BISCAYNE BAY REGIONAL RESTORATION COORDINATION TEAM

ACTION PLAN

ACCEPTED BY THE SOUTH FLORIDA ECOSYSTEM RESTORATION WORKING GROUP JANUARY 20, 2006

TABLE OF CONTENTS

SECTION **PAGE**

LIST OF ACRONYMS

BBAPA.....Biscayne Bay Aquatic Preserve Act
BBPI .....Biscayne Bay Partnership Initiative
BBRRCT .....Biscayne Bay Regional Restoration Coordination Team
BMPs .....Best Management Practices
CERP.....Comprehensive Everglades Restoration Plan
EPOCs .....Emerging Pollutants of Concern
FFWCC.....Florida Fish and Wildlife Conservation Commission
FDEP .....Florida Department of Environmental Protection
FIU.....Florida International University
MAST .....Marine Advisory Support Team
MFLs .....Minimum Flows and Levels
NOAA.....National Oceanic and Atmospheric Administration
NPS.....Non Point Source
OFW.....Outstanding Florida Water
SFWMD.....South Florida Water Management District
TMDLs.....Total Maximum Daily Loads
TPL.....The Trust for Public Land
USFWS.....United States Fish and Wildlife Service
USEPA.....United States Environmental Protection Agency

GLOSSARY OF TERMS

Aquifer: water bearing rock formation

Alert signage: *Needs Definition*

Benthic: bottom-dwelling or associated with the bottom of a water body

Best Management Practices (BMPs): methods by which potential pollutant loading to a water body can be reduced or eliminated through at- or near- source management

Dewatering: removal of water from upland excavations or trenches during construction

Dredging: excavation of submerged sediments and/or rock substrate

Ecosystem: community of organisms, including humans, interacting with one another and the environment in which they live

Ecotourism: pleasure-related travel and travel services that involve visiting, interacting with, and observing nature or natural systems

Estuary: a partially enclosed coastal embayment where fresh water and sea water meet and mix

Emerging Pollutants of Concern (EPOCs): chemical compounds, typically found in wastewater treatment associated with human sources, including, but not limited to, hormones, prescription and non-prescription pharmaceuticals, human and veterinary antibiotics, personal care products and industrial and household chemicals

Exotic Species: kinds of plants and animals not normally found in an area.; sometimes such species are highly invasive and outcompete native species sometimes to the point of altering the structure and function of landscapes and habitat (often referred to as Invasive Species)

Filling: placement of soils, sand, rock or other materials in wetlands or tidal waters

Hard bottom community: plants and animals that are living at sites with little or no sediment

Imperiled species: plants and animals appearing on the state and federal official lists of endangered species, threatened species, and other species categorized in some way by the respective jurisdictional agencies as meriting special protection or consideration

Mesohaline: a distinct estuarine salinity zone defined as having a salinity envelope of 5-18 part per thousand according to the Venice System of estuarine zonation

Nonpoint source (NPS) pollution: unlike pollution from industrial and sewage treatment plants, which are compartmentalized and often flow from the end of a pipeline or other outflow structure; NPS comes from many diffuse sources; caused by rainfall (or snowmelt in

colder climates) moving over and through the ground. As the runoff moves, it picks up and carries away natural and human-made pollutants, finally depositing them into lakes, rivers, wetlands, coastal waters, and even underground sources of drinking water

Outstanding Florida Waters (OFWs): a water-body designated by the State of Florida as worthy of special protection because of its natural attributes

Rip-rap: an assemblage or revetment of boulders used to stabilize shorelines or absorb wave energy

Sanitary sewer: a system of pumps and underground pipes that collect and transport untreated sewage

Storm sewer: a system of catch basins, culverts, pipes and pumps that collect and disperse storm water runoff

Turbidity: condition of reduced water clarity due to the presence of suspended particles

Watershed: the land area that contributes runoff and groundwater flow to a specific receiving water body

Stormwater: surface water runoff resulting from rainfall that does not percolate into the ground or evaporate

Sustainability: the state of having met the needs of the present without endangering the ability of future generations to meet their own needs

Total Maximum Daily Loads (TMDL): amount of a given pollutant that may be allowed to enter a water body on a daily basis as defined by the US EPA

Water dependent uses: uses that must be located adjacent to, or with access to, navigable water bodies, which cannot exist or otherwise occur without association with such water bodies.

Wetlands: areas that are inundated or saturated by surface water or groundwater at a frequency and duration sufficient to support a prevalence of vegetative or aquatic life that require saturated or seasonally saturated soil conditions for growth and reproduction

1.0 INTRODUCTION

In 1999 the Florida Legislature established the Biscayne Bay Partnership Initiative (BBPI). Its mission was *"The development of an open and inclusive, community-based forum to survey public and private sector activities and programs affecting Biscayne Bay, and to provide recommendations for actions to protect, improve, and enhance the bay's resources, its social, economic, and natural values, with its ecological health as a priority."* This community-based group was formed to survey the status of the Bay's resources and to produce a final report of its findings, with recommendations for further action. In its final report in 2001, the BBPI defined the widely varying character and physical attributes of the Bay, and set forth a listing of values and goals for the future of the Bay. One key action recommended by the BBPI was the creation of a Biscayne Bay Project Coordination Team as part of the Working Group of the South Florida Ecosystem Restoration Task Force. This team, as envisioned by the BBPI, was to function as a forum for, and to, the public, while also acting as a voice for the Bay, and advisor to the Working Group. Furthermore, this team was to develop an action plan in order to "guide efforts and prioritize activities to balance appropriate economic use with improved public access, increased habitat restoration and environmental protection." Thus, from this vision, the Biscayne Bay Regional Restoration Coordination Team (BBRRCT) was formed.

