

**Geographic Information System Analysis Methods  
using the Habitat Priority Planner  
for Mobile Bay Conservation Planning (2008-2010)**

*and*

**Instructions for Preparing Data Layers  
for the Online Habitat Mapper**

For internal use by project partners. Documented by the National Oceanic and Atmospheric Administration Coastal Services Center.

April 2010

## Table of Contents

<b>Introduction.....</b>	<b>1</b>
<b>Geospatial Process .....</b>	<b>1</b>
<b>Geospatial Analysis Overview .....</b>	<b>3</b>
Habitat Prioritization Analysis.....	3
Preparing Data for Alabama Habitat Mapper .....	4
Future Updates to the Alabama Habitat Mapper .....	4
<b>Appendix A: Habitat Analysis Details .....</b>	<b>5</b>
Freshwater Wetlands.....	5
Streams and Rivers .....	10
Riparian Buffer .....	15
Beach and Dune .....	22
Intertidal Marshes and Flats.....	26
Sub Aquatic Vegetation .....	31
Oyster Reefs.....	36
Longleaf Pine .....	39
Pine Savannah.....	43
Maritime Forest.....	47
<b>Appendix B: Parcel Analysis Details.....</b>	<b>51</b>
<b>Appendix C: Priority Habitats Merge .....</b>	<b>58</b>
<b>Appendix D: Aliases.....</b>	<b>59</b>

# **Introduction**

In 2009, the Mobile Bay National Estuary Program (MBNEP) partnered with the National Oceanic and Atmospheric Administration (NOAA) Coastal Services Center (the Center), NOAA's Office of Habitat Conservation, and The Nature Conservancy (TNC) to update local habitat conservation priorities in Alabama. The partnership worked with MBNEP's local stakeholder group, the Coastal Habitats Coordinating Team (CHCT), which includes over 60 state and local representatives concerned with habitat protection in coastal Alabama. The project focused on prioritizing habitat patches for conservation in Mobile and Baldwin counties in order to guide and inform the habitat protection efforts of these organizations.

This document is intended to provide members of the project team with an overview of the process, so that they have a basic framework for the Geographic Information System (GIS) analysis process for future habitat assessments. This document includes:

- Background information on the project for Mobile and Baldwin counties.
- Summary of the participatory GIS portion of the process.
- Review of the data and steps used to perform the GIS analysis using the Center's Habitat Priority Planner (HPP) ArcGIS software extension.
- Instructions for preparing the data for an online conservation planning tool, called Habitat Mapper. (This tool was developed as part of this project to allow members of the public to access and explore the GIS analysis results.)

# **Geospatial Process**

The project team chose the Center's HPP tool to help prioritize habitats for protection. The HPP tool is an ArcGIS extension designed to help intermediate GIS users prioritize habitats for conservation, restoration, or land-use decisions. (To download this free tool or find out more about it, go to <http://www.csc.noaa.gov/digitalcoast/tools/hpp/>.)

To organize the geospatial analysis, the project team followed a process by which participants determined their goals, developed objectives for each goal, and then considered selection criteria that would help to narrow down and prioritize habitat patches for conservation. This process involved stakeholder interaction, local data mining and assembly, geospatial analysis, and stakeholder review and refinement of the geospatial analysis through a participatory GIS process.

The project team worked with the CHCT to help direct the GIS analysis; the primary steps with the CHCT were initiated in the three meetings described on the following page.

## **Meeting 1: Demonstrating the Tool and Identifying Initial Criteria (December 2008)**

The project team provided a demonstration of the HPP tool to the CHCT in Mobile, Alabama. Meeting participants discussed habitat protection goals and objectives, and they also identified initial criteria for selecting priority habitat patches for 10 habitat types. Additionally, the CHCT reaffirmed and refined the habitat protection goals for those 10 habitat types:

- Freshwater Wetlands
- Rivers and Streams (analyzed using watersheds)
- Riparian Buffer
- Beach and Dune
- Intertidal Marshes and Flats
- Sub Aquatic Vegetation
- Oyster Reefs
- Longleaf Pine
- Pine Savannah
- Maritime Forest

Following this stakeholder meeting, staff from the Center and TNC inventoried available local data—based on the goals and selection criteria identified—in order to identify data for the GIS analysis. Gap Analysis Program (GAP) land cover data (from 2001) was chosen as the base data, because it contains habitat types that are important to the CHCT. To have the most up-to-date view of the available habitat, the GAP data was updated using developed land cover classes from NOAA’s 2005 Coastal Change Analysis Program (C-CAP) data. Once this large, data gathering effort was complete, staff from the Center and TNC completed an initial HPP analysis for each of the 10 habitat type goals using the objectives and selection criteria discussed during the December meeting.

## **Meeting 2: Refining Selection Criteria (April 2009)**

The project partners met with the CHCT in Mobile to show the results of the initial HPP analysis and to get additional input on the selection criteria. HPP’s participatory GIS module (the Data Explorer) was used to show the analysis results and make on-the-fly modifications to the analysis as stakeholders provided input. This process allowed participants to refine the selection criteria used to identify priority habitats for conservation. CHCT members also verified that the appropriate GAP land cover classes were being used for each habitat goal. After this meeting, staff from the Center and TNC revised the HPP analysis based on the new input.

## **Meeting 3: Reviewing Habitat Priority Planner Outputs (June 2009)**

The refined HPP results were shown to the CHCT during three webinars, and then staff from the Center and TNC produced the final outputs (based on the feedback from the webinars). These outputs—along with supporting data—were incorporated into the Alabama Habitat Mapper, an online conservation planning tool created by the Center so that the MBNEP, CHCT, and other stakeholders could view and interact with the prioritized habitat patches and ancillary data sets.

Interested parties may obtain a DVD containing all data used for the GIS analysis by contacting:  
Roberta Swann, Director of MBNEP  
4172 Commanders Drive  
Mobile, AL 36615  
(251) 431-6409  
[rswann@mobilebaynep.com](mailto:rswann@mobilebaynep.com)

The remainder of this document includes a brief overview of the geospatial analysis process, followed by appendixes that explain the process in greater detail. The appendixes contain a spatial analysis summary table, step-by-step instructions for how HPP was used, a final map layout for each habitat goal identified by the CHCT, and instructions for preparing the data for the Habitat Mapper.

## Geospatial Analysis Overview

### ***Habitat Prioritization Analysis***

The first step in the geospatial analysis was to create the proper base data for the 10 habitat goals identified by the CHCT. As mentioned previously, the chosen base data used 2001 GAP land cover data that had been updated with the 2005 C-CAP land cover data.

The following statements (extracted from the metadata of the land cover file) describe the base data that was used for all of the HPP GIS analysis:

- *2001\_gap\_land\_cover.img* - All GAP land cover categories present in Mobile and Baldwin counties in 2001 rescaled to classes 1-34.
- *gap\_update\_2005\_impervious.img* - Developed categories from 2005 C-CAP were inserted into the 2001 GAP layer. This captures changes from natural areas to developed in the GAP map between 2001 and 2005. Developed categories may be different in existing developed areas in the GAP map because C-CAP used a different threshold on the percent impervious layer.
- *2005\_change\_mask.img* - This is a binary change mask between the 2001 and 2005 C-CAP maps. This can be used to indicate natural areas that may have changed in the GAP map.

Once the base data was established, the next step was to use the HPP tool to perform the habitat prioritization analysis for each of the 10 habitat goals (using the selection criteria identified by the CHCT). The details of this analysis are available in Appendix A, which includes the following components for the 10 habitat goals:

1. **Summary Table:** A table summarizing the CHCT's analytical process for each habitat goal; the process allowed the group to focus in on specific habitat patches that met a variety of selection criteria. The summary table identifies the habitat protection goal, the protection objectives (specific characteristics of the habitat that are considered important), and a set of spatial selection criteria for each objective. (For example, if the goal is to conserve wetland habitat, one objective might be to focus on a minimum habitat size. The corresponding selection criteria for that example objective might be to focus on wetland habitat patches of at least 20 acres.) Additionally, the summary table includes (1) the data sets that were used to analyze each objective according to the selection criteria, and (2) additional data sets that were included in the Habitat Mapper as ancillary data that could be viewed alongside the prioritized habitats. These additional data sets were not used for analysis, but they were identified by the CHCT as having important relationships to the habitats.

2. **Instructions:** Step-by-step instructions on how HPP was used to perform the geospatial analysis. (These instructions are specific to the 2009 HPP analysis; the file naming conventions reflect the objectives and selection criteria of this analysis. Be aware that future HPP analyses may use different names from those shown in this document, in order to reflect the criteria that is specific to the new analyses.)
3. **Priority Habitat Map:** A map layout showing the final priority habitats for each of the 10 habitat types (as determined by the objectives and selection criteria chosen by the CHCT members for the 2009 HPP analysis).

## ***Preparing Data for Alabama Habitat Mapper***

To bring the analysis data into the Habitat Mapper for viewing, three steps needed to be completed:

1. **Identifying Priority Habitat Relative to County Parcels:** Geospatial data representing parcels in Mobile and Baldwin Counties were obtained from each county, and then the HPP tool results were used to approximate the amount of priority habitat in each 2009 land parcel. (See Appendix B for more details.) Parcel data shown in the Habitat Mapper provides the Parcel ID Number and the amount of priority habitat associated with each parcel, for use as an initial screening-level assessment for conservation and land use planners. For additional information on the parcels, either contact Mobile or Baldwin County directly or use parcel information available on the web.
2. **Merging All Priority Habitats Together:** An additional data layer was created that merges into a single layer all of the priority habitat patches indentified by the CHCT selection criteria. (See Appendix C for more details.)
3. **Generating Aliases:** In order to make the Habitat Mapper easy to use for people without a GIS background, simpler names (that is, aliases) were created for the table of contents and attribute fields. Appendix D lists all of the layer names (that is, aliases) displayed in the Habitat Mapper table of contents, the original layer file names used for the analysis, the aliases for the attributes displayed in the Habitat Mapper, and the original names of the attribute fields from the analysis.

