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111TH CONGRESS
2d Session
SENATE
REPORT
111–125

THE HARMFUL ALGAL BLOOMS AND HYPOXIA RESEARCH AND CONTROL AMENDMENTS ACT OF 2009

R E P O R T

OF THE

COMMITTEE ON COMMERCE, SCIENCE, AND TRANSPORTATION

ON

S. 952

FEBRUARY 4, 2010.—Ordered to be printed

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SENATE COMMITTEE ON COMMERCE, SCIENCE, AND TRANSPORTATION

ONE HUNDRED ELEVENTH CONGRESS

SECOND SESSION

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FEBRUARY 4, 2010.—Ordered to be printed

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

REPORT

[To accompany S. 952]

The Committee on Commerce, Science, and Transportation, to which was referred the bill (S. 952) to develop and promote a comprehensive plan for a national strategy to address harmful algal blooms and hypoxia through baseline research, forecasting and monitoring, and mitigation and control while helping communities detect, control, and mitigate coastal and Great Lakes harmful algal blooms and hypoxia events, having considered the same, reports favorably thereon with an amendment (in the nature of a substitute) and recommends that the bill (as amended) do pass.

PURPOSE OF THE BILL

The purpose of S. 952, the Harmful Algal Blooms and Hypoxia Research and Control Amendments Act of 2009, is to reauthorize and amend the Harmful Algal Bloom and Hypoxia Research and Control Act of 1998. This bill would authorize and enhance the continuing work of the Inter-Agency Task Force on Harmful Algal Blooms and Hypoxia. It would integrate and improve coordination among the individual harmful algal bloom (HAB) programs within the National Oceanic and Atmospheric Administration (NOAA). It would facilitate the identification and consideration of regional, State, and local needs in prioritizing research and developing products and tools to aid decision-making. It would also promote the transition of research products into implementable actions to predict, prevent, monitor, and mitigate HAB and hypoxia events, thereby minimizing the economic, ecologic, and human health impacts caused by such events.

BACKGROUND AND NEEDS

An algal bloom occurs when a single algal species multiplies until it dominates the microscopic plant (phytoplankton) community. A HAB occurs when algae produce toxic or harmful effects on people, fish, shellfish, marine mammals and birds. HABs are increasingly impacting marine and freshwaters of the United States as well as other countries. The impacts include: human illness and mortality due to direct or indirect exposure to toxins; economic hardship for coastal communities dependent on seafood and tourism; fish, bird, and marine mammal deaths; and ecological damage. HABs are pervasive, affecting multiple regions, resources, and sectors of the economy. Thirty years ago, HAB problems were sporadic and scattered throughout the country; today, virtually every state is threatened by harmful or toxic algal blooms. According to a recent NOAA report, the United States seafood and tourism industries suffer annual losses of $82 million due to economic impacts of harmful algal blooms.

A number of factors contribute to the increasing occurrence of HABs. Marine transportation may contribute to the global HAB expansion by transporting species in ballast water. Global climate change, increased nonpoint source nutrient runoff from urban and agricultural activities, and increases in aquaculture activities also may contribute to HAB expansion. Increased nutrient loads to coastal waters may stimulate the growth of algae populations, which can initiate a HAB event. Some scientists argue that the nutrients channeled to coastal waters by human activities are delivered in proportions that differ from naturally occurring ratios, creating conditions that favor the rapid growth and high concentration of harmful algal populations. Other new bloom events may reflect indigenous algae populations that were discovered because of better detection methods. More research is necessary to determine what controls the development of HABs.

Hypoxia refers to a depressed concentration of dissolved oxygen in water. Most forms of aquatic life require a certain level of dissolved oxygen for survival, and when deficiencies arise, hypoxia, or "dead zones," can occur in the water column. Hypoxia events are natural phenomena, but they can be intensified and made more frequent and expansive by some human activities such as eutrophic conditions caused by increased nutrient loading. Hypoxic areas are more widespread during the summer, when they may drive out or kill marine animal life, and usually dissipate by winter. Over half of U.S. estuaries experience natural or human-induced hypoxic conditions at some time each year and the frequency and duration of hypoxic events have increased exponentially over the last few decades. Hypoxia is now a persistent problem in the Gulf of Mexico, Puget Sound, Chesapeake Bay, Lake Erie, Narragansett Bay, and many other fresh water bodies and marine areas of recreational and commercial importance. The largest domestic hypoxic area is in the northern Gulf of Mexico near the mouth of the Mississippi River. Wherever it appears, hypoxia significantly impairs fisheries production and ecosystem function.

Hypoxic areas frequently occur in coastal waters where rivers enter the ocean. Fresh water is less dense than saltwater and typically flows across the top of the sea water. The fresh surface water

effectively "caps" the more dense, saline bottom waters. This retards mixing, which creates a two-layer system and promotes hypoxia development in the lower, more saline waters. Hypoxic conditions can be exacerbated by high concentrations of nutrients delivered to the ocean in river water. These nutrients promote primary productivity that, in addition to causing HAB outbreaks, contributes to hypoxia by consuming oxygen in the surface water. Hypoxia is more likely to occur in estuaries with high nutrient loading and low flushing.

