

**FDOU Project 26A Part 5 –Data Gathering and Technical
Support for the Southeast Florida Coral Reef Initiative
(SEFCRI) Our Florida Reefs (OFR) Decision Support Tool
April 2014 – June 2014**

Florida Department of Environmental Protection
Coral Reef Conservation Program
Project 26A Part 5



FDOU Project 26A Part 5 –Data Gathering and Technical Support for the Southeast Florida Coral Reef Initiative (SEFCRI) Our Florida Reefs (OFR) Decision Support Tool

Meeting Agendas and Minutes
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**Florida Department of Environmental Protection
Coral Reef Conservation Program
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Project 26A Part 5

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List of Acronyms

ACER- *Acropora cervicornis*
CWG- Community working group
CERP- Comprehensive Everglades Restoration Plan
DST- Decision support tool
FDEP- Florida Department of Environmental Protection
FDOU- Fishing Diving and Other Uses
FKNMS- Florida Keys National Marine Sanctuary
FRRP- Florida Reef Resilience Program
FWC- Florida Fish and Wildlife Conservation Commission
GIS- Geographic Information Systems
ICW- Inter-coastal waterway
MPA- Marine protected area
NOAA- National Oceanic and Atmospheric Administration
NOAA Biogeo- National Oceanic and Atmospheric Administration Biogeography Branch
NOAA NMFS SEFSC- National Oceanic and Atmospheric Administration National Marine Fisheries Service Southeast Fisheries Science Center
OFR- Our Florida Reefs
ORCA- Ocean Research and Conservation Association
SECREMP- Southeast Florida Coral Reef Evaluation and Monitoring Project
SEFCRI- Southeast Florida Coral Reef Initiative

1. OUR FLORIDA REEFS AND NOAA BIOGEO UPDATE MEETING

1.1. Meeting Agenda

Our Florida Reefs and NOAA Biogeography GIS Update Meeting

Friday April 25th, 2014 1pm-2pm

Join the conference call:

Teleconference Number: (954)-262-2663

Conference ID: 33764 #

- 1:00-1:20 **Our Florida Reefs Process and Decision Support Tool**
 - Our Florida Reefs (OFR) timeline
 1. Feb- July – Learning Phase
 2. Aug- Tool Workshop
 3. Sept- Oct – Develop Recommendations
 - Role of decision support tool (DST) in the OFR process and timeline for DST
 1. DST will be used in 3 ways
 - ~1) Data viewer (Have layers in 5 bins (Coral, Fish, Habitat, People & Management, and Water) 2) Survey tool 3) Provide real time analysis of layers to assist CWG in making recommendations
 2. May-June- Web-based tool & Survey development
 3. June-August- Survey Push
 4. Aug- Jan- CWG tool scenario development and collaborative use
 - Major players (Tool team, Point 97)
 1. Tool team just being finalized and contract with Point 97 not complete but in the process and should be contracted soon.
 - Anticipated role of spatial bibliography in the DST and OFR process
 1. CWG will be able to click on an area of interest and pull up all of the data associated with that area to assist them in making recommendations

- **1:20-1:45 NOAA Biogeography Updates**
 - Spatial Bibliography update
 - Review of products NOAA provided for the FKNMS working groups and what we can expect for the OFR process
 1. Have any new data layers been added to the original layers given to us in the NOAA geodatabase last August 2013 and are you all able to send an updated version if so.
 2. Can you all explain how you analyzed and displayed the data in the Keys and where did the data come from
 3. Are there any new data sets available for the SEFCRI region that have not been turned into layers
 4. Are we able to get commercial fishing data
 5. Planning unit size?
- **1:45-2:00 Questions/Open discussion**

1.2. Meeting Minutes

Our Florida Reefs and NOAA Biogeography Update Meeting Minutes

Friday April 25th 1pm-2pm

Attendees:

- Chris Jeffrey
- David Nelson (Moe)
- Theresa Goedeke
- Dan Dorfman
- Brian Walker
- Amanda Costaregni
- Lauren Waters
- Shay Viehman (Came in at end of call due to missing PIN#)

- **Our Florida Reefs Process and Decision Support Tool**

- **Our Florida Reefs (OFR) timeline**

1. Feb- July: Learning Phase
2. Aug: Tool Workshop
3. Sept- Oct : Develop Recommendations

- **Role of decision support tool (DST) in the OFR process and timeline for DST**

1. DST will be used in 3 ways
 - ~1) Data viewer (Have layers in 5 bins :Coral, Fish, Habitat, People & Management, and Water) 2) Survey tool 3) Provide real time analysis of layers to assist CWG in making recommendations
2. May-June: Web-based tool & Survey development
3. June-August: Survey Push
4. Aug- Jan: CWG tool scenario development and collaborative use

- **Major players (Tool team, Point 97)**

1. Tool team just being finalized and contract with Point 97 not complete but in the process and should be contracted soon.

- **Anticipated role of spatial bibliography in the DST and OFR process**

1. It was originally hoped that the CWG will be able to click on an area of interest and pull up all of the data associated with that area to assist them in making recommendations

-As of now, we are not planning for this however, after the database is set up w/ tags to fit into a spatial framework, it should be relatively easy to work into the tool after.

-We will need to discuss the possibility of a spatial component in the DST further with Point 97

-For now we will focus on creating and organizing an Endnote Bibliography with all relevant references to be provided online to CWG members

2. A simple Endnote Library with all relevant references in folders organized by Eco-regions will also be helpful

-Need to find out about the fee associated with an Endnote Online Account. NOAA Library already has a subscription so they may be able to host the bibliography on their account. ***Moe will look into this**

-Issue with providing PDFs on Endnote: Copy write infringement may be a problem. ***We will chat with the Nova librarians about this issue and follow up.**

-*Amanda will provide Moe the latest NSU version.

-*Moe will work on bibliography to provide us with a finished product to be reviewed by the end of MAY

- **Current layers ready for the tool**

1. There are about 20 layers that were identified as most important for the beginning data portal phase of the tool. These fit under 5 bins (Coral, Fish, Habitat, Water, and People & Management)

- **Layers needed from NOAA BioGeography for the tool**

1. No specific layers that are needed at the moment
2. Some layers from the geodatabase sent in August 2013 were lacking metadata. ***Amanda will send list to NOAA biogeography to obtain metadata so we are able to explain to the CWG where the data came from and how it was analyzed**
3. C.J. said that for the FKNMS effort, the working groups had specific questions that they wanted answered. This helped NOAA in deciding what analyses were needed to create the necessary layers for them (e.g. How much area in each region is found in managed areas vs. unmanaged areas). He suggested we ask the same of the CWG in this process.
4. Getting the working groups to come up with the right questions was one of the most difficult tasks.

5. Discussed possibly taking time in one the CWG meetings to have the members develop questions that they feel are important for this process so that layers can be developed before they begin developing recommendations. There may be time to develop these after the presentations.
6. C.J. explained that there are so many issues to be addressed that at some point we need to focus on certain priorities and help guide the process if it is to be productive.
7. Theresa suggested that we could send out a poll to the CWG to try to ascertain their priorities and see what layers would be most important.
8. Layers used in the FKNMS focused on coral cover and species richness, fish abundance and species richness, reef resilience, and human use data, vessel monitoring data.
9. The issue with gathering data up in the SEFCRI region is we don't have as many region-wide surveys as they have in the Keys (W/ exception of FRRP).
10. A 1km grid system was used and a ranking was agreed upon to show high and low spots.
11. The average time to develop the NOAA layers after the questions have been asked was about one month.

