



**MIAMI-DADE COUNTY  
PARKS, RECREATION,  
AND OPEN SPACES  
DEPARTMENT**

**CONSERVATION PLAN**







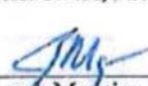
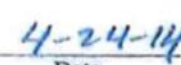
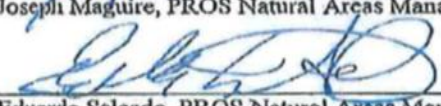
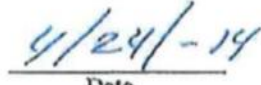
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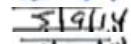





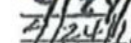





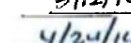
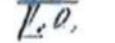
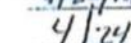

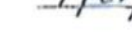








# Miami-Dade County Parks, Recreation and Open Spaces Department Conservation Plan

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## **Executive Summary**

Miami-Dade County conservation efforts are decentralized, with the responsibility of environmental planning falling on each department and office. This has created a need for better communication and coordination between PROS divisions, other county departments, state and federal agencies, and the private sector. The Conservation Plan seeks to overcome the challenge by bringing conservation efforts under one unified plan. This document is intended to set policy guidelines and management direction for PROS concerning conservation and sustainability issues. Several documents served as the foundation for the development of this plan and align strategically to the county's GreenPrint plan.

The intention is to establish a flexible plan to guide coordinated intra-departmental and inter-departmental sustainability efforts. Four goal areas were selected as follows:

- Leadership - establishing the county in a leadership position with respect to conservation efforts
- Water and Energy - water and energy conservation
- Environment, Landscape, and Cultural Resources - finding cost-effective land management methods while maintaining biodiversity and restoring ecological function
- Economy - finding sustainable and reliable sources of funding

A total of 28 initiatives were identified under the four goal areas to be implemented over a period of three years and reviewed quarterly to determine if goals are being met. Progress of the plan will be illustrated in an annual report.

The evolution of the plan will rely on the success of its implementation. By identifying needs, actions, and costs necessary to balance increasing community demands and natural resource protection, this plan should prove an effective tool in managing Miami-Dade County's natural resources. The plan must be embedded in the culture of the department and each employee should embrace it by implementing it on a daily basis.

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The Miami Dade County Parks, Recreation, and Open Spaces Conservation Plan implements the Miami Dade Open Space Master Plan principles of sustainability, beauty, and access which seek to connect people to natural areas through ecohubs, ecozones and sustainability practices as expressed in the goals of this plan.

The Plan identifies, coordinates, and recommends actions, programs and targets focused on conservation issues that will make Miami-Dade a more environmentally sustainable County. The Plan addresses conservation threats and opportunities facing the Department and answers the following question: What initiatives and actions should be taken by PROS to effectively achieve desired environmental outcomes in a coordinated and comprehensive manner?

This document provides a three-year Conservation Plan for the Miami-Dade Parks, Recreation, and Open Spaces Department (PROS). The scope of the plan is designed to help coordinate conservation efforts and to set policy guidelines and management direction for PROS by identifying the needs, actions, and costs necessary to balance increasing community demands and natural resource protection. An annual report will be prepared to provide the status of the initiatives and achievements.

The Conservation Plan will guide PROS leaders and administration and its constituents in meeting these challenges intentionally, pragmatically, and over the long term.

Climate change and sea level rise pose an eminent threat to our community and well-being. Coastal facilities such as marinas, beaches, coastal parks and nature preserves will be seriously affected unless necessary precautions are taken to protect them. PROS should pay special attention to climate change and begin to develop and implement a climate change action plan.

Many of the protected natural areas PROS manages contain unique historic resources and rare archaeological and paleontological sites. These resources are of great value to our heritage and represent only a small fraction of a non-renewable resource left from past times. Their management requires specialized care which goes hand in hand with natural resource conservation.

As the County population grows, so do demands on infrastructure and the environment. Miami-Dade County's natural environment continues to be highly valued for its contribution to quality of life. Environmental health is essential for long-term economic and social well-being. The department faces many challenges as it balances growth demands while protecting the natural environment and quality of life for future generations. This document provides the goals, guidelines, initiatives and strategies for the Department.

