

Pinellas County  
Department of Environmental Management  
2002 Annual Report



*Managing a  
Lasting Environment*

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**Our mission statement**

*“The Department of Environmental Management is dedicated to providing responsible leadership necessary to manage our natural and urban environment to meet the needs of present and future citizens of Pinellas County.”*

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William M. Davis





*William M. Davis, Director  
Department of Environmental  
Management*

I am very proud to present the Pinellas County Department of Environmental Management's FY 2001-2002 Annual Report for your review. Your dedicated staff provides a wide array of services to the citizens of Pinellas County as well as other county departments. The Annual Report reflects those successes and the commitment and dedication of the Board of County Commissioners as good stewards of not only the natural environment but also the quality of our communities.

Please join me as we highlight our achievements for the past year. These include:

- \* Providing sound stewardship of the County's wild lands
- \* Ensuring compliance with regulatory standards to maintain quality neighborhoods
- \* Building our volunteer base to support and enhance environmental programs
- \* Providing environmental solutions to minimize impact of our capital improvement program
- \* Fostering an appreciation for the environment through outreach activities
- \* Monitoring air and water quality and insuring compliance with standards
- \* Educating industry, businesses and homeowners to minimize environmental waste and prevent pollution
- \* Furthering our educational goals through development of our two new environmental education centers

A handwritten signature in black ink that reads "William M. Davis". The signature is written in a cursive, flowing style.

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## Monitoring Programs

### SURFACE WATER QUALITY MONITORING

The Pinellas County Comprehensive Plan contains a number of initiatives aimed at improving the quality of surface waters and natural habitats in the County. Goals of the Comprehensive Plan mandate that the County conduct a surface water monitoring program and systematically prepare and implement watershed or waterbody management plans in a manner that is unique to the character and condition of each watershed or waterbody. The Comprehensive Plan commits the County to show measurable improvements in the quality of County waters, and their associated habitats as a result of management activities. In addition, the surface water monitoring program supports the goals outlined in the Tampa Bay Estuary Program's Comprehensive Conservation and Management Plan. This plan encourages its partners-agencies, local governments, and counties-to adopt a Tampa Bay-wide approach to water quality monitoring and improvement.

Since October 1990, the Pinellas County Department of Environmental Management has monitored surface water quality from 45 of the County's 52 drainage basins, plus sites in nine defined marine waterbodies receiving discharge from County basins. In 2002, the sampling network totaled 131 sites. A comprehensive review of surface water monitoring data from 1991 through 2002 will be summarized in a report to be released in 2003. This review report will update and replace a previous report summarizing 1991 through 1997 results. The report will also describe the methods used to collect and analyze samples and will describe the water quality parameters measured. This report will be available to the general public and will be shared with other local and state agencies engaged in water quality management in the Tampa Bay region. Lastly, this report will bring to a close the fixed-station monitoring program in the open waterbodies of the county. Beginning in January 2003, section staff will implement a new monitoring program that will allow the County to better assess long-term trends in water quality and provide more statistically defensible data for prioritizing waterbodies for management purposes. The new program will focus on the county's open waterbodies including major lakes and coastal areas. The program will also include monitoring at fixed-site locations in streams and creeks.

For more information on the new program contact Kelli Hammer Levy, Pinellas County Department of Environmental Management at (727) 464-4425.

### SOUTHWEST FLORIDA REGIONAL AMBIENT MONITORING PROGRAM (RAMP)

The Tampa Bay Estuary Program (TBEP) initiated RAMP in 1992 for the purpose of coordinating the baywide water and sediment/benthic quality monitoring programs of Manatee and Pinellas counties, the Environmental Protection Commission of Hillsborough County (EPC) and the City of Tampa. RAMP participants meet quarterly to collect water samples for interlaboratory comparisons and to discuss approaches to strengthen overall monitoring program compatibility. Each of the monitoring programs has its own laboratory analyze the samples for a core group of parameters (total nitrogen (TN), nitrate+nitrite nitrogen, ammonia nitrogen, total suspended solids (TSS), total phosphorus (TP), orthophosphate, color, turbidity, and chlorophyll-a), and the RAMP participants compare the results at the next quarterly meeting. To date, the RAMP participants have worked out differences between programs for several critical parameters (chlorophyll-a, TN, TP, TSS) and continue to work on others. After several years of collaborative efforts, very similar parameter results have been achieved among RAMP participants; this has strengthening the ability to assess regional water quality conditions.

The successful coordination effort has recently been joined by monitoring program representatives from Charlotte, Sarasota, Lee and Polk counties and RAMP has been recognized by the State of Florida as a core group for inclusion in discussions to develop a statewide RAMP program. RAMP participants also bring updated methods and techniques for discussion and testing among the partners. Some of the discussion topics have included the "new STORET" data entry module, monitoring strategies to meet the Total Maximum Daily Load requirements by the USEPA and FDEP, and laboratory certification (NELAC).

### BENTHIC MACROINVERTEBRATE MONITORING

In addition to the County's monitoring of freshwater creeks, streams, and lakes, Pinellas County has made special commitments to collaborate with local governments and public agencies for long-term

environmental monitoring of Tampa Bay. These collaborative monitoring efforts were largely implemented as a TBEP initiative to better meet the goals of TBEP’s Comprehensive Conservation and Management Plan (CCMP). The signing of the CCMP in 1996 represented a responsibility of local governments - the counties of Hillsborough, Pinellas, and Manatee; and the cities of Clearwater, St. Petersburg, and Tampa - to monitor Tampa Bay into the foreseeable future.

In 1996, the Water Resources Management Section began sampling for benthic macroinvertebrates in Boca Ciega Bay to assess sediment quality. This monitoring program includes sampling for sediment grain-size, sediment chemistry, benthic macroinvertebrates, and physical and chemical water quality parameters. Each year twenty or more site locations are selected at random in Boca Ciega Bay for benthic sampling during August and September. At least ten of the randomly selected sites are then sampled monthly for surface water quality over the following calendar year. Data results allow for calculations of unbiased areal estimates of benthic and water quality condition in Boca Ciega Bay.

In 2002, two special study areas were added to the program. These areas were added to provide data in areas containing stressed benthic communities. The special study areas included the embayment west of the Bayside Bridge in Old Tampa Bay and St. Petersburg’s Bayboro Harbor. This sampling was designed to take a “snapshot” look at existing benthic conditions to determine if further study is needed.

For more information contact Robert McWilliams, Pinellas County Department of Environmental Management at (727) 464-4425.



*Pinellas County Seagrasses*

**SEAGRASS MONITORING**

In 1998, the Water Resources Management Section (WRMS) began participating in a baywide seagrass monitoring program along with the City of Tampa’s Bay Study Group, the EPC, Manatee County, and the Florida Marine Research Institute of the Fish and Wildlife Commission. Developed by TBEP’s Technical Advisory Committee, the program was designed to characterize the general health and condition of seagrass meadows in the bay. The objectives are to provide a cost-effective and technically defensible measurement of:

- \* Areal seagrass extent in the estuaries and their sub regions
- \* Seagrass zonation in relation to depth
- \* Changes in seagrass growth, zonation and distribution over time

WRMS staff monitor 11 permanent seagrass transects in Boca Ciega Bay and 14 in the Clearwater Harbor/St. Joseph Sound region. Transect monitoring occurs in October and early November to coincide with the end of the seagrass growing season. Data collected include observations of water depth, percent seagrass cover, species composition, epiphyte/epifauna coverage as well as water quality samples for chlorophyll-a, turbidity, and other water clarity indicators.

For more information contact Scott Deitche, Pinellas County Department of Environmental Management at (727) 464-4425.

**SHELL KEY PRESERVE MONITORING**

The Shell Key Preserve is located in the Gulf of Mexico, immediately west of Tierra Verde in southern Pinellas County. It includes a barrier island and several mangrove islands as well as the surrounding seagrass beds and sand flats. In the past, the barrier island consisted of both Shell Key and an unnamed key to the south. These two keys have since merged into one island, which is referred to as Shell Key. The total size of the preserve is 1755 acres and Shell Key itself covers approximately 180 acres with a linear distance of nearly 2.6 miles from northeast tip to southeast tip.

The Shell Key Management Plan serves as the basic statement of policy and direction for managing the Shell Key Preserve. The “Resource Management Component” of the Plan provides a detailed inventory and assessment of the area’s natural and cultural resources.

The Water Resources Management Section (WRMS) has developed three monitoring programs to contribute to the Resource Management Component of the Shell Key Preserve Management Plan. Monitoring components are comparable to ongoing monitoring initiatives being undertaken throughout the Tampa Bay estuary. The programs include: water quality/clarity, seagrass assessment, and fish and invertebrate monitoring,

In 2001 a survey to determine seagrass species composition and distribution was designed to coincide with biennial SWFWMD aerial surveys. The survey was initially conducted in the winter of 2001 and will be repeated in the winter of 2003. In this program the species composition and distribution of dominant seagrass species were determined through an intensive field survey of the Preserve seagrass beds. The SWFWMD aerial survey determines baywide seagrass areal coverage estimates of patchy and continuous seagrass beds. The intensive field effort in the Preserve provides species-specific information currently not assessed by SWFWMD and provides a detailed delineation of existing seagrass beds.

In September of 2002, a bimonthly monitoring program was initiated to target smaller size classes of fish (<100mm



Shell Key Preserve

standard length) and selected invertebrates in the Shell Key Preserve. Samples were collected at site locations randomly selected from six habitat strata (areas) identified in the Shell Key Preserve. Strata include mangrove shoreline with seagrass, mangrove shoreline without seagrass, cordgrass-lined shoreline, channels, offshore areas with seagrass, and offshore areas without seagrass. Collections from September and November 2002 show the Preserve serves as a nursery area for juveniles of a number of recreationally and commercially important species including brown shrimp, mullet, grey snapper, red drum, spotted seatrout, blue crabs, lane snapper, gulf flounder, grunts, snook, and gag grouper.



Healthy Fish

For more information contact Mark Flock, Pinellas County Department of Environmental Management at (727) 464-4425.

