



2019 Habitat Restoration Needs Plan

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MYAKKA 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>

Myakka River Basin

The Myakka River basin totals 382,772 acres. Proportionally, the Myakka River basin contains the greatest amount of MET and RT, totaling 124,463 acres. This basin contains the Carlton Reserve and Myakka State Forest. The results for this basin area are presented in the following narrative and in Figures 21 through 23.

Preservation/Conservation Opportunities (PCO)

A total of 84,881 acres was identified as potential PCO, of which 30 percent (25,446 acres) was categorized as non-native and 70 percent (59,435 acres) as native habitat (Table 13; Figure 21). Overall, the acreage identified as potential PCO constitutes 22 percent of the total lands within the Myakka River basin. The dominant native habitat communities were classified as shrub and brushland (13,263 acres; 16%), pine flatwoods (11,024 acres; 13%), and freshwater marshes (11,786 acres; 14%) (Appendix E). Cropland and pastureland (17,767 acres; 21%) was identified as the major non-native habitat classification within the overall basin.

Overall, the potential PCO were distributed throughout the Myakka River basin (Figure 21). 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 (RO)

A total of 53 acres was identified as potential RO within the Myakka River basin (Table 13; Figure 22). Overall, the acreages identified constitute less than one percent of the total lands within this basin. The dominant potential RO were classified as open lands (21 acres) and croplands and pasturelands (20 acres) (Appendix E). Potential RO were prominent near the estuarine complex along the Myakka River (Figure 22).

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 Myakka River basin HEM map (Figure 24) illustrates model Run 3 (Intermediate-High Sea Level Rise, Low Accretion) for Years 2016 and 2070. The results illustrate a limited expansion of open water created by projected sea level rise, as well as the loss of mangroves and their migration higher into the landscape.

Management/Enhancement Targets (MET)

A total of 124,463 acres was identified as MET and RT, of which 91% (113,130 acres) was categorized for MET (Table 13; Figure 23). Overall, the acreage identified as MET and RT constitutes 33 percent of the total lands within the Myakka River basin. The dominant native habitat communities identified for MET were classified as shrub and brushland, (29,264 acres; 24%);, pine flatwoods (27,590 acres; 22%);, and freshwater marshes (22,398 acres; 18%) (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 13). The vast majority of MET occurred within the Myakka River State Park/Carlton Reserve, Deer Prairie Creek and other lands within the Myakka River basin (Figure 23).

Restoration Targets (RT)

A total of 124,463 acres was identified as RT and MET, of which 9% (11,333 acres) was categorized for as RT (Table 13; Figure 23). Overall, the acreage identified as RT and MET constitutes 33 percent of the total lands within the Myakka 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 13). 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 14). 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; and
- Forested freshwater wetlands converting to non-forested freshwater wetlands through silviculture.

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 a changes;

- Slough waters classification was not used in 2009/2011;
- 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 in 2009/2011; and
- Large areas around El Jobean that were mapped as saltwater marsh in 1995 were remapped as freshwater marsh in 2009/2011, although there were no signature changes in the aerial analysis between these two periods.

Myakka River Basin Summary

The Myakka River basin is the second largest of the CHNEP major basins, extending from Manatee County to Charlotte Harbor. 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.

The habitat status and trends analysis for the Myakka River basin showed losses in upland coniferous forest, primarily pine flatwoods. This may be considered a priority habitat for restoration. In addition, substantial increases in vegetated non-forested wetland and mixed rangelands were noted. Changes in other upland and freshwater wetland habitats were difficult to discern due to mapping inconsistencies. Slight decreases in both mangrove swamp and saltwater marsh were also noted in the tidal portion of the lower Myakka River. The latter observation contradicts the findings of the HEM utilized as part of this project, but mapping inconsistencies were evident in a review of the aerial imagery. The HEM 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 Myakka 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 Myakka River constitutes an important fish and wildlife migratory corridor that is still mostly intact. Myakka River State Park encompasses a large portion of the 100-year floodplain, but most of the remaining floodplain is in private ownership. The habitat continuity of the Myakka River floodplain and watershed area could be substantially improved by strategically-located public land acquisition, with almost 85,000 acres of PCO identified by CHNEP stakeholders and other natural resource agencies. Large tracts of potential preservation and conservation lands were identified on the eastern edge of Myakka River State Park, which if acquired would consolidate a very large proportion of the overall basin area. Conversely, only 53 acres were identified as RO, as much of the tidal portion of the Myakka River basin is either still in native wetland habitats, or built out as existing development.

