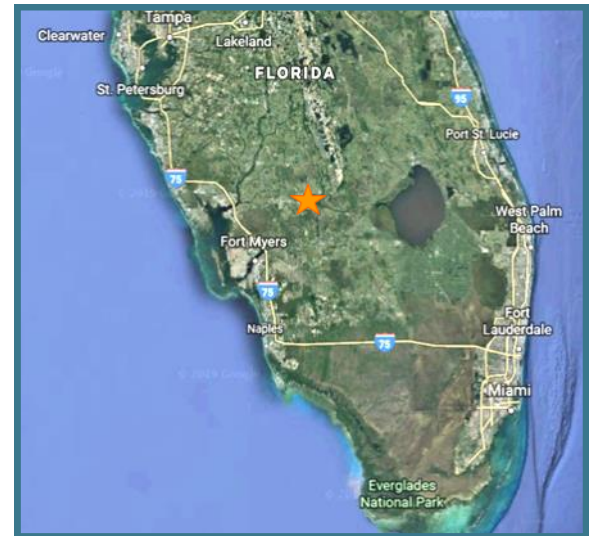


Habitat Restoration Needs (HRN) Plan

FISH, WILDLIFE, & HABITAT



Gail Stenger



Summary

Habitat restoration is central to the mission of the Coastal and Heartland National Estuary Partnership (CHNEP). The Habitat Restoration Needs (HRN) Plan was developed to help guide habitat management, connectivity, preservation and conservation, sustainability, restoration, and resiliency throughout the CHNEP area.

The overarching goal of the HRN Plan is to increase the acreages of native habitats in the CHNEP area, both strategically and opportunistically. This document can be used as a resource to identify and map preservation, conservation, and reservation opportunities, as well as management, enhancement, and restoration targets within each of the CHNEP basins.

Full implementation of the HRN Plan would have substantial positive impacts on the long-term sustainability of water quality and quantity, natural systems, and species populations. The Plan articulates CHNEP's habitat restoration vision for the next 50 years of "A diverse environment of interconnected, healthy habitats that support natural processes and viable and resilient native plant and animal communities", while integrating supplemental analyses to incorporate recent climate change and sea level rise data.

Location: Polk, Hardee, Manatee, Sarasota, DeSoto, Highlands, Charlotte and Lee Counties, FL

Partners: CHNEP Management Conference

Implemented: 2018

Status: Completed

CHNEP Cost: \$150,000

Funding Source: Southwest Florida Water Management District and Mosaic funds managed through CHNEP

2019 CHNEP Plan Activity:



Fish, Wildlife, & Habitat Restoration 2.1: Encourage and support the permanent conservation of environmentally sensitive lands and critical habitat areas through land acquisition and conservation easements held in perpetuity.

COASTAL & HEARTLAND NATIONAL ESTUARY PARTNERSHIP



Results and Anticipated Benefits

Project Results:

The HRN Plan resulted in multiple recommendations throughout the CHNEP area including increasing the existing acreage of preservation and conservation areas to 17 percent of the watershed (521,148 acres), reserving less than one percent of the watershed (1,590 acres) to accommodate future coastal habitat migration due to sea level rise, increasing restored areas by 88,130 acres, and increasing managed or enhanced areas to 447,683 acres.

Future Work:

The HRN Plan was completed in May of 2019. Interactive maps from this study are accessible through the CHNEP Water Atlas chnep.wateratlas.usf.edu. A similar project is underway in the CHNEP expansion area including Glades and Hendry Counties with a report and maps to follow.

The results from this project will be used in coordination with FWC's Critical Habitat Conservation Plan to identify multi-partner opportunities and priorities. This project will also assist local and regional organizations and state and federal agencies in identifying, planning, and implementing habitat restoration and land acquisition projects needed to efficiently achieve habitat restoration goals while balancing additional community needs including economic growth, water supply, water quality treatment, and flood protection.

The HRN Report can be found online at CHNEP.org/publications.



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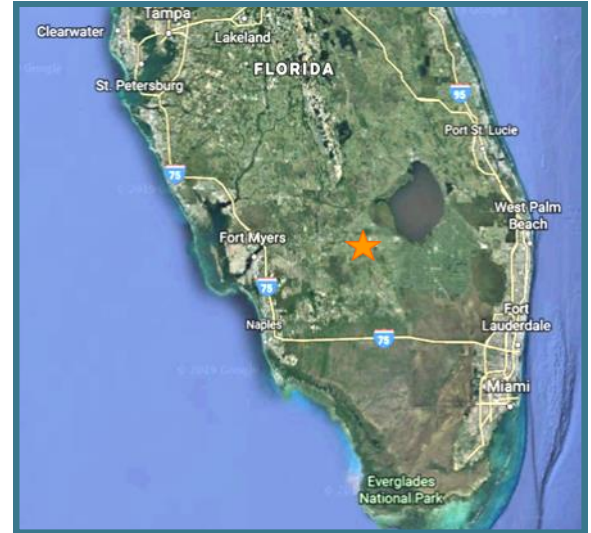
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Habitat Restoration Needs (HRN) Plan Expansion for the Freshwater Caloosahatchee Basin

FISH, WILDLIFE, & HABITAT RESTORATION



Summary

The CHNEP area is known for its spectacular birds, fish, and other wildlife. The rich diversity and abundance of these species requires a diverse environment of interconnected habitats that support natural processes and viable, resilient native plant and animal communities. To fulfill this vision, CHNEP partners worked to create the original Habitat Restoration Needs (HRN) Plan in 2019 to guide resource managers help focus preservation and restoration efforts on regional 'landscape-level' protection.

The HRN Plan maps and identifies preservation/conservation and reservation opportunities, as well as management/enhancement and restoration targets. Full implementation of the Plan will have substantial positive impacts on the long-term sustainability of water quantity, water quality, natural systems, and species populations. The overarching goal of the Plan is to increase the acreages of native habitats in the CHNEP area, both strategically and opportunistically.

In 2020, the second phase of the Plan extended the project to include the freshwater Caloosahatchee River basin in the CHNEP expansion area. This phase used the same methods from the original project to map preservation/conservation and reservation opportunities, as well as management/enhancement and restoration targets in the new area. The updated Plan will be used by partners to identify, prioritize, and implement effective habitat restoration and conservation projects in Lee, Glades, and Hendry Counties.

Location: Glades, Hendry, and Lee and Counties, FL

Partners: CHNEP Management Conference

Implemented: 2019-2021

Status: Completed

Cost: \$73,423

Funding Source: Environmental Protection Agency

2019 CHNEP Plan Activity:



Fish, Wildlife, & Habitat Restoration 2.1: Encourage and support the permanent conservation of environmentally sensitive lands and critical habitat areas through land acquisition and conservation easements held in perpetuity.

COASTAL & HEARTLAND NATIONAL ESTUARY PARTNERSHIP



Anticipated Results and Benefits

Opportunities and Targets:

Opportunities and Targets identified in Phase I of the Habitat Restoration Needs Plan include: Opportunity to increase existing acreage of preservation and conservation areas by 521,148 acres through land acquisition or conservation easements; and Opportunity to reserve 1,590 acres of public lands to accommodate future coastal habitat migration due to climate change impacts.

Targets for public lands include: increase restored areas by 88,130 acres; and increase managed or enhanced areas to 447,683 acres.

Similar analysis will identify Targets and Opportunities in the CHNEP expansion area.

Economic and Recreational Benefits:

The natural systems within the CHNEP area offer many economic and recreational benefits to the state of Florida. The results from this project will be used in coordination with FWC's Critical Habitat Conservation Plan to identify multi-partner opportunities and priorities. This project will also assist local and regional organizations and state and federal agencies in identifying, planning, and implementing habitat restoration and land acquisition projects needed to efficiently achieve habitat restoration goals while balancing additional community needs including economic growth, water supply, water quality treatment, and flood protection.

Improved Terrestrial and Aquatic Habitat:

Full implementation of the Plan will have substantial positive impacts on the long-term sustainability of water quantity, water quality, natural systems, and species populations. The Plan articulates CHNEP's habitat restoration vision for the next 50 years of "A diverse environment of interconnected, healthy habitats that support natural processes and viable and resilient native plant and animal communities."