Hypoxia research is necessary to help provide tools for coastal resource managers to use to assess alternative management strategies for preventing or mitigating the impacts of hypoxia on coastal ecosystems. Understanding the causes of hypoxia, developing the capability to predict its occurrence in response to varying levels of anthropogenic stress, and evaluating the subsequent ecological, economic, and social impacts are necessary to assess management alternatives.

The Harmful Algal Bloom and Hypoxia Research and Control Act (HABHRCA) was signed into law on November 13, 1998. This Act recognized that many of our nation's coastal areas suffer from harmful algal blooms and hypoxia each year, threatening coastal ecosystems and fisheries and endangering human health. To respond to these concerns, the Act established an Inter-Agency Task Force on Harmful Algal Blooms and Hypoxia and mandated the formulation of the following three national assessments: a National Assessment on Harmful Algal Blooms; a National Assessment on Hypoxia; and an Assessment and a Plan for Hypoxia in the Gulf of Mexico. These assessments—and the continuing occurrence of HAB and hypoxia events—demonstrate the need for ongoing work in predicting, monitoring, and mitigating these potentially dangerous events.

HABHRCA was reauthorized with passage of the Harmful Algal Bloom and Hypoxia Amendments Act of 2004 (2004 Act), which was signed into law on December 10, 2004. The 2004 Act enhanced the reporting requirements of the previous legislation, mandating an evaluation of efforts to protect the public from adverse impacts of HABs, as well as regional scientific assessments of the impacts of HABs and hypoxia, including a separate report on freshwater HABs. The 2004 Act further called for Scientific Assessments of both HABs and hypoxia to establish priorities for determining the causes, consequences, and costs of these phenomena and assessing the progress being made under the existing programs. The 2004 Act also authorized appropriations for fiscal years 2005-2008.

SUMMARY OF PROVISIONS

S. 952 would reauthorize and amend HABHRCA, with the overarching goal of building upon the Nation's efforts to research and monitor HABs and hypoxia and taking steps to develop and carry out actions to predict more accurately, to mitigate, and to control outbreaks. It also would encourage greater collaboration among Federal agencies with a role in HAB and hypoxia research by establishing an interagency National Harmful Algal Bloom and Hypoxia Program (Program), overseen by the existing Task Force and with NOAA as its lead agency. The Program would promote a unified national strategy to understand, predict, mitigate, and control

HABs and hypoxia. As the lead agency within the Program, NOAA would maintain and enhance its existing programs, and establish a Mitigation and Control of Harmful Algal Blooms Program.

S. 952 would take additional steps to encourage regional efforts to deal with HABs and hypoxia. It would require the Regional Research and Action Plans to be developed by the Program in conjunction with regional panels of experts. Each Regional Research and Action Plan (RRAP) would address the specific needs of regions within the United States, including identification of regional priorities for research, technology, and recommended actions.

S. 952 would update reporting requirements first established in the 2004 Act, and establish a pilot program for freshwater HABs to enhance our Nation's research on this emerging source of HAB activity.

Finally, S. 952 would update funding authorization levels for fiscal years 2010–2104, including setting aside specific funds for development of the RRAPs and the freshwater HABs pilot program.

LEGISLATIVE HISTORY

S. 952 was introduced by Senator Snowe on May 1, 2009, with Senators Nelson, Cantwell, Levin, Vitter, Cardin, Landrieu, and Boxer as original cosponsors. Senators Kerry, Collins, Begich, Burris, Whitehouse, and Mikulski subsequently signed on as cosponsors. The bill was referred to the Senate Committee on Commerce, Science, and Transportation. On August 5, 2009, the Committee considered a manager's amendment to this bill in an open executive session. The Committee, without objection, ordered S. 952 be reported favorably as amended.

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:

SEPTEMBER 2, 2009.

Hon. JOHN D. ROCKEFELLER IV,
Chairman, Committee on Commerce, Science, and Transportation, U.S. Senate, Washington, DC.

DEAR MR. CHAIRMAN:

The Congressional Budget Office has prepared the enclosed cost estimate for S. 952, the Harmful Algal Blooms and Hypoxia Research and Control Amendments Act of 2009.

If you wish further details on this estimate, we will be pleased to provide them. The CBO staff contact is Jeff LaFave.

Sincerely,

DOUGLAS W. ELMENDORF.

Enclosure.

S. 952—Harmful Algal Blooms and Hypoxia Research and Control Amendments Act of 2009

Summary: S. 952 would amend current law to attempt to reduce the effects of harmful algal blooms and hypoxia (reduced oxygen level) in certain bodies of water. The bill would authorize the ap-

propriation of $40 million a year over the 2010–2014 period for a National Oceanic and Atmospheric Administration (NOAA) program to mitigate the effects of harmful algal blooms and hypoxia. Assuming appropriation of the necessary and authorized amounts, CBO estimates that implementing the legislation would cost $171 million over the 2010–2014 period and $24 million after 2014.

S. 952 contains no intergovernmental or private-sector mandates as defined in the Unfunded Mandates Reform Act (UMRA) and would impose no costs on state, local, or tribal governments.

