

## **ACTION PLAN** *Habitat Restoration Enhancement and Monitoring*

### **EM-1**

#### **Implement Sea Turtle Monitoring**

##### **ACTION:**

Monitor the health of the sea turtle population utilizing Lake Worth Lagoon (LWL) by continuing to perform annual monitoring events for an additional 5 years.

##### **BACKGROUND:**

Sea turtles are considered an indicator species of ecosystem value. Baseline data on the sea turtle populations utilizing LWL were collected between 2005-2011 and it was learned that many more turtles than expected were observed, the lagoon seagrass beds provide important developmental juvenile green turtles, and turtles from nesting beaches throughout the Western Hemisphere use LWL (see Chapter 2). To determine the distribution and health of the sea turtle population in LWL changes in response to habitat restoration and water quality improvements, the following questions remain:

- Does Catch Per Unit Effort (CPUE) of sea turtles increase over time?
- What is the growth rate of turtles in LWL?
- Is the occurrence and severity of fibropapillomatosis (FP) reduced over time?
- Are there unique habitat characteristics in the Little Munyon Island sea turtle “hotspot”??
- How long are turtles resident in the lagoon and do they utilize other nearby developmental habitats (nearshore reefs and adjacent lagoons) during this period?

##### **STRATEGY:**

STEP 1 Continue to implement the revised 2012 sea turtle netting study scope of work for the next five years. Study will continue to capture and tag new turtles and provide information on CPUE and FP rate and severity change over time. More data from recaptured turtles is required in order to calculation growth rate and determine where migrants originate.

**Responsible parties: ERM**

STEP 2 Conduct seagrass surveys to determine differences in habitat quality between “hotspots” and nearby areas used less frequently by turtles and use findings to guide restoration.

STEP 3 Continue to collect water quality data and consider expanding parameters to evaluate constituents (such as arginine) that may possibly be linked to FP

**Responsible parties: ERM**

STEP 4 Explore development of a sonic or radio tagging program to evaluate short term

patterns of habitat utilization, nearshore reef habitat use, and residence time in LWL.

**Responsible parties:** *PBCERM, universities, environmental education/ research centers*

**STEP 5** Continue an educational campaign promoting understanding of the importance of sea turtles. Promote community participation in maintaining LWL health and protection of sea turtles, similar to beach programs.

**Responsible parties:** *ERM*

**SCHEDULE:**

Step 1 and Step 2: Annual survey to be conducted 1 week every summer. Step 3 and 5 will be implemented as part of the Action Plans PE-1 and WQ-1, contingent upon available funding. Step 4 will depend on receiving research approvals from FWC and NMFS.

**COST:**

Annual costs for contractor staff, equipment, and blood and dietary sample analysis are estimated at approximately \$15,000 per year. Cost for Step 4 tagging will depend on the type of tag permitted.

**EXPECTED BENEFITS:**

By comparing changes in the sea turtle population in the LWL to the 2005-11 baseline, the impacts of water quality improvement and habitat restoration projects on sea turtle health can be documented.

**MONITORING ENVIRONMENTAL RESPONSES:**

Data is collected and analyzed in accordance with FWC and NMFS permits and guidelines. LWL data will be compared to the LWL baseline and similar lagoon systems, such as the Indian River Lagoon and Mosquito Lagoon.

**REGULATORY NEEDS:**

Although not required by any regulatory or construction activities, this study may document sea turtle habitat preferences and population distribution that should be included in LWL management decisions.

**FUNDING:** Funding is available in the Pollution Recovery Trust Fund (PRTF) and the Sea Turtle License Plate Grants. Additional funding sources will be investigated.

**POTENTIAL PARTNERS AND FUNDING SOURCES\*:**

*ERM, FWC, Sea Turtle License Plate Grants Program, USFWS, PRTF*

\*Listed Agencies have not committed funds and are subject to Agencies' budget approvals