- **NOAA Biogeo Updates**

- **Spatial Bibliography update**

1. The Endnote database is not ready to be shared currently but Moe will work on it and have it ready to be reviewed by the end of May. We will need a workable database by August

- **Review of products NOAA provided for the FKNMS working groups and what we can expect for the OFR process**

1. Have any new data layers been added to the original layers given to us in the NOAA geodatabase last August 2013? If so, NSU needs latest version.
2. Are there any new data sets available for the SEFCRI region that have not been turned into layers?
3. Are we able to get commercial fishing data
4. Planning unit size?
5. One push back in the FKNMS was that the CWG members didn't believe the data or thought the data was outdated. Those leading the process had to spend a lot of time breaking down and explaining

how the data was obtained and analyzed to create the layers being presented.

6. It is very important that the CWG buy into the data being presented.
7. Shay explained that it is important to display the data in the simplest way possible for the CWG members so they can understand and relate to the layers more easily.

-It was important to display the data consistently and briefly explain the data every time it was presented to the groups, especially for major datasets.

-The presentations with these explanations can be viewed on the FKNMS website.

-Some scientists complained about over-simplification however and argued that they were underutilizing the available data.

8. Some members brought in data that they collected and felt would be useful for the process but we're not sure if we will use this data as there are issues with how it is reviewed etc.

***Task to be completed by attendee**

2. TOOL TIMELINE MEETING

2.1. Meeting Agenda

Tool Timeline Meeting

May 8th, 2014 12:00pm-1:00pm

Join the conference call:

Number: 877-820-7831

Passcode: 553756

Invitees:

Amanda Costaregni

Ben Wahle

Brian Walker

Carol Lippincott

Jamie Monty

Lauren Waters

Meghan Balling

Overview of FDEPs CWG meeting outcomes

- Discuss what's expected out of the working group meetings (recommendations, implementation plans, etc.)

Overview of current CWG meeting agendas

Overview of current tool timeline

- Online map viewer (May-June)
- Survey (June-August)
- Tool real time analysis (August-January)

Concerns with current timeline

- Point 97 still not under contract
- Length of time to leave survey open to public
- Use of DST by CWG to aid in generating recommendations with spatial component

Any changes proposed for current timeline?

- Is another meeting necessary?
- Homework in preparation for next meeting?

Questions/Comments & wrap-up

2.2. Meeting Minutes

Tool Timeline Meeting Minutes

Thursday May 8th, 2014 12pm-2pm

Attendees:

- Amanda Costaregni
- Brian Walker
- Carol Lippincott
- Jamie Monty
- Lauren Waters
- Meghan Balling

Objective of Call: *To make sure we are all on the same page with the tool timeline and how it will fit into the OFR process timeline. Brian Walker and Amanda Costaregni are the technical support team and now the Tool Team leaders who will be coordinating all tool related meetings as well as will be the liaisons between the Tool Team, Point 97, and the CWGs*

Overview of FDEPs CWG meeting outcomes

- The OFR process is complicated as it has a lot of moving parts
- Some recommendations that come out of the CWG are not expected to have any spatial component and thus will not require the DST

Overview of current CWG meeting agendas

- Now through July – Learning phase
- Aug- CWG will start brainstorming every possible recommendation
- Oct- Recommendations will be ready for SEFCRI review over the 3 month (Nov-Jan) break
- All recommendations made by the CWGs must go through a quality check (e.g. whether it is feasible, whether it is legal, etc.) to be put on the list of management recommendations that will be sent out for review.
- After the quality check, there will be a second spread sheet with the recommendation implementation information.
- Nov-Jan- SEFCRI review
- Feb- Prioritization

Overview of current tool timeline

- Should have a fully executed contract with Point 97 by the end of next week (5/16)
- 1) Online map viewer similar to GIS or google maps (May-June)
- 2) Survey (June-August) - Stakeholder use data will be fed into the third part of the DST

- 3) Tool real time analysis (August-January) –Layers will be provided to the CWG so they are able to work through their recommendations with a spatial component.
- Need to fit the tool into the meetings and make it as seamless as possible
- The tool will help the CWG understand where something should go (e.g. mooring balls, MPA, etc.) based on a set of criteria that must be decided upon and input into the tool.

Tool Technical Support Team updates

- Five Microsoft surface tablets have been purchased and are being set up for the CWGs
- They will have internet access to perform searches, to view the SEFCRI endnote bibliography online and the Our Florida Reefs website, and to take the survey.
- Discussed how we could incorporate the tablets into the CWG meetings in other ways.
- Could possibly be used to fill out the recommendation worksheets.
- Brian envisioned utilizing the DST in the CWG meetings in several ways
 1. To generate a list of management recommendations or actions
 2. To develop a list of criteria for each action (e.g. high coral cover, high fish diversity, etc.)
 3. Criteria list would be programmed into the tool to see which area of reef would fit the criteria (possibly using a slider bar). This is why we will need input from the CWG to build the function.

Concerns with current timeline and with other controversial subjects

- Point 97 still not under contract
- Length of time to leave survey open to public
- Use of DST by CWG to aid in generating recommendations with spatial component
- Brian concerned that two meetings may not be enough to agree on criteria and that getting lines on a map will be even harder to agree on.
- One of the biggest concerns is that we may need more time
- What if the CWGs do not like the tool?
 - It should be easy to convince them that it will be beneficial as the tool will be able to provide science-based, defensible recommendations.
- Most controversial subject is MPAs
 - May want to bring up MPAs in dialogue as early as possible to try to make the CWGs comfortable with the idea
 - Could possibly have the CWG members ask their constituents what their concerns are as a homework assignment over the holidays

Any changes proposed for current timeline (Brainstorm Session)

- **List of criteria could be part of the implementation spreadsheet** that goes with the recommendations.
- **The CWG could develop management actions and attach criteria to these actions** which would be captured on the implementation worksheet but this may mean that the list would not be ready until the end of October.
- **Could make the criteria part of the second spreadsheet with the implementation information.**
- **Could provide the CWG members with a list of data layers available** to help them develop criteria.
 - Criteria should be developed using simple questions they want answered (i.e. how big, how far away or how close to something, what type of habitat it should be in)
- During Aug, Sept, and Oct, CWG would only be using the web viewer and not the analysis portion of the tool as originally envisioned.
- When the CWG come back in Feb they could use the analysis functions that could be built in using the criteria. The hiatus from Nov-Jan could be used to program this function using the aforementioned criteria.
- Feb was originally supposed to be used for prioritization.
- Question was asked of whether prioritization should be completed as a final step after any necessary lines are drawn or as a preliminary step, prior to lines being drawn and based on the criteria.
- Jamie expressed that prioritization as the final step, after lines are drawn, makes the most sense because location may be another way to prioritize.
- **Could possibly move the criteria generation earlier, to Sept rather than starting it in Oct.**
- Carol inquired whether it would be possible to work on recommendations that have a spatial component first.
- Optimistic timeline: Develop management actions with criteria in Oct so Point 97 has criteria to develop tool by end of Oct.
- **Could have a quick initial prioritization in early Feb** so that the recommendations that fall into the top 30% will be focused on when drawing lines. Prioritization could be done in groups (e.g. highest, higher, high) based on the feedback given my SEFCRI
- When the CWGs meet in March, the highest priority recommendations will have been chosen and then we can focus on line drawing.
- **If more time is necessary for the process**, we could always narrow both periods of review but everyone must agree to shorten the break so that both Jan and May would be extra meeting dates instead of break times.
 - Both CWGs approved their work plans with an agreement that it could possibly change.
 - During the July meeting we could possibly poll the CWG members to see what dates work for them in Nov or Jan just in case a contingency plan is needed.

