

STORAGE NAME: h4409a.wrm

DATE: April 16, 1998

**HOUSE OF REPRESENTATIVES
COMMITTEE ON
WATER AND RESOURCE MANAGEMENT
BILL RESEARCH & ECONOMIC IMPACT STATEMENT**

BILL #: HB 4409

RELATING TO: Red tide research and mitigation

SPONSOR(S): Representative Bradley and Representative Carlton

COMPANION BILL(S): SB 2272 (s)

ORIGINATING COMMITTEE(S)/COMMITTEE(S) OF REFERENCE:

- (1) WATER AND RESOURCE MANAGEMENT YEAS 7 NAYS 0
 - (2)
 - (3)
 - (4)
 - (5)
-

I. SUMMARY:

HB 4409 directs the Secretary of the Department of Environmental Protection to create the Red Tide Study Committee which will determine appropriate studies and make recommendations for using funds provided under this bill for red tide control and mitigation. The committee is required to submit an interim and a final report to the Legislature, and to develop recommendations that state and local governments can implement to control and mitigate the effects of red tide. Mote Marine Laboratory shall undertake a project designed to increase knowledge of factors that control red tide as a basis for detecting, controlling, and mitigating red tide. That project must address areas not adequately covered in the cooperative program known as Ecology and Oceanography of Harmful Algal Blooms (ECOHAB). Mote Marine Laboratory is allowed, if necessary, to acquire or establish facilities with instrumentation specifically designed for monitoring factors that effect red tide.

HB 4409 appropriates \$3 million from the General Revenue Fund to the Department of Environmental Protection for fiscal year 1998-1999 to carry out the provisions of this bill. The committee shall use up to \$300,000 of this appropriation for an economic impact study on the financial losses associated with red tide blooms in Florida. The remaining funds are to be used for Mote Marine Laboratory activities authorized by Section 2 of this bill, specifically focusing on red tide control and mitigation.

HB 4409 would take effect on July 1 of the year in which enacted.

A strike-everything-after-the-enacting-clause amendment was adopted by the Committee on Water and Resource Management, but the bill will not become a committee substitute. The amendment, which will follow the bill, establishes the Harmful Algal Blooms Task Force. The task force will provide recommendations to DEP. The program is intended to enhance and address areas not adequately covered by Ecology and Oceanography of Harmful Algal Blooms (ECOHAB-Florida). The amendment also provides that DEP is to implement a program designed to increase the knowledge of factors that control HABs. A financial disbursement program is created within DEP to implement the provisions of the bill. The amendment includes a \$3 million appropriation for the purposes of this bill. \$1.5 million is for ECOHAB-Florida, half of that is to go to Mote Marine Laboratory. Up to \$50,000 may be used by DEP for the travel and document production costs of the Harmful Algal Bloom Task Force.

II. SUBSTANTIVE RESEARCH:

A. PRESENT SITUATION:

Red tides, in Florida, cause massive fish kills, shellfish contamination, and severe respiratory irritation to residents and visitors of Florida's Gulf coast. In 1996, a red tide bloom resulted in approximately 150 manatee deaths. Because of the severe economic and public health effects of red tide, much consideration has been given to predicting, controlling, and mitigating the blooms. Red tides occur worldwide and are caused by several species of marine phytoplankton, a microscopic plant producing potent chemical toxins. The origin of Florida's red tide is blooms of a single-celled algae called *Gymnodinium breve* ("*G. breve*"). While coastal pollution may enhance red tide blooms in some areas, Florida's red tide appears to result from natural processes not caused by pollution. These red tide blooms are part of the ecology of Florida's gulf coast regions.