Estimated cost to the Federal Government: The estimated budgetary impact of S. 952 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—						
	2009	2010	2011	2012	2013	2014	2009–2014
SPENDING SUBJECT TO APPROPRIATION							
Spending Under Current Law: [a]							
Budget Authority/Authorization Level	12	30	0	0	0	0	42
Estimated Outlays	12	20	6	4	0	0	42
Proposed Changes:							
Mitigation Program:							
Authorization Level	0	10	40	40	40	40	170
Estimated Outlays	0	7	28	35	39	40	149
Pilot Programs:							
Estimated Authorization Level	0	5	5	5	5	5	25
Estimated Outlays	0	3	4	5	5	5	22
Subtotal:							
Estimated Authorization Level	0	15	45	45	45	45	195
Estimated Outlays	0	10	32	40	44	45	171
Spending Under S. 952:							
Budget Authority/Estimated Authorization Level	12	45	45	45	45	45	237
Estimated Outlays	12	30	38	44	44	45	213

[a] The 2009 level is the amount appropriated for that year; $30 million is authorized to be appropriated in 2010 for this program under current law.

Basis of estimate: For this estimate, CBO assumes that S. 952 will be enacted near the end of fiscal year 2009 and that the authorized and necessary amounts will be appropriated each year. Estimated outlays are based on historical spending patterns for similar NOAA programs.

S. 952 would authorize the appropriation of $40 million a year over the 2010–2014 period for a NOAA program to mitigate the effects of harmful algal blooms and hypoxia in coastal waters and the Great Lakes. (In 2010, $30 million is authorized to be appropriated for this program under current law.) The bill would direct NOAA to enhance several existing grant programs and establish at least two new programs related to algal blooms and hypoxia. The bill also would require NOAA to oversee and coordinate regional efforts to address related problems. Finally, the bill would require NOAA to submit biennial and five-year reports to Congress describing the activities of the program.

Additionally, S. 952 would direct an interagency task force to establish a pilot program to research the occurrence of harmful algal blooms and hypoxia in freshwater systems. Based on information from NOAA, CBO estimates that implementing the pilot program

would cost $22 million over the 2010–2014 period and $3 million after 2014.

Assuming appropriation of the necessary and authorized amounts, CBO estimates that implementing S. 952 would cost $171 million over the 2010–2014 period and $24 million after 2014.

Intergovernmental and private-sector impact: S. 952 contains no intergovernmental or private-sector mandates as defined in UMRA and would impose no costs on state, local, or tribal governments.

Estimate prepared by: Federal Costs: Jeff LaFave; Impact on State, Local, and Tribal Governments: Ryan Miller; 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 reported bill would require the enhancement of programs intended to detect, mitigate, and control HABs and hypoxia. It does not authorize any new regulations and therefore will not subject any individuals or businesses to new regulations.

ECONOMIC IMPACT

Section 8 of the reported bill authorizes $40 million for each of fiscal years 2010 through 2014 to NOAA to implement the National Harmful Algal Bloom and Hypoxia Program, of which up to $10,000,000 per year would be allocated to the creation of RRAPs. Considering the potential cost savings and economic return on a program to enhance the Nation's efforts to detect, mitigate, and control HABs and hypoxia, these funding levels are not expected to have a significant impact on the Nation's economy.

PRIVACY

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

PAPERWORK

S. 952 would not impose any new paperwork requirements on private citizens, businesses, or other entities that do not choose to participate in a regional coastal and ocean observation association; representatives of entities choosing to participate in these associations may be subject to some additional paperwork requirements.

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 and Table of Contents

Section 1 would title the bill the Harmful Algal Blooms and Hypoxia Research and Control Amendments Act of 2009. This section would also contain the Table of Contents.

Section 2. Amendment of Harmful Algal Bloom and Hypoxia Research and Control Act of 1998

Section 2 would state that any reference in this title 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. Findings

Section 3 would revise the bill's findings to recognize the increasing frequency and intensity of HABs and hypoxia, and that excessive nutrients in coastal waters has contributed to this increase. It would also recognize NOAA's role in HAB research and management, the adverse economic effects HABs and hypoxia have imposed on coastal states and communities, and that global climate change may exacerbate their occurrence. Finally, it would recognize that since the 1998 passage of HABHRCA, research has led to numerous technological advances providing essential decision-making tools for resource managers and stakeholders.

Section 4. Purpose

Section 4 would add a purpose section to the bill specifying that the purposes of this Act are to develop a comprehensive and integrated national program to address HABs and hypoxia; to provide for the assessment of environmental, socio-economic, and human health impacts of HABs and hypoxia on a regional and national scale; and to facilitate regional, State, and local efforts to develop and implement appropriate HAB and hypoxia response plans, strategies, and tools.

Section 5. Interagency Task Force on Harmful Algal Blooms and Hypoxia

Section 5 would elevate Task Force membership to consist of representatives of the offices of the Secretary or the head of the agency from each department or agency represented on the Task Force. This section would also amend HABHRCA's existing report section by deleting requirements for reports that have already been issued.

Section 6. National Harmful Algal Bloom and Hypoxia Program

Section 6 would establish and maintain the Program. The Task Force would develop an action strategy for the Program and would also serve as its oversight body. It would coordinate all interagency responsibilities, including reviewing and assessing interagency work, spending plans, and required reports; reviewing distribution of Federal grants; supporting implementation of the RRAPs; and promoting development of new technologies. The Task Force would also be responsible for appointing a general advisory committee consisting of representative experts intended to provide rec-

ommendations to the Task Force and support its interagency functions.

