Florida Department of Environmental Protection

Division of Water Resource Management

Hardbottom SOP

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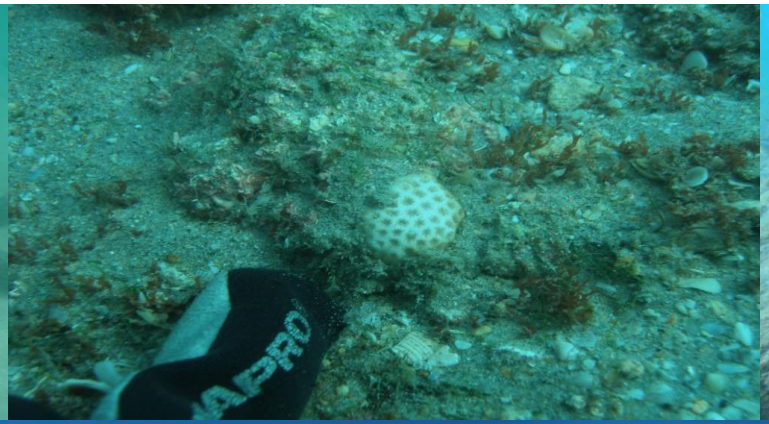
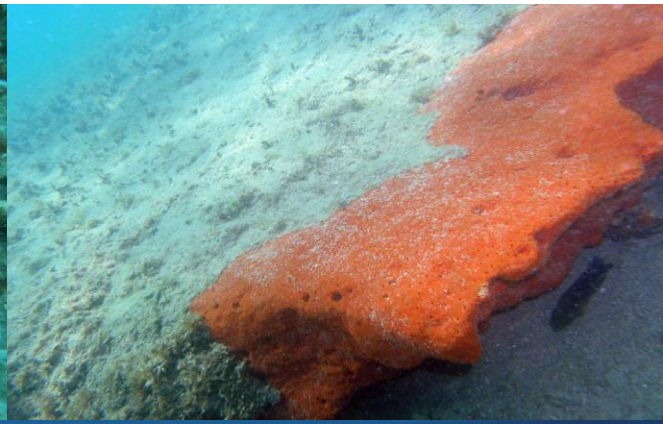
What is Hardbottom SOP?

STANDARD OPERATING PROCEDURES

- Developed for HB monitoring of nourishments
- Monitoring = reasonable assurance
- Details exact / appropriate methodology to use
- Consulted with field experts to develop
- More certainty in permitting
- Provides guidance on submittals

Why Now???

- Many permits have potential HB impact
- Many repeat projects
- Need for consistency in permitting
- Need for data comparisons within / between projects
- Efficiencies for better / more consistent review

Eliminate Sampling Differences

I am using a 1 meter interval for sediment measurements

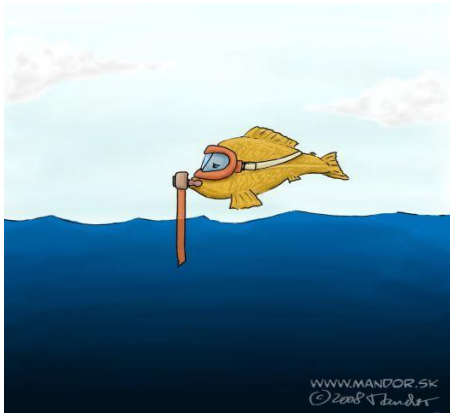
I am using a 5 meter interval for sediment measurements

My sampling area is 5 m^2 per transect

My sampling area is 15 m^2 per transect

What to Standardize?

- Definitions & classification system
- Monitoring firm requirements, equipment
- Survey Requirements
- Operating methodology for field surveys
  - Initial HB characterization / mapping
  - Transect establishment
  - Annual survey methodologies
- Data Submission
- Reporting Protocol