Over 113,000 acres of native habitats occur within existing preservation and conservation lands in the Myakka River basin; and these areas allow for habitat management activities to optimize functions. In addition, over 11,000 acres of altered, non-native habitats occur within existing

preservation and conservation lands; and these areas allow for opportunities for true habitat restoration, including primarily upland and freshwater wetland habitats. The majority of the larger habitat restoration areas exist on the east side of Myakka River State Park.

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 Myakka River basin, the uplands category provides the greatest area for both management/enhancement and restoration activities, followed by freshwater wetlands. 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 these updates presented below:

- Portions of land along the shoreline of Big Slough waterway in North Port were partially mapped as PCO based on existing mapping FLUCCS codes; however, these areas have been purchased and preserved by the City of North Port and should now fall into the MET (lands mapped as native) and RT (lands mapped as non-native) categories and should be reclassified in future HRN studies.
- Parcels of land at the intersection of Toledo Blade and Price Boulevard in North Port were partially mapped as PCO based on existing mapping FLUCCS codes; however, these areas have been zoned for commercial use and are currently being developed and should be reclassified in future HRN studies as Existing Development.
- All maps and tables in this basin are based on 2011 SWFWMD habitat mapping data.

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

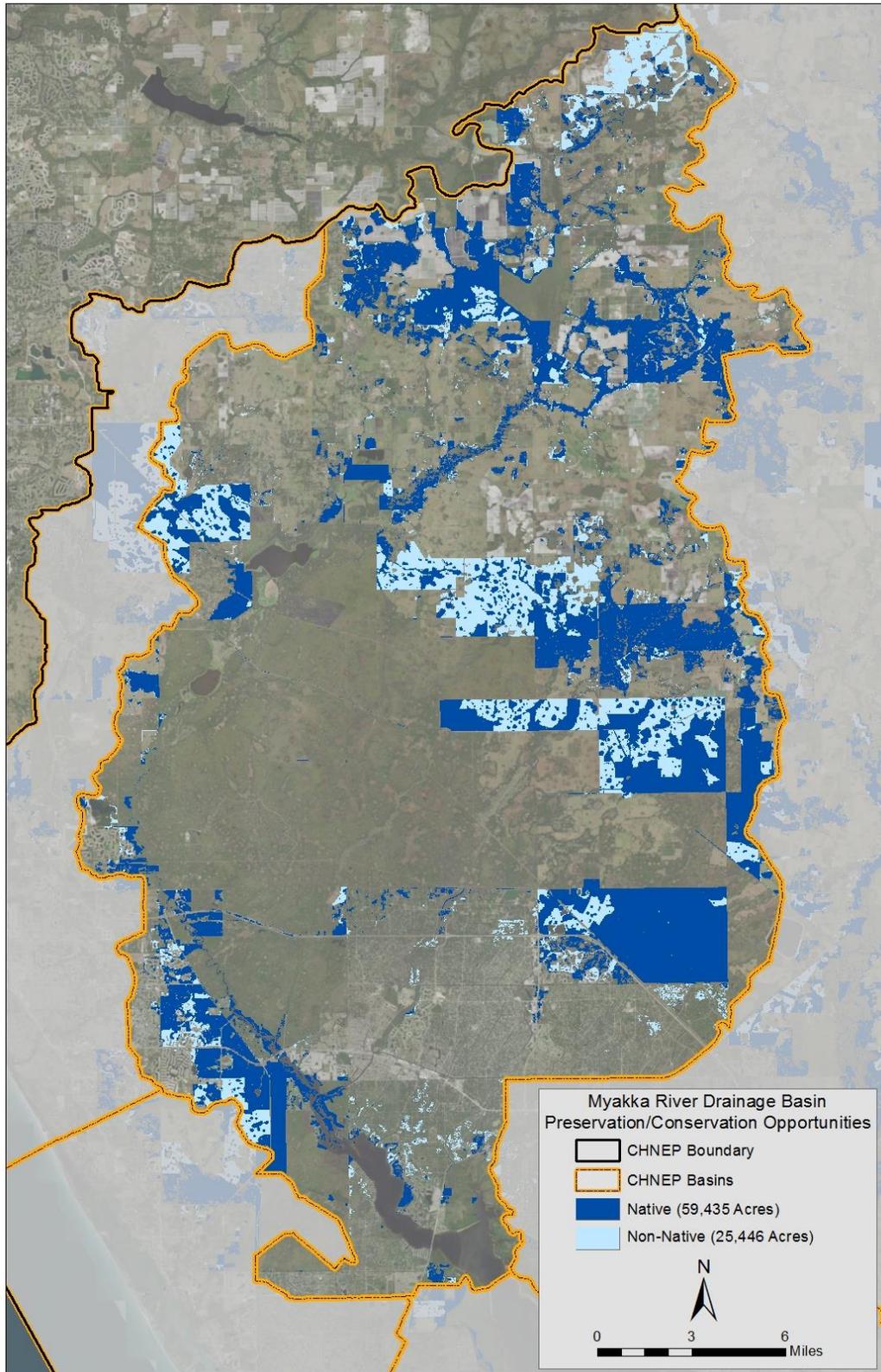
TABLE 13. HRN OPPORTUNITIES AND TARGETS FOR THE MYAKKA RIVER BASIN BY MAJOR HABITAT TYPE