NOAA would be the lead Federal agency charged with administering the Program, and promoting its national strategy. S. 952 would also stipulate specific responsibilities for the Program including: preparing interagency work and spending plans and coordinating interagency activities, including with the State Department on international efforts; administering merit-based, competitive grant funding; coordinating with State, local, tribal, and other entities to address HABs and hypoxia; coordinating outreach, education, and training programs; training of State and local resource managers; and supporting regional efforts to control and mitigate outbreaks.

NOAA would also maintain and enhance its existing, internal programs (the Ecology and Oceanography of Harmful Algal Blooms Program, the Monitoring and Event Response for Harmful Algal Blooms Program, the Northern Gulf of Mexico Ecosystems and Hypoxia Assessment Program, the Coastal Hypoxia Research Program, and other relevant NOAA programs). It also would establish a Mitigation and Control of Harmful Algal Blooms Program and other programs as necessary; and work together with other relevant offices and organizations on managing data, products, and infrastructure.

Section 7. Regional Research and Action Plans

Section 7 would call for the development and implementation of RRAPs overseen by the Program. The Program would also identify appropriate regional boundaries.

Section 7(b) specifies that the Program would convene a panel of experts for each region. The panel would include State coastal management and planning officials; water management and watershed officials from both coastal states and non coastal states with water resources that drain into water bodies affected by harmful algal blooms; public health officials; emergency management officials; nongovernmental organizations; science and technology development institutions; economists; affected industries and businesses; expert scientists from academic institutions; and other appropriate stakeholders. It also would specify that panels shall be convened in at least 1/3 of the regions within the first 9 months after enactment; in at least 2/3 of the regions within 21 months of enactment; and in the remaining regions within 33 months of enactment. Each panel would then reconvene at least every 5 years after the date it was initially convened.

Section 7(c) would require each regional panel of experts to develop a Regional Research and Action Plan for its region. The RRAP would include baseline ecological, social, and economic research; regional priorities; research needed to develop and advance technologies; State and local government actions that may be implemented; mechanisms by which data and products are transferred between entities; communication, outreach, and information dissemination strategies; and appropriate pilot projects.

Section 7(d) would establish timelines for the development of RRAPs, specifically that within 12 months of the convening of a regional panel, its RRAP must be completed and approved by the

Program. Each regional plan would have to be updated at least every 5 years.

Under section 7(e), the Program would have to develop mechanisms to administer funding for RRAP development to eligible organizations through a merit-based, competitive process. This section also would define ''eligible organizations''.

Section 7(f) would establish that if the need should arise (due to an emergent need or threat) to revise an RRAP prior to its scheduled review, the Program would notify the Task Force and convene the appropriate regional panel.

Section 8. Reporting

This section would update reporting requirements to reflect the completion of reports called for under existing law. The bill would require biennial reports to the Senate Committee on Commerce, Science, and Transportation and the House of Representatives Committees on Science and Technology and on Natural Resources describing activities, budgets, and progress of the program, the proceedings of the annual Task Force meeting, and the status, activities, and funding of the RRAPs. The bill would also require the Task Force to submit reports once every five years to the Senate Committee on Commerce, Science, and Transportation and the House of Representatives Committees on Science and Technology and on Natural Resources. These reports would evaluate the state of knowledge on HABs and hypoxia, their social and economic impacts and the strategies to deal with them; examine and evaluate their human health impacts; describe advances in capabilities for their monitoring, forecasting, modeling, control, mitigation, and prevention; evaluate progress made by, and the needs of, Federal, regional, State, and local policies and strategies, including the economic costs and benefits of such policies and strategies; make recommendations for integrating, improving, and funding future national, regional, State, and local policies and strategies; and describe communication, outreach, and education efforts intended to increase public awareness.

Section 9. Northern Gulf of Mexico Hypoxia

Section 9 would direct the Mississippi River/Gulf of Mexico Watershed Nutrient Task Force to complete annual progress reports for each of the years from 2009 through 2013. These annual reports will describe the progress made by the Task Force-directed activities toward attainment of the Coastal Goal of the Gulf Hypoxia Action Plan of 2008. This section would also require the Task Force to complete and submit to Congress and the President a Five Year Report on status of the Coastal Goal of the Gulf Hypoxia Action Plan of 2008.

Section 10. Pilot Program for Freshwater Harmful Algal Blooms and Hypoxia

Section 10 would direct the Task Force to establish a collaborative pilot program to examine harmful algal blooms and hypoxia in freshwater systems. The pilot program would assess the issues associated with harmful algal blooms and hypoxia; research the efficacy of mitigation measures; and recommend potential management solutions. The Task Force would also be directed to assess the

effectiveness of the pilot program and make the findings available to the public.

Section 11. Interagency Financing

Section 11 would allow agencies represented on the Task Force to participate in interagency financing to carry out programs under this bill.

Section 12. Application with other Laws

Section 12 would ensure that nothing in this title supersedes or limits the authority of any agency to carry out its responsibilities and missions under other laws.

