

116TH CONGRESS  
1ST SESSION

# H. R. 1237

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

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## 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,*

1 **SECTION 1. SHORT TITLE.**

2       This Act may be cited as the “Coastal and Ocean  
3 Acidification Stressors and Threats Research Act of  
4 2019” or the “COAST Research Act of 2019”.

5 **SEC. 2. PURPOSES.**

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

9           (1) in paragraph (1)—

10               (A) in the matter preceding subparagraph  
11               (A), by striking “development and coordina-  
12               tion” and inserting “coordination and imple-  
13               mentation”;

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

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

24           (2) in paragraph (2), by striking “establissh-  
25           ment” and inserting “maintenance”;

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

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

7           (b) **TECHNICAL AND CONFORMING AMENDMENT.**—  
8           Section 12402 of the Federal Ocean Acidification Re-  
9           search and Monitoring Act of 2009 (33 U.S.C. 3701(a))  
10          is amended by striking “(a) **PURPOSES.**—”.

11       **SEC. 3. DEFINITIONS.**

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

15               (1) in paragraph (1), by striking “of the  
16               Earth’s oceans” and all that follows before the pe-  
17               riod at the end and inserting “and changes in the  
18               water chemistry of the Earth’s oceans, coastal estu-  
19               aries, and waterways caused by carbon dioxide from  
20               the atmosphere and the breakdown of organic mat-  
21               ter”;

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

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

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

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

“(1) COASTAL ACIDIFICATION.—The term  
‘coastal acidification’ means the combined decrease  
in pH and changes in the water chemistry of coastal  
oceans, estuaries, and other bodies of water from  
chemical inputs (including carbon dioxide from the  
atmosphere), freshwater inputs, and excess nutrient  
run-off from land and coastal atmospheric pollution  
that result in processes that release carbon dioxide,  
acidic nitrogen, and sulfur compounds as byprod-  
ucts.”; and

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

“(5) STATE.—The term ‘State’ means each of  
the State of the United States, the District of Co-  
lumbia, the Commonwealth of Puerto Rico, Amer-  
ican Samoa, Guam, the Commonwealth of the  
Northern Mariana Islands, the Virgin Islands of the  
United States, and any other territory or possession  
of the United 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 Tech-  
10 nology of the National Science and Technology  
11 Council shall coordinate Federal activities on  
12 ocean acidification and” and insert “Sub-  
13 committee shall”;

14 (B) in paragraph (2), by striking “Wildlife  
15 Service,” and inserting “Wildlife Service, the  
16 Bureau of Ocean Energy Management, the En-  
17 vironmental Protection Agency, the Department  
18 of Agriculture, the Department of State, the  
19 Department 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  
24 represented on the interagency working group—

1 “(A) participates in the Ocean Acidifica-  
2 tion Information Exchange established under  
3 paragraph (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  
10 Representatives”; and

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

14 (5) by redesignating subsection (c) as sub-  
15 section (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 after the  
24 Subcommittee submits the most recent report  
25 under subsection (d)(2) to Congress—

1 “(i) review such report; and

2 “(ii) submit an analysis of such report  
3 to the Subcommittee, the Committee on  
4 Commerce, Science, and Transportation of  
5 the Senate, the Committee on Science,  
6 Space, and Technology of the House of  
7 Representatives, and the Committee on  
8 Natural Resources of the House of Rep-  
9 resentatives;

10 “(B) not later than 180 days after the  
11 Subcommittee submits the most recent strategic  
12 research plan under subsection (d)(3) to Con-  
13 gress—

14 “(i) review such plan; and

15 “(ii) submit an analysis of such plan  
16 and the implementation thereof to the Sub-  
17 committee, the Committee on Commerce,  
18 Science, and Transportation of the Senate,  
19 the Committee on Science, Space, and  
20 Technology of the House of Representa-  
21 tives, and the Committee on Natural Re-  
22 sources of the House of Representatives;

23 “(C) provide ongoing advice to the Sub-  
24 committee and the interagency working group



1 on matters related to Federal activities on  
2 ocean acidification and coastal acidification;

3 “(D) advise the Subcommittee and the  
4 interagency working group on—

5 “(i) efforts to coordinate research and  
6 monitoring activities related to ocean acidi-  
7 fication and coastal acidification; and

