

CWG Review 1: Spring 2015

Tier 1 Information:

1. Management Action

S-1 Remove tires and debris from failed Broward County (Ft. Lauderdale and Deerfield Beach) (a.k.a. Osborne tire reef) artificial tire reef projects and the reef tract to eliminate damage to existing corals.

2. Intended Result (Output/Outcome)

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

- Removal of 700,000 tires from Broward County reefs, minimally removal of loose tires from the area adjacent to reef edges off Ft. Lauderdale and Deerfield. Continuation of current removal efforts, re-initiated by Broward County and partners in 2015 to remove approximately 100,000 tires.
- Eliminate impact to reef resources.

3. Duration of Activity

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

- Recurring. Duration could be long term (many years). A re-evaluation will need to occur at the completion of current removal activities.

4. Justification

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

- Protection of coral reef habitat and ecosystem. Tires have been migrating since the 1980's onto reef tracts during high wave energy events. Tires were originally deposited offshore of Ft. Lauderdale. Many have since become unbundled and spread along the reef tracts. (Comment from KB and DEP)

5. Potential Pros

What are the potential advantages associated with this management action?

- Eliminate ongoing damage to coral reef ecosystem from mobile tires.

6. Potential Cons

What are the potential disadvantages associated with this management action?

- Due to the large cost involved, this could take funding away from other valuable conservation projects.

7. Location

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

- Broward County

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

- Coral Reef and sand

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

- Reef edges and shallow areas which are more susceptible to damage from moving tires.

8. Extent

Area, number, etc.

- Ft. Lauderdale Tire Artificial Site - approximately 700,000 tires
- Deerfield Tire Reef – amount unknown. Army Corps permit SAJOD-RP (76K-0382) March 2, 1977

9. Is this action spatial in nature?

Yes. This is a spatial action. As with other artificial reefs, the tires should be plotted to indicate proximity to reefs to help assess threat. (Comment from PD)

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:

At this time only the main site of the Osborne Tire artificial reef is plotted on the Marine Planer.

- Information with the reef location and amount of tires that have migrated must be plotted onto Marine Planer.
- Divers could provide GPS coordinates of tires observed with approximate number of tires.
- Use this information to show the extent of tire migration
- Show priority area to be cleaned up first
- Use this information to show need for additional funds.

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 D2 – Reduce physical marine benthic impacts from recreational and commercial activities and marine debris
- FL Priorities Goal D2 Objective 3 – Develop a centrally located volunteer-based marine-debris reporting and removal program.
- SEFCRI LAS FDOU Issue 3 Goal – Ensure reef ecosystem are not harmed or degraded by artificial reefs through proper planning development and deployment of artificial reefs and development and implementation of long-term management and monitoring programs.

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.

- In October 2014, Broward County Commissioners approved \$471,000 to fund a new contract between FDEP and Industrial Divers Corporation of Fort Lauderdale to remove 100,000 tires over a three year period. No tires have been removed since 2009 when the military was involved.
- The current removal project started on May 4, 2015 and is expected to last at least three years. Work is being conducted in "Priority Area 1", an area approximately 1,000 feet long and 150 feet wide against the eastern edge of the middle reef, using a multi-diver team and a 50-foot salvage vessel equipped with a crane. Through August 2015, approximately 22,000 tires have been removed with the current project.

3. Intended Benefits (Outcomes)

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

- Protection of coral reef habitat and ecosystem. Prevention of ongoing and future damage by migrating tires.

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

- Tire removal action will encourage support by stakeholders (divers, residents, academia, etc.) of ecological progress.
- Protection of coral reef tourism industry to SE Florida most specifically Broward County. Tourist return home with photos and stories of reefs littered with tires (trash).

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

- Long-lasting. Removal of unsightly and destructive tires will help reduce additional stress on nearby reefs.

4. Indirect Costs (Outcomes)

What potential negative environmental impacts might this action have?

- No negative environmental impact is expected unless unintentional damage to coral colonies by divers or salvage barge occurs.

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

- None

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

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5. Risk

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

- More than 700,000 tires lie on the ocean floor and the risk of continued tire migration to the reef tract during tropical storms and hurricanes is high. The tires proved to be a poor substrate for coral recruitment.

6. Relevant Supporting Data

What existing science supports this recommendation? (Provide citations)

- Sherman, Robin L. and Spieler, Richard E., "Tires: Unstable Materials For Artificial Reef Construction" (2006). *Oceanography Faculty Proceedings, Presentations, Speeches, Lectures*. Paper 58.
http://nsuworks.nova.edu/occ_facpresentations/58
- Waste Tires in Florida, State of the State, September 9, 2011
- http://www.dep.state.fl.us/waste/quick_topics/publications/shw/tires/2010_Tires_State-of-the-State.pdf

7. Information Gaps

What uncertainties or information gaps still exist?

