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113TH CONGRESS *1st Session*	SENATE	REPORT 113–121

HARMFUL ALGAL BLOOMS AND HYPOXIA RESEARCH AND CONTROL AMENDMENTS ACT OF 2013

R E P O R T

OF THE

COMMITTEE ON COMMERCE, SCIENCE, AND TRANSPORTATION

ON

S. 1254



NOVEMBER 18, 2013.—Ordered to be printed

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SENATE COMMITTEE ON COMMERCE, SCIENCE, AND TRANSPORTATION

ONE HUNDRED THIRTEENTH CONGRESS

FIRST SESSION

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Mr. ROCKEFELLER, from the Committee on Commerce, Science, and Transportation, submitted the following

R E P O R T

[To accompany S. 1254]

The Committee on Commerce, Science, and Transportation, to which was referred the bill (S. 1254) to amend the Harmful Algal Blooms and Hypoxia Research and Control Act of 1998, and for other purposes, having considered the same, reports favorably thereon without amendment, and recommends that the bill do pass.

PURPOSE OF THE BILL

The purpose of S. 1254 is to reauthorize and amend the Harmful Algal Blooms and Hypoxia Research and Control Act of 1998 (HABHRCA) to promote and coordinate a national research strategy for improving the understanding and prevention of marine and freshwater harmful algal blooms (HABs) and hypoxia events.

BACKGROUND AND NEEDS

HARMFUL ALGAL BLOOMS

Algal blooms occur when environmental conditions promote the rapid growth of large numbers of single-celled marine algae, also known as phytoplankton. Excess nutrient inputs, changes in temperature or amounts of light, and turbulence in the water column are all known to influence the creation of algal blooms. While algal blooms occur naturally, they are increasing in frequency and intensity due to human activities. Blooms have been linked to increasing nutrient availability via agricultural and municipal (sewage) runoff, and through the transport of exotic species into an area. These blooms often discolor the water and are sometimes known as "red tides" or "brown tides." HABs occur when some or all of the

phytoplankton in the bloom produce toxins that are harmful to humans, fish, invertebrates, and other marine organisms. Some species of algae known to produce toxins include: *Alexandrium* spp., primarily in New England; *Pfiesteria* spp. in the Mid-Atlantic; *Karena* spp. in the Gulf of Mexico; *Pseudo-nitzschia* spp., which produces the neurotoxin domoic acid, on the West Coast; and *Heterosigma* spp. in the Pacific Northwest. In addition to producing toxins, HABs may have negative impacts by clogging or lacerating fishes' gills, by rapidly depleting the available oxygen in a given area thereby "suffocating" fish and other marine life, or by blocking the sunlight that may be available to aquatic plants beneath the bloom.

HYPOXIA

In aquatic systems, hypoxia refers to a situation where the concentration of dissolved oxygen is reduced to less than 2 to 3 parts per million. Hypoxic areas frequently occur in coastal and estuarine areas where rivers bring freshwater to the ocean. This freshwater is less dense than the underlying seawater, which reduces mixing of the various water layers, effectively "capping" the subsurface, saline (salty) water. The freshwater runoff is often heavily laden with nutrients from agricultural operations, wastewater treatment plant discharges, urban runoff, and atmospheric deposition, among other sources. The excess nutrients present in the freshwater runoff act as fertilizer and stimulate the rapid growth of algae at the sea surface. When this explosive growth has consumed all of the available nutrients, the algae die en masse. As the dead algae sink to the seafloor they are decomposed by oxygen-consuming bacteria that proliferate in response to increased dead matter on which to feed. If the bacteria consume most of the available oxygen in the water, a "dead zone" develops.

Anoxia is the term for the most extreme case of hypoxia wherein all available oxygen in the seawater is consumed by bacteria. Animals that are able to swim away to higher-oxygen waters are less affected by dead zones. However, animals that are non-motile or that move too slowly to escape hypoxic or anoxic waters, such as shellfish, are particularly negatively affected. Storms and tides may mix the hypoxic bottom water and the aerated surface water, ameliorating the severity of the hypoxia. However, in the absence of such mixing, hypoxic conditions may persist for long periods of time.

In recent decades, large areas of hypoxia have occurred in the Gulf of Mexico, along the Oregon coast, and in the Chesapeake Bay. The most notable dead zone in U.S. waters is located in the Gulf of Mexico. This dead zone has been detected annually since the 1970s and has since grown in extent since that time to encompass an area as large as the State of Connecticut.

GEOGRAPHIC DISTRIBUTION AND ECONOMIC IMPACTS

HABs and hypoxic events cause significant impacts to the Nation's economy. Nationally, commercial fisheries annually lose $38 million as a result of these events. In addition, the public health cost of human illness is estimated at $37 million annually. Recreation and tourism impacts are roughly $4 million per year, and the cost of coastal monitoring and management is $3 million per year. Yet, these are likely conservative estimates due, in part, to a lack

of information about individual events, un-quantified economic effects of environmental impacts, and a lack of documentation of socio-economic impacts such as increased reliance on social services, decreased recreational opportunities, and changes in livelihoods. Woods Hole Oceanographic Institution's HABs expert Dr. Don Anderson has estimated the economic impact of HABs to be in the billions.

At the regional level, HABs and hypoxic events are known to affect all regions of the country. Recent *Alexandrium* ("red tide") outbreaks in New England in 2005, 2006, and 2008 resulted in the closure of shellfish beds in Maine, New Hampshire, and Massachusetts and fish kills in Rhode Island. The 2005 red tide event alone cost the region approximately $23 million in lost shellfish sales. A significantly more severe outbreak in 2009 forced the closure of 97 percent of Maine's 89,000 acres of inshore shellfish habitat and 100 percent of the ocean quahog beds. The economic impacts of the 2009 bloom are estimated in the tens of millions of dollars in Maine alone.

Outbreaks of *Karena brevis* (also called red tide) can impact fish, birds, marine mammals, as well as people living or working near the water. Impacts from these blooms typically exceed $19 million, up to $32 million annually. A particularly bad event in Florida in 1971 cost the State nearly $100 million, primarily impacting the tourism industry. While these events typically occur in the eastern portion of the Gulf of Mexico, they are also known to occur in Texas and Louisiana. A 2001 *Karena* bloom brought shellfish closures, fish kills, and lost tourism that cost Galveston County in Texas alone nearly $10 million. In 2011, Texas experienced its worst red tide in a decade.

Outbreaks of *Pfiesteria*-like organisms in the Chesapeake Bay and its tributaries resulted in a collapse of the seafood industry in 1997. The loss to commercial watermen, charter-boat operators, seafood dealers, and seafood restaurants was approximately $43 million. There were also significant public health concerns as many people became ill due to exposure to *Pfiesteria*.

In the Pacific Northwest, high levels of domoic acid in razor clams, oysters, and Dungeness crabs (which can result in the serious illness called "amnesic shellfish poisoning" if consumed) cost Washington State at least $10 million to $12 million in lost revenue in 2002 and 2003. Annually, these fisheries contribute $72 million to the Washington economy and are important not only to commerce, but to recreational anglers and harvesters as well as local tribes. Thus any disruption to these fisheries, even short disruptions, can have significant impacts on Washington State.

In Hawaii, algal blooms along the north shore of Maui are a recurring problem adversely impacting coral reefs and local aesthetics. Due to a decrease in real estate values, reduced hotel occupancy rates, and increased clean-up costs, these blooms potentially cost Hawaii more than $20 million annually. Continued algal blooms are projected to cost the State an additional $16 million annually over the next several decades.

