The Florida Senate

BILL ANALYSIS AND FISCAL IMPACT STATEMENT

(This document is based on the provisions contained in the legislation as of the latest date listed below.)

Prepared By: The Professional Staff of the Committee on Appropriations

BILL:	SB 1552
INTRODUCER:	Senators Gruters and Hooper
SUBJECT:	Florida Red Tide Mitigation and Technology Development Initiative
DATE:	April 17, 2019
REVISED:	

	ANALYST	STAFF DIRECTOR	REFERENCE	ACTION
1.	Schreiber	Rogers	EN	**Favorable**
2.	Reagan	Betta	AEG	**Recommend: Favorable**
3.	Reagan	Kynoch	AP	**Favorable**

I. Summary:

SB 1552 establishes the Florida Red Tide Mitigation and Technology Development Initiative as a partnership between the Fish and Wildlife Conservation Commission's Fish and Wildlife Research Institute and Mote Marine Laboratory. The purpose of the initiative is to develop technologies and approaches needed to address the control and mitigation of red tide and its impacts. The bill requires funds specifically appropriated by the Legislature for the initiative to be awarded by the Fish and Wildlife Research Institute to Mote Marine Laboratory to achieve the goals of the initiative. The bill establishes within the initiative the Initiative Technology Advisory Council.

The bill requires the Florida Red Tide Mitigation and Technology Development Initiative to submit an annual report, beginning January 15, 2021, containing an overview of the initiative's accomplishments and priorities to the Governor, the President of the Senate, and Speaker of the House of Representatives, the Secretary of Environmental Protection, and the executive director of the Fish and Wildlife Conservation Commission. The section authorizing the initiative expires on June 30, 2025.

The bill appropriates $3 million annually from the General Revenue Fund beginning in the 2019-2020 fiscal year through the 2024-2025 fiscal year to the Fish and Wildlife Conservation Commission for the purpose of implementing the bill. SB 2500, the Senate's 2019-2020 General Appropriations Bill, appropriates $6.6 million from the General Revenue Fund for red tide research.

The bill takes effect July 1, 2019.

II. Present Situation:

Red Tide

Algae is a diverse group of plant-like organisms that produce oxygen and form the base of aquatic food webs, and they range from microscopic, single-celled organisms to large seaweeds.[1] When algae reproduce or accumulate far beyond their normal levels for a specific geographic area it is known as a bloom.[2] When blooms occur they can have harmful effects such as smothering other marine life or blocking the sun, producing dangerous toxins, and depleting oxygen levels as the algae decays.[3] These events are known as harmful algal blooms.[4] In the waters around Florida, particularly in the Gulf of Mexico, such high concentrations of algae occur that the water turns red or brown.[5] These harmful algal blooms are known as "red tide," and have been observed for centuries.[6] In the Gulf of Mexico and around Florida, the species that causes most red tide is *Karenia brevis* (*K. brevis*).[7]

K. brevis is a single-celled algae that occurs in marine and estuarine waters in Florida.[8] *K. brevis* is always present in low concentrations in the Gulf of Mexico with no apparent adverse effects.[9] However, when it blooms, typically in the late summer or early fall, this species can cause large-scale harmful algal blooms.[10] *K. brevis* produces neurotoxins called brevetoxins that can sicken or kill fish, seabirds, turtles, and marine mammals.[11] Wave action can break open *K. brevis* cells and release the brevetoxins into the air, and with winds blowing onshore this can lead to respiratory irritation in humans, and potentially serious illness for people with severe or chronic respiratory conditions.[12] The red tide toxins can also accumulate in animals such as oysters and clams, which can lead to Neurotoxic Shellfish Poisoning in people who consume contaminated