Section 13. Definitions

Section 13 would define the terms: ''Administrator''; ''Harmful Algal Bloom''; ''Hypoxia''; ''NOAA''; ''Program''; ''Regional Research and Action Plan''; ''Secretary''; ''Task Force''; and ''United States Coastal Waters''.

Section 14. Authorization of Appropriations

Section 14 would authorize $40 million to NOAA for each of fiscal years 2010 through 2014, of which up to $10 million each year would be allocated for the RRAPs. Of these appropriations, the Secretary shall ensure a substantial portion shall be allocated to extramural research activities. Finally, this section would authorize NOAA to make available, out of funds appropriated to NOAA, such funds as necessary to carry out the pilot program established under section 603C.

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]

TITLE VI—HARMFUL ALGAL BLOOMS AND HYPOXIA

SECTION 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. 602. FINDINGS.

The Congress finds the following:

(1) Harmful algal blooms and hypoxia are increasing in frequency and intensity in the Nation's coastal waters and Great Lakes and pose a threat to the health of coastal and Great

Lakes ecosystems, are costly to coastal economies, and threaten the safety of seafood and human health.

(2) Excessive nutrients in coastal waters have been linked to the increased intensity and frequency of hypoxia and some harmful algal blooms and there is a need to identify more workable and effective actions to reduce the negative impacts of harmful algal blooms and hypoxia on coastal waters.

(3) NOAA, through its ongoing research, monitoring, observing, education, grant, and coastal resource management programs and in collaboration with the other Federal agencies, on the Interagency Task Force, along with States, Indian tribes, and local governments, possesses capabilities necessary to support a near and long-term comprehensive effort to prevent, reduce, and control the human and environmental costs of harmful algal blooms and hypoxia.

(4) Harmful algal blooms and hypoxia can be triggered and exacerbated by increases in nutrient loading from point and non-point sources, much of which originates in upland areas and is delivered to marine and freshwater bodies via river discharge, thereby requiring integrated and landscape-level research and control strategies.

(5) Harmful algal blooms and hypoxia affect many sectors of the coastal economy, including tourism, public health, and recreational and commercial fisheries; and according to a recent report produced by NOAA, the United States seafood and tourism industries suffer annual losses of $82 million due to economic impacts of harmful algal blooms.

(6) Global climate change and its effect on oceans and the Great Lakes may ultimately affect harmful algal bloom and hypoxic events.

(7) Proliferations of harmful and nuisance algae can occur in all United States waters, including coastal areas and estuaries, the Great Lakes, and inland waterways, crossing political boundaries and necessitating regional coordination for research, monitoring, mitigation, response, and prevention efforts.

(8) Following passage of the Harmful Algal Bloom and Hypoxia Research and Control Act of 1998, federally funded and other research has led to several technological advances, including remote sensing, molecular and optical tools, satellite imagery, and coastal and ocean observing systems, that provide data for forecast models, improve the monitoring and prediction of these events, and provide essential decisionmaking tools for managers and stakeholders.

SEC. 602A. PURPOSES.

The purposes of this title are—

(1) to provide for the development and coordination of a comprehensive and integrated national program to address harmful algal blooms and hypoxia through baseline research, monitoring, prevention, mitigation, and control;

(2) to provide for the assessment of environmental, socio-economic, and human health impacts of harmful algal blooms and hypoxia on a regional and national scale, and to integrate that assessment into marine and freshwater resource decisions; and

(3) to facilitate regional, State, tribal, and local efforts to develop and implement appropriate harmful algal bloom and hy-

poxia response plans, strategies, and tools including outreach programs and information dissemination mechanisms.

SEC. 602B. REGIONAL RESEARCH AND ACTION PLANS.

(a) IN GENERAL.—The Program shall—

(1) oversee the development and implementation of Regional Research and Action Plans; and

(2) identify appropriate regions and sub-regions to be addressed by each Regional Research and Action Plan.

(b) REGIONAL PANELS OF EXPERTS.—

(1) IN GENERAL.—In accordance with the schedule set forth in paragraph (2), the Program shall convene a panel of experts for each region identified under subsection (a)(2) from among—

(A) State coastal management and planning officials;

(B) tribal resource management officials;

(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;

(D) public health officials;

(E) emergency management officials;

(F) nongovernmental organizations concerned with marine and aquatic issues;

(G) science and technology development institutions;

(H) economists;

(I) industries and businesses affected by coastal and freshwater harmful algal blooms and hypoxia;

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

(K) other stakeholders as appropriate.

(2) SCHEDULE.—The Program shall—

(A) convene panels in at least ⅓ of the regions within 9 months after the date of enactment of the Harmful Algal Blooms and Hypoxia Research and Control Amendments Act of 2009;

(B) convene panels in at least ⅔ of the regions within 21 months after such date;

(C) convene panels in the remaining regions within 33 months after such date; and

(D) reconvene each panel at least every 5 years after the date on which it was initially convened.

