



2019 Habitat Restoration Needs Plan



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PEACE RIVER 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>

Peace River Basin

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. The results for this basin area are presented in the following narrative and in Figures 17 through 19.

Preservation/Conservation Opportunities (PCO)

A total of 289,966 acres were identified as potential PCO within the Peace River basin, of which 47 percent (135,691 acres) was categorized as non-native and 53 percent (154,275 acres) as native habitat (Table 11; Figure 17). Overall, the acreage identified as potential PCO constitutes 19 percent of the total lands within the overall Peace River basin. The dominant native habitat communities were classified as shrub and brushland, and stream and lake swamps, which comprised 11 percent (32,241 acres) and 15 percent (43,194 acres), respectively, of all potential PCO acreages (Appendix E). Cropland and pastureland was identified as the major non-native habitat classification within the overall basin with 32 percent (91,981 acres) coverage.

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. (Figure 17). 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 (RO)

A total of 89 acres was identified as potential RO (Table 11; Figure 18) within this basin. Overall, the acreage identified for potential RO constitutes less than one percent of the total lands within this basin. The dominant habitat community was classified as open lands (72 acres; Table 11). Potential RO were identified in the lower extent of the Peace River (Figure 18).

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 Peace River basin HEM map (Figure 20) illustrates model Run 3 (Intermediate-High Sea Level Rise, Low Accretion) for Years 2016 and 2070. The results illustrate an expansion of open water created by projected sea level rise, as well as the loss of mangroves and its migration higher into the landscape.

Management/Enhancement Targets (MET)

A total of 187,211 acres was identified as MET and RT within the Peace River basin. This includes 70 percent (130,218 acres) categorized for MET (Table 11; Figure 19). Overall, the acreage identified as MET and RT constitutes 13 percent of the total lands within the Peace River basin. The dominant native habitat communities identified as MET were classified as stream and lake swamps (31,188 acres; 17 %), and shrub and brushlands (28,411 acres; 15%;) (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 11). The vast majority of MET are dispersed throughout the basin, with the largest areas being Bright Hour Watershed, Lower Peace River, and Babcock/Webb Wildlife Management Area (Figure 19).

Restoration Targets (RT)

A total of 187,211 acres was identified as MET and RT within the Peace River basin. This includes 30 percent (56,993 acres) categorized as RT (Table 11; Figure 19). Overall, the acreage identified as RT and MET constitutes 13 percent of the total lands within the Peace River 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 11). There are areas identified as non-native (RT) that largely occur in the northwestern section of this basin. 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 12). 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, agriculture, and mining;
- Forested freshwater wetlands converting to non-forested freshwater wetlands through silviculture;
- New non-forested freshwater wetlands from mine reclamation; and
- Saltwater marsh 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;
- Increases in intermittent pond occurred from development between 1995 and 2009/2011. Also, open water ponds classification that became shallow ponds was remapped to intermittent ponds in 2009/2011; and
- Vegetated non-forested wetlands classification mapped in 1995 was remapped as saltwater marsh at the eastern limits of Shell Creek.

Peace River Basin Summary

The Peace River basin is the largest of the CHNEP major basins, extending from the Heartlands of Polk County down to Charlotte Harbor. The Peace River is free-flowing; however, the headwaters have been impacted by extensive phosphate mining, with the middle reaches characterized mostly by agricultural land uses. A major surface water withdrawal for potable supply occurs on the lower Peace River.

The habitat status and trends analysis for the Peace River basin showed substantial losses in upland coniferous forest; primarily pine flatwoods which may be considered priority habitat for restoration. In addition, a substantial increase in vegetated non-forested wetland was noted, primarily associated with new wetlands on reclaimed mine lands. Changes in other upland and freshwater wetland habitats were difficult to discern due to mapping inconsistencies. An increase in saltwater marsh was also noted in the tidal portion of the lower Peace River. The latter observation confirms the findings of the HEM which predicts the landward migration of mangroves, and the upstream migration of salt marshes in the tidal rivers and tributaries, in response to sea level rise over the next 100 years. Based on these predictions, ensuring appropriate freshwater inflows and restricting future impoundments in the Peace River will be important to preserving the balance of the primary tidal wetlands which are mangroves and salt marshes in this basin.