Using the final report of the BBPI as a guide, the BBRRCT has been tasked with integrating and coordinating restoration, enhancement, and preservation projects, plans, and activities, and working towards maintaining a functioning ecosystem while promoting a sustainable region. Specifically, the purpose of the team is to provide a forum for public involvement, outreach and interagency coordination and communication; to identify priority issues for action and to create teams to address those issues as needed; to make recommendations on key issues to the Working Group; to identify goals and performance measures related to key issues and to assess the achievement of goals; to identify funding requirements; and to review elements of the Comprehensive Everglades Restoration Plan (CERP) that affect Biscayne Bay. To these ends, the BBRRCT's vision statement references the need for ecological restoration and greater public accessibility, while supporting a variety of uses and economic activities. Furthermore, the BBRRCT's stated vision refers to active management in order to promote coordination and resolve conflicts, while calling for necessary resources to be allocated to meet the needs of the Bay.

This Action Plan is the first step in realizing the vision for the Bay as laid out by the BBPI and the BBRRCT. It is the culmination of literally years of effort by various diverse stakeholders who have an interest in Biscayne Bay. Upon adoption of this Plan, the BBRRCT will set to work on following the framework set forth herein, and supporting implementation of those actions it deems of the highest priority. This Plan is not meant to operate in a vacuum, nor to be a closed document, but rather, the BBRRCT will re-examine and update the content on a periodic basis, as priorities change and actions are completed. Additionally, the BBRRCT will function as a public forum, and will begin to assess activities related to the Bay and its restoration.

2.0 VISION STATEMENT

The initial objective of the Team as identified in the Team's Charter approved by the South Florida Ecosystem Restoration Task Force Working Group was to develop a Biscayne Bay Action Plan. The Working Group intended for this Action Plan to "guide efforts and prioritize activities to balance appropriate economic use with improved public access, increased habitat restoration, and environmental protection." The Team developed and adopted their vision for the future of Biscayne Bay which is as follows:

Biscayne Bay is ecologically restored. It is readily accessible to and appreciated by all members of our diverse community. It supports a variety of uses and economic activities that are environmentally sustainable. Biscayne Bay is managed to promote coordination and to resolve conflicts among competing objectives with sufficient resources to achieve this vision.

3.0 OVERARCHING GOALS

3.1 Preamble

The role of the BBRRCT as stated in the BBPI report is to provide a unified voice for Biscayne Bay, improve coordination of Bay related initiatives as part of regional restoration plans and to serve as a clearinghouse for many of the BBPI recommendations. The BBPI and/or the Team Charter included a set of guiding principles for the Team:

- The Team shall not supplant agency authority or have any regulatory authority
- The work of the Team shall be consistent with the Biscayne Bay Aquatic Preserve Act (BBAPA).
- The Team shall serve in an advisory role and shall not serve as a direct granting agency
- Team membership shall be representative of Biscayne Bay interests
- Team members shall be knowledgeable about Biscayne Bay issues
- The team shall recognize the importance of watershed management for the protection of Biscayne Bay
- The team will coordinate with entities involved in coordinating scientific/research efforts

The BBPI further identified a number of functions of the BBRRCT:

- Provide a forum for public involvement.
- Provide information to the public regarding activities and issues related to Biscayne Bay.
- Provide a forum for interagency coordination and communication.
- Identify priority issues for action and create Biscayne Bay issue teams as needed to assist the BBRRCT.
- Make recommendations on key issues to agencies and organizations.
- Identify goals and performance measures related to key issues.
- Assess the achievement of goals.
- Identify and pursue funding for key priorities.
- Review elements of CERP that affect Biscayne Bay.

The common threads weaving the tapestry of all these issues together involve the inadequate provision of:

- Dedicated and predictable funding sources that address land acquisition and other needs to implement the objectives of this Plan, operations and maintenance shortfalls, broad environmental education opportunities, and enforcement to protect natural resources and public safety.
- Efficient and effective coordination among all levels of government and the more than 36 different jurisdictions, agencies and organizations with responsibility for management, protection and use of the Bay and its resources; and,
- The full enforcement of existing practices, procedures and safeguards designed to enhance the potential and experience of the Bay.

With the above functions and issues in mind, the BBRRCT developed four Overarching Goals:

1) Coordination
2) Funding

3) Tracking and Follow-up
4) Enforcement of Existing Regulations

3.2 Coordination

Coordination must be an integral part of what the BBRRCT does to promote and assist in the well being of Biscayne Bay. By providing a public forum for Bay related issues and projects that impact the Bay, the BBRRCT can foresee and help eliminate, or minimize, conflict among Bay stakeholders and at the same time improve interagency coordination on local, state and federal levels.

The team views the purpose of its coordination role to be the achievement of three main objectives:

1) Act as a unified voice for Biscayne Bay.
    a. Increase awareness of Biscayne Bay among agencies, policy makers and citizens by publicizing the team's vision.
    b. Elevate the importance of Biscayne Bay's restoration needs in regional planning efforts.

2) Identify and prioritize issues and objectives for action.
    a. Make recommendations to address gaps, duplications and conflicts between agencies and stakeholders.
    b. Make recommendations to the Working Group based upon priorities identified as part of this Action Plan.
    c. Update the Action Plan on a periodic basis.

3) Serve as a clearinghouse for many Bay matters.
    a. Act as a centralized forum where agencies and organizations involved in, or affecting Biscayne Bay can learn about Bay initiatives and identify gaps, duplications and conflicts.
    b. Act as a centralized forum for information and activities related to Biscayne Bay.
    c. Use information collected in the role of clearinghouse to educate the public and policy makers about Biscayne Bay.
    d. Provide a forum for stakeholders views and opinions regarding Biscayne Bay activities.

3.3 Funding

Lack of adequate resources, especially money, is often a barrier when it comes to restoring and maintaining Biscayne Bay. In keeping with the impetus for the BBPI and the BBRRCT, the team will strive to ensure that Biscayne Bay receives funding that is on par with other regional restoration efforts and initiatives within the State of Florida. To that end, the BBRRCT has identified funding as a priority and an overarching goal.

The BBRRCT identified the following objectives related to this goal:

a) Review and identify funding priorities for Biscayne Bay.

b) Develop a master list of funding sources for Bay related projects, both public and private.
c) Identify existing and potential new dedicated funding sources.
d) Work to ensure agencies serve Biscayne Bay at a level consistent with other restoration efforts.
e) Encourage collaboration among stakeholders in raising funding for projects consistent with priorities identified in the Action Plan, to avoid duplicative or competing funding requests.