- Good to keep in mind that there may be a possibility of needing to extend funding into the next cycle.
- **Clarification: Are the recommendations being submitted a consensus from the group or all recommendations gleaned from the group?**
 - Recommendations will capture everything the group brings up and will not be consensus based.
 - CWGs have the authority to decide if they want to focus on a few recommendations rather than work on 100s.
- **Clarification: Will the CWGs have to come to a consensus on the spatial criteria?**
 - The groups will not need to focus on details of the criteria (i.e. a percentage) just what criteria is important (i.e. coral cover). The initial criteria will just be topic based.
 - We will not try to reach CWG consensus on the criteria.
- During the first review, SEFCRI will decide what is deemed “high coral cover” in different areas according to what is realistic for the local system.

Tasks

- **Carol** will focus on the draft process agendas for Aug, Sept, and Oct
 - Will try to have the ready but they may not be complete before the May meetings.
- **Amanda** will contact Carol to check on her availability for a possible face to face meeting when she is in South Florida
 - This meeting does not need to occur before the May meetings but should be scheduled soon as the process agendas will need to be solidified

3. TOOL TEAM MEETING

3.1. Meeting Agenda

Tool Project Team Meeting

Tuesday May 27th, 2014 3:00pm-4:30pm

Conference number:

(954-262-2663)

Conference ID: 30095

PIN: 5678

Invitees:

- Amanda Costaregni
- Brian Walker
- Lauren Waters
- Meghan Balling
- Jamie Monty
- Ben Wahle
- Rene Baumstark
- Cheryl Miller
- Dana Wusinich-Mendez
- Manoj Shivilani
- Mason Smith
- Pat Quinn
- Sara Thanner
- Stephanie Clark
- Dan Crowther
- Cheryl Chen
- Jenny Walsh

3:00-3:10pm: Introductions

3:10-3:20pm: Overview of FDEPs CWG meeting outcomes

- Discuss what's expected out of the working group meetings (recommendations, implementation plans, etc.)

3:20-3:40pm: Overview of current tool timeline

- Online map viewer (May-June)
- Survey (June-August)
- Tool real time analysis (August-January)
 - Will be created using the criteria that the CWG members come up with before the first break

3:40-3:50pm: What is expected from the Tool Team

- Decisions regarding which GIS data layers should be included in the map viewer
- Survey development input

3:50-4:05pm: Review of Layers for the Data Viewer

- Thoughts on the NOAA biogeo layers available
- Any other layers not on the list that should be added. (Must have data already available)

4:05-4:20pm: Review of Draft Survey Outline

- Survey length and what key questions should be included

4:20-4:30pm: Questions/ Wrap-up

3.2. Meeting Minutes

TOOL PROJECT TEAM MEETING

Tuesday May 27th, 2014 3:00pm-4:00pm

Attendees:

- Amanda Costaregni (NSU, DST technical support)
- Brian Walker (NSU, DST technical support)
- Lauren Waters (FDEP)
- Meghan Balling (FDEP)
- Ben Wahle (FDEP)
- Rene Baumstark (Tool Project Team)
- Cheryl Miller (Tool Project Team)
- Manoj Shivlani (Tool Project Team)
- Sara Thanner (Tool Project Team)
- Dan Crowther (Point 97)
- Cheryl Chen (Point 97)
- Jenny Walsh (Point 97)
- Moe Nelson (NOAA Biogeo)
- Dan Dorfman (NOAA Biogeo)

Introductions

Overview of FDEPs CWG meeting outcomes

- What is expected out of the working group meetings (recommendations, implementation plans, etc.)
- The Community Working groups will develop an initial list of management actions
- They will then agree on the top 5 actions to gather more detailed information on
- They will come up with initial spatial descriptors for these top 5 actions. These descriptors will be used to create the analysis portion of the DST and will include items such as: which areas this activity should occur in and why, what this area should contain, what this area should be near to or far from, what activities currently occur or do not occur in this area, etc.
- SEFRCI will review the recommendations and spatial descriptors during the break months (Nov-Jan)
- The CWG will then take the review and come up with the final recommendations accordingly as well as the final spatial descriptors and decide on more details for these descriptors. For example one of the initial descriptors may have been high coral cover. With the recommendations from SEFCRI on what this means for the region they are looking at, they

will decide what percentage range they want. Of course we would all like 50% coral cover but in our region 5% is more realistic.

- The last step is to prioritize all management actions and come to a consensus based on a process and vote.

Overview of current tool timeline

- Online map viewer (May-June)
 - Point97 is currently under contract and working on the beta version of the data viewer which should be available shortly. The Tool Project Team will be reviewing this version and assisting us to decide which layers need to be included in the final version that will go up on the OFR website
- Survey (June-August)
 - Originally it was thought that the survey would be open June-August however as June is fast approaching, this is obviously not attainable so we will need to decide on a time window in which the survey will be open.
 - Realistically it probably will not be ready until July
- Tool real time analysis (August-January)
 - Spatial descriptors will be decided for the top 5 recommendations (only the top 5 that need a spatial component) that the CWG come up with. These will not be consensus based.
 - For example: High coral cover, high fish diversity, what the recommendation should be near to or far from (e.g. mooring ball locations or MPAs), size of an area, etc.
 - During SEFCRI review, the analysis portion of the tool will be created using the spatial descriptors that the CWG members come up with before the first break
 - This tool will allow the CWGs to locate and adjust areas that meet their needs for the recommendation based on the spatial descriptors.

What is expected from the Tool Team

- Decisions regarding which GIS data layers should be included in the map viewer
 - How these layers should be divided up
 - Are there any layers that we do not have on the list that you feel we should add if they exist
- Survey development input
 - How long should the survey period be open
 - How long should the survey take to complete
 - What age group should we target (Cheryl noted that their surveys were directed at only those 18+ and included a disclaimer in the beginning)
 - English and Spanish
 - What questions should survey include

Review of Layers for the Data Viewer

- ****Amanda** will send out an excel file to the Tool Project Team that was compiled by FWC that lists all of the data layers currently available
- We would like the tool project team's thoughts on layers going into the beta version of the data viewer
- We would like the Tool Project Team's thoughts on the NOAA biogeo layers available
- Any other layers not on the list that should be added. (Must have data already available)
- Although it would be nice to include all layers available it may be slightly overwhelming so we think it may be beneficial to narrow the list down slightly

Review of Draft Survey Outline

- Survey length and what key questions should be included
- Discussed whether both coastal and ocean use be included
 - Cheryl Chen noted that in her past experience, having too many options to choose from may lead the participants to focus more on the coastal than the ocean use as most people tend to map 3-4 activities.
- ****Amanda** will send a draft survey for the Tool Project Team to review and send comments which will be compiled for our next meeting. This meeting will be more detailed and geared toward making key decisions needed to develop both the data viewer and survey.
- Lauren and Meghan expressed that the survey should be 5 to 10 minutes max and focus on where you go and what you do.
- Brian recommended the tool focus only on surveying fishers, divers and boaters
- Lauren expressed the need to include as many user groups as possible and be more specific, for instance commercial vs recreational.
- Meghan suggested ask CWG members what user groups to include.
- ****A** link to the Washington coastal and ocean use survey that will be out in the next couple of weeks will be provided. The survey will be slightly different as this demo will have participants drop pins and the OFR survey will have participants highlight a grid.

****Action Items**

4. FWC MEETING

4.1. Meeting Agenda

FWC OFR Conference Call: A Discussion of lessons learned in the FL Keys

Tuesday June 3rd, 2014 1:00pm-2:00pm

Conference number: (954) 262-2663

Conference ID: 72435

PIN: 5678

Invitees:

1. Amanda Costaregni
2. Brian Walker
3. Lauren Waters
4. Meghan Balling
5. Jamie Monty
6. Ben Wahle
7. Cheryl Miller
8. Dana Wusinich-Mendez
9. Manoj Shivlani
10. Mason Smith
11. Pat Quinn
12. Sara Thanner
13. Stephanie Clark
14. Dan Crowther
15. Cheryl Chen
16. Jenny Walsh
17. Rene Baumstark
18. Chris Anderson
19. Kathleen Okeife
20. John Hunt
21. Carol Lippincott

Introductions

- NSU
- FDEP
- Tool Project Team
- Point97
- FWC FWRI

Reason for this meeting and what we hope to accomplish (NSU)

- Insight from FWC on their community planning process in the FL Keys.