## ***Future Updates to the Alabama Habitat Mapper***

In the future MBNEP and the CHCT may decide to update the Habitat Mapper as new or updated data become available—or if their conservation goals and priorities change. The *Technical Design and Maintenance* document provides instructions for updating the Habitat Mapper with new data. For more information on this document, contact:

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2234 South Hobson Avenue  
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# Appendix A: Habitat Analysis Details

## Freshwater Wetlands

### Summary Table for Freshwater Wetlands

*Goal: Identify priority freshwater wetland habitat.*

Objectives	Selection Criteria	HPP Analyses	Available Data for Analyses	Related Data for Habitat Mapper
Identify riverine, freshwater wetland habitat		Unique classification for riverine, wetlands only; do not include non-riverine in analysis.	Land cover ( <i>gap_update_2005_impervious.img</i> )	Boat ramps and marinas ( <i>ramp_marina_srvy_03.shp</i> )
Identify non-riverine, freshwater wetland habitat		Simple classification	Land cover ( <i>gap_update_2005_impervious.img</i> )	Non-riverine wetlands ( <i>non_riverine_wetlands.shp</i> )
Habitats should be a minimum size	1–10 hectares	Size	Land cover ( <i>gap_update_2005_impervious.img</i> )	Protected lands ( <i>prot_land_Mob_Bald.shp</i> )
Habitats should be a certain distance from developed areas	1 kilometer or more from development	Distance to	Medium- and high-intensity developed areas ( <i>dev_med_high.shp</i> )	The Nature Conservancy (TNC) aquatic and terrestrial priority areas ( <i>TNC_aquatic_priority.shp</i> , <i>TNC_terr_priority.shp</i> )

### Explanation of Analysis for Freshwater Wetlands

- The Coastal Habitats Coordinating Team (CHCT) chose to isolate non-riverine freshwater wetlands, including treeless savannah and wet prairie, cypress domes, and basin swamps. (Many of these habitats are small and isolated; if they were analyzed among larger, more dominant riverine classes, they would have been eliminated.) With these habitats, the CHCT chose to use a simple classification that effectively lumps them together into a single habitat type: non-riverine, freshwater wetlands.
- The CHCT performed a unique classification on the riverine, freshwater wetlands, which includes floodplain forests and tidal swamps. The unique classification allows each wetland type to be preserved individually.
  - Only riverine, freshwater wetlands between 1–10 hectares were analyzed. Many of the very large patches of this habitat are already protected, so the focus was shifted to smaller habitats. The CHCT determined that based on the scale of the base data (30 meters), 1 hectare was the minimum appropriate size to consider.
  - Only riverine, freshwater wetlands at least 1 kilometer from developed areas were analyzed. The thought behind this decision was that these would be the healthiest habitats to conserve.

- The CHCT felt that boat ramps, marinas, and TNC priority areas were interesting to examine with the freshwater wetland habitats and could help make decisions about which habitats to choose for a project. These data sets were not be used for analysis, but they were made available in the Habitat Mapper so that users could examine them alongside the prioritized freshwater wetlands.

## Geospatial Analysis Instructions for Freshwater Wetlands

Data Used For Analysis	Related Data For Habitat Mapper
<ul style="list-style-type: none"> <li>Gap Analysis Program (GAP) land cover updated with Coastal Change Analysis Program (C-CAP) (<i>gap_update_2005_impervious.img</i>)</li> <li>Medium- and high-intensity developed areas (<i>dev_med_high.shp</i>)</li> </ul>	<ul style="list-style-type: none"> <li>Boat ramps and marinas (<i>ramp_marina_srvy_03.shp</i>)</li> <li>Non-riverine wetlands (<i>non_riverine_wetlands.shp</i>)</li> <li>Protected lands (<i>prot_land_Mob_Bald.shp</i>)</li> <li>TNC priority aquatic areas (<i>TNC_aquatic_priority.shp</i>)</li> <li>TNC priority terrestrial areas (<i>TNC_terr_priority.shp</i>)</li> </ul>

### Step 1: Habitat Classification (Habitat Priority Planner (HPP) Module 1)

- Classify Non-riverine, Freshwater Wetlands.

**Note:** The CHCT determined that all non-riverine, freshwater wetlands are considered priority, so they will all be shown in the results (that is, no habitat prioritization analysis needed to be performed on non-riverine, freshwater wetlands).

- Select *Create a new habitat patch file*.  
Click *Next*.
- From the Land cover dataset dropdown menu, choose *gap\_update\_2005\_impervious.img*.  
Select the Analysis Extent *Extent of the above selected land cover layer*.  
Click *Next*.
- From the Value field dropdown menu, choose *Value*.  
From the Description field dropdown menu, choose *class\_name*.  
Click *Generate Values*.  
Click *Next*.
- Select the Classification Type *Simple*. Check the boxes next to the following land cover classes:  
27 – Southern Coastal Plain Nonriverine Basin Swamp  
30 – Southern Coastal Plain Nonriverine Cypress Dome  
32 – Treeless Savannah and Wet Prairie  
Click *Next*.

- e. Either create a file geodatabase, or store the output in an existing file geodatabase.
  - f. Save results as ***non\_riverine\_wetlands*** and click *Finish*.
2. Classify Riverine, Freshwater Wetlands.
- a. Select *Create a new habitat patch file*.  
Click *Next*.
  - b. From the Land cover dataset dropdown menu, choose *gap\_update\_2005\_impervious.img*.  
Select the Analysis Extent *Extent of above selected land cover layer*.  
Click *Next*.
  - c. From the Value field dropdown menu, choose *Value*.  
From the Description field dropdown menu, choose *class\_name*.  
Click *Generate Values*.  
Click *Next*.
  - d. Select the Classification Type *Unique*. Check the boxes next to the following land cover classes:  
 24 – East Gulf Coastal Plain Large River Floodplain Forest – Forest Modifier  
 25 – East Gulf Coastal Plain Small Stream and River Floodplain Forest  
 26 – Southern Coastal Plain Blackwater River Floodplain Forest  
 31 – East Gulf Coastal Plain Tidal Wooded Swamp  
 33 – East Gulf Coastal Plain Large River Floodplain Forest – Herbaceous Modifier  
 Click *Next*.
  - e. Save result as ***riverine\_wetlands\_mod1*** and click *Finish*.

#### *Step 2: Habitat Analysis (HPP Module 2)*

1. Perform a new habitat analysis.
  - a. From the Habitats layer dropdown menu, choose *riverine\_wetlands\_mod1*.  
Choose distance units: *meters*.  
Choose area units: *hectares*.  
Click *Next*.
  - b. Landscape analyses: the CHCT decided that landscape analyses were not necessary for this habitat. not applicable  
Click *Next*.
  - c. Click *New* to add a Custom Analysis:
    - i. From the Analysis type dropdown menu, choose *distance to*.  
From the Analysis layer dropdown menu, choose *dev\_med\_high*.  
From the Field name dropdown menu, choose *dt\_dev\_mh*.  
Click *OK*.

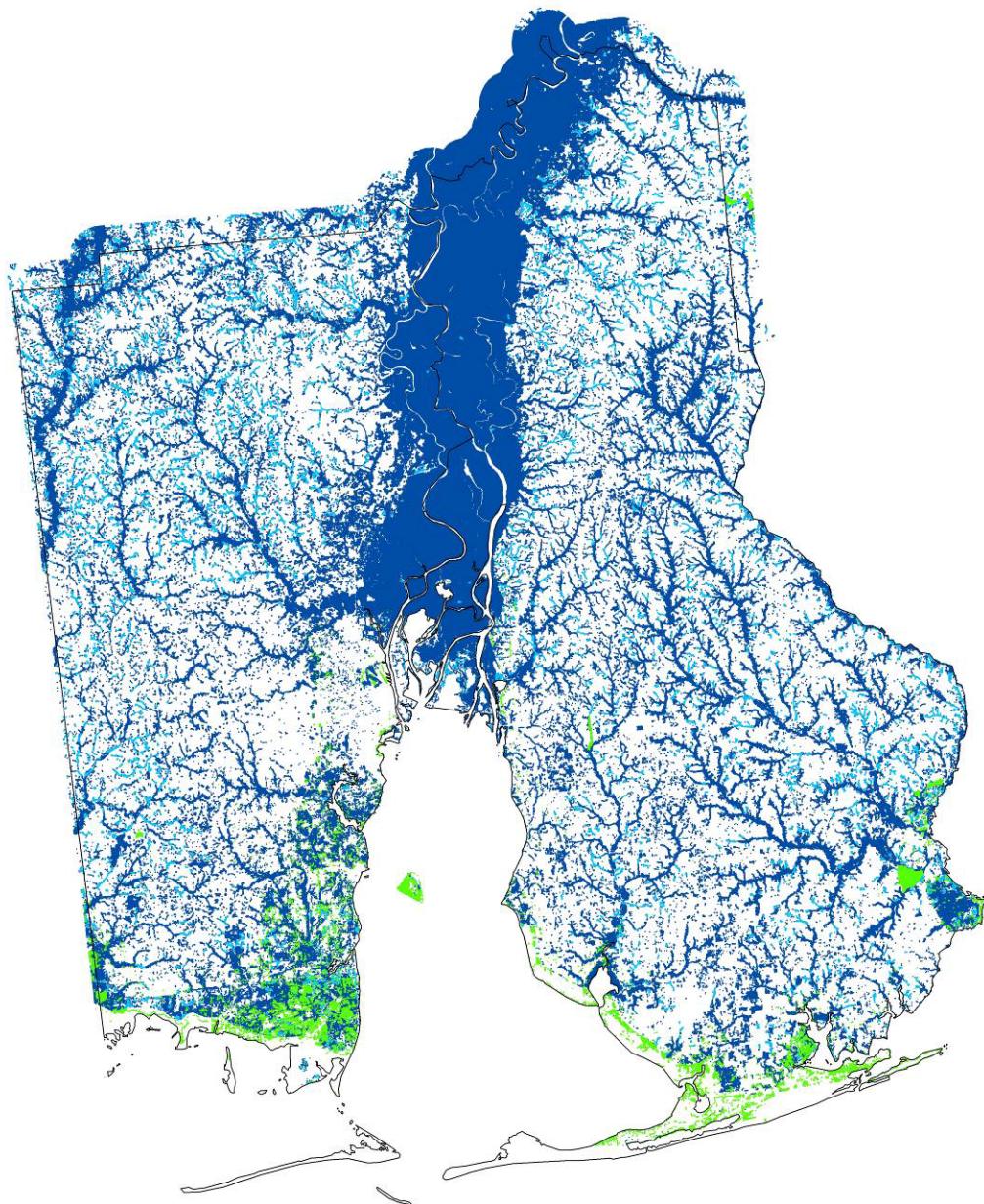
- d. Save result as *riverine\_wetlands\_mod2*.

*Step 3: Data Exploration (HPP Module 3)*

1. From the Map Layer dropdown menu, choose *riverine\_wetlands\_mod2*.  
From the Field dropdown menu, choose *area\_hectare*.  
Select *1–10 hectares*.  
Click *Add Selection to Query*.  
Click *Apply*.
2. From the Field dropdown menu, choose *distance to dev\_med\_high*.  
Select *1000 meters or greater*.  
Insert an *AND* statement.  
Click *Add Selection to Query*.  
Click *Verify*.  
Click *Apply*.
3. Save result as *priority\_riverine\_wetlands\_1*.
4. Click *OK*.

