

Calendar No. 518

116TH CONGRESS }
2d Session }

SENATE

{ REPORT
{ 116-257

SOUTH FLORIDA CLEAN COASTAL WATERS
ACT OF 2019

R E P O R T

OF THE

COMMITTEE ON COMMERCE, SCIENCE, AND
TRANSPORTATION

ON

S. 10



AUGUST 13, 2020.—Ordered to be printed

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SENATE COMMITTEE ON COMMERCE, SCIENCE, AND TRANSPORTATION

ONE HUNDRED SIXTEENTH CONGRESS

SECOND SESSION

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SOUTH FLORIDA CLEAN COASTAL WATERS ACT OF 2019

AUGUST 13, 2020.—Ordered to be printed

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

R E P O R T

[To accompany S. 10]

[Including cost estimate of the Congressional Budget Office]

The Committee on Commerce, Science, and Transportation, to which was referred the bill (S. 10) to require the Inter-Agency Task Force on Harmful Algal Blooms and Hypoxia to develop a plan for reducing, mitigating, and controlling harmful algal blooms and hypoxia in South Florida, 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. 10, the South Florida Clean Coastal Waters Act of 2019, is to amend the Harmful Algal Bloom and Hypoxia Research and Control Act of 1998 to require the Inter-Agency Task Force on Harmful Algal Blooms and Hypoxia (Task Force) to develop a plan for reducing, mitigating, and controlling harmful algal blooms and hypoxia in South Florida.

BACKGROUND AND NEEDS

Harmful algal blooms (HABs) occur when environmental conditions (e.g., increased temperatures and nutrient concentrations) promote the rapid growth of certain algae, producing toxic or harmful effects to humans, animals, fish, shellfish, marine mammals, and birds.¹ HABs can occur in marine, fresh, or brackish water and

¹NOAA, “Harmful Algal Blooms: Frequently Asked Questions” (<https://oceanservice.noaa.gov/hazards/hab/>) (accessed Apr. 20, 2020).

have been reported in every U.S. State.² Only a small percentage of the world’s algal species are considered harmful, but HAB events can have significant detrimental impacts on human health, marine ecosystems, and local economies.³

In general, algae proliferates when environmental conditions (e.g., nutrient availability, temperature, and salinity) are optimal for cell growth. The interaction of these factors with several other biological, ecological, chemical, and physical processes determine if enhanced cell growth will result in harmful biomass accumulation and toxin production.⁴ Understanding how the interaction between these factors drive the initiation, severity, and duration of HAB events has been identified as a critical component to advancing HAB management.⁵

IMPACTS TO HUMAN HEALTH AND ECOSYSTEMS

Some harmful algae produce toxins which are dangerous to humans, fish, shellfish, and other animals. These blooms often discolor the water and result in red tides or brown tides.⁶ One of the best known HABs in the United States concentrates along Florida’s gulf coast.⁷ *Karenia brevis*, the algae responsible for Florida red tides, blooms frequently in this region,⁸ and produces potent neurotoxins called brevetoxins. Humans, wildlife, and domestic animals can be exposed to algal toxins through skin contact, ingesting contaminated food or water, and inhalation of aerosols containing HAB toxins.⁹ Exposure to certain toxins via inhalation or skin contact can cause eye, nose, and throat irritation, as well as shortness of breath.¹⁰ Ingestion of these toxins can cause gastric distress, liver damage, and lung paralysis, and can lead to hospitalization or death.¹¹ Florida also faces periodic and significant blooms of another type of HAB. Toxic cyanobacteria blooms occur in Florida’s freshwater systems, and in Lake Okeechobee, the Harris chain of lakes, and the St. Johns, St. Lucie, and Caloosahatchee rivers and

²U.S. National Office for Harmful Algal Blooms at the Woods Hole Oceanographic Institute, “Harmful Algae: Distribution of HABs in the U.S.” (<https://hab.whoi.edu/maps/regions-us-distribution/>) (accessed Apr. 25, 2020).

