118TH CONGRESS
1ST SESSION

S. _____

To amend the Harmful Algal Blooms and Hypoxia Research and Control Act of 1998 to address harmful algal blooms, and for other purposes.

IN THE SENATE OF THE UNITED STATES

Mr. SULLIVAN (for himself and Ms. BALDWIN) introduced the following bill; which was read twice and referred to the Committee on _____

A BILL

To amend the Harmful Algal Blooms and Hypoxia Research and Control Act of 1998 to address harmful algal blooms, and for other purposes.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled,

SECTION 1. SHORT TITLE.

This Act may be cited as the ''Harmful Algal Bloom and Hypoxia Research and Control Amendments Act of 2023''.

SEC. 2. AMENDMENTS TO THE HARMFUL ALGAL BLOOMS AND HYPOXIA RESEARCH AND CONTROL ACT OF 1998.

(a) ASSESSMENTS.—

(1) IN GENERAL.—Section 603 of the Harmful Algal Blooms and Hypoxia Research and Control Act of 1998 (33 U.S.C. 4001) is amended—

(A) in the section heading, by striking ''**ASSESSMENTS**'' and inserting ''**TASK FORCE, ASSESSMENTS, AND ACTION STRATEGY**'';

(B) in subsection (a)—

(i) by redesignating paragraphs (13) and (14) as paragraphs (14) and (15), respectively; and

(ii) by inserting after paragraph (12) the following:

''(13) the Department of Energy;'';

(C) by striking subsections (b), (c), (d), (e), (g), (h), and (i) and redesignating subsection (f) as subsection (b);

(D) in subsection (b), as so redesignated—

(i) in paragraph (1), in the first sentence, by striking ''coastal waters including the Great Lakes'' and inserting ''marine, estuarine, and freshwater systems''; and

(ii) in paragraph (2)—

(I) by amending subparagraph (A) to read as follows:

''(A) examine—

''(i) the causes and ecological consequences of hypoxia on marine and aquatic species in their natural environments; and

''(ii) the socio-cultural or economic costs of hypoxia, including impacts on food safety and security;'';

(II) by redesignating subparagraphs (B), (C), and (D) as subparagraphs (D), (E), and (F), respectively;

(III) by inserting after subparagraph (A) the following:

''(B) examine the effect of other environmental stressors on hypoxia;

''(C) evaluate alternatives for reducing, mitigating, and controlling hypoxia and its environmental impacts;'';

(IV) in subparagraph (D), as redesignated by subclause (II), by inserting '', social,'' after ''ecological''; and

(V) in subparagraph (E), as redesignated by subclause (II), by striking ''hypoxia modeling and monitoring data'' and inserting ''hypoxia modeling, forecasting, and monitoring and observation data''; and

(E) by adding at the end the following:

''(c) ACTION STRATEGY AND SCIENTIFIC ASSESSMENT FOR MARINE AND FRESHWATER HARMFUL ALGAL BLOOMS.—

''(1) IN GENERAL.—Not less frequently than once every 5 years, the Task Force shall complete and submit to Congress an action strategy for harmful algal blooms in the United States.

''(2) ELEMENTS.—Each Action Strategy shall—

''(A) examine, and include a scientific assessment of, marine and freshwater harmful algal blooms, including such blooms—

''(i) in the Great Lakes and upper reaches of estuaries;

''(ii) in freshwater lakes and rivers; and

"(iii) that originate in freshwater lakes or rivers and migrate to coastal waters;

"(B) examine the causes, ecological consequences, and economic or socio-cultural impacts, including food safety and security, of harmful algal blooms;

"(C) examine the effect of other environmental stressors on harmful algal blooms;

"(D) examine potential methods to prevent, control, and mitigate harmful algal blooms and the potential ecological, social, cultural, and economic costs and benefits of such methods;

"(E) identify priorities for research needed to advance techniques and technologies to detect, predict, monitor, respond to, and minimize the occurrence, duration, and severity of harmful algal blooms, including recommendations to eliminate significant gaps in harmful algal bloom forecasting, monitoring, and observation data;

"(F) evaluate progress made by, and the needs of, activities and actions of the Task Force to prevent, control, and mitigate harmful algal blooms;

"(G) identify ways to improve coordination and prevent unnecessary duplication of effort among Federal agencies with respect to research on harmful algal blooms; and

"(H) include regional chapters relating to the requirements described in this paragraph in order to highlight geographically and ecologically diverse locations with significant ecological, social, cultural, and economic impacts from harmful algal blooms.