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Peace River Basin Restoration Needs Plan

FISH, WILDLIFE, & HABITAT RESTORATION

Background & Benefits

The Habitat Restoration Needs (HRN) Plan was developed to guide habitat preservation/conservation, connectivity, management, restoration, sustainability, and resiliency throughout the Coastal and Heartland National Estuary Partnership area. Our goal is to increase the acreages of native habitats in the CHNEP area, both strategically and opportunistically. The 'Plan' identifies and maps potential **Preservation/Conservation Opportunities** (PCO; private lands with exceptional habitat value) and **Reservation Opportunities** (RO; non-natural public lands prone to increased flooding), as well as **Management/Enhancement Targets** (MET; natural public lands that need ongoing management or enhancement) and **Restoration Targets** (RT; non-natural public lands that need ecological restoration), in each basin within the CHNEP area. Full implementation of the Plan would have substantial positive impacts on the long-term sustainability of water quality, water quantity, natural systems, and species populations in the CHNEP area.



2019 CHNEP Plan Vision:



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

The Peace River Basin is the largest basin within the CHNEP limits, and totals **1,494,057 acres**. This basin stretches high up into the northern and eastern reaches of the CHNEP boundary, connecting to Charlotte Harbor, and supports the greatest amount of acreage of MET and RT. The health and function of the Peace River Basin headwaters have been identified as vitally important to downstream habitats, bays and estuaries for water quality and wildlife movement.

Summary of Results

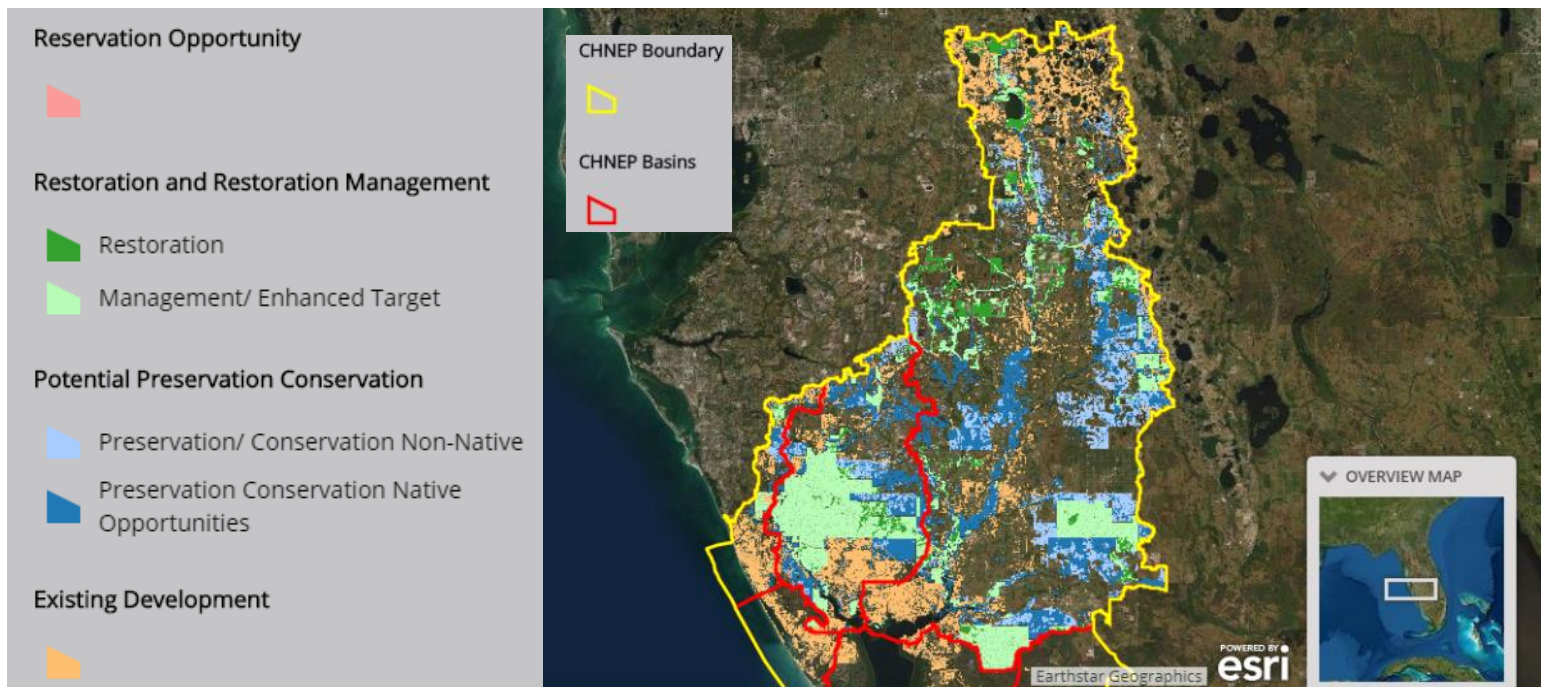
The Peace River Basin area was assigned to one of four categories listed above and focused on tidal wetland, freshwater wetland, and upland habitats in the CHNEP area. Results are summarized below.

Table 1. HRN Opportunities and Targets for the Peace River Basin by Major Habitat Type

Major Habitat Type	Opportunities		Targets	
	PCO	RO	MET	RT
Uplands	66,905	N/A	57,661	34,601
Freshwater Wetlands	85,610	N/A	69,501	22,390
Tidal Wetlands	1,761	N/A	3,056	1
Non-Native	135,691	89	N/A	N/A
Total	289,966	89	130,218	56,993

Summary of Results

- ⇒ Preservation/Conservation Opportunities (blue) Overall, the potential PCO occurred within the lower portions of the Peace River Basin, the southeastern limits of the basin, and the eastern limits of the basin. The native habitat communities were primarily found within the lower portions of the Peace River and the southeastern limits of the basin. In contrast, the majority of non-native (potential future RO or RT) habitat communities were identified along the eastern portions of the basin.
- ⇒ Reservation Opportunities (pink) were identified in the lower extent of the Peace River.
- ⇒ Management/Enhancement Targets (light green) are mostly dispersed throughout the basin, with the largest areas being Bright Hour Watershed, Lower Peace River, and Babcock/Webb Wildlife Management Area.
- ⇒ Restoration Targets (dark green) largely occur in the northwestern section of this basin.



Interactive HRN pages and maps can be found on the CHNEP Water Atlas website:

<https://chnep.wateratlas.usf.edu/habitat-restoration-needs#hrn-plan-home>.

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Myakka River Basin Restoration Needs Plan

FISH, WILDLIFE, & HABITAT RESTORATION

Background & Benefits

The Habitat Restoration Needs (HRN) Plan was developed to guide habitat preservation/conservation, connectivity, management, restoration, sustainability, and resiliency throughout the Coastal and Heartland National Estuary Partnership area. Our goal is to increase the acreages of native habitats in the CHNEP area, both strategically and opportunistically. The 'Plan' identifies and maps potential **Preservation/Conservation Opportunities** (PCO; private lands with exceptional habitat value) and **Reservation Opportunities** (RO; non-natural public lands prone to increased flooding), as well as **Management/Enhancement Targets** (MET; natural public lands that need ongoing management or enhancement) and **Restoration Targets** (RT; non-natural public lands that need ecological restoration), in each basin within the CHNEP area. Full implementation of the Plan would have substantial positive impacts on the long-term sustainability of water quality, water quantity, natural systems, and species populations in the CHNEP area.



2019 CHNEP Plan Vision:



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

The Myakka River Basin is the second largest basin within CHNEP limits, and totals **382,772 acres**. Proportionally, it contains the greatest amount of MET and RT, totaling 124,463 acres. This basin extends from Manatee County to Charlotte Harbor containing the Carlton Reserve and Myakka State Forest. The Myakka River is impounded in Myakka State Park, at the south end of Upper Lake Myakka, which has been used as water supply source. The headwaters of the Myakka River have been impacted by intensive row crops, resulting in the over-hydration and associated tree die-off in the Flatford Swamp. The lower reaches of the river are characterized by mostly native habitats, with some residential development.