The 100-year floodplain of the Peace River constitutes an important fish and wildlife migratory corridor that is still relatively intact, but largely in private ownership. The habitat continuity of the Peace River floodplain could be substantially improved by strategically-located public land acquisition – with almost 290,000 acres of PCO identified by CHNEP stakeholders and other natural resource agencies. Conversely, less than 90 acres were identified for RO, as much of the tidal portion of the Peace River basin is either built out as existing development, or is still in native wetland habitats.

Over 130,000 acres of native habitats occur within existing preservation/conservation lands in the Peace River basin; and these areas allow for extensive opportunities for habitat management activities to ensure optimize functions. In addition, almost 57,000 acres of altered, non-native habitats occur within existing preservation/conservation lands; and these areas allow for extensive opportunities for true habitat restoration, including primarily upland and freshwater wetland

habitats. The majority of the larger habitat restoration areas exist in the upper reaches of the basin, including the south end of Lake Hancock.

MET and RT were developed for the three major native habitat types - tidal wetlands, freshwater wetlands, and uplands, to distinguish the general classes of habitats that could be managed/enhanced or restored. In the Peace River basin, the freshwater wetlands category provides the greatest area for restoration, while the uplands category provided the greatest area for management/enhancement. However, the upper reaches of the Peace River basin provide great restoration potential for headwater streams and riparian wetlands on reclaimed mine impacts. Limited restoration opportunities exist for tidal wetland restoration in this basin.

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 CHNEP Management Conference noted the update presented below:

- The southern portion of Lake Hancock was partially mapped as Restoration based on existing mapping non-native FLUCCS codes; however, this area has been undergoing restoration by SWFWMD and should be should be reclassified as Management/Enhancement in future HRN studies.

The results presented in the tables and maps below can form the foundation for future studies.

TABLE 11. 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	34,602
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

TABLE 12. HRN TARGETS FOR THE PEACE RIVER BASIN BY HABITAT CLASSIFICATION TYPE.

FLUCCS Codes	Primary Classifications	Acres		Change Analysis	
		1995	2009/2011	Acres	Percent
3100	Dry Prairie	4,398	2,819	-1,579	-36%
3200	Shrub and Brushlands	112,653	77,968	-34,685	-31%
3300	Mixed Rangelands	1,260	9,638	8,378	*
4100	Upland Coniferous Forest	78,649	53,161	r	-32%
4200/4300	Upland Hardwood Forest	57,225	33,384	-23,841	-42%
5100	Streams and Waterways	6,749	6,755	6	0.1%
5200	Lakes	30,145	29,827	-318	-1%
5600	Slough Waters	N/A	N/A	N/A	N/A
6100	Wetland Hardwood Forest	110,689	127,769	17,080	15%
6120	Mangrove Swamp	2,941	3,041	101	3%
6200	Wetland Coniferous Forest	10,759	9,586	-1,173	-11%
6300	Wetland Forested Mixed	6,781	7,439	658	10%
6400	Vegetated Non-Forested Wetlands	103,403	141,356	37,953	37%
6420	Saltwater Marsh	2,206	2,484	278	13%
6530	Intermittent Ponds	64	515	451	*
6600	Salt Flats	4	4	0	N/A