"(d) CONSULTATION.—In carrying out subsections (b) and (c), the Task Force shall consult with—

"(1) States, Indian tribes, and local governments; and

"(2) appropriate industries (including fisheries, agriculture, and fertilizer), academic institutions, and nongovernmental organizations with relevant expertise.".

(2) CLERICAL AMENDMENT.—The table of contents in section 2 of the Coast Guard Authorization Act of 1998 (Public Law 105–383; 112 Stat. 3412; 136 Stat. 1268) is amended by striking the item relating to section 603 and inserting the following:

"Sec. 603. Task Force, assessments, and Action Strategy.".

(3) CONFORMING AMENDMENT.—Section 102 of the Harmful Algal Bloom and Hypoxia Amend-

ments Act of 2004 (33 U.S.C. 4001a) is amended by striking ''In developing'' and all that follows through ''management.''.

(b) NATIONAL HARMFUL ALGAL BLOOM AND HYPOXIA PROGRAM.—Section 603A of the Harmful Algal Blooms and Hypoxia Research and Control Act of 1998 (33 U.S.C. 4002) is amended—

(1) in subsection (a)—

(A) in paragraph (1)—

(i) by striking ''predicting,'' and inserting ''monitoring, observing, forecasting,''; and

(ii) by striking ''and'' after the semicolon; and

(B) by striking paragraph (2) and inserting the following:

''(2) the scientific assessment submitted under section 603(b); and

''(3) the Action Strategy.'';

(2) in subsection (c)—

(A) in paragraph (3), by striking ''ocean and Great Lakes science and management programs and centers'' and inserting ''programs and centers relating to the science and manage-

ment of marine, estuarine, and freshwater systems''; and

(B) in paragraph (5), by inserting ''while recognizing each agency is acting under its own independent mission and authority'' before the semicolon;

(3) in subsection (d), by striking ''Except as provided in subsection (h), the'' and inserting ''The'';

(4) in subsection (e)—

(A) in the matter preceding paragraph (1), by inserting ''(or the Administrator, as provided under subsection (g))'' after ''Under Secretary'';

(B) by amending paragraph (2) to read as follows:

''(2) examine, in collaboration with State and local entities and Indian tribes, including island communities, low-population rural communities, Indigenous communities, subsistence communities, fisheries, and recreation industries that are most dependent on coastal and water resources that may be impacted by marine and freshwater harmful algal blooms and hypoxia, the causes, ecological con-

sequences, cultural impacts, and social and economic costs of harmful algal blooms and hypoxia;'';

(C) by striking paragraph (3);

(D) by redesignating paragraphs (4), (5), and (6) as paragraphs (3), (4), and (5), respectively;

(E) in paragraph (3), as so redesignated, by striking ''agencies'' and inserting ''entities, regional coastal observing systems (as defined in section 12303 of the Integrated Coastal and Ocean Observation System Act of 2009 (33 U.S.C. 3602)),'';

(F) in paragraph (5), as redesignated by subparagraph (D), by inserting ''and communities'' after ''ecosystems'';

(G) by inserting after paragraph (5), as redesignated by subparagraph (D), the following:

''(6) support sustained observations, including through peer-reviewed, merit-based, competitive grant funding, to provide State and local entities, Indian tribes, and other entities access to real-time or near real-time observation data for decision-making to protect human and ecological health and local economies;'';

(H) in paragraph (8), by inserting ''and Indian tribes'' after ''managers''; and

(I) in paragraph (9)(A), by striking '', tribal, and local stakeholders'' and inserting ''and local stakeholders and Indian tribes'';

(5) by amending subsections (f), (g), and (h) to read as follows:

''(f) COOPERATION AND COORDINATION.—The Under Secretary shall—

''(1) work cooperatively with and avoid duplication of effort of other agencies on the Task Force and States, Indian tribes, and nongovernmental organizations concerned with marine and freshwater issues; and

''(2) coordinate harmful algal bloom and hypoxia and related activities and research with those entities.

''(g) FRESHWATER AND ESTUARINE PROGRAM DUTIES.—The Administrator, in coordination with the Task Force, shall—

''(1) carry out the duties under the Administrator's purview under subsection (e) for freshwater aspects of the Program through the activities required under section 603C; and

''(2) coordinate with the Under Secretary on estuarine aspects of the Program through the activities required under this section.