#### **FEATHER SOUND WATER QUALITY/SEAGRASS INVESTIGATIONS**

In a cooperative effort with TBEP, WRMS is participating in two projects to investigate seagrass losses in the Feather Sound area of Old Tampa Bay. Feather Sound is located along the western shoreline from the St. Petersburg-Clearwater Airport south to the Gandy Bridge. From 1996 to 1999, over 1500 acres of seagrass were lost in Old Tampa Bay with the majority from the Feather Sound area. These efforts have received funding support from the Pinellas County Environmental Foundation (PCEF).

The first project component is an intensive monitoring program in Old Tampa Bay to determine if statistically significant water clarity differences exist among the different geographical areas of Old Tampa. Areas being examined include western shallow waters (area of most seagrass loss), eastern shallow waters (area of little or no seagrass loss), and deep waters. Water samples will be collected at randomly selected site locations in each of several (17) defined strata (areas) over two warm-season sampling periods (April-October) in 2002 and 2003. The number of sites sampled per area over the entire study

period varies from 28 to 126. Water clarity data collected at each site will include chlorophyll-a, turbidity, color, Secchi depth and photosynthetically active radiation (PAR). Staffs from WRMS, City of Tampa, TBEP, and SWFWMD are participating.

The second component of the project is a monitoring program that measures changes in seagrass growth, zonation and distribution over time in two areas on the western side of Old Tampa Bay and two areas on the eastern side of Old Tampa Bay. A fixed transect across a shallow grass and sand flat has been established in each area. Seagrass coverage along the transect is described and characterized at least twice each year. Monitoring of the two transects along western Old Tampa Bay is shared by WRMS and City of Tampa staff. Both transects have been sampled twice in 2001, in late May/June and more recently in October 2002. The two transects on the eastern side of Old Tampa Bay have been sampled each October since 1997 by City of Tampa staff.

For more information contact Mark Flock, Pinellas County Department of Environmental Management at (727) 464-4425.



*Pollutant Discharge in Storm Drains*

- \* Reduction of pollutants in runoff from industrial, commercial, and residential areas
- \* Control of stormwater discharges from new development and redevelopment areas
- \* Maintaining a surface water quality monitoring program
- \* Providing stormwater pollution prevention public outreach programs

## Permit Compliance

### NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM AND STORMWATER MANAGEMENT

In November of 1997, Pinellas County, along with 21 municipalities and the Florida Department of Transportation (DOT), obtained a National Pollutant Discharge Elimination System (NPDES) permit from United States Environmental Protection Agency (USEPA). This five-year permit addresses stormwater discharges from the Municipal Separate Storm Sewer System (MS4) into waters of the United States. Permit conditions include a variety of requirements such as:

- \* Identifying major outfalls and pollutant loadings
- \* Detection and elimination of non-stormwater discharges to the system

For the past five years, Pinellas County and its co-permittees have been abiding by and tracking the satisfactory completion of these requirements. Currently, Pinellas County and its co-permittees are awaiting the issuance of a new permit. Until the new permit is received, the requirements stipulated in the previous permit remain in effect. Recently, this program has taken on a greater importance for three reasons:

- \* The NPDES stormwater permit program was recently delegated from the federal level to the state level, which has brought greater scrutiny upon the program.
- \* In 2003, the NPDES program will move to "Phase II," which will lower the acreage threshold from 5 acres to 1 acre for construction activities regulated under the permit. This means numerous construction sites will potentially incur state inspections for erosion control.

\* The NPDES stormwater permit program will likely serve as an enforcement tool for Total Maximum Daily Load (TMDL) allocations. The TMDL program is a USEPA program delegated to, and under development by, the Florida Department of Environmental Protection (FDEP). Once a waterbody is deemed impaired by FDEP, TMDL allocations would be included as a permit requirement.

Along with the Planning and Public Works Departments, Environmental Management staff is actively involved in the “Lead Team” effort to coordinate and guide other County departments and NPDES co-permittees in a successful compliance program. Other responsibilities include wet and dry weather field monitoring, enforcement of a stormwater ordinance, and training County and municipal field staff in the recognition of illicit discharges. A Stormwater Watchline continues to be operated allowing County citizens to call in possible illegal dumping or discharges to the MS4.

Educating the public about stormwater pollution is a primary focus of our NPDES program. Our department has developed stormwater information publications such as a brochure and a coloring book. A professionally developed stormwater video program is broadcast periodically on the local County cable television station (Pinellas 18). We offer presentations to schools and civic groups and have acquired a life-sized stormwater mascot named “M. Phibian, the frog” that attends fairs and various public events. Our stormdrain-marking program is also very successful with over 2500 drains marked since 1997.

For more information contact Melanie Poirier, Pinellas County Department of Environmental Management at (727) 464-4425.

## Watershed Planning

### LAKE TARPON

Lake Tarpon is the largest lake in Pinellas County with a surface area covering 2,583 acres and a watershed encompassing 52 square miles. The estimated economic value to the community is over \$46,000,000. The lake is a popular regional recreational destination and is considered one the top ten largemouth bass lakes in Florida.

The Pinellas County Board of County Commissioners adopted the Lake Tarpon Drainage Basin Management Plan in 1999. The plan was the culmination of 13 years of effort prompted by a large algae bloom in 1987 that incited public concern for the health of the lake. The Lake Tarpon Management Committee was formed to coordinate efforts to study the lake’s problems. In addition, SWFWMD designated Lake Tarpon a Surface Water Improvement Management (SWIM) priority waterbody. A SWIM plan was then developed opening greater funding opportunities for improvement projects. This plan was last revised in July 2001.



Lake Tarpon

Pinellas County Departments of Environmental Management, Utilities, Parks and Public Works are currently working with SWFWMD on several projects recommended in the management plan. These projects include:

- \* Aquifer storage and recovery of excess lake discharge water
- \* Improvement of stormwater treatment in priority subbasins
- \* Habitat and recreational improvements of the pond system in John Chesnut Sr. Park
- \* Groundwater sampling to determine impacts of on-site septic tanks and fertilizer use around the lake

- \* Evaluation of recreationally important fish populations

Sampling to determine the lake phytoplankton taxonomic composition began in 2000. This effort, along with water quality sampling, will continue in order to evaluate lake water quality response to structural and non-structural management actions implemented within the Lake Tarpon drainage basin.

For more information contact Don Hicks, Pinellas County Department of Environmental Management at (727) 464-4425.

**ALLEN'S CREEK**

The Allen's Creek Watershed is a typical urban stream basin in the central portion of Pinellas County. Pinellas County, the City of Largo, and the City of Clearwater agreed to fund and develop a watershed management plan to address the problems of poor creek water quality and degraded habitat. In October 1996, the Board of County Commissioners adopted the watershed plan. Since plan adoption, several projects have been implemented including:

- \* Habitat landscaping demonstration project to promote the use of native vegetation and the principles of the Florida Yards and Neighborhoods program
- \* Restoration of Maple Swamp, 27 acres of vegetated wetlands, littoral zones and stormwater treatment ponds
- \* Oligohaline restoration at St. Paul's Drive



*Allen's Creek oligohaline restoration site*

- \* Removal of all septic tanks in City of Largo service area
- \* Various channel improvements by the County and City of Clearwater
- \* Completion of the designs for the restoration of "Lancaster" property

During 2002, work continued on numerous projects aimed to evaluate and improve the creek including monthly water quality sampling at six locations, post-construction monitoring at the Maple Swamp restoration project and yearly bird surveys. The restoration of the "Lancaster" tract will begin in 2003 and will include removal of nuisance exotic plant species, enhancement of oak, slash pine and mangrove habitats, and stormwater treatment areas.

For more information contact Sue Myers, Pinellas County Department of Environmental Management at (727) 464-4425.

**LAKE SEMINOLE**

Lake Seminole has a surface area of 648 acres and has a contributing watershed of over 3480 acres. As the second largest lake in the county, Lake Seminole has had poor water quality for many years. A 1991 Diagnostic Feasibility Study concluded that stormwater runoff is a major cause of poor water quality in the lake. Most of the water inflow to the lake is from untreated stormwater, as the majority of construction in the highly developed watershed occurred before any stormwater regulations were in effect. Stormwater runoff along with a stabilized water level and a decrease in lake water flushing have degraded Lake Seminole. The lake has elevated nutrient concentrations and high chlorophyll-a levels resulting in its year-round pea-green color. The lake's trophic state index is above 90 and considered hypereutrophic for a Florida lake.

A watershed management plan is complete and is scheduled for Board of County Commission approval in early 2003. The watershed plan recommends activities and programs to improve water quality, flood control, and

wildlife and vegetative habitat in the lake and watershed. Some of the recommended activities that have been completed include:

- \* Design and construction of an adjustable water level control structure
- \* Design and construction of a habitat and shoreline restoration project
- \* Pond creation adjacent to Seminole Boulevard at 89th Avenue
- \* Dog Leg pond refurbishment at 114th Avenue and 88th Terrace and stormwater treatment system at St. Petersburg College campus
- \* Cattail harvesting and vegetation management program

Activities currently scheduled for 2003 include:

- \* Construction of regional stormwater treatment facilities in priority basins
- \* Diversion of flow through the lake from the Seminole Bypass Canal

Future lake improvement activities include:

- \* Dredging of flocculent deep sediments
- \* Improve efficiency of existing stormwater facilities
- \* Sediment phosphorus inactivation via chemical treatment
- \* Dredging of organic shoreline sediments
- \* In-lake habitat restoration projects
- \* Biomanipulation of fish populations

The County will continue to monitor water quality, harvest cattails and manage nuisance aquatic vegetation in Lake Seminole. After priority restoration activities are implemented, it is anticipated that identified areas will be planted with beneficial native vegetation. The changes should result in higher rates of sportfish recruitment and improved angler fishing success and satisfaction. More diverse and beneficial plant communities should provide better habitat for wildlife species frequenting the lake and watershed and allow for improved boat navigation and aesthetics. Removal of cattail biomass will preclude accumulation of additional organic matter and serve to remove nutrients from the lake that would occur if the plants were only chemically treated. To provide lasting benefits to the improved macrophyte community, it is important to fluctuate the lake level annually through use of the new control structure.



