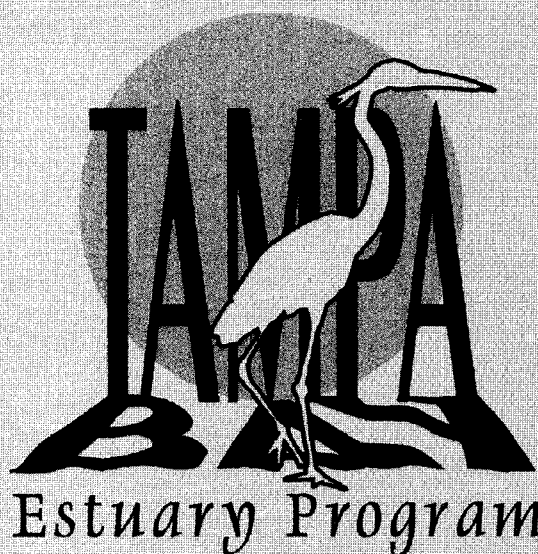
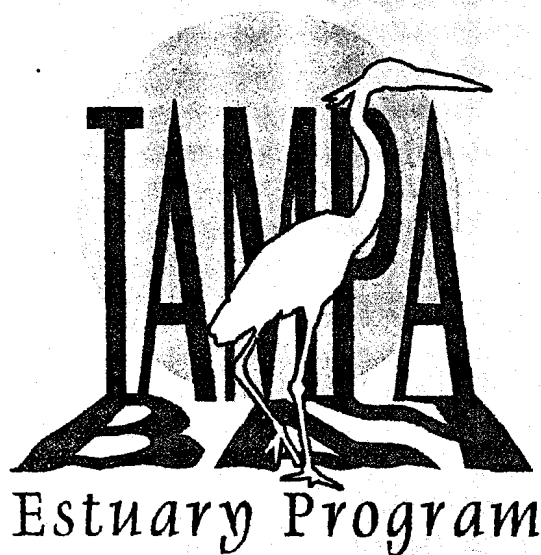




2004 IMPLEMENTATION REVIEW

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2004 IMPLEMENTATION REVIEW

FFY01 Workplan, Travel

2

FFY02 Workplan, Travel,
Leveraged Funds Report

3

FFY03 Workplan, Travel,
Leveraged Funds Report

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Government Performance
and Results Act (GPRA)

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Implementation Tracking &
Action Plan Report Card

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Environmental Progress
Report

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Environmental Indicators
and Monitoring

TAMPA BAY ESTUARY PROGRAM

FFY 01 ANNUAL WORK PLAN

October, 2001

(Revised March 2002)

FFY 2001 ANNUAL WORK PLAN

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INTRODUCTION

The FFY01 Annual Work Plan highlight the accomplishments of the Tampa Bay Estuary Program in FFY00 and outlines proposed activities of the Program for FFY 01, the fiscal year beginning October 1, 2001. FFY01 will be the fourth year of the Program's operation under the Interlocal Agreement through which the Comprehensive Conservation and Management Plan (CCMP) is being implemented.

The Tampa Bay Estuary Program was honored with three awards during the year recognizing its groundbreaking work in building community support for the restoration and protection of Tampa Bay: the CF Industries National Watershed Award; an Environmental Merit Award 2000 from the U.S. Environmental Protection Agency; and a Community Leadership Award from the Southeast Natural Resources Leaders Group.

Declines in the acreage of seagrasses in most parts of the bay drew major attention from the TBEP and its partners in 2000. A three-day seagrass symposium organized by TBEP in August 2000 brought scientists and bay managers together to set priorities for investigating unexpected slow-downs in seagrass recovery in some areas of the bay. And in October, 2000 it was found that over 2000 acres of seagrass had been lost baywide since 1996. Taking actions to understand the causes of seagrass decline and get their recovery back on track was a major thrust of the program in FFY00 and will continue to be in the FFY01 workplan.

Revisiting TBEP nitrogen management goals, one of the keys to seagrass recovery, has also demanded the Program's attention over the past year. Estimates of current future and nitrogen loading and updated chlorophyll/light relationships, the building blocks of the nitrogen management strategy, were completed in spring 2001. Updated seagrass restoration targets and nitrogen management goals will be finalized by August, 2001. Along with these benchmarks of the CCMP, goals and targets for the remaining priority issues in the CCMP will be revisited and updated as deemed appropriate by the TBEP partners by August 2001. Current CCMP issues and the four new issues screened by the Management and Policy boards will be addressed in a CCMP supplement to be issued in Fall, 2001.

In keeping with the requirements of the Interlocal Agreement, TBEP partners will be asked to complete Action Plan supplements, updating their progress in implementing bay restoration projects included in their initial Action Plans and identifying additional projects planned or underway. TBEP staff will also implement a data management system for tracking implementation of nitrogen load reduction projects undertaken by TBEP public and private partners in the Tampa Bay Nitrogen Management Consortium.

FFY00 marked the first year of implementation of the Tampa Bay specialty license plate approval by the Florida Legislature, with 80% of the revenues allocated to CCMP implementation. A sum of \$10,000 from the initial license plate revenues was pooled with \$20,000 from other TBEP sources to fund Bay Mini-Grants for twelve community groups in the Tampa Bay region. The \$30,000 balance of license tag revenues from FFY01 will fund the next round of Bay Mini-Grants in fall 2001.

FY00 OBJECTIVES AND ACCOMPLISHMENTS

The principal Program objective for FFY00 was to carry out responsibilities assigned to the Tampa Bay Estuary Program under the CCMP Implementing Agreement. The responsibilities included:

- finalizing goals and priorities and coordinating development of five-year action plans for bay restoration for the period 2000-2004;
- continuing the Program's effective community outreach programs to promote public participation and facilitate CCMP implementation;
- instituting a program to document implementation of action plans, including nitrogen reduction projects of public and private sector participants;
- completing the Program's five-year atmospheric deposition research program;
- initiating actions to address emerging priority issues such as invasive species;
- implementing a process for selecting qualified projects and administering agreements for expenditure of license plate revenues;
- assisting Program participants in obtaining grants and other financial aid to fund implementation of projects in individual Action Plans;
- refining and implementing the Program's Action Plan to achieve goals not addressed in the action plans of other parties; and
- facilitating development and implementation of watershed management plans in the Tampa Bay watershed that help to advance the goals of the CCMP.

TECHNICAL INITIATIVES AND ACCOMPLISHMENTS

In addition to completion of the technical projects listed in Appendix A, the TBEP Technical Advisory Committee and technical staff accomplished the following in the fiscal year ending September 30, 2001.

- ☐ The TAC initiated a comprehensive reevaluation of the technical basis for the CCMP goals and targets, an action called for every five years as stated the Interlocal Agreement. Examinations of the status, trends, and comparison to goals for water quality, seagrass acreage and other habitat goals are ongoing. Models of nutrient loading and response in the bay's water quality are currently being updated and tested with data collected since 1995. The technical reevaluation is scheduled to be complete by Winter 2001.
- ☐ In January 2000, the TAC finalized recommendations for a "decision process", which will be used

to assist with determination of what types of actions should be considered if water quality and/or seagrass targets are not being met. The decision process framework was approved by the Management Board in January 2000. Application of this process to data collected since 1995 was reviewed by the TAC. In July 2001, Year 2000 data were applied to the decision process.

- . Upon review of the seagrass acreage trends that indicate seagrass acreage may be slowing or stalled in some areas of the bay, the TAC identified potential factors affecting the expansion of seagrasses. The TAC also recommended that a workshop with national experts and local scientists be convened to review existing data and develop a plan of study for evaluating water quality and other factors potentially affecting the ability to meet long-term seagrass restoration goals in Tampa Bay. The 3-day Symposium, entitled "Seagrass Management: It's Not Just Nutrients", was held in August 2000, and was organized by TBEP and co-sponsored by the NEPs in Tampa, Sarasota and Charlotte Harbor, the Gulf of Mexico Program, Florida Sea Grant, the Florida Marine Research Institute, and private sponsors.

The Symposium was attended by 150 seagrass scientists, environmental managers and citizens, and featured experts from throughout the United States. A Tampa Bay workshop conducted on the final day of the Symposium helped to prioritize research needs to ensure continued seagrass growth in the bay.

- . The second edition of the Baywide Environmental Monitoring Report (covering the 1993-1998 time period) was compiled and published. Authors of this popular technical publication include the technical staffs of the TBEP partners. Results of the ongoing monitoring programs are used to report status and trends of water and sediment quality, atmospheric deposition, populations of birds, marine mammals and sea turtles, and seagrass throughout the bay and watershed. A final chapter summarizes the condition of the bay's living resources and points out "warning flags".
- . Habitat mitigation criteria specifically for the Tampa Bay watershed were developed by a joint TBEP/ABM working group, and adopted by the Management and Policy Boards in FY2000. Criteria included recommendations for on-site and off-site mitigation for coastal and inland habitats.
- . The TBEP Action Plan Liaisons submitted updates (Action Plan Supplements) of their 5-year plans as called for in the Interlocal Agreement. Supplements included revisions as necessary to each partners' 1998 Action Plan, plus additional projects initiated or planned since the first Action Plan submittal. Staff will collate results and report back to the Management and Policy Boards.
- . The Tampa Bay Dredged Material Management Strategy, developed by the U.S. Army Corps of Engineers and members of a baywide advisory committee, was finalized in July 2000. Results indicate a shortfall of placement capacity over the next 25 years. The final strategy included a list of potential beneficial use projects and recommended next steps.
- . The Tampa Bay Atmospheric Deposition Study (TBADS) has taken on additional importance with

the announcement of the Tampa Electric Company settlements with FDEP and EPA, significantly reducing NOX and other emissions. The TBADS monitoring program, now in its fourth year for nutrients and first year for toxic materials, will provide a baseline to measure the effects of expected reductions from the electric power plants.

- . The Tampa Bay Sediment Quality Advisory Group (SQAGS) hosted a 3-day workshop in May 1999. National and international scientists assisted the local SQAGs group in defining the final elements needed to define Tampa Bay's sediment quality targets. Targets are scheduled to be available for Management Board review in Spring 2001.
- . A TBEP Technical Web Site, designed to be a companion to the primary TBEP site, is currently being designed and implemented. The TBEP Tech WebSite will include databases, GIS maps, analytical tools (including the water quality models completed for TBEP), copies of recent TBEP technical reports, and links to other partners' web sites.
- . Data collection for the Healthy Beaches Tampa Bay initiative, a partnership with University of South Florida, SWFWMD, Pinellas County Public Health and the Pinellas County Tourist Board, was finalized in fall 2000. A final report will include recommended indicators and tests for public health pathogens in SW Florida estuarine and marine waters, and methods for identifying sources of pathogens in the watershed.
- . Several members of the TAC, including the TBEP scientist, are participating in the State's TMDL Technical Advisory and Policy Advisory committees. These committees have been convened by FDEP to provide input and recommendations to FDEP staff regarding development of the TMDL rule for the state.
- . At the request of the Hillsborough County Board of County Commissioners in April 2000, TBEP and ABM facilitated a joint ABM/TBEP TAC technical discussion of potential cumulative effects of permitted and planned water supply projects in the Hillsborough Bay and Middle Tampa Bay watersheds, including the planned desalination facility. Objectives of the discussion were to define questions concerning potential cumulative effects, identify information sources addressing those questions, and identify possible gaps in information needed to address the defined questions. Collated results of this process were finalized in summer 2000, and were delivered to the regulatory agencies, Hillsborough BOCC and other interested parties.
- . The TBEP scientist participated in an 18-month National Academies of Sciences National Research Council panel addressing the extent, impacts and management of nutrient over-enrichment and eutrophication in the Nation's coastal waters. The panel's report, entitled "Clean Coastal Waters: Understanding and Reducing the Effects of Nutrient Pollution", was published by NRC in May 2000. Other national technical transfer and support activities of the TBEP scientist include:
 - National Steering Committee, National Coastal Assessment project (a synoptic survey of the US coastal waters, to be initiated in summer 2000);
 - Steering Committee, Estuarine Research Federation International

Conference 2001;

- Presentation (with Nitrogen Management Consortium co-chairs) to EPA Administrator Browner's Science Advisory Board concerning partnerships in implementing management goals, January 2000;
- Facilitation of management session at the Ecological Society of America's symposium on atmospheric deposition to the Gulf of Mexico, October 1999;
- All-day workshop and presentation to EPA's Office of Research and Development Watershed Management Branch, Edison, NJ, April 2000;
- Chair, Aquatic Nuisance Species Conference, Tampa, October 1999.

PUBLIC OUTREACH

The Tampa Bay Estuary Program continues to emphasize the importance of environmental education to the long-term health of the bay by creating a constituency of informed, involved citizens. This mission is aided by a Community Advisory Committee composed of residents from a variety of backgrounds and interests who share a common concern for the future of the bay.

CAC activities in FFY 2000 included: serving as judges for the Bay Mini-Grants program, which provided \$30,000 to community groups for bay improvement projects; developing a public opinion poll for the TBEP website that assess citizens' perceptions of and commitment to bay improvement; and recommending and reviewing new actions to be addressed in the first revision of the CCMP for Tampa Bay.

The CAC also hosted the Second Annual Joint Luncheon with Management and Policy Board members. This informal gathering allows CAC members to inform administrators and elected officials of their activities, and to discuss issues of mutual concern related to bay restoration and protection.

In addition to serving as the staff coordinator for the CAC, the Program's Public Outreach Coordinator continued to serve as chair of the Manatee Awareness Coalition, an alliance of scientists, conservationists, industry representatives and others concerned about protection of Tampa Bay's population of endangered manatees. The MAC continues to be a leader in developing innovative boater education programs and tools to promote protection of manatees and their habitats. More than 100 volunteers contributed more than 6,000 hours of their time in 2000 through the Tampa Bay Manatee Watch program developed by the MAC and coordinated by Tampa Bay Watch. The MAC also worked with Pinellas County to implement a local ordinance designating the shallow waters around the FPC power plant at Weedon Island a seasonal no-entry zone to protect manatees that seek refuge there during the winter. Additionally, the MAC sponsored the inaugural "Manatee Mania" festival at Fort DeSoto Park in November 2000. TBEP staff support for the MAC included preparation of meeting agendas; assistance with press conferences; preparation of grant applications and promotional materials and other related tasks.

Other public outreach accomplishments in FFY 2000 included:

- Coordinating design, production and distribution of nearly 1 million inserts promoting the Tampa Bay Estuary license plate. The inserts were distributed in City of Tampa utility bills and auto tag

renewal notices in Manatee and Pinellas counties.

- Coordinating production of a poster promoting the license plate, and distributing the poster to every marina and bait shop in the region.
- Coordinating design and production of a CD-rom containing the CCMP for Tampa Bay, as well as the Tampa Bay Nitrogen Management Consortium Action Plan.
- Coordinating logistics for a 3-day seagrass symposium held on August 22-24, 2000. Duties included preparation of a postcard and brochure advertising the symposium, posting of info on the TBEP website, solicitation of sponsors for refreshment breaks and student poster presentations, and publicity related to the symposium.
- Coordinating final production and initial distribution of the educational poster, "Wild and Wonderful Tampa Bay". A special poster unveiling ceremony was held in April 2000 and was well attended by area environmental educators. The poster was publicized in area newsletters and on the TBEP website, and is being distributed on request to middle and high school teachers. Formal distribution of the poster through the Hillsborough, Pinellas and Manatee County School Boards occurred in August 2000.
- Updating TBEP's website, including the addition of new features, and maintenance of the website listserver and Community Bulletin Board. This task also involved responding to more than 100 questions submitted by visitors to the site from around the world, through the "Ask Me About The Bay" feature.
- Serving as chair of the planning committee for the second annual VIP tour of Cockroach Bay sponsored by the Cockroach Bay Aquatic Preserve Management Advisory Team. Nearly 60 Hillsborough County dignitaries attended the April 27 on-water tour of this spectacular segment of Tampa Bay.
- Coordinating design and production of colorful stickers with messages such as "I'm Wild About Tampa Bay!" and "Don't Trash My Bay!" for distribution to children at area festivals and also through the Manatee Watch and Tampa Bay Beach Buddies program.

TBEP RECOGNITION

The Tampa Bay Estuary Program was honored with three awards recognizing its groundbreaking work in building community support for the restoration and protection of Tampa Bay.

TBEP was among four recipients of the CF Industries National Watershed Award, which annually honors organizations that have developed model programs to protect local watersheds. Specifically, the award recognizes effective, non-regulatory approaches for improving water quality such as TBEP's Nitrogen Management Consortium, an alliance of local governments, regulatory agencies and private industries

which cooperatively developed a voluntary plan to reduce nitrogen pollution in the bay. Other honorees included the Chain of Lakes Clean Water Partnership in Minneapolis; the Careless Creek Watershed Project in Roundup, Montana; and the Sugar Creek SALT Project in Bethany, Missouri.

TBEP also was among the inaugural winners of an Environmental Merit Award 2000 from the U.S. Environmental Protection Agency's Region IV office in Atlanta. The Program was honored for its leadership and dedication to environmental protection.

The TBEP was honored with a Community Watershed Leadership Award by the Southeast Natural Resources Leaders Group (SENRLG) for its efforts in furthering protection and restoration of the water resource in the southeastern United States. The SENRLG is an association of federal agency directors in the southeast such as EPA Region 4.

FFY01 ANNUAL WORK PLAN

The principal Program objective for FFY01 is to carry out responsibilities assigned to the Tampa Bay Estuary Program under the CCMP Implementing Agreement. Duties that will receive special emphasis in FFY01 include:

- ☐ overseeing implementation of five-year action plans for bay restoration for the period 2000-2004, including nitrogen reduction projects of public and private sector participants;
- ☐ continuing the Program's effective community outreach programs to promote public participation and facilitate CCMP implementation;
- ☐ continuing actions to address emerging priority issues including invasive species;
- ☐ implementing a process for selecting qualified projects and administering agreements for expenditure of license plate revenues;
- ☐ implementing a CCMP financing strategy developed in conjunction with the Financing Strategy Task Force;
- ☐ continuing implementation of the Program's Action Plan to achieve goals not addressed in the action plans of other parties; and
- ☐ continuing assistance to other programs in development and implementation of watershed management plans in the Tampa Bay watershed that help to advance the goals of the CCMP.

I. ACTION PLAN IMPLEMENTATION AND CCMP OVERSIGHT

The updating of seagrass restoration and nitrogen management goals along with goals for other priority CCMP issues will be finalized by August, 2001. Priority problems addresses in the current CCMP as well as the four new issues screened by the Management and Policy boards will be addressed in a CCMP supplement to be issued in Fall, 2001.

In keeping with the requirements of the Interlocal Agreement, TBEP partners will be asked to supplement their Action Plans in 2002 by incorporating projects that address the updated goals and new issues. TBEP staff will take every reasonable measure to make the partners' task of preparing supplements as simple as possible while still capturing the necessary documentation. A data management system develop with the assistance of TBEP's technical support contractor will help track implementation of local governmental and agency and action plans as well as projects of the Nitrogen Management Consortium.

As one of the nation's twenty-eight national estuary programs and a priority SWIM water body, Tampa Bay enjoys an enviable position in the competition for federal and state grants, particularly those grant programs administered by EPA and FDEP. To help the Program take better advantage of those and many other outside funding opportunities, TBEP staff is working with a Task Force of the Management Board to develop a CCMP Financing Strategy. Staff will be available to assist any TBEP partner who is interested in pursuing funding opportunities outlined in the Strategy.

TBEP staff will endeavor to meet its other responsibilities outlined in the CCMP and Interlocal Agreement, including: continue the Program's effective community outreach programs to promote public participation and facilitate CCMP implementation; prepare a baywide environmental monitoring report; report to the Policy Board on each partner's compliance with the Interlocal Agreement and implementation of their Action Plans; and, work with the Tampa Bay Dredged Material Advisory Committee and Army Corps of Engineers to implement the long-term dredged material management plan for the bay.

EPA will be completing its second evaluation of TBEP's implementation of the CCMP in fall 2001. Although EPA gave TBEP overall high marks in its initial evaluation of the Program in 1998, the Agency still pointed to a couple areas of needed improvement. If there are any other recommended improvements that arise from the second program evaluation, TBEP will need to respond to those in FFY01.

Estimated cost: \$525,500 (TBEP staff time and expenses; no additional project costs)
CCMP Action: Implementing responsibilities of the TBEP entity as required under Section 6.7 of the Interlocal Agreement.

II. CONTRACTED TECHNICAL PROJECTS

Analysis and Interpretation of Benthic Samples

In 2000, the seventh year of a baywide benthic monitoring program established by NEP, Hillsborough, Manatee and Pinellas Counties collected a total of almost 200 samples throughout the bay, with TBEP taxonomic analysis support totaling \$30,000. TBEP participants and EPA EMAP are conducting a review of results in spring 2001, and will be redirecting efforts of the benthic program as appropriate for future years.

Results of the benthic monitoring program will be used to support development and application of the sediment quality target evaluation, with the objectives of establishing measurable targets and actions needed to reach those targets. This project will support laboratory analyses of the sediment quality and benthic collected through FFY 2001, development of numeric sediment quality targets, and assistance with identifying actions needed to meet targets.

Estimated total cost: \$30,000
Responsible party: Hillsborough County EPC/contractor

Technical Support and Data Management

Technical support will be needed to: facilitate technical workshops; prepare technical reports; support staff in the technical evaluation of implementation projects in the 2000-2005 Action Plans; develop a distributed data management system and assist with evaluation of the environmental monitoring program. It is anticipated that TBEP staff will also require continued data management support to tract and transfer data requested by TBEP partners and the public; manage the TBEP GIS library; provide data reduction and analysis services; refine and update the data base to track implementation of the CCMP; support graphic and mapping needs; and update CD ROM and Internet access to TBEP data and maps. Staff anticipates issuing separate work orders as specific needs arise.

Estimated total cost: \$37,000 (includes \$20,000 of Clean Water Action Plan supplement)
Responsible party: contractor
CCMP Action: Monitoring Bay Improvement, updating CCMP goals, data management, and technical evaluation of CCMP implementation projects.

Support of the Tampa Bay Seagrass Recovery Plan of Study

The 1999 seagrass coverage maps produced by SWFWMD indicate that seagrass coverage was reduced by almost 2000 acres since 1996, associated with the impact of El Nino rains on bay water quality. However, there are some areas of the bay (including Old Tampa Bay and Hillsborough Bay) where seagrass recovery was not responding even before the impacts of El Nino. The Tampa Bay Seagrass Workshop, held in August 2000, identified the need for additional investigation in these seagrass "problem areas", with the objective of defining specific actions needed to encourage the recovery of seagrass in these areas. A Tampa Bay Seagrass Working Group has been formed from the workshop participants, and has developed a Scope of Work to examine the causes of slowed seagrass recovery in problem areas, and to define specific actions needed to address these impacts.

The funds from this project will be used to support the Plan of Study for seagrass "problem areas". The Working Group members are committed to contributing significant time, effort and other support towards the projects. TBEP funds will be allocated as follows:

\$10,000 for scanning of seagrass photographs and development of a photo archive for Tampa Bay. FWC FMRI using TBEP funds together with funds from the Gulf of Mexico Program will perform the work.

\$7,000 for equipment needed to support an intensive seagrass and water quality monitoring program in the identified "problem areas". Specifically, equipment to measure light attenuation in the field is needed.

Specific projects and budget will be submitted to the Management Board for final approval prior to implementation.

Estimated total cost: \$17,000
Responsible parties: contractor/agency partners
CCMP Action: Seagrass protection and restoration goals

III. COMMUNITY OUTREACH AND EDUCATION

Community Information and Publications

Budget provides for continued publication of TBEP's Bay Guardian newsletter; quarterly updates to the TBEP Internet site; production of press releases and media kits, and other regular communication materials. Additional outreach efforts include preparation and production of a televised community forum on an issue of widespread interest; and production of a half-hour pilot video on Tampa Bay that will be used to promote the value of a monthly program on bay-related news to area cable or public access stations.

Estimated total cost: \$48,000

CCMP Action: Public Involvement chapter of CCMP and Section 7.7(e) of Interlocal Agreement

Invasive Species Outreach

Budget provides for comprehensive campaign to educate citizens about ecological problems associated with invasive species and enlisting their support in reporting any invasive species they encounter in the bay. Campaign could include posters that would be displayed at area boat ramps, bait shops and waterfront parks, Public Service Announcements, low-frequency radio transmitters to broadcast educational messages, and the creation of a hotline or clearinghouse where people could learn more about invasive species and report sightings of unusual plants and animals. This campaign could be coordinated by the TBEP in partnership with a community group.

Estimated total cost: \$15,000 (includes \$10,000 of Clean Water Action Plan supplement)

CCMP Action: Section 6.7(e) of Interlocal Agreement.

License Plate Marketing

The Tampa Bay Estuary license plate is projected to generate about \$60,000 in revenues in its first full years of availability (see Supplement A). The enabling legislation allows up to 5 percent of the earnings to be used for marketing of the license tag, or about \$2,500 based on projected revenues.

Because it is new and because there so many specialty plates now competing for the same target audience, extensive marketing is needed to heighten public awareness of the Tampa Bay tag and its benefits. Marketing tools to be considered include billboard advertisements; radio and TV PSA's; creation of stand-up desktop displays for area businesses who wish to promote the tag; and purchase of incentive items (such as t-shirts, hats or fishing license holders) to give motorists who purchase the plate.

Estimated total cost: \$10,000 (\$2,500 tag revenues - see Bay Restoration Grants)
(\$7,500 base program funds)

BUDGET

The proposed budget for the Tampa Bay Estuary Program's FFY01 Annual Work Plan is itemized in Table 1, indicating funding sources and amounts, and Table 2 showing projected expenditures.

As indicated in Table 1, the U.S. Environmental Protection Agency is expected to contribute a total of **\$340,000** to the TBEP in FFY01 that includes a \$30,000 Clean Water Action Plan (CWAP) supplement from EPA.

A total of **\$415,000** in non-federal funds will be provided by the six local governments represented on the Policy Board and the five basin boards of the Southwest Florida Water Management District within the Tampa Bay watershed. The contributions from local governments and basin boards are based on two-thirds of the non-federal contribution being paid by local governments and one-third by SWFWMD river basin boards. This is in keeping with Section 9.4 of the 1998 Interlocal Agreement executed by the six local governments, SWFWMD, FDEP, and other Management Board members. The funding contributions from local governments and basin boards are unchanged from last year.

Total TBEP funding for FFY01 will be **\$755,000**. This is \$10,000 more than last year's budget.

Of the **\$755,000** in total funding for FFY01, **\$680,000** will be used to fund the FFY01 Cooperative Agreement Workplan. The remaining **\$75,000** in non-federal supplemental funding from local partners will be tracked separately and may be used for projects that require non-federal funding or non-federal match.

Budget for Cooperative Agreement - Estimated expenditures by cost category are provided in Table 2. Implementation of the program's action plan, including staffing and program operating costs, totals **\$525,000**. A total of **\$84,000** is allocated for Contracted Technical Projects, while **\$70,500** is devoted to Community Outreach and Education Projects.

Budget for Non-Federal Projects - A total of **\$71,000** is allocated for Contracted Technical Projects, while **\$4,000** is devoted to National Outreach.

Table 1
TAMPA BAY ESTUARY PROGRAM
FUNDING TABLE, FFY 01

Source of Funding	Change from Amount	FFY00	Type
FEDERAL:			
FFY 01 EPA funding	\$300,000		Clean Water Act, Section 320
	30,000		Clean Water Action Plan
	<u>10,000</u>		Travel/Technology Transfer
TOTAL FEDERAL (requires match)	\$340,000	0	
NON-FEDERAL:			
City of Clearwater	\$ 13,979	0	City appropriation
City of St. Petersburg	33,379	0	City appropriation
City of Tampa	39,402	0	City appropriation
Manatee County	32,217	0	County appropriation
Pinellas County	73,714	0	County appropriation
Hillsborough County	<u>83,974</u>	<u>0</u>	County appropriation
Total Local Government	\$276,665	\$0	
S.W.F.W.M.D. BASIN BOARDS			
Alafia River B.B.	27,667	0	Basin Board appropriation
Manasota B.B.	27,667	0	Basin Board appropriation
Hillsborough River B.B.	27,667	0	Basin Board appropriation
Northwest Hillsborough B.B.	27,667	0	Basin Board appropriation
Pinellas-Anclote B.B.	<u>27,667</u>	<u>0</u>	Basin Board appropriation
Total Basin Boards	\$138,335	\$0	
TOTAL NON-FEDERAL	\$415,000	\$0	
(LESS NON-FEDERAL SUPPLEMENTAL FUNDS FOR MATCH PROJECTS)	(SEE PAGE 15) (\$ 75,000)		
TOTAL FFY 01 WORKPLAN BUDGET	\$680,000		

Table 2

**TAMPA BAY ESTUARY PROGRAM
FFY 01 PROJECTED EXPENDITURES**

<u>ACTIVITY OR PROJECT</u>	<u>ESTIMATED COST</u>	<u>CHANGE FROM FFY00</u>
A. COOPERATIVE AGREEMENT FUNDING		
I. PROGRAM ACTION PLAN IMPLEMENTATION		
Direct personnel services	297,940	
Fringe benefits	100,079	
Publication, subscriptions and dues	1,000	
Travel/conferences	14,000	
Insurance	7,500	
Legal expenses	8,000	
Capital outlays	4,000	
Printing/graphics	8,000	
Contract services	26,000	
Office rental	19,850	
Communications/Phones	6,000	
Equipment Lease/Maintenance	6,180	
Legal notices	1,500	
Auditing	12,000	
Other operating expenses	<u>13,451</u>	
Total Program Operations	525,500	\$42,500
II. CONTRACTED TECHNICAL PROJECTS		
Analysis of Benthic Samples	30,000	
Technical Support and Data Management	37,000	
Seagrass Recovery Plan Implementation	<u>17,000</u>	
Total Technical Projects	84,000	(\$111,000)*
III. COMMUNITY OUTREACH AND EDUCATION PROJECTS		
Community Outreach and Publications	48,000	
License Plate Marketing	7,500	
Invasive Species Outreach	<u>15,000</u>	
Total Outreach Projects	70,500	\$ 3,500*
TOTAL COOPERATIVE AGREEMENT FUNDING	\$ 680,000	
B. NON-FEDERAL SUPPLEMENTAL FUNDING – Page 15		
Technical Support and Data Management	48,000	
Seagrass Recovery Plan Implementation	23,000	
National Outreach	<u>4,000</u>	
TOTAL NON-FEDERAL SUPPLEMENTAL	75,000	\$75,000*
TOTAL PROJECTED EXPENDITURES	\$ 755,000	\$10,000

* Subject to change pending amendment to the FFY00 Cooperative Agreement and Workplan

NON-FEDERAL SUPPLEMENTAL FUNDING

On February 15, 2002, The Management Board recommended, and the Policy Board approved, amending the FFY 01 Cooperative Agreement and Workplan to release local partner overmatch for for new projects that require non-federal funding or non-federal match. The EPA approved the corresponding amendment to the FFY 01 Cooperative Agreement and Workplan on February 27, 2002. As a result of this amendment, the projects below totaling **\$75,000** will now be expensed through Board Operations.

FFY 01 PROJECTED EXPENDITURES OF SUPPLEMENTAL FUNDS

Technical Support and Data Management

Technical support will be needed to: facilitate technical workshops; prepare technical reports; support staff in the technical evaluation of implementation projects in the 2000-2005 Action Plans; develop a distributed data management system and assist with evaluation of the environmental monitoring program. It is anticipated that TBEP staff will also require continued data management support to tract and transfer data requested by TBEP partners and the public; manage the TBEP GIS library; provide data reduction and analysis services; refine and update the data base to track implementation of the CCMP; support graphic and mapping needs; and update CD ROM and Internet access to TBEP data and maps. Staff anticipates issuing separate work orders as specific needs arise.

Supplemental funds:	\$48,000
Estimated total cost:	\$85,000 (including FY01 Workplan)
Responsible party:	contractor
CCMP Action:	Monitoring Bay Improvement, updating CCMP goals, data management, and technical evaluation of CCMP implementation projects.

Support of the Tampa Bay Seagrass Recovery Plan of Study

Supplemental funds:	\$23,000
Estimated total cost:	\$40,000 (including FY01 Workplan)
Responsible parties:	contractor/agency partners
CCMP Action:	Seagrass protection and restoration goals

National Outreach

Budget provides \$2,000 for annual dues to the Association of National Estuary Programs, a professional, non-profit organization promoting increased awareness and support of the mission and accomplishments of the National Estuary Program. And \$2,000 is provided to co-sponsor the Fall/2001 meeting of EPA and ANEP in southwest Florida.

Supplemental funds:	\$4,000
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BAY RESTORATION GRANTS

Total license plate revenue is anticipated to be approximately \$60,000 of which 20 percent or \$12,000 is pledged to the Agency on Bay Management under the enabling legislation. TBEP's share of the specialty license plate revenues is projected to be \$48,000, which will continue to fund the Bay Mini-Grants.

The designated fund balance in license plate revenue will provide \$46,500 for bay restoration and Bay Mini-Grants of up to \$7,500 each to community groups for bay restoration and improvement projects. Mini-Grant recipients are selected by a committee composed of CAC members, and all projects must be completed within 12 months of award.

Estimated total cost: \$46,500
CCMP Action: Public Involvement chapter of CCMP and Section 6.7(e) of Interlocal Agreement.

PROJECTED EXPENDITURES

Bay Mini-Grants	\$46,500
License Plate Marketing	<u>2,500</u>
Total Projected Expenditures	49,000

PINELLAS COUNTY ENVIRONMENTAL FOUNDATION GRANT

The Tampa Bay Seagrass Restoration Strategy will assess potential causes and factor(s) which may be hindering successful restoration of seagrass in several identified “problem areas” along the western shore of Old Tampa Bay, areas where seagrasses existed in 1950 but are not found now. Based on these applied research results project partners, with input from seagrass scientists and resource managers, will define specific actions needed to encourage seagrass recovery in these areas (potentially totaling approximately 2000 acres of “restorable” seagrass habitat, or more than 15 % of the TBEP restoration goal), and disseminate their recommendations to managers, citizens and policy-makers.

Estimated total cost: \$299,600

CCMP Action: Seagrass protection and restoration goals

PROJECTED EXPENDITURES

NFWF/PCEF Funding		\$ 149,600
Approved Matching Challenge		\$ 150,000
(TBEP Cash Contribution	\$ 29,520)	
(TBEP In-kind Services	\$ 13,600)	
Total Projected Expenditures		\$ 299,600

FFY01

Travel

Summary

Tampa Bay Estuary Program

Fiscal Year 2001 Travel Expenses

<i>Staff Member</i>	<i>Begin Travel</i>	<i>End Travel</i>	<i>Location</i>	<i>Purpose</i>	<i>Airline</i>	<i>Rental Car</i>	<i>Hotel</i>	<i>Registration</i>	<i>PerDiem</i>	<i>Parking /Mileage /Other</i>
Greening	10/14/2001	10/18/200	Virginia	Nitrogen Conf 2001	\$228.19	\$50.00	\$0.00	\$1,200.00	\$0.00	\$26.25
Greening/Eckenrod	11/4/2001	11/8/2001	St. Pete Beach	ERF 2001	\$0.00	\$0.00	\$0.00	\$650.00	\$0.00	\$0.00
All	11/8/2001	11/11/200	St. Pete Beach	ANEF Fall Mtg	\$0.00	\$0.00	\$625.00	\$0.00	\$0.00	\$0.00
Greening	11/13/2001	11/14/200	Baltimore, MD	SETAC Conference	\$194.50	\$25.00	\$272.26	\$0.00	\$36.00	\$21.25
Greening	11/26/2001	11/28/200	New Orleans, LA	EPA Non Point Source	\$195.50	\$20.00	\$246.16	\$150.00	\$30.00	\$25.00
Eckenrod	12/12/2001	12/14/200	Rhode Island	Coastal resource	\$197.25	\$50.00	\$0.00	\$0.00	\$60.00	\$0.00
Greening	12/12/2001	12/12/200	Tallahassee, FL	Nutrient Criteria	\$86.50	\$31.44	\$0.00	\$0.00	\$9.00	\$10.00
Holland	12/17/2001	12/18/200	Pensacola, FL	Invasive Species	\$303.50	\$0.00	\$65.79	\$0.00	\$42.00	\$20.00
Holland	1/15/2002	1/15/2002	New Orleans, LA	GOMP	\$94.00	\$20.00	\$170.12	\$0.00	\$18.00	\$20.00
Eckenrod	1/29/2002	1/29/2002	Washington, DC	Mgmt and Budget Conf	\$327.50	\$31.00	\$0.00	\$0.00	\$18.00	\$10.00
Greening	2/23/2002	2/25/2002	Ft. Lauderdale, FL	Watershed 2002	\$0.00	\$0.00	\$122.10	\$0.00	\$15.00	\$0.00
Eckenrod	3/9/2002	3/14/2002	Washington, DC	EPA/ANEP	\$509.50	\$15.00	\$687.30	\$200.00	\$123.00	\$42.00
Greening	4/9/2002	4/12/2002	Woods Hole, MA	ERF	\$370.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Cladas	4/30/2002	5/1/2002	Atlanta	Region 4 mtg	\$205.50	\$5.25	\$106.02	\$0.00	\$36.00	\$0.00
Eckenrod	4/30/2002	5/1/2002	Atlanta	Region 4 mtg	\$229.50	\$5.25	\$106.02	\$0.00	\$36.00	\$20.00
Hosler	4/30/2002	5/1/2002	Atlanta	Region 4 mtg	\$229.50	\$5.25	\$106.02	\$0.00	\$39.00	\$0.00
Squires, A	4/30/2002	5/1/2002	Atlanta	Region 4 mtg	\$331.50	\$5.25	\$106.02	\$0.00	\$39.00	\$0.00
Greening	5/19/2002	5/22/2002	Roanoke, VA	ASCE Water Resource	\$533.50	\$0.00	\$0.00	\$195.00	\$0.00	\$0.00

<i>Staff Member</i>	<i>Begin Travel</i>	<i>End Travel</i>	<i>Location</i>	<i>Purpose</i>	<i>Airline</i>	<i>Rental Car</i>	<i>Hotel</i>	<i>Registration</i>	<i>PerDiem</i>	<i>Parking /Milage /Other</i>
Greening	8/3/2002	8/8/2002	Boulder, CO	NRC Mtg.	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Greening	9/3/2002	9/6/2002	Gulf Breeze, FL	GED Review	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Greening	9/15/2002	9/17/2002	Jupiter, FL	AWMA Mtg.	\$0.00	\$0.00	\$204.50	\$215.00	\$18.00	\$129.30
<i>Totals</i>					\$4,035.94	\$263.44	\$2,817.31	\$2,610.00	\$519.00	\$323.80

TAMPA BAY ESTUARY PROGRAM

FFY 02 ANNUAL WORK PLAN

June 2002

Printed on recycled paper

FFY 2002 ANNUAL WORK PLAN

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INTRODUCTION

The FFY 02 Annual Work Plan outlines activities proposed for the Tampa Bay Estuary Program (TBEP) for the fiscal year beginning October 1, 2002. This year will mark the beginning of the fifth year of Program operation under the Interlocal Agreement through which the Comprehensive Conservation and Management Plan (CCMP) is being implemented.

A significant increase in federal funding for NEPs in FFY 02, coupled with the increase in required non-federal match that took effect in FFY 01, dictates that TBEP follow a new funding strategy for FFY 02. EPA will contribute \$510,000 to each NEP in FFY 02 for implementing CCMPs. The required non-federal match will be \$510,000 and can be met either with cash or in-kind contributions. TBEP can no longer afford the luxury of meeting the non-federal match requirement with cash contributions from its non-federal partners.

The program funding strategy for FFY 02 consists of the following elements:

- Fund projected expenditures for FFY 02 with \$510,000 in federal funds and \$300,000 in non-federal funds.
- Meet the balance of required matching funds with \$210,000 in in-kind contributions from one or more projects implemented by TBEP partners (Table 2).
- Hold the non-federal contributions from local governments and SWFWMD basin boards at \$415,000, the same level as the previous two years, and use the \$115,000 in overmatch funds to leverage federal and state dollars for projects sponsored by TBEP's partners.

To help leverage the overmatch funds most effectively, it is proposed that a professional grant writer/fund raiser be contracted to work with TBEP local government and agency partners in locating promising state and federal funding sources and preparing grant applications.

A substantial increase in revenue from the Tampa Bay specialty license tag is expected in FFY 02. Those funds will be available for Bay Mini-Grants to schools and community groups as in past years or other projects deemed appropriate by the Policy Board.

The sharp decline in seagrass recovery in Old Tampa Bay between 1996 and 1999 triggered a multi-faceted research project to determine the causes of the decline and to define specific action needed to reverse the decline. The Tampa Bay Seagrass Recovery Project was initiated this year with funding support from the Pinellas County Environmental Foundation and others. Funding the second and final year of the project is one of the important Contracted Technical Projects proposed in the FFY 02 Annual Work Plan.

FFY 01 OBJECTIVES AND ACCOMPLISHMENTS

FFY 01 OBJECTIVES

The principal Program objective in FFY 01 was to continue to carry out responsibilities assigned to the Tampa Bay Estuary Program under the CCMP Implementing Agreement. Duties that received special emphasis in FFY 01 include:

- overseeing implementation of five-year action plans for bay restoration for the period 2000-2004, including nitrogen reduction projects of public and private sector participants;
- continuing the Program's effective community outreach programs to promote public participation and facilitate CCMP implementation;
- continuing actions to address emerging priority issues including invasive species;
- implementing a process for selecting qualified projects and administering agreements for expenditure of license plate revenues;
- implementing a CCMP financing strategy developed in conjunction with the Financing Strategy Task Force;
- continuing implementation of the Program's Action Plan to achieve goals not addressed in the action plans of other parties; and
- continuing assistance to other programs in development and implementation of watershed management plans in the Tampa Bay watershed that helps to advance the goals of the CCMP.

FFY 01 TECHNICAL ACCOMPLISHMENTS

In addition to completion of the technical objectives listed in Appendix A, the TBEP Technical Advisory Committee and technical staff accomplished the following in the fiscal year ending September 30, 2002.

Major focus areas of the TAC and its subcommittees during this year included finalization of review of the technical re-evaluation of the Nitrogen Management Strategy for Tampa Bay, recommendations for the next 5-year nitrogen management strategy based on these reviews, and further refinement of the Seagrass Restoration Strategy for Old Tampa Bay. Specific activities included the following:

- The Technical Advisory Committee finalized reviews of the chlorophyll/light analyses and nitrogen loading estimates (existing and future). During 2000-2001, the TAC reviewed and recommended revisions to each of the five technical reports supporting the Nitrogen Management Strategy, one of TBEP's primary initiatives. The Management and Policy Boards approved the TAC recommendations in spring 2001.
- The Tampa Bay Atmospheric Deposition Study group held a 2-day conference June 21-22, 2001. Over 75 scientists and managers (local and national) attended the meeting, with the objectives of providing a review of the first 5 years of monitoring atmospheric deposition to Tampa Bay, and of providing input into the design for the next 5-year period.

Results of the first 5 years indicate that atmospheric deposition contribution of nitrogen to the bay continues to be between 20-30 % per year, depending upon rainfall amounts. Contribution of other contaminants (heavy metals, PAHs, PCBs and organic pesticides) to water quality or sediments in the bay from atmospheric sources appears to be negligible (with the possible exception of mercury). FDEP's Bay Regional Atmospheric Chemistry Experiment (BRACE) was initiated in spring 2001, and FDEP will be assuming funding responsibility of the long-term atmospheric deposition monitoring as well as specific intensive experiments. Presentations from the conference can be viewed at www.hsc.usf.edu/publichealth/EOH/BRACE/TBADS.htm.

- The Army Corps of Engineers and TBEP jointly convened the yearly Dredged Material Management Strategy meeting in August. TBEP staff and TAC members are among the groups working to outline a process involving appropriate groups/individuals to take advantage of opportunities for using dredged material in habitat restoration projects over the next 10 years.
- A Water Budget Workshop was held fall 2001. Characterization of a "water budget" for Tampa Bay (freshwater inflows and outflows to and from the Bay, and effects that changes in the water budget may have on the bay's environmental systems) is a priority issue of the Tampa Bay Estuary Program and its partners. Goals of the Tampa Bay Water Budget Workshop were to determine the current state of knowledge of freshwater inflow and outflow in Tampa Bay, and to identify and prioritize gaps in our knowledge as a first step in characterizing the Tampa Bay water budget. Over 75 scientists and resource managers participated in the two-day workshop.

FFY 01 COMMUNITY OUTREACH ACCOMPLISHMENTS

The Tampa Bay Estuary Program continues to emphasize the importance of environmental education to the long-term health of the bay by creating a constituency of informed, involved citizens. This mission is aided by a Community Advisory Committee composed of residents from a variety of backgrounds and interests who share a common concern for the future of the bay.

CAC activities in FFY 01 included: serving as judges for the Bay Mini-Grants program, which provided \$62,000 to community groups for bay improvement projects; developing an Action Plan to address improvements in design and maintenance of stormwater ponds; and hosting for the third year an informal luncheon with Policy and Management Board members.

In addition to serving as the staff coordinator for the CAC, the Program's Public Outreach Coordinator continued to serve as chair of the Manatee Awareness Coalition, an alliance of scientists, conservationists, industry representatives and others concerned about protection of Tampa Bay's population of endangered manatees. The MAC continues to be a leader in developing innovative boater education programs and tools to promote protection of manatees and their habitats. More than 100 volunteers contributed more than 6,000 hours of their time in 2001 through the Tampa Bay Manatee Watch program developed by the MAC and coordinated by Tampa Bay Watch. In 2001, the MAC expanded the Manatee Watch program from the water to the waterfront, promoting manatee protection to bayside neighborhoods with a high percentage of docks and boats. The Neighborhood Manatee Watch program provides a slide show and resource notebook, and rewards communities who take steps to safeguard manatees by designating them a "Manatee Friendly Neighborhood."

Besides its innovative educational programs, the MAC advised local officials in 2001 on the creation of two manatee protection zones, one around the Florida Power Corp. plant at Weedon Island in Pinellas County, and one covering about six miles of shallow waters in eastern Tampa Bay.

TBEP staff support for the MAC included preparation of meeting agendas; coordination of the speaker's bureau; assistance with design and writing of educational materials; and support in preparation of grant applications and promotional materials.

Another key area of focus for the Public Outreach Coordinator was the development and early implementation of an Action Plan addressing invasive species in Tampa Bay. This action plan became the first new issue to be added to the CCMP since its approval in 1996. The Public Outreach Coordinator developed the Action Plan with assistance from a newly formed Steering Committee, and began implementation of the outreach components of the plan in FY 2001. The outreach program, known as "Eyes on The Bay", includes a substantial expansion of the TBEP website to address invasive species; a comprehensive slide show designed to educate citizens about the threats posed by bio-invasions and enlist their help in preventing further introductions; and assistance in planning and hosting a statewide conference on invasive research and management scheduled for November 2002.

TBEP also helped to sponsor an exhibit on invasive species at The Florida Aquarium, opening in May 2002 and expected to draw more than 500,000 visitors a year. Additionally, TBEP's Public Outreach Coordinator serves on the Gulf of Mexico Program's Invasive Species Focus Team.

Other public outreach accomplishments in FFY 01 included:

- Coordinating marketing efforts for the Tampa Bay Estuary license plate, including production of promotional materials such as inserts for tag renewal notices, rack cards and website information. License tag sales steadily climbed in FFY 01 and are expected to reach \$120,000 annually by the end of calendar year 2002. Revenues from 2001 were used to finance Bay Mini-Grants for community groups.
- Coordinating reprints of the Cockroach Bay and Hillsborough Bay Boater's Guides.
- Coordinating planning, volunteer recruitment, logistics and promotion for "Give A Day For The Bay," the TBEP's annual volunteer workday. The event, held in May 2002, attracted more than 200 volunteers who participated in a bay restoration activity such as planting sea oats or creating an oyster reef. All volunteers received a free lunch and t-shirt.
- Updating TBEP's website, including the addition of the "Eyes On The Bay" invasive species section, and maintenance of the website listserver and Community Bulletin Board. This task also involved responding to more than 100 questions submitted by visitors to the site from around the world, through the "Ask Me About The Bay" feature.
- Serving as co-chair of the planning committee for the third annual VIP tour of Cockroach Bay sponsored by the Cockroach Bay Aquatic Preserve Management Advisory Team. Nearly 60 Hillsborough County dignitaries attended the May 23 tour of this spectacular segment of Tampa Bay, viewing both on-water areas of the preserve as well as land-based habitat restoration sites.
- Writing and coordinating production of TBEP's popular quarterly newsletter, *Bay Guardian*.

FFY 02 ANNUAL WORKPLAN

I. TBEP ACTION PLAN IMPLEMENTATION AND CCMP OVERSIGHT

TBEP staff will coordinate development of action plans of TBEP partners for the five-year period ending 2005. This includes tracking implementation of the Nitrogen Management Consortium Action Plan, a responsibility that takes on added importance if the information collected by TBEP is used by FDEP as the basis for determining compliance with the Total Maximum Daily Load (TMDL) of nitrogen for Tampa Bay.

As one of the nation's twenty-eight national estuary programs and a priority SWIM water body, Tampa Bay enjoys an enviable position in the competition for federal and state grants, particularly those grant programs administered by EPA and FDEP. As in previous years FFY 02 is an opportunity for TBEP partners to take advantage of the priority ranking of Tampa Bay and large parts of its watershed. TBEP staff, aided by the services of a contracted grant writer, will continue to work with local governments and agency partners to help secure grant assistance for projects contributing to implementation of the CCMP.

TBEP staff will endeavor to meet its other responsibilities outlined in the CCMP and Interlocal

Agreement, including: continue the Program's effective community outreach programs to promote public participation and facilitate CCMP implementation; organize the fourth Bay Area Scientific Information Symposium and prepare a companion report to the citizens of the Tampa Bay region; report to the Policy Board on each partners' compliance with the Interlocal Agreement and implementation of their Action Plans; coordinate several research projects to collect information needed to better manage bay resources; and, work with the Tampa Bay Dredged Material Advisory Committee and Army Corps of Engineers to implement the long-term dredged material management plan for the bay.

The re-examination and updating of CCMP goals as provided for in Sec 4.2 of the Interlocal Agreement will also be completed during the coming year

Estimated total cost: \$540,000 (TBEP)
CCMP Action: Implementing responsibilities of the TBEP entity as required under Section 6.7 of the Interlocal Agreement.

II. TBEP PARTNERS ACTION PLAN IMPLEMENTATION

Balm Road Wetland and Stormwater Treatment Project

This wetland habitat restoration and stormwater treatment project is located in south Hillsborough County, Florida, and lies adjacent to the northern border of Bullfrog Creek on 1,609 acres purchased through the Hillsborough County Environmental Lands Acquisition and Protection Program. The main objective of the project is to convert 29 acres of disturbed uplands (i.e., fallow farm fields and pasture) to freshwater marsh so that off-site stormwater runoff from active, upstream agricultural areas can be captured and treated prior to entering the upper and middle reaches of the creek. Disturbed uplands will be graded to wetland elevations, while bypass swales will redirect excess runoff into newly created wetlands. The project will increase wetland wildlife habitat and reduce sedimentation and pollution entering Bullfrog Creek and, ultimately, Tampa Bay. Construction is scheduled to begin during the Fall of 2002. Final design plans are complete and all environmental permits are secured. Hillsborough County, the District's cooperator for this project, is in the process of preparing a Request for Bids (RFB) for construction and planting.

Estimated total cost:	\$1,712,000	Design, Permitting and Construction Management
In-Kind Match ¹ :	\$ 210,000	
Responsible party:	Hillsborough County:	\$100,000
	SWFWMD:	\$100,000
Construction:	SWFWMD:	\$800,000 ²
	Hillsborough County:	\$712,000 ³

1 - \$ 210,000 is offered by SWFWMD as in-kind match for FFY 02 Workplan.

2 - \$ 320,000 is from Alafia River Basin Board and \$ 480,000 is from State SWIM Program.

3 - \$412,000 from the Tampa Port Auth.; \$300,000 is from the Pollution Recovery Fund (FDEP).

Professional Grant Writer

To help leverage the non-federal overmatch funds most effectively, it is proposed that a professional grant writer be contracted to work with TBEP local government and agency partners in locating promising state and federal funding sources and preparing grant applications. The grant writer's activities will be directed toward grants and funding opportunities that contribute to implementation of the CCMP. The grant writer will help facilitate communication among grant writers of TBEP partners and help them identify promising grant opportunities that might otherwise be overlooked. The grant writer will also provide grant-writing support to local governments in the Tampa Bay watershed that may lack in-house, grant-writing expertise.

Estimated total cost: \$30,000
Responsible party: contractor

III. CONTRACTED TECHNICAL PROJECTS

Analysis of Benthic Samples for Special Surveys

The TBEP Benthic Monitoring Subcommittee is currently re-evaluating long-term benthic monitoring objectives for Tampa Bay, based on the eight years of data collection completed for the Tampa Bay Benthic Monitoring Program. As an important element of the redesign process, it is anticipated that a number of "special surveys" for specific areas within Tampa Bay will be recommended for intensive survey work starting in 2002. These areas include Ybor and Seddon Channels in Hillsborough County, and the Bayside Bridge area in Pinellas County. Each of these areas may be more heavily impacted than surrounding areas due to recent or long-term events, and a detailed characterization is needed to provide baseline conditions to compare with future recovery or change.

This project will support laboratory analyses of the sediment quality and benthic organisms collected in the "special survey" areas. Samples will be collected in late summer, 2002.

Estimated total cost: \$30,000
Responsible party: HCEPC/contractor

Technical Support and Data Management

Technical support will be needed to: facilitate technical workshops; prepare technical reports; support staff in the technical evaluation of implementation projects in the 2000-2005 Action Plans; develop a distributed data management system and assist with a sediment quality assessment. It is anticipated that TBEP staff will also require continued data management support to track and transfer data requests; manage the TBEP GIS library and maintain the new technical website (www.tbep.tech.org); provide data reduction and analysis; support graphic and mapping needs; and update CD ROM and Internet access to TBEP data and maps. Staff anticipates issuing separate work orders as specific needs arise.

Estimated total cost: \$80,000
Responsible party: contractor

Support of the Tampa Bay Seagrass Recovery Plan of Study: Year 2

In 2001, TBEP partners applied for and received a Pinellas County Environmental Foundation grant to examine the causes of slowed seagrass recovery in the Feather Sound area of Old Tampa Bay, and to define specific actions needed to address these impacts. The research team is committed to contributing significant time, effort and other support towards the projects. TBEP funds that are expected to be needed include equipment, specific expertise not available within the research team members, and analytical support for the second and final year of this project. Specific project needs for these funds will be defined through development of a Project Quality Assurance Plan (currently underway), and will be presented to the Management Board for approval prior to finalization.

Estimated total cost: \$40,000
Responsible party: contractor/agency partners

Bay Area Scientific Information Symposium (BASIS 4)

The fourth Bay Area Scientific Information Symposium (BASIS 4) is schedule to be held in December 2002. BASIS 4 will bring together bay area scientists and managers to present the results of six years of scientific research and monitoring compiled since BASIS 3 in 1996. The link between science and management will be an important element of the symposium. The U.S. Geological Survey, one of the co-sponsors, will use this opportunity to present the findings of its integrated science program for Tampa Bay.

Estimated total cost: \$15,000 for TBEP portion
Responsible parties: TBEP, USGS, ABM, and other sponsors

Evaluation of In-Bay Habitats and Prioritization of Restoration Opportunities

TBEP and its partners developed a Habitat Restoration Masterplan ("Restoring the Balance") in 1994, and have been implementing the strategy since its adoption. The Masterplan focuses on major shoreline and upland habitats (oligohaline habitat, marshes and mangroves, and associated uplands). Seagrass restoration has also been a major habitat focus of TBEP partners and is the basis for the Program's nitrogen management strategy. This project will identify existing and historical information on the distribution and extent of other in-bay habitats including mudflats and sandbars, oyster bars, dredged holes, in-bay islands, hard bottom habitat, artificial reefs and others. Evaluation and prioritization of restoration opportunities for these habitats and seagrass would follow the initial characterization.