''(h) ANTI-DEFICIENCY ACT APPLIED TO HARMFUL ALGAL BLOOM SERVICES.—Any services accepted by an officer or employee of the United States Government under this title relating to the development and dissemination of forecasts and bulletins through the Harmful Algal Bloom Operational Forecast System of the National Centers for Coastal Ocean Science and the National Oceanic and Atmospheric Administration shall be considered, for purposes of section 1342 of title 31, United States Code, services for an emergency involving the safety of human life or the protection of property. Such consideration shall apply only to services performed for areas with active harmful algal blooms during any lapse in appropriations beginning on or after the date of the enactment of the Harmful Algal Bloom and Hypoxia Research and Control Amendments Act of 2023.''; and

(6) by striking subsection (i).

(c) NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION ACTIVITIES.—

(1) IN GENERAL.—Section 603B of the Harmful Algal Blooms and Hypoxia Research and Control

Act of 1998 (33 U.S.C. 4003) is amended to read as follows:

"SEC. 603B. NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION ACTIVITIES.

''(a) IN GENERAL.—The Under Secretary shall—

''(1) carry out response activities for marine, coastal, and Great Lakes harmful algal bloom and hypoxia events;

''(2) develop and enhance operational harmful algal bloom observing and forecasting programs, including operational observations and forecasting, monitoring, modeling, data management, and information dissemination;

''(3) maintain and enhance peer-reviewed, merit-based, competitive grant funding relating to harmful algal blooms and hypoxia—

''(A) to maintain and enhance baseline monitoring programs established by the Program;

''(B) to support the projects maintained and established by the Program;

''(C) to address the research and management needs and priorities identified in the Action Strategy;

"(D) to accelerate the utilization of effective methods of intervention and mitigation to reduce the frequency, severity, and impacts of harmful algal bloom and hypoxia events;

"(E) to identify opportunities to improve monitoring of harmful algal bloom and hypoxia, with a particular focus on coastal waters that may affect fisheries, public health, or subsistence harvest;

"(F) to examine the effects of other environmental stressors on harmful algal blooms and hypoxia;

"(G) to assess the effects of multiple environmental stressors on living marine resources and coastal ecosystems; and

"(H) to evaluate adaptation and mitigation strategies to address the impacts of harmful algal blooms and hypoxia;

"(4) enhance communication and coordination among Federal agencies carrying out activities and research relating to marine and freshwater harmful algal bloom and hypoxia;

"(5) to the greatest extent practicable, leverage existing resources and expertise available from local research universities and institutions; and

''(6) use cost effective methods in carrying out this section.

''(b) INTEGRATED COASTAL AND OCEAN OBSERVATION SYSTEM.—The collection of monitoring and observing data under this section shall comply with all data standards and protocols developed pursuant to the Integrated Coastal and Ocean Observation System Act of 2009 (33 U.S.C. 3601 et seq.). Such data shall be made available through the National Integrated Coastal and Ocean Observation System established under section 12304 of that Act (33 U.S.C. 3603).''.

(2) CLERICAL AMENDMENT.—The table of contents in section 2 of the Coast Guard Authorization Act of 1998 (Public Law 105–383; 112 Stat. 3412; 136 Stat. 1268) is amended by striking the item relating to section 603B and inserting the following:

''Sec. 603B. National Oceanic and Atmospheric Administration activities.''.

(d) ENVIRONMENTAL PROTECTION AGENCY ACTIVITIES.—

(1) IN GENERAL.—The Harmful Algal Bloom and Hypoxia Research and Control Act of 1998 is amended by inserting after section 603B (33 U.S.C. 4003) the following:

''SEC. 603C. ENVIRONMENTAL PROTECTION AGENCY ACTIVITIES.

''(a) IN GENERAL.—The Administrator shall—

''(1) carry out research on the ecology and human health impacts of freshwater harmful algal blooms and hypoxia events;

''(2) develop and maintain forecasting and monitoring of, and event response to, freshwater harmful algal blooms in lakes, rivers, estuaries (including tributaries thereof), and reservoirs;

''(3) enhance communication and coordination among Federal agencies carrying out freshwater harmful algal bloom and hypoxia activities and research;

''(4) to the greatest extent practicable, leverage existing resources and expertise available at local research universities and institutions; and

''(5) use cost-effective methods in carrying out this section.