Even Alaska is not immune from the effects of HABs as evidenced by the 2009 appearance of an "Arctic blob", a dark, floating mass that stretched for miles through the Chuckchi Sea. Originally

thought to be an oil spill, this "fibrous, hairy goo" was positively identified as a massive bloom of algae.

CONGRESSIONALLY-MANDATED REPORTS

HABHRCA and the Harmful Algal Bloom and Hypoxia Amendments Act of 2004 (2004 Act) required submission to Congress of numerous reports intended to outline progress made in HAB and hypoxia research and to recommend future actions that could enhance national capabilities to handle these conditions. Those reports are summarized in the following paragraphs.

Harmful Algal Bloom Management & Response: Assessment and Plan [1]

This report, released in September 2008, details the considerable progress made due to Federal efforts with regard to HAB prediction and response. However, the report also outlines several opportunities for additional advancement. These include: (1) advances in monitoring, prediction, and control of HABs; (2) more coordinated, comprehensive event response capabilities; (3) improved coordination between Federal agencies rather than relying on informal partnerships; and (4) increased social science research to optimize effectiveness and efficiency of coordinated approaches.

Gulf Hypoxia Action Plan 2008 [2]

The 2008 Action Plan was issued by the Mississippi River/Gulf of Mexico Watershed Nutrient Task Force originally convened as a result of HABHRCA, and is an example of the regional assessments called for in the 2004 Act. This 2008 Action Plan reflects the Task Force's efforts to track progress, update the science, and adapt actions to improve the effectiveness of Task Force efforts throughout the Mississippi River Basin.

Scientific Assessment of Freshwater Harmful Algal Blooms [3]

This 2008 report outlines the following priorities for freshwater HAB research and response: (1) improve methods for detecting HAB cells and toxins; (2) improve understanding of HAB toxin uptake, metabolism, and health effects in humans and animals; (3) improve human health and ecological risk assessments; (4) improve knowledge of bloom occurrence through better monitoring; (5) improve bloom prediction; (6) develop HAB prevention and control methods; and (7) improve HAB research and response infrastructure.

Scientific Assessment of Marine Harmful Algal Blooms [4]

This 2008 report is organized into five major thematic areas; (1) understanding HAB causes and controls and developing predictive models; (2) developing detection methods for cells and toxins; (3) characterizing toxins and toxin impacts; (4) HAB impacts on food

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[1] Jewett, E.B., Lopez, C.B., Dortch, Q., Etheridge, S.M, Backer, L.C. 2008. Harmful Algal Bloom Management and Response: Assessment and Plan. Interagency Working Group on Harmful Algal Blooms, Hypoxia, and Human Health of the Joint Subcommittee on Ocean Science and Technology. Washington, D.C.

[2] Mississippi River/Gulf of Mexico Watershed Nutrient Task Force. 2008. Gulf Hypoxia Action Plan 2008 for Reducing, Mitigating, and Controlling Hypoxia in the Northern Gulf of Mexico and Improving Water Quality in the Mississippi River Basin. Washington, D.C.

[3] Lopez, C.B., Jewett, E.B., Dortch, Q., Walton, B.T., Hudnell, H.K. 2008. Scientific Assessment of Freshwater Harmful Algal Blooms. Interagency Working Group on Harmful Algal Blooms, Hypoxia, and Human Health of the Joint Subcommittee on Ocean Science and Technology. Washington, D.C.

[4] Lopez, C.B., Dortch, Q., Jewett, E.B., Garrison, D. 2008. Scientific Assessment of Marine Harmful Algal Blooms. Interagency Working Group on Harmful Algal Blooms, Hypoxia, and Human Health of the Joint Subcommittee on Ocean Science and Technology. Washington, D.C.

webs and fisheries; and (5) assessing public health, economic, and socio-cultural impacts. Based on the findings, the report recommends: continuing basic research to help develop strategies and tools for improved HAB management; greater coordination between biological and social science research programs; more rapid transfer of technology from the research phase to the operational phase; and a combination of extramural and intramural competitive and non-competitive research aimed at meeting the multiple goals of HAB management.

Harmful Algal Bloom Research, Development, Demonstration, & Technology Transfer (HAB RDDTT) National Workshop Report[5]

This 2008 report outlines steps that need to be taken with regard to: prevention, control, and mitigation (PCM); event response; and improvements in core infrastructure. The report also recommends implementation of these steps in a series of phases. It recommends legislative changes that would be necessary for full implementation, and it outlines the benefits of full implementation of the RDDTT program.

Scientific Assessment of Hypoxia in U.S. Coastal Waters[6]

This 2010 HABHRCA report assesses the problem of hypoxia in our Nation's coastal ocean and estuarine waters, and describes recent advances made by Federal agencies to improve scientific understanding of hypoxia and our ability to manage and prevent these events. The report draws from the contributions of Federal agencies as well as previous reports and planning efforts that involved experts and stakeholders from Federal, State and local governments, and academia, industry, and non-governmental organizations.

SUMMARY OF PROVISIONS

The Harmful Algal Blooms and Hypoxia Research and Control Amendments Act of 2013 would reauthorize the program from 2014 through 2018. The bill would establish a national HAB/Hypoxia Program at the National Oceanic and Atmospheric Administration (NOAA), which will be responsible for:

- promoting a national strategy to help communities understand, predict, control and mitigate freshwater and marine HAB and hypoxia events;
- enhancing, coordinating, and assessing the activities of existing HABs and hypoxia programs;
- providing for development of a comprehensive research plan and action strategy; and
- requiring an assessment and plan for Great Lakes HABs and hypoxia.

This bill would authorize $20.5 million to be appropriated for each of the fiscal years 2014 through 2018 to implement the program and the action strategy. Of these appropriations, the new section 610(b) of the HABHRCA would require the Secretary of Com-

[5] HAB RDDTT. 2008. Harmful Algal Bloom Research, Development, Demonstration, and Technology Transfer National Workshop Report. Dortch, Q., Anderson, D.M., Ayres, D.L., Glibert, P.M. (Eds)., Woods Hole, Massachusetts.

[6] Committee on Environment and Natural Resources. 2010. Scientific Assessment of Hypoxia in U.S. Coastal Waters. Interagency Working Group on Harmful Algal Blooms, Hypoxia, and Human Health of the Joint Subcommittee on Ocean Science and Technology. Washington, D.C.

merce to ensure a substantial portion is allocated to extramural research activities.

LEGISLATIVE HISTORY

S. 1254 was introduced on June 27, 2013, by Senator Nelson, and is cosponsored by Senators Portman, Begich, Rockefeller, Blumenthal, King, Cardin, Cantwell, Landrieu, Wicker and Merkley. S. 1254 would reauthorize and update the research programs established in HABHRCA, originally enacted in 1998 and last reauthorized in 2004.

Legislation to reauthorize HABHRCA was reported by the Committee by unanimous consent in the 111th and the 112th Congresses, but was never considered by the full Senate. S. 1254 includes significant changes from similar legislation previously considered by the Committee, reflecting the interests of the sponsors, current programmatic needs, and declining budget trends.

On July 30, 2013, the Committee met in open executive session and, by voice vote, ordered S. 1254 reported without amendment.