Between 40-80 miles offshore in the Gulf of Mexico, red tide blooms result from a massive multiplication of *G. breve*. These blooms are driven by winds and ocean currents towards nutrient-rich, shallow waters where the blooms multiply to harmful levels. At high concentrations, *G. breve* creates a brownish-red sheen on the water's surface. At lower concentrations, the water's surface may appear yellow-green. Some red tide blooms have covered as much as several hundred square miles of water. These blooms enter the bloodstream of fish through their gills and cause fish to die quickly. Filter-feeding shellfish, such as oysters, clams, and mussels consume *G. breve* and concentrate the toxins in several organs, making these shellfish unsafe to harvest and eat. The Department of Environmental Protection must determine that waters and shellfish in an area are free of red tide toxins before shellfish may be harvested. In addition, red tide can cause a variety of symptoms in humans including irritations of the eyes, nose, and throat.

Because focused research into the ecological and oceanographic mechanisms that influence red tide is urgently needed, the National Science Foundation and the National Oceanic and Atmospheric Administration developed a national research agenda to guide research efforts. The goal of the program, Ecology and Oceanography of Harmful Algal Blooms (ECOHAB), is to "develop an understanding of the population dynamics and trophic impacts of harmful algal species which can be used as a basis for minimizing their adverse effects on the economy, public health, and marine ecosystems." ECOHAB relies largely on a comparative approach utilizing data from large-scale, regional field programs and theoretical studies using new or existing models to simulate the dynamics of red tide blooms in different oceanographic systems, rather than limiting its research to a specific study site. While ECOHAB centers its research on the ecology and oceanography of red tide, many other aspects of this phenomenon fall outside this scope and still require research.

Factors that impact red tide and need further research according to Solutions To Avoid Red Tide (S.T.A.R.T.) include: the precise location of initiation zones for blooms, the cause of the bloom initiation, what causes the bloom to die off, what amounts of toxins are produced, how the toxins are released, and at what stage of the life-cycle are toxins produced. This bill is intended to address those research areas not adequately covered by the ECOHAB program. The proposed project will focus on the Florida red tide problem. The project will result in an integrated detection and prediction network for monitoring and responding to the development and movement of red tide blooms on the

west Florida shelf and coastal regions. Resource managers, using the applications of this interactive system, will be able to assess the potential public health and economic damage from a bloom and take appropriate control or mitigation steps.

B. EFFECT OF PROPOSED CHANGES:

HB 4409 provides for the creation of the Red Tide Study Committee and directs the Secretary of DEP to appoint scientists, engineers and citizen-group members to the committee. The committee is to determine appropriate studies and make recommendations for using funds provided under this bill for red tide control and mitigation. In addition, the committee will prepare an interim report which is to be submitted to the Legislature by January 30, 1999, submit a final report to the Legislature by June 30, 1999, and provide recommendations that can be implemented by state and local governments to control and mitigate the effects of red tide.

Mote Marine Laboratory is directed to undertake a project designed to increase knowledge of the factors that control red tide blooms, and to provide a basis for early detection of factors leading to red tides, prediction of the extent and seriousness of red tides, and allow for the opportunity to successfully control or mitigate the effects of red tide. This project will address only those areas not adequately covered in the cooperative program known as ECOHAB.

HB 4409 appropriates \$3 million from the General Revenue Fund to DEP for fiscal year 1998-1999 to carry out the provisions of this bill. Up to \$300,000 of this appropriation is to be used by the Red Tide Study Committee for an economic impact study on the financial losses associated with red tide blooms in Florida, relying on the 1995-1996 blooms as a model. The remaining funds must be used for Mote Marine Laboratory activities authorized by this bill.

C. APPLICATION OF PRINCIPLES:

1. Less Government:

a. Does the bill create, increase or reduce, either directly or indirectly:

(1) any authority to make rules or adjudicate disputes?

N/A

(2) any new responsibilities, obligations or work for other governmental or private organizations or individuals?

N/A

(3) any entitlement to a government service or benefit?

N/A

b. If an agency or program is eliminated or reduced:

(1) what responsibilities, costs and powers are passed on to another program, agency, level of government, or private entity?