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## **The Conservation Plan Purposes are:**

**Purpose 1:** Coordinate conservation efforts and set policy guidelines and management direction for PROS by identifying the needs, actions, and costs necessary to balance increasing community demands with appropriate natural resource protection.

**Purpose 2:** Address conservation threats and opportunities facing the Department (PROS).

**Purpose 3:** Guide PROS leaders, administrators and constituents in meeting future conservation challenges intentionally, pragmatically, and over the long term.

**Purpose 4:** Guide PROS to adopt energy, fuel, solid waste reduction, procurement practices, and water conservation measures to protect the environment and save taxpayers money.

**Purpose 5:** Establish guidelines to protect natural resources in parks and preserves by establishing special land conservation designation, implementing sustainable landscapes models, and protecting and restoring watersheds and wetlands.

**Purpose 6:** Continue to create and forge conservation partnerships; increase youth engagement and volunteer participation in conservation and stewardship practices.

**Purpose 7:** Guide the creation of an interconnected framework of parks, public spaces, natural and cultural areas, greenways, trails, Eco-hubs, and streets that promote sustainable communities, the health and wellness of county residents, and that serve the diverse local, national, and international communities as illustrated in the Open Space Master Plan.

## **Overview of the Conservation Plan**

Miami-Dade County understands that conservation is not the responsibility of one or two county departments; comprehensive resource conservation depends on the cooperation and buy-in of every department and office and every employee. Miami-Dade County's approach to environmental management is relatively decentralized, with responsibility for environmental planning, implementation, measuring, and reporting requirements

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throughout county departments and offices. However, the role of environmental tasks and resource conservation fall primarily on two departments: the Regulatory and Economic Resources - Division of Environmental Resources Management (RER-DERM), and Miami- Dade Parks, Recreation, and Open Spaces (PROS). Land management and conservation is conducted through RER-DERM's Environmentally Endangered Lands (EEL) Program and PROS's Natural Areas Management (NAM) Office.

County governments have a great deal of influence over the way resources in an area are used and managed and the way communities are developed. Local governments are closer to citizens and affect their day-to-day lives in many ways by directly providing a wide range of services most people take for granted: safe drinking water, waste management, transportation, and parks and recreation services, to name just a few. Miami-Dade County understands that concentrating people in ever-larger urban settlements creates considerable environmental disruption through pollution of air and water, consumption of energy and natural resources, loss of natural habitat, and altered drainage patterns.

The Parks, Recreation, and Open Spaces Department must act as active member in regional and national conservation initiatives. PROS possesses a wide range of expertise in several areas including planning and development, operations, natural areas management and programming and could easily take a conservation leadership position in South Florida and beyond.

The Miami-Dade Parks, Recreation, and Open Spaces Conservation Plan was conceived out of the need to provide the department with the guidelines to improve coordination of conservation and sustainability efforts within its operations, recreation, planning and development sections, the Office of Community Image, and other county departments, state, and federal agencies, and the private sector.

Miami-Dade County's GreenPrint, the National Recreation and Park Association Conservation Task Force (NRPA) recommendations, the Recreation and Open Space Element of the Comprehensive Development Master Plan and the PROS Recreation Master Plan served as foundation for the development of this Conservation Plan.

The PROS Conservation Plan aligns strategically to these documents and recommendations. Since the Conservation Plan addresses department specific needs, it also includes areas unique to PROS such as cultural resources management. Many of the natural preserves under the management of PROS- Natural Areas Management contain unique historic resources and rare archaeological and paleontological sites. Most of these are of great value to our heritage and represent only a small fraction of a

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non-renewable resource left from past times. These sites require a specialized management approach in both natural and cultural resource management.

Overall, this plan is broad in scope and recognizes that by creating long-term policies that are consistent and reliable, and by creating community involvement and dialogue, mistakes from the past can be prevented and stronger public-private partnerships can be built.

## **The PROS Conservation Plan Goal Areas**

A comparison of the NRPA Task Force Recommendations and the GreenPrint Goals identified four (4) focal goal areas from which the rest of the document develops. These include: **Leadership, Water/Energy, Environment, and Economy.**

Because of the potential threat of sea level rise due to climate change to county marinas, beaches, coastal parks and natural areas, the issue has been addressed as part of the Plan's goals and specific initiatives.

