

Hungryland Slough Natural Area Restoration

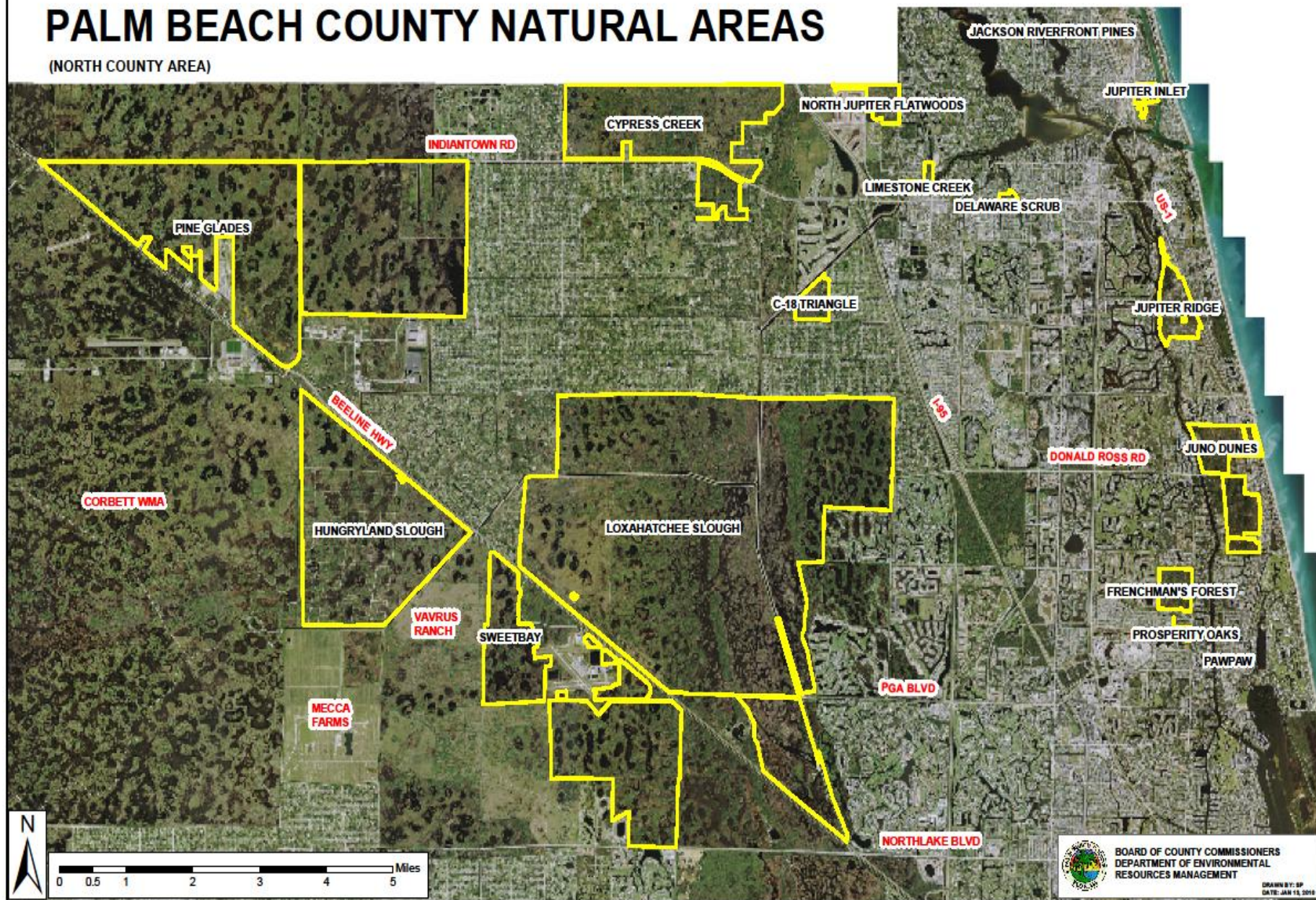


Palm Beach County
Department of Environmental Resources Management



PALM BEACH COUNTY NATURAL AREAS

(NORTH COUNTY AREA)