- Learn from the positive and negative aspects to improve the Our Florida Reefs process.

Quick overview of the Our Florida Reefs Process for the SECRI region (NSU)

- What is expected out of the community working group meetings (recommendations, implementation plans, etc.)?
- Plan to incorporate the decision support tool.

Overview of the process in the FL Keys (FWC)

- FL keys process discussion: lessons learned.
- Positive and negative outcomes.
- Future steps in FL Keys.

Discussion on how the two processes relate (All)

- How can OFR benefit from the FL Keys process?
- Things to avoid.
- Things to incorporate.

Questions/ Wrap-up

4.2. Meeting Minutes

MEETING MINUTES FWC/OFR CONFERENCE CALL

Tuesday June 3rd , 2014 1:00pm-2:00pm

Attendees:

- Amanda Costaregni- NSU
- Brian Walker-NSU
- Lauren Waters-FDEP
- Manoj Shivlani- Tool Project Team
- Rene Baumstark- Tool Project Team
- Dan Crowther- Point97
- Cheryl Chen- Point97
- Chris Anderson- FWC FWRI (mapping lead)
- Kathleen Okeife- FWC FWRI (GIS coordinator)
- John Hunt- FWC FWRI (front line contact for Sanctuary)

Reason for this meeting and what we hope to accomplish (NSU)

- Insight from FWC on their community planning process in the FL Keys.
- Learn from the positive and negative aspects to improve the Our Florida Reefs process.

Overview of the Our Florida Reefs Process for the SECRI region (NSU)

1. Overview of FDEPs Community Working Group (CWG) meeting outcomes

- The Community Working groups will develop an initial list of management actions
- They will then agree on the top 5 actions to gather more detailed information on
- They will come up with initial spatial descriptors for these top 5 actions. These descriptors will be used to create the analysis portion of the DST and will include items such as: which areas this activity should occur in and why, what this area should contain, what this area should be near to or far from, what activities currently occur or do not occur in this area, etc.
- SEFCRI will review the recommendations and spatial descriptors during the break months (Nov-Jan)
- The CWG will then take the review and come up with the final recommendations accordingly as well as the final spatial descriptors and decide on more details for these descriptors. For example one of the initial descriptors may have been high coral cover. With the recommendations from SEFCRI on what this means for the region they are looking at, they will decide what percentage range they want. Of course we would all like 50% coral cover but in our region 5% is more realistic.
- The last step is to prioritize all management actions and come to a consensus based on a process and vote.

2. Overview of the Decision Support Tool

- Online map viewer (May-June)
 - Point97 is currently under contract and working on the beta version of the data viewer. The Tool Project Team will be reviewing this

version and assisting us to decide which layers need to be included in the final version that will go up on the OFR website.

- This map viewer (marine planner) will be accessible to the general public via the OFR website. They will be able to pull up and view multiple data layers that are available for the SEFCRI region.
- Survey (June-August)
 - The survey should be up and running around July
 - It will be used to gather stakeholder use data in the SEFCRI region (where people are frequenting and what they are doing there)
 - It will give us an updated data set in addition to Shivlani's study in 2006 and will also serve to get the public involved and feel more vetted in the process.
 - Data collected will be used to produce another layer for the OFR process.
- Tool real time analysis (Feb)
 - Spatial descriptors will be decided for the top 5 recommendations (only the top 5 that need a spatial component) that the CWG come up with. These will not be consensus based.
 - For example: High coral cover, high fish diversity, what the recommendation should be near to or far from (e.g. mooring ball locations or MPAs), size of an area, etc.
 - During SEFCRI review, the analysis portion of the tool will be created using the spatial descriptors that the CWG members come up with before the first break
 - This tool will allow the CWGs to locate and adjust areas that meet their needs for the recommendation based on the spatial descriptors.

Overview of the process in the FL Keys (FWC) and recommendations/advice

- In the beginning, an advisory committee was put together with every stakeholder involved
- Kathleen gave a GIS 101 presentation to the group to show them how to use GIS. Most of those who participated (2/3rds or more) did not have much knowledge and were interested in learning about the program. Explained points, lines, and polygons and people were appreciative saying they never knew what the elements were.
- FWC used a multi-pronged approach incorporating GIS online and a flex application similar to google earth, and provided KML files for use in Google Earth. They also printed out a multitude of hard copy maps which were used the most. They found that the map was more convenient (did not readily have access to computers) for most stakeholders to use and they felt more comfortable with it.
- Warned work between meetings would be very low.
- The original scoping meetings were open and held in the evening as that was the time more people were able to attend. During these meeting recommendations and prioritizations were collated.

- Many stakeholders criticized that the meetings were not well advertised as they did not visit the website. Radio and TV advertisement would work better for them.
- Another criticism was concerning meeting times in the middle of the day when working people were not able to attend. As a result, and in order to accommodate greater participation, evening meetings have been scheduled more regularly.
- Early in the process, representatives of stakeholders were selected to be a voice for their constituents however later in the process irate fishermen showed up saying they were not represented.
- John pointed out that many people only showed up at the point when they perceive that they will be negatively affected.
- During the Sanctuary meetings, they heard the whole range of opinions
- Three working groups
 - Coral Restoration Group- No conflicts, all of like mind, fairly easy
 - Shallow Water Group- Moved forward well
 - Ecosystem Protection Working Group- With this group, the support staff learned of the challenges non-scientists have in accessing and effectively using spatial data on line. Hence, progress was slow and the information was underutilized. Moving forward- information synthesis has helped the process. The people producing the information have guided the users through the data and how they can use it. This suggests that the decision to develop a decision support tool in advance should help the SEFCRI process.
- Will come across arguments on whether older scientific data is still valid (e.g. Shivlani's 2006 data). This was overcome with discussion on why the data is useful and how it was obtained.
- John recommended that when we are ready to show the information to the SE FL working groups that we thoroughly review the spatial depictions, etc. to make sure they make sense before they see it. One way to accomplish this could be to show it to those familiar with the region and get their reaction. One possible approach could be to take the decision support tool to non-science people to have a trial run and see how they respond to it before giving it to the CWG
 - Kathleen suggested the Audubon Society as an option for the trial run
- Lack of local knowledge when presenting data can be detrimental.
- Challenge- Even after all of the information is presented and the decision support tool guides them, how you manage (facilitate) the working group and the make-up of the group will be key and possibly more important than the tool.
- The next FKNMS Ecosystem Protection Working Group meetings are next Tuesday and Wednesday (6/10 and 6/11) at the Eco Discovery Center in Key West. They will be focusing on the Marquesas region which is relatively data poor. There may be a controversial discussion on whether to have spatial management for spawning aggregation site there. This could be an opportunity to see how an existing working group is working. Another possible time could be the July 8 and 9 meeting at the Marathon Garden Club.