Estimated total cost: no additional cost
Responsible party: TBEP staff

IV. COMMUNITY OUTREACH AND EDUCATION

Community Information and Publications

Budget provides for contribution to publication of Soundings, the regional bay journal coordinated by the Tampa Bay Regional Planning Council; quarterly updates to the TBEP Internet site; production of press releases and media kits, and other regular communication materials. Additional outreach efforts planned for FFY 02 include: support for a statewide Invasive Species Workshop, including an outreach session, to be held in Tampa in November 2002; support for a citizens session, including lectures and fields trips, as part of the BASIS "State of the Bay" conference in December 2002; and purchase of heavy-duty aluminum signs to recognize "Manatee Friendly Neighborhoods" as part of the ongoing Manatee Watch education program. A report to the citizens of Tampa Bay on the progress of bay restoration efforts will also be published.

TBEP also will sponsor an annual Student Ocean Conference at The Florida Aquarium that pairs area students with mentors in the environmental field to develop strategies for addressing key bay problems.

An update and reprint of the large Tampa Bay Boater's Guide may also be required in the coming year.

Estimated total cost: \$60,000
CCMP Action: Public Involvement chapter of CCMP and Section 7.7(e) of Interlocal Agreement

Student Ocean Conference

Budget provides for \$5,000 for annual one-day conference with students and local environmental experts, and teacher workshops before the conference.

Estimated total cost: \$5,000
CCMP Action: Public Involvement chapter of CCMP and Section 6.7(e) of Interlocal Agreement.

Invasive Species Outreach

Budget provides for continuation of campaign to educate citizens about ecological problems associated with invasive species and enlists the support of bay user groups in reporting any invasive species they encounter in the bay, and preventing further introductions. A key element of the campaign for FY 02 will be sponsorship of a statewide workshop to examine the status of invasive species research and outreach efforts in Florida.

Estimated total cost: \$10,000
CCMP Action: Section 6.7(e) of Interlocal agreement.

BUDGET

The proposed budget for the Tampa Bay Estuary Program's FFY 02 Annual Work Plan is itemized in Table 1, indicating funding sources and amounts, and Table 2 showing projected expenditures.

As indicated in Table 1, the U.S. Environmental Protection Agency will contribute a total of **\$510,000** to the TBEP in FFY 02, an increase of **\$170,000** over the Agency's FFY 01 contribution.

The required non-federal match will be **\$510,000** and can be met either with cash or in-kind contributions. A total **cash** contribution of **\$415,000** in non-federal funds will be provided by the six local governments represented on the Policy Board and the five basin boards of the Southwest Florida Water Management District within the Tampa Bay watershed. The contributions are in keeping with Section 9.4 of the 1998 Interlocal Agreement executed by the six local governments, SWFWMD, FDEP, and other Management Board members. The funding contributions from local governments and basin boards are unchanged from last year.

Local partners will also contribute an additional **\$210,000** in "in-kind" from non-federally funded projects that are consistent with CCMP objectives. This contribution will be reflected in the Workplan under "TBEP Partners Action Plan Implementation". The cash difference will allow TBEP to use **\$115,000** in non-federal supplemental funds to leverage future grants that require non-federal match.

A total of **\$1,020,000** will be used to fund the FFY 02 Cooperative Agreement Workplan.

Budget for Cooperative Agreement - Estimated expenditures by cost category are provided in Table 2. Implementation of the program's action plan, including staffing and program operating costs, totals **\$540,000**. Partners Actions Plan Implementation is estimated at **\$240,000**. A total of **\$165,000** is allocated for Contracted Technical Projects, while **\$75,000** is devoted to Community Outreach and Education Projects.

Budget for Non-Federal Supplemental Funding (Supplement "A", page 16) - A total of **\$111,000** is allocated for future grant match, while **\$4,000** is devoted to National Outreach.

Table 1
**TAMPA BAY ESTUARY PROGRAM
FUNDING TABLE, FFY 02**

Source of Funding	Amount	Change from FFY 01	Type
FEDERAL:			
FFY 02 EPA funding	\$500,000 <u>10,000</u>		Clean Water Act, Section 320 Travel/Technology transfer
TOTAL FEDERAL (requires match)	\$510,000	\$170,000	
NON-FEDERAL:			
City of Clearwater	\$ 13,979	0	City appropriation
City of St. Petersburg	33,379	0	City appropriation
City of Tampa	39,402	0	City appropriation
Manatee County	32,217	0	County appropriation
Pinellas County	73,714	0	County appropriation
Hillsborough County	<u>83,974</u>	<u>0</u>	County appropriation
Total Local Government	\$276,665	\$0	
Alafia River Basin Board	\$ 27,667	0	Basin Board appropriation
Manasota Basin Board	27,667	0	Basin Board appropriation
Hillsborough River B.B.	27,667	0	Basin Board appropriation
Northwest Hillsborough B.B.	27,667	0	Basin Board appropriation
Pinellas-Anclote B.B.	<u>27,667</u>	<u>0</u>	Basin Board appropriation
Total Basin Boards	\$138,335	\$0	
In-kind contribution from TBEP Partners' Action Plans	\$210,000	\$210,000	
TOTAL NON-FEDERAL	\$625,000	\$210,000	
Required match	510,000		
Overmatch	115,000		
[LESS NON-FEDERAL SUPPLEMENTAL FUNDS FOR MATCH PROJECTS]	(see page 15 and 16) [\$115,000]	[\$ 40,000]	
TOTAL FFY 02 WORK PLAN (Total federal + total non-federal minus non-federal supplemental)	\$1,020,000	\$ 340,000	

Table 2
TAMPA BAY ESTUARY PROGRAM
PROJECTED EXPENDITURES, FFY 02

<u>ACTIVITY OR PROJECT</u>	<u>ESTIMATED COST</u>	<u>CHANGE FROM FFY 01</u>
A. <u>COOPERATIVE AGREEMENT FUNDING</u>		
I. TBEP ACTION PLAN IMPLEMENTATION		
Direct personnel services	295,023	
Other personnel services	12,000	
Indirect costs	82,606	
Publication, subscriptions and dues	1,200	
Travel/conferences	20,000	
Insurance	8,000	
Legal expenses	8,500	
Capital outlays	4,000	
Printing/graphics	6,000	
Contract services	26,000	
Office rental	21,500	
Communications/Phones	8,500	
Equipment Lease/Maintenance	6,500	
Auditing	12,000	
Office supplies	9,000	
Postage/Mass Mailing	9,400	
Legal Notices	1,750	
Other operating expenses	<u>8,021</u>	
Total Program Operations	540,000	14,500
II. TBEP PARTNERS ACTION PLAN IMPLEMENTATION		
One or more major projects from Partners' Action Plans totaling at least \$210,000 in in-kind contributions	210,000	
Fundraising Support for TBEP Partners	<u>30,000</u>	
Total Partners Action Plan Implementation	240,000	240,000
III. CONTRACTED TECHNICAL PROJECTS		
Analysis of Benthic Samples	30,000	
Technical Support and Data Management	80,000	
Bay Area Scientific Information Symposium 4	15,000	
Tampa Bay Seagrass Recovery Study -- Year 2	<u>40,000</u>	
Total Technical Projects	165,000	81,000
IV. COMMUNITY OUTREACH AND EDUCATION PROJECTS		
Community Outreach and Publications	60,000	
Invasive Species Outreach	10,000	
Student Ocean Conference	<u>5,000</u>	
Total Outreach Projects	75,000	4,500

TOTAL COOPERATIVE AGREEMENT FUNDING \$1,020,000

\$340,000

Table 2 (Continued)
TAMPA BAY ESTUARY PROGRAM
PROJECTED EXPENDITURES, FFY 02

<u>ACTIVITY OR PROJECT</u>	<u>ESTIMATED COST</u>	<u>CHANGE FROM FFY 01</u>
B. <u>NON-FEDERAL SUPPLEMENTAL FUNDING</u>		
CCMP Implementation Support	111,000	
National Outreach	<u>4,000</u>	
Total Projects	115,000	
<i>TOTAL NON-FEDERAL SUPP. FUNDING</i>	<i>\$115,000</i>	<i>\$ 40,000</i>

SUPPLEMENT A

NON-FEDERAL SUPPLEMENTAL FUNDING

FFY 02 PROJECTED EXPENDITURES OF SUPPLEMENTAL FUNDS

CCMP Implementation Support

On February 15, 2002, the Management Board recommended, and the Policy Board approved, applying \$115,000 in local partners' supplemental funds for projects that require non-federal funding or non-federal match.

Supplemental funds: \$111,000

Responsible party: contractors/local governments/agencies/university

CCMP Action: Monitoring Bay Improvement, updating CCMP goals, data management, and technical evaluation of CCMP implementation projects.

National Outreach

Budget provides \$4,000 for annual dues to the Association of National Estuary Programs, a professional, non-profit organization promoting increased awareness and support of the mission and accomplishments of the National Estuary Program. ANEP's congressional education and outreach efforts were arguably the most important factor contributing to the \$170,000 increase in federal funding for each NEP in FFY 02.

Supplemental funds: \$4,000

SUPPLEMENT B

ADDITIONAL PROJECTS AND GRANTS TO BE IMPLEMENTED IN FFY 02

In addition to the projects outlined in the TBEP FFY 02 Annual Workplan, the following TBEP projects and grants will be initiated (in association with program partners) in FFY 02. Funding sources, including the budget year, for each of these projects are noted.

BAY RESTORATION GRANTS

Total license plate revenue is anticipated to be approximately \$120,000 of which 20 percent or \$24,000 is pledged to the Agency on Bay Management under the enabling legislation. TBEP's share of the specialty license plate revenues is projected to be \$96,000, which will continue to fund the Bay Mini-Grants.

The designated fund balance in license plate revenue will provide funding for Bay Mini-Grants of up to \$7,500 each to community groups for bay restoration and improvement projects. A committee composed of CAC members selects Mini-Grant recipients, and all projects must be completed within 12 months of award.

Estimated total cost: \$96,000
Funding Source: Tampa Bay Estuary license plate revenues; 308-1400
CCMP Action: Public Involvement chapter of CCMP and Section 6.7(e) of Interlocal Agreement.

PINELLAS COUNTY ENVIRONMENTAL FOUNDATION GRANT

The Tampa Bay Seagrass Restoration Strategy will assess potential causes and factor(s) which may be hindering successful restoration of seagrass in several identified "problem areas" along the western shore of Old Tampa Bay, areas where seagrasses existed in 1950 but are not found now. Based on these applied research results project partners, with input from seagrass scientists and resource managers, will define specific actions needed to encourage seagrass recovery in these areas (potentially totaling approximately 2000 acres of "restorable" seagrass habitat, or more than 15 % of the TBEP restoration goal), and disseminate their recommendations to managers, citizens and policy-makers.

Estimated total cost:	\$299,600	
Funding Sources:	PCEF	\$149,600
	TBEP; FFY 01 Supp. Funds 351-1173	\$ 91,900 (cash+in-kind)
	SWFWMD	\$ 7,100 (in-kind)
	Pinellas County DEM	\$ 24,000 (in-kind)
	FMRI	\$ 13,000 (in-kind)
	City of Tampa	\$ 10,000 (in-kind)
	EPCHC	\$ 4,000 (in-kind)

COMMUNITY PROFILE OF SEAGRASS MEADOWS OF THE GULF COAST

Although many recent studies and evaluations of the ecology and biology of seagrass meadows on Florida's west coast have been and are being conducted by academic researchers, agency scientists, resource managers and private companies, a synthesis of information of seagrass ecology/biology has not been compiled since 1989. The final products for this synthesis document will be produced in hard copy format, with extensive graphics, databases and photos included on an accompanying CD and distribution on the web. A Steering Committee, consisting of seagrass and seagrass community scientists and resource managers, met in January 2002, and identified elements and issues which should be included in the synthesis. The Steering Committee will also review aspects of the synthesis as they are completed.

Drs. Clinton Dawes (USF Biology Department) and Ron Phillips (currently working with FMRI) are the coauthors on this synthesis. The Tampa Bay Seagrass Working Group, with additional expertise from seagrass biologists from other areas, is acting as advisors and reviewers.

Total Project Cost:	\$ 43,000	
Funding Sources:	Gulf of Mexico Program	\$18,000
	TBEP; FFY 01 Supp. Funds 351-1173	\$10,000
	FWC Florida Marine Research Institute	\$10,000 (in-kind)
	U.S. Geological Survey	\$ 5,000 (in-kind)

NUTRIENT FLUX FROM SEDIMENTS TO TAMPA BAY

This project will provide a "missing element" (nutrient flux between sediments and water column) for Tampa Bay Nitrogen Management Strategy, to refine nitrogen budgets for the Bay, and help to define more accurate nutrient loading targets (including TMDLs). Rates of nutrient flux between sediments and water column in Tampa Bay will be measured on a quarterly basis for one year, using replicate diver-collected cores incubated in the laboratory. Drs. Paul Carlson (FWC FMRI) and Peter Swarzenski (USGS) will be the principal investigators on this project.

Total Project Cost:	\$ 72,000	
Funding Sources:	Gulf of Mexico Program	\$22,000
	Florida DEP (BRACE initiative)	\$25,000
	TBEP; FFY 01 Supp. Funds 351-1173	\$10,000
	FWC Florida Marine Research Institute	\$10,000 (in-kind)
	US Geological Survey	\$ 5,000 (in-kind)

PAH FLUX TO TAMPA BAY

Urbanization has placed a great pollution burden on Tampa Bay and its adjacent waters. Sediments of Tampa Bay most heavily impacted by urban or commercial activities have levels up to 3 mg kg⁻¹ for individual polycyclic aromatic hydrocarbons (PAHs), which for some PAHs poses a significant ecological or human health risk (TBNEP 1996). The portion of the atmospheric flux of PAHs to the bay that is derived from vehicle emissions will be explained through this research.

PAHs are found in nature, and are formed by the incomplete combustion of fossil fuels. They enter the Bay from urban and agricultural runoff, direct industrial and municipal discharges to surface waters, and atmospheric deposition. For some watersheds, atmospheric deposition represents a significant input to the total surface water PAH burden, independent of adjacent land use. Across the nation increases in surface water sediment concentrations track increases in "vehicle miles traveled". Gasoline and diesel vehicles have been identified as the major contributors in the atmospheric deposition of PAHs to Chesapeake Bay and Massachusetts Bay and Casco Bay, respectively.

For the Tampa Bay area, an intensive PAH measurement period will have tremendous value in quickly resolving extant questions about the PAH particle-bound fraction, wet deposition rates and air-water exchange of gases. This project will be timed to coincide with the Bay Regional Atmospheric Chemistry Experiment (BRACE). PAH measurements would also support source apportionment of local and transported ambient air pollution among the utility, industrial, and transportation source categories. Combined with BRACE-derived concentration and deposition estimates for metals and volatile organic compounds, an improved estimate of the ambient air and water PAH concentrations, the direction and magnitude of the PAH fluxes, and the apportionment of these air toxins between the source categories would provide enough scientific data to assess the human and environmental health benefit of planned or proposed source strength reductions.

The University of South Florida, Department of Public Health, will conduct this research. The Principal Investigator is Dr. Noreen Poor.

Total Project Cost:	\$120,000	
Funding Source:	EPA Offices of Air and Water	\$120,000
	No match required	

(This project will be funded through a separate Cooperative Agreement with EPA.)

ECOLOGICAL FUNCTION OF EXISTING DREDGE HOLES IN TAMPA BAY

Implementation of the Tampa Bay Dredged Material Management Strategy calls for linking the needs of the resource management community for material fill in habitat restoration projects with the desire of the USACOE to find "beneficial uses" for dredged material. Of particular interest are submerged dredged holes which could provide important shallow water habitat if filled. However, these holes may also provide critical fish habitat, including refugia during cold weather. This project will allow assessment of up to ten of the major holes, with the objective of developing specific implementation plans for each of the assessed holes. The recreational fishing community in Tampa Bay will be critical partners in development of restoration plans. The products for this project are assessment and restoration implementation plans for each of the major dredged holes in Tampa Bay.

This 2-year project has been funded by the EPA Wetland Grants program, and will be initiated in summer 2002.

Estimated total cost:	\$200,000	
Funding Sources:	EPA	\$150,000
	FMRI (in-kind services)	\$ 50,000

EVALUATION OF RESTORATION OPTIONS FOR CONTAMINATED AREAS IN TAMPA BAY

Several recent sediment quality assessments continue to indicate “hot spots” of sediment contamination in Tampa Bay, including Ybor Channel and other areas in upper Hillsborough Bay, tidal areas of the Hillsborough, Palm and Alafia Rivers, and Bayboro Harbor. The planned “special surveys” in the FFY 02 Workplan will assist with further defining the extent and severity of contamination in these areas. This evaluation project will initiate examination of potential restoration options. A background paper summarizing pros and cons for different options (from literature and communication with others) is being developed. This project will be implemented through working with a sediment quality assessment group to recommend potential restoration options.

The Sediment Working Group will also identify and assess next steps in issues raised at the Sediment Quality Assessment Group workshop in February 2002. These issues include the need for additional risk assessment analyses for human and ecological health.

Estimated Total Cost: \$25,000

Funding Sources: TBEP; FFY 01 Supp. Funds 351-1173, and FFY 01 312-1232 Tech.

Responsible Parties: TBEP for convening working group; contractor/university for assessment of next steps

TRANSPORTATION OF ATMOSPHERIC DEPOSITION THROUGH THE TAMPA BAY WATERSHED

Recent results of the Tampa Bay Atmospheric Deposition Study have provided a quantified measurement of the deposition of nutrients and toxic materials (metals, organic pesticides) directly to the surface of Tampa Bay. However, the amount of atmospherically-derived nutrient loading being deposited on the watershed and washing into Tampa Bay via stormwater is still an unknown, and potentially quite significant to the nutrient budget for Tampa Bay. This project will apply methods developed by Dr. Curt Pollman (USF) to estimate the amount of atmospheric deposition (nitrogen) reaching the bay via stormwater after attenuation from the Tampa Bay watershed. Dr. Pollman developed and verified this technique in northern Florida watersheds, and will be using local measurements to calibrate and verify the model for the Tampa Bay watershed.

Total Estimated Cost: \$30,000

Funding Sources: existing funds awarded to TBEP for atmospheric deposition assessments, and FFY 01 Atm. Dep. 309-1222

Responsible Parties: USF

INVASIVE AQUATIC SPECIES, WITH AN EMPHASIS ON ASIAN GREEN MUSSEL

The University of Florida/IFAS (Drs. P. and S. Baker) is currently completing a rapid assessment of marine and estuarine nonindigenous fish, invertebrates, plants, and macro algae in Tampa Bay. This rapid assessment is not anticipated to be definitive or exhaustive, but rather, to be an indicator of topics which require further research or immediate management decisions. The rapid assessment will

be divided into two components: literature surveys and field surveys. The following materials will be provided to the Tampa Bay Estuary Program, as completed, and to be delivered by August 31, 2002.

- 1) A review and bibliography of the literature pertaining to the biota of Tampa Bay. A list of nonindigenous and cryptogenic (of unknown native range) species will be compiled. This material will be provided in both hard copy and electronic form.
- 2) A final report consisting of the field survey data and an interpretation/summary of the data. Raw data will include sampling site, gear used, substrate/community type, modal salinity, species presence/absence, and abundance.
- 3) Preserved samples of abundant species, as well as those of specific interest, will be provided for use in future specimen identification.
- 4) An oral presentation will be given to the Tampa Bay Estuary Program technical advisory committee, staff members, and their invitees. The presentation will summarize the literature review, present the field survey data, and briefly discuss other relevant on-going research projects.

TBEP proposes that, at the time of the oral presentation, participants at the presentation assist in the development of "next steps" in addressing invasive aquatic species in Tampa Bay. Funding for priority next steps may be recommended for the next TBEP Annual Workplan, or other sources.

Total estimated costs: No additional costs

Responsible parties: UF for ongoing survey work; TBEP for convening meeting

EFFECTS OF FRESHWATER INFLOW ON BIOLOGICAL RESOURCES OF TAMPA BAY

The objective of this project is to implement one of the most highly ranked data/information "gaps" identified by workshop participants at the December 2001 Water Budget Workshop: the recommendation to "mine existing data sources to examine effects (focusing on biological effects) of freshwater inflow changes". The workshop presentations included several focusing on some of the potential impacts of changes in the water budget on fisheries, benthic communities and vegetation in the bay and tributaries. However, researchers noted that their analyses were the "tip of the iceberg" in terms of interpretation, and that further evaluation of existing data (from the Florida Marine Research Institute, EPC of Hillsborough County and other sources) could provide much more information on biological effects of changes in freshwater inflow.

Estimated total cost: \$50,000

Funding Sources:	TBEP; FFY 00 309-1225 and 309-1229	\$30,000
	Gulf of Mexico Program FY01 grant funds	\$20,000

Responsible party: agency partners/contractor

DEVELOPMENT OF A WATERSHED ATLAS FOR TAMPA BAY

Watershed Atlas Web Sites for Hillsborough County, Pinellas County and lakes of Polk County have been completed by USF Florida Center for Community Design and Research for Hillsborough County and SWFWMD, and are available on-line at www.wateratlas.org. These web sites provide user-friendly access to water quality data collated from many sources, land use information, aerial photos, hydrography, transportation routes, stormwater systems, and many other frequently-requested information pieces, all placed on geo-referenced GIS maps.

The goal of this project is to contribute to the development of a comprehensive, consistent group of atlases for bay area counties that included data on the estuary as well as its tributaries. The product of this project will be useful to many audiences, from general public to managers and local government departments, to researchers working in the Tampa Bay watershed. With an option for a direct link to STORET, this tool could also be an important link between FDEP and local governments' water quality sampling programs, and assist with NPDES and TMDL development and tracking. No funds will expended on this project until specifically approved by the Management and Policy Boards, subject to obtaining more information regarding the interface of the atlas with STORET and TMDL and addressing concerns about supporting a centralized database and overlapping functions with County websites providing similar information.

Estimated cost:	\$ 75,000-100,000 for the full atlas	
Funding Sources:	TBEP; FFY 01 312-1232	\$25,000
	Remainder from other sources	

SUPPORT MONITORING AT FT. DESOTO COUNTY PARK: PRE- AND POST-CONSTRUCTION

Pinellas County will be removing an existing causeway at Ft. Desoto Park this summer by constructing a bridge and culvert system, to allow for additional flushing between two historically connected seagrass beds. Dr. Tom Cuba (USF) has proposed to conduct biological and water quality monitoring pre and post-construction, to help assess the impacts of improved flushing in this area of Ft. Desoto. Dr. Cuba is currently developing a plan of study for the monitoring program, and has requested assistance (either funding, field work or lab work).

Total Project Cost:	Total cost unknown.	
Funding Sources:	TBEP; FFY 98 balance 300-1012	\$9,000
	Remainder from other sources	
Potential partners:	Pinellas County, TBEP, FDOT, and other researchers	

Appendix A

FFY 01 Projects Status Report

NOTE: A complete status report of the technical and community outreach projects of the NEP from FY91-FY95 is provided in the FY96 workplan (August 1996). The FY97, FY98, FY99 and FY 00 status reports of projects completed in FY96-99 are provided in the respective Annual Work Plans.

I. Action Plan Implementation and CCMP Oversight

PROJECT TITLE: Electronic Tracking of CCMP Implementation
CONTRACTOR: Janicki Environmental, Inc; TBEP staff
STATUS: Electronic database developed and tested. Existing projects (1995-1999 and 2000 Supplemental projects) entered into the electronic database. TBEP staff is working with partners to check accuracy of existing projects and enter 2000-2005 new projects into database.

DELIVERABLES: ***Tampa Bay Estuary Program Action Plan Electronic Database***
SUMMARY: The Electronic Database will be used to track progress on all TBEP CCMP Actions. The Electronic Database uses standardized calculations to estimate untreated loads and reductions associated with proposed or existing projects included in the Action Plan to estimate load reduction from subbasins.

PROJECT TITLE: Water Budget Workshop
CONTRACTOR: TBEP staff
STATUS: Project complete
DELIVERABLES: **Water Budget Workshop for Tampa Bay: Presentations and Workshop Summary, December 4-5, 2001.** 2002. Technical Report #02-02 of the Tampa Bay Estuary Program. Includes CD of presentations. Prepared by TBEP staff (H. Greening and M. Cladas).

SUMMARY: Characterization of a "water budget" for Tampa Bay (freshwater inflows and outflows to and from the Bay, and effects that changes in the water budget may have on the bay's environmental systems) is a priority issue of the Tampa Bay Estuary Program and its partners. Goals of the Tampa Bay Water Budget Workshop were to determine the current state of knowledge of freshwater inflow and outflow in Tampa Bay, and to identify and prioritize gaps in our knowledge as a first step in characterizing the Tampa Bay water budget. Over 75 scientists and resource managers participated in the two-day workshop.

PROJECT TITLE: Data and Information Management Workshop
 CONTRACTOR: TBEP staff and USGS
 STATUS: Workshop complete
 DELIVERABLES: **Workshop summary**
 SUMMARY: Three primary recommendations resulted from the Data and Information Management Workshop held in March 2002:

1. Hold an annual workshop to showcase new web tools.
2. Develop and maintain a “website of websites” of local, regional and national information
3. Support the development of the USF Water Atlas as an integration tool for GIS and other information and data in the Tampa Bay area.
4. TBEP will host an annual workshop, and will develop and maintain a website of websites for the Tampa Bay area.

PROJECT TITLE: Tampa Bay Journal – “Soundings”
 CONTRACTOR: Tampa Bay Regional Planning Council and Partners
 STATUS: Ongoing. Editor hired. First publication in progress.
 DELIVERABLES: **Quarterly publication devoted to Bay-related issues and news.**
 SUMMARY: The TBEP Policy Board approved, at the May 11, 2001 meeting, to incorporate the “Bay Guardian” newsletter into a new Tampa Bay-wide publication entitled the “Soundings”. The Tampa Bay Estuary Program has budgeted the \$12,000 – \$ 15,000, which is currently being spent to publish the “Bay Guardian” as match towards the new journal.

PROJECT TITLE: Invasive Species Action Plan
 CONTRACTOR: TBEP, University of Florida, U.S.G.S., Florida Aquarium
 STATUS: Ongoing. Field investigations in progress, Invasive Species Exhibit complete.
 DELIVERABLES: Component 1 - Assess **the extent of existing invasions in Tampa Bay** (U.S.G.S., Univ. of Fl.)
 Component 2 – **Implement a public education program** (TBEP, Florida Aquarium)
 SUMMARY: Component 1 – This action supports research to identify the numbers and types of invasive species found in Tampa Bay, through both a literature review and a field assessment. The effort will provide a basic understanding of the types of invasives occurring in the bay, their relative ecological risks, and habitats most vulnerable to invasion. Results of the study can be used to expand existing bay monitoring programs – such as field seagrass monitoring, benthic sampling or fisheries assessments – so they may serve more effectively as an early warning system to track the arrival or spread of invasive species.
 Component 2 – To increase public awareness of the consequences of bio-invasions – and enlist their help in preventing introductions -- a campaign

called "Eyes On The Bay" is being developed.

The campaign will utilize public service messages, posters, signs and a user-friendly web site to provide information about invasive species likely to appear and flourish in Tampa Bay. A clearinghouse may be established to answer residents' questions, collect information about sightings of the targeted invasive species and coordinate placement of educational signs, posters and other materials. Low-frequency radio transmitters (AM bandwidth) will be stationed on one or more of the bridges spanning Tampa Bay to broadcast educational messages, such as reminders to boaters about the importance of washing their boats before leaving the boat ramp to reduce the potential of introducing harmful species. Waterfront residents also will be enlisted in this campaign; they will be provided information about the problem and potential solutions, advised on prevention strategies, and recruited to monitor their docks, seawalls and boat hulls for the presence of the targeted species.

PROJECT TITLE: Stormwater Pond Management Action Plan
CONTRACTOR: TBEP, CAC, Partners
STATUS: Action Plan strategy under development
DELIVERABLES: **CCMP Action Plan to address uniform design, construction and maintenance of stormwater detention/retention ponds throughout the Tampa Bay watershed.**
SUMMARY: Staff has received a good response to the survey sent to stormwater managers, and is in the process of incorporating suggestions made by respondents into the draft stormwater action plan. The actions will be reviewed in a joint workshop of the CAC and TAC before coming back to Management and Policy Board for final approval.

II. Contracted Technical Projects (FFY 01)

PROJECT TITLE: Analysis and Interpretation of Benthos and Sediment Quality
CONTRACTOR: Hillsborough County EPC, Pinellas County and Manatee County
STATUS: Eighth year of benthic sampling complete.
DELIVERABLES: **Status of Tampa Bay Sediments: Polycyclic Aromatic Hydrocarbons, Organochlorine Pesticides, and Polychlorinated Biphenyls (1993 and 1995-1999).** 2002. Technical Report #01-02 of the Tampa Bay Estuary Program. Prepared by the Environmental Protection Commission of Hillsborough County (S.A. Grabe and J.Barron).

PROJECT TITLE: Technical Support projects
CONTRACTOR: Janicki Environmental, Inc.

STATUS: Projects complete
DELIVERABLES: The **following seven reports** are available on one CD entitled "Tampa Bay Water Quality Evaluation and Modeling, 1974-1998".

An Analysis of Long-Term Trends in Tampa Bay Water Quality. 2001. Technical Report #04-01 of the Tampa Bay Estuary Program. Prepared by Janicki Environmental, Inc. (A. Janicki, R. Pribble, M. Winowitch).

Estimates of Total Nitrogen, Total Phosphorus, Total Suspended Solids, and Biochemical Oxygen Demand Loadings to Tampa Bay, Florida. 2001. Technical Report #05-01 of the Tampa Bay Estuary Program. Prepared by Janicki Environmental, Inc. (R. Pribble, A. Janicki, H. Zarbock, S. Janicki and M. Winowitch).

Tampa Bay Estuary Program Model Evaluation and Update: Chlorophyll a-Light Attenuation Relationship. 2001. Technical Report #06-01 of the Tampa Bay Estuary Program. Prepared by Janicki Environmental, Inc. (A. Janicki and D. Wade).

Tampa Bay Estuary Program Model Evaluation and Update: Nitrogen Load-Chlorophyll a Relationship. 2001. Technical Report #07-01 of the Tampa Bay Estuary Program. Prepared by Janicki Environmental, Inc. (A. Janicki and D. Wade).

Model-Based Estimates of Total Nitrogen Loading to Tampa Bay: Current Conditions and Updated 2010 Conditions. 2001. Technical Report #08-01 of the Tampa Bay Estuary Program. Prepared by Janicki Environmental, Inc. (A. Janicki, R. Pribble, H. Zarbock, S. Janicki, and M. Winowitch).

Estimation of the Spatial and Temporal Nature of Hypoxia in Tampa Bay, Florida. 2001. Technical Report #09-01 of the Tampa Bay Estuary Program. Prepared by Janicki Environmental, Inc. (A.J. Janicki, R. Pribble, and M. Winowitch).

Tampa Bay Estuary Program Tracking Progress Toward Its Nitrogen Management Goals: Fifth Year Assessment of Bay Water Quality Indicators and Models. 2001. Technical Report #10-01 of the Tampa Bay Estuary Program. Prepared by Janicki Environmental, Inc. (A. Janicki).

PROJECT TITLE: Technical Support projects
CONTRACTOR: Janicki Environmental, Inc.
STATUS: Projects complete
DELIVERABLES: **Assessing the 2000 Chlorophyll *a* and Light Attenuation Conditions in Tampa Bay: Tracking Progress Toward TBEP Goals.** 2001. Technical Report #11-01 of the Tampa Bay Estuary Program. Prepared by Janicki Environmental, Inc. (A. Janicki and R. Pribble).

SUMMARY: A major element of the FY01 work plan was the re-evaluation of the Technical basis for the Tampa Bay Nitrogen Management Strategy. Working through the TAC, the seven reports listed above summarize the evaluation of seagrass targets, relationships between light attenuation factors and loadings, and response of water quality parameters related to light availability (i.e., chlorophyll, color and turbidity). The results of these projects indicated that the Tampa Bay Nitrogen Management Strategy appears to be on track, with no changes recommended at this time.

PROJECT TITLE: Atmospheric Deposition projects
CONTRACTOR: University of South Florida College of Public Health
STATUS: Sampling complete. Final interpretive report delivered.
DELIVERABLES: **Atmospheric Deposition of Nitrogen and Air Toxins to the Tampa Bay Estuary.** Draft final report in review.
SUMMARY: Results through 2001 indicate that atmospheric deposition of nitrogen directly to the surface of Tampa Bay is estimated to contribute about 20-30% of the total nitrogen load from all sources (depending upon rainfall amounts). Ongoing monitoring for toxic materials deposition (heavy metals, PAHs, PCBs and other contaminants) was completed in May 2001. All ongoing and completed data analyses are posted on the Tampa Bay Atmospheric Deposition website, and will be linked to the TBEP Tech Web Site.

PROJECT TITLE: Support of the Tampa Bay Seagrass Recovery Plan of Study
CONTRACTORS: NOAA, City of Tampa, FMRI, Pinellas County, SWFWMD, TBEP, and USGS
STATUS: Ongoing; Seagrass Restoration Strategy under development
DELIVERABLES: None to date
SUMMARY: See Awarded Grants under CCMP Development above

III. Community Outreach and Education (FFY 01)

PROJECT TITLE: Community Outreach and Publications
CONTRACTOR: TBEP, McShane Communications, Insight Graphic Design, Magic Bus Enterprises, University of Florida
STATUS: Ongoing
DELIVERABLES: **Four quarterly editions of the Bay Guardian newsletter; quarterly updates of the TBEP web site; maintenance of the video lending library; "Eyes On The Bay" exhibit; coordination of a baywide "Give A Day For The Bay" featuring a variety of bay improvement projects in which residents participated.**
SUMMARY: A major public outreach project for FFY 01 was the launching of TBEP Manatee Awareness Coalition (MAC) "Neighborhood Manatee Watch

Program” that encourages neighborhoods to promote manatee conservation and awareness. Waterfront neighborhoods that complete a minimum number of activities (such as posting manatee caution sign on a percentage of their community’s docks or building an informational kiosk at a community boat ramp) will receive designation as a “Manatee Friendly Neighborhood” and be given a handsome sign to display at their community entrance. MAC members are taking turns giving presentations on the program to neighborhood groups and have developed an extensive “Neighborhood Notebook” of resources, contacts, free educational materials and suggested manatee protection activities.

TBEP's Public Outreach Coordinator also continued to coordinate activities of the Tampa Bay Manatee Awareness Coalition (MAC), which provides oversight of the Manatee Watch boater research and education program developed by the MAC, Tampa BayWatch, and the Florida Fish and Wildlife Conservation Commission. The Manatee Watch program seeks to compare the effectiveness of regulation versus education in protecting manatees in Tampa Bay by monitoring boater behavior in selected study sites, providing on-water boater education at some sites and implementing regulatory speed or no-entry zones in others. Compliance with these disparate methods of protection will then be assessed to determine the effectiveness of each. Trained volunteers are utilized in both aspects of the program. The MAC also was instrumental in successfully promoting adoption of a year-round regulatory slow-speed zone for the area of Tampa Bay north and south of the Big Bend power plant, a major winter refuge for more than 300 endangered manatees.

Another key outreach initiative was “Give A Day For The Bay,” a series of community-driven bay improvement events held in May 2002. Extensive planning went into this effort, which featured one activity in Pinellas, Manatee, and Hillsborough counties. Volunteers could participate by planting sea oats along the beach, planting trees at a local state park or creating an artificial seawall from clean oyster shell to help prevent erosion. More than 200 people volunteered for the events and plans are already in the works for next year’s event.

A public awareness campaign was launched to draw attention to the threats posed by non-native invasive aquatic species. The “Eyes On The Bay” project includes extensive information about invasives on the TBEP website (www.tbep.org) and a slide show designed for community groups. As part of this project, TBEP has contracted with the University of Florida to perform a “rapid field assessment” of aquatic invasives in Tampa Bay, with fieldwork occurring in Spring of 2002. TBEP also has contributed

\$10,000 to development of a major exhibit on invasive species at The Florida Aquarium, which opened in May 2002, and assisted in developing the exhibit content and companion educational programming.

The Public Outreach Coordinator is coordinating “Eyes On The Bay”, with assistance from a local steering committee of educators, scientist, industry representatives and marine extension specialists. Ms. Holland also serves on the Gulf of Mexico Program’s Invasive Species Focus Team and attended meetings of this group in December 2001 and in June 2002.

The Public Outreach Coordinator also hired a part-time outreach assistant. The assistant works two days per week, answering information request from the public and helping to plan meetings, volunteer activities and other TBEP events. The assistant is also assisting with research and literature reviews related to dredge hole management and data management.

In May 2001, TBEP’s Management and Policy Boards approved directing monies to fund the news journal “Soundings”. This journal will reach an extended audience and cover topics related to the protection, restoration and health of Tampa Bay. To avoid duplication and excessive time constraints, the TBEP newsletter, Bay Guardian, will no longer be published, however Ms. Holland will submit newsworthy articles for publication in the new journal. The Public Outreach Coordinator has also been active on the Advisory Board of the Soundings journal.

In February 2002, the Public Outreach Coordinator planned a recognition event for the Community Advisory Committee (CAC). This event allows CAC members to meet the Policy and Management Board member that appointed them to the committee in a comfortable and informal setting.

In May 2002, the Public Outreach Coordinator planned two environmental awareness outings. Cargill Fertilizer plant was host to an outing to educate the Community Advisory Committee (CAC) about the environmental improvements that have been made at the plant in addition to future pollution prevention processes. Another outing included a tour of the Cockroach Bay Aquatic Preserve.

IV. Bay Mini-Grants (FFY 01)

Bay Mini-Grants Completed in FFY 01

PROJECT TITLE: Inner-City Outings
GRANTEE: Sierra Club of Tampa Bay
STATUS: Completed
DELIVERABLES: **Provide outdoor service outings to under-privileged students to teach bay stewardship.**
SUMMARY: This mini-grant provides an opportunity for under-privileged students to learn about restoration and protection of Tampa Bay, by participating in hands-on experiences at local parks or nature preserves.

PROJECT TITLE: Exotic plant removal along Rocky Creek
GRANTEE: Town 'N County Park Homeowners Civic Association
STATUS: Completed
DELIVERABLES: **Eradication of Brazilian pepper plants.**
SUMMARY: Volunteers worked along side County employees to remove Brazilian peppers and other exotics along the banks of Rocky Creek.

PROJECT TITLE: The Frog Listening Network
GRANTEE: Hillsborough River Greenways Task Force
STATUS: Completed
DELIVERABLES: **Update of educational materials for the Frog Listening Network.**
SUMMARY: Creation of new laminated cards used to help identify frogs and toads. Cards are given to volunteers that attend a training session to learn how to distinguish frogs by their "songs". Data collected by volunteers helps biologists assess the overall health of an ecosystem.

PROJECT TITLE: Reef Ball Creation
GRANTEE: Admiral Farragut Academy
STATUS: Completed
DELIVERABLES: **Installation of artificial reefs to create habitat for marine life along seawalls.**
SUMMARY: Students at the Academy mix up a cement cocktail and pour it into pre-made forms. Once the cement hardens, the reef ball is removed and placed along seawalls to encourage marine habitat.

PROJECT TITLE: Navigational buoys installed in the Cockroach Bay Aquatic Preserve.
GRANTEE: Cockroach Bay Users Group
STATUS: Completed
DELIVERABLES: **Installation of buoys in the Cockroach Bay Aquatic Preserve.**
SUMMARY: Buoys were purchased and installed to mark shallow areas and areas restricting boater access within the Cockroach Bay Aquatic Preserve.

These are replacements for buoys that were lost or destroyed.

PROJECT TITLE: Removal of exotic plants.
GRANTEE: Tampa BayWatch
STATUS: Completed
DELIVERABLES: **Removal of Brazilian pepper plants and other non-native species.**
SUMMARY: Tampa BayWatch teamed up with neighborhood volunteer groups to rid areas around the bay of the non-native Brazilian pepper plant.

PROJECT TITLE: Costume replacement.
GRANTEE: Museum of Science and Industry
STATUS: Completed
DELIVERABLES: Replacement costumes for the Marine Gang, an environmental theater troupe.
SUMMARY: The Marine Gang travels around to bay area schools and organizations teaching children the importance of the Tampa Bay Estuary.

PROJECT TITLE: "Spud-busting"
GRANTEE: Around the Bend Nature Tours
STATUS: Completed
DELIVERABLES: **Removal of non-native, invasive air potato plants at Emerson Point Nature Park.**
SUMMARY: School-age children embark on a two-part environmental adventure. Middle-school age children are taught about invasive plants and animals and after learning to identify the invasive air potato, they set out to rid the park of the nuisance plant.

PROJECT TITLE: A Regional Ocean Conference – ROCS
GRANTEE: The Florida Aquarium
STATUS: Completed
DELIVERABLES: **Develop strategies to protect and restore Tampa Bay.**
SUMMARY: The Regional Ocean Conference pairs students with local scientists to develop strategies to protect and restore Tampa Bay.

PROJECT TITLE: Landscaping with native plants.
GRANTEE: Pinellas Native Plant Society
STATUS: Completed
DELIVERABLES: **Non-native vegetation removal and planting of native landscaping.**
SUMMARY: Volunteers work to remove non-native vegetation around the Indian mound at Phillipe Park and replace it with native plants. Informational signs were also installed to educate visitors about the benefits of landscaping with native plants.

PROJECT TITLE: How to remove a hook and line from a seabird.
GRANTEE: Save Our Seabirds, Inc.

STATUS: Completed
DELIVERABLES: **A brochure explaining how to remove a hook and line from a seabird.**
SUMMARY: A brochure created to educate fishermen on the proper way to remove hook and line from a seabird.

PROJECT TITLE: Manatee portable display.
GRANTEE: Lowry Park Zoo
STATUS: Completed
DELIVERABLES: **A portable suitcase used to educate residents about manatees.**
SUMMARY: A portable display that is used to inform and educate residents about manatee rescue and salvage operations.

Bay Mini-Grants Initiated in FFY 01

PROJECT TITLE: Assembly of a Remotely Operated Vehicle (ROV).
GRANTEE: Hillsborough Community College
STATUS: Ongoing
DELIVERABLES: High-school age students learn to assemble and disassemble a ROV.
SUMMARY: Junior and senior high school students learn to assemble and disassemble a ROV. The ROV will allow the students to view Tampa Bay from a different perspective – under the water!

PROJECT TITLE: “Art-O-Fishal-Fun”
GRANTEE: The Florida Aquarium
STATUS: Ongoing
DELIVERABLES: School-age students learn bay stewardship through weeklong camps.
SUMMARY: At-risk students attend a full-day, weeklong camp that teaches bay stewardship by combining art with environmental science.

PROJECT TITLE: Global Rivers Environmental Educational Network (GREEN) projects.
GRANTEE: Suncoast Earth Force
STATUS: Ongoing
DELIVERABLES: School-age students learn to assess watershed health then initiate a sustainable project to improve the environmental quality.
SUMMARY: Using GREEN watershed educator kits, teachers and students work together to identify a problem area within their watershed then initiate a sustainable project to improve that area.

PROJECT TITLE: Environmental reference notebooks for neighborhoods.
GRANTEE: St. Petersburg Audubon

STATUS: Ongoing
 DELIVERABLES: Notebook stuffed with references on topics ranging from proper environmental landscaping and composting to bird watching.
 SUMMARY: Select neighborhoods in southern Pinellas County will be lead on a bird walk, view a slide show, and receive the free reference notebook to educate them about urban habitat enhancement and restoration.

PROJECT TITLE: Volunteers educating the public about manatee-safe boating.
 GRANTEE: Cockroach Bay Users Group (CBUG).
 STATUS: Ongoing
 DELIVERABLES: Volunteers will disseminate flyers to the public.
 SUMMARY: CBUG will recruit volunteers and station them at local boat ramps to pass out flyers and brochures in an effort to educate the public about manatee-safe boating.

PROJECT TITLE: "Spud-busting"
 GRANTEE: Around the Bend Nature Tours
 STATUS: Ongoing
 DELIVERABLES: Removal of non-native, invasive air potato plants at Emerson Point Nature Park.
 SUMMARY: School-age children embark on a two-part environmental adventure. Middle-school age children are taught about invasive plants and animals and after learning to identify the invasive air potato, they set out to rid the park of the nuisance plant.

PROJECT TITLE: "Tampa Bay: Species of Concern"
 GRANTEE: The Pier Aquarium
 STATUS: Ongoing
 DELIVERABLES: An interactive exhibit to educate visitors about threatened and endangered animals.
 SUMMARY: "Tampa Bay: Species of Concern" is a new interactive exhibit and educational program that will alert bay area residents and tourists to endangered, threatened, or otherwise jeopardized marine species that reside in Tampa Bay. Educational activities will include a "Turtle Tour" and "Hatchling Hunt".

PROJECT TITLE: Updating existing bulletin boards at local boat ramps.
 GRANTEE: Keep Manatee Beautiful
 STATUS: Ongoing
 DELIVERABLES: Bulletin boards at local boat ramps will be given a face-lift.
 SUMMARY: Updating existing bulletin boards displaying informative maps, plant identification, marine pollution, manatee and seagrass protection, and artificial reef locations at boat ramps in Manatee County.

PROJECT TITLE: Boater's Guide for Boca Ciega Bay.
 GRANTEE: St. Petersburg Audubon/Audubon of Florida
 STATUS: Ongoing
 DELIVERABLES: Creation of a map for the Boca Ciega Bay region.
 SUMMARY: This map will include boat ramp locations, canoe and kayak launch site, boating speed zones and motor exclusion information.

PROJECT TITLE: Junior Master Gardeners
 GRANTEE: Hillsborough County Cooperative Extension Service
 STATUS: Ongoing
 DELIVERABLES: A program to help install bay stewardship through proper environmentally friendly gardening practices.
 SUMMARY: The Junior Master Gardener (JMG) program, modeled after the Master Gardener program is designed to teach children horticultural and environmental science. The JMG includes a youth handbook and teacher guide. At the end of the program the children participate in a community improvement project such as a coastal clean-up, beautification project or teaching other children.

PROJECT TITLE: Shoreline restoration at Allen's Creek.
 GRANTEE: St. Paul's School
 STATUS: Ongoing
 DELIVERABLES: Restoration and stabilization of the shoreline adjacent to the school.
 SUMMARY: The school plans to use students, faculty, staff and neighbors to assist in the restoration efforts, which will be done in phases.

PROJECT TITLE: Shoreline restoration along Bayshore Boulevard.
 GRANTEE: Bayshore Beautiful Homeowners Association
 STATUS: Ongoing
 DELIVERABLES: Restoration of a section of shoreline along Bayshore Boulevard.
 SUMMARY: The Bayshore Beautiful Homeowners Association will acquire all permits necessary before work begins. Installation of approximately 125 artificial oyster reef balls, made from a poured cement mold, along a ninety-foot area parallel to Bayshore Blvd. seawall. The primary function of the reef balls is to reduce the wave energy to allow further restoration to the shoreline.

Appendix B

Tampa Bay Estuary Program Staff Responsibilities

Dick Eckenrod – Executive Director

Oversee preparation of Annual Work Plan and Budget each year for review by Management and Policy Boards and submittal to EPA.

Oversee preparation of annual Cooperative Agreement application package for base program operation each year for submittal to EPA.

Secure funding contributions from local governments each year from local governments and water management district.

Accomplish program goals specified in the Annual Work Plan each year.

Meet all the general and special conditions specified in the cooperative agreements for base program and other grant awards.

Maintain controllable expenditures within budget and take appropriate actions when unexpected budget problems develop. Make necessary amendments as required by EPA regulations.

Ensure that the NEP program responsibilities under the Interlocal Agreement are met.

Comply with legal meeting notice requirements and agenda mailings 10 days prior to meeting.

Monitor progress of work on grant awards both received and made by the Program to assure timely completion of work.

Ensure that TBEP meets matching fund requirements for grants it receives and that in-kind match is sufficiently documented per requirements of awarding agencies.

Holly Greening – Senior Scientist

Organizing and coordinating meetings of the Technical Advisory Committee and subcommittees as required to meet technical objectives of program.

Presenting results of TBEP's technical work to NEP committees and community groups.

Provides technical support as needed to Director, POC and Office Administrator.

Provides assistance to Director as needed in managing the program.

Stays abreast of research and developments in estuarine science and management.

Presents results of TBEP work to appropriate local, state and national science and resource management meetings, and participate in state-wide/national efforts on atmospheric deposition.

Actively participates in regional resource management committees directly related to TBEP objectives such as CAPMAT, CSWM and RAMP.

Participates in atmospheric deposition studies in Tampa Bay and other research efforts.

Participates in national resource management initiatives, using Tampa Bay experience as example of successful management program.

Monitoring progress toward TBEP goals through tracking implementation of

Local government/agencies Action Plans. Reports environmental conditions and trends to Management Committee.

Assists with the development and implementation of TBEP Action Plan.

Pursues additional funding sources for implementation of the CCMP.

Nanette Holland – Public Outreach Coordinator

Promotes the Program's accomplishments to the media through ongoing and consistent communication of Program goals, challenges and achievements.

Researches, writes and coordinates production of the Bay Guardian newsletter on a quarterly basis.

Gathers and coordinates information for the quarterly update of the TBEP website.

Develops public education programs that address TBEP priority goals, and assist government industry and non-profit partners in creating and promoting educational programs and tools.

Provides staff support to the Manatee Awareness Coalition for its educational campaign and

Assist Tampa BayWatch in developing its on-water volunteer corps.

Provide staff support to the CAC, while encouraging members to become more actively involved in developing and implementing their own projects.

Implements marketing plan for the new Tampa Bay Estuary License Plate, as funds are available for this activity.

Oversees the "Eyes on the Bay" invasive species outreach project, in partnership with FMRI, Florida Sea Grant and others.

Ensures that TBEP maintains a high profile among the environmental community by assisting Local public, private and non -profit partners with outreach needs, and serving on local and regional committees and task forces.

Misty Cladas – Project Manager

Work with the current technical support contractor and Nitrogen Management Consortium partners on implementation and maintenance of the Action Plan database; including, but not limited to, data entry, maintenance, and QA/QC.

Work with FDEP and EPC-HC to retrieve Discharge Monitoring Reports.

Updates and maintains TBEP Technical Website.

Responsible for administering Bay Mini-Grants projects.

Acts as Office Administrator back-up as needed.

Provides computer and/or graphic support to TBEP staff.

Presents Action Plan Database and related topics to appropriate audiences as needed.

Ron Hosler – Office Administrator

Works with EPA Project Officer to ensure that all requirements and documents for cooperative agreements are submitted and tracked on a timely and accurate basis.

Works with TBRPC attorney and TBEP Executive Director to create contracts and intergovernmental agreements, and processes them for execution ensuring that all federal and state requirements are being adhered to.

Acts as human resources coordinator.

Processes purchase orders, TBEP accounts payable, and requests for subcontractor payments, ensuring that all federal and state requirements are adhered to.

Assists with the setting up of TBEP meetings and arrangements as required.

Provides supervision of secretary, offering assistance with her workload, helping her set priorities,

and acting as her back-up.

Maintains responsibility for Management/Policy Board/other meeting notices, agendas, and RFP packets.

Maintain general responsibility for smooth and efficient office operations (i.e. building maintenance, supplies, office machines, staff assistance, etc.)

Make travel arrangements for TBEP staff as needed.

Responsible for reporting, collecting and processing all federal reimbursements and local government contributions.

Cheryl Cooper – Secretary

Provide clerical and administrative support to the TBEP Executive Director, Office Administrator and other staff.

Answers all incoming calls and routing. Responsible for overseeing operation of phone system.

Responsible for all aspects related to the process of incoming and outgoing mail and equipment.

Responsible for meeting room reservations for MB, PB, TAC, CAC, MAC and others. This includes mail outs, parking reservations, coffee preparation, specific room set-ups, keys, etc.

Take minutes at Management and Policy Board Meetings.

Maintains Program and staff monthly calendars.

Maintains inventory of public outreach and technical publications

Office Supplies

General program files

Lindsay Griffen – Public Outreach Assistant

Provides support to Public Outreach Coordinator.

Duties include, but are not limited to:

answering website inquiries

filling publication orders

creating presentations in Microsoft PowerPoint

technical research as needed by Senior Scientist

special projects for staff on an as needed basis

Set 02

Page 1

Summary

Tampa Bay Estuary Program

Fiscal Year 2002 Travel Expenses

<i>Staff Member</i>	<i>Begin Travel</i>	<i>End Travel</i>	<i>Location</i>	<i>Purpose</i>	<i>Airline</i>	<i>Rental Car</i>	<i>Hotel</i>	<i>Registration</i>	<i>PerDiem</i>	<i>Parking /Milage /Other</i>
Greening	10/9/2002	10/11/200	New Orleans, LA	EPA Atmospheric Depos	\$279.00	\$55.00	\$205.14		\$30.00	
Greening	10/13/2002	10/24/200	Seattle, WA	NRC Mtg & ERF Meeting	\$459.00	\$17.00			\$24.00	
Eckenrod	10/15/2002	10/18/200	Maryland/Delaware	ANEP - Fall Conf.	\$248.50	\$170.83	\$172.22		\$72.00	\$49.28
Eckenrod	11/13/2002	11/15/200	Charleston, SC	CZM Workshop	\$471.50	\$27.00	\$243.92	\$100.00	\$54.00	\$39.86
Eckenrod	1/14/2003	1/14/2003	Jacksonville, FL	SJRWMD Meeting	\$191.50	\$60.35			\$15.00	\$19.28
Greening	1/15/2003	1/18/2003	Washington, DC	NRC Meeting						
Eckenrod	1/27/2003	1/31/2003	Cocoa Beach, FL	EPA Tech Transfer Conf.			\$158.00	\$50.00	\$68.00	\$71.92
Greening	1/27/2003	1/31/2003	Cocoa Beach, FL	EPA Tech Transfer Conf.			\$272.55	\$50.00	\$36.00	\$101.50
Holland	1/27/2003	1/31/2003	Cocoa Beach, FL	EPA Tech Transfer Conf.			\$272.55	\$50.00		
Greening	2/5/2003	2/6/2003	Rhode Island	Narragansett Bay WS	\$256.50					
Greening	3/10/2003	3/11/2003	Ft. Myers, FL	Estero Bay ABM	\$0.00	\$0.00	\$172.50	\$0.00	\$12.00	\$29.00
Eckenrod	3/11/2003	3/13/2003	Sarasota, FL	TBEP Seagrass Worksh				\$100.00		\$17.98
Greening	3/11/2003	3/13/2003	Sarasota, FL	TBEP Seagrass Worksh			\$247.50	\$100.00		
Hosler	3/11/2003	3/13/2003	Sarasota, FL	TBEP Seagrass Worksh			\$198.00	\$100.00		
Eckenrod	3/15/2003	3/20/2003	Washington, DC	EPA/ANEP Meeting	\$487.00	\$60.00	,064.05		\$138.00	\$94.36
Greening	3/20/2003	3/20/2003	Orlando, FL	GEMI Conf.						\$52.20
Holland	4/9/2003	4/11/2003	New Orleans, LA	Nat'l Assn Gov't Commu	\$168.00	\$20.00	\$318.94	\$535.00	\$51.00	\$37.54
Greening	4/12/2003	4/13/2003	Baltimore, MD		\$287.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Greening	4/22/2003	4/22/2003	Atlanta, GA	EPA - State Water Mgrs	\$249.00				\$6.00	\$10.00
Eckenrod	4/25/2003	4/25/2003	Washington, DC	Nat'l Ed Campaign	\$343.00	\$35.00			\$21.00	\$10.00
Greening	4/29/2003	5/3/2003	Tuscon, AZ	ERF Board Meeting	\$281.50	\$149.22				\$41.25

<i>Staff Member</i>	<i>Begin Travel</i>	<i>End Travel</i>	<i>Location</i>	<i>Purpose</i>	<i>Airline</i>	<i>Rental Car</i>	<i>Hotel</i>	<i>Registration</i>	<i>PerDiem</i>	<i>Parking /Mileage /Other</i>
Greening	5/27/2003	5/29/2003	Charleston, SC	ACE Meeting	\$392.00					
Greening	6/13/2003	6/13/2003	Fl Keys, FL	Stormwater	\$334.50	\$37.66	\$0.00	\$0.00	\$12.00	\$10.00
Eckenrod	6/24/2003	6/27/2003	Woods Hole	CZM Workshop	\$0.00	\$140.02	\$0.00	\$0.00	\$0.00	\$30.00
Greening	6/25/2003	6/27/2003	Gulf Breeze, FL	Nat'l Coastal Assess	\$243.00	\$30.59	\$152.71	\$0.00	\$24.00	\$20.00
Holland	6/25/2003	6/27/2003	New Orleans, LA	EPA/GOMP	\$158.00	\$26.00	\$206.09	\$0.00	\$63.00	\$30.00
Greening	7/13/2003	7/15/2003	Baltimore, MD	CZM Meeting	\$208.00	\$13.00	\$504.76	\$25.00	\$53.00	\$30.00
Long, Ed	7/15/2003	7/18/2003	Portland-Tampa	Expert Panel	\$348.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Greening	8/20/2003	8/20/2003	Sarasota, FL	Sea Grant Mtg			\$0.00		\$0.00	\$31.90
Eckenrod	9/4/2003	9/5/2003	Melbourne, FL	Coast Workshop			\$0.00		\$0.00	\$0.00
Greening	9/11/2003	9/19/2003	Seattle, WA	ERF/ANEP	\$458.00	\$43.50	\$573.36	\$435.00	\$147.00	\$0.00
Eckenrod	9/16/2003	9/19/2003	Seattle, WA	ERF/ANEP	\$311.50	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
<i>Totals</i>					\$6,174.50	\$885.17	\$4,762.29	\$1,545.00	\$826.00	\$726.07

FFY02

Funds

Leveraged



August 23, 2002

Greg Colianni
U.S. Environmental Protection Agency
1200 Pennsylvania Avenue, N.W., 4504T
Washington, DC 20460

Dear Greg:

Enclosed you will find the information requested by EPA in the NEP FY 2002 Funding Guidance pertaining to funds leveraged (Section 320 and others) in FY 01 and their sources. For clarity, three categories of leveraged funds are provided: (1) cash contributions from Tampa Bay Estuary Program (TBEP) partners used to match Sec. 320 funds and specialty license tag revenues; (2) other grants and in-kind contributions leveraged with Section 320 funds and with TBEP non-federal funds in excess of the Sec. 320 match requirement; and (3) funds expended by TBEP partners on projects contributing to implementation of CCMP goals.

