CWG Review 1: Spring 2015

Tier 1 Information:

1. **Management Action**

N-71 Maintain and coordinate a unified monitoring program to detect, identify, and eliminate sources of pollution flowing through inlets to improve water quality and protection to reef.

SEFCRI TEAM/ TAC Review 2015: Reviewer acknowledged that the RMA is in good shape overall but they indicated that it is not really a management action. They think it needs to be done but it is more like the step before a management action. This activity would ID what and how much of any given constituent is coming out an inlet then you would put management actions in place would address the various means to reduce the impact of that constituents.

2. **Intended Result (Output/Outcome)**
   What is the end product/result of this management action?
   - a COORDINATED program AND STRATEGY for monitoring water pollution and water quality at the nine southeast Florida coastal inlets

3. **Duration of Activity**
   Is this a discrete action or a recurring activity? Explain.
   - Ongoing

4. **Justification**
   What issue or problem will this management action address? Explain.
   - lack of sustained water quality monitoring effort to address LBSP impacts to coral reefs via ocean inlets

5. **Potential Pros**
   What are the potential advantages associated with this management action?
   - unifies monitoring plans and protocols across whole SEFCRI region improved coordination among all agencies involved in monitoring sustained program - results in baseline data and event-specific data

6. **Potential Cons**
   What are the potential disadvantages associated with this management action?
   - cost to organizations or organizational structure to fund and implement program yet to be identified will not automatically identify sources of LBSP

7. **Location**
   County/Counties: Miami-Dade, Broward, Palm Beach, Martin, Other?
   - All

   Relevant Habitats: Coral reef, seagrass, watershed, etc.?
   - coral reef, all other nearshore hardbottom, watershed

   Specific Location: City, site name, coordinates, etc.?
   - cities with ocean inlets

8. **Extent**
   Area, number, etc.
   - Nine inlets in southeast Florida inlets: St. Lucie, Jupiter, Lake Worth, Boynton (Identified as a priority watershed)

Boca Raton, Hillsboro, Port Everglades, Baker's Haulover and Government Cut.

9. Is this action spatial in nature?

- No

Do you believe this management action could be informed by the Our Florida Reefs Marine Planner Decision Support Tool?

If yes, you will proceed to the next section on Marine Planner Information.

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Marine Planer Information:

The Decision Support function of the OFR Marine Planner assists in providing spatial options for management recommendations. If the management action is spatial in nature, and it is believed that data layers in the OFR Marine Planner can be used to help provide spatial options for that management recommendation, please fill out the following to help us develop the tool to address your needs.

The Decision Support Tool provides spatial options based on features in the OFR Marine Planner that you select as being relevant. The critical information you need to provide for your recommendation are:

Feature - These are the data layers in the marine planner relevant to your management recommendation. For example:

- Depth
- Habitat types to avoid or target
- Proximity to other features (inlets, outfalls, artificial reefs)
- Types of reef-use to include or exclude
- Intensity of use
- Fish/coral density
- Fish/coral diversity
- Etc.

(Feature) Value - How much? This will be a unit of measure, e.g. #, %, distance, area, amount. If you are unsure you can state "high, medium, low" and allow input from advisors on how much is high, medium or low for our region. Also, you can make a statement like "far enough away to allow for ___" or "has enough of x to accomplish y," again allowing reviewers to help provide necessary input.

	FEATURE	VALUE
1.	Coral density	High.
2.	SWFMD historic flow data	high - better understand how much water drains through the area and where that water comes from - which may provide insights into what is in that water.
3.	Results from monitoring available online Historical sampling station sites with information to retrieve available data.	high
4.		
5.		
6.		

7.		
8.		
9.		
10.		

Tier 2 Information:

WHY?

1. **Strategic Goals & Objectives to be Achieved**

   Refer to the SEFCRI Coral Reef Management Goals and Objectives Reference Guide.

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2. **Current Status**

   Is this activity currently underway, or are there planned actions related to this recommendation in southeast Florida? If so, what are they, and what is their status.

   - Similar activities are being developed ad hoc at various locations. This RMA would standardize the activities and provide a framework for a tiered approach that may be necessary due to fiscal constraints on resource management agencies.

3. **Intended Benefits (Outcomes)**

   What potential environmental benefits or positive impacts might this management action have?

   - Results of the project would be used in watershed planning and provide baseline information to measure LBSP reductions within each Inlet Contributing Area (ICA).

   What potential social/economic benefits or positive impacts might this management action have?

   - Project outcomes are expected to lead to reduction of LBSP. Reduced water pollution would improve the southeast Florida coastal environment and strengthen the tourism industries.

   What is the likely duration of these benefits - short term or long-lasting? Explain.

   - Long-term

4. **Indirect Costs (Outcomes)**

   What potential negative environmental impacts might this action have?