3.4 Tracking and Follow-up

One area of importance recognized by the BBRRCT that has been largely overlooked is consistent and thorough tracking of Bay management projects and initiatives as they progress, as well as proper follow up to determine how effective they have been and what further work is needed. As such the BBRRCT has identified this area as a priority and an overarching goal.

The BBRRCT identified the following objectives related to this goal:

a) Develop better tracking and communication of Bay projects recommended for funding or implementation by the BBRRCT and their results.
b) Develop an effective method for tracking and follow-up of long term restoration projects and ongoing activities by stakeholders and agencies.
c) Develop a periodic "report card" on Bay related activities and BBRRCT priorities.
d) Periodically review and update this Action Plan as a "live" document.

3.5 Enforcement of Existing Regulations

A final overarching goal recognized by the BBRRCT as critical to the maintenance and long term health of Biscayne Bay and public safety is improvement in the enforcement of existing regulations pertaining to the Bay. The BBPI report states that while existing local, state and federal regulations are generally sufficient to regulate activities within Biscayne Bay, efforts to achieve compliance are not sufficient. The report further recognizes that enforcement has become more difficult over time, as population and Bay usage have increased while enforcement resources such as personnel and funding have decreased.

The BBRRCT and the BBPI report have identified the following objectives relating to this goal:

a) Increase on-water, waterfront and watershed enforcement of regulations with the ultimate goal of a continuous bay-wide enforcement presence that results in increased compliance.
b) Each agency tasked with enforcement of regulations as they pertain to Biscayne Bay should perform annual manpower and resource needs assessments and provide summarizing reports.
c) Expand the Marine Advisory Support Team (MAST) to include an interagency marine regulatory task force to address bay-wide enforcement issues and strengthen enforcement.
d) Develop a multi-agency data base that quantifies number and status of enforcement actions for environmental and safety regulations pertaining to Biscayne Bay.

e) Develop a multi agency status report on rate of compliance for construction and operating permits related to Biscayne Bay.
f) Provide a system of feedback to regulators and legislators in an effort to improve their decision making process.
g) Work with Miami Dade County Planning and Zoning to develop a mechanism that ensures that shoreline development review committee resolutions are implemented.
h) Educate the user population about the rules and regulations to encourage voluntary compliance.
i) Encourage the enforcement of existing regulations designed to protect the physical, visual and public access to the Bay.

4.0 FOCUS AREA 1 - ECOLOGICAL AND PHYSICAL RESTORATION

4.1 Preamble

Biscayne Bay is part of a larger ecosystem, including adjoining coastal water bodies, uplands, and wetlands. Since the turn of the century, it has been directly and indirectly affected by human activities occurring within it and on the land and waters around it. More than 40 percent of north Biscayne Bay bottom habitats were altered by dredging and filling to support urban development of the surrounding upland and for navigation and infrastructure. In the past, marshes and mangroves bordered much of the Bay, but filled and bulkheaded shorelines have replaced most of these natural areas north of Coral Gables. In addition to lost habitat and productivity, this type of shoreline alteration contributes to resuspension and erosion of sediments, poor water clarity, and increased risk of storm-surge damage.

Additionally, the construction and operation of the network of flood control canals and structures caused further physical disturbance and drainage of coastal wetland habitats and altered the volume, timing, and discharge of freshwater to the nearshore estuarine zones of northern and western Biscayne Bay. Rather than a gradual flow of freshwater through wetlands, tidal creeks, and springs, large volumes of freshwater enter the Bay at canal mouths in intermittent pulses, creating a widely fluctuating salinity pattern, particularly during the rainy season. Illegal discharges or spills and runoff from urban and agricultural areas may also convey contaminants, such as nutrients, pathogens, trace metals, pesticides and other chemicals into canal and Bay water and sediment.

Despite these impacts and alterations, Biscayne Bay remains an important estuarine and marine habitat for fish and wildlife, including numerous endangered, threatened or protected species. Mangroves still dominate the shorelines of central and south Biscayne Bay, and productive seagrass and hardbottom communities thrive, even in the most impacted parts of the system. The Bay supports both commercial and recreational fisheries, or provides nursery habitat for additional species of economic importance. Except in or near major canals, water quality meets or exceeds local and state numerical criteria, and in recognition of their unusual ecological values, the Biscayne Bay Aquatic Preserve and Biscayne National Park have been designated as Outstanding Florida Waters (OFWs).

Maintaining or improving the water quality and habitat in Biscayne Bay and adjoining coastal wetland systems requires a combination of preservation, acquisition, restoration and enhancement of remaining environmentally sensitive lands. It is also important to avoid and minimize impacts from future development and redevelopment on the shoreline and in the watershed, and eliminate past consumptive uses, development, and drainage practices that are not environmentally sustainable. Local, state and federal regulatory programs are the principal management tools in place to accomplish this. There are also regional water management and land use planning activities in progress, such as CERP or water supply plans, that are likely to affect Biscayne Bay and provide opportunity for restoring estuarine and wetland habitats and reserving the minimum freshwater needed for a healthy, functioning natural system. These water-related regulatory and planning programs incorporate science-based assessment and performance measures. Continued development of stronger monitoring, research, and modeling tools is essential for preventing degradation and making management of Biscayne Bay more effective, and for ensuring that Biscayne Bay's freshwater inflow needs are met.

4.2 Objectives

The BBRRCT developed a list of objectives related to ecological and physical restoration, and organized them by grouping them into categorical subgoals. It should be noted that many of the objectives relate to activities currently being implemented, or fall within the responsibility of BBRRCT member-organizations or other existing authorities.

4.2.1 Subgoal: Reduce Pollution and Maintain/Improve Water Quality

a) Identify and reduce point and non-point sources of pollution to Biscayne Bay, from land and marine based sources.
b) Continue long-term surface water quality monitoring in the Bay and its tributaries
c) Monitor and provide input to the Florida Department of Environmental Protection (FDEP) in the development of Total maximum Daily Loads (TMDLs) for Biscayne Bay.
d) Establish numerical "antidegradation" water quality targets for nutrients, toxics, water clarity, and Emerging Pollutants of Concern (EPOCs) in order to meet the intent of narrative standards for OFW regulations.
e) Upgrade aging public sanitary and storm sewer system infrastructure to reduce debris and pollutant discharge to surface waters.
f) Eliminate or reduce illegal or improper discharges to storm sewers through regulatory programs, enforcement, and implementation of Best Management Practices (BMPs).
g) Establish stormwater treatment or detention areas in degraded wetlands or other undeveloped lands in south Miami-Dade, including acquisition of lands if necessary.
h) Determine relative significance of atmospheric inputs of air pollutants to surface waters.
i) Reduce or eliminate dumping of trash and litter in the watershed and from vessels.
j) Enforce regulations prohibiting discharges of sewage, oily waste, and other pollutants from vessels.
k) Reduce siltation and water clarity degradation from dewatering, dredging, or shoreline construction activities through the use of floating curtains, treatment systems, or other equipment and operation practices designed to manage turbidity.
l) Assess the potential effects of major dredging and filling projects, on water quality and circulation through monitoring, modeling and applied scientific studies.

4.2.2 Subgoal: Improve Fisheries Resources

a) Obtain fundamental understanding of ecology and population dynamics of target species.
b) Define sustainable take for species of recreational and commercial importance.
c) Support the completion of the Comprehensive Fisheries Management Plan for Biscayne National Park being developed by the National Park Service and Florida Fish and Wildlife Conservation Commission (FFWCC).
d) Enforce existing fisheries regulations.
e) Improve fishing practices to reduce habitat impact and by-catch.
f) Restore and enhance stable estuarine habitats in nearshore areas and coastal wetlands (see also, objectives related to Water Quantity).

4.2.3 Subgoal: Improve Water Management

a) Improve timing, distribution, and the quality and quantity of freshwater inputs into Biscayne Bay to create a more stable mesohaline estuarine zone in the near shore and nearby coastal marshes, and to reduce damaging pulses discharges of large volumes of freshwater.
b) Increase the priority of implementation of Biscayne Bay water resource issues in CERP.
c) Monitor and provide input to the design and implementation of the CERP Biscayne Bay Coastal Wetlands project and Wastewater Reuse Pilot Project.
d) Through CERP, increase efforts to identify alternative sources of additional freshwater, other than reclaimed wastewater, for Biscayne Bay.
e) Monitor and provide input to the South Florida Water Management District (SFWMD) in the development of Minimum Flows and Levels (MFLs) for Biscayne Bay.
f) Increase water storage and aquifer recharge capability to address run-off generated by a 5, 10, 25 and 100-year 3-day duration storm event.
g) Evaluate the current and future impact of sea level rise on Biscayne Bay ecology and long-term plans for restoration.

4.2.4 Subgoal: Restore, Enhance and Preserve Habitat for Fish and Wildlife

a) Regulate, remove, and control invasive exotic species and restore with native species.
b) Improve exotic species management techniques.
c) Develop science-based restoration targets and performance measures, and evaluate effectiveness of habitat restoration projects.
d) Encourage and support ongoing and existing Biscayne Bay habitat restoration efforts.
e) Achieve no net loss of seagrass, other benthic habitat and coastal wetland habitat as a result of dredging and filling.
f) Restore and enhance hydrology and function of coastal wetlands in south Miami-Dade County through implementation of CERP Biscayne Bay Coastal Wetland project.
g) Reestablish functioning tidal creeks in south Miami-Dade mangrove systems to improve the distribution and timing of freshwater discharge.
h) Stabilize eroding or unconsolidated shorelines with natural limestone rip-rap and appropriate native vegetation.
i) Enforce existing regulations requiring the use of riprap in new or replacement bulkhead and seawall construction.
j) Restore or enhance previously dredged areas in north Biscayne Bay with stable fill or artificial reef materials.
k) Acquire and manage environmentally endangered lands for conservation purposes.

4.2.5 Subgoal: Protect Imperiled Species and Maintain Biodiversity

a) Reduce human-related mortality and/or disturbance of endangered, threatened, or protected species and their habitat in the Biscayne Bay system.
b) Preserve, restore and increase spatial extent of habitat suitable for imperiled species.
c) Enforce existing regulations established to protect imperiled species.
d) Implement the Multi-Species Recovery Plan established by the USFWS, and other species Recovery Plans established by federal and state agencies.

5.0 FOCUS AREA 2 - READILY ACCESSIBLE AND APPRECIATED

5.1 Preamble

Many of the same challenges affecting the ecological health of the Bay also impact the public's ability to access it: poorly coordinated shoreline planning among coastal cities and the County, development practices that fail to focus on the water and lax implementation of existing environmental safeguards and protection strategies. Social and economic issues, lack of funding for infrastructure, lack of public information and environmental education, inadequate signage and insufficient transit options further exacerbate these challenges. For these reasons and others, the framers of the BBPI identified unlocking access to the Bay as one of its seven overarching themes.

The BBRRCT also recognizes physical and visual access to Miami-Dade's waterfront, which encompasses not only the Bay but also its tributaries, as a priority, and envisions a Biscayne Bay that is "readily accessible to, and appreciated by, all members of our diverse community." The realization of this vision requires more waterfront land to be used for water dependent public purposes, an infrastructure to support a diversity of recreational and educational opportunities and experiences, a stronger political will to protect and maintain parks, open spaces and natural areas and an ethic of enlightened stewardship among the general public.

With 40 public parks along Biscayne Bay – encompassing federal, state, county and municipal areas - and more than 35 miles of shoreline from Broward County on the north to Monroe County on the south, it would appear that access to the Bay would be plentiful. However, inspection of the shoreline has revealed that access points to the Bay and their amenities are underutilized, unevenly utilized, neglected and/or unavailable for public use:

- Some waterfront parks, such as Bicentennial Park in downtown Miami, were poorly designed, thus discouraging use. It has remained shuttered for more than 10 years, except for special events.
- Others, such as Watson Island, sit fallow and unrealized for years and then are leased to private interests for commercial, revenue-generating activities that limit the public's opportunity to affordably access the shoreline.
- Nature-parks such as R. Hardy Matheson and Chapman Field continue to wait for adequate funding and resources for their full potential to support environmentally appropriate recreational and educational activities to be realized.
- According to a March, 2005 Survey of all public and private marinas in Miami-Dade County by Trust for Public Land (TPL), publicly owned marinas and dry storage areas average more than 95 percent occupancy rates. And on holiday weekends, boat ramps at Black Point Marina and Matheson Hammock Park experience full capacity and overflow, impeding access to the Bay.

Our common spaces, public parks, swimming areas, and facilities should adequately support a variety of active recreational pursuits as well as opportunities for passive enjoyment, quiet respite, appreciation and venues for environmental learning. Ideally, public access opportunities should be provided in an environmentally sensitive manner over a broad geographic range with greenways and trails as linkages, and be maintained in a manner to be free of trash, debris, and physical obstructions so that people across the region from a range of neighborhoods and varying mobility can easily reach them and enjoy them. Natural areas

set aside for conservation should be accessible only to the extent appropriate to maintain their protection and further their restoration.

With greater access to the Bay and its resources comes a greater responsibility for its protection. Information, education and awareness are the keys to achieving balanced access in concert with conscientious stewardship. A broad public information strategy that includes maps, signage, user guides, and events, must join with a comprehensive and coordinated environmental education framework that targets lawmakers, educators, students, and the general public to build awareness, appreciation and advocacy for the restoration, protection and improvement of Biscayne Bay.

5.2 Objectives

To address and remedy these broad issues, the BBRRCT identified a number of objectives to achieve greater public awareness of the Bay through improved opportunities for, and experiences of, physical and visual access. While keeping in mind that greater access also exerts greater impacts on the Bay's resources, measures need to be taken to mitigate these through responsible use and practices. Many of the following objectives relate to ongoing activities and efforts by the member organizations and authorities represented on the BBRRCT. They are identified here to give priority for their consideration and implementation. It is important to note, as well, that as each of these objectives proceed toward implementation, they may change in breadth and scope as new information is gathered and a finer detail given to their planning.

5.2.1 Subgoal: Physical and Visual Access

a) Enforce existing regulations and environmental safeguards designed to protect physical, visual and public access to the shoreline;
b) Reduce issuance of variances and exceptions to public access requirements for new shoreline developments, including mixed-use facilities;
c) Support the completion of the Strategic Public Access Plan, also known as "Get Your Feet Wet…The Plan to Discover Biscayne Bay," to identify priority projects for funding consideration;
d) Increase the amount of and safely maintain, operate and increase green, recreational and open spaces and natural areas along the Bay shoreline and its tributaries;
e) Link public access points along the Bay, using a variety of greenways, trails, land based public transit and environmentally sensitive water-borne transit modes;
f) Determine feasibility of increasing visitor use and enjoyment of underutilized public parks and spaces along the Bay, such as causeways and street ends;
g) Work with public agencies to review and possibly adjust park user fees to make them more affordable;

5.2.2 Subgoal: Education, Information and Awareness

a) Create an educational campaign targeting elected officials – local, state and federal – to increase understanding of the issues related to Bay ecology, its economic contributions and its aesthetic values in an effort to improve coordinated governance and enforcement of environmental safeguards, and to develop dedicated funding sources for the Bay's restoration.
b) Develop informational and educational materials, and outreach methods for a Biscayne Bay campaign to reach residents, visitors, teachers and educators, park and recreation professionals and active and passive users to increase awareness of the

Bay's recreational opportunities, boating safety, eco-tourism adventures, conservation of environmental resources, and its economic value to the greater community, as well as to improve appreciation of these attributes through responsible and balanced use.

c) Coordinate existing educational opportunities among the more than 25 different environmental education organizations and agencies to identify shared goals, gaps in research, education and target audiences, and sites for experiential learning opportunities.
d) Create a comprehensive Bay Access directional, educational, informational and interpretive signage program.
e) Develop a Biscayne Bay communication strategy and marketing campaign, and assure Biscayne Bay activities are included in convention and visitors bureau promotional material.
f) Implement a comprehensive boater education program to ensure better awareness of boating safety and responsible stewardship.
g) Support the evolution of the www.discoverbiscaynebay.org website from an agency information network to a public access, education and information website.
h) Improve marking of channels, seagrass beds and coral areas and provide adequate and timely maintenance of all markers and signage within the Bay.
i) Increase awareness of the historical, archaeological and/or cultural significance of freshwater springs in Biscayne Bay in the context of Native American Culture and South Florida history.

6.0 FOCUS AREA 3 - SUPPORTS USES AND ECONOMIC ACTIVITY

6.1 Preamble

The vision statement of the BBRRCT states: "It [Biscayne Bay] supports a variety of uses and economic activities that are environmentally sustainable."

The inclusion of environmentally sustainable "economic activities" in the BBRRCT's vision makes the BBRRCT's tasks particularly challenging. The BBRRCT must seek a balance among restoration, economic use, and public access, but a balance that gives physical and ecological restoration priority (especially in the long term) without ignoring or dismissing access and use. In the simplest terms, this means finding ways to encourage economic uses that are compatible with restoration and access – though stating the problem this way does not necessarily provide a simple or clear approach to its resolution. The difficulties of achieving "balance" have emerged in several key areas: use of the waterfront; watershed development; reducing impacts; consumptive uses; and sustainable uses.

It seems appropriate that Bay-front property should be used for wildlife and natural areas, water-oriented park space, and water-dependent or water-related economic activities, rather than for non-water-dependent uses. Though this may seem obvious, sections of the waterfront in the upper- and mid-Bay are used for parking or storage (for dumpsters, for example). More important still, recent discussions among BBRRCT members have noted growing pressures on the Bay from development in the watershed and along the waterfront, especially the transition of waterfront property from marine-related/dependent economic activities to high-end residential or office uses. There are also periodic efforts to use the waterfront for non-water-dependent fixed or floating structures that, in effect, create more upland real estate at the expense of the water area for a variety of economic purposes (offices, storage facilities, cell phone towers, to name a few). The team is united in its concern over this trend and the potential it holds for preventing us from finding ways to insure that the Bay is ecologically and physically restored, accessible and appreciated by all the members of our diverse community, and supportive of a variety of uses and economic activities.

The physical condition of the Bay is affected by land uses in the watershed. Non-point-source pollution often originates far upland. Pollution may increase with population, and a larger population means greater demand for water, drainage and flood protection, and use of the Bay, with greater pressure on available land, water and sewer infrastructure, and access facilities. Development that occurs miles away from the Bay thus has an impact on the ecosystem, even though it may be essential for the economic life of the community. In the long term, it seems likely that physical and ecological restoration of the Bay will require changes to the ways development occurs in the watershed, even though the connections between the two are not obvious.

Even thoughtful, well-intended economic and recreational users of the Bay have impacts on its resources. These impacts often interfere with the goal of physical and ecological restoration. This problem is complicated by the fact that many of the economic uses of the Bay contribute positively toward our vision. Marine industries are an important source of diversity among waterfront uses. Boating is a popular way to access the Bay. The Port of Miami, for example, continues to be an important source of employment and commerce, even though it's physical presence on the Bay and efforts to deepen or widen channels,

expand its scope, and improve its facilities may impact water quality, fisheries and wildlife, and prevent the full public access to, preservation or restoration of natural areas. The BBRRCT, therefore, is seeking ways to reduce impacts and conflicting uses while preserving or augmenting environmentally friendly economic viability.

Many of the economic uses that consumed or removed the resources of the Bay have been restricted by law – harvesting of vegetation or fisheries resources, dredging and filling – and the BBRRCT believes that such laws should be strictly enforced. The principal remaining consumptive uses are commercial and recreational fishing. Both commercial and recreational fishing may be compatible with the long-term objective of physical and ecological restoration, but this will require defining sustainable take limits and insuring the use of sustainable fishing practices (both commercial and recreational). At this point, more needs to be known about historical fish populations and about contemporary fishing practices to determine how close we are to rendering these consumptive uses sustainable. Even more important, where this information is already known, it should be even more widely disseminated and used.

The BBRRCT prefers to see sustainable economic uses of the Bay, especially those activities that take advantage of its beauty and diversity in ways that increase user appreciation for its physical condition and heighten public desire to protect it even as they provide jobs and sustain businesses. Ecotourism should play a strong role in the local economy, these industries should be expanded, and these businesses should receive a higher profile in tourism marketing efforts.

6.2 Objectives

With these issues in mind, the BBRRCT developed a list of objectives related to supporting uses and economic activities, and organized them into categorical subgoals: Fishing, Boating, Sustainable Uses, and Marine Industries (Infrastructure). It should be noted that the many of the objectives relate to activities currently being implemented or within the responsibility of BBRRCT member-organizations or other existing authorities.

6.2.1 Subgoal: Improve Fisheries Resources

a) Enforce existing fisheries regulations.
b) Improve fishing practices to reduce habitat impact and by-catch.
c) Restore and enhance stable estuarine habitats in nearshore areas and coastal wetlands (see also, objectives related to Water Quantity under Ecological and Physical Restoration).
d) Educate users
e) Encourage continued coordination by the National Park Service, Florida Fish and Wildlife Conservation Commission, and other federal and state agencies to manage fish stocks within Biscayne Bay as one biological unit.

6.2.2 Subgoal: Boating (Uses)

a) Obtain a fundamental understanding of the impacts of boating on the Bay.
b) Increase the use of safe boating practices.
c) Increase environmentally sound vessel storage and access.
d) Reduce boating accidents and fatalities (human and animal).
e) Decrease groundings and propeller scars.
f) Reduce conflicts between recreational and commercial vessels.

g) If needed, expand boat maintenance facilities in environmentally suitable areas.
h) Support use of best management practices for reducing potential discharges related to boat maintenance.
i) Increase availability of solid and liquid waste disposal facilities for vessels.
j) Increase the number of boating facilities participating in the FDEP Clean Marina and Clean Boatyards programs.
k) Streamline the process of, and maximize the funding for, removing derelict vessels.
l) Increase availability of environmentally friendly mooring facilities and boat anchorages in appropriate locations.
m) Enforce guidelines and regulations for vessel waste discharge, anchoring, and operation.
n) Conduct a current and historical vessel wet/dry slips inventory and analysis to determine trends in boating storage infrastructure.
o) Development of new and expanded marine facilities should be consistent with the Miami Dade Manatee Protection Plan, existing rules and regulations while minimizing environmental impact.
p) Work with public agencies to adjust fee schedules for boat storage and launching to make them more affordable.
q) Seek out the most innovative and environmentally sustainable practices to reduce potential impacts from vessels and marine facilities. Implement these practices as new facilities come on line or aging facilities are improved and upgraded;

6.2.3 Subgoal: Sustainable Uses

a) Obtain an understanding of the role of eco-tourism in the local economy and identify opportunities for its expansion.
b) Develop measures for determining the adequacy and condition of national, state and local parks (including facilities and maintenance).
c) Increase environmentally sound, water oriented opportunities for park visitors and for people who do not have boats.
d) Increase number, value, and employment in eco-tourism businesses.
e) Increase affordable opportunities for recreational uses, such as snorkel/scuba and kayak/canoe rentals/sales, that are less likely to produce pollution or damage resources.
f) Encourage environmentally friendly food/drink establishments near the water and accessible by water consistent with exiting rules and regulations
g) Optimize the socio-economic value of historical resources of the Bay (displaying, marketing).
h) Preserve historic, archaeological, and cultural resources.
i) Create a comprehensive guidebook/sourcebook for user groups.