Summary of Results

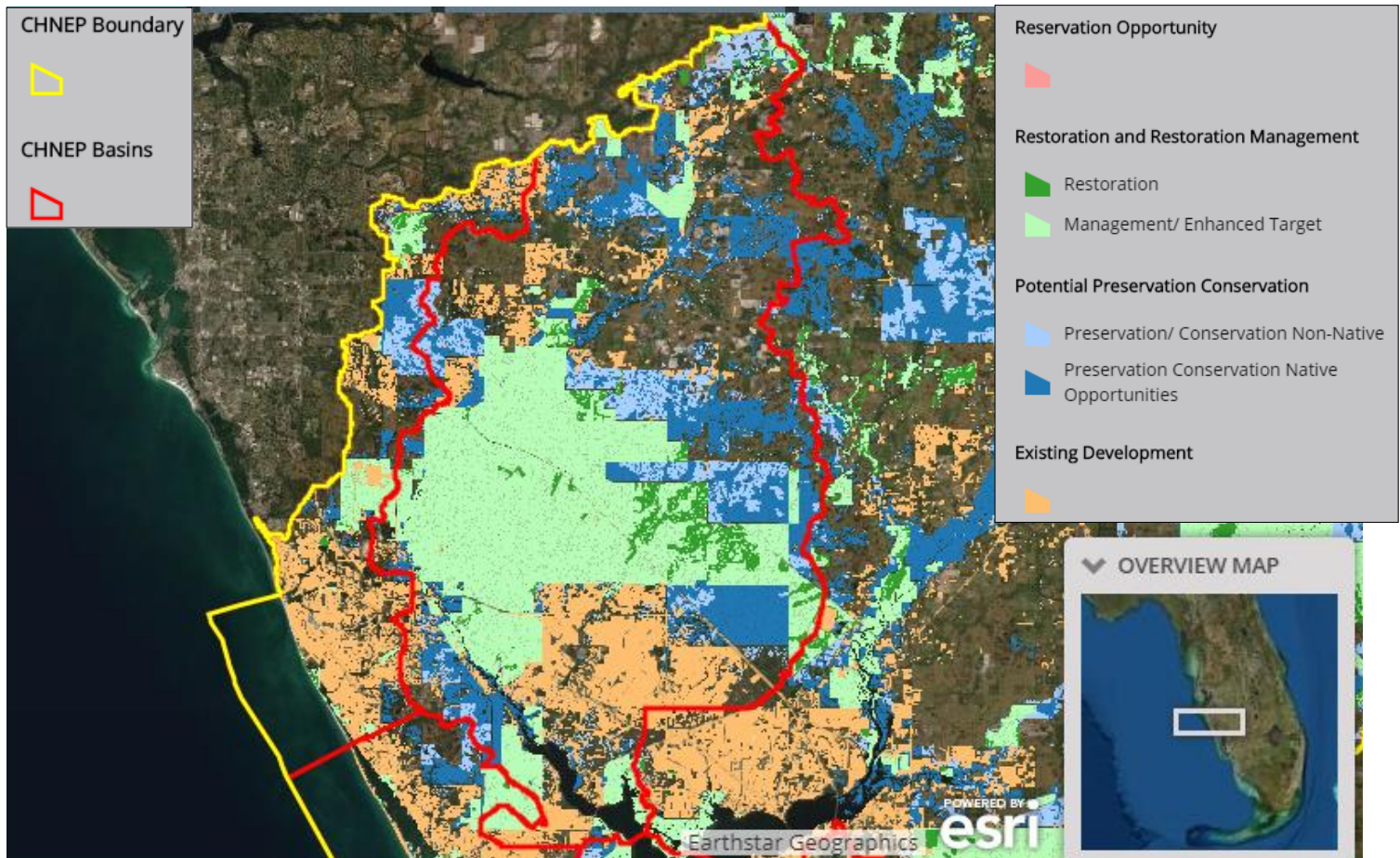
The Myakka River Basin area was assigned to one of four categories listed above and focused on tidal wetland, freshwater wetland, and upland habitats in the CHNEP area. Results are summarized below.

Table 1. HRN Opportunities and Targets for the Myakka River Basin by Major Habitat Type

Major Habitat Type	Opportunities		Targets	
	PCO	RO	MET	RT
Uplands	34,074	N/A	66,808	8,466
Freshwater Wetlands	24,470	N/A	44,957	2,865
Tidal Wetlands	891	N/A	1,364	2
Non-Native	25,446	53	N/A	N/A
Total	84,881	53	113,130	11,333

Summary of Results

- ⇒ Preservation/Conservation Opportunities (blue) are distributed throughout the Myakka River Basin. The greatest area of native habitat communities was identified on lands east of the Myakka River State Park/Carlton Reserve, and within the Myakka River and creeks. The majority of non-native (potential future RO or RT) habitat communities were also identified east of the Carlton Reserve.
- ⇒ Reservation Opportunities (pink) are prominent near the estuarine complex along the Myakka River.
- ⇒ Management/Enhancement Targets (light green) occur within the Myakka River State Park/Carlton Reserve, Deer Prairie Creek and other lands within the Myakka River Basin.
- ⇒ There were some opportunities for Restoration Targets (dark green) of publicly owned lands that would benefit wildlife as well.



Interactive HRN pages and maps can be found on the CHNEP Water Atlas website:
<https://chnep.wateratlas.usf.edu/habitat-restoration-needs#hrn-plan-home>.

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Dona & Roberts Bays Basin Restoration Needs Plan

FISH, WILDLIFE, & HABITAT RESTORATION

Background & Benefits

The Habitat Restoration Needs (HRN) Plan was developed to guide habitat preservation/conservation, connectivity, management, restoration, sustainability, and resiliency throughout the Coastal and Heartland National Estuary Partnership area. Our goal is to increase the acreages of native habitats in the CHNEP area, both strategically and opportunistically. The 'Plan' identifies and maps potential **Preservation/Conservation Opportunities** (PCO; private lands with exceptional habitat value) and **Reservation Opportunities** (RO; non-natural public lands prone to increased flooding), as well as **Management/Enhancement Targets** (MET; natural public lands that need ongoing management or enhancement) and **Restoration Targets** (RT; non-natural public lands that need ecological restoration), in each basin within the CHNEP area. Full implementation of the Plan would have substantial positive impacts on the long-term sustainability of water quality, water quantity, natural systems, and species populations in the CHNEP area.



2019 CHNEP Plan Vision:



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

At **93,325 acres**, the Dona and Roberts Bays Basin is the second smallest basin within the overall CHNEP area. Significant features within this basin include Dona Bay, Roberts Bay, Cow Pen Slough, The Pinelands Reserve and Heritage Ranch Gopher Tortoise Preserve. This basin was historically altered in the 1960s and 1970s through the channelization of Cow Pen Slough which dramatically increased the size of the basin, and increased volumes of freshwater to the downstream estuaries.

Summary of Results

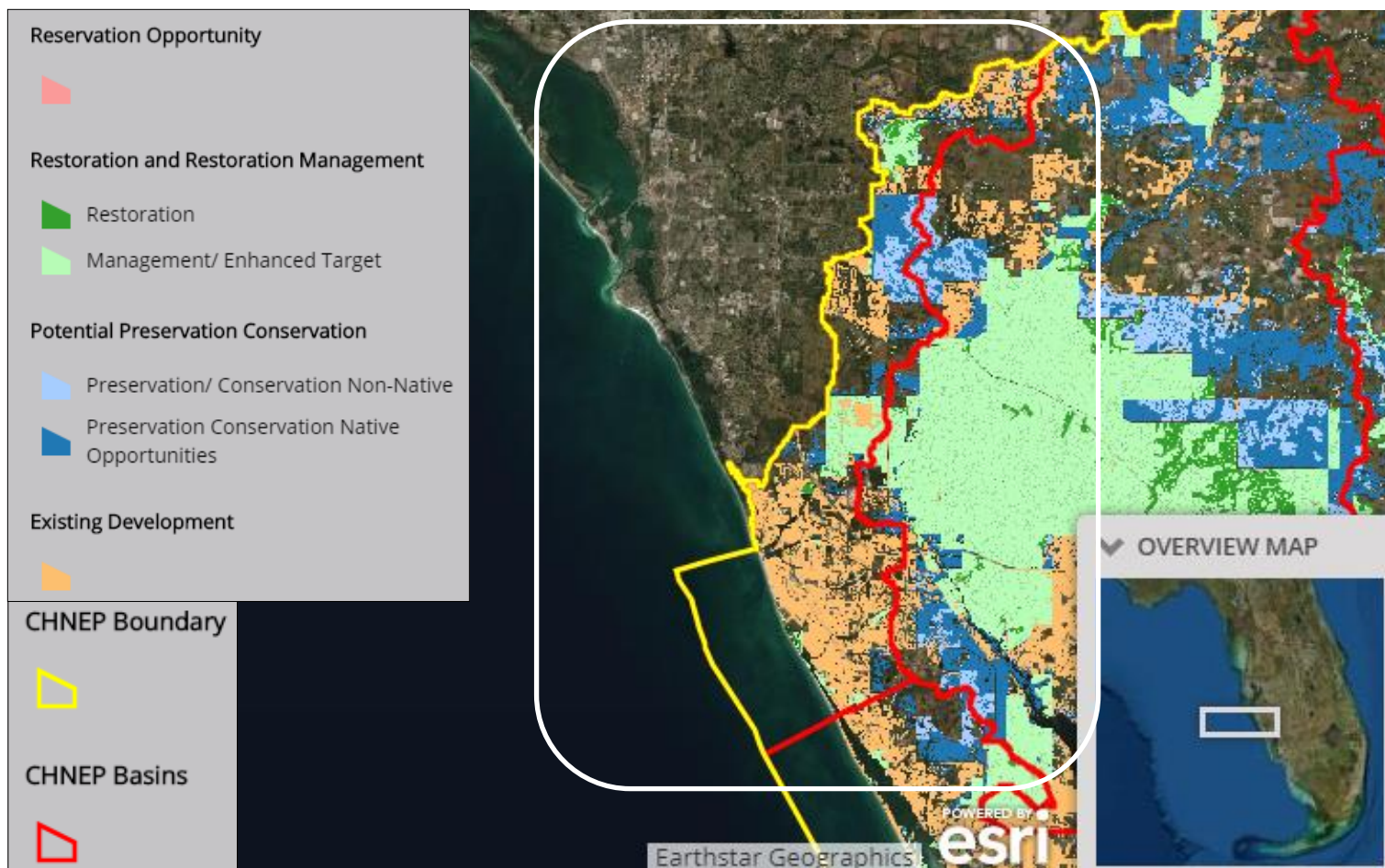
28% of the Dona & Roberts Bays basin was classified as **existing development**, the remaining area was assigned to one of four categories listed above and focused on tidal wetland, freshwater wetland, and upland habitats in the CHNEP area. Results are summarized below.