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

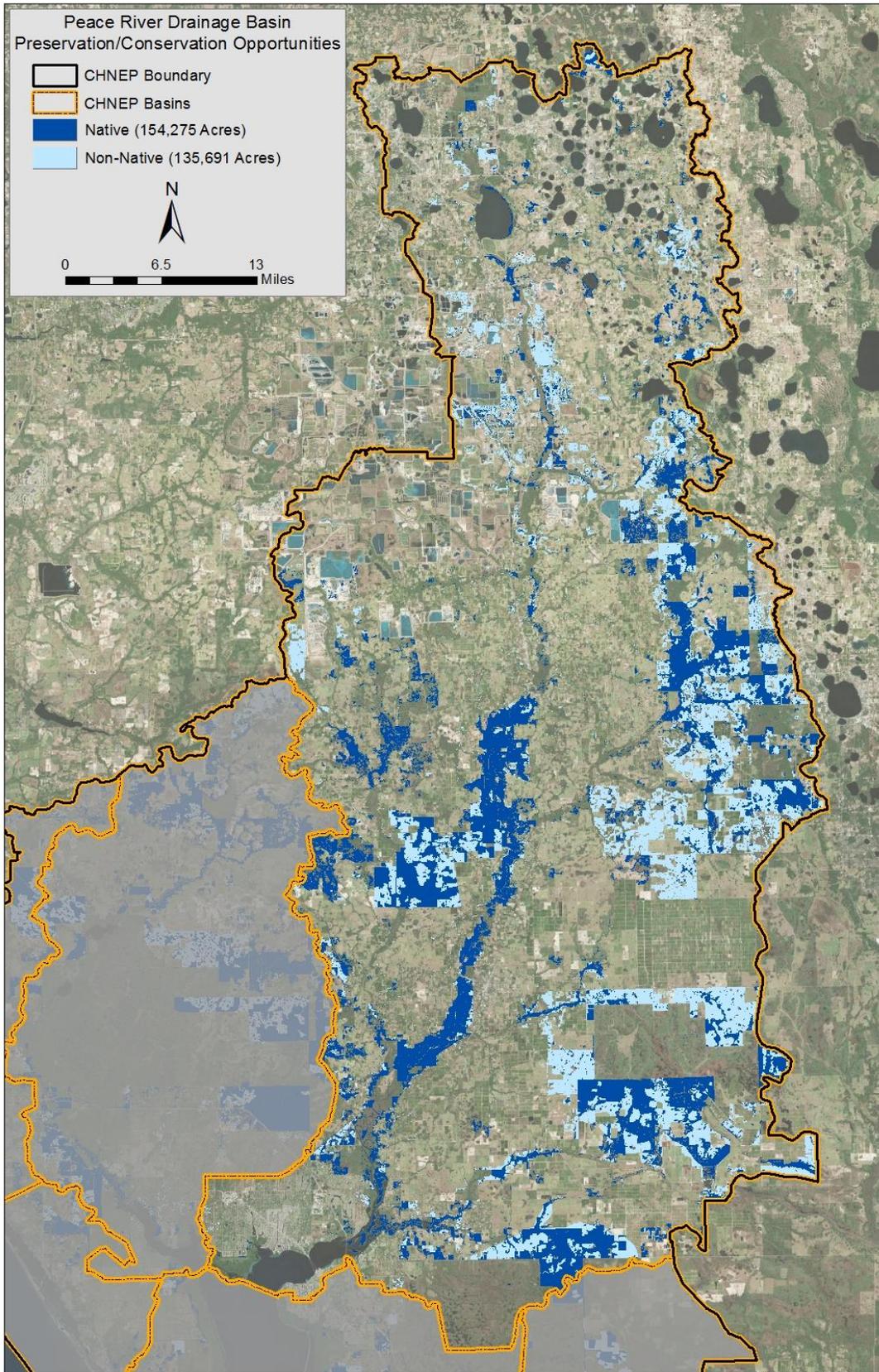


Figure 17. Peace River Basin PCO.