Habitat Characterization

Characterization guidance = consistent with UMAM

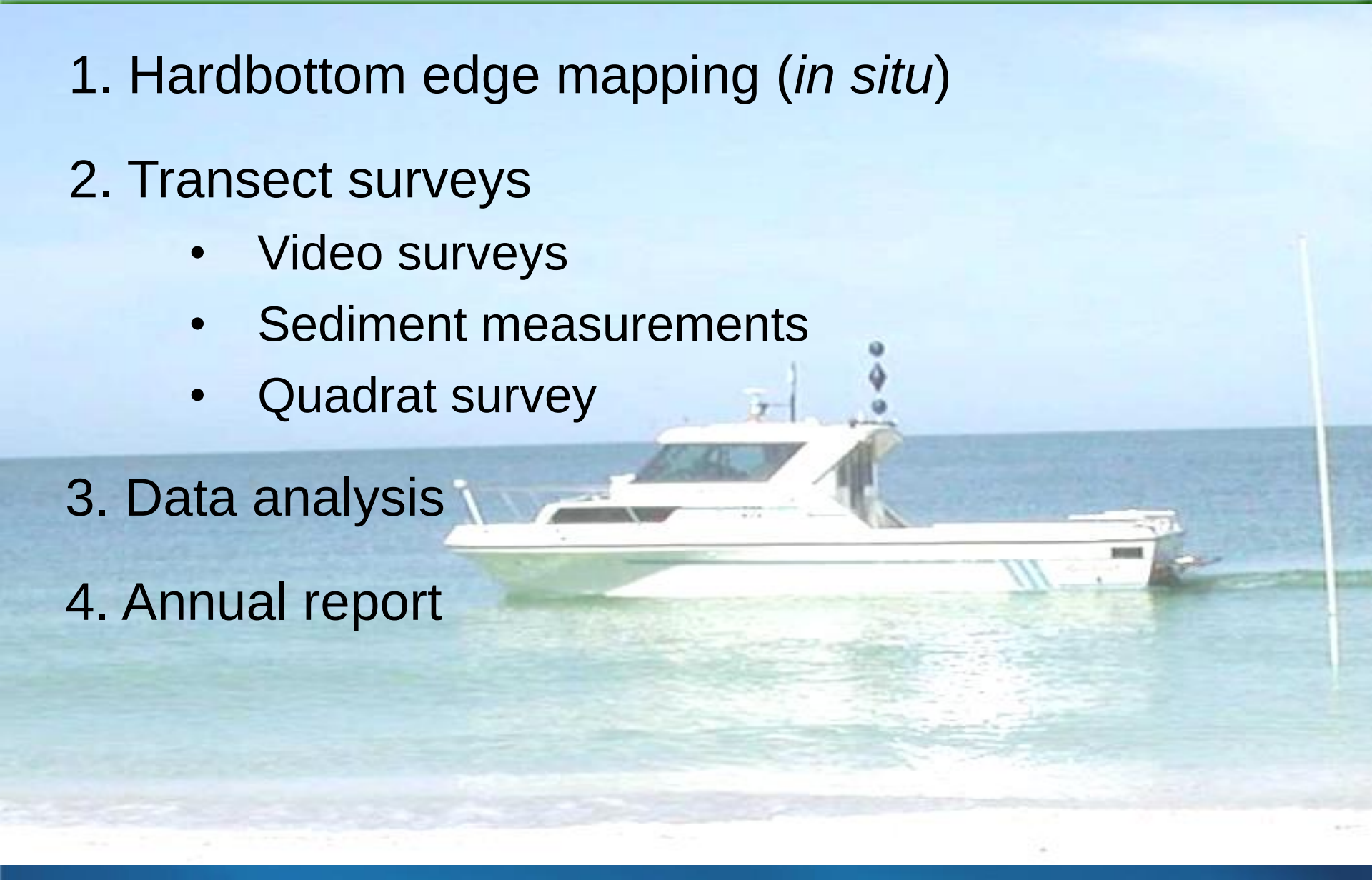
- Goal of initial assessment / characterization
  - Delineate HB habitat boundaries, 62-345.200 (1), F.A.C.
  - Determine acreage, 62-345.400 (3), F.A.C.
  - Classify community type(s), 62-345.400 (5), F.A.C.
  - Evaluate uniqueness, 62-345.400 (6), F.A.C.
  - Characterize ecological values & functions 62-345.400 (7, 8, and 10)
- Identifies HB habitats
- Allows tracking of changes during monitoring phase

Transect Establishment

- Cross-shore
- Permanent
- Strategically plotted:
  - Community characterization
  - Interpolation between transects
  - More dense in areas of potential impact
- Installation details
- Variable length: 150 m - 200 m

Annual Survey Requirements

1. Hardbottom edge mapping (*in situ*)
2. Transect surveys
    - Video surveys
    - Sediment measurements
    - Quadrat survey
3. Data analysis
4. Annual report



Hardbottom Edge Mapping (*in situ*)

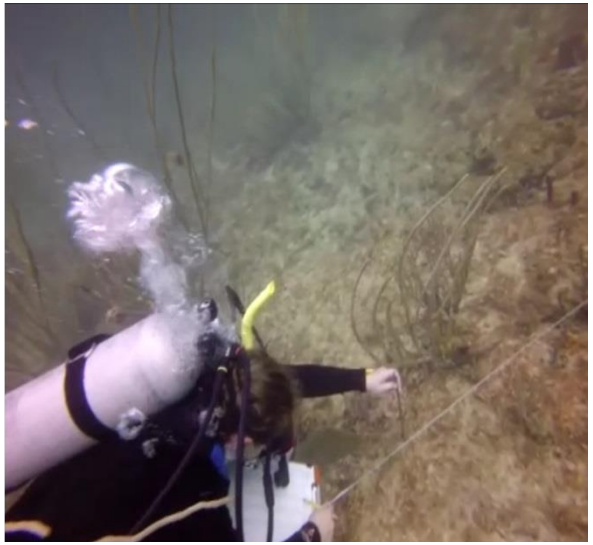
- Conducted close to aerial survey
- Two tasks : NS edge + patchy areas
- Diver position recording
- Edges where benthos is protruding
- Documentation of changes in features

