

# Port Everglades DRAFT Outline of DEP Suggested Biological Monitoring

## I. PRE-APPLICATION AND PERMITTING PHASE

### A. Reconnaissance Survey for Predicted Impacts

1. Purpose:
  - a. Characterization for Uniform Mitigation Assessment Method (UMAM).
  - b. Communities surveyed serve as reference for mitigation (e.g., artificial reefs).
  - c. Locate and enumerate colonies/individuals of listed species.
2. Timing: Prior to submission of application (0-2 years prior; need “current condition”).
3. Location: Within direct impact area (channel) and predicted secondary impact areas.
4. Methods:
  - a. Random stratified sampling within habitat types inside predicted impacts areas.
  - b. Employ temporary transects and quadrats.
    - i. Video surveys, Line-intercept surveys, and BEAMR quadrat surveys.
    - ii. Documentation of listed species (enumeration, locations).

## II. POST-PERMITTING THROUGH POST-CONSTRUCTION PHASE

### A. Assessment area and control site monitoring

1. Purpose:
  - a. Provide reasonable assurance that unpermitted impacts will be identified.
  - b. Provide information on distribution, spatial extent (acreage), severity (functional degradation / loss), and permanence (persistence) of any project related unpermitted impacts; required for DEP to conduct UMAM analysis to determine amount of additional compensatory mitigation necessary to offset impacts.
2. Timing: Once Pre- (baseline), repeatedly During-, and once Post- Construction.
3. Location: Within the area that could potentially be influenced by the project (secondary impacts) and at control sites.
4. Methods:
  - a. Employ a Before-After Control-Impact (BACI) design.
  - b. Monitoring stations installed based on a grid.
  - c. In situ surveys along permanent transects, belt transects, and quadrats at stations:
    - i. Video surveys
    - ii. Interval sediment depth measurements (every meter)
    - iii. Sediment characterization (every 5 m)
    - iv. Identification and size measurements of corals, octocorals, and sponges within belt transects.
    - v. Assessment of tagged corals, octocorals, and sponges.
    - vi. BEAMR surveys within quadrats.

### B. Minimization effort monitoring (e.g., monitoring of transplants)

1. Purpose: Document success of various minimization efforts.
2. Timing: Repeatedly following implementation
- 3 and 4. Location / Methods: Dependent on efforts employed

### C. Mitigation monitoring

1. Purpose: Document success of mitigation.
2. Timing: Repeatedly post-mitigation construction.
- 3 and 4. Location / Methods: Mitigation sites / Dependent on type of mitigation

## III. ADDITIONAL COMPONENTS (APPLICABLE TO ALL PHASES)

- A. QA/QC – within primary monitoring firm, also by independent 3<sup>rd</sup> party
- B. Deliverables and reporting