

UNITING PARTNERS AND RESOURCES TO PROTECT CENTRAL & SOUTHWEST FLORIDA'S WATER, WILDLIFE, AND HABITAT

Habitat Restoration Needs Plan For CHNEP Area



Nicole Iadevaia, Research & Outreach Manager
Coastal & Heartland National Estuary Partnership

Uniting Central and Southwest Florida to Protect Water and Wildlife



THE STRATEGIC PLAN FOR CHNEP

COMPREHENSIVE CONSERVATION & MANAGEMENT PLAN

4 FOCUS ACTIONS:



Reducing Nutrient
Pollution



Restoring
Hydrological Flow



Protecting Fish
Wildlife and
Habitat



Public
Engagement



Full CCMP available at
<https://www.chnep.org/our-plan>

Uniting Central and Southwest Florida to Protect Water and Wildlife

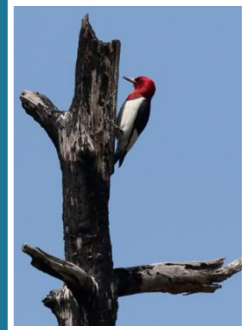




PROTECTING FISH WILDLIFE AND HABITAT: THE HABITAT RESTORATION NEEDS PLAN

Action Vision:

- A diverse environment of interconnected, healthy habitats that support natural processes and viable and resilient native plant and animal communities



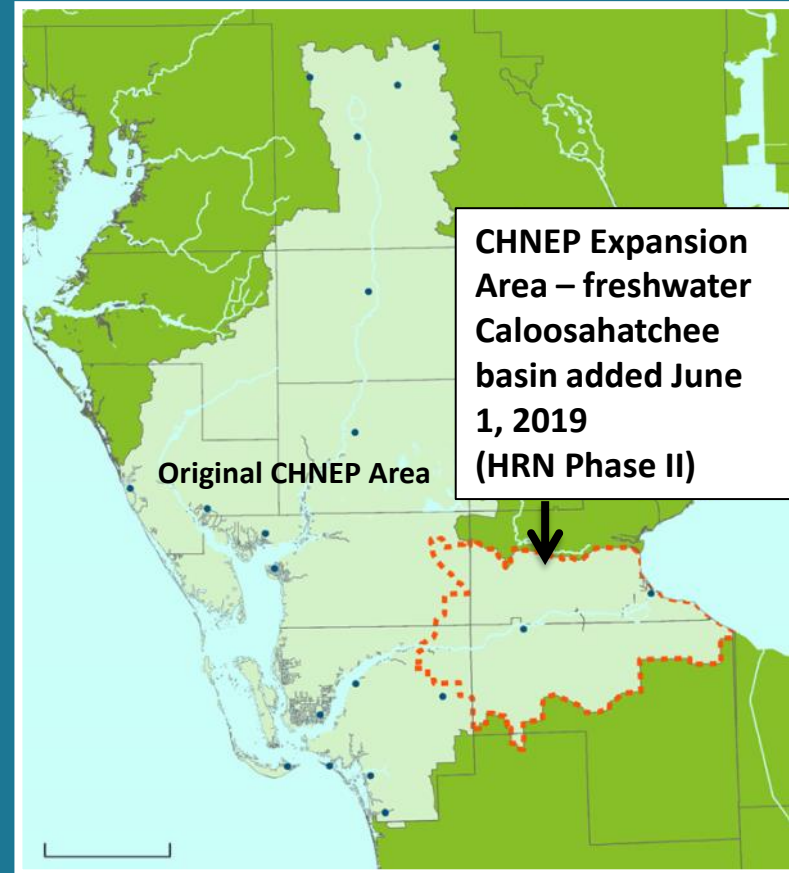
Implementation of Vision:

- Create a Habitat Restoration Needs (HRN) Plan to increase the acreages of native habitats in Central & SW Florida, both *strategically* and *opportunistically*, through land acquisition and restoration
- HRN Plan develops method for implementation of Vision. We created the 'Additive hybrid approach' Use GIS to identify acquisition opportunity areas, and to develop quantitative habitat restoration targets that are "place-based" and mapped
- 'Additive hybrid approach' was used to create realistic restoration goals based on current conditions. It is retrospective (informed by past changes in habitat) and also forward-looking to incorporate future impacts and conditions to help stakeholders prioritize funding and restoration work in the region



WHERE WE WORK

- CHNEP area cover both Central and Southwest Florida. CHNEP area: 5,416 sq. miles (3.1 million acres)
- Estuaries include: Lemon Bay, Dona & Roberts Bays, Charlotte Harbor, Pine Island Sound, San Carlos Bay and Estero Bay
- 4 major River watersheds: Myakka, Peace, Caloosahatchee, and Estero
- The Strategic Plan and HRN Plan implemented by the a collaborative of CHNEP: state and federal agencies, 10 counties/25 cities, and NGOs



HRN Report for expansion area will be ready Spring 2021

Uniting Central and Southwest Florida to protect water and wildlife.