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[1] NOAA, *What is a Harmful Algal Bloom?*, https://www.noaa.gov/what-is-harmful-algal-bloom (last visited Mar. 15, 2019); FWC, *What Is a Harmful Algal Bloom*, https://myfwc.com/research/redtide/general/harmful-algal-bloom/ (last visited Mar. 2019). Microscopic algae produce around half of the oxygen we breathe.
[2] FWC, *What Is a Harmful Algal Bloom?*, https://myfwc.com/research/redtide/general/harmful-algal-bloom/ (last visited Mar. 2019).
[3] *Id.*; NOAA, *What is a Harmful Algal Bloom?*, https://www.noaa.gov/what-is-harmful-algal-bloom (last visited Mar. 15, 2019).
[4] Gulf of Mexico Alliance, *A Primer on Gulf of Mexico Harmful Algal Blooms*, 2-5 (2013), *available at* https://myfwc.com/media/15902/habprimer.pdf (last visited Mar. 17, 2019). The term "harmful algal bloom" is sometimes abbreviated as "HAB."
[5] FWC, *Red Tide FAQ*, https://myfwc.com/research/redtide/faq/ (last visited Mar. 15, 2019).
[6] *Id.*
[7] *Id.*
[8] FWC, *Karenia Brevis: Fact Sheet*, https://myfwc.com/media/12422/karenia-brevis-factsheet.pdf (last visited Mar. 15, 2019); Mote Marine Laboratory, *Phytoplankton Ecology*, https://mote.org/research/program/phytoplankton-ecology (last visited Mar. 15, 2019). *K. brevis* is a "phytoplankton" because it does photosynthesis like a plant.
[9] R. H. Pierce and M. S. Henry, *Harmful Algal Toxins of the Florida Red Tide (Karenia brevis): Natural Chemical Stressors In South Florida Coastal Ecosystems*, ECOTOXICOLOGY, vol. 17, 7 (2008): 623-631, 2 (2008), *available at* https://www.ncbi.nlm.nih.gov/pmc/articles/PMC2683401/pdf/nihms101414.pdf (last visited Mar. 15, 2019).
[10] FWC, *Karenia Brevis: Fact Sheet*, https://myfwc.com/media/12422/karenia-brevis-factsheet.pdf (last visited Mar. 15, 2019); FWC, *Red Tide Current Status*, https://myfwc.com/research/redtide/statewide/ (last visited Mar. 15, 2019). FWC reports the current status of red tide using the concentration of *K. brevis* cells per liter of water.
[11] FWC, *Karenia Brevis: Fact Sheet*, https://myfwc.com/media/12422/karenia-brevis-factsheet.pdf (last visited Mar. 15, 2019)
[12] Mote Marine Laboratory, *Florida Red Tide FAQ's*, https://mote.org/news/florida-red-tide (last visited Mar. 15, 2019).

shellfish.[13] Though this is less common, blooms of *K. brevis* can also contribute to fish kills by depleting the water of dissolved oxygen.[14]

K. brevis cannot tolerate low-salinity waters for very long, so while red tide is found in bays and estuaries, it is not found in freshwater systems such as lakes or rivers.[15] The algae causing red tide is different from the cyanobacteria (often called "blue-green algae") found in freshwater systems such as Lake Okeechobee.[16] Cyanobacteria is found in lakes, rivers, and estuaries, and it too is toxic and harmful.[17]

Red tides can last as little as a few weeks or longer than a year.[18] The duration of a *K. brevis* bloom depends on the conditions that influence its growth and persistence, including sunlight, nutrients, and salinity, as well as the speed and direction of wind and water currents.[19] *K. brevis* is found almost exclusively in the Gulf of Mexico from Mexico to Florida. However, it is transported as coastal waters move with winds and currents. Florida's red tides can reach the Atlantic Ocean and be transported along the eastern coast of the United States.[20] Florida's red tides develop 10-40 miles offshore.[21] There is no demonstrated direct link between nutrient pollution and *K. brevis* red tide formation or frequency, and red tide has been observed since before Florida's coastlines were heavily developed.[22] However, once red tides are transported to shore, they are capable of using human-caused nutrient pollution for their growth.[23] Currently, there is no practical and acceptable way to control or kill red tide blooms.[24]

An unusually persistent red tide affected portions of the coast of Florida between 2017 and 2018.[25] In 2018, the Governor issued executive orders declaring a state of emergency in 14 counties for red tide algae blooms.[26] The Department of Environmental Protection established a grant funding program for targeted algal bloom cleanup and took other measures to respond to the situation.[27] In addition to threatening public safety and harming the environment, red tide can