''(b) NONDUPLICATION.—The Administrator shall ensure that activities carried out under subsection (a) focus on new approaches to addressing freshwater harmful algal blooms and are not duplicative of existing research and development programs authorized by this title or any other law.''.

(2) CLERICAL AMENDMENT.—The table of contents in section 2 of the Coast Guard Authorization Act of 1998 (Public Law 105–383; 112 Stat. 3412;

136 Stat. 1268) is amended by inserting after the item relating to section 603B the following:

"Sec. 603C. Environmental Protection Agency activities.".

(e) NATIONAL HARMFUL ALGAL BLOOM AND HYPOXIA OBSERVING NETWORK.—

(1) IN GENERAL.—Section 606 of the Harmful Algal Blooms and Hypoxia Research and Control Act of 1998 (33 U.S.C. 4005) is amended to read as follows:

"SEC. 606. NATIONAL HARMFUL ALGAL BLOOM OBSERVING NETWORK.

"(a) IN GENERAL.—The Under Secretary, acting through the National Centers for Coastal Ocean Science and the Integrated Ocean Observing System of the National Oceanic and Atmospheric Administration, shall integrate Federal, State, regional, and local observing capabilities to establish a national network of observing systems for the monitoring, detection, and forecasting of harmful algal blooms by leveraging the capacity of regional associations of the Integrated Ocean Observing System, including through the incorporation of emerging technologies and new data integration methods, such as artificial intelligence.

"(b) COORDINATION AND DATA ASSEMBLY.—In carrying out subsection (a), the Program Office of the Integrated Ocean Observing System shall—

''(1) coordinate with the National Centers for Coastal Ocean Science regarding observations, data integration, and information dissemination; and

''(2) establish a center for the assembly of data on harmful algal blooms to integrate, disseminate, and provide a central architecture to support ecological forecasting.''.

(2) CLERICAL AMENDMENT.—The table of contents in section 2 of the Coast Guard Authorization Act of 1998 (Public Law 105–383; 112 Stat. 3412; 136 Stat. 1268) is amended by striking the item relating to section 606 and inserting the following:

''Sec. 606. National harmful algal bloom observing network.''.

(f) NATIONAL-LEVEL INCUBATOR PROGRAM.—

(1) IN GENERAL.—The Harmful Algal Blooms and Hypoxia Research and Control Act of 1998 is amended by inserting after section 606 (33 U.S.C. 4005) the following:

''SEC. 606A. NATIONAL-LEVEL INCUBATOR PROGRAM.

''(a) IN GENERAL.—The Under Secretary, in collaboration with the Administrator and research universities and institutions, shall establish a national-level incubator program (in this section referred to as the 'program') to increase the number of strategies, technologies, and measures available to prevent, mitigate, and control harmful algal blooms.

''(b) FRAMEWORK.—The program shall establish a framework for preliminary assessments of novel strategies, technologies, and measures to prevent, mitigate, and control harmful algal blooms in order to determine the potential effectiveness and scalability of such technologies.

''(c) FUNDING.—The program shall provide merit-based funding, using amounts otherwise available to the Under Secretary for the award of grants, for strategies, technologies, and measures that eliminate or reduce, through biological, chemical, or physical means, the levels of harmful algae and associated toxins resulting from harmful algal blooms.

''(d) DATABASE.—The program shall include a database for cataloging the licensing and permitting requirements, economic costs, feasibility, effectiveness, and scalability of novel and established strategies, technologies, and measures to prevent, mitigate, and control harmful algal blooms.

''(e) PRIORITIZATION.—In carrying out the program, the Under Secretary shall prioritize proposed strategies, technologies, and measures that would, to the maximum extent practicable—

''(1) protect key habitats for fish and wildlife;

''(2) maintain biodiversity;

''(3) protect public health;

''(4) protect coastal resources of national, historical, and cultural significance; or

''(5) benefit low-income communities, Indian tribes or Indigenous communities, and rural communities.''.

(2) CLERICAL AMENDMENT.—The table of contents in section 2 of the Coast Guard Authorization Act of 1998 (Public Law 105–383; 112 Stat. 3412; 136 Stat. 1268) is amended by inserting after the item relating to section 606 the following:

''Sec. 606A. National-level incubator program.''.