- Confirmation of actual number of tires still on the ocean floor.
- Location of tires

WHEN?

8. Anticipated Timeframe for Implementation

How long will this recommendation take to implement?

- 0-2 years if grant or privately funded. Legislative funding will take 5+ years.

9. Linkage to Other Proposed Management Actions

Is this activity linked to other proposed management recommendations?

- No

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

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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](#).

Broward County

11. Other Agencies or Organizations

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

- U.S. Military, FDEP (solid waste disposal and permits), U.S. EPA (may have provided a grant for the artificial reef), Broward County (technical oversight and permits), US Army Corps of Engineers (permit), NOAA (marine debris and restoration programs), NGOs

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.

Support

- All stakeholders will benefit: divers, NPO's, government, academia, fishermen, and private business.
- Dive operators

Opposition

- None

HOW?

13. Feasibility

Is there appropriate political will to support this? Explain.

- Yes. Local political support, as demonstrated by Broward County Commissioners approval of \$471,000 towards the tire removal project as in-kind for a federal grant.

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

- About 70,000 tires were removed by the military during a three year project. The technical challenges include the number of tires to be removed, and the depth of the tire locations.
- Tires have migrated a great distances from the original footprint of the project. Information with the reef location and amount of tires that have migrated must be documented and mapped.
- Partially buried tires are much more labor intensive to remove than the loose tires. May not be feasible to remove buried tires (equipment, turbidity, etc. may cause harm to resources).
- Tires that are relatively stable (i.e. partially buried) may have significant (>10 cm diameter) stony coral growth which would probably have to be removed and transplanted prior to tire removal.

14. Legislative Considerations

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

- No Known conflicts identified with existing local, state or federal laws and/or regulations.

15. Permitting Requirements

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

- Permits are required and already secured by Broward County for tires at 65' depth off Ft. Lauderdale.
- Project specific permits required. FDEP and US Army Corps joint ERP, Broward County permit (if lead is not Broward Co)

16. Estimated Direct Costs

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

\$3-5 million initially and then costs would need to be re-estimated based on numbers and locations of the tires.

- For example: Approximately \$15/removal per each loose tire (does not include buried tires) + \$3 disposal fee per tire = \$18/tire. Removal of 150,000 additional tires would be \$2.7 million. This also does not include shallow or hard-to-access tires.

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

- Costs will be recurring until all priority tires are removed

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

- 10 years including securing funding, evaluating, planning, permitting
- \$ 2-3 million per year

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.

- The State of Florida currently collects a \$ 1 disposal fee on all tires. This money was used to clean up used-tire dump sites and is now put into the general fund. In 2010 the state collected over \$16 million in disposal fees. Now that most of the sites have been cleaned up, a portion of this money should be used to clean up the off shore tire reef. These statements will have to be verified with FDEP.
- This tax is used to fund multiple projects, not easily accessible, Request funding from the Tire Disposal Fee put in the budget of the next legislative session.
- Appropriations Subcommittee on Transportation Tourism and Economic Development.
- Agriculture & Natural Resources Subcommittee
- Goodyear and other tire companies (this partnership would need to be fostered by and NGO)

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?

- Success of effort will be measured by the number of tires removed.

SEFCRI/TAC Targeted Questions:

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

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

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

Tier 1 – #4 (Justification)

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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)

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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)

- Yes, some removal has been completed by military.

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.

- No

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.

- No

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.

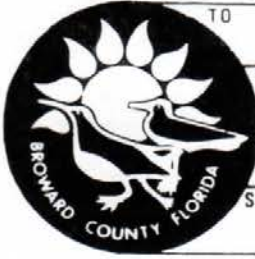
Tier 1 - #5 (Potential Pros), Tier 1 - #6 (Potential Cons), Tier 2 - #3 (Intended Benefits), Tier 2 - #4 (Indirect Costs) and Tier 2 - #12 (Key Stakeholders)

- Yes

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)

- Yes



TO Randall Bushey, District Engineer
Beach Erosion Office, E.Q.C.B.

INTER-OFFICE MEMORANDUM

THRU

FROM

Carlton K. Miller, Director

CKM

SOLID WASTE DIVISION

SUBJECT

Southern Venture trips
to Artificial Reef

DATE

1/30/79

Load No.	Date	Number of tires
1	8/15/78	27,000
2	9/18/78	29,000
3	9/21/78	28,860
4	9/23/78	25,700
5	9/27/78	28,000
6	9/29/78	27,700
7	10/3/78	29,020
8	10/6/78	24,740
9	10/11/78	28,290
10	10/13/78	28,520
11	10/16/78	27,630
12	10/20/78	25,670
13	10/23/78	29,730
14	11/6/78	29,130
15	11/7/78	28,590
16	11/17/78	17,690
TOTAL ----		435,270