Totals for each funding category are provided below, with more detailed information in the enclosed tables.

TBEP Partners' Cash Contributions	\$ 482,284
Other Grants and In-kind Contributions	2,337,370
CCMP Implementation Projects	34,206,711

Bear in mind that projects in the third category are frequently undertaken to meet multiple community objectives in addition to CCMP goals. The contribution of TBEP to these projects is normally limited to staff tracking their implementation and assessing their contribution to CCMP goals. While we believe it is justifiable to include them as leveraged funds, please use your own judgement in this regard.

Sincerely,

Richard M. Eckenrod
Executive Director

cc: Tim Jones
Felicia Robinson

T A M P A B A Y E S T U A R Y P R O G R A M

Mail Station I-1/NEP • 100 8th Avenue S.E. • St. Petersburg, FL 33701 • (727) 893-2765 • FAX (727) 893-2767 • SUNCOM 513-9497

POLICY BOARD: HILLSBOROUGH COUNTY, MANATEE COUNTY, PINELLAS COUNTY, CITY OF CLEARWATER, CITY OF ST. PETERSBURG, CITY OF TAMPA,
FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION, SOUTHWEST FLORIDA WATER MANAGEMENT DISTRICT, U.S. ENVIRONMENTAL PROTECTION AGENCY.



**Category I - TBEP Partners' CCMP Implementation
Cash Contribution 2001**

City of Clearwater	\$ 13,979.00
City of St. Petersburg	33,379.00
City of Tampa	39,402.00
Manatee County	32,217.00
Pinellas County	73,714.00
Hillsborough County	<u>83,974.00</u>

Total Local Government Cash Contribution \$ 276,665.00

Alafia River Basin Board	\$ 27,667.00
Manasota Basin Board	27,667.00
Hillsborough River Basin Board	27,667.00
Northwest Hillsborough Basin Board	27,667.00
Pinellas-Anclote Basin Board	<u>27,667.00</u>

Total Basin Boards Cash Contribution \$ 138,335.00

Specialty License Tag Revenue \$ 67,283.81

Total Non-Federal Cash \$ 482,283.81

**Category II - Additional Funding/In-Kind Secured Through Leveraging -
2001**

Project Name	Funding/In-Kind Source(s)	Partners' Match	TBEP Funds Leveraged
Broadway Outfall Stormwater Retrofit	319h, City of Temple Terrace, SWFWMD, SWIM, TBEP, Private	\$795,933	\$25,000 of non-federal overmatch
Cliff Stevens Park Stormwater Retrofit	SWFWMD, Pinellas Cty, Clearwater, TBEP, FDEP	\$269,889	\$37,500 of non-federal overmatch
Tampa Bay Benthic Monitoring Program	TBEP, Hills. Cty. EPC, Manatee Cty. DEM, Pinellas Cty. DEM	\$216,000	\$30,000 of non-federal overmatch
Tampa Bay Atmospheric Deposition - BRACE	FDEP, TBEP	\$433,664	\$10,000 from FY 98 Workplan
Regional Geographic Initiative - Toxic Materials from Air Deposition	EPA - Region 4 Air, Pesticides & Toxic Mgmt. Div	\$62,000	Staff In-Kind
P.O.R.T.S. (Physical Oceanographic Real-Time System)	Tampa Port Authority, Hillsborough Cty, Tampa Bay Pilots Assn, TBEP	\$110,000	\$10,000 from Implementation Demonstration
Non-Indigenous Marine and Estuarine Species	University of Florida, TBEP	\$447,601	\$14,722 from FY 99 Workplan
Whiskey Stump Oyster Restoration Project	Tampa Baywatch TBEP	\$1,067	\$1,500 from FY 00 Workplan
Hillsborough Bay Boater's Guide	Tampa Electric, Cargill Fertilizer, TB Regional Planning Council, TBEP	\$1,216	\$608 from FY 00 Workplan

Total Additional Funding/In-Kind

\$ 2,337,370

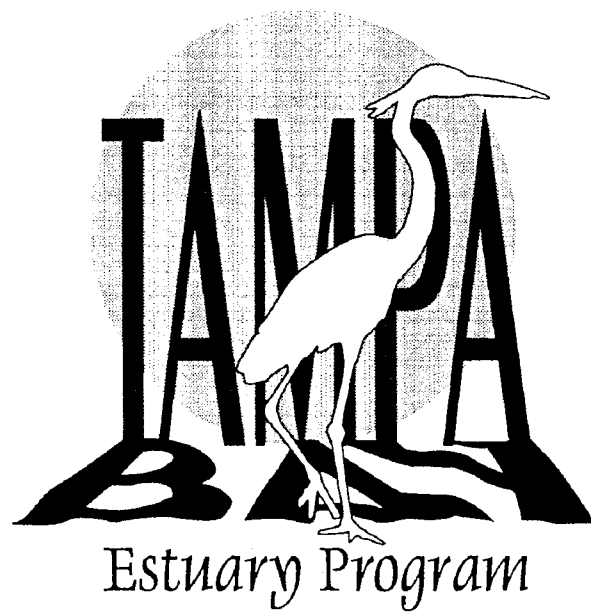
Category III - TBEP Partners' CCMP Implementation Projects - 2001

Project Name	Funding Source(s)	Amount
Lower Bullfrog Creek: habitat restoration	SWFWMD	\$571,351
Bahia Beach: acquisition	Hillsborough County ELAPP	\$656,512
Cockroach Bay Greenway: riparian acquisition	Hillsborough County ELAPP	\$1,346,348
New Tampa Flatwoods: acquisition	Hillsborough County ELAPP	\$3,000,000
Wolf Branch Creek #1: habitat creation	SWFWMD	\$3,126,000
Fort Brooke: habitat restoration	SWFWMD	\$40,000
Palma Ceia Area Stormwater Pond	City of Tampa	\$550,000
North Tampa Pond Enlargements	City of Tampa	\$650,000
Environmentally Sensitive Land Acquisition	Pinellas County	\$4,000,000
Florida Yards and Neighborhoods	Pinellas County, Tampa Bay Water	\$65,500
Tampa Bay Estuarine System Land Acquisition	SWFWMD	\$1,250,000
Largo Regional Stormwater Treatment Facility	SWFWMD City of Largo	\$400,000
Lake Seminole "Dogleg" Refurbishing	SWFWMD Pinellas County	\$53,000
St. Pete Junior College Wetland Restoration	Pinellas County SWFWMD	\$20,000
Surface Water Quality Monitoring Program	Environmental Protection Commission Hills. Cty	\$350,000

Lowry Park Zoo Stormwater Rehabilitation	SWFWMD	\$88,000
McKay Bay Drainage Basin Rehabilitation	SWFWMD, City of Tampa FDOT	\$340,000
South Gulf Beaches Reclaimed Water System	Pinellas County	\$7,400,000
North Gulf Beaches Reclaimed Water System	Pinellas County	\$5,700,000
Old Oakhurst Road Reclaimed Water System	Pinellas County	\$3,600,000
Bonnie Bay Reclaimed Water System	Pinellas County	\$1,000,000

Total Partners' CCMP Implementation Projects

\$ 34,206,711



FFY 03 ANNUAL WORK PLAN

August 29, 2003

FFY 2003 ANNUAL WORK PLAN

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INTRODUCTION

The FFY 03 Annual Work Plan outlines activities proposed for the Tampa Bay Estuary Program (TBEP) for the fiscal year beginning October 1, 2003. This year will mark the beginning of the sixth year of Program operation under the Interlocal Agreement through which the Comprehensive Conservation and Management Plan (CCMP) is being implemented.

EPA will contribute \$544,685 to each NEP in FFY 03 for implementing CCMPs. The required non-federal match will be \$506,685 and can be met either with cash or in-kind contributions. TBEP can no longer afford the luxury of meeting the non-federal match requirement with cash contributions from its non-federal partners.

The program funding strategy for FFY 03 will consist of the following elements:

- Fund projected expenditures for FFY 03 with \$544,685 in federal funds and \$330,000 in non-federal funds.
- Meet the balance of required matching funds with a \$176,685 in-kind contribution from the Pinellas County D.E.M. Ft. Desoto Re-circulation Project (Page 10 and 12).
- Hold the non-federal contributions from local governments and SWFWMD basin boards at \$415,000, the same level as the previous three years, and use the \$85,000 in overmatch funds to leverage federal and state dollars for projects sponsored by TBEP's partners.

To help leverage the overmatch funds most effectively, it is proposed that we continue with the professional grant writer/fund raiser to work with TBEP local government and agency partners in locating promising state and federal funding sources and preparing grant applications.

A substantial increase in revenue from the Tampa Bay specialty license tag is expected in FFY 03. Those funds will be available for Bay Mini-Grants to schools and community groups as in past years or other projects deemed appropriate by the Policy Board that contribute to implementation

FFY 02 OBJECTIVES AND ACCOMPLISHMENTS

FFY 02 OBJECTIVES

The principal Program objective in FFY 02 was to continue to carry out responsibilities assigned to the Tampa Bay Estuary Program under the CCMP Implementing Agreement. Duties that received special emphasis in FFY 02 include:

- overseeing implementation of five-year action plans for bay restoration for the period 2000 - 2004, including nitrogen reduction projects of public and private sector participants;
- continuing the Program's effective community outreach programs to promote public participation and facilitate CCMP implementation;
- continuing actions to address emerging priority issues including invasive species;
- implementing a process for selecting qualified projects and administering agreements for expenditure of license plate revenues;
- implementing a CCMP financing strategy developed in conjunction with the Financing Strategy Task Force;
- continuing implementation of the Program's Action Plan to achieve goals not addressed in the action plans of other parties; and
- continuing assistance to other programs in development and implementation of watershed management plans in the Tampa Bay watershed that helps to advance the goals of the CCMP.

FFY 02 TECHNICAL ACCOMPLISHMENTS

In addition to completion of the technical objectives listed in Appendix A, the TBEP Technical Advisory Committee and technical staff accomplished the following in the fiscal year ending September 30, 2003.

A major focus area of Tampa Bay Nitrogen Management Consortium was development of a **Tampa Bay Watershed Management Summary**. This document was provided for the use of FDEP and other watershed stakeholders in demonstrating reasonable assurance that waterbody segments in Tampa Bay which are designated as potentially impaired or verified impaired for nutrients will be maintained or restored. In August 2002, FDEP accepted the technical approach and implementation plan of the Tampa Bay Nitrogen Management Strategy as sufficient to provide reasonable assurance that this process would meet state water quality criteria for nitrogen for Tampa Bay, thus removing Tampa Bay from the need for a TMDL for nitrogen.

Results of the 2001 water quality comparison to chlorophyll and light attenuation targets show that three of the four bay segments are in the “yellow” or caution stage. Chlorophyll a targets are being met for all major bay segments (indicating that the Nitrogen Management Strategy is still on track), but light attenuation targets are not. The Joint Water Quality Subcommittee recommends re-evaluation of the light attenuation targets as a next step.

A critical element of the Tampa Bay Watershed Management Strategy is the ability to track TBEP and Consortium member projects and expected nutrient reductions from project implementation. Development of an electronic **TBEP Project Tracking Database** was a major initiative of TBEP staff and Nitrogen Management Consortium members in FFY 2002. All projects submitted through partner Action Plans (1995-2000) have been entered into the database, and partners will be entering their 2001-2004 projects this year.

The Regional Ambient Monitoring Program (RAMP) continues to meet on a quarterly basis for sample analyses and comparison. This exercise is an important element of quality assurance for the baywide monitoring program. More than 20 groups from southwest Florida participate in RAMP.

More than 20 atmospheric scientists participated in collecting intensive atmospheric chemistry measurements as part of the **Bay Regional Atmospheric Chemistry Experiment (BRACE)** program during the month of May 2002. This work will be repeated after TECO’s Bayside Power Plant re-powering (switching from burning coal to natural gas) in 2003-2004. BRACE is one of the most intensive atmospheric data collection efforts in the world, and will provide information about the relative importance of different sources of atmospheric deposition to the bay.

Development of **sediment quality targets** is ongoing. Analysis of contamination levels in Tampa Bay, as determined using sediment chemistry and benthic community structure, indicate that a large percentage of the bay is relatively “clean”, with hot spots of contamination occurring in upper Hillsborough Bay, Bayboro Harbor and a few other locations. These results will be used in conjunction with analyses of physical factors (percent silt/clay, salinity and dissolved oxygen) to develop benthic quality targets for Tampa Bay.

Characterization of freshwater inflows and outflows to and from Tampa Bay, and effects that changes in the water budget may have on the bay’s living resources is a priority issue of the Tampa Bay Estuary Program and its partners. Over 75 scientists and resource managers participated in a two-day workshop to determine the current state of knowledge of freshwater inflow and outflow in Tampa Bay, and to identify and prioritize gaps in our knowledge. Several initiatives addressing identified gaps are ongoing, including the evaluation of biological response to changes in freshwater inflow rates through a Gulf of Mexico Program grant awarded to TBEP.

Data management needs for Tampa Bay identified by workshop participants in winter 2002 included:

- Conduct a survey of user groups to identify information needs and determine how best to distribute that information to the users
- Hold an annual meeting (such as the Data Management Workshop) to review new tools for information management and distribution
- Develop a “website of websites” of Tampa Bay information at a central location. USGS is currently developing a “website of websites” for Tampa Bay as an element of their Tampa Bay Pilot Study.

The Southwest Florida Seagrass Working Group continues to grow, and now includes more than 40 active participants from Tampa Bay, Sarasota Bay and Charlotte Harbor. A major agenda item in

2002 was the discussion of reporting seagrass mapping results. Following presentations by SWFWMD and SBNEP, the Seagrass Working Group and SWFWMD agreed on the following process:

- a. SWFWMD will continue to take aerial photographs of seagrasses from the Anclote River through Charlotte Harbor every two years. Flights will be conducted in October-December time period, when seagrass biomass has not yet declined and the water clarity is highest.
- b. SWFWMD will announce results of the photo interpretation at a joint TBEP/SBNEP/CHNEP TAC meeting in October/November of the year following the aerial photos.
- c. SWFWMD will report current estimates in each estuary for 1) total seagrass acreage; 2) continuous acreage; and 3) patchy acreage. The change in acreage from previous estimates for each of these three metrics will also be reported.

Results from aerial photographs taken in January 2002 estimate that Tampa Bay has experienced a 5% increase (1, 237 acres) in seagrass area extent since 1999, indicating partial recovery of the 2,000 acre loss due to El Nino rains in 1999. Total acreage in 2002 was estimated to be 26,078 acres, or about 69 % of the 38,000-acre goal adopted by TBEP partners.

Intensive water quality and seagrass monitoring and experimental work is ongoing as part of the **Feather Sound seagrass project**. Experimental efforts underway include measuring the expansion of individual seagrass beds over time, examining the effects of sting ray burrowing on the re-establishment of seagrasses by using Ray Excluder Devices (REDS), and estimating the potential impacts of newly discovered freshwater seeps in the Feather Sound area. Initial results of these experiments and monitoring data are due in 2003.

The **Dredged Material Management Strategy workgroup** addressed issues concerning long-term disposal of dredged material in Tampa Bay in summer 2002. Beneficial uses projects have been identified for material to be dredged from the Federal harbors projects for the next three years. These projects include the Harbor Isle Lakes project in St. Petersburg, Cockroach Bay upland shell pit habitat creation, and widening of a littoral shelf at the Port of Tampa in upper Hillsborough Bay. A strong focus of this workgroup will be the upcoming **Tampa and St. Petersburg Harbor Re-Evaluation** project requirements for dredged material placement areas over the next 10 years. The U.S. Army Corps of Engineers options for their upcoming Tampa Harbor General Re-evaluation Study include significant new dredging for anchorage areas, passing and turning lanes, creation of a loop channel, and several other navigational safety improvements. As one of the initial phases of the Re-evaluation, a hydrologic and hydraulic model will be developed. The USGS is interested in the possibility of joining this effort to provide an integrated model (water quality, sediment quality and ecological factors) for Tampa Bay.

The **Dredge Hole Assessment Project Advisory Group** identified priority dredge holes in the bay for inclusion in the assessment of existing ecological functions of man-made dredge holes, for potential enhancement using beneficial dredged material, artificial reefs, etc. Thirteen were identified by the group for in-depth assessment, including fisheries (using both scientific collection techniques and angler surveys), benthos, water quality and physical characteristics. Sampling will be initiated by the end of the year, and will continue for one year. The Advisory Group will develop specific

management recommendations based on data collected for each of the priority holes, which may range from keeping the hole as is, to filling and allowing seagrasses to colonize the surface.

About 100 people attended the **Invasive Species in Florida's Saltwater Systems** on November 5-6, 2002. Participants in this interactive, two-day workshop examined the status of invasive species research, outreach and management from national and statewide perspectives. Primary goals of the workshop were to identify key challenges to effective management of saltwater invasives and to initiate development of a strategic plan to guide future research and education efforts in Florida.

Several members of the TAC are involved with the ABM Task Force on recommendations for monitoring potential effects of the discharge into Bishop Harbor from the emergency **Piney Point Phosphate discharge**. Monitoring elements include nitrogen loadings, water quality, harmful algal blooms, seagrass and macroalgae, atmospheric ammonia, and benthos. At the request of the EPA's request for technical input from the TBEP on the proposed ocean dispersion options for discharge of remnant process water from the Piney Point Phosphates facility. To obtain the best possible technical input in a timely manner, TBEP staff sought the advice of colleagues in the central and eastern Gulf of Mexico regions with expertise in assessing the causes and consequences of harmful algae blooms. More than 20 scientists and stakeholders participated in a conference call hosted by the TBEP on February 21, 2003.

Each of the experts participating in the call was asked specifically for his/her assessment of the comparative ecological and human health risks of the two proposed Gulf of Mexico dispersion options versus continuation of the discharge into lower Tampa Bay. The unanimous consensus among the scientists was that dispersing the ammonia-enriched wastewater in the Gulf of Mexico posed fewer ecological and health risks than continuing the discharge into Tampa Bay. The panelists emphasized that ocean dispersion should be used only as a stopgap measure in the short term until other options were implemented to relieve the emergency conditions.

The greatest risk posed by the offshore dispersion option was the triggering of a harmful algae bloom that subsequently moved into coastal waters. There was a strong consensus among the scientists that the further offshore the better and that no discharge should occur within 40 nautical miles of shore to reduce the risk of an offshore bloom moving onshore.

Several actions were recommended to minimize the potential impact of offshore dispersion including: determining the discharge pattern with the least probability of affecting coastal waters; avoiding entrainment in the eastern Gulf loop current; and applying appropriate circulation models to help determine the safest dispersion strategy.

FFY 02 COMMUNITY OUTREACH ACCOMPLISHMENTS

The Tampa Bay Estuary Program continues to emphasize the importance of environmental education to the long-term health of the bay by creating a constituency of informed, involved citizens. This mission is aided by a Community Advisory Committee composed of residents from a variety of backgrounds and interests who share a common concern for the future of the bay.

The CAC was dramatically expanded in FFY 02, doubling in size from 18 to 36 members. The expansion was accomplished by a general solicitation of new members through press releases and listserve postings. The expansion served to further diversity the membership of the committee and offer more residents a chance to participate in bay management efforts. Policy Board members still retain the right to appoint up to two (2) members to the CAC.

CAC members embarked on a series of TBEP-sponsored field trips to familiarize themselves with the bay and important aspects of bay restoration. Trips were taken to the Florida Marine Research Institute, Cargill Fertilizer and the new desalination plant in Apollo Beach. A boat tour of Hillsborough Bay also was offered and was attended by more than 40 CAC members and their families.

CAC members continued to serve as judges for the Bay Mini-Grants program, which provided \$90,000 to community groups for bay improvement projects. A Mini-Grants subcommittee was active in FFY 02 and assisted TBEP staff in streamlining and clarifying Mini-Grant application and evaluation procedures.

The CAC also provided valuable input on revisions to the CCMP, and several CAC members served on subcommittees of the Technical Advisory Committee examining specific aspects of the CCMP in greater detail.

TBEP's Public Outreach Coordinator continued to serve as the staff coordinator for the CAC, as well as chair of TBEP's Manatee Awareness Coalition, an alliance of scientists, conservationists, industry representatives and others concerned about protection of Tampa Bay's population of endangered manatees. The MAC was instrumental in FY 02 in developing local, state and federal manatee protection zones that have made Tampa Bay a statewide leader in this effort, and served as a valuable open forum for diverse interests, including boating and fishing groups, to participate cooperatively in development of regulatory initiatives.

Also in 2002, the MAC concluded a 3-year research project assessing the effectiveness of education in changing boater behavior. The educational research program, Manatee Watch, was coordinated by Tampa BayWatch and the Florida Marine Research Institute, and involved nearly 100 citizen-volunteers trained to provide information and safe boating tools, such as nautical charts and polarized glasses, to area boaters in specific manatee "hot spots." A new educational program, Neighborhood Manatee Watch, was started to provide outreach about manatees to waterfront neighborhoods. In FY 03, MAC members will revise their educational strategies based on the findings of the research project.

Another key area of focus for the Public Outreach Coordinator was the continued implementation of the "Eyes On The Bay" invasive species outreach program. Projects in FY 02 included: continued

expansion of the "Eyes On The Bay" website area; sponsorship, with Florida Sea Grant, of the first statewide workshop addressing invasive species research and outreach in Florida; sponsorship, with The Florida Aquarium, of teacher training and an all-day student workshop pairing local middle and high school students with experts to devise strategies for preventing and eradicating marine bio-invasions; and coordination of a plenary session devoted to invasive species at EPA's Tech Transfer Conference in January 2003. The Public Outreach Coordinator also coordinated technical reviews of a literature review and field survey of invasives in Tampa Bay conducted by the University of Florida. That work documented 55 known, suspected or potential marine invaders (excluding plants) in the bay watershed.

TBEP also helped to sponsor an exhibit on invasive species at The Florida Aquarium, which opened in May 2002 and drew more than 400,000 visitors by the end of 2002. Additionally, TBEP's Public Outreach Coordinator serves on the Gulf of Mexico Regional Panel on Invasive Species.

Another major initiative for TBEP's Public Outreach program was the initiation of quarterly "Give A Day For The Bay" volunteer workdays, which recruit citizens to participate in half-day bay improvement project. "Give A Day" events in FFY 02 involved more than 400 citizens in removing Brazilian pepper from area parks, cleaning shorelines of litter and marine debris, and installing reef balls along seawalls to enhance marine habitat and reduce shoreline erosion.

Other public outreach accomplishments in FFY 02 included:

- Coordinating marketing efforts for the Tampa Bay Estuary license plate, including production of promotional materials such as inserts for tag renewal notices, a new brochure, rack cards and website information. 500,000 households in Hillsborough County received a "tarpon tag" insert as a result of a joint mail-out between TECO and TBEP. Consequently, license tag sales increased substantially in FFY 02, and are expected to reach \$120,000 by the start of FFY 03. Revenues from 2002 were again used to finance Bay Mini-Grants for community groups.
- Producing the Tampa Bay Ethical Angler Wallet Card, which shows illustrations of the 12 most commonly targeted fish species in the bay, along with harvest restrictions and important phone numbers for anglers to report violations, fish kills or fish tags. The card, printed on special latex paper that folds to the size of a credit card for easy stowing in a tackle box or wallet, received substantial favorable publicity and has proven to be one of TBEP's most popular educational products ever. The first 5,000 cards printed were distributed in 6 weeks, and a second reprint of 7,500 was authorized.
- Coordinating angler recruitment in a project to evaluate the habitat value of dredge holes in the bay. As part of this substantial research effort involving a variety of organizations, more than 30 fishing guides and recreational anglers were enlisted to fish the 10 dredge holes in the study and report their catch data to FMRI scientists. TBEP's Public Outreach Coordinator produced posters and flyers about the study and delivered them to bait shops and boat dealers, spoke about the project at fishing seminars, and distributed press releases that garnered favorable publicity about the project and helped to recruit anglers.

- Producing a full-color brochure about the Tampa Bay Estuary license plate, explaining how the revenues are allocated to advance bay restoration efforts.
- Updating TBEP's website, including the addition of downloadable educational materials, and new sections on the Manatee Friendly Neighborhood program, partnership projects and an expanded teacher resources area. The website's "Ask Us About The Bay" section generated more than 300 queries from citizens, managers and scientists from as far away as Norway and Sri Lanka seeking information about the bay and TBEP. The website listserve, through which the Public Outreach Coordinator provides news briefs about the bay, as well as information about upcoming events, grant opportunities and job openings, maintained more than 200 subscribers.
- Contributing articles and graphics about TBEP initiatives to the new quarterly regional publication, *Tampa Bay Soundings*.
- Producing an elegant pocket folder and companion insert sheets to create customized information packets about TBEP, highlighting such issues as seagrass recovery and habitat restoration.

FFY03 ANNUAL WORKPLAN

The principal Program objective for FFY03 is to carry out responsibilities assigned to the Tampa Bay Estuary Program under the CCMP Implementing Agreement. Duties that will receive special emphasis in FFY03 include:

- overseeing implementation of five-year action plans for bay restoration for the period 2000-2004, including nitrogen reduction projects of public and private sector participants;
- continuing the Program's effective community outreach programs to promote public participation and facilitate CCMP implementation;
- continuing actions to address emerging priority issues including invasive species;
- continue overseeing mini-grant projects and administering agreements for expenditure of license plate revenues;
- assist TBEP partners in securing funding for CCMP implementation projects;
- continuing implementation of the Program's Action Plan to achieve goals not addressed in the action plans of other parties; and
- continuing assistance to other programs in development and implementation of watershed management plans in the Tampa Bay watershed that help to advance the goals of the CCMP.

I. TBEP ACTION PLAN IMPLEMENTATION AND CCMP OVERSIGHT

TBEP will continue its principal role facilitating and tracking implementation of the CCMP. The Program will continue to support environmental research and monitoring activities that contribute directly to improved management of the bay and implementation of the CCMP. TBEP staff will track implementation of action plans of TBEP partners for the five-year period ending 2005. This includes tracking implementation of the Nitrogen Management Consortium Action Plan, a responsibility that takes on added importance since FDEP has formally accepted the Tampa Bay Nitrogen Management Strategy and the information collected by TBEP as the basis for determining compliance with the Total Maximum Daily Load (TMDL) of nitrogen for Tampa Bay.

A concise statement, setting forth the mission of the Tampa Bay Estuary Program, will be prepared to help better communicate the purpose of the Estuary Program to public officials and the general public.

As one of the nation's twenty-eight national estuary programs and a priority SWIM water body, Tampa Bay enjoys an enviable position in the competition for federal and state grants; particularly those grant programs administered by EPA and FDEP. As in previous years FFY 03 is an opportunity for TBEP partners to take advantage of the priority ranking of Tampa Bay and large parts of its watershed. TBEP staff, aided by the services of a contracted grant writer, will continue to work with local governments and agency partners to help secure grant assistance for projects contributing to implementation of the CCMP.

TBEP staff will endeavor to meet its other responsibilities outlined in the CCMP and Interlocal Agreement, including: continue the Program's effective community outreach programs to promote public participation and facilitate CCMP implementation; carry out TBEP's responsibilities pursuant to FDEP's reasonable assurance determination for nutrients in Tampa Bay; support efforts of local government partners in developing reasonable assurance document for major river basins; report to the Policy Board on each partners' compliance with the Interlocal Agreement and implementation of their Action Plans; continue support of seagrass and benthic monitoring program, vital to tracking the health of the bay; and, work with the Tampa Bay Dredged Material Advisory Committee and Army Corps of Engineers to implement the long-term dredged material management plan for the bay.

The re-examination and updating of CCMP goals as provided for in Sec 4.2 of the Interlocal Agreement will also be completed during the coming year

Estimated total cost:	\$576,685 (TBEP)
CCMP Action:	Implementing responsibilities of the TBEP entity as required under Section 6.7 of the Interlocal Agreement.
Responsible Party:	TBEP Staff
Deliverables:	Interlocal Agreement Coordination and EPA Cooperative Agreement Implementation

II. TBEP PARTNERS ACTION PLAN IMPLEMENTATION

Last year the SWFWMD contributed \$210,000 as in-kind match toward the FFY 02 Work Plan from the Balm Road Wetland and Stormwater Treatment Project. This year, the Pinellas County D.E.M. will contribute **\$176,685** in "in-kind" from the Ft. Desoto Re-circulation Project.

Construction of Bridges to Restore Circulation and Provide Ecological Enhancement in the Ft. DeSoto Park Aquatic Habitat Management Area

Project Objectives: The objective of this project is to restore circulation to the inner portion of the bays that was severed during the dredging and filling activities that occurred in the late 1950s. Summertime temperatures become extremely elevated in these areas leading to very low dissolved oxygen levels as well as severe seagrass stress resulting in blade necrosis. Restored circulation patterns will lead to improvement in water quality parameters and a healthier seagrass and faunal community. The improved health and viability of seagrasses should result in continued seasonal uptake of nutrients and sediment trapping instead of adding pollutant load to the water body due to decaying seagrasses.

Project Description: The project will include the construction and performance evaluation of 40' clear-span bridges to replace portions of the filled causeways at Ft. DeSoto Park in Pinellas County. Opening the causeways by partial replacement with 40' clear-span bridges will restore east-west circulation to the semi-enclosed embayments and will improve ecosystem health. Preliminary modeling predicts a 100% exchange of water in the smaller bay and 25% for the larger bay. The bridges will be designed to allow non-motorized vessels to travel between the bays and provide a canoe trail within the park as an added public benefit. A public education informational display will be constructed to describe the project and acknowledge project participants.

The project directly affects a SWIM priority water body and is within a Group 1 impaired water on FDEP's verified list for Total Maximum Daily Load development. It affects water quality and habitat value at a regional park facility. The project is consistent with the Pinellas County Comprehensive Plan, SWIM, the goals of the Tampa Bay Estuary Program and its CCMP. It is also contained within the Pinellas County Capital Improvement Program.

Estimated total cost:	TBA
In-Kind Match:	\$176,685
CCMP Action:	BH-1 - Implement the Tampa Bay Master Plan for Habitat Restoration and Protection
Responsible party:	Pinellas County Department of Environmental Management
Deliverables:	Restore circulation to the inner portion of the bay for improved water quality

Professional Grant Writer

To help leverage the non-federal overmatch funds most effectively, it is proposed that a professional grant writer be contracted to work with TBEP local government and agency partners in locating promising state and federal funding sources and preparing grant applications. The grant writer's activities will be directed toward grants and funding opportunities that contribute to implementation of the CCMP. The grant writer will help facilitate communication among grant writers of TBEP partners and help them identify promising grant opportunities that might otherwise be overlooked. The grant writer will also provide grant-writing support to local governments in the Tampa Bay watershed that may lack in-house, grant-writing expertise.

Estimated total cost:	\$30,000
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CCMP Action: Primarily WQ-1 - Implement Nitrogen Management Goals for Tampa Bay; and
BH-1 – Implement the Tampa Bay Master Plan
Responsible party: contractor
Deliverables: Locate state and federal funding sources and prepare grant applications
for TBEP partners

III. CONTRACTED TECHNICAL PROJECTS

Tampa Bay Benthic and Seagrass Monitoring Programs

In 2002, the Tampa Bay Benthic and Seagrass Monitoring Programs were evaluated and the following elements were defined to maintain our careful watch on bay benthic conditions, while allowing a reduction in effort over time. This effort would not be possible without all partners' willingness to continue this excellent collaboration in reaching common monitoring objectives.

1. **Basic Baywide Benthic Sampling Effort:** Starting in 2002, increase the reporting period from 1-year to 4-years for all segments, and reduce sampling effort by approximately one-half. Continue to collect samples on an annual basis. This design will provide approximately equal effort and coverage in each bay segment, and still allow estimation for the Bay as a whole every year. It would also assist with tracking conditions in anomalous years, such as droughts, El Nino or storms.

Bay Segment	Sites Sampled Per Year	Responsible Party
Old Tampa Bay	9	Pinellas County
Hillsborough Bay	11	EPCHC
Middle Tampa Bay	11	EPCHC
Lower Tampa Bay	9	Manatee County
Boca Ciega Bay	13	Pinellas County
Manatee River/Terra Ceia Bay	11	Manatee County
All Tampa Bay	64	

In addition to the Basic Baywide Benthic Monitoring Program, some counties may desire additional stations for specific objectives not included in the Basic Design (such as EPC to track conditions for Minimum Flows and Levels or the HIMP, or Pinellas County for effects of Joe's Creek discharge into Boca Ciega Bay). Although we encourage the use of the Baywide Design and protocols, these additional samples would not be the responsibility of the partners. Individual partners are encouraged to work out equitable compensation if they wish to request services above the Basic Program from other partners.

Responsibilities: The Benthic Monitoring group agreed to the following in-kind services and

responsibilities be considered in the processing of samples, starting in 2002:

- a. **Rough sorting:** EPC will continue to conduct all rough sorting. Manatee County will lend EPC a sorting scope to assist with this work.
- b. **Taxonomic:** EPC will continue to conduct the taxonomic identification for all samples collected in the Basic Program and Special Studies. To assist with the cost for the taxonomic work, TBEP staff will commit to providing \$20,000 per year to EPC, for 2002-2005, subject to annual approval by the TBEP Policy Board.
- c. **Grain size analysis:** Manatee County will continue to provide silt-clay analyses for the Basic Program and Special Studies. TBEP has committed to provide \$10,000 to Manatee County to assist with silt-clay analyses of samples from the Base Program, subject to annual approval by the TBEP Policy Board. Manatee County will also provide training and quality assurance checks to EPC, for silt/clay analysis.
- d. **Sediment chemistry:** EPC will continue to conduct the sediment chemistry analyses for the Basic Program and Special Studies. To assist with the cost for the sediment chemistry analyses, TBEP staff will commit to providing \$10,000 per year to EPC for 2002-2005, subject to annual approval by the TBEP Policy Board.
- e. **Site selection and Data Management:** Site selection and database management will be conducted by Pinellas County, starting in 2002. The database will be available to all partners. To assist with this effort, TBEP will commit to providing \$5,000 per year (2002-2005) to Pinellas County to help support SAS licensing, subject to annual approval by the TBEP Policy Board.
- f. **Reporting:** The Benthic Monitoring partners will report results in the BEMR every four years, at a minimum. Publication in scientific literature of any aspect of this program is also encouraged. Depending upon final targets for sediment quality, reporting may also include a yearly update of progress towards targets (to be determined after targets are finalized). TBEP would be responsible for reporting on targets.

2. **Baywide Seagrass Transects:** The Tampa Bay seagrass transect monitoring program is entering the fifth year of data collection. Hillsborough, Pinellas and Manatee counties, the City of Tampa, FWC FMRI, SWFWMD, and Tampa BayWatch conduct this combined field sampling effort. Data collected are collated and basic analyses conducted by the City of Tampa Bay Study Group. Results from the program to date have been used to assist with assessing the effects of wave energy on seagrass growth, sand bar stabilization, and quantifying the natural and anthropogenic short-term changes in seagrass coverage, species diversity and growth patterns, and growth at the deep edges. These results will be critical elements of the Seagrass Management Plan.

The proposed funding would allow the City of Tampa Bay Study Group to apply graphical and statistical analyses to the transect monitoring data, and will also result in data for use in developing a comprehensive 5-year plan for transect monitoring. The 5-year plan, to be developed by the Seagrass

Working Group, will include concentrated work in "problem areas" and appropriate control areas to assist with the evaluation of causes of seagrass slowdown.

Estimated costs for support of Baywide Monitoring Programs:

Benthic Analyses and Reporting support:

Taxonomic support	\$20,000	EPCHC
Grain size analyses	\$10,000	Manatee County Env. Management
Sediment chemistry	\$10,000	EPCHC
Statistical program	\$ 5,000	Pinellas County DEM

Seagrass Transect Analyses and Reporting support:

Training and Analyses	\$10,000	City of Tampa Bay Study Group
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Estimated total cost:	\$ 55,000
CCMP Action:	BH-8 – Expand Habitat Mapping and Monitoring
Responsible parties:	as noted above
Deliverables:	Benthic Monitoring Support and Reporting

Technical Support and Data Management

Technical support will be needed to: facilitate technical workshops; prepare technical reports; support staff in the technical evaluation of implementation projects in the 2000-2005 Action Plans; develop a distributed data management system and assist with a sediment quality assessment. It is anticipated that TBEP staff will also require continued data management support to track and transfer data requests; manage the TBEP GIS library and maintain the new technical website (www.tbep.tech.org); provide data reduction and analysis; support graphic and mapping needs; update CD ROM and Internet access to TBEP data and maps, and evaluate how climatic events such as El Nino may effect attainment of nitrogen management and seagrass recovery goals. Staff anticipates issuing separate work orders as specific needs arise.

Estimated total cost:	\$ 80,000
CCMP Action:	WQ-1 – Implement Nitrogen Management Goals for Tampa Bay; and BH-8 – Expand Habitat Mapping and Monitoring
Responsible party:	contractor
Deliverables:	workshops, technical reports, distributed data management system, and sediment quality assessment support

Priority Technical Projects Implementation Plan

As noted in the FY 2002 Accomplishments at the beginning of this Workplan, TBEP has convened a number of workshops and initiatives on specific issues in the Tampa Bay area. Most of these workshops were designed to help identify priority "next steps" or gaps needed to adequately address these issues.

Staff recommends that the priorities identified for all issues be reviewed by TAC and CAC (where

appropriate), and ranked according to our current understanding of technical and management needs. TAC recommendations and expected costs for each priority would then be forwarded to the Management Board for consideration. Potential grant opportunities would also be identified.

Issues for which priorities have been identified through group workshops or working groups include the following:

- Data Management (from workshop)
- Freshwater Inflow (from workshop)
- Modeling (from workshop)
- Sediment targets (from Sediment Targets workshop and working group)
- Seagrass (from Seagrass Working Group and upcoming workshop)
- Habitat restoration and Restoring the Balance (from upcoming workshop)
- Invasive Species (from workshop)
- Pathogens (from Healthy Beaches project)
- Light attenuation goals (from Water Quality Subcommittee)

A "Priority Technical Projects Implementation Plan" developed by staff would summarize the recommended priority projects, estimated costs, and potential funding sources (grants, agency partners, TBEP funding). Funds for FY03 TBEP would be used for implementation of priority projects.

Estimated total costs: \$ 25,000 Expenses for grant match and for project costs.
CCMP Action: FL-1 – Establish and Maintain Seasonal Freshwater Flows Downstream of Dams; BH-1 – Implement the Tampa Bay Master Plan; IS-1 – Implement a Public Education Program to Enlist Citizens' Help in Preventing Marine Bio-Invasions; and TX-1 – Address Hot Spots of Toxic Contamination
Responsible Party: contractor
Deliverables: Priority Technical Projects Implementation Plan

IV. COMMUNITY OUTREACH AND EDUCATION

Community Information and Publications

Budget provides for general contribution to publication of Soundings, the regional bay journal coordinated by the Tampa Bay Regional Planning Council; quarterly updates to the TBEP Internet site; sponsorship of four "Give A Day For The Bay" volunteer workdays; production of press releases and media kits, and printing and reprinting of education materials. Additional outreach efforts planned for FFY 03 include continued support for an annual student workshop on bay-related issues at The Florida Aquarium, as well as continued support for the "Eyes On The Bay" invasive species awareness program. The budget also includes starter funds for a new endeavor B the production of a high-quality documentary film and companion museum exhibit featuring longtime residents offering their historical perspectives on the past, present and future of Tampa Bay. Grant funds also will be sought to accomplish this substantial effort.

Finally, the budget provides for a special edition of *Tampa Bay Soundings* that will provide a

comprehensive status report on bay restoration for the public.

Estimated total cost: \$50,000
Responsible Parties: Tampa Bay Regional Planning Council, Florida Aquarium, Others
CCMP Action: PE-1 – Foster Community Support for Bay Restoration by Continuing Public Education, and Section 7.7(e) of Interlocal Agreement

Invasive Species Outreach

Budget provides for continuation of campaign to educate citizens about ecological problems associated with invasive species and enlists the support of bay user groups in reporting any invasive species they encounter in the bay, and preventing further introductions. A key element of the campaign for FY 03 will be expansion of the Dock Watch citizen monitoring program to the Tampa Bay area, and support for research and awareness projects targeting key pathways for introductions of invaders into the bay system.

Estimated total cost: \$ 5,000
Responsible Party: TBA
CCMP Action: IS-1 and IS-2, and Section 6.7(e) of Interlocal agreement.
Deliverables: Dock Watch monitoring program, invasive species education

Documentary and Museum Exhibit

Budget provides seed funding for development of a 60-minute documentary film encompassing interviews with longtime bay residents, historical photos and current footage of key bay landmarks. The film will be targeted for regional or statewide airing on PBS stations. A companion museum exhibit also is proposed, most likely with a local history museum. Cost of the film is estimated at \$60,000; the cost of the museum exhibit is projected at \$25,000. Grant funds will be sought for the bulk of this project.

Estimated total cost: \$15,000
Responsible Party: TBA
CCMP Action: PE-1 - Public Involvement chapter of CCMP, and Section 7.7(e) of Interlocal Agreement
Deliverables: Documentary film and Museum Exhibit

BUDGET

The proposed budget for the Tampa Bay Estuary Program's FFY 03 Annual Work Plan is itemized in Table 1, indicating funding sources and amounts, and Table 2 showing projected expenditures.

As indicated in Table 1, the estimated contribution from the U.S. Environmental Protection Agency to the TBEP in FFY 03 is **\$544,685**. This includes **\$38,000** in EPA non-matched funding for the Cross Bayou Revitalization Project.

The required non-federal match will be **\$506,685** and can be met either with cash or in-kind contributions. A total **cash** contribution of **\$330,000** in non-federal funds will be provided by the six local governments represented on the Policy Board and the five basin boards of the Southwest Florida Water Management District within the Tampa Bay watershed. The contributions are in keeping with Section 9.4 of the 1998 Interlocal Agreement executed by the six local governments, SWFWMD, FDEP, and other Management Board members. The funding contributions from local governments and basin boards are unchanged from last year.

Pinellas County D.E.M. will also contribute an additional **\$176,685** in "in-kind" from the Ft. Desoto Re-circulation Project. This contribution is reflected in the Workplan under "TBEP Partners Action Plan Implementation". The cash difference will allow TBEP to use **\$85,000** in non-federal supplemental funds to leverage future grants that require non-federal match.

A total of **\$1,051,370** will be used to fund the FFY 03 Cooperative Agreement Workplan.

Budget for Cooperative Agreement - Estimated expenditures by cost category are provided in Table 2. Implementation of the program's action plan, including staffing and program operating costs, totals **\$576,685**. Partners Actions Plan Implementation is estimated at **\$206,685**. A total of **\$198,000** is allocated for Contracted Technical Projects, while **\$70,000** is devoted to Community Outreach and Education Projects.

Budget for Non-Federal Supplemental Funding (Supplement "A", page 21) - A total of **\$81,000** is allocated for future grant match, while **\$4,000** is devoted to National Outreach.

Table 1
**TAMPA BAY ESTUARY PROGRAM
 FUNDING TABLE, FFY 03**

Source of Funding	Amount	Change from FFY 02	Type
FEDERAL:			
FFY 03 EPA funding	\$496,685		Clean Water Act, Section 320
	10,000		Travel/Technology transfer
	<u>38,000</u>		Pinellas County – Cross Bayou
TOTAL FEDERAL (\$506,685 requires match)	\$544,685	\$ 34,685	
NON-FEDERAL:			
City of Clearwater	\$13,979	0	City appropriation
City of St. Petersburg	33,379	0	City appropriation
City of Tampa	39,402	0	City appropriation
Manatee County	32,217	0	County appropriation
Pinellas County	73,714	0	County appropriation
Hillsborough County	<u>83,974</u>	<u>0</u>	County appropriation
Total Local Government	\$276,665	\$0	
Alafia River Basin Board	\$27,667	0	Basin Board appropriation
Manasota Basin Board	27,667	0	Basin Board appropriation
Hillsborough River B.B.	27,667	0	Basin Board appropriation
Northwest Hillsborough B.B.	27,667	0	Basin Board appropriation
Pinellas-Anclote B.B.	<u>27,667</u>	<u>0</u>	Basin Board appropriation
Total Basin Boards	\$138,335	\$0	
In-kind contribution from TBEP Partners' Action Plans	\$176,685	(\$ 33,315)	
TOTAL NON-FEDERAL	\$591,685	(\$ 33,315)	
Required match	506,685		
Overmatch	85,000		
[LESS NON-FEDERAL SUPPLEMENTAL FUNDS FOR MATCH PROJECTS]	(see page 21) [\$85,000]	\$ 30,000	
TOTAL FFY 03 WORK PLAN	\$1,051,370	\$31,370	

Table 2
TAMPA BAY ESTUARY PROGRAM
PROJECTED EXPENDITURES, FFY 03

<u>ACTIVITY OR PROJECT</u>	<u>ESTIMATED COST</u>	<u>CHANGE FROM FFY 02</u>
A. <u>COOPERATIVE AGREEMENT FUNDING</u>		
I. TBEP ACTION PLAN IMPLEMENTATION		
Direct personnel services	309,775	
Other personnel services	21,685	
Indirect costs	99,925	
Publication, subscriptions and dues	800	
Travel/conferences	15,000	
Insurance	8,000	
Legal expenses	7,500	
Capital outlays	12,000	
Printing - Admin/Tech	6,000	
Contract services	26,500	
Office rental/Storage rental	22,000	
Communications/Phones	9,000	
Equipment Lease/Maintenance	6,500	
Auditing	13,500	
Office supplies/Paper	6,000	
Postage/Mass Mailing	6,000	
Legal Notices	1,500	
Other operating expenses	<u>5,000</u>	
Total Program Operations	576,685	36,685
II. TBEP PARTNERS ACTION PLAN IMPLEMENTATION		
Pinellas County D.E.M. – Ft. Desoto	176,685	
Grant Writing Support for TBEP Partners	<u>30,000</u>	
Total Partners Action Plan Implementation	206,685	(33,315)
III. CONTRACTED TECHNICAL PROJECTS		
Tampa Bay Benthic and Seagrass Monitoring Program	55,000	
Technical Support and Data Management	80,000	
Priority Technical Projects Implementation Plan	25,000	
Pinellas County Cross Bayou Revitalization	<u>38,000</u> (see Supplement B)	
Total Technical Projects	198,000	33,000
IV. COMMUNITY OUTREACH AND EDUCATION PROJECTS		
Community Information and Publications	50,000	
Invasive Species Outreach	5,000	
Documentary and Museum Exhibit	<u>15,000</u>	
Total Outreach Projects	70,000	(5,000)

TOTAL COOPERATIVE AGREEMENT FUNDING \$1,051,370

31,370

Table 2 (Continued)
**TAMPA BAY ESTUARY PROGRAM
PROJECTED EXPENDITURES, FFY 03**

<u>ACTIVITY OR PROJECT</u>	<u>ESTIMATED COST</u>	<u>CHANGE FROM FFY 02</u>
B. <u>NON-FEDERAL SUPPLEMENTAL FUNDING</u>		
CCMP Implementation Support	81,000	
National Outreach	<u>4,000</u>	
Total Projects	85,000	
TOTAL NON-FEDERAL SUPP. FUNDING	\$85,000	(\$30,000)

SUPPLEMENT A

NON-FEDERAL SUPPLEMENTAL FUNDING

FFY 03 PROJECTED EXPENDITURES OF SUPPLEMENTAL FUNDS

CCMP Implementation Support

Apply \$85,000 in local partners' supplemental funds for projects that require non-federal funding or non-federal match.

Supplemental funds:	\$81,000
Responsible party:	contractors/local governments/agencies/university
CCMP Action:	Monitoring Bay Improvement, updating CCMP goals, data management, and technical evaluation of CCMP implementation projects.

National Outreach

Budget provides \$4,000 for annual dues to the Association of National Estuary Programs, a professional, non-profit organization promoting increased awareness and support of the mission and accomplishments of the National Estuary Program. ANEP's congressional education and outreach efforts were arguably the most important factor contributing to the \$170,000 increase in federal funding for each NEP in FFY 02.

Supplemental funds:	\$4,000
Responsible Party:	ANEP
CCMP Action:	Securing Funding for CCMP Implementation; Public Education and Involvement

SUPPLEMENT B

ADDITIONAL PROJECTS AND GRANTS TO BE IMPLEMENTED IN FFY 03

In addition to the projects outlined in the TBEP FFY 03 Annual Workplan, the following TBEP projects and grants will be initiated (in association with program partners) in FFY 03. Funding sources, including the budget year, for each of these projects are noted.

BAY RESTORATION GRANTS

Total license plate revenue is anticipated to be approximately \$120,000 of which 20 percent or \$24,000 is pledged to the Agency on Bay Management under the enabling legislation. TBEP's share of the specialty license plate revenues is projected to be \$96,000, which will continue to fund the Bay Mini-Grants.

The designated fund balance in license plate revenue will provide funding for Bay Mini-Grants of up to \$7,500 each to community groups for bay restoration and improvement projects. A committee composed of CAC members selects Mini-Grant recipients, and all projects must be completed within 12 months of award.

Estimated total cost:	\$96,000
Funding Source:	Tampa Bay Estuary license plate revenues; 308-1400
CCMP Action:	Public Involvement chapter of CCMP and Section 6.7(e) of Interlocal Agreement.
Deliverables:	Several community restoration and education projects

ECOLOGICAL FUNCTION OF EXISTING DREDGE HOLES IN TAMPA BAY

Year 2

Implementation of the Tampa Bay Dredged Material Management Strategy calls for linking the needs of the resource management community for material fill in habitat restoration projects with the desire of the USACOE to find "beneficial uses" for dredged material. Of particular interest are submerged dredged holes which could provide important shallow water habitat if filled. However, these holes may also provide critical fish habitat, including refugia during cold weather. This project will allow assessment of up to ten of the major holes, with the objective of developing specific implementation plans for each of the assessed holes. The recreational fishing community in Tampa Bay will be critical partners in development of restoration plans. The products for this project are assessment and restoration implementation plans for each of the major dredged holes in Tampa Bay.

This 2-year project has been funded by the EPA Wetland Grants program, and will be initiated in summer 2002.

Estimated total cost:	\$200,000
Funding Sources:	EPA \$150,000
	FMRI (in-kind services) \$ 50,000
CCMP Action:	DR-1 – Dredged Material Management; BH-1 – Habitat Restoration
Deliverables:	Assessment and restoration implementation plans for each of the major dredged holes in Tampa Bay.

PINELLAS COUNTY, FLORIDA, CROSS BAYOU AREA – WIDE REVITALIZATION PROJECT

The purpose of this Revitalization Initiative is to identify methods to facilitate cleanup and productive reuse of contaminated properties within a designated watershed area. This project will address challenging area-wide contamination problems at multiple sites by using coordinated, cross program, multi-agency approaches. The Cross Bayou watershed will be the targeted area which is a part of the Tampa Bay Estuary Program.

Tasks may include:

- Identify sources (types and/or specific sources) of known or suspected contamination impacting the watershed area; (i.e. Brownfields, state or federal hazardous waste sites, RCRA facilities, UST sites, etc.)
- Identify all local, state and federal authorities, programs and requirements applicable in the watershed area;
- Utilize GIS mapping to locate and identify contamination sources and receptors and their relationships;
- Identify all participating programs and stakeholders;
- Integrate available data and maps into a cohesive source of information for the watershed area;
- Integrate and coordinate watershed protection plans with area remediation plans and other programs;
- Develop short term goals to assist multiple programs in achieving long term goals;
- Identify funding needs and actions needed, and to be leveraged, to achieve long term goals of stakeholders and programs.

At the completion of each task a deliverable will be provided documenting the work performed in the appropriate format and/or digitized format as directed.

Estimated total cost: \$ 38,000

Funding Sources: EPA

CCMP Action: TX-1 – Address Toxic Hot Spots

TX-2 – Improve Opportunities for Proper Hazardous Waste Disposal

Deliverables: Documentation of the work performed in the appropriate format and/or digitized format as directed.

Appendix A

FFY 02 Projects Status Report

NOTE: A complete status report of the technical and community outreach projects of the NEP from FY91-FY95 is provided in the FY96 workplan (August 1996). The FY97, FY98, FY99, FY00, and FY01 status reports of projects are provided in the respective Annual Work Plans.

I. Action Plan Implementation and CCMP Oversight

PROJECT TITLE: Electronic Tracking of CCMP Implementation
CONTRACTOR: Janicki Environmental, Inc; TBEP staff
STATUS: Electronic database revised and tested. Existing projects (1995-1999 and 2000 Supplemental projects) entered into the electronic database. Identified ongoing and proposed projects also entered into database. TBEP staff is working with partners to check accuracy of existing projects and enter 2000-2005 new projects into database.

DELIVERABLES: ***Tampa Bay Estuary Program Action Plan Electronic Database***
SUMMARY: The Electronic Database will be used to track progress on all TBEP CCMP Actions. The Electronic Database uses standardized calculations to estimate untreated loads and reductions associated with proposed or existing projects included in the Action Plan to estimate load reduction from sub-basins.

PROJECT TITLE: Water Budget Workshop
CONTRACTOR: TBEP staff
STATUS: Project complete
DELIVERABLES: **Water Budget Workshop for Tampa Bay: Presentations and Workshop Summary, December 4-5, 2001.** 2002. Technical Report #02-02 of the Tampa Bay Estuary Program. Includes CD of presentations. Prepared by TBEP staff (H. Greening and M. Cladas).

SUMMARY: Characterization of a "water budget" for Tampa Bay (freshwater inflows and outflows to and from the Bay, and effects that changes in the water budget may have on the bay's environmental systems) is a priority issue of the Tampa Bay Estuary Program and its partners. Goals of the Tampa Bay Water Budget Workshop were to determine the current state of knowledge of freshwater inflow and outflow in Tampa Bay, and to identify and prioritize gaps in our knowledge as a first step in characterizing the Tampa Bay water budget. Over 75 scientists and resource managers participated in the two-day workshop.