*Lake Seminole stormwater treatment pond*

In an effort to improve communication between the County and interested citizens, a quarterly update of environmental improvement activities within the Lake Seminole watershed will be posted on the County's web page.

For more information contact Kelli Hammer Levy, Pinellas County Department of Environmental Management at (727) 464-4425.

### CROSS BAYOU CANAL

The Cross Bayou Canal watershed is located in central Pinellas County and encompasses approximately 7,800 acres. The 10.5 mile long Cross Bayou Canal bisects the watershed and connects to both Old Tampa Bay and Boca Ciega Bay on its northeastern and southwestern ends, respectively.



*Cross Bayou Canal*

Since 1991, water quality samples have been collected at three sites on Cross Bayou Canal as part of the County's monthly ambient water quality monitoring program. Relative to other waterbodies in Pinellas County, Cross Bayou Canal has very poor water quality. A high number of the monthly surface water quality samples collected from the canal (1991-1997) have exceeded state water quality standards and reference water quality values. Parameter concentrations most often exceeding state standards or reference values included nitrite nitrogen, nitrite+nitrate nitrogen, dissolved oxygen, chlorophyll-a, orthophosphate, total and fecal coliform, and fecal streptococcus.

During 2000 and 2001, County staff conducted a number of activities to characterize the basin in preparation for the anticipated diagnostic study in 2003. Water quality samples were collected in each of ten canal zones on two sampling trips in the late spring (dry season) and late summer (wet season) in 2000 and 2001. Staff also noted the location of stormwater outfall pipes into the canal. Furthermore, publicly owned lands located adjacent to the canal were identified as potential habitat restoration sites or stormwater treatment facilities. Finally, annual estimates of stormwater

pollutant loads into the canal were calculated for each subbasin within the watershed based on land use-specific stormwater runoff water quality concentrations, soil-specific runoff coefficients, mean annual rainfall, and subbasin acreage.

The diagnostic study planned for 2003 will encompass the first two years of a multi-year project to develop a Watershed Management Plan. The completion of the diagnostic feasibility study and subsequent Watershed Plan will provide information essential for developing cost effective actions to improve drainage and water quality, and expand viable habitat for fish and wildlife in the basin. Ultimately, the Watershed Management Plan will serve to increase functional habitat in the Tampa Bay watershed and will reduce pollutant loads to Old Tampa Bay and Boca Ciega Bay. Habitat enhancement, water quality improvement, and pollutant loading reductions to Tampa Bay are in accord with the goals in SWFWMD's SWIM Plan for Tampa Bay and the Tampa Bay (National) Estuary Program's Comprehensive Conservation and Management Plan (CCMP).

For more information about Cross Bayou, contact Robert McWilliams, Pinellas County Department of Environmental Management at (727)464-4425.

## Public Education/Outreach and Related Programs

### PUBLIC OUTREACH INITIATIVES

The Water Resources Management Section (WRMS) is dedicated to public outreach and education. Our outreach activities range from giving formal presentations to answering citizens' questions and concerns about county surface waters. Examples of outreach elements are listed below:

- \* We have developed a complaint response system to quickly respond and investigate citizen complaints and provide information on natural processes and human activities that impact county waterbodies.

- \* We have produced brochures on many topics, including manatees, stormwater, lakes and ponds, and septic systems. These items are distributed to citizens, civic groups, and other organizations.
- \* We offer presentations to schools and neighborhood associations on a wide range of environmental topics and present technical papers and posters at local, regional, state, and national conferences. For more information, see the County's Speakers' Bureau list.
- \* We participate in local environmental events such as the Coastal Clean-up, Marine Quest, and Family Earthfest at Pinewood Cultural Park. We also organize stormdrain-marking events year-round in conjunction with other agencies and provide lakes and ponds educational seminars.
- \* Our educational stormwater videos continue to be showcased locally on Pinellas 18, the County's cable TV station.

### MANATEE PROTECTION IN PINELLAS COUNTY

Although Pinellas County has not been required by the State to adopt a formal Manatee Protection Plan, the County has a long record of taking actions, educating the public, and adopting policies and regulations that serve to protect manatees and their habitat in Pinellas coastal waters. In 1992, the Pinellas County Manatee Watch Line was activated to collect information from the public on manatee sightings. These data helps track and document the occurrences of sightings in County waters.. Public education is considered essential and WRMS staff



*A posted regulatory ordinance sign*

typically gives over 40 presentations on manatee protection each year. In 2000 an ordinance was amended and identified the Florida Power Bartow Power Plant, the Weedon Island Preserve, the Shell Key Management Preserve and the Ft. DeSoto Seagrass Protection areas as heavy manatee use locations. During 2002 these areas have been posted to caution boaters of seagrass beds, shallow water and regulated speed zones. Since the zones have been posted the Pinellas County Sheriff's Deputies have issued over 80 tickets and warnings. Sheriff's Deputies have stated that boaters are complying with the regulated speed zones, especially near the Bartow Plant.

For more information about manatee protection or the regulated speed zones contact Pam Leasure, Pinellas County Department of Environmental Management at (727) 453-6505.

### 2002 CITIZEN COMPLAINTS

Citizen complaint investigations are an integral part of the Water Resources Management Section. From October 1, 2001 through September 30, 2002, the staff responded to 236 water-related complaints. They were categorized as follows: nuisance vegetation (59), stormwater/illicit discharge (56), water quality/fish kill (50), algae bloom (10), odor (9), erosion (5), and other (47). The complaints in the "other" category were further broken down as: pond/lake problems (30), trash complaints (4) and miscellaneous (13).

Responses varied as follows: referrals to other departments or agencies (92), handled over phone (61), field inspections (48), and field inspections coupled with referrals (35). In addition, many complaint responses resulted in providing environmental information, scheduling of formal presentations, and the distribution of brochures and other related public outreach materials.

In the coming year section staff will continue to utilize our complaint response and tracking program to educate the public and to prevent and enforce stormwater pollution violations. To comply with the County NPDES permit and better resolve stormwater complaints, staff will continue to issue Notice Of Violations (NOV) to stormwater pollution violators, and will issue subsequent fines as allowable under the County Stormwater Ordinance and Environmental Enforcement Act.

## INTERDEPARTMENTAL COORDINATION OF CAPITAL IMPROVEMENT PROJECT DESIGN AND IMPLEMENTATION

The construction of County Capital Improvement Projects nearly always involves permitting through one or more State and Federal regulatory agencies. Virtually all projects must take into account water quality treatment and storage of on-site runoff. In addition, wetlands are sometimes impacted due to project constraints such as limited rights-of-way or safety concerns. During the permit application process, County departments may experience costly delays due to the many detailed environmental questions asked by the regulatory agencies as well as the complex field determinations required.



*Environmental Support Services ensures that capital improvement projects are conducted in an environmentally responsible manner and that habitat restorations are designed to provide maximum environmental benefit*

The Environmental Support Services Section helps facilitate the construction of these Capital Improvement projects, especially through the environmental permitting process and liaison activities with the regulatory agencies. Impact analysis and alternative selection is discussed. The section also provides Habitat Management Permitting and investigates inquiries and complaints as they relate to County-initiated projects.

Although initially formed to support only the Public Works Engineering Section in project design and permitting, the responsibilities of Environmental Support Services have grown to serve other County departments including Parks, Utilities and the General Services Real Estate Management Division. Duties have expanded to include mitigation site monitoring, inspection and redesign as well as a myriad of

special projects supported by the County Commission, such as the Ft. DeSoto Park seagrass study and exotic plant species control projects. This section has also been instrumental in obtaining State, Federal, and private grants totaling over \$4 million dollars. Several such grants were awarded to reestablish historical circulation patterns around Mullet Key in Ft. DeSoto Park by constructing a series of bridges along the entrance road and maintenance access. Continued monitoring is included in the recirculation project to help assess the effectiveness of the design for other similar projects. Another grant was awarded to fund the construction of a near-shore oyster reef to provide shoreline protection and habitat enhancement for War Veterans' Park. This section is also responsible for permitting and enforcement of the Habitat Management Ordinance as it relates to County Capital Improvement projects.

During 2002 over 106 reviews were performed for Capital Improvement projects as well as a myriad of other projects. Environmental consulting assistance was provided for a wide spectrum of other projects including providing training for the Stormwater Maintenance Section of the Highway Division, which is responsible for County mitigation areas and permitted stormwater ponds. The Environmental Support Services Section team members are involved with the Pinellas County Wildland Fire Team, which has provided insight to the importance of prescribed burning on County lands. The Section provides public education for elementary, middle and high schools through the Pinellas County's Speaker's Bureau as well as attending environmental expositions, conferences and festivals. Several programs on Pinellas 18, Pinellas County's Government Access cable television channel, have featured staff explaining topics such as exotic species control and seagrass protection.

As evidenced by the tasks outlined, the Environmental Support Services Section is best described as the "Jack of all trades" of the Department of Environmental Management and provides timely, cost effective assistance to other County Departments where needed.

For more information about the Environmental Support Services Section, contact Eric Fehrmann at (727) 464-4761.

The Pollution Prevention and Resource Recovery (P2R2) Program is a non-regulatory program developed to assist citizens and businesses to reduce their use of hazardous and toxic materials. These materials are resources that cost money, both in their initial purchase and in the costs related to liability and governmental regulation. Pollution prevention and resource recovery protect the environment and save money by reducing the consumption of these expensive resources while reducing potential regulatory costs (fees, fines, permitting, and man-hours). Any program that reduces costs and improves efficiency makes good business sense.

During FY 2001/02, program staff provided waste reduction assistance to an average of ten citizens per week, twelve businesses per week (predominately small business) and eight government entities per month.

