CWG Review 1: Spring 2015

Tier 1 Information:

1. **Management Action**

N-78 Reduce ground water pollution from sources such as septic and storage tank infrastructure to watersheds associated with priority reef areas to improve water quality and reef health.

SEFCRI TEAM/TAC Review 2015- Reviewer struggled with this RMA because it flip flops between implementing management actions and gathering data to develop management actions.   Cleaning up and regulating water quality before the water goes into the ground and eliminating potential sources, ie. septic tanks are projects that could happen now. Going out and collecting ground water samples to ID pollutants and determine loads seem more like the steps before you develop management actions, as mentioned by one of the reviewers. Some of the comments suggest combining this one with N-79 and N-82, that may be worth some discussion and help focus on a direction.

2. **Intended Result (Output/Outcome)**
   What is the end product/result of this management action?
   - Some intended outcomes from implementing this management action include: improved groundwater quality, target identification of sources and types of pollution; reduction of septic tank use in SEFCRI region; implementation of advanced wastewater treatment before disposal in deep well injection; and this management action could be used to improve infrastructure to increase system capacity and reduce storm-driver treatment bypass events (this is addressed in N-82).

3. **Duration of Activity**
   Is this a discrete action or a recurring activity? Explain.
   - This duration of this management action would be recurring.

4. **Justification**
   What issue or problem will this management action address? Explain.
   - Groundwater is a major source of freshwater to estuarine and nearshore coastal waters off southeast Florida. Groundwater has been contaminated with pollutants that adversely affect the coral reef ecosystem. SEFCRI partners need to identify groundwater pollution sources (to aquifers, subsurface flow) - septic, saltwater intrusion, deep well injection, aquifer storage that affect priority watersheds and evaluate methods to remediate or contain the pollutants.

5. **Potential Pros**
   What are the potential advantages associated with this management action?
   - Potential advantaged associated with this management action include improved groundwater quality; a reduction in LBSP loading to watersheds in SE Florida and reduction of pollution reaching reef areas. This management action also would provide identification and tracing sources of pollution in groundwater that may result in new partnerships within SEFCRI.

6. **Potential Cons**
   What are the potential disadvantages associated with this management action?
   - No potential disadvantages with implementation f this management action have been identified.

7. **Location**
   County/Counties: Miami-Dade, Broward, Palm Beach, Martin, Other?
   - all 4 counties

Relevant Habitats: Coral reef, seagrass, watershed, etc.?
- Coral reef, hardbottom, seagrass, oyster, mangrove, inlet and watersheds

Specific Location: City, site name, coordinates, etc.?
- -

8. **Extent**
   Area, number, etc.
   - Southeast Florida watersheds

9. **Is this action spatial in nature?**
   - Yes

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.
   - Yes

Marine Planer Information:

Marine Planner 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 to low
2.	Coral biodiversity (species richness)	High to low
3.	Listed coral species	Presence, absence, abundance

4.	Coral colony size	Largest to smallest
5.	Fish spawning aggregations	presence and size
6.	Fish species richness (biodiversity)	High
7.	Rare fish species	presence or absence
8.	Areas of high fishing effort	distance to source of pollution
9.	Areas of high diving effort	
10.	Nutrient values (water quality) Salinity Light levels (turbidity and color) Locations of inlets	proximity of inlets and pollution sources to areas with high biodioversity

Tier 2 Information:

WHY?

1. Strategic Goals & Objectives to be Achieved

Refer to the [SEFCRI Coral Reef Management Goals and Objectives Reference Guide](#).

- Goal C1, Objective 4: Eliminate the use of septic tanks by providing sanitary sewer infrastructure in order to reduce nutrient and pharmaceutical product loading to groundwater.
- Goal C4 Objective 5: Develop and implement new legislation to reduce the quantities and impacts of land-based sources of pollution entering the coastal environment.
- SEFCRI LAS LBSP Issue 4 Goal Obj 3 : Initiate the implementation of engineering/management actions to reduce pollution from the highest priority sources

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.

- Currently there is some work that is ongoing. (NSU, USGS, FAU, NOAA)
- Looking at the goals and objectives above, (cleaning up the water before it goes into the ground/or not putting it in there at all), there is uncertainty that they match up with the work being done by USGS, NOAA etc. which is more along the line of sampling groundwater wells and looking at what is in the water. As for status, the TMDL process may be a possible pathway to address some of the above goals and it is already in motion. The Coastal Ocean taskforce also had similar recommendations, so collaborating with that group to develop legislation could be worthwhile.

3. Intended Benefits (Outcomes)

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

- Some intended befits that will come about with this management action include improved groundwater quality, and a reduction in pollutant loading to estuarine and nearshore coastal waters

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

- -

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

- -

4. Indirect Costs (Outcomes)

What potential negative environmental impacts might this action have?

- No negative environmental impacts are expected to result from this RMA

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

- -

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

- -

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

- Adverse consequences of not reducing groundwater pollution include continued water quality degradation, reduced wetland and aquatic ecological functions, and reduced aquifer capacity for human and environmental needs.

