

CWG Review 1: Spring 2015

Tier 1 Information:

1. Management Action

S-116 Maintain the ecological function of the wrackline by reducing beach raking practices.

This revised RMA is a combination of the following original RMAs:

- S-116: Improve beach management (e.g. raking) to make beaches more sustainable and lessen the need for beach projects.
- N-124: Increase protection of wrack line to reduce erosion of beach to provide nutrients for critters.
- N-125: Reduce negative impacts from beach raking/cleanup practices to provide ecological benefits to beach ecosystems

2. Intended Result (Output/Outcome)

What is the end product/result of this management action?

- The intended outcome of this action is to maintain the ecological function of the wrackline by reducing beach raking practices. By improving the ecological function of the wrack line this will improve the resilience, improve fisheries habitats, and improve soil and sediment control. This recommended management action also aims at providing education about wracklines to the community; production of a guidance document for beach management activities that would minimize beach erosion and loss of material from shore, which would include guidance for raking and dune construction. This would yield an outcome in reduction for the need of nourishment projects and produce a more sustainable beach, by reducing sand loss.
- The existing Mechanical Beach Cleaning Guidelines should be followed (FWC)
 - All Material collected must be removed from the beach
 - Cleaning equipment must stay at least 10 feet from salt-tolerant vegetation
- Wrack line communities are underappreciated. Trying to make people aware of its importance. If wind blows, can blow seaweed into dunes, this acts as fertilizer. We've been encouraging limited raking, and encouraging targeted cleanups instead. I believe regulations say: do not remove wrack, only trash. This is hard to enforce.

3. Duration of Activity

Is this a discrete action or a recurring activity? Explain.

- Development of a wrackline plan/objectives is discrete (with periodic updates) and the working group would be ongoing

4. Justification

What issue or problem will this management action address? Explain.

- This recommended management action is being put forth due to current beach management practices that may not be maintaining the slope of the beach and dune system as effectively as possible and since sand is expensive there is a need to do the best job possible of keeping it where it is placed to minimize recurrence with beach raking activities.
- The problem of beach raking and wrack removal is that it sterilizes the beach and creates a homogeneous environment, as well as exposing sand to increased erosion. With the removal of the wrack line and other natural debris on the beach there becomes a decrease in habitats, food sources, and biodiversity on the beach.
- Raking buries collected material on wrack line very close to turtle nests (See photos attached June 2015)

5. Potential Pros

What are the potential advantages associated with this management action?

- Some potential benefits with implementation of this recommended management action include: (1) maintaining the beach and increasing the intervals between beach renourishments; (2) minimizing impacts to near shore resources; (3) a reduction in the state/county expenses for beach maintenance; (4) an increase of biodiversity along the shoreline and a decrease in beach erosion; (5) providing a valuable source of nutrients for coastal flora and fauna, including migratory bird species.

6. Potential Cons

What are the potential disadvantages associated with this management action?

- Some potential disadvantages associated with this recommended management action include: (1) a change in the state and county procedures which involves staff time and altered contracts/permits; (2) there may be difficulty convincing people and municipalities of the importance of the wrack line, therefore difficulty in implementing strategies to leave it in place. (3) by not raking the beach, an increase in complaints and a decrease in desire of beach goers to use the beach may occur; (4) it's impossible to ban racking activities entirely; and (5) economic input is not considered in this action which may be a negative.

7. Location

County/Counties: Miami-Dade, Broward, Palm Beach, Martin, Other?

- All counties in SEFCRI Region

Relevant Habitats: Coral reef, seagrass, watershed, etc.?

- Shore, and Near shore communities especially, littoral zone, beach communities and near shore resources, near shore harbottom, Coral reef, dune, beaches

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

- All counties nearshore

8. Extent

Area, number, etc.

- Nearshore
- All counties in SEFCRI Area

9. Is this action spatial in nature?

- no

Tier 2 Information:

WHY?

1. Strategic Goals & Objectives to be Achieved

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

- FL Priorities Goal C2 Obj. Protect living shorelines and implement a program to help maintain their ecological value and to contain runoff from uplands in areas where natural wetland buffers have been eliminated through coastal construction activities,
- SEFCRI LAS MICCI Issue 1 Goal Obj. 2 Avoid and minimize impacts on coral reef ecosystems from dredge and fill activities and infrastructure (pipelines, outfalls, cables) installation on coral reef ecosystems. Reduce the aerial extent of project-related impacts
- GDEP CRCP Obj. 1 Work with local municipalities to establish higher environmental standards (e.g. greening programs, water reuse, sewage treatment, etc.)

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.

- Marco Island beach – Beach rake must stay at least 15 feet from dune line and 15 feet from the wrack line.
- Palm Beach County ERM has been active in developing living shorelines along publicly-owned property. Their approach could be expanded to other parts of southeast Florida.
 - 30 yrs ago PBC tried to ban beach cleaners however property owners that lived on the beaches did not like seaweed that would remain on them, even though there was effort made to educate people.
 - PBC does have seasonal bans on raking. Raking is allowed but it cannot occur where there are sea turtle nests. This is a practical ban not a regulation, but parks dept. and sea turtle monitors can't facilitate raking activities. There is a Coastal Construction ordinance that sea turtle monitors have to clear the beach before the beach raker can work. In Ocean Reef Park North this a defacto ban.
 - Some towns were able to activate bans. Each raker has to have a specific permit but territory changes on a monthly basis and competing.
 - PBC has BMPs but they are hard to implement. Years ago it used to be a lifeguards job to wrack the weedline.
- Miami-Dade County parks wracks the entire beach, they run over it and bury it a little.
- Broward County in some parks there are city contractors who rake
- Martin County has rules for wrack line - Jupiter Island has no raking. Looking at "adopt-a-beach" project, no wrack removal in Martin County.
- In Massachusetts there's a restriction on when beach raking can take place to provide a food source for endangered/threatened migratory birds.
 - Collected material is buried at high tide line in Ft. Lauderdale and Lauderdale by the Sea.
 - Most likely in other cities where Beach Raker operates.
- Sea Oats have been found to be most effective to hold vegetation, which is a natural way to sustain beaches along with enhancing the dune line. Hand raking may help keep some ecological functions.