HABITAT PLANNING FOR THE FUTURE:

‘STRATEGIC’ TARGET SETTING METHODOLOGY

Used GIS Maps to create REAL targets and opportunities using the best available data and modeling for future conditions and provide recommendations for habitat categories

HRN Plan ‘Additive Hybrid Approach’ Methodology Overview:

- 1. Document existing preservation and conservation lands**
- 2. Conduct habitat trend analysis- Using LU/LC maps from Water Management District(s) to evaluate habitat shifts over time**
- 3. Overlay maps with historical soils distributions to determine ‘endpoint’ targets for restoration**
- 4. Model habitat migration and other shifts due to climate changes to determine how to accommodate SLR**
- 5. Map Proposed land acquisition priorities and listed species critical habitats and migratory corridors**

Scope of the HRN Plan

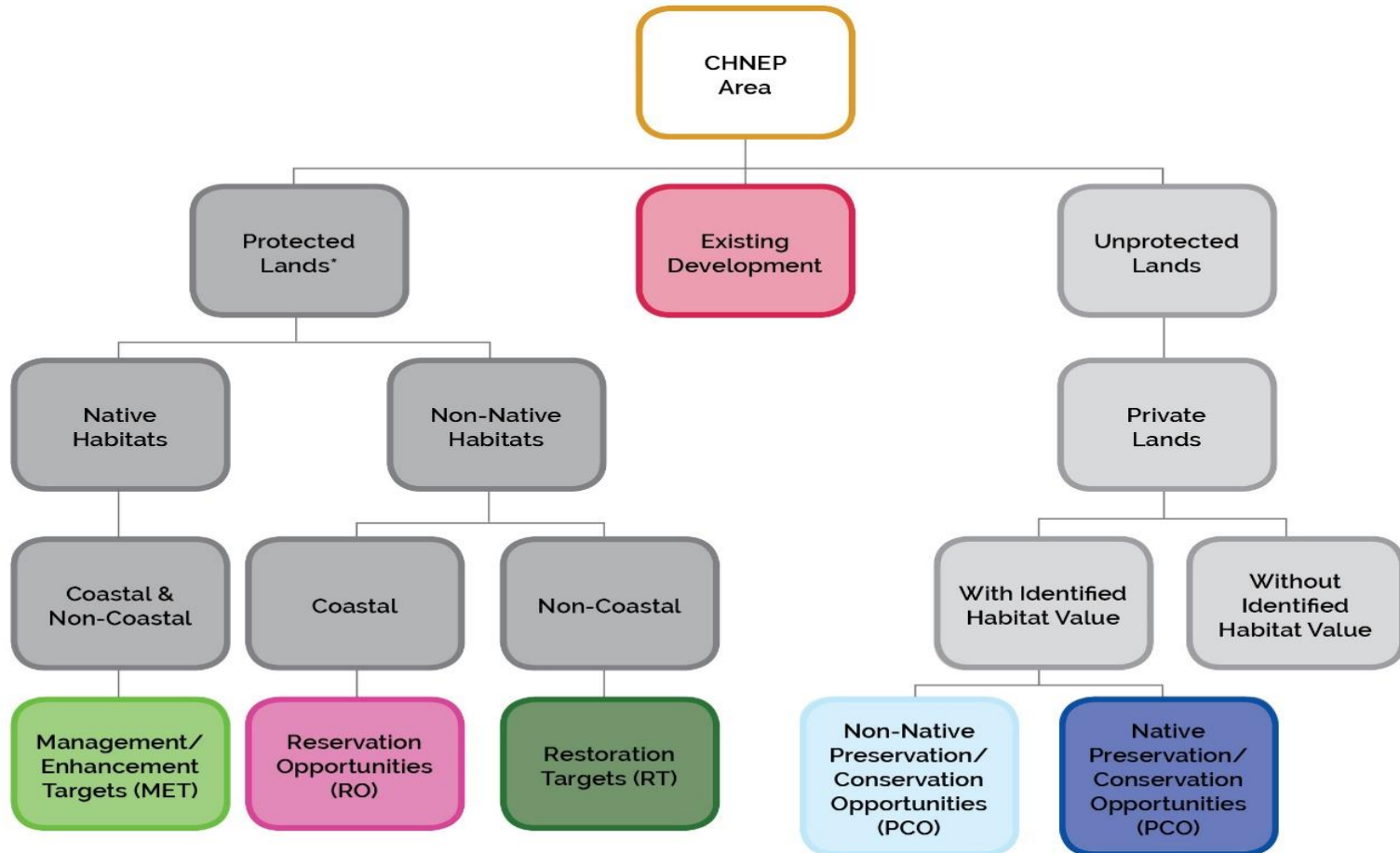
Map and make realistic and strategic recommendations for future Habitat Restoration and Conservation planning to help stakeholders prioritize funding and restoration work for the CHNEP area for the next 50 years.