ESTIMATED COSTS

In accordance with paragraph 11(a) of rule XXVI of the Standing Rules of the Senate and section 403 of the Congressional Budget Act of 1974, the Committee provides the following cost estimate, prepared by the Congressional Budget Office:

S. 1254—Harmful Algal Blooms and Hypoxia Research and Control Amendments Act of 2013

Summary: S. 1254 would reauthorize and modify the Harmful Algal Bloom and Hypoxia Research and Control Act of 1998. The bill would authorize the appropriation of $20.5 million annually over the 2014–2018 period for the National Oceanic and Atmospheric Administration (NOAA) to mitigate the effects of harmful algal blooms and hypoxia (reduced oxygen level) in certain bodies of water.

Assuming appropriation of the authorized amounts, CBO estimates that implementing the legislation would cost $92 million over the 2014–2018 period and $11 million after 2018. Enacting S. 1254 would not affect direct spending or revenues; therefore, pay-as-you-go procedures do not apply.

S. 1254 contains no intergovernmental or private-sector mandates as defined in the Unfunded Mandates Reform Act (UMRA).

Estimated cost to the Federal Government: The estimated budgetary impact of S. 1254 is shown in the following table. The costs of this legislation fall within budget function 300 (natural resources and environment).

	By fiscal year, in millions of dollars—					
	2014	2015	2016	2017	2018	2014-2018
CHANGES IN SPENDING SUBJECT TO APPROPRIATION						
Authorization Level	21	21	21	21	21	103
Estimated Outlays	13	17	20	21	21	92

Note: Amounts may not sum to totals because of rounding.

Basis of estimate: For this estimate, CBO assumes that the legislation will be enacted near the end of fiscal year 2013 and that the

authorized amounts will be appropriated for each fiscal year. Estimated outlays are based on historical spending patterns for similar NOAA activities.

S. 1254 would authorize the appropriation of about $21 million a year over the 2014–2018 period for certain NOAA activities related to mitigating the effects of harmful algal blooms and hypoxia in coastal waters and the Great Lakes. Those activities include providing grants, conducting research, preparing reports, and overseeing an interagency task force. Over the 2008–2012 period, NOAA spent about $18 million a year on similar activities. Assuming appropriation of the authorized amounts, CBO estimates that implementing the legislation would cost $92 million over the 2014–2018 period and $11 million after 2018.

Pay-As-You-Go considerations: None.

Intergovernmental and private-sector impact: S. 1254 contains no intergovernmental or private-sector mandates as defined in UMRA.

Estimate prepared by: Federal Costs: Jeff LaFave; Impact on State, Local, and Tribal Governments: Melissa Merrell; Impact on the Private Sector: Amy Petz.

Estimate approved by: Theresa Gullo; Deputy Assistant Director for Budget Analysis.

REGULATORY IMPACT STATEMENT

In accordance with paragraph 11(b) of rule XXVI of the Standing Rules of the Senate, the Committee provides the following evaluation of the regulatory impact of the legislation, as reported:

NUMBER OF PERSONS COVERED

The bill does not authorize any new regulations and therefore will not subject any individuals or businesses to new regulations.

ECONOMIC IMPACT

The bill authorizes $20.5 million for each of fiscal years 2014 through 2018, less than amounts authorized in the past for the same program, but greater than appropriations in fiscal years 2007 through 2012 (not adjusted for inflation). These amounts are not expected to have an inflationary impact on the Nation's economy. Improving the prediction and prevention of HAB events is likely to have a modest positive economic impact on the Nation's economy.

PRIVACY

The reported bill would not have any adverse impact on the personal privacy of individuals.

PAPERWORK

This bill would establish a national harmful algal bloom and hypoxia program, and would require the development of a comprehensive research plan and action strategy. It would require several reports to Congress regarding the task force's action plans, including for the Gulf of Mexico and Great Lakes regions, and updates on the progress of the program in the years following the initiation of the program.

CONGRESSIONALLY DIRECTED SPENDING

In compliance with paragraph 4(b) of rule XLIV of the Standing Rules of the Senate, the Committee provides that no provisions contained in the bill, as reported, meet the definition of congressionally directed spending items under the rule.

SECTION-BY-SECTION ANALYSIS

Section 1. Short Title.

This section would provide that the Act be cited as the Harmful Algal Blooms and Hypoxia Research and Control Amendments Act of 2013.

Section 2. References to the Harmful Algal Bloom and Hypoxia Research and Control Act of 1998.

Section 2 would specify that any reference in this Act to an amendment or repeal would be to the Harmful Algal Bloom and Hypoxia Research and Control Act of 1998, unless otherwise specified.

Section 3. Interagency Task Force on Harmful Algal Blooms and Hypoxia.

This section would add the Centers for Disease Control (CDC) to the list of agencies represented on the Task Force.

Section 4. National Harmful Algal Bloom and Hypoxia Program.

This section would establish a national HAB and hypoxia program, and require the development of a comprehensive research plan and action strategy.

This section would direct the Task Force to periodically review and revise the program. It would specify the Task Force's role with respect to the program, including to expedite interagency review processes, review funding distribution, and promote the development of new technologies to address HABs and hypoxia.

This section would give NOAA, through the Task Force, primary responsibility for administering the program, except for the freshwater aspects of the program, which would be carried out in coordination with the Administrator of the EPA. This section would require the Under Secretary of Commerce for Oceans and Atmosphere (Under Secretary) to:

(1) promote the program;

(2) prepare work and spending plans;

(3) administer merit-based, competitive grant funding;

(4) coordinate with regional, State, tribal, and local government agencies and programs;

(5) coordinate with the Secretary of State on international efforts;

(6) identify additional research, development and demonstration needs;

(7) integrate, coordinate and augment existing education programs;

(8) facilitate and provide resources for training State and local coastal and water resource managers;

(9) support regional efforts to control and mitigate outbreaks;

(10) convene at least one meeting of the Task Force each year; and

(11) perform other tasks delegated by the Task Force.

This section would direct the Under Secretary to: maintain and enhance existing competitive programs at NOAA relating to HABs and hypoxia; carry out marine and Great Lakes HABs and hypoxia response activities; establish new programs and infrastructure as necessary; enhance communication and coordination among Federal agencies carrying out marine and freshwater HAB and hypoxia activities and research; leverage existing resources and expertise; and increase availability of resources to appropriate public and private entities. This section would direct the Under Secretary to work cooperatively and avoid duplication with other programs, agencies, and entities.

Finally, this section would require that all data collection and monitoring under this title comply with the data standards and protocols of the Integrated Coastal and Ocean Observation System Act of 2009 (33 U.S.C. 3601 et seq.) and be made available through the integrated ocean observing system.

Section 5. Comprehensive Research Plan and Action Strategy.

This section would direct the Under Secretary, via the Task Force, to develop a comprehensive research plan and action strategy to address marine and freshwater HABs and hypoxia, and to submit the plan and action strategy to Congress within one year of the date of enactment of this Act. This section would require the Action Strategy to identify: specific program activities associated with a timeline; roles and responsibilities for each Federal agency in the Task Force; and region- and subregion specific research needs. With respect to the regional focus of the Action Strategy, this section would require that the Action Strategy identify: regional research priorities; needed research, development, and demonstration activities; methods for reducing the duration and intensity of HABs and hypoxia; ways to address the human health impacts of HABs and hypoxia; mechanisms to protect affected ecosystems; ways to better share data among government and nongovernment entities; ways to improve public dissemination of information about HABs and hypoxia; and roles for Federal Agencies to play in implementing the Action Strategy.

