

CWG Review 1: Spring 2015

Tier 1 Information:

1. Management Action

N-1 Educate the public on the effects of land-based sources of pollution to reduce the amount of pollutants entering storm drains and waterways.

2. Intended Result (Output/Outcome)

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

- To reduce the amount of pollutants entering storm drains and waterways.

3. Duration of Activity

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

- Recurring activity.

4. Justification

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

- The public's lack of awareness concerning all pollutants that enter storm drains and waterways.

5. Potential Pros

What are the potential advantages associated with this management action?

- The more educated the public is, the more willing they are to prevent land-based sources of pollution.

6. Potential Cons

What are the potential disadvantages associated with this management action?

- Lack of public interest and/or action.

7. Location

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

- The four SEFCRI counties.

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

- All habitats.

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

- No specific location

8. Extent

Area, number, etc.

- No specific location

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.

- No

Marine Planer Information:

N/A

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 C1, SEFCRI LAS LBSP Issue 5, FDEP CRCP Education and Outreach Obj. 1

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.

- There are currently several agencies/organizations that have programs that address some aspect of land based sources of pollution:
 - FDEP (SEFCRI LBSP) <http://www.dep.state.fl.us/coastal/programs/coral/land-based.htm>
 - FDEP (Clean Marine Program) http://www.dep.state.fl.us/mainpage/programs/clean_marina.htm
 - Officer Snook http://www.7-dippity.com/edprog/ep_osinfo.html
 - SFWMD (What you can do) <http://my.sfwmd.gov/portal/page/portal/xweb%20protecting%20and%20restoring/what%20you%20can%20do>
 - Palm Beach County http://www.protectingourwater.org/watersheds/map/lake_worth_lagoon_palm_beach_c/
 - Broward County <http://www.broward.org/KNOWTHEFLOW/Pages/protect.aspx>
 - Miami-Dade County <http://www.miamidade.gov/environment/water-protection.asp>

3. Intended Benefits (Outcomes)

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

- Decreased levels of pollutants entering the waterways due to a greater educated public on pollutants' effects.

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

- Improved water quality and reef health will lead to enhanced (both in number and quality) recreational opportunities (diving, fishing, boating, etc.) which will lead to increased economic benefits via recreationally based tourism.
- A public which is better educated on land based sources of pollution and their effects on reefs, will develop a greater understanding of the importance of coral reefs and increased appreciation of their value.

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

- Short-term: education programs may lead to some direct actions (i.e. storm drain stenciling, participation in hazardous waste recycling, input and voting on local ordinances, etc.)
- Long-term: institutionalized education programs and efforts across multiple age groups will result in multi-generational awareness, and ideally positive habitual actions, analogous to recycling.

4. Indirect Costs (Outcomes)

What potential negative environmental impacts might this action have?

- There are no potential negative environmental impacts this action may have.

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

- Increased awareness of LBSP problems may lead to reduced use or enjoyment of coral reefs due to perception that water/environment is unsafe to human health. Economic ramifications could be reduced recreational activities, and therefore reduced direct and value-added revenue associated with these activities. Property values along Interior waterways (watersheds, rivers, marinas, estuaries, canals) could decrease as a result of persistent perceptions of degraded water quality.
- Increased perception that entire ecosystem is degraded may lead to increased cynicism and inaction regarding potential solutions to LBSP issues.

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

- Negative social/economic impacts can be both short and long-term. Episodic events (i.e. oil spill, excessive freshwater discharges) can result in immediate short-term economic impacts (cease of recreational activities, decreased visitation and tourism, costs related to clean up and remediation).
- If perception of a degraded environment persists; then economic impacts may be long-term (declining tourism, reduced property values)

5. Risk

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

- Moderate risk, but lack of implementation of effective education coupled with increasing numbers of new visitors and residents will lead to an increasing uninformed, unengaged public.
- In the absence of single events that galvanize the public such as an oil spill, lack of effective education will lead to a growing public unaware of the effects of LBSP and consequently less support for actions and legislation that address this problem.

