

## Environmental Restoration SWOT Analysis and Major Issues

The Pinellas County PDRP Environmental Work Group conducted a SWOT analysis with respect to environmental issues, prioritized the issues and identified gaps in data and resources.

**Strengths** of the existing entities, resources, infrastructure to deal with a catastrophe:

- Resiliency of natural systems in response to natural catastrophes
- There are fully documented maps of natural communities, bird rookeries and listed species habitat, sea turtle nest sites, so that damage can be assessed quickly
- Large areas in public ownership with existing management plans
- Expertise in habitat restoration that can advise on best techniques (Although this could be a weakness due to recent layoffs and reorganization)
- Local/State/Federal funding program in place for beach re-nourishment
- Existing beach re-nourishment programs and permitted projects
  - Sand sources identified for use in beach re-nourishment (However, this is a limited source and may not be sufficient in a major disaster. May need to map “hard bottom” offshore)
  - Ongoing beach profile monitoring to document loss

**Weaknesses** of the existing entities, resources, infrastructure to deal with a catastrophe:

- Limited policies in place to incentivize private landowners to relocate landward from eroding high-risk shorelines
- Very little flexibility within local government land management agencies’ budgets or staffing to respond to catastrophes
- Large number of exotic species in the area (e.g. Melaleuca, Brazilian pepper, Cogon grass, Japanese climbing fern, air potato and the continuing addition of others) which are dispersed during high winds and into disturbed areas
- Revisit local regulations to control “emergency” seawall repair or replacement / coastal armoring
- Beach re-nourishment permitting revision process is time-consuming
- Limited data on long-term beach nourishment needs based on future costs of dwindling sand resources, existing erosion rates, storm frequencies, and different sea level rise scenarios.
- Need to identify policies and procedures relating to submerged lands including “who” defines the new shoreline following a disaster.

**Opportunities** for long-term mitigation that may arise from a catastrophe:

- Acquisition of areas for open space where development cannot/should not reoccur
- Correct Stormwater Systems (grandfathered) and Wastewater Systems (including isolated pockets of septic systems)
- Connect greenways and wildlife corridors through acquisition
- Use of native species in reforestation

- 100% Federal funding of beach renourishment projects following a disaster (no local match)
- Volunteer involvement in exotics removal, rescuing hurt wildlife, monitoring damage and recovery of habitats and species
- If sufficient resources (funding and staffing) supplied to assist, can accomplish additional exotics removal to reduce future threat

**Threats** to recovery that may arise from a catastrophe:

- Use of publicly-owned, managed native habitat for a variety of potentially negative impacts of post-recovery efforts (e.g. temporary landfills, temporary housing)
- Hazardous Material contamination (flooded gas stations, boats and vessels, tanks, 302 facilities)
- Red mangroves, the first line of defense, can be killed in high winds by removal of the apical meristems. This may lead to sediment loss which increases coastal vulnerability.
- Invasion by exotic species due to abundance of disturbed habitat, dispersal by wind and water
- Waste Water System vulnerability and potential health issues (pockets of septic systems)
- Contamination from construction material debris including fuel, asbestos
- Potential public perception that it is of low priority to include natural resource recovery in the mix of post-disaster items
- Low dissolved oxygen levels, high nutrient pollution loads, and big red tide events after severe, wet hurricane seasons
- Debris removal activities could severely damage seagrass and mangroves.
- Lack of strong state or local regulations to prevent permanent or harmful beach armoring
- Inability to restore beaches and dunes in a timely manner following a catastrophic storm event
- Sand sources becoming limited with increased demand
- Failure of the public to view beaches as infrastructure requiring long-term maintenance and restoration
- Staff resources being diverted from exotics and erosion control to other tasks off-site
- Impacts to wildlife and habitats
- Unlicensed/unqualified contractors doing more harm than good.
- Strong risk of Wildfire in next dry season

This analysis provided an excellent starting point for the committee to identify the major issues to be addressed in the Post-disaster Redevelopment Plan.

The Work Group identified the following major issues:

**Short Term Recovery**

- Waterway debris removal and pollution control
- Water and Air Quality monitoring and remedy
- Plan to quickly assess and manage areas contaminated by hazardous materials release, debris contaminates, etc.
- Monitor/regulate debris removal from environmentally sensitive areas
- Environmental review of temporary sites (temporary housing, debris management)
- Work with partners and volunteer organizations to implement response plan involving exotics removal, rescuing hurt wildlife, monitoring damage and recovery of habitats and species

**Long Term Recovery**

- Acquisition of areas for open space where development cannot/should not reoccur
- Identification of incentives for private landowners to relocate landward from eroding high-risk shorelines
- Public information to foster support for natural resource recovery in the mix of post-disaster items
- Process to efficiently identify opportunities and project funding for wetland and beach restoration, removal of exotics, restoration of urban forests
- Review state and local regulations and emergency permitting processes to prevent permanent or harmful beach armoring
- Maintain management protection of coastal areas, conservation lands, parks, etc.
- Identify potential sea level rise scenarios and adaptive strategies