

**AMENDMENT IN THE NATURE OF A SUBSTITUTE**  
**TO H.R. \_\_\_\_\_**  
**OFFERED BY MS. BONAMICI OF OREGON**

Strike all after the enacting clause and insert the following:

**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

1 (C) in subparagraph (B), by striking “es-  
2 tablish” and all that follows through the semi-  
3 colon and inserting “maintain and advise an  
4 interagency research, monitoring, and public  
5 outreach program on ocean acidification and  
6 coastal acidification;”;

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

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

11 (4) in paragraph (4), by inserting “and coastal  
12 acidification that take into account other environ-  
13 mental and anthropogenic stressors” after “ocean  
14 acidification”.

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

19 **SEC. 3. DEFINITIONS.**

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

23 (1) in paragraph (1), by striking “of the  
24 Earth’s oceans” and all that follows before the pe-  
25 riod at the end and inserting “and changes in the

1 water chemistry of the Earth’s oceans, coastal estu-  
2 aries, and waterways caused by carbon dioxide from  
3 the atmosphere and the breakdown of organic mat-  
4 ter”;

5 (2) in paragraph (3), by striking “Joint Sub-  
6 committee on Ocean Science and Technology of the  
7 National Science and Technology Council” and in-  
8 serting “National Science and Technology Council  
9 Subcommittee on Ocean Science and Technology”;

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

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

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

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

1           “(5) STATE.—The term ‘State’ means each  
2           State of the United States, the District of Columbia,  
3           the Commonwealth of Puerto Rico, American  
4           Samoa, Guam, the Commonwealth of the Northern  
5           Mariana Islands, the Virgin Islands of the United  
6           States, and any other territory or possession of the  
7           United States.”.

8   **SEC. 4. INTERAGENCY WORKING GROUP.**

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

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

14                 (2) in subsection (a)—

15                         (A) in paragraph (1), by striking “Joint  
16                         Subcommittee on Ocean Science and Tech-  
17                         nology of the National Science and Technology  
18                         Council shall coordinate Federal activities on  
19                         ocean acidification and” and insert “Sub-  
20                         committee shall”;

21                         (B) in paragraph (2), by striking “Wildlife  
22                         Service,” and inserting “Wildlife Service, the  
23                         Bureau of Ocean Energy Management, the En-  
24                         vironmental Protection Agency, the Department  
25                         of Agriculture, the Department of State, the

1 Department of Energy, the Department of the  
2 Navy, the National Park Service, the Bureau of  
3 Indian Affairs, the National Institute of Stand-  
4 ards and Technology, the Smithsonian Institu-  
5 tion,”; and

6 (C) in paragraph (3), in the heading, by  
7 striking “CHAIRMAN” and inserting “CHAIR”;

8 (3) in subsection (b)—

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

13 (B) in paragraph (2)—

14 (i) in subparagraph (A), by inserting  
15 “and coastal acidification” after “ocean  
16 acidification”; and

17 (ii) in subparagraph (B), by inserting  
18 “and coastal acidification” after “ocean  
19 acidification”;

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

22 (D) in paragraph (5)—

23 (i) by striking “developed” and insert-  
24 ing “and coastal acidification developed”;  
25 and

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

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

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

8 “(A) participates in the Ocean Acidifica-  
9 tion Information Exchange established under  
10 paragraph (5); and

11 “(B) delivers data and information to sup-  
12 port the data archive system established under  
13 section 12406(d).”;

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

15 (A) by inserting “, and to the Office of  
16 Management and Budget,” after “House of  
17 Representatives”; and

18 (B) in subparagraph (B), by striking “the  
19 interagency research” and inserting “inter-  
20 agency strategic research”;

21 (5) by redesignating subsection (c) as sub-  
22 section (d); and

23 (6) by inserting after subsection (b) the fol-  
24 lowing:

25 “(c) ADVISORY BOARD.—

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

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

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

8                           “(i) review such report; and

9                           “(ii) submit an analysis of such report  
10           to the Subcommittee for consideration in  
11           the final report submitted under subsection  
12           (d)(2); and

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

24                          “(B) not later than 180 days before the  
25           Subcommittee submits the most recent strategic

1 research plan under subsection (d)(3) to Con-  
2 gress—

3 “(i) review such plan; and

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

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

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

24 “(D) advise the Subcommittee and the  
25 interagency working group on—



1 “(i) efforts to coordinate research and  
2 monitoring activities related to ocean acidi-  
3 fication and coastal acidification; and

4 “(ii) the best practices for the stand-  
5 ards developed for data archiving under  
6 section 12406(e);

7 “(E) publish in the Federal Register a  
8 charter;

9 “(F) provide the Library of Congress  
10 with—

11 “(i) the charter described in subpara-  
12 graph (E);

13 “(ii) any schedules and minutes for  
14 meetings of the Advisory Board;

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

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

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

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

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

3           “(B) 1 representative of the finfish indus-  
4 try.