³C.B. Lopez, et al., *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, Dec. 2008 (http://aquaticcommons.org/14920/1/assess_12-08.pdf) (accessed Apr. 26, 2020).

⁴P.M. Glibert, et al., “The Global, Complex Phenomena of Harmful Algal Blooms,” *Oceanography* 18, no. 2 (Jun. 2005): 136–147 (https://tos.org/oceanography/assets/docs/18-2_glibert2.pdf) (accessed Apr. 29, 2020).

⁵E.B. Jewett, et al., *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, Sep. 2008 (https://obamawhitehouse.archives.gov/sites/default/files/microsites/ostp/jsost_hab0908.pdf) (accessed Apr. 27, 2020).

⁶NOAA, “What Is a Red Tide?,” last updated Apr. 9, 2020 (<https://oceanservice.noaa.gov/facts/redtide.html>) (accessed Apr. 20, 2020).

⁷Mote Marine Laboratory & Aquarium, “Florida Red Tide FAQs” (<https://mote.org/news/florida-red-tide>) (accessed Apr. 29, 2020).

⁸Red tides in Florida can occur almost every year and frequently in other regions of the Gulf of Mexico. See Jenny Howard, “Red Tides, Explained,” *National Geographic*, Jul. 5, 2019 (<https://www.nationalgeographic.com/environment/oceans/reference/red-tides/>) (accessed Apr. 20, 2020).

⁹Centers for Disease Control and Prevention, “Sources of Exposure & Risk Factors: Routes of Exposure” (<https://www.cdc.gov/habs/exposure-sources.html>) (accessed Apr. 27, 2020).

¹⁰Centers for Disease Control and Prevention, “Humans and Marine Water-associated Illnesses” (<https://www.cdc.gov/habs/illness-symptoms-marine.html>) (accessed Apr. 27, 2020).

¹¹Wayne W. Carmichael, et al., *Human Health Effects from Harmful Algal Blooms: a Synthesis*, International Joint Commission Health Professionals Advisory Board, Nov. 22, 2013 (<http://www.ijc.org/files/publications/Attachment%202%20Human%20Health%20Effects%20from%20Harmful%20Algal%20Blooms.pdf>) (accessed Apr. 27, 2020).

estuaries.¹² These blooms are so frequent that they are actually persistent.¹³ Because many of Florida’s freshwater systems are managed, these blooms and the associated toxins are often transmitted from the freshwater where they originate to saltwater outlets where their impact is not yet well-understood.¹⁴ One study by the United States Geological Survey suggests that when cyanobacteria are exposed to salt, their cell walls become damaged, thereby releasing toxins into the water.¹⁵ In sum, several harmful algae threaten human health in Florida—neurotoxins produced by *Karenia brevis* and other toxic algae can accumulate in fish and shellfish, and cause neurotoxic shellfish poisoning, amnesic shellfish poisoning, and Ciguatera fish poisoning.¹⁶

HABs can have significant detrimental impacts to marine and freshwater ecosystems. Toxins produced during HAB events have caused widespread mortality of marine mammals, sea turtles, birds, and wild and cultured fish and shellfish, and are increasingly linked to marine mammal unusual mortality events (UMEs) in the United States.¹⁷ Excessive biomass blooms of nontoxic HAB species can also negatively impact marine ecosystems and wildlife by clogging or lacerating fish gills, blocking penetration of sunlight into the water column,¹⁸ and significantly reducing or depleting dissolved oxygen.¹⁹

HYPOXIA

In aquatic systems, hypoxia refers to a situation where the concentration of dissolved oxygen is reduced to less than two to three parts per million.²⁰ Hypoxic areas, sometimes referred to as dead zones, frequently occur in coastal and estuarine areas after the rapid growth of algae. When this explosive growth has consumed all of the available nutrients, the algae begins to die and decompose, aided by oxygen-consuming bacteria. As these bacteria consume most of the available oxygen, a dead zone develops. Animals that are able to swim away are less affected by these dead zones; however, slow-moving or stationary fauna, such as shellfish, are particularly susceptible to hypoxia and suffocate.²¹

¹²Florida Fish and Wildlife Conservation Commission, “Cyanobacteria in Florida Waters” (<https://myfwc.com/research/redtide/general/cyanobacteria/>) (accessed Apr. 20, 2020).