This section would require that, in developing the Action Strategy, the Under Secretary use existing research, assessments, reports, and program activities, and further that the Under Secretary coordinate with State, tribal, and regional officials, including water managers, public health officials, economists, industries, and other stakeholders.

This section would require the Action Strategy to be published in the Federal Register and revised as necessary.

Section 6. Reporting.

This section would require that, two years after the submission of the Action Strategy, the Under Secretary report to Congress on the proceedings of the Task Force meetings, activities carried out under the program and the budget for those activities, progress made under the Action Strategy, and any need to revise or terminate program activities.

Section 7. Northern Gulf of Mexico Hypoxia.

This section would direct the Administrator of the EPA and the Mississippi River/Gulf of Mexico Watershed Nutrient Task Force to submit a progress report to Congress describing the progress toward attainment of the goals of the Gulf Hypoxia Action Plan 2008. The initial progress report would be due within one year of the date of enactment of this Act, and updates would be due every two years thereafter.

Section 8. Great Lakes Hypoxia and Harmful Algal Blooms.

This section would require the Task Force to submit to Congress and the President, within 18 months of the date of enactment, an integrated assessment to describe the causes, consequences, and approaches for reducing HABs and hypoxia in the Great Lakes. This section would also require, within two years of the date of enactment, the Task Force to develop and submit to Congress a research plan based on the aforementioned integrated assessment. This section would require the research plan to address issues such as monitoring needs, budgetary requirements and timelines, model development and verification, and quantification of the ecological and economic effects of HABs and hypoxia in the Great Lakes. Finally, this section would require that the research plan be developed in consultation with a number of stakeholders, leverage existing activities and information, and be published in the Federal Register, and would require biennial progress reports on the research plan.

Section 9. Application with other Laws.

This section would ensure that nothing in this Act would supersede or limit the authority of any agency to carry out its responsibilities and missions under other laws.

Section 10. Definitions; Conforming Amendment.

This section would define the following terms: "Action Strategy" means the comprehensive research plan and action strategy established under section 603B of HABHRCA; "Administrator" means the Administrator of the EPA; "Harmful Algal Bloom" means marine and freshwater phytoplankton that proliferate to high concentrations, resulting in nuisance conditions or harmful impacts on marine and aquatic ecosystems, coastal communities, and human health through the production of toxic compounds or other biological, chemical, and physical impacts of the algae breakout; "Hypoxia" means a condition where low dissolved oxygen in aquatic systems causes stress or death to resident organisms; "Program" means the national harmful algal bloom and hypoxia program established under section 603A of HABHRCA; "State" means each of the several States of the United States, the District of Columbia, the Commonwealth of Puerto Rico, the Virgin Islands, Guam, American Samoa, the Commonwealth of the Northern Mariana Islands, and any other territory or possession of the United States, and any Indian tribe; "Task Force" means the Interagency Task Force established by section 603(a) of HABHRCA; "Under Secretary" means the Under Secretary of Commerce for Oceans and Atmosphere (i.e., Administrator of NOAA); and "United States Coastal Waters" includes the Great Lakes.

Section 11. Interagency Financing.

This section would allow agencies represented on the Task Force to participate in interagency financing to carry out administrative or programmatic project or activity under HABHRCA.

Section 12. Authorization of Appropriations.

This section authorizes $20.5 million to be appropriated for each of the fiscal years 2014 through 2018 to implement the program and the action strategy. Of these appropriations, this section would require the Under Secretary to ensure a "substantial portion" shall be allocated to extramural research activities.

CHANGES IN EXISTING LAW

In compliance with paragraph 12 of rule XXVI of the Standing Rules of the Senate, changes in existing law made by the bill, as reported, are shown as follows (existing law proposed to be omitted is enclosed in black brackets, new material is printed in italic, existing law in which no change is proposed is shown in roman):

HARMFUL ALGAL BLOOM AND HYPOXIA RESEARCH AND CONTROL ACT OF 1998

[16 U.S.C. 1451 note]

SEC. 601. SHORT TITLE.

This title may be cited as the "Harmful Algal Bloom and Hypoxia Research and Control Act of 1998".

SEC. 602. FINDINGS.

The Congress finds that—

(1) the recent outbreak of the harmful microbe Pfiesteria piscicida in the coastal waters of the United States is one example of potentially harmful algal blooms composed of naturally occurring species that reproduce explosively and that are increasing in frequency and intensity in the Nation's coastal waters;

(2) other recent occurrences of harmful algal blooms include red tides in the Gulf of Mexico and the Southeast; brown tides in New York and Texas; ciguatera fish poisoning in Hawaii, Florida, Puerto Rico, and the United States Virgin Islands; and shellfish poisonings in the Gulf of Maine, the Pacific Northwest, and the Gulf of Alaska;

(3) in certain cases, harmful algal blooms have resulted in fish kills, the deaths of numerous endangered West Indian manatees, beach and shellfish bed closures, threats to public health and safety, and concern among the public about the safety of seafood;

(4) according to some scientists, the factors causing or contributing to harmful algal blooms may include excessive nutrients in coastal waters, other forms of pollution, the transfer of harmful species through ship ballast water, and ocean currents;

(5) harmful algal blooms may have been responsible for an estimated $1,000,000,000 in economic losses during the past decade;

(6) harmful algal blooms and blooms of non-toxic algal species may lead to other damaging marine conditions such as hypoxia (reduced oxygen concentrations), which are harmful or fatal to fish, shellfish, and benthic organisms;

(7) according to the National Oceanic and Atmospheric Administration in the Department of Commerce, 53 percent of United States estuaries experience hypoxia for at least part of the year and a 7,000 square mile area in the Gulf of Mexico off Louisiana and Texas suffers from hypoxia;

(8) according to some scientists, a factor believed to cause hypoxia is excessive nutrient loading into coastal waters;

(9) there is a need to identify more workable and effective actions to reduce nutrient loadings to coastal waters;

(10) the National Oceanic and Atmospheric Administration, through its ongoing research, education, grant, and coastal resource management programs, possesses a full range of capabilities necessary to support a near and long-term comprehensive effort to prevent, reduce, and control harmful algal blooms and hypoxia;

(11) funding for the research and related programs of the National Oceanic and Atmospheric Administration will aid in improving the Nation's understanding and capabilities for addressing the human and environmental costs associated with harmful algal blooms and hypoxia; and

(12) other Federal agencies such as the Environmental Protection Agency, the Department of Agriculture, and the National Science Foundation, along with the States, Indian tribes, and local governments, conduct important work related to the prevention, reduction, and control of harmful algal blooms and hypoxia.

SEC. 603. ASSESSMENTS.

(a) ESTABLISHMENT OF INTER-AGENCY TASK FORCE.—The President, through the Committee on Environment and Natural Resources of the National Science and Technology Council, shall establish an Inter-Agency Task Force on Harmful Algal Blooms and Hypoxia[(hereinafter referred to as the "Task Force")]. The Task Force shall consist of [the following representatives from] *a representative from—*

(1) the Department of Commerce (who shall serve as Chairman of the Task Force);

(2) the Environmental Protection Agency;

(3) the Department of Agriculture;

(4) the Department of the Interior;

(5) the Department of the Navy;

(6) the Department of Health and Human Services;

(7) the National Science Foundation;

(8) the National Aeronautics and Space Administration;

(9) the Food and Drug Administration;

(10) the Office of Science and Technology Policy;

(11) the Council on Environmental Quality; [and]

(12) the Centers for Disease Control; and

[(12)]*(13)* [such] other Federal agencies as the President considers appropriate.