In addition to assisting citizens and businesses, program staff provide technical support to other County operations in the recognition, identification, and abatement of chemical hazards at County worksites. Chemicals are a part of our wide range of County operations including activities as varied as routine cleaning, printing operations, and road striping. Regulations covering chemicals are complex. Few departments have staff with expertise in chemicals. The P2R2 Program's goal is to eliminate the generation of any hazardous waste. Staff initiate County worksite inspections to monitor compliance with hazardous waste regulations. Inspections encompass evaluation of current waste handling

practices, an overview of all chemical handling, assistance with hazardous waste disposal, and guidance on hazardous waste reduction.

A few examples of the assistance staff provided to other County departments and municipalities during FY 2001/02 include:

- \* Compiled case study of Pinellas County Fleet Management's waste reduction efforts for inclusion in the Community Achievements section of the section's web page
- \* Completed waste assessment and summary of potential waste reduction opportunities for Pinellas County Solid Waste Operations, Highway Sign and Pavement Operations and City of Tarpon Springs' municipal wastewater treatment facility
- \* Assessed silver pollutant impact on County public owned treatment works (POTWs)
- \* Provided assistance to St. Petersburg-Clearwater International Airport maintenance staff regarding antifreeze in airplane waste tanks
- \* Provided industry-specific pollution prevention opportunities to several municipalities requesting assistance
- \* Provided pollution prevention training and field resource to several local municipal industrial Pre-treatment Program staff



*Pollution Prevention's goal is to assist citizens and businesses to reduce their use of hazardous and toxic chemicals*

P2R2 staff also review properties for soil or groundwater contamination prior to purchase by the County and provide technical assistance to County departments in cleaning contaminated sites. Property is continually being acquired for road improvements, parks, preservation, or other County needs. Pinellas County Government has developed a strong, proactive program to reduce the likelihood of acquiring contaminated property.

The P2R2 program focuses on the educational approach to environmental management. During FY 2001/02, Pinellas County’s Environmental Management and Utilities departments in conjunction with the City of St. Petersburg, and Pinellas County’s Public Health Department provided a medical mercury thermometer exchange to the public for National Pollution Prevention Week. The goals of the exchange were to reduce the amount of mercury in our environment and to increase awareness of using safer substitutes for traditional consumer products. Collected were 569 mercury thermometers, 13.5 lbs of mercury in jars, 4 large “lab-type” thermometers, and 3 thermostats.

Another educational component of the P2R2 program is the County’s Clean Marina Program, a voluntary program designed to work with marinas in a partnership to protect the environment. The objective of the program is to raise awareness and promote environmentally responsible boating

and marina operations. This is accomplished through educational seminars, public activities, and staff training. Marina professionals and recreational boaters learn and share valuable techniques related to preventing marine pollution, how to comply with environmental rules and regulations, how to identify environmentally friendly marinas, and how to respond to pollution violations. During FY 2001/02 the P2R2 Program recognized the St. Petersburg Municipal Marina for participation in the Clean Marina Program. The marina received “Clean Marina” designation in May 2002.

FY 2001/02 proved to be a year of growth in our program. Pollution prevention efforts throughout Pinellas County resulted in measurable pollutant reductions.

For more information, contact the P2R2 staff at (727) 464-4761.



*The P2R2 program provides public education on pollution prevention through various community events*



*Demonstration of the hydrologic cycle to elementary students*

**E**nvironmental Management's Water and Navigation Section is responsible for the administration and enforcement of the dock and dredge and fill program under the Pinellas County Water and Navigation Control Authority. The Authority, which consists of the Board of County Commissioners, was created by Special Act of the legislature in 1955 to address the environmental and navigational impacts of activities within County waters. These include all saltwaters (and a few freshwater areas such as Lakes Tarpon and Seminole) in both the incorporated and unincorporated areas of Pinellas County. During the 2002 fiscal year, staff processed 1,478 dock applications and 97 dredge and fill applications. The review process verifies consistency with the applicable criteria of the Pinellas County Code, which primarily address environmental, navigational and safety issues. Upon completion of the dock, Section staff also conducts a final inspection to ensure that the structure is in compliance with its permit and with the construction standards of the code.



*Ensuring vital habitats are protected when docks are constructed*

Water and Navigation Section staff also handle complaint investigations concerning docks and dredge and fill activities. These include complaints about unpermitted construction, non-compliance with permit conditions, placement of materials and fill within County waters, impacts to coastal resources, and impediments to navigation.

Section staff also issue Habitat Management and Landscape permits for projects over which the Authority has jurisdiction.

The Section is also responsible for administering the Mangrove Trimming and Preservation Act through a delegation agreement with the Florida Department of Environmental Protection. The Section manages the trimming and removal of mangroves in both the unincorporated and incorporated areas of the County as



*Healthy Pinellas County Red Mangroves*

well as provides enforcement for any violations of the Mangrove Act. Many trimming activities do not require permits and therefore staff spends a great deal of time assisting property owners in understanding and complying with the provisions of the Mangrove Act. During this fiscal year, the Section conducted approximately 300 pre-application or exemption reviews for citizens. There were also 19 formal permit applications processed and almost 100 complaints investigated, resulting in 33 cases requiring formal enforcement.

For more information, contact the Water and Navigation Control Authority staff at (727) 464-4761.

**E**nvironmental Management's Enforcement Division was created to enforce a number of codes geared toward maintaining the high quality of life in Pinellas County.

The Code Enforcement Division is responsible for maintaining a complaint system that provides County citizens an avenue to register their complaints about various activities within their neighborhoods. In the fiscal year of 2001-2002, the Code Division conducted investigations on over 5042 citizen's complaints. Response times are generally within 1 week. These complaints in turn generated 14,978 inspections of properties for alleged violations of several different sections of the Pinellas County Code.



*Communicating with officers investigating a complaint*

The Pinellas County Zoning Code controls land use. Simply put, the County's land mass has been categorized into basically three types of zones; residential, commercial and manufacturing. The zoning code helps to insure that neighborhoods keep their residential character. An example would be not allowing a used car lot within a residential zone.

The Inoperable Vehicle Code keeps residential neighborhoods free of unsightly junk vehicles. Any car, pickup truck or van kept at a home must be operable and currently licensed.

The County's Trash and Debris Code helps keep all properties clean regardless of zoning category. It prohibits the dumping or accumulating of all manner of discarded items.

The Lot Mowing Code addresses uncontrolled growth of grass and weeds. Growth that exceeds 12" in height must be mowed and trash on the property removed. If the owner does not correct the problem once notified, then the County's contractor will perform the work, and the property owner is billed.

Under the Commercial Vehicle Code, commercial vehicles are not allowed to be parked or stored within any residential area. These vehicles would be box trucks, tow trucks, panel trucks, semi tractor-trailers, construction equipment, or other similar types of vehicles.

The Noise Code regulates the amount of noise, in decibels, that can be created on any property within the county. Noise levels are measured with noise meters and compared to the levels allowed in the code. It does not regulate motor vehicle noise (no muffler), animal noise (dog barking), or noise generated by people (shouting).

The Minimum Housing Code ensures the health, safety, and welfare of our citizens and addresses conditions both inside dwelling units as well as the exterior of the structure. All residential dwelling units must meet minimum standards and the Code officers may open cases on such issues as leaking roofs, unsafe electrical systems, deteriorating soffits, etc. Operating under the Minimum Housing Code, unsafe vacant dwellings, stagnant swimming pools and hazardous residential structures are secured.

Department enforcement officers frequently work with other agencies of Pinellas County. For example, when faced with an angry citizen, the Pinellas County Sheriff's Office may be involved in an inspection. When appropriate, officers will coordinate an inspection of a property with several agencies at one time, such as the Building, Health, and Fire Departments. This minimizes the impact on a citizen who will not have to be subjected to several individual visits over a period of time.

The computerized complaint system maintains a cradle to grave history of all cases handled by Environmental Management. The complaint and permit databases built over the years will be incorporated into the Geographical Information System (GIS) as an enforcement layer. This will enable users of GIS to view any action by the Codes Enforcement Division on any given parcel within Pinellas County.

For more information about the Code Enforcement Division, contact Robert Mortoro at (727) 464-4761.

### WHAT IS AIR POLLUTION?

**A**ir pollution is defined as the presence in the outdoor atmosphere of any one or more substances in quantities which may be harmful or injurious to human health or welfare, animal or plant life, or which may reasonably interfere with the enjoyment of life, including outdoor recreation, or property. Air pollution includes a vast array of elements, which may be introduced into our atmosphere in the form of vapors or particles from both natural and manmade sources. In most cases, air pollution frequently affects those who are least prepared to protect themselves, namely children and the elderly.

### WHAT IS THE MISSION OF THE AIR QUALITY DIVISION?

**T**he Air Quality Division, created in 1975 under the direction of the Board of County Commissioners, is dedicated to protect and preserve or enhance the air quality within Pinellas County. The Division will accomplish its mission by providing and maintaining for the citizens and visitors of Pinellas County, standards that will ensure atmospheric purity and freedom of the air from contaminants, which threaten public health and welfare.



*Accurate monitoring is the key to air quality*

### HOW WILL THE AIR QUALITY DIVISION CARRY OUT ITS MISSION?

**T**he Division will implement air pollution control strategies where needed, maintain and develop new programs to protect the public from potential sources of toxic (hazardous) air pollutants, develop new

programs that serve and educate the public on air pollution issues, and maintain programs that will prevent the degradation of air quality where air pollution standards are already being met.

### WHAT WERE THE ACCOMPLISHMENTS OF THE AIR QUALITY DIVISION DURING 2002?

- \* Maintained attainment for all regulated contaminants
- \* Maintained monitoring systems at 13 sites in Pinellas County and conducted monitoring for additional air pollutants at 4 sites throughout Hillsborough and Pinellas counties
- \* Successfully responded to 100% of the citizen complaints
- \* Cooperatively worked on partnerships, through grant funding, with groups such as the Environmental Protection Commission of Hillsborough County and the University of South Florida

There are three sections of the Air Quality Division: Air Monitoring, Permitting & Compliance, and Planning & Analysis. All three sections jointly implement the mission of the Air Quality Division.