¹³Id.

¹⁴U.S. Geological Survey, “Salty Water Causes Some Freshwater Harmful Algae to Release Toxins,” Oct. 18, 2018 (<https://www.usgs.gov/news/salty-water-causes-some-freshwater-harmful-algae-release-toxins>) (accessed Apr. 20, 2020).

¹⁵Barry H. Rosen, et al, *Understanding the Effect of Salinity Tolerance on Cyanobacteria Associated With a Harmful Algal Bloom in Lake Okeechobee, Florida: U.S. Geological Survey Scientific Investigations Report 2018–5092*, 2018 (<https://pubs.er.usgs.gov/publication/sir20185092>) (accessed Apr. 20, 2020).

¹⁶NOAA, “Gulf of Mexico/Florida: Harmful Algal Blooms” (<https://oceanservice.noaa.gov/hazards/hab/gulf-mexico.html>) (accessed Apr. 29, 2020).

¹⁷Jan H. Landsberg, “The Effects of Harmful Algal Blooms on Aquatic Organisms,” *Reviews in Fisheries Science* 10, no. 2 (2002): 113–390 (<https://doi.org/10.1080/20026491051695>) (accessed Apr. 29, 2020).

¹⁸Christopher P. Onuf, “Seagrass Response to Long-term Light Reduction by Brown Tide in Upper Laguna Madre, Texas: Distribution and Biomass Patterns,” *Marine Ecology Progress Series* 138 (Jul. 25, 1996): 219–231 (<https://www.int-res.com/articles/meps/138/m138p219.pdf>) (accessed Apr. 29, 2020).

¹⁹NOAA, “Harmful Algal Blooms: Frequently Asked Questions” (<http://oceanservice.noaa.gov/hazards/hab/>) (accessed Apr. 27, 2020).

²⁰Mississippi River/Gulf of Mexico Hypoxia Task Force, “Hypoxia 101,” U.S. Environmental Protection Agency (<https://www.epa.gov/ms-htf/hypoxia-101>) (accessed Apr. 27, 2020).

²¹NOAA, “What Is a Dead Zone?” (<http://oceanservice.noaa.gov/facts/deadzone.html>) (accessed Apr. 27, 2020).

ECONOMIC IMPACTS

HABs and hypoxia can have significant negative effects on coastal economies in a variety of economic sectors. Poisonings in humans can result in lost work and high costs of medical treatments. Fish kills, harvesting closures, and negative public perceptions and decreased demand for seafood can also cause significant economic hardships for the commercial fishing industry. Economic impact assessments estimating the cumulative economic impact of HABs are variable. A September 2000 National Oceanic and Atmospheric Administration (NOAA)-funded study by the Woods Hole Oceanographic Institute estimated that the annual economic impact of HABs in the United States is approximately \$50 million, including a cost of \$18 million to commercial fishing industries, \$7 million for recreation and tourism effects, and \$2 million for monitoring and management.²² Other studies have estimated economic costs of HABs as high as \$82 million per year.²³ Sociocultural impacts of HABs may be significant, but remain mostly undocumented.²⁴

HAB events in Florida result in economic impacts ranging from healthcare costs related to hospital and doctor visits, beach clean ups, losses in tourism revenue, and impacts to fisheries. For example, in Sarasota County, the costs of hospital visits for respiratory illnesses alone after a single red tide can amount to \$4 million,²⁵ which does not include wages lost from missed workdays. Recurrent red tides in Florida have been estimated to cause over \$20 million in losses related to tourism.²⁶