Table 1. HRN Opportunities and Targets for the Dona and Roberts Bays Basin by Major Habitat Type

Major Habitat Type	Opportunities		Targets	
	PCO	RO	MET	RT
Uplands	3,850	N/A	4,164	786
Freshwater Wetlands	2,954	N/A	2,378	191
Tidal Wetlands	3	N/A	37	33
Non-Native	3,693	N/A	N/A	N/A
Total	10,500	48*	6,680	1,010

Summary of Results

- ⇒ Preservation/Conservation Opportunities (blue) are primarily located in the upper basin, and connect with PCO identified in the Myakka River basin which border the Myakka River State Park to the east.
- ⇒ Reservation Opportunities (pink) are primarily identified in the southern coastal portion of the basin, with a small area identified in the Cow Pen Slough region.
- ⇒ Management/Enhancement and Restoration Targets (green) located in the upper basin include Pineland Reserve and Heritage Ranch conservation lands, and in the southern coastal portion of the basin, they provide the opportunity to connect with Reservation Opportunity areas to provide coastal protection and accommodate habitat migration from projected sea level rise impacts.



Interactive HRN pages and maps can be found on the CHNEP Water Atlas website:
<https://chnep.wateratlas.usf.edu/habitat-restoration-needs#hrn-plan-home>.

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Lemon Bay Basin Restoration Needs Plan

FISH, WILDLIFE, & HABITAT RESTORATION

Background & Benefits

The Habitat Restoration Needs (HRN) Plan was developed to guide habitat preservation/conservation, connectivity, management, restoration, sustainability, and resiliency throughout the Coastal & Heartland National Estuary Partnership area. Our goal is to increase the acreages of native habitats in the CHNEP area, both strategically and opportunistically. The 'Plan' identifies and maps potential **Preservation/Conservation Opportunities** (PCO; private lands with exceptional habitat value) and **Reservation Opportunities** (RO; non-natural public lands prone to increased flooding), as well as **Management/Enhancement Targets** (MET; natural public lands that need ongoing management or enhancement) and **Restoration Targets** (RT; non-natural public lands that need ecological restoration), in each basin within the CHNEP area. Full implementation of the Plan would have substantial positive impacts on the long-term sustainability of water quality, water quantity, natural systems, and species populations in the CHNEP area.



2019 CHNEP Plan Vision:



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

At **84,557 acres**, the Lemon Bay Basin is the smallest basin within the overall CHNEP area. The largest feature within this basin is Lemon Bay, with other significant aquatic features including Ainger and Gottfried Creeks. The southern limits of this basin support portions of the Charlotte Harbor Preserve State Park, the western limits of Myakka River State Forest, and Stump Pass Beach State Park.

Summary of Results

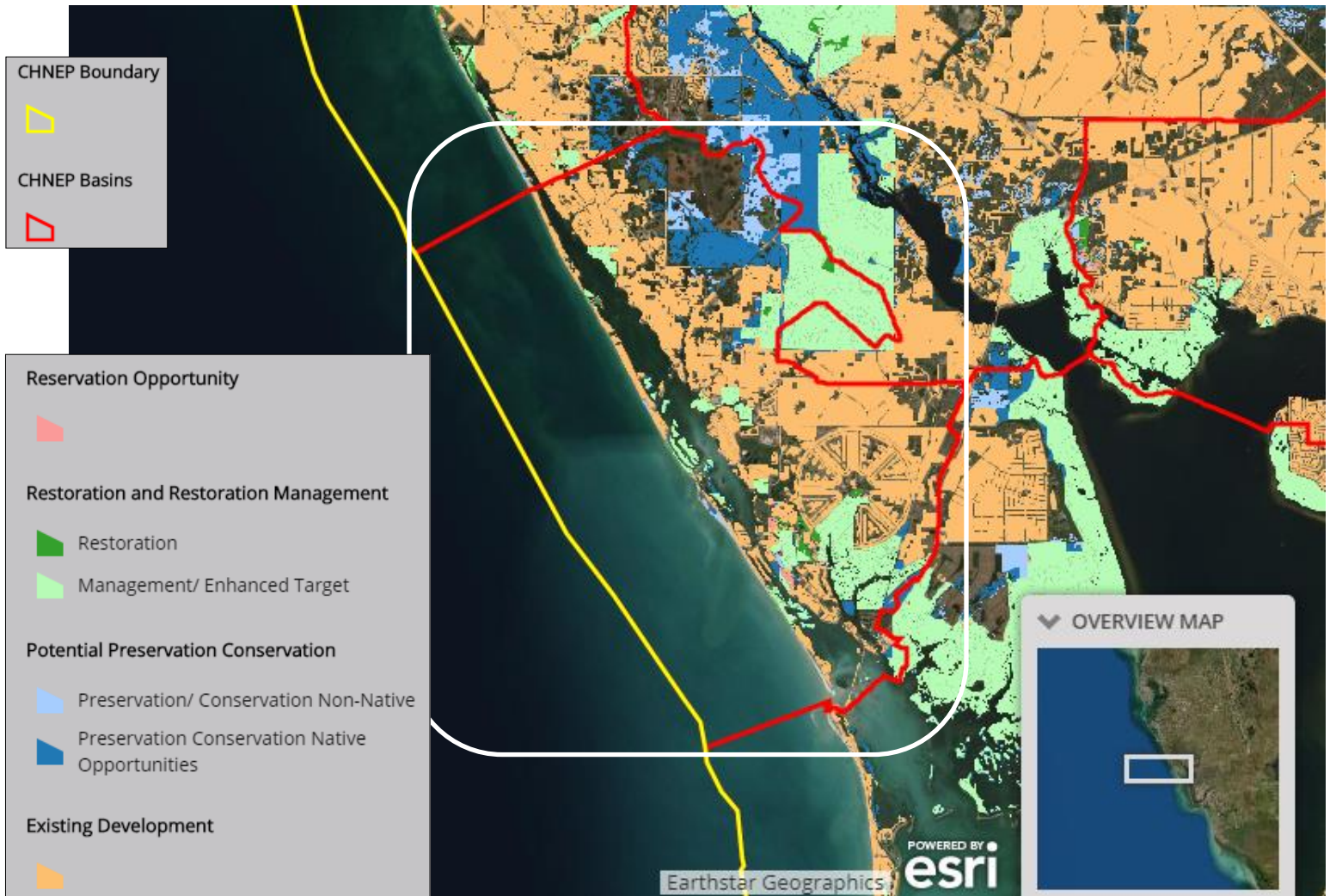
21% of the Lemon Bay basin was classified as **existing development**, the remaining area was assigned to one of four categories listed above and focused on tidal wetland, freshwater wetland, and upland habitats in the CHNEP area. Results are summarized below.

Table 1. HRN Opportunities and Targets for the Lemon Bay Basin by Major Habitat Type

Major Habitat Type	Opportunities		Targets	
	PCO	RO	MET	RT
Uplands	2,319	N/A	4,954	263
Freshwater Wetlands	822	N/A	1,453	74
Tidal Wetlands	105	N/A	1,058	44
Non-Native	1,227	150	N/A	N/A
Total	4,474	150	7,464	381

Summary of Results

- ⇒ Preservation/Conservation Opportunities (blue) are primarily located in the upper basin near Ainger and Gottfried Creeks.
- ⇒ Reservation Opportunities (pink) are distributed throughout the coastal portion of the basin, with a small area identified in Rotunda area.
- ⇒ Management/Enhancement Targets (light green) are primarily located in the east-central and southwestern areas of the basin.



Interactive HRN pages and maps can be found on the CHNEP Water Atlas website:
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Charlotte Harbor Basin Restoration Needs Plan

FISH, WILDLIFE, & HABITAT RESTORATION

Background & Benefits

The Habitat Restoration Needs (HRN) Plan was developed to guide habitat preservation/conservation, connectivity, management, restoration, sustainability, and resiliency throughout the Coastal and Heartland National Estuary Partnership area. Our goal is to increase the acreages of native habitats in the CHNEP area, both strategically and opportunistically. The 'Plan' identifies and maps potential **Preservation/Conservation Opportunities** (PCO; private lands with exceptional habitat value) and **Reservation Opportunities** (RO; non-natural public lands prone to increased flooding), as well as **Management/Enhancement Targets** (MET; natural public lands that need ongoing management or enhancement) and **Restoration Targets** (RT; non-natural public lands that need ecological restoration), in each basin within the CHNEP area. Full implementation of the Plan would have substantial positive impacts on the long-term sustainability of water quality, water quantity, natural systems, and species populations in the CHNEP area.

The Charlotte Harbor Basin consists of **224,073** acres. Its major features include Charlotte Harbor, Charlotte Harbor State Park, the western portions of Babcock/Webb Wildlife Management Area, and contains a large proportion of publically owned lands. The Peace and Myakka Rivers flow into this basin.



2019 CHNEP Plan Vision:



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

Summary of Results

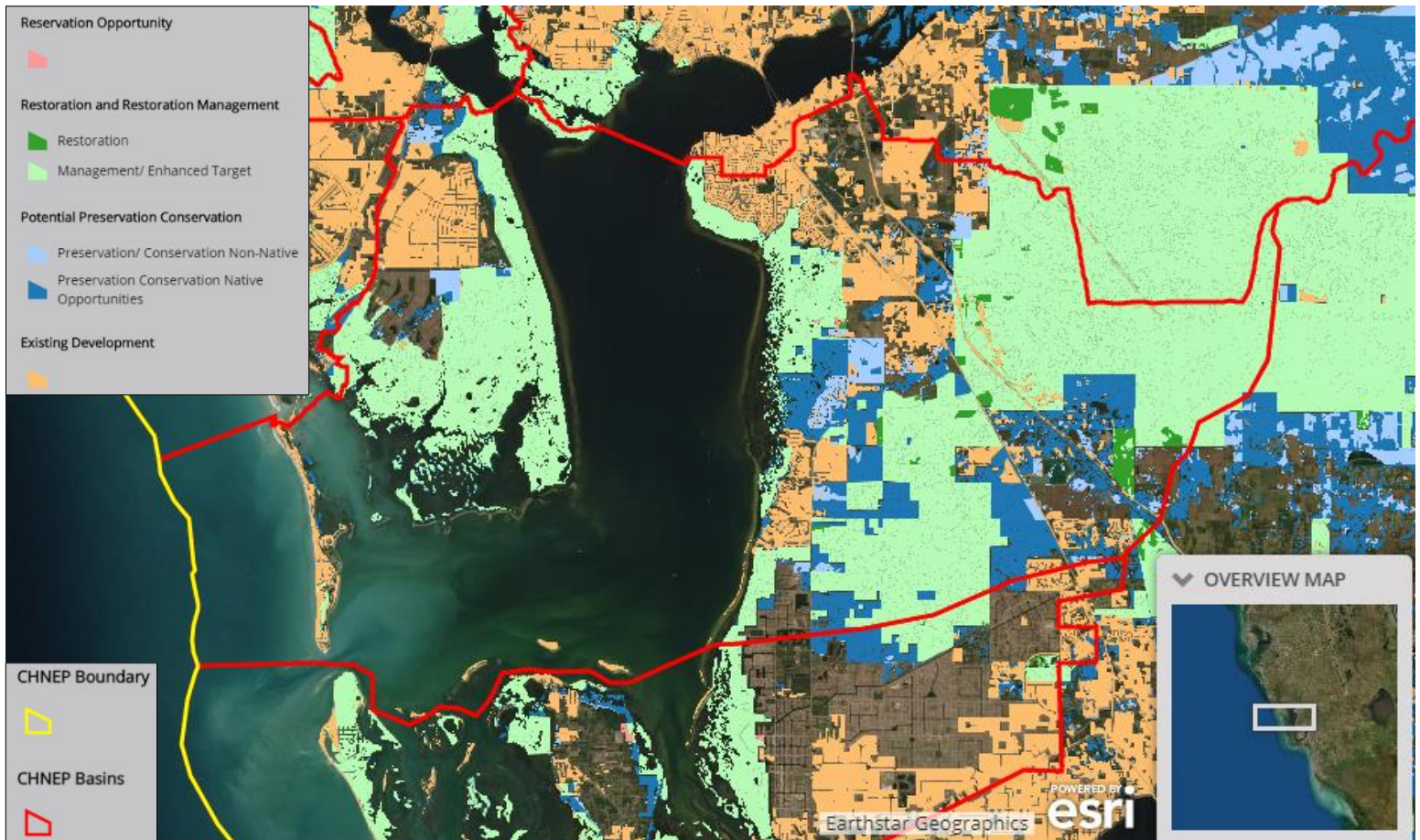
9% of the Charlotte Harbor basin was classified as **existing development**, the remaining area was assigned to one of four categories listed above and focused on tidal wetland, freshwater wetland, and upland habitats in the CHNEP area. Results are summarized below.

Table 1. HRN Opportunities and Targets for the Charlotte Harbor Basin by Major Habitat Type

Major Habitat Type	Opportunities		Targets	
	PCO	RO	MET	RT
Uplands	8,746	N/A	26,171	642
Freshwater Wetlands	4,888	N/A	16,538	701
Tidal Wetlands	1,184	N/A	17,748	1
Non-Native	4,079	69	N/A	N/A
Total	18,897	69	60,457	1,344

Summary of Results

- ⇒ Preservation/Conservation Opportunities (blue) are primarily located in the eastern portion of the basin for connectivity with Yucca Pens and Babcock/Webb Wildlife Management Areas.
- ⇒ Management/Enhancement Targets (light green) along the West Wall and East Wall of Charlotte Harbor are part of Charlotte Harbor State Park, and can accommodate projected sea level rise and provide coastal protection. CHNEP stakeholders identified publicly owned areas along the West Wall and East Wall of Charlotte Harbor as important wildlife corridors; as well as a small portion of the far eastern edge of the basin.
- ⇒ There were some opportunities for Restoration Targets (dark green) of publicly owned lands that would benefit wildlife as well.



Interactive HRN pages and maps can be found on the CHNEP Water Atlas website:
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Estero Bay Basin Restoration Needs Plan

FISH, WILDLIFE, & HABITAT RESTORATION

Background & Benefits

The Habitat Restoration Needs (HRN) Plan was developed to guide habitat preservation/conservation, connectivity, management, restoration, sustainability, and resiliency throughout the Coastal and Heartland National Estuary Partnership area. Our goal is to increase the acreages of native habitats in the CHNEP area, both strategically and opportunistically. The 'Plan' identifies and maps potential **Preservation/Conservation Opportunities** (PCO; private lands with exceptional habitat value) and **Reservation Opportunities** (RO; non-natural public lands prone to increased flooding), as well as **Management/Enhancement Targets** (MET; natural public lands that need ongoing management or enhancement) and **Restoration Targets** (RT; non-natural public lands that need ecological restoration), in each basin within the CHNEP area. Full implementation of the Plan would have substantial positive impacts on the long-term sustainability of water quality, water quantity, natural systems, and species populations in the CHNEP area.