## Map Layout for Freshwater Wetlands

### Freshwater Wetland Habitat



Selection Criteria for Priority  
Riverine Wetlands:  
1-10hectares AND  
1000m or further from  
development



0 5 10 20  
Miles

#### Legend

- Mobile and Baldwin Counties
- Non riverine wetlands (8760 ac)
- Prioritized riverine wetlands (29,216 ac)
- All other riverine wetlands (376,877 ac)

## **Streams and Rivers**

### **Summary Table for Streams and Rivers**

*Goal: Identify priority streams and rivers (via watershed analysis).*

Objectives	Selection Criteria	HPP Analyses	Available Data for Analyses	Related Data for Habitat Mapper
<b>Conservation Track = Less than 10 percent impervious surface</b>				
Identify watersheds to the 12-digit hydrologic unit code (HUC) in Mobile and Baldwin counties		Unique classification	12-digit HUC watersheds ( <i>huc12.shp</i> )	Drinking water supply sites ( <i>drinkwater_supply_site.shp</i> )
Identify 12-digit HUC watersheds with less than 10% impervious surface	0–9%	Polygon overlay	Impervious surface ( <i>impervious_2001.shp</i> )	TNC aquatic and terrestrial priority areas ( <i>TNC_aquatic_priority.shp</i> , <i>TNC_terr_priority.shp</i> )
Identify watersheds that contain impaired streams (that is, those that are listed in accordance with section 303(d) of the Clean Water Act)	FALSE	Presence/absence	303(d) listed streams ( <i>mob_bal_303d_line.shp</i> )	Wellhead protected areas ( <i>Wellhd_Protect_area.shp</i> )
Identify number of dams in watershed				Dam locations ( <i>dams.shp</i> )
<b>Restoration Track = 10–25 percent impervious surface</b>				
Identify watersheds to the 12-digit HUC in Mobile and Baldwin counties		Unique classification	12-digit HUC watersheds ( <i>huc12.shp</i> )	Drinking water supply sites ( <i>drinkwater_supply_site.shp</i> )
Identify 12-digit HUC watersheds with 10–25% impervious surface	10–25%	Polygon overlay	Impervious surface ( <i>impervious_2001.shp</i> )	
Identify watersheds that contain impaired streams (303(d) listed)	TRUE	Presence/absence	303(d) listed streams ( <i>mob_bal_303d_line.shp</i> )	

### **Explanation of Analysis for Streams and Rivers**

- The CHCT decided to apply a commonly used delineation—12-digit HUC watersheds—as a proxy to locate priority streams for habitat protection and restoration. Conditions within the entire watershed impact the health of a stream.

- The CHCT looked at watershed priorities in two ways:
  - For the conservation track, a low impervious surface (0-9 percent) throughout the watershed was an important way to identify healthy habitat, which translates to healthy streams and rivers. Additionally, the CHCT wanted to locate watersheds that did not contain any 303(d) listed streams (that is, those that are identified as impaired according the Environmental Protection Agency's Clean Water Act).
  - For the restoration track, the CHCT needed to identify unhealthy habitat, so they searched for watersheds that contained (1) a moderate amount (10–25 percent) of impervious surface, and (2) impaired streams. (It is generally accepted in literature that this quantity of impervious surface in a watershed begins to have a negative impact on streams and rivers.)
- Several additional data sets were identified as useful for decision making, but too narrowing for analysis purposes. These data sets included dam locations, drinking water supply sites, wellhead protections areas, and TNC priority areas; they are available in the Habitat Mapper so that users can examine them alongside prioritized habitats.

## Geospatial Analysis Instructions for Streams and Rivers

Data Used For Analysis	Related Data For Habitat Mapper
<ul style="list-style-type: none"> <li>• 12-digit HUC watersheds (<i>huc12.shp</i>)</li> <li>• Impervious surface (<i>impervious_2001.shp</i>)</li> <li>• 303(d) listed streams (<i>mob_bal_303d_line.shp</i>)</li> </ul>	<ul style="list-style-type: none"> <li>• Dam locations (<i>dams.shp</i>)</li> <li>• Drinking water supply sites (<i>drinkwater_supply_site.shp</i>)</li> <li>• Wellhead protection areas (<i>Wellhd_Protect_area.shp</i>)</li> <li>• TNC priority aquatic areas (<i>TNC_aquatic_priority.shp</i>)</li> <li>• TNC priority terrestrial areas (<i>TNC_terr_priority.shp</i>)</li> </ul>

### Step 1: Habitat Classification (HPP Module 1)

1. Classify Watersheds.
  - a. Select *Create a new habitat patch file*.  
Click *Next*.
  - b. From the Land cover dataset dropdown menu, choose *huc12*.  
Select the Analysis Extent *Extent of the above selected land cover layer*.  
Click *Next*.
  - c. From the Value field dropdown menu, choose *Value*.  
From the Description field dropdown menu, choose *class\_name*.  
Click *Generate Values*.  
Click *Next*.

- d. Select the Classification Type *Unique*. Check all the land cover class boxes.
- e. Either create a file geodatabase, or store the output in an existing file geodatabase.
- f. Save results as **watersheds\_mod1** and Click *Finish*.

#### *Step 2: Habitat Analysis (HPP Module 2)*

1. Perform a new habitat analysis.
  - a. From the Habitats layer dropdown menu, choose *watersheds\_mod1*.  
Choose distance units: *meters*.  
Choose area units: *hectares*.  
Click *Next*.
  - b. Landscape analyses: the CHCT decided that landscape analyses were not necessary for this habitat.  
Click *Next*.
  - c. Click *New* to add a Custom Analysis:
    - i. From the Analysis type dropdown menu, choose *polygon overlay*.  
From the Analysis layer dropdown menu, choose *impervious\_2001*.  
From the Field name dropdown menu, choose *PO\_impervious\_pct*.  
Click *OK*.
    - ii. From the Analysis type dropdown menu, choose *presence/absence*.  
From the Analysis layer dropdown menu, choose *mob\_bal\_303d\_line*.  
From the Field name dropdown menu, choose *PA\_303dstreams*.  
Click *OK*
  - d. Save results as **watersheds\_mod2**.

#### *Step 3: Data Exploration (HPP Module 3)*

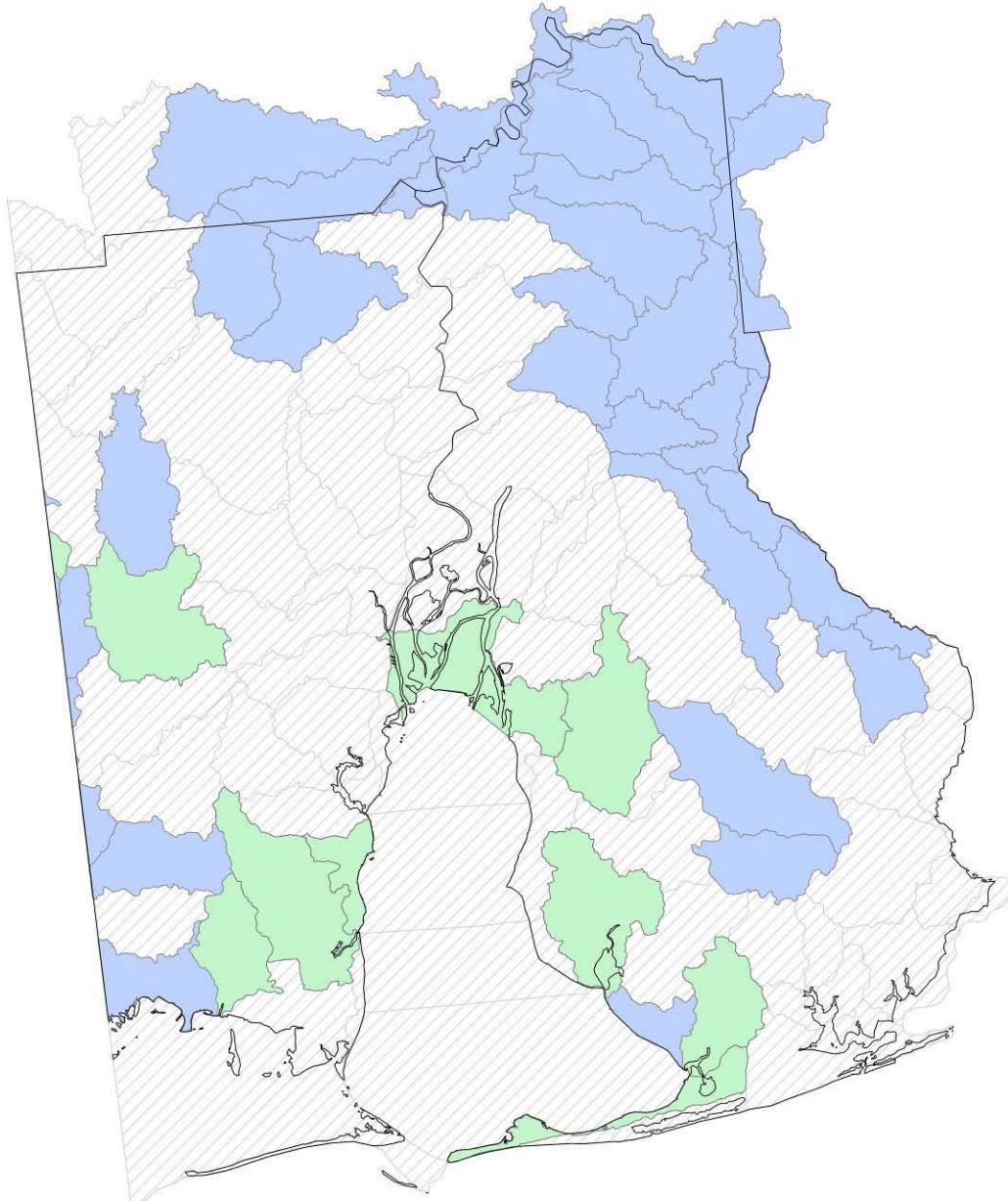
1. Conservation Track
  - a. From the Map Layer dropdown menu, choose *watersheds\_mod2*.  
From the Field dropdown menu, choose *PO\_impervious\_pct*.  
Select *0-9%*.  
Click *Add Selection to Query*.  
Click *Apply*.
  - b. From the Field dropdown menu, choose *PA\_303dstreams*.  
Select *false*.  
Insert an *AND* statement.  
Click *Add Selection to Query*.  
Click *Verify*.  
Click *Apply*.
  - c. Save result as **conservation\_watersheds**.
  - d. Click *OK*.

## 2. Restoration Track

- a. From the Map Layer dropdown menu, choose *watersheds\_mod2*.  
From the Field dropdown menu, choose *PO\_impervious*.  
Select *10-25%*.  
Click *Add Selection to Query*.  
Click *Apply*.
- b. From the Field dropdown menu, choose *PA\_303dstreams*.  
Select *true*.  
Insert an *AND* statement.  
Click *Add Selection to Query*.  
Click *Verify*.  
Click *Apply*.
- c. Save result as *restoration\_watersheds*.
- d. Click *OK*.