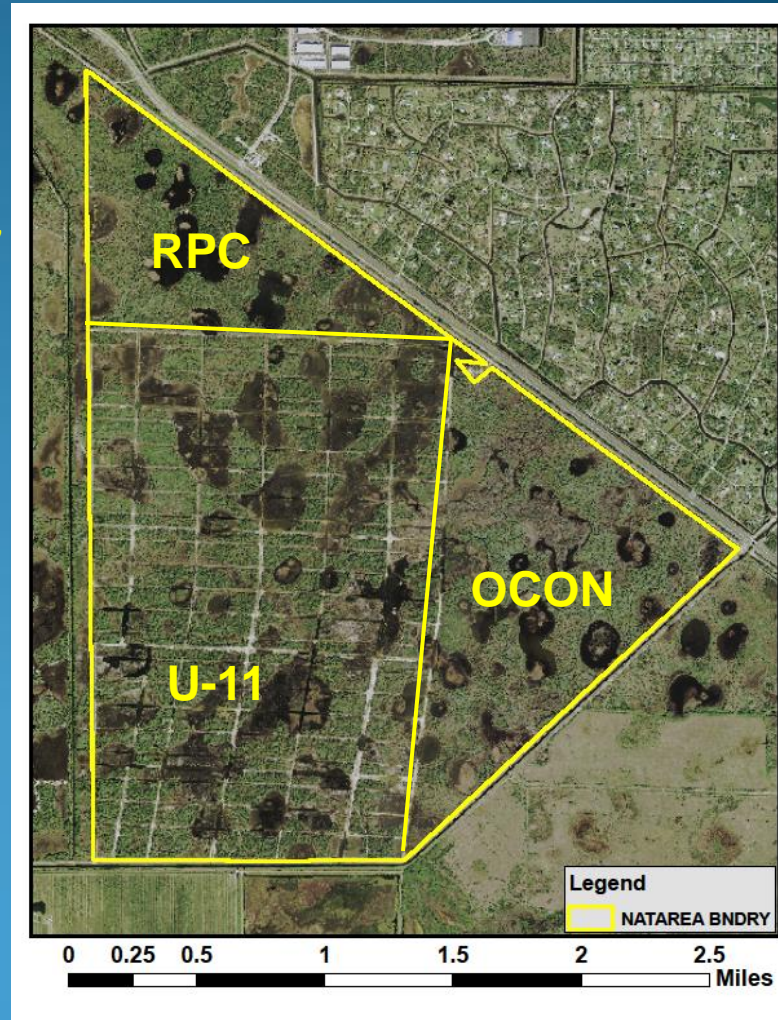
Hungryland Slough Natural Area - Acquisition

2,944 TOTAL ACRES ACQUIRED IN THREE TRACTS

County Bond Referendum & Florida Communities Trust
Royal Palm Colony (RPC) Tract – 445 acres, August 1997
O'Connell (OCON) Tract – 730 acres, August 1999

Mitigation & FCT

Unit 11 (U-11) Tract – 1769 acres, subdivided into over 1300 lots in the 1970's, over 900 owners
Acquired over 10-year period – completed in June 2006



1953

2004

HISTORIC SLOUGH

WHY RESTORATION NEEDED?

Natural Areas Restoration

FOUR“ELEMENTS”

PLANTS

Eradicate
& Control
Exotics

FIRE

Re-introduce
Rx Burns

EARTH

Remove Roads,
Canals, Berms
& Ditches

WATER

Remove Culverts
as needed
Restore Overland
Sheetflow
Raise Control Elev.