(b) ASSESSMENT OF HARMFUL ALGAL BLOOMS.—

(1) Not later than 12 months after the date of the enactment of this title, the Task Force, in cooperation with the coastal States, Indian tribes, and local governments, industry (including agricultural organizations), academic institutions, and nongovernmental organizations with expertise in coastal zone management, shall complete and submit to the Congress an assessment which examines the ecological and economic consequences of harmful algal blooms, alternatives for reducing, mitigating, and controlling harmful algal blooms, and the social and economic costs and benefits of such alternatives.

(2) The assessment shall—

(A) identify alternatives for preventing unnecessary duplication of effort among Federal agencies and departments with respect to harmful algal blooms; and

(B) provide for Federal cooperation and coordination with and assistance to the coastal States, Indian tribes, and local governments in the prevention, reduction, management, mitigation, and control of harmful algal blooms and their environmental and public health impacts.

(c) ASSESSMENT OF HYPOXIA.—

(1) Not later than 12 months after the date of the enactment of this title, the Task Force, in cooperation with the States, Indian tribes, local governments, industry, agricultural, academic institutions, and non-governmental organizations with expertise in watershed and coastal zone management, shall complete and submit to the Congress an assessment which examines the ecological and economic consequences of hypoxia in United States coastal waters, alternatives for reducing, mitigating, and controlling hypoxia, and the social and economic costs and benefits of such alternatives.

(2) The assessment shall—

(A) establish needs, priorities, and guidelines for a peer-reviewed, interagency research program on the causes, characteristics, and impacts of hypoxia;

(B) identify alternatives for preventing unnecessary duplication of effort among Federal agencies and departments with respect to hypoxia; and

(C) provide for Federal cooperation and coordination with and assistance to the States, Indian tribes, and local governments in the prevention, reduction, management, mitigation, and control of hypoxia and its environmental impacts.

(d) REPORT TO CONGRESS ON HARMFUL ALGAL BLOOM IMPACTS.—

(1) DEVELOPMENT.—Not later than 12 months after the date of enactment of the Harmful Algal Bloom and Hypoxia Amendments Act of 2004, the President, in consultation with the chief executive officers of the States, shall develop and submit to the Congress a report that describes and evaluates the effectiveness of measures described in paragraph (2) that may be utilized to protect environmental and public health from impacts of harmful algal blooms. In developing the report, the President shall consult with the Task Force, the coastal States, Indian tribes, local governments, appropriate industries (including fisheries, agriculture, and fertilizer), academic institutions, and nongovernmental organizations with expertise in coastal

zone science and management, and also consider the scientific assessments developed under this Act.

(2) REQUIREMENTS.—The report shall—

(A) review techniques for prediction of the onset, course, and impacts of harmful algal blooms including evaluation of their accuracy and utility in protecting environmental and public health and provisions for their development;

(B) identify innovative research and development methods for the prevention, control, and mitigation of harmful algal blooms and provisions for their development; and

(C) include incentive-based partnership approaches regarding subparagraphs (A) and (B) where practicable.

(3) PUBLICATION AND OPPORTUNITY FOR COMMENT.—At least 90 days before submitting the report to the Congress, the President shall cause a summary of the proposed plan to be published in the Federal Register for a public comment period of not less than 60 days.

(4) FEDERAL ASSISTANCE.—The Secretary of Commerce, in coordination with the Task Force and to the extent of funds available, shall provide for Federal cooperation with and assistance to the coastal States, Indian tribes, and local governments regarding the measures described in paragraph (2), as requested.

(e) LOCAL AND REGIONAL SCIENTIFIC ASSESSMENTS.—

(1) IN GENERAL.—The Secretary of Commerce, in coordination with the Task Force and appropriate State, Indian tribe, and local governments, to the extent of funds available, shall provide for local and regional scientific assessments of hypoxia and harmful algal blooms, as requested by States, Indian tribes, and local governments, or for affected areas as identified by the Secretary. If the Secretary receives multiple requests, the Secretary shall ensure, to the extent practicable, that assessments under this subsection cover geographically and ecologically diverse locations with significant ecological and economic impacts from hypoxia or harmful algal blooms. The Secretary shall establish a procedure for reviewing requests for local and regional assessments. The Secretary shall ensure, through consultation with Sea Grant Programs, that the findings of the assessments are communicated to the appropriate State, Indian tribe, and local governments, and to the general public.

(2) PURPOSE.—Local and regional assessments shall examine—

(A) the causes and ecological consequences, and the economic cost, of hypoxia or harmful algal blooms in that area;

(B) potential methods to prevent, control, and mitigate hypoxia or harmful algal blooms in that area and the potential ecological and economic costs and benefits of such methods; and

(C) other topics the Task Force considers appropriate.

(f) SCIENTIFIC ASSESSMENT OF FRESHWATER HARMFUL ALGAL BLOOMS.—

(1) Not later than 24 months after the date of enactment of the Harmful Algal Bloom and Hypoxia Amendments Act of

2004 the Task Force shall complete and submit to Congress a scientific assessment of current knowledge about harmful algal blooms in freshwater, such as the Great Lakes and upper reaches of estuaries, including a research plan for coordinating Federal efforts to better understand freshwater harmful algal blooms.

(2) The freshwater harmful algal bloom scientific assessment shall—

(A) examine the causes and ecological consequences, and the economic costs, of harmful algal blooms with significant effects on freshwater, including estimations of the frequency and occurrence of significant events;

(B) establish priorities and guidelines for a competitive, peer-reviewed, merit-based interagency research program, as part of the Ecology and Oceanography of Harmful Algal Blooms (ECOHAB) project, to better understand the causes, characteristics, and impacts of harmful algal blooms in freshwater locations; and

(C) identify ways to improve coordination and to prevent unnecessary duplication of effort among Federal agencies and departments with respect to research on harmful algal blooms in freshwater locations.

(g) SCIENTIFIC ASSESSMENTS OF HYPOXIA.—

(1) Not less than once every 5 years the Task Force shall complete and submit to the Congress a scientific assessment of hypoxia in United States coastal waters including the Great Lakes. The first such assessment shall be completed not less than 24 months after the date of enactment of the Harmful Algal Bloom and Hypoxia Amendments Act of 2004.

(2) The assessments under this subsection shall—

(A) examine the causes and ecological consequences, and the economic costs, of hypoxia;

(B) describe the potential ecological and economic costs and benefits of possible policy and management actions for preventing, controlling, and mitigating hypoxia;

(C) evaluate progress made by, and the needs of, Federal research programs on the causes, characteristics, and impacts of hypoxia, including recommendations of how to eliminate significant gaps in hypoxia modeling and monitoring data; and

(D) identify ways to improve coordination and to prevent unnecessary duplication of effort among Federal agencies and departments with respect to research on hypoxia.

