



# 2019 Habitat Restoration Needs Plan

*Gulf Coast VTours*

## DONA AND ROBERTS BAY BASIN

### Section 4: Results, Recommendations, and Conclusions

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.

The complete HRN report can be found online at: <https://www.chnep.org/publications>



## Dona and Roberts Bay Basin

At 93,325 acres, the Dona & Roberts Bay 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 1960's and 1970's through the channelization of Cow Pen Slough that dramatically increased the size of the basin, and increased the volume of freshwater reaching downstream estuaries. The results for this basin area are presented in the following narrative and in Figures 9 through 11.

### Preservation/Conservation Opportunities (PCO)

A total of 10,500 acres was identified as potential PCO, in which 35 percent (3,693 acres) were categorized as non-native and 65 percent (6,807 acres) as native habitat (Table 7; Figure 9). Overall, the acreage identified as potential PCO constitutes 11 percent of the total lands within this basin. The dominant native habitat communities were classified as pine flatwoods (2,104 acres; 20%), and freshwater marshes (1,541 acres; 15%). Cropland and pastureland (2,480 acres; 24%) was identified as the major non-native habitat classification within the overall basin. Appendix E presents the detailed results.

Overall, the potential PCO clustered in the central portion of this basin (Figure 9). The native habitat communities were more dispersed within this basin compared to the non-native (potential future RO or RT) habitats that are predominantly clustered around the central portion of the watershed.

### Reservation Opportunities (RO)

A total of 48 acres was identified as potential RO (Table 7; Figure 9). Overall, the acreage identified as potential RO constitutes less than one percent of the total lands within the Dona and Roberts Bay basin. The dominant habitat community was classified as Open Land (35 acres) (Appendix E). The RO were prominent adjacent to Dona and Roberts Bays (Figure 10).

The concept of reservation areas is to support potential tidal habitat migration caused by increased tidal flooding and inundation from projected sea level rise. As presented in Section 3 and Appendix B, a model was developed to project potential habitat migration in tidally influenced areas. The Dona and Roberts Bay basin HEM map (Figure 12) illustrates model Run 3 (Intermediate-High Sea Level Rise, Low Accretion) for Years 2016 and 2070. The results illustrate a moderate change in habitat extent as the majority of the basin consists of developed upland.

### Management/Enhancement Targets (MET)

A total of 7,590 acres was identified as MET and RT, of which 87 percent (6,580 acres) was categorized as MET. Overall, the acreage identified for MET and RT constitutes 8 percent of the total lands within the overall basin. The dominant native habitat community identified as MET was classified as pine flatwoods which comprised 40 percent (3,066 acres) of all MET and RT acreages.

Cropland and pastureland (668 acres; 9%) was identified as the major non-native habitat classification within the overall basin (Appendix E). MET were developed for the three major native habitat types: tidal wetlands, freshwater wetlands, and uplands to distinguish the types of overall habitats that could be managed or enhanced (Table 7). The vast majority of MET occur at the western limits of the Carlton Reserve within this basin (Figure 11).

## **Restoration Targets (RT)**

A total of 7,590 acres was identified as MET and RT, of which 13 percent (1,010 acres) was categorized as RT (Table 7; Figure 11). Overall, the acreage identified for RT and MET constitutes 8 percent of the total lands within the overall basin. RT were developed for the three major native habitat types: tidal wetlands, freshwater wetlands, and uplands, to distinguish the types of overall habitats that could be restored (Table 7). There are several instances in which areas identified as non-native (RT) are directly adjacent to native habitats. Identifying areas for strategic restoration could result in the further expansion of restored native habitat communities.

## **Habitat Status and Trends Analysis**

A change analysis was completed for this basin to quantify the gains/losses of habitats between 1995 and 2009/2011 (Table 8). The objectives of this change analysis were to determine: which habitats may be in actual decline, or experiencing disproportionate losses; which habitats may be increasing; and what stressors may be driving these changes. Data limitations and mapping inconsistencies between the two time periods did not always support these objectives. For example, conversions between various classes of freshwater wetlands were often found to be ambiguous and unverifiable; however, conversions from native habitats to developed urban land uses were more easily discernable through a review of the aerial imagery. Those habitats changes that could be verified through the review of the aerial imagery were used to identify priority habitats.