FEDERAL EFFORTS

Federal efforts to develop a comprehensive response to problems associated with HABs and hypoxia began in 1998, when Congress passed the Harmful Algal Bloom and Hypoxia Research and Control Act (HABHRCA) as title VI of the Coast Guard Authorization Act of 1998.²⁷ The HABHRCA established the Task Force through the White House Office of Science and Technology Policy (OSTP) and authorized funding for existing and new research programs on mitigating HABs and hypoxia. The Task Force was required to produce the following: (1) a national assessment of HABs; (2) a national assessment of hypoxia; and (3) an assessment on hypoxia in the Northern Gulf of Mexico and a plan for reducing and controlling hypoxia in the region.

HABHRCA was reauthorized in 2004 in the Harmful Algal Bloom and Hypoxia Amendments Act,²⁸ which reconstituted the

²² Donald M. Anderson, et al., *Estimated Annual Economic Impacts From Harmful Algal Blooms (HABs) in the United States*, Woods Hole Oceanographic Institute, Sep. 2000 (<https://www.whoi.edu/files/server.do?id=24159&pt=10&p=19132>) (accessed Apr. 27, 2020).

²³ Porter Hoagland and Sara Scatista, "The Economic Effects of Harmful Algal Blooms," *Ecological Studies* 189: *Ecology of Harmful Algae*, Springer, 2006 (https://doi.org/10.1007/978-3-540-32210-8_30) (accessed Apr. 27, 2020).

²⁴ Marybeth Bauer, et al., *Harmful Algal Research and Response: A Human Dimensions Strategy*, National Office for Marine Biotoxins and Harmful Algal Blooms, Woods Hole Oceanographic Institution, 2006 (<https://www.whoi.edu/science/B/redtide/nationplan/HARR-HD.pdf>) (accessed Apr. 28, 2020).

²⁵ Porter Hoagland, et al. "The Costs of Respiratory Illnesses Arising From Florida Gulf Coast *Karenia brevis* Blooms," *Environmental Health Perspectives* 117, no. 8 (Aug. 2009): 1239–1243 (<https://ehp.niehs.nih.gov/doi/pdf/10.1289/ehp.0900645>) (accessed Apr. 28, 2020).

²⁶ Donald M. Anderson, et al., *Estimated Annual Economic Impacts From Harmful Algal Bloom (HABs) in the United States*, Woods Hole Oceanographic Institute, Sep. 2000 (https://www.whoi.edu/cms/files/Economics_report_18564_23050.pdf) (accessed Apr. 27, 2020).

²⁷ Pub. L. 105–383.

²⁸ Pub. L. 108–456.

Task Force and authorized funding for research programs. The 2004 amendments also required new reports, including the following: (1) regional scale assessments of HABs and hypoxia;²⁹ (2) a scientific assessment of freshwater HABs;³⁰ (3) a scientific assessment of marine HABs;³¹ and (4) scientific assessments of hypoxia.³² The law also authorized research, education, and monitoring activities related to the prevention, reduction, and control of harmful algal blooms and hypoxia.

In 2014, the HABHRCA was reauthorized and expanded, giving NOAA the primary responsibility for administering the program and expanding the Task Force's functions. The law also directed the Administrator of the Environmental Protection Agency (EPA) to provide a report to Congress on progress toward attaining goals in the Gulf Hypoxia Action Plan 2008,³³ and required the Task Force to produce a new assessment to examine the causes, consequences, and approaches to reduce hypoxia and harmful algal blooms in the Great Lakes.³⁴

In 2019, HABHRCA was again reauthorized. This time, the legislation formally added the Army Corps of Engineers to the Task Force. It also codified the authority for NOAA or EPA to designate a harmful algal bloom or hypoxic event of national significance, triggering access to disaster-like assistance from the Federal Government.