## Map Layout for Streams and Rivers

### Watersheds for Stream and River Habitat



Selection Criteria for Watersheds  
for Conservation Priority:

0-9% impervious surface AND  
Absence of impaired streams

Selection Criteria for Watersheds  
for Restoration Priority:

10-25% impervious surface AND  
Presence of impaired streams



0 4.5 9 18  
Miles

#### Legend

- Mobile and Baldwin Counties
- Prioritized watersheds for conservation (693,153 ac)
- Prioritized watersheds for restoration (249,284 ac)
- All other watersheds (2,415,909 ac)

## Riparian Buffer

### Summary Table for Riparian Buffer

*Goal: Identify priority riparian buffer habitat.*

Objectives	Selection Criteria	HPP Analyses	Available Data for Analyses	Related Data for Habitat Mapper
<b>Conservation Track = Intact riparian buffers within priority conservation watersheds</b>				
Identify riparian buffer (30-meter buffer on either side of stream)		30-meter buffer; mask GAP data; grouped classification	Land cover ( <i>gap_update_2005_impervious.img</i> ) Streams and rivers ( <i>All_Water_Alabama_Clip.shp</i> )	Protected lands ( <i>prot_land_Mob_Bald.shp</i> )
Identify intact buffer	Intact		Grouped habitat layer ( <i>grouped_30m_buf_mod2.shp</i> )	
Identify sections of continuous intact buffer habitat	500 meters x 30 meters = 15,000 square meters		Land cover ( <i>gap_update_2005_impervious.img</i> ) Streams and rivers ( <i>All_Water_Alabama_Clip.shp</i> )	303(d) listed streams ( <i>mob_bal_303d_line.shp</i> )
Identify intact buffer within priority conservation watersheds	50% or greater overlay	Polygon overlay	Priority watersheds for conservation ( <i>conservation_watersheds.shp</i> )	
<b>Restoration Track = Intact and impaired riparian buffers within priority restoration watersheds</b>				
Identify riparian buffer (30-meter buffer on either side of stream)		30-meter buffer; mask GAP data; grouped classification	Land cover ( <i>gap_update_2005_impervious.img</i> ) Streams and rivers ( <i>All_Water_Alabama_Clip.shp</i> )	Protected lands ( <i>prot_land_Mob_Bald.shp</i> )
Identify intact and impaired buffer	Intact OR impaired		Grouped habitat layer ( <i>grouped_30m_buf_mod2.shp</i> )	
Identify sections of intact and impaired buffer habitat	500 meters x 30 meters = 15,000 square meters		Land cover ( <i>gap_update_2005_impervious.img</i> ) Streams and rivers ( <i>All_Water_Alabama_Clip.shp</i> )	303(d) listed streams ( <i>mob_bal_303d_line.shp</i> )
Identify intact buffer within priority restoration watersheds	50% or greater overlay	Polygon overlay	Priority watersheds for restoration ( <i>restoration_watersheds.shp</i> )	

## Explanation of Analysis for Riparian Buffer

- The CHCT determined that, like the Watersheds for Streams and Rivers goal, priority riparian buffer habitat should have both a conservation and restoration track. For both tracks, a 30-meter area on either side of streams and rivers was identified as the focus area.
  - For the conservation track, the CHCT decided that the most important component of stream buffers was to have intact vegetation to prevent erosion, sedimentation, and warmer water temperatures. Intact vegetation includes all classes of the GAP land cover data that are naturally vegetated. In addition to intact vegetation, the CHCT wanted to identify buffers that were also (1) at least 500 meters long, and (2) associated with watersheds identified as priorities for conservation.
  - For the restoration track, the CHCT sought intact or impaired buffers that were at least 500 meters long. (Impaired habitat describes land cover that is not in a natural state, but could be restored. For example, habitat that is classified as Open Developed Space, such as a golf course or park.) Additionally, the buffers needed to be associated with watersheds identified as priorities for restoration.
- Additional datasets (including those for protected lands and impaired streams) were identified as important and included in the Habitat Mapper so that users can examine them alongside prioritized habitats.

## Geospatial Analysis Instructions for Riparian Buffer

Data Used For Analysis	Related Data For Habitat Mapper
<ul style="list-style-type: none"><li>• GAP land cover updated with C-CAP (<i>gap_update_2005_impervious.img</i>)</li><li>• Priority watersheds for conservation (<i>conservation_watersheds.shp</i>)</li><li>• Priority watersheds for restoration (<i>restoration_watersheds.shp</i>)</li></ul>	<ul style="list-style-type: none"><li>• 303(d) listed streams (<i>mob_bal_303d_line.shp</i>)</li><li>• Protected lands (<i>prot_land_Mob_Bald.shp</i>)</li><li>• Alabama streams and rivers (<i>All_Water_Alabama_Clip.shp</i>)</li><li>• Grouped habitat layer (<i>grouped_30m_buf_mod2.shp</i>)</li></ul>

### Step 1: Pre-processing

1. The Alabama streams and rivers file was buffered by 30 meters on each side using the Buffer tool in the ArcGIS toolbox.
2. A mask was applied to the land cover data (GAP and C-CAP) with the 30-meter stream buffer.
3. This subset of the land cover data was used as the primary input to the Classify Habitats module of HPP (*gap\_extract.img*).

## *Step 2: Habitat Classification (HPP Module 1)*

1. Classify Riparian Buffers.
  - a. Select *Create a new habitat patch file*.  
Click *Next*.
  - b. From the Land cover dataset dropdown menu, choose *gap\_extract.img*.  
Select the Analysis Extent *Extent of the above selected land cover layer*.  
Click *Next*.
  - c. From the Value field dropdown menu, choose *value*.  
The Description field is not applicable for this classification.  
Click *Generate Values*.  
Click *Next*.
  - d. Select the Classification Type *Grouped*. In the Habitat Groups box, double click to add a new group. Create three groups named *Intact*, *Impaired*, and *Developed*. Drag and drop land cover classes into each group according to the list below and Click *Next*.

### *Intact:*

- 7 - Florida Panhandle Beach Vegetation
- 10 – Unconsolidated Shore (Lake/River/Pond)
- 11 – Unconsolidated Shore (Beach/Dune)
- 12 – East Gulf Coastal Plain Southern Mesic Slope Forest
- 13 – East Gulf Coastal Plain Interior Upland Longleaf Pine Woodland – Offsite Hardwood Modifier
- 15 – East Gulf Coastal Plain Maritime Forest
- 16 – East Gulf Coastal Plain Interior Upland Longleaf Pine Woodland – Loblolly Modifier
- 17 – East Gulf Coastal Plain Interior Upland Longleaf Pine Woodland – Open Understory Modifier
- 20 – Successional Shrub/Scrub (Other)
- 21 – East Gulf Coastal Plain Dune and Coastal Grassland
- 24 – East Gulf Coastal Plain Large River Floodplain Forest – Forest Modifier
- 25 – East Gulf Coastal Plain Small Stream and River Floodplain Forest
- 26 – Southern Coastal Plain Blackwater River Floodplain Forest
- 27 – Southern Coastal Plain Nonriverine Basin Swamp
- 28 – East Gulf Coastal Plain Near-Coast Pine Flatwoods – Offsite Hardwood Modifier
- 29 – East Gulf Coastal Plain Near-Coast Pine Flatwoods – Open Understory Modifier
- 30 – Southern Coastal Plain Nonriverine Cypress Dome
- 31 – East Gulf Coastal Plain Tidal Wooded Swamp
- 32 – East Gulf Coastal Plain Treeless Savanna and Wet Prairie
- 33 – East Gulf Coastal Plain Large River Floodplain Forest – Herbaceous Modifier
- 34 – Mississippi Sound Salt and Brackish Tidal Marsh

### *Impaired:*

- 3 - Developed Open Space

- 8 – Bare Soil
- 14 – Evergreen Plantations
- 18 – Successional Shrub/Scrub (Clear Cut)
- 19 – Successional Shrub/Scrub (Utility Swath)
- 22 – Pasture/Hay
- 23 – Row Crop

*Developed:*

- 4 - Low Intensity Developed
- 5 – Medium Intensity Developed
- 6 – High Intensity Developed
- 9 – Quarry/Strip Mine/Gravel Pit

- e. Either create a file geodatabase, or store the output in an existing file geodatabase.
- f. Save results as ***grouped\_30m\_buffer*** and Click *Finish*.

*Step 3: Habitat Analysis (HPP Module 2)*

1. Perform a new habitat analysis.
  - a. From the Habitats layer dropdown menu, choose *grouped\_30m\_buffer*.  
Choose distance units: *meters*.  
Choose area units: *hectares*.  
Click *Next*.
  - b. Landscape analysis: the CHCT decided that landscape analyses were not necessary for this habitat.  
Click *Next*.
  - c. Click *New* to add a Custom analysis:
    - i. From the Analysis type dropdown menu, choose *polygon overlay*.  
From the Analysis layer dropdown menu, choose *conservation\_watersheds*.  
From the Field name dropdown menu, choose *Po\_con\_wat*.  
Click *OK*.
    - i. From the Analysis type dropdown menu, choose *polygon overlay*.  
From the Analysis layer dropdown menu, choose *restoration\_watersheds*.  
From the Field name dropdown menu, choose *po\_rest\_wat*.  
Click *OK*.
  - e. Save result as ***grouped\_30m\_buf\_mod2***.

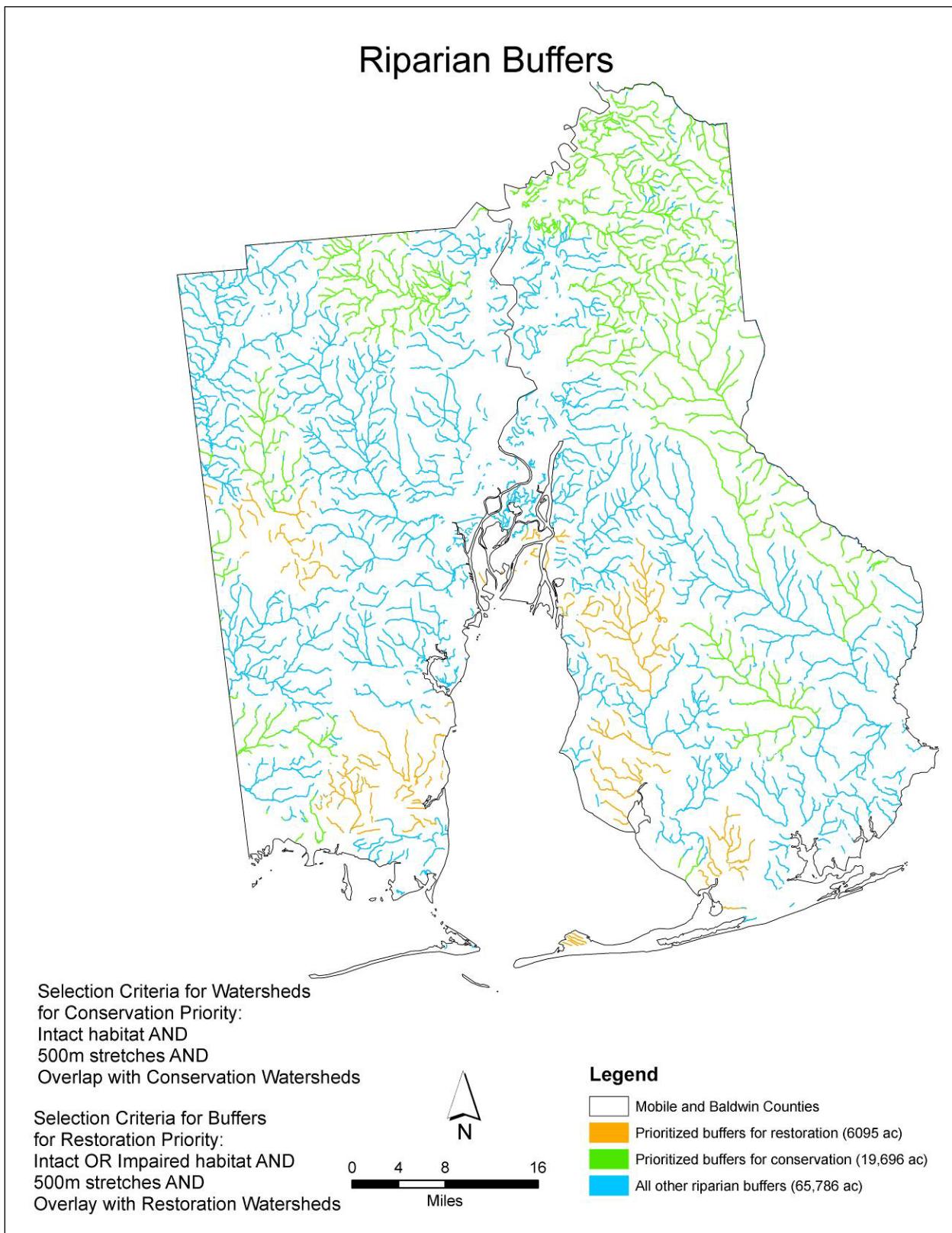
*Step 4: Data Exploration (HPP Module 3)*

1. Conservation Track
  - a. From the Map Layer dropdown menu, choose *grouped\_30m\_buf\_mod2*.  
From the Field dropdown menu, choose *class name*.

