



Southwest FL Oyster Working Group Meeting 3
Friday May 25, 2012
12:30 pm – 4:30 pm
SWFRPC, 1926 Victoria Ave., Fort Myers, FL 33901

You may also join the meeting remotely via Teleconference &/or WebEx:

- **To view via WebEx:** In your internet browser, enter <https://suncom.webex.com/>, click on the *Meeting Center* tab & then on the *Browse Meetings* link. Click on the *Weekly* tab & find *May 20-26*. Scroll down to *Friday May 25* & click on the *SW FL Oyster Working Group*. Click on the *Join Now* button & you will be able to see the host computer screen.
- **To hear via Teleconference:** Dial (888) 808-6959 and enter Conference Code 599 645 525 when prompted.

AGENDA

Purpose: The purposes of the Southwest FL Oyster Working Group Meeting 3 are:

- Review oyster restoration suitability model output maps.
- Review post-model GIS consideration maps.
- Identify priority restoration sites by estuary segment.

12:00-12:30 – Lunch and Map Review*

*Maps of the suitability model output will be posted for each estuary segment for review prior to the start of the meeting. A light lunch will be provided.

Meeting:

1. Welcome & Introductions – Judy Ott
2. Discussion of Oyster Restoration Suitability Model Output – Jaime Boswell & Dan Cobb
3. Discussion of Post-model GIS considerations – Jaime Boswell
4. Determine Priority Restoration Sites by Estuary Segment – Jaime Boswell & Judy Ott
 - Dona & Roberts Bays
 - Upper Lemon Bay
 - Lower Lemon Bay
 - Tidal Myakka River
 - Tidal Peace River
 - Upper Charlotte Harbor (East and West Walls)
 - Lower Charlotte Harbor/Cape Haze
 - Pine Island Sound
 - Matlacha Pass
 - Caloosahatchee River
 - Estero Bay
5. Next Tasks, Duties & Schedule – Judy Ott
 - June 19th – Oyster Working Group Meeting 4 – Review Draft Restoration Plan
 - June 26th – Comments on Draft Restoration Plan Due

THIS MEETING IS OPEN TO THE PUBLIC

Two or more members of the Everglades West and Caloosahatchee Basin Working Groups, Peace River Basin Management Advisory Committee, Peace River Basin Management Working Group, or Southwest Florida Regional Planning Council may be in attendance, and may discuss matters that could come before the respective body.



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MEETING NOTES

Attendees:

On site: Anne Birch/TNC, Greg Tolley/FGCU, Loren Coen/FAU-HBOI, Jim Beever/SWFRPC, Barbara Welch/SFWMD, Holly Downing/City of Sanibel, Lucy Blair/FDEP, Steve Geiger/FWC FWRI, Dan Cobb/SWFRPC, Jaime Boswell/for CHNEP, Judy Ott/CHNEP

Via Teleconference (WebEx was down): John Ryan/Sarasota Co., Andrea Graves/TNC

Purposes of Meeting 3 of SW FL Oyster Working Group:

- Review oyster restoration suitability model output.
- Review post-model GIS considerations.
- Identify priority restoration sites by estuary segment.

Meeting Notes:

Due to technical difficulties, the meeting was not available via WebEx & started at 12:50 pm.

1. Welcome & Introductions – Judy Ott, CHNEP

Members introduced themselves & Judy reviewed the purposes of the meeting & the agenda.

2. Discussion of Oyster Habitat Suitability Model (HSM) Output – Jaime Boswell & Dan Cobb

Jaime & Dan summarized the key components of the Oyster Habitat Suitability Model, including:

- Acres of suitable habitat for entire area & by estuary segment
- Classification of data (i.e. percent suitability ranges)
- Interpretation of results
- Identify any errors & changes needed

Discussion:

- Questions & discussion regarding salinity. What salinity values should be used – monthly, daily, ranges, etc.? How should salinity be included in model? Need to review salinity data for San Carlos & Dona/Roberts Bays. Need to look at salinity variability & duration.
- Discussion regarding how depth, salinity, seagrasses & oysters relate & what drives suitability in specific estuaries. To review habitat suitability model outputs for an estuary, look at model results for that estuary & then look at handouts for specific model inputs to see what is driving results.
- Discussion regarding whether using GIS analysis is appropriate for developing a habitat suitability analysis, but no alternatives were offered. Suggested that it would be helpful to have a hands-on look at the Oyster Habitat Suitability Model & be able to turn different layers on & off to see how the results are affected.
- There are 6 Oyster Habitat Suitability Model Components: Submerged Aquatic Vegetation (SAV), Aquaculture, Boat Channels, Depth, Salinity & Dissolved Oxygen (DO).
- Discussions regarding omitting DO from Habitat Suitability Model.
- Discussion regarding SAV: SAV is scored based on persistence – if present all 5 years = not suitable for oyster restoration & score 0, if present 1-4 years OK for further consideration for oyster restoration. SAV persistence drives model results a lot. What about effects of clam aquaculture on seagrass? What about small areas within or near seagrass that could be suitable for oysters? This is addressed at a large scale by excluding areas with 5 years of SAV.
- Discussion regarding Aquaculture Lease Areas - need to be pull aquaculture lease areas out of potential oyster restoration areas, but no buffer is needed.
- Discussion regarding boat channels: Used a simplistic approach - omit channels & do a lower ranking for a 75 foot buffer along channels. Recognize that a larger buffer maybe needed in some major channels.
- Discussion regarding depth: areas less than 3' gets highest score. 3-6 gets 5; over 6' gets a 0.
- Lengthy discussion regarding salinity - see ranges on maps.