8 “(ii) the best practices for the stand-  
9 ards developed for data archiving under  
10 section 12406(e);

11 “(E) publish in the Federal Register the  
12 charter required under section 9(c) of the Fed-  
13 eral Advisory Committee Act (5 U.S.C. App.);

14 “(F) provide the Library of Congress  
15 with—

16 “(i) the charter described under sub-  
17 paragraph (E);

18 “(ii) any schedules and minutes for  
19 meetings of the Advisory Board;

20 “(iii) any documents described in sub-  
21 sections (b) and (c) of section 9 of the  
22 Federal Advisory Committee Act (5 U.S.C.  
23 App.) that are created by the Advisory  
24 Board; and

1 “(iv) any reports prepared by the Ad-  
2 visory Board; and

3 “(G) establish a publicly accessible web  
4 page on the website of the National Oceanic  
5 and Atmospheric Administration, that contains  
6 the information described in clause (i) through  
7 (iv) of subparagraph (F).

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

10 “(A) 2 representatives of the shellfish and  
11 crab industry.

12 “(B) 1 representative of the finfish indus-  
13 try.

14 “(C) 1 representative of seafood proc-  
15 essors.

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

18 “(E) 1 representative of recreational fish-  
19 ing.

20 “(F) 1 representative of relevant non-  
21 governmental organizations.

22 “(G) 6 representatives from relevant State,  
23 local, and Tribal governments.

24 “(H) 1 representative from the Alaska  
25 Ocean Acidification Network.

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

3           “(J) 1 representative from the Northeast  
4           Coastal Acidification Network.

5           “(K) 1 representative from the Southeast  
6           Coastal Acidification Network.

7           “(L) 1 representative from the Gulf of  
8           Mexico Coastal Acidification Network.

9           “(M) 1 representative from the Mid-Atlan-  
10          tic Coastal Acidification Network.

11          “(4) APPOINTMENT OF MEMBERS.—The Chair  
12          of the Subcommittee shall—

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

20                       “(i) represent the interest group for  
21                       which each seat is designated;

22                       “(ii) demonstrate expertise on ocean  
23                       acidification or coastal acidification and its  
24                       scientific, economic, industry, cultural, and  
25                       community impacts; and

1 “(iii) have a record of distinguished  
2 service with respect to ocean acidification  
3 or coastal acidification, and such impacts  
4 thereof;

5 “(B) give consideration to nominations and  
6 recommendations from the members of the  
7 interagency working group and the public for  
8 such appointments; and

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

13 “(5) TERM OF MEMBERSHIP.—Each member of  
14 the Advisory Board—

15 “(A) shall be appointed for a 5-year term;  
16 and

17 “(B) may be appointed to more than one  
18 term.

19 “(6) CHAIR.—The Chair of the Subcommittee  
20 shall appoint one member of the Advisory Board to  
21 serve as the Chair of the Advisory Board.

22 “(7) MEETINGS.—Not less than once each cal-  
23 endar year, the Advisory Board shall meet at such  
24 times and places as may be designated by the Chair  
25 of the Advisory Board, in consultation with the

1 Chair of the Subcommittee and the Chair of the  
2 interagency working group.

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

7 “(9) FEDERAL ADVISORY COMMITTEE ACT.—  
8 The Federal Advisory Committee Act shall not apply  
9 to the Advisory Board, except for subsections (b)  
10 and (c) of section 9 and subsections (a) through (d)  
11 of section 10 of such Act.”.

12 **SEC. 5. STRATEGIC RESEARCH PLAN.**

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

16 (1) in subsection (a)—

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

20 (B) in the first sentence—

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

24 (ii) by inserting “address the socio-  
25 economic impacts of ocean acidification

1 and coastal acidification and to” after  
2 “mitigation strategies to”; and

3 (iii) by striking “marine ecosystems”  
4 each place it appears and inserting “eco-  
5 systems”; and

6 (C) in the second sentence, by inserting  
7 “and recommendations made by the Advisory  
8 Board in the review of the plan required under  
9 subsection (e)” after “subsection (d)”;  
10 (2) in subsection (b)—

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

13 (B) in paragraph (2)—

14 (i) in subparagraph (A), by striking  
15 “impacts” and inserting “impacts, includ-  
16 ing trends of changes in ocean chemistry,”;