The South Florida Clean Coastal Waters Act of 2019 would require the HABHRCA Task Force to complete an integrated assessment for South Florida, like the assessment conducted for the Great Lakes as a result of the 2014 reauthorization bill. The general global trend of warming waters, and episodic drought/flood intervals, combined with increased nutrient pollution of both fresh and saltwater ecosystems, has increased the frequency, severity, and persistence of algal blooms across the United States.³⁵ Florida is no exception.³⁶ The South Florida Clean Coastal Waters Act of 2019 would ensure an integrated Federal assessment of and plan

²⁹For example, Mississippi River Gulf of Mexico Watershed Nutrient Task Force. See *Gulf Hypoxia Action Plan 2008*, 2008 (https://www.epa.gov/sites/production/files/2015-03/documents/2008_8_28_msbasin_ghap2008_update082608.pdf) (accessed Apr. 28, 2020).

³⁰C.B. Lopez, et al., *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, 2008 (<https://www.who.edu/files/serve?id=41023&pt=10&p=19132>) (accessed Apr. 29, 2020).

³¹C.B. Lopez, et al., *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, Dec. 2008 (http://http://aquaticcommons.org/14920/1/assess_12-08.pdf) (accessed Apr. 29, 2020).

³²Committee on Environment and Natural Resources, *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, Sep. 2010 (<https://obamawhitehouse.archives.gov/sites/default/files/microsites/ostp/hypoxia-report.pdf>) (accessed Apr. 28, 2020).

³³Mississippi River Gulf of Mexico Watershed Nutrient Task Force, *Gulf Hypoxia Action Plan 2008*, 2008 (https://www.epa.gov/sites/production/files/2015-03/documents/2008_8_28_msbasin_ghap2008_update082608.pdf) (accessed Apr. 28, 2020).

³⁴National Science and Technology Council, *Harmful Algal Blooms and Hypoxia in the Great Lakes Research Plan and Action Strategy: An Interagency Report*, Office of Science and Technology Policy, Aug. 2017 (<https://www.whitehouse.gov/wp-content/uploads/2017/12/Harmful-Algal-Blooms-Report-FINAL-August.2017.pdf>) (accessed Apr. 28, 2020).

³⁵U.S. Global Change Research Program, *Fourth National Climate Assessment, Volume II: Impacts, Risks, and Adaptation in the United States*, Ch. 3, 2018 (<https://nca2018.globalchange.gov/chapter/3/>) (accessed Apr. 28, 2020).

³⁶Karl Havens, *The Future of Harmful Algal Blooms in Florida Inland and Coastal Waters*, Florida Sea Grant College Program and UF/IFAS Extension, Feb. 2018 (<https://edis.ifas.ufl.edu/pdf/files/SG/SG15300.pdf>) (accessed Apr. 28, 2020).

for addressing these blooms in a highly managed aquatic ecosystem.

SUMMARY OF PROVISIONS

S. 10 would require the Task Force to do the following:

- Conduct an integrated assessment examining harmful algal blooms and hypoxia in South Florida.
- Develop a plan, based on the integrated assessment, to reduce, mitigate, and control harmful algal blooms and hypoxia in South Florida.

LEGISLATIVE HISTORY

S. 10, the South Florida Clean Coastal Waters Act of 2019, was introduced on January 3, 2019, by Senator Rubio and was referred to the Committee on Commerce, Science, and Transportation of the Senate. Senator Scott was added as a cosponsor on June 4, 2019. On November 13, 2019, the Committee met in open Executive Session and, by voice vote, ordered S. 10 reported favorably without amendment.

In the 115th Congress, S. 3374, the South Florida Clean Coastal Waters Act of 2018, was introduced on August 23, 2018, by Senator Rubio (for himself and Senator Nelson) and was referred to the Committee on Commerce, Science, and Transportation of the Senate.