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- Generally the model is doing what we want it to do but have some areas to fix.
- Discussion regarding how far out into the Gulf of Mexico to extend oyster HSM – need to clip out Gulf areas across mouths of passes.
- Reminder that the oyster HSM is designed to give a big picture by estuary segment: how many acres of suitable habitat are available on a broad scale. Goal is to establish CHNEP oyster restoration acres – where oyster habitat restoration may happen in the future.
- Need to define what suitable habitat is then overlay where oysters actually exist. Need mapping of current oysters.
- Discussion & questions regarding overlaying existing oysters with oyster HSM output & accuracy of GIS layers of historic & existing oysters – which range from 1000s to 100s of acres. In reality, could be close to 1000 acres – are more oysters in Myakka & Peace R; think ground truthing will show many more acres of oysters. A lot of aerial photos aren't shot at correct tide & under mangroves & with sun glare, so miss a bunch of oysters. Google pictures are often helpful.
- Discussion & questions regarding ranking of HSM components: Are all model components weighted equally? Yes – factors are multiplied together – see model outcome summary.
- Discussion regarding percent of suitable habitat that actually has oysters: Detailed imagery & mapping in SC only found about 30% of oyster reefs; especially under mangroves.
- Discussion regarding substrate: CERP has a map of substrate of substrate that is ground-truthed for Caloosahatchee R & San Carlos Bay.
- Additional discussion regarding salinity: Salinity is a pretty conservative parameter so there shouldn't be pockets of very high or very low salinities - higher habitats tend to show up with higher salinities. Need to go back & look at salinity data – because it is such an important deciding factor. Suggest using the layer of salinity data from CERP for Caloosahatchee R. How SCCF RECON salinity data could be used? Would need special context to use recon data & ground truth upstream “killing floods” (as well as dry season high temps) & salinity durations. Duration & frequencies of low salinities are more limiting & critical than average salinities. Discussion that there are more dead reefs more in high salinity areas, but these could be relic reefs. Predation may be higher in high salinity areas, too. Low salinities occur in SW FL in summer when temps are high which may minimize diseases. Possible cause is that isohalines changed over time, especially with canals & salinities became flashier, adversely affecting oyster. 1960s restoration included lots of dumped oyster shells which didn't all survive – may look as relic reefs in Pine I Sound. We discussed how to incorporate salinity in oyster HSM in previous SW FL Oyster Working Group meetings. Originally had 10 year averages & tried to include killing floods, but eliminated it because there wasn't a good method to estimate it. We could add killing flood back into the oyster HSM, but need direction on how to do that. Before we used the salinity data available from the CHNEP Water Atlas. Killing floods are going to be the biggest problem upstream. Salinity could be a recommendation about how to move on to the next step & other salinity steps will be needed in more detail during project design & implementation. Would be hard to pull data logger data into oyster HSM at this stage of development. We are interested in where there are excessive freshwater flows & if this process identified the areas that would be very helpful.
- Discussion regarding oyster harvesting & dredging: Oyster dredging has been active in the past.
- Discussion regarding grid size used in the oyster HSM: Used 50 feet X 50 feet. Seagrass is mapped from aerials & will need to refine in more details when designing & implementing restoration projects. Reminder that many oyster reef smaller than 50 feet X 50 feet. In SC used a minimum mapping unit of 10 feet.
- Additional discussion regarding SAV: Need to not adversely impact seagrasses when using volunteers to deliver oyster bags across seagrasses to oyster restoration sites. Along the west side of Pine Island, volunteers brought in lots of oyster bags next to SAV without damage.
- Discussion regarding optimal places for oyster which don't need restoration.