Within this basin, substantial acreage gains in native habitats could not be verified through a review of the aerial imagery. However, discernable habitat losses and changes are noted below:

- Upland habitats being converted to development and agriculture;
- Losses of upland coniferous forest and shrub and brushlands; and
- Salt marshes transitioning to mangroves.

Mapping inconsistencies observed in the change analysis included the following:

- FLUCCS 3000 (Upland Non-Forested) Series Level 2 (Dry Prairie, Shrub and Brushland, Mixed Rangeland) codes were often interchangeably used for the same aerial signature between 1995 and 2009/2011, so gains/losses in the 3000 Series may not all be real changes;
- Slough waters classification was not used in 2009/2011;
- Outer zones of freshwater marshes were mapped as lakes classification in 1995, but were correctly remapped as vegetated non-forested wetlands in 2009/2011; and

- Increases in intermittent pond classification occurred from development between 1995 and 2009/2011. Also, open water ponds that became shallow ponds were re-mapped to intermittent ponds classification in 2009/2011.

## Dona and Roberts Bay Basin Summary

Dona and Roberts Bay is the second smallest basin in the overall CHNEP area, with 28% of the basin classified as existing development. The habitat status and trends analysis showed losses in upland habitats. These habitats may be considered a priority for restoration in this basin, and future studies can further identify the assemblage of specific habitat types. Changes in other upland and freshwater wetland habitats were difficult to discern due to mapping inconsistencies. The change analysis showed an increase in the mangrove swamp classification, which is consistent with HEM model projections that salt marshes will transition to mangroves. There are no primary or secondary Florida panther habitat areas in this basin, and CHNEP stakeholders did not identify any wildlife corridors specific to the basin.

PCO 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. RO are primarily identified in the southern coastal portion of the basin, with a small area identified in the Cow Pen Slough region. MET and RT that are also located in the southern coastal portion of the basin, and provide the opportunity to connect with RO to allow this coastal area to provide coastal protection and accommodate habitat migration from projected sea level rise impacts. Other MET and RT areas located in the upper basin include Pineland Reserve and Heritage Ranch conservation lands.

The HRN results reflect priorities outlined from the HRN project methodology and are based on the best available data at the time of development. There may be other habitats of importance; and current and future research and analysis may support additional opportunities and targets not currently represented here. The results presented in the tables and maps below can form the foundation for future studies.

**TABLE 7. HRN OPPORTUNITIES AND TARGETS FOR THE DONA AND ROBERTS BAY 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	32
Non-Native	3,693	N/A	N/A	N/A
<b>Total</b>	<b>10,500</b>	<b>48</b>	<b>6,580</b>	<b>1,009</b>

**TABLE 8. HRN CHANGE ANALYSIS GAINS/LOSSES FOR THE DONA AND ROBERTS BAY BASIN BY HABITAT CLASSIFICATION TYPE.**

FLUCCS Codes	Primary Classifications	Acres		Change Analysis	
		1995	2009/2011	Acres	Percent
3100	Dry Prairie	88	159	71	80%
3200	Shrub and Brushlands	7,540	2,719	-4,820	-64%
3300	Mixed Rangelands	265	575	309	*
4100	Upland Coniferous Forest	10,997	7,564	-3,432	-31%
4200/4300	Upland Hardwood Forest	2,353	2,040	-313	-13%
5100	Streams and Waterways	160	158	-2	-1%
5200	Lakes	681	27	-654	-96%
5600	Slough Waters	N/A	N/A	N/A	N/A
6100	Wetland Hardwood Forest	3,490	3,361	-129	-4%
6120	Mangrove Swamp	151	172	21	14%
6200	Wetland Coniferous Forest	153	158	4	3%
6300	Wetland Forested Mixed	675	680	5	1%
6400	Vegetated Non-Forested Wetlands	6,390	7,066	677	11%
6420	Saltwater Marsh	67	61	-6	-9%
6530	Intermittent Ponds	5	43	38	*
6600	Salt Flats	N/A	N/A	N/A	N/A

