

117TH CONGRESS
1ST SESSION

H. R. 1447

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.

IN THE HOUSE OF REPRESENTATIVES

MARCH 1, 2021

Ms. BONAMICI (for herself, Mr. YOUNG, Ms. PINGREE, Mr. POSEY, Mr. BEYER, Mr. MCNERNEY, Mr. PAPPAS, Mr. FITZPATRICK, Mr. PANETTA, Ms. VELÁZQUEZ, Ms. BROWNLEY, Mr. DEFazio, Mr. LARSEN of Washington, Mr. CASE, Mr. BLUMENAUER, and Mr. CRIST) introduced the following bill; which was referred to the Committee on Science, Space, and Technology

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 2021” or the “COAST Research Act of 2021”.

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 through 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 “establis-
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 byproducts
which end up in coastal waters.”; and

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

“(5) STATE.—The term ‘State’ means each
State of the United States, the District of Columbia,
the Commonwealth of Puerto Rico, American
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)—

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

(B) in paragraph (2)—

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

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

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

(D) in paragraph (5)—

(i) by striking “developed” and inserting “and coastal acidification developed”; and

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

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

“(6) ensure that each of the Federal agencies 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 before the
24 Subcommittee submits the most recent report
25 under subsection (d)(2)—

1 “(i) review such report;

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

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

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

21 “(i) review such plan;

22 “(ii) submit an analysis of such plan
23 and the implementation thereof to the Sub-
24 committee for consideration in the final

1 strategic research plan submitted under
2 subsection (d)(3); and

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

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

18 “(D) advise the Subcommittee and the
19 interagency working group on—

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

23 “(ii) the best practices for the stand-
24 ards developed for data archiving under
25 section 12406(e);

1 “(E) publish in the Federal Register a
2 charter;

3 “(F) provide the Library of Congress
4 with—

5 “(i) the charter described in subpara-
6 graph (E);

7 “(ii) any schedules and minutes for
8 meetings of the Advisory Board;

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

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

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

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

20 “(A) Two representatives of the shellfish
21 and crab industry.

22 “(B) One representative of the finfish in-
23 dustry.

24 “(C) One representative of seafood proc-
25 essors.

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

3 “(E) One representative of recreational
4 fishing.

5 “(F) One representative of relevant non-
6 governmental organizations.

7 “(G) Six representatives from relevant
8 State, local, and Tribal governments.

9 “(H) One representative from the Alaska
10 Ocean Acidification Network.

11 “(I) One representative from the California
12 Current Acidification Network.

13 “(J) One representative from the North-
14 east Coastal Acidification Network.

15 “(K) One representative from the South-
16 east Coastal Acidification Network.

17 “(L) One representative from the Gulf of
18 Mexico Coastal Acidification Network.

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

21 “(N) One representative from the Pacific
22 Islands Ocean Observing System or similar en-
23 tity representing the island territories and pos-
24 sessions of the United States in the Pacific
25 Ocean, and the State of Hawaii.

1 “(O) One representative from the Carib-
2 bean Regional Association for Coastal Ocean
3 Observing or a similar entity representing Puer-
4 to Rico and the United States Virgin Islands.

5 “(P) One representative from the National
6 Oceanic and Atmospheric Administration shall
7 serve as an ex-officio member of the Advisory
8 Board without a vote.

9 “(4) APPOINTMENT OF MEMBERS.—The Chair
10 of the Subcommittee shall—

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

18 “(i) represent the interest group for
19 which each seat is designated;

20 “(ii) demonstrate expertise on ocean
21 acidification or coastal acidification and its
22 scientific, economic, industry, cultural, and
23 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 “(B) give consideration to nominations and
5 recommendations from the members of the
6 interagency working group and the public for
7 such appointments; and

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

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

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

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

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

21 “(7) MEETINGS.—Not less than once each cal-
22 endar year, the Advisory Board shall meet at such
23 times and places as may be designated by the Chair
24 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 Section 14 of the Federal Advisory Committee Act
9 shall not apply to the Advisory Board.”.

10 **SEC. 5. STRATEGIC RESEARCH PLAN.**

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

14 (1) in subsection (a)—

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

18 (B) in the first sentence—

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

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

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

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

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

12 (B) in paragraph (2)—

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

16 (ii) in subparagraph (B)—

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

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

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

25 “(C) provide information for the—

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

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

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

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

12 “(D) improve research on—

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

15 “(ii) the interactions between and ef-
16 fects of multiple combined stressors includ-
17 ing changes in water chemistry, changes in
18 sediment delivery, hypoxia, and harmful
19 algal blooms, on ocean acidification and
20 coastal acidification; and

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

24 (C) in paragraph (3)—

1 (i) in subparagraph (F), by striking
2 “database development” and inserting
3 “data management”;

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), by striking “outline
23 budget requirements” and inserting “estimate
24 costs associated for full implementation of each
25 element of the plan by fiscal year”;

