IN THE SENATE OF THE UNITED STATES  

MAY 19, 2021  
Received; read twice and referred to the Committee on Commerce, Science, and Transportation

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.
Be it enacted by the Senate and House of Representa-
tives of the United States of America in Congress assembled,

SECTION 1. SHORT TITLE.

This Act may be cited as the “Coastal and Ocean
Acidification Stressors and Threats Research Act of
2021” or the “COAST Research Act of 2021”.

SEC. 2. PURPOSES.

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

(1) in paragraph (1)—

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

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

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

HR 1447 RFS
(2) in paragraph (2), by striking “establish-
ment” and inserting “maintenance”; 
(3) in paragraph (3), by inserting “and coastal
acidification” after “ocean acidification”; and
(4) in paragraph (4), by inserting “and coastal
acidification that take into account other environ-
mental and anthropogenic stressors” after “ocean
acidification”.
(b) Technical and Conforming Amendment.—
Section 12402 of the Federal Ocean Acidification Re-
search and Monitoring Act of 2009 (33 U.S.C. 3701(a))
is amended by striking “(a) PURPOSES.—”.
SEC. 3. Definitions.
Section 12403 of the Federal Ocean Acidification Re-
search and Monitoring Act of 2009 (33 U.S.C. 3702) is
amended—
(1) in paragraph (1), by striking “of the
Earth’s oceans” and all that follows before the pe-
period at the end and inserting “and changes in the
water chemistry of the Earth’s oceans, coastal estu-
aries, and waterways caused by carbon dioxide from
the atmosphere and the breakdown of organic mat-
ter”; 
(2) in paragraph (3), by striking “Joint Sub-
committee on Ocean Science and Technology of the
National Science and Technology Council” and inserting “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 redesignated, 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.”.

SEC. 4. INTERAGENCY WORKING GROUP.

Section 12404 of the Federal Ocean Acidification Research and Monitoring Act of 2009 (33 U.S.C. 3703) is amended—

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

(2) in subsection (a)—

(A) in paragraph (1), by striking “Joint Subcommittee on Ocean Science and Technology of the National Science and Technology Council shall coordinate Federal activities on ocean acidification and establish” and insert “Subcommittee shall establish and maintain”; and

(B) in paragraph (2), by striking “Wildlife Service,” and inserting “Wildlife Service, the Bureau of Ocean Energy Management, the Environmental Protection Agency, the Department of Agriculture, the Department of State, the Department of Energy, the Department of the Navy, the National Park Service, the Bureau of Indian Affairs, the National Institute of Standards and Technology, the Smithsonian Institution,”; and
(C) in paragraph (3), in the heading, by striking “CHAIRMAN” and inserting “CHAIR”;

(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—

“(A) participates in the Ocean Acidification Information Exchange established under paragraph (5); and

“(B) delivers data and information to support the data archive system established under section 12406(d).”;

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

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

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

(5) by redesignating subsection (e) as subsection (d); and

(6) by inserting after subsection (b) the following:

“(c) ADVISORY BOARD.—

“(1) ESTABLISHMENT.—The Chair of the Subcommittee shall establish an Ocean Acidification Advisory Board.

“(2) DUTIES.—The Advisory Board shall—
“(A) not later than 180 days before the Subcommittee submits the most recent report under subsection (d)(2)—

“(i) review such report;

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

“(iii) concurrently with the Subcommittee’s final submission of the report under subsection (d)(2), the Advisory Board shall submit a copy of the analysis provided to the Subcommittee to the Committee on Commerce, Science, and Transportation of the Senate, the Committee on Science, Space, and Technology of the House of Representatives, and the Committee on Natural Resources of the House of Representatives;

“(B) not later than 180 days before the Subcommittee submits the most recent strategic research plan under subsection (d)(3) to Congress—

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

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

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

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

“(i) efforts to coordinate research and monitoring activities related to ocean acidifi-
cation and coastal acidification; and
“(ii) the best practices for the standards developed for data archiving under section 12406(e);
“(E) publish in the Federal Register a charter;
“(F) provide the Library of Congress with—
“(i) the charter described in subparagraph (E);
“(ii) any schedules and minutes for meetings of the Advisory Board;
“(iii) any documents that are approved by the Advisory Board; and
“(iv) any reports and analysis prepared by the Advisory Board; and
“(G) establish a publicly accessible web page on the website of the National Oceanic and Atmospheric Administration, that contains the information described in clauses (i) through (iv) of subparagraph (F).
“(3) MEMBERSHIP.—The Advisory Board shall consist of 24 members as follows:
“(A) Two representatives of the shellfish and crab industry.
“(B) One representative of the finfish industry.

“(C) One representative of seafood processors.

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

“(E) One representative of recreational fishing.

“(F) One representative of a relevant non-governmental organization.

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

“(H) One representative from the Alaska Ocean Acidification Network or a subsequent entity that represents the same geographical region and has a similar purpose.

“(I) One representative from the California Current Acidification Network or a subsequent entity that represents the same geographical region and has a similar purpose.

