

Calendar No. 203

117TH CONGRESS }
2d Session }

SENATE

{ REPORT
117-64 }

SOUTH FLORIDA CLEAN COASTAL WATERS
ACT OF 2021

R E P O R T

OF THE

COMMITTEE ON COMMERCE, SCIENCE, AND
TRANSPORTATION

ON

S. 66



FEBRUARY 3, 2022.—Ordered to be printed

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SENATE COMMITTEE ON COMMERCE, SCIENCE, AND TRANSPORTATION

ONE HUNDRED SEVENTEENTH CONGRESS

SECOND SESSION

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SOUTH FLORIDA CLEAN COASTAL WATERS ACT OF 2021

FEBRUARY 3, 2022.—Ordered to be printed

Ms. CANTWELL, from the Committee on Commerce, Science, and Transportation, submitted the following

R E P O R T

[To accompany S. 66]

[Including cost estimate of the Congressional Budget Office]

The Committee on Commerce, Science, and Transportation, to which was referred the bill (S. 66) 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. 66, the South Florida Clean Coastal Waters Act of 2021, 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

There are several algae species that produce toxins dangerous to humans, fish, shellfish, marine mammals, and birds.¹ Harmful algal blooms (HABs) occur when environmental conditions (e.g., winds, currents, increased temperatures, and excess nutrient concentrations) promote the rapid growth of these algae. These blooms

¹National Oceanic and Atmospheric Administration, "Harmful Algal Blooms: Frequently Asked Questions," updated October 8, 2021 (<https://oceanservice.noaa.gov/hazards/hab/>).

often discolor the water and result in red tides or brown tides.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 HABs can occur in marine, fresh, or brackish water and have been reported in every U.S. State.⁴ Understanding how the interaction among environmental factors drives the initiation, severity, and duration of HAB events has been identified as a critical component to advancing HAB management.⁵

One of the best known HABs in the United States occurs along Florida’s gulf coast.⁶ *Karenia brevis*, a naturally occurring algae off the coast of Florida, blooms frequently in this region,⁷ causing a red tide and producing potent neurotoxins (called brevetoxins). These red tide blooms have occurred in Florida during 57 of the 66 years between 1953 and 2019.⁸ More recently, an unusually persistent algal bloom impacted portions of the coast of Florida from October 2017 through the winter of 2018–2019.⁹

HABs also occur in Florida’s freshwater systems including in Lake Okeechobee, the Harris chain of lakes, the St. Johns, St. Lucie, and Caloosahatchee rivers, and estuaries¹⁰ where nutrient pollution from agriculture and urban runoff have caused naturally occurring cyanobacteria to bloom. One study by the U.S. Geological Survey suggests that, when freshwater cyanobacteria are exposed to saltwater, their cell walls become damaged, thereby releasing toxins into the water.¹¹

IMPACTS TO HUMAN HEALTH AND ECOSYSTEMS

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.¹² Exposure to certain toxins via inhalation or skin contact can cause eye, nose,

²National Oceanic and Atmospheric Administration, “What Is a Red Tide?,” updated February 26, 2021 (<https://oceanservice.noaa.gov/facts/redtide.html>).

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, December 2008 (https://aquadocs.org/bitstream/handle/1834/30786/assess_12-08.pdf?sequence=1&isAllowed=y).

⁴U.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/>).

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, September 2008 (https://obamawhitehouse.archives.gov/sites/default/files/microsites/ostp/jsost_hab0908.pdf).

⁶Mote Marine Laboratory & Aquarium, “Florida Red Tide FAQs” (<https://mote.org/news/florida-red-tide>).

⁷Red 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*, July 5, 2019 (<https://www.nationalgeographic.com/environment/oceans/reference/red-tides/>).

⁸University of Florida, “The Basics of Florida Red Tide,” November 25, 2019 (<http://blogs.ifas.ufl.edu/charlotteco/2019/11/25/the-basics-of-florida-red-tide/>).

⁹National Oceanic and Atmospheric Administration, “Fall 2018 Red Tide Event That Affected Florida and the Gulf Coast,” updated February 26, 2021 (<https://oceanservice.noaa.gov/hazards/hab/florida-2018.html>); *Ibid.*

¹⁰Florida Fish and Wildlife Conservation Commission, “Cyanobacteria in Florida Waters” (<https://myfwc.com/research/redtide/general/cyanobacteria/>).