PROJECT TITLE: Tampa Bay Journal - "Soundings"
CONTRACTOR: Tampa Bay Regional Planning Council and Partners
STATUS: Ongoing. First year of publication in progress.
DELIVERABLES: **Quarterly publication devoted to Bay-related issues and news.**
SUMMARY: The TBEP Policy Board approved, at the May 11, 2001 meeting, to incorporate the "Bay Guardian" newsletter into a new Tampa Bay-wide publication entitled the "Soundings". The Tampa Bay Estuary Program has

budgeted the \$12,000 - \$ 15,000, which is currently being spent to publish the "Bay Guardian" as match toward the new journal.

PROJECT TITLE: Invasive Species Action Plan
CONTRACTOR: TBEP, University of Florida, U.S.G.S., Florida Aquarium
STATUS: Ongoing. Field investigations and literature review by UF complete. Invasive Species Exhibit complete.
DELIVERABLES: **Component 1 - Assess the extent of existing invasions in Tampa Bay (U.S.G.S., Univ. of Fl.)**
Component 2 - Implement a public education program (TBEP, Florida Aquarium)
SUMMARY: Component 1 - This action supports research to identify the numbers and types of invasive species found in Tampa Bay, through both a literature review and a field assessment. The effort will provide a basic understanding of the types of invasives occurring in the bay, their relative ecological risks, and habitats most vulnerable to invasion. Results of the study can be used to expand existing bay monitoring programs B such as field seagrass monitoring, benthic sampling or fisheries assessments B so they may serve more effectively as an early warning system to track the arrival or spread of invasive species.
Component 2 - To increase public awareness of the consequences of bio-invasions, and enlist their help in preventing introductions -- a campaign called "Eyes On The Bay" is being developed. The campaign will utilize public service messages, posters, signs and a user-friendly web site to provide information about invasive species likely to appear and flourish in Tampa Bay. A clearinghouse may be established to answer residents' questions, collect information about sightings of the targeted invasive species and coordinate placement of educational signs, posters and other materials.

PROJECT TITLE: Stormwater Pond Management Action Plan
CONTRACTOR: TBEP, CAC, Partners
STATUS: Action Plan strategy under development
DELIVERABLES: **CCMP Action Plan to address uniform design, construction and maintenance of stormwater detention/retention ponds throughout the Tampa Bay watershed.**
SUMMARY: Staff has received a good response to the survey sent to stormwater managers, and is in the process of incorporating suggestions made by respondents into the draft stormwater action plan. The actions will be reviewed in a joint workshop of the CAC and TAC before coming back to Management and Policy Board for final approval.

II. Contracted Technical Projects (FFY 02)

PROJECT TITLE: Analysis and Interpretation of Benthos and Sediment Quality
CONTRACTOR: Hillsborough County EPC, Pinellas County and Manatee County
STATUS: Ninth year of benthic sampling complete.
DELIVERABLES: **Status of Tampa Bay Sediments: Polycyclic Aromatic Hydrocarbons, Organochlorine Pesticides, and Polychlorinated Biphenyls (1993 and**

1995-1999). 2002. Technical Report #01-02 of the Tampa Bay Estuary Program. Prepared by the Environmental Protection Commission of Hillsborough County (S.A. Grabe and J. Barron).

Tampa Bay Benthic Monitoring Program: Status of Hillsborough Bay: 1993-1998. 2002. Technical Report #11-02 of the Tampa Bay Estuary Program. Prepared by Environmental Protection Commission of Hillsborough County. (S.A. Grabe, D.J. Karlen, C.M. Holden, B. Goetting).
SUMMARY: In summer 2002, based on the results of the benthic monitoring program to date, a Benthic Program Redesign was finalized and adopted (see Workplan-benthic analyses project for description of the redesign). A revised Tampa Bay Benthic Index, to be used to develop specific numeric targets, will be finalized in summer 2003.

PROJECT TITLE: Technical Support projects
CONTRACTOR: Janicki Environmental, Inc.; MacDonald Environmental Services, Ltd.; TBEP staff
STATUS: Projects complete
DELIVERABLES: **Tracking Chlorophyll-a and Light Attenuation in Tampa Bay: Application to 2001 Data.** 2002. Technical Report #03-02 of the Tampa Bay Estuary Program. Prepared by Janicki Environmental, Inc. (A. Janicki and R. Pribble)

An Ecosystem-based Framework for Assessing and Managing Sediment Quality Conditions in Tampa Bay, Florida. 2002. Technical Report #10-02 of the Tampa Bay Estuary Program. Prepared by MacDonald Environmental Services Ltd. (D.D. MacDonald, D.E. Smorong, and R.A. Lindskoog).

Tampa Bay Sediment Quality Targets Physical Parameters Assessment. 2002. Technical Report #05-02 of the Tampa Bay Estuary Program. Prepared by Janicki Environmental, Inc.

Tampa Bay Baywide Environmental Monitoring Report. 2002. Technical Report #06-02 of the Tampa Bay Estuary Program. Prepared by the Tampa Bay environmental monitoring groups. (R.J. Pribble, A. J. Janicki, and H. Greening, eds).
SUMMARY: Results of the 2001 water quality comparison to chlorophyll and light attenuation targets show that three of the four bay segments are in the "yellow" or caution stage. Chlorophyll a targets are being met for all major bay segments (indicating that the Nitrogen Management Strategy is still on track), but light attenuation targets are not. The JWQ Subcommittee recommends re-evaluation of the light attenuation targets as a next step. *See Benthic Analyses project for a summary of the benthic program results.*

PROJECT TITLE: Atmospheric Deposition projects
CONTRACTOR: University of South Florida College of Public Health
STATUS: Project complete.
DELIVERABLES: **Atmospheric Deposition of Nitrogen and Air Toxins to the Tampa Bay**

Estuary. 2002. Technical Report #08-02 of the Tampa Bay Estuary Program. Prepared by University of South Florida College of Public Health (N. Poor).

SUMMARY: Results through 2001 indicate that atmospheric deposition of nitrogen directly to the surface of Tampa Bay is estimated to contribute about 20-30% of the total nitrogen load from all sources (depending upon rainfall amounts). Ongoing monitoring for toxic materials deposition (heavy metals, PAHs, PCBs and other contaminants) was completed in May 2001. All ongoing and completed data analyses are posted on the Tampa Bay Atmospheric Deposition website, and will be linked to the TBEP Tech Web Site.

PROJECT TITLE: Support of the Tampa Bay Seagrass Recovery Plan of Study

CONTRACTORS: NOAA, City of Tampa, FMRI, Pinellas County, SWFWMD, TBEP, and USGS

STATUS: Ongoing; Seagrass Restoration Strategy under development

DELIVERABLES: **Seagrass Management: It's Not Just Nutrients!** Proceedings of a Symposium August 22-24, 2000, St. Petersburg, Florida 2002. Technical Report #04-02 of the Tampa Bay Estuary Program. Edited by H. Greening. 246 p.

Evaluating the Effects of Offshore Sandbars on Seagrass Recovery and Restoration in Tampa Bay Through Ecological Forecasting and Hindcasting of Exposure to Waves. 2002. Technical Report #07-02 of the Tampa Bay Estuary Program. Prepared by NOAA NOS Center for Coastal Fisheries and Habitat Research. (M.S. Fonseca, B.D. Robbins, P.E. Whitfield, L. Woods, and P. Clinton).

Data Summary from the Tampa Bay Interagency Seagrass Monitoring Program Through the Year 2001. 2002. Technical Report #09-02 of the Tampa Bay Estuary Program. Prepared by City of Tampa Bay Study Group (W. Avery and R. Johansson).

SUMMARY: Results from seagrass-related projects completed in 2002 include the following:

- Wave energy and loss of offshore bars may be inhibiting the re-establishment of seagrass beds in some areas of the bay, especially along the southeast coastline. Wave energy does not appear to be a factor in the loss or slow recovery of seagrass in the Feathersound area in Old Tampa Bay.
- Data collected from yearly transects around Tampa Bay indicate that year to year variation in seagrass community structure and condition may be significant in some places. The implications for this variability to seagrass growth are currently not known.

III. Community Outreach and Education (FFY 02)

PROJECT TITLE: Community Outreach and Publications
CONTRACTOR: TBEP, McShane Communications, Insight Graphic Design, Magic Bus Enterprises
STATUS: Ongoing
DELIVERABLES: **Four quarterly editions of the Soundings newsletter; quarterly updates of the TBEP web site; maintenance of the video lending library; "Eyes On The Bay" presentation materials; coordination of quarterly "Give A Day For The Bay" volunteer workdays; development and printing/reprinting of other educational materials as needed.**
SUMMARY: A major public outreach project for FFY 02 was the launching of TBEP Manatee Awareness Coalition (MAC) "Neighborhood Manatee Watch Program" that encourages neighborhoods to promote manatee conservation and awareness. Waterfront neighborhoods that complete a minimum number of activities (such as posting manatee caution sign on a percentage of their community's docks or building an informational kiosk at a community boat ramp) will receive designation as a "Manatee Friendly Neighborhood" and be given a handsome sign to display at their community entrance. MAC members are taking turns giving presentations on the program to neighborhood groups and have developed an extensive "Neighborhood Notebook" of resources, contacts, free educational materials and suggested manatee protection activities.

TBEP's Public Outreach Coordinator also continued to coordinate activities of the Tampa Bay Manatee Awareness Coalition (MAC), which provides oversight of the Manatee Watch boater research and education program developed by the MAC, Tampa BayWatch, and the Florida Fish and Wildlife Conservation Commission. The Manatee Watch program seeks to compare the effectiveness of regulation versus education in protecting manatees in Tampa Bay by monitoring boater behavior in selected study sites, providing on-water boater education at some sites and implementing regulatory speed or no-entry zones in others. Compliance with these disparate methods of protection will then be assessed to determine the effectiveness of each. Trained volunteers are utilized in both aspects of the program. The MAC also was instrumental in successfully promoting adoption of a year-round regulatory slow-speed zone for the area of Tampa Bay north and south of the Big Bend power plant, a major winter refuge for more than 300 endangered manatees.

Another key outreach initiative was "Give A Day For The Bay," a series of community-driven bay improvement events that was expanded to a quarterly basis in FY 02. Extensive planning is involved in this effort, which recruits and organizes volunteers to perform such work as Brazilian pepper removal or oyster reef creation. Workdays in FY 02 were held in partnership with the City of Tampa, the Cockroach Bay Users Group, Audubon, and the Coastal Conservation Association.

The "Eyes On The Bay" invasive species awareness campaign also expanded in FY 02, with a sighting report mechanism added to the TBEP website. The Eyes On The Bay slide show and CD also was updated and revised, and TBEP began working with Dauphin Island Sea Lab to expand the Dock Watch citizen monitoring program for nuisance and invasive jellyfish to Southwest Florida. TBEP also helped to fund a teaching guide to invasive species with USF and The Florida Aquarium, and provided funding for associated teacher training workshops. Additionally, TBEP's

Public Outreach Coordinator co-hosted a session on invasive species at EPA's January 2003 Technology Transfer Conference. Ms. Holland also serves on the state of Florida's Invasive Species Working Group.

TBEP's Public Outreach Coordinator continued to provide articles and graphics for the quarterly *Tampa Bay Soundings* publication, and to serve on the editorial advisory committee. A special issue of *Soundings* focusing on progress in implementing the CCMP is planned for late summer of 2003.

TBEP's Community Advisory Committee doubled in size in FY 02, in response to a general solicitation for new members that attracted more than 60 applicants B of which 18 were invited to join the CAC. To help educate the new members about issues facing the bay, the Public Outreach Coordinator organized quarterly field trips for CAC members to such places as the Florida Marine Research Institute and the new desalination facility. CAC members were also deeply involved in the Bay Mini-Grant selection process and the revision of the CCMP.

IV. Bay Mini-Grants (FFY 02)

Bay Mini-Grants Completed in FFY 02

PROJECT TITLE: Assembly of a Remotely Operated Vehicle (ROV).
GRANTEE: Hillsborough Community College
STATUS: Completed
DELIVERABLES: High-school age students learn to assemble and disassemble a ROV.
SUMMARY: Junior and senior high school students learn to assemble and disassemble a ROV. The ROV will allow the students to view Tampa Bay from a different perspective B under the water!

PROJECT TITLE: "Art-O-Fishal-Fun"
GRANTEE: The Florida Aquarium
STATUS: Complete
DELIVERABLES: School-age students learn bay stewardship through weeklong camps.
SUMMARY: At-risk students attend a full-day, weeklong camp that teaches bay stewardship by combining art with environmental science.

PROJECT TITLE: Global Rivers Environmental Educational Network (GREEN) projects.
GRANTEE: Suncoast Earth Force
STATUS: Ongoing
DELIVERABLES: School-age students learn to assess watershed health then initiate a sustainable project to improve the environmental quality.
SUMMARY: Using GREEN watershed educator kits, teachers and students work together to identify a problem area within their watershed then initiate a sustainable project to improve that area.

PROJECT TITLE: Environmental reference notebooks for neighborhoods.
GRANTEE: St. Petersburg Audubon
STATUS: Complete

DELIVERABLES: Notebook stuffed with references on topics ranging from proper environmental landscaping and composting to bird watching.

SUMMARY: Select neighborhoods in southern Pinellas County will be lead on a bird walk, view a slide show, and receive the free reference notebook to educate them about urban habitat enhancement and restoration.

PROJECT TITLE: Volunteers educating the public about manatee-safe boating.

GRANTEE: Cockroach Bay Users Group (CBUG).

STATUS: Complete

DELIVERABLES: Volunteers will disseminate flyers to the public.

SUMMARY: CBUG will recruit volunteers and station them at local boat ramps to pass out flyers and brochures in an effort to educate the public about manatee-safe boating.

PROJECT TITLE: "Spud-busting"

GRANTEE: Around the Bend Nature Tours

STATUS: Complete

DELIVERABLES: Removal of non-native, invasive air potato plants at Emerson Point Nature Park.

SUMMARY: School-age children embark on a two-part environmental adventure. Middle-school age children are taught about invasive plants and animals and after learning to identify the invasive air potato, they set out to rid the park of the nuisance plant.

PROJECT TITLE: "Tampa Bay: Species of Concern"

GRANTEE: The Pier Aquarium

STATUS: Ongoing

DELIVERABLES: An interactive exhibit to educate visitors about threatened and endangered animals.

SUMMARY: "Tampa Bay: Species of Concern" is a new interactive exhibit and educational program that will alert bay area residents and tourists to endangered, threatened, or otherwise jeopardized marine species that reside in Tampa Bay. Educational activities will include a "Turtle Tour" and "Hatchling Hunt".

PROJECT TITLE: Updating existing bulletin boards at local boat ramps.

GRANTEE: Keep Manatee Beautiful

STATUS: Complete

DELIVERABLES: Bulletin boards at local boat ramps will be given a face-lift.

SUMMARY: Updating existing bulletin boards displaying informative maps, plant identification, marine pollution, manatee and seagrass protection, and artificial reef locations at boat ramps in Manatee County.

PROJECT TITLE: Boater's Guide for Boca Ciega Bay.
GRANTEE: St. Petersburg Audubon/Audubon of Florida
STATUS: Ongoing
DELIVERABLES: Creation of a map for the Boca Ciega Bay region.
SUMMARY: This map will include boat ramp locations, canoe and kayak launch site, boating speed zones and motor exclusion information.

PROJECT TITLE: Junior Master Gardeners
GRANTEE: Hillsborough County Cooperative Extension Service
STATUS: Complete
DELIVERABLES: A program to help install bay stewardship through proper environmentally friendly gardening practices.
SUMMARY: The Junior Master Gardener (JMG) program, modeled after the Master Gardener program is designed to teach children horticultural and environmental science. The JMG includes a youth handbook and teacher guide. At the end of the program the children participate in a community improvement project such as a coastal clean-up, beautification project or teaching other children.

PROJECT TITLE: Shoreline restoration at Allen's Creek.
GRANTEE: St. Paul's School
STATUS: Ongoing
DELIVERABLES: Restoration and stabilization of the shoreline adjacent to the school.
SUMMARY: The school plans to use students, faculty, staff and neighbors to assist in the restoration efforts, which will be done in phases.

PROJECT TITLE: Shoreline restoration along Bayshore Boulevard.
GRANTEE: Bayshore Beautiful Homeowners Association
STATUS: Complete
DELIVERABLES: Restoration of a section of shoreline along Bayshore Boulevard.
SUMMARY: The Bayshore Beautiful Homeowners Association will acquire all permits necessary before work begins. Installation of approximately 125 artificial oyster reef balls, made from a poured cement mold, along a ninety-foot area parallel to Bayshore Blvd. seawall. The primary function of the reef balls is to reduce the wave energy to allow further restoration to the shoreline.

PROJECT TITLE: Global Rivers Environmental Educational Network (GREEN) projects.
GRANTEE: Suncoast Earth Force
STATUS: Complete
DELIVERABLES: School-age students learn to assess watershed health then initiate a sustainable project to improve the environmental quality.
SUMMARY: Using GREEN watershed educator kits, teachers and students work

together to identify a problem area within their watershed then initiate a sustainable project to improve that area.

PROJECT TITLE: Lake Skipper water quality and restoration project.
GRANTEE: Dixie Hollins High School
STATUS: Complete
DELIVERABLES: Water quality and habitat improvement
SUMMARY: Students will purchase a YSI water quality instrument and begin monitoring to create a database. Remove exotics along shoreline and replant with natives. Create storm drain markers and plant identification markers.

Appendix B

Tampa Bay Estuary Program Staff Responsibilities

Dick Eckenrod - Executive Director

Oversee preparation of Annual Work Plan and Budget each year for review by Management and Policy Boards and submittal to EPA.

Oversee preparation of annual Cooperative Agreement application package for base program operation each year for submittal to EPA.

Secure funding contributions from local governments each year from local governments and water management district.

Accomplish program goals specified in the Annual Work Plan each year.

Meet the entire general and special conditions specified in the cooperative agreements for base program and other grant awards.

Maintain controllable expenditures within budget and take appropriate actions when unexpected budget problems develop. Make necessary amendments as required by EPA regulations.

Ensure that the NEP program responsibilities under the Interlocal Agreement are met.

Comply with legal meeting notice requirements and agenda mailings 10 days prior to meeting.

Monitor progress of work on grant awards both received and made by the Program to assure timely completion of work.

Ensure that TBEP meets matching fund requirements for grants it receives and that in-kind match is sufficiently documented per requirements of awarding agencies.

Holly Greening -Senior Scientist

Organizing and coordinating meetings of the Technical Advisory Committee and subcommittees as required to meet technical objectives of program.

Presenting results of TBEP's technical work to NEP committees and community groups.

Provides technical support as needed to Director, POC and Office Administrator.

Provides assistance to Director as needed in managing the program.

Stays abreast of research and developments in estuarine science and management.

Presents results of TBEP work to appropriate local, state and national science and resource management meetings, and participate in state-wide/national efforts on atmospheric deposition.

Actively participates in regional resource management committees directly related to TBEP objectives such as CAPMAT, CSWM and RAMP.

Participates in atmospheric deposition studies in Tampa Bay and other research efforts.

Participates in national resource management initiatives, using Tampa Bay experience as example of successful management program.

Monitoring progress toward TBEP goals through tracking implementation of Local government/agencies Action Plans. Reports environmental conditions and trends to Management Committee.

Assists with the development and implementation of TBEP Action Plan.

Pursues additional funding sources for implementation of the CCMP.

Nanette Holland - Public Outreach Coordinator

Promotes the Program's accomplishments to the media through ongoing and consistent communication of Program goals, challenges and achievements.

Researches, writes and coordinates production of the Bay Guardian newsletter on a quarterly basis.

Gathers and coordinates information for the quarterly update of the TBEP website.

Develops public education programs that address TBEP priority goals, and assist government industry and non-profit partners in creating and promoting educational programs and tools.

Provides staff support to the Manatee Awareness Coalition for its educational campaign and

Assist Tampa BayWatch in developing its on-water volunteer corps.

Provide staff support to the CAC, while encouraging members to become more actively involved in developing and implementing their own projects.

Implements marketing plan for the new Tampa Bay Estuary License Plate, as funds are available for this activity.

Oversees the "Eyes on the Bay" invasive species outreach project, in partnership with FMRI, Florida Sea Grant and others.

Ensures that TBEP maintains a high profile among the environmental community by assisting Local public, private and non -profit partners with outreach needs, and serving on local and regional committees and task forces.

Misty Cladas - Project Manager

Work with the current technical support contractor and Nitrogen Management Consortium partners on implementation and maintenance of the Action Plan database; including, but not limited to, data entry, maintenance, and QA/QC.

Work with FDEP and EPC-HC to retrieve Discharge Monitoring Reports.

Updates and maintains TBEP Technical Website.

Acts as Office Administrator back-up as needed.

Provides computer and/or graphic support to TBEP staff.

Presents Action Plan Database and related topics to appropriate audiences as needed.

Ron Hosler – Office Administrator

Works with EPA Project Officer to ensure that all requirements and documents for cooperative agreements are submitted and tracked on a timely and accurate basis.

Acts as the Grants Coordinator for the Bay Mini-Grants program.

Works with TBRPC attorney and TBEP Executive Director to create contracts and intergovernmental agreements, and processes them for execution ensuring that all federal and state requirements are being adhered to.

Acts as human resources coordinator.

Processes purchase orders, TBEP accounts payable, and requests for subcontractor payments, ensuring that all federal and state requirements are adhered to.

Assists with the setting up of TBEP meetings and arrangements as required.

Provides supervision of secretary, offering assistance with her workload, helping her set priorities, and acting as her back-up.

Maintains responsibility for Management/Policy Board/other meeting notices, agendas, and RFP

packets.

Maintain general responsibility for smooth and efficient office operations (i.e. building maintenance, supplies, office machines, staff assistance, etc.)

Make travel arrangements for TBEP staff as needed.

Responsible for reporting, collecting and processing all federal reimbursements and local government contributions.

Cheryl Cooper - Secretary

Provide clerical and administrative support to the TBEP Executive Director, Office Administrator and other staff.

Answers all incoming calls and routing. Responsible for overseeing operation of phone system.

Responsible for all aspects related to the process of incoming and outgoing mail and equipment.

Responsible for meeting room reservations for MB, PB, TAC, CAC, MAC and others. This includes mail outs, parking reservations, coffee preparation, specific room set-ups, keys, etc.

Take minutes at Management and Policy Board Meetings.

Maintains Program and staff monthly calendars.

Maintains inventory of public outreach and technical publications

Office Supplies

General program files

Lindsay Griffen – Technical Assistant

Provides technical support to the Sr. Scientist.

Provides logistical and planning support for conferences and workshops.

Technical research as needed by Senior Scientist.

Operational and Administrative duties as needed to support Director.

Kristin Thoms - Public Outreach Assistant

Provides support to Public Outreach Coordinator.

Duties include, but are not limited to:

answering website inquiries

filling publication orders

creating presentations in Microsoft PowerPoint

special projects for staff on an as needed basis

FFY03

Travel

Summary

Tampa Bay Estuary Program

Fiscal Year 2003 Travel Expenses

<i>Staff Member</i>	<i>Begin Travel</i>	<i>End Travel</i>	<i>Location</i>	<i>Purpose</i>	<i>Airline</i>	<i>Rental Car</i>	<i>Hotel</i>	<i>Registration</i>	<i>PerDiem</i>	<i>Parking /Milage /Other</i>
Hosler	10/22/2003	10/22/200	Atlanta-Region 4	MBE/WBE	\$195.00	\$0.00	\$85.40	\$0.00	\$0.00	\$20.00
Holland, Fred	10/26/2003	10/30/200	St. Pete, FL	BASIS 4 PANEL	\$0.00	\$50.00	\$350.76	\$0.00	\$35.62	\$28.50
All Staff	10/27/2003	10/30/200	St. Pete	BASIS 4			\$237.00			
Greening	11/13/2003	11/13/200	Region 4 EPA	Nat'l Indicators	\$323.00	\$0.00	\$0.00	\$0.00	\$18.00	\$10.00
Greening	1/26/2004	1/27/2004	Bonita Springs, FL	Estero Bay Consortium			\$73.58	\$0.00	\$24.00	\$89.90
Greening	1/29/2004	1/30/2004	Washington, DC	CSO Meeting	\$364.80	\$15.00	\$171.75	\$0.00	\$27.00	\$20.00
Holland	2/4/2004	2/6/2004	Houston, TX	EPA/GOMP	\$0.00	\$74.10	\$174.80	\$0.00	\$0.00	\$30.00
Eckenrod	3/7/2004	3/11/2004	Washington, DC	EPA/ANEP	\$359.20	\$0.00	\$687.00	\$300.00	\$0.00	\$0.00
Greening	3/8/2004	3/11/2004	Washington, DC	EPA/ANEP	\$359.20	\$0.00	\$0.00	\$300.00	\$0.00	\$0.00
<i>Totals</i>					\$1,601.20	\$139.10	\$1,780.29	\$600.00	\$104.62	\$198.40

FFY03

Funds

Leveraged

Leveraged Resources Committed to Your NEP's Operations and Projects Over Past Year

Your NEP Program Name: Tampa Bay Estuary Program

Reporting Period Used *: October 1, 2001 - September 30, 2002

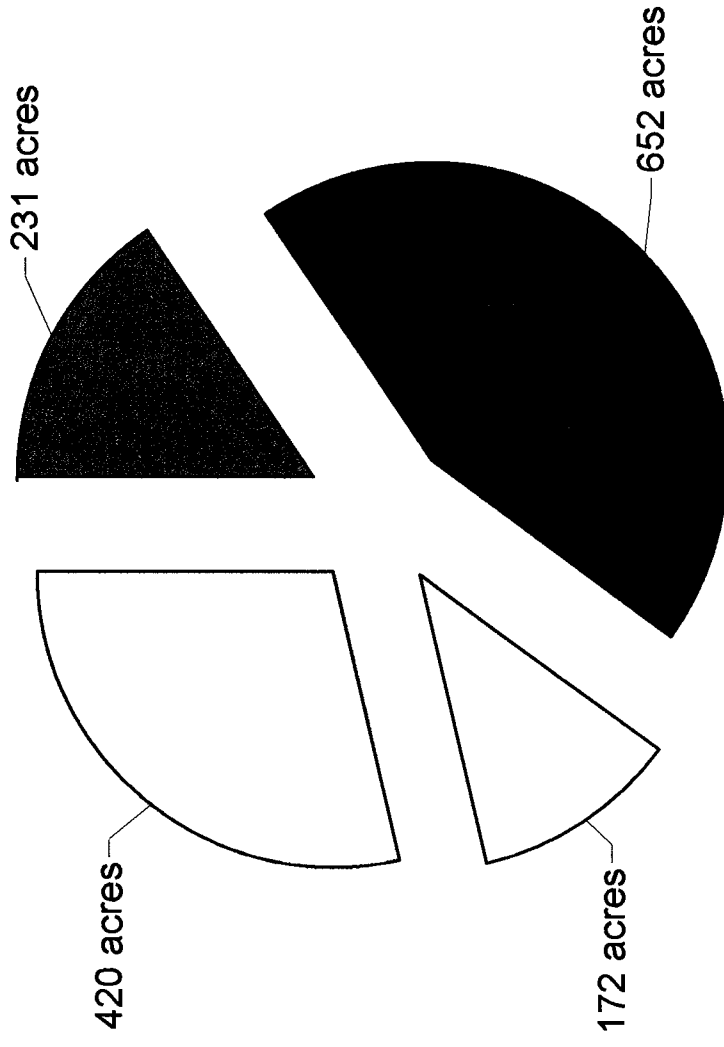
CCMP or Workplan Activity**	NEP Role (primary, significant, or support - with a brief description) ***	Leveraged Federal (Do not include 320 grant)		Leveraged State		Leveraged Local		Leveraged Private		Total Leveraging
		Cash	In-kind	Cash	In-kind	Cash	In-kind	Cash	In-kind	
320 Match	Primary - NEP requested			\$138,335		\$276,665				\$415,000
320 Match	Support - NEP provided letter of support						\$210,000			
Other Grants	Primary - NEP requested	\$460,096		\$24,978	\$60,000	\$29,500	\$122,500		\$400,000	\$1,097,074
Specialty License Plate FY 02	Primary - NEP requested	\$7,200		\$130,617	\$984	\$36,399	\$3,740	\$7,527	\$33,490	\$219,957
Totals		\$467,296	\$0	\$293,930	\$60,984	\$342,564	\$336,240	\$7,527	\$433,490	\$1,732,031

* The Reporting Period should be tied to your annual workplan. For example, June 30, 2001- July 1, 2002 ; September 30, 2001 - October 1, 2002 etc.

** The following are examples only; you may or may not include these activities and may use more or less detail in describing your activities.

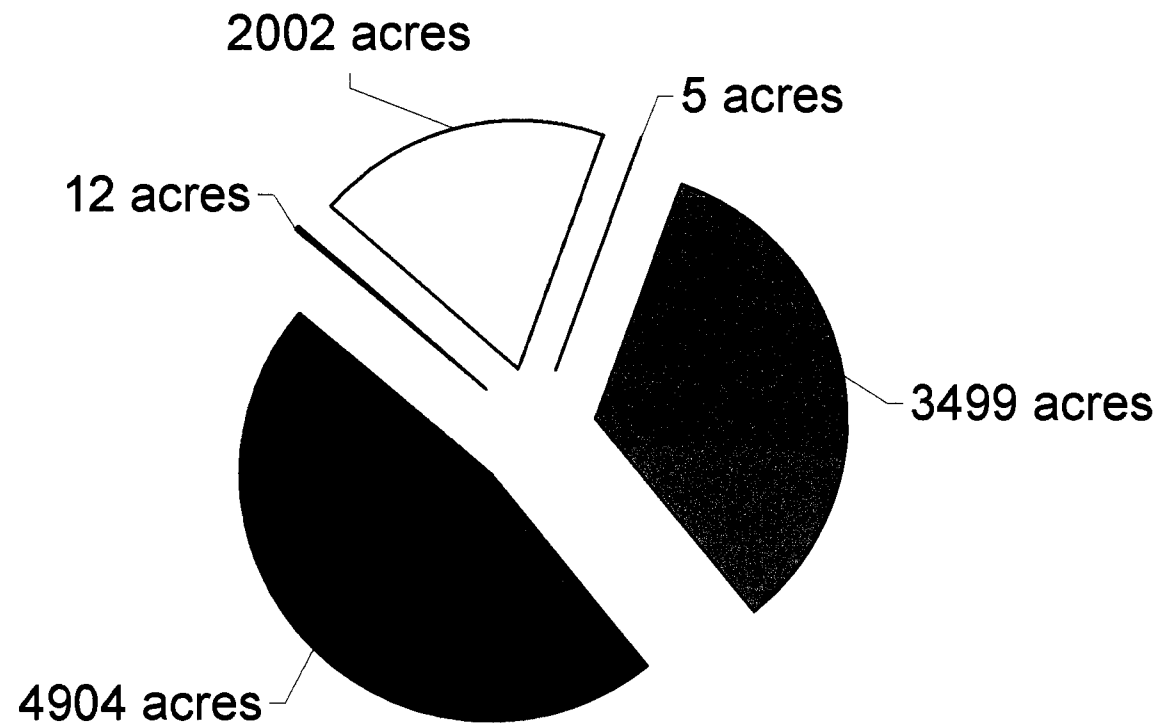
*** Please see Leveraging Criteria for the definition and examples of these roles.

HABITAT PROTECTED OR RESTORED 2001



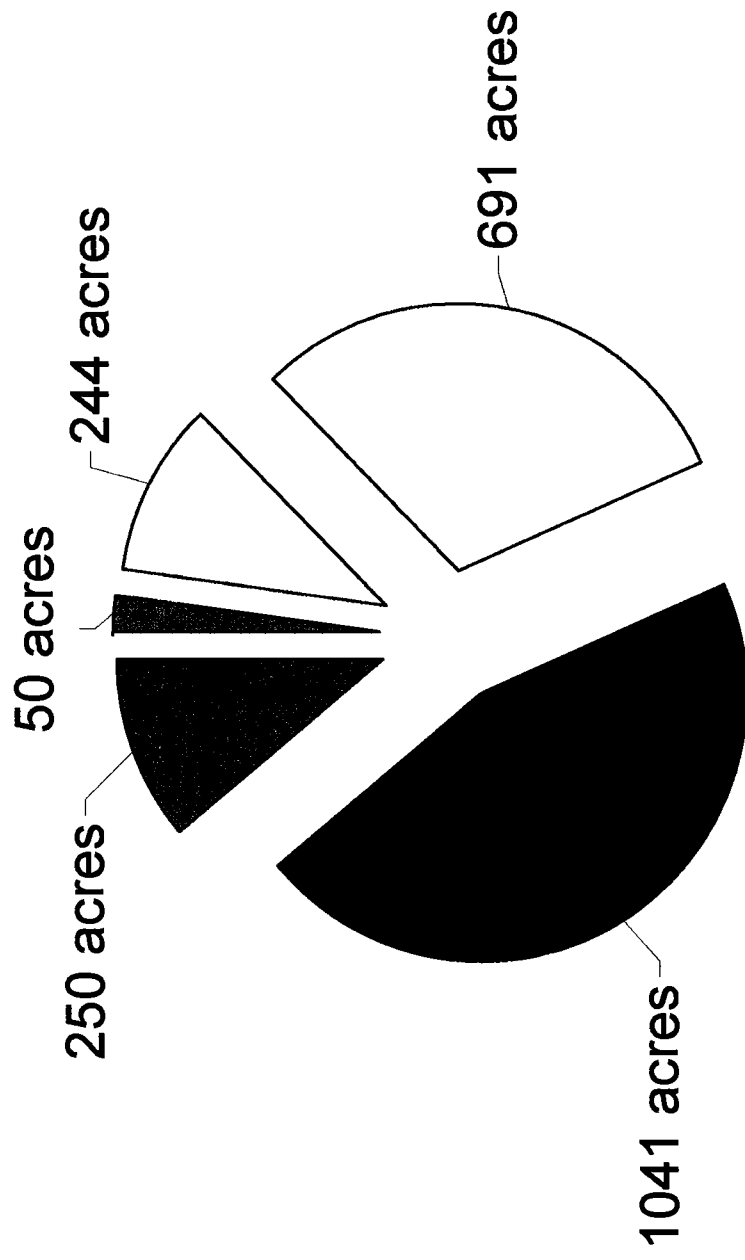
■ estuarine ■ riparian □ uplands □ wetlands

HABITAT PROTECTED OR RESTORED 2002



■ uplands ■ riparian ■ wetland □ SAV ■ mangroves

HABITAT PROTECTED OR RESTORED 2003



■ estuarine □ uplands □ wetland ■ various coastal habitats ■ mangroves

GPRA Habitat Restored and Protected 2001-2003

Tampa Bay

Project Name	CCMP Action	Habitat description	Habitat category	Project description	Activity	Partners	Acres	Project Cost
Mangrove Bay Habitat Rehabilitation	BH-1	intertidal wetlands along shoreline of Riviera Bay	wetland	exotic removal (Brazilian pepper)	Enhancement	none	13.00	\$3,050
Weedon Island Preserve Exotic Plant Removal	BH-1	mixed tidal marsh	mangroves	exotic removal (Brazilian pepper, Australian Pine, Punk by spraying/burning)	Enhancement	FDEP suncoast grant, Pinellas Co. DEM	30.00	\$34,700
River Garden Stabilization	BH-1		instream		Reestablishment	Tampa		\$102,064
Largo Central Park	BH-1	forested freshwater wetlands	wetland	exotic removal (Brazilian pepper removal by spraying/machinery) followed by native replanting	Enhancement	City of Largo	22.50	\$425,000
Apollo Beach	BH-1	estuarine wetlands and uplands	wetland	restoration of estuarine open water/wetlands and uplands	Enhancement	Hillsborough	37.00	\$2,236,044
Port Redwing	BH-1	estuarine wetlands and uplands	wetland	restoration of estuarine open water/wetlands, freshwater wetlands, and coastal uplands	Enhancement	Audubon, Hillsborough	120.00	\$1,800,000
Dugo Creek	BH-1	estuarine wetlands and coastal uplands	wetland	partial restoration of coastal tidal currents via creation of tidal passes, restoration of coastal uplands	Enhancement	Audubon, Hillsborough	38.00	\$445,114
Wolf Branch Creek Phase 2	BH-1	coastal uplands	uplands	restoration of coastal uplands	Enhancement	Hillsborough, EPC, USFWS, FDEP	96.00	\$645,585
Cockroach Bay Phase c,d,e,f	BH-1	coastal wetlands along estuary and surrounding bayou	wetland	restoration of freshwater/estuarine wetlands and coastal uplands	Enhancement	Shell, City of St. Pete, COBRA	275.00	\$7,000,000
Clam Bayou Phase 3	BH-1	coastal wetlands along estuary and surrounding bayou	wetland	stormwater treatment and ecosystem restoration (still in planning phase)	Enhancement	Gulfport, St. Pete, FDEP, Pinellas County	145.00	

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Tampa Bay Estuarine Ecosystem	BH-1	freshwater/estuarine wetlands, uplands	various coastal habitats	habitat protection by acquisition followed by restoration	Protection	Manatee	127.00	\$830,000
Tampa Bay Estuarine Ecosystem	BH-1	freshwater/estuarine wetlands, uplands	various coastal habitats	habitat protection by acquisition followed by restoration	Protection	Hillsborough	14.18	\$158,088
Alafia River Corridor	BH-1			Habitat protection by acquisition	Protection	Hillsborough	899.42	\$9,600,000
Alligator Lake Habitat Restoration Project	BH-1	freshwater marsh, scrubby flatwoods	uplands	marsh creation (from spoil mounds) exotics removal, ditch reroute through created wetlands	Establishment	SWFWMD (SWIM)	8.00	\$350,000
Little Bayou Habitat Restoration Project	BH-1	Phase I: freshwater creek revitalization	wetland	Phase 1: creek enhanced and pond created with native vegetation	Enhancement	Echelon Commercial LLC	3.00	\$75,000
CSX MacDill/Port Tampa	BH-1	coastal wetlands/west of MacDill AFB	mangroves	exotic removal (Brazilian pepper), restore mosquito niches (project in planning phase)	Enhancement	City of Tampa/SWFWMD (SWIM)	220.00	\$220,000
Clam Bayou Nature Preserve	BH-1	coastal wetlands along estuary and surrounding bayou	wetland	acquisition of land for future enhancement and creation of wetlands for water quality improvement	Protection	SWFWMD, City of Gulfport	7.68	\$1,309,050
Alligator Lake Habitat Restoration Project	BH-1	freshwater marsh, scrubby flatwoods	wetland	marsh creation (from spoil mounds) exotics removal (Brazilian pepper, air potato removal by spraying), ditch reroute through created wetlands (project in planning phase)	Establishment	SWFWMD (SWIM)	9.00	\$350,000
Tappan Restoration	BH-1	wetland and upland restoration, Old Hillsborough Bay, Southwest Tampa	estuarine	exotic removal (melaleuca, Brazilian pepper using heavy machinery), wetland creation, upland restoration and native habitat planting, create ephemeral pond	Enhancement	SWFWMD	30.00	\$260,000
Cotanchobee Fort Brooke Park Shoreline Restoration	BH-1	tidal shoreline and habitat restoration in downtown Tampa	estuarine	dock and warf removal, shoreline restoration revegetated with wetland and coastal habitat plants	Establishment	SWFWMD, ACOE		\$100,000
Brooker Anclote Corridor	BH-1	forested wetland on west side of East Lake Drive	uplands	habitat protection by acquisition	Protection	Pinellas (future Florida Conservation Trust)	1.00	\$15,172

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Brooker Anclote Corridor	BH-1	forested wetland on west side of East Lake Drive	wetland	habitat protection by acquisition	Protection	Pinellas (future Florida Conservation Trust)	13.50	\$204,828
Brooker Anclote Corridor	BH-1	mixed forested area on west side of East Lake Road north of Keystone Road	wetland	habitat protection by acquisition	Protection	Pinellas (future Florida Conservation Trust)	4.00	\$237,662
Brooker Anclote Corridor	BH-1	mixed forested area on west side of East Lake Road north of Keystone Road	uplands	habitat protection by acquisition	Protection	Pinellas (future Florida Conservation Trust)	9.17	\$544,838
Brooker Creek Preserve	BH-1	middle of the south end of the Preserve	uplands	habitat protection by acquisition	Protection	Pinellas Co.	2.50	\$28,000
Brooker Creek Preserve	BH-1	property on south border of preserve	uplands	habitat protection by acquisition	Protection	none	27.00	\$0
Brooker Creek Preserve - Mt. Brooker exotics removal	BH-1	uplands in the south part of the Preserve	uplands	exotics removal (Brazilian pepper, air potato removed by spraying)	Enhancement	Suncoast Grant (FDEP)	100.00	\$21,375
Joe's Creek School Site	BH-1	Coastal estuary and pine dominate uplands along Joe's Creek	estuarine	exotic removal (Brazilian pepper), hydrological restoration	Enhancement	SWFWMD (SWIM), NOAA, Pinellas Co. DEM	20.00	\$355,686
Little Bayou Habitat Restoration Project	BH-1	Phase II: intertidal wetland along shoreline	wetland	Phase II: seawall removed and upland field removed. Creation of saltwater wetland	Establishment	Echelon Commercial LLC	3.00	\$75,000
Brooker Creek Acquisition #1 and #2	BH-1	same as above	wetland	Habitat protection by acquisition	Protection	Pinellas County Environmental Lands	4.98	\$46,800
Terra Ceia Aquatic Preserve	BH-1	Invasive removal and replanting along Terra Ceia Bay	uplands	clearing, mulching, planting	Reestablishment	SWFWMD /SWIM, FDEP	121.30	\$200,000
Cockroach Creek Greenway	BH-1	purchase of tidal stream buffer land on east shore	uplands	Habitat protection by acquisition	Protection	Hillsborough County	549.50	\$1,346,348
Brooker Creek Acquisition #1 and #2	BH-1	purchase of uplands in NW Tampa Bay	riparian	Habitat protection by acquisition	Protection	Pinellas County Environmental Lands	200.00	\$5,382,000

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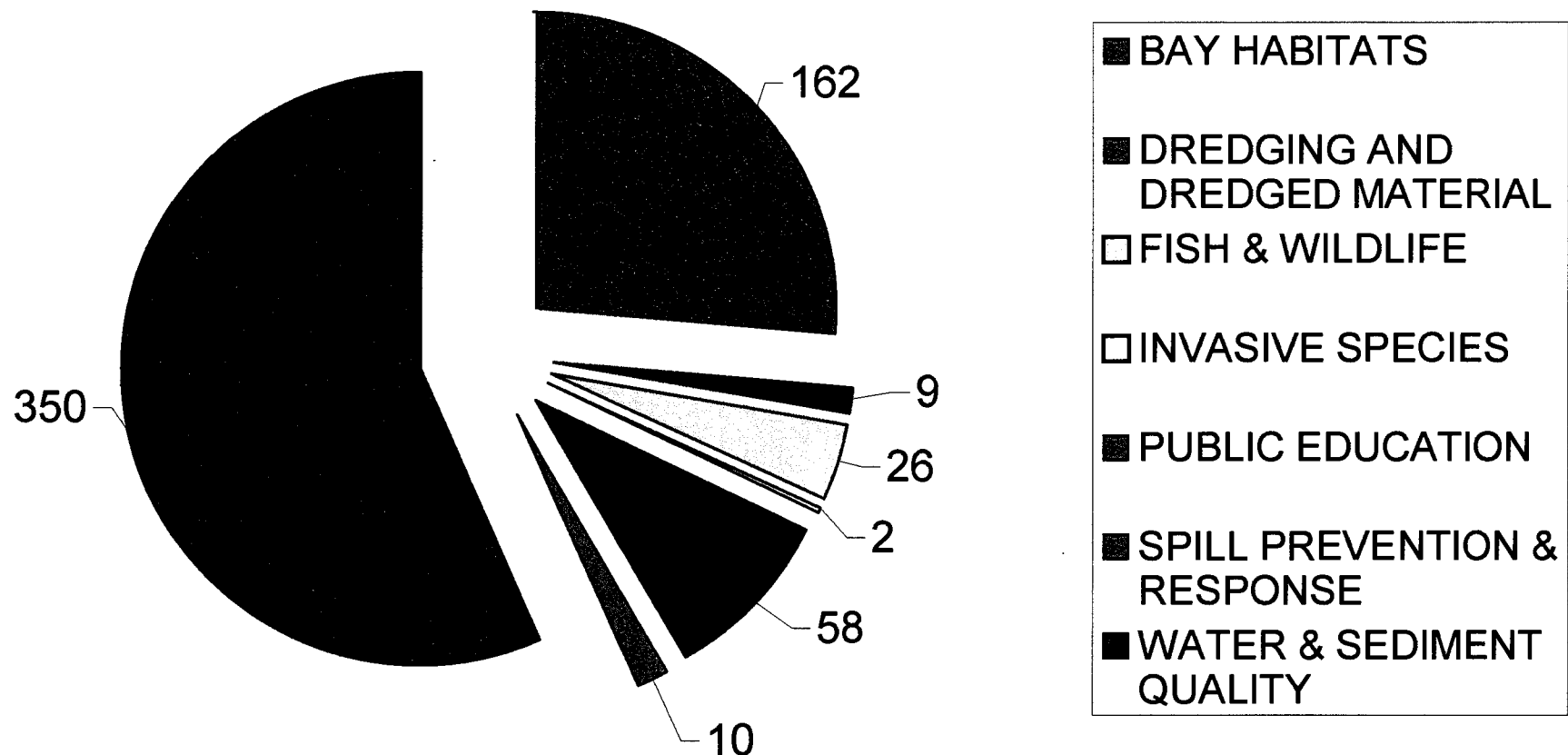
Wall Springs #1 and #2	BH-1	same as above	uplands	Habitat protection by acquisition	Protection	Pinellas County Environmental Lands	88.58	\$21,450,000
Wall Springs #1 and #2	BH-1	purchase of natural spring and adjacent land in Tarpon Springs	wetland	Habitat protection by acquisition	Protection	Pinellas County Environmental Lands	5.16	\$1,474,000
Joe's Creek Restoration	BH-1	same as above	uplands	exotic removal, clearing and planting	Reestablishment	SWFWMD/ SWIM, USFWS, Pinellas County	6.06	
Joe's Creek Restoration	BH-1	same as above	wetland	exotic removal, clearing and planting	Reestablishment	SWFWMD/ SWIM, USFWS, Pinellas County	1.83	
Natural Seagrass Re-establishment	BH-1	Water quality improvements baywide	SAV	seagrass restoration thru nutrient reduction, measured 12/01	Reestablishment	All	2,000.00	
Seagrass Planting	BH-1	Seagrass replanting in Old Tampa Bay	SAV	Seagrass planting	Reestablishment	Tampa Baywatch	2.00	\$0
Seawall Reefs	BH-1	installation of artificial reef baywide	estuarine	Artificial reef creation	Establishment	Tampa Baywatch	0.00	\$8,500
Alafia River Corridor Acquisition #1 and #2	BH-1	Purchase of shoreline buffer on east shore of bay	riparian	Habitat protection by acquisition	Protection	SWFWMD	4,704.00	\$21,260,000
Gateway Area Habitat Restoration Project	BH-1	Invasive removal and tidal wetlands replanting in Middle Tampa Bay	uplands	clearing and planting	Reestablishment	SWFWMD/ SWIM; SWFWMD/ PABB; Pinellas County	11.23	\$2,650,000
Brooker Creek Preserve Flatwoods Restoration	BH-1	Upland enhancement NW of Bay	uplands	thinning of pines in fire suppressed area	Rehabilitation	Pinellas County	133.00	\$0
Joe's Creek Restoration	BH-1	invasive removal and replanting on west shore of Tampa bay	mangroves	exotic removal, clearing and planting	Reestablishment	SWFWMD/ SWIM, USFWS, Pinellas County	4.61	\$200,000
Cypress Creek Preserve	BH-1	purchase of uplands and stream buffer on NE shore	uplands	Habitat protection by acquisition	Protection	Hillsborough County	2,589.70	\$9,620,060

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Bahia Beach area	BH-1	Three parcels	estuarine	acquisition of priority coastal areas for restoration	Protection	FDEP	148.70	\$656,512
Davis Tract/Kitchen #2	BH-1		uplands	creation of coastal uplands	Establishment		50.00	
Davis Tract/Kitchen #1	BH-1		estuarine	creation of marsh/mangrove	Establishment		10.00	
Wolf Branch Creek #3	BH-1		wetland	re-establish tidal flow to estuarine wetlands	Enhancement	Hills. Co. ELAP	134.00	
Wolf Branch Creek #2	BH-1		wetland	creation of 55 acres of freshwater wetland	Establishment	Hills. Co. ELAP	55.00	
Wolf Branch Creek #1	BH-1		wetland	creation of 128 acres of oligohaline	Establishment	Hills. Co. ELAP	128.00	\$3,126,000
Oyster Bar Builds	BH-1		estuarine	28 tons of fossilized oyster shell in four new oyster bars along bay island shorelines	Establishment		2.00	
Anclote River	BH-1		riparian	acquisition of riparian corridor area	Protection		92.47	
Hillsborough River Corridor	BH-1		riparian	acquisition of priority wildlife corridor habitat identified in CCMP	Protection		9.85	
Cockroach Creek Greenway	BH-1		riparian	acquisition of priority wildlife corridor habitat identified in CCMP	Protection		549.50	\$1,346,348
Lower Bullfrog Creek	BH-1		estuarine	acquisition of coastal habitats identified as priority protection areas in CCMP	Protection	Hills. Co. ELAP	69.60	\$571,351
Fort Brooke	BH-1		wetland	103 acres of restored estuarine wetlands	Establishment	City of Tampa	103.00	\$40,000
New Tampa Flatwoods	BH-1		uplands	acquisition of pine flatwoods habitat	Protection	Hills. Co. ELAP	121.70	\$3,000,000
							Acres	Project Cost
NEP Totals							14,170.72	\$99,804,175

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PROJECTS INCLUDED IN THE ACTION PLAN DATABASE BY PRIORITY ISSUE



617 PROJECTS HAVE BEEN IMPLEMENTED TO FURTHER CCMP GOALS TO-DATE

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NITROGEN MANAGEMENT CONSORTIUM ACTION PLAN UPDATE AND NEXT STEPS

BACKGROUND

One of the more challenging tasks TBEP faces is monitoring or tracking projects implemented by its partners as progress towards meeting CCMP goals. Realizing the need for a comprehensive tracking system, a Microsoft Access database was created.

The Tampa Bay Estuary Program (TBEP) working with its contractor, Janicki Environmental, Inc., has taken tracking CCMP implementation a step further.

This database performs all calculations necessary to determine pollutant load reductions based on several key factors such as land use type and treatment method. To accurately calculate pollutant load reductions, the database incorporates a linked Microsoft Excel table which contains the most recent nutrient loading rates by land use type. Once information is entered into the database, customized pollutant load reduction reports for total nitrogen (TN) and total suspended solids (TSS) can be printed for specific areas such as county jurisdiction, bay segment and major basin.

Additionally, this database has the flexibility to house key elements of our partners' habitat restoration and creation projects. Using the information supplied to TBEP by its partners the database is able to track acres of habitat that have been protected or restored as part of their progress towards meeting habitat goals outlined in the CCMP. The database provides options for reporting habitat acreage for the entire area within TBEP's watershed boundaries, or smaller areas defined by bay segments or basins. One-page summary printouts for example nitrogen reduction and habitat restoration projects are attached.

The database is being populated with current pollutant load reduction projects, and will serve as the clearinghouse for nitrogen reduction goals for Tampa Bay. It will also be used to provide the Department of Environmental Protection reasonable assurance that the innovative partnership of public and private entities participating in the Tampa Bay Estuary Program's Nitrogen Management Consortium is sufficient to attain applicable water quality standards.

To date our partners have submitted over 600 projects to include in the Action Plan Database.

Next steps for the Action Plan database will have TBEP staff visiting partner liaisons to update existing projects and collect information related to any new projects being implemented to meet CCMP goals.

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TBEP Action Plan Database Nitrogen Management Report

Project Name Alligator Creek Channel "H" Stormwater Treatment Pond **DBID** 57

Lead Entity Pinellas County	Bay Segment Old Tampa Bay	Major Basin Coastal Old Tampa Bay	Jurisdiction Pinellas County
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SOURCE: ☒ 1995-1999 Action Plan ☒ 2000 Update Action Plan ☐ 2003 Update Action Plan ☐ Other Source

Primary Action Plan WQ-1	Priority Issue Water & Sediment Quality	Title Implement Nitrogen Management Goals for Tampa Bay
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SCHEDULE: ☒ **Planned** **Anticipated Initiation** 1994 **Anticipated Completion** 1995
☐ **Planned/Not Initiated**
☒ **Project Completed** **Completion Date** 1995
☐ **Discontinued** **Discontinued Date**
☐ **Project Ongoing (Education Projects Only)**

PROJECT COST/FUNDING **Total Project Cost** **Estimated Cost Range** 3M-5M

Funding Secured YES
Funding Sources SWFWMD and Pinellas County

DESCRIPTION: Stormwater runoff diverted from Channel "H" through a wet detention pond for treatment. Project included extensive wetland plantings to provide improved treatment via biological uptake. Year 2000 date: Completed as indicated.



☐ **Hard Copy** ☒ **Text File** ☐ **Image File**

Sub-Basin	Land Use	Area Treated (acres)	Current Load (lbs/yr)	Treatment Area (acres)	Method	Removal Rate	Load Reduction (lbs/yr)
451	Institutional/Transportation/U	26	78		Extended Detention Pond	30%	
☐ Doc	☐ Use Alternate Load						23
	☐ Use Alternate Method and/or Removal Rate					%	
451	Commercial	30	219		Extended Detention Pond	30%	
☐ Doc	☐ Use Alternate Load						66
	☐ Use Alternate Method and/or Removal Rate					%	
451	Medium Density Residential	320	1,327		Extended Detention Pond	30%	
☐ Doc	☐ Use Alternate Load						398
	☐ Use Alternate Method and/or Removal Rate					%	
Total Reduction							487

Date	Entry Last Name	Source Last Name	Log Entry
2/4/2003	Cladas		Text in attached document from a project description document provided by Pinellas County.

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TBEP Action Plan Database Nitrogen Management Report

Project Name Fort DeSoto Bridge Construction

DBID 543

Lead Entity
Pinellas County

Bay Segment
Lower Tampa Bay

Major Basin

Jurisdiction
Pinellas County

SOURCE: ☐ 1995-1999 Action Plan ☐ 2000 Update Action Plan ☐ 2003 Update Action Plan ☒ Other Source

Primary Action Plan
BH-1

Priority Issue
Bay Habitats

Title
Implement the Tampa Bay Master Plan for Habitat
Restoration and Protection

SCHEDULE: ☐ *Planned Anticipated Initiation Anticipated Completion*
☐ *Planned/Not Initiated*
☐ *Project Completed Completion Date*
☐ *Discontinued Discontinued Date*
☒ *Project Ongoing (Education Projects Only)*

PROJECT COST/FUNDING Total Project Cost \$550,000 Estimated Cost Range

Funding Secured YES

Funding Sources PCEF-\$250,000; Pin.Co.DEM-\$300,000

DESCRIPTION:

☐ Hard Copy ☐ Text File ☐ Image File

Date Entry Last Name Source Last Name Log Entry

3/13/2003 Cladas

additional information from SWFWMD Newsletter article,
Jan. 1998, attached.

