

Title:

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.

Background:

- This recommended management action relates to the entire Southeast Florida Coral Reef Initiative (SEFCRI) region and all relevant habitats.
- This recommended management action is being proposed because of the public's lack of awareness concerning pollutants that enter storm drains and waterways.

Objective:

- The intended outcome of this action is to reduce the amount of pollutants entering storm drains and waterways by educating the public on pollutants' effects.
- Improved water quality and reef health will lead - both in number and quality - to enhanced recreational opportunities (diving, fishing, boating, etc.) which, in turn, will lead to increased economic benefits via recreationally based tourism.
- A public that is better educated on land-based sources of pollution (LBSP) and their effects on reefs will develop a greater understanding of the importance of coral reefs and, in turn, have an increased appreciation of their value.

Intended Benefits and/or Potential Adverse Effects:

- Benefits of implementation of this recommended management action include decreased levels of pollutants entering waterways due to a better educated public on pollutants' effects.
- There are no anticipated negative environmental impacts.
- The duration of the benefits of this recommended management action are reoccurring.
- A potential benefit of implementation of this recommended management action is the belief that a more educated public becomes more likely to prevent land-based sources of pollution.
- Some possible issues that may arise with implementation of this recommended management action include: (1) increased awareness of LBSP problems may lead to reduced use or enjoyment of coral reefs due to the perception that the water environment is unsafe for human health, (2) economic ramifications could include reduced recreational activities and, therefore, reduced direct and value-added revenue associated with these activities, (3) property values along the interior waterways (watersheds, rivers, marinas, estuaries, canals) could decrease as a result of persistent perceptions of degraded water quality, and (4) an increased perception that the entire ecosystem is degraded may lead to increased cynicism and inaction regarding potential solutions to LBSP issues.
- Negative social/economic impacts can be both short and long term. Episodic events (e.g., oil spills, excessive freshwater discharges) can result in immediate short-term economic

View the Entire RMA Document at: www.ourfloridareefs.org/RMAcomment

impacts (cessation of recreational activities, decreased visitation and tourism, costs related to clean-up and remediation). If perception of a degraded environment persists, economic impacts may be long term (declining tourism, reduced property values).

- If this recommended management action is not implemented, the lack of effective education coupled with increasing numbers of new visitors and residents will ultimately lead to an increasingly uninformed, unengaged public. In the absence of single events that galvanize the public, such as an oil spill, a lack of effective education on the effects of LBSP may result in less support for actions and legislation aimed at addressing this problem.

Agencies/ Organizations:

- The lead agency for implementation of this recommended management action could be any of the agencies listed in the Agencies and Actions Reference Guide that already have, or could develop, education programs about LBSP.
- Other potential agencies or organizations who could be involved include environmental non-governmental organizations (NGOs) and city and town governments.
- The key stakeholders for this recommended management action would be the general public, commercial and recreational fishers, the diving community, schools and universities, local governments, some maritime industries (marinas, boating, and cruise industry) and environmental NGOs.
- There is potential opposition from the agriculture and horticulture industries, convention and tourism bureaus, chambers of commerce, other maritime industries (shipping, coastal construction, boat manufacturing, and cruise industry), chemical and petrochemical industries, and local governments. Some support or opposition may arise within the same stakeholder group depending on intra-industry efforts to show compliance/support for addressing LBSP issues. Opposition would likely arise to existing or new programs that assign blame to particular stakeholders.
- The legislative considerations entail taking into account that programs and materials may need to keep current with changes in laws and regulations, particularly if there is variation at the local level (e.g., county, city or town ordinances).

Permitting/ Enforcement Requirements of RMA:

- There are no permitting requirements with this recommended management action.
- Ways of measuring the success of this recommended management action include: 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.

Cost:

- The estimated direct cost of implementing this recommended management action is unknown, but an estimate in the \$100,000 range per year seems appropriate. These costs would be recurring as annual printing costs and potential outreach programs continue.

View the Entire RMA Document at: www.ourfloridareefs.org/RMAcomment

- Potential funding sources include the United States Environmental Protection Agency (EPA) or the National Oceanic and Atmospheric Administration (NOAA).

Time Frame & Extent:

- The anticipated timeframe for implementation of this recommended management action is 1 - 2 years.

Miscellaneous Info:

- This recommended management action is linked with N-68, N-71 and S-25.
- Some uncertainties or gaps with this recommended management action exist, such as the difficulty of gauging the effectiveness of educational programs that are aimed at increasing public awareness and whether the increased awareness leads to positive actions.
- Supporting and relevant data were not provided for this recommended management action.
- Currently there are 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 Marina 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 (Know the Flow) <http://www.broward.org/KNOWTHEFLOW/Pages/protect.aspx>
 - Miami-Dade County <http://www.miamidade.gov/environment/water-protection.asp>

Goals/ Objectives to be achieved:

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

- FL Priorities Goal C1.
 - FDEP CRCP Education and Outreach Obj. 1.
- SEFCRI LAS LBSP Issue 5.

View the Entire RMA Document at: www.ourfloridareefs.org/RMAcomment