“(J) One representative from the Northeast Coastal Acidification Network or a subsequent entity that represents the same geographical region and has a similar purpose.
“(K) One representative from the Southeast Coastal Acidification Network or a subsequent entity that represents the same geographical region and has a similar purpose.

“(L) One representative from the Gulf of Mexico Coastal Acidification Network or a subsequent entity that represents the same geographical region and has a similar purpose.

“(M) One representative from the Mid-Atlantic Coastal Acidification Network or a subsequent entity that represents the same geographical region and has a similar purpose.

“(N) One representative from the Pacific Islands Ocean Observing System or a subsequent entity that represents the island territories and possessions of the United States in the Pacific Ocean, and the State of Hawaii and has a similar purpose.

“(O) One representative from the Caribbean Regional Association for Coastal Ocean Observing or a subsequent entity that represents Puerto Rico and the United States Virgin Islands and has a similar purpose.

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

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

“(A) appoint members to the Advisory Board (taking into account the geographical interests of each individual to be appointed as a member of the Advisory Board to ensure that an appropriate balance of geographical interests are represented by the members of the Advisory Board) who—

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

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

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

“(B) give consideration to nominations and recommendations from the members of the interagency working group and the public for such appointments; and
“(C) ensure that an appropriate balance of scientific, industry, and geographical interests are represented by the members of the Advisory Board.

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

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

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

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

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

“(8) BRIEFING.—The Chair of the Advisory Board shall brief the Subcommittee and the interagency working group on the progress of the Advisory Board as necessary or at the request of the Subcommittee.
“(9) FEDERAL ADVISORY COMMITTEE ACT.—

Section 14 of the Federal Advisory Committee Act shall not apply to the Advisory Board.”.

SEC. 5. STRATEGIC RESEARCH PLAN.

Section 12405 of the Federal Ocean Acidification Research and Monitoring Act of 2009 (33 U.S.C. 3704) is amended—

(1) in subsection (a)—

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

(B) in the first sentence—

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

(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
(II) by striking ‘‘; and” at the end and inserting a semicolon;
(iii) by amending subparagraph (C) to read as follows:
“(C) provide information for the—
“(i) development of adaptation and mitigation strategies to address the socio-economic impacts of ocean acidification and coastal acidification;
“(ii) conservation of marine organisms and ecosystems;
“(iii) assessment of the effectiveness of such adaptation and mitigation strategies; and”; and

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

“(D) improve research on—

“(i) ocean acidification and coastal acidification;

“(ii) the interactions between and effects of multiple combined stressors including changes in water chemistry, changes in sediment delivery, hypoxia, and harmful algal blooms, on ocean acidification and coastal acidification; and

“(iii) the effect of environmental stressors on marine resources and ecosystems;”;

(C) in paragraph (3)—

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

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

(iii) by adding at the end the following new subparagraphs:
“(J) assessment of adaptation and mitigation strategies; and

“(K) education and outreach activities;”;

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

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

(F) in paragraph (6)—

(i) by inserting “and coastal acidification” after “ocean acidification”; and

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

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

(H) in paragraph (8)—

(i) by inserting “and coastal acidification” after “ocean acidification” each place it appears;

(ii) by striking “its” and inserting “their”; and
(iii) by striking “; and” at the end and inserting a semicolon;

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

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

“(11) describe monitoring needs necessary to support potentially affected industry members, coastal stakeholders, fishery management councils and commissions, non-Federal resource managers, and scientific experts on decision-making and adaptation related to ocean acidification and coastal acidification.”;

(3) in subsection (e)—

(A) in paragraph (1)(C), by striking “surface”;

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

(C) in paragraph (3)—

(i) by striking “input, and” and inserting “inputs,”;

(ii) by inserting “, marine food webs,” after “marine ecosystems”; and
(iii) by inserting ‘‘, and modeling that supports fisheries management’’ after ‘‘marine organisms’’;

(D) in paragraph (5), by inserting ‘‘and coastal acidification’’ after ‘‘ocean acidification’’; and

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

‘‘(8) Research to understand related and cumulative stressors and other biogeochemical processes occurring in conjunction with ocean acidification and coastal acidification.’’; and

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

‘‘(e) ADVISORY BOARD EVALUATION.—Not later than 180 days before a plan is submitted to Congress, the Subcommittee shall provide the Advisory Board established under section 12404(c) a copy of the plan for purposes of review under paragraph (2)(B)(i) of such section.

‘‘(f) PUBLICATION AND PUBLIC COMMENT.—Not later than 90 days before the strategic research plan, or any revision thereof, is submitted to Congress, the Subcommittee shall publish the plan in the Federal Register and provide an opportunity for submission of public comments for a period of not less than 60 days.’’.
SEC. 6. NOAA OCEAN ACIDIFICATION ACTIVITIES.