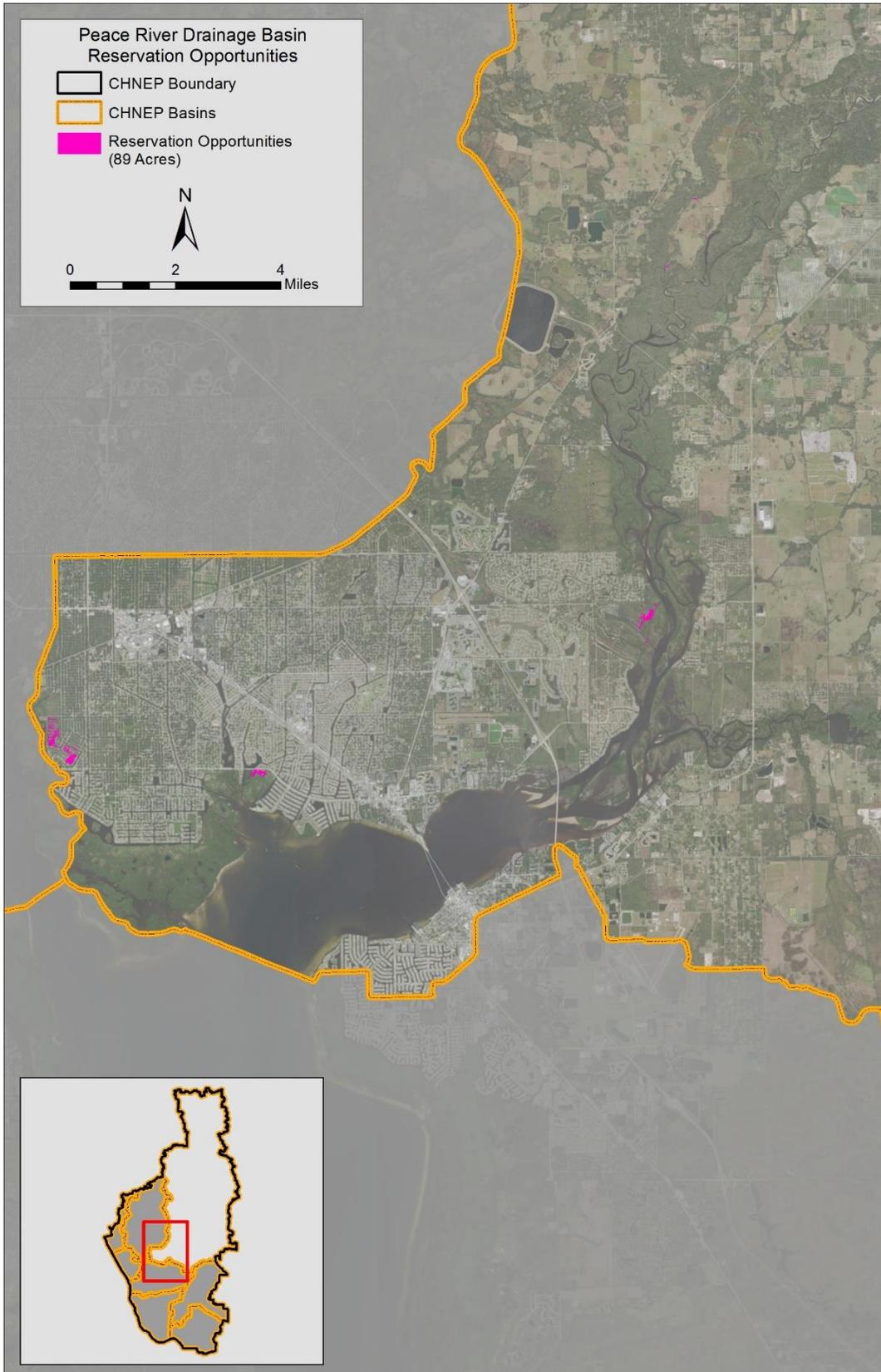
