

Hungryland Slough Natural Area Restoration

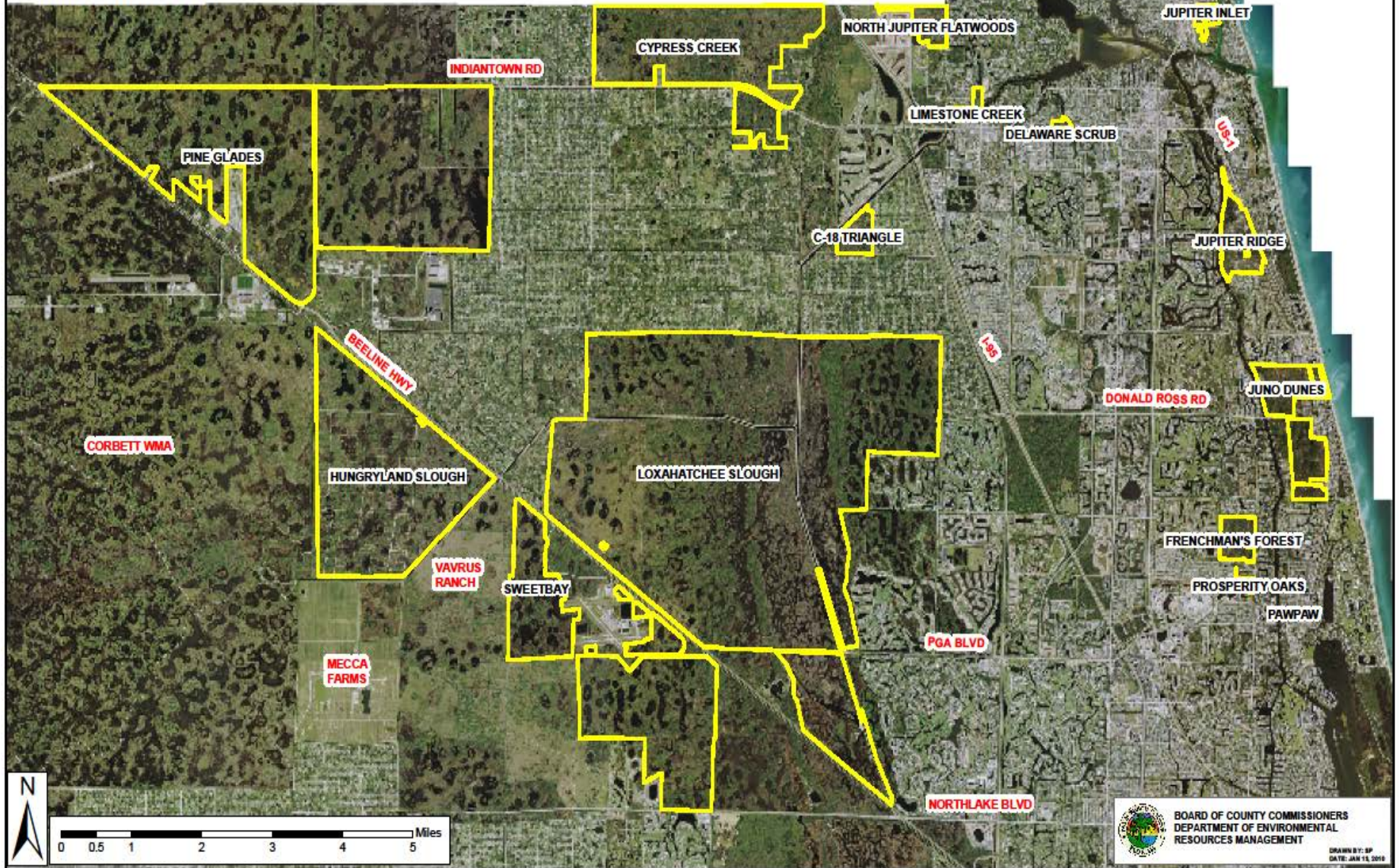


Palm Beach County
Department of Environmental Resources Management



PALM BEACH COUNTY NATURAL AREAS

(NORTH COUNTY AREA)