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

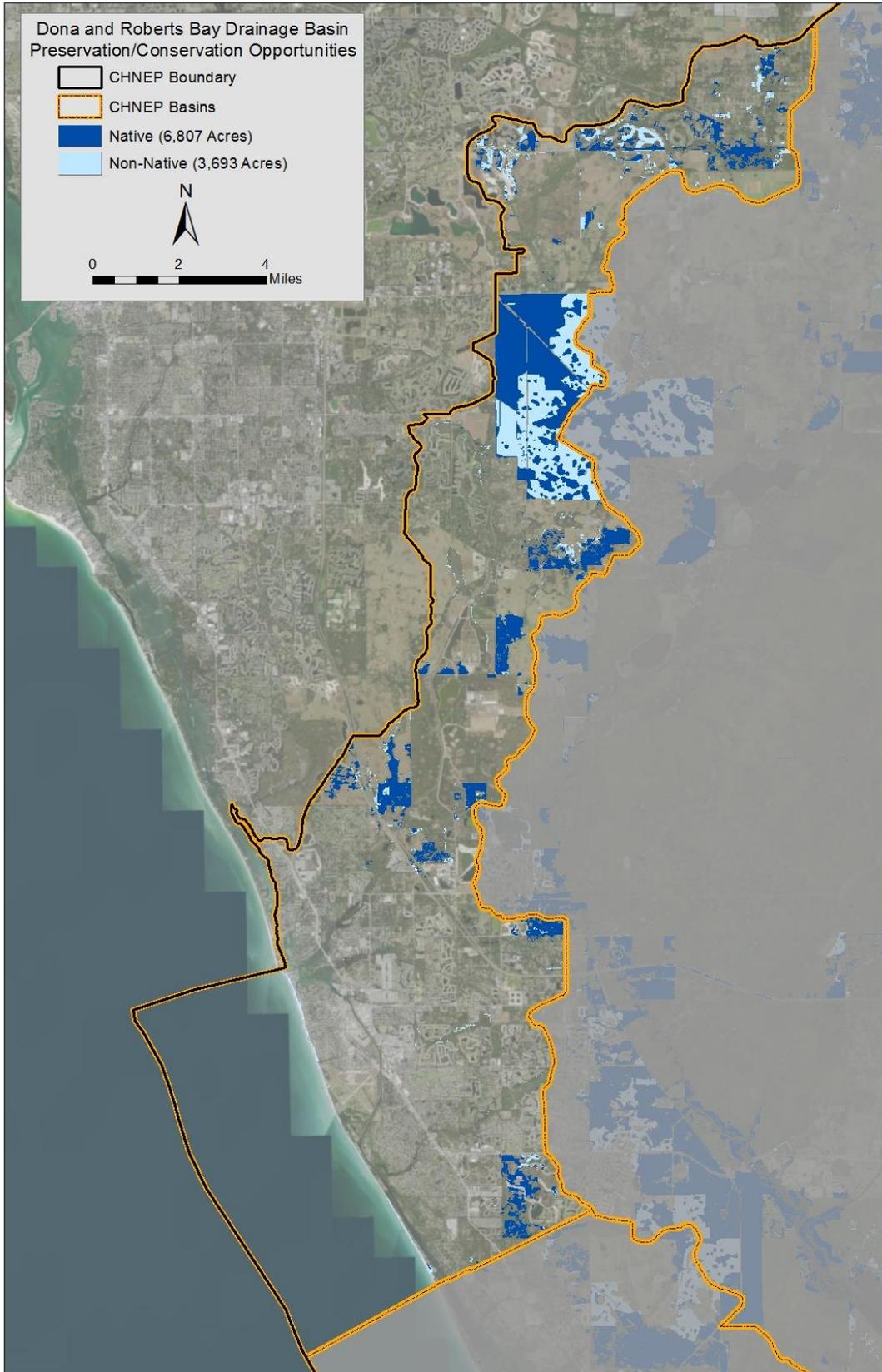


Figure 9. Dona and Roberts Bay Basin PCO.