3/6/2003 Cladas

from PCEF Annual Report-2001 Pg. 10; 2002, Pg. 14

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TBEP Action Plan Database Nitrogen Management Report

Project Name High School Wetland Nursery Program

DBID 576

Lead Entity
Pinellas County

Bay Segment
All Segments

Major Basin

Jurisdiction
Pinellas County

SOURCE: ☐ 1995-1999 Action Plan ☐ 2000 Update Action Plan ☐ 2003 Update Action Plan ☒ Other Source

Primary Action Plan

BH-1

Priority Issue

Bay Habitats

Title

Implement the Tampa Bay Master Plan for Habitat
Restoration and Protection

SCHEDULE: ☐ **Planned** Anticipated Initiation Anticipated Completion

☐ Planned/Not Initiated

☐ Project Completed

Completion Date

☐ Discontinued

Discontinued Date

☒ Project Ongoing (Education Projects Only)

PROJECT COST/FUNDING Total Project Cost \$65,860 Estimated Cost Range

Funding Secured YES

Funding Sources PCEF-\$32,930; Tampa BayWatch-\$32,930

DESCRIPTION:

☐ Hard Copy ☐ Text File ☐ Image File

Date **Entry Last Name** **Source Last Name** **Log Entry**

3/12/2003 Cladas

from PCEF Annual Report-2000, Pg. 10, attached

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Table 1. Implementation of the Tampa Bay Comprehensive Conservation and Management Plan (CCMP)
Update: March 2004

Action #	Description	Substantial/Complete (2001 version)	Moderate (2001 version)	Some (2001 version)	Negligible (2001 version)	02 GPRA	03 GPRA	Next Steps (2004 version)
WQ-1	Implement nitrogen management goals for Tampa Bay 2002 STATUS: Ongoing 2003 Status: ongoing	-Nitrogen Management Consortium projects meet 5-year goals -Action Plan & Supplements adopted and being implemented -Tampa Electric Company settlement will provide significant emissions reduction -EPA TMDL designation				Ongoing	Ongoing	-2001-2005 Action Plans from partners due summer 2001 - Development of electronic tracking system ongoing- due summer 2001
SW-1 SW-1-03	Continue support for the Florida Yards & Neighborhoods Program and similar pollution prevention initiatives 2002 STATUS: Complete 2003 STATUS: Complete as written; implementation ongoing	-FY&N now adopted statewide, implemented by State Cooperative Extension Services -Community & Homebuilder Waterwise Awards yearly -FY&N Kiosk at Home Depot				Complete	Complete	- Continue distribution of FY&N materials

Table 1-1

Table 1. Implementation of the Tampa Bay Comprehensive Conservation and Management Plan (CCMP)
Update: March 2004

Action #	Description	Substantial/Complete (2001 version)	Moderate (2001 version)	Some (2001 version)	Negligible (2001 version)	02 GPRA	03 GPRA	Next Steps (2004 version)
SW-2 SW-2-03	Assist businesses in implementing best management practices to reduce stormwater pollution, and develop model landscaping guidelines for commercial use 2002 STATUS: Ongoing 2003 STATUS: Complete as written; implementation ongoing		-Operation Bay Works (Hillsborough County) -DEP's P2 Program -Port Authority P2 Program -Tampa Bay Water developing model water conservation ordinances & turf grass research -SWFWMD developed model landscape ordinances			Ongoing	Complete	- TBEP's CAC is developing recommendations for improved stormwater pond design- will present to MB and PB in Nov.
SW-3 SW-3-03	Encourage local governments to adopt integrated pest management policies and implement environmentally beneficial landscaping practices 2002 STATUS: Complete 2003 STATUS: Complete as written; implementation ongoing	-Manatee County, Pinellas County, and Hillsborough County have adopted policies in their Comp. Plans -Cooperative Extension Service hired full-time IPM Agent -DOT sponsored IPM training for local gov't personnel				Complete	Complete	This action is complete. Continue to support implementation.

Table 1-2

Table 1. Implementation of the Tampa Bay Comprehensive Conservation and Management Plan (CCMP)
Update: March 2004

Action #	Description	Substantial/Complete (2001 version)	Moderate (2001 version)	Some (2001 version)	Negligible (2001 version)	02 GPRA	03 GPRA	Next Steps (2004 version)
SW-4 (Number retired in 2003)	Reduce impervious paved surfaces 2002 STATUS: Evaluate 2003 STATUS: Consolidate into new SW- 10-03		-Demonstration project (at The Aquarium)			Evaluate	--	- Hillsborough County is constructing a demonstration site with pervious surface - FY&N promotes pervious surface installation when working with developers.
SW-5 (Number retired in 2003)	Required older properties being redeveloped to meet current stormwater treatment standards for that portion of the site being redeveloped, or provide equivalent compensation 2002 STATUS: Evaluate 2003 STATUS: Consolidate into new SW- 10-03			-St. Pete., Clearwater require addition treatment during redevelopment		Evaluate	--	Review this action with Boards to determine appropriate next steps.

Table 1-3

Table 1. Implementation of the Tampa Bay Comprehensive Conservation and Management Plan (CCMP)
Update: March 2004

Action #	Description	Substantial/Complete (2001 version)	Moderate (2001 version)	Some (2001 version)	Negligible (2001 version)	02 GPRA	03 GPRA	Next Steps (2004 version)
SW-6 (Number retired in 2003)	Promote compact urban development and redevelopment 2002 STATUS: Evaluate 2003 STATUS: Consolidate into new SW- 10-03			-Clearwater Brownfields project -CAC co-sponsored a land/water forum -Manatee County Comp. Plans encourages cluster development		Evaluate	--	- CAC recommendations for promoting sustainable urban development will be incorporated into existing action plans by summer 2001.
SW-7 SW-7-03	Enforce and require the timely completion of the consent orders for the cleanup of fertilizer facilities in the East Bay sector 2002 STATUS: Complete 2003 STATUS: Complete by 2004; monitor implementation	All now complete or due to be complete this year				Complete	Complete	None required- Action complete.

Table 1-4

Table 1. Implementation of the Tampa Bay Comprehensive Conservation and Management Plan (CCMP)
Update: March 2004

Action #	Description	Substantial/Complete (2001 version)	Moderate (2001 version)	Some (2001 version)	Negligible (2001 version)	02 GPRA	03 GPRA	Next Steps (2004 version)
SW-8 SW-8-03	Encourage best management practices on farms 2002 STATUS: Ongoing 2003 STATUS: Ongoing; SW-9 merged into SW-8-03		Major focus of all Extension Service education programs is utilizing and encouraging BMPS as a management tool (CAC)	-Full time IPM agent at Ag. Extension Service -White Ibis brochure and maps on CD-Rom focused on importance of small isolated wetlands as feeding areas		Ongoing	Ongoing	-Distribute white ibis materials to regulatory agencies for consideration during permit review - Provide materials to Extension Service for distribution to farmers and landowners. - The Florida Department of Agriculture and Consumer Services has expressed interest in becoming involved with the Nitrogen Management Consortium.
SW-9 (Number retired in 2003)	Improve compliance with agricultural ground and surface water management plans 2002 STATUS: Evaluate 2003 STATUS: Consolidated into SW-8-03				Little progress	Evaluate	--	State TMDL requirements include encouragement of BMPs on farms. If voluntary compliance is not reached within 5 years, BMPs on farms will become regulated.

Table 1-5

Table 1. Implementation of the Tampa Bay Comprehensive Conservation and Management Plan (CCMP)
Update: March 2004

Action #	Description	Substantial/Complete (2001 version)	Moderate (2001 version)	Some (2001 version)	Negligible (2001 version)	02 GPRA	03 GPRA	Next Steps (2004 version)
SW-10-03	Consolidated Action: Design and Implement Low Impact Development Strategy 2003 STATUS: New action, consolidating SW- 4, SW-5 and SW-6					---	Initiated in 2003	
SW-11-03	2003 New Action: Expand Adopt-A-Pond to additional communities 2003 STATUS: Pilot Project initiated in 2003					---	Initiated in 2003	

Table 1-6

Table 1. Implementation of the Tampa Bay Comprehensive Conservation and Management Plan (CCMP)
Update: March 2004

Action #	Description	Substantial/Complete (2001 version)	Moderate (2001 version)	Some (2001 version)	Negligible (2001 version)	02 GPRA	03 GPRA	Next Steps (2004 version)
AD-1	Continue atmospheric deposition studies and develop an action plan to address the important environmental issue 2002 STATUS: Ongoing 2003 STATUS: Ongoing	-FDEP now taken over responsibility - much enhanced through BRACE -TECO settlement will provide significant reductions in emissions -air toxics as well as nutrients are included in TBADS study -Results of TBADS has had national implications for air/water interactions				Ongoing	Ongoing	- Ensure that monitoring is in place to track effects of expected emissions reductions. - TBEP will continue to coordinate agency and industry involvement with TBADS - Need to consider if additional management actions are needed to reduce nitrogen atm dep - Evaluate results of toxic atm dep project and determine the need for next steps with toxic atm dep.

Table 1-7

Table 1. Implementation of the Tampa Bay Comprehensive Conservation and Management Plan (CCMP)
Update: March 2004

Action #	Description	Substantial/Complete (2001 version)	Moderate (2001 version)	Some (2001 version)	Negligible (2001 version)	02 GPRA	03 GPRA	Next Steps (2004 version)
AD-2	Promote public and business energy conservation 2002 STATUS: Evaluate 2003 STATUS: Complete as written; staff recommends exploring a shift in emphasis to motor vehicles (in review)		-Hosted EPA forum for Energy Star/Greenlights programs -Cities & counties have all implemented energy saving actions, typically lightning and electronics			Evaluate	Complete	-Discuss appropriate next steps with Boards - Support "Build Green and Profit" to promote energy efficient houses - Track the State's Energy Policy under development
WW-1	Expand the use of reclaimed water where reuse benefits the bay 2002 STATUS: Ongoing 2003 STATUS: Ongoing	-Almost all WWTP sources of reuse either implemented or planned in the next several years -TBEP encourage cooperation between jurisdictions				Ongoing	Ongoing	- TBEP may provide a forum for assessing the feasibility of inter-jurisdictional "sharing" of reuse for distribution.

Table 1-8

Table 1. Implementation of the Tampa Bay Comprehensive Conservation and Management Plan (CCMP)
Update: March 2004

Action #	Description	Substantial/Complete (2001 version)	Moderate (2001 version)	Some (2001 version)	Negligible (2001 version)	02 GPRA	03 GPRA	Next Steps (2004 version)
WW-2 Number retired in 2003	Extend central sewer service to priority areas now served by septic systems 2002 STATUS: Evaluate 2003 STATUS: Staff recommends move to Public Health actions, evaluate as public health issue and determine next steps					Evaluate	---	Update recent and expected service extensions in next Action Plans (due summer 2001).
WW-3	Require standardized monitoring of wastewater discharges 2002 STATUS: Evaluate 2003 STATUS: Staff recommends Complete as written.			-Letter sent to FDEP concerning deficiencies in point source databases and offering to help locally-		Evaluate	Complete	-TBEP has invited FDEP to assist with development of local electronic tracking system. - Continue to encourage standardized monitoring

Table 1-9

Table 1. Implementation of the Tampa Bay Comprehensive Conservation and Management Plan (CCMP)
Update: March 2004

Action #	Description	Substantial/Complete (2001 version)	Moderate (2001 version)	Some (2001 version)	Negligible (2001 version)	02 GPRA	03 GPRA	Next Steps (2004 version)
WW-4 Number retired in 2003	Revise HRS rules to incorporate environmental performance or design standards for septic systems 2002 STATUS: Evaluate 2003 STATUS: Staff recommends incorporate into WW2 and move to Public Health					Evaluate	--	Assess whether this project is still appropriate
TX-1	Address hot spots of contamination 2002 STATUS: Ongoing 2003 STATUS: Ongoing	-Sediment quality targets due Summer 2001 -Extensive annual monitoring underway since 1993 -many stormwater projects implemented and enhanced for additional sediment control				Ongoing	Ongoing	Using targets and monitoring data, identify locations of contaminated sediments and develop specific actions for these areas.

Table 1-10

Table 1. Implementation of the Tampa Bay Comprehensive Conservation and Management Plan (CCMP)
Update: March 2004

Action #	Description	Substantial/Complete (2001 version)	Moderate (2001 version)	Some (2001 version)	Negligible (2001 version)	02 GPRA	03 GPRA	Next Steps (2004 version)
TX-2	Improve opportunities for proper hazardous waste disposal 2002 STATUS: Complete 2003 STATUS: Complete as written; continue to monitor implementation	-All counties/cities now have household hazardous waste disposal locations - convenience could be improved -Manatee County & Hills. County have business hazardous waste pickups - Tampa Bay Repair Kit has contacts for all collection sites - TBEP and SWFWMD produced a brochure on non-toxic alternatives for household chemicals. - The Clean Boating Habits booklet includes non-toxic alternatives				Complete	Complete	- Continue to promote proper disposal of hazardous materials, and use of non-toxic alternatives. - Encourage expansion of collection locations to smaller communities.
TX-3 Number retired in 2003	Reduce toxic contaminants from ports and marinas 2002 STATUS: Ongoing 2003 STATUS: Ongoing; staff recommends consolidation of TX-3, PH-3 and SP-3 into one new action.		-Clean Marinas (6 in this area) -P2 for Tampa Port Authority -TBEP, FDEP distribution of Clean Boating Habits booklet			Ongoing	---	-Encourage more participation in Clean Marinas Program - Distribute Clean Boating Habits booklet

Table 1-11

Table 1. Implementation of the Tampa Bay Comprehensive Conservation and Management Plan (CCMP)
Update: March 2004

Action #	Description	Substantial/Complete (2001 version)	Moderate (2001 version)	Some (2001 version)	Negligible (2001 version)	02 GPRA	03 GPRA	Next Steps (2004 version)
TX-4	Promote integrated pest management on farms to reduce pesticides in runoff 2002 STATUS: Evaluate 2003 STATUS: Complete as written. Continue to promote IPM as essential components of DEP's Whole Farm Planning.		-IPM agents now at Ag. Ext. Service -Pesticide training manual includes IPM			Evaluate	Complete	- Continue to promote existing programs
PH-1	Reduce the occurrence of municipal sewer overflows to the bay 2002 STATUS: Evaluate 2003 STATUS: Complete as written. Continue to monitor wastewater spills.		-Self-Audit MOM -Clearwater, St. Pete., implementing MOM -TBEP hosted EPA MOM seminars -St. Pete. Allocated \$30M to improve collection system -Hillsborough County implemented SCADA			Evaluate	Complete	-Review this action with Boards to determine appropriate next steps for TBEP. - Assess the new EPA CMOM program for implementation in Tampa Bay.

Table 1. Implementation of the Tampa Bay Comprehensive Conservation and Management Plan (CCMP)
Update: March 2004

Action #	Description	Substantial/Complete (2001 version)	Moderate (2001 version)	Some (2001 version)	Negligible (2001 version)	02 GPRA	03 GPRA	Next Steps (2004 version)
PH-2	Establish water quality standards for saltwater beaches 2002 STATUS: Ongoing 2003 STATUS: Ongoing. Staff recommends change title to "Continue source and risk assessments of health indicators suitable for subtropical marine beaches".		-Healthy Beaches project recommends several indicators - still need decisions re: levels for action (such as beach closure)			Ongoing	Ongoing	Encourage county health departments in the Tampa Bay area to use recommended indicators and consistent levels for action (such as beach closure) - Work with local governments to help fund Phase II Healthy Beaches research.
PH-3 Number retired in 2003	Install additional sewage pump-out facilities for recreational boaters and live-aboard vessels 2002 STATUS: Ongoing 2003 STATUS: Recommend merging into MP-1		-All Clean Marinas have pump-out facilities			Ongoing	--	Encourage additional marinas to become members of Clean Marina Program - TDEP will be adding Clean Marinas to the next version of the Tampa Bay Boaters Guide (2002).
PH-4-04	Central sewer/public health issues- merging Old WW-2 and WW-4					--	Initiate in 2004	

Table I-13

Table 1. Implementation of the Tampa Bay Comprehensive Conservation and Management Plan (CCMP)
Update: March 2004

Action #	Description	Substantial/Complete (2001 version)	Moderate (2001 version)	Some (2001 version)	Negligible (2001 version)	02 GPRA	03 GPRA	Next Steps (2004 version)
MP-1-04	Marina and port action- merge old TX-3, PH-3 and SP-3					--	Initiate in 2004	
BH-1-03	Implement the Tampa Bay master plan for habitat restoration and protection 2002 STATUS: Ongoing 2003 STATUS: Ongoing	-Meeting and exceeding oligohaline restoration goal -Good progress on acquisition -Seagrass management priorities identified & moving forward on implementation - Tidal rivers and streams identified as critical habitats for setting of goals and targets				Ongoing	Ongoing	- Assess and document progress on "Restoring the Balance" approach - Include hard bottom substrates in the resulting update - Develop restoration and protection goals and targets for tidal rivers and streams - Develop a Seagrass Restoration and Protection Plan for Tampa Bay

Table 1-14

Table 1. Implementation of the Tampa Bay Comprehensive Conservation and Management Plan (CCMP)
Update: March 2004

Action #	Description	Substantial/Complete (2001 version)	Moderate (2001 version)	Some (2001 version)	Negligible (2001 version)	02 GPRA	03 GPRA	Next Steps (2004 version)
BH-2-03	Establish and implement mitigation criteria for Tampa Bay, and identify priority sites for mitigation 2002 STATUS: Evaluate 2003 STATUS: Ongoing. Staff recommends increasing efforts to implement Mitigation Criteria established in 1999.		Tampa Bay Mitigation Strategy complete & adopted - implementation unknown -Priority list for mitigation areas identified, but progress on mitigation banking remains slow - Compliance rates for mitigation projects have significantly increased			Evaluate	Ongoing	-Review this action with Boards to determine appropriate next steps for TBEP. - Evaluate the implementation of recommendations with regulatory agencies
BH-3-04	Reduce propeller scarring of seagrass and pursue seagrass transplanting opportunities at select sites 2002 STATUS: Ongoing 2003 STATUS: Ongoing. Staff recommends coordination with new Manatee Speed Zones (FW-2)	-Management plans at Ft. DeSoto, Weedon Island, Cockroach Bay -Evaluations of planting techniques funded - to be completed in 2002 -Manatee Watch boater education program encourages slow speed in shallow seagrass areas -Manatee County - Seagrass protection signage & kiosks - Substantial new manatee speed zones in the bay provide dual protection for seagrasses				Ongoing	Ongoing	-Assess success of seagrass restoration or scar reduction techniques - Upon adoption of new manatee zones, evaluate the need for expanded no-motor or slow speed zones for seagrass.

Table 1-15

Table 1. Implementation of the Tampa Bay Comprehensive Conservation and Management Plan (CCMP)
Update: March 2004

Action #	Description	Substantial/Complete (2001 version)	Moderate (2001 version)	Some (2001 version)	Negligible (2001 version)	02 GPRA	03 GPRA	Next Steps (2004 version)
BH-4-04	Restrict impacts to hard-bottom communities 2002 STATUS: Ongoing 2003 STATUS: Ongoing		-Pipeline permit significantly avoids hard bottom -Heightened awareness in permit reviews - USGS acoustic survey in 2004 will identify bottom habitat types throughout bay - ABM to host workshop to evaluate protection of hard bottom offered by current permitting and mitigation rules			Ongoing	Ongoing	- Assist in developing recommendations to minimize or mitigate hard bottom impacts from the proposed Tampa Harbor project - Evaluate the ecological impacts and benefits of artificial hard bottom habitats, such as reef balls, oyster reefs and artificial reefs
BH-5 Number retired in 2004	Improve management of parking and vehicle access along causeways and coastal areas 2002 STATUS: Evaluate 2003 STATUS: Staff recommends removal of this action from CCMP.			-Through ABM, strategy developed, but rejected by Pinellas County due to public access concerns		Evaluate	---	-None. Action as written to be removed from CCMP; issue of lack of restrooms at unofficial beaches to be folded into new action focusing on ensuring adequate public access to the bay.

Table 1-16

Table 1. Implementation of the Tampa Bay Comprehensive Conservation and Management Plan (CCMP)
Update: March 2004

Action #	Description	Substantial/Complete (2001 version)	Moderate (2001 version)	Some (2001 version)	Negligible (2001 version)	02 GPRA	03 GPRA	Next Steps (2004 version)
BH-6-04	Encourage waterfront residents to enhance shorelines and limit runoff from yards 2002 STATUS: Evaluate 2003 STATUS: Staff recommends redirecting effort to educational efforts.		-FY&N priority issue -Oyster reefs at seawalls -Adopt-A-Pond - "Manatee Friendly Neighborhood" program			Evaluate	---	- Redirect effort to educational programs, including targeted distribution of educational materials - Explore development of a Realtors Environmental Certification Program to promote preservation of natural shorelines and limit runoff - Expand participation in the Manatee Friendly Neighborhood
BH-7 Number retired in 2004	Improve compliance with and enforcement of wetland permits 2002 STATUS: Evaluate 2003 STATUS: Action merged with BH-2.		"Cradle to grave" responsibilities at SWFWMD. ERP permit coordination between DEP & SWFWMD			Evaluate	---	- Merge this action into action BH-2, which seeks improvements in wetlands mitigation criteria, and continue to assess progress toward compliance with wetland permits.

Table 1-17

Table 1. Implementation of the Tampa Bay Comprehensive Conservation and Management Plan (CCMP)
Update: March 2004

Action #	Description	Substantial/Complete (2001 version)	Moderate (2001 version)	Some (2001 version)	Negligible (2001 version)	02 GPRA	03 GPRA	Next Steps (2004 version)
BH-8-04	Expand habitat mapping and monitoring programs 2002 STATUS: Ongoing 2003 STATUS: Ongoing	-Seagrass transects included in baywide monitoring since 1998 -Photos scanned & made electronic for several years -Wetlands are being mapped through USGS ongoing study -Production of TBEP Baywide Environmental Monitoring Report every 3 years.				Ongoing	Ongoing	- Develop and implement a monitoring program to track habitat quantity and quality in coastal marshes, oligohaline habitats and isolated freshwater marshes, hard bottom and oyster reefs, and associated uplands. - Continue seagrass aerial mapping and transect monitoring - Continue benthic monitoring program.

Table 1. Implementation of the Tampa Bay Comprehensive Conservation and Management Plan (CCMP)
Update: March 2004

Action #	Description	Substantial/Complete (2001 version)	Moderate (2001 version)	Some (2001 version)	Negligible (2001 version)	02 GPRA	03 GPRA	Next Steps (2004 version)
FI-1-04	Establish and maintain minimum seasonal freshwater flows downstream of dams 2002 STATUS: Ongoing 2003 STATUS: Ongoing			-Minimum flows set for Hillsborough River; others are scheduled -will become more critical due to water needs		Ongoing	Ongoing	- Convene a workshop to assess potential effects of proposed MFL determinations on existing and potential oligohaline habitat, initially for Sulfur Springs and the Alafia River - Establish seasonal flow requirements for Tampa Bay tributaries - Evaluate results of Tampa Bay Water's Hydrobiological Monitoring Program and Hillsborough County's Independent Monitoring Programs to assess impacts from surface water withdrawals

Table 1-19

Table 1. Implementation of the Tampa Bay Comprehensive Conservation and Management Plan (CCMP)
Update: March 2004

Action #	Description	Substantial/Complete (2001 version)	Moderate (2001 version)	Some (2001 version)	Negligible (2001 version)	02 GPRA	03 GPRA	Next Steps (2004 version)
FW-1 Retire number in 2003	Increase on-water enforcement of environmental regulations on the bay 2002 STATUS: Evaluate 2003 STATUS: Staff recommends redirecting effort towards education.- move to ED-1-03		County personnel in Pinellas County assigned to Ft. DeSoto seagrass protection area		No more state personnel assigned	Evaluate	---	-Continue to support Manatee Watch volunteers for on- water presence (although not regulatory) - Assist local partners in obtaining funds for on-water enforcement of local protection zones.
FW-2	Establish and enforce manatee protection zones 2002 STATUS: Complete 2003 STATUS: Complete. Continue to monitor implementation.	-Manatee Awareness Coalition initiated and going strong -Manatee Watch Program initiated, using volunteers -Local speed zones established in Pinellas & Hillsborough County -Boater information kiosks in Manatee & Hills. County installed				Complete	Complete	- Assist local governments obtain funds for implementation of protection zones. - Continue to support establishment of protection zones where needed.

Table 1. Implementation of the Tampa Bay Comprehensive Conservation and Management Plan (CCMP)
Update: March 2004

Action #	Description	Substantial/Complete (2001 version)	Moderate (2001 version)	Some (2001 version)	Negligible (2001 version)	02 GPRA	03 GPRA	Next Steps (2004 version)
FW-3	Support bay scallop restoration 2002 STATUS: Evaluate 2003 STATUS: Ongoing. Continue to monitor restocking efforts in the bay.			-Great Bay Scallop search conducted annually -Research sponsored by TBEP		Evaluate	Ongoing	- TBEP involvement needs re-evaluation
FW-4	Assess the needs to investigate the cumulative impacts of power plant entrainment on fisheries 2002 STATUS: Evaluate 2003 STATUS: Complete as written. Continue to track implementation of new rule.			-EPA names Tampa Bay as potential pilot to assess cumulative impacts -no action to date		Evaluate	Complete	- Continue to encourage EPA to conduct pilot study in Tampa Bay

Table 1-21

Table 1. Implementation of the Tampa Bay Comprehensive Conservation and Management Plan (CCMP)
Update: March 2004

Action #	Description	Substantial/Complete (2001 version)	Moderate (2001 version)	Some (2001 version)	Negligible (2001 version)	02 GPRA	03 GPRA	Next Steps (2004 version)
FW-5	Continue and expand the Critical Fisheries Monitoring Program 2002 STATUS: Evaluate 2003 STATUS: Ongoing. Continue implementation and evaluate adding new stations.		-Continuation of Fisheries Independent Monitoring Program -FMRI assisted with minimum flows workshop - Hillsborough River is now included in monitoring program			Evaluate	Ongoing	- TBEP Monitoring Evaluation will include the need to expand FIMP to include low-salinity areas.
DR-1	Develop a long-term dredging and dredged material management plan for Tampa Bay 2002 STATUS: Complete 2003 STATUS: Complete as written. Address new Harbor Reevaluation projects. Rename as "Implement the long..."	-25-Year Dredged Material Management Plan complete -Beneficial use on Egmont Key in 2000 -Initiation of beneficial uses placement identification, including dredge holes - The ACOE has volunteered engineering services to assist with permitting of potential beneficial uses projects				Complete	Ongoing	- Work with the ACOE and local programs to identify and permit habitat restoration sites for beneficial uses of dredged material.

Table 1. Implementation of the Tampa Bay Comprehensive Conservation and Management Plan (CCMP)
Update: March 2004

Action #	Description	Substantial/Complete (2001 version)	Moderate (2001 version)	Some (2001 version)	Negligible (2001 version)	02 GPRA	03 GPRA	Next Steps (2004 version)
SP-1	Establish an integrated vessel traffic system for Tampa Bay and permanently fund the PORTS system 2002 STATUS: Ongoing 2003 STATUS: Ongoing.	-VTS established -PORTS still need permanent funding				Ongoing	Ongoing	Assist in identifying permanent funding for PORTS, including through alternative sources such as NGOs.
SP-2	Evaluate and update oil and hazardous waste spill response plans for priority areas 2002 STATUS: Complete 2003 STATUS: Complete. Continue to monitor implementation of ACP.			Cockroach Bay Response Plan complete & volunteers being trained (Tampa Bay Watch)		Complete	Complete	

Table 1. Implementation of the Tampa Bay Comprehensive Conservation and Management Plan (CCMP)
Update: March 2004

Action #	Description	Substantial/Complete (2001 version)	Moderate (2001 version)	Some (2001 version)	Negligible (2001 version)	02 GPRA	03 GPRA	Next Steps (2004 version)
SP-3 Retire number in 2003	Improve fueling and bilge- pumping practices among pleasure boaters 2002 STATUS: Evaluate 2003 STATUS: Staff recommends consolidating all marina-related actions into one (TX-3, PH-3 and SP-3). merge into MP-1-03			-Repair Kit -Clean Boater Kit -Clean Marina Program		Evaluate	---	- Consider distribution of oil-absorbent products to boaters at Clean Marinas.
I-1	Invasive Species 2002 STATUS: Ongoing 2003 STATUS: Ongoing	- Sponsored exhibit at FL Aquarium - Contracted for rapid assessment survey - Eyes On The Bay outreach program				Ongoing	Ongoing	- Expand Eyes On the Bay to add citizen monitoring - Become involved in state invasive species mgmt. plan
ED-1-04	Education and Public Outreach Priorities 2003 STATUS: Initiate in 2004;includes old FW-1 and BH-6					---	Initiate in 2004	

Table 1-24

Table 1. Implementation of the Tampa Bay Comprehensive Conservation and Management Plan (CCMP)
Update: March 2004

Action #	Description	Substantial/Complete (2001 version)	Moderate (2001 version)	Some (2001 version)	Negligible (2001 version)	02 GPRA	03 GPRA	Next Steps (2004 version)
RP-1-04	Develop and Implement Research Priorities					---	Initiate in 2004	

Table 1-25

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TAMPA BAY ENVIRONMENTAL PROGRESS REPORT

This Environmental Progress Report is presented in three segments: (1) Summary and Conclusions from the 2001 Baywide Environmental Monitoring Report; (2) a tabulated summary of "Goals at a Glance" updated for 2001-2003; and (3) graphical representations of progress toward each CCMP goal.

SUMMARY AND CONCLUSIONS FROM THE 2001 BAYWIDE ENVIRONMENTAL MONITORING REPORT

Results from the 1998-2001 Baywide Environmental Monitoring Report are collated here to provide a synthesis of current status and trends for goals and the resources they are designed to protect and/or restore. In addition, specific Aflags® (indicating that additional attention and action may be needed) are highlighted, along with a brief description of recently initiated actions to address these areas of potential concern.

The impacts to water quality and seagrass acreage from heavy winter rains during the 1997-1998 El Nino climatic event were evident during the 1998-2001 time period. Results also indicate the following:

Water and sediment quality:

- All four major bay segments continue to show long-term improvements in chlorophyll *a* concentrations, and met target levels in 1999, 2000, 2001 and 2002. None of the bay segments met chlorophyll *a* targets during the El Nino year (1998).
- The Tampa Bay Benthic Index scores indicate that most of Tampa Bay remains "healthy", with the exception of areas around the Port of Tampa, mouth of the Hillsborough River, and near the St. Petersburg/Clearwater Airport.

Nutrient and contaminant loading:

- The inflow and loading of total nitrogen and total suspended solids increased substantially during the El Nino rainfall event in 1997-1997. TN loading ranged between 5,000 and 6,500 tons during wet years and 3,000 and 4,000 tons during relatively dry years.
- Direct atmospheric deposition rate of total nitrogen to the bay is about 780 tons/year based on a 5-year average, with roughly equal average wet and dry deposition rates, or between 20 and 25% of all sources. Ammonia concentrations in the vicinity of Port Sutton do not indicate a major impact to Tampa Bay as a whole, but do represent a potential impact to Hillsborough Bay.

Habitats:

- The parasitic protista *Labyrinthula* infected between 69% and 83% of the seagrass transects sampled in Tampa Bay in 1999, 2000 and 2001, a high rate of infection relative to statewide rates. The high infection rate in Tampa Bay in 1999-2001 may suggest that *Labyrinthula* is playing a role in the observed thinning of dense *Thalassia* beds in Tampa

period and previous losses between 1994 and 1996, suggesting a more serious condition could exist in this part of the bay.

2. Chlorophyll *a* concentrations in all bay segments met target levels with the exception of 1998, but **light attenuation did not meet target levels in three of the four major bay segments during this period.** Continuation of the management strategy adopted by the Tampa Bay Nitrogen Management Consortium will be critical to maintain steady progress toward maintaining water quality goals, and an evaluation of non-chlorophyll light attenuation factors is underway.

3. Although the total quantity of freshwater loading to the major bay segments has not changed over the last 60 years, **the seasonality of freshwater inflow has changed, most notably in those watersheds most subjected to land use changes.** In addition, estimates of freshwater inflow and loading to total nitrogen suggest a weak increasing trend during the period 1985-2001.

4. **In the Lower Hillsborough River, some contaminants (PAHs, the pesticide chlordane, and zinc) were detected at concentrations likely to be toxic to aquatic life, as was PCBs in the Palm River.** The Palm River also had a relatively high frequency of “empty” samples indicative of DO stress and hypoxia in this river.

5. **Direct atmospheric deposition rate estimates of heavy metals (mercury, copper, zinc and iron) to Tampa Bay were higher than previously estimated. Estimated PAH direct atmospheric deposition rate to Tampa Bay was high enough to indicate a significant anthropogenic contribution.**

6. **Manatee watercraft mortality for the period 1998-2001 exceeded perinatal mortality, which was previously the highest category of mortality for the Tampa Bay area.** In 2000 and 2001, several county-initiated no-wake slow zones were adopted in Tampa Bay to help protect manatees and seagrass. The initiation of the Tampa Bay Manatee Watch Program in 1999 is aimed at educating boaters about manatees and the need to reduce speeds in shallow seagrass areas.

5. **Wading bird species populations which nest on bay islands but forage in freshwater wetlands have declined.**

Tampa Bay Goals at a Glance
Habitat
 2001- 2003 Update

GOAL	STATUS	
	ACTION INDICATORS	ENVIRONMENTAL INDICATORS
<i>Recover an additional 12,350 acres of seagrass over 1992 levels, while also preserving the bay's existing 25,600 acres and reducing propeller scarring of seagrasses.</i> 2003 Update: The overall TBEP seagrass goal of 38,000 acres baywide still stands. However, to reflect the most recent estimates, the goal has been reworded as <i>"Recover an additional 11,922 acres over 2002 levels, while preserving the bay's existing 26,078 acres and reducing propellor scarring of seagrasses".</i>	2003 Update: Nitrogen load reduction goals continue to be met by the Nitrogen Management Consortium baywide, although El Nino rains resulted in the delivery of excess nitrogen to the bay in 1997-1998. A Seagrass Restoration Strategy is being implemented to address those areas where seagrass recovery is lagging. Several "go slow" areas in shallow seagrass habitat have been adopted at the county levels. Seagrass conditions monitoring (70 transects baywide) has been increased to annual frequency. Aerial photographs were taken in January 2004, and seagrass extent GIS maps are due in January 2005.	2003 Update: Between 1992 and 1996, seagrass acreage increased at about 350 acres per year. Heavy rains associated with El Nino in 1997-1998 resulted in excess nitrogen loading and chlorophyll <i>a</i> concentrations above target levels in all bay segments. Almost 2000 acres of seagrass were lost baywide during this period. Aerial photographs taken in January 2002, showed seagrass acreage increased by 1,237 acres to 26,078 acres baywide, a 5% increase from 1999.

Tampa Bay Goals at a Glance
Habitat
2001-2003 Update

GOAL	STATUS	
	ACTION INDICATORS	ENVIRONMENTAL INDICATORS
<i>"Restore the historic balance" of coastal wetland habitats in Tampa Bay by restoring at least 100 acres of low-salinity (oligohaline) tidal marsh every five years, for a total increase over time of 1,800 acres.</i> 2003 Update: With 378 acres restored between 1995-2003, the total restoration goal of oligohaline habitat over time is now 1422 acres above 2003 estimates.	2003 Update: More than twenty coastal habitat restoration projects were initiated or completed between 1998 and 2003 by state and local government/agency partners. An update of the Tampa Bay Habitat Masterplan is scheduled for completion in 2004, which will include assessment of habitat restoration projects and goals for other habitats (including oyster bars and hard bottom habitats) not included in the 1996 CCMP.	2003 Update: A total of 2,357 acres of estuarine habitat, including 378 acres of oligohaline habitat was restored between 1996-2003.

Tampa Bay Goals at a Glance
Habitat
2001-2003 Update

GOAL	STATUS	
	ACTION INDICATORS	ENVIRONMENTAL INDICATORS
<i>Preserve and enhance the bay's 18,800 acres of existing mangrove/salt marsh habitats, including the 28 coastal habitat sites designated as priorities for protection, either through public purchase or methods such as conservation easements.</i>	2001-2003 Update: All 28 priority sites identified in the TBEP Habitat Masterplan have been given the highest priority for the State's Save Our Rivers or P2000 land acquisition programs by the Southwest Florida Water Management District. Local government partners are also acquiring estuarine habitat as elements of their land acquisition programs. Pinellas County's "Penny for Pinellas" tax for environmental projects (including acquisition) and Hillsborough County's Environmental Lands Acquisition Program have been renewed.	A total of 1,893 acres of the 13,434 acres identified as the "Tampa Bay Estuarine Ecosystem" were acquired for preservation and restoration between 1995-2000. 2001-2003 Update: A total of 11,494 acres of estuarine and riparian habitat, including 2,261 acres of marsh/mangrove was preserved through acquisition between 1996-2003, as reported by TBEP partners.

Tampa Bay Goals at a Glance
Water and Sediment Quality
 2001-2003 Update

GOAL	STATUS	
	ACTION INDICATORS	ENVIRONMENTAL INDICATORS
<i>Prevent increases in the bay's nitrogen levels to provide water clarity suitable for the gradual recovery of 11,922 acres over 2002 levels. To maintain existing water quality conditions, local governments and industries will need to reduce their future nitrogen contributions to the bay by about 7 percent by the year 2010, or approximately 17 tons per year.</i> 2001-2003 Update: After review of models and updates of loading estimates and bay response, the TAC and Management Board have recommended that the 17 ton per year reduction goal remain unchanged through 2010.	2001-2003 Update: Action Plan Updates, received from all partners in 2000-2001, confirmed that projects completed met reduction goals through 2000. 2001-2005 Action Plans from all partners, outlining expected projects and anticipated reductions, are currently being finalized. An electronic tracking system is complete, and will be used by the partners to enter their projects. Nutrient loading estimates for 1999-2003 are scheduled to be complete in 2004. To support watershed management efforts and TMDLs, the 17 ton per year reduction goal was apportioned to major drainage basins.	2001-2003 Update: Updated nitrogen loading estimates (1995-1999) showed that nitrogen loading during this time period was higher than for the previous period (1985-1994), primarily due to heavy rains and runoff associated with El Nino in 1997-1998. When adjusted for rainfall, however, nitrogen loadings showed no trend since 1985.

Tampa Bay Goals at a Glance
Water and Sediment Quality
 2001-2003 Update

GOAL	STATUS	
	ACTION INDICATORS	ENVIRONMENTAL INDICATORS
<i>Interim target: Maintain segment-specific chlorophyll <u>a</u> concentrations equal to the lowest of either the annual average of 1992-1994 or the concentration that supports the seagrass restoration goal.</i> 2001-2003 Update: The TAC and Management and Policy Boards have approved the chlorophyll <i>a</i> concentration targets through 2010, based on review of water quality data and application of the TBEP models.	See action indicators for nitrogen loading above. In 2000, TBEP developed a "Decision Matrix" assessment tool to assist with tracking annual chlorophyll <i>a</i> and light attenuation targets. The Decision Matrix is updated each year, and is reviewed by the TAC and Management Board, which makes recommendations to the Policy Board if annual measurements of chlorophyll or light attenuation are "out of bounds". The Decision Matrix analyses have been completed for 2000, 2001, 2002 and 2003.	Average annual chlorophyll <i>a</i> levels for each bay segment have fluctuated above and below specific targets since 1994. No obvious trends over time are evident. 2001-2003 Update: Each bay segment met chlorophyll <i>a</i> targets in 2000, 2001 and 2002. Heavy rains in 2003 resulted in two of the four bay segments not meeting chlorophyll targets.

Tampa Bay Goals at a Glance
Water and Sediment Quality
 2001-2003 Update

GOAL	STATUS	
	ACTION INDICATORS	ENVIRONMENTAL INDICATORS

<i>Gain a better understanding of the role that atmospheric deposition plays in the bay's water quality, and identify and address the sources of air pollution.</i>	Eight research and monitoring projects addressing atmospheric deposition in the Tampa Bay area are ongoing. 2001-2003 Update: In 2000, FDEP assumed responsibility for continuing the intensive wet/dry deposition monitoring at the Gandy Bridge site, and initiated a much more extensive project (the Bay Region Atmospheric Conditions Experiment- BRACE). Atmospheric toxics and PAH deposition sampling was complete in 2001-2003. A major local reduction in atmospheric emissions of NO_x is expected with the conversion of a large Tampa Electric Company power plant from coal to natural gas in 2003. However, the relationship between emissions and deposition remains highly uncertain, and careful monitoring will be needed to track any changes in deposition to the bay.	2001-2003 Update: 1995-1998 estimates of the contribution of TN from atmospheric deposition loadings to Tampa Bay showed a decrease over the previous time period. Atmospheric deposition contributions during 1995-1998 accounted for 21% of the TN loadings, compared to 29% during the 1992-1994 period . Estimates of metals, PCBs and PAHs from atmospheric deposition indicate that, while atmospheric deposition sources are contributing to the loading of these contaminants to Tampa Bay, these sources are probably not the major contributors to areas of sediment contamination. Important new information from the atmospheric deposition studies include: - the finding that sea salt interactions play a large part in estimating deposition of nitrogen species (in particular) to the bay. - although point sources dominate emissions of atmospheric nitrogen in the Tampa Bay area, mobile sources appear to be providing 50% or more of the total deposition to the Bay.
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Tampa Bay Goals at a Glance
Water and Sediment Quality
 2001-2003 Update

GOAL	STATUS	
	ACTION INDICATORS	ENVIRONMENTAL INDICATORS
<i>Reduce bacterial contamination now present in the bay to levels safe for swimming and shellfish harvesting.</i>	2001-2003 Update: Results of the “Healthy Beaches Tampa Bay” study, complete in February 2001, recommended that a combination of indicators be used in Tampa Bay: 1. Fecal coliform bacteria combined with enterococcus should be used for routine monitoring; 2. For areas where source tracking is needed, multiple antibiotic resistance for fecal coliform bacteria should be used, and coliphage should be added as a third indicator in areas with freshwater inputs. 3. <i>Clostridium</i> may be useful for one-time sanitary surveys. <i>Bacteriodes</i> can be useful in identifying septic tank inputs.	Number of beach closures and percent shellfish beds open (not yet compiled for Tampa Bay) 2001-2003 Update: The Healthy Beaches one-year survey showed that, baywide, most of the study sites showed little sign of human health risk. However, of 22 sites around the bay and the beaches , samples from two sites consistently exceeded suggested guidelines for human health. One of these sites was a tributary in a rural area with multiple septic systems, the other a residential tributary to Old Tampa Bay. Specific indicators for this goal have not yet been compiled. The Healthy Beaches project did not address shellfish harvesting areas.

Tampa Bay Goals at a Glance
Water and Sediment Quality
 2001-2003 Update

GOAL	STATUS	
	ACTION INDICATORS	ENVIRONMENTAL INDICATORS
<i>Reduce the amount of toxic chemicals in contaminated bay sediments and protect relatively clean areas of the bay from contamination.</i>	2001-2003 Update: A Tampa Bay Benthic Index, using the benthic community as metrics, was developed in 2003 to discriminate between healthy and degraded sediment conditions. The TBBI will be used to measure progress towards adopted targets. Numeric targets are under development, and are expected to be based on the estimated geographic extent of healthy, degraded and indeterminant habitats in various segments of the bay. Targets are scheduled to be finalized by summer 2004. Annual baywide monitoring is continuing, with additional focus in tributaries and several "hot spots" in 2001-2003.	"Hot spots" of contaminated sediments occur in relatively concentrated areas around large marinas, ports and urban stormwater outfalls. To date, no trends in sediment quality since monitoring was initiated in 1993 have been observed. 2001-2003 Update: Samples collected in the bay show no significant changes since 1993. However, additional "hot spots" have been located in larger tributaries not previously sampled, and concentrated sampling has better defined the areal extent of degraded habitat in several known "hot spot" areas.

Tampa Bay Goals at a Glance
Fish and Wildlife
2000-2003 Update

GOAL	STATUS	
	ACTION INDICATORS	ENVIRONMENTAL INDICATORS

<i>Improve the on-water enforcement of fishing and environmental regulations</i>	In 1997-1998, a Manatee Protection Task Force developed recommendations for a manatee protection strategy in Tampa Bay, which included 1) seasonal “no-entry” restrictions in manatee congregation and calving areas; 2) voluntary “go slow” areas; and 3) “safe speed” marked access channels through the grass flats. The Manatee Awareness Coalition (MAC) has been formed to train volunteer on-water bay stewards to promote the voluntary “go slow” areas 2001-2003 Update: Extensive slow speed zones have been established in Tampa Bay by local ordinance and state regulation. More zones are being considered by the state in 2004, and additional local zones are being implemented in Manatee County, the city of Tampa, and Upper Old Tampa Bay in both Pinellas and Hillsborough counties. TBEP’s Public Outreach Coordinator chaired a state-mandated Local Rule Review Committee in 2003 that evaluated and made recommendations addressing additional state zones.	The MAC is currently developing specific environmental indicators to test the effectiveness of the voluntary “go slow” areas. Possible indicators may included 1) manatee scarring rates and mortality; 2) monitoring how many boaters are aware of the manatee protection strategy, including the “go slow” areas; 3) on-water surveys of how many boats slow down upon entering a voluntary “go slow” area; and 4) presence or absence of manatee education materials at area marinas, boat dealerships and boat ramps. 2001-2003 Update: The Manatee Watch boater education and research program was completed in 2003. Results of that study indicated that regulatory zones are more effective than education alone in achieving boater compliance with slow speed zones. Education is still an important element, however, and the MAC is revising its education program based on the results of the research. New elements include a “Manatee Friendly Neighborhood” certification program, targeted distribution of boaters guides, and an incentive-based marketing program to involve bait shops, marinas, boat rental operators and boating supply outlets in the effort.
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Tampa Bay Goals at a Glance

Dredging and Dredged Material Management

2001-2003 Update

GOAL	STATUS	
	ACTION INDICATORS	ENVIRONMENTAL INDICATORS
<i>Develop a long-range dredged material management plan for the bay that will minimize environmental impacts and maximize beneficial uses of the dredged material</i>	2001-2003 Update: The Tampa Bay Dredged Material Management Strategy was complete by ACOE in July 2000. Results indicated a severe shortage of disposal areas for expected dredged material volume in the future. Implementation of the recommendations (particularly for identification of potential beneficial uses for dredged material) is ongoing, particularly through an assessment of dredge holes as potential beneficial uses (results due in early 2005). The ACOE has offered support services to assist with evaluation of potential beneficial uses placement sites.	Specific environmental indicators have not been developed for this goal. 2001-2003 Update: Results of the Tampa Bay DMMS indicate a shortfall by 2025 of placement options of more than 15 million cubic yards, or about one-third of the material volume expected to be generated. If additional placement locations are not found, existing placement sites will be full by 2004. Plans to enlarge the capacity of existing sites, when implemented, will provide adequate capacity through about 2010. Between 2001 and 2003, three habitat restoration projects were implemented with dredged material, allowing all dredged material from Federal projects to be used in beneficial use projects.

Tampa Bay Goals at a Glance
Spill Response
 2001-2003 Update

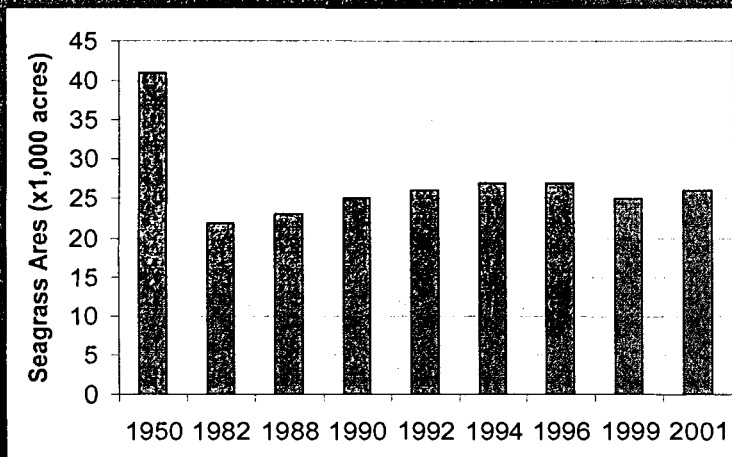
GOAL	STATUS	
	ACTION INDICATORS	ENVIRONMENTAL INDICATORS
Install a state-of-the-art vessel traffic and information system (VTIS) to improve coordination of ship movements along the bay's shipping channel	A real-time tide and weather information (PORTS) system is operational and funded through 2000. Elements of the Vessel Traffic Advisory System are being implemented in Fall 1998. Remaining elements are ongoing. 2001-2003 Update: The VTS has been funded and is operational. PORTS is funded through 2004, but permanent funding for PORTS has not yet been secured.	A specific environmental indicator for this goal has not been defined. One possible indicator is the number of ship groundings and spills in Tampa Bay.

Progress Towards Goals: 2001- 2003 Update Seagrass

Goal: Restore and protect a total of 38,000 acres of seagrass in Tampa Bay over time.

Status: Between 2001 and 2003, seagrass acreage increased by 1,237 acres, for a baywide total of 26,078 acres.

SEAGRASS RESTORATION AND PROTECTION



GOAL: Recover an additional 11,920 acres of seagrass over 2002 levels, while preserving the bay's existing 26,080 acres.

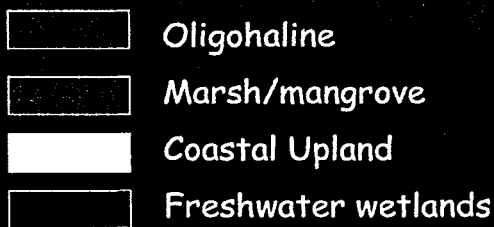
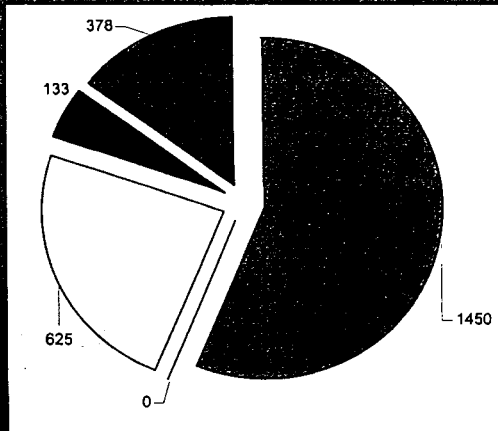
Between 1988-1996, seagrass acreage increased 200-300 acres per year. El Nino rains resulted in seagrass losses of about 2,000 acres between 1996-1999. In January 2002, seagrass acreage increased by 1,237 acres to 26,078 acres baywide, a 5% increase from 1999.

Progress Towards Goals: 2001- 2003 Update Oligohaline Habitat

Goal: "Restore the historic balance" of coastal habitat by restoring at least 100 acres of oligohaline habitat every 5 years, starting in 1996.

Status: A total of 2,357 acres of estuarine habitat, including 378 acres of oligohaline habitat was restored between 1996 and 2003.

TAMPA BAY HABITAT RESTORATION * 1996-2003 SUMMARY



"Restore the historic balance" of coastal wetland habitats by restoring at least 100 acres of low-salinity habitat every 5 years

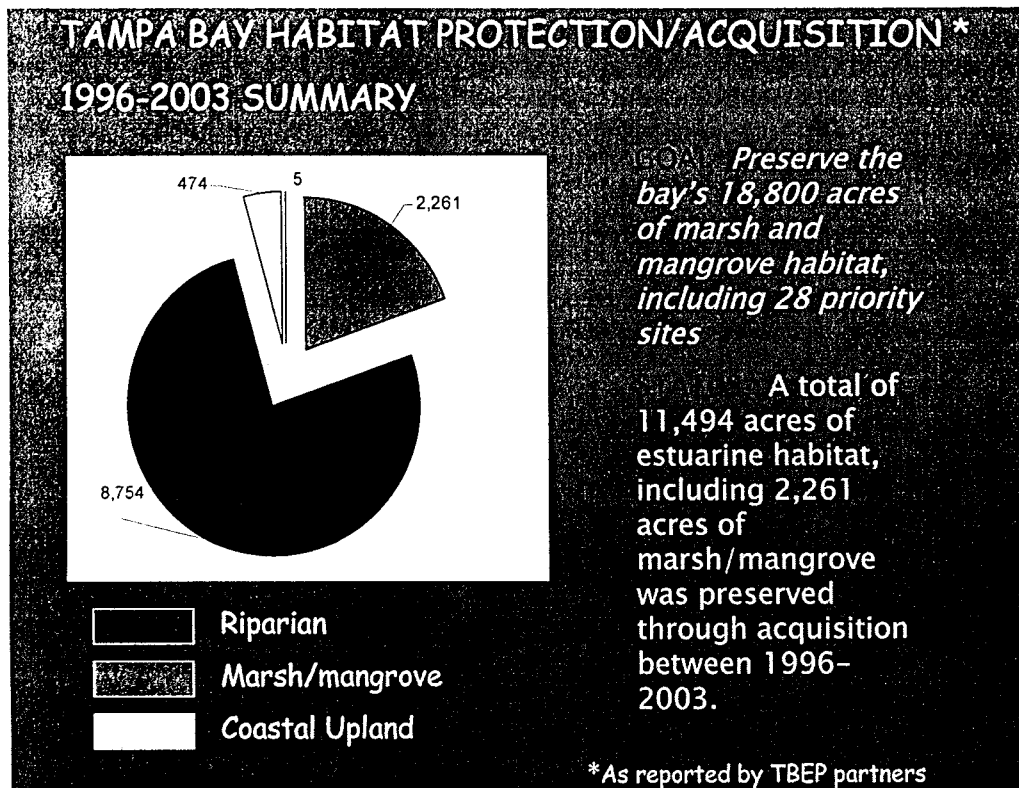
A total of 2,357 acres of estuarine habitat, including 378 acres of oligohaline habitat was restored between 1996-2003.

* As reported by TBEP partners

Progress Towards Goals: 2001- 2003 Update Habitat Protection

Goal: Preserve the remaining 18,800 acres of marsh and mangrove habitat around Tampa Bay.

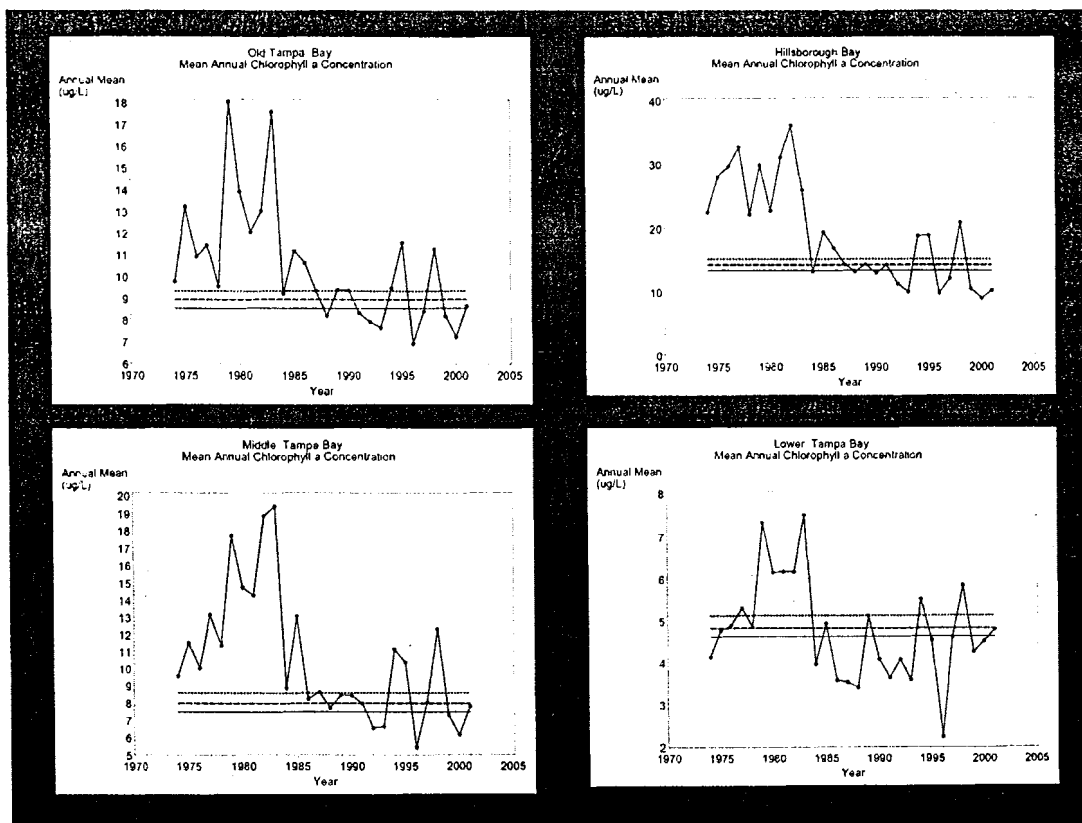
Status: A total of 2,261 acres of marsh/mangrove was preserved since 1996. A total of 11,494 acres of estuarine habitat of all types was preserved through acquisition.