- Select *intact*.  
Click *Add Selection to Query*.  
Click *Apply*.
- b. From the Field dropdown menu, choose *area\_size*.  
Select *15,000 square meters or larger*.  
Click *Add Selection to Query*.  
Click *Apply*.
- c. From the Field dropdown menu, choose *poly\_over\_cons\_watshds\_Pct*.  
Select *50% or more*.  
Insert an *AND* statement.  
Click *Add Selection to Query*.  
Click *Verify*.  
Click *Apply*.
- d. Save result as *cons\_buffers\_final*.
- e. Click *OK*.
2. Restoration Track
- a. Step 1:
- i. From the Field dropdown menu, choose *poly\_over\_cons\_watshds\_Pct*.  
Select *50% or more*.  
Insert an *AND* statement.  
Click *Add Selection to Query*.  
Click *Verify*.  
Click *Apply*.
- ii. Save result as *rest\_buf\_mod3*.
- iii. Click *OK*.
- b. Step 2:
- i. From the Map Layer dropdown menu, choose *rest\_buf\_mod3*.  
From the Field dropdown menu, choose *area\_size*.  
Select *15,000 square meters or larger*.  
Click *Add Selection to Query*.  
Click *Apply*.  
Insert an *AND* statement.
- ii. From the Field dropdown menu, choose *class name*.  
Select *intact*.  
Click *Add Selection to Query*.  
Insert an *OR* statement.

- iii. From the Field dropdown menu, choose *class name*.  
Select *impaired*.  
Click *Add Selection to Query*.  
Click *Verify*.  
Click *Apply*.
- iv. Save result as *rest\_buffers\_final*.
- v. Click *OK*.

## Map Layout for Riparian Buffer



## **Beach and Dune**

### **Summary Table for Beach and Dune**

*Goal: Identify priority beach and dune habitat.*

Objectives	Selection Criteria	HPP Analyses	Available Data for Analyses	Related Data for Habitat Mapper
Identify beach and dune adjacent to maritime forests	Within 1 mile	Distance to	Land cover ( <i>gap_update_2005_impervious.img</i> ) Maritime forest habitat ( <i>GP_maritime_mod2_june_run2</i> )	
Identify beach and dune beyond the construction control line	Overlap of 50%	Polygon overlay	Construction control line ( <i>cclddline1.shp</i> )	
Identify beach and dune that contain specific threatened and endangered species	TRUE	Presence/absence AND used for both species	Alabama Beach Mouse habitat ( <i>ABM_Habitat_Range.shp</i> ) Sea turtle nesting areas ( <i>Sea_Turtle.shp</i> )	

### **Explanation of Analysis for Beach and Dune**

- The CHCT wanted to identify beach and dune habitat that was adjacent to maritime forest to ensure the stability of the habitat. Additionally, they wanted to locate habitat that was:
  - Located at least partially beyond the construction control line, because beach beyond this line is already protected by regulations associated with this boundary.
  - Identified as habitat suitable for two species of concern. The habitat had to be suitable for both the Alabama beach mouse and for sea turtles (when they are nesting).
- No additional data was identified for inclusion in the Habitat Mapper.

### **Geospatial Analysis Instructions for Beach and Dune**

Data Used For Analysis	Related Data For Habitat Mapper
<ul style="list-style-type: none"><li>• GAP land cover updated with C-CAP (<i>gap_update_2005_impervious.img</i>)</li><li>• Alabama Beach Mouse (<i>ABM_Habitat_Range.shp</i>)</li><li>• Sea turtle data (<i>Sea_Turtle.shp</i>)</li><li>• Construction control line (<i>cclddline1.shp</i>)</li><li>• Maritime forest (<i>GP_maritime_mod2_june_run2</i>)</li></ul>	

### *Step 1: Habitat Classification (HPP Module 1)*

1. Classify Beach and Dune.
  - a. Select *Create a new habitat patch file*.
  - b. From the Land cover dataset dropdown menu, choose *gap\_update\_2005\_impermeous.img*.  
Select the Analysis Extent *Extent of the above selected land cover layer*.  
Click *Next*.
  - c. From the Value field dropdown menu, choose *value*.  
From the Description field dropdown menu, choose *class\_name*.  
Click *Generate Values*.  
Click *Next*.
  - d. Select the Classification Type *Unique*. Check the boxes next to the following land cover classes:  
7 – Florida Panhandle Beach Vegetation  
11 – Unconsolidated Shore  
21 – East Gulf Coastal Plain Dune and Coastal Grass  
Click *Next*.
  - e. Either create a file geodatabase, or store the output in an existing file geodatabase.
  - f. Save results as ***beachdune\_mod1*** and Click *Finish*.

### *Step 2: Habitat Analysis (HPP Module 2)*

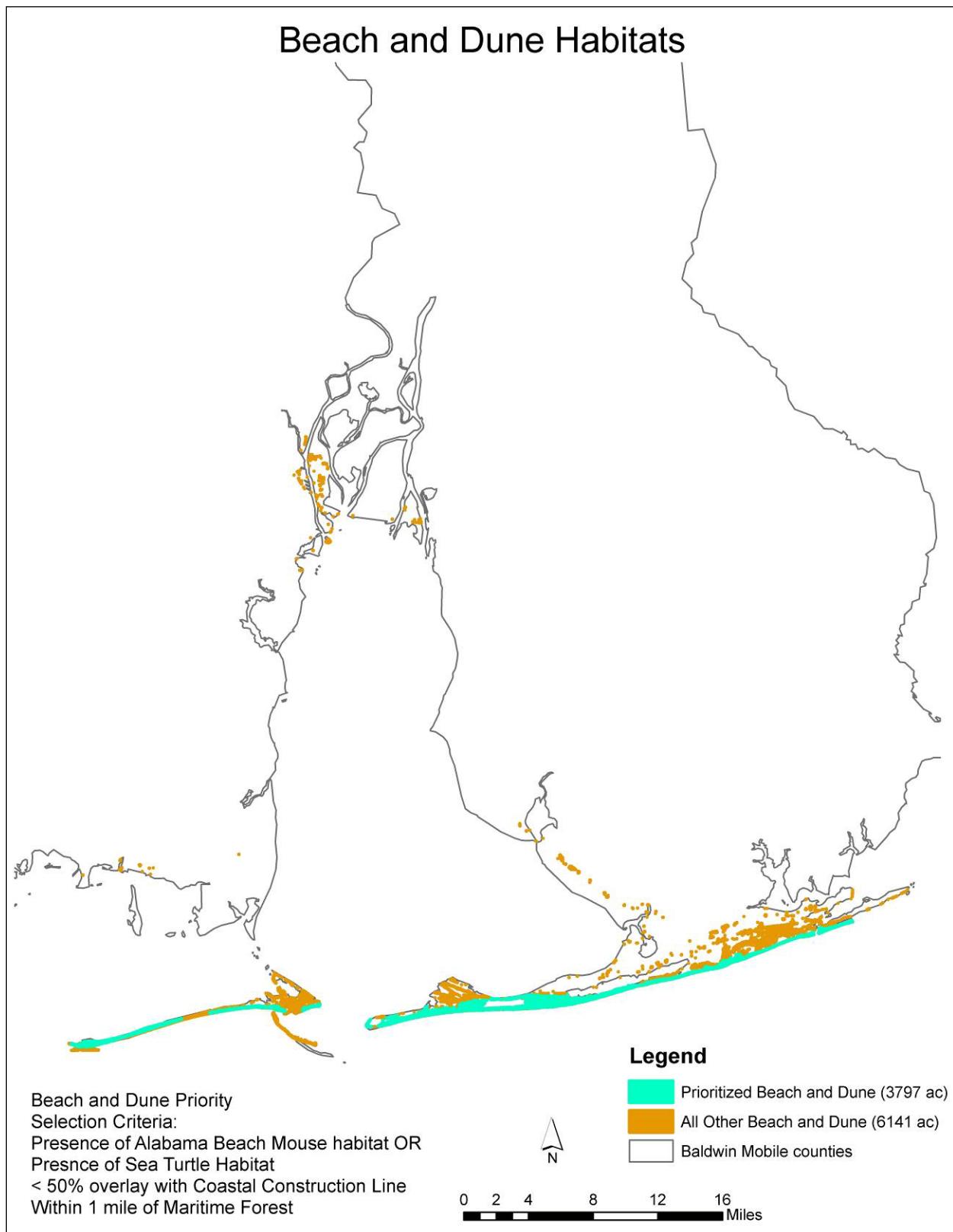
1. Perform a new habitat analysis.
  - a. From the Habitats layer dropdown menu, choose *beachdune\_mod1*.  
Choose distance units: *feet*.  
Choose area units: *acres*.  
Click *Next*.
  - b. Landscape analysis: the CHCT decided that landscape analyses were not necessary for this habitat.  
Click *Next*.
  - c. Click New to add a Custom analysis:
    - i. From the Analysis type dropdown menu, choose *presence/absence*.  
From the Analysis layer dropdown menu, choose *ABM\_Habitat\_Range*.  
From the Field name dropdown menu, choose *pa\_ABM\_Hab\_Range*.  
Click *OK*.
    - ii. From the Analysis type dropdown menu, choose *polygon overlay*.  
From the Analysis layer dropdown menu, choose *cclddline1*.  
From the Field name dropdown menu, choose *Polygon\_Overlay\_CCL\_Clipper\_Pct*.  
Click *OK*.