¹¹Barry 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>).

¹²Centers for Disease Control and Prevention, “Sources of Exposure,” last reviewed April 1, 2021 (<https://www.cdc.gov/habs/exposure-sources.html>).

and throat irritation, as well as shortness of breath.¹³ Ingestion of these toxins can cause gastric distress, liver damage, and lung paralysis, and can lead to hospitalization or death.¹⁴

In addition to health hazards, HABs can also negatively impact the freshwater and marine ecosystem. These freshwater blooms can inhibit light transmission that negatively impacts submerged aquatic vegetation. 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.¹⁵ 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,¹⁶ and significantly reducing or depleting dissolved oxygen.¹⁷

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.¹⁸

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.¹⁹ 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.²⁰

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, negative public perceptions, and decreased demand for seafood can also cause significant economic

¹³Centers for Disease Control and Prevention, “Harmful Algal Bloom (HAB)-Associated Illness: Illness and Symptoms,” last reviewed April 19, 2021 (<https://www.cdc.gov/habs/illness-symptoms-marine.html>).

¹⁴Wayne W. Carmichael, et al., *Human Health Effects from Harmful Algal Blooms: a Synthesis*, International Joint Commission Health Professionals Advisory Board, November 22, 2013 (<http://www.ijc.org/files/publications/Attachment%20%20Human%20Health%20Effects%20from%20Harmful%20Algal%20Blooms.pdf>).

¹⁵Jan 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>).

¹⁶Christopher 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 (July 25, 1996): 219–231 (<https://www.int-res.com/articles/meps/138/m138p219.pdf>).

¹⁷National Oceanic and Atmospheric Administration, National Ocean Service, “Harmful Algal Blooms: Frequently Asked Questions” (<http://oceanservice.noaa.gov/hazards/hab/>).

¹⁸National Oceanic and Atmospheric Administration, National Ocean Service, “Gulf of Mexico/Florida: Harmful Algal Blooms” (<https://oceanservice.noaa.gov/hazards/hab/gulf-mexico.html>).

¹⁹Mississippi River/Gulf of Mexico Hypoxia Task Force, “Hypoxia 101,” U.S. Environmental Protection Agency (<https://www.epa.gov/ms-htf/hypoxia-101>).

²⁰National Oceanic and Atmospheric Administration, National Ocean Service, “What Is a Dead Zone?” (<http://oceanservice.noaa.gov/facts/deadzone.html>).

hardships for the commercial fishing industry. The recent red tides in Florida have adversely impacted the commercial fishing sector. Governor DeSantis has requested a fishery disaster declaration from the U.S. Department of Commerce as a result of this impact.²¹

Economic impact assessments estimating the cumulative economic impact of HABs are variable. A September 2000 Woods Hole Oceanographic Institute study, which was funded by the National Oceanic and Atmospheric Administration (NOAA), 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 largely 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

Property values for homes near a HAB have been documented to decline during a HAB. Within 5 miles of the coast in Southwest Florida, property prices declined by approximately 10 percent during a persistent bloom.²⁷ This study echoes findings in previous studies regarding the impact of HABs on property prices.²⁸

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 1998.²⁹ 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

²¹ Governor Ron DeSantis to Secretary Wilbur Ross, May 24, 2019 (https://media.fisheries.noaa.gov/dam-migration/florida_desantis.pdf).

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

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).

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>).

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

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

²⁷ Andrew Bechard, "External Costs of Harmful Algal Blooms Using Hedonic Valuation: the Impact of *Karenia Brevis* on Southwest Florida," *Environmental and Sustainability Indicators* (5):100019 (February 2020) (doi: <https://doi.org/10.1016/j.indic.2020.100019>).

²⁸ *Ibid.*

²⁹ Public Law 105–383.

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,³⁰ which reconstituted the 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;³¹ (2) a scientific assessment of freshwater HABs;³² (3) a scientific assessment of marine HABs;³³ and (4) scientific assessments of hypoxia.³⁴ 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, assigning 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 2008,³⁵ 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.³⁶

In 2019, HABHRCA was again reauthorized. This time, the legislation formally added the U.S. 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 2021 would require the 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

³⁰Public Law 108-456.

³¹For 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).

