

Title:

N-82: Support and promote existing and create innovative new initiatives that increase stormwater storage, and reduce stormwater runoff, enhance treatment, increase reuse, and reduce nutrients and other contaminants to the watershed, especially from surface water, to restore healthy estuaries.

Background:

- This recommended management action relates to Miami-Dade, Broward, Palm Beach, and Martin counties, those of the Southeast Florida Coral Reef Initiative (SEFCRI) region, as well as other counties in watersheds linked to SEFCRI estuaries.
- This recommended management action is being put forth to address: (1) stormwater that is insufficiently treated or poorly managed and which detrimentally impacts the reef ecosystem, (2) the quality, quantity, timing, and distribution of said stormwater, (3) to improve the quality, velocity and volume of runoff, and (4) improve residential property owners knowledge or understanding about how their actions on land impact coral reefs and the environment as a whole.
- Estuaries are not as healthy as they should be due largely to on stormwater runoff. Water quality is a major driver of the health of estuaries, including seagrass beds, mangrove forests or fringes and associated back-reef habitats. Counties have insufficient funds so partnerships may be necessary to collect enough money to cross any jurisdictional boundaries to put this recommended management action into effect.
- This recommended management action will address the fact that existing water quality standards and enforcement are both ineffective and inadequate, thereby resulting in poor estuary water quality and a degraded coral reef ecosystem.

Objective:

- The intended outcomes of this action are: (1) improved water quality resulting in ecosystem condition improvement for priority reef habitats in the SEFCRI region, (2) increased awareness among resident populations, (3) decreased or eliminated areas of unmanaged stormwater runoff, (4) identification of priority areas of coral reef habitat for conservation action and increased management, and (5) improved estuarine quality will have positive impacts on seagrass, oysters, mangroves and coral reefs.
- Strengthening water quality standards for runoff via standardized regulations and increased enforcement are needed. In the past, proposed standards to stop runoff were weakened so much in the political process that they became ineffective at protecting water quality in estuaries. There needs to be more enforcement through monitoring and reporting. There also needs to be public education on the importance of improved water quality and reducing land-based sources of pollution.
- The State of Florida and counties regulate stormwater treatment, so support for this recommended management action will entail acquiring more funding to continue the initiatives that will increase stormwater storage, treatment and contaminant removal, as well as surface water reuse.
- This recommended management action supports current work, including Basin Management Action Plans (BMAP), restoration efforts and research into the links between upland water quality and better estuarine and coral reef water quality.
 - Watershed-scale planning will work in areas with bad water quality - but not so bad that the basin has been designated as a BMAP basin.
 - Possible improvements:

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- Green development projects could improve stormwater management and treatment
- Create new outstanding Florida waters.
- Use existing improvement measures such as Wellington Section 24, along with stormwater reservoirs proposed for the C-11 and C-51 basins.

Intended Benefits and/or Potential Adverse Effects:

- The anticipated benefits of implementation of this recommended management action include: (1) improved water quality, (2) improved and increased awareness of stormwater issues, (3) a reduction of stormwater runoff, (4) creation of additional 'natural' habitats and the introduction of natural landscapes into built areas, (5) raised visibility of the importance of estuary health, and (6) raised awareness needed to change behavior and reduce negative impacts.
- Planned projects are awaiting funding to begin. Thus, implementation of this recommended management action will put many projects into action.
- This recommended management action will foster improved ecosystem health in estuaries and the reefs, resulting in increased tourist activity, financial benefits to the overall community, improved recreational and commercial fishing, improved diving, improved beach conditions, less harmful algal blooms, and reduced wildlife impacts.
- The anticipated negative impacts include: (1) increased costs, (2) land in those areas where rainwater runoff needs to be collected and treated is in short supply and expensive, (3) appropriately planted areas may be more expensive to maintain than traditional bahiagrass basins, (4) even if the project acquires enough start-up funding, maintenance and monitoring may not be funded so the overall project may still be under-funded, (5) stakeholder opposition to changes in/to the watershed may come from agricultural, golf courses and individual homeowners, and (6) there may be significant costs associated with education, retrofitting, monitoring, and enforcement.
- The duration of the benefits of this recommended management action are both ongoing and discrete. The planning process and identification of watersheds would be discrete. Monitoring and maintenance of anything installed or managed would be recurring, as would educational aspects of this recommended management action.
- An issue that may arise with implementation of this recommended management action is the negative economic impact resulting from (increased) project costs.
- If this recommended management action is not implemented continued degradation of estuarine and coastal water quality is expected.

Agencies/ Organizations:

- The lead agencies for implementation of this recommended management action are local governments.
- Other agencies or organizations that may participate include the Florida Department of Environmental Protection (FDEP), the South Florida Water Management District (SFWMD), the Florida Department of Agriculture and Consumer Services (FDAC), the National Oceanic and Atmospheric Administration (NOAA) and NOAA's Coral Reef Conservation Program (CRCP).
- The key stakeholders for this recommended management action are utilities, municipalities, state regulators (FDEP, SFWMD, FDAC), and county regulators (e.g. health departments permitting septic tanks).
- This recommended management action is consistent with local, state and federal laws protecting water quality.

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Permitting/ Enforcement Requirements of MA:

- Permitting requirements exist for any construction projects.
- A metric to measure the success of this recommended management action is targeted water quality monitoring in the estuarine and marine waters of Inlet Contributing Areas, with a focus on land-based sources of pollution.

Cost:

- The estimated direct cost of implementing this recommended management action depends on the scale and type of implementation.
- Potential funding may be acquired through the state legislature, county/local governments and federal grants, including the United States Environmental Protection Agency's 319 grant program.

Time Frame & Extent:

- The anticipated timeframe for implementation of this recommended management action is dependent on project scale. Some short-term pilot projects could be completed within 1 - 2 years, while other, larger projects could have a 5-year timeframe. Ecosystem-scale projects would have timeframes of 10 years or more.

Miscellaneous Info:

- This recommended management action is not linked to any other recommended management action nor does it conflict with any other recommended management action.
- No uncertainties or gaps with this recommended management action were indicated.
- Supporting and relevant data includes the following:
 - N. Pickering, and E. Baker. Watershed Scale Planning to Reduce the Land-Based Sources of Pollution (LBSP) for the Protection of Coral Reefs in Southeast Florida. 2015. Prepared for the National Oceanographic and Atmospheric Administration. Horsley Witten Group. Sandwich, MA.
 - K. Gregg, Literature Review and Synthesis of Land-Based Sources of Pollution Affecting Essential Fish Habitats in Southeast Florida. 2013. Prepared for: NOAA Fisheries, Southeast Region, Habitat Conservation Division. Coral Reef Conservation Program. West Palm Beach, Florida.
- The State of Florida currently regulates activities that affect estuarine resources and water quality. SFWMD rules apply the state's authority to the project-scale and regional-scale in southeast Florida. These regulated activities are often evaluated separately.

Goals/ Objectives to be Achieved:

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

- FL Priorities Goal C1 Obj. 1 / FL Priorities Goal C2 / FL Priorities Goal C2 Obj. 3 / FL Priorities Goal C2 Obj. 4.