Progress Towards Goals: 2001- 2003 Update Water Quality

Goal: Chlorophyll a concentrations: Maintain concentrations equal or below 1992-1994 levels, to maintain water clarity adequate for seagrass recovery

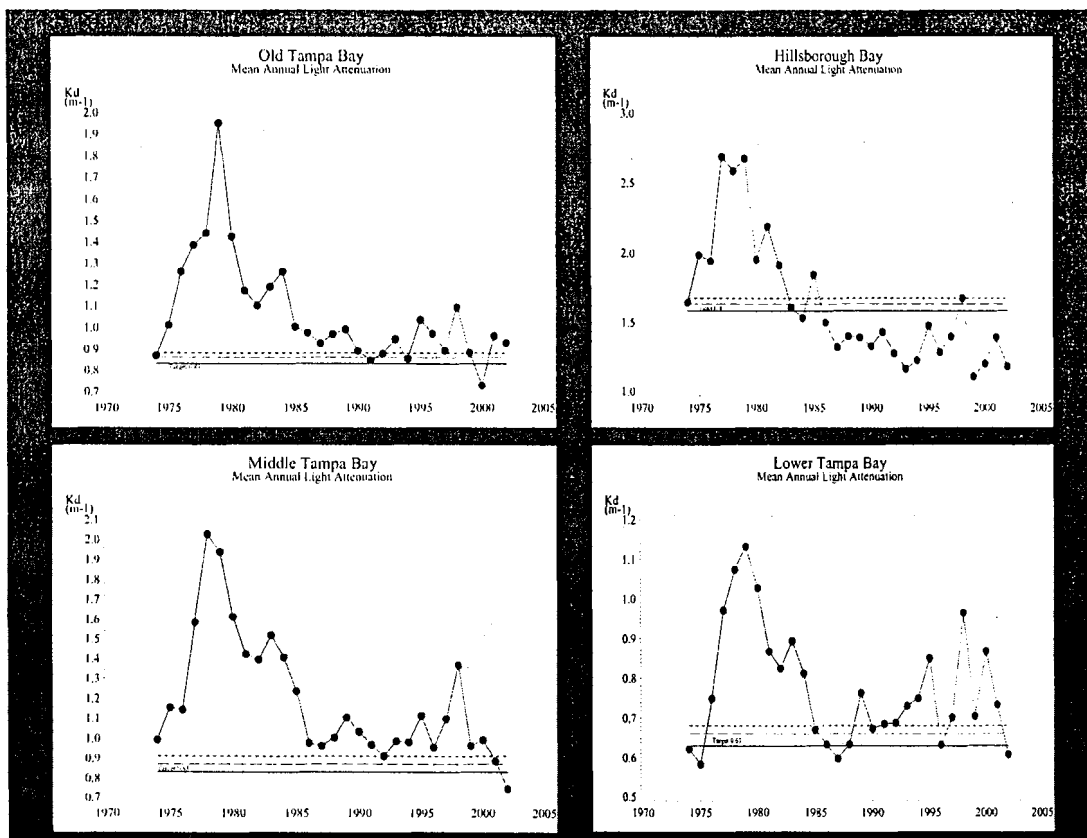
Status: Annual average chlorophyll a concentrations in 2000, 2001 and 2002 were below targets in all four major bay segments.



Progress Towards Goals: 2001- 2003 Update Water Quality

Goal: *Light attenuation (K_d):* Maintain a minimum of 20.5% light to target depths for seagrass recovery

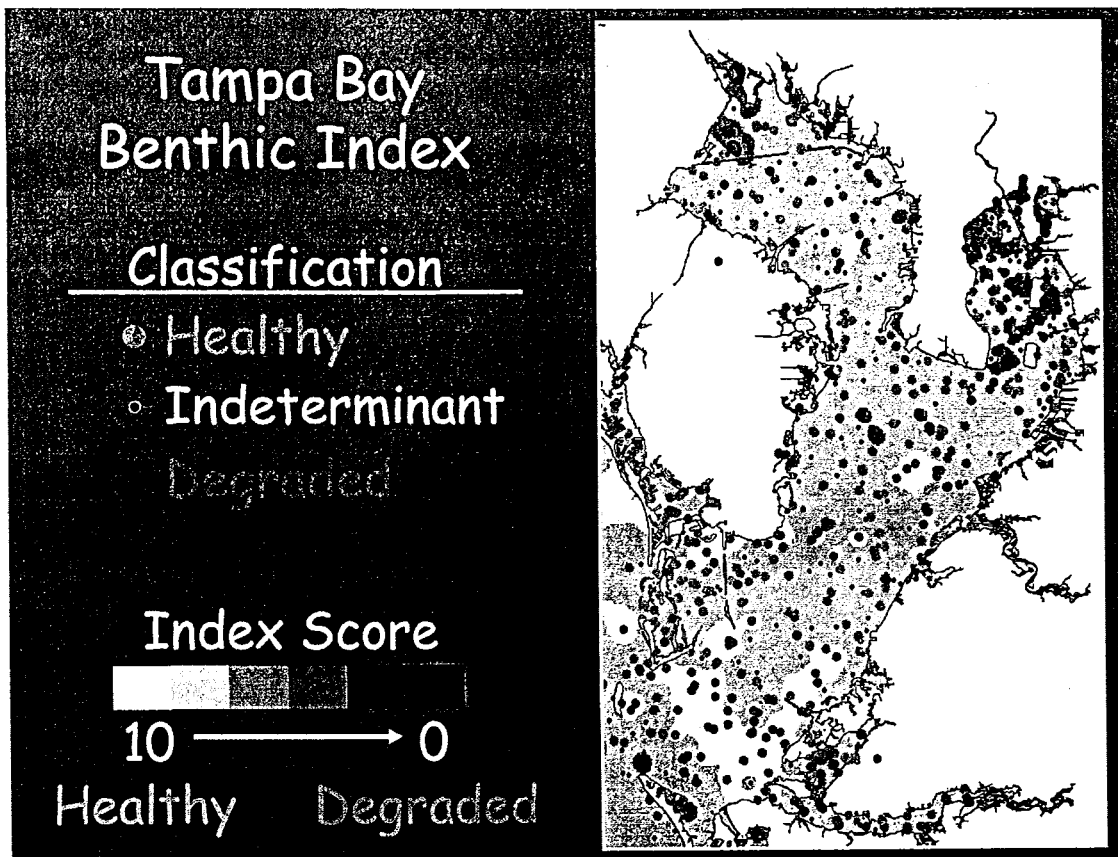
Status: Light attenuation did not meet targets in Old Tampa Bay in 2001 or 2002, or in Lower Tampa Bay in 2001. Targets were met in all other segments and years.



Progress Towards Goals: 2001- 2003 Update Sediment Quality

Goal: Reduce toxic chemicals in contaminated sediments and protect clean areas

Status: A Tampa Bay Benthic Index, based on benthic community metrics, shows limited areas of degraded habitat. Targets for recovery are under development.



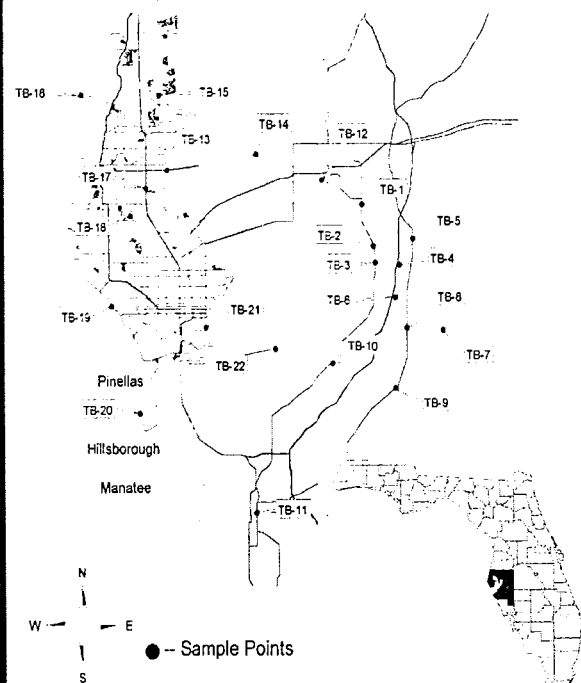
Progress Towards Goals: 2001- 2003 Update Water Quality

Goal: Reduce bacterial contamination to levels safe for swimming and shellfish harvesting

Status: Several "hot spots" of bacterial contamination have been identified and actions are underway in these watersheds. Recommended indicators are under review.

- Healthy Beaches Study (1999):
- "hot spots" in Bullfrog Creek, Sweetwater Creek, Allens Creek
- recommended indicators: fecal coliform bacteria and enterococci
- *Bacteriodes* for studying wastewater facilities and septic system inputs

Healthy Beaches Sampling Locations



Graphic produced by Pinellas County Health Department - Environmental Engineering Division

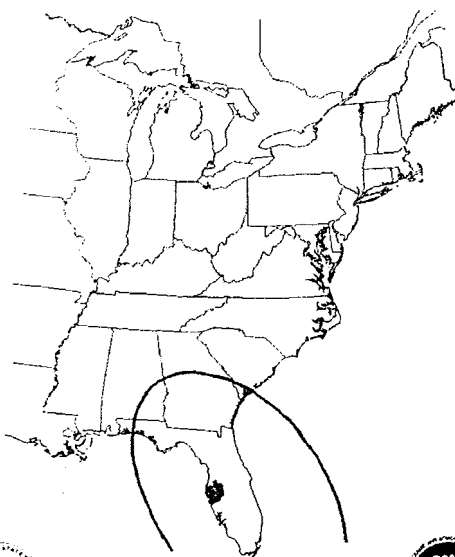
Progress Towards Goals: 2001- 2003 Update Atmospheric Deposition

Goal: Gain a better understanding of atmospheric deposition, and identify sources of air pollution

Status: Results to date include estimates of the nitrogen airshed extent and relative importance of mobile vs. stationary sources to deposition in Tampa Bay.

● Preliminary results indicate the nitrogen airshed for Tampa Bay includes all of Florida and north almost to Atlanta. Estimates indicate that more than 35% of the atmospheric deposition of nitrogen to Tampa Bay is not local.

PRINCIPAL OXIDIZED NITROGEN AIRSHED FOR:
TAMPA BAY



DEVELOPED BY R. DENNIS, ATMOSPHERIC SCIENCES MODELING DIVISION,
ARL, NOAA, 10/17/99



Progress Towards Goals: 2001- 2003 Update Fish & Wildlife

Goal: Improve on-water enforcement of fishing and environmental regulation

Status:

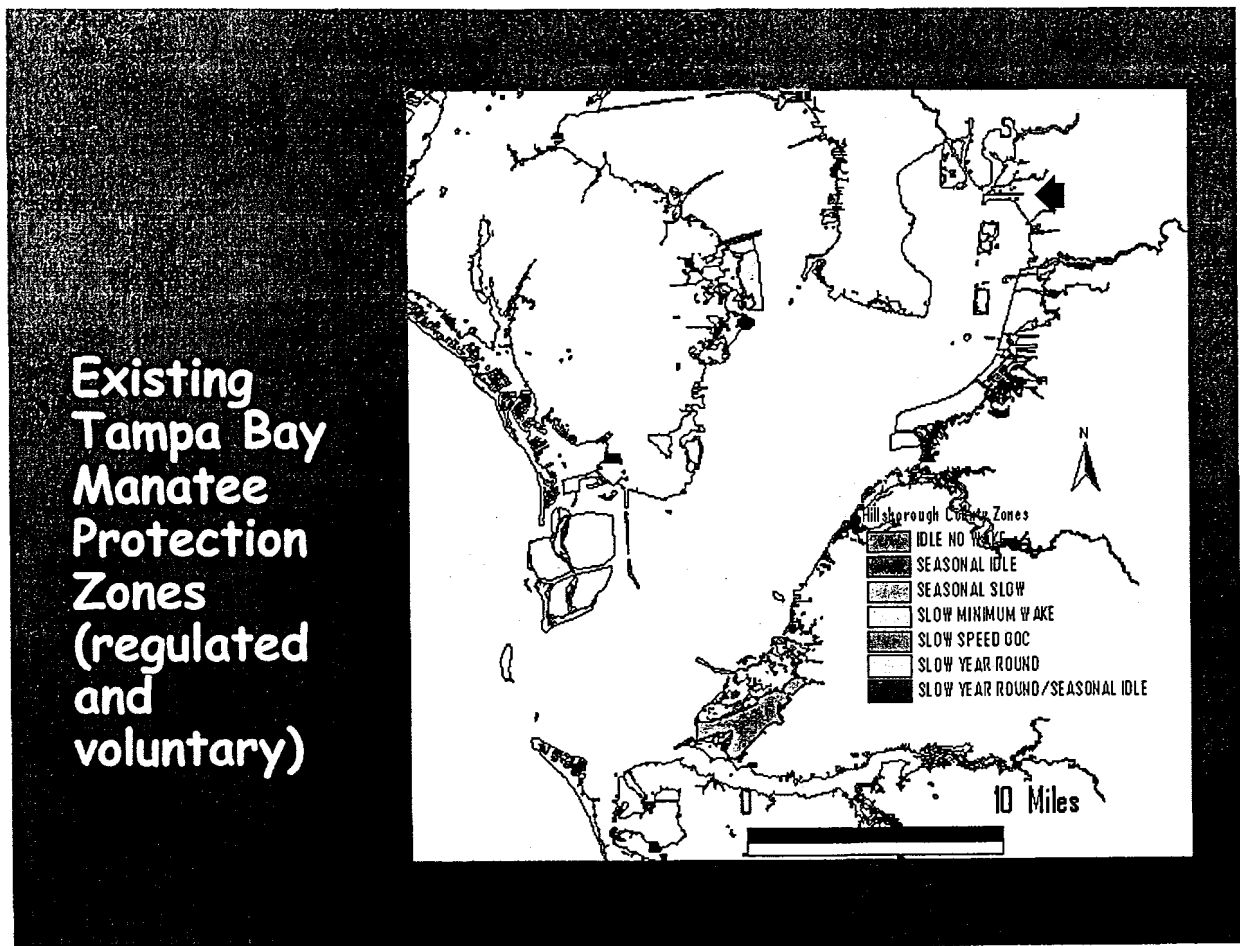
On-Water Enforcement

- FWC and GFC merger resulted in increased on-water presence in Tampa Bay;
- Local governments (Pinellas, Hillsborough and Manatee counties) have increased on-water presence;
- Educational on-water presence by Manatee Watch and other programs.
- RESULTS: Increased presence, but not adequate for baywide protection

Progress Towards Goals: 2001- 2003 Update Fish & Wildlife

Goal: Develop recommendations for local manatee protection zones.

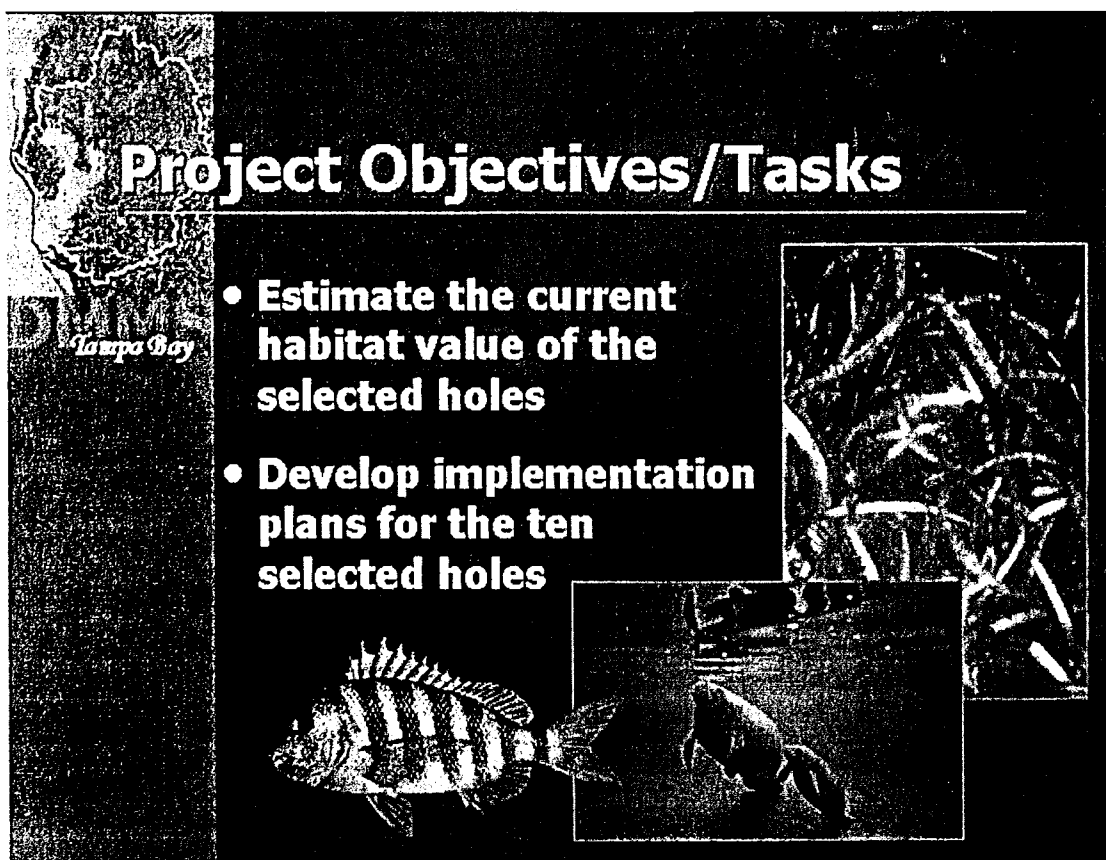
Status: Recommendations to FWC from Tampa Bay Manatee Protection Zones Local Rule Review Committee, Summer 2003, included keeping all local protection zones and adding additional protection in several rivers (calving grounds).



Progress Towards Goals: 2001- 2003 Update Dredging and Dredged Material Management

Goal: Develop a long-range dredged material management plan for the bay that will minimize environmental impacts and maximize beneficial uses of the dredged material.

Status: Long-term plan indicated a severe shortage of disposal areas with expected dredged material volume in the future. An assessment of dredge holes as potential beneficial uses is underway.



Project Objectives/Tasks

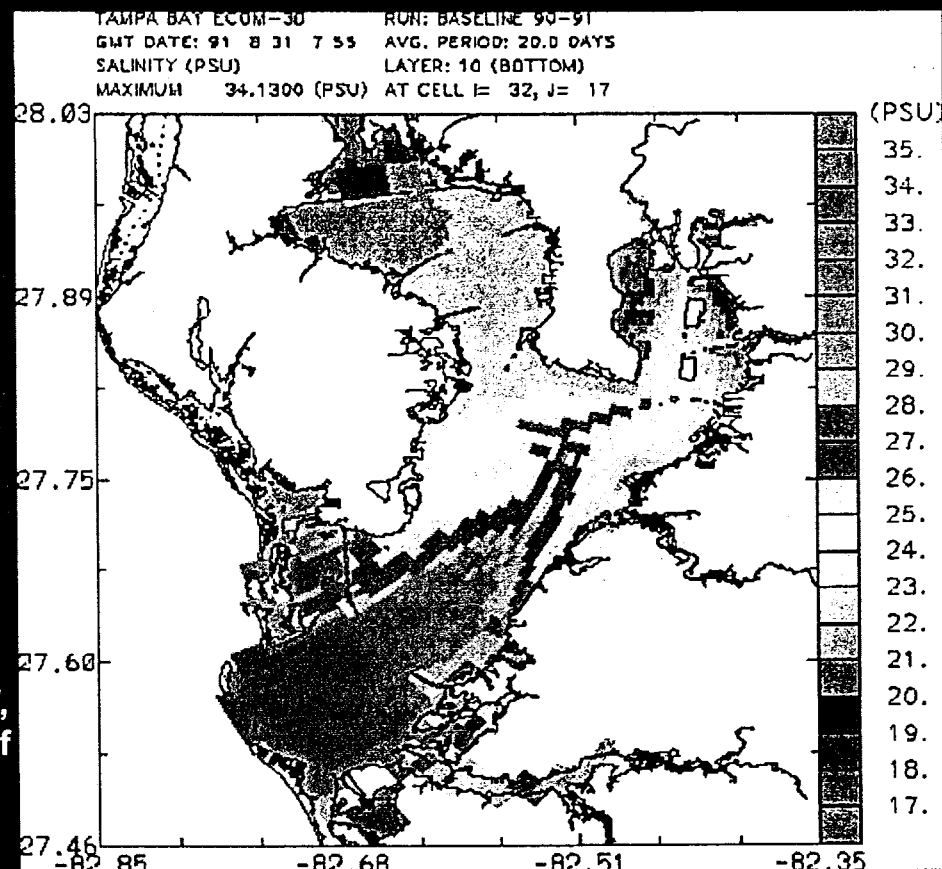
- **Estimate the current habitat value of the selected holes**
- **Develop implementation plans for the ten selected holes**

Progress Towards Goals: 2001- 2003 Update Spill Prevention and Response

Goal: Install a state-of-the-art vessel traffic and information system (VTIS) to improve coordination of ship movements along the bay's narrow shipping channel.

Status: Vessel Traffic System established. PORTS still needs permanent funding. PORTS also supports circulation and flushing rate models.

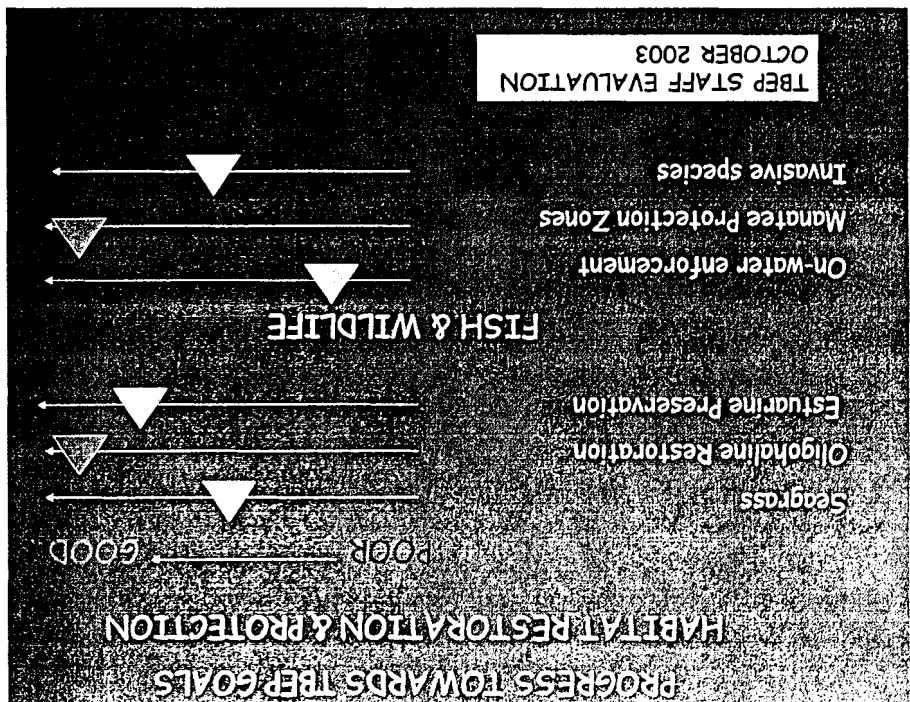
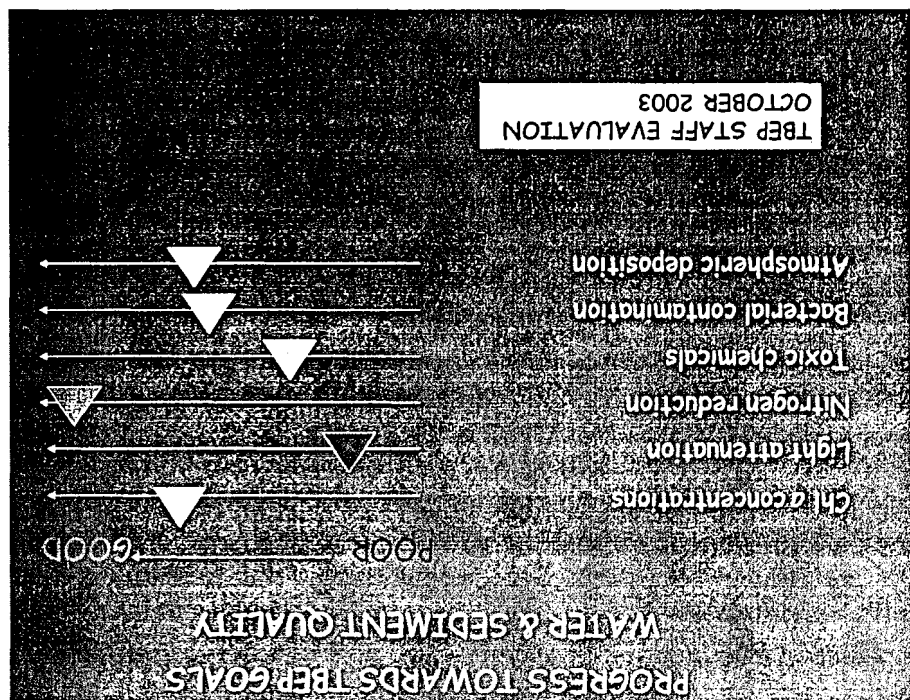
Average Bottom Salinity for August 31, 1991



M. Luther et al,
USF College of
Marine
Sciences

Progress Towards Goals: 2001-2003 Update

Overall Progress



1

2

3

TAMPA BAY ESTUARY PROGRAM ENVIRONMENTAL INDICATORS

The TBEP partners have developed and adopted numeric targets and goals for several issues identified in the CCMP, and are working toward quantifying goals for additional issues. Both “action indicators” and “environmental indicators” have been identified for each goal. The “Goals at a Glance” summary tables (reference Tab 6) outline progress to date.

Measurable environmental indicators used to track progress towards goals of the TBEP include both Response Indicators and Stressor Indicators:

Response Indicators:

- Seagrass acreage (estimated every two years)
- The Tampa Bay Benthic Index (estimated yearly) using benthic community metrics, to track sediment habitat condition and estimate acreage in each condition class
- Estuarine habitat restored, particularly oligohaline habitat (acres)
- Estuarine habitat preserved, particularly marsh and mangrove (acres)

Stressor Indicators:

- Average annual chlorophyll *a* concentrations and light attenuation to track environmental requirements of seagrass
- Nitrogen loading estimates to track effects of nutrient reduction actions taken in the watershed (estimated every 5 years)

Additional indicators used to support CCMP goals include:

- atmospheric deposition (nitrogen and other contaminants) used in developing nitrogen loading estimates, to address water quality issues
- bacterial contamination estimates (fecal coliform) to address public health issues
- manatee protection areas to address fish and wildlife issues
- dredged material beneficial uses and disposal areas to address dredged material issues
- Vessel Traffic System in place to address spill prevention and response.

A brief summary of the Tampa Bay Monitoring Program and progress towards environmental goals are included in this Section.

TAMPA BAY ENVIRONMENTAL MONITORING PROGRAM: 2001-2003 UPDATE

Effective monitoring is essential to a successful bay restoration effort by allowing communities to measure return on investment, assess progress and fine-tune priorities as needed. The baywide monitoring program, initiated through an TBEP effort and based on EPA’s EMAP statistical design, is implemented by several of the TBEP partners and builds upon existing monitoring data to more clearly assess progress in the bay's recovery. Rather than emphasizing compliance with rigid laboratory standards for water quality, the monitoring program for Tampa Bay seeks to measure instead the health and diversity of bay habitats and the animals that inhabit them.

An important step in the Baywide Environmental Monitoring Program has been the agreement in 2001 by one of the partners, Pinellas County Environmental Management Department, to take the lead on providing statistical analyses of water quality and benthic data collected baywide using the EMAP-based algorithms currently being finalized for Tampa Bay by EPA's Gulf Breeze Laboratory. This effort completes the elements needed for long-term maintenance of a baywide monitoring plan, and follows leadership by the Environmental Protection Commission of Hillsborough County for the benthic sample analyses; Manatee County Department of Environmental Management for administering RAMP and baywide grain size analyses; the City of Tampa Bay Study Group for analyses of baywide seagrass transect data; the Southwest Florida Water Management District for aerial photographs and GIS maps of seagrass extent, and the Florida Fish and Wildlife Commission Florida Marine Research Institute for baywide fisheries monitoring.

This cooperative approach coordinated through TBEP has allowed us to conduct a much more comprehensive monitoring program than any of the partners would be capable of doing independently. All partners provide field collection efforts (using standardized techniques and methods), but each partner has "specialized" to provide baywide analyses for a specific monitoring element.

The following summary includes several elements of the Tampa Bay Monitoring Program, including water quality, benthos/sediment quality, fisheries, seagrass, and atmospheric deposition monitoring programs.

WATER QUALITY

The baywide water quality monitoring program is not run by one agency, but is a combined effort of Manatee and Pinellas counties, Hillsborough EPC, the City of Tampa, FDEP, FMRI and SWFWMD. Continuous coordination between the various local governments and agencies participating in this combined effort is therefore essential. Coordination for the water quality element of the program is accomplished through the Regional Ambient Monitoring Program (RAMP), which was initiated by TBNEP in 1992, but it now coordinated by the local governments who run the monitoring programs. RAMP meets quarterly to collect water samples from a common container. Each program has its own laboratory run the samples for a core group of parameters (TN, nitrate+nitrite, ammonia, TSS, TP, orthophosphate, color, turbidity, and chlorophyll *a*), and the RAMP participants compare the results at a following meeting. To date, the RAMP participants have worked out differences between laboratories for several critical parameters (chlorophyll, TN, TP, TSS) and continues to work on others (color, for example).

This successful coordination effort has recently been joined by Charlotte, Sarasota, Lee and Polk counties' monitoring programs as well as the USGS, and has been recognized by the State of Florida as a core group for inclusion in the developing statewide program.

2001-2003 Update: The water quality monitoring programs are ongoing, with more than 100 stations collected on a monthly basis. RAMP is continuing to meet quarterly to collect water

quality samples and compare results among laboratories. RAMP participants have agreed to submit water quality data to STORET, and made a concerted effort to submit all data collected to date into STORET for inclusion in the state's 305(b) report and to support the state and EPA's TMDL efforts.

BENTHOS AND SEDIMENT QUALITY

The Baywide Benthic Monitoring Program, initiated in 1993, is based on EMAP design and sampling protocols, and is being implemented in Tampa Bay by EPC of Hillsborough County, Pinellas County, and Manatee County, with taxonomic assistance from FMRI and some funding support from TBEP. Over 100 stations are collected using the EMAP stratified random hexagonal design once a year in September-October. Sediment quality parameters (metals, PAHs, PCBs, organic pesticides and grain size fractions), benthic community structure (taxonomic sorting to species) and water quality measurements (24-hour *in-situ* dissolved oxygen, salinity, conductivity, pH and temperature) are included in the sampling protocols. Results of the program are compiled and interpreted by EPC and distributed as TBEP technical publications. Data are stored in the TBEP Data Library and distributed to the participating programs and others as requested.

2001-2003 Update: Annual data collection at over 100 stations baywide continued through 2002, then was revised as noted below. A quality-assured database containing records for all benthic parameters measured in Tampa Bay since 1990 has been finalized. This database is considered by national members of the Tampa Bay Sediment Quality Assessment Group, originally convened by TBNEP in 1992 to help guide our benthic and sediment quality monitoring program, to be one of the most extensive in the country.

Starting in 2002, the reporting period was increased from 1-year to 4-years for all segments, reducing sampling effort by approximately one-half. This design, consistent with EMAP statistical properties, will provide approximately equitable effort and coverage in each bay segment, and still allow estimation for the Bay as a whole every year. It would also assist with tracking conditions in anomalous years, such as droughts, El Nino or storms.

Bay Segment	Sites Sampled Per Year	Responsible Party
Old Tampa Bay	9	Pinellas County
Hillsborough Bay	11	EPCHC
Middle Tampa Bay	11	EPCHC
Lower Tampa Bay	9	Manatee County
Boca Ciega Bay	13	Pinellas County
Manatee River/Terra Ceia Bay	11	Manatee County

All Tampa Bay	64	
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In 2002, four Special Study areas were sampled (responsible party for sampling as noted in parentheses): 20 samples in Ybor and Seddon Channel areas (EPCHC); 10 samples in the Bayside Bridge area (Pinellas County); 4 samples in the Bayboro Harbor area (Pinellas County); and 20 samples collected in Bishop Harbor (Manatee County- collected in June 2002).

FISHERIES

The Tampa Bay region is fortunate to have FDEP's Florida Marine Research Institute located in this area, which conducts monthly adult and juvenile fish monitoring at approximately 60 stations throughout the bay. Their program, which includes both random and fixed station design elements, provides excellent information on status and trends of fish populations in Tampa Bay, and the statistical design is compatible with the EMAP-based design of the water quality and benthos elements. FMRI supports an extensive statewide data base which is available upon request, and also reports status and trends of important fish species in the Tampa Bay Estuary Program's Environmental Monitoring Report.

SEAGRASS

The Southwest Florida Water Management District is continuing aerial photography and GIS mapping of seagrass extent every two years, which provides the basis for measuring progress toward the TBEP long-term seagrass restoration goal. SWFWMD develops Arc-Info GIS coverages for all bay segments, which are distributed to TBEP, FMRI, and other partners as requested. Status and trends of seagrass acreage in Tampa Bay is reported in the Tampa Bay Environmental Monitoring Report.

In 1999, an important element was added to the Baywide Environmental Monitoring Program. Randomly located seagrass transects (70 baywide) are monitored by divers on an annual basis to monitor seagrass condition throughout the bay. Species composition, percent cover, degree of epiphyte cover, incidence of the slime mold *Labyrinthula*, and depth at the deep edges of the grassbeds are collected along the transects. Ten agencies and non-profit partners are participating in this new program.

2001-2003 Update: Due to the finding that seagrass growth in some areas of the bay appears to be slowing or is halted, an intensive monitoring program in "problem areas" (specifically, the Feather Sound area in Old Tampa Bay) and reference sites is being conducted.

Preliminary results show that, although water clarity in shallow areas is not different than in deeper areas within Feather Sound, this area does exhibit poorer water quality than three other quadrants in Old Tampa Bay. Causes have yet to be identified, but may be related to decreased circulation and slowed flushing rates, possible higher light requirements for recovering seagrasses, or high levels of sulfide in the sediments. A follow-on study is being developed to further evaluate these potential factors.

ATMOSPHERIC DEPOSITION

The atmospheric deposition monitoring program is coordinated by FDEP and the University of South Florida as an element of the Tampa Bay Atmospheric Deposition Study (TBADS), and sample collection is conducted by EPC of Hillsborough County and Pinellas County. The TBADS intensive site (wet deposition measurements) is included in the NADP network, using NADP sample analyses QA/QC procedures and techniques. Core parameters include ambient air (sulfate, nitrate-N, and ammonium-N) and wet deposition measurements for sulfate, nitrite, chloride, ammonium, phosphate, calcium, magnesium, sodium, and potassium. A companion meteorological station located in the center of the bay collects wind speed and direction, relative humidity, and water and air temperature for input into a "buoy model" developed by NOAA for TBADS to estimate dry deposition from ambient air and meteorological conditions. Data are currently being delivered to NADP (wet only) in addition to being available from the TBEP Data Library. The wet deposition data from the Tampa Bay site is available on the NADP website.

TBEP's funding support of the intensive wet and dry deposition of nutrients and sulfur was assumed by the Florida Department of Environmental Protection in August 2000, thus ensuring a continuous atmospheric deposition monitoring program in Tampa Bay through 2004. A short-term (18 month) data collection project for toxic materials (heavy metals, PAHs, PCBs, and OGCs), funded by EPA Region 4 RGI grant, was complete in 2001. A more comprehensive PAH study, funded by EPA OWOW as an air/water initiative, was complete in 2003. Findings from these two projects indicated that, while atmospheric deposition does play a role in sediment contamination by these substances, it is probably not the major source to Tampa Bay.

TBEP will continue to provide coordination between the atmospheric deposition monitoring programs and local governments, agencies and private companies through the continuation of the Tampa Bay Atmospheric Deposition Study (TBADS) advisory committee.

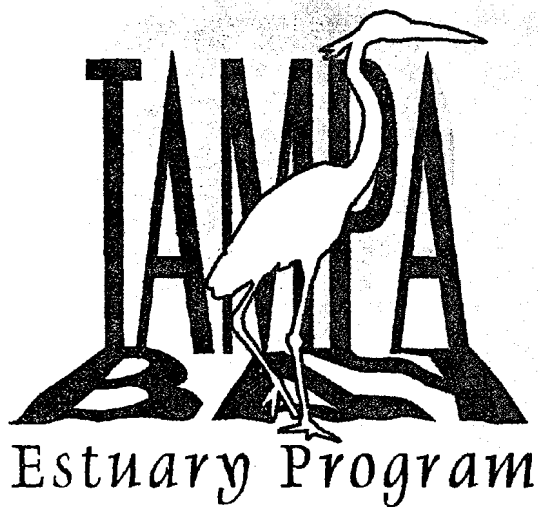
2001-2003 Update: FDEP is also conducting additional intensive surveys of air quality and deposition in urban areas of Tampa, with the specific objective of further quantifying deposition of airborne materials to Tampa Bay. This project, called the Bay Regional Atmospheric Chemistry Experiment or BRACE, is being funded through a settlement agreement with Tampa Electric Company.

Tampa Electric (TECO) completed refueling one of the large power plants on Tampa Bay in November 2003 switching from coal to natural gas, which is expected to reduce local emissions significantly over the next 5 years. It will be critical to maintain adequate atmospheric deposition and water quality monitoring to "catch" this dramatic local emissions reduction, and its potential impacts on air quality and water quality. TBEP will continue to work with local, state and federal partners to ensure adequate monitoring is in place.

REPORTING MONITORING RESULTS

Key results of the monitoring program are highlighted in a Baywide Environmental Monitoring Report (BEMR) compiled every several years by TBEP. In addition to the core baywide monitoring program results, status and trends on manatees, dolphins, sea turtles, and wading birds in Tampa Bay are included in the BEMR. The first BEMR was produced in 1996; the second was published in 1998.

2001-2003 Update: The third BEMR was produced in 2002, and is included as a CD in this Implementation Review package. Discussions will be held this year to determine an appropriate reporting period for this full document. Suggestions include reporting the full suite of monitoring programs every 5 years (just preceding the revision of goals and targets), with annual monitoring reports for water quality and seagrass extent.



2004 IMPLEMENTATION REVIEW

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Executive Summary

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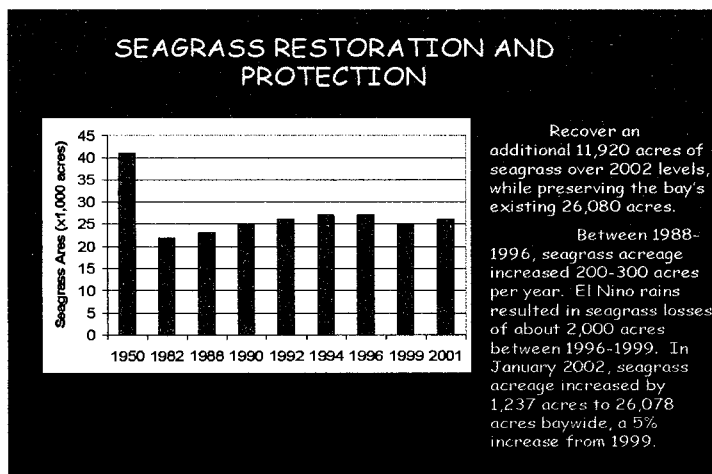
Post-CCMP Funding Graphic

TAMPA BAY ESTUARY PROGRAM ACHIEVEMENTS

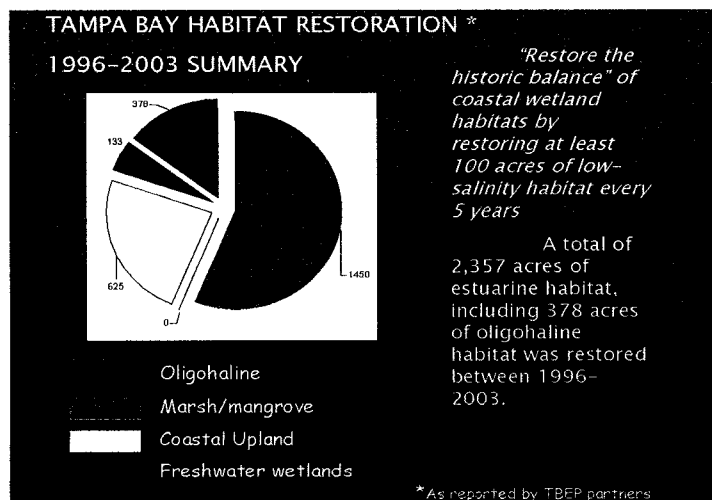
The Tampa Bay Estuary Program and its partners have made measurable progress toward implementation of the adopted CCMP goals. Highlights of progress toward key goals are provided below, followed by a listing of accomplishment of the TBEP partners and staff.

BAY HABITATS

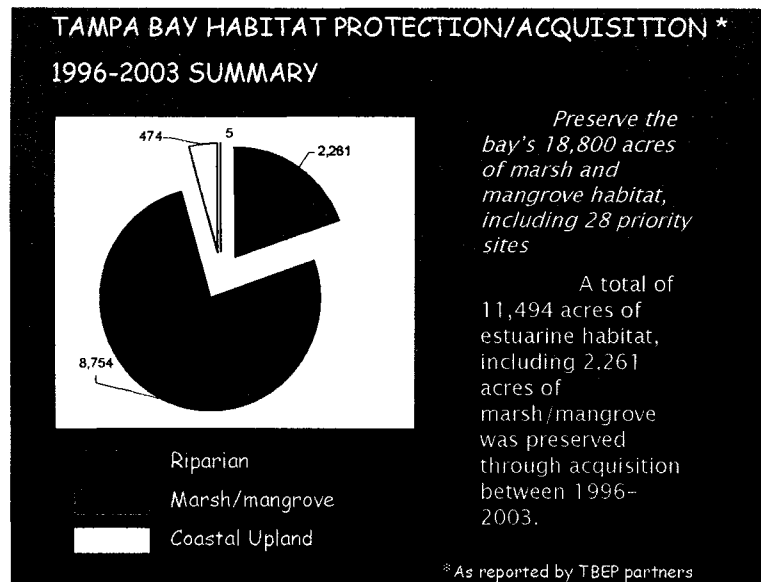
Following a major setback in seagrass recovery efforts caused by torrential El Nino rains and runoff in 1997-1998, seagrass acreage rebounded dramatically, increasing by 1,237 acres between 1999 and 2001.



A total of 2357 acres of estuarine habitat, including 378 acres of oligohaline (or low-salinity habitat, was restored during the 1996 - 2003.

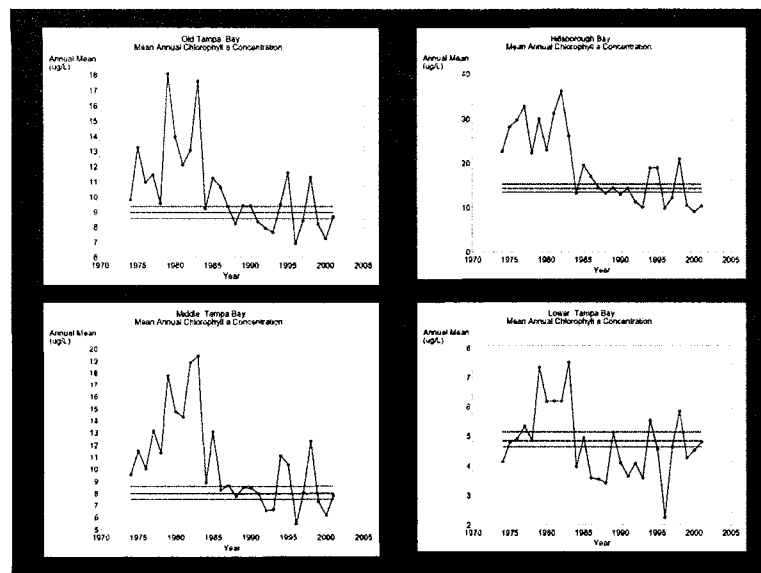


A total of 2,261 acres of marsh/mangrove was preserved since 1996. A total of 11,494 acres of estuarine habitat of all types was preserved through acquisition.



WATER AND SEDIMENT QUALITY

Each major bay segment met chlorophyll *a* targets in 2001 and 2002, although three of the four did not meet light penetration targets due to non-chlorophyll attenuation factors. Heavy rains in 2003 resulted in exceedances of the chlorophyll *a* targets in two of the four major bay segments.





PROGRAM ACHIEVEMENTS

Programmatic achievements of TBEP staff and contractors during the 3-year review period are presented below under the following three categories: **Bay Management**; **Research and Monitoring**; and **Public Outreach**.

BAY MANAGEMENT

- With guidance from the Tampa Bay Nitrogen Management Consortium, TBEP developed a **Tampa Bay Watershed Management Summary** to provide reasonable assurance to the Florida Department of Environmental Protection that the Tampa Bay Nitrogen Management Strategy will meet state water quality criteria for nitrogen for Tampa Bay. In August 2002, FDEP determined the Tampa Bay strategy provided the necessary assurance, thereby precluding the need for developing a nitrogen TMDL for the bay.
- The **Technical Advisory Committee** finalized reviews of the chlorophyll/light analyses and nitrogen loading estimates (existing and future). During 2000-2001, the TAC reviewed and recommended revisions to each of the five technical reports supporting the Nitrogen Management Strategy, one of TBEP's primary initiatives. The Management and Policy Boards approved the TAC recommendations in spring 2001.
- The Army Corps of Engineers and TBEP jointly convened the **Dredged Material Management Strategy** meeting each year in August to review opportunities. A strong focus of this workgroup will be the upcoming **Tampa and St. Petersburg Harbor Re-Evaluation** project requirements for dredged material placement areas over the next 10 years.
- Completion of TBEP's **Action Plan Data Base** gives the program the ability to track projects that contribute to implementation of the CCMP. All projects submitted through partner Action Plans (1995-2000) have been entered into the database, and partners will be entering their 2001-2004 projects this year.
- Using 7 years of data from a comprehensive benthic monitoring program, TBEP completed development of a **Tampa Bay Benthic Index** in 2003. The TBBI correctly classifies healthy and degraded sediments 90 percent of the time based on benthos and DO concentration. With the TBBI as the principal indicator, TBEP is developing sediment quality targets. Once adopted in August 2004, the targets will guide strategies to reduce loadings of contaminants of concern to the bay.

RESEARCH AND MONITORING

- The **Southwest Florida Seagrass Working Group**, comprised of more than 40 active participants from Tampa Bay, Sarasota Bay and Charlotte Harbor, reviewed results from aerial photographs taken in January 2002 and estimated that Tampa Bay has experienced a 5% increase (1,237 acres) increase in seagrass area extent since 1999, indicating partial recovery of the 2,000 acre loss due to El Nino rains in 1999. Total acreage in 2002 was estimated to be 26,078 acres, or about 69 % of the 38,000-acre goal adopted by TBEP partners.

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- Intensive water quality and seagrass monitoring and experimental work was completed in March 2004 to determine factors impeding the expected recovery of seagrasses in the **Feather Sound** area. Experimental efforts included measuring the expansion of individual seagrass beds over time, examining the effects of sting ray burrowing on the re-establishment of seagrasses by using Ray Excluder Devices (REDS), and estimating the potential impacts of newly discovered freshwater seeps in the Feather Sound area.
- More than 75 scientists and managers attended a 2-day conference of the **Tampa Bay Atmospheric Deposition Study** group in June 2001 to review results of the first 5 years of atmospheric deposition monitoring and to provide input into the design for the next 5-year period. Results of the first 5 years indicate that atmospheric deposition contribution of nitrogen to the bay continues to be between 20-30 % per year. Contribution of other contaminants (heavy metals, PCBs and organic pesticides) to water quality or sediments in the bay from atmospheric sources appears to be negligible. Presentations from the conference can be viewed at www.hsc.usf.edu/publichealth/EOH/BRACE/TBADS.htm.
- TBEP's **Dredge Hole Assessment Project Advisory Group** identified priority dredge holes in the bay for inclusion in the assessment of existing ecological functions of man-made dredge holes, for potential enhancement using beneficial dredged material, artificial reefs, etc. The Advisory Group will develop specific management recommendations based on data collected from each of priority 13 holes, which may range from keeping the hole as is, to filling and allowing seagrasses to colonize the surface.
- TBEP sponsored a **Water Budget Workshop** in fall 2001 to determine the state of knowledge of freshwater inflow and outflow in Tampa Bay, and to identify and prioritize gaps in our knowledge. Over 75 scientists and resource managers participated in the two-day workshop.
- About 100 people attended the Invasive Species in Florida's Saltwater Systems conference co-sponsored by the TBEP in November 5-6, 2002. Participants in this interactive, two-day workshop examined the status of invasive species research, outreach and management from national and statewide perspectives. Primary goals of the workshop were to identify key challenges to effective management of saltwater invasives and to initiate development of a strategic plan to guide future research and education efforts in Florida.
- Over 230 researchers, managers and citizens attended the fourth **Bay Area Science Information Symposium**, held October 27-30, 2003. Over 80 oral presentations and 70 poster presentations were made on the six major issues in the CCMP. Several priority focus areas were highlighted, including tidal rivers and streams, invasive species, and food web interactions. Presentations are available through the TBEP website, and Proceedings are due mid-2004.
- More than 20 TBEP and TAC members attended **EPA's Technology Transfer Conference, Emerging Technologies, Tools and Techniques to Manage Our Coasts in the 21st Century**, January 28-31, 2003 in Cocoa Beach. The purpose of this national meeting was to

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examine current and emerging coastal and ocean management tools, techniques and strategies, as well as to consider mechanisms for enhancing our ability over the next 25 years to protect and manage coastal ecosystems in the face of new challenges.

- Approximately 260 scientists, resource managers and regulators attended a **Seagrass and Submerged Habitat Restoration Workshop**, jointly convened by the four Florida NEPs and held at Mote Marine Laboratory in Sarasota, FL on March 11-13, 2003. Presentations from more than 70 scientists, engineers and resource managers, experienced in the restoration of estuarine and coastal seagrass, hard bottom and tidal creek habitats, impacts from dredging and prop scars, and artificial reefs were included in the three-day workshop. Submerged habitat restoration priorities were identified by workshop participants.
- The **Regional Ambient Monitoring Program** created by TBEP continues to meet on a quarterly basis, to conduct a round-robin sample analyses evaluation and discuss water quality laboratory issues. This group, now in its tenth year, is continuing to provide quality assurance measures to ensure comparability between laboratories around the bay area and now includes laboratories from throughout southwest Florida. In addition to laboratory QA, RAMP participants are addressing certification requirements for meeting TMDL reporting criteria.
- More than 15 TAC members attended and made presentations at the international **Estuarine Research Federation** conference in Seattle, WA, September 15-19, 2003. Tampa Bay continues to be a featured estuary at ERF, and applied research and resource management from the Tampa Bay area is considered by the estuarine scientific community to be among the best in the world. Holly Greening is currently serving on the ERF Governing Board.

Twenty-seven Technical Reports completed by TBEP and its contractors between October 2001 and March 2004 are listed in the Supplemental Information section.

PUBLIC OUTREACH

The Tampa Bay Estuary Program continues to emphasize the importance of environmental education to the long-term health of the bay by providing high-quality outreach materials and programs to create a constituency of informed, involved citizens. This mission is aided by numerous partnerships with governmental, non-profit and private sector organizations, as well as an active Community Advisory Committee composed of residents from a variety of backgrounds and interests who share a common concern for the future of the bay.

Outreach activities from 2001-2003 targeted three main areas: boater and angler education, invasive species awareness and promotion of Florida-friendly landscaping techniques for homeowners. In addition, TBEP continued to provide information and educational materials addressing a broad spectrum of issues affecting Tampa Bay. Highlights of the three major focus areas are as follows:

- Coordinated an average of 4 "Give A Day For The Bay" workdays a year, recruiting more than 400 community volunteers to conduct one-day bay restoration projects ranging from litter cleanups to artificial reef construction to Brazilian pepper removal.

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- Created and implemented the “Eyes On The Bay” campaign to heighten awareness of invasive species and enlist citizens in preventing accidental introductions. “Eyes On The Bay” was initiated in 2002 and is an ongoing effort.
- Products include: sponsorship of a major exhibit on invasive species at The Florida Aquarium; an extensive website of information and resources; a laminated card for divers highlighting key known or likely marine invaders; a field guide to invasive plants in the Tampa Bay area; and a slide program showing homeowners how to remove invasive plants from their backyard landscapes.
- Coordinated the Tampa Bay Manatee Watch program, developed by TBEP’s Manatee Awareness Coalition, to educate boaters about safe boating in seagrass and manatee habitat. Implemented by Tampa BayWatch and the Florida Marine Research Institute, Manatee Watch was a 3-year research and outreach effort to assess the effectiveness of regulatory versus voluntary slow-speed zones in the bay. The program used a trained corps of volunteers, both to provide information and safe boating tools to boaters, and to collect data on boater behavior in areas of the bay with and without speed zones.
- That program was further expanded in 2002 with the creation of the Manatee-Friendly Neighborhood certification program, which recognizes waterfront neighborhoods that complete a menu of activities to protect manatees and the seagrass beds that support them.
- Produced a variety of outreach materials, including Boater’s Guides to Hillsborough Bay and Boca Ciega Bay, and the popular Tampa Bay Ethical Angler Wallet Card, which highlights catch restrictions for 12 of the bay’s most popular recreational fishes, along with basic tips for ethical angling and important phone numbers to report violations and fish kills. More than 60,000 of the Boater’s Guides and Wallet Cards have been distributed in the last three years.

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ADDRESSING CHALLENGES IDENTIFIED IN THE 2001 IMPLEMENTATION REVIEW

The 2001 Implementation Review Team for Tampa Bay Estuary Program identified four areas as “challenges” for the 2001-2003 time period: Further assessment of the Tampa Bay Seagrass Management Strategy, given the observed decline in seagrass acreage between 1996 and 1999; Dredged material management over time; Development of a Vessel Traffic System for Tampa Bay; and Development of a long-term funding strategy. The 2001-2003 progress on each of these challenge areas is summarized here.

FURTHER ASSESSMENT OF THE TAMPA BAY SEAGRASS MANAGEMENT STRATEGY

As reported in the Environmental Progress Report (Tab 6), seagrass acreage estimates taken from aerial photographs shot in January 2002 showed that seagrasses have started to rebound from the losses that occurred between 1996 and 1999 (which included an El Nino event with heavy rainfall). Seagrass acreage increased by 1,237 acres, a 5% increase over 1999 estimates.

However, the seagrass recovery rate is still lagging in some areas of the bay, including a 2000-acre area in Feather Sound (Old Tampa Bay). In 2001, TBEP and a number of partners applied for and received a competitive grant from the Pinellas County Environmental Foundation to study factors affecting seagrass recovery in the Feather Sound area. Results and observations over the two-year study period showed that the Feather Sound area had poorer water quality (and thus, less light available for seagrasses) during the 2002-2003 period than the other three areas studied. In addition, seagrass loss between 1950 and the present at the deeper areas of Feather Sound indicate historically degraded water clarity in this area. Epiphytes caused significant light reduction (25- 32%) in all four sample areas, but was greatest in Feather Sound. Volunteer seagrass patches colonized the Feather Sound area in 2002, but many patches died or formed “donuts” with dead centers in 2003. Causes of “donut” formations are currently unknown. Transplanted seagrass survival in Feather Sound was very low; 8.3% after two growing seasons, compared with 25% in other areas of the bay.