5. WEBSITE MEETING

5.1. Meeting Agenda

IT/Website Meeting

June 4th, 2014 2:00pm-2:45pm

Conference number: (954)262-2663

Conference ID: 44191

PIN:5678

Invitees:

1. Alison Bradley
2. Amanda Costaregni
3. Ben Wahle
4. Brian Walker
5. Cheryl Chen
6. Christopher Boykin
7. Dan Crowther
8. Edwin Knuth
9. Jamie Monty
10. Jenny Walsh
11. Lauren Waters
12. Meghan Balling

2:00-2:05pm: Introduction

2:05-2:15pm: Where does Marine Planner currently stand (Point97)

- Beta version now out for testing
- OFR look/feel still needs to be incorporated

2:15-2:25pm: What does Point97 need from Alison to achieve the OFR look/ feel (Point97)

2:25-2:35pm: Alison's questions for Point97

2:35-2:45pm: Wrap-up

5.2. Meeting Minutes

Meeting Minutes IT/Website Meeting

June 4th, 2014 2:00pm-3:00pm

Attendees:

1. Amanda Costaregni (NSU)
2. Brian Walker (NSU)
3. Alison Bradley (Web designer at Wackypuppy Design)
4. Lauren Waters (FDEP)
5. Ben Wahle (FDEP)
6. Meghan Balling (FDEP)
7. Dan Crowther (Point97)
8. Jenny Walsh (Point97)
9. Edwin Knuth (Point97)
10. Rene Baumstark (FWC/data host/member of Tool Project Team)

Question about OFR Website and Marine Planner's Incorporation

- Will users need to create a username and password in the OFR website for purposes other than to use the tool? Answer: No
- For the tool, users will need to log-in to use and to take the survey. There is also a possibility of giving specific groups access to certain layers.
 - Groups can be created so that they are able to work together and share ideas in a tighter context.
 - The log-in will be important for the groups to interact, to bookmark maps, etc.
 - There is a possibility that we could also have them log-in through their google or facebook account as well.
 - The analysis portion of the tool will only be available to the CWG members.
 - We will be able to manage users on the tool's back end.
- Marine Planner Page
 - Ben will help modify the marine planner page on the OFR website and write a small blurb introducing the tool.
 - Alison can help activate the page.
 - It will be simple to edit the page and add a link to launch the tool.
 - The tool will need to be in the banner heading as its own separate entity or may be listed in one of the drop down lists in the banner heading (still up for debate).
 - The tool will launch in a new window and will not be embedded.
 - It may be useful to have a HOME PAGE button in the tool window so that users can easily return back to the OFR website.

Current Status of Marine Planner

- Beta version now out for testing
- OFR look/feel still needs to be incorporated
- <http://OFR.marineplanner.io>
- Lauren as emailed Point97 the font packages etc. to incorporate into the tool

- Marine Planner just needs a few design cues (colors, fonts, logo) to keep consistency with the OFR website.
- Jenny will get a mock-up to Alison in the near future when the design is complete.
- Alison had a concern with the data not contrasting against the basemaps however this was alleviated as the opacity of the layers will be changed to 100% as well as the possibility of using a different basemap as the default.
- We discussed the different basemaps available as well as the pros and cons for each (Satellite imagery, Esri Oceans, NOAA nautical charts, etc.)
- An option was also to look into using one of Bings maps

6. TOOL TEAM MARINE PLANNER MEETING

6.1. Meeting Agenda

OFR Tool Project Team Marine Planner Conference Call

Monday June 16th, 2014 10:00 – 11:00 am

Conference number:

(954-262-2663)

Conference ID: 30095

PIN: 5678

Invitees:

1. Rene Baumstark
2. Stephanie Clark
3. Cheryl Miller
4. Pat Quinn
5. Manoj Shivlani
6. Mason Smith
7. Sara Thanner
8. Dana Wusinich-Mendez
9. Meghan Balling
10. Jamie Monty
11. Ben Wahle
12. Lauren Waters
13. Cheryl Chen
14. Dan Crowther
15. Jenny Walsh
16. Amanda Costaregni
17. Brian Walker

10:00-10:30am: Overview of the available layers

- Discuss project team layer review results
- Identify which layers are essential and which are preferred by the Tool Project Team
- Discuss display aspects of the chosen layers

10:30-11:00am: Present Marine Planner

- Demonstrate the draft Marine Planner
- Questions regarding use of the tool
- Discuss any immediate suggestions that may improve the tool

6.2. Meeting Minutes

MEETING MINUTES OFR TOOL PROJECT TEAM MARINE PLANNER CONFERENCE CALL

Monday June 16th, 2014 10:00am-11:00am

Attendees:

- Amanda Costaregni- NSU
- Ben Wahle- FDEP
- Brian Walker-NSU
- Cheryl Miller- Tool Project Team
- Dan Crowther- Point97
- Dana Wusinich-Mendez- Tool Project Team
- Jenny Walsh- Point97
- Lauren Waters-FDEP
- Manoj Shivlani- Tool Project Team
- Mason Smith- Tool Project Team
- Meghan Balling- FDEP
- Pat Quinn- Tool Project Team
- Rene Baumstark- Tool Project Team
- Sara Thanner- Tool Project Team

Objectives of call:

- Overview of available data layers
- Overview of OFR Tool Project Team review of available layers
- Demonstration of the OFR Marine Planner

Overview of Available Data Layers

- Reviews of the available data layers were compiled to gauge layers preference
 - Important to note that the majority of team members did not supply reviews
 - We are giving more time for those team members to give feedback on the layers
- Explanation of Layer Review excel sheet
 - Columns G-J are the compiled ratings from the review
 - The cells in these columns are colored according to the number of responses:
No responses = white, 1 response = light blue, 2 responses = medium blue, 3 responses=dark blue
 - The data rows are color coded to Columns G-J where the majority of responses determined the category. Red=not needed, White=Indifferent, Yellow=Preferred, and Green=Essential.
 - Red and white rows will most likely be excluded as they represent layers that all responded to as not needed/ indifferent or that do not pertain to the SEFCRI region.

- Only the green and yellow rows will most likely be reviewed as they were selected as essential/preferred
- Conflicting responses, where there was at least 1 essential and 1 not needed, were labeled as orange. These are the layers that must be investigated further and decided upon by the Tool Project Team. (e.g. fresh water boat ramps)
- There will most likely be only one benthic habitat layer but this is up for discussion. Some people may want a broader layer that only displays all hard bottom and coral as one color in addition to the detailed categorization.
- We will merge layers where possible rather than having them as two separate layers to reduce the amount of layers visible to the public. The more layers, the more confusing it may get.
- Layers must be kept under 100. We may have to decide on a point or polygon layer for similar data (may not be able to have both).
- Biscayne Bay Mooring buoy layer not relevant to SEFCRI region so it will not be included
- Want to give FWC a minimum list as not to burden them with unnecessary work.
- Extended deadline for Layer Review for those Tool Project Team members who did not have a chance to respond. **NEW DEADLINE: Tuesday June, 24th at 4pm. Reminder email will be sent out with the file attached.**

OFR Marine Planner Presentation

- OFR Marine Planner web address: <http://ofr.marineplanner.io>
- Explained icons on the right of screen (sharing, bookmarking, etc.)
- Can zoom into layer using +/- signs in bottom right corner of the screen
- Can also zoom to a specific area by holding down the shift key and left clicking the mouse around the desired area
- On the left side of the screen, under the OFR logo, there is a search box to find desired layers
- The layers currently reside under 5 headers: Coral, Fish, Water, Habitat, and People & Management
 - It was suggested that People & Management be two separate headers as people would encompass socioeconomic data
- Active Tab reveals all of the layers open in the map
 - Within this tab you are able to change the opacity of the layers, the order of the layers, or remove the layers
- Legend Tab to the right of the Active Tab shows the key to interpreting the open layers
- Functionality of the Marine Planner tool, categorization of the layers, labeling of the layers, layer colors and symbols are all up for discussion by the Tool Project Team
- The Tool Project Team is advised to take the tour of the tool before exploring as it does a great job of explaining how the tool operates.
- The Tool Project Team is encouraged to use the FEEDBACK button at the bottom of the screen to provide functionality feedback directly to the developers. When giving