## Air Monitoring

**T**he U.S. Environmental Protection Agency (EPA), in order to protect health and welfare, is responsible for establishing and maintaining the National Ambient Air Quality Standards (NAAQS) for regulated pollutants. These pollutants include:

**Lead (Pb)** - With the reduction of lead additives in gasoline and lead-based paints the primary sources of lead are power plants and other industrial sources. It can affect the nervous system and lead to anemia. With the phasing out of lead in gasoline, levels in the air have been barely detectable since 1986.

**Ozone (O<sub>3</sub>)** - Is produced through a photochemical reaction of volatile organic compounds (VOCs) and nitrogen oxides in the presence of sunlight. Ozone, the main ingredient of smog, irritates the eyes, nose and throat and places a burden on the respiratory system and heart. While the Tampa Bay area was very close to exceeding the 8-hour ozone standard for the year 2002, the area is in attainment for both the 1-hour and 8-hour standards.

**Nitrogen Dioxide (NO<sub>2</sub>)** - Is produced by combustion processes, including motor vehicles. It places a strain on the heart and respiratory system.

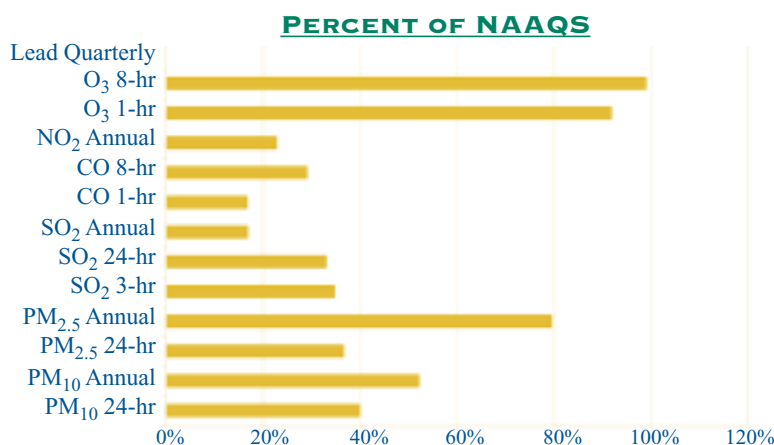
**Carbon Monoxide (CO)** - Is produced mainly by motor vehicles. It reduces a person's ability to think and see clearly and causes headaches.

**Sulfur Dioxide (SO<sub>2</sub>)** - Is produced by power plants and industries burning coal or oil. It irritates the lungs and causes or aggravates respiratory problems.

**Particulates (PM<sub>10</sub> and PM<sub>2.5</sub>)** - Are solid particles or liquid droplets consisting of acid aerosols, heavy metals or soot. They can aggravate respiratory diseases and irritate the eyes.

The charts below are a summary of the monitoring site locations and Percent of National Ambient air Quality Standards (NAAQS).

<u>SITE NAME</u>	<u>NEAREST INTERSECTION LOCATION</u>	<u>POLLUTANT MONITORED</u>
East Lake Tarpon	John A. Chesnut Sr. Park	SO <sub>2</sub> , O <sub>3</sub> , PM <sub>10</sub>
SPC/Clearwater Campus	Clearwater Campus	O <sub>3</sub>
Motor Pool	100th St & Ulmerton Rd	PM <sub>10</sub>
Derby Lane	San Martin Blvd & 98th Ave	SO <sub>2</sub>
Resource Recovery	43rd St & 118th Ave N	SO <sub>2</sub>
Azalea Park	72nd St & 22 Ave N	NO <sub>2</sub> , CO, O <sub>3</sub> , PM <sub>10</sub> , Toxic VOCs, PM <sub>2.5</sub> , Toxic Metals, Carbonyls
Tyrone Square	66th St & Tyrone Blvd	CO
Woodlawn	19th St N & 13th Ave N	PM <sub>10</sub>
Curlew Road	Curlew Rd & McMullen Booth Rd	CO
Gateway	34th St N & Ulmerton Rd	CO
Lift Station #65	47th St N & 115th Ct	Pb
Oakwood	US Hwy 19 N & Oakwood St	SO <sub>2</sub>
Dunedin Middle School	Union St & Patricia Ave	PM <sub>2.5</sub> , Toxic VOCs, Toxic Metals, Carbonyls

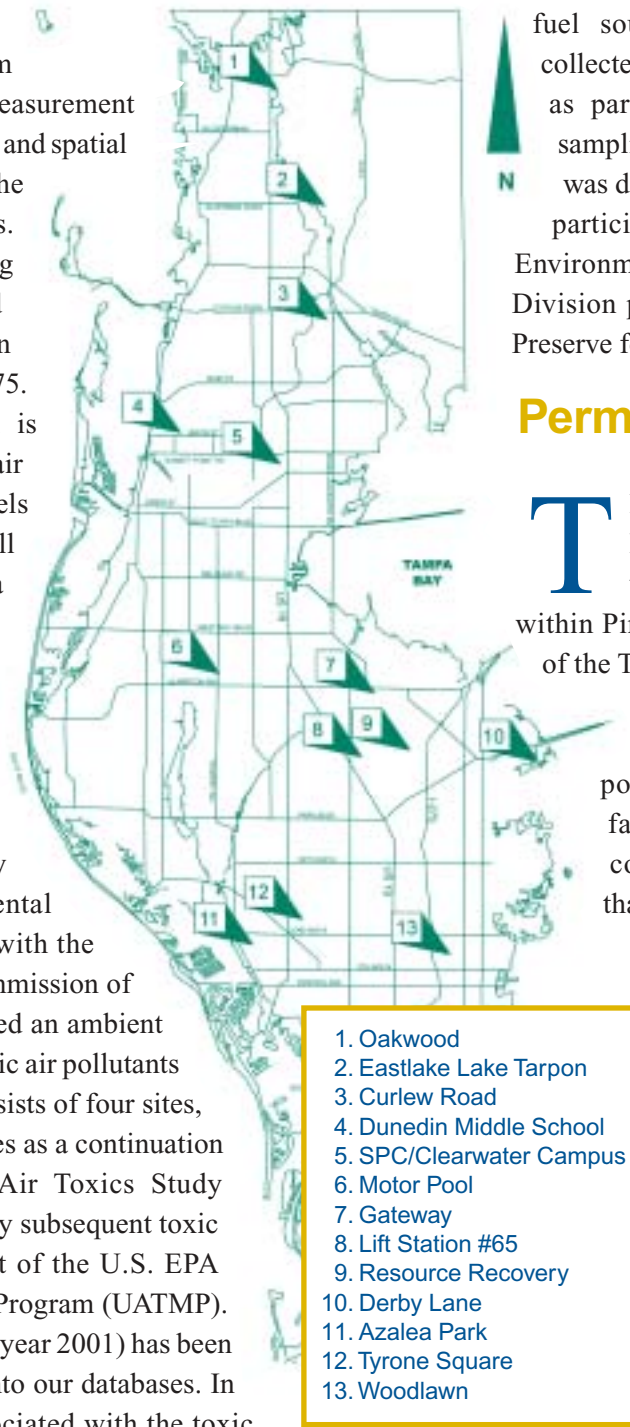


The framework for a well-developed air quality management strategy begins with a balanced ambient monitoring network. A fully approved monitoring network must comply with uniform criteria for network design, measurement methodology, instrument siting and spatial representation, as defined in the Code of Federal Regulations. The County's air monitoring network is an EPA-approved program that has been in continuous operation since 1975. The Air Monitoring Section is responsible for measuring air pollution concentration levels throughout the county. All monitoring data is subjected to a rigorous quality assurance program to ensure the data is valid, representative, complete and of known precision and accuracy.

The Pinellas County Department of Environmental Management, in partnership with the Environmental Protection Commission of Hillsborough County, continued an ambient air monitoring program for toxic air pollutants during 2002. The network consists of four sites, two in each county and operates as a continuation of the Tampa Bay Region Air Toxics Study (TBRATS). This study and any subsequent toxic monitoring programs are part of the U.S. EPA Urban Air Toxics Monitoring Program (UATMP). The first year of data (calendar year 2001) has been quality checked and entered into our databases. In addition, the health risks associated with the toxic air pollution have been analyzed and quantified.

The Air Quality Division partnered in the Bay Regional Atmospheric Chemistry Experiment (BRACE) along with other federal, state, and local organizations. The goals of BRACE are to estimate the direct deposition of nitrogen into

Tampa Bay, determine the regional sources of this nitrogen, and assess the regional air quality before and after the Gannon power station changes to natural gas as a fuel source. The Air Monitoring Section collected nitrogen data at the Azalea Park site as part of the BRACE study. Additional sampling for particulate matter and aerosols was done at the Azalea site by other BRACE participants. In addition, Department of Environmental Management Air Quality Division provided a site at the Weedon Island Preserve for a vertical wind profiler.



*Locations of Environmental Management air monitoring sites*

## Permitting & Compliance

The Permitting and Compliance Program oversees both permitted and unpermitted sources of air pollution within Pinellas County. The program consists of the Toxics and Stationary Source Sections. The inspections include toxic and hazardous sources, as well as oil-fired power plants, waste incineration facilities, gasoline stations, paint and coating operations, and other sources that emit regulated pollutants.

Permitting staff review state permit applications for air pollution sources to ensure compliance with control standards. In fiscal year 2002, the permitting staff conducted 115 permit reviews consisting of 13 major and 102 minor facility source permits.

Stationary source staff inspect permitted and unpermitted sources, investigate citizen's complaints, compile annual emission inventories for air

pollutants, review compliance test reports, inspect gasoline stations and tanker trucks for vapor recovery, and enforce the County's Comprehensive Air Quality Ordinance.

The Air Quality Asbestos/Air Toxics staff inspect permitted and unpermitted sources, investigates complaints, inspects demolition and renovation projects for proper removal and disposal of asbestos material, and cooperates with state and local agencies for asbestos notifications. Other activities include computer modeling to evaluate potential air toxic emission impacts, development of an air toxics control program and special section projects

During the fiscal year 2002, the Compliance Program inspected 756 stationary source inspections, inspected 585 asbestos demolition and renovation projects, responded to 374 air complaints, and reviewed 162 compliance test reports. These compliance activities resulted in the processing of 113 advisory warning letters, attending 47 compliance meetings, and processing 39 consent orders. Consent orders are an enforcement action that requires the facility to make corrective changes and/or pay a penalty. Total penalties collected in fiscal year 2002 were \$49,050.00. Penalty revenues are deposited into the county Air Pollution Recovery Trust Fund and are used only for air pollution control program related to the control of emissions, air quality monitoring, facility inspections, and other such purposes related to the Permitting and Compliance program.