The Plan's initiatives are divided into YR 1, YR 2, and YR 3 depending on priority. There are 28 initiatives in total.

The PROS Conservation Plan goal areas and their initiatives are:

**Goal 1. Leadership (6 initiatives)** - PROS must act as community leader to promote conservation and sustainability by supporting conservation and environmental policy, partnership development, public outreach, advocacy, stewardship program development and employing best management conservation practices in the department. PROS should continue making efforts to integrate local, regional and national decision-making policy and operations and should bring together government, community leaders and non-profit organizations in working on community conservation objectives.

### **On- going Initiatives**

1.1 Continue to strengthen existing conservation partnerships through new and innovative programs and collaborative efforts (Fairchild Tropical Botanical Garden, USDA, TERRA Environmental Research Institute, ISPA (International Studies program Academy), CIAB (Community Image Advisory Board), FLDEP-Forestry Division, Montgomery Foundation, Million Trees Miami, American Forests, Citizens For a Better South Florida, National Park Service, Florida Fish and Wildlife



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Conservation Commission, Tropical Audubon Society, Florida International University, Museum of Science, and the University of Florida). (On going)

## YR1 Initiatives

- 1.2 Work with the Miami-Dade County Office of Sustainability to establish a parks steering advocacy team to include an internal cross functional team (working group) and an external (advisory stakeholder group) to work and advise on conservation and sustainability; and help direct PROS efforts in these areas (2013-2014). (YR 1)
- 1.3 Work with the South Florida Parks Coalition including municipalities, environmental organizations, Million Trees Miami, National Parks, State agencies, museums and educational institutions, to incorporate a conservation agenda into their discussions and develop a natural area system map and guide (2013-2014). (YR 1- Follow up of 1.1)
- 1.4 Prepare a mandatory natural resource stewardship guide geared towards training PROS staff (Include it as part of the Operations Manual) (2013-2014). Idea box. (YR 1)  
  
Note: Improve the new hires orientation by including workshops and fieldwork (classroom and laboratory).
- 1.5 Develop a Department wide plan to prepare marinas, coastal parks and protected natural areas against climate change and sea level rise. Develop and implement a Climate Change Action Plan (2014-2016). (YR 1)

## YR 2 Initiatives

- 1.6 Standardize and formalize sustainability and conservation outreach programs through branding by creating printed material, website pages, public training courses, workshops and volunteer involvement opportunities and Focus in Parks (2014-2016). (YR 2)  
  
Note: Internal working group should work on launching the PROS Conservation Plan at the Zoo Miami Florida Exhibit opening in 2016.



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**Goal 2. Water / Energy (5 Initiatives)** - The department must continue its commitment to reduce energy and water use. By providing adequate staff training and by adopting best management practices in every area PROS is involved with including landscaping, procurement, construction, maintenance and operations, PROS can help reduce electricity, water, and paper consumption in the community.

## **On-going Initiatives**

2.1 Implement 2-3 programs annually to reduce PROS energy and water consumption in our parks and facilities by 20% (2014-2016).

(On-going)

2.2 Develop Golf course water conservation programs to reduce water consumption and use reclaimed water for irrigation (Golf Courses are the county's 4<sup>th</sup> largest consumer of water (2014-2016)). (On-going)

Note: Explore the new generation of smart water irrigation systems (sensors) and non-real turf golf/athletic turf alternatives.

Note: Audubon International – the organization that ‘certifies’ golf courses as Bird Sanctuaries – has no official or unofficial relationship with the conservation non-profit the National Audubon Society.

Ensure that golf courses minimize their use of pesticides and herbicides that may impact ground and surface water resources and ecological communities.