6.2.4 Subgoal: Marine Industries (Infrastructure)

a) Obtain an understanding of the role of marine industries in the local economy and identify opportunities for their expansion consistent with existing rules and regulations.
b) Evaluate the costs and benefits of gentrification of the working waterfront and use of waterfront land for non-water dependent activities.
c) Avoid, minimize, and mitigate impacts of ports and waterways projects (including blasting, dredging and expansion).

d) Reduce potential impact of marine facilities through use of best management practices.
e) Improve port security.
f) Increase employment opportunities in marine and boating industry.
g) Increase efficiency and contiguity of deep and shallow water port areas.
h) Decrease non-water dependent uses on waterfront land in order to maintain no net loss of the working-waterfront.
i) Enforce existing regulations related to storm and sanitary sewer infrastructure for ports and marine facilities.

7.0 INITIAL ACTION STEPS

7.1 Preamble

The purposes of the BBRRCT are to provide a unified voice for the Bay, improve coordination among ongoing efforts and existing groups working on issues related to the Bay and to serve as a clearinghouse of information related to the Bay. In developing a vision, focus Areas and overarching themes as guiding principles for this effort, the Team has defined its goals for a sustainable future. To meet these goals, initial two-year action items have been developed. It is not the intent for this list to cover all possible or practical actions that the BBRRCT should and most likely will undertake. The order of the following list is not intended to suggest priorities.

1) Review and revise the BBRRCT Action Plan no later than two years from the date of final acceptance, including the development of Action Steps for the Focus Areas identified in the Action Plan.

2) Hold two evening meetings each calendar year to encourage public participation and attendance. The team will hold one in 2005.

3) Review and provide comments on Biscayne Bay related CERP projects (including, but not limited to, Biscayne Bay Coastal Wetlands, C-111 North Spreader Canal, Wastewater Reuse Pilot Project), South Miami-Dade Watershed Study, Biscayne National Park's General and Fisheries Management Plans, the FDEP development of TMDLs and list of impaired water bodies, *agriculture and urban BMPs,* land acquisition plans, and other Biscayne Bay related programs, projects and studies.

4) Complete an inventory of potential grants, funding sources and legislative appropriations for water body management, restoration, access, education, and all other Biscayne Bay related focus areas.

5) Arrange informational presentations with regard to the Objectives of this Plan from appropriate lead agencies/groups in order to improve coordination and build the informational base of the Team.

6) Facilitate a comprehensive directional, information and interpretive signage network for Biscayne Bay access.

7) Facilitate an interagency coordination meeting including federal, state, county, and municipal park and resource management agencies to expand participation in the Clean Marina, Clean Boatyard and Clean Boater programs along Biscayne Bay and the Miami River: and to identify most feasible locations for expansion of public boat ramps, marinas, and vessel storage, and other types of public access opportunities, considering compatibility with environmental restoration goals and resource management plans, land ownership and safety of the public.

8) With assistance from land and recreation management agencies, develop a list of sites or facilities in need of improvements to facilitate shoreline and water access for fishing, viewing, paddling, or similar water dependent activities, including a general estimate of construction, operations and maintenance costs and a timeline.

9) Host workshops, tailored for municipal building officials, on existing shoreline development requirements and guidelines in order to achieve greater compliance and reduce variances.

10) With assistance from resource management agencies, develop a list of Biscayne Bay and coastal wetland environmental restoration and enhancement opportunities, including a rough estimate of construction operations and maintenance costs and a timeline.

11) Review existing lands in the Biscayne Bay watershed listed for acquisition for conservation purposes and provide recommendations for prioritizing acquisition.

12) Develop an annual "report card" or similar review of Biscayne Bay targets or measures related to ecological health, access, and use that is suitable for non technical audiences.

13) Request a presentation on the recently completed study on the role of marine industries, ecotourism and other Bay-related activities in the local economy and identify opportunities for their expansion consistent with existing rules and regulations and the restoration and protection of the Bay.

14) Request a presentation from the City of Miami to provide a briefing and receive feedback on their ongoing efforts to develop a Virginia Key master plan, the Dinner Key Waterfront Master Plan, the Bicentennial Park Master Plan, the Miami River Plan and other waterfront related planning efforts.

15) Work cooperatively with the National Park Service to determine the appropriate extent of 'alert' signage on the water along primary access routes to Biscayne National Park.

8.0 CONCLUSION

The Biscayne Bay Action Plan is not an endpoint; rather it is the beginning of a process to target the most urgent needs to restore the Bay, create opportunities for responsible public engagement and to enhance its economic vitality. This Action Plan, as presented by the BBRRCT, is designed first to heighten the profile and awareness of the Bay as an important environmental, economic, historical and cultural resource to the South Florida region, and second to generate coordinated and achievable action among Bay stakeholders.

Implementation of these Action Steps requires the cooperation of a number of individuals, organizations, agencies and levels of governance. By no means are they meant to be a complete set of recommendations, and they will be further refined and brought to a greater level of detail than can be presented here as the Plan implementation moves forward and gains momentum. These steps should be considered as the starting blocks – not the end result – from which to achieve greater dialogue among interested parties, to pursue financial and human resources for Plan implementation, to improve enforcement efforts to protect the Bay, and to monitor the Bay's progress as these steps are taken. It is the sincere intent of this Team that this Action Plan remains dynamic and inspiring and provides guidance into the future.