(c) PLAN DEVELOPMENT.—Each regional panel of experts shall develop a Regional Research and Action Plan for its respective region and submit it to the Task Force for approval. The Plan shall identify appropriate elements for the region, including—

(1) baseline ecological, social, and economic research needed to understand the biological, physical, and chemical conditions that cause, exacerbate, and result from harmful algal blooms and hypoxia;

(2) regional priorities for ecological and socio-economic research on issues related to, and impacts of, harmful algal blooms and hypoxia;

(3) research needed to develop and advance technologies for improving capabilities to predict, monitor, prevent, control, and mitigate harmful algal blooms and hypoxia;

(4) State, tribal, and local government actions that may be implemented—

(A) to support long-term monitoring efforts and emergency monitoring as needed;

(B) to minimize the occurrence of harmful algal blooms and hypoxia;

(C) to reduce the duration and intensity of harmful algal blooms and hypoxia in times of emergency;

(D) to address human health dimensions of harmful algal blooms and hypoxia; and

(E) to identify and protect vulnerable ecosystems that could be, or have been, affected by harmful algal blooms and hypoxia;

(5) mechanisms by which data and products are transferred between the Program and State and local governments and research entities;

(6) communication, outreach and information dissemination efforts that State and local governments and nongovernmental organizations can undertake to educate and inform the public concerning harmful algal blooms and hypoxia and alternative coastal resource-utilization opportunities that are available; and

(7) pilot projects, if appropriate, that may be implemented on local, State, and regional scales to address the research priorities and response actions identified in the Plan.

(d) PLAN TIMELINES; UPDATES.—The Program shall ensure that Regional Research and Action Plans developed under this section are—

(1) completed and approved by the Program within 12 months after the date on which a regional panel is convened or reconvened under subsection (b)(2); and

(2) updated no less frequently than once every 5 years.

(e) FUNDING.—

(1) IN GENERAL.—Subject to available appropriations, the Program shall make funding available to eligible organizations to implement the research, monitoring, forecasting, modeling, and response actions included under each approved Regional Research and Action Plan. The Program shall select recipients through a merit-based, competitive process and seek to fund research proposals that most effectively align with the research priorities identified in the relevant Regional Research and Action Plan.

(2) APPLICATION; ASSURANCES.—Any organization seeking funding under this subsection shall submit an application to the Program at such time, in such form and manner, and containing such information and assurances as the Program may require. The Program shall require any organization receiving funds under this subsection to utilize the mechanisms described in subsection (c)(5) to ensure the transfer of data and products developed under the Plan.

(3) ELIGIBLE ORGANIZATION.—In this subsection, the term 'eligible organization' means—

(A) an institution of higher education, other non-profit organization, State, tribal, and local government, commercial organization, or Federal agency that meets the require-

ments of this section and such other requirements as are established by the Secretary; and

(B) with respect to nongovernmental organizations, an organization that is subject to regulations promulgated or guidelines issued to carry out this section, including United States audit requirements that are applicable to nongovernmental organizations.

(f) INTERMEDIATE REVIEWS.—If the Program determines that an intermediate review is necessary to address emergent needs in harmful algal blooms and hypoxia under a Regional Research and Action Plan, it shall notify the Task Force and reconvene the relevant regional panel of experts for the purpose of revising the Regional Research and Action Plan so as to address the emergent threat or need.''.

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''). *Hypoxia.* ¿The Task Force shall consist of the following representatives from— *The Task Force shall consist of representatives of the Office of the Secretary from each of the following departments and of the office of the head of each of the following Federal agencies:*

(1) ¿the *The* Department of Commerce (who shall serve as Chairman of the Task ¿Force); *Force.*

(2) ¿the *The* Environmental Protection ¿Agency; *Agency.*

(3) ¿the *The* Department of ¿Agriculture; *Agriculture.*

(4) ¿the *The* Department of the ¿Interior; *Interior.*

(5) ¿the *The* Department of the ¿Navy; *Navy.*

(6) ¿the *The* Department of Health and Human ¿Services; *Services.*

(7) ¿the *The* National Science ¿Foundation; *Foundation.*

(8) ¿the *The* National Aeronautics and Space ¿Administration; *Administration.*

(9) ¿the *The* Food and Drug ¿Administration; *Administration.*

(10) ¿the *The* Office of Science and Technology ¿Policy; *Policy.*

(11) ¿the *The* Council on Environmental ¿Quality; and *Quality.*

(12) The Centers for Disease Control.

¿(12) such other *(13) 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 signifi-

cant 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) BIENNIAL REPORTS.—Every 2 years the Program shall prepare a report for the Senate Committee on Commerce, Science, and Transportation and the House of Representatives Committees on Science and Technology and on Natural Resources that describe—

(1) activities, budgets, and progress on implementing the national harmful algal bloom and hypoxia program;

(2) the proceedings of the annual Task Force meetings; and

(3) the status, activities, and funding for implementation of the Regional Research and Action Plans, including a description of research funded under the program and actions and outcomes of Plan response strategies carried out by States.