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[13] FWC, *Karenia Brevis: Fact Sheet*, https://myfwc.com/media/12422/karenia-brevis-factsheet.pdf (last visited Mar. 15, 2019).
[14] *Id.*
[15] FWC, *Red Tide FAQ*, https://myfwc.com/research/redtide/faq/ (last visited Mar. 15, 2019).
[16] *Id.*
[17] FWC, *Cyanobacteria in Florida's Waters*, https://myfwc.com/research/redtide/general/cyanobacteria/ (last visited Mar. 15, 2019); U.S. EPA, *Harmful Algal Blooms & Cyanobacteria Research*, https://www.epa.gov/water-research/harmful-algal-blooms-cyanobacteria-research (last visited Mar. 15, 2019). Although they are often called "blue-green algae" and exhibit characteristics of algae, cyanobacteria are classified as bacteria.
[18] FWC, *Red Tide FAQ*, https://myfwc.com/research/redtide/faq/ (last visited Mar. 15, 2019).
[19] *Id.*
[20] *Id.*
[21] Mote Marine Laboratory, *Florida Red Tide FAQ's*, https://mote.org/news/florida-red-tide (last visited Mar. 15, 2019).
[22] *Id.*
[23] *Id.*
[24] FWC, *Red Tide FAQ*, https://myfwc.com/research/redtide/faq/ (last visited Mar. 15, 2019).
[25] NOAA, *Red Tide in Florida and Texas*, https://oceanservice.noaa.gov/news/redtide-florida/ (last visited Mar. 15, 2019).
[26] Office of Economic & Demographic Research, *Annual Assessment of Florida's Water Resources and Conservation Lands, 2019 Edition*, 154 (2019) *available at* http://edr.state.fl.us/Content/natural-resources/LandandWaterAnnualAssessment_2019Edition.pdf (available at Mar. 16, 2019).
[27] DEP, *Emergency Authorizations Implement Measures To Address South Florida Algal Blooms*, https://floridadep.gov/dear/algal-bloom/content/emergency-authorizations-implement-measures-address-south-florida-algal (last visited Mar. 15, 2019).

have a variety of economic consequences.[28] Harmful algal blooms can result in significant costs associated with public health, commercial fishery reduction, decreases in recreation and tourism, and management and monitoring.[29]

Fish and Wildlife Research Institute

The Fish and Wildlife Conservation Commission (FWC) derives its authority from the State Constitution and chapter 379 of the Florida Statutes.[30] The FWC is authorized to exercise regulatory and executive powers of the state with respect to wild animal life, fresh water aquatic life, and marine life, and in these areas the FWC's staff is authorized to conduct management, research, and enforcement.[31] The Fish and Wildlife Research Institute (Institute) is the principal unit for research services within the FWC.[32]

Over half of the Institute's more than 600 staff work at its headquarters in St. Petersburg, Florida.[33] The groups comprising it have been generating quality science for over 50 years.[34] The Institute's annual operating budget of approximately $50 million supports around 300 research projects.[35] The FWC is authorized to expend money through grants and contracts to fund research with the Institute.[36]

The FWC assigns to the Institute all of the following responsibilities and functions:
- Serve as the primary source of research and technical information and expertise on the status of marine life, freshwater aquatic life, and wild animal life resources in this state.
- Monitor the status and health of marine life, freshwater aquatic life, and wild animal life species and their habitat.
- Develop restoration and management techniques for habitat and enhancement of plant and animal populations.
- Respond to and provide critical technical support for catastrophes including oil spills, ship groundings, major species die-offs, hazardous spills, and natural disasters.
- Identify and monitor harmful algal blooms including red tides, evaluate their impacts, and provide technical support concerning state and local public health concerns.
- Provide state and local governments with technical information and research results concerning fish and wild animal life.[37]

In 1999, the Legislature established a Harmful Algal Bloom Task Force for the purpose of determining research, monitoring, control, and mitigation strategies for red tide and other