(h) SCIENTIFIC ASSESSMENTS OF HARMFUL ALGAL BLOOMS.—

(1) Not less than once every 5 years the Task Force shall complete and submit to Congress a scientific assessment of harmful algal blooms in United States coastal waters. The first such assessment shall be completed not later than 24 months after the date of enactment of the Harmful Algal Bloom and Hypoxia Amendments Act of 2004 and shall consider only marine harmful algal blooms. All subsequent assessments shall examine both marine and freshwater harmful algal blooms, including those in the Great Lakes and upper reaches of estuaries.

(2) The assessments under this subsection shall—

(A) examine the causes and ecological consequences, and economic costs, of harmful algal blooms;

(B) describe the potential ecological and economic costs and benefits of possible actions for preventing, controlling, and mitigating harmful algal blooms;

(C) evaluate progress made by, and the needs of, Federal research programs on the causes, characteristics, and impacts of harmful algal blooms; and

(D) identify ways to improve coordination and to prevent unnecessary duplication of effort among Federal agencies and departments with respect to research on harmful algal blooms.

(i) NATIONAL SCIENTIFIC RESEARCH, DEVELOPMENT, DEMONSTRATION, AND TECHNOLOGY TRANSFER PLAN ON REDUCING IMPACTS FROM HARMFUL ALGAL BLOOMS.—

(1) Not later than 12 months after the date of enactment of the Harmful Algal Bloom and Hypoxia Amendments Act of 2004, the Task Force shall develop and submit to Congress a plan providing for a comprehensive and coordinated national research program to develop and demonstrate prevention, control, and mitigation methods to reduce the impacts of harmful algal blooms on coastal ecosystems (including the Great Lakes), public health, and the economy.

(2) The plan shall—

(A) establish priorities and guidelines for a competitive, peer reviewed, merit based interagency research, development, demonstration, and technology transfer program on methods for the prevention, control, and mitigation of harmful algal blooms;

(B) identify ways to improve coordination and to prevent unnecessary duplication of effort among Federal agencies and departments with respect to the actions described in paragraph (1); and

(C) include to the maximum extent practicable diverse institutions, including Historically Black Colleges and Universities and those serving large proportions of Hispanics, Native Americans, Asian Pacific Americans, and other underrepresented populations.

(3) The Secretary of Commerce, in conjunction with other appropriate Federal agencies, shall establish a research, development, demonstration, and technology transfer program that meets the priorities and guidelines established under paragraph (2)(A). The Secretary shall ensure, through consultation with Sea Grant Programs, that the results and findings of the program are communicated to State, Indian tribe, and local governments, and to the general public.

(j) REPORT.—Not later than 2 years after the date the Action Strategy is submitted under section 603B, the Under Secretary shall submit a report to Congress that describes—

(1) the proceedings of the annual Task Force meetings;

(2) the activities carried out under the Program, including the regional and subregional parts of the Action Strategy;

(3) the budget related to the activities under paragraph (2);

(4) the progress made on implementing the Action Strategy; and

(5) any need to revise or terminate research and activities under the Program.

SEC. 603A. NATIONAL HARMFUL ALGAL BLOOM AND HYPOXIA PROGRAM.

(a) ESTABLISHMENT.—Not later than 1 year after the date of enactment of the Harmful Algal Bloom and Hypoxia Research and Control Amendments Act of 2013, the Under Secretary, acting through the Task Force, shall establish and maintain a national harmful algal bloom and hypoxia program, including—

(1) a statement of objectives, including understanding, detecting, predicting, controlling, mitigating, and responding to marine and freshwater harmful algal bloom and hypoxia events; and

(2) the comprehensive research plan and action strategy under section 603B.

(b) PERIODIC REVISION.—The Task Force shall periodically review and revise the Program, as necessary.

(c) TASK FORCE FUNCTIONS.—The Task Force shall—

(1) coordinate interagency review of the objectives and activities of the Program;

(2) expedite the interagency review process by ensuring timely review and dispersal of required reports and assessments under this title;

(3) support the implementation of the Action Strategy, including the coordination and integration of the research of all Federal programs, including ocean and Great Lakes science and management programs and centers, that address the chemical, biological, and physical components of marine and freshwater harmful algal blooms and hypoxia;

(4) support the development of institutional mechanisms and financial instruments to further the objectives and activities of the Program;

(5) review the Program's distribution of Federal funding to address the objectives and activities of the Program;

(6) promote the development of new technologies for predicting, monitoring, and mitigating harmful algal bloom and hypoxia conditions; and

(7) establish such interagency working groups as it considers necessary.

(d) LEAD FEDERAL AGENCY.—Except as provided in subsection (h), the National Oceanic and Atmospheric Administration shall have primary responsibility for administering the Program.

(e) PROGRAM DUTIES.—In administering the Program, the Under Secretary shall—

(1) promote the Program;

(2) prepare work and spending plans for implementing the research and activities identified under the Action Strategy;

(3) administer merit-based, competitive grant funding—

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

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

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

(4) coordinate and work cooperatively with regional, State, tribal, and local government agencies and programs that address marine and freshwater harmful algal blooms and hypoxia;

(5) coordinate with the Secretary of State to support international efforts on marine and freshwater harmful algal bloom and hypoxia information sharing, research, prediction, mitigation, control, and response activities;

(6) identify additional research, development, and demonstration needs and priorities relating to monitoring, prevention, control, mitigation, and response to marine and freshwater harmful algal blooms and hypoxia, including methods and technologies to protect the ecosystems affected by marine and freshwater harmful algal blooms and hypoxia;

(7) integrate, coordinate, and augment existing education programs to improve public understanding and awareness of the causes, impacts, and mitigation efforts for marine and freshwater harmful algal blooms and hypoxia;

(8) facilitate and provide resources to train State and local coastal and water resource managers in the methods and technologies for monitoring, preventing, controlling, and mitigating marine and freshwater harmful algal blooms and hypoxia;

(9) support regional efforts to control and mitigate outbreaks through—

(A) communication of the contents of the Action Strategy and maintenance of online data portals for other information about harmful algal blooms and hypoxia to State, tribal, and local stakeholders; and

(B) overseeing the development, review, and periodic updating of the Action Strategy;

(10) convene at least 1 meeting of the Task Force each year; and

(11) perform such other tasks as may be delegated by the Task Force.

(f) NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION ACTIVITIES.—The Under Secretary shall—

(1) maintain and enhance the existing competitive programs at the National Oceanic and Atmospheric Administration relating to harmful algal blooms and hypoxia;

(2) carry out marine and Great Lakes harmful algal bloom and hypoxia events response activities;

(3) establish new programs and infrastructure, as necessary, to develop and enhance critical observations, monitoring, modeling, data management, information dissemination, and operational forecasts relevant to harmful algal blooms and hypoxia events;

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

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

(6) increase the availability to appropriate public and private entities of—

(A) analytical facilities and technologies;

(B) operational forecasts; and

(C) reference and research materials.

(g) COOPERATIVE EFFORTS.—The Under Secretary shall work cooperatively and avoid duplication of effort with other offices, centers, and programs within the National Oceanic and Atmospheric Administration, other agencies on the Task Force, and States, tribes, and nongovernmental organizations concerned with marine and freshwater issues to coordinate harmful algal bloom and hypoxia (and related) activities and research.

(h) FRESHWATER.—With respect to the freshwater aspects of the Program, the Administrator, through the Task Force, shall carry out the duties otherwise assigned to the Under Secretary under this section, except the activities described in subsection (f).