(k) QUINQUENNIAL REPORTS.—Not less than once every 5 years after the date of enactment of the Harmful Algal Blooms and Hypoxia Research and Control Amendments Act of 2009, the Task Force shall complete and submit a report on harmful algal blooms and hypoxia in marine and freshwater systems to the Senate Committee on Commerce, Science, and Transportation and the House of Representatives Committees on Science and Technology and on Natural Resources. The report shall—

(1) evaluate the state of scientific knowledge of harmful algal blooms and hypoxia in marine and freshwater systems, including their causes and ecological consequences;

(2) evaluate the social and economic impacts of harmful algal blooms and hypoxia, including their impacts on coastal communities, and review those communities' efforts and associated economic costs related to event forecasting, planning, mitigation, response, and public outreach and education;

(3) examine and evaluate the human health impacts of harmful algal blooms and hypoxia, including any gaps in existing research;

(4) describe advances in capabilities for monitoring, forecasting, modeling, control, mitigation, and prevention of harmful algal blooms and hypoxia, including techniques for, integrating landscape- and watershed-level water quality information into marine and freshwater harmful algal bloom and hypoxia prevention and mitigation strategies at Federal and regional levels;

(5) evaluate progress made by, and the needs of, Federal, regional, State, tribal, and local policies and strategies for forecasting, planning, mitigating, preventing, and responding to harmful algal blooms and hypoxia, including the economic costs and benefits of such policies and strategies;

(6) make recommendations for integrating, improving, and funding future Federal, regional, State, tribal, and local policies and strategies for preventing and mitigating the occurrence and impacts of harmful algal blooms and hypoxia; and

(7) describe communication, outreach, and education efforts to raise public awareness of harmful algal blooms and hypoxia, their impacts, and the methods for mitigation and prevention.

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

(a) ESTABLISHMENT.—The President, acting through the Committee on Natural Resources of the National Science and Technology Council, shall establish and maintain a national program for integrating efforts to address harmful algal bloom and hypoxia research, monitoring, prediction, control, mitigation, prevention, and outreach.

(b) ACTION STRATEGY.—

(1) IN GENERAL.—The Task Force shall develop a national harmful algal blooms and hypoxia action strategy that—

(A) is consistent with the purposes of this title;

(B) includes a statement of goals and objectives; and

(C) includes an implementation plan.

(2) CONSULTATION.—In developing the action strategy, the Task Force shall consult with the HABs and Hypoxia Advisory Group.

(3) PUBLICATION.—Within 12 months after the date of enactment of the Harmful Algal Blooms and Hypoxia Research and Control Amendments Act of 2009, the Task Force shall—

(A) submit the action strategy to the Senate Committee on Commerce, Science, and Transportation and the House of Representatives Committees on Science and Technology and on Natural Resources; and

(B) publish the action strategy in the Federal Register.

(4) PERIODIC REVISION.—The Task Force shall periodically review and revise the strategy as necessary.

(c) TASK FORCE FUNCTIONS.—The Task Force shall be the oversight body for the development and implementation of the national harmful algal bloom and hypoxia program and shall—

(1) coordinate interagency review of plans and policies of the Program;

(2) assess interagency work and spending plans for implementing the activities of the Program;

(3) review the Program's distribution of Federal grants and funding to address research priorities;

(4) support implementation of the actions and strategies identified in the regional research and action plans under subsection (d);

(5) support the development of institutional mechanisms and financial instruments to further the goals of the program;

(6) expedite the interagency review process and ensure timely review and dispersal of required reports and assessments under this title;

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

(8) establish such interagency working groups as it deems necessary.

(d) ADVISORY COMMITTEE.—

(1) IN GENERAL.—The Task Force shall appoint a general advisory committee—

(A) consisting of not more than 20 individuals who shall be representative of the various groups and regions concerned with harmful algal blooms and hypoxia, including representatives of nongovernmental organizations, States, tribes, and educational institutions; and

(B) providing, to the maximum extent practicable, an equitable balance among such groups and regions.

(2) FUNCTION.—The general advisory committee shall provide recommendations to the Task Force on the development of the national action strategy, including goals and objectives and support for regional research and action plans.

(3) FACA NOT TO APPLY.—The Federal Advisory Committee Act (5 U.S.C. App.) shall not apply to the general advisory committee.

(e) LEAD FEDERAL AGENCY.—NOAA shall be the lead Federal agency for administering the National Harmful Algal Bloom and Hypoxia Program.

(f) PROGRAM RESPONSIBILITIES.—The Program shall—

(1) promote a national strategy to help communities understand, detect, predict, control, and mitigate freshwater and marine harmful algal bloom and hypoxia events;

(2) plan, coordinate, and implement the National Harmful Algal Bloom and Hypoxia Program; and

(3) report to the Task Force via the Administrator.

(g) PROGRAM DUTIES.—The Program shall—

(1) prepare work and spending plans for implementing the activities of the Program and developing and implementing the Regional Research and Action Plans;

(2) administer merit-based, competitive grant funding to support the projects maintained and established by the Program, and to address the research and management needs and priorities identified in the Regional Research and Action Plans;

(3) coordinate interagency programs that address harmful algal blooms and hypoxia and other ocean and Great Lakes science and management programs and centers that address the chemical, biological, and physical components of harmful algal blooms and hypoxia;

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

(5) coordinate with the State Department to support international efforts on harmful algal bloom and hypoxia information sharing, research, mitigation, and control;

(6) coordinate an outreach, education, and training program that integrates and augments existing programs to improve public education about and awareness of the causes, impacts, and mitigation efforts for harmful algal blooms and hypoxia;

(7) facilitate and provide resources for training of State, tribal, and local coastal and water resource managers in the methods and technologies for monitoring, controlling, and mitigating harmful algal blooms and hypoxia;

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

(A) communication of the contents of the Regional Research and Action Plans and maintenance of online data portals for other information about harmful algal blooms and hypoxia to State and local stakeholders within the region for which each plan is developed; and

(B) overseeing the development, review, and periodic updating of Regional Research and Action Plans established under section 602C(b);

(9) convene at least 1 meeting of the Task Force annually; and

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

(h) NOAA DUTIES.—

(1) EXISTING PROGRAMS.—NOAA shall maintain and enhance the following existing competitive programs:

(A) The Ecology and Oceanography of Harmful Algal Blooms Program.