5           “(C) 1 representative of seafood proc-  
6 essors.

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

9           “(E) 1 representative of recreational fish-  
10 ing.

11           “(F) 1 representative of relevant non-  
12 governmental organizations.

13           “(G) 6 representatives from relevant State,  
14 local, and Tribal governments.

15           “(H) 1 representative from the Alaska  
16 Ocean Acidification Network.

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

19           “(J) 1 representative from the Northeast  
20 Coastal Acidification Network.

21           “(K) 1 representative from the Southeast  
22 Coastal Acidification Network.

23           “(L) 1 representative from the Gulf of  
24 Mexico Coastal Acidification Network.

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

3           “(N) 1 representative from the Pacific Is-  
4           lands Ocean Observing System or similar entity  
5           representing the island territories and posses-  
6           sions of the United States in the Pacific Ocean,  
7           and the State of Hawaii.

8           “(O) 1 representative from the Caribbean  
9           Regional Association for Coastal Ocean Observ-  
10          ing or a similar entity representing Puerto Rico  
11          and the U.S. Virgin Islands.

12          “(P) 1 representative from the National  
13          Oceanic and Atmospheric Administration shall  
14          serve as an ex-officio member of the Advisory  
15          Board without a vote.

16          “(4) APPOINTMENT OF MEMBERS.—The Chair  
17          of the Subcommittee shall—

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

1                   “(i) represent the interest group for  
2                   which each seat is designated;

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

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

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

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

18                  “(5) TERM OF MEMBERSHIP.—Each member of  
19                  the Advisory Board—

20                         “(A) shall be appointed for a 5-year term;  
21                         and

22                         “(B) may be appointed to more than one  
23                         term.

1           “(6) CHAIR.—The Chair of the Subcommittee  
2 shall appoint one member of the Advisory Board to  
3 serve as the Chair of the Advisory Board.

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

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

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

17 **SEC. 5. STRATEGIC RESEARCH PLAN.**

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

21           (1) in subsection (a)—

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

25                   (B) in the first sentence—

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

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

8 (iii) by striking “marine ecosystems”  
9 each place it appears and inserting “eco-  
10 systems”; and

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

16 (2) in subsection (b)—

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

19 (B) in paragraph (2)—

20 (i) in subparagraph (A), by striking  
21 “impacts” and inserting “impacts, includ-  
22 ing trends of changes in ocean chemistry,”;

23 (ii) in subparagraph (B)—

24 (I) by striking “improve the abil-  
25 ity to assess the” and inserting “as-

1                   sess the short-term and long-term”;

2                   and

3                   (II) by striking “; and” at the

4                   end and inserting a semicolon;

5                   (iii) by amending subparagraph (C) to

6                   read as follows:

7                   “(C) provide information for the—

8                   “(i) development of adaptation and

9                   mitigation strategies to address the socio-

10                  economic impacts of ocean acidification

11                  and coastal acidification;

12                  “(ii) conservation of marine organisms

13                  and ecosystems; and

14                  “(iii) assessment of the effectiveness

15                  of such adaptation and mitigation strate-

16                  gies;”;

17                  (iv) by adding at the end the following

18                  new subparagraph:

19                  “(D) improve research on—

20                  “(i) ocean acidification and coastal

21                  acidification;

22                  “(ii) the interactions between and ef-

23                  fects of multiple combined stressors includ-

24                  ing changes in water chemistry, changes in

25                  sediment delivery, hypoxia, and harmful

1           algal blooms, on ocean acidification and  
2           coastal acidification; and

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

6           (C) in paragraph (3)—

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

10                  (ii) in subparagraph (H) by striking  
11           “and” at the end; and

12                  (iii) by adding at the end the fol-  
13           lowing new subparagraphs:

14                   “(J) assessment of adaptation and mitiga-  
15           tion strategies; and

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

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

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

23           (F) in paragraph (6)—

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



1 (ii) by striking “of the United States”  
2 and inserting “within the United States”;

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

7 (H) in paragraph (8)—

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

11 (ii) by striking “its” and inserting  
12 “their”; and

13 (iii) by striking “; and” at the end  
14 and inserting a semicolon;

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

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

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

1 (3) in subsection (c)—

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

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

7 (C) in paragraph (3)—

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

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

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

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

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

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

24 (4) by striking subsection (e) and inserting the  
25 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), (2), and (3), by  
20 striking “acidification” each place it appears  
21 and inserting “acidification and coastal acidifi-  
22 cation”; 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 to carry out  
24 research activities on ocean acidification  
25 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

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

4 **SEC. 9. AUTHORIZATION OF APPROPRIATIONS.**

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

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

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