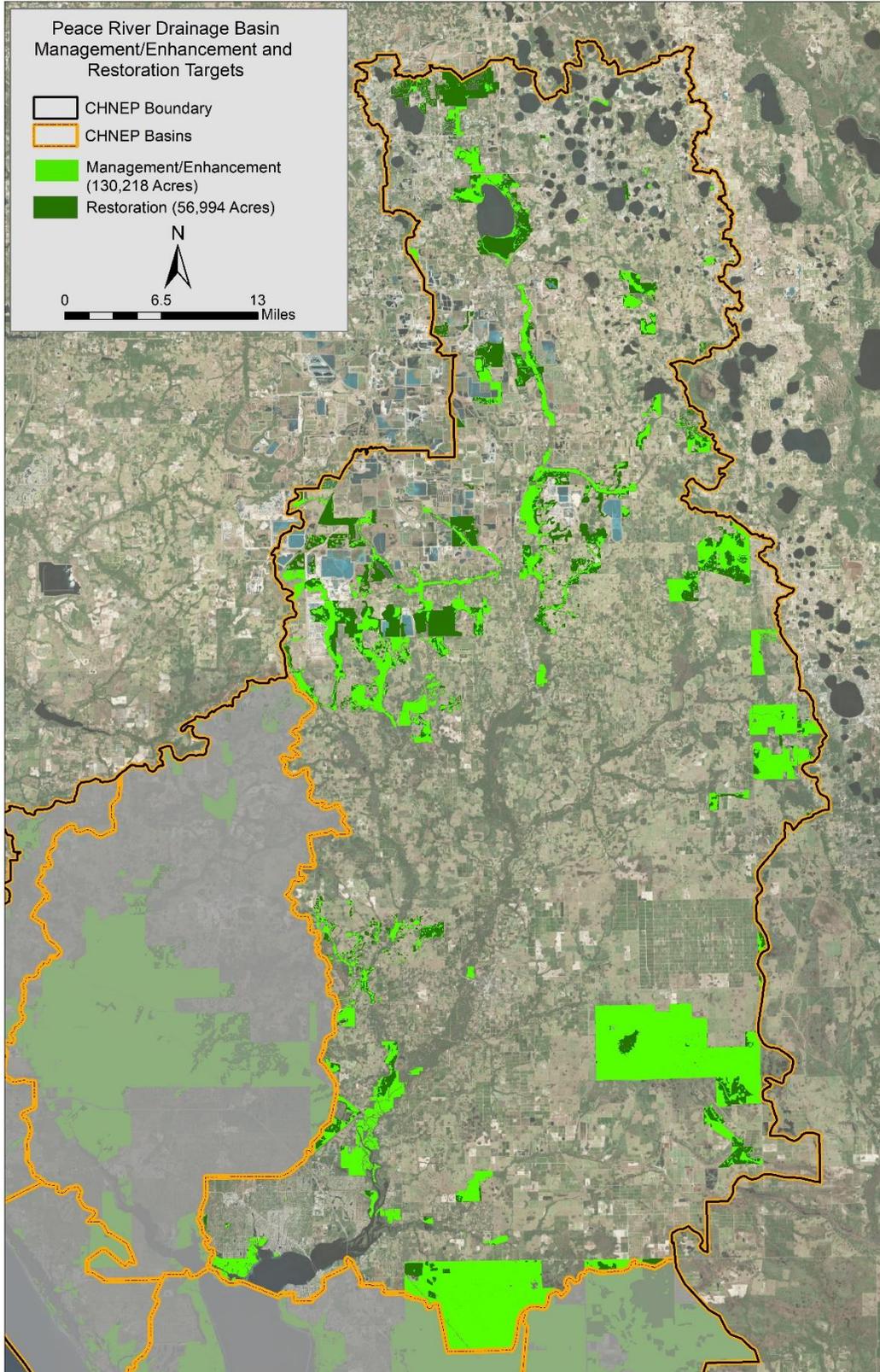