2.3 Adopt “green” procurement rule changes by establishing more efficient purchasing practices (2014-2016). (On-going)

2.4 Implement the Miami-Dade County Parks Pattern Book in support of sustainable landscape practices. (On going)

## **YR2 Initiatives**

2.5 Reinforce and improve PROS recycling practices in offices, garages, parks, and natural areas (2014-2016). (YR 2)

**Goal 3. Environment, Landscapes, and Cultural Resources (10 Initiatives)** - PROS-NAM, in partnership with the EEL Program, manages over 26,000

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acres of land that includes several habitats types such as globally imperiled pine Rocklands. When maintained properly, natural areas provide various types of ecosystem services, outdoor recreation, and habitat for hundreds of plant and animal species including rare and listed species. PROS also manages numerous open spaces including golf courses, right-of-ways, neighborhood and regional parks, marinas, Special Tax District preserves, Zoo Miami and the Deering Estate at Cutler. Park resources lessen the negative impact of habitat destruction on climate, air, water and public health. In order to protect natural and cultural resources PROS must commit personnel and resources and create sustainable long-term methods of funding.

## **YR1 Initiatives**

- 3.1 Update the conservation inventory of existing park preserves including updating cost estimates and invasive plant and animal species inventories. Use these inventories to advise PROS infrastructure development (trails, buildings, utilities, etc.) to avoid impacts to natural areas, designated Natural Forest Communities, EEL Preserves, cultural resources, and other significant ecological and biological resources. (2013-2014) (YR 1)
- 3.2 Develop butterfly conservation programs to protect critical butterfly habitat and establish two (2) demonstration butterfly gardens (2013-2014). (YR 1)
- 3.3 Create policy needed for broadening palette of tree and ground cover available for landscaping. Create demand for native plants through South Florida Parks Coalition efforts. Drive the market of native plants by creating the demand for them. Include roadways, right of ways, and swales as ecological connectors and habitats (i.e. Fairchild Tropical Botanical Garden projects: Connect to Protect) (2014-2016). (YR 1)

## **YR2 Initiatives**

- 3.4 Evaluate nature centers and develop a strategy on their location, function, operation, programming, economic viability and overall relevance to the community. The outcome is a strategic plan for improving the way we operate them and how these can better serve the community and these conservation goals (2014-2016). (YR 2)

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3.5 Establish sustainable landscape practices that implement the principles of conservation at three (3) park locations and adopt the nine (9) basic landscaping principles established by the Florida Yards and Neighborhoods Program from the University of Florida as landscaping standards (2014-2016). (YR 2)

Note: As part of this initiative there should be lecture series, workshops and classes on related topics.

3.6 Implement three (3) pilot projects and apply the Open Space Master Plan elements related to conservation of natural and cultural resources by evaluating different levels of access to natural areas and linking the natural area system through ecohubs and ecozones (2013-2014). (YR 2)

Note: Fits as thematic district overlay. Neighborhood integration with parks by using trails. Park spillover into neighborhoods (seamless transition).

3.7 Incorporate tree resources into conservation strategy. Conduct a department wide tree survey and inventory. This inventory must include specimen and champion trees, and the ecosystem service values of trees (2014-2016). (YR 2)

3.8 Promote reforestation on golf course where possible (2014-2016). (YR 2)

3.9 Create archeological and historical resource protection and conservation initiatives that include an archeological, paleontological, and historical site map (GIS layer) and interpretive signage (2014-2016). (YR 2)

3.10 Evaluate PROS IPM (Integrated Pest management) strategies as they relate to pesticide application to protect and conserve insect pollinators (YR 2)

**Goal 4. Economy (7 Initiatives)** - PROS must diversify its funding sources to offset the negative effects of economic fluctuations and to ensure proper and sufficient management of its natural capital. PROS must continue seeking grant opportunities and forging partnerships that foster a common conservation mission. These must include private, public, non-profit and corporate partnerships. PROS must continue its commitment to engage youth and volunteers in conservation and



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stewardship practices through volunteer workdays, internship programs, and work-learning opportunities.

## **On-going Initiatives**

4.1 Identify and develop new revenue stream sources for county land conservation and designate this funding for Natural Areas and EEL land management needs to supplement current and projected conservation funding deficits (on going).

Examples:

- Green Utility Tax (OOS is working on this)
- Referendum
- Establish surcharge fees (internal and external)
- Intra-departmental cost share initiatives
- Develop green corporate donor initiatives
- Seek more grants
- Endowments, sinking funds and trusts
- Identify and establish ecosystem service (ES) markets
- PROS- Trust for Public Land Impact Study -Elaborate- more information needed.