3. Intended Benefits (Outcomes)

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

- Natural debris that builds up is one of the most important areas of a living beach's food web. Trash should be removed.
- Improved resilience, improved fisheries habitat, improved soil and sediment control.
- Nutrients and seeds for the sand and Habitat for wildlife
- Beach wrack harbors food and provides cover for wildlife and promotes the growth of new dunes, which helps to keep our beaches from washing or blowing away (FWC).

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

- Decrease beach erosion

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

- Long lasting – healthier beaches

4. Indirect Costs (Outcomes)

What potential negative environmental impacts might this action have?

- There are no negative environmental impact from this action

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

- Probably less cost to minimize raking, but the public doesn't like the smell and eyesore of the seaweed

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

- Short term cost long term benefits

5. Risk

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

- If this recommended management action were not to be implemented there is a chance for increased beach erosion causing more frequent renourishment projects and thus costing more funding.

6. Relevant Supporting Data

What existing science supports this recommendation? (Provide citations)

- S-116 Additional papers: Nordstrom, Karl F., Reinhard Lampe, and Lisa M. Vandemark. "Reestablishing naturally functioning dunes on developed coasts." *Environmental Management* 25.1 (2000): 37-51.
- <http://link.springer.com/article/10.1007/s12237-011-9375-9/fulltext.html>
- Colombini, I., et al. "Temporal and spatial use of stranded wrack by the macrofauna of a tropical sandy beach." *Marine Biology* 136.3 (2000): 531-541.
- Patterson, Michael E., James D. Fraser, and Joseph W. Roggenbuck. "Factors affecting piping plover productivity on Assateague Island." *The Journal of wildlife management* (1991): 525-531.
- Bouchard, Sarah S., and Karen A. Bjorndal. "Sea turtles as biological transporters of nutrients and energy from marine to terrestrial ecosystems." *Ecology* 81.8 (2000): 2305- 2313.
- Florida Beach and Shore Preservation Act
http://www.leg.state.fl.us/Statutes/index.cfm?App_mode=Display_Statute&URL=0100-0199/0161/0161.html

7. Information Gaps

What uncertainties or information gaps still exist?

- Some uncertainties or gaps with this recommended management action include: (1) if seaweed on the beach actually reduces erosion, there have been no studies to prove this claim; (2) this recommended management action would only help reefs if in fact it does cause more erosion, if more beach renourishment is necessary and in fact raking causes erosion it could be important; (3) a list of beaches that are DO NOT RAKE beaches needs to be created; and (4) not really sure what happens to the wrack if its left alone or in place.

WHEN?

8. Anticipated Timeframe for Implementation

How long will this recommendation take to implement?

- 0-2 years

9. Linkage to Other Proposed Management Actions

Is this activity linked to other proposed management recommendations?

- YES

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

- This RMA is linked to S-116, N-124 and N-125.

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

- This RMA does not conflict with other recommended 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](#).

- The lead agency for implementation of this recommended management action would be FDEP since the CCCL gives the permits to the beach rakers.

11. Other Agencies or Organizations

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

- Other potential agencies or organizations who could be involved include Florid Fish and Wildlife Conservation Commission, cities, and counties.

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.

- The key stakeholders for this recommended management action would be the beach goers and residents that live along the wrackline.

HOW?

13. Feasibility

Is there appropriate political will to support this? Explain.

- There is generally no political will to support this recommended management action except for in areas with high density sea turtle nesting. There is a Statewide beach habitat conservation plan in place and there would be expected revisions that would have to take place to modify permit requirements.

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

- The recommendation is technically feasible from an agency perspective (Comments)

14. Legislative Considerations

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

- There are no legislative considerations to take into account or conflict with this recommended management action.

15. Permitting Requirements

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

- There are no permitting requirements associated with this recommended management action; however this action recommends the FDEP CCCL permit be amended to or a condition added to reduce raking frequency and reduce in environmentally sensitive areas; switch from mechanical to hand raking however this would increase costs; and enact a seasonal ban except in areas where there is high use.

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 estimated direct cost of implementing this recommended management action is cost dependent on the scale of implementation.

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

- One time for each area

17. Enforcement

Does this require enforcement effort?

Yes because many current raking guidelines are not followed

Provide an explanation if available?

18. Potential Funding Sources

Identify potential funding organizations/grant opportunities, etc.

- The county or municipality that owns the beach should bare the cost of the raking itself. The development of the

project could be FDEP or a multi-county workgroup.

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?

- A way to provide a means to measure the success of this recommended management action includes the frequency of beach projects and an increase in shorebird presence.

SEFCRI/TAC Targeted Questions:

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

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

2. **TAC** - Is the recommendation sufficient to address the identified issue or problem? Explain.

Tier 1 – #4 (Justification)

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)

- The criteria should be more uniform across the counties and integrate potential impacts since sediment doesn't stop at the county lines.

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)

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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.

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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)

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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Burying debris at high tide mark in front of turtle nests, LBTS



Buried debris at high tide mark



Within a few feet of salt-tolerant vegetation