(1) PARTICIPATION.—The Administrator's participation under this section shall include—

(A) research on the ecology and impacts of freshwater harmful algal blooms; and

(B) forecasting and monitoring of and event response to freshwater harmful algal blooms in lakes, rivers, estuaries (including their tributaries), and reservoirs.

(2) NONDUPLICATION.—The Administrator shall ensure that activities carried out under this title 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.

(i) INTEGRATED COASTAL AND OCEAN OBSERVATION SYSTEM.—The collection of monitoring and observation data under this title 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 system established under that Act.

SEC. 603B. COMPREHENSIVE RESEARCH PLAN AND ACTION STRATEGY.

(a) IN GENERAL.—Not later than 1 year after the date of enactment of the Harmful Algal Bloom and Hypoxia Research and Control Amendments Act of 2013, the Under Secretary, through the Task Force, shall develop and submit to Congress a comprehensive research plan and action strategy to address marine and freshwater harmful algal blooms and hypoxia. The Action Strategy shall identify—

(1) the specific activities to be carried out by the Program and the timeline for carrying out those activities;

(2) the roles and responsibilities of each Federal agency in the Task Force in carrying out the activities under paragraph (1); and

(3) the appropriate regions and subregions requiring specific research and activities to address local, State, and regional harmful algal blooms and hypoxia.

(b) REGIONAL FOCUS.—The regional and subregional parts of the Action Strategy shall identify—

(1) regional priorities for ecological, economic, and social research on issues related to the impacts of harmful algal blooms and hypoxia;

(2) research, development, and demonstration activities needed to develop and advance technologies and techniques for

minimizing the occurrence of harmful algal blooms and hypoxia and improving capabilities to detect, predict, monitor, control, mitigate, respond to, and remediate harmful algal blooms and hypoxia;

(3) ways to reduce the duration and intensity of harmful algal blooms and hypoxia, including deployment of response technologies in a timely manner;

(4) research and methods to address human health dimensions of harmful algal blooms and hypoxia;

(5) mechanisms, including the potential costs and benefits of those mechanisms, to protect ecosystems that may be or have been affected by harmful algal bloom and hypoxia events;

(6) mechanisms by which data, information, and products may be transferred between the Program and the State, tribal, and local governments and research entities;

(7) communication and information dissemination methods that State, tribal, and local governments may undertake to educate and inform the public concerning harmful algal blooms and hypoxia; and

(8) roles that Federal agencies may have to assist in the implementation of the Action Strategy, including efforts to support local and regional scientific assessments under section 603(e).

(c) UTILIZING AVAILABLE STUDIES AND INFORMATION.—In developing the Action Strategy, the Under Secretary shall utilize existing research, assessments, reports, and program activities, including—

(1) those carried out under existing law; and

(2) other relevant peer-reviewed and published sources.

(d) DEVELOPMENT OF THE ACTION STRATEGY.—In developing the Action Strategy, the Under Secretary shall, as appropriate—

(1) coordinate with—

(A) State coastal management and planning officials;

(B) tribal resource management officials; and

(C) water management and watershed officials from both coastal States and noncoastal States with water sources that drain into water bodies affected by harmful algal blooms and hypoxia; and

(2) consult with—

(A) public health officials;

(B) emergency management officials;

(C) science and technology development institutions;

(D) economists;

(E) industries and businesses affected by marine and freshwater harmful algal blooms and hypoxia;

(F) scientists with expertise concerning harmful algal blooms or hypoxia from academic or research institutions; and

(G) other stakeholders.

(e) FEDERAL REGISTER.—The Under Secretary shall publish the Action Strategy in the Federal Register.

(f) PERIODIC REVISION.—The Under Secretary, in coordination and consultation with the individuals and entities under subsection (d), shall periodically review and revise the Action Strategy prepared under this section, as necessary.

[SEC. 604. NORTHERN GULF OF MEXICO HYPOXIA.

[(a) ASSESSMENT REPORT.—Not later than May 30, 1999, the Task Force shall complete and submit to Congress and the President an integrated assessment of hypoxia in the northern Gulf of Mexico that examines: the distribution, dynamics, and causes; ecological and economic consequences; sources and loads of nutrients transported by the Mississippi River to the Gulf of Mexico; effects of reducing nutrient loads; methods for reducing nutrient loads; and the social and economic costs and benefits of such methods.

[(b) SUBMISSION OF A PLAN.—No later than March 30, 2000, the President, in conjunction with the chief executive officers of the States, shall develop and submit to Congress a plan, based on the integrated assessment submitted under subsection (a), for reducing, mitigating, and controlling hypoxia in the northern Gulf of Mexico. In developing such plan, the President shall consult with State, Indian tribe, and local governments, academic, agricultural, industry, and environmental groups and representatives. Such plan shall include incentive-based partnership approaches. The plan shall also include the social and economic costs and benefits of the measures for reducing, mitigating, and controlling hypoxia. At least 90 days before the President submits such plan to the Congress, a summary of the proposed plan shall be published in the Federal Register for a public comment period of not less than 60 days.]

SEC. 604. NORTHERN GULF OF MEXICO HYPOXIA.

(a) INITIAL PROGRESS REPORTS.—Beginning not later than 12 months after the date of enactment of the Harmful Algal Bloom and Hypoxia Research and Control Amendments Act of 2013, and biennially thereafter, the Administrator, through the Mississippi River/Gulf of Mexico Watershed Nutrient Task Force, shall submit a progress report to the appropriate congressional committees and the President that describes the progress made by activities directed by the Mississippi River/Gulf of Mexico Watershed Nutrient Task Force and carried out or funded by the Environmental Protection Agency and other State and Federal partners toward attainment of the goals of the Gulf Hypoxia Action Plan 2008.

(b) CONTENTS.—Each report required under this section shall—

(1) assess the progress made toward nutrient load reductions, the response of the hypoxic zone and water quality throughout the Mississippi/Atchafalaya River Basin, and the economic and social effects;

(2) evaluate lessons learned; and

(3) recommend appropriate actions to continue to implement or, if necessary, revise the strategy set forth in the Gulf Hypoxia Action Plan 2008.

[SEC. 605. AUTHORIZATION OF APPROPRIATIONS.

[There are authorized to be appropriated to the Secretary of Commerce for research, education, and monitoring activities related to the prevention, reduction, and control of harmful algal blooms and hypoxia, $15,000,000 for fiscal year 1999, $18,250,000 for fiscal year 2000, $19,000,000 for fiscal year 2001, $23,500,000 for fiscal year 2005, $24,500,000 for fiscal year 2006, $25,000,000 for fiscal year 2007, and $30,000,000 for each of fiscal years 2008 through 2010, to remain available until expended. The Secretary shall consult with the States on a regular basis regarding the de-

velopment and implementation of the activities authorized under this section. Of such amounts for each fiscal year—

[(1) $1,500,000 for fiscal year 1999, $1,500,000 for fiscal year 2000, $2,000,000 for fiscal year 2001, and $2,500,000 for each of fiscal years 2005 through 2010 may be used to enable the National Oceanic and Atmospheric Administration to carry out research and assessment activities, including procurement of necessary research equipment, at research laboratories of the National Ocean Service and the National Marine Fisheries Service;

[(2) $4,000,000 for fiscal year 1999, $5,500,000 for fiscal year 2000, $5,500,000 for fiscal year 2001, and $6,500,000, of which $1,000,000 shall be used for the research program described in section 603(f)(2)(B), for each of fiscal years 2005 through 2010 may be used to carry out the Ecology and Oceanography of Harmful Algal Blooms (ECOHAB) project under the Coastal Ocean Program established under section 201(c) of Public Law 102-567;