## **YR1 Initiatives**

4.2 Expand natural/school partnerships to engage school aged children to advance participation in departmental conservation and stewardship efforts. (2013-2014). (YR 1)

Note: Citizen Science program (Deering Estate at Cutler, Zoo Miami, Key Biscayne Foundation. Incorporate Eco- Nature Centers, 4Hs.

4.3 Work with the Parks Foundation to promote PROS's goal of becoming a local conservation leader by adding a conservation element to an existing fundraising event, developing new marketing opportunities, and creating two (2) corporate conservation partnerships in 2013-2014 that seek to increase funding for management of natural areas. (YR 1)

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Note: The Parks Foundation helps obtain donations of plants, materials. Elevate conservation initiatives with the foundation. Have the Park Foundation adopt stewardship/ conservation initiatives to increase funding for management of natural areas and awareness. Create opportunities with existing events (Zoo Miami, Parks Foundation, and Deering Estate at Cutler).

Note: Expand volunteer opportunities- corporate ops, "Adopt-a-Natural-Area.

- 4.4 Develop a directory (advocacy base) of organizations that PROS can partner with to help implement the Conservation Plan (2013-2014). (YR 1)

## **YR2 Initiatives**

- 4.5 Develop a marketing and funding strategy for conservation initiatives and natural areas management (2014-2016). (YR 2)
- 4.6 Evaluate the feasibility of implementing a community farm at Plant Park (NAM) and develop a plan of implementation (2014-2016). (YR 2)
- 4.7 Coordinate with the Miami-Dade County Office of Sustainability to contract an environmental economist to study the role of Ecosystem Services (ES) in park land and EEL Preserves. Consider a valuation study to assess the opportunity of establishing ES markets such as carbon (C) sequestration (reduction of Green House Gases-GHG), underground water recharge and filtration (quality), and storm and surge protection (2014-16). (YR2)

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## **PROS Conservation and Sustainability Past Accomplishments**

PROS's list of past and present conservation-related accomplishments includes:

- Miami-Dade County Natural Areas Management Plan (in cooperation with the EEL program, 2004).
- Miami-Dade PROS - Cat Policy
- Miami-Dade County Parks, Recreation, and Open Spaces Department - Operation Manual - Guidelines- Subject: Stewardship and Conservation.
- Fairchild Tropical Botanical Garden- PROS/NAM/EEL Contract.
- PROS- Planning and Development- Construction Division - Water Conservation Initiative/study.
- Everglades Conservation Invasive Species Management Area (ECISMA) Partnership. (in cooperation with the EEL program)
- NAM- USDA-TERRA Environmental Research Institute Partnership for the management of KIH using a bio-control agent as a management tool.
- The Honeywell and PROS Conservation measures project that includes a thorough energy and water survey and significant improvements in infrastructure to increase efficiency and sustainability.

## **Conclusion**

The goals and initiatives presented in this three year plan need to be evaluated periodically to determine if the objectives are being met. The target of this plan is not only to help PROS become a better steward of its resources, but to save the department, the county and tax payers money by establishing guidelines and initiatives to minimize management costs, increase revenues, and reduce energy and water consumption in a time of limited funding, climate change and growing population demands.

The initiatives listed above can be accomplished by the PROS department internally, but many rely on help and cooperation of key players from other county departments and offices, state and federal government agencies and the private sector including business leaders and academia. While the list of initiatives illustrates specific strategies and practices, the main underlying message is the need to build upon past conservation strategies and practices. The county and PROS along with each employee have to embrace this change to accomplish the goals and objectives indicated in the plan.



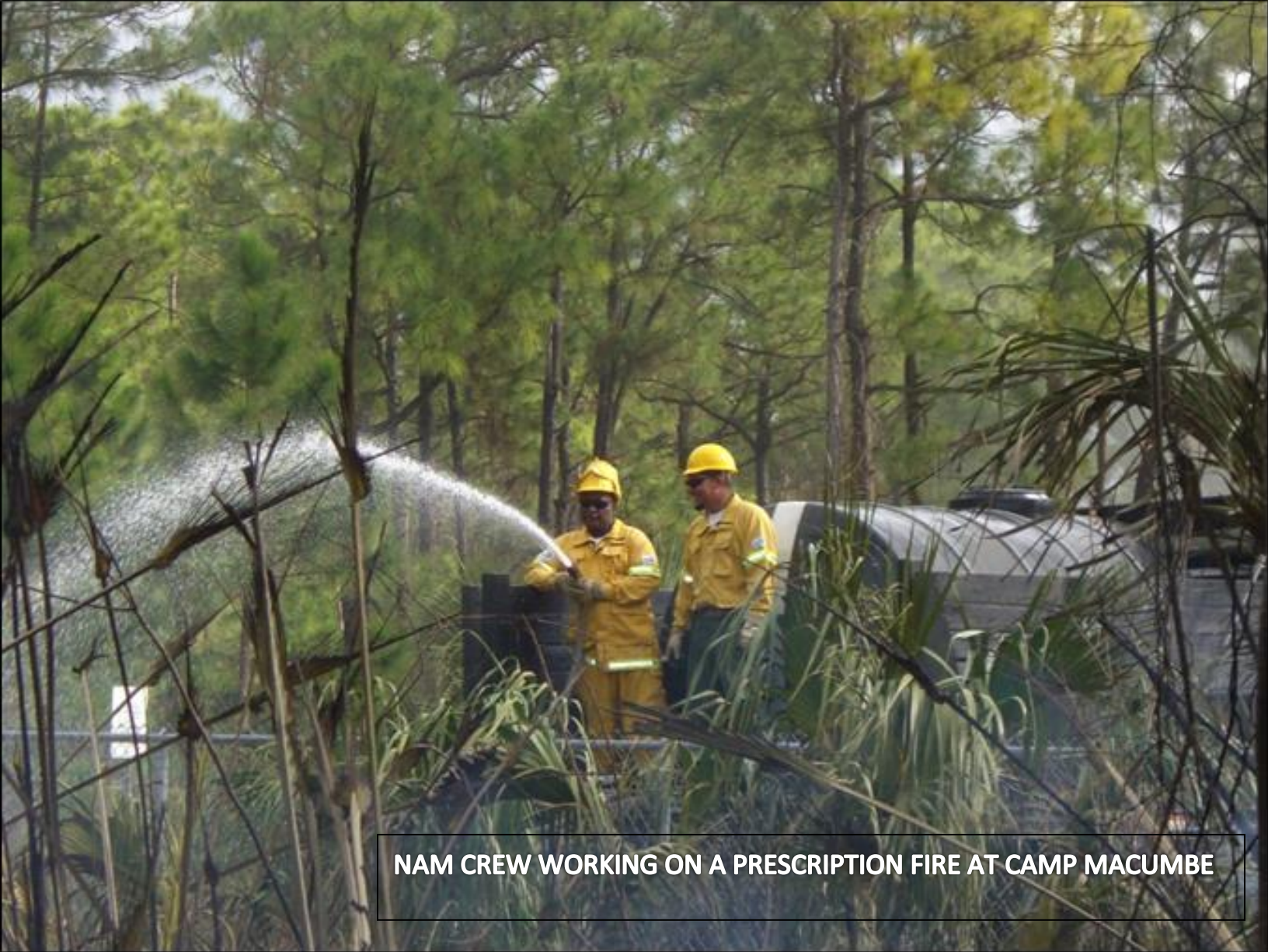
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The plan demonstrates that the mission of the PROS department in conservation is not only important but crucial to support a more sustainable Miami-Dade County. No other department reaches the Miami-Dade County community as PROS does. Expansion and improvement of the plan will depend on the successful implementation of strategies and initiatives presented, meeting the plan's goals and objectives, adapting the plan to an ever-changing environment both natural and man-made, forging key partnerships to help accomplish common goals, securing future funding opportunities, and including the participation and support of the private sector.



**“Connecting People and Parks for Life”**



**NAM CREW WORKING ON A PRESCRIPTION FIRE AT CAMP MACUMBE**

**The Parks Recreation and Open Spaces Department mission is to create outstanding recreational, natural and cultural experiences to enrich you and to enhance the quality of life for our community for this and future generations and we are proud to be of service.**