- feedback, please provide the browser being used (firefox, internet explorer, etc.) as well as the operating system (MAC vs. PC, Windows 7 vs. Windows 8, etc.).
- The ADD LAYER button will not be available. It is only used by the administrators.
 - There is flexibility with the basemaps. Currently, ESRI Ocean is the default basemap but this is up for discussion. Five other options are available (including Google 2014 Satellite Map) but there may be more options added such as the NOAA nautical charts. Brian Prefers Google Physical as the basemap.
 - Would like to add Lidar Bathymetry layer to the basemap as a default layer that appear immediately upon opening the OFR Marine Planner
 - Cheryl inquired about beach nourishment locations and permitting layers and offered to send contact information to retrieve these layers as they may be very helpful.
 - Any data gaps that exist must be recognized so please notify Brian or Amanda
 - Email layer feedback to Brian or Amanda if possible. We will also receive relevant responses from the tool feedback.
 - Use feedback button within tool to submit comments on functionality of the OFR Marine Planner
 - OFR Marine Planner must be ready to present to the CWGs by August 14
 - Provide comments on the tool and layers by Tuesday June 24th at 4pm**
 - Doodle poll for in-person Survey Development Meeting will be extended as a desirable date could not be decided upon. Doodle poll closes on Friday June 20th at 4pm**

IMPORTANT DATES:

- **Friday June 20th at 4pm:** Doodle poll for two hour, in-person, Survey Development Meeting closes
- **Tuesday June 24th at 4pm:** Layer Review file and OFR Marine Planner review due

7. COMMUNITY WORKING GROUP MEETING GIS FOLLOW-UP NOTES

7.1. March Community Working Group Meeting

Who presented the Map layer	Subject of the Map layer	Do we currently have access to the map layer
Jamie Monty	Map of the FL reef tract including SEFCRI region, Nation Parks and Sanctuary	YES
Jamie Monty	Map of habitat types divided into ecoregions	YES
Jamie Monty	Lidar	YES
Jamie Monty	Benthic habitats for North and South Broward County	YES
Jamie Monty	Florida's Reef Management Jurisdictions	YES

7.2. April Community Working Group Meeting

Who presented the Map Layer	Subject of Map Layer	Do we currently have access to the map layer
James Byrne	FRRP Surveyed sites	YES
James Byrne	Bleaching and paling prevalence	NO
James Byrne	Various slivers of heat maps that represent FRRP coral abundance, colony area, colony diameter, bleaching, and disease	NO
James Byrne	SEFCRI Coral Resilience	NO
Kevin Carter	Field Station Areas of Responsibility watershed	NO
Kevin Carter	Water control structures, pump stations, residents, agricultural land, protected/managed natural areas	NO
Kevin Carter	Foundation and CERP Projects under construction or with complete/nearing complete project implementation reports	NO
Kurtis Gregg	Map of SEFCRI region with National Parks, FKNMS, aquatic preserves and major rivers/canals	YES
Kurtis Gregg	Septic and Package Plants within the Lake Worth Lagoon Watershed	NO
Kurtis Gregg	Inlet contributing areas in SE Florida	YES

7.3. May Community Working Group Meeting

Who presented the Map Layer	Subject of Map Layer	Do we currently have access to the map layer
Jim Mathie	Wreck locations in SE Florida	YES
Kurtis Gregg	NOAA-NMFS SEFSC customer, partners, and stocks	NO
Dave Gilliam	Florida reef tract, SEFCRI region, John Pennecamp, FKNMS (map was used to show how many managed areas are in the south compared to the north)	YES
Dave Gilliam	SECREMP sites	YES
Brian Walker	Lidar of typical reef profile in SE Florida	YES
Brian Walker	Benthic habitat map of SEFCRI region	YES
Brian Walker	Flying overview of benthic habitat (animation video)	YES
Brian Walker	Eco-boundaries	YES
Brian Walker	Study sites surveyed for algae cover as well as sewage outfall and inlet locations	YES
Mike Brescher	ORCA (Ocean Research and Conservation Association) map-a-mile project. Mapped pollution in one sq mile area between 17 th st Bridge and Barber Bridge in Vero Beach. Shows total nitrogen in parts per million	NO

GIS/DST Follow-up Questions/Requests:

1. Obtain NOAA tech report 555 for OFR bibliography. Ten year study that gives trends over time of commercial and recreational landings

7.4. June Community Working Group Meeting

SOUTH CWG JUNE 18TH 2014 MAP LAYERS PRESENTED

Who presented the Map Layer	Subject of Map Layer	Do we currently have access to the map layer
Mark Perry	Martin county satellite image labeling lagoons, estuaries, lakes, and bays	YES
Mark Perry	Map of expansion of the canal and levee systems over the years	No but I do not feel historical data is relevant to this process
Mark Perry	Map of discharge from Lake Okeechobee to the St. Lucie River estuary and Indian River lagoon including C-24, C-23, and C-44	NO
Mark Perry	Oyster reef locations	YES
Mark Perry	Seagrass bed locations 2007 and Oyster bed locations 1997 as well as seagrass monitoring site locations	We have seagrass and oyster reef locations but I do not currently have the monitoring site locations
Mark Perry	Oculina reef off of Ft. Pierce and the St. Lucie nearshore reef locations	YES
Mark Perry	St. Lucie Inlet Preserve State Park map with lidar	YES
Mark Perry	Reef transect preserve boundary map including areas of confirmed abandoned fishing nets in the preserve	NO
Mark Perry	Artificial reef locations	YES
Mark Perry	Nearshore hard bottom habitat in Martin county	YES
Mark Perry	Wastewater ocean outfall map	YES
Mark Perry	Locations of class I injection facilities	NO
Paul Davis	Palm Beach county canals, rivers, inlets, ecoregions, seagrass, mangroves, and oyster reefs, and hardbottom	YES
Paul Davis	Flow control structures	NO
Ken Banks	Map with lidar, seagrass, and mangrove stands	YES

Sarah Thanner	Miami-Dade county aquatic preserves, national parks, national wildlife refuge, FKNMS	YES
Sarah Thanner	Habitats in Biscayne Bay including bare or undetermined, mangroves, seagrass and algae, hardbottom, and coral reef	YES
Sarah Thanner	ICW, bays, rivers, and canals in Miami-Dade	YES
Sarah Thanner	Inshore artificial reef sites in Biscayne	YES
Sarah Thanner	Beaches and dune restorations and erosional hotspots	NO
Sarah Thanner	Offshore habitat map with artificial reef sites	YES
Sarah Thanner	Map with largest known ACER patch and the location of the Miami-Dade outfall	YES
Sarah Thanner	Port of Miami anchorage location	YES
Sarah Thanner	Key Biscayne Special Management Zone est. in 1990	YES
Sarah Thanner	Mooring buoy locations in Miami-Dade county	YES
Manoj Shivlani	Southeast Florida census county division 2000 housing units	YES
Manoj Shivlani	Map of tropical depressions, storms, and hurricanes in FL from 1950-2008	NO
Manoj Shivlani	Source/sink dynamis and connectivity for spiny lobster in the Caribbean and NW Atlantic (Kough et al.)	NO
Manoj Shivlani	Commercial lobster fishing map	YES
Manoj Shivlani	Commercial reef fish fishing map	YES
Manoj Shivlani	Charter reef fish map	YES
Manoj Shivlani	Areas used by divers and snorkelers	YES
Manoj Shivlani	2008-09 Behringer vessel use survey	YES

Manoj Shivilani	Visitor survey of their perception of where reefs are found (AA project 2)	No but not useful for our purposes
Manoj Shivilani	Stakeholder conflict of use areas (FDOU project 18& 20B)	YES
Manoj Shivilani	Stakeholder preferred managed areas based on local knowledge, preferences, and expected benefits	YES
Brian Walker	Ship grounding event locations and Port Everglades anchorage areas both past and present	YES

GIS/DST Follow-up Questions/Requests:

- 1) Does the Marine Planner require flash?
- 2) Can Marine Planner site be used on an iPad?
- 3) Will there be coordinates that appear on the map when you drag the mouse?
- 4) Will you be able to import your own, personal data (e.g. If you see a diseased coral or derelict fishing gear out on the reef)?
- 5) Request for Don Berhinger’s boater use survey.
- 6) Can you get coordinates for a certain point when you hover the mouse over it?
- 7) Will you be able to download layers or the actual data?
- 8) Can users add in points of interest?
- 9) Is there a goal for participatory mapping in the future?
- 10) Are there dates tied to the map layers that indicate when the data was recorded?