N/A

(2) what is the cost of such responsibility at the new level/agency?

N/A

(3) how is the new agency accountable to the people governed?

N/A

2. Lower Taxes:

a. Does the bill increase anyone's taxes?

N/A

b. Does the bill require or authorize an increase in any fees?

N/A

c. Does the bill reduce total taxes, both rates and revenues?

N/A

d. Does the bill reduce total fees, both rates and revenues?

N/A

e. Does the bill authorize any fee or tax increase by any local government?

N/A

3. Personal Responsibility:

STORAGE NAME: h4409a.wrm

DATE: April 16, 1998

PAGE 5

- a. Does the bill reduce or eliminate an entitlement to government services or subsidy?

N/A

- b. Do the beneficiaries of the legislation directly pay any portion of the cost of implementation and operation?

N/A

4. Individual Freedom:

- a. Does the bill increase the allowable options of individuals or private organizations/associations to conduct their own affairs?

N/A

- b. Does the bill prohibit, or create new government interference with, any presently lawful activity?

N/A

5. Family Empowerment:

- a. If the bill purports to provide services to families or children:

- (1) Who evaluates the family's needs?

N/A

- (2) Who makes the decisions?

N/A

- (3) Are private alternatives permitted?

N/A

- (4) Are families required to participate in a program?

N/A

(5) Are families penalized for not participating in a program?

N/A

b. Does the bill directly affect the legal rights and obligations between family members?

N/A

c. If the bill creates or changes a program providing services to families or children, in which of the following does the bill vest control of the program, either through direct participation or appointment authority:

(1) parents and guardians?

N/A

(2) service providers?

N/A

(3) government employees/agencies?

N/A

D. STATUTE(S) AFFECTED:

N/A

E. SECTION-BY-SECTION RESEARCH:

Section 1. Directs the Secretary of the Department of Environmental Protection to create the Red Tide Study Committee and appoint scientists, engineers and citizen-group members to the committee. Charges the committee to determine appropriate studies and make recommendations for using funds provided under this bill for red tide control and mitigation. Requires the committee to prepare an interim report which is to be submitted to the Legislature by January 30, 1999, and to submit a final report to the Legislature by June 30, 1999. Requires the committee to review the status and adequacy of information for monitoring physical, chemical, and biological factors affecting red tide development on the west Florida shelf. Requires the committee to assess the capabilities of existing research facilities, both private and public, to provide the resources required for processing, interpreting, and applying data to red tide detection and prediction. Also requires the committee to develop recommendations that can be implemented by state and local governments to control and mitigate the effects of red tide.

Section 2. Provides that the Mote Marine Laboratory shall undertake a project designed to increase knowledge of the factors that control red tide blooms which will act

as a basis for early detection of factors leading to red tides, prediction of the extent and seriousness of red tides, and allow for the opportunity to successfully control or mitigate the effects of red tide. Stipulates this project will address only those areas not adequately covered in the cooperative program known as ECOHAB. Defines the goal of this project as the production of an integrated detection and prediction network for monitoring and responding to the development and movement of red tide blooms on the Florida shelf. The long-term goal is to allow resource managers to use the interactive system to assess the potential for public health and economic damage from a red tide bloom in order to begin control or mitigation efforts at specific sites along the west Florida shelf and coastal regions. To perform the project authorized in this section, the Mote Marine Laboratory shall, if necessary, acquire and use facilities and instrumentation specifically designed for monitoring factors that effect red tide, establish laboratory facilities for evaluating new methodologies for red tide control and mitigation, and consult with the Red Tide Study Committee and give due consideration to the committee's recommendations.

Section 3. Appropriates \$3 million from the General Revenue Fund to the Department of Environmental Protection for fiscal year 1998-1999 to carry out the provisions of this bill. The Red Tide Study Committee shall use up to \$300,000 of this appropriation for an economic impact study on the financial losses associated with red tide blooms in Florida, relying on the 1995-1996 blooms as a model. If it is feasible, the economic impact study must be designed in cooperation with and with the use of federal sea grant program funds. Provides that remaining funds must be used for Mote Marine Laboratory activities authorized by Section 2 of this bill, focusing specifically on red tide control and mitigation.