6. Relevant Supporting Data

What existing science supports this recommendation? (Provide citations)

- None found

7. Information Gaps

What uncertainties or information gaps still exist?

- Evaluation of education programs need to be performed to gauge their effectiveness in increasing public awareness and whether increased awareness leads to positive actions.

WHEN?

8. Anticipated Timeframe for Implementation

How long will this recommendation take to implement?

- A new education program on LBSP will take 1-2 years to implement.

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?)

- N-79, N-80, N-89, S-25 S-26 S-34 ,N-71 and N-68

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

- Not to my knowledge

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](#).

- Any of the agencies listed could or already have education programs about LBSP.

11. Other Agencies or Organizations

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

- Environmental NGOs
- City and Town governments

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: general public, commercial and recreational fishing, diving community, schools and universities, local governments, some maritime industries (marinas, boating, cruise industry), environmental NGOs,
- Opposition: agriculture and horticulture industries, convention and tourism bureaus, chambers of commerce, other maritime industries (shipping, coastal construction, boating (manufacturing), cruise industry), chemical and petrochemical industries, local governments
- Note: as shown above, some support or opposition may likely arise within the same stakeholder group depending on intra-industry efforts to show compliance/support for addressing LBSP issues or opposition if existing or new programs assign blame to particular stakeholders.

HOW?

13. Feasibility

Is there appropriate political will to support this? Explain.

- Generally yes, but if an education program is tied to a regulatory action/legislation (for example a fertilizer ordinance) political will may be mixed or unsupportive.

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

- Duplication with existing efforts, keeping information up to date and reflective of the current science and regulatory/legislative environment, ensuring consistency and accuracy of information across educational material delivered by different agencies/groups while allowing for those groups to maintain their unique perspective or message regarding LBSP.

14. Legislative Considerations

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

- Support – however, programs and material may need to keep current with changes in laws and regulations particularly if there is variation at the local level (i.e. county, city or town ordinances)

15. Permitting Requirements

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

- No

16. Estimated Direct Costs

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

- Exact cost is unknown, but an estimate in the \$100 thousand range as an annual cost seems appropriate.

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

- Recurring as annual printing costs and potentially outreach programs continue.

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

action?

- ~2-3 years

17. Enforcement

Does this require enforcement effort?

- No

Provide an explanation if available.

18. Potential Funding Sources

Identify potential funding organizations/grant opportunities, etc.

- EPA, NOAA

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?

- Socio-economic surveys related to LBSP; number of education/outreach programs delivered; number of people attending education/outreach programs; and the level of support for legislation related to addressing LBSP issues

SEFCRI/TAC Targeted Questions:

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

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

- It has the potential to reduce LBSP. JS
- Education is always a good thing. NIC
- Yes, the storm-drain labels have made some positive impacts. More is needed. PRG

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

Tier 1 – #4 (Justification)

- This needs development to be sure, but in concept the idea is valid. 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

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)

- -Information has been gathered and displayed at several website (see email).

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.

- -This would be classified as an educational effort rather than research.

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)

- - This could be initiated by either a regulatory agency, NGO or as a stakeholder project.

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:

- ST: Look into the Officer Snook Program with the Coast Guard. Possibly expand/Create a section relating to the reefs if not existing already.
- This is a good Idea. Achieving results will require the development of an information campaign. JS
 - And a means of getting that information out to people. NIC
- The goal will be to decrease the emission of pollutants into coastal areas by educating consumers on proper usage of pesticides, fertilizers and other chemical. Create awareness of the connections between the household environment and the waterways and coastal areas. Understand the importance of hazardous chemicals collection and the importance of water use and re-use. TAC3
- Establishing a "consciousness" about this is certainly going to require repetition (which is costly) JS
- Public education will likely result in significant reductions of fertilizer and chemical uses. Educate the public on their role in water quality sustainability through water reuse, better management practices and how the system really works. Understand the relationship between the contribution to their downstream chemical footprint and how to minimize it. Related to N-79, N-80, N89, S-25 S-26 S-34 and N-71.
- SEFCRI TAC Team 3 recognized this as a top priority. (T3)
- ST: Reinventing the wheel because I think this is what the Officer Snook program tries to do. Maybe just look into partnering or enhancing this program.
- Broward County also has a "Know the Flow" program that maybe useful to look at. NIC
- ST: Include all counties
- Why not Broward and Dade? It should include all counties. JS and NIC
- This is important for both North and South Groups. (TAC3.
- I think that spatial planning can help identify the target population. JS
- This should be discussed with an expert in advertising/public information. JS Agreed, we need some kind of mass marketing strategy. NIC
- There are still a lot of public misconceptions regarding domestic waste-water storm-water and runoff that need to be re-emphasized. Many people still think they are the same. PRG
- It may result in a net reduction of direct inputs of contaminants that go untreated. PRG
- Not a lot of data showing the link between LBSPs and unhappy coral. NIC
- A simple comparison between the quality of treated domestic wastewater vs stormwater runoff may be an eye opener on the contribution of the latter in populated areas. PRG
- ST: 0-2 years to implement if coordinated with existing programs like Officer Snook
- Needs to be continuous and sustained. The list of pollutants is constantly changing. PRG
- this is the basis for pretty much all other proposed actions, people are not going to do or not do something

unless they know why. NIC

- Agree. It is also much more effective than trying to introduce new regulations or water quality criteria. PRG
- There will be an initial investment but must be supported by a recurring stream of voluntary based revenue (i. e license plate). PRG
- Public opinion surveys to assess the effectiveness of the campaign. JS
- This could be linked with enforcement action/awareness, so that the public is made aware of the consequences. JS
- It has the potential to reduce LBSP. JS Education is always a good thing. NIC
- Yes, the storm-drain labels have made some positive impacts. More is needed. PRG
- This needs development to be sure, but in concept the idea is valid. JS
- Difficult to enforce but a good PR campaign based on the negative effects may be all that is needed. PRG
- Most important thing to do is public education. Example of public education: In Tallahassee they demonstrated there was an effect from nitrates (10 miles south of WWTP, springs were being affected by algae). A community of 200,000 people supported and got a Waste Water Treatment upgrade that cost \$20 million.
- Fertilizers/runoff – Ban in Pinellas County from selling fertilizer during high rain summer season. This is an example of an education campaign that worked.
- Educate the public about the need for this. PG
- Verbs: Ban, Enforce, Restrict etc. these will not go anywhere as currently written. But if public is educated at the Home Depot when buying fertilizers etc. it is helpful to possibly justify \$ for wastewater treatment (better understand why \$ is needed).

Questions from the Reviewers:

Questions/Information Needs Highlighted by the Reviewers		Addressed by CWG:	Not Addressed by CWG Because:
1.	N/A	<input type="checkbox"/>	<input type="checkbox"/> This does not apply. <input type="checkbox"/> Need help addressing it.
2.		<input type="checkbox"/>	<input type="checkbox"/> This does not apply. <input type="checkbox"/> Need help addressing it.
3.		<input type="checkbox"/>	<input type="checkbox"/> This does not apply. <input type="checkbox"/> Need help addressing it.
4.		<input type="checkbox"/>	<input type="checkbox"/> This does not apply. <input type="checkbox"/> Need help addressing it.
5.		<input type="checkbox"/>	<input type="checkbox"/> This does not apply. <input type="checkbox"/> Need help addressing it.
6.		<input type="checkbox"/>	<input type="checkbox"/> This does not apply. <input type="checkbox"/> Need help addressing it.
7.		<input type="checkbox"/>	<input type="checkbox"/> This does not apply. <input type="checkbox"/> Need help addressing it.

Questions from the CWGs back to the Reviewers: