

ENVIRONMENTALLY ENDANGERED LANDS

The final report in brief

This report presents a history of the Environmentally Endangered Lands (EEL) Program, its importance for adapting to climate change, and the Program's recent progress, including the acquisition of approximately 250 acres during this past year. A primary focus of the report is to identify additional potential funding mechanisms appropriate to meet short-term and long-term needs. A combination of sources described in the report will likely be required; however, additional funding from the recent passage of Amendment 1 is an important potential source.

How the Environmentally Endangered Lands Program supports climate change adaptation

Miami-Dade County's natural environments, like coastal barrier islands, mangrove forests, shallow bays, estuaries, and wetlands, are an important first line of defense against climate change. In addition to their intrinsic value as conservation lands, these rich natural resources are also the best insurance to protect our drinking water and coasts from the impacts of gradual sea level rise and extreme weather. These areas provide protection for our coastlines from erosion and storm surge. The wider and the thicker the natural buffer, the more the mangrove forest can protect the communities behind it by dampening wave energy and potentially delaying or reducing the height of storm surges. For example, a mature and healthy forest with a complex root system can help dissipate wave energy more effectively than a thinner or fragmented forest. Though exact values will vary by location, research has shown a mature mangrove forest can reduce wave energy by 20% for every 300 feet of forest. A local study found the mangroves effectively attenuated surge and reduced the area flooded during Hurricane Wilma.

In contrast to manmade flood defenses, mangrove forests have a natural ability to adapt and keep pace with rising sea levels if the environmental conditions are favorable. However, many factors may compromise their ability to acclimate. If environmental stressors impact the mangroves, they may not be able to keep up with sea level rise. As a result, if the forests are too stressed, the width of the buffer area and their protective value would diminish. Protecting the health of these ecosystems can therefore contribute to the long-term safety for the communities sheltered by them. In order to guard against reducing the protective power of our natural defenses, it is crucial to protect these vital resources through conservation and preservation with the help of the EEL Program. In order to further the goals of this successful program, sustainable funding sources need to be identified. Acquisition of these natural barriers is critical, especially in communities, such as those in south Dade.

Recent progress

Since the Program's inception, EEL, along with its partners has successfully acquired and managed more than 24,000 acres of environmentally endangered land and has identified strategic priorities for future acquisitions. These properties represent a wide range of habitats, which provide a myriad of ecosystem services to the community. Between January 2015, and January 2016, the EEL Program acquired approximately 250 acres at a cost of \$1,177,081. These acquisitions include lands within the Goulds Pineland and the South Dade Wetland Pre-

serves. These acquisitions have helped reduce fragmentation between other preserves, which helps reduce management costs and improves the ecological health of the resources.

Program funding

A key consideration affecting the EEL Program's long-term success is the ability to fund the management of Preserves and addition of the remaining land on the Acquisition List. In 1990, the electorate of Miami-Dade County authorized the County to levy a two year ad valorem tax for acquisition, preservation and maintenance of environmentally endangered lands for the benefit of present and future generations. The initial funding allowed for the creation of the EEL Program. The Program has succeeded in leveraging the original investment made by taxpayers and has accrued \$198 million in revenue since its inception. However, ongoing land management costs currently exceed the budgeted \$3 million dollars and cannot be sustained in the long run under the current model. The Program has endeavored to address land management needs by engaging volunteers and by securing additional intermittent sources of funds; however, additional revenue sources are needed to assure program achievements be sustained and objectives met.

Potential funding sources

The report identifies several potential funding mechanisms including:

- Florida Constitutional Amendment 1
- Green Utility Fee
- State Legislative Proposal to Allocate Funds to the EEL Program for Exotic Plant Removal and Management
- New EEL Referendum
- Continued use of Miami-Dade County's Wetlands and Tree Trust Funds
- Stormwater Utility Fee