[28] Office of Economic & Demographic Research, *Annual Assessment of Florida's Water Resources and Conservation Lands, 2019 Edition*, 156 (2019) *available at* http://edr.state.fl.us/Content/natural-resources/LandandWaterAnnualAssessment_2019Edition.pdf (available at Mar. 16, 2019).
[29] *Id.*
[30] FLA CONST. art. IV, s. 9; *see* chapter 379, F.S.; *see also* s. 20.331, F.S.
[31] FLA CONST. art. IV, s. 9.
[32] Section 20.331(4)(b), F.S.; FWC, *Fish and Wildlife Research Institute*, https://myfwc.com/about/inside-fwc/fwri/ (last visited Mar. 15, 2019).
[33] FWC, *Fish and Wildlife Research Institute*, https://myfwc.com/about/inside-fwc/fwri/ (last visited Mar. 15, 2019).
[34] *Id.*
[35] *Id.*
[36] Section 379.2202, F.S.; *see* s. 379.2201(1)(c), F.S.
[37] Section 20.331(7)(a), F.S.

harmful algal blooms in Florida waters.[38] The Institute appointed the members of the group.[39] The task force was required to develop priorities and strategies for mitigation and control of harmful algal blooms and to make recommendations to the Institute regarding harmful algal blooms.[40] The Legislature also required the Institute to implement a program designed to improve understanding and allow for early detection of harmful algal blooms, including red tide, to facilitate accurate predictions and successful efforts to control and mitigate the effects of harmful algal blooms.[41] The Harmful Algal Bloom Task Force is not currently active, but reconvening the task force has been suggested.[42]

The Institute provides many services and resources pertaining to red tide. It publishes detailed information every day on the status of red tide in the state.[43] The Institute's teams of experts conduct cutting-edge ecological research and analysis on the organisms in Florida's waters, advancing the collective understanding of red tide and its impacts on the state.[44] The FWC scientists combine field sampling with tools maintained by state and federal partners to track red tide and its effects.[45] The Institute's Harmful Algal Bloom Monitoring Database contains detailed scientific information and continually recorded datasets on red tide from 1954 to the present.[46] Through its webpages on the FWC's website, the Institute provides comprehensive information and resources to the public relating to red tide.[47] This includes resources for learning what causes red tide, tools for tracking red tide, and information for reporting on red tide and its effects.[48]

Mote Marine Laboratory

The Mote Marine Laboratory is a Florida nonprofit organization that was founded in 1955.[49] Today, the Mote Marine Laboratory includes a 10.5-acre campus and aquarium in Sarasota, Florida, with various facilities known as field stations in Key West, eastern Sarasota County, Summerland Key, and Charlotte Harbor.[50] It has over 200 employees, including more than 30 Ph.D. scientists, working in numerous research programs involving marine biology, marine

[38] Section 379.2271(1), F.S.
[39] *Id.*
[40] Section 379.2271, F.S.
[41] Section 379.2272, (1)(a), F.S.
[42] *Letter from Governor Rick Scott to Chairman of the Florida Fish and Wildlife Conservation Bo Rivard*, 2 (Sept. 20, 2018), *available at* https://www.flgov.com/wp-content/uploads/2018/09/SGS-BIZHUB18092014370.pdf (last visited Mar. 15, 2019).
[43] FWC, *Red Tide Current Status*, https://myfwc.com/research/redtide/statewide/ (last visited Mar. 15, 2019).
[44] FWC, *Labs and People: About*, https://myfwc.com/research/redtide/labs-people/about/ (last visited Mar. 15, 2019).
[45] FWC, *Tools for Tracking Red Tides*, https://myfwc.com/research/redtide/tools/ (last visited Mar. 15, 2019).
[46] FWC, *HAB Monitoring Database*, https://myfwc.com/research/redtide/monitoring/database/ (last visited Mar. 15, 2019).
[47] FWC, *Research: Red Tide*, https://myfwc.com/research/redtide/ (last visited Mar. 15, 2019).
[48] FWC, *Red Tide-Related Hotlines and Information Sources*, https://myfwc.com/research/redtide/contact/ (last visited Mar. 15, 2019).
[49] Mote Marine Laboratory, *2020 Vision & Strategic Plan, Version 2.0*, 7, 11, 28 (2016) *available at* https://mote.org/about-us#2020 (last visited Mar. 15, 2019) (download the document by scrolling to the box where it appears and clicking the "Download" arrow in the top left corner). The laboratory was created by Dr. Eugenie Clark in 1955, and it was originally known as the Cape Haze Marine Laboratory, until it was later renamed Mote Marine Laboratory.
[50] Mote Marine Laboratory, *Mote Marine Laboratory and Aquarium*, https://mote.org/locations/details/mote-marine-laboratory-aquarium (last visited Mar. 15, 2019); Mote Marine Laboratory, *Mote Field Stations*, https://mote.org/locations (last visited Mar. 15, 2019).