In addition, the Air Quality Division received permission from the Board of County Commissioners to collect asbestos removal and demolitions fees. The pass-through fees collected by the State did not cover the “direct” costs for the asbestos program. The new fees are expected to cover these direct costs associated with the compliance work necessary to ensure the proper removal of asbestos during renovation and demolition projects. The new fee schedule, which was approved on August 27, 2002, went into effect on October 1, 2002. The County anticipates collecting approximately \$94,000 in fiscal year 2002-2003.

## Planning & Analysis

Public education and outreach activities conducted in 2002 concentrated on strengthening existing partnerships and implementing programs developed through these partnerships. These include:

- \* Air toxics monitoring and analysis (including risk assessment) with the Hillsborough County Environmental Protection Commission
- \* Participation in the American Lung Association of Gulfcoast Florida’s Air Quality Task Force (AQTF). AQTF emphasis has continued in two areas: 1. The Airwise grade school educational program (for the first time in 2002 the Airwise program was used in private schools); and 2. Daily air quality reporting (see [www.tampabayairquality.org](http://www.tampabayairquality.org))
- \* Participation with the University of South Florida College of Public Health in teaching students and teachers about the environment through seminars and hands-on activities (e.g. the “Public Health Possibilities – Plus/Project HELP” program)
- \* West Central Florida Air Quality Coordinating Committee (WCFAQCC). WCFAQCC is an organization comprised of public and private entities working to promote communication between various stakeholders and improve public awareness of air quality issues

During 2002, EPA finalized improvements of the models used to calculate emissions from on-road vehicles. As a result of these model changes vehicular emissions budgets contained in the State Implementation Plan had to be revised. Section staff worked in conjunction with personnel from the Pinellas County Metropolitan Planning Organization and Florida Department of Environmental Protection to complete this task.

### ADMINISTRATION

Administration supports key administrative and daily operational needs. Staff is responsible for maintaining the division’s budget and federal grants, program and policy development, interagency coordination, media relations and clerical support.

For more information about the Air Quality Division, contact Peter Hessling at (727) 464-4422.

## Automation in Environmental Management

The County has embraced a decentralized computing environment consisting of smaller, semi-independent Local Area Networks (LAN's) and personal computers. New advances in hardware and software have put the power of the personal computer in the hands of the users. The department uses a myriad of software application to track environmental compliance issues with permits, performance on individual projects and contracts, violation follow-up, mitigation success, watershed and habitat use modeling, land management successes and biological research, to name just a few. Various groups in the department interface their data with State and Federal agencies. The department continues to take full advantage of office automation tools including word processing, calendaring, personnel and resource scheduling, e-mail, database, and spreadsheet functionality.

### INFORMATION SUPPORT SERVICES

With the explosion of personal desktop computers in the department comes the need to support the entire information system infrastructure. This includes maintenance and support of workstations, local and networked printers, application support, office automation tools, assorted peripheral devices and administration of three servers in locations throughout the county, with a fourth server scheduled to come on-line in late 2002. The section also provides long-range strategic direction related to information technology issues as well as evaluating future technologies. The section provides purchasing and budgetary support to the department ensuring the best tool is acquired while maintaining fiscal responsibility.

### GRAPHICS AND WEB PAGE SUPPORT

Educating and informing the public and employees about our environment is vital to the success of our mission. To that end, the department hired a graphic artist to produce departmental publications and develop departmental web pages. During the year, numerous items were produced including a department annual report, a division annual report, brochures, booklets, stickers, signage and posters. For a list of available publications on-line please visit our web site at:

<http://www.pinellascounty.org/Environment/pagesHTML/pub10.html>

The popularity of the Internet has given rise to the need to provide information in an accessible format to our customers on the "World Wide Web". To accomplish that task, the department began work on an "improved" departmental web presence consisting of many unique pages of information. It will include information about our different divisions and section, our preserves and management areas, our public outreach effort, to name but a tiny portion of the information available. It will also have a mechanism for filing a code violation, water resource or air quality complaint on-line. The "improved" departmental web site is expected to debut in October 2002. Please visit us on-line at: [www.pinellascounty.org/Environment](http://www.pinellascounty.org/Environment)

### GIS/COMPUTER MAPPING SUPPORT

Since the implementation of a Geographical Information System (GIS) for Pinellas County Government in the early 1990's, it has matured into a user friendly and data rich tool. Many County departments have been active participants in GIS, with the Department of Environmental Management among the lead players. A partial listing of data that Environmental Management has been involved with producing includes: manatee location and activity, ambient water quality monitoring sites, benthic sites, watershed-related data, seagrass monitoring, and information related to the County preserves and management areas. The County has also incorporated data from other sources, including the Southwest Florida Water Management District, the United States Geological Survey, University of Florida, and others. The data is readily accessible by all members of the Department using a browser-based application, MapGuide<sup>®</sup> from AutoDesk<sup>®</sup>. This program allows users to easily query the database and create customized plots satisfying their needs using a Windows-like interface. Other, more complex outputs or what-if scenarios are easily produced by departmental GIS staff.



*Geographic information is plotted*

For more information about the Information Support Services Section, contact Laura Potter at (727) 464-4761.

## Environmental Lands Division

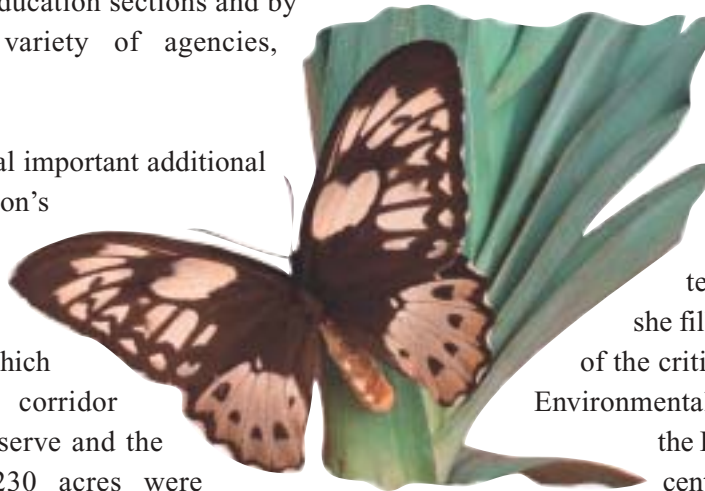
The mission of the Environmental Lands Division of the Department of Environmental Management is to provide sound stewardship to the County's wild lands and opportunities for the appreciation of their intrinsic value. Specifically, we are responsible for the management and public use of a suite of 13 preserves and management areas found throughout Pinellas County. We do this through a coordinated effort between our land management, research and education sections and by partnering with a wide variety of agencies, organizations and the public.

During the past year, several important additional lands were added to our Division's management. One of the most significant areas were purchases made in the Anclote Islands project area which now provide an unbroken corridor between Brooker Creek Preserve and the Anclote River. Nearly 230 acres were purchased during the year, comprised from 6 separate acquisitions. The addition of these lands protects some of the region's most beautiful ecological resources and creates significant opportunity for future passive public uses. Significant additions also were made within the Brooker Creek Preserve project area. Two separate infill parcels were acquired, totaling about 15 acres. Another 26-acre forested wetland parcel at the extreme southern end of the Preserve was donated to us by the Southwest Florida Water Management District. This latter tract will be added to land owned by the City of Oldsmar to create a 40-acre environmental park that will serve as a southern trailhead for the Preserve.

While most of the new acquisitions occurred in and around Brooker Creek Preserve, a very significant purchase was completed for addition to Wall Springs Park. Nearly 90 acres of coastal uplands and wetlands were acquired to finalize the plans for this important County Park. The Environmental Lands Division will play a role in the management of the ecologically sensitive areas of Wall Springs Park, working closely with the Park Department. During the past two years, acquisition of the "Wall Springs Park Additions" was made

possible through successful grant applications made to Florida Communities Trust, Florida Department of Community Affairs. The Division played a significant role in garnering nearly \$11 million of state monies to aid in these purchases during the past two years.

The Division's staffing has undergone important growth as well. One of the most significant was the continued growth in our Education Section. During the past year, we filled positions of Senior Environmental Specialist (essentially the Assistant Education Center Manager) for both of our planned education centers: Weedon Island Preserve (Phyllis Kolianos) and Brooker Creek Preserve (Christy Hughes). Christy was promoted from the temporary education position that she filled during the previous year. One of the critical teaching/naturalist positions, Environmental Specialist II, also was hired for the Brooker Creek Preserve education center, Kelly Victory.



Other sections of the Division hired important new staff during the year. Kristin O'Meara was hired as the Division's Office Specialist, helping with various office operations as well as assuming the lead role in running the ever-expanding volunteer program. Marcia Colby filled our vacant Division GIS position, replacing Frank Sargent who left to take a promotion with the Southwest Florida Water Management District. Chris Helt was hired as a new Park Maintenance Worker based at Brooker Creek Preserve. In the Research section, Kristen Penney became our new Senior Environmental Specialist while Don Stillwaugh was promoted from a temporary position to a permanent Environmental Specialist II. At Weedon Island Preserve, Kevin Petticord left his Spray Tech position for a promotion at Mosquito Control and Skip Stone left his Park Ranger position for a similar one in the Park Department. Both of these positions were reclassified as Park Maintenance Workers and one of the openings was filled by Chris Nawrot. Currently, our Division is staffed by 27 employees. Three vacancies remain unfilled; a graphic artist position, a publications assistant position in the Education Section and a Park Maintenance Worker for Weedon Island Preserve.