   - No negative impacts from this RMA are expected.

   What potential negative social/economic impacts might this action have?

   - Costs of LBSP reduction and water management will ultimately be borne by taxpayers and water users in south Florida.

   What is the likely duration of these negative impacts - short term or long-lasting? Explain.

   - Long-term

5. **Risk**

   What is the threat of adverse environmental, social, or economic effects arising from not implementing this action?

   - Continued LBSP loading is expected to exacerbate coral decline and benthic species composition changes in southeast Florida. This would adversely affect economic, environmental and social services and values provided by the coral reef ecosystem.

6. **Relevant Supporting Data**

What existing science supports this recommendation? (Provide citations)

- Pickering, N. and Baker, E. 2015. Watershed Scale Planning to Reduce the Land-Based Sources of Pollution (LBSP) for the Protection of Coral Reefs in Southeast Florida. Prepared for the National Oceanographic and Atmospheric Administration. Horsley Witten Group. Sandwich, MA. 84 pp.

- Trnka, M., K. Logan, P. Krauss and N. Craig. 2006. Land-Based Sources of Pollution Local Action Strategy Combined Projects 1 &2. Nova Southeastern University, Oceanographic Center. Dania Beach, Florida. 207pp.

- Gregg, K. 2013. Literature Review and Synthesis of Land-Based Sources of Pollution Affecting Essential Fish Habitats in Southeast Florida. Prepared for: NOAA Fisheries Southeast Region, Habitat
- Conservation Division. West Palm Beach, Florida. 55pp.

7. **Information Gaps**

What uncertainties or information gaps still exist?

- Pollutant loading through inlets of SE FL is a data gap that would be filled by the RMA.

WHEN?

8. **Anticipated Timeframe for Implementation**

How long will this recommendation take to implement?

- 1-5 years

9. **Linkage to Other Proposed Management Actions**

Is this activity linked to other proposed management recommendations?

- LBSP loading to coral reef ecosystem is related to a number of other RMAS.

If so, which ones, and how are they linked? (e.g., is this activity a necessary step for other management actions to be completed?)

- Pollutant loading through inlets of SE FL is a data gap that would be filled by the RMA.

Does this activity conflict with other existing or proposed management actions?

- No

WHO?

10. **Lead Agency or Organization for Implementation**

What agency or organization currently has/would have authority? Refer to the Agencies and Actions Reference Guide.

- Florida DEP, US EPA, NOAA Fisheries Service, NOAA NOS, NOAA AOML

11. **Other Agencies or Organizations**

Are there any other agencies or organizations that may also support implementation? Explain.

- SE Florida counties, SFWMD

12. **Key Stakeholders**

Identify those stakeholders most greatly impacted by this management action, including those from whom you might expect a high level of support or opposition. Explain.

- Municipalities, utilities, drainage districts

HOW?

13. **Feasibility**

Is there appropriate political will to support this? Explain.

- LBSP impacts have been described as the main threat facing SE Florida coral reef ecosystem resources in surveys and interactions with reef users.

What are the potential technical challenges to implementing this action? Has it been done elsewhere?

- Pilot scale and full work has been done by SFWMD

14. **Legislative Considerations**

Does the recommendation conflict with or actively support existing local, state, or federal laws or regulations? Explain.

- The project is consistent with legislation and laws.

15. **Permitting Requirements**

Will any permits be required to implement this action? Explain.

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16. **Estimated Direct Costs**

Approximately how much will this action likely cost? (Consider one-time direct costs, annual costs, and staff time, including enforcement.)

- >$250,000

Will costs associated with this activity be one-time or recurring?

- recurring

If recurring, approximately how long will staff time and annual costs be necessary to implement the management action?

- Depends on the scope and scale of implementation

17. **Enforcement**

Does this require enforcement effort?

- No

Provide an explanation if available.

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18. **Potential Funding Sources**

Identify potential funding organizations/grant opportunities, etc.

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19. **Measurable Outcomes/Success Criteria/Milestones**

How will the success of this recommendation be measured? How will you know when the intended result is achieved?

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SEFCRI/TAC Targeted Questions:

1. **TAC - Is the recommendation likely to achieve the intended result? Explain.**

Tier 1 – #2 (Intended Result - Output/Outcome)

- Yes, but as water management policies change the loading from the inlets will change as well. JS

2. **TAC - Is the recommendation sufficient to address the identified issue or problem? Explain.**
   Tier 1 – #4 (Justification)
   - in concept. JS

3. **TAC - Is the recommendation technically achievable from a science or management perspective? Explain.**
   Tier 2 – #8 (Anticipated Timeframe for Implementation) and Tier 2 - #13 (Feasibility)
   - Yes. JS and NIC
   - TAC Team 3
   - Need for inlet monitoring – Team 3 is supportive of this from a scientific perspective. Small scope, limit cost and can cover a lot. Inlets allow study of groundwater flow, surface runoff, etc. – many different issues that can affect the offshore resources.
   - JL – Shows the inlets are distinct from some other sources. Might help to show need for more monitoring to identify fluctuations.