ecology, environmental health, and technology.[51] The Mote Marine Laboratory's mission statement is: "[t]he advancement of marine and environmental sciences through scientific research, education and public outreach, leading to new discoveries, revitalization and sustainability of our oceans and greater public understanding of our marine resources."[52]

The nonprofit organization is funded through federal, state, and local grants and through individual donors and foundations.[53] The FWC is authorized to expend certain money through grants and contracts to fund research with the Mote Marine Laboratory.[54] The proceeds of the annual use fee for the "Protect Our Reefs" license plates are distributed to the Mote Marine Laboratory.[55]

Since early on in its development, the Mote Marine Laboratory has been conducting research on red tide.[56] Its experts are conducting research on red tide with the goal of understanding how the blooms form, how they dissipate into the environment, and what effects it has on humans and marine animals.[57] The Mote Marine Laboratory monitors red tide by taking samples, including with the use of technology such as detectors specially developed by the laboratory and autonomous underwater vehicles, providing continuous data that is communicated back to the laboratory for analysis.[58] The laboratory's Beach Conditions Report provides detailed information, updated twice daily by trained observers, on the conditions of 26 Florida beaches along the Gulf of Mexico.[59] Several of the laboratory's research programs cover areas of science related to red tide, such as the effects of toxins on aquatic organisms, the environmental health aspects of airborne toxins in coastal areas, and phytoplankton ecology.[60]

In 2018, the laboratory announced that it is establishing the Red Tide Institute at the Mote Marine Laboratory.[61] The Red Tide Institute will apply the knowledge gained on the ecological dynamics of red tide blooms to develop and test innovative, science-based technologies for attacking red tide blooms and reducing their impacts.[62] Also in 2018, the state invested over $2 million in the testing and development of innovative red tide mitigation technologies, including

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[51] Mote Marine Laboratory, *Research Programs*, https://mote.org/research (last visited Mar. 15, 2019).
[52] Mote Marine Laboratory, *Annual Report 2017*, 1 (2018), *available at* https://mote.org/about-us#Annual (last visited Mar. 15, 2019).
[53] Mote Marine Laboratory, *Mote Marine Laboratory and Aquarium*, https://mote.org/locations/details/mote-marine-laboratory-aquarium (last visited Mar. 15, 2019).
[54] Section 379.2202, F.S.; Section 379.2201(1)(c), F.S. The section authorizes money from saltwater license and permit fees to be used for marine research and management; *see* s. 379.354, F.S.
[55] Section 320.08058(39), F.S.
[56] Kumar Mahadevan, Mote Marine Laboratory, *Exploring the Secrets of the Sea Since 1955*, 3 (Nov. 19, 2010) *available at* https://mote.org/media/uploads/files/MoteMarineLaboratory-history.pdf (last visited Mar. 15, 2019).
[57] Mote Marine Laboratory, *Red Tide Research*, https://mote.org/news/red-tide-research (last visited Mar. 15, 2019).
[58] *Id.*
[59] Mote Marine Laboratory, Sarasota Operations Coastal Oceans Observation Lab, *Beach Conditions Reporting System*, https://visitbeaches.org/# (last visited Mar. 15, 2019).
[60] Mote Marine Laboratory, *Red Tide Research*, https://mote.org/news/red-tide-research (last visited Mar. 15, 2019).
[61] Mote Marine Laboratory, *Mote Launches Red Tide Institute for Mitigation and Control, Thanks to Founding Donor* (Oct. 23, 2018), https://mote.org/news/article/mote-launches-red-tide-institute-for-mitigation-and-control-thanks-to-found (last visited Mar. 16, 2019).
[62] Mote Marine Laboratory, *Mote's Red Tide Institute Welcomes Renowned Scientific Director* (Nov. 13, 2018), https://mote.org/news/article/motes-red-tide-institute-welcomes-renowned-scientific-director (last visited Mar. 16, 2019).