Potential causes of slower seagrass recovery in Feather Sound, as compared to the other study sites, include reduced circulation and slower flushing rates; increased epiphyte loads (possibly associated with increased algae concentrations); high rates of bioturbation (by stingrays and burrowing organisms); and possible influence of higher hydrogen sulfide concentrations. Wave energy does not appear to be a factor in slower recovery in Feather Sound, nor do submarine groundwater influences. Chlorophyll *a* concentrations throughout Old Tampa Bay were higher than in other bay segments in 2003; however, the reasons are not yet known.

The Feather Sound Seagrass Recovery research team is planning to apply for additional funds to follow up on the identified potential causes in 2004-2005.

DREDGED MATERIAL MANAGEMENT

To fulfill its commitment to the TBEP CCMP implementation, the U.S. Army Corps of Engineers (Corps) authorized the development of the Tampa Bay Dredged Material Management Strategy in 1999. The Corps and TBEP finalized the Tampa Bay DMMS in July 2000. The

DMMS identifies placement needs, capacity and beneficial uses of dredged material. It attempts to account for material removed from all sources within the Tampa Bay watershed, from the bay's three major seaports to private marinas.

In all about 42,000,000 cubic yards (cy) of material are projected to be dredged from Tampa Bay in the next 25 years, or about 1,680,000 cy per year, including maintenance dredging of existing Federal channels and dredging of new, deeper, or wider channels. These figures do not include volumes of material removed from any channel modifications that might be constructed as a result of studies on-going for the Federal Tampa Harbor and St. Petersburg Harbor shipping channels and probably underestimate the amount of material to be dredged by private interests. Over this timeframe the placement capacity shortfall is estimated to be 15,000,000 cy if existing upland areas are not enlarged. If the existing upland placement areas are enlarged this shortfall is reduced to 400,000 cy. The DMMS concludes that in order to meet future capacity needs, four actions should occur: place material on beaches, use dredged material beneficially for habitat restoration or commercial applications, manage aggressively existing upland areas and share placement areas.

Implementation of the Tampa Bay DMMS calls for linking the needs of the resource management community for material fill in habitat restoration projects with the desire of the USACOE to find "beneficial uses" for dredged material. Of particular interest are submerged dredged holes which could provide important shallow water habitat if filled. However, these holes may also provide critical fish habitat, including refugia during cold weather.

To address these issues, TBEP, along with a number of partners, applied for and received a three-year Wetlands Development Grant from the United States Environmental Protection Agency (USEPA) in 2001 to study dredged holes in Tampa Bay, evaluate the existing ecological value and potential enhancement of the holes and develop management plans for the holes based on the results of the scientific assessment. This project will allow assessment of each of the major holes, with the objective of developing specific implementation plans for each of the assessed holes.

An important element of this project is the engagement of the local recreational fishing community in deciding the ultimate fate of these holes. Hillsborough County Commissioner (and avid fisher) Jan Platt has volunteered to represent this important group on the Steering Committee, through interactions with the Tampa Bay recreational fishing community.

The Florida Marine Research Institute and Environmental Protection Commission of Hillsborough County will provide the technical assessment, focusing on fisheries but also including water quality and benthic analyses. The Tampa Bay Estuary Program will provide programmatic management, project tracking and reporting of results. The U.S. Army Corps of Engineers has expressed a willingness to provide engineering services to assess the major holes (a considerable in-kind service) and to provide fill if appropriate. Other partners include the Florida Department of Environmental Protection and the Southwest Florida Water Management District. Sampling is scheduled to be completed in spring 2004.

Options to be evaluated in management plan development include habitat restoration by filling holes with dredged material as a beneficial use, partially filling holes or leaving holes as they are. Management plans for each of the 10 selected dredge holes are scheduled to be developed in 2004 and finalized by April 2005.

DEVELOPMENT OF A VESSEL TRAFFIC SYSTEM FOR TAMPA BAY

As reported in the Environmental Progress Report (Tab 6), a significant portion of this action has been completed, with the establishment of a coordinated Vessel Tracking System (VTS) for the bay financed by a consortium of maritime interests, including the Tampa Port Authority. VTS has equipped all harbor pilots with shipboard laptop computers linked to a digital GPS system that provides real-time information on shipping traffic in Tampa Bay. The pilots can see precisely where they and all other ships nearby are located at any given time, and coordinate that information with weather and current data to guard against collisions or groundings. Shore-based radar units operated by the Coast Guard further enhance navigational safety among commercial ships. Since installation of VTS, there have been no serious ship-to-ship collisions in the bay.

Up-to-the-minute information about tides, winds and currents in Tampa Bay is available to all mariners (recreational boaters included) through the Physical Oceanographic Real-Time System (PORTS), a network of data collection buoys located at key positions around the bay. PORTS was created by NOAA and is maintained by the University of South Florida Department of Marine Science. The system can be accessed online or by telephone. The Tampa PORTS system not only provides critical real-time wind and tide information for safe navigation for Tampa Bay's shippers, but also drives several circulation and tide models used to examine such diverse issues as the fate of discharge from the Piney Point Phosphate plant and the potential impacts of water withdrawals from bay area rivers. However, a permanent funding source for PORTS has not yet been secured.

A current proposal involving contributions from all three bay counties would secure PORTS funding for the next six years. Hillsborough County has committed to partial funding of PORTS for six years if Manatee and Pinellas will also contribute. Pinellas has agreed to financial support; Manatee has not at this time. USF is also requesting funds from the Coastal Protection Trust Fund.

DEVELOPMENT OF A LONG-TERM FUNDING STRATEGY

A draft CCMP Financing Plan is included with this Executive Summary.

EMERGING CHALLENGES

In addition to work on existing challenges (detailed earlier), new and emerging challenges in implementing the CCMP include:

- Assessing Low Impact Development techniques for the Tampa Bay watershed
- Evaluating effects of artificial substrates on the spread of invasive species in the Bay
- Defining adequate and appropriate public access to the Bay
- Developing resource-based targets for tidal stretches of rivers, streams and creeks
- Building and testing the effectiveness of longshore bars in helping to restore seagrasses
- Tracking changes in wetlands and seagrasses, using remote sensing techniques

A summary of issues and possible ways in which EPA can assist with these emerging challenges are listed below.

LOW IMPACT DEVELOPMENT

Low Impact Development (LID) is an innovative stormwater management approach based on managing rainfall at the source using uniformly distributed, decentralized controls. The goal of LID is to mimic a site's predevelopment hydrology by using design techniques that infiltrate, filter, store, evaporate, and detain runoff close to its source. LID addresses stormwater through small, cost-effective landscape features located at the lot level. LID is a versatile approach that can be applied equally well to new development, urban retrofits, and redevelopment / revitalization projects. LID would complement, but not replace, existing stormwater regulations.

The TBEP partners will be holding a workshop on LID in spring 2004, to examine the principles and practices of LID and to determine if there is sufficient support at local government staff and policy-making levels and interest within the development community to pursue implementation of LID practices in the Tampa Bay region. Among the key issues to be discussed at the workshop are: (1) the feasibility of implementing LID stormwater management practices through local government regulations that may differ from state and regional regulations and/or from other local governments in the region; (2) implications of LID for local governments in meeting the requirements of FDEP's Total Maximum Daily Load (TMDL) related rules; and (3) the extent to which LID should overlap land use and transportation planning.

Critical assistance which EPA could provide is to conduct an evaluation of LID techniques throughout the nation. A literature and personal interview review of the effectiveness and costs associated with various LID techniques for different regions of the country would be useful to all NEPs working in urban areas and other group considering LID practices. Of particular interest would be limitations to various LID techniques, including technical issues (such as rainfall patterns, groundwater level, temperature limitations, etc) and regulatory issues (such as local, state or national stormwater permitting requirements).

INVASIVE SPECIES

The arrival of the Asian green mussel in Tampa Bay in 1999 – probably as a ballast water hitchhiker – has raised awareness of the environmental and economic threats posed by marine invasive species in Florida's estuarine waters.

In response to the discovery of the green mussel, which has now spread throughout Florida, TBEP added an Invasive Species Action Plan to its CCMP in 2002. The Action Plan calls for a two-pronged approach to addressing invasive species, focusing on **research** to better assess threats, risks and likely invaders to the bay, and **education** to alert residents to the problems associated with invasive species and enlist their help in monitoring and preventing invasions. EPA has assisted TBEP in this campaign by helping to sponsor a Ballast Water Workshop bringing together various interest groups and stakeholders in the maritime community, and providing special supplemental funding for TBEP's "Eyes On The Bay" public awareness campaign.

A more recent emerging issue related to invasive species is the proliferation of artificial habitats in the bay (i.e. oyster reefs, reef balls, seawall reefs) and the interaction of invasive species such as mussels with these manmade structures. TBEP's Technical Advisory Committee recently identified as a research priority the need to determine the effects, either positive or negative, of these artificial habitats on the bay ecosystem, and specifically to answer the question of whether these structures are facilitating the spread of invasive species.

EPA could assist in this effort by helping to identify funding sources for a research project directed at this topic, or by helping to fund or coordinate a formal Rapid Assessment of invasives in Tampa Bay (utilizing experts from a variety of areas for a short but intensive field survey). The Rapid Assessment would help us to more precisely identify problem species and the vectors by which they enter or spread through the Tampa Bay estuary.

PUBLIC ACCESS

Ensuring adequate and appropriate access to Tampa Bay has recently been identified as another emerging issue for TBEP, especially in the face of increasing growth in the Tampa Bay region that is leaving fewer undeveloped shoreline areas with each passing year. The issue of access encompasses many forms, from adequate numbers of boat ramps and canoe/kayak launch areas to accommodate the needs of the boating and paddling public, to sufficient passive and active use parks where people can swim, fish, picnic or just enjoy a panoramic view of the water.

TBEP has just begun to address this issue and is currently participating on a Task Force charged with identifying appropriate areas for future boat ramps along Tampa Bay and its tributaries.

If future boat ramps or canoe launch locations are identified which are adjacent to federal highways or lands, EPA could possibly assist with identification of potential federal funds for construction. However, we do not anticipate knowing where these recommended locations may be for at least a year.

GOALS AND TARGETS FOR TIDAL RIVERS

The top-ranked habitat and freshwater inflow research priority identified by TAC and CAC members in December 2003 was to assess the water quality, sediment quality and habitat of tidal rivers, streams and creeks in Tampa Bay. A priority issue identified in the newly revised BH-1-03 Action Plan is to develop goals and targets for these important systems. As noted by several researchers during the BASIS 4 presentations in fall 2003, target conditions in coastal streams may be different than for open waters of the Bay or in the freshwater sections of the watershed. These goals and targets have not yet been developed for Tampa Bay tidal rivers and streams.

This effort will be developed as a grant application, for submittal to appropriate grant entities, for implementation starting in FFY 04. TBEP has allocated \$50,000 from non-federal Program Overmatch funds to match a granting agency to support the assessment of existing conditions and develop water quality and habitat goals for tidal rivers, streams and creeks in the Tampa Bay area. Staff anticipates that total cost for this project is \$80,000 - \$100,000.

EPA could assist this effort by helping to identify grant opportunities (\$30,000 – 50,000 needed to match non-federal TBEP Program Overmatch funds already allocated for this project) for which this work may be appropriate.

LONGSHORE BARS FOR SEAGRASS RECOVERY

The second-ranked research priority identified by TAC and CAC members in December 2003 was to design and construct a longshore bar in an area where historic bars existed as a pilot study. Recent research results indicate that natural and man-made wave energy are important factors in observed longshore bar loss and associated seagrass declines in areas behind the historic bars. The ACOE is interested in providing appropriate dredged material in rebuilding lost longshore bars as beneficial uses projects; however, the ACOE does not have funding to cover the costs of design, construction, and monitoring results.

EPA could assist this project by helping to identify grant opportunities. Matching funds from TBEP and ACOE (in-kind for building materials) would be available. It is anticipated that \$100,000 - \$150,000 would be needed for this pilot project, for a total project cost of \$250,000.

REMOTE SENSING TECHNIQUES FOR TRACKING CHANGES

As noted in the Environmental Progress and Environmental Indicators Report, estimating acreage changes for seagrasses and intertidal and emerging wetlands are critical components in tracking progress towards goals in the Tampa Bay region. Currently, we are relying on hand-digitizing aerial photographs for estimating seagrass acreage and wetland changes, a labor-intensive and costly process.

Emerging technologies in remote sensing promise to provide a much more cost-effective and rapid method for tracking changes such as these. However, these technologies do not yet appear to be developed to the point where they can be used for the detailed mapping of submerged aquatic vegetation, or to be able to differentiate between native mangrove species and invasive species such as Brazilian pepper. EPA could assist by encouraging development of cost-effective remote sensing technologies for these and other tasks currently done with aerial photography and digitization.

STAKEHOLDER ROLES IN CCMP IMPLEMENTATION

The Tampa Bay Estuary Program and its mission of CCMP Implementation are supported by a broad group of stakeholders. The founding stakeholders are the 13 local governments and state and federal agencies that are signatories to the TBEP Interlocal Agreement, the document which guides implementation of the CCMP. As signatories to the Interlocal Agreement, the primary stakeholders have committed to working collectively toward achieving the goals of the CCMP. Each stakeholder has committed to developing and supplementing when necessary a local action plan, setting forth the specific projects that it proposes to undertake to help achieve the goals of the CCMP. Local government members of the TBEP Policy Board and the Southwest Florida Water Management District have also committed to funding the operation of the program.

Unique contributions of the founding stakeholders along with other key stakeholder groups are described below.

FEDERAL AGENCIES

The **U.S. Environmental Protection Agency** is the parent federal agency of the National Estuary Program. EPA provides programmatic and technical support to the TBEP, channels congressionally approved funding to the program for CCMP implementation and oversight, and monitors NEPs' performance through a CCMP Implementation Review process. EPA Projects Officers at Headquarters and in Region 4 provide guidance to TBEP and serve as portals to the Agency. EPA is providing about \$500,00 to the TBEP in the current fiscal year, which constitutes roughly 50 percent of the program's FFY '03 operating budget. Beyond funding TBEP's base program, the Agency provide funding support through various other programs including the Gulf of Mexico Program and the Great Waters Program that have made substantial grants to the TBEP relating to CCMP implementation.

EPA's recent adoption of rules pertaining to impingement and entrainment by existing power plants substantially completes the CCMP action relating to power plant entrainment.

The **U. S. Army Corps of Engineers** is also a founding stakeholder of the TBEP. The principal contribution of the Corps to CCMP implementation has been the development and implementation of a long-term dredged material management plan for Tampa Bay. The Corps is also coordinating local review of its Tampa Harbor Re-evaluation Study through TBEP and the Agency on Bay Management. The **Tampa Port Authority**, a member of the TBEP Management Board, serves as the host program for dredged material management workshops, and coordinates implementation of the Vessel Traffic System serving Tampa Bay.

TBEP has interacted particularly closely with the **U.S. Geological Survey** over the last three years. The USGS is completing a five-year Tampa Bay Integrated Science Project and has closely coordinated that effort with the TBEP Senior Scientist and the program's Technical Advisory Committee. The Survey has provided incalculable information management support to TBEP, making TBEP technical reports readily available through the USGS website. Most recently, USGS is helping fund development of an online Tampa

Bay Estuary Atlas and synthesize the results of volumes of technical studies by TBEP, the Survey, and other researchers.

NOAA's Center for Coastal Fisheries and Habitat Restoration developed a Wave Exposure Model for Tampa Bay to evaluate placement of offshore sandbars as a potential seagrass restoration strategy. The **National Marine Fisheries Service** and the **U.S. Fish & Wildlife Service** play advisory roles to TBEP as members of its Technical Advisory Committee and also consider CCMP goals when conducting consistency reviews of various federal projects.

STATE AGENCIES

Actions by the **Florida Legislature** help support CCMP implementation. Bay area legislators sponsored and supported adoption of the Tampa Bay Estuary Specialty License Plate, revenues from which are earmarked specifically for implementation of the CCMP. A significant portion of state funding for the Governor's Florida Forever program are administered through the state's water management districts for land acquisition and implementing Surface Water Improvement and Management programs (see SWFWMD below).

The **Florida Department of Environmental Protection** is a TBEP founding stakeholder. Its representative on the Management and Policy Boards serves as the Chairperson for both boards. FDEP supports TBEP's voluntary, non-regulatory approach to nitrogen management and has determined that it provides reasonable assurance that the nitrogen standard for Tampa Bay will be met without the need to establish a TMDL. Last year FDEP provided over \$1.4-million in Sec 319(h) grants to three of TBEP's partners for stormwater improvements.

FDEP took responsibility for managing the abandoned phosphate chemical plant at Piney Point three years ago and has avoided a potentially catastrophic spill from the facility to the bay. Closure of the first cell of the gypsum stack in early summer 2004 will eliminate the threat of a major spill.

The **Florida Fish & Wildlife Conservation Commission** is represented on the TBEP Management Board and houses TBEP's administrative offices at the Florida Marine Research Institute (FMRI) in St. Petersburg. Scientists and technicians at FMRI have lent their expertise to a variety of research and public outreach projects co-sponsored by TBEP including the Tampa Bay Boater's Guide, one of the program's most popular publications. In addition to its fisheries management responsibilities, the FWC implements a Fisheries Independent Monitoring Program that provides vital information on abundances of juvenile fishes in Tampa Bay from year to year. The FWC also monitors harmful algae blooms, marine mammals and turtles in the bay that all contribute to the CCMP monitoring goals. In its development review capacity, the FWC also helps to ensure that bay and associated uplands are appropriately protected.

REGIONAL AGENCIES

The **Southwest Florida Water Management District (SWFWMD)** has responsibilities for managing water quality and natural systems as well as water use in a 16-county area of southwest Florida, including the entire Tampa Bay watershed. SWFWMD and its four sister agencies in Florida implement the state's Surface Water Improvement and Management (SWIM), Florida's equivalent to the National Estuary Program. SWFWMD, a founding stakeholder of the TBEP, has virtually adopted the CCMP as its SWIM plan for Tampa Bay. The District restores and protects hundreds of acres of estuarine habitat each year in the Tampa Bay watershed, and retrofits thousands of acres of previously developed land with stormwater treatment systems. SWFWMD conducts extensive monitoring of seagrasses in estuaries throughout southwest Florida that provides the data for tracking progress toward TBEP's seagrass restoration goal.

The five Basin Boards of SWFWMD in the Tampa Bay watershed fund one-third of the program's non-federal match for its Sec. 320 grant. SWFWMD staff is active at every level of the TBEP. TBEP and SWFWMD collaborate on outreach and education materials. In its regulatory capacity, SWFWMD links decisions on wetland mitigation to TBEP's wetland restoration goals.

The Tampa Bay Regional Planning Council through its **Agency on Bay Management** was instrumental in having Tampa Bay named to the National Estuary Program in 1990. The ABM receives 20 percent of the revenue from the Tampa Bay specialty license plate, and applies its share to various projects that help to implement the CCMP. ABM and TBEP, for example, each contribute \$20,000 to the production of Bay Soundings, covering news from the estuary and its watershed. The Council will also be sponsoring the upcoming workshop on Low Impact Development, one of the newest actions in the CCMP. The Council also provides a wide range of administrative support services to TBEP.

Universities and community colleges in the bay region serve as partners in a variety of research project and public outreach initiatives. The three-dimensional circulation model developed by USF provides a vital tool for planning oil spill response and has proved useful to TBEP and other programs in assessing flushing rates and patterns of pollutant movements in the bay. USF and community colleges in the area provide bay-related educational tools and programs to students, sometimes with grant support from TBEP.

LOCAL GOVERNMENTS

The counties of **Hillsborough, Pinellas, and Manatee** together with the cities of **Tampa, St. Petersburg, and Clearwater** are founding stakeholders of the TBEP. They are represented at every level in the TBEP and comprise six of the nine positions on the program's Policy Board. Collectively, this group of local governments provides two-thirds of the program's non-federal match for the Sec. 320 grant.

Bay area local governments support CCMP implementation in many ways, but none more important than the vital job of collecting treating, and disposing of wastewater in a manner that minimizes loading of nitrogen and other pollutants to the bay. Through their regulatory programs they help ensure that new development is consistent with CCMP

goals. And, they implement a wide variety of education and outreach programs to reduce non-point source pollution, as well as retrofitting older areas with stormwater treatment systems.

The counties augment SWFWMD and state conservation programs through land acquisition and habitat restoration programs of their own that frequently include estuarine wetlands and associated uplands. The Cooperative Extension Service office in each county provides advice and training to homeowners on how to create bay-friendly landscapes in their yards and neighborhoods through a program created by Florida's NEPs. Local Lakewatch and Pond Watch programs get citizens involved in monitoring and restoring natural and constructed ponds in the Tampa Bay watershed.

Each county and the City of Tampa operate environmental monitoring programs that generate a wealth of water and sediment quality data that the Estuary Program relies upon to track progress toward CCMP water quality goals and periodically update its nitrogen loading/chlorophyll response model. Comparability of water quality data collected from the various programs is assured through a Regional Ambient Monitoring Program (RAMP) established by TBEP and now managed by the member governments. A Tampa Bay Benthic Index has been developed by TBEP with data collected by its local government partners.

CITIZENS AND PRIVATE SECTOR STAKEHOLDERS

Citizens are contributing to CCMP implementation in countless ways including: (1) obtaining Bay Mini-Grants from TBEP (nearly \$100,000 in grants last year alone) to implement cleanup, habitat enhancement, and wildlife protection projects in neighborhoods, schools, and other public areas; (2) serving on the TBEP Community Advisory Committee which in the last two years has greatly expanded opportunities for citizen participation; (4) taking part in TBEP "Give a Day for the Bay" events each quarter, providing outdoor experiences for citizens interested in cleanup and restoration work in the bay and its tributaries; (5) getting training from their local Cooperative Extension Office on how to become a certified "Florida Yard" or Neighborhood; (6) contacting **Tampa BayWatch**, an affiliate of Restore America's Estuaries, and learning of the many bay restoration opportunities available through BayWatch.

The **Tampa Bay Nitrogen Management Consortium** is a public-private partnership created by TBEP to help achieve the nitrogen management goals for Tampa Bay through a voluntary, non-regulatory approach. Representatives from the fertilizer, electric utility and agricultural industries work with their local governments and agency counterparts on cooperative approaches to reducing nitrogen loading to the bay. The success of this unique stakeholder group was instrumental in FDEP's determination that the Tampa Bay Nitrogen Management Strategy provides reasonable assurance that the nitrogen standard for Tampa Bay will be met without the need to establish a TMDL.

BARRIERS TO CCMP IMPLEMENTATION

The Tampa Bay Estuary Program has enjoyed consistently strong support from its local government and agency partners and the Tampa Bay community in general. A governing body committed to restoring the bay, supported by a well-respected program staff; a scientifically-sound and widely adopted CCMP; and the innovative Interlocal Agreement through which the plan is being implemented have provided a solid foundation for a successful bay management program.

Whereas, the program is exceeding or making good progress toward most of the bay restoration goals, there are obstacles that in some instances have already slowed and could further impede progress in implementing the CCMP.

BURDENING PARTNERS WITH REPORTING AND MEETING REQUIREMENTS

The most important contributions TBEP's partners make to the program are the many projects they undertake that help implement the CCMP. TBEP staff is obligated under the Interlocal Agreement and its funding agreement with EPA to track implementation of the partners' projects. When reporting requirements become excessive burden on partners, they pose an obstacle to CCMP implementation.

Because TBEP relies heavily on its partners and committees for advice and technical expertise on a wide range of issues, demands on their time for attendance at meetings and workshops can be significant. To avoid overburdening TBEP's partners with reporting and meeting requirements, staff is working on more efficient ways to collect project implementation data and technical advice on various issues.

AGRICULTURAL INDUSTRY INVOLVEMENT ON NITROGEN MANAGEMENT CONSORTIUM

Runoff from intensive agricultural operations constitutes about 12 percent of the total nitrogen load to the bay and a higher percentage of the load to some bay segments. Greater involvement of the agricultural industry on the Nitrogen Management Consortium will be a factor in sustaining the participation of other members, particularly those from the private sector. Action is being taken through the Consortium to address this issue.

WASTEFUL DUPLICATION OF EFFORT IN COLLECTING AND MANAGING POINT SOURCE DATA

TBEP needs access to reliable data on point source discharges to periodically update its pollutant loading estimates, particularly Total Nitrogen, to Tampa Bay. Agencies responsible for establishing TMDLs and managing water quality would also benefit from access to that data. Whereas this need has been recognized in the CCMP since 1996, no reliable source of point source loading data exists. Absence of a reliable point source database places a large and needless demand on TBEP resources to independently collect loading data from hard-copy Discharge Monitoring Reports, posing a barrier to efficient updating of the TBEP loading model and implementation of the CCMP.

UNDETERMINED CAUSE FOR STUNTED SEAGRASS RECOVERY IN OLD TAMPA

BAY/FEATHER SOUND

Seagrasses are not re-colonizing the Feather Sound region of Old Tampa Bay, an area that supported about 2000 acres of seagrass beds in 1950. Extensive research over the last two years has narrowed the range of potential causes, but has not determined a probable cause. If the cause cannot be identified through further research and subsequently corrected, the long-term goal of restoring roughly 12,000 acres of additional seagrass will be difficult to reach.

FACILITATING COMMUNITY-BASED ENVIRONMENTAL DECISION MAKING

CREATING A COMMUNITY-BASED PROGRAM STRUCTURE

Decision making in the Tampa Bay Estuary Program has been made at the community level from the outset of the program. Six local government officials sit on the nine-member policy making body of the program (originally called the Policy Committee, now called the Policy Board). Five of those officials hold elective office, one is a senior manager. The remaining three members represent EPA, Florida DEP, and the Southwest Florida Water Management District. The original composition of the Policy Committee assured that decision-making at the highest level in the program would be made, for the most part, by individuals knowledgeable of community issues and responsive to community concerns.

Because the community oriented make-up of the Policy Committee had served the program well during the planning phase, the same structure was carried over to the implementation phase. Upon adoption of the Interlocal Agreement that created the Tampa Bay Estuary Program as an independent legal entity, the name "Policy Committee" was change to "Policy Board" to better reflect its new stature.

Strong community presence is reflected in the Management Board and advisory committees that inform the Policy Board's decisions. Eleven of the eighteen members of the Management Board are either citizens or representatives of local governments. All 36 members of the Community Advisory Committee (CAC) are citizens from communities around the bay. And 22 of the 91 active members of the Technical Advisory Committee represent local governments.

EXPANDING THE ROLE OF THE CAC

The CAC is the principal avenue through which citizens influence decision making in the Estuary Program. The opportunity for citizen input to the Program was significantly expanded two years ago when the number of members was increased from 24 to 36. Instead of all members being appointed by Policy Board members (each had three slots), now only 16 members are directly appointed by Board members and 20 are chosen from the community at large based on their interest and qualifications. A sub-committee of the CAC screens applications, and the full committee forwards its recommended appointees to the Policy Board for approval. The result is a better-informed, more involved membership with a larger network in the community.

The CAC elects two co-chairs who represent the CAC on both Management and Policy Boards. Reports from the CAC and TAC are regularly scheduled parts of the Management and Policy Boards meeting agendas. It provides a regular opportunity for the committees to inform the boards of their activities and bring to boards' attention issues, concerns, and recommendations for action. To encourage more interaction between the CAC and TAC, staff arranged joint workshops of the two committees to review proposed revisions to CCMP action plans and recommend appropriate changes.

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During development of the initial CCMP, the CAC played a mainly reactive role in reviewing proposed CCMP actions. In the process of updating the CCMP over the last two years, the CAC has play a more proactive role, and took the lead in developing an action to improve the value of stormwater retention ponds to wildlife.

The Policy Board has entrusted the CAC with the responsibility for reviewing Bay Mini-Grants applications and recommending awards to the Management and Policy Boards. Based on the CAC recommendations, all of which were accepted, TBEP awarded close to \$100,000 in grants this past year. The process vests citizens with a lead role in making spending decisions that will impact the quality of the bay.

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PUBLIC OUTREACH STRATEGY

The Tampa Bay Estuary Program continues to emphasize the importance of environmental education to the long-term health of the bay by providing high-quality outreach materials and programs to create a constituency of informed, involved citizens.

A linchpin of TBEP's outreach program is a 36-member Community Advisory Committee (CAC) composed of area residents from a variety of backgrounds and interests who share a mutual concern for Tampa Bay. The membership is a 50-50 balance of residents appointed to the CAC by Policy Board members, and elected at-large by the CAC members through a general application process. The Committee meets every other month, with field trips and special activities throughout the year.

CAC members advise the Program on appropriate educational strategies and programs, and assist in planning and implementing these efforts.

Outreach activities from 2001-2003 targeted three main areas: boater and angler education, invasive species awareness and promotion of Florida-friendly landscaping techniques for homeowners.

TBEP's Manatee Awareness Coalition (MAC) greatly assisted the Program in implementing boater education strategies, creating the Tampa Bay Manatee Watch and the Manatee-Friendly Neighborhood programs to encourage safe boating and foster a sense of stewardship for the bay's living resources, including manatees and seagrasses.

Partnership is another important component of TBEP's Outreach Strategy. The Program routinely partners with local and state government and non-profit organizations on its educational programs and materials. For example, as part of its "Eyes On The Bay" invasive species awareness campaign, TBEP is coordinating production of a statewide teaching guide on marine invasives, in partnership with The Florida Aquarium, Florida Sea Grant, the state's Water Management Districts, other Florida NEPs, and Florida NERRs.

TBEP's Public Outreach Coordinator also finds numerous partnership opportunities by serving on several education-oriented committees, including The Florida Aquarium Education Committee, the Florida Yards and Neighborhoods Management Committee and the regional NPDES Stormwater Education Task Force.

TBEP's Outreach Strategy is a mix of both innovative, user-friendly **educational materials** and hands-on **public involvement activities**.

Materials produced by TBEP and its partners include:

- A series of Boater's Guides to the Bay and specific bay segments, with maps showing important resources, navigational aids and speed restrictions.

- A series of invasive species prevention and eradication tools, including a field guide to invasive plants, a homeowner's Power Point seminar, and a laminated underwater dive card highlighting known or likely marine invaders.
- A series of teaching aids for middle and high school students, including a Teacher's Guide to Tampa Bay, and a teaching poster highlighting important bay habitats and the animals that depend upon them.

Regular public involvement activities include:

- Quarterly "Give Day For The Bay" workdays to recruit citizens to participate in bay restoration activities, such as salt marsh plantings, artificial reef construction, litter clean-ups and invasive plant removals. The workdays are implemented in partnership with local or state agencies, as well as non-profits, with TBEP coordinating volunteer recruitment and site logistics.
- Implementation of "Estuary Academy," an annual day-long series of lectures and seminars highlighting scientific research in laymen's terms. Estuary Academy allows citizens to be "scientists for a day" through participation in fun workshops taught by area scientists such as marine plant identification, edible native plants or juvenile fish sampling.
- Participation in several area festivals during the year, at which TBEP staff and CAC members distribute outreach materials and answer questions about the bay and TBEP.
- TBEP's Public Outreach Coordinator gives numerous presentations each year on the bay and TBEP, and on specific topics such as invasive species or manatees, to a variety of community groups, including school classes, fishing and boating clubs, neighborhoods, and service clubs.

Another key element of TBEP's Outreach Strategy is the **Bay Mini-Grant Program**, which annually provides grants of up to \$7,500 to community groups, schools and non-profits for projects that help to restore the bay or educate the public about key issues affecting the bay. The Mini-Grant program is now funded solely by revenues from the Tampa Bay Estuary specialty license plate ("Tarpon Tag"), which now provides more than \$100,000 annually for the grants program. These small grants provide substantial benefits by directly involving citizens in efforts to restore and protect Tampa Bay. The Mini-Grants have provided seed funding for pilot projects which have consequently become ongoing, successful stand-alone programs.

A summary of the Bay Mini-Grant recipients for the 2001-2004 time frame is provided in Tab 12 of this review.

DRAFT CCMP FINANCING PLAN

INTRODUCTION

TBEP has historically and will continue to pursue at least eight separate avenues to secure funding or in-kind support to finance operation of the base program and to advance implementation of the CCMP. The financing plan includes a balance of both dedicated and variable funding sources at federal, state, and local levels as well as private and non-profit sources.

FINANCING OBJECTIVES

Support TBEP Base Program

Develop dedicated sources of funding to sustain the base operations of the TBEP, including personnel, administrative cost, community outreach, environmental monitoring, and technical support.

ENHANCE CCMP IMPLEMENTATION

Develop dedicated and variable sources of funding that enhance implementation of the CCMP and maintain adequate progress toward bay restoration goals.

FINANCING STRATEGY

Securing Dedicated Funding Sources

Currently, the following four funding sources provide dedicated or reasonably secure funding to support the base program and/or enhance CCMP implementation.

Federal NEP Funding. Congress has authorized a spending level in Sec. 320 of the Clean Water Act of up to \$35-million each year to support the National Estuary Program. The amount appropriated by Congress for each of the last three year has been level at about \$24.5-million, equating to about \$520,000 for each of the 28 NEPs. For several years prior to that, federal funding for NEPs was about \$310,000 per program.

The Association of National Estuary Programs is urging Congress to fund the NEPs at the full authorized level of \$35-million. In view of the popularity of the NEP within Congress, it is reasonably safe to expect that TBEP will not receive less than \$300,000 each year in federal funding through Sec. 320 CWA.

Funding Commitments in Interlocal Agreement. The Interlocal Agreement through which the CCMP is being implemented obligates local government and agencies partners to fund all TBEP costs approved by the Policy Board in the annual program budget. One-third of the cost is allocated to the Southwest Florida Water Management District (SWFWMD) and two-thirds to the six local government partners. The SWFWMD share is paid equally from five separate river basin boards. When coupled with the federal NEP allocation administered through EPA, local government and agency cash contributions,

which have been level for the past three years, have met or exceeded the amount required to operate the program at the full-service level.

Specialty License Plate. Revenue from the *Tampa Bay Estuary* specialty license plate generated a total of \$145,305 in calendar year 2003, of which \$116,305 was allocated to TBEP for CCMP implementation. Total annual revenue from license plate sales have steadily climbed from \$50,265 in 2000, the first full year of plate sales. Whereas, the TBEP Policy Board has thus far allocated its share of the revenues for Bay Mini-Grant projects, the Board is authorized under the state law that created the Tampa Bay Estuary plate, to use those funds for any types of projects that contributed to CCMP implementation. Bay Mini-Grants generate tens of thousands of dollars in matching funds and in-kind services.

Pinellas County Environmental Fund. PCEF is a partnership of Pinellas County and the National Fish and Wildlife Foundation, created to raise funds for projects that help advance implementation of the CCMP. Over the past five years, PCEF has awarded more than \$4.2-million in grants for projects throughout the bay area that contribute to CCMP implementation. PCEF officials are actively exploring opportunities to increase contributions to the Fund from public and private entities in the Tampa Bay region.

Variable Funding Sources

The following funding sources supplement CCMP implementation through local action plans of TBEP partners, grants, cooperative agreements, and other mechanisms. While variable from year to year, they represent significant funding sources for TBEP and its partners.

Local Action Plans of TBEP Partners. The TBEP Interlocal Agreement calls on each of the 13 signatory parties to develop and periodically update local action plans describing projects they propose to undertake that will help advance CCMP goals. The countless monetary and in-kind expenditures by TBEP's local government and agency partners in the course of implementing their local action plans represent by far the largest source of contributions to CCMP implementation. Habitat restoration and protection projects alone conducted by TBEP partners from 2001 to 2003 improved over 14,000 acres of habitat at a cost of \$100-million. Sustaining TBEP's partners' commitment made in the Interlocal Agreement to achieving the goals of the CCMP through local action plans is arguably the most critical element of this financing strategy.

Contracted Grant Writing Services. Beginning in 2003, TBEP has contracted a professional grant writer to assist TBEP staff and its partners in preparing grant applications for projects that help implement the CCMP. In her first year, the contracted grant writer assisted three TBEP partners in securing over \$1.4-million in 319(h) grants for stormwater management projects. TBEP plans to continue offering these services to its local government and agency partners.

Other Grants and Cooperative Agreements. TBEP staff has partnered with federal, state and local agencies to secure hundreds of thousands of dollars in grants for developing

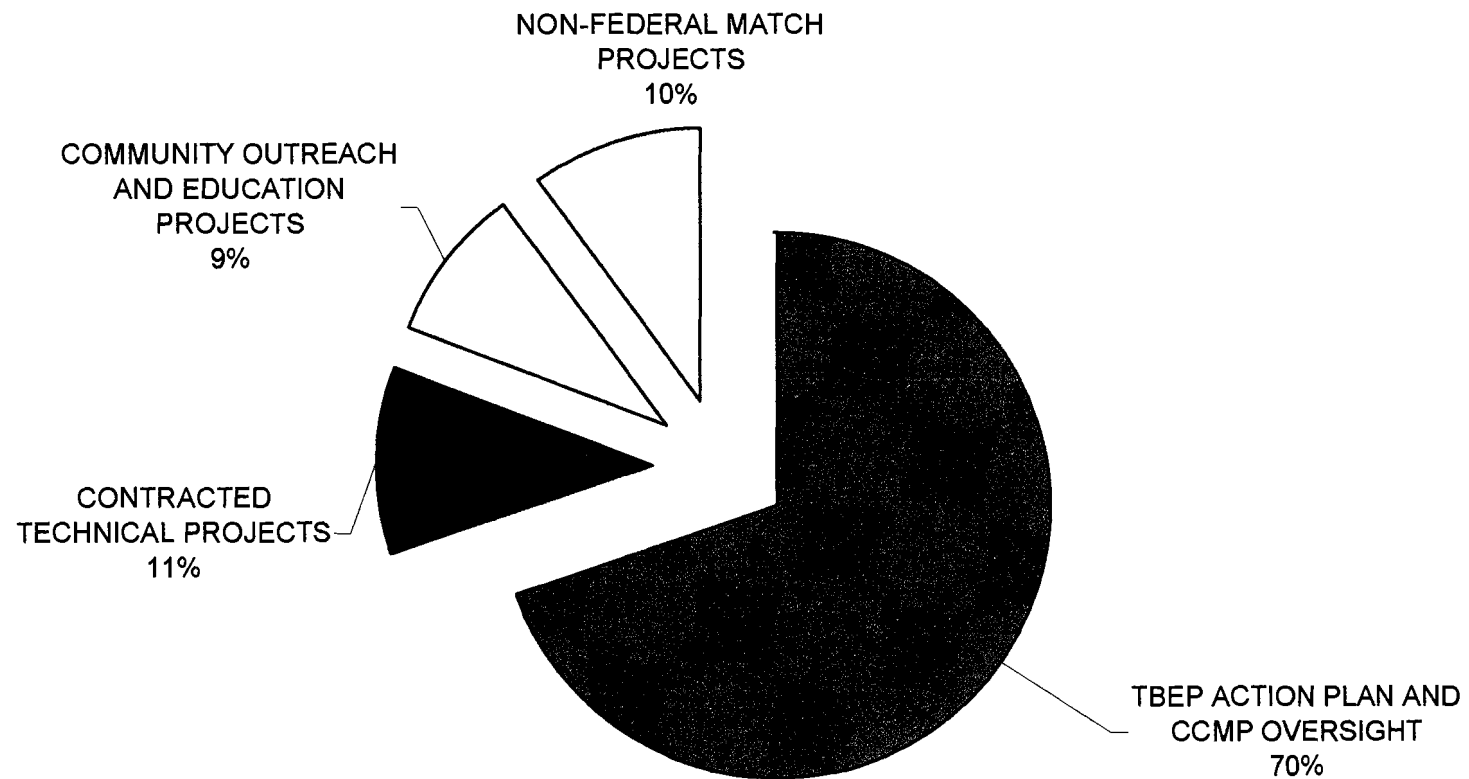
management tools and for research and environmental monitoring projects as called for in the CCMP. TBEP has teamed with local government environmental management departments, EPA, USGS, NOAA, and the ACOE to leverage TBEP funds for priority plans and studies ranging from a dredged material management plan with the ACOE to atmospheric deposition monitoring with EPA to developing an online information atlas of Tampa Bay with the USGS. TBEP will continue to pursue these opportunities as a means of financing priority research, monitoring, and resource management needs.

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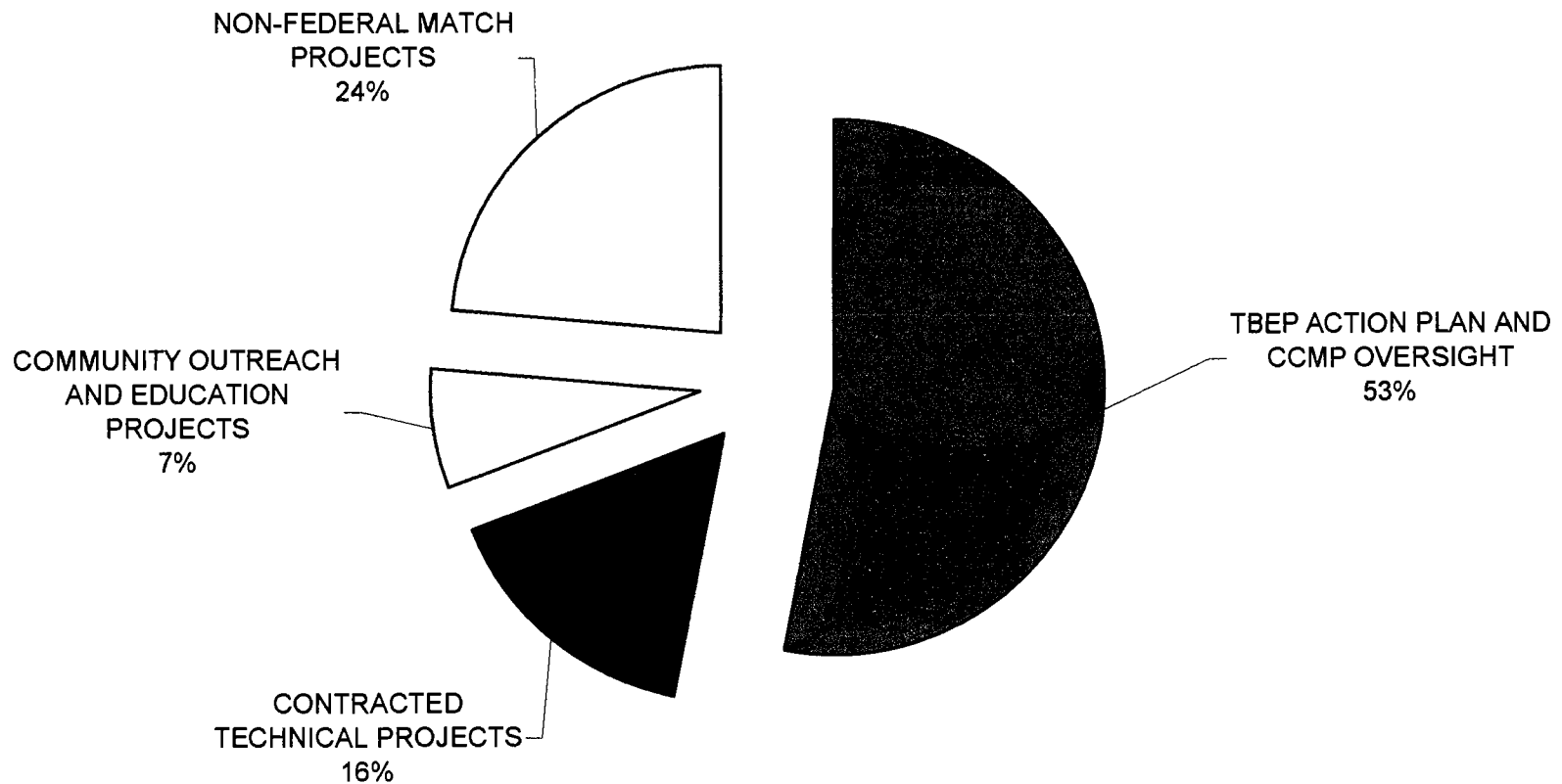
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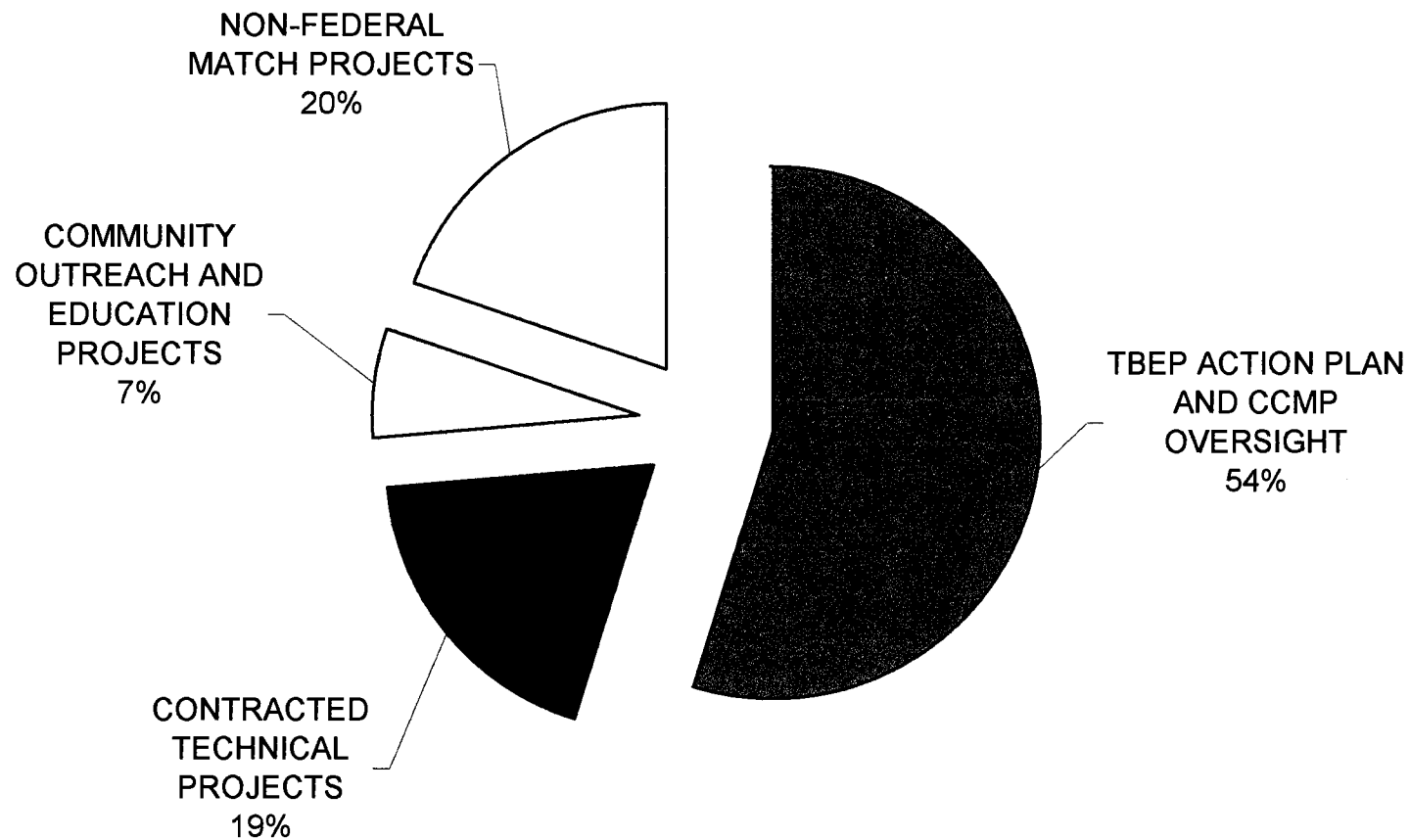
TAMPA BAY ESTUARY PROGRAM PROJECTED EXPENDITURES FEDERAL FISCAL YEAR 2001



**TAMPA BAY ESTUARY PROGRAM
PROJECTED EXPENDITURES
FEDERAL FISCAL YEAR 2002**



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FEDERAL FISCAL YEAR 2003**





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TECHNICAL HIGHLIGHTS, OCTOBER 2001-MARCH 2004

- The **Technical Advisory Committee** finalized reviews of the chlorophyll/light analyses and nitrogen loading estimates (existing and future). During 2000-2001, the TAC reviewed and recommended revisions to each of the five technical reports supporting the Nitrogen Management Strategy, one of TBEP's primary initiatives. The Management and Policy Boards approved the TAC recommendations in spring 2001.
- The **Tampa Bay Atmospheric Deposition Study** group held a 2-day conference June 21-22, 2001. Over 75 scientists and managers (local and national) attended the meeting, with the objectives of providing a review of the first 5 years of monitoring atmospheric deposition to Tampa Bay, and of providing input into the design for the next 5-year period.
- Results of the first 5 years indicate that atmospheric deposition contribution of nitrogen to the bay continues to be between 20-30 % per year, depending upon rainfall amounts. Contribution of other contaminants (heavy metals, PCBs and organic pesticides) to water quality or sediments in the bay from atmospheric sources appears to be negligible (with the possible exception of mercury). Although estimated PAH direct atmospheric deposition rate to Tampa Bay was high enough to indicate a significant anthropogenic contribution, patterns of elevated PAH concentrations in sediments located in highly urbanized areas indicate urban stormwater drainages, not direct atmospheric sources, may be primary contributors. FDEP's Bay Regional Atmospheric Chemistry Experiment (BRACE) was initiated in spring 2001, and FDEP will be assuming funding responsibility of the long-term atmospheric deposition monitoring as well as specific intensive experiments. Presentations from the conference can be viewed at www.hsc.usf.edu/publichealth/EOH/BRACE/TBADS.htm.
- The Army Corps of Engineers and TBEP jointly convenes the **Dredged Material Management Strategy** meeting each year in August. TBEP staff and TAC members are among the groups working to outline a process involving appropriate groups/individuals to take advantage of opportunities for using dredged material in habitat restoration projects over the next 10 years.
- The **Dredged Material Management Strategy workgroup** addressed issues concerning long-term disposal of dredged material in Tampa Bay in summer 2002. Beneficial uses projects have been identified for material to be dredged from the Federal harbors projects for the next three years. These projects include the Harbor Isle Lakes project in St. Petersburg, Cockroach Bay upland shell pit habitat creation, and widening of a littoral shelf at the Port of Tampa in upper Hillsborough Bay.
- A strong focus of this workgroup will be the upcoming **Tampa and St. Petersburg Harbor Re-Evaluation** project requirements for dredged material placement areas over the next 10 years. The U.S. Army Corps of Engineers options for their upcoming Tampa Harbor General Re-evaluation Study include significant new dredging for anchorage areas, passing and turning lanes, creation of a loop channel, and several other

navigational safety improvements. As one of the initial phases of the Re-evaluation, a hydrologic and hydraulic model will be developed. The USGS is interested in the possibility of joining this effort to provide an integrated model (water quality, sediment quality and ecological factors) for Tampa Bay.

- The **Dredge Hole Assessment Project Advisory Group** identified priority dredge holes in the bay for inclusion in the assessment of existing ecological functions of man-made dredge holes, for potential enhancement using beneficial dredged material, artificial reefs, etc. Thirteen were identified by the group for in-depth assessment, including fisheries (using both scientific collection techniques and angler surveys), benthos, water quality and physical characteristics. Sampling will be initiated by the end of the year, and will continue for one year. The Advisory Group will develop specific management recommendations based on data collected for each of the priority holes, which may range from keeping the hole as is, to filling and allowing seagrasses to colonize the surface.
- A **Water Budget Workshop** was held fall 2001. Characterization of a “water budget” for Tampa Bay (freshwater inflows and outflows to and from the Bay, and effects that changes in the water budget may have on the bay’s environmental systems) is a priority issue of the Tampa Bay Estuary Program and its partners. Goals of the Tampa Bay Water Budget Workshop were to determine the current state of knowledge of freshwater inflow and outflow in Tampa Bay, and to identify and prioritize gaps in our knowledge as a first step in characterizing the Tampa Bay water budget. Over 75 scientists and resource managers participated in the two-day workshop.
- A major focus area of Tampa Bay Nitrogen Management Consortium was development of a **Tampa Bay Watershed Management Summary**. This document was provided for the use of FDEP and other watershed stakeholders in demonstrating reasonable assurance that waterbody segments in Tampa Bay which are designated as potentially impaired or verified impaired for nutrients will be maintained or restored. In August 2002, FDEP accepted the technical approach and implementation plan of the Tampa Bay Nitrogen Management Strategy as sufficient to provide reasonable assurance that this process would meet state water quality criteria for nitrogen for Tampa Bay, thus removing Tampa Bay from the need for a TMDL for nitrogen.
- A critical element of the Tampa Bay Watershed Management Strategy is the ability to track TBEP and Consortium member projects and expected nutrient reductions from project implementation. Development of an electronic **TBEP Project Tracking Database** was a major initiative of TBEP staff and Nitrogen Management Consortium members in FFY 2002. All projects submitted through partner Action Plans (1995-2000) have been entered into the database, and partners will be entering their 2001-2004 projects this year.
- Development of **sediment quality targets** is ongoing. Analysis of contamination levels in Tampa Bay, as determined using sediment chemistry and benthic community structure, indicate that a large percentage of the bay is relatively “clean”, with hot spots of contamination occurring in upper Hillsborough Bay, Bayboro Harbor and a few other locations. These results will be used in conjunction with analyses of physical factors

(percent silt/clay, salinity and dissolved oxygen) to develop benthic quality targets for Tampa Bay.

- **The Southwest Florida Seagrass Working Group** continues to grow, and now includes more than 40 active participants from Tampa Bay, Sarasota Bay and Charlotte Harbor. Results from aerial photographs taken in January 2002 estimate that Tampa Bay has experienced a 5% increase (1,237 acres) in seagrass area extent since 1999, indicating partial recovery of the 2,000 acre loss due to El Nino rains in 1999. Total acreage in 2002 was estimated to be 26,078 acres, or about 69 % of the 38,000-acre goal adopted by TBEP partners.
- Intensive water quality and seagrass monitoring and experimental work is ongoing as part of the **Feather Sound seagrass project**. Experimental efforts underway include measuring the expansion of individual seagrass beds over time, examining the effects of sting ray burrowing on the re-establishment of seagrasses by using Ray Excluder Devices (REDS), and estimating the potential impacts of newly discovered freshwater seeps in the Feather Sound area. Initial results of these experiments and monitoring data are due in 2003.
- About 100 people attended the Invasive Species in Florida's Saltwater Systems on November 5-6, 2002. Participants in this interactive, two-day workshop examined the status of invasive species research, outreach and management from national and statewide perspectives. Primary goals of the workshop were to identify key challenges to effective management of saltwater invasives and to initiate development of a strategic plan to guide future research and education efforts in Florida.
- Over 230 researchers, managers and citizens attended the fourth **Bay Area Science Information Symposium**, held October 27-30, 2003. Themes followed the major issues identified in the CCMP: Bay Habitats, Invasive Species, Water and Sediment Quality, Fish and Wildlife, Dredging and Dredged Material Management, and Spill Prevention and Response. Over 80 oral presentations and 70 poster presentations were made. Several priority focus areas were highlighted, including tidal rivers and streams, invasive species, and food web interactions. Presentations are available through the TBEP website, and Proceedings are due mid-2004.
- More than 20 TBEP and TAC members attended **EPA's Technology Transfer Conference, Emerging Technologies, Tools and Techniques to Manage Our Coasts in the 21st Century**, January 28-31, 2003 in Cocoa Beach. The purpose of this national meeting was to examine current and emerging coastal and ocean management tools, techniques and strategies, as well as to consider mechanisms for enhancing our ability over the next 25 years to protect and manage coastal ecosystems in the face of new challenges. TBEP staff members convened a special session on invasive species, and were invited speakers for a TMDL session.
- Approximately 260 scientists, resource managers and regulators attended a **Seagrass and**

Submerged Habitat Restoration Workshop, jointly convened by the four Florida NEPs and held at Mote Marine Laboratory in Sarasota, FL on March 11-13, 2003.

Presentations from more than 70 scientists, engineers and resource managers experienced in the restoration of estuarine and coastal seagrass, hard bottom and tidal creek habitats, impacts from dredging and prop scars, and artificial reefs were included in the three-day workshop. Submerged habitat restoration priorities were identified by the Workshop participants, and have been incorporated into this Workplan.