4. **SEFCRI Team, PPT & Other Advisors - Has this been done (by SEFCRI, other agencies or organizations in the SEFCRI region)? Explain.**
   Tier 2 – #2 (Current Status)
   - KF: Some work ongoing
   - CV: Not aware of WQ monitoring within the inlets, probably some episodic events.

5. **SEFCRI Team, PPT & Other Advisors - Is this recommendation a research or monitoring project? (Recommendations should be turn-dirt management actions, not the step you take before a management action). Explain.**
   - KF: Yes, monitoring and some research
   - CV: Monitoring....not sure how this would lead to a turn-dirt MA

6. **SEFCRI Team, PPT & Other Advisors - If either of the following applies to this management action, provide feedback on which information submitted by the Community Working Groups may be more appropriate, or if entries should be merged. Explain.**
   a. **There are different viewpoints for an individual management action (i.e. two working group members provided separate information, as indicated by a '//' marking between them).**
   b. **Information submitted for this and other draft management actions is sufficiently similar that they might be considered the same.**
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7. **SEFCRI Team, PPT & Other Advisors - Non-agency Question: Is the recommendation technically achievable from your stakeholder perspective? If not, do you have suggestions that would allow this to become technically achievable from your stakeholder perspective? Explain.**
   Tier 1 - #5 (Potential Pros), Tier 1 - #6 (Potential Cons), Tier 2 - #3 (Intended Benefits), Tier 2 - #4 (Indirect Costs) and Tier 2 - #12 (Key Stakeholders)
   - KF and CJK: Yes
   - CV: if we want to know more about the WQ parameters coming in and out of the inlets, definitely achievable. Where does this lead?

8. **SEFCRI Team, PPT & Other Advisors - Agency Question: Is the recommendation technically achievable from a management perspective? If not, do you have suggestions that would allow this to become technically achievable from your agency's management perspective? Explain.**
   Tier 2 – #10 (Lead Agency or Organization for Implementation) and Tier 2 - #11 (Other Agencies or Organizations)
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Comments from the Reviewers:

- CV: Interesting concept which would show WQ conditions through the inlets. Aside from that what would be gain and this would be expensive.
- TJS - some counties/entities have implemented limited water quality programs in their inlets (Broward, EPA)
- The components of this would be:
    - 1) understanding the loading from the inlet contributing area (ICA),
    - 2) understanding the characteristics of the inlet itself and
    - 3) understanding the dispersion of materials into the coastal ocean from the inlet. Some work has been done in all these areas. A uniform analysis of all the inlets would be good. JS
- KF: Discrete monitoring events that are ongoing
- The hydrodynamic characteristics of the inlet and its plume may depend on water management actions. The nutrient loading to the ICA may change. So, this may not be completely discrete. JS
- We see that at Port Everglades inlet NIC
- KF: May not be a 1 size fits all plan, but uniform, consistent and widespread monitoring would be great
- Also need to understand the upstream water management vs runoff contributed by the urban areas to the coastal lagoons and barrier islands.PRG
- This is costly and somewhat difficult work to do. JS
- KF: Yes, mapping basin flows, WQ monitoring station locations, measured coral stress levels
- CV: Okay (Tier 1, Q#4)
- TJS - add inflow data from Everglades water movement that drains through SEFCRI inlets (Dania Cut off canal drains everglades and then out Port Everglades). obtain historic flow data from SFWMD for all the canals that drain into the SECFRI inlets
- The benthic area impacted by the plumes from inlets could be assessed using spatial analysis. JS
    - Do we know what the impacts are? NIC
- Agreed, it would be useful but we would need the resources (which cost $$) NIC Common approach will be beneficial. Consensus on what "pollution" means is a must. Without understanding flows, directions, exchange, etc. short-term, discrete chemical concentrations are not very relevant. PRG
- ECP: Still developing an understanding of the three areas proposed across all the SEFCRI counties would be valuable.
- TAC Team 3 felt this was the fourth most important on the list. Monitoring at the inlet would allow a big picture view of 'overall' impact and 'sources' while limiting scope and cost
- CV: This MA closely ties to LAS LBSP, Issue 2, obj 1, projs 1 and 29
- KF: Monitoring occurring at some locations, but not uniform or coordinated
- CV: Not aware if any of the inlets have a WQ monitoring effort in place but it should be uniform and shared which could reduce the overall costs.
- TJS - some historic and ongoing monitoring by various entities for various reasons. Obtain historic data to add to system.
- Some work has been done. JS
- Broward looks at Port Everglades but does not have resources to expand beyond that at this time. NIC
- KF: ID sources of pollutants, reduce/eliminate them, reduce coral stress. IDing sources helps to develop strategies to clean water. Better appreciation of ALL impacts from impaired water
- CV: Not actually sure whether there would be an environmental benefit unless the pollutants measured can be traced back to a source.
- Asses the value of water management activates and reduction of LBSP in the ICA. JS
- KF: Popular practices identified as contributing to problem, and require changes in behavior…possible increased costs to public
- CV: If nutrients are measured to be too high which results in impacts to the biota near the inlets, public will need to deal with the issue which may not have a solution. The one question answered from monitoring the inlets will generate many more questions. And these questions will require more and more funding. May be better to spend $$ on projects that remove nutrients upstream before hitting the estuaries.