[(3) $1,000,000 for fiscal year 1999, $2,000,000 for fiscal year 2000, $2,000,000 for fiscal year 2001, and $3,000,000 for each of fiscal years 2005 through 2010 may be used by the National Ocean Service of the National Oceanic and Atmospheric Administration to carry out a peer-reviewed research project on management measures that can be taken to prevent, reduce, control, and mitigate harmful algal blooms and to carry out section 603(d);

[(4) $5,500,000 for each of the fiscal years 1999, 2000, 2001, and $6,000,000 for each of fiscal years 2005 through 2010 may be used to carry out Federal and State annual monitoring and analysis activities for harmful algal blooms administered by the National Ocean Service of the National Oceanic and Atmospheric Administration;

[(5) $3,000,000 for fiscal year 1999, $3,750,000 for fiscal year 2000, $4,000,000 for fiscal year 2001, $4,000,000 for fiscal year 2005, $5,000,000 for fiscal year 2006, $5,500,000 for fiscal year 2007, and $6,000,000 for each of fiscal years 2008 through 2010 may be used for activities related to research and monitoring on hypoxia by the National Ocean Service and the Office of Oceanic and Atmospheric Research of the National Oceanic and Atmospheric Administration; and

[(6) $1,500,000 for each of fiscal years 2005 through 2010 to carry out section 603(e).]

SEC. 605. GREAT LAKES HYPOXIA AND HARMFUL ALGAL BLOOMS.

(a) INTEGRATED ASSESSMENT.—Not later than 18 months after the date of enactment of the Harmful Algal Bloom and Hypoxia Research and Control Amendments Act of 2013, the Task Force, in accordance with the authority under section 603, shall complete and submit to the Congress and the President an integrated assessment that examines the causes, consequences, and approaches to reduce hypoxia and harmful algal blooms in the Great Lakes, including the status of and gaps within current research, monitoring, management, prevention, response, and control activities by—

(1) Federal agencies;

(2) State agencies;

(3) regional research consortia;

(4) academia;
(5) private industry; and
(6) nongovernmental organizations.

(b) PLAN.—

(1) IN GENERAL.—Not later than 2 years after the date of enactment of the Harmful Algal Bloom and Hypoxia Research and Control Amendments Act of 2013, the Task Force shall develop and submit to the Congress a plan, based on the integrated assessment under subsection (a), for reducing, mitigating, and controlling hypoxia and harmful algal blooms in the Great Lakes.

(2) CONTENTS.—The plan shall—

(A) address the monitoring needs identified in the integrated assessment under subsection (a);

(B) develop a timeline and budgetary requirements for deployment of future assets;

(C) identify requirements for the development and verification of Great Lakes hypoxia and harmful algal bloom models, including—

(i) all assumptions built into the models; and

(ii) data quality methods used to ensure the best available data are utilized; and

(D) describe efforts to improve the assessment of the impacts of hypoxia and harmful algal blooms by—

(i) characterizing current and past biological conditions in ecosystems affected by hypoxia and harmful algal blooms; and

(ii) quantifying effects, including economic effects, at the population and community levels.

(3) REQUIREMENTS.—In developing the plan, the Task Force shall—

(A) consult with State and local governments and representatives from academic, agricultural, industry, and other stakeholder groups;

(B) consult with relevant Canadian agencies;

(C) ensure that the plan complements and does not duplicate activities conducted by other Federal or State agencies;

(D) identify critical research for reducing, mitigating, and controlling hypoxia events and their effects;

(E) evaluate cost-effective, incentive-based partnership approaches;

(F) utilize existing research, assessments, reports, and program activities;

(G) publish a summary of the proposed plan in the Federal Register at least 180 days prior to submitting the completed plan to Congress; and

(H) after submitting the completed plan to Congress, provide biennial progress reports on the activities toward achieving the objectives of the plan.

SEC. 606. PROTECTION OF STATES' RIGHTS.

(a) Nothing in this title shall be interpreted to adversely affect existing State regulatory or enforcement power which has been granted to any State through the Clean Water Act or Coastal Zone Management Act of 1972.

(b) Nothing in this title shall be interpreted to expand the regulatory or enforcement power of the Federal Government which has been delegated to any State through the Clean Water Act or Coastal Zone Management Act of 1972.

SEC. 607. EFFECT ON OTHER FEDERAL AUTHORITY.

Nothing in this title supersedes or limits the authority of any agency to carry out its responsibilities and missions under other laws.

SEC. 608. DEFINITIONS.

In this title:

(1) ACTION STRATEGY.—The term "Action Strategy" means the comprehensive research plan and action strategy established under section 603B.

(2) ADMINISTRATOR.—The term "Administrator" means the Administrator of the Environmental Protection Agency.

(3) HARMFUL ALGAL BLOOM.—The term "harmful algal bloom" means marine and freshwater phytoplankton that proliferate to high concentrations, resulting in nuisance conditions or harmful impacts on marine and aquatic ecosystems, coastal communities, and human health through the production of toxic compounds or other biological, chemical, and physical impacts of the algae outbreak.

(4) HYPOXIA.—The term "hypoxia" means a condition where low dissolved oxygen in aquatic systems causes stress or death to resident organisms.

(5) PROGRAM.—The term "Program" means the national harmful algal bloom and hypoxia program established under section 603A.

(6) STATE.—The term "State" means each of the several States of the United States, the District of Columbia, the Commonwealth of Puerto Rico, the Virgin Islands, Guam, American Samoa, the Commonwealth of the Northern Mariana Islands, any other territory or possession of the United States, and any Indian tribe.

(7) TASK FORCE.—The term "Task Force" means the Inter-Agency Task Force on Harmful Algal Blooms and Hypoxia under section 603(a).

(8) UNDER SECRETARY.—The term "Under Secretary" means the Under Secretary of Commerce for Oceans and Atmosphere.

(9) UNITED STATES COASTAL WATERS.—The term "United States coastal waters" includes the Great Lakes.

SEC. 609. INTERAGENCY FINANCING.

The departments and agencies represented on the Task Force may participate in interagency financing and share, transfer, receive, obligate, and expend funds appropriated to any member of the Task Force for the purposes of carrying out any administrative or programmatic project or activity under this title, including support for the Program, a common infrastructure, information sharing, and system integration for harmful algal bloom and hypoxia research, monitoring, forecasting, prevention, and control. Funds may be transferred among the departments and agencies through an appropriate instrument that specifies the goods, services, or space being acquired from another Task Force member and the costs of the goods, services, and space. The amount of funds transferrable under

this section for any fiscal year may not exceed 5 percent of the account from which the transfer was made.

SEC. 610. AUTHORIZATION OF APPROPRIATIONS.

(a) IN GENERAL.—There is authorized to be appropriated to the Under Secretary to carry out sections 603A and 603B $20,500,000 for each of fiscal years 2014 through 2018.

(b) EXTRAMURAL RESEARCH ACTIVITIES.—The Under Secretary shall ensure that a substantial portion of funds appropriated pursuant to subsection (a) that are used for research purposes are allocated to extramural research activities. For each fiscal year, the Under Secretary shall publish a list of all grant recipients and the amounts for all of the funds allocated for research purposes, specifying those allocated for extramural research activities.

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