³²C.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/fileserver.do?id=41023&pt=10&p=19132>).

³³C.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, December 2008 (http://aquaticcommons.org/14920/1/assess_12-08.pdf).

³⁴Committee 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, September 2010 (<https://obamawhitehouse.archives.gov/sites/default/files/microsites/ostp/hypoxia-report.pdf>).

³⁵Mississippi River Gulf of Mexico Watershed Nutrient Task Force, *Gulf Hypoxia Action Plan 2008*, 2008 (https://www.epa.gov/sites/default/files/2015-03/documents/2008_8_28_Msbasin_ghap2008_update082608.pdf).

³⁶National Science and Technology Council, Committee on Environment, Natural Resources, and Sustainability, *Harmful Algal Blooms and Hypoxia in the Great Lakes Research Plan and Action Strategy: An Interagency Report*, Interagency Working Group on the Harmful Algal Bloom and Hypoxia Research and Control Act of the Subcommittee on Ocean Science and Technology, Office of Science and Technology Policy, August 2017 (<https://trumpwhitehouse.archives.gov/wp-content/uploads/2017/12/Harmful-Algal-Blooms-Report-FINAL-August.2017.pdf>).

ecosystems, has increased the frequency, severity, and persistence of algal blooms across the United States.³⁷ Florida is no exception.³⁸ The South Florida Clean Coastal Waters Act of 2021 would ensure an integrated Federal assessment of and plan for addressing these blooms in a highly managed aquatic ecosystem.

SUMMARY OF PROVISIONS

S. 66 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. 66, the South Florida Clean Coastal Waters Act of 2021, was introduced on January 27, 2021, by Senator Rubio (for himself and Senator Scott of Florida) and was referred to the Committee on Commerce, Science, and Transportation of the Senate. On June 16, 2021, the Committee met in open Executive Session and, by voice vote, ordered S. 66 reported favorably without amendment.

116TH CONGRESS

A similar bill, 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 of Florida 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.

A corresponding bill, H.R. 335, was introduced on January 8, 2019, by Representative Mast [R–FL–18] in the House of Representatives. H.R. 335 passed the House by voice vote.

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:

³⁷U.S. Global Change Research Program, *Impacts, Risks, and Adaptation in the United States: Fourth National Climate Assessment, Volume II* Ch. 3, 2018 (<https://nca2018.globalchange.gov/chapter/3/>).

³⁸Karl Havens, *The Future of Harmful Algal Blooms in Florida Inland and Coastal Waters*, Florida Sea Grant College Program and University of Florida/Institute of Food and Agricultural Sciences Extension, February 2018 (<https://edis.ifas.ufl.edu/pdffiles/SG/SG15300.pdf>).

U.S. CONGRESS,
CONGRESSIONAL BUDGET OFFICE,
Washington, DC, December 13, 2021.

Hon. MARIA CANTWELL,
Chairwoman, Committee on Commerce, Science, and Transportation,
U.S. Senate, Washington, DC.

DEAR MADAM CHAIRWOMAN: The Congressional Budget Office has prepared the enclosed cost estimate for S. 66, the South Florida Clean Coastal Waters Act of 2021.

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

Sincerely,

PHILLIP L. SWAGEL,
Director.

Enclosure.

S. 66, South Florida Clean Coastal Waters Act of 2021			
As ordered reported by the Senate Committee on Commerce, Science, and Transportation on June 16, 2021			
By Fiscal Year, Millions of Dollars	2022	2022-2026	2022-2031
Direct Spending (Outlays)	0	0	0
Revenues	0	0	0
Increase or Decrease (-) in the Deficit	0	0	0
Spending Subject to Appropriation (Outlays)	*	*	not estimated
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 2032?	No	Contains intergovernmental mandate?	No
		Contains private-sector mandate?	No
* = between zero and \$500,000.			

S. 66 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 three years a plan to reduce, mitigate, and control harmful algal blooms in southern Florida. The plan would be based on interim assessments also required under the bill. 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. 66 would cost less than \$500,000 over the 2022–2026 period; such spending would be subject to the availability of appropriated funds.

The CBO staff contact for this estimate is Sofia Guo. 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

S. 66 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. 66 is not expected to have a negative impact on the Nation's economy.