technologies being developed by the Mote Marine Laboratory.[63]

The Mote Marine Laboratory and the Institute have been collaborating in the area of harmful algal blooms for years. Previously, both institutions participated in the five year, federally-funded "Ecology and Oceanography of Harmful Algal Blooms" program.[64] This collaborative research led to new scientific understanding of how coastal pollution and nutrients affect red tide.[65] Today, the Mote Marine Laboratory and the Institute work together continuously to monitor waters around southwestern Florida for the organisms that cause red tide, often in collaboration with county government partners.[66] The sampling done through this collaboration is combined with satellite imagery and modeling of water currents in the Gulf of Mexico to develop the constant updates that the Institute provides to the public.[67]

The Mote Marine Laboratory's website describes the "Mote-FWRI Cooperative Red Tide Program."[68] The goals of the program include the following:

- Protecting public health, the economy and living natural resources through increased education and outreach.
- Mitigating the effects of red tide by monitoring and tracking *Karenia brevis*.
- Supporting bloom modeling and forecast efforts by providing information on the environmental factors that influence *K. brevis*.
- Investigating toxin persistence in recreationally harvested shellfish.[69]

III. Effect of Proposed Changes:

Section 1 creates s. 379.2273, F.S., which establishes the Florida Red Tide Mitigation and Technology Development Initiative (Initiative) and Initiative Technology Advisory Council. The section expires on June 30, 2025.

The bill states that it is the intent of the Legislature to establish an independent and coordinated effort among public and private research entities to develop prevention, control, and mitigation technologies and approaches to address the impacts of red tide on coastal environmental and communities in the state.

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[63] Mote Marine Laboratory, *Scientists, Resource Managers Share Major Updates on Tackling Florida Red Tide* (Sept. 26, 2018), https://mote.org/news/article/scientists-resource-managers-share-major-updates-on-tackling-florida-red-ti (last visited Mar. 17, 2019).
[64] FWC, *ECOHAB: Florida*, https://myfwc.com/research/redtide/research/scientific-products/ecohab-florida/ (last visited Mar. 15, 2019); *see* s. 379.2272(1)(c); *see also* NOAA, *Harmful Algal Bloom and Hypoxia Research and Control Act*, https://coastalscience.noaa.gov/research/stressor-impacts-mitigation/habhrca/ (last visited Mar. 15, 2019). Federal legislation exists for harmful algal blooms and programs that address them.
[65] Mote Marine Laboratory, *News & Press: Nutrients that Feed Red Tide "Under the Microscope" in Major Study*, https://mote.org/news/article/nutrients-that-feed-red-tide-under-the-microscope-in-major-study (last visited Mar. 15, 2019).
[66] Mote Marine Laboratory and Aquarium, *Red Tide Research*, https://mote.org/news/red-tide-research (last visited Mar. 15, 2019).
[67] Mote Marine Laboratory, *Mote-FWRI Cooperative Red Tide Program*, https://mote.org/pages/mote-fwri-cooperative-red-tide-program (last visited Mar. 15, 2019).
[68] *Id.*
[69] *Id.*

The bill establishes the Initiative as a partnership between the Institute and the Mote Marine Laboratory. The purpose of the Initiative is to lead the development of innovative technologies and approaches to address the control and mitigation of red tide and its impacts by building upon the ongoing cooperative red tide research and monitoring program between the Institute and the Mote Marine Laboratory. The goal of the Initiative is to develop, test, and implement innovative, effective, and environmentally sustainable technologies and approaches for controlling and mitigating the impacts of red tide.