6. Relevant Supporting Data
What existing science supports this recommendation? (Provide citations)

- Reich, C.D., Swarzenski, P.W., Greenwood, J.W., and Wiese, D.S., 2009, Investigation of coastal hydrogeology utilizing geophysical and geochemical tools along the Broward County coast, Florida: U.S. Geological Survey Open-File Report 2008-1364, 21 p., plus apps. A-C.
- J. Carrie Futch, Dale W. Griffin and Erin K. Lipp 2010. Human enteric viruses in groundwater indicate offshore transport of human sewage to coral reefs of the Upper Florida Keys. Environmental Microbiology 12 (4) 964-974
- Peter W. Swarzenski, William H. Orem Benjamin, F. McPherson , Mark Baskaran, Yongshan Wan. 2006. Biogeochemical transport in the Loxahatchee River estuary, Florida:
- The role of submarine groundwater discharge. Marine Chemistry 101 (2006) 248–265
- Jonathan B. Martin, Jaye E. Cable, Christopher Smith, Moutusi Roy,and Jennifer Cherrier. 2007. Magnitudes of submarine groundwater discharge from marine and terrestrial sources: Indian River Lagoon, Florida. WATER RESOURCES RESEARCH, VOL. 43, W05440

7. Information Gaps
What uncertainties or information gaps still exist?

- Uncertainties and large information gaps within this management action include the types of pollutants and their loads and the discharge rates to the watersheds (wet season/dry season).

WHEN?
8. Anticipated Timeframe for Implementation
How long will this recommendation take to implement?

- The anticipated timeframe for implementation of this management action is years to decades.

9. Linkage to Other Proposed Management Actions
Is this activity linked to other proposed management recommendations?

- Linkage to any management actions that propose to reduce LBSP to the SE Florida coral reef ecosystem.

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

- -

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

- -

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, SFWMD, USGS, USEPA, USACE. Individuals or groups that can help draft proposed legislation need to be identified.

11. Other Agencies or Organizations
Are there any other agencies or organizations that may also support implementation? Explain.
- County water resource agencies, municipalities, water utilities

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.
- Water utilities, homeowners using septic systems

HOW?
13. Feasibility
Is there appropriate political will to support this? Explain.
- Technical and fiscal challenges with remediation.

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

14. Legislative Considerations
Does the recommendation conflict with or actively support existing local, state, or federal laws or regulations? Explain.
- The management action is consistent with local, state and federal laws and regulations.

15. Permitting Requirements
Will any permits be required to implement this action? Explain.
- There will be no permitting requirements for the management action itself; however there will be individual projects which may require permits.

16. Estimated Direct Costs
Approximately how much will this action likely cost? (Consider one-time direct costs, annual costs, and staff time, including enforcement.)
- The costs will depend on the level and scale of implementation.

Will costs associated with this activity be one-time or recurring?
- Costs are expected to be recurring.

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

17. Enforcement
Does this require enforcement effort?
-

Provide an explanation if available.
- -

18. Potential Funding Sources
Identify potential funding organizations/grant opportunities, etc.

- USEPA and FDEP

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?
   - Reduction of septic system usage.
   - Reduction of measurable pollutants contained in groundwater

SEFCRI/TAC Targeted Questions:

1. **TAC - Is the recommendation likely to achieve the intended result? Explain.**
   Tier 1 – #2 (Intended Result - Output/Outcome)
   - If it can be implemented, yes. JS

2. **TAC - Is the recommendation sufficient to address the identified issue or problem? Explain.**
   Tier 1 – #4 (Justification)
   - This is probably not known at this point. 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)
   - It is technically possible but It will take resources.JS
   - TAC Team 3: Consider groundwater pollution with alternative disposal strategies e.g., deep injection. That water is not confined; this is not a solution.

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)
   - -
   - -

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.**
   - -
   - -

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.**
   - -
   - -

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)

- -
- -

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)
   - -
   - -

Comments from the Reviewers:

- JDV: relative to their note on Tier 2, this is essentially a research project first that could lead to a more specific MA.
- A good idea. JS.
- Not sure how you would do this. NIC
- Combine with N79
- Some work is ongoing. (NSU, USGS, FAU) JS
- This may be a tough problem. JS. [comment under question #13 Feasibility]

Questions from the Reviewers:

	Questions/Information Needs Highlighted by the Reviewers	Addressed by CWG:	Not Addressed by CWG Because:
1.	JDV: good opening but many more specifics are needed here.	☐	☐ This does not apply. ☒ Need help addressing it.
2.		☐	☐ This does not apply. ☐ Need help addressing it.
3.		☐	☐ This does not apply. ☐ Need help addressing it.
4.		☐	☐ 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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SFWMD, USGS, University of Miami, FAU Harbor Branch all have data on ground water. The information is out there and it just needs to be synthesized.

Title Change update – DO NOT ARCHIVE!