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- Discussion regarding what changes are needed to the oyster HSM to provide a realistic big picture estimate of oyster restoration areas: Summary = 2 key changes = clip out the Gulf of Mexico from the HSM & refine the salinity to reflect limiting low salinity conditions.
 - Summary discussion of Gulf of Mexico & Coastal considerations: What about wind component & calculating wave energy based on wind speed & direction. What about the Coastal Control Construction Line? We know oysters don't grow in high energy areas below CCCL. On Ft Myers Beach, show significant loss of oysters along the Gulf, near the passes – possible because the shorelines moved a lot. What about Sea Level Rise & the future of oyster restoration? TNC doing restoration for CC resilience. What is the time period of this restoration? We want to look at areas that may be suitable in the future, & be adaptable & consider areas for restoration now & in the future.
 - Reminder that if things change (i.e. salinities) can rerun the HSM, which we plan to do regularly (every 5 years?) &/or as new data becomes available.
 - Summary discussion of salinity considerations: Staff requested direction from the group. Could use current data & clean it up or could incorporate something to address killing floods now (or in future runs of the oyster HSM). Could do model specifically for each river (Peace, Myakka & Caloosahatchee). Could use MFLs for Peace & Myakka from SWFWMD – other hydrologic models are very detailed. Killing floods relate to seasonality of rainfall - use rainy season, so focus on peak of wet season. What about duration of killing flood? Duration of killing flood is important. Don't average entire wet season – look for 30 day consecutive period below 5-7 ppt – but would have to look at data logger data to be able to do this. Need to look at Caloosahatchee R Aug – Oct pulse releases. Should we take salinity data out of HSM? Need to look at average salinity as a big picture. Wet season salinity is more important for oyster restoration. As an easiest first cut, select rainy season data – Jul – Oct. \
 - Conclusion of oyster HSM discussions: use wet season average & clip geographic extent & investigate tidal river details for killing floods using Peace & Myakka MFL isohalines & Caloosahatchee data loggers &/or flow/salinity estimates.
 - Additional discussion: Need to add areas where we think would be the best place to do restoration & provide the rationale as to why these areas would be good. What about using USGS & SCCF data?
- 3. Discussion of Post-model GIS considerations – Jaime Boswell**
Reviewed & discussed maps including SHAs, Historic Oyster Habitat, Current Oyster Habitat, Sediment Type, Managed Areas, Shoreline Type, Sawfish Hotspots w/1km buffer.
Discussion:
- Difficult to map oysters using aerials, either historically or currently.
 - Sediment type will be reviewed in more detail during restoration project design & implementations.
 - Habitat restoration projects are consistent with Aquatic Preserve Management as long as habitat restoration is the goal of the project.
 - Will review sawfish hotspots when designing & implementing oyster restoration projects.
 - Will discuss regulatory topics in more detail with a smaller group in the near future.
- 4. Determine Priority Restoration Sites by Estuary Segment – Jaime Boswell & Judy Ott**
Reviewed & discussed oyster HSM & post-model considerations for each estuary & added local knowledge to maps for each estuary, including: Dona & Roberts Bays

Dona & Roberts Bays

Oysters end at intersection with Fox Creek and are most abundant east of 41, Blackburn Canal hydrology may affect success

Priority Areas – east of 41



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Lemon Bay

SWFWMD Coral Creek restoration should benefit oyster habitat

Priority Areas – all tributaries

Peace River

Suitable up to the I-75 bridge

Priority Areas – northwest of Punta Gorda Isles, Alligator Bay, behind Hog Island

Myakka River

There are lots of healthy oysters in the Myakka River, additional substrate may be added west of the 776 bridge.

Priority Areas – west of 776 bridge, Tippecanoe Bay

Upper Charlotte Harbor

CCA is a citizen's group interested in oyster restoration in this area

Priority sites – add fringing reefs near islands north of Pirate's Harbor

Gasparilla Sound/Lower Charlotte Harbor

Avoid manatee natality area in Turtle Bay

Priority sites – sandbars to the north of Bokeelia, south side of Cape Haze, west side of Cayou Pelau

Matlacha Pass

The southern area, south of the powerlines, near the mouth of the Caloosahatchee River is not likely to have optimal salinities until the implementation of CERP. Avoid Pine Island Creek due to conflict with American Crocodile.

Priority sites – shallow areas outside of the channel, north of the powerlines

Pine Island Sound

Locations of existing reefs – northwest of York Island, near MacKeever Keys, near Regla Island, underneath mangroves outside of Tarpon Bay's shallow cut, east of the north end of Buck Key, south of Demere Key, Captiva Rocks, near fish houses west of Pineland, between Cayo Costa and Cabbage Key

Priority sites – add substrate near existing reefs

Caloosahatchee River

Salinity is currently not stable enough in the Caloosahatchee River for oyster restoration, with the implementation of CERP salinities could be appropriate up to the area between the midpoint and Cape Coral bridges.

Priority Sites – area on the north side of the mouth of the river near Cattle Dock Point may be the only potential site

Estero Bay

Higher quality oyster habitat is near Estero River and Spring Creek. High flows from the Imperial River and Mullock Creek reduce the quality of habitat in these areas. High flows from Mullock Creek also flow up Hendry Creek, reducing salinities.

Hell Peckney Bay and Hurricane Bay may provide good habitat.

Priority Sites – Hell Peckney Bay, Hurricane Bay, around Estero River and around Spring Creek

5. Next Tasks, Duties & Schedule – Judy Ott

- June 19th – Oyster Working Group Meeting 4 to review revisions to oyster HSM & restoration methods & some components of draft Restoration Plan.



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- June 26th – Comments on Draft Restoration Plan Due
- Present oyster HSM results & methods & parts of draft plan to the July/Aug round of CHNEP Management Conference meetings.
- May extend schedule for developing CHNEP Oyster Restoration Plan to allow additional technical review & input from the SW FL Oyster Working Group & CHNEP Management Conference until Oct/Nov round of Management Conferences to assure technically sound, consensus based, usable document.