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

TABLE 14. HRN CHANGE ANALYSIS GAINS AND LOSSES FOR THE MYAKKA RIVER BASIN BY HABITAT CLASSIFICATION TYPE.

FLUCCS Codes	Primary Classifications	Acres		Change Analysis	
		1995	2009/2011	Acres	Percent
3100	Dry Prairie	1,503	1,035	-468	-31%
3200	Shrub and Brushlands	60,288	46,323	-13,965	-23%
3300	Mixed Rangelands	2,148	4,455	2,307	107%
4100	Upland Coniferous Forest	51,168	44,331	-6,837	-13%
4200/4300	Upland Hardwood Forest	17,960	18,434	474	3%
5100	Streams and Waterways	1,295	1,226	-69	-5%
5200	Lakes	2,236	1,392	-844	-38%
5600	Slough Waters	N/A	N/A	N/A	N/A
6100	Wetland Hardwood Forest	29,016	28,702	-314	-1%
6120	Mangrove Swamp	827	806	-21	-2%
6200	Wetland Coniferous Forest	1,441	1,436	-5	-0.3%
6300	Wetland Forested Mixed	696	873	177	25%
6400	Vegetated Non-Forested Wetlands	48,371	53,845	5,474	11%
6420	Saltwater Marsh	1,701	1,574	-127	-7%
6530	Intermittent Ponds	23	72	49	*
6600	Salt Flats	N/A	47	47	*

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



*See narrative for note on mapping classifications.

Figure 21. Myakka River Basin PCO.