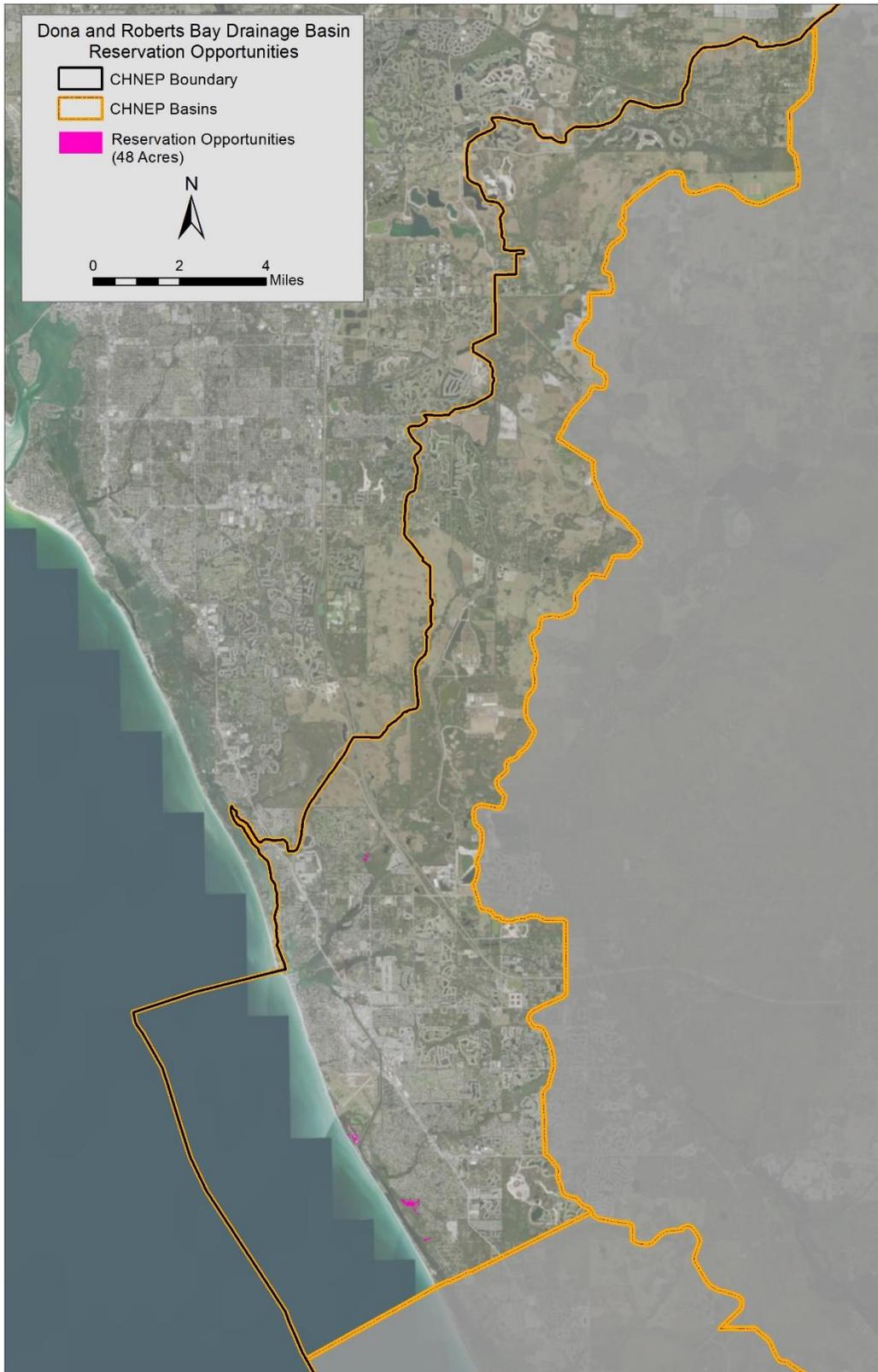


Figure 10. Dona and Roberts Bay Basin RO.