The Estero Bay Basin totals **230,086 acres** and is a large estuarine and tidal system. Other significant areas within this basin include Edison Farms Preserve and Estero Bay Preserve State Park.

Summary of Results

21% of the Charlotte Harbor basin was classified as **existing development**, the remaining area was assigned to one of four categories listed above and focused on tidal wetland, freshwater wetland, and upland habitats in the CHNEP area. Results are summarized below.

Table 1. HRN Opportunities and Targets for the Estero Bay Basin by Major Habitat Type

Major Habitat Type	Opportunities		Targets	
	PCO	RO	MET	RT
Uplands	14,217	N/A	4,734	990
Freshwater Wetlands	21,856	N/A	24,158	1,075
Tidal Wetlands	1,839	N/A	11,208	1
Non-Native	23,951	537	N/A	N/A
Total	61,863	537	40,100	2,065



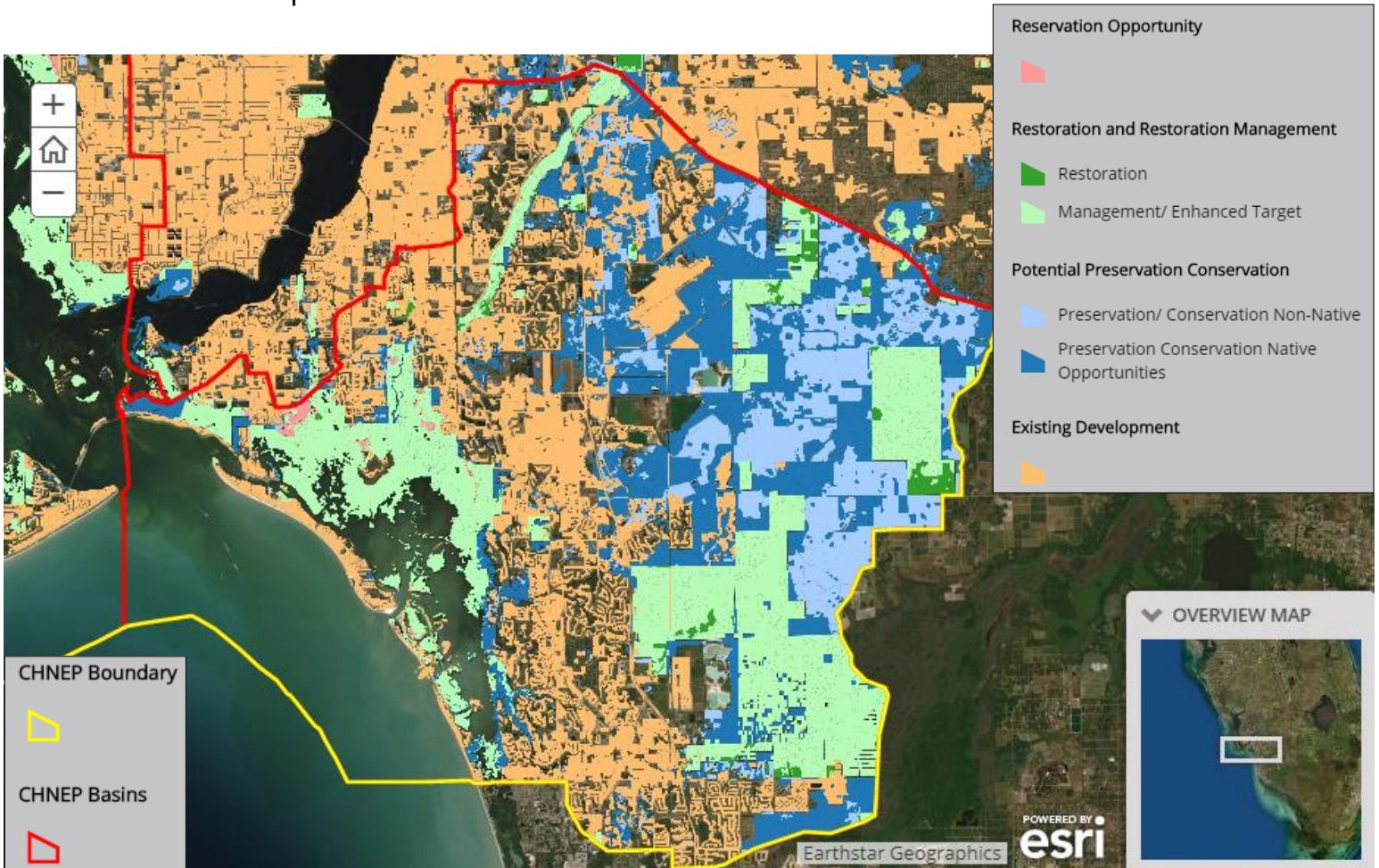
2019 CHNEP Plan Vision:



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

Summary of Results

- ⇒ Reservation Opportunities (pink) occur in the northwestern limits of this basin.
- ⇒ The existing Management/Enhancement Targets (light green) include Estero Bay Preserve State Park, which accommodate projected sea level rise in this basin. There are also 40,100 acres of MET that largely occur within Edison Farms and Corkscrew Regional Ecosystem Watershed.
- ⇒ There are still significant Preservation/Conservation Opportunities (blue) in the eastern basin that are primary and secondary Florida panther habitat areas, a keystone species that protects important habitat for other species as well.



Interactive HRN pages and maps can be found on the CHNEP Water Atlas website:
<https://chnep.wateratlas.usf.edu/habitat-restoration-needs#hrn-plan-home>.

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Pine Island Sound Restoration Needs Plan

FISH, WILDLIFE, & HABITAT RESTORATION

Background & Benefits

The Habitat Restoration Needs (HRN) Plan was developed to guide habitat preservation/conservation, connectivity, management, restoration, sustainability, and resiliency throughout the Coastal and Heartland National Estuary Partnership area. Our goal is to increase the acreages of native habitats in the CHNEP area, both strategically and opportunistically. The 'Plan' identifies and maps potential **Preservation/Conservation Opportunities** (PCO; private lands with exceptional habitat value) and **Reservation Opportunities** (RO; non-natural public lands prone to increased flooding), as well as **Management/Enhancement Targets** (MET; natural public lands that need ongoing management or enhancement) and **Restoration targets** (RT; non-natural public lands that need ecological restoration), in each basin within the CHNEP area. Full implementation of the Plan would have substantial positive impacts on the long-term sustainability of water quality, water quantity, natural systems, and species populations in the CHNEP area.



2019 CHNEP Plan Vision:



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

The Pine Island Sound/Matlacha Pass Basin totals **239,923 acres**, and is primarily estuary and tidal areas including Pine Island Sound and Matlacha Pass. This basin also contains the southern limits of the Charlotte Harbor Preserve State Park (i.e. East Wall), Ding Darling Wildlife Management Area, Pine Island Mitigation Bank, Pine Island Flatwoods Preserve, and Cayo Costa State Park.