Section 4. Provides that the bill shall take effect July 1, 1998.

III. FISCAL RESEARCH & ECONOMIC IMPACT STATEMENT:

A. FISCAL IMPACT ON STATE AGENCIES/STATE FUNDS:

1. Non-recurring Effects:

The bill appropriates \$3 million from the General Revenue Fund to the Department of Environmental Protection for fiscal year 1998-1999 to carry out the purposes of this act.

2. Recurring Effects:

N/A

3. Long Run Effects Other Than Normal Growth:

N/A

4. Total Revenues and Expenditures:

N/A

B. FISCAL IMPACT ON LOCAL GOVERNMENTS AS A WHOLE:

1. Non-recurring Effects:

N/A

2. Recurring Effects:

N/A

3. Long Run Effects Other Than Normal Growth:

N/A

C. DIRECT ECONOMIC IMPACT ON PRIVATE SECTOR:

1. Direct Private Sector Costs:

N/A

2. Direct Private Sector Benefits:

N/A

3. Effects on Competition, Private Enterprise and Employment Markets:

N/A

D. FISCAL COMMENTS:

N/A

IV. CONSEQUENCES OF ARTICLE VII, SECTION 18 OF THE FLORIDA CONSTITUTION:

A. APPLICABILITY OF THE MANDATES PROVISION:

The mandates provision is not applicable to an analysis of HB 4409 because the bill does not require cities or counties to expend funds, or take actions which require the expenditure of funds.

B. REDUCTION OF REVENUE RAISING AUTHORITY:

This bill does not reduce the revenue raising authority of local governments.

C. REDUCTION OF STATE TAX SHARED WITH COUNTIES AND MUNICIPALITIES:

This bill does not reduce the state tax shared with counties and municipalities.

V. COMMENTS:

N/A

VI. AMENDMENTS OR COMMITTEE SUBSTITUTE CHANGES:

On April 15, 1998, the Committee on Water and Resource Management adopted a strike-everything-after-the-enacting-clause amendment. The bill as amended was then adopted by a vote of 7-0. The major provisions of the amendment were:

- ◆ Establishes a Harmful Algal Blooms Task Force to follow guidelines similar to those set out for the Red Tide Study Commission established in the original bill, except that the task force will provide recommendations to DEP rather than to the Legislature. The program is intended to enhance and address areas not adequately covered by Ecology and Oceanography of Harmful Algal Blooms (ECOHAB-Florida). ECOHAB is a federal/state program which includes University of South Florida, Mote Marine Laboratory, and the Department of Environmental Protection (DEP).
- ◆ Provides that DEP is to implement a program designed to increase the knowledge of factors that control HABs. A financial disbursement program is created within DEP to implement the provisions of the bill. Funding and technical assistance is to be provided to government agencies, research universities, coastal local governments and organizations with scientific and technical expertise including but not limited to Mote Marine Laboratory, Harbor Branch Oceanographic Institute, and University of Miami, for the purpose of HAB study, detection, control and mitigation.
- ◆ Appropriates \$3 million for the purposes of this bill. \$1.5 million is for ECOHAB-Florida, half of that is to go to Mote Marine Laboratory. Up to \$50,000 may be used by DEP for the travel and document production costs of the Harmful Algal Bloom Task Force.

The bill will be recommended favorably with the amendment trailing and will not become a committee substitute.

STORAGE NAME: h4409a.wrm

DATE: April 16, 1998

PAGE 10

VII. SIGNATURES:

COMMITTEE ON WATER AND RESOURCE MANAGEMENT:

Prepared by:

Legislative Research Director:

Sarah J. Hodges

Joyce Pugh