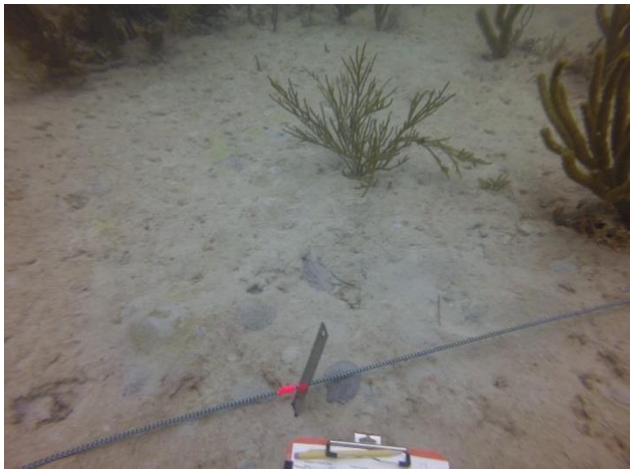
Transects: Video

Transects: Sediment Measurements

- Types of measurements
  - Interval sediment depth
  - Line intercept
- Tools
  - Ruler

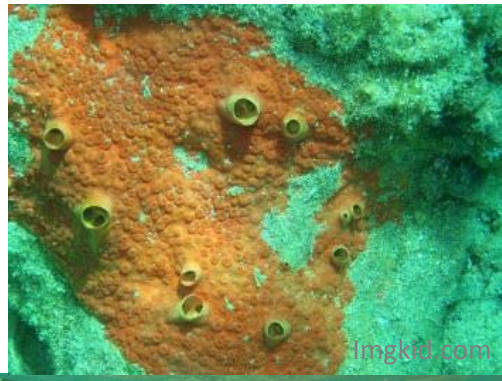
  - Weighted line / tape
- Measurement Specifics

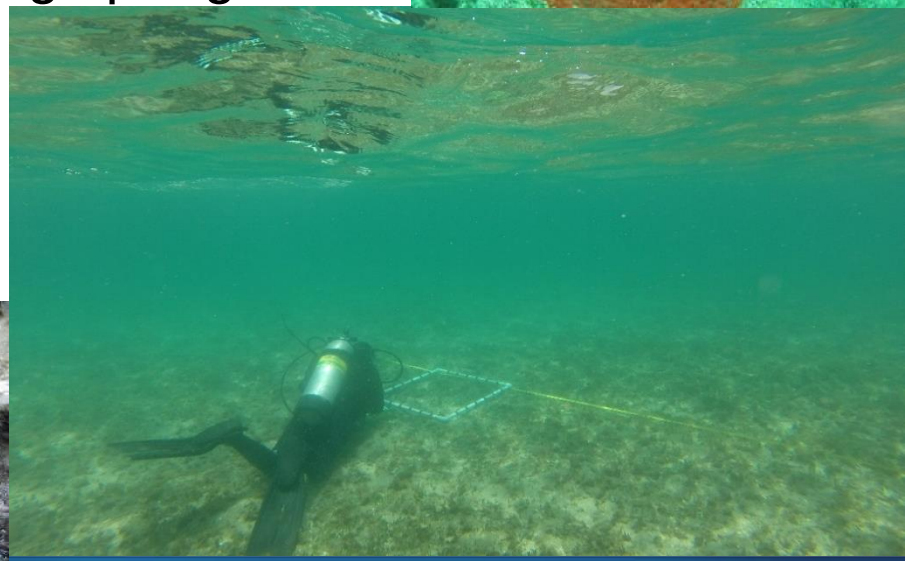




Transects: Quadrat Surveys

- Installation Guidance
- Number and Size of Quadrats
  - 0.5m^2 or 1.0 m^2
  - $\geq$ 10 m^2 sampling area / full transect.
  - ~ 4 sampling areas / zones
- Habitat / Community Characteristics
  - Density of corals and excavating sponges
  - % cover functional groups
  - Sediment depth
  - Relief





Analysis / Reporting

- Tests
- Commencement and completion dates
- Raw data submission
- Standardized title and content
- Report due date

Moving Forward

- Finalization of Draft
- Distribution to Regulated Entities
- Workshop
- Incorporate guidance into Rule by reference

THANK YOU

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Biological Monitoring Firms
Resource Reviewing Agencies

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