Appendix 1. The Tool Project Team was asked to assess the list of available GIS layers for the OFR decision support tool and decide whether each layer was essential, preferred, indifferent, or not needed. Nine reviews were received and compiled to generate this table. All layers found to be essential are highlighted in green, preferred in yellow, indifferent in white, and not needed in red.

GIS Map Layer Citation Title	Essential= 16 Layers	Preferred= 69 Layers	Indifferent= 80 Layers	Not needed= 68 Layers
Bathymetric Contours Florida	1	2	3	2
Algae Florida	0	3	3	2
Artificial Benthic Habitat Southeast Florida	1	4	2	1
Artificial Reef Permits Florida	2	1	3	1
Artificial Reefs Florida	7	1	0	0
Benthic Habitats South Florida	1	2	0	5
Coral and Hard Bottom Habitats Florida	5	1	0	1
Coral and Rock points from GEODAS Hydrographic Features	1	5	2	0
Oyster Habitats Florida	1	4	2	1
Seagrass Florida	4	4	0	0
Seagrass Propeller Scars Florida 1991 to 1994	0	1	0	8
Southeast Area Monitoring and Assessment Program Bottom Mapping Points Atlantic	0	1	4	3
Southeast Area Monitoring and Assessment Program Bottom Mapping Polygons Northeast Florida	1	1	4	2
Southeast Area Monitoring and Assessment Program Bottom Mapping Polygons Southeast Florida	0	0	3	4
Southeast Area Monitoring and Assessment Program Bottom Mapping Transects Atlantic	0	0	4	3
Worm Reef Habitats Florida East Coast	3	4	1	0

Aids to Navigation Southeast United States	2	3	3	1
Anchorage Florida	5	3	0	1
Boating Restricted Areas Florida	6	3	0	0
Coast Guard Regulated Navigational Areas United States	2	3	3	0
Coast Guard Safety Zones United States	0	3	4	1
Coast Guard Security Zones United States	0	3	4	1
Freshwater Boat Ramps Florida	2	0	2	3
FWC Boat Ramp Inventory	3	1	3	1
Greenways Priority Paddling Trails Florida	0	0	5	3
Hydrographic Feature Points GEODAS Florida	0	0	5	2
International Collision at Sea Regulation Lines United States East Coast and Gulf of Mexico	1	1	5	1
Marine Facilities Florida	1	4	3	1
Marine Precautions Southeast United States	2	0	7	0
Mooring Buoys Biscayne Bay Florida	4	1	0	3
Navigable Waterways Southeast United States	2	1	4	1
Piers, Ramps and Docks from Historic Florida Shoreline	0	2	3	4
Shallow Water Shoal Dangers Biscayne Bay Florida	1	1	5	2
Socio-economic Study of Boating in Florida	2	0	2	4
Vessel Corridors Florida	0	7	1	0
Vessel Groundings, Anchor Drags, Cable Tow Drags, Chain Drag, Orphan Sites	5	3	0	1
Waterway Navigation Routes Southeast United States	0	2	6	1

City Limits Census 2010 Florida	0	2	1	5
County City Parks South Florida	1	0	4	3
Estuaries Florida	0	3	5	2
Federal Waters Florida	1	3	3	1
Florida State Waters Boundary	2	4	0	1
Florida Water Management District Owned Lands	1	0	6	2
Gulf and Atlantic State Waters Polygon Florida	0	0	3	6
Gulf of Mexico and Atlantic Ocean Boundary	0	0	1	8
Maritime Limits United States	0	1	6	1
Military Lands (FNAI)	0	1	5	1
Ocean Dredge Material Disposal Sites for the Carolinas, Georgia and Florida	0	5	2	0
Regional Planning Council Bounds Florida	0	2	4	2
Spoil Dumping Areas	1	2	3	2
State Parks Florida	0	4	2	1
Water Management District Boundary Lines Florida	0	1	3	4
Water Management District Boundary Polygons Florida	0	3	2	3
Environmental Sensitivity Index Bird Nests 2000	0	4	2	2
Environmental Sensitivity Index Birds 2000	0	4	2	2
Environmental Sensitivity Index Birds 2003	0	4	1	2
Environmental Sensitivity Index Florida	0	4	4	0
Environmental Sensitivity Index Human-Use and Socio-Economic Resources Lines Florida	0	5	3	1

Environmental Sensitivity Index Human-Use and Socio-Economic Resources Points Florida	0	4	4	1
Environmental Sensitivity Index Hydrography Florida	0	4	3	2
Environmental Sensitivity Index Invertebrates	0	3	3	2
Environmental Sensitivity Index Map Index Florida	0	2	4	2
Environmental Sensitivity Index Marine Mammals	0	4	2	2
Environmental Sensitivity Index Natural Resource Management and Conservation Areas Florida	0	2	5	1
Environmental Sensitivity Index Shoreline Classification Lines Florida	0	2	4	2
Environmental Sensitivity Index Shoreline Classification Polygons Florida	0	0	3	5
Florida Fish and Wildlife Conservation Commission Facilities	0	0	1	7
Marine Research Facilities Florida	0	1	1	6
Power Plants Florida	0	2	3	4
Florida Fish and Wildlife Conservation Commission Sampling Grid Florida 2008	2	0	0	6
<i>Acropora</i> Critical Habitat Florida, Puerto Rico and Virgin Islands	6	1	0	2
American Crocodile Critical Habitat Florida	0	1	5	3
Cape Sable Seaside Sparrow Critical Habitat Florida	0	2	2	5
Critical Wildlife Areas Florida	3	3	2	1
EFH	3	5	0	0
EFH-HAPCs	1	6	0	1
Everglades Snail Kite Critical Habitat Florida	0	1	3	5
Florida Wood Stork Nesting Colony Core Foraging Areas	1	2	3	3

Johnson's Seagrass Critical Habitat Area Florida	2	5	1	0
Manatee Critical Habitat Florida	1	4	2	1
Marine Ecosystem Management Areas Florida	1	5	1	0
Piping Plover Wintering Ground Critical Habitat Units Southeast United States	1	1	3	4
Rice Rat Critical Habitat Florida	2	1	2	4
Smalltooth Sawfish Critical Habitat Florida	2	4	1	1
Anchorage defacto MPA	3	3	2	0
Key Biscayne SMZ	2	4	0	2
Naval Restricted Areas (Defacto MPA)	0	4	4	0
No Discharge Zone	1	5	2	1
No lobster trapping boundary	1	5	1	1
Outstanding Florida Waters	1	6	1	0
SAFMC Gear Restrictions	0	7	1	1
Special Management Zones in the Southeast (SMZ)	1	5	2	0
Aquatic Preserves Florida	1	5	2	0
Ecosystem Management Areas Florida	0	5	3	1
Fish Management Areas Florida	0	4	3	1
Florida Forever Board of Trustees Project Areas	0	1	3	5
Managed Areas Florida	0	4	3	1
Manatee Protection Areas United States Fish and Wildlife Service Florida	1	3	1	4
Marine Protected Areas Atlantic Ocean and Gulf of Mexico	1	6	1	1