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. 10, South Florida Clean Coastal Waters Act of 2019			
As ordered reported by the Senate Committee on Commerce, Science, and Transportation on November 13, 2019			
By Fiscal Year, Millions of Dollars	2020	2020-2024	2019-2029
Direct Spending (Outlays)	0	0	0
Revenues	0	0	0
Increase or Decrease (-) in the Deficit	0	0	0
Spending Subject to Appropriation (Outlays)	*	*	*
Statutory pay-as-you-go procedures apply?	No	Mandate Effects	
Increases on-budget deficits in any of the four consecutive 10-year periods beginning in 2030?	No	Contains intergovernmental mandate?	No
		Contains private-sector mandate?	No
* = between zero and \$500,000.			

S. 10 would amend the Harmful Algal Bloom and Hypoxia Research and Control Act of 1998 to direct the interagency task force on harmful algal blooms to develop and submit to the Congress within two years a plan to reduce, mitigate, and control harmful

algal blooms in southern Florida. The interagency task force includes the National Oceanic and Atmospheric Administration, the Environmental Protection Agency, the Department of the Interior, the Department of Agriculture, and other agencies.

Using information on the cost of completing similar reports, CBO estimates that implementing S. 10 would cost less than \$500,000 over the 2020–2024 period. Any such spending would be subject to the availability of appropriated funds.

On August 6, 2019, CBO transmitted a cost estimate for H.R. 335, the South Florida Clean Coastal Waters Act of 2019, as ordered reported by the House Committee on Science, Space, and Technology on July 24, 2019. The two pieces of legislation are similar and CBO’s estimates of their costs are the same.

The CBO staff contact for this estimate is Robert Reese. The estimate was reviewed by H. Samuel Papenfuss, Deputy Director of 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 would require Federal inter-agency assessments on harmful algal blooms and hypoxia in South Florida, as well as development of mitigation and response plans. It does not authorize any new regulations and, therefore, will not subject any individuals or businesses to new regulations.

ECONOMIC IMPACT

S. 10, as reported, is not expected to have a negative impact on the Nation’s economy.

PRIVACY

The reported bill would have no impact on the personal privacy of individuals.

PAPERWORK

The reported bill would not increase paperwork requirements for either the private or public sectors.

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 provides that the bill may be cited as the “South Florida Clean Coastal Waters Act of 2019”.

Section 2. South Florida harmful algal blooms and hypoxia assessment and action plan

This section would amend the Harmful Algal Bloom and Hypoxia Research and Control Act of 1998 to require the Inter-Agency Task Force on Harmful Algal Blooms and Hypoxia to conduct and submit to Congress no later than 540 days after the date of enactment an integrated assessment examining harmful algal blooms and hypoxia in South Florida. In addition, this section would require the Task Force to develop an action plan no later than 2 years after the date of enactment, based on the integrated assessment, for reducing, mitigating, and controlling harmful algal blooms and hypoxia in South Florida. The plan would address monitoring needs, timelines and budgetary requirements, requirements to develop algal bloom and hypoxia models, and a plan to implement a remote monitoring network and early warning system for alerting local communities.

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):

COAST GUARD AUTHORIZATION ACT OF 1998

[Pub. L. 105-383]

* * * * *

SEC. 2. TABLE OF CONTENTS.

The table of contents for this Act is as follows:

Sec. 1. Short title.

Sec. 2. Table of contents.

* * * * *

[TITLE VI—HARMFUL ALGAL BLOOMS AND HYPOXIA

[Sec. 601. Short title.

[Sec. 602. Findings.

[Sec. 603. Assessments.

[Sec. 603A. National Harmful Algal Bloom and Hypoxia Program.

[Sec. 603B. Comprehensive research plan and action strategy.

[Sec. 604. Northern Gulf of Mexico hypoxia.

[Sec. 605. Great Lakes hypoxia and harmful algal blooms.

[Sec. 606. Protection of States' rights.

[Sec. 607. Effect on other Federal authority.

[Sec. 608. Definitions.

[Sec. 609. Authorization of appropriations.]

TITLE VI—HARMFUL ALGAL BLOOMS AND HYPOXIA

Sec. 601. Short title.