BOARD OF COUNTY COMMISSIONERS
DEPARTMENT OF ENVIRONMENTAL
RESOURCES MANAGEMENT

DRAWN BY: SP
DATE: JAN 11, 2010

Hungryland Slough Natural Area - Acquisition

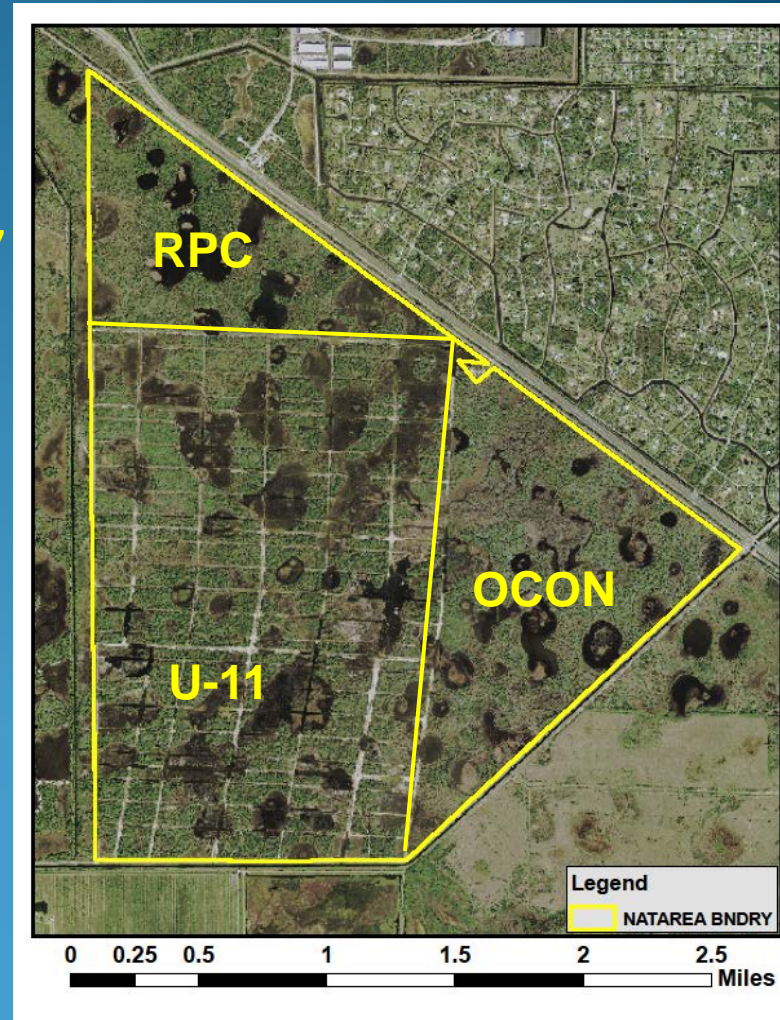
2,944 TOTAL ACRES ACQUIRED IN THREE TRACTS

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

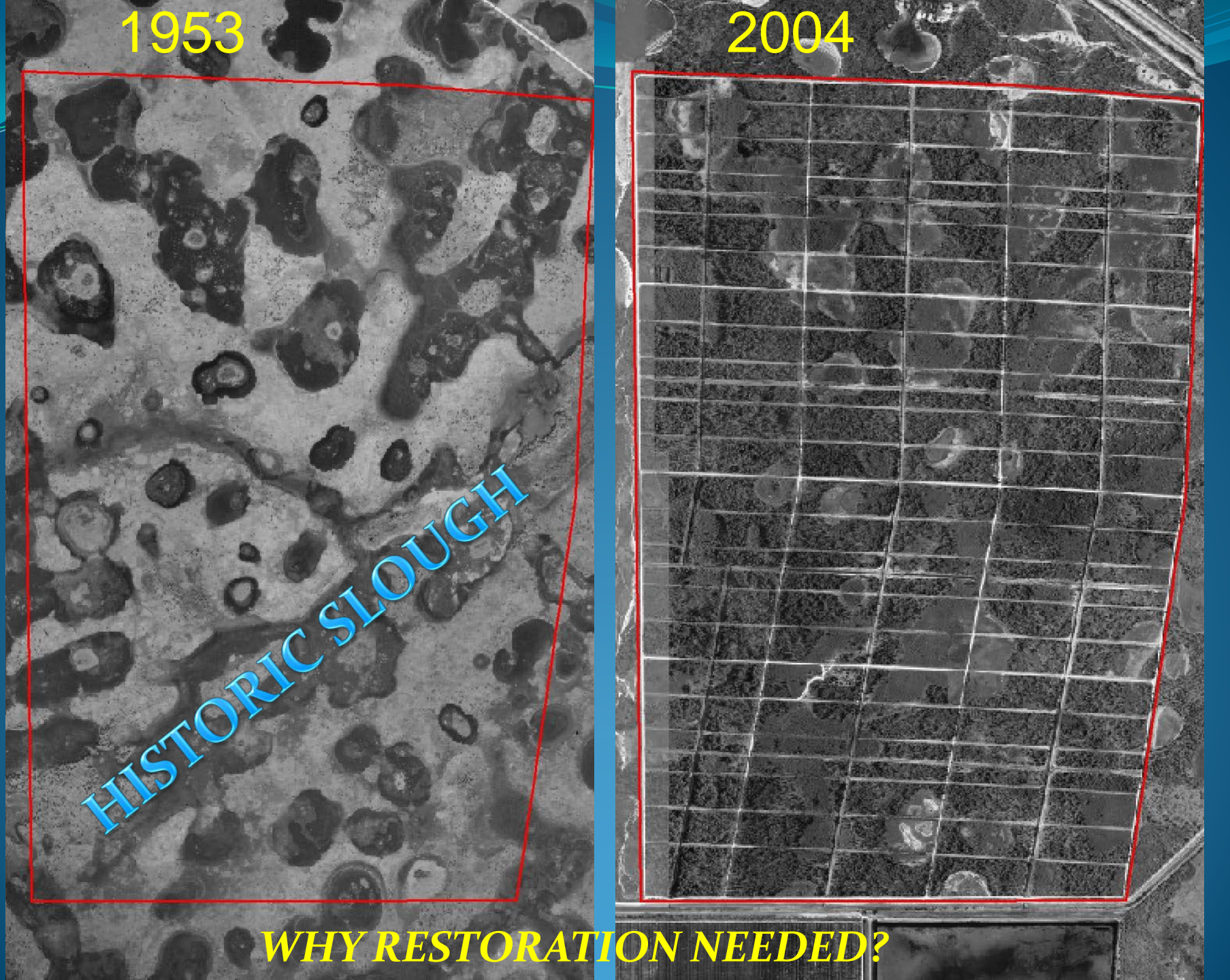


1953

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

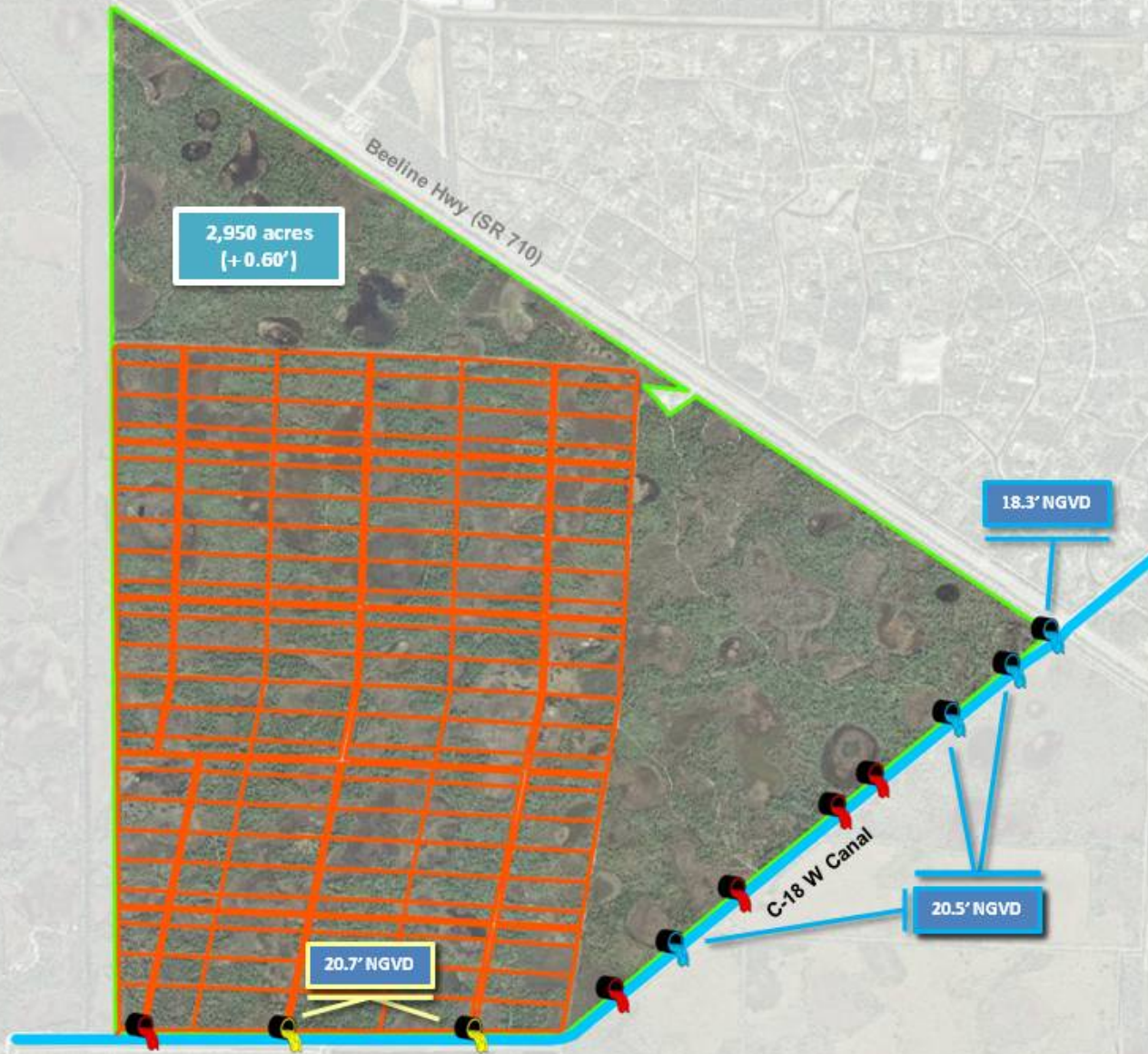
Raise control elevations – original permitted control elevation of Unit-11 was 19.1' NGVD, new restored controls are 20.7' along south edge and 20.5' along eastern edge

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



**Estimated Maximum
Water Storage Increase:**

1,755 acre-feet
(572 million gallons)

-  New Structure
-  Old Structure (Removed)
-  Improved Structure
-  Restoration Work

UNIT 11 TRACT RESTORATION PROGRESS TIME SERIES



N

2004 - PRE RESTORATION

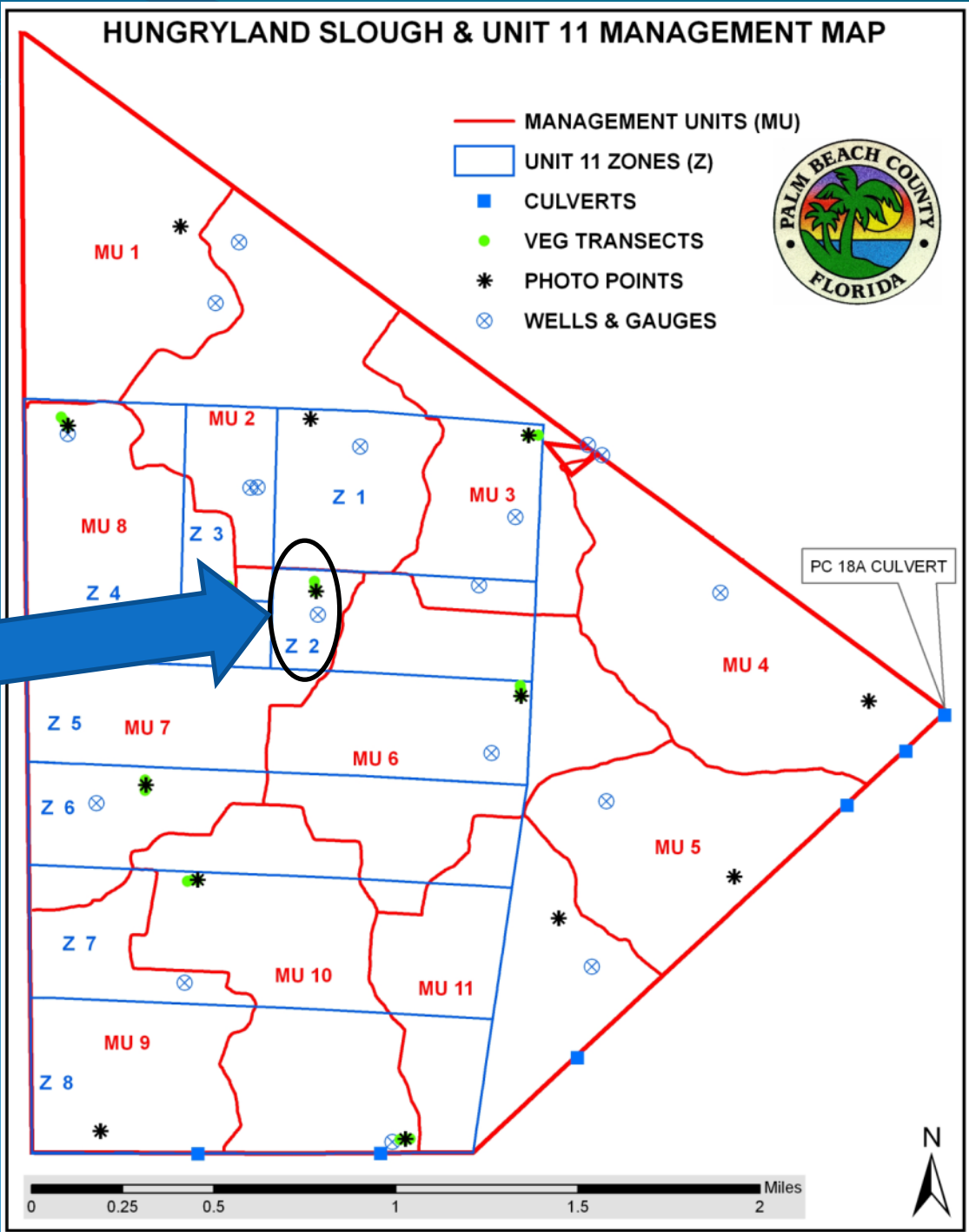
2006 --- DURING RESTORATION

2008 --- POST-RESTORATION

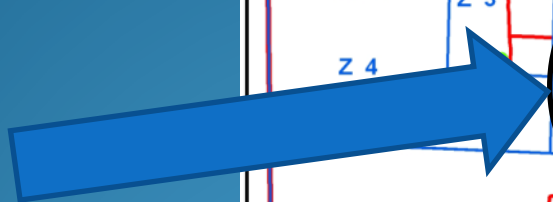
HUNGRYLAND SLOUGH & UNIT 11 MANAGEMENT MAP



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



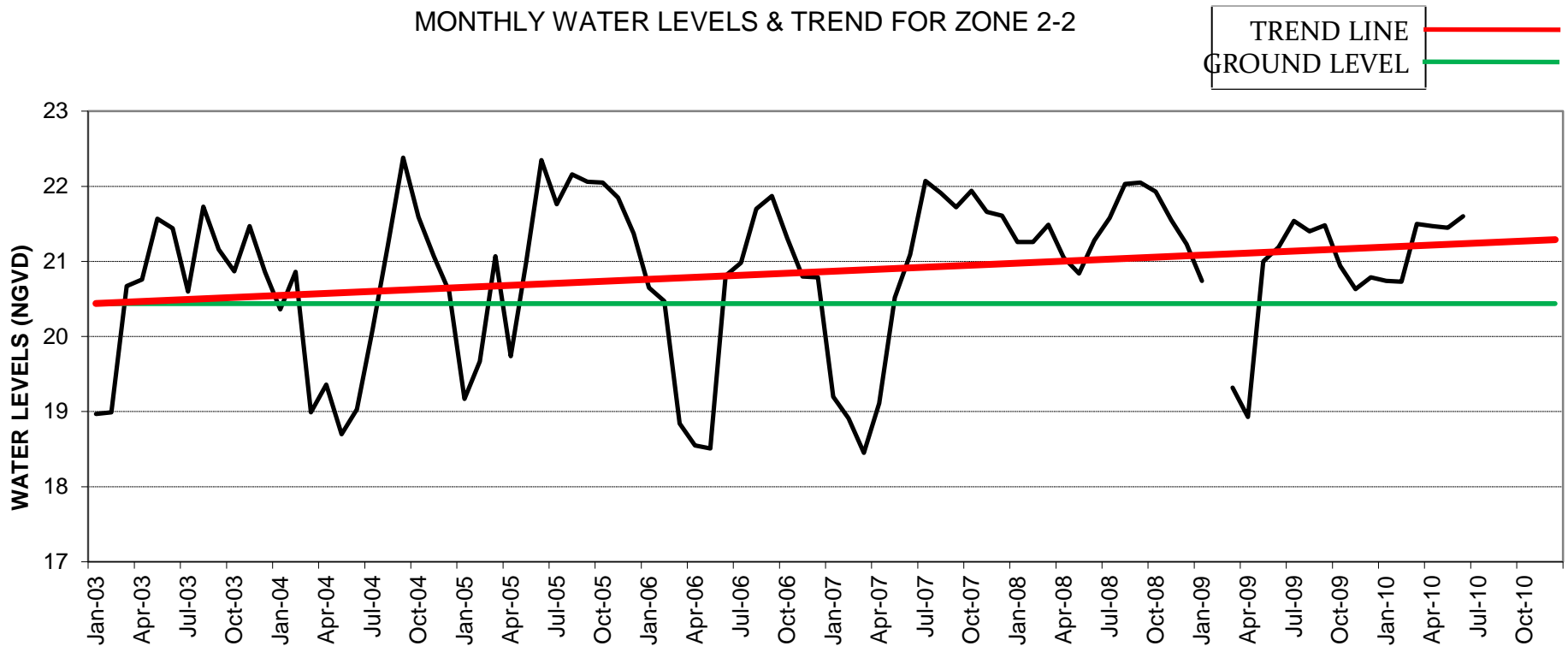
**UNIT 11
ZONE 2
MONITORING
STATION**



UNIT 11 PHOTO MONITORING TRANSECT #2



UNIT 11 HYDROLOGICAL MONITORING DATA STATION 2



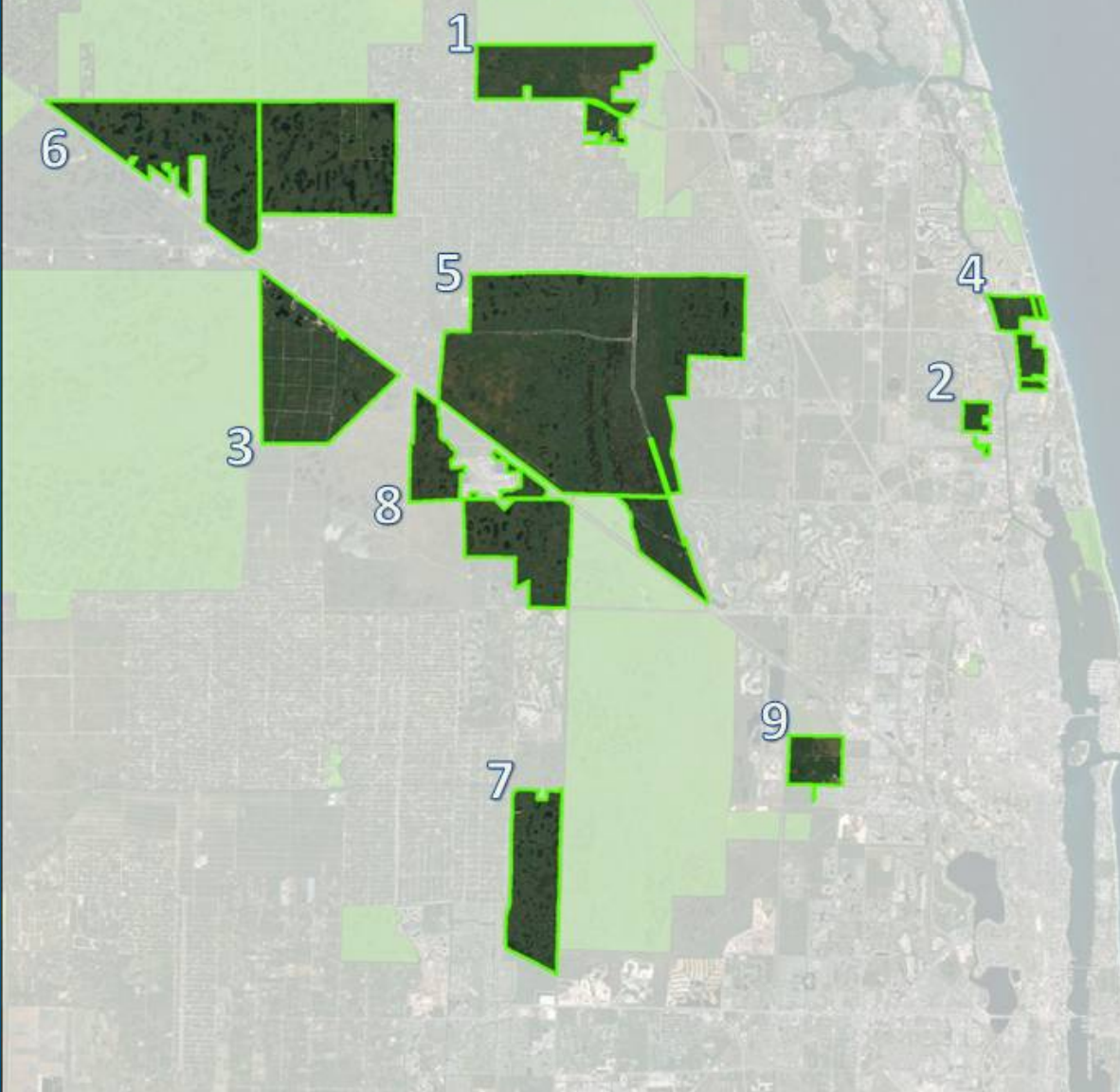
Wetland Recruitment After Restoration



Upland Recruitment After Restoration



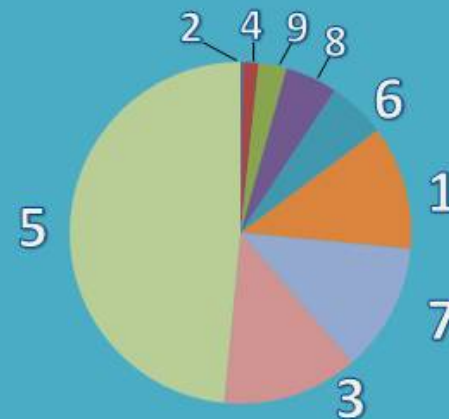
Water Storage Increase North County



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
	<i>= 4.44 billion gallons</i>

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