The bill states that funds that the Legislature specifically appropriates for the Initiative's red tide mitigation technology development projects must be awarded by the Institute to the Mote Marine Laboratory. The bill authorizes the Mote Marine Laboratory, with the agreement of the Institute, to use a portion of the awarded funds to facilitate additional engagement with other pertinent marine science and technology development organizations in Florida and around the world to pursue applied research and technology for the control and mitigation of the impacts of red tide. The bill prohibits the Mote Marine Laboratory from using more than five percent of its awarded funds for direct annual initiative administration coordination costs. The bill requires the Initiative to leverage state-appropriated funds with additional funds from private and federal sources.

Beginning on January 15, 2021, and each January thereafter until January 15, 2025, the bill requires the Initiative to submit a report containing an overview of the Initiative's accomplishments up until that date and its priorities for subsequent years. The reports must be submitted to the Governor, the President of the Senate, the Speaker of the House of Representatives, the Secretary of the Department of Environmental Protection, and the executive director of the FWC.

The bill establishes within the Initiative the Initiative Technology Advisory Council (Council). The bill states that the Council will be an advisory council as defined in s. 20.03(7), F.S., which defines "advisory council" as "an advisory body created by specific statutory enactment and appointed to function on a continuing basis for the study of the problems arising in a specified functional or program area of state government and to provide recommendations and policy alternatives."[70] The Council will include marine science, technology development, and natural resource management representatives from governmental entities, private organizations, and public or private research institutions. The bill requires the Council to meet at least twice per year. The bill requires that the Council be chaired by the president and chief executive officer of the Mote Marine Laboratory, and consist of the following:

- One member from a private commercial enterprise, appointed by the Governor.
- One member from a public or private university in Florida, appointed by the President of the Senate.
- One member from a non-university public or private marine environmental organization, appointed by the Speaker of the House of Representatives.
- One member from the Department of Environmental Protection who has expertise in red tide, appointed by the Secretary of Environmental Protection.
- One member from the Institute who has expertise in red tide, appointed by the executive director of the Institute.

[70] Section 20.03(7), F.S.

The bill requires that the members of the Council serve staggered two year terms, and authorizes reappointment. The bill requires that the members of the Council serve without compensation. The bill requires each organization represented by a member on the Council to cover all of the expenses of its respective representatives.

Section 2 provides for an appropriation. The bill appropriates $3 million annually, beginning in Fiscal Year 2019-2020 and continuing until Fiscal Year 2024-2025, from the General Revenue Fund to the FWC for the purpose of implementing s. 379.2273, F.S.

Section 3 states that the act shall take effect on July 1, 2019.

IV. Constitutional Issues:

A. Municipality/County Mandates Restrictions:

None.

B. Public Records/Open Meetings Issues:

None.

C. Trust Funds Restrictions:

None.

D. State Tax or Fee Increases:

None.

E. Other Constitutional Issues:

None.

V. Fiscal Impact Statement:

A. Tax/Fee Issues:

None.

B. Private Sector Impact:

Red tide negatively impacts Florida's economy, by harming industries such as commercial fisheries, recreation, and tourism. If the Initiative and the Council create technologies or approaches that prevent or mitigate Red Tide and its impacts, this could prevent harm to such industries. Therefore, this bill may have an indeterminate, positive fiscal impact on the private sector.

C. Government Sector Impact:

The bill requires an annual appropriation to the FWC of $3 million from the General Revenue Fund from the 2019-2020 fiscal year to the 2024-2025 fiscal year. SB 2500, the Senate's 2019-2020 General Appropriations Bill, appropriates $6.6 million from the General Revenue Fund for red tide research.

VI. Technical Deficiencies:

None.

VII. Related Issues:

None.

VIII. Statutes Affected:

This bill creates section 379.2273 of the Florida Statutes.

IX. Additional Information:

A. Committee Substitute – Statement of Changes:
(Summarizing differences between the Committee Substitute and the prior version of the bill.)

None.

B. Amendments:

None.