UNDERSTANDING RESTORATION PROJECTS PERMITS AND MONITORING

FOUR PROJECTS: FOUR PERMIT STRATEGIES ONE PROJECT: ONE STUDY SITE

FOR SOUTHERN ENVIRONMENTAL LAW CENTER SYBIL H. SMITH CHARITABLE TRUST

LIVING SHORELINE WORKSHOP FIVE RIVERS DELTA, SPANISH FORT, ALABAMA APRIL 18, 2013

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Ecological Consulting Services, Inc





THREE R'S REGULATORY RESTORATION RESEARCH

Living Shoreline Definition: A shoreline stabilization method that promotes a natural shoreline and enhances native habitat of the terrestrial and aquatic ecosystems

• Regulatory

• Restoration Is it creation, restoration or enhancement

- Do the Rules fit the Project?
- Local
- State
- Federal
- No? Then let's have the Project fit the rules
- Research

- Does it need to be restored? Money?
- Native Habitat
- Changing the natural habitat
- Location, Location, Location
- Destroy natural resources and seeding potential
- Will it enhance what is already present
- Research- Monitoring



ECS Permitted Projects

Santa Rosa Dunes (Horizontal Reefs)

Photo Credit: Laura Kammerer SHPO



DEP Exemption 62-346.051 (14) (e) FAC (Less than 90 days) Issued ACOE Section 7 Consult Almost a year Yellow River Marsh Aquatic Preserve Shoreline Stabilization Project 2009-2012 (Vertical Reefs)



Photo by Barbara Albrecht



No State Land Lease needed ACOE Authorization – Modified 2012 for more structural flow through breakwaters



ECS Permitted Project -True Restoration Project

Non- ECS Permitted Project Project Greenshores





1940 and 2011

Port Industry of Pensacola **Congress Legislative Decision** Shorelines of Port Cities belong to the City (all over Florida) State lands are set lines today

ACOE Mitigation (Bruce's Beach)

A donor site for seagrass and emergent grass propagation for DEP **Ecosystem Restoration Section and** their greenhouses)

Deadman's Island 1940 and 2011 (DEP State Land Lease) ACOE (No Mitigation)

Not a donor site but expansion site for seagrass and study site for Federal Government

Sediment Management Plan Gulf of Mexico Governor's Action Plan





(Vertical Reefs)



Reefblk

Two Types of vertical breakwater





Ecosystems

- Fish Habitat
- Wave attenuation
- Anchor system

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Non-Oyster Dependent

- Structurally Sound ٠
- Stack according to • depth
- **Promotes fish Habitat** •
- Provides circulation •



Oyster Dependent Salinity

Depth dependent

Promotes fish habitat

Provides circulation





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RESEARCH: MONITORING-WHERE IS THE DATA? WHO IS MONITORING?



- Most projects are too small to justify thorough monitoring
- Most Projects do not **monitor enough** to make management decisions
- Most Projects **do not have the funding** to monitor
- Most Project do not have the **staff** to monitor
- Projects with grant funding for part time or **full time staff** do not perform any type of real monitoring except a few pictures- **only enough to satisfy grant and final report requirements** but not enough to help make management decisions.
- These programs are used for staff, materials and deployment only-
- Authoritative- Are looked up on for answers but can only guess- Not a reliable source of information
- **Conjectural** information not based on numerical monitoring results but observations a few times a year

Solid Dependable Data

- Universities and Research Institutes
- The Nature Conservancy (Incorporated the DI monitoring plan)
- US Fish and Wildlife
- State Florida Fish and Wildlife
- NOAA
- Management Decisions
- Permitting Decisions
- Transferability
- Discern RESTORE Projects
- Now more than ever- college level monitoring is needed – especially for fulltime positions funded by grant agencies

Monitoring Costs allowed for a large scale project \$14,000 per year -

Science can help with permitting

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Why are the numbers important?









SCENARIOS



One side of the reef is buried? Why?

Why is there increased mortality in oysters when there are sick fish or no fish?

Crushed shells are located in one section of the reef. Why?

Dead oysters have pinholes in them. why?

What do the presence of coral and zoanthids tell?

These are important questions a traditional randomly thrown quadrat (a few times a year) and % cover -cannot answer.

Quantitative Underwater Ecological Surveying Techniques (QUEST)



Figure 16 - Data example from side scan sonar mosaic: Area of proposed restoration

Pre-monitoring



Granulometric Analysis



Florida Geological Survey

VIDERCORS VSRB-04



Deadman's Island GPR Test



Mean High Water Survey



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% coverage / biodiversity/species competition/ mortality

Fixed Quadrat

- Growth C Rate
- Fish • Surveys
- Tissue testing (oil spill) 0
 - Accretion Yearly bathymetric survey
 - Structure Testing/Comparis on
 - Sediment Management
 - Sand shift

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Protected Species Monitoring

Conclusion:

The City of Gulf Breeze Deadman's Island Restoration Project prides itself like no other, as giving back to the granting agencies who have provided over 1.3 million dollars to the project over a period of years. We are providing at least five years of complete monitoring information to help develop further successful restoration projects all over the US. The project is still not complete due to the 2011 reef die off- more funding is being applied for.

Hurricane Resiliency

2012 Navigational Aids/Gulf





QUESTIONS?

Thank You Partners!

Services Inc.

Ecological

Consulting







1 P W D H











COMMUNITY INVOLVEMENT



ECS

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- Army Corps of Engineers
- ► FLDEP Coastal Aquatic Managed Areas
- NOAA
- National Fish and Wildlife Foundation
- Five Star Partners
- UWF Archeology Dept
- Escambia County Board of Education
- Georgestone Technical School
- Santa Rosa County
- US Fish and Wildlife