1 (H) in paragraph (8)—

2 (i) by inserting “and coastal acidifica-
3 tion” after “ocean acidification” each place
4 it appears;

5 (ii) by striking “its” and inserting
6 “their”; and

7 (iii) by striking “; and” at the end
8 and inserting a semicolon;

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

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

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

20 (3) in subsection (c)—

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

23 (B) in paragraph (2), by inserting “and
24 coastal acidification” after “ocean acidification”
25 each place it appears;

1 (C) in paragraph (3)—

2 (i) by striking “input, and” and in-
3 serting “inputs,”;

4 (ii) by inserting “, marine food webs,”
5 after “marine ecosystems”; and

6 (iii) by inserting “, and modeling that
7 supports fisheries management” after
8 “marine organisms”;

9 (D) in paragraph (5), by inserting “and
10 coastal acidification” after “ocean acidifica-
11 tion”; and

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

14 “(6) Research to understand related and cumu-
15 lative stressors and other biogeochemical processes
16 occurring in conjunction with ocean acidification and
17 coastal acidification.”; and

18 (4) by striking subsection (e) and inserting the
19 following:

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

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

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

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

11 (1) in subsection (a)—

12 (A) in the matter preceding paragraph (1),
 13 by inserting “coordination,” after “research,
 14 monitoring,”;

15 (B) in paragraph (1)—

16 (i) in subparagraph (B)—

17 (I) by inserting “including the
 18 Integrated Ocean Observing System
 19 and the ocean observing assets of
 20 other Federal and State agencies,”
 21 after “ocean observing assets,”; and

22 (II) by inserting “and agency
 23 and department missions, prioritizing
 24 the location of monitoring instru-
 25 ments, assets, and projects to maxi-

1 mize the efficiency of resources and to
2 optimize understanding of socio-
3 economic impacts and ecosystem
4 health” after “research program”;

5 (ii) in subparagraph (C)—

6 (I) by striking “adaptation” and
7 inserting “adaptation and mitigation”;
8 and

9 (II) by inserting “and supporting
10 socioeconomically vulnerable commu-
11 nities and industries” after “marine
12 ecosystems”;

13 (iii) in subparagraph (E), by striking
14 “its impacts” and inserting “their respec-
15 tive impacts”;

16 (iv) in subparagraph (F), by striking
17 “monitoring and impacts research” and in-
18 serting “research, monitoring, and adapta-
19 tion and mitigation strategies”; and

20 (v) by adding at the end the following
21 new subparagraph:

22 “(G) research to improve understanding of
23 the effect of—

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

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

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

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

15 (D) in paragraphs (1) and (2), by striking
16 “acidification” each place it appears and insert-
17 ing “acidification and coastal acidification”;
18 and

19 (2) by adding at the end the following new sub-
20 sections:

21 “(c) RELATIONSHIP TO INTERAGENCY WORKING
22 GROUP.—The National Oceanic and Atmospheric Admin-
23 istration shall serve as the lead Federal agency responsible
24 for coordinating the Federal response to ocean acidifica-
25 tion and coastal acidification, by—

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

4 “(2) coordinating monitoring and research ef-
5 forts among Federal agencies in cooperation with
6 State, local, and Tribal government and inter-
7 national partners;

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

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

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

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

23 “(d) DATA ARCHIVE SYSTEM.—

24 “(1) MANAGEMENT.—The Secretary, in coordi-
25 nation with members of the interagency working

1 group, shall provide for the long-term stewardship
2 of, and access to, data relating to ocean acidification
3 and coastal acidification by establishing and main-
4 taining a data archive system that the National Cen-
5 ter for Environmental Information uses to process,
6 store, archive, provide access to, and incorporate to
7 the extent possible, such data collected—

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

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

13 “(2) EXISTING GLOBAL OR NATIONAL DATA AS-
14 SETS.—In establishing and maintaining the data ar-
15 chive system under paragraph (1), the Secretary
16 shall ensure that existing global or national data as-
17 sets (including the data assets maintained by the
18 National Centers for Environmental Information,
19 the Integrated Ocean Observing System, and other
20 existing data systems within Federal agencies) are
21 incorporated to the greatest extent possible.

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

1 agency working group, shall establish and revise as nec-
2 essary the standards, protocols, 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 collect 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 data archive sys-
 5 tem under subsection (d), in accordance with any
 6 rules promulgated by the Secretary.”.

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” and all that
 18 follows through “which shall”;

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

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

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

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

3 (D) in paragraph (3)—

4 (i) by striking “and its impacts” and
5 inserting “and their respective impacts”;
6 and

7 (ii) by striking the period at the end
8 and inserting “; and”; and

9 (E) by adding at the end the following new
10 paragraph:

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

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

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

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

21 “(2) submit such data to the Director and the
22 Secretary, in accordance with any rules promulgated
23 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 \$50 million for each
2 of the fiscal years 2022 through 2026.”; 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 million for each
6 of the fiscal years 2022 through 2026.”.

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