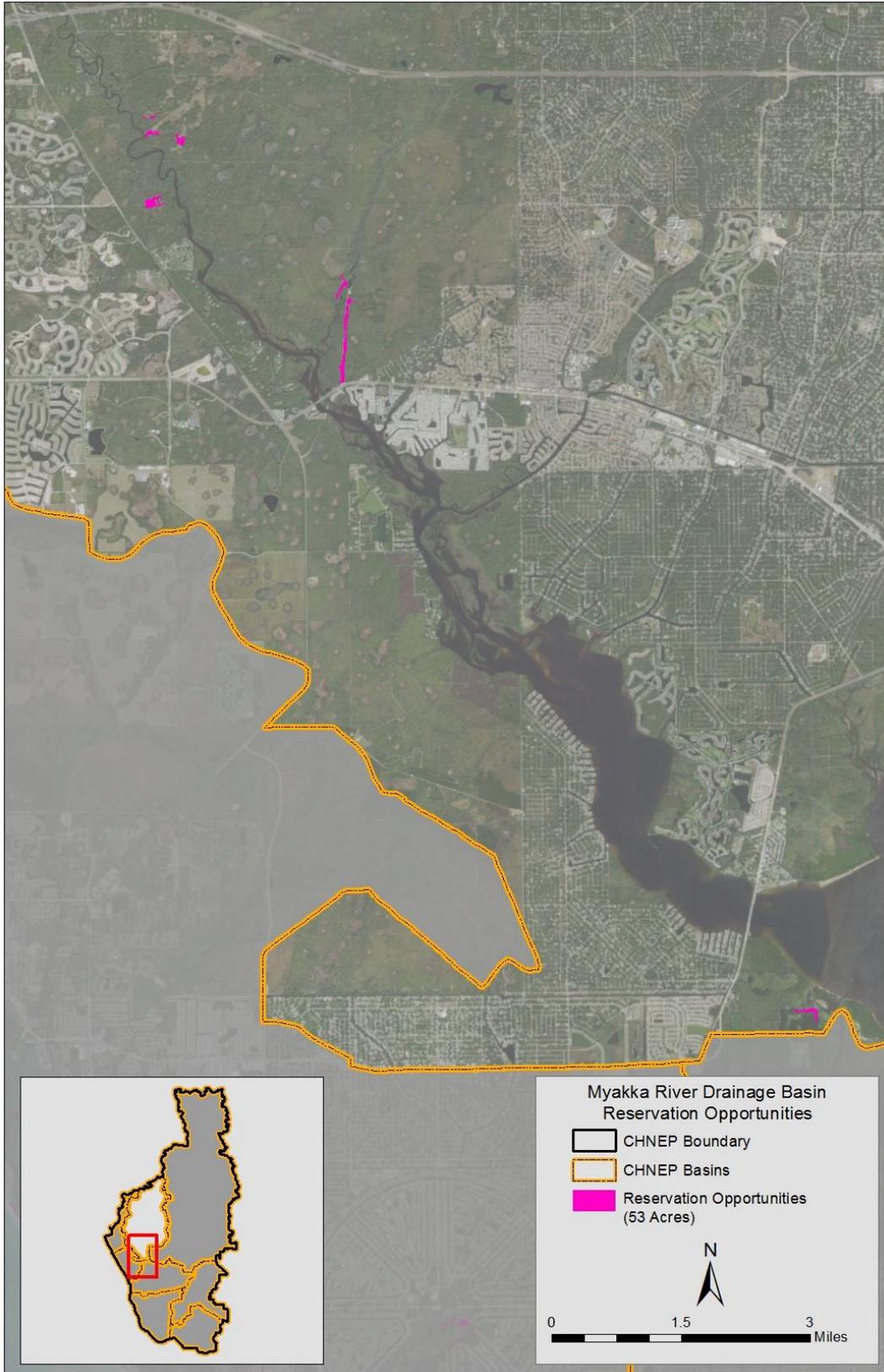