HYDROLOGICAL



Exotic Vegetation Removal



Reintroduction of Fire

8 Prescribed Burns Conducted
Since 2002



1620 Acres Burned
To Date



Earth Moving Restoration – Undevelopment of Unit 11

- Four dry seasons (2004-2007)
- “De-construction” occurred from north-to-south
- Annual price agreement contracts utilized for equipment and operator – maximized flexibility
- ERM staff and County equipment/rentals utilized as well
- Results
 - 38 miles of dirt roads removed
 - 12 miles of canals removed – backfilled or banks regraded
 - 3.5 miles of perimeter berm and ditch removed





MAY 2005





MAR 2006



APR 2007

Hungryland Slough – Hydrological Restoration

Remove/replace culverts – a total of 10 culverts were previously installed along edge of site draining into C-18W. Five were considered obsolete and removed/plugged, 3 were rebuilt, 2 were repaired

Raise control elevations – original permitted control elevation of Unit-11 was 19.1' NGVD, new restored controls are 20.7' along south edge and 20.5' along eastern edge

Culvert Removal/Replacement



OCON TRACT – ALL 7 OLD CULVERTS REMOVED ALONG THE 1.75 MILE EASTERN EDGE: 4 WERE PLUGGED, AND 3 WERE REBUILT WITH NEW MATERIAL

Hungryland Slough Natural Area

2,950 acres
(+ 0.60')

Beeline Hwy (SR 710)

**Estimated Maximum
Water Storage Increase:**

1,755 acre-feet
(572 million gallons)

18.3' NGVD

C-18 W Canal

20.5' NGVD

20.7' NGVD



New Structure



Old Structure
(Removed)