Summary of Results

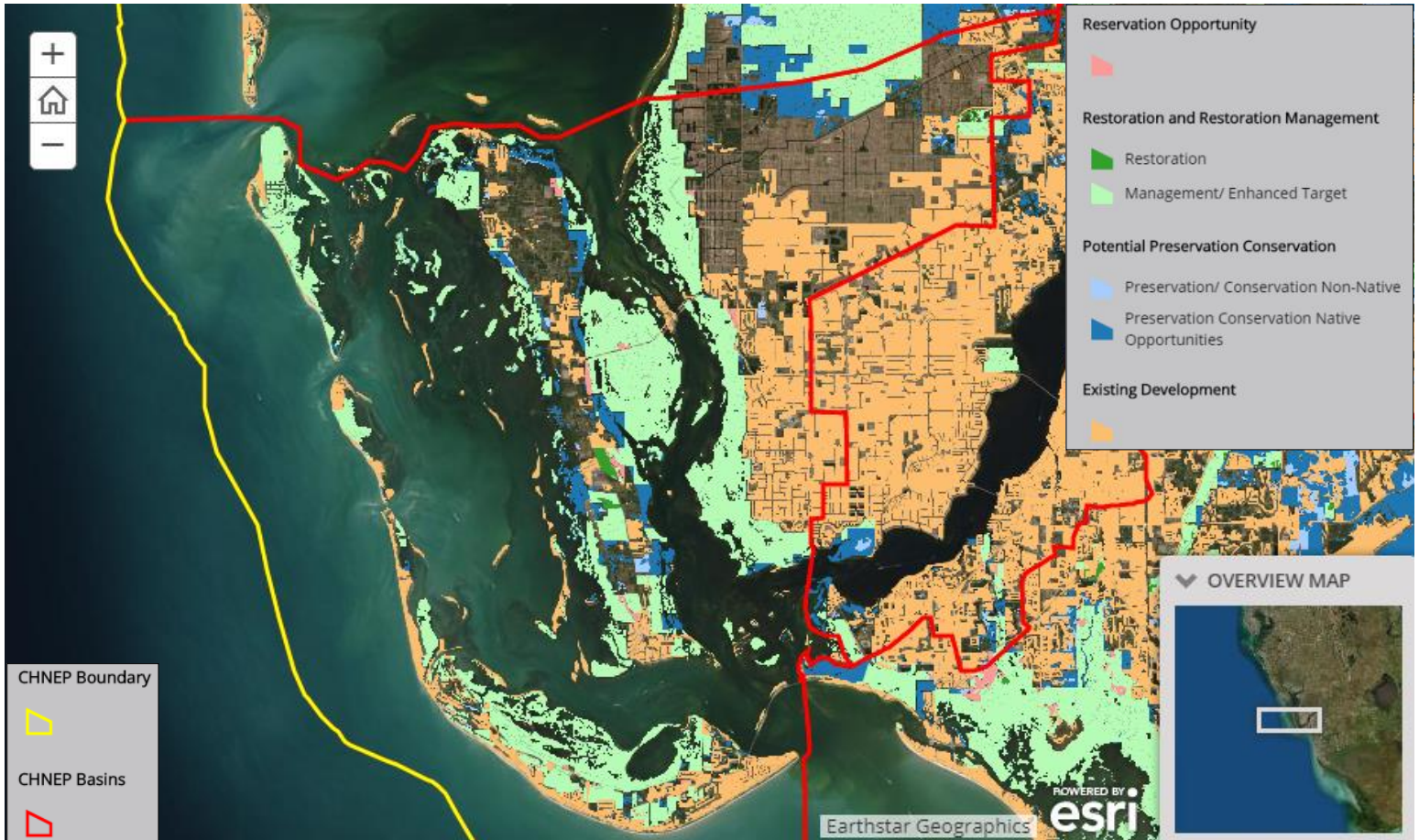
10% of the Pine Island Sound was classified as **existing development**, the remaining area was assigned to one of four categories listed above and focused on tidal wetland, freshwater wetland, and upland habitats in the CHNEP area. Results are summarized below.

Table 1. HRN Opportunities and Targets for the Pine Island / Matlacha Pass Basin by Major Habitat Type

Major Habitat Type	Opportunities		Targets	
	PCO	RO	MET	RT
Uplands	1,636	N/A	4,258	265
Freshwater Wetlands	551	N/A	2,595	39
Tidal Wetlands	2,505	N/A	22,562	2
Non-Native	634	530	N/A	N/A
Total	5,326	530	29,414	306

Summary of Results

- ⇒ Preservation/Conservation Opportunities (blue) are generally limited in this basin due to existing development, the extent of Management/Enhancement and Restoration Targets (green), and the extent of open water within this basin; The bulk of the identified PCO occur on Pine Island, and are predominantly tidal wetlands.
- ⇒ Reservation Opportunities (pink) are largely focused around Pine Island.
- ⇒ This basin supports relative large MET and RT areas relative to its size, including Little Pine Island, the southern limits of Charlotte Harbor Preserve State Park, and Ding Darling Wildlife Management Area.



Interactive HRN pages and maps can be found on the CHNEP Water Atlas website:
<https://chnep.wateratlas.usf.edu/habitat-restoration-needs#hrn-plan-home>.

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Uniting Central and Southwest Florida to protect water and wildlife

Tidal Caloosahatchee Restoration Needs Plan

FISH, WILDLIFE, & HABITAT RESTORATION

Background & Benefits

The Habitat Restoration Needs (HRN) Plan was developed to guide habitat preservation/conservation, connectivity, management, restoration, sustainability, and resiliency throughout the Coastal and Heartland National Estuary Partnership area. Our goal is to increase the acreages of native habitats in the CHNEP area, both strategically and opportunistically. The 'Plan' identifies and maps potential **Preservation/Conservation Opportunities** (PCO; private lands with exceptional habitat value) and **Reservation Opportunities** (RO; non-natural public lands prone to increased flooding), as well as **Management/Enhancement Targets** (MET; natural public lands that need ongoing management or enhancement) and **Restoration Targets** (RT; non-natural public lands that need ecological restoration), in each basin within the CHNEP area. Full implementation of the Plan would have substantial positive impacts on the long-term sustainability of water quality, water quantity, natural systems, and species populations in the CHNEP area.



2019 CHNEP Plan Vision:



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

The Tidal Caloosahatchee River Basin totals **271,995 acres**, and contains the tidal portion of the Caloosahatchee River and significant portions of Babcock/Webb Wildlife Management Area. This basin is significantly altered by the Franklin Lock at the eastern limits of the basin, which has restricted the normal tidal intermixing of salt and fresh waters within a typical riverine system. The southeastern limits of this basin contain secondary Florida panther habitat.

Summary of Results

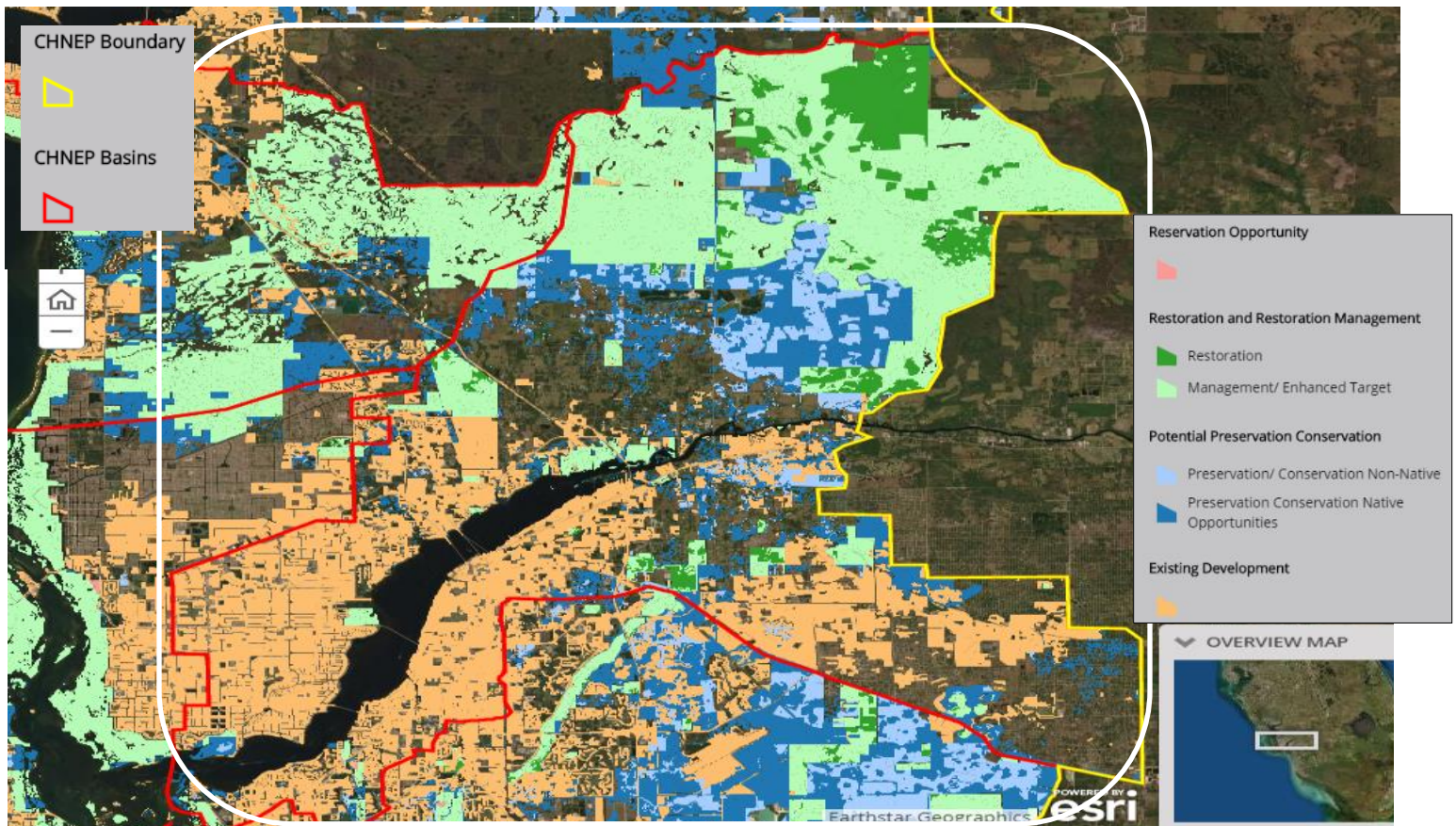
25% of the Tidal Caloosahatchee basin was classified as **existing development**, the remaining area was assigned to one of four categories listed above and focused on tidal wetland, freshwater wetland, and upland habitats in the CHNEP area. Results are summarized below.