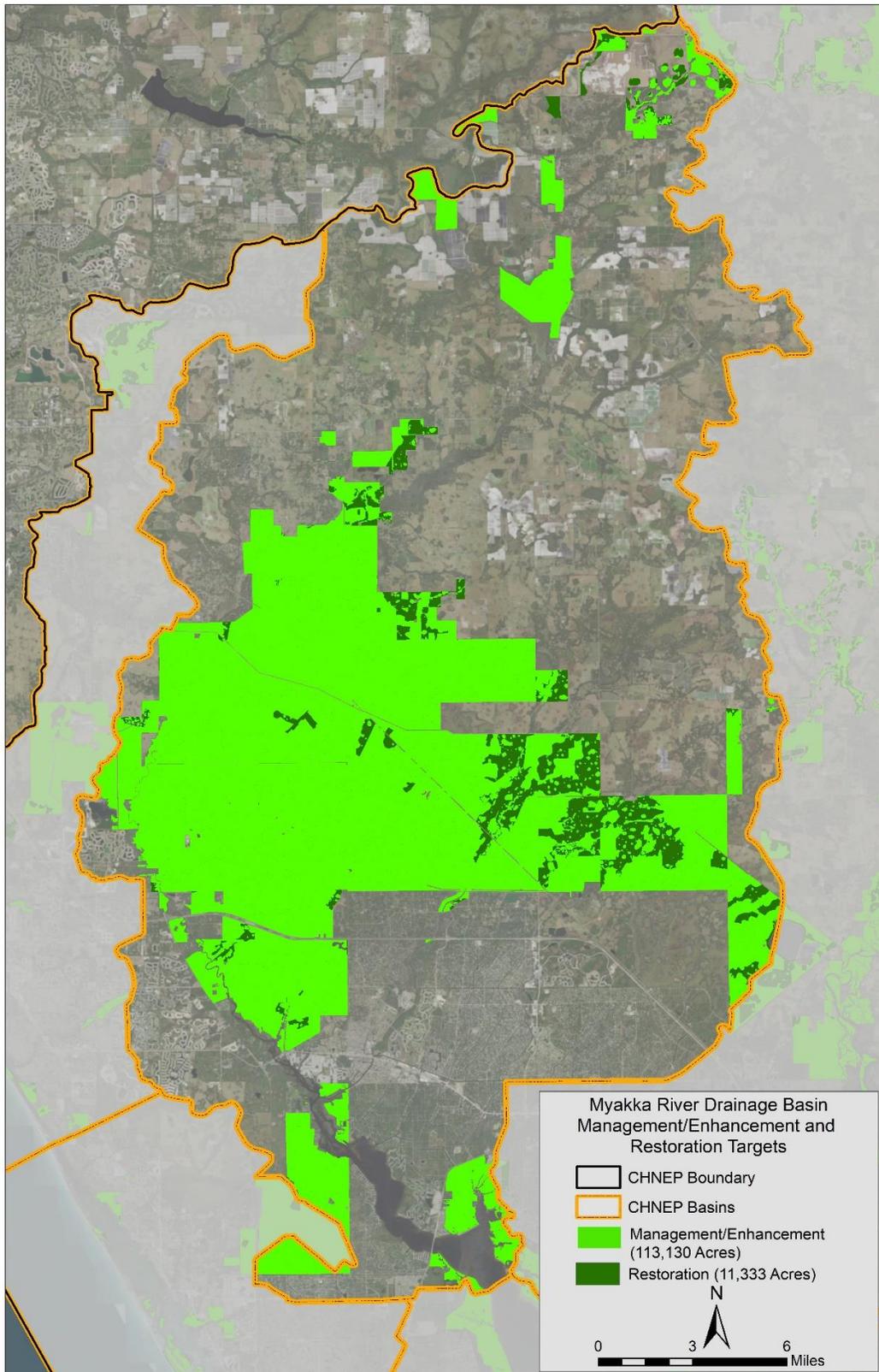