9.0 APPENDICES

9.1 MEMBERSHIP LIST

(A) Indicates the alternate member
** indicates past members and alternates*
*** indicates chair*

At-Large
Lloyd Miller

At-Large
Keith Revell

At-Large
Ed Swakon

At-Large
Roberto Torres

Biscayne Bay Nature Center
Theo Long

Biscayne National Park
Rick Clark
Sarah Bellmund (A)*

Citizens for a Better South Florida
Arsenio Milian
Edith McClintock(A)
Autrey Ordenes*

Farm Bureau
John Sanchez
Bill Losner (A)
Dave Frederichs*

Florida Department of Environmental Protection
Kim Shugar
Daniel Apt*

Biscayne Bay Aquatic Preserve
Marsha Colbert

Florida Legislature – Miami-Dade Delegation
Marisa Bluestone*

Florida Wildlife Conservation Commission
Dennis Post
Joe Walsh*

Mark Robson*

Miami-Dade County Department of Environmental Resource Management
Carlos Espinosa
Susan Markley (A)

Miami-Dade County Agricultural Extension Services – Institute of Food and Agricultural Science
Don Pybas
Marella Crane (A)

Miami-Dade County Department of Planning and Zoning
Subrata Basu
Cindy Dwyer (A)

Miami Marine Council
Phil Everingham

Miami River Marine Group
Fran Bohnsack
Ken Lipner (A)
Cleve Jones (A)*

National Oceanic and Atmospheric Administration – Florida Keys National Marine Sanctuary
Stephen Beckwith
David Score*
Nancy Diersing (A)

National Oceanic and Atmospheric Administration –
Fisheries Service and the Atlantic Oceanographic and Meteorological Laboratoy
Joan Browder
Alex Chester (A)
Peter Ortner*

Port of Miami
John Kuryla

South Florida Regional Planning Council
John Hulsey
Allyn Childress (A)*
Natalie Schneider (A)*

South Florida Water Management District
Humberto Alonso**
Rhonda Haag* (former Chair)
Sue Ray (A)*
Deb Drum (A)*
Audrey Ordenes (A)

Tropical Audubon
Cynthia Guerra
Dennis Olle (A)

Trust for Public Lands
Amy Condon

U.S. Fish and Wildlife Service
Patrick Pitts
Rick Fike (A)
Sandra Schneckenberger (A)*

STAFF

Catanese Center
Jim Murley
M.J. Matthews (A)*

Process Design and Facilitation
Janice Fleischer, J.D., Flash Resolutions

South Florida Ecosystem Restoration Task Force Office
Rafaela Monchek

South Florida Water Management District, Project Managers and Support
Trisha Stone
Elizabeth Abbott*
Evan Skornick

9.2 Procedure, Process and Organizational Structure

The BBRRCT was established to enable and foster inter-agency and public/private enterprise communication and coordination with regard to issues related to Biscayne Bay, which are essential functions for the enhancement of maintenance and restoration of the Bay. The Team is comprised of representatives of diverse stakeholder constituencies who do the direct negotiating and deliberating with additional input from public comment included in all stages of the process. For the first two years of its existence, the Team had no formal structure for meetings, deliberations and decision making.

In March, 2003, a facilitator was brought into the process to assist with having the Team develop an organizational and procedural structure in an effort to hasten and ensure completion of the Team's duties as outlined in the Charter. To begin the organizational process, the Facilitator had the Team adopt Meeting Guidelines and rules for decision making. Once those protocols were established, the Team went on to develop rules defining a quorum, requiring attendance, naming designees and alternates to the Team from each stakeholder group, and conducting an analysis of the current stakeholder constituencies.

Meeting Guidelines (Exhibit x): After discussion and lengthy deliberations regarding past practices of the Team during its first two years, the Team adopted protocols for meeting interaction initially on March 14, 2003, with amendments on April 11, 2003 and May 1, 2003.

Decision Making (Exhibit x): In any large group in which decisions are to be made, a process for decision making must be determined prior to the onset of deliberations. No formal adoption of a decision making process had been made in the Team's first two years of deliberations. The facilitator suggested that the Team use a collaborative, consensus-based process for decision making. This process encourages and fosters participants assisting one another in developing alternatives which are acceptable to all members of the group. This type of process often takes longer in order to accomplish agreement, however, research has shown that agreements reached collaboratively and with a consensus based process often are more satisfying to a group's participants and bring with it greater support and implementation efforts.

The Team agreed to try a modified consensus based procedure and eventually formally adopted a consensus decision-making process. Modified consensus relies on a "back up" if consensus cannot be reached, usually in the form of a "super majority" vote (meaning greater than the typical 50% plus 1). Within the BBRRCT, consensus was used for all decision-making and if consensus could not be reached, a majority vote of 75% of those voting members present at the meeting was required to pass an item. The consensus rules were initially adopted on March 14, 2003 and revised to correct an omission on February 13, 2004.

A specific ranking process was used to establish consensus. Members were asked, by a show of fingers, (1 through 5) to express their agreement on a specific issue. 5 fingers meant wholehearted support, 4 fingers meant support, 3 fingers meant neutral but will support the decision fully to the outside world, 2 fingers meant still have questions to ask, and 1 finger blocks any decision being reached by the group. Consensus was defined as everyone showing no less than 3 fingers in the ranking process.

If any member had a show of 1 or 2 fingers, discussion followed to answer the questions or concerns of those members. Team members helped one another resolve concerns and conflicts. After a period of discussion, a second ranking was taken to determine if consensus had been reached. If all members were showing 3 fingers or more, consensus was reached and the Team moved on to the next issue. If, in the second ranking, there were still members who indicated their concerns by a showing of 1 or 2 fingers, the Team converted to a voting system on that issue. If an item was voted upon, 75% of the voting members present was required to pass an item if a vote became necessary.

In addition to decision making, the Consensus Rules established what constituted a quorum in order to have a meeting: 50% plus 1 of the voting members.

Organizational Structure (Exhibit x): In adopting the Meeting Guidelines and Consensus Rules, the Team began to develop its Organizational Structure. Membership consisted of both voting and non-voting members. Each stakeholder group had a Designee and one Alternate. Attendance rules were clarified to ensure participation by interested and affected stakeholder groups.

Post-meeting evaluations from members of the Team were used as an indicator to gauge Member understanding of and satisfaction with the process. Evaluations also included several sections for comments and suggestions. Adaptations in the process were made based on evaluation input.

Public comment opportunities were included in the process at every meeting. Comments could be given orally during formal public comment time at each meeting or submitted in the form of written or emailed comments to the facilitator. The facilitator initiated and maintained an "interested parties" email distribution list for all individuals who were not Team members but wish to receive announcements regarding meeting schedules and other information in connection with the Team.

The adopted organizational structure supported the Team being lead by a Chair.