Figure 18. Peace River Basin RO.



*See narrative for note on mapping classifications.

Figure 19. Peace River Basin MET and RT.

Peace River - Run 3, Intermediate-High SLR, Low Accretion

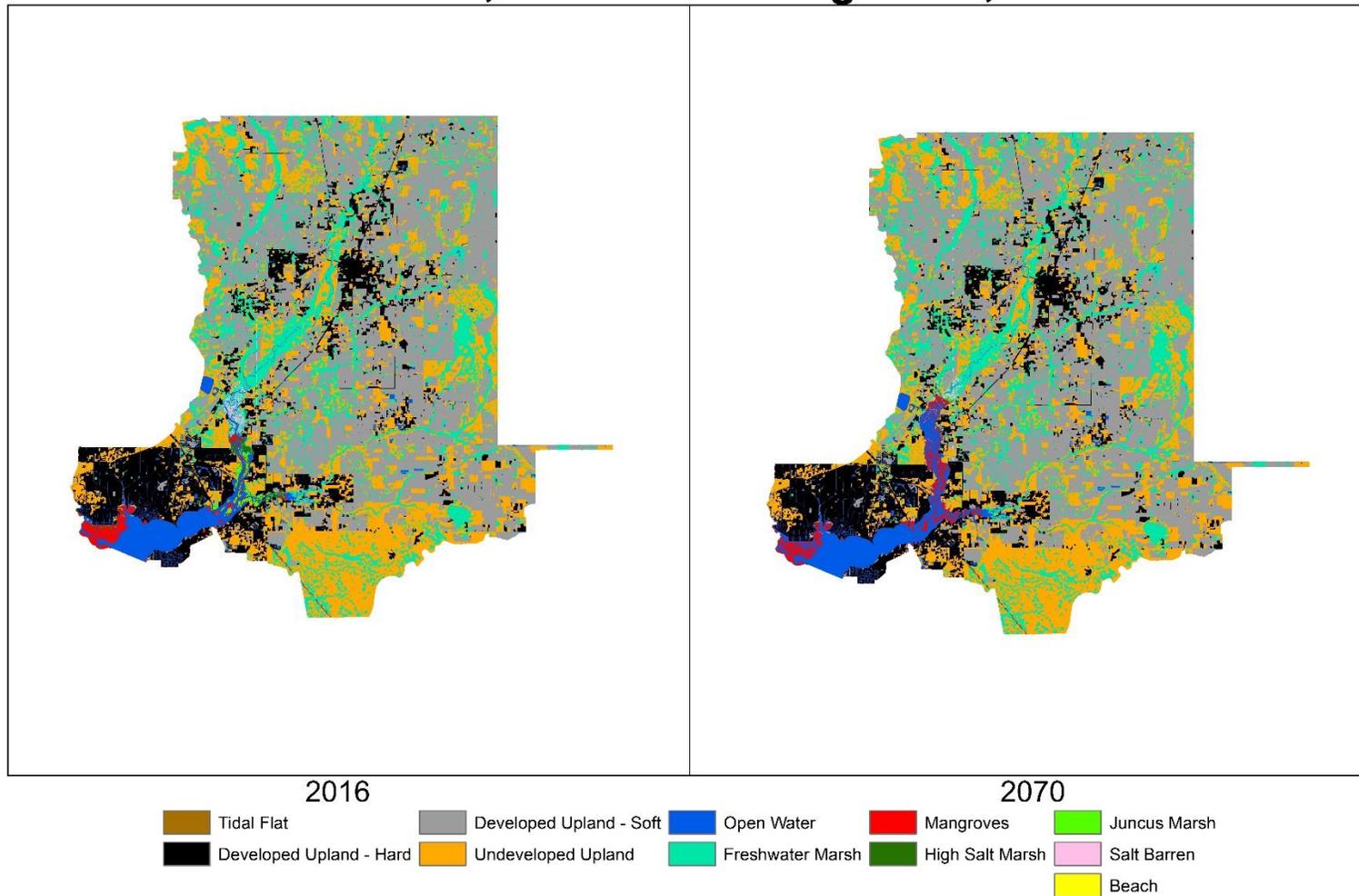


Figure 20. HEM Model Results for the Peace River basin