Section 12406 of the Federal Ocean Acidification Research and Monitoring Act of 2009 (33 U.S.C. 3705) is amended—

(1) in subsection (a)—

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

(B) in paragraph (1)—

(i) in subparagraph (B)—

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

and

(II) by inserting “and agency and department missions, prioritizing the location of monitoring instruments, assets, and projects to maximize the efficiency of resources and to optimize understanding of socio-economic impacts and ecosystem health” after “research program”; (ii) in subparagraph (C)—
(I) by striking “adaptation” and inserting “adaptation and mitigation”; and

(II) by inserting “and supporting socioeconomically vulnerable States, local governments, Tribes, communities, and industries through technical assistance and mitigation strategies” after “marine ecosystems”;

(iii) in subparagraph (E), by striking “its impacts” and inserting “their respective impacts”;

(iv) in subparagraph (F), by striking “monitoring and impacts research” and inserting “research, monitoring, and adaptation and mitigation strategies”; and

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

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

“(i) other environmental stressors on ocean acidification and coastal acidification;
“(ii) multiple environmental stressors on living marine resources and coastal ecosystems; and

“(iii) adaptation and mitigation strategies to address the socioeconomic impacts of ocean acidification and coastal acidification.”;

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

(D) in paragraphs (1) and (2), by striking “acidification” each place it appears and inserting “acidification and coastal acidification”; and

(2) by adding at the end the following new subsections:

“(c) RELATIONSHIP TO INTERAGENCY WORKING GROUP.—The National Oceanic and Atmospheric Administration shall serve as the lead Federal agency responsible for coordinating the Federal response to ocean acidification and coastal acidification, by—

“(1) leading the interagency working group in implementing the strategic research plan under section 12405;
“(2) coordinating monitoring and research efforts among Federal agencies in cooperation with State, local, and Tribal government and international partners;

“(3) maintaining an Ocean Acidification Information Exchange described under section 12404(b)(5) to allow for information to be electronically accessible, including information—

“(A) on ocean acidification developed through or used by the ocean acidification program described under section 12406(a); or

“(B) that would be useful to State governments, local governments, Tribal governments, resource managers, policymakers, researchers, and other stakeholders in mitigating or adapting to the impacts of ocean acidification and coastal acidification; and

“(4) establishing and maintaining the data archive system under subsection (d).

“(d) DATA ARCHIVE SYSTEM.—

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

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

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

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

“(e) STANDARDS, PROTOCOLS, AND PROCEDURES.—
With respect to the data described in subsection (d), the
Secretary, in coordination with members of the inter-
agency working group, shall establish and revise as nec-
essary the standards, protocols, or procedures for—

“(1) processing, storing, archiving, and pro-
viding access to such data;
“(2) the interoperability and intercalibration of such data;

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

“(4) sharing such data with State, local, and Tribal government programs, potentially affected industry members, coastal stakeholders, fishery management councils and commissions, non-Federal resource managers, and academia.

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

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

“(1) collect such data in accordance with the standards, protocols, or procedures established pursuant to subsection (e); and

“(2) submit such data to the data archive system under subsection (d) after publication, in ac-
cordance with any rules promulgated by the Sec-

S 7. NSF OCEAN ACIDIFICATION ACTIVITIES.

Section 12407 of the Federal Ocean Acidification Re-

search and Monitoring Act of 2009 (33 U.S.C. 3706) is

amended—

(1) by striking “ocean acidification” each place

it appears and inserting “ocean acidification and

costal acidification”;

(2) in subsection (a)—

(A) in the matter preceding paragraph (1),

by striking “its impacts” and inserting “their

respective impacts”; 

(B) in paragraph (3), by striking “and its

impacts” and inserting “and their respective

impacts”; 

(C) in paragraph (4), by striking the pe-

riod at the end and inserting “; and”; and 

(D) by adding at the end the following new

paragraph:

“(5) adaptation and mitigation strategies to ad-

dress socioeconomic effects of ocean acidification and

costal acidification.”; and

(3) by adding at the end the following:
“(d) REQUIREMENT.—Recipients of grants from the National Science Foundation under this subtitle that collect data described under section 12406(d) shall—

“(1) collect data in accordance with the standards, protocols, or procedures established pursuant to section 12406(e); and

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

SEC. 8. NASA OCEAN ACIDIFICATION ACTIVITIES.

Section 12408 of the Federal Ocean Acidification Research and Monitoring Act of 2009 (33 U.S.C. 3707) is amended—

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

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

(3) by adding at the end the following new subsection:

“(d) REQUIREMENT.—Researchers from the National Aeronautics and Space Administration under this subtitle that collect data described under section 12406(d) shall—
“(1) collect such data in accordance with the standards, protocols, or procedures established pursuant to section 12406(e); and

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

SEC. 9. AUTHORIZATION OF APPROPRIATIONS.

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

(1) in subsection (a), by striking “subtitle—” and all that follows through paragraph (4) and inserting the following: “subtitle—

“(1) $30,500,000 for fiscal year 2022;
“(2) $35,000,000 for fiscal year 2023;
“(3) $40,000,000 for fiscal year 2024;
“(4) $45,000,000 for fiscal year 2025; and
“(5) $50,000,000 for fiscal year 2026.”; and

(2) in subsection (b), by striking “subtitle—” and all that follows through paragraph (4) and
inserting the following: "subtitle $20,000,000 for each of the fiscal years 2022 through 2026."

Passed the House of Representatives May 18, 2021.

Attest: CHERYL L. JOHNSON,

Clerk.