National Estuarine Research Reserve Bounds Florida	0	5	2	2
National Park Bounds Florida	0	6	2	0
Oculina Bank Habitat Area of Particular Concern Florida	0	6	2	1
Pompano Endorsement Zone Florida	0	1	6	2
Rare and Imperiled Fish Watershed Locations Florida	0	0	6	3
Shellfish Harvesting Areas Florida	0	2	6	1
Special Permit Zone South Florida	0	0	5	3
Spiny Lobster Sanctuary Biscayne Bay Florida	0	0	4	4
Spotted Seatrout Regulation Areas Florida	0	1	6	2
Wildlife Management Areas Florida	0	2	5	2
A Survey of Offshore Fishing in Florida	0	3	1	4
Breeding Bird Atlas Points Florida	0	0	4	5
Breeding Bird Atlas Polygons Florida	0	0	3	6
Eagle Nesting Locations Florida	0	1	2	6
Fish and Wildlife Service Consultation Areas for Select Florida Species	1	0	3	5
Florida Species Locations	0	0	4	5
Florida Wood Stork Nesting Colonies	0	0	3	6
Juvenile Snapper Seine Project, Middle Florida Keys	1	0	1	7
Lobster Larval collectors	1	2	1	5
Manatee Synoptic Survey Sightings Florida 1991 to 2010	3	1	1	4
Rare and Imperiled Fish in Florida 2011	2	2	2	3

Sea Turtle Nesting Beaches Florida	2	1	1	4
Sea Turtle Standings Florida	2	1	1	4
Snowy Plover Nests Florida	0	2	1	6
Wading Bird Colony Species Presence by Era Florida	0	1	1	7
Wading Bird Rookeries Florida	0	1	1	7
Wildlife Crossings Florida	0	0	1	8
Wildlife Observations Florida	0	0	1	8
Wildlife Observations of Listed Species Florida	0	0	1	7
Calcareous Stream Habitat Florida	0	0	4	5
Canal/Ditch Habitat Florida	0	0	2	6
Coastal Tidal River or Stream Habitat Florida	0	0	3	5
Flood Maps Tier Three Florida	0	0	4	5
Flood Maps Tier Two Florida	0	0	3	6
Flood Prone Areas Florida	0	0	4	5
Hydrologic Units Florida	0	0	2	7
Impaired Waters Florida	0	1	1	7
Major River Polygons Florida	0	1	3	4
National Hydrography Dataset Basins	0	1	1	6
National Hydrography Dataset Lakes 1:24,000 Scale Florida	0	0	1	7
Water Body Identifications Florida	2	1	1	4
Watershed Monitoring and Data Management Saltwater Delineation Florida	0	1	4	3

Atlantic and Gulf Rapid Reef Assessment (AGRRA)	2	2	4	0
Seagrass Monitoring in the Florida Keys National Marine Sanctuary	0	1	3	5
Water Quality Monitoring Project (WQMP)	1	1	4	3
National Marine Fisheries Service Fisheries Monitoring Areas United States East Coast	0	1	3	4
Beaches Florida	0	2	3	4
Ecoregions Florida	0	1	6	0
Land Use Land Cover South Florida Water Management District 2004-2005	0	0	4	3
Land Use Land Cover South Florida Water Management District 2008-2009	0	0	5	2
Boundary between Coast Guard and Environmental Protection Agency Jurisdiction Florida	0	1	3	4
Coast Guard Facilities Florida	0	0	5	3
Coast Guard Sectors Southeast United States	0	1	2	5
Environmentally Sensitivity Index Map Index Centroids Southeast United States	0	0	3	5
Environmentally Sensitivity Index Map Index Grid Southeast United States	0	1	3	4
General Recommended Booming Strategies Florida	0	0	3	5
Geographic Response Plan Map Icons	0	0	2	6
Port Authorities Florida	0	2	4	2
Public Beach Access Locations Florida	0	3	1	4
Tidal Inlet Protection Booming Strategies Florida	0	0	3	5
Tidal Inlet Protection Strategy Inlets Florida	1	1	1	5
U.S. Waterway Data Port and Waterway Facilities	0	2	1	5
Harmful Algal Bloom (HAB)	2	2	3	2

Manatee Mortality	1	0	2	6
Beach Access Florida	2	2	1	4
Beach Names Florida	0	2	3	4
Fishing Piers, Jetties and Beaches Florida	2	3	2	2
Geographic Names Information System Florida	0	2	3	4
Inlets and Passes Florida	0	7	0	2
Shipwrecks and Obstructions Coastal Waters Southeast United States	0	4	4	0
Undersea Feature Names	0	2	6	1
Underwater Archaeological Preserves Florida	1	3	3	1
Coastal Benchmarks Florida	1	0	5	2
Range Monuments Florida	1	1	4	2
Coastal Vulnerability to Sea-Level Rise United States East Coast	0	5	3	1
Shoreline 1:100,000 Scale Florida 2000	0	3	4	2
Environmental Sensitivity Index Mangrove Lines Florida	0	3	5	0
Environmental Sensitivity Index Mangrove Polygons Florida	1	3	4	0
Mangroves Florida	5	3	0	0
Saltwater Marsh Florida	3	5	0	1
Tidal Flats Florida	4	4	0	1
Wetlands Florida	2	3	0	2
Monitoring and Mapping of Threatened Acroporids, FL Reef tract	3	3	2	0
FWC Patch Reef Surveys	1	3	1	4

Manatee Zones	2	2	2	3
Deepwater Coral HAPC	2	3	2	1
<i>Dendrogyra</i> presence	3	4	1	1
Vessel Locations from Aerial Surveys	0	6	0	2
Vessel Automatic Identification System Traffic Patterns	2	4	0	2
Vessel Automatic Identification System Traffic Patterns Detailed	2	4	0	2
Anchorage Areas	1	5	0	2
Census Counties	0	4	1	4
Census Water	0	5	0	4
Vessel Activity from aerial survey	1	5	2	1
CCAP Per Change	0	1	3	1
Census Totals by County	0	0	5	2
Citations Totals by County	1	1	4	2
International Collision at Sea Regulation lines	0	0	4	3
Commercial Fishery Seasonal Closures	0	5	2	2
Demographic trends at County Level	0	6	1	2
DEP Clean Marinas	0	7	0	2
Historic Docks from NOAA shoreline	0	1	5	2
Dredge and Fill Permits 2	1	1	4	1
ERP poly SFWMD Project 2	1	0	5	1
Manmade shoreline derived from Environmental Sensitivity Index	0	0	5	2

Fish Management Areas	0	5	2	1
Key Biscayne Special Mgt Zone	0	1	5	2
Marine Jurisdiction Areas (NOAA)	0	1	6	2
Mooring Buoys	3	5	0	0
Angler-trips from Marine Recreational Information Program by County 2004	3	4	1	1
NMFS Project	1	0	5	3
Ocean Dredge Disposal Sites	1	2	4	1
Census by Population Block, 2000	0	1	4	3
Census by Population Block, 2010	0	1	4	2
Port Facilities	0	4	3	2
Recreational fishing seasons and closures within the SAFMC EEZ	0	5	1	1
Sand Borrow Areas SEFL	2	4	2	1
SE FL Sum Facilities	0	1	4	3
Shipping Safety Fairways	1	1	4	3
SPA Details	1	1	3	3
Spear Fishing Regulations (Federal)	1	5	1	2
Special Use Area Details	0	2	3	4
VMS 2011	1	0	1	5
Watercraft related businesses	0	3	4	2
WMA Details	1	1	5	2
<i>Dendrogyra</i> coral locations	3	4	1	0

FCRT Sampling Grid	3	4	0	1
Annual and Seasonal water quality index	0	2	2	2
Seagrass Monitoring	0	0	4	2
Florida Reef Resiliency Program coral species richness	3	2	2	0
FWC FHAP 1km overall Mean and Std dev	1	2	1	3
SCREAM Soft Coral Richness	2	2	0	2
SCREAM Stony Coral Richness	2	2	1	1
Staghorn Coral Locations	3	3	1	0