Improved
Structure



Restoration Work

UNIT 11 TRACT RESTORATION PROGRESS TIME SERIES



N

2004 - PRE RESTORATION

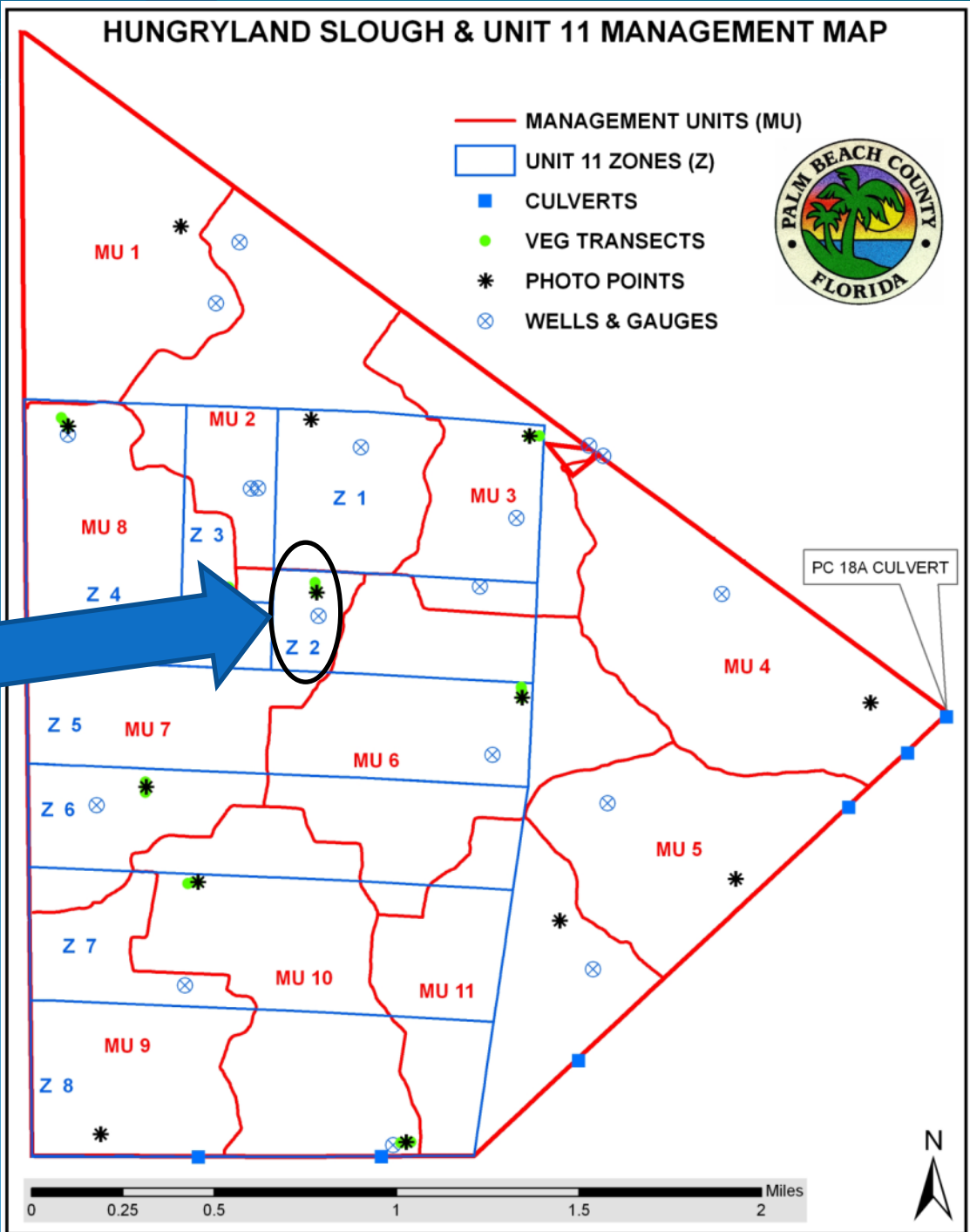
2006 --- DURING RESTORATION

2008 --- POST-RESTORATION

HUNGRYLAND SLOUGH & UNIT 11 MANAGEMENT MAP



- MANAGEMENT UNITS (MU)
- UNIT 11 ZONES (Z)
- CULVERTS
- VEG TRANSECTS
- * PHOTO POINTS
- ⊗ WELLS & GAUGES

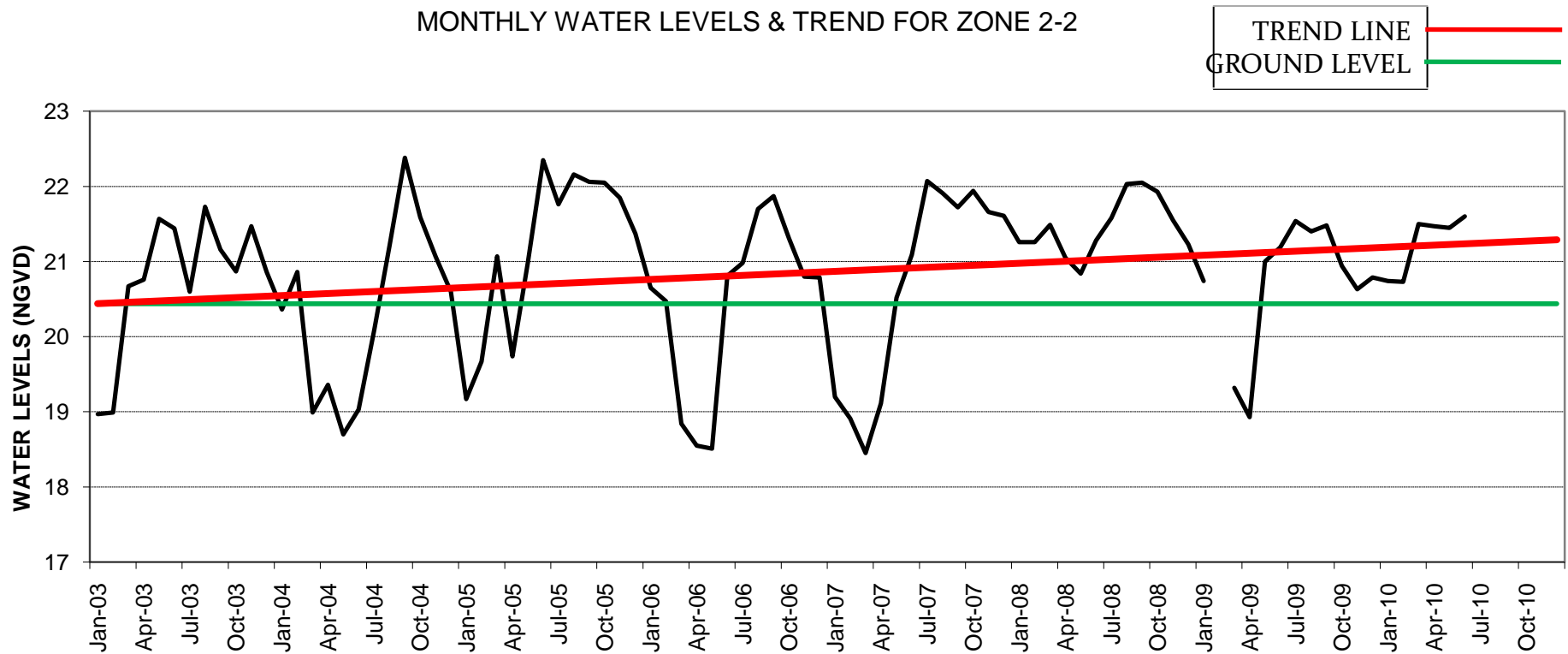


**UNIT 11
ZONE 2
MONITORING
STATION**

UNIT 11 PHOTO MONITORING TRANSECT #2



UNIT 11 HYDRLOGICAL MONITORING DATA STATION 2



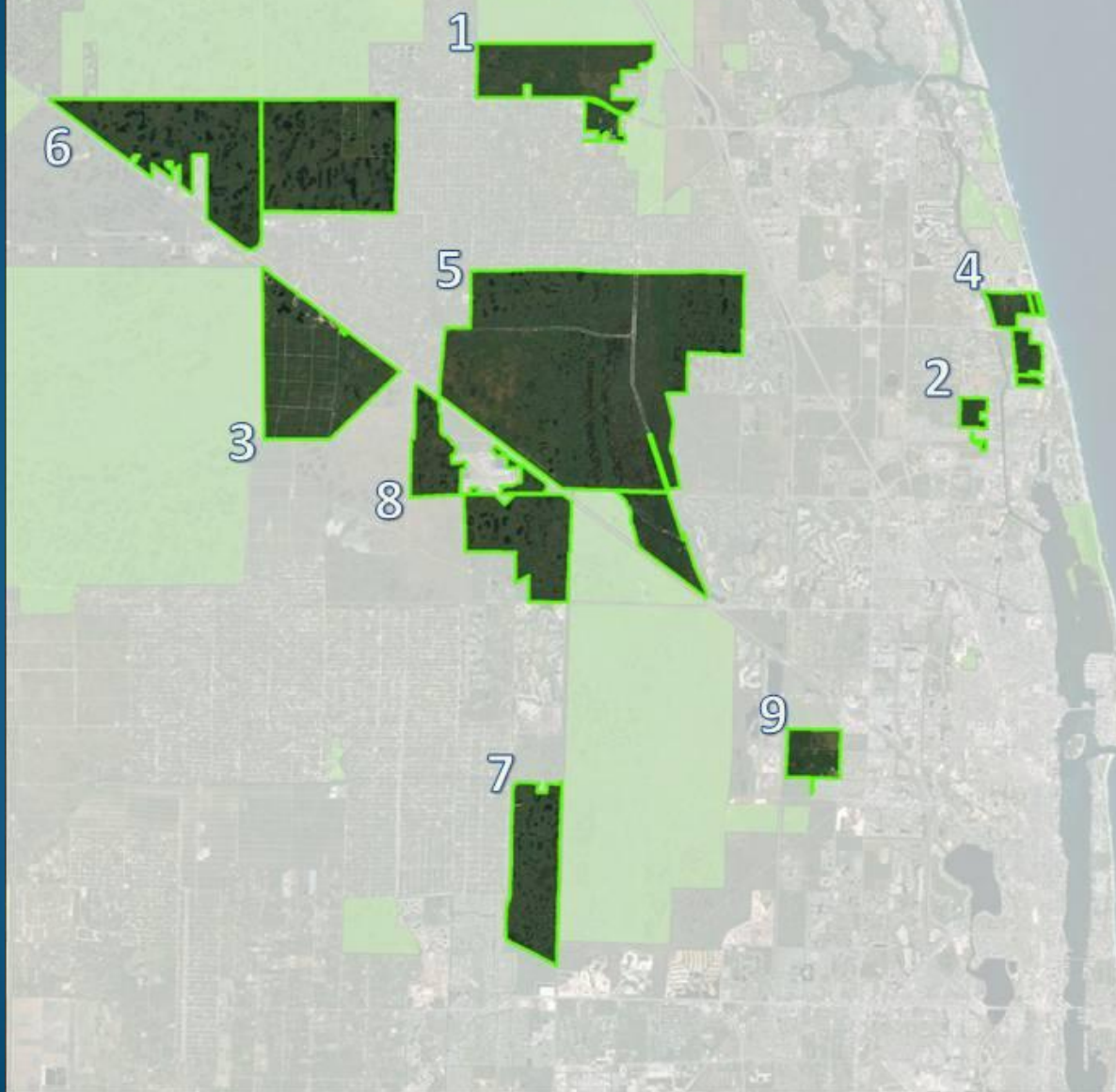
Wetland Recruitment After Restoration



Upland Recruitment After Restoration