Table 1. HRN Opportunities and Targets for the Tidal Caloosahatchee River Basin by Major Habitat Type

Major Habitat Type	Opportunities		Targets	
	PCO	RO	MET	RT
Uplands	19,333	N/A	39,018	10,117
Freshwater Wetlands	7,630	N/A	19,633	4,578
Tidal Wetlands	846	N/A	1,670	2
Non-Native	14,059	115	N/A	N/A
Total	41,869	115	60,321	14,697

Summary of Results

- ⇒ Preservation/Conservation Opportunities (blue) within the Tidal Caloosahatchee River basin were identified as lands abutting the southern limits of Babcock/Webb, small areas at the mouth of the Caloosahatchee River, and parcels within Lehigh Acres that are primary and secondary Florida panther habitats. Areas where primary and secondary Florida panther habitats occur should be a priority in the 19,333 acres of upland PCO.
- ⇒ The Reservation Opportunities (pink) total 115 acres, and are located at the southern shoreline of the river mouth.
- ⇒ Management/Enhancement and Restoration Targets (green) are mostly in the northeastern portion of the basin.



Interactive HRN pages and maps can be found on the CHNEP Water Atlas website:
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Freshwater Caloosahatchee Restoration Needs Plan

FISH, WILDLIFE, & HABITAT RESTORATION

Background & Benefits

The Habitat Restoration Needs (HRN) Plan was developed to guide habitat preservation/conservation, connectivity, management, restoration, sustainability, and resiliency throughout the Coastal and Heartland National Estuary Partnership area. CHNEP expanded the program area in 2019 to include the freshwater upstream portions of the Caloosahatchee River basin in the designated counties. Phase II of the HRN Plan included the mapping of **Preservation/Conservation Opportunities** (PCO; private lands with exceptional habitat value) as well as **Management/Enhancement Targets** (MET; natural public lands that need ongoing management or enhancement) and **Restoration Targets** (RT; non-natural public lands that need ecological restoration) in the CHNEP expansion area. A conscious effort was made to remain consistent with the data sources used in previous mapping analyses for the entire CHNEP service area. The updated HRN Plan will be used by partners to identify, prioritize, and implement effective habitat restoration and conservation projects in these counties.



2019 CHNEP Plan Vision:



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

The Freshwater Caloosahatchee River Basin totals **605,615 acres**, and spans from the current Tidal Caloosahatchee boundary at the Franklin Lock in Lee County, upstream to Lake Okeechobee. This basin is significantly altered by the Franklin Lock at the eastern limits of the basin, which has restricted the normal tidal intermixing of salt and fresh waters within a typical riverine system. This basin contains over 300,000 acres of Florida panther habitat.

Summary of Results

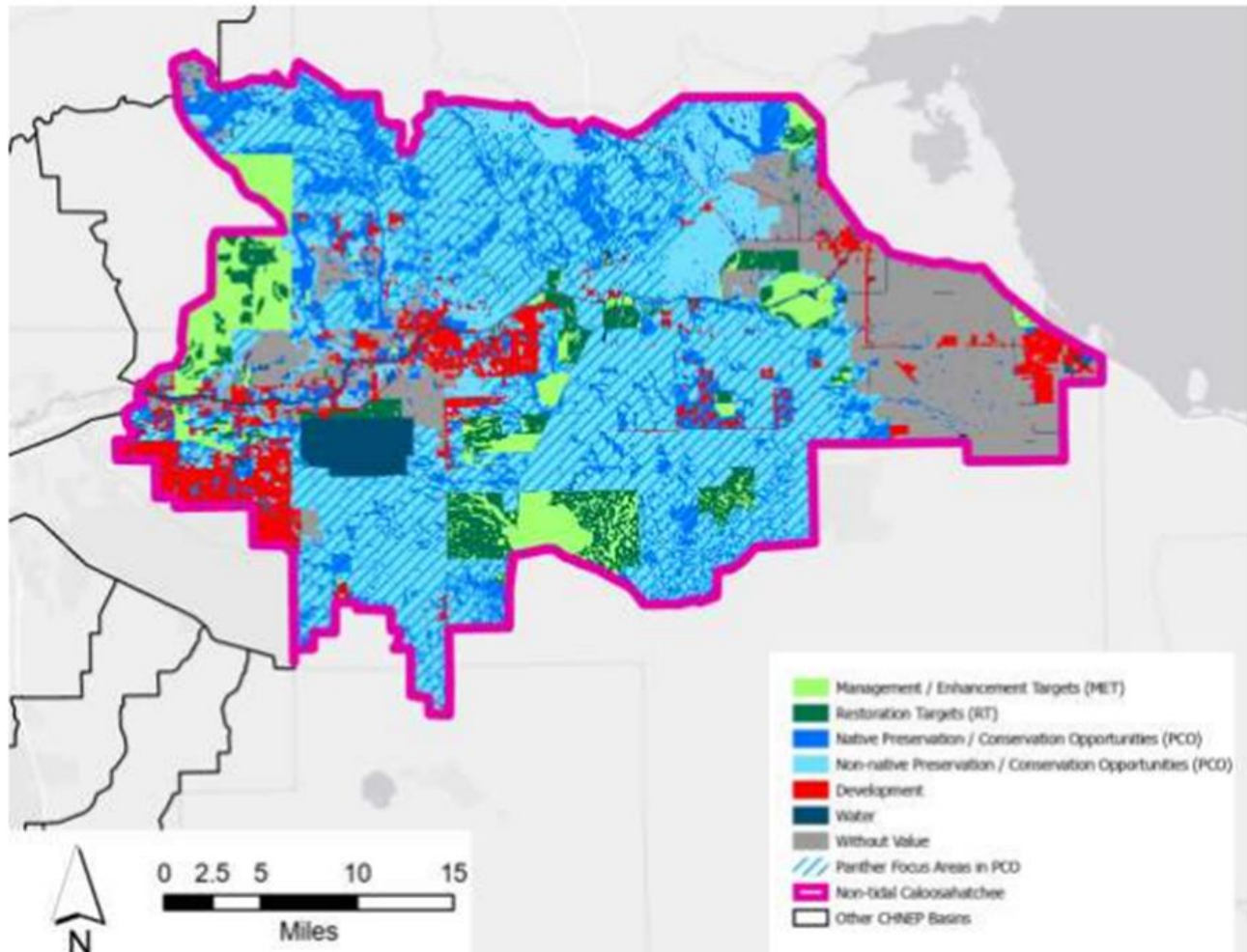
8% of the Freshwater Caloosahatchee River Basin was classified as **existing development**, the remaining area was assigned to one of four categories listed above and focused on freshwater wetland and upland habitats in the CHNEP area. Results are summarized below.

Table 1. HRN II Opportunities and Targets for the Freshwater Caloosahatchee River Basin by Major Habitat Type

Strata	Management Enhancement Targets	Restoration Targets	Native P/C Opportunities	Non-Native P/C Opportunities
Freshwater Wetland	26,118	467	64,660	N/A
Upland	20,990	32,675	41,294	259,664
Total	47,108	33,142	105,954	259,664

Summary of Results

- ⇒ Preservation/Conservation Opportunities (blue) within the Freshwater Caloosahatchee River basin were identified from private lands that may be considered for preservation or conservation through acquisition, easement, or other means. 60% of the Freshwater Caloosahatchee River Basin was classified as PCO, primarily because these lands also provide critical habitat to Florida panthers. In fact, over 80% of potential conservation lands were classified as Florida panther focus areas.
- ⇒ Management/Enhancement and Restoration Targets (green) total 80,250 acres, and are located in Babcock Webb and Spirit-of-the-Wild WMAs and small areas near Port LaBelle and Moore Haven.



Interactive HRN pages and maps can be found on the CHNEP Water Atlas website:
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