## Land Management

### MISSION

The mission of the Land Management Section is to provide sound management techniques to the various lands within the Division for the restoration and preservation of their natural and cultural resources. The Section is responsible for managing various restoration activities, supervising the County’s Wildland Fire Team, monitoring and surveying natural and cultural resources, implementing passive public use opportunities, and directing security measures.

### LAND MANAGEMENT ACCOMPLISHMENTS

During the past year, the Section made extensive accomplishments in a wide variety of areas. Management plans for Mobbly Bayou Wilderness Preserve Management Area were further refined following a public meeting and significant field work to build various databases for the property. An initial management plan for the environmental portions of Wall Springs Park also was completed.

### Brooker Creek Preserve

Several major hydrological restoration projects of Brooker Creek were initiated that will restore historic flow patterns to Brooker Creek channels once completed. These include:

- \* Brooker Creek (Channel F). Design work was completed and plans were made to select a contractor for the physical work.
- \* Brooker Creek (Channel L, Florida Power crossing). A consultant completed the design plans. A contractor was selected to initiate the physical work.
- \* Brooker Creek Comprehensive Watershed Plan. A proposal was drafted with input from the Southwest Florida Water Management District and Hillsborough County to secure cooperative funding to study the regional watershed, current hydrology and prioritize restoration needs.

- \* “Mount Brooker”. Work continued to remove “mountains” of clay (up to 19-ft. deep) historically dumped in a southern portion of the Preserve.

### Other lands

Restoration efforts were initiated at a number of other Preserves and Management Areas:

- \* A conceptual design plan for a major restoration effort at Allen’s Creek Management Area (including 14 acres of wetland creation) was finalized. Earthwork should commence in early FY 2003. This project is funded by SWIM.
- \* Major efforts to remove exotic plant species were initiated or continued at the Tierre Verde portion of Shell Key Preserve, at Shell Key Preserve itself, and at Mobbly Bayou, Joe’s Creek, and Alligator Lake Management Areas.
- \* Native tree species were replanted in the southern public use portion of Shell Key.

### Prescribed Fire

The Division manages and supervises the County’s Wildland Fire Team. Composed of about 45 members and representing employees from many Departments, the Wildland Fire Team conducts prescribed fire on a variety of County lands and assists the Florida Division of Forestry, where needed, in the final mop-up of wildfire on County-managed lands. The Wildland Fire Team accomplished a great deal this year despite difficult weather conditions for much of the year. Nearly 100 acres at Brooker Creek Preserve and 36 acres at Weedon Island Preserve were successfully burned. In preparation for future burns, 28 miles of firebreaks were established and/or maintained.



Wildland Fire Team members oversee a controlled burn

These firebreaks make it easier to control the burn as well as providing better access to the site for local fire departments and fire suppression vehicles.

### Public Use Enhancements

The development and management of trails and facilities for the public use of our properties is an important element of our program. An additional 2 miles of hiking trail was constructed and marked at Brooker Creek Preserve with the assistance of an Eagle Scout candidate. This trail will connect the Preserve’s 9-mile wilderness trail to the planned Oldsmar City Park project on the Preserve’s southern border. A project to redesign the canoe launch at Weedon Island Preserve was completed. The redesign will make it easier for users to load and unload their boats. Existing public trails were maintained. This includes nearly 13 miles of equestrian trails and about 17 miles of hiking trail at Brooker Creek Preserve; about 3 miles of boardwalk, an observation tower, canoe launch and fishing pier at Weedon Island Preserve; and a public area at Ozona Management Area. Guided walks continued at Brooker Creek and Weedon Island Preserves.



*A view of a pond along one of the scenic trails managed by Environmental Lands Division*

### Security

The Environmental Lands Unit of the Pinellas County Sheriff’s Department continued to work at the Division’s three Preserves: Weedon Island, Brooker Creek and Shell Key. During the past year, the Environmental Lands Ordinance was approved by the Board of County Commissioners and the language adopted as law.

### Ecological Monitoring

Monitoring the application of various land management strategies is critical to our future effectiveness and efficiency as land managers. Monitoring programs of importance were:

- \* Wildlife Usage of Xeric Habitat - Methods that were used to survey the “islands” of dry upland habitats at Brooker Creek Preserve during the development of the initial management plan in 1992 were repeated for the second consecutive year to document if there have been changes in wildlife populations in these critical habitat areas.
- \* Starkey Wilderness Preserve/Brooker Creek Preserve Red-Cockaded Woodpecker (RCW) feasibility study - We completed our contract with Dr. Reed Bowman to assist us in identifying how we should manage the site in a way that increases the region’s potential as RCW habitat.
- \* Flora and Fauna of Weedon Island Preserve - We initiated a contract with Dr. Steve Christman to conduct in-depth flora and fauna surveys throughout Weedon Island Preserve. Such work has not been previously done by expert biologists.

### Research

The mission of the Division’s Research Program is to collect and analyze data that may be used to support its land management and wild land conservation activities and to provide educational opportunities for future scientists. Through research, the

Division advances the scientific knowledge of our protected wild lands, provides opportunities of professional advancement to students and other environmental professionals, and shares its experience and knowledge with other agencies and the scientific community. The Research Section also manages the operation of the Biological Field Research Station at Brooker Creek Preserve. The Station is a member of the Organization of Biological Field Stations (OBFS), an association of about 180 field stations and professionals concerned with field facilities for biological research and education, primarily in North America and Central America. The Station shares the OBFS mission to promote the exchange of information and ideas among field station directors on such topics as management of field stations and reserves, promotion of biological field education and research, environmental monitoring, and funding opportunities.

**RESEARCH ACCOMPLISHMENTS**

**D**uring the past year, the Research Section continued work on a number of long-term studies and survey initiatives.

**Research Studies**

**Catesby’s Lily**

The ecology of Catesby’s lily (*Lilium catesbaei*), a threatened species, is important when considering restoration of Florida’s pine flatwood communities. Decades of fire suppression



may have contributed to the overall decline of this species. As prescribed fire and surrogate mechanical techniques are applied, the response of Catesby’s lilies will help us assess our restoration success. Little is known concerning the ecology of the Catesby’s lily and in 1995, a general ecological study was initiated at Brooker Creek Preserve. For the past seven years, data has been collected at five pine flatwood sites. Flowering and seeding dates, mortality, and seed production have been the primary focus of this study.

**Tampa Butterfly Orchid**

The ecology of the Tampa Butterfly Orchid (*Encyclia tampensis*) is important when considering the restoration of the Preserve’s surface water hydrology. An epiphytic orchid at the northern extension of its geographic range, this plant is greatly dependent on the hydrology of Brooker Creek Preserve’s cypress swamps. We have been studying butterfly orchids since 1995 at four sites. This study was continued during the past fiscal year.

**Shell Key Preserve Studies**

In response to the Shell Key Preserve Management Plan a third season of shorebird monitoring was completed. One month prior to beginning the study, semi-permanent posts with signs designating the Bird Preservation Area were installed. Shell Key provides critical nesting habitat for four listed species, the American oystercatcher, snowy plover, least tern, and black skimmer which were the foci of this study. Data also was collected on wintering bird use, sea turtle nesting and public use of the island. Research studies were initiated to examine sea grass conditions, water quality, and juvenile fish populations.

**Pine Flatwoods**

Understanding the effects of prescribed fire and roller chopping (as a surrogate to fire) as restoration techniques is critical to the management of pine flatwood communities at Brooker Creek Preserve. A comprehensive study designed to document the vegetative and wildlife responses to each treatment continued for the second year.

**Cooperative Projects**

Through a cooperative project with St. Leo University and the University of South Florida, we again participated in a study to measure the response of vegetation, birds, reptiles, and amphibians to wetland rehydration from groundwater wells. The fourth year of sampling for this project was completed. A research project with the University of South Florida and Hillsborough County designed to learn more about the efficacy of gopher tortoise relocation methods was continued for a second year.

## Surveys

**R**outine surveys are important to establish population trends and to discover new species. During the year, we continued mammal tracking, avian and butterfly surveys at Brooker Creek Preserve. Butterfly surveys were initiated at Weedon Island Preserve.

## Internships

**T**he Division provides educational opportunities for students through paid Management Internships with the Research Section. Students are exposed to a wide variety of field techniques and analyses that assist them in their career choices while collecting data pertinent to the Division's objectives. Individuals who have participated in this program this past year include: Amy Villamanga - Eckerd College/Environmental Studies, Heather Williams - University of South Florida/Environmental Science, Jason Ester - University of South Florida/Environmental Science, and Jason DePue - Bob Jones University/Biology.

## Education

### MISSION

**T**he mission of the Division's Education Program is to foster a greater understanding and appreciation of the natural and cultural resources of the County's Preserves and Management Areas and to ensure that they are supported and preserved in perpetuity. The education program strives to provide state-of-the-art educational opportunities for teachers, students and visitors.

### EDUCATION ACCOMPLISHMENTS

**D**uring the past year, the Education Section made significant progress in a number of areas.

### Publications

**P**ublications are an important tool in educating the public about the Division and the natural and cultural resources we manage. We continued to publish and distribute the Division's quarterly newsletter, *Tracks and Trails*, to several hundred persons on our mailing list and to have it posted on the County's website. For the second year, the Section also assumed responsibility for producing the Division's Annual Report. Several publications were completed for use at the opening of the Weedon Island education center. A contract was completed to design and publish a field guide to Brooker Creek

Preserve. A draft was completed and final publication expected in FY 2003.

## Outreach Activities

**W**e conducted the fifth annual "Toad-ally Terrific Field Camp" for upcoming 6th graders at the Brooker Creek Preserve. Two 5-day sessions were again offered to a total of 25 students. The Division supported a similar camp at Weedon Island Preserve, the fifth annual "Catch the Weedon Island Fever Summer Camp". The campers, between 4th and 8th grade



Education staff instructing camp participants

in age, took part in environmental and cultural programs and trips during two one-week sessions, sponsored by the Friends of Weedon Island, the Pier Aquarium, the St. Petersburg Museum of History, and the Southwest Florida Water Management District. Additionally, the Section was involved with the County's fourth Family Earthfest at Pinewood Cultural Park in Largo, with a booth featuring hands-on explorations on animal tracks and animal calls, publications, gifts, and information.