Water Storage Increase North County

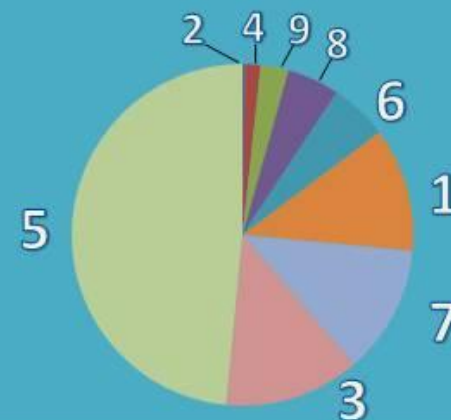


Water Storage Increase (acre-feet)

1 Cypress Creek NA	1,601
2 Frenchman's Forest NA	27.7
3 Hungryland Slough NA	1,755
4 Juno Dunes NA	204
5 Loxahatchee Slough NA	6,613
6 Pine Glades NA	745
7 Pond Cypress NA	1,664
8 Sweetbay NA	667
9 Winding Waters NA	362

TOTAL 13,638
= 4.44 billion gallons

Percent of Total (acre-feet)



Benefits of Restoration Efforts On These Nine Palm Beach County Natural Areas



Increase of More Than 13, 638 Acre-Feet of Water Storage Over Previously Existing Conditions!!



Removal of Exotic Vegetation From More Than 2500 Acres of Monocultures and ~26,050 Acres of Moderate to Light Infestations -- Providing Improved Native Habitat and Recruitment Areas for Flora and Fauna



Restoration of More Than ~ 16,500 Acres of Wetlands, Greatly Improving Quality of Water on the Natural Areas



- Backfilled or Reshaped More Than 39 Miles of Canals**
- Removed ~ 40 Miles of Roads**
- Scraped Down ~ 5.5 Miles of Berms Restricting Water Flow**
- Installed 13 Water Control Structures**



Provided Tens of Millions of Dollars to Vendors and Contractors Working On the Projects

Any Questions?



**Palm Beach County Board of County Commissioners
Department of Environmental Resources Management**

www.pbcgov.com/ERM