- iii. From the Analysis type dropdown menu, choose *presence/absence*.  
 From the Analysis layer dropdown menu, choose *Sea\_Turtle*.  
 From the Field name dropdown menu, choose *Presence\_Absence\_Sea\_Turtle*.  
 Click *OK*.
- iv. From the Analysis type dropdown menu, choose *distance to*.  
 From the Analysis layer dropdown menu, choose  
*GP\_maritime\_mod2\_june\_run2*.  
 From the Field name dropdown menu, choose *dt\_maritime\_simple\_mod1*.  
 Click *OK*.
- v. Save result as ***Beach\_Dune\_mod2***.

### Step 3: Data Exploration (HPP Module 3)

- 1. From the Map layer dropdown menu, choose *Beach\_Dune\_mod2*.  
 From the Field dropdown menu, choose *PA\_ABM\_Hab\_Range*.  
 Select *true*.  
 Click *Add Selection to Query*.  
 Click *Apply*.
- 2. From the Field dropdown menu, choose *PA\_Sea\_Turtle*.  
 Select *true*.  
 Insert an *OR* statement.  
 Click *Add Selection to Query*.  
 Click *Verify*.  
 Click *Apply*.
- 3. From the Field dropdown menu, choose *Poly\_Over\_CCL\_Clipper\_Pct*.  
 Select *0-50%*.  
 Insert an *AND* statement.  
 Click *Add Selection to Query*.  
 Click *Verify*.  
 Click *Apply*.
- 4. From the Field dropdown menu, choose *dt\_mari\_simple\_mod1*.  
 Select *0–5280 feet*.  
 Insert an *AND* statement.  
 Click *Add Selection to Query*.  
 Click *Verify*.  
 Click *Apply*.
- 5. Save results as ***BeachDune\_mod3\_update***.
- 6. Click *OK*.

## Map Layout for Beach and Dune



## **Intertidal Marshes and Flats**

### **Summary Table for Intertidal Marshes and Flats**

*Goal: Identify priority intertidal marshes and flats.*

Objectives	Selection Criteria	HPP Analyses	Available Data for Analyses	Related Data for Habitat Mapper
<b>Hazard Protection Track = Areas close to development and 100-year flood.</b>				
Identify intertidal marsh close to developed areas	0–100 feet (approx. 30 meters)	Distance to	Developed lands ( <i>developed.shp</i> )	
Identify areas that provide protection from 100-year flood	Distance to flood – 500 feet	Distance to	Flood data ( <i>year_flood.shp</i> )	
<b>Natural Resource Conservation Track = Areas close to currently protected lands that contain species of concern.</b>				
Identify marshes that coincide with species of concern	0–100 feet (approx. 30 meters)	Presence/absence	Species of concern ( <i>Species_of_concern.shp</i> )  <i>Note:</i> Shapefile combines Alabama Beach Mouse habitat, sea turtle nesting areas, 1995 and 2001 delineated oyster reefs, and Sub Aquatic Vegetation (SAV).	Alabama Beach Mouse Habitat ( <i>ABM_Habitat_Range.shp</i> )  Sea turtle nesting areas ( <i>Sea_Turtle.shp</i> )  1995 and 2001 delineated oyster reefs ( <i>oyster.shp</i> )  SAV habitat ( <i>SAV_Mod2.shp</i> )
Identify marshes that are close to currently protected lands	0–500 feet	Distance to	Protected lands ( <i>prot_land_Mob_Bald.shp</i> )	

### **Explanation of Analysis for Intertidal Marshes and Flats**

- The CHCT decided to focus on two important aspects of intertidal marshes and flats: protection from hazards and for natural resource conservation.
  - For the hazard protection track, they wanted to locate intertidal marshes and flats that were close to developed areas, and would therefore act as a buffer for flooding and storm surges. They also wanted to locate intertidal marshes and flats that were within 500 feet of the Federal Emergency Management Agency's 100-year flood plain.
  - For the natural resource conservation track, they wanted to identify intertidal marshes and flats that were (1) within 100 feet of species of concern (beach mouse, sea turtle, oysters, and SAV), and (2) close to protected areas (in the hope that the species would continue to expand into the protected areas in the future).

- Individual data sets representing species of concern are available in the Habitat Mapper for users to view alongside the prioritized habitats.

## Geospatial Analysis Instructions for Intertidal Marshes and Flats

Data Used For Analysis	Related Data For Habitat Mapper
<ul style="list-style-type: none"> <li>• GAP land cover updated with C-CAP (<i>gap_update_2005_impervious.img</i>)</li> <li>• Protected lands (<i>prot_land_Mob_Bald.shp</i>)</li> <li>• Developed Lands (<i>developed.shp</i>)</li> <li>• Flood Data (<i>year_flood.shp</i>)</li> <li>• Species of Concern - Alabama beach mouse, oysters, SAV, sea turtles (<i>Species_of_concern.shp</i>)</li> </ul>	<ul style="list-style-type: none"> <li>• Alabama Beach Mouse habitat (<i>ABM_Habitat_Range.shp</i>)</li> <li>• Sea turtle nesting areas (<i>Sea_Turtle.shp</i>)</li> <li>• 1995 and 2001 delineated oyster reefs (<i>oyster.shp</i>)</li> </ul>

### Step 1: Habitat Classification (HPP Module 1)

1. Classify Intertidal Marshes and Flats.
  - a. Select *Create a new habitat patch file*.  
Click *Next*.
  - b. From the Land cover dataset dropdown menu, choose *gap\_update\_2005\_impervious.img*.  
Select the Analysis Extent *Extent of the above selected land cover layer*.  
Click *Next*.
  - c. From the Value field dropdown menu, choose *Value*.  
From the Description field dropdown menu, choose *class\_name*.  
Click *Generate Values*.  
Click *Next*.
  - d. Select the Classification Type *Unique*. Check the box next to the following land cover class:  
34 – Intertidal Wetlands (Mississippi Sound Salt and Brackish Tidal Marsh)  
Click *Next*.
  - e. Either create a file geodatabase, or store the output in an existing file geodatabase.
  - f. Save results as *intertidal\_mod1* and click *Finish*.

### Step 2: Habitat Analysis (HPP Module 2)

1. Perform a new habitat analysis.
  - a. From the Habitats layer dropdown menu, choose *intertidal\_mod1*.

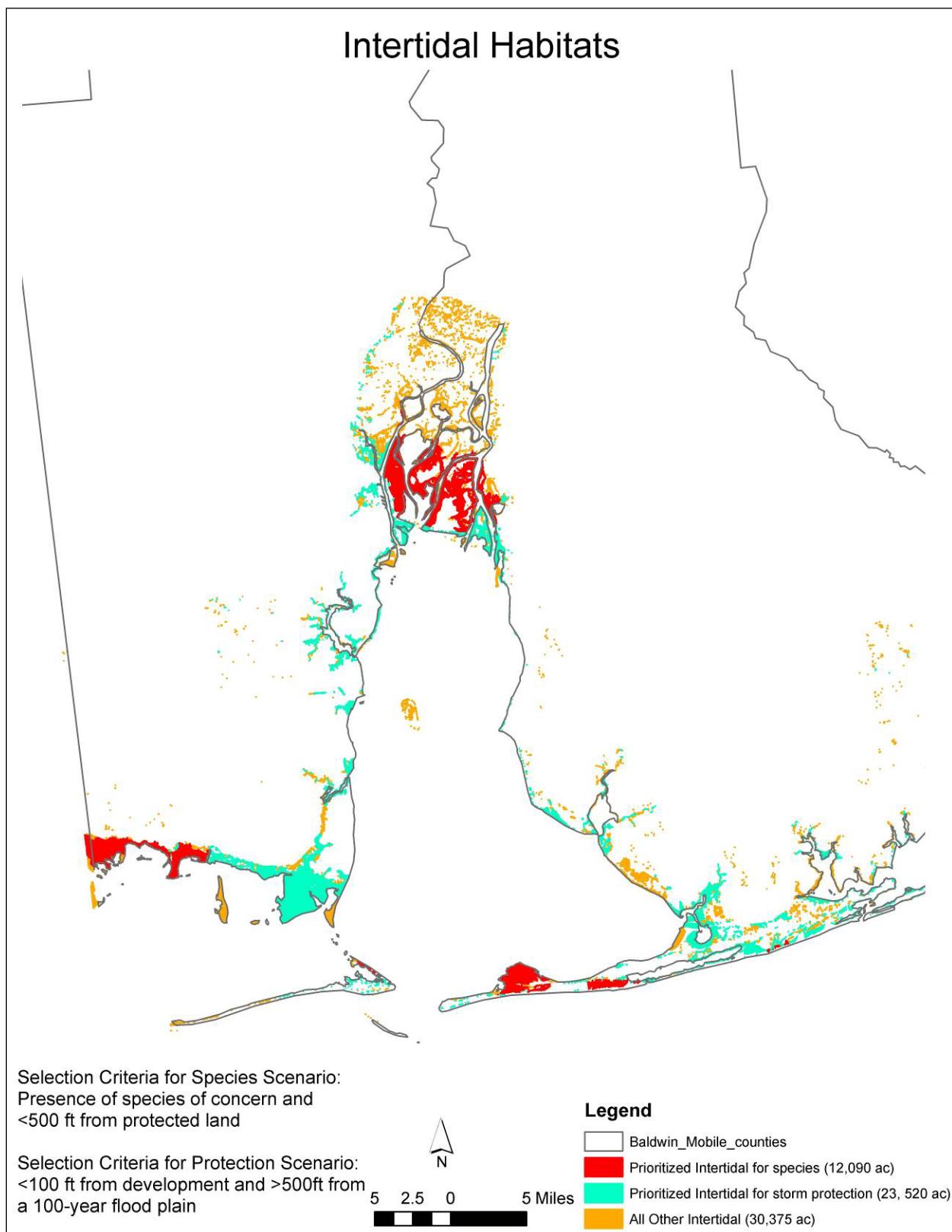
- Choose distance units: *feet*.  
 Choose area units: *acres*.  
 Click *Next*.
- b. Landscape analysis: the CHCT decided that landscape analyses were not necessary for this habitat.  
 Click *Next*.
- c. Click *New* to add a Custom Analysis:
- i. From the Analysis type dropdown menu, choose *distance to*.  
 From the Analysis layer dropdown menu, choose *developed*.  
 From the Field name dropdown menu, choose *DT\_dev*.  
 Click *OK*.
  - ii. From the Analysis type dropdown menu, choose *distance to*.  
 From the Analysis layer dropdown menu, choose *year\_flood*.  
 From the Field name dropdown menu, choose *dt\_100\_yr\_flood*.  
 Click *OK*.
  - iii. From the Analysis type dropdown menu, choose *presence/absence*.  
 From the Analysis layer dropdown menu, choose *Species\_of\_concern*.  
 From the Field name dropdown menu, choose *pa\_species\_of\_con*.  
 Click *OK*.
  - iv. From the Analysis type dropdown menu, choose *sistance to*.  
 From the Analysis layer dropdown menu, choose *prot\_land\_mob\_bald*.  
 From the Field name dropdown menu, choose *dt\_prot\_land\_Mob\_Bald*.  
 Click *OK*.
- e. Save result as *intertidal\_mod2\_update2*.