Figure 22. Myakka River Basin RO.



*See narrative for note on mapping classifications.

Figure 23. Myakka River Basin MET and RT.

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

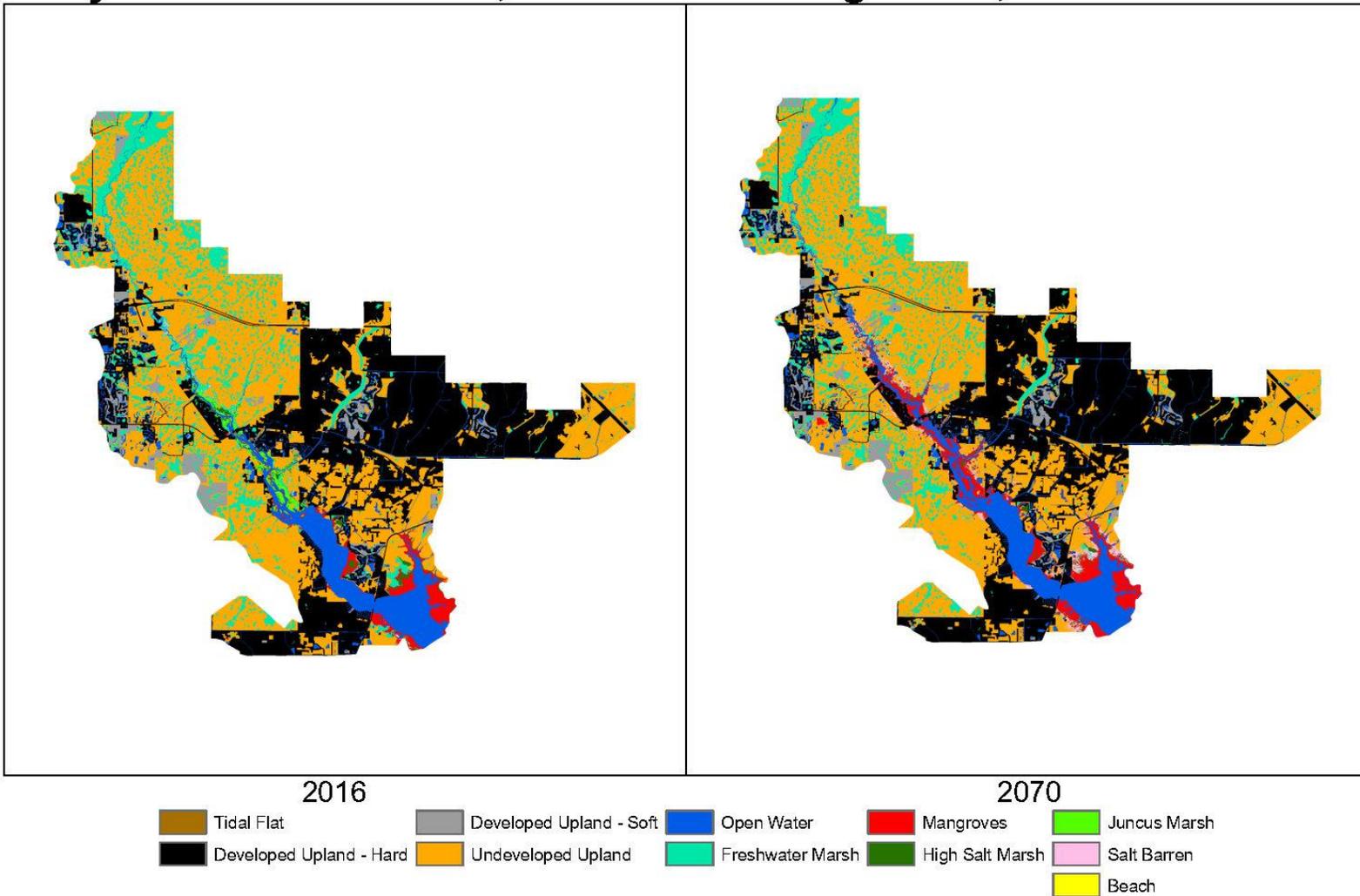


Figure 24. HEM Model Results for the Myakka River basin