### EDUCATION CENTERS

**T**he Section is responsible for the development and management of education centers at Brooker Creek and Weedon Island Preserves. During the fiscal year, significant progress was made on the design of both centers and the programs that will be conducted there. Partnerships were sought to assist the County in funding the full exhibits plan being designed. Completion of these centers is a section priority and will permit the Division to reach a large public audience with effective educational programming.

### Brooker Creek

The major focus of this center is to interpret the natural history of this 8,500-acre Preserve and relate this to the larger Florida story. Much of the infrastructure was completed during the year and construction of the buildings was initiated. The Exhibits Program was continued and plans were further refined.

### Weedon Island

The Weedon Island center was put on a fast-track construction schedule. Construction of the center was nearly completed in time for the dedication ceremony scheduled November 2, 2002. Final construction is expected very early in FY 2003 and the center will open to the public at that time. The exhibits program also was put on a fast-track to be completed by the opening date. The floor plan was completed as was several of the major exhibits. It is hoped that all exhibits can be fully designed and constructed by the end of FY 2003.

#### MAJOR EVENTS, AWARDS, PRESENTATIONS

One major award during the year:

- \* Stewards of Heritage Award, presented to Keith Thompson, Preserve Supervisor, Weedon Island Preserve, by Florida Anthropological Society

Our volunteers received several awards during the year:

- \* Bob Kimzey, Partners in Public Service Award, Pinellas County Board of County Commissioners

- \* Shell Key Preserve Volunteers, National Association of Counties Achievement Award, National Association of Counties
- \* Shell Key Preserve Research Group, Outstanding Volunteer Service, Pinellas County Board of County Commissioners
- \* Robert Kimzey won the Green Thumb Award 2002, presented by the City of St. Petersburg for his outstanding services to the Environmental Lands Division on behalf of our natural environment

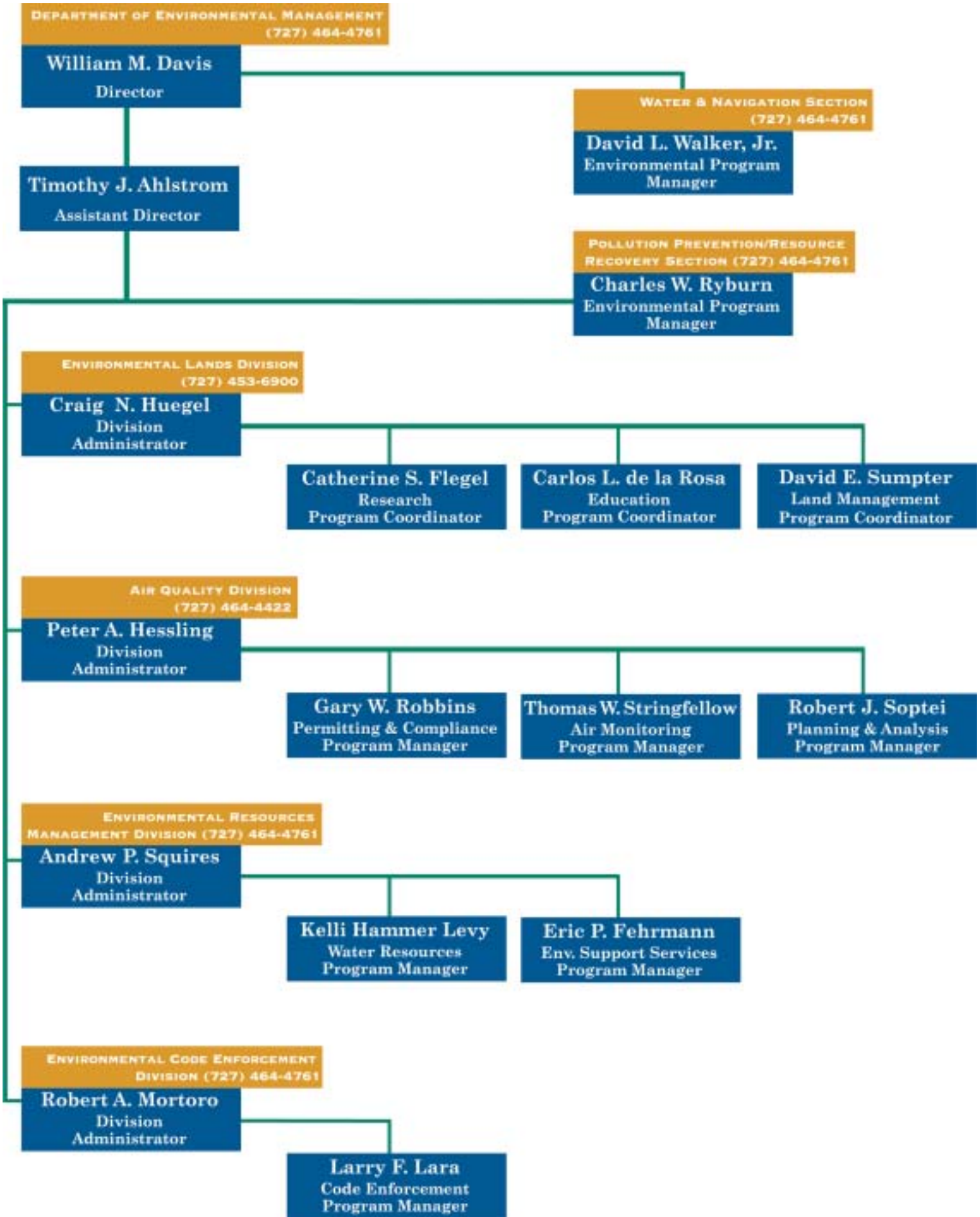
## Volunteer Program

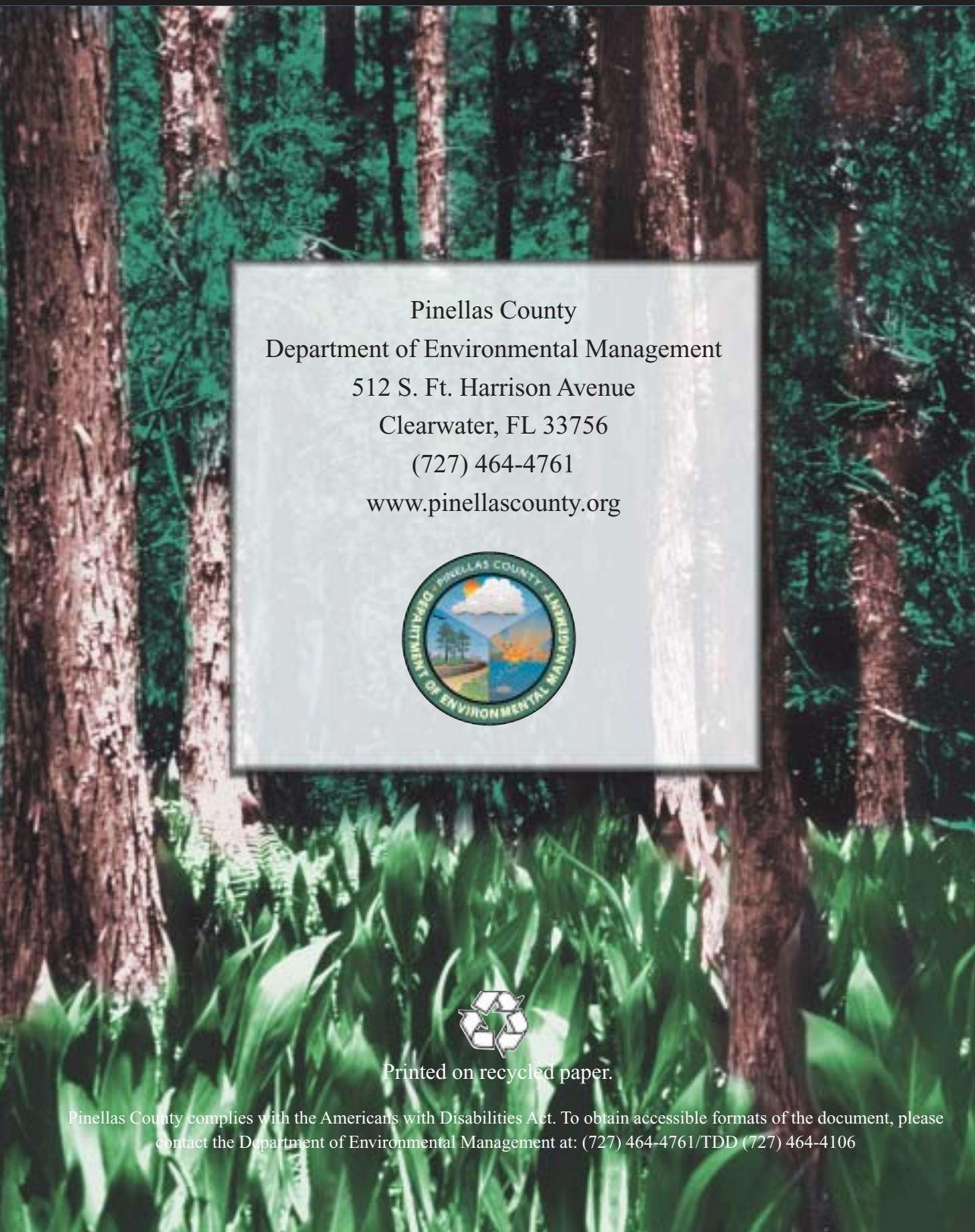
Tremendous growth occurred in the Division's volunteer program. The volunteer corps increased in membership from 172 to 226 volunteers. Total volunteer hours for the year was more than 4,300, reflecting a 18% increase over the previous year's total. Volunteer increases occurred mostly because of increased volunteerism at Weedon Island and Shell Key Preserves. Major increases will be expected as the education centers open during next fiscal year.

For more information about the Environmental Lands Division, contact Craig Huegel at (727) 453-6900.



*The Weedon Island Preserve Cultural and Natural History Center nearing completion*





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