### *Step 3: Data Exploration (HPP Module 3)*

1. Hazard Protection Track
  - a. From the Map layer dropdown menu, choose *intertidal\_mod2\_update2*.  
 From the Field dropdown menu, choose *DT\_dev*.  
 Select *0-100 feet*.  
 Click *Add Selection to Query*.  
 Click *Apply*.
  - b. From the Field dropdown menu, choose *dt\_100\_yr\_flood*.  
 Select *500 feet or greater*  
 Insert an AND statement.  
 Click *Add Selection to Query*.  
 Click *Verify*.  
 Click *Apply*.
  - c. Save result as *intertidal\_mod3\_dev*.

- d. Click *OK*.
2. Natural Resource Conservation Track
- a. From the Map layer dropdown menu, choose *intertidal\_mod2\_update2*.  
From the Field dropdown menu, choose *PA\_spec\_of\_con*.  
Select *true*.  
Click *Add Selection to Query*.  
Click *Apply*.
  - b. From the Field dropdown menu, choose *dt\_prot\_land\_Mob\_Bald*.  
Select *0–500 feet*.  
Insert an *AND* statement.  
Click *Add Selection to Query*.  
Click *Verify*.  
Click *Apply*.
  - c. Save result as *intertidal\_mod3\_species*.
  - d. Click *OK*.

## Map Layout for Intertidal Marshes and Flats



## ***Sub Aquatic Vegetation***

### **Summary Table for Sub Aquatic Vegetation**

*Goal: Identify priority sub aquatic vegetation habitat.*

<b>Objectives</b>	<b>Selection Criteria</b>	<b>HPP Analyses</b>	<b>Available Data for Analyses</b>	<b>Related Data for Habitat Mapper</b>
Identify the locations and type of SAV	Prioritize brackish and freshwater SAV; just view marine SAV		Benthic data that includes SAV ( <i>Benthic_draft_4-13-09.shp</i> )	Marine SAV ( <i>Marine_SAV.shp</i> )
Identify invasive SAV				Invasive SAV ( <i>SAV_invasive_shp_1.shp</i> )
Identify SAV near dredge areas	Greater than 1 mile (5,280–90,000 feet)	Distance to	Dredge locations ( <i>Dredge.shp</i> )	
Identify SAV near boat ramps and marinas	Greater than 1 mile (5,280–90,000 feet)	Distance to	Boat ramps and marinas ( <i>ramp_marina_srwy_03.shp</i> )	
Identify SAV near currently protected lands	Within 2 miles (1–10,560 feet)	Distance to	Protected lands ( <i>prot_land_Mob_Bald.shp</i> )	
Identify water depth ideal for SAV growth	2 meters or less (for viewing only)			Bathymetry ( <i>bathy_vect.shp</i> )

### **Explanation of Analysis for Sub Aquatic Vegetation**

- Since there is so little marine SAV, the CHCT decided that all of this habitat should be considered a priority. Therefore, habitat prioritization analyses were only performed on brackish and freshwater SAV.
- When searching for brackish and freshwater SAV, the CHCT wanted to locate SAV that were (1) at least 1 mile from dredge areas, boat ramps, and marinas (because habitat closer than one mile may be negatively impacted by activities in these areas), and (2) within 2 miles of protected areas (in the hope of expanding these areas and locating SAV that is as healthy as possible).
- Individual data sets are available in the Habitat Mapper for users to view alongside the prioritized habitats. These data sets include bathymetry data (to help users identify areas that have appropriate depth—less than 2 meters—for SAV growth) and marine, freshwater, brackish, and invasive SAV that were parsed out.

## Geospatial Analysis Instructions for Sub Aquatic Vegetation

Data Used For Analysis	Related Data For Habitat Mapper
<ul style="list-style-type: none"> <li>Benthic data, including 2002 SAV data (<i>Benthic_draft_4-13-09.shp</i>)</li> <li>Boat ramps and marinas (<i>ramp_marina_srvy_03.shp</i>)</li> <li>Dredge locations (<i>Dredge.shp</i>)</li> <li>Protected lands (<i>prot_land_Mob_Bald.shp</i>)</li> </ul>	<ul style="list-style-type: none"> <li>Marine SAV (<i>Marine_SAV.shp</i>)</li> <li>Invasive SAV (<i>SAV_invasive_shp_1.shp</i>)</li> <li>Bathymetry (<i>bathy_vect.shp</i>)</li> </ul>

### Step 1: Habitat Classification (HPP Module 1)

1. Classify Sub Aquatic Vegetation.
  - a. Select *Create a new habitat patch file*. Click *Next*.
  - b. From the Land cover dataset dropdown menu, choose *Benthic\_draft\_4-13-09*. Select the Analysis Extent *Extent of the above selected land cover layer*. Click *Next*.
  - c. From the Value field dropdown menu, choose *value*. From the Description field dropdown menu, choose *class\_name*. Click *Generate Values*. Click *Next*.
  - d. Select the Classification Type *Unique*. Check the boxes next to the following land cover classes:  
 8 – SAV\_Brackish  
 9 – SAV Fresh  
 10 – SAV-Marine  
 Click *Next*.
  - e. Either create a file geodatabase, or store the output in an existing file geodatabase.
  - f. Save results as *SAV\_mod1* and click *Finish*.

**Note:** To create the marine SAV file, select all marine SAV, extract selected, and export the shapefile. Marine SAV were not prioritized; these were considered a standalone priority.

### Step 2: Habitat Analysis (HPP Module 2)

**Note:** Perform the following steps for Freshwater and Brackish habitats only.

1. Perform a new habitat analysis.
  - a. From the Habitats layer dropdown menu, choose *SAV\_mod1*.

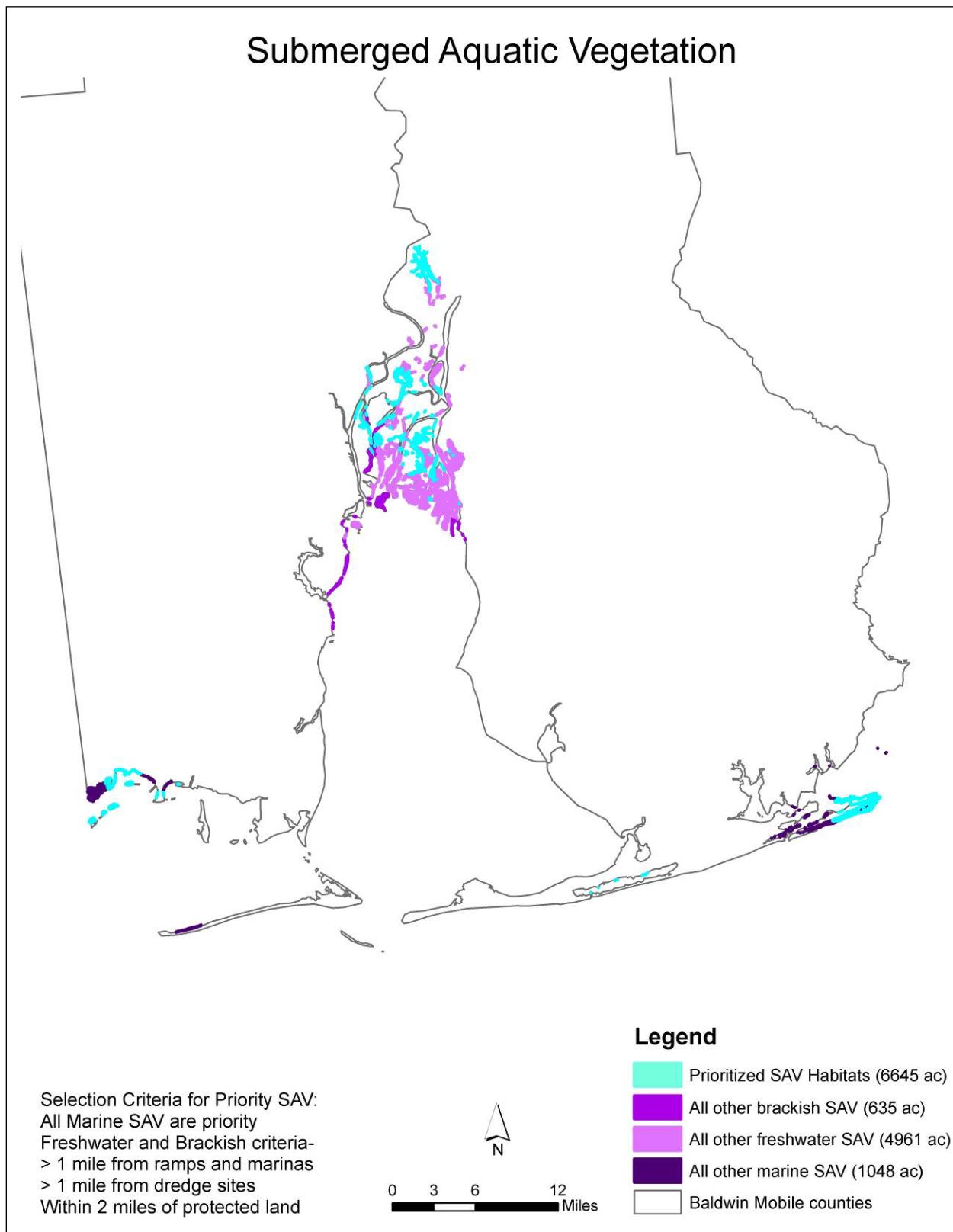
- Choose distance units: *feet*.  
 Choose area units: *acres*.  
 Click *Next*.
- b. Landscape analysis: the CHCT decided that landscape analyses were not necessary for this habitat.  
 Click *Next*.
- c. Click *New* to add a Custom analysis:
- i. From the Analysis type dropdown menu, choose *distance to*.  
 From the Analysis layer dropdown menu, choose *ramp\_marina\_srvy03*.  
 From the Field name dropdown menu, choose *dt\_ramp\_marina\_srvy03*.  
 Click *OK*.
  - ii. From the Analysis type dropdown menu, choose *distance to*.  
 From the Analysis layer dropdown menu, choose *Dredge*.  
 From the Field name dropdown menu, choose *Distance\_To\_Dredge*.  
 Click *OK*.
  - iii. From the Analysis type dropdown menu, choose *distance to*.  
 From the Analysis layer dropdown menu, choose *prot\_land\_Mob\_Bald*.  
 From the Field name dropdown menu, choose *dt\_prot\_land\_Mob\_Bald*.  
 Click *OK*.
- d. Save result as *SAV\_mod2*.

### *Step 3: Data Exploration (HPP Module 3)*

1. From the Map layer dropdown menu, choose *SAV\_mod2*.  
 From the Field dropdown menu, choose *dt\_ramp\_marina\_srvy03*.  
 Select *5280 feet and greater*.  
 Click *Add Selection to Query*.  
 Click *Apply*.
2. From the Field dropdown menu, choose *Distance\_To\_Dredge*.  
 Select *5280 feet and greater*.  
 Insert an *AND* statement.  
 Click *Add Selection to Query*.  
 Click *Verify*.  
 Click *Apply*.
3. From the Field dropdown menu, choose *dt\_prot\_land\_Mob\_Bald*.  
 Select *1–10,560 feet*.  
 Insert an *AND* statement.  
 Click *Add Selection to Query*.  
 Click *Verify*.  
 Click *Apply*.
4. Save result as *SAV\_Mod3*.