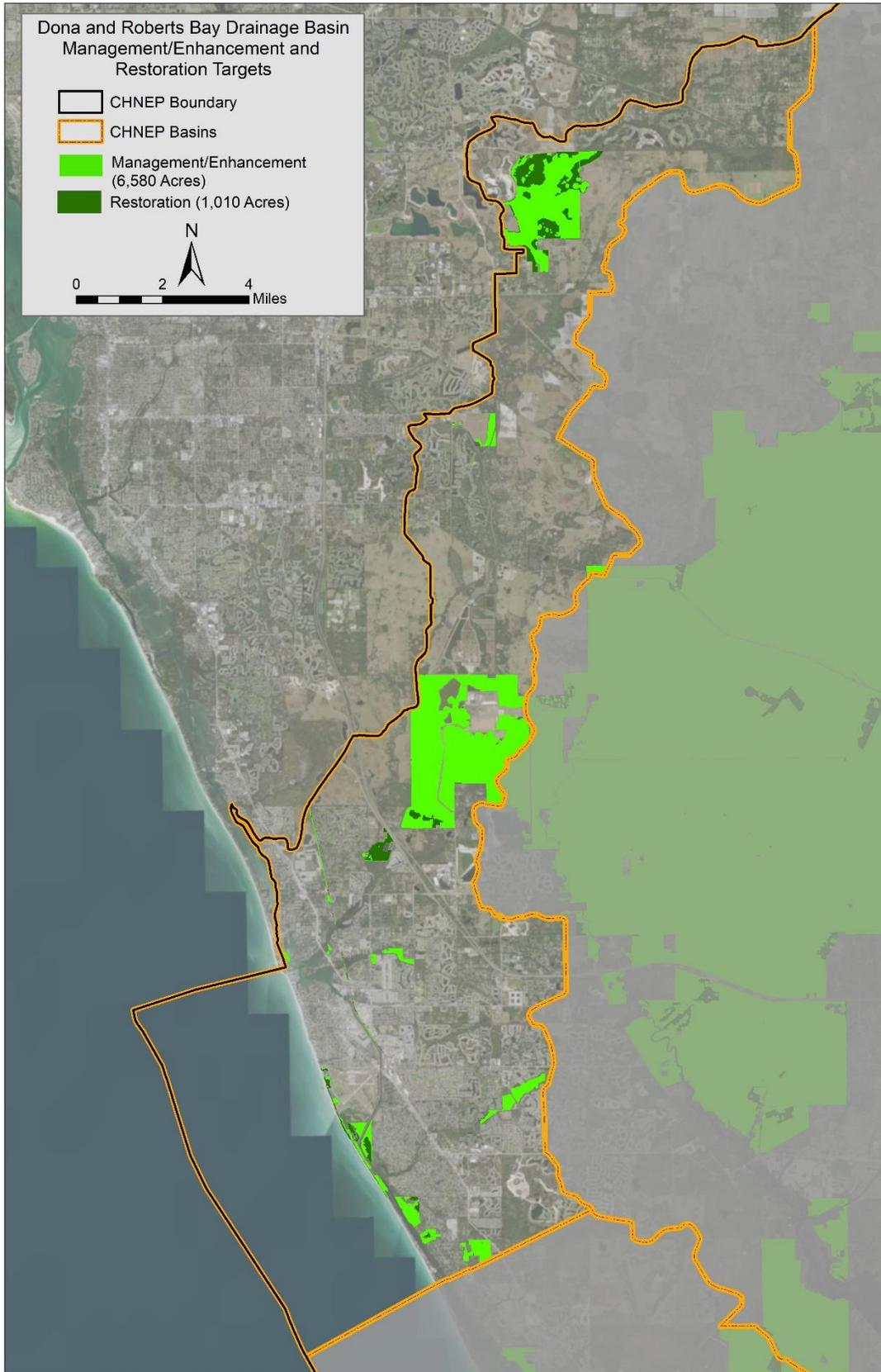
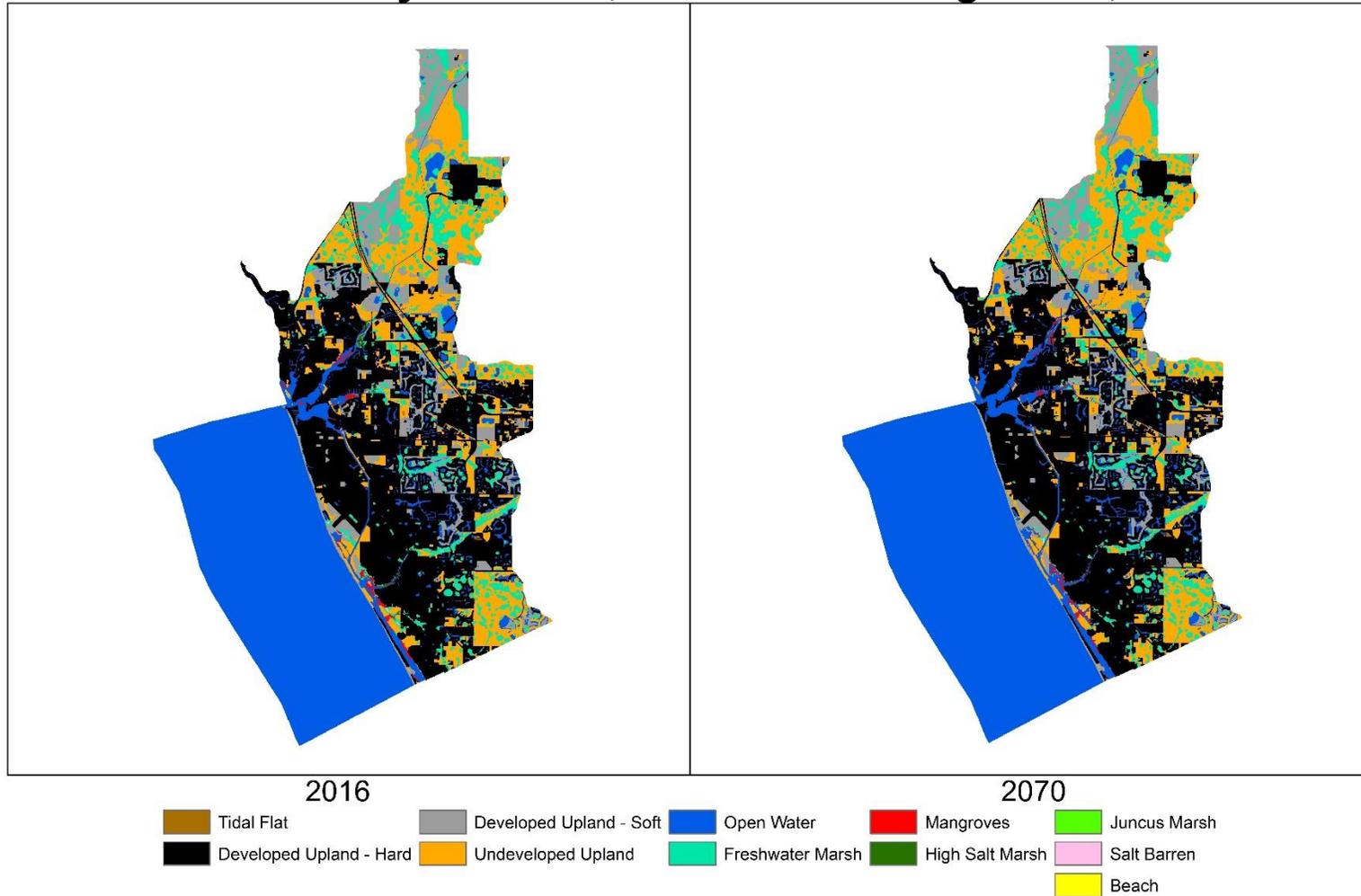


Figure 11. Dona and Roberts Bay Basin MET and RT.

## Dona and Roberts Bays - Run 3, Intermediate-High SLR, Low Accretion



**Figure 12. HEM Model Results for the Dona and Roberts Bay basin.**