(g) DEFINITIONS.—Section 609 of the Harmful Algal Blooms and Hypoxia Research and Control Act of 1998 (33 U.S.C. 4008) is amended—

(1) in paragraph (1), by striking ''means the comprehensive research plan and action strategy established under section 603B'' and inserting ''means the action strategy for harmful algal blooms in the United States most recently submitted under section 603(c)'';

(2) by amending paragraph (3) to read as follows:

''(3) HARMFUL ALGAL BLOOM.—The term 'harmful algal bloom' means a high concentration of marine or freshwater algae or macroalgae, including Sargassum, resulting in nuisance conditions or

harmful impacts on marine and freshwater ecosystems, communities, or human health through the production of toxic compounds or other biological, chemical, or physical impacts of the algae outbreak.''.

(3) by striking paragraph (9);

(4) by redesignating paragraphs (4), (5), (6), (7), and (8) as paragraphs (6), (7), (8), (10), and (11), respectively;

(5) by inserting after paragraph (3) the following:

''(4) HARMFUL ALGAL BLOOM AND HYPOXIA EVENT.—The term 'harmful algal bloom and hypoxia event' means the occurrence of a harmful algal bloom or hypoxia as a result of a natural, anthropogenic, or undetermined cause.

''(5) INDIAN TRIBE.—The term 'Indian tribe' has the meaning given that term in section 4 of the Indian Self-Determination and Education Assistance Act (25 U.S.C. 5304).'';

(6) in paragraph (6), as redesignated by paragraph (4)—

(A) by striking ''aquatic'' and inserting ''marine or freshwater''; and

(B) by striking ''resident'' and inserting ''marine or freshwater''; and

(7) by inserting after paragraph (8), as redesignated by paragraph (4), the following:

''(9) SUBSISTENCE USE.—The term 'subsistence use' means the customary and traditional use of fish, wildlife, or other freshwater, coastal, or marine resources by any individual or community to meet personal or family needs, including essential economic, nutritional, or cultural applications.''.

(h) AUTHORIZATION OF APPROPRIATIONS.—Subsection (a) of section 610 of the Harmful Algal Blooms and Hypoxia Research and Control Act of 1998 (33 U.S.C. 4009) is amended to read as follows:

''(a) IN GENERAL.—There is authorized to be appropriated to carry out this title, for each of fiscal years 2024 through 2028—

''(1) $19,500,000 to the Under Secretary; and

''(2) $8,000,000 to the Administrator.''.

SEC. 3. OTHER HARMFUL ALGAL BLOOM MATTERS.

(a) HARMFUL ALGAL BLOOM OR HYPOXIA EVENT OF NATIONAL SIGNIFICANCE.—Section 9(g) of the National Integrated Drought Information System Reauthorization Act of 2018 (33 U.S.C. 4010(g)) is amended—

(1) in paragraph (1), by adding at the end the following:

''(D) CONTRACT, GRANT, AND COOPERATIVE AGREEMENT AUTHORITY.—The Under Secretary of Commerce for Oceans and Atmosphere may enter into agreements and grants with States, Indian Tribes, local governments, or other entities to pay for or reimburse costs incurred by such entities for the purposes of supporting the determination of, and assessing the environmental, economic, social, subsistence use, and public health effects of, a harmful algal bloom or hypoxia event of national significance.'';

(2) in paragraph (2)(A), by inserting '', a leadership official of an affected Indian Tribe, the executive official of the District of Columbia, or the executive official of an affected territory or possession of the United States,'' after ''State''; and

(3) by adding at the end the following:

''(4) AUTHORIZATION OF APPROPRIATIONS.—There is authorized to be appropriated to carry out this subsection $2,000,000 for each of fiscal years 2024 through 2028, to remain available until expended.''.

(b) PROTECT FAMILIES FROM TOXIC ALGAL BLOOMS.—Section 128 of the Water Resources Development Act of 2020 (33 U.S.C. 610 note; division AA of Public Law 116–260) is amended—

(1) by redesignating subsection (e) as subsection (f); and

(2) by inserting after subsection (d) the following:

''(e) HARMFUL ALGAL BLOOM TECHNOLOGIES.—In carrying out the demonstration program under subsection (a), the Secretary may enter into agreements with water and irrigation districts located in the focus areas described in subsections (c) and (d) for the use or sale of any new technologies developed under the demonstration program to expedite the removal of harmful algal blooms in those areas.''.