17 (ii) in subparagraph (B)—

18 (I) by striking “improve the abil-  
19 ity to assess the” and inserting “as-  
20 sess the short-term and long-term”;  
21 and

22 (II) by striking “; and” at the  
23 end and inserting a semicolon;

24 (iii) by amending subparagraph (C) to  
25 read as follows:

1 “(C) provide information for the—

2 “(i) development of adaptation and  
3 mitigation strategies to address the socio-  
4 economic impacts of ocean acidification  
5 and coastal acidification;

6 “(ii) conservation of marine organisms  
7 and ecosystems; and

8 “(iii) assessment of the effectiveness  
9 of such adaptation and mitigation strate-  
10 gies;”; and

11 (iv) by adding at the end the following  
12 new subparagraph:

13 “(D) improve research on—

14 “(i) ocean acidification and coastal  
15 acidification;

16 “(ii) the effect of environmental  
17 stressors on each other, including research  
18 on the effect of changes in water chem-  
19 istry, changes in sediment delivery, hy-  
20 poxia, and harmful algal blooms, on ocean  
21 acidification and coastal acidification; and

22 “(iii) the effect of environmental  
23 stressors on marine resources and eco-  
24 systems;”;

25 (C) in paragraph (3)—

1 (i) in subparagraph (F), by inserting  
2 “and management” after “database devel-  
3 opment”;

4 (ii) in subparagraph (H) by striking  
5 “and” at the end; and

6 (iii) by adding at the end the fol-  
7 lowing new subparagraphs:

8 “(J) assessment of adaptation and mitiga-  
9 tion strategies; and

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

11 (D) in paragraph (4), by striking “set  
12 forth” and inserting “ensure an appropriate  
13 balance of contribution in establishing”;

14 (E) in paragraph (5), by striking “reports”  
15 and inserting “the best available peer-reviewed  
16 scientific reports”;

17 (F) in paragraph (6)—

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

20 (ii) by striking “of the United States”  
21 and inserting “within the United States”;

22 (G) in paragraph (7)—

23 (i) by striking “outline budget re-  
24 quirements” and inserting “estimate budg-  
25 et requirements for each of the fiscal years



1 of the plan for full implementation of each  
2 element of the plan”; and

3 (ii) by inserting “over the course of  
4 10 years” after “under the plan”;

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 acidifica-  
5 tion”;

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 60 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.

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

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

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

15               (1) in subsection (a)—

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

19               (B) in paragraph (1)—

20                       (i) in subparagraph (B)—

21                               (I) by inserting “including the  
 22                               Integrated Ocean Observing System  
 23                               and the ocean observing assets of  
 24                               other Federal agencies,” after “ocean  
 25                               observing assets,”; and

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

10 (I) by striking “adaptation” and  
11 inserting “adaptation and mitigation”;  
12 and

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

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

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

24 (v) by adding at the end the following  
25 new subparagraph:

1                   “(G) research to improve understanding of  
2           the effect of—

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

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

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

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

17                  (D) in paragraphs (1), (2), and (3), by  
18          striking “acidification” each place it appears  
19          and inserting “acidification and coastal acidifi-  
20          cation”; and

21                  (2) by adding at the end the following new sub-  
22          sections:

23                  “(c) RELATIONSHIP TO INTERAGENCY WORKING  
24          GROUP.—The National Oceanic and Atmospheric Admin-  
25          istration shall serve as the lead Federal agency responsible

1 for coordinating the Federal response to ocean acidifica-  
2 tion and coastal acidification, by—

3 “(1) leading the interagency working group in  
4 implementing the strategic research plan under sec-  
5 tion 12405;

6 “(2) coordinating monitoring and research ef-  
7 forts among Federal agencies in cooperation with  
8 State, local, and international partners;

9 “(3) maintaining an Ocean Acidification Infor-  
10 mation Exchange described under section  
11 12404(b)(5) to allow for information to be electroni-  
12 cally accessible, including information—

13 “(A) on ocean acidification developed  
14 through or used by the ocean acidification pro-  
15 gram described under section 12406(a); or

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

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

24 “(d) DATA ARCHIVE SYSTEM.—

1           “(1) ESTABLISHMENT.—The Secretary, in co-  
2           ordination with members of the interagency working  
3           group, shall provide for the long-term stewardship  
4           of, and access to, data relating to ocean acidification  
5           and coastal acidification by establishing a data ar-  
6           chive system that processes, stores, archives, pro-  
7           vides access to, and incorporates to the extent pos-  
8           sible, such data collected—

9                   “(A) through relevant federally funded re-  
10                  search; and

11                   “(B) by a Federal agency, State agency,  
12                  local agency, Tribe, academic scientist, citizen  
13                  scientist, or industry organization.