Sec. 602. Findings.

Sec. 603. Assessments.

Sec. 603A. National Harmful Algal Bloom and Hypoxia Program.

Sec. 603B. Comprehensive research plan and action strategy.

Sec. 604. Northern Gulf of Mexico hypoxia.

Sec. 605. South Florida harmful algal blooms and hypoxia.

- Sec. 606. *Great Lakes hypoxia and harmful algal blooms.*
- Sec. 607. *Protection of States' rights.*
- Sec. 608. *Effect on other Federal authority.*
- Sec. 609. *Definitions.*
- Sec. 610. *Authorization of appropriations.*

* * * * *

TITLE VI—HARMFUL ALGAL BLOOMS AND HYPOXIA

[Title VI may be cited as the Harmful Algal Bloom and Hypoxia Research and Control Act of 1998; Pub. L. 105-383, as amended through Pub. L. 113-124; 33 U.S.C. 4004 et seq.]

* * * * *

SEC. 604. NORTHERN GULF OF MEXICO HYPOXIA.

- (a) * * *
- (b) * * *

SEC. 605. SOUTH FLORIDA HARMFUL ALGAL BLOOMS AND HYPOXIA.

(a) *SOUTH FLORIDA.*—*In this section, the term “South Florida” has the same meaning given the term “South Florida ecosystem” in section 601(a)(5) of the Water Resources Development Act of 2000 (Public Law 106-541).*

(b) *INTEGRATED ASSESSMENT.*—*Not later than 540 days after the date of enactment of the South Florida Clean Coastal Waters Act of 2019, the Task Force, in accordance with the authority under section 603, shall complete and submit to Congress and the President an integrated assessment that examines the causes, consequences, and potential approaches to reduce harmful algal blooms and hypoxia in South Florida, and the status of, and gaps within, current harmful algal bloom and hypoxia research, monitoring, management, prevention, response, and control activities that directly affect the region by—*

- (1) *Federal agencies;*
- (2) *State agencies;*
- (3) *regional research consortia;*
- (4) *academia;*
- (5) *private industry; and*
- (6) *nongovernmental organizations.*

(c) ACTION PLAN.—

(1) *IN GENERAL.*—*Not later than 2 years after the date of the enactment of the South Florida Clean Coastal Waters Act of 2019, the Task Force shall develop and submit to Congress a plan, based on the integrated assessment under subsection (b), for reducing, mitigating, and controlling harmful algal blooms and hypoxia in South Florida.*

(2) *CONTENTS.*—*The plan submitted under paragraph (1) shall—*

- (A) *address the monitoring needs identified in the integrated assessment under subsection (b);*
- (B) *develop a timeline and budgetary requirements for deployment of future assets;*
- (C) *identify requirements for the development and verification of South Florida harmful algal bloom and hypoxia 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) propose a plan to implement a remote monitoring network and early warning system for alerting local communities in the region to harmful algal bloom risks that may impact human health.

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

(A) coordinate and consult with the State of Florida, and affected local and tribal governments;

(B) consult with representatives from regional academic, agricultural, industry, and other stakeholder groups;

(C) ensure that the plan complements and does not duplicate activities conducted by other Federal or State agencies, including the South Florida Ecosystem Restoration Task Force;

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

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

(F) ensure that the plan is technically sound and cost-effective;

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

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

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

SEC. [605.] 606. GREAT LAKES HYPOXIA AND HARMFUL ALGAL BLOOMS.

- (a) * * *
- (b) * * *

SEC. [606.] 607. PROTECTION OF STATES' RIGHTS.

- (a) * * *
- (b) * * *

SEC. [607.] 608. EFFECT ON OTHER FEDERAL AUTHORITY.

- (a) * * *
- (b) * * *

SEC. [608.] 609. DEFINITIONS.

* * *

SEC. [609.] 610. AUTHORIZATION OF APPROPRIATIONS.

- (a) * * *
- (b) * * *

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