5. Click *OK*.

## May Layout for Sub Aquatic Vegetation



## Oyster Reefs

### Summary Table for Oyster Reefs

*Goal: Identify priority oyster reef habitat.* (The CHCT decided that all data for this goal should be viewable and that no analysis should be performed.)

Objectives	Data for Habitat Mapper
Identify current locations of oyster reefs in Mobile Bay	Benthic data ( <i>Benthic_draft_4-13-09.shp</i> ) 1995 & 2001 delineated oysters ( <i>oyster.shp</i> ) Historical oysters ( <i>oyster_1968.shp</i> ) Fossilized oysters ( <i>Sediment.shp</i> )
Identify oyster reefs that are near developed areas	Developed lands ( <i>developed.shp</i> )
Identify ideal depth for oysters	3-4 meters depth - Bathymetry ( <i>bathy_vect.shp</i> )
Identify appropriate substrate for oysters	Sediment ( <i>Sediment.shp</i> )

### Explanation of Analysis for Oyster Reefs

- Very little data on oyster habitat is available; therefore, all oyster habitats were considered priority by the CHCT and no analyses were performed on this data.
- Individual data sets are available in the Habitat Mapper for users to view alongside the prioritized habitats. These data sets include bathymetry data (to help users identify areas that have appropriate depth, 3–4 meters, for oyster growth), a sediment file to locate appropriate substrate (hard surfaces) for oysters, and data on developed areas. Oyster reefs near developed areas may offer filtration to the runoff there, but may be less healthy than oyster beds further from development.

### Geospatial Analysis Instructions for Oyster Reefs

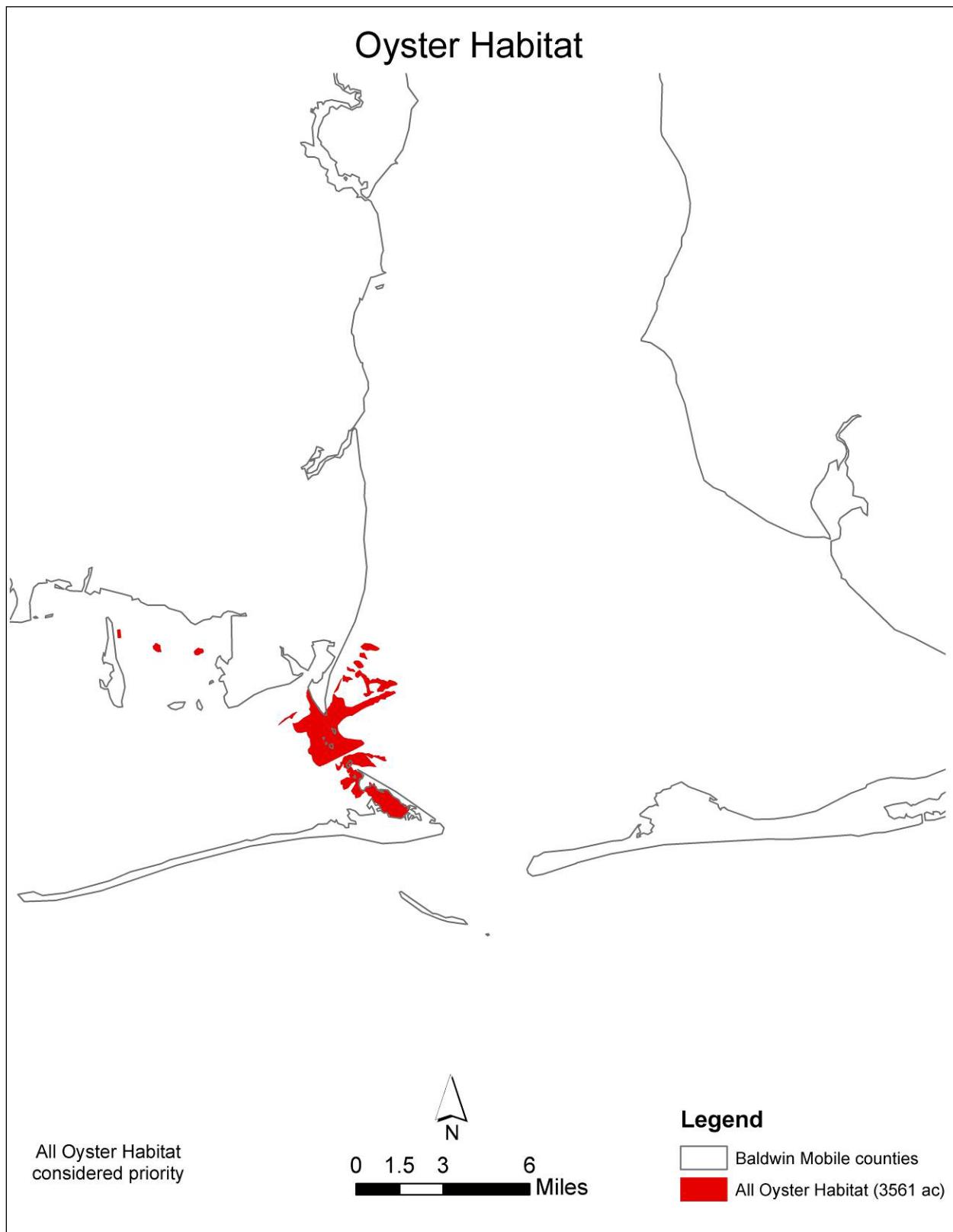
Data Used For Analysis	Related Data For Habitat Mapper
	<ul style="list-style-type: none"><li>• 1995 and 2001 delineated oysters (<i>oyster.shp</i>)</li><li>• Sediment with fossilized oysters (<i>Sediment.shp</i>)</li><li>• Benthic data (<i>Benthic_draft_4-13-09.shp</i>)</li><li>• Bathymetry (<i>bathy_vect.shp</i>)</li><li>• Developed lands (<i>developed.shp</i>)</li><li>• Historical oysters (<i>oyster_1968.shp</i>)</li></ul>

*Step 1: Habitat Classification (HPP Module 1)*

1. Classify Oyster Reefs.
  - a. Select *Create a new habitat patch file*.  
Click *Next*.
  - b. From the Land cover dataset dropdown menu, choose *Benthic\_draft\_4-13-09*.  
Select the Analysis Extent *Extent of the above selected land cover layer*.  
Click *Next*.
  - c. From the Value field dropdown menu, choose *Value* .  
From the Description field dropdown menu, choose *class\_name*.  
Click *Generate Values*.  
Click *Next*.
  - d. Select the Classification Type *Unique*. Check the box next to the following land cover class:  
6 – Oyster Reef  
Click *Next*.
  - e. Either create a file geodatabase, or store the output in an existing file geodatabase.
  - f. Save result as *oyster\_mod1* and click *Finish*.

**Note:** No additional habitat prioritization analyses were completed. Due to the limited oyster data, all oyster habitats were considered priority.

## Map Layout for Oyster Reefs



## **Longleaf Pine**

### **Summary Table for Longleaf Pine**

*Goal: Identify priority longleaf pine habitat.*

Objectives	Selection Criteria	HPP Analyses	Available Data for Analyses	Related Data for Habitat Mapper
Identify longleaf pine habitat		Simple habitat classification	Land cover ( <i>gap_update_2005_impervious.img</i> )	
Identify longleaf pine open understory	Only for viewing (not for analysis)	Unique habitat classification	Land cover ( <i>gap_update_2005_impervious.img</i> )	
Identify longleaf pine habitat near protected areas	Within 1 mile (5,280 feet)	Distance to protected areas	Protected lands ( <i>prot_land_Mob_Bald.shp</i> )	
Identify clumped patches of longleaf pine habitat	Between 0–147 feet	Nearest neighbor	Land cover ( <i>gap_update_2005_impervious.img</i> )	

### **Explanation of Analysis for Longleaf Pine**

- Longleaf pine habitat with open understory is classic longleaf pine habitat, and the CHCT wanted to identify this priority habitat.
- Other longleaf pine habitat identified in the GAP data may contain mixed hardwoods or mixed pine. Of the mixed longleaf habitats, the CHCT wanted to identify those within 1 mile of currently protected lands—in hopes of expanding these lands in the future and for the purposes of fire management. Additionally, the CHCT wanted to locate longleaf pine habitat that was within 147 feet of other longleaf habitat. (Initially, the CHCT had examined habitat within 150 feet, but this selection was more broad than desired.)
- No additional data was identified for inclusion in the Habitat Mapper.

### **Geospatial Analysis Instructions for Longleaf Pine**

Data Used For Analysis	Related Data For Habitat Mapper
<ul style="list-style-type: none"><li>• GAP land cover updated with C-CAP (<i>gap_update_2005_impervious.img</i>)</li><li>• Protected lands (<i>prot_land_Mob_Bald.shp</i>)</li></ul>	

### *Step 1: Habitat Classification (HPP Module 1)*

1. Classify Open Understory Longleaf Pine.
  - a. Select *Create a new habitat patch file*.  
Click *Next*.
  - b. From the Land cover dataset dropdown menu, choose *gap\_update\_2005\_impervious.img*.  
Select the Analysis Extent *Extent of the above selected land cover layer*.  
Click *Next*.
  - c. From the Value field dropdown menu, choose *Value*.  
From the Description field dropdown menu, choose *class\_name*.  
Click *Generate Values*.  
Click *Next*.
  - d. Select the Classification Type *Simple*. Check the box next to the following land cover class:  
17 – East Gulf Coastal Plain Interior Upland Longleaf Pine Woodland – Open Understory Modifier  
Click *Next*.
  - e. Either create a file geodatabase, or store the output in an existing file geodatabase.
  - f. Save result as *ll\_pine\_open\_understory* click *Finish*.

**Note:** This file was only used for viewing purposes, not for analysis.

2. Classify all possible Longleaf Pine.
  - a. Select *Create a new habitat patch file*.  
Click *Next*.
  - b. From the Land cover dataset dropdown menu, choose *gap\_update\_2005\_impervious.img*.  
Select the Analysis Extent *Extent of the above selected land cover layer*.  
Click *Next*.
  - c. From the Value field dropdown menu, choose *Value*.  
From the Description field dropdown menu, choose *class\_name*.  
Click *Generate Values*.  
Click *Next*.
  - d. Select the Classification Type *Simple*. Check the boxes next to the following land cover classes:  
13 – East Gulf Coastal Plain Interior Upland Longleaf Pine Woodland – Offsite Hardwood Modifier  
16 – East Gulf Coastal Plain Interior Upland Longleaf Pine Woodland – Loblolly Modifier

17 – East Gulf Coastal Plain Interior Upland Longleaf Pine Woodland – Open Understory Modifier  
Click *Next*.

3. Either create a file geodatabase, or store the output in an existing file geodatabase.
4. Save result as ***longleaf\_pine\_mod1*** and click *Finish*.