- KF: Continued and increased stress to corals from water exiting inlets CV: From this MA alone, I'd say no effect.
- KF: Conclude ongoing studies and make a determination of what else is needed
- A comprehensive coastal circulation model (which could also asses other LBSP sources) is an information gap. JS
- KF: IF fully developed and funded, could be implemented in a year
- CV: To get a meaningful data set could take several years of monitoring and at least 1-2 years to get the necessary funding and coordinate the activity. 5 years+
- TJS require historic and new data - 5+ years in addition to all historic data.
- KF: DEP
- CV: Should be larger than County government, at least FDEP, possibly EPA TJS - SFWMD, DEP and EPA. USGS has also done some work.
- CJK: WMD or EPA would seem appropriate to lead this one.
- KF: NOAA, FWC, Counties, NGOs
- CV: Water Management Districts, Drainage Districts,
- NOAA has and will continue to support this as funding allows. JS
- KF: Coastal counties in SEFCRI, fishermen, divers, water users CV: tourism, to would include hotels, dive shops, restaurants, etc.
- CJK: There are 25+ water management entities in Palm Beach County alone. Lots of outreach will be required
- [feasibility] CV: Probably but at what cost. Measuring WQ in inlets would pose some challenges and likely increase costs.
- Yes but not sufficient funding. There are technical challenges but none that cannot be overcome. JS
- KF: Supports water quality, should have legislative support
- KF: Results from this may lead to new permitting requirements, but no permits required for project…maybe for collection if that is a part.
- Some instrument installations may require permits. JS
- KF: Recurring for 3-5 years
- CV: 5+ years sound about right.
- Potential funding sources: DEP, NOAA grants, NGO, SFWMD, EPA, County governments
- KF: ID constituents that have specific impact on coral, trace to source CV: Need to trace to source, question is how to do????
- Good estimation of the LBSP from the inlets and where that ends up. (as a function of time) JS.

Questions from the Reviewers:

	Questions/Information Needs Highlighted by the Reviewers	Addressed by CWG:	Not Addressed by CWG Because:
1.	KF: Dispersion of impaired water through inlets, right? (Tier 1, Q#2) This program would provide baseline water quality and pollution load information that are be needed for watershed planning and LBSP reductions at the Inlet Contributing Area (ICA) scale.	☒	☐ This does not apply. ☐ Need help addressing it.
2.	Cost vs. gain, what is gained from this? o 1) understanding the loading from the inlet contributing area (ICA), o 2) understanding the dispersion of materials into the coastal ocean from the inlet. o 3) With water quality monitoring, we would be able to address mitigation of pollutants that affect the coral reef ecosystem, including the corals themselves. Nutrients are the #1 threat to coral in southeast Florida, by making them susceptible to disease. Studies have shown that coral health	☒	☐ This does not apply. ☐ Need help addressing it.

	can recover in as little as 10 months after nutrient enrichment was reduced.		
3.	Can this information be used to pinpoint sources of pollution that could be curtailed? Yes. Southeast Florida coastal inlets function as a point-source for pollution loading to nearshore coastal waters. Source tracking for nutrients and other pollutants can be used to find priority LBSP reduction project locations.	☒	☐ This does not apply. ☐ Need help addressing it.
4.	In situ equipment that would be pulled periodically? Can this be used for testing nutrients? Grab sampling with a bucket (surface) or niskin bottles and bomb samplers would likely be the methods of collection.	☒	☐ This does not apply. ☐ Need help addressing it.
5.		☐	☐ This does not apply. ☐ Need help addressing it.
6.		☐	☐ This does not apply. ☐ Need help addressing it.
7.		☐	☐ This does not apply. ☐ Need help addressing it.

Questions from the CWGs back to the Reviewers:

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~~This RMA are being addressed through the creation of the SEFCRI Region Water Quality Monitoring Project and Watershed Scale Planning for LBSP Reduction project. ARCHIVE~~
CWG did not archive this one.