(B) The Monitoring and Event Response for Harmful Algal Blooms Program.

(C) The Northern Gulf of Mexico Ecosystems and Hypoxia Assessment Program.

(D) The Coastal Hypoxia Research Program.

(E) The Prevention, Control, and Mitigation of Harmful Algal Blooms Program.

(2) NEW PROGRAMS.—NOAA shall establish—

(A) an Event Response Program to coordinate and enhance event response activities;

(B) an Infrastructure Program to develop and enhance the critical observations, monitoring, modeling, data man-

agement, information dissemination, and operational forecasts required to meet the purposes of this title; and

(C) such other programs as may be necessary.

(3) COOPERATIVE EFFORTS.—NOAA shall work cooperatively with other offices, centers, and programs within NOAA and other agencies represented on the Task Force, States, tribes, and nongovernmental organizations concerned with marine and aquatic issues to coordinate Harmful algal blooms and hypoxia and related issues, including management of data, products, for—

(A) compiling, managing, and archiving data from relevant programs in Task Force member agencies;

(B) creating data portals for general education and data dissemination on centralized, publicly available databases; and

(C) establishing communication routes for data, predictions, and management tools both to and from the regions, States, and local communities.

SEC. 603B. PILOT PROGRAM FOR FRESHWATER HARMFUL ALGAL BLOOMS AND HYPOXIA.

(a) PILOT PROGRAM.—The Task Force shall establish a collaborative pilot program to examine harmful algal blooms and hypoxia occurring in freshwater systems, including the Great Lakes. The pilot program shall—

(1) assess the issues associated with, and impacts of, harmful algal blooms and hypoxia in freshwater ecosystems;

(2) research the efficacy of prevention, control, and mitigation measures, including measures to reduce nutrient loading; and

(3) recommend potential management solutions.

(b) REPORT.—The Task Force, in consultation with other participating Federal agencies, shall conduct an assessment of the effectiveness of the pilot program in improving freshwater habitat quality and publish a report, available to the public, of the results of the assessment.

¿**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) TASK FORCE ANNUAL PROGRESS REPORTS.—For each of the years from 2009 through 2013, the Mississippi River/Gulf of Mexico Watershed Nutrient Task Force shall complete and submit to the Congress and the President an annual report on the progress made by Task Force-directed activities toward attainment of the Coastal Goal of the Gulf Hypoxia Action Plan 2008.

(b) TASK FORCE 5-YEAR PROGRESS REPORT.—In 2013, that Task Force shall complete and submit to Congress and the President a 5-year report on the progress made by Task Force-directed activities toward attainment of the Coastal Goal of the Gulf Hypoxia Action Plan 2008. The report shall assess 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. The report shall include an evaluation of how current policies and programs affect management decisions, including those made by municipalities and industrial and agricultural producers, evaluate lessons learned, and recommend appropriate actions to continue to implement or, if necessary, revise this strategy.

SEC. 604A. INTERAGENCY FINANCING.

The departments and agencies represented on the Task Force are authorized to 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 Act, 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 such 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 same.

¿**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 development 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. AUTHORIZATION OF APPROPRIATIONS.

(a) IN GENERAL.—There are authorized to be appropriated to NOAA to implement the Program under this title $40,000,000 for each of fiscal years 2010 through 2014, of which up to $10,000,000 shall be allocated each fiscal year to the creation of Regional Research and Action Plans required by section 602B.

(b) EXTRAMURAL RESEARCH ACTIVITIES.—The 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.

(c) PILOT PROGRAM.—In addition to any amounts appropriated pursuant to subsection (a), there are authorized to be appropriated to NOAA such sums as may be necessary to carry out the pilot program established under section 603B.

SEC. 605A. DEFINITIONS.

In this Act:

(1) ADMINISTRATOR.—The term 'Administrator" means the Administrator of the NOAA.

(2) HARMFUL ALGAL BLOOM.—The term "harmful algal bloom" means marine and freshwater phytoplankton that pro-

liferate 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.

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

(4) NOAA.—The term "NOAA" means the National Oceanic and Atmospheric Administration.

(5) PROGRAM.—The term "Program" means the Integrated Harmful Algal Bloom and Hypoxia Program established under section 603A.

(6) REGIONAL RESEARCH AND ACTION PLAN.—The term "Regional Research and Action Plan" means a plan established under section 602B.

(7) SECRETARY.—The term "Secretary" means the Secretary of Commerce, acting through NOAA.

(8) TASK FORCE.—The term "Task Force" means the Interagency Task Force established by section 603(a).

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

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.

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