It is focused on native habitats rolled up into three major categories:

- Emergent tidal wetlands
- Freshwater wetlands
- Upland habitats

Subtidal estuarine habitats such as seagrasses, oysters, and hard-bottom communities are not addressed here but this could be part of a future project

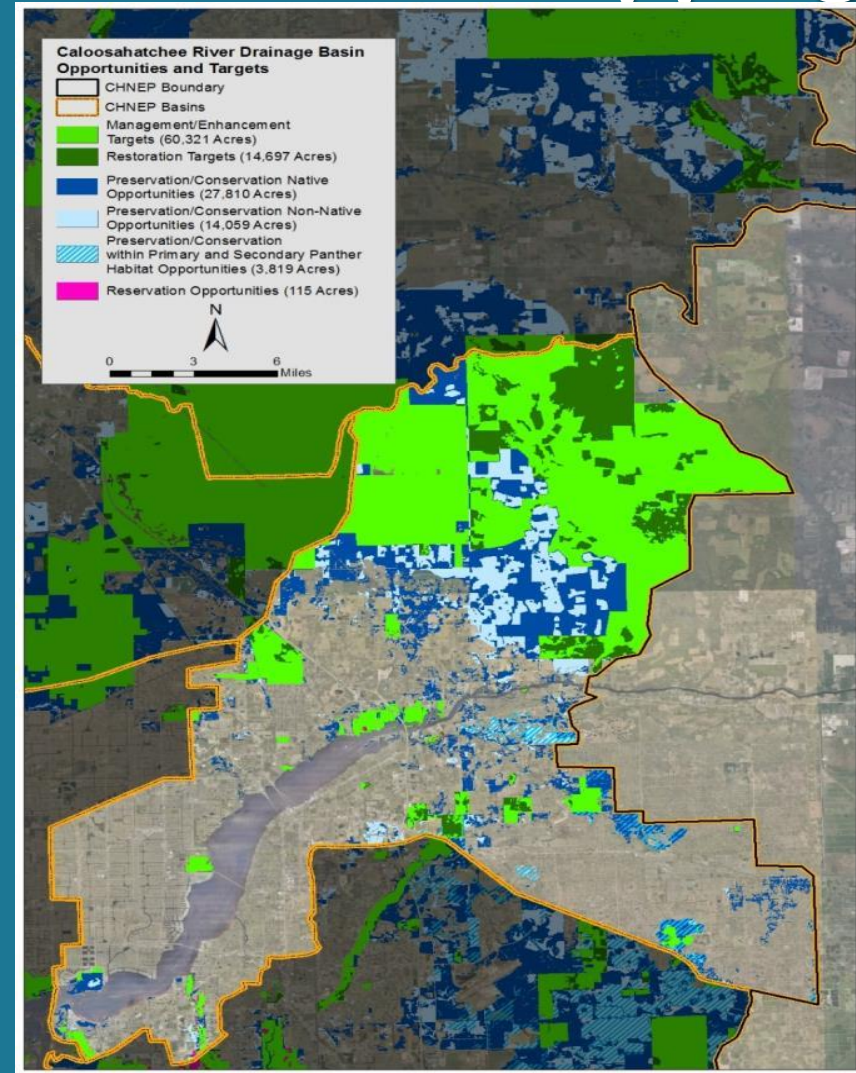
Target Setting Process: Flow Chart for Habitat Restoration