PRIVACY

S. 66 would have no impact on the personal privacy of individuals.

PAPERWORK

The reported bill would require the Task Force to complete an interim integrated assessment, a finalized integrated assessment, and an action plan. The reported bill would not increase paperwork requirements for the private sector.

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 2021".

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

This section would amend HABHRCA, define "South Florida", require the Task Force to conduct and submit to Congress an interim integrated assessment (no later than 540 days after enactment) and a finalized integrated assessment (no later than 3 years after enactment) that would examine harmful algal blooms and hypoxia in South Florida. Further, this section would require the Task Force to develop an action plan no later than 3 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):

THE HARMFUL ALGAL BLOOM AND HYPOXIA RESEARCH AND CONTROL ACT OF 1998

* * * * *

[33 U.S.C. 4001 et seq.; Public Law 105-383]

SEC. 604. * * *

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

(a) *SOUTH FLORIDA.*—*In this section, the term “South Florida” means—*

- (1) *all lands and waters within the administrative boundaries of the South Florida Water Management District;*
- (2) *regional coastal waters, including Biscayne Bay, the Caloosahatchee Estuary, Florida Bay, Indian River Lagoon, and St. Lucie River Estuary; and*
- (3) *the Florida Reef Tract.*

(b) *INTEGRATED ASSESSMENT.*—

(1) *INTERIM INTEGRATED ASSESSMENT.*—*Not later than 540 days after the date of enactment of the South Florida Clean Coastal Waters Act of 2021, the Task Force, in accordance with the authority under section 603, shall complete and submit to Congress and the President an interim integrated assessment.*

(2) *FINALIZED INTEGRATED ASSESSMENT.*—*Not later than 3 years after the date of enactment of the South Florida Clean Coastal Waters Act of 2021, the Task Force shall finalize, and submit to Congress and the President, the interim integrated assessment required by paragraph (1).*

(3) *CONTENTS OF INTEGRATED ASSESSMENT.*—*The integrated assessment required by paragraphs (1) and (2) shall examine 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—*

- (A) *Federal agencies;*
- (B) *State agencies;*
- (C) *regional research consortia;*
- (D) *academia;*
- (E) *private industry;*
- (F) *nongovernmental organizations; and*
- (G) *Indian tribes (as defined in section 4 of the Indian Self-Determination and Education Assistance Act (25 U.S.C. 5304)).*

(c) *ACTION PLAN.*—

(1) *IN GENERAL.*—Not later than 3 years and 180 days after the date of the enactment of the South Florida Clean Coastal Waters Act of 2021, 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) 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) *INTEGRATED ASSESSMENT.*—Not later than 18 months after the date of enactment of the Harmful Algal Bloom and Hypoxia Research and Control Amendments Act of 2014, the Task Force, in accordance with the authority under section 603, shall complete and submit to the Congress and the President an integrated assessment that examines the causes, consequences, and approaches to reduce

hypoxia and harmful algal blooms in the Great Lakes, including the status of and gaps within current research, monitoring, management, prevention, response, and control activities by—

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

(b) PLAN.—

(1) IN GENERAL.—Not later than 2 years after the date of enactment of the Harmful Algal Bloom and Hypoxia Research and Control Amendments Act of 2014, the Task Force shall develop and submit to the Congress a plan, based on the integrated assessment under subsection (a), for reducing, mitigating, and controlling hypoxia and harmful algal blooms in the Great Lakes.

(2) CONTENTS.—The plan shall—

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

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

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

(i) all assumptions built into the models; and

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

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

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

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

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

(A) coordinate with State and local governments;

(B) consult with representatives from academic, agricultural, industry, and other stakeholder groups, including relevant Canadian agencies;

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

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

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

(F) 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. [606.] 607. 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.] 608. EFFECT ON OTHER FEDERAL AUTHORITY.

(a) **AUTHORITY PRESERVED.**—Nothing in this title supersedes or limits the authority of any agency to carry out its responsibilities and missions under other laws.

(b) **REGULATORY AUTHORITY.**—Nothing in this title may be construed as establishing new regulatory authority for any agency.

SEC. [608.] 609. DEFINITIONS.

In this title:

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

(2) **ADMINISTRATOR.**—The term “Administrator” means the Administrator of the Environmental Protection Agency.

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

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

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

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

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

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

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

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

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

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

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