- The **Regional Ambient Monitoring Program** continues to meet on a quarterly basis, to conduct a round-robin sample analyses evaluation and discuss water quality laboratory issues. This group, now in its tenth year, is continuing to provide quality assurance measures to ensure comparability between laboratories around the bay area and now includes laboratories from throughout southwest Florida. In addition to laboratory QA, RAMP participants are addressing certification requirements for meeting TMDL reporting criteria.
- More than 15 TAC members attended and made presentations at the international **Estuarine Research Federation** conference in Seattle, WA, September 15-19, 2003. Tampa Bay continues to be a featured estuary at ERF, and applied research and resource management from the Tampa Bay area is considered by the estuarine scientific community to be among the best in the world. Holly Greening is currently serving on the ERF Governing Board.

TBEP TECHNICAL REPORTS 2001-2003

Twenty-seven technical reports were produced by the Tampa Bay Estuary Program in 2001-2003, and are listed below. Included in the technical products during this time period are two workshop proceedings (*Water Budget Workshop for Tampa Bay* and *Seagrass Management: It's Not Just Nutrients!*), the 2002 Tampa Bay Baywide Environmental Monitoring Report, and a series of reports detailing results of the goals and targets review completed in 2000-2001.

All TBEP Technical Publications are now available on-line at the Tampa Bay Digital Library, developed and maintained by the US Geological Survey working cooperatively with TBEP and other local partners. The Tampa Bay Digital Library can be accessed through the TBEP website at www.tbep.org.

Survey of the Distribution of the Marine Slime Mold *Labyrinthula* sp. in the seagrass *Thalassia testudinum* in the Tampa Bay Area, Fall 1999- Fall 2000. 2001. Technical Report #01-01 of the Tampa Bay Estuary Program. Prepared by the Florida Fish and Wildlife Conservation Commission Florida Marine Research Institute (B. Blakesley, P. Hall, D. Berns, J. Hyniova, M. Merello, and R. Convoy).

Tampa Bay Interagency Seagrass Monitoring Program: Seagrass Species Distribution and Coverage Along Fixed Transects 1997-2000. 2001. Technical Report #02-01 of the Tampa Bay Estuary Program. Prepared by City of Tampa Bay Study Group (W.M. Avery and J.O.R. Johansson).

Healthy Beaches Tampa Bay: Microbiological Monitoring of Water Quality Conditions and Public Health Impacts. 2001. Technical Report #03-01 of the Tampa Bay Estuary Program. Prepared by College of Marine Sciences, University of South Florida (J.B. Rose, J.H. Paul, M.R. McLaughlin, V.J. Harwood, S.Farrah, M.Tamplin and G.Lukasik).

NOTE: The following seven reports are available on one CD entitled "Tampa Bay Water Quality Evaluation and Modeling, 1974-1998".

An Analysis of Long-Term Trends in Tampa Bay Water Quality. 2001. Technical Report #04-01 of the Tampa Bay Estuary Program. Prepared by Janicki Environmental, Inc. (A. Janicki, R. Pribble, M. Winowitch).

Estimates of Total Nitrogen, Total Phosphorus, Total Suspended Solids, and Biochemical Oxygen Demand Loadings to Tampa Bay, Florida. 2001. Technical Report #05-01 of the Tampa Bay Estuary Program. Prepared by Janicki Environmental, Inc. (R. Pribble, A. Janicki, H. Zarbock, S. Janicki and M. Winowitch).

Tampa Bay Estuary Program Model Evaluation and Update: Chlorophyll a-Light Attenuation Relationship. 2001. Technical Report #06-01 of the Tampa Bay Estuary Program. Prepared by Janicki Environmental, Inc. (A. Janicki and D. Wade).

Tampa Bay Estuary Program Model Evaluation and Update: Nitrogen Load-Chlorophyll a Relationship. 2001. Technical Report #07-01 of the Tampa Bay Estuary Program. Prepared by Janicki Environmental, Inc. (A. Janicki and D. Wade).

Model-Based Estimates of Total Nitrogen Loading to Tampa Bay: Current Conditions and Updated 2010 Conditions. 2001. Technical Report #08-01 of the Tampa Bay Estuary Program. Prepared by Janicki Environmental, Inc. (A. Janicki, R. Pribble, H.Zarbock, S. Janicki, and M.Winowitch).

Estimation of the Spatial and Temporal Nature of Hypoxia in Tampa Bay, Florida. 2001. Technical Report #09-01 of the Tampa Bay Estuary Program. Prepared by Janicki Environmental, Inc. (A.J. Janicki, R. Pribble, and M.Winowitch).

Tampa Bay Estuary Program Tracking Progress Toward Its Nitrogen Management Goals: Fifth Year Assessment of Bay Water Quality Indicators and Models. 2001. Technical Report #10-01 of the Tampa Bay Estuary Program. Prepared by Janicki Environmental, Inc. (A. Janicki).

Assessing the 2000 Chlorophyll *a* and Light Attenuation Conditions in Tampa Bay: Tracking Progress Toward TBEP Goals. 2001. Technical Report #11-01 of the Tampa Bay Estuary Program. Prepared by Janicki Environmental, Inc. (A. Janicki and R. Pribble).

Survey Research on Florida Boaters and Manatee Management. 2000. Technical Report #12-01 of the Tampa Bay Estuary Program. Prepared by Department of Wildlife Ecology and

Conservation, University of Florida for the Florida Fish and Wildlife Conservation Committee (S.Jacobson and S. Aipanjiguly).

Status of Tampa Bay Sediments: Polycyclic Aromatic Hydrocarbons, Organochlorine Pesticides, and Polychlorinated Biphenyls (1993 and 1995-1999). 2002. Technical Report #01-02 of the Tampa Bay Estuary Program. Prepared by the Environmental Protection Commission of Hillsborough County (S.A. Grabe and J.Barron).

Water Budget Workshop for Tampa Bay: Presentations and Workshop Summary, December 4-5, 2001. 2002. Technical Report #02-02 of the Tampa Bay Estuary Program. Includes CD of presentations. Prepared by TBEP staff (H. Greening and M. Cladas).

Tracking Chlorophyll-a and Light Attenuation in Tampa Bay: Application to 2001 Data. 2002. Technical Report #03-02 of the Tampa Bay Estuary Program. Prepared by Janicki Environmental, Inc. (A. Janicki and R. Pribble)

Seagrass Management: It's Not Just Nutrients! Proceedings of a Symposium August 22-24, 2000, St. Petersburg, Florida 2002. Technical Report #04-02 of the Tampa Bay Estuary Program. Edited by H. Greening. 246 p.

Tampa Bay Sediment Quality Targets Physical Parameters Assessment. 2002. Technical Report #05-02 of the Tampa Bay Estuary Program. Prepared by Janicki Environmental, Inc.

Tampa Bay Baywide Environmental Monitoring Report. 2002. Technical Report #06-02 of the Tampa Bay Estuary Program. Prepared by the Tampa Bay environmental monitoring groups. (R.J. Pribble, A. J. Janicki, and H. Greening, eds).

Evaluating the Effects of Offshore Sandbars on Seagrass Recovery and Restoration in Tampa Bay Through Ecological Forecasting and Hindcasting of Exposure to Waves. 2002. Technical Report #07-02 of the Tampa Bay Estuary Program. Prepared by NOAA NOS Center for Coastal Fisheries and Habitat Research. (M.S. Fonseca, B.D. Robbins, P.E. Whitfield, L.Woods, and P.Clinton).

Atmospheric Deposition of Nitrogen and Air Toxins to the Tampa Bay Estuary. 2002. Technical Report #08-02 of the Tampa Bay Estuary Program. Prepared by University of South Florida College of Public Health (N. Poor).

Data Summary from the Tampa Bay Interagency Seagrass Monitoring Program Through the Year 2001. 2002. Technical Report #09-02 of the Tampa Bay Estuary Program. Prepared by City of Tampa Bay Study Group (W. Avery and R. Johansson).

An Ecosystem-based Framework for Assessing and Managing Sediment Quality Conditions in Tampa Bay, Florida. 2002. Technical Report #10-02 of the Tampa Bay Estuary Program. Prepared by MacDonald Environmental Services Ltd. (D.D. MacDonald, D.E. Smorong, and R.A. Lindskoog).

Tampa Bay Benthic Monitoring Program: Status of Hillsborough Bay: 1993-1998. 2002. Technical Report #11-02 of the Tampa Bay Estuary Program. Prepared by Environmental Protection Commission of Hillsborough County. (S.A. Grabe, D.J. Karlen, C.M. Holden, B. Goetting, and T. Dix).

Tracking Chlorophyll-*a* and Light Attenuation in Tampa Bay: Application to 2002 Data. 2003. Technical Report #01-03 of the Tampa Bay Estuary Program. Prepared by Janicki Environmental, Inc. (A. Janicki, R. Pribble, and M. Winowitch).

Evaluation of Changes in Total Nitrogen Loadings to Tampa Bay due to Expected Nitrogen Air Emissions Reductions. 2003. Technical Report #02-03 of the Tampa Bay Estuary Program. Prepared by Janicki Environmental, Inc. (R. Pribble, A. Janicki, and M. Winowitch).

Data Summary from the Tampa Bay Interagency Seagrass Monitoring Program through the Year 2002. 2003. Technical Report #03-03 of the Tampa Bay Estuary Program. Prepared by the City of Tampa Bay Study Group (W. Avery and R. Johansson).

Nitrogen Loadings to Tampa Bay: Model Based Estimates of 1998 and 2010 Loads to Major Basins, and TN Load Reduction/Preclusion Apportionment. Technical Report #04-03 of the Tampa Bay Estuary Program. Prepared by Janicki Environmental, Inc.

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HOLLY GREENING'S NATIONAL ACTIVITIES

- Member, National Academy of Sciences National Research Council panel "Causes and Management of Coastal Eutrophication", 1998-2001
- Governing Board, Estuarine Research Federation, 2001-2005
- Member, National Academy of Sciences National Research Council panel "National Needs for Coastal Mapping and Charting", 2002-2003
- Member, Coastal States Organization Science Work Group, 2003-2004
- Member, National Steering Committee for EPA Coastal Assessment Program (EMAP) 2002-2004
- Member, Science Program 5-Year Review for EPA Gulf Ecology Laboratory, 2003

SELECTED PUBLICATIONS, 2001-2003

Greening, H.S. ed. 2002. Proceedings, Seagrass Management, It's Not Just Nutrients! Symposium held August 22-24, 2000; St. Petersburg, FL. 246 pp.

Greening, H. and C. Elfring. 2002. Local, state, regional and federal roles in coastal nutrient management. Estuaries; Vol. 25, No 4b, p 838-847 .

Greening, H. and B.D. DeGrove. 2001. Implementing a Voluntary, Nonregulatory Approach to Nitrogen Management in Tampa Bay, FL: A Public/Private Partnership. IN: Optimizing Nitrogen Management in Food and Energy Production and Environmental Protection: Proceedings of the 2nd International Nitrogen Conference on Science and Policy. TheScientificWorld; 1(S2), 378-383..

Greening, H. 2001. Nutrient Management and Seagrass Restoration in Tampa Bay, Florida, USA. InterCoast; Fall 2001.

Stacey, P.E., H.S. Greening, J.N. Kremer, D. Peterson and D. A. Tomasko. 2001. Contributions of Atmospheric Nitrogen Deposition to U.S. Estuaries. IN: Nitrogen Loading in Coastal Water Bodies: An Atmospheric Perspective, Coastal and Estuarine Studies Vol. 57. R. Valigura, editor. American Geophysical Union Books.

Poor, N., R. Pribble, and H.Greening. 2001. Direct wet and dry deposition of ammonia, nitric acid, ammonium and nitrate to the Tampa Bay Estuary, FL, USA. Atmospheric Environment 35 (2001), 3947-3955.

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PUBLIC OUTREACH ACCOMPLISHMENTS

The Tampa Bay Estuary Program continues to emphasize the importance of environmental education to the long-term health of the bay by providing high-quality outreach materials and programs to create a constituency of informed, involved citizens. This mission is aided by numerous partnerships with governmental, non-profit and private sector organizations, as well as an active Community Advisory Committee composed of residents from a variety of backgrounds and interests who share a common concern for the future of the bay.

Outreach activities from 2001-2003 targeted three main areas: boater and angler education, invasive species awareness and promotion of Florida-friendly landscaping techniques for homeowners. In addition, TBEP continued to provide information and educational materials addressing a broad spectrum of issues affecting Tampa Bay. Highlights of the three major focus areas are as follows:

BOATER AND ANGLER EDUCATION

Manatee Awareness Coalition and Manatee Watch

TBEP continued to be a leader in promoting safe boating principles that respect and protect important bay resources such as manatees, seagrasses, colonial waterbirds and fisheries. A major initiative was a community-based monitoring and education program, Tampa Bay Manatee Watch. This program was developed by TBEP's Manatee Awareness Coalition -- a diverse advisory group that serves as a regional clearinghouse for manatee-related issues -- to provide on-water outreach to area boaters utilizing a trained volunteer corps coordinated by Tampa Bay Watch.

An important component of Manatee Watch was a scientifically designed research program that sought to assess the effectiveness of education in persuading boaters to slow down in shallow areas where seagrasses grow and manatees feed and rest. Trained volunteers also were utilized in this monitoring effort, which was designed and implemented by the Florida Marine Research Institute.

More than 150 volunteers participated in Manatee Watch during its 3-year pilot period, either as outreach volunteers or research assistants. The outreach crews distributed more than 3,000 Safe Boating Kits containing important tools such as polarized sunglasses, nautical charts and boat decals containing manatee protection tips, both at area boat ramps and on the water from a specially equipped pontoon boat. The research assistants worked with manatee biologists to record boater compliance with voluntary go-slow zones compared with compliance in mandatory (regulatory) go-slow zones.

Manatee Watch ended in 2003. Preliminary results indicate that regulatory zones were more effective than a combination of voluntary zones and education in altering boater behavior. However, the research also highlighted ways in which educational strategies could be revised, such as providing direct outreach to waterfront homeowners with private docks. The research also pointed to the need for education of boaters new to Florida or new to boating.

To help address these specific educational needs, the MAC in 2003 created the Manatee Friendly Neighborhood program. This program recognized waterfront communities that perform a minimum number of community projects designed to promote manatee and seagrass protection, as well as create a sense of stewardship for the bay in general. Attractive signs are presented to participating neighborhoods that can be posted at the entrance to that community. The first Manatee Friendly Neighborhood, Coquina Key in St. Petersburg, was designated in 2003.

Also during the 2001-2003 periods, the MAC created a program aimed at reaching new boaters. The "Minute for Manatees" program consists of a series of brief messages about safe boating in manatee and seagrass habitat for use in the U.S. Coast Guard Auxiliary Safe Boating Course program. The MAC partnered with two local Coast Guard Auxiliary flotillas, one in Tampa and one in St. Pete, to develop and implement a pilot of this program.

Tampa Bay Ethical Angler Wallet Card and Related Materials

In addition to the substantial efforts directed at educating boaters about manatee and seagrass habitats, TBEP also created a special product targeting sport fishermen in the bay. The "Tampa Bay Ethical Angler Wallet Card" provides bag and size limit information for 12 of the most popular sportfish in Tampa Bay. The card also provides tips for environmentally friendly angling and important phone numbers to call to report fisheries violations, injured manatees or fish kills. Printed on water-resistant paper, the Wallet Card can be folded to fit inside a shirt pocket, wallet or tackle box. The Card has proven to be among the most popular products ever produced by TBEP, with 16,000 distributed in 2003, the first year it was available.

TBEP also distributed EPA's "Healthy Eating of the Fish You Catch" brochure in several languages (English, Spanish, Vietnamese and Korean), and helped to fund and distribute Spanish and English versions of a brochure called "Which Would You rather Catch?" highlighting the threats posed to marine life by carelessly discarded monofilament line.

TBEP also provided funding and distribution assistance for the Clean Boating Habits booklet developed by the Florida Department of Environmental Protection and the Florida Marine Industries Association. The booklet offers advice on proper fueling, solid waste, sewage and fish waste management for boaters, as well as tips on how to prevent the spread of invasive species by boats.

Boater's Guides

TBEP supported the production of three new Boaters' Guides during the 2001-2003 review periods. These guides, to Hillsborough Bay, Boca Ciega Bay and Clearwater Harbor/St. Joseph Sound, serve as a companion to the larger Tampa Bay Boater's Guide, providing detailed navigational and resource protection information for specific segments of the bay.

These guides were created in partnership with a variety of local governments and non-profit organizations, with production coordinated by Audubon of Florida's Coastal Islands Sanctuaries program.

“EYES ON THE BAY” INVASIVE SPECIES CAMPAIGN

In 2001, TBEP launched a comprehensive outreach program designed to prevent future accidental introductions of invasive species. This campaign, “Eyes On The Bay,” seeks to increase citizen awareness of the problems caused by invasive plants and animals; inform them about ways they can prevent introductions of invasives; and enlist their help in monitoring bay waters for current or likely invaders.

Key elements of “Eyes On The Bay” initiated or completed during the 2001-2003 Implementation Review period include:

- Development of an extensive section on TBEP’s website (www.tbep.org) devoted to invasive species, including resources for information, photos and an index of educational materials.
- Creation of two slide presentations for community groups, one focusing on invasive plants frequently found in the home landscape and one addressing marine plants and animals.
- Co-sponsorship, with Florida Sea Grant, of the first workshop on invasive species in marine waters ever held in Florida, in November 2002. The workshop brought together more than 100 scientists, managers and educators to discuss and prioritize research and outreach needs and foster cooperation in achieving agreed-upon goals.
- Partial funding of the first exhibit on marine invasives at a major public aquarium in the United State. “Invaders!” opened in May 2002 at The Florida Aquarium; more than 350,000 people toured the exhibit in its first year.
- Creation of a laminated dive card (“Divers Alert!”) highlighting eight known or likely invaders to Florida marine waters. The card is designed to be used by recreational divers; a toll-free hotline and the USGS website are provided to report sighting of any of the species listed on the card. The card was developed in partnership with Florida Sea Grant and the University of Central Florida.
- Sponsoring a Student Conference at The Florida Aquarium that paired 75 middle and high school students with local scientists to discuss problems associated with invasive species, and potential solutions.

In addition, TBEP’s Public Outreach Coordinator chaired a session on invasive species at EPA’s Technology Transfer Conference in Cocoa Beach in January 2003, and participated in the local interagency Invasive Species Task Force.

FLORIDA-FRIENDLY LANDSCAPING

TBEP, along with the Sarasota Bay NEP, jointly created the Florida Yards & Neighborhood Program a decade ago to encourage homeowners to reduce fertilizer, pesticide and water use on their lawns by planting native plants, grouping plants according to their watering and soil needs, and incorporating Florida-friendly design features such as swales and rain barrels.

FY&N has been one of the most dramatic success stories for the Florida NEPs. The program is now administered by the University of Florida's Cooperative Extension Services, and with local coordinators in 54 of Florida's 67 counties. Although funding is no longer needed from TBEP on a regular basis, the Estuary Program continues to promote FY&N concepts as one of the most economical and effective ways homeowners can protect Tampa Bay.

From 2001-2003, TBEP has:

- Distributed more than 2,000 FY&N workbooks and FY&N guides to homeowners
- Reprinted and distributed 20,000 Tampa Bay Repair Kits, which provide practical tips on landscaping, non-toxic cleaning and gardening solutions, and recycling, along with a complete reference directory of applicable organizations by county from which to seek additional information.
- Provided funding for Hillsborough County's Junior Master Gardener Program, which teaches kids the basics of eco-friendly gardening. This funding included production of Junior Master Gardener workbooks in both English and Spanish.
- Distributed the "Waterfront Property Owners Guide" produced by the Florida Department of Environmental Protection
- Provided funding to expand the Adopt-A-Pond program to Pinellas County. Piloted in Hillsborough County, Adopt-A-Pond teaches homeowners how to properly care for their stormwater ponds to improve water quality and enhance wildlife habitat. Expanding the Adopt-A-Pond program to all three Tampa Bay counties is a new goal of the TBEP approved as part of the revision of the CCMP.

ADDITIONAL OUTREACH PROGRAMS AND MATERIALS

Give A Day For The Bay

In conjunction with TBEP's 10th anniversary in 2001, the Program began a series of volunteer workdays called "Give A Day For The Bay." These workdays enlist community volunteers to perform a variety of bay restoration and improvement projects. TBEP recruits and provides supplies for the volunteers, while partnering agencies and organizations provide any heavy equipment and support personnel needed (such as chain saw operators).

TBEP now sponsors an average of four "Give A Day" workdays each year, annually recruiting up to 500 community volunteers. Workdays conducted in the 2001-2003 time frame included Brazilian pepper removal at E.G. Simmons County Park in Ruskin and McKay Bay Nature Park in Tampa; reef ball installation in Tampa; planting of native trees at Terra Ceia Preserve in Manatee County; litter cleanups in Largo and in southern Hillsborough County; and planting of sea oats to stabilize dunes at Fort DeSoto Park in St. Petersburg.

Wildlife of Tampa Bay Field Identification Cards

TBEP and Tampa Audubon Society partnered in the development of laminated field identification cards for common plants and animals of the bay watershed. Color illustrations of more than 150 birds, fish, mollusks, reptiles, mammals, and plants are featured on the card, which is provided to students and citizens attending guided nature tours of area parks and

preserves.

Bay Soundings

TBEP is a major partner in the production of *Bay Soundings*, a quarterly tabloid dedicated to news about Tampa Bay and its watershed. *Bay Soundings* has taken the place of TBEP's own newsletter Bay Guardian, and now has a distribution of nearly 15,000 – including area libraries, college campuses, and bait and tackle shops. *Soundings* was first published in the Spring of 2002. It features informative articles about current issues affecting the bay; point-counterpoint perspectives on hot topics, a children's page, and features on interesting places and people around the bay.

With its high-quality writing, color photos and eye-catching graphics, *Soundings* has become a key educational tool for reporting progress in bay restoration to the public, and for sharing scientifically-based information in a non-technical, reader-friendly style.

THE LOCAL RULE REVIEW COMMITTEE

TBEP's Public Outreach Coordinator took on a significant additional responsibility in the summer of 2003, when she served as the Chair of a Local Rule Review Committee examining the state's proposed new manatee speed zones in Tampa Bay.

The proposed new zones were mandated as the result of the settlement of a lawsuit against the state by several environmental organizations. However, before the zones could be adopted, the Florida Legislature passed a rule requiring review of any new state manatee zones by a local advisory committee composed evenly of manatee advocates and waterway users.

Members of TBEP's Manatee Awareness Coalition were asked by the state to consider serving as a joint rule review committee representing all three counties. MAC members agreed that this role would be consistent with their mission, and the counties designated the MAC as the formal Local Rule Review Committee for Tampa Bay, with TBEP's Public Outreach as the neutral facilitator and staff coordinator.

By law, the Local Rule Review Committee had 60 days in which to complete its review of the state proposal and prepare recommendations. The Committee met for more than 25 hours in six separate meetings over a 5-week period, and held one public forum that was attended by nearly 600 people. TBEP's Public Outreach Coordinator provided all logistical and administrative support for the Committee, produced minutes of all meetings, prepared press releases about the committee, and responded to more than 500 requests for information from citizens and organizations interested in the LRRC process. She also prepared a final report summarizing the LRRC recommendations, which was submitted to the state by the Sept. 15, 2003 deadline. The state has indicated it will accept and implement many of the committee's recommendations.

While this task consumed an extraordinary amount of time, it proved highly worthwhile for the Program as a meaningful demonstration of the important facilitation role that NEPs can play in bringing together interests from opposing viewpoints to seek common ground.

TBEP'S COMMUNITY ADVISORY COMMITTEE

TBEP's mission is aided by a Community Advisory Committee composed of residents from a variety of backgrounds and interests who share a common concern for the future of the bay.

The CAC was dramatically expanded in FFY 02, doubling in size from 18 to 36 members. The expansion was accomplished by a general solicitation of new members through press releases and listserv postings. The expansion served to further diversify the membership of the committee and offer more residents a chance to participate in bay management efforts. Policy Board members still retain the right to appoint up to two (2) members to the CAC.

CAC members embarked on a series of TBEP-sponsored field trips to familiarize themselves with the bay and important aspects of bay restoration. From 2001-2003, trips were taken to the Florida Marine Research Institute, Cargill Fertilizer, and the new desalination plant in Apollo Beach. A boat tour of Hillsborough Bay also was offered and was attended by more than 40 CAC members and their families.

CAC members continued to serve as judges for the Bay Mini-Grants program, which awarded more than \$350,000 from 2001-2003 to community groups for bay improvement projects. A Mini-Grants subcommittee of the CAC was formed in 2002 and continued through 2003. The committee spearheaded a substantial and excellent revision of the Bay Mini-Grant application and evaluation procedures to streamline and clarify the process.

The CAC also provided valuable input on revisions to the CCMP, including developing several new actions related to management and operation of stormwater ponds that were approved for inclusion in the CCMP. Additionally, several CAC members served on subcommittees of the Technical Advisory Committee examining specific aspects of the CCMP in greater detail.

Divers Alert!

Report Marine Invaders

1-877-STOP-ANS



The species below are already present in Florida waters:

Green Mussel

Perna viridis

Florida Locations:

Tampa Bay (1999) to Charlotte Harbor (2002), St. Augustine to Ponce de Leon Inlet (2002)

Suspected Vector:

ballast water release from ship

Description: Green mussels in the United States were first reported from Tampa Bay, where they clogged the intake pipes at several power plants during the summer of 1999. Since then, these mussels have spread south (probably larvae drifting on currents) and to the east coast of central Florida (possibly in ballast water or on ship hulls). Green mussels grow to 7 inches (18 cm), their shells are brilliant to dark green, and they survive best in saltwater (salinity of 27–33 ppt).

Description: Thousands of basketball-size Australian spotted jellyfish were seen in the Gulf of Mexico during the summer of 2000. In many areas, the jellyfish were packed so tightly that fishing gear was damaged and trawling was impossible. The bell of this jellyfish is white (semi-transparent to opaque) with bright white spots. Frilly tentacles extend below the bell. The Australian spotted jelly has a very mild sting.

Australian Spotted Jellyfish

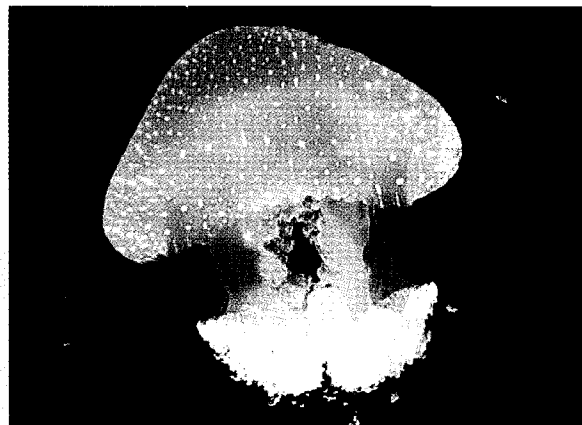
Phyllorhiza punctata

Florida Locations:

Gulf of Mexico (2000), Indian River Lagoon (2001)

Suspected Vector:

ship ballast or hull fouling



Caulerpa

Caulerpa brachypus

Florida Locations:

Palm Beach County (2002) to Fort Pierce (2003)

Suspected Vector:

aquarium release or ballast water from ship

Description: *Caulerpa brachypus* produces small, undivided, elongate to oval fronds (blades) that are up to 1.25 inches (3 cm) long and less than 0.5 inches (1.3 cm) wide. The fronds are attached to a green, creeping stem (rhizome or stolon). This plant grows on rocks or in sediments down to 100 feet (30 m). It can overgrow corals and seagrasses. *C. brachypus* resembles both a native *Caulerpa* and the rare Johnson's seagrass, so divers should not collect specimens.

Description: The spectacular lionfish grows to 17 inches (43 cm). It has distinctive white and red stripes, fleshy tentacles around its face, fanlike pectoral fins, and 13 dorsal spines that contain extremely painful, but generally non-fatal, venom. This fish inhabits turbid lagoons and reefs down to 180 feet (55 m). It is generally found under ledges and feeds on small crustaceans and fishes. It spends most of its daylight hours immobile and may not swim away when disturbed. Instead, it may point its dorsal spines toward the intruder.

Indo-Pacific Lionfish (Red Lionfish)

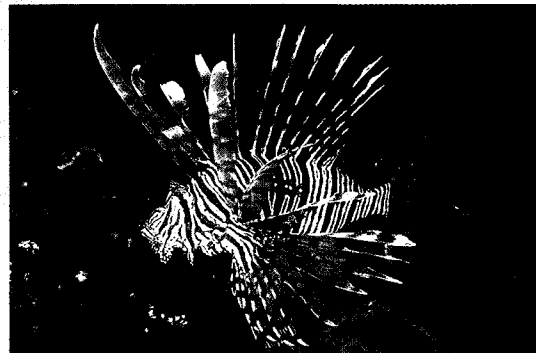
Pterois volitans

Florida Locations:

Miami area (early 1990's), Jacksonville (2002)

Suspected Vector:

home aquarium releases



The species on this side are likely to invade soon:



Veined Rapa Whelk

Rapana venosa

Vulnerable Locations:
sandy bottom areas in
northeast Florida

Description: Native to Asia, the veined Rapa whelk was first reported along the U.S. East Coast (near Cape Hatteras) in 1996. Rapa whelks may have been introduced via ballast water discharge masses associated with marine farming. Larvae of this whelk will probably feed on oyster, clam, and scallop. In Cape Hatteras, adult whelks are reported to have caused them to consume large numbers of oyster, scallop, and other shellfish.

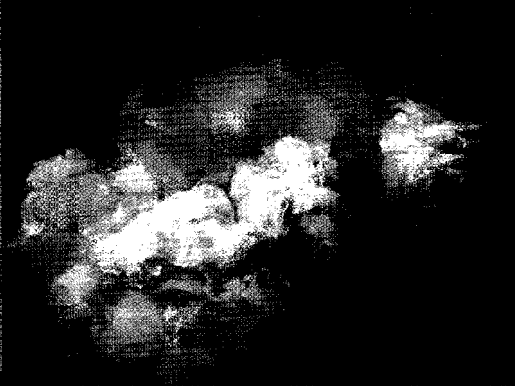
Description: In 1984, *Caulerpa taxifolia* was accidentally introduced into the Mediterranean Sea. It now dominates these shorelines by overgrowing native plants and animals, which has caused local fishing and tourism to plummet. This plant was discovered in California in 2000 and in Australia in 2001, and both areas are spending millions of dollars on eradication. A native *C. taxifolia* strain occurs in the Florida Keys; only the Mediterranean (or aquarium) strain is a problem.

Feather Caulerpa

Caulerpa taxifolia

**Mediterranean strain
(or aquarium strain)**

Vulnerable Locations:
all marine waters where
aquarium dumping
occurs



Carnivorous Jellyfish (or Big Pink Jellyfish)

Physalia physalis

Vulnerable Locations:
Gulf coast. Huge
numbers were recorded
in the Gulf of Mexico
in the fall of 2000.

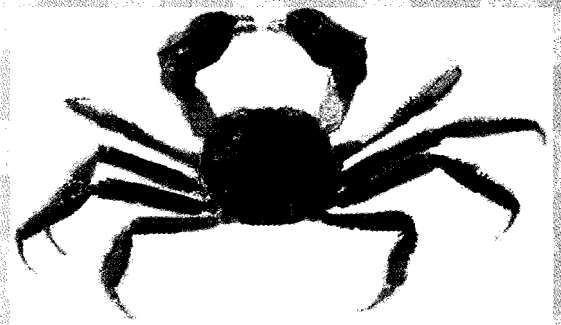
Description: Pink, carnivorous jellyfish reach 12-15" (30 cm) in diameter and their dense pack of tentacles can stretch to 20 feet (6 m). Pink jellyfish often float upside down to the surface of the water. Their stinging ranges from mild to severe in the Gulf of Mexico. Pink jellyfish commonly are moon jelly in April and June. This jellyfish may have been swept into the Gulf by currents coming north from Caribbean waters.

Description: Chinese mitten crabs were first recorded in San Francisco Bay in 1992, and they have spread both north and south in California. Chinese mitten crabs have also been sighted in Lake Erie and the waters of Louisiana. The common name for these crabs comes from the distinctive, hairy "mittens" on their front claws. Adults average 3 inches (8 cm) across their backs (carapaces). Mitten crabs spend most of their life in freshwater, and adults migrate to saltwater to reproduce. A single adult female can produce up to 1 million larvae that can be spread by ocean currents for up to 2 months.

Chinese Mitten Crab

Eriocheir sinensis

Vulnerable Locations:
freshwater and estuarine
areas in northern half of
the state



Produced by the Tampa Bay Estuary Program

(727) 893-2765 • www.tbep.org



Lionfish photo courtesy of Bishop Museum, Hawaii. Rapa whelk photo courtesy of U.S. Geological Survey. *Caulerpa brachypus* photo courtesy of the South Florida Water Management District. Spotted jellyfish and carnivorous jellyfish images belong to Dauphin Island Sea Lab. *Caulerpa taxifolia* photo by Dr. Linda Walters.

Seagrasses are vital nursery and feeding areas for fish and other marine animals. Please protect them.

If you run aground or enter grass flats to fish, stop your motor, tilt it up, and pole or push your boat through.

Tampa Bay

Clearwater

Tampa

Old Tampa Bay

Hillsborough Bay

St. Petersburg

Tampa Bay

Fort De Soto Wetlands and Aquatic Management Area

Bradenton

Gulf of Mexico

LEGEND

- Seagrass
- Mangroves
- Salt Marsh
- Aquatic Preserve Boundary
- All submerged ownership lands in Pinellas County are also designated as an aquatic preserve.
- Channel
- 6-foot depth line
- Public boat ramps - see listing below
- Artificial Reefs - see listing below
- Navigation Markers
- Tide Stations

KILOMETERS
MILES

● PUBLIC ACCESS BOAT RAMPS

★ ARTIFICIAL REEFS

TAMPA Bay Estuary Program

SPORT FISH RESTORATION



Printed on recycled paper
This chart is not intended for navigation use.
No warranty is made for use of this chart.

Boat Ramp	Location	Access	Depth	Notes
1. Clearwater Beach	Clearwater Beach	Public	10-12	
2. Clearwater	Clearwater	Public	10-12	
3. Clearwater	Clearwater	Public	10-12	
4. Clearwater	Clearwater	Public	10-12	
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98. Clearwater	Clearwater	Public	10-12	
99. Clearwater	Clearwater	Public	10-12	
100. Clearwater	Clearwater	Public	10-12	

[illegible]

Boater's Tips:

- Stay clear of the main ship channel when large ships are approaching. Some vessels entering Tampa Bay are as long as two football fields, carry thousands of gallons of fuel, and are difficult to maneuver. Stay clear of the 43-foot-deep shipping channel by at least 1/2 mile. If you must pass a large ship, do so with care. If the vessel is approaching, it is in the way of the vessel you are passing. It is up to you to make the best decision to keep safely out of the way of the ship.
- In case of an emergency, use VHF Channel 13 to communicate with commercial ships.
- Be sure your boat is visible at night and in poor weather conditions.
- The main shipping channels are shown on the map.
- Be sure your boat is in good repair with all necessary safety equipment on board.
- Watch for changing weather conditions.
- Know your boat's limitations and respect them.
- In all areas, be polite, law-abiding, and follow all boating regulations.
- The Coast Guard Auxiliary and Power Squadrons offer free boat inspections and boating safety classes. These are informative, fun, and educational. See Resources for information.
- Be careful to prevent spills during refueling and when adding oil.

Safety and Security:

The Coast Guard Auxiliary and Security Task Force is working hard to keep you safe from all commercial vessels and facilities in Tampa Bay. In commercial public areas and facilities in Tampa Bay, there are many security measures in place to protect you. A 100-foot security zone extends from the shoreline (beyond the bridge supports), including the vicinity of the bridge piers, a direct vertical line. To report suspicious activities, call 911 or VHF Channel 16. For more information, call 727-264-7231.

Fishing Tips:

- Help fish stocks increase by practicing catch and release.
- Observe regulations and size limits.
- Dispose of fishing line properly.
- Use chlorine-treated steel, gold-plated steel, or brass hooks as they corrode quickly in salt water. In contrast, stainless steel hooks do not corrode and will protect in harmful fish and wildlife, harming them. Hooked fish and wildlife caught in stainless steel hooks can die of toxic shock or die of their wounds, as they shouldn't be used either.

If you catch an unwanted animal (cat, turtle, snake, etc.) in a trap or net, please call the Wildlife Conservation Commission at 1-800-666-PRICK (2022) to arrange for its removal. These are 1-800-666-PRICK (2022) to arrange for its removal. These are 1-800-666-PRICK (2022) to arrange for its removal. These are 1-800-666-PRICK (2022) to arrange for its removal.

Bay scallops

- Don't buy larger bay scallops. They are harvested from the outer edge of the bay, and can be seen because of their size. They are harvested from the outer edge of the bay, and can be seen because of their size. They are harvested from the outer edge of the bay, and can be seen because of their size.

Resources

U.S. Coast Guard
Pittsburg, Florida 33604-7506
Charlotte Harbor Field Office
727-593-6540

Marine Safety and Security Task Force
To increase public safety and to reduce the threat of pollution or terrorism calls:
727-593-7531

State Warning Point, Department of Community Affairs, Division of Emergency Management
1601, north environmental emergency: 888-726-6119
National Pollution Response Center
1-800-425-6802

NOAA Weather Service Broadcast
24-hour weather and marine forecast:
1-246-655-1204, call: 1-82-55-8478
www.cfr.gov

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Speed Restrictions

Vessel speeds are regulated for many reasons including safety concerns in high traffic areas and to help ensure the safety of swimmers. Boaters, in particular, please refer to the exclusion zones and shallow water caution zones on the map.

Idle Speed: A vessel operating in an "idle speed" zone must slow to the minimum speed that will maintain steering control. An example of this is to put a jet ski in neutral transmission in "idle" and allow it to idle forward.

Slow Speed: A vessel operating in a "slow speed" zone must slow to the minimum speed that will maintain steering control. An example of this is to put a jet ski in neutral transmission in "idle" and allow it to idle forward.

Resume Normal Safe Operation: When exiting an "idle speed" or "slow speed" zone, you will see a sign that reads "Resume Normal Safe Operation." At this point you may increase your speed to one that is appropriate for the area and vessel traffic conditions.

No Entry: Boats, people, dogs prohibited. **Combustion Motor Exclusion:** No gas or diesel powered motor on board the high electric motors, masts, and jacking systems.

Shallow Water Danger: The area behind the sign is very shallow. At high tide, exposed rocks can be seen. At low tide, exposed rocks can be seen. At low tide, exposed rocks can be seen. At low tide, exposed rocks can be seen.

Use Caution Around Seagrass Beds! Seagrass beds are shallow in the map. Boaters operating near seagrass beds should be careful to prevent propeller damage. If you're near a seagrass bed, reduce speed and use the motor to avoid the seagrass.

Scallops and seagrasses rely on clean estuary waters. You can help:

- Reduce fish pollution.
- Don't use antifouling paint.
- Report the Tampa Bay Estuary Program's Tampa Bay Risk Report.
- Participate in Tampa Bay's Water Quality Monitoring Program.

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Boca Ciega Bay Boater's Guide

Johns Pass to Passage Key, including Shell Key, Fort De Soto, & Egmont Key

Boca Ciega Bay offers a variety of boating opportunities, including public boat ramps, shallow water, and environmental protection. The bay is located on the north side of the mouth of Tampa Bay and is bordered by the cities of St. Petersburg, Tarpon, and Dunedin. The bay is home to a variety of wildlife, including birds, fish, and marine mammals. The bay is also a popular destination for boaters looking for a peaceful escape from the city.

Johns Pass contains three islands: Little Boca Ciega Bay, Middle Boca Ciega Bay, and Big Boca Ciega Bay. The islands are home to a variety of wildlife, including birds, fish, and marine mammals. The islands are also a popular destination for boaters looking for a peaceful escape from the city.

Dogkey Key is located south of Johns Pass. The key is home to a variety of wildlife, including birds, fish, and marine mammals. The key is also a popular destination for boaters looking for a peaceful escape from the city.

Boca Ciega Millennium Park is a 100-acre county park located on the northern Boca Ciega Bay. The park is home to a variety of wildlife, including birds, fish, and marine mammals. The park is also a popular destination for boaters looking for a peaceful escape from the city.

Shell Key Preserve contains 170 acres and includes the 130-acre barrier island Shell Key and the 40-acre mainland. The preserve is home to a variety of wildlife, including birds, fish, and marine mammals. The preserve is also a popular destination for boaters looking for a peaceful escape from the city.

Don Cesar Hotel is located on the northern Boca Ciega Bay. The hotel is home to a variety of wildlife, including birds, fish, and marine mammals. The hotel is also a popular destination for boaters looking for a peaceful escape from the city.

Exeter College is located on the northern Boca Ciega Bay. The college is home to a variety of wildlife, including birds, fish, and marine mammals. The college is also a popular destination for boaters looking for a peaceful escape from the city.

The Sunshine Skyway Bridge connects Pinellas and Manatee counties. The bridge is home to a variety of wildlife, including birds, fish, and marine mammals. The bridge is also a popular destination for boaters looking for a peaceful escape from the city.

Habitat Restoration Projects are ongoing throughout the bay. The projects are home to a variety of wildlife, including birds, fish, and marine mammals. The projects are also a popular destination for boaters looking for a peaceful escape from the city.

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Birds on the Bay: Do Not Disturb!



People and dogs on nesting islands create problems for nesting birds. If people and dogs land on the Santa Rosa Island (SRI) or SRI, they can cause the parent birds to leave their nests. Fish coveys or other birds will not abandon nests. Fish coveys may accidentally step on eggs or nestlings. Visitors may accidentally step on eggs or nestlings. Visitors may accidentally step on eggs or nestlings. Visitors may accidentally step on eggs or nestlings.

Sea Turtles

Several species of sea turtles inhabit diverse habitats in Hillsborough and Tampa Bays. All of them are threatened or endangered species, so you will be very lucky to see one or two! Most of the sea turtles that may be seen in the Bay are leatherbacks and hawksbills. The leatherbacks are the largest of the sea turtles. They have a dark, mottled pattern on their backs. The hawksbills are smaller and have a distinctive pattern on their heads.

Loggerheads stay near rocky outcrops and channels, and are common, eating horseshoe crabs, crabs, whelms, and other mollusks and annelids.

Green turtles inhabit seagrass areas and are strictly plant-eaters, eating on seagrasses and algae.

Kemp's Ridley turtles are usually found in open shallow areas, including muddy bottoms. They lay mostly clutches. Tampa Bay is an important site for juvenile Kemp's Ridley.

Hawksbill turtles have been seen in Tampa Bay, but mostly at the mouth of the Bay. Scientists don't think they use the interior of Tampa Bay.

Diamondback Terrapins This is the only freshwater turtle of the Eastern U.S., ranging from Southern New York to Mexico. The diamondback terrapin is a well-camouflaged reptile, mottled with brownish and olive colors.

They are found in shallow water, usually in the spring and summer in Tampa Bay.

There are fewer and fewer diamondback terrapins seen every year, possibly because there is less habitat available to support their needs. But Bulling Creek, the Kitchens, and the estuary waters near the Santa Rosa Island are known diamondback terrapin sites. So with good luck and sharp eyes, you may spot a genuine diamondback!

Manatees The West Indian Manatee is a large, grayish-brown aquatic mammal, with a thick, wrinkled skin and a short, rounded tail. It has a blunt snout with prominent nostrils and a large, fleshy mouth. It is found in shallow water and has a long, thin tail. It is found in shallow water and has a long, thin tail.

Manatees

The West Indian Manatee is a large, grayish-brown aquatic mammal, with a thick, wrinkled skin and a short, rounded tail. It has a blunt snout with prominent nostrils and a large, fleshy mouth. It is found in shallow water and has a long, thin tail. It is found in shallow water and has a long, thin tail.

Manatees are curious and gentle. Sometimes manatees graze on the beds of manatees that have eaten a lot of time. In all cases, they are gentle and curious.

Seagrasses in Hillsborough Bay Seagrasses are underwater flowering plants that use strong roots to anchor themselves to the bay floor. They can live in shallow water, but they can also live in deeper water. They can live in shallow water, but they can also live in deeper water.

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- Comply with signs on nesting islands and size offshore.
- Never sit down on nesting colony islands. Birds know dogs are effective predators and are disturbed by them.
- Between April and August, gulls, terns and skimmers may nest on unmarked sites. If you notice birds circling over your head, you may be near a nesting colony. Leave quietly, and enjoy the colony from a distance.
- Birds resting and feeding on sandbars and mudflats should not be disturbed. Migrating birds depend on the Bay's resources to provide a nourishing and restful stop-over. Disturbance of birds on sandbars can interfere with feeding behavior, reducing weight gain and the endurance needed for long flights.

Sharks and Rays

The area of Hillsborough Bay near the mouth of Bulling Creek and the Alafia River "South Mouth" is the most important nursery site for bull sharks known on Florida's west coast.

Speed Restrictions Vessel speeds are regulated for many reasons including safety concerns in high traffic areas, and to help protect the safety of swimmers, boaters, or mariners.

Idle Speed: A vessel operating in an "Idle Speed" zone must slow to the minimum speed that will maintain steering control. An example of this is to put a car's automatic transmission in "Drive" and allow it to idle forward.

Slow Speed: A vessel operating in a "Slow Speed Minimum Wake" zone must come fully off plane and completely settle in the water. The vessel's wake must not be excessive, so as not to create a hazard to other vessels.

Resume Normal Safe Operation: When exiting an "Idle Speed" or "Slow Speed" zone, you will see a sign that states "Resume Normal Safe Operation." At this point you may increase speed to a level that is appropriate for the sea and vessel conditions.

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About This Guide

This guide provides the special habitat and natural history information of Clearwater Harbor and the adjacent bay. It is intended to inform and assist the boating public in the preservation of these bays and their natural resources. It is not a substitute for the Florida Department of Natural Resources' regulations, rules, and policies, and is not intended to replace the Florida Department of Natural Resources' regulations, rules, and policies.

For more information on the various addressed topics of the guide, please contact the Tampa Bay Estuary Program at (813) 464-3747 or www.tbep.org. Florida Department of Natural Resources at (888) 367-6848.



Areas of Special Interest

Anchor Key, Anchor Key, Three Rooker Island, Horseshoe Island, and Caladog Island are managed as part of the Florida State Park System. These islands are all under the jurisdiction of the Florida Department of Natural Resources.

Anchor Key is a relatively young island located north of the main island. It is a small, sandy island with a few trees and a small building. It is a popular spot for bird watching and fishing.



Anchor Key, Florida Department of Natural Resources

Anchor Key Preserves State Park is located in the Gulf of Mexico, three miles west of Tarpon Springs. It is a small, sandy island with a few trees and a small building. It is a popular spot for bird watching and fishing.



Anchor Key, Florida Department of Natural Resources

Three Rooker Island is part of the Anchor Key Preserves State Park. It is a small, sandy island with a few trees and a small building. It is a popular spot for bird watching and fishing.



Three Rooker Island, Florida Department of Natural Resources

Horseshoe Island State Park is a spectacular look in the heart of the Clearwater Harbor. It is a small, sandy island with a few trees and a small building. It is a popular spot for bird watching and fishing.



Horseshoe Island, Florida Department of Natural Resources

Boater's Guide



Boater's Guide, Florida Department of Natural Resources

Clearwater Harbor & St. Joseph Sound including **Three Rooker Island** and **Anchor Key & Anchor Bar**

Caladog Island State Park, located south of Horseshoe Island, is another important natural area. It is a small, sandy island with a few trees and a small building. It is a popular spot for bird watching and fishing.

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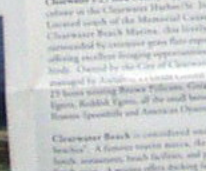
The Florida Aquatic Preserves Islands are managed by the Florida Department of Environmental Protection. These islands include the natural and man-made spoil islands throughout the International Waterway in St. Joseph Sound and Clearwater Harbor (see map). Some of these islands have had Clearwater Harbor State Park.

A large "boiling spring" is located in St. Joseph Sound in the expansive estuarine area south of Seaside Point, north of Crystal Beach. At low tide, the spring water can be seen bubbling above the waves.



Boiling Spring, Florida Department of Natural Resources

Dunedin Sand Key is owned by Pinellas County and is managed by the Florida Department of Environmental Protection. It is a small, sandy island with a few trees and a small building. It is a popular spot for bird watching and fishing.

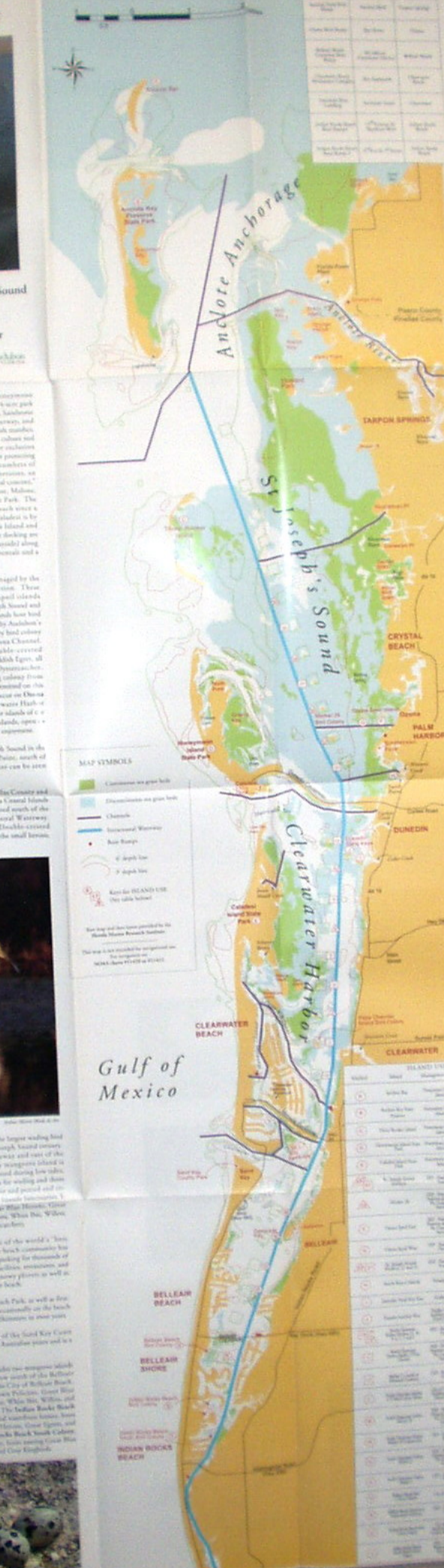


Dunedin Sand Key, Florida Department of Natural Resources

Clearwater 1.25 Bird Colony supports the largest nesting bird colony in the Clearwater Harbor. It is a small, sandy island with a few trees and a small building. It is a popular spot for bird watching and fishing.



Clearwater 1.25 Bird Colony, Florida Department of Natural Resources



Island Name	Area (Acres)	Managed By	Access	Boating	Fishing	Birding	Other
Anchor Key	1.25	Florida Department of Natural Resources	Public	Yes	Yes	Yes	Yes
Anchor Key Preserves State Park	1.25	Florida Department of Natural Resources	Public	Yes	Yes	Yes	Yes
Three Rooker Island	1.25	Florida Department of Natural Resources	Public	Yes	Yes	Yes	Yes
Horseshoe Island	1.25	Florida Department of Natural Resources	Public	Yes	Yes	Yes	Yes
Caladog Island	1.25	Florida Department of Natural Resources	Public	Yes	Yes	Yes	Yes
Clearwater 1.25 Bird Colony	1.25	Florida Department of Natural Resources	Public	Yes	Yes	Yes	Yes
Dunedin Sand Key	1.25	Pinellas County	Public	Yes	Yes	Yes	Yes
Clearwater Harbor	1.25	Florida Department of Natural Resources	Public	Yes	Yes	Yes	Yes
St. Joseph Sound	1.25	Florida Department of Natural Resources	Public	Yes	Yes	Yes	Yes
Gulf of Mexico	1.25	Florida Department of Natural Resources	Public	Yes	Yes	Yes	Yes
Indian River	1.25	Florida Department of Natural Resources	Public	Yes	Yes	Yes	Yes

Speed Restrictions

There are three marine traffic lanes and shallow water channels in the harbor. Speed restrictions are in effect in these areas to protect the environment and the safety of the public.

Idle speed: a vessel operating in an "idle speed zone" must slow to the minimum speed that allows steering control.

Slow speed: a vessel operating in a "slow speed zone" must come down off plane and completely astern to the water. The vessel's wake must be minimal, as well as its wake to be heard in other vessels.

Reverse Normal Safe Operation: When moving in "idle speed" or "slow speed" zones, boaters will see a sign that reads "reverse normal safe operation". Boaters must operate their vessel in a safe manner for these zones. The water conditions, and local traffic conditions.

Resources

Emergency 311

NOAA Weather Service Broadcast
24-hour weather and marine forecast: 813/445-2700
www.noaa.gov radio: 162.55 KHz/300

U.S. Coast Guard
Tampa Bay: 727/224-7500
Clearwater Beach/Long Key Station: 727/442-4500
National Pollution Response Center: 1-800-844-6842
U.S. Coast Guard Auxiliary: 727/788-0858 (after hours)

Boat Safety
The Coast Guard Auxiliary and Auxiliary Task Force is a volunteer organization that provides boating safety education and training. They also provide boating safety education and training to the public. They also provide boating safety education and training to the public.

U.S. Fish and Wildlife Service 800/222-5586
Marine and Sea Turtle Conservation

Florida Marine Fisheries Service 727/776-5122
Hatchery: 800/953-1964. White: 727/776-5122
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Florida Fish and Wildlife Conservation Commission
www.floridawildlife.com
To report an spill, marine debris, boating accident, and marine wildlife sightings or sightings: 1-800-444-7622

Florida Marine Research Institute www.floridamarine.org
Report fish kills: 1-800/36-8511

State Warning Point, Department of Community Affairs, Division of Emergency Management 311, 800/222-5586
800/222-5586

Department of Environmental Protection 311, 800/222-5586
800/222-5586

Florida Marine Research Institute Fisheries monitoring and biology research, water quality, marine debris, boating accident, and marine wildlife sightings or sightings: 1-800-444-7622

Tampa Bay Aquatic Preserves and Baiter Areas Manage the Florida Aquatic Preserves including the aquatic resources in Pinellas County and the State of Florida owned lands: 941/721-2868

Horseshoe Island State Park Administration Office Management for Caladog Island State Park, Horseshoe Island State Park, Three Rooker Island, Anchor Key, and Anchor Bar: 727/442-4500
Caladog Island, Horseshoe Island, Three Rooker Island: 727/442-4500

Southwest Florida Water Management District Water Resource Management and Management Program. Habitat restoration and water quality improvement projects: 941/721-2868

Pinellas County www.pinellascounty.org
Planning Department: 727/442-4500
Public Department: 727/442-4500
Environmental Management: 727/442-4500
Environmental services, compliance, habitat restoration and public works: 727/442-4500
Land Construction: 727/442-4500
Public Works Management and Construction: 727/442-4500
Public Works Department: 727/442-4500
Public Works Department: 727/442-4500

Tampa Bay Regional Planning Council's Agency on Bay Management 727/776-5122, 800-740-7400. Regional agency for bay management and water quality improvement projects: 727/776-5122

Anchor Key, Florida Department of Natural Resources www.anchorkey.com
Anchor Key: 727/442-4500
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Anchor Key: 727/442-4500

Tampa Bay Water www.tampabaywater.org
Tampa Bay Water: 727/776-5122
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Water Quality www.waterquality.org
Water Quality: 727/776-5122
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Sanibel Island 727/776-5122
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TAMPA BAY REPAIR KIT

Rx FOR A HEALTHY BAY



CLEAN BOATING HABITS



WILDLIFE OF TAMPA BAY

AN INTRODUCTION
TO FAMILIAR PLANTS
AND ANIMALS



Blue Crab



Florida Horse Conch



Red Mangrove



West Indian
Manatee



Diamondback Terrapin



Red Drum



Tampa Audubon Society