*Publicly Owned or Under Public Easement

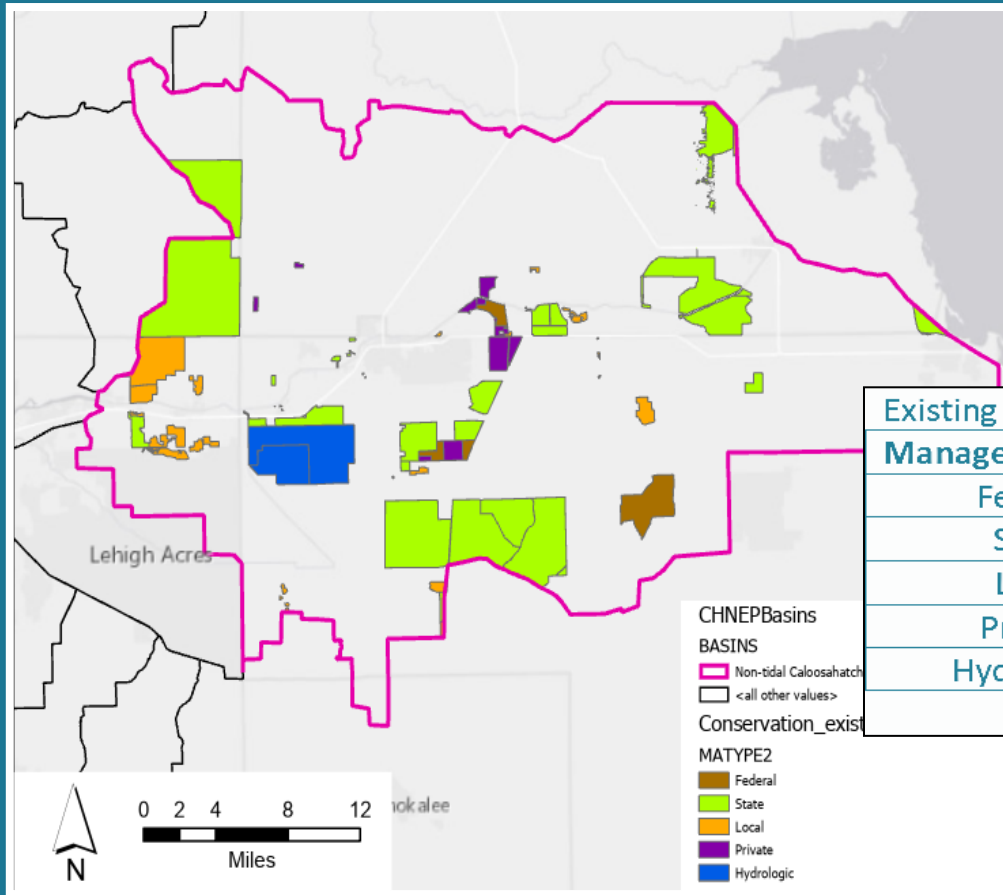
Strategic Targets/Opportunities Mapping

- **Management/Enhancement Targets (MET)**
(Public Lands or Conservation Easements that are Native)
- **Restoration Targets (RT)**
(Public Lands or Conservation Easements that are Non-Native)
- **Preservation/ Conservation Opportunities (PCO)**
(Not Publicly Owned)
- **Reservation Opportunities (RO)**
(Coastal buffers for SLR)



(Example from Tidal Caloosahatchee area)

1. Document Existing Conservation Lands



- Compile and synthesize GIS from all state and federal sources along with county, city, and NGO information in one place.

Existing Projects summary

Management Type	Number of Projects	Area in Acres
Federal	4	5,063
State	22	63,633
Local	38	8,526
Private	7	3,533
Hydrologic	1	10,492

(Example from SFWMD Land Cover maps for Freshwater Caloosahatchee River Basin)

2. Habitat Status and Trends Analysis

Existing LU/LC maps and FLUCCS codes from Water Management District(s) were compared to and determine habitat shifts over time

FLUCCS Codes	Primary Classification	Acres		Change Analysis	
		1995	2009/2011	Acres	Percent
Tidal Wetlands Total	Roll Up	73,430	74,663	1,233	2%
Mangrove Swamp	6120	60,990	61,894	904	1%
Saltwater Marsh	6420	12,436	12,206	-230	-2%
Salt Flats	6600	4	563	559	*
Freshwater Wetlands Total	Roll Up	430,775	495,484	64,709	15%
Wetland Hardwood Forest	6100	164,424	178,819	14,395	9%
Wetland Coniferous Forest	6200	53,401	60,673	7,272	14%
Wetland Forested Mixed	6300	15,923	12,815	-3,108	-20%
Vegetated Non-Forested Wetlands	6400	196,930	242,525	45,595	23%
Intermittent Ponds	6530	97	652	555	*
Uplands Total	Roll Up	646,510	564,686	-78,595	-12%
Dry Prairie	3100	7,663	47,074	39,411	*
Shrub and Brushlands	3200	212,550	169,543	-43,007	-20%
Mixed Rangelands	3300	12,057	20,155	8,098	*
Upland Coniferous Forest	4100	267,232	198,335	-68,897	-26%
Upland Hardwood Forest	4200/4300	84,915	69,816	-15,099	-18%
Streams and Waterways	5100	27,411	28,313	902	3%
Lakes	5200	34,085	31,450	-2,635	-8%
Slough Waters	5600	597	N/A	N/A	*

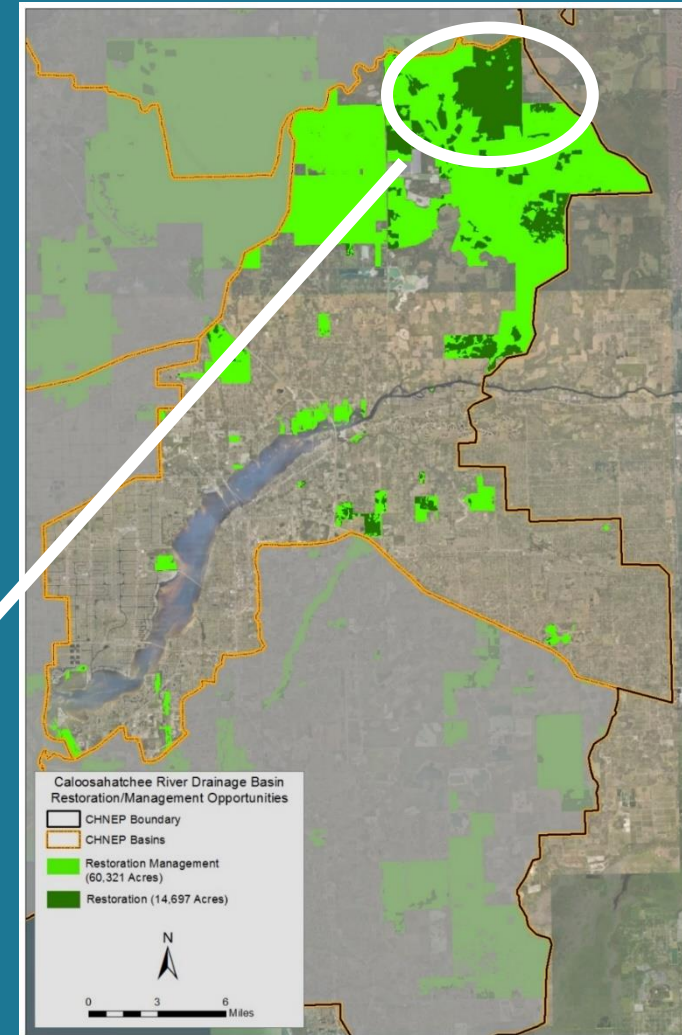
*Differences in mapping methodologies between periods may account for some anomalies in the data.