14           “(2) EXISTING GLOBAL OR NATIONAL DATA AS-  
15           SETS.—In establishing the data archive system  
16           under paragraph (1), the Secretary shall ensure that  
17           existing global or national data assets (including the  
18           data assets of the National Centers for Environ-  
19           mental Information, the Integrated Ocean Observing  
20           System, and other existing data systems within Fed-  
21           eral agencies) are incorporated to the greatest extent  
22           possible.

23           “(e) STANDARDS, PROTOCOLS, AND PROCEDURES.—  
24           With respect to the data described in subsection (d), the  
25           Secretary, in coordination with members of the inter-

1 agency working group, shall establish standards, protocols,  
2 or procedures for—

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

5 “(2) the interoperability and intercalibration of  
6 such data;

7 “(3) the collection of any metadata underlying  
8 such data; and

9 “(4) sharing such data with State, local, and  
10 Tribal government programs, potentially affected in-  
11 dustry members, coastal stakeholders, fishery man-  
12 agement councils and commissions, non-Federal re-  
13 source managers, and academia.

14 “(f) DISSEMINATION OF OCEAN ACIDIFICATION  
15 DATA AND COASTAL ACIDIFICATION DATA.—The Sec-  
16 retary, in coordination with members of the interagency  
17 working group, shall disseminate the data described under  
18 subsection (d) to the greatest extent practicable by sharing  
19 such data on full and open access exchanges, including  
20 the Ocean Acidification Information Exchange described  
21 in section 12404(b)(5).

22 “(g) REQUIREMENT.—Recipients of grants from the  
23 National Oceanic and Atmospheric Administration under  
24 this subtitle that collected data described under subsection  
25 (d) shall—



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

4 “(2) submit such data to the Secretary, in ac-  
5 cordance with any rules promulgated by the Sec-  
6 retary.”.

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

8 Section 12407 of the Federal Ocean Acidification Re-  
9 search and Monitoring Act of 2009 (33 U.S.C. 3706) 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)—

15 (A) in the matter preceding paragraph

16 (1)—

17 (i) by striking “continue to carry out  
18 research activities on ocean acidification  
19 which shall”;

20 (ii) by striking “proposals for re-  
21 search” and inserting “proposals for the  
22 researching”; and

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

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

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

5 (D) in paragraph (3)—

6 (i) by striking “and its impacts” and  
7 inserting “and their respective impacts”;  
8 and

9 (ii) by striking the period at the end  
10 and inserting “; and”; and

11 (E) by adding at the end the following new  
12 paragraph:

13 “(4) adaptation and mitigation strategies to ad-  
14 dress socioeconomic effects of ocean acidification and  
15 coastal acidification.”; and

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

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

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

23 “(2) submit such data to the Director and the  
24 Secretary, in accordance with any rules promulgated  
25 by the Director or the Secretary.”.

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

2 Section 12408 of the Federal Ocean Acidification Re-  
3 search and Monitoring Act of 2009 (33 U.S.C. 3707) 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), by striking “its impacts”  
9 and inserting “their respective impacts”; and

10 (3) by adding at the end the following new sub-  
11 section:

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

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

18 “(2) submit such data to the Administrator and  
19 the Secretary, in accordance with any rules promul-  
20 gated by the Administrator or the Secretary.”.

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

22 Section 12409 of the Federal Ocean Acidification Re-  
23 search and Monitoring Act of 2009 (33 U.S.C. 3708) is  
24 amended—

25 (1) in subsection (a), by striking “subtitle—”  
26 and all that follows through paragraph (4) and in-

1       serting the following: “subtitle \$30,500,000 for each  
2       of the fiscal years 2019 through 2023.”; and  
3       (2) in subsection (b), by striking “subtitle—”  
4       and all that follows through paragraph (4) and in-  
5       serting the following: “subtitle \$20,000,000 for each  
6       of the fiscal years 2019 through 2023.”.

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