3. Restoration Target Setting

Identified restoration areas mapped represent restoration potential

Restoration end point target acreages for specific habitat types were developed by overlaying historical NRCS soils maps onto restoration area for the three habitat categories:

- Tidal wetlands = Hydric Estuarine Soils
- Freshwater wetlands = Hydric Freshwater Soils
- Uplands = Xeric Soils

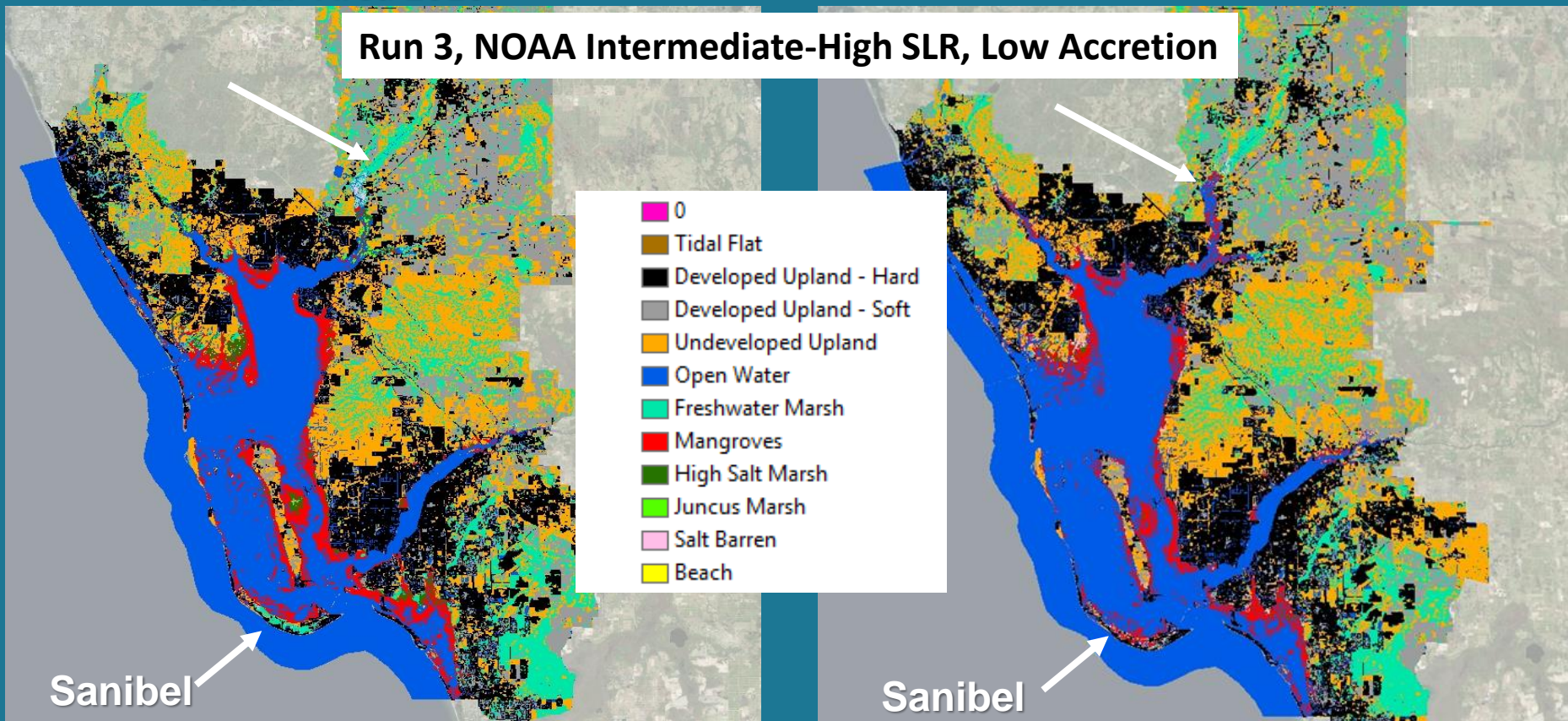


4. Modeling Habitat Shifts from Sea Level Rise (HEM)

CHNEP Area 2016

CHNEP Area 2070

Run 3, NOAA Intermediate-High SLR, Low Accretion



Uniting Central and Southwest Florida to Protect Water and Wildlife

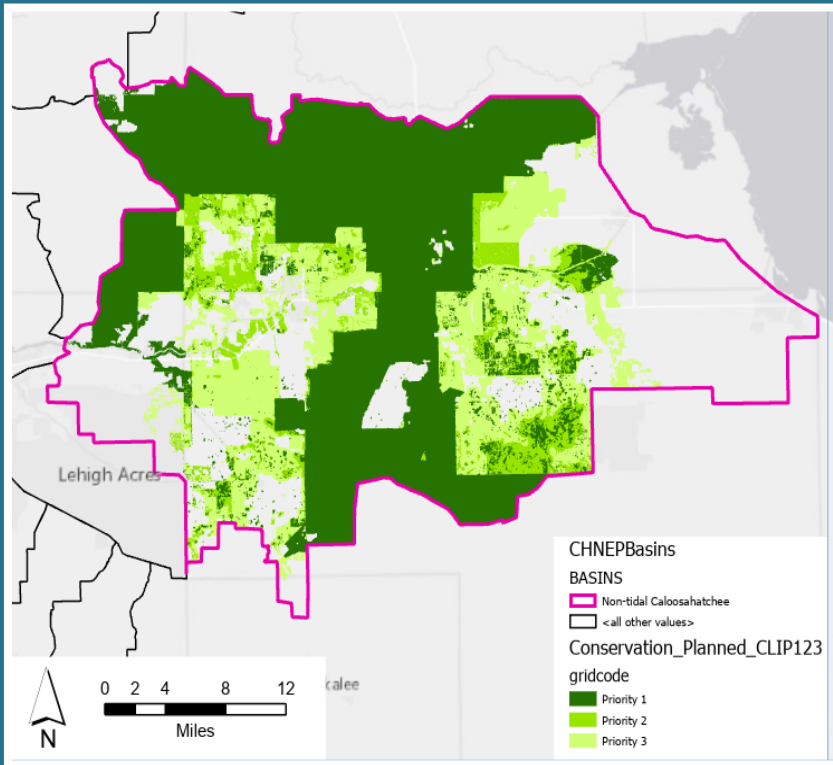


Planning for the Future of SLR:HEM

- Tidal wetlands will expand landward where suitable slopes and substrates exist
- Mangroves will encroach on salt marshes/Salt marshes will be relegated to the tidal rivers and will need suitable salinity to survive
- Freshwater wetlands experience 'Pinch-out' between open water and Hardened Development-need to reserve upland areas to accommodate landward migration
- Need to 'Reserve' areas in Floodplain that are publicly owned to prevent further 'Hardening' (e.g. Public Parks and Ballfields) that could accommodate landward movement of tidal wetlands or increased flooding
 - Climate Change Modeling will be addressed differently in FW Caloosahatchee (less impacted by SLR-more so rain and Lake O)

5. Map Proposed Land Acquisition Priorities

- Private lands that are not under conservation easements
- Compile and synthesize GIS parcels recommended by stakeholders or in agency databases for preservation or conservation
- Focused on native habitats that if preserved would expand existing conservation lands into larger ecosystem units and/or consolidate wildlife migratory corridors



(Example from Planned State Priority Areas for Freshwater Caloosahatchee River Basin)

Target Acreage Summaries for 3 Major Habitat Categories in CHNEP area

Major Habitat Type	Opportunities Assumes willing land owners	
	PCO (17%) of Total	RO <1% of Total
Total CHNEP AREA 3.1 million acres:		
Uplands	151,102	N/A
Freshwater Wetlands	149,406	N/A
Tidal Wetlands	11,854	N/A
Non-Native	208,786	1,590
Total	521,148	1,590

Targets Already in the Public Domain	
MET (18%) of Total	RT
207,767	56,092
181,214	31,952
58,702	86
N/A	N/A
447,683	88,130

*Project to add FW Freshwater Caloosahatchee River Basin mapping currently underway,
Totals above do not include this area.

HRN Report Recommendations – Tidal Wetlands

- The continued maintenance of adequate freshwater flows in the tidal rivers to sustain salt marsh habitats
- Need to prioritize the reservation of pervious coastal areas for tidal wetland habitats to migrate landward with increasing sea level rise
- Continued coordination is needed with both Water Management Districts needed to ensure that Minimum Flows and Levels (MFLs) are being attained, and adequately addressing these resource management concerns

HRN Report Recommendations – Freshwater Wetlands

- The restoration of river floodplain integrity and freshwater flows is a high priority overall
- Marsh areas experience ‘Pinch-out’ between open water and Hardened Development-need to reserve upland areas to accommodate landward migration
- Additionally, there are unique opportunities for headwater stream and wetland restoration in the Peace River watershed (on non-mandatory reclaimed mined lands)

HRN Report Recommendations – Uplands

- Given the disproportionate losses of native upland habitats in the CHNEP area, greater preservation/conservation efforts in these areas, and support for more stringent regulatory protection
- Native upland habitats also provide important aquifer recharge functions and support migratory corridors for threatened species such as the Florida panther and rare habitats

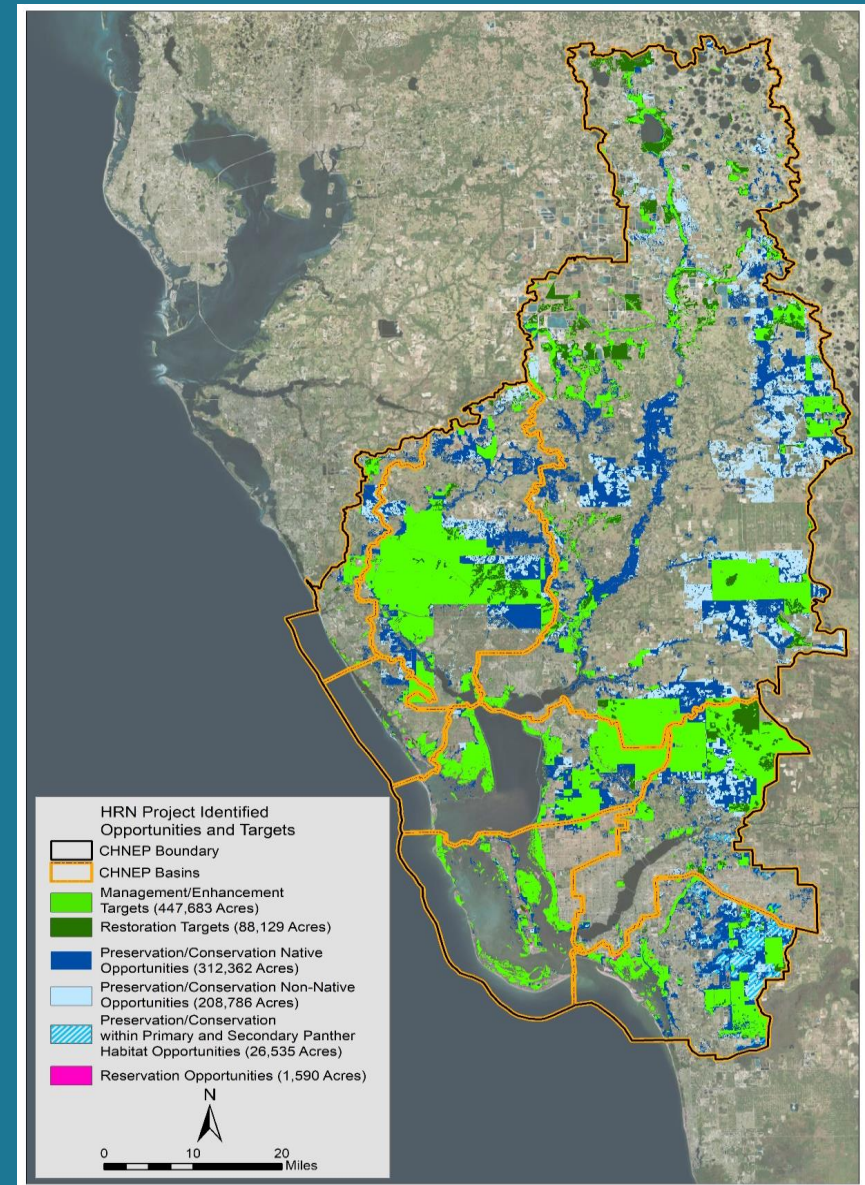
LANDSCAPE-LEVEL HABITAT PROTECTION

Project in Totality:

Combined you can see where the private habitat areas (blues) fit together with public habitat areas (greens) to create landscape-level habitat corridors and contiguous habitat areas

To Meet Stated Objective:

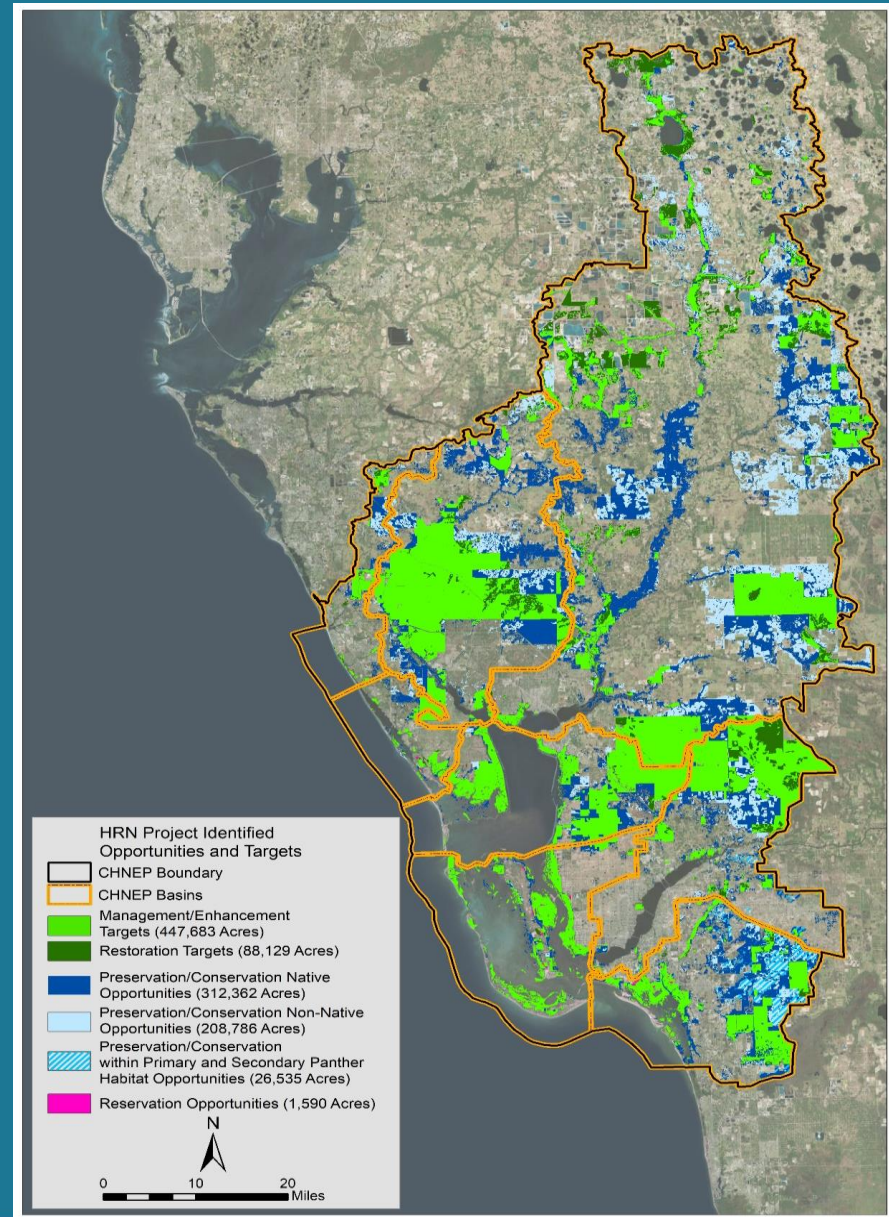
A diverse environment of interconnected, healthy habitats



NEXT STEPS

Project geared toward specifically toward *strategic* Habitat Restoration Targets- collaboration to meet multiple needs in Central and SW Florida:

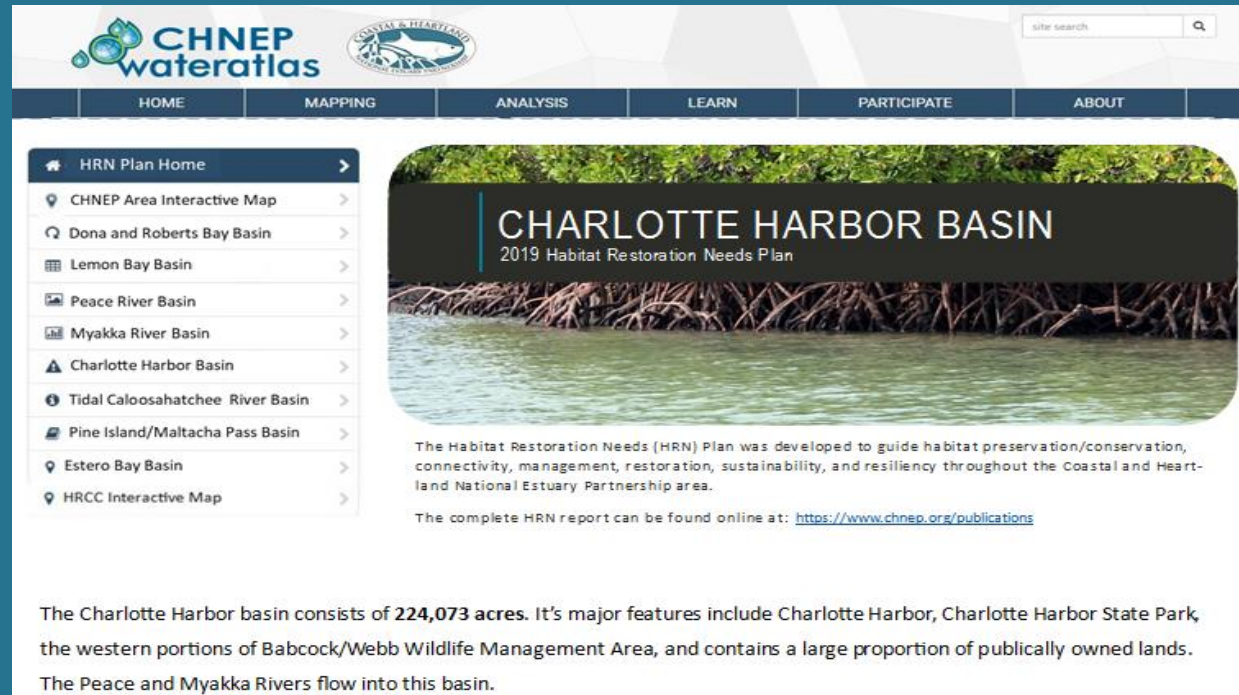
- Economic Growth
- Quality of Life
- Habitat Protection
- Water Supply
- Water Quality Treatment
- Flood Protection
- Aquifer Recharge



Uniting Central and Southwest Florida to Protect Water and Wildlife



- CHNEP to make GIS data easily accessible on CHNEP Water Atlas and possibly other platforms in the future



- Updates needed to LU/LC base maps based on new mapping efforts from both Water Management Districts
- HRN Phase II for Freshwater Caloosahatchee Basin addendum added to original Report in Spring 2021

WHO CAN USE THESE RECOMMENDATIONS FROM THE HRN FOR RESTORATION/CONSERVATION PLANNING?

- **Counties/Cities of CHNEP**
 - Land Use Planners
 - Ecologists
 - Transportation Planners
 - Water Resource Managers
 - Environmental Land Managers
 - Parks and Recreation Managers
 - Land Acquisition Programs, NGOs
 - Wildlife Managers
- **Agencies: FDEP, FWC, SWFWMD (Charlotte Harbor SWIM Plan), SFWMD**



Questions?



For Full Report of HRN for Original CHNEP area, go to CHNEP.org → News & Resources → Publications & Reports → Habitat Restoration Needs Report

Thank you to the CHNEP Technical Advisory Committee Members, ESA, Wood Environmental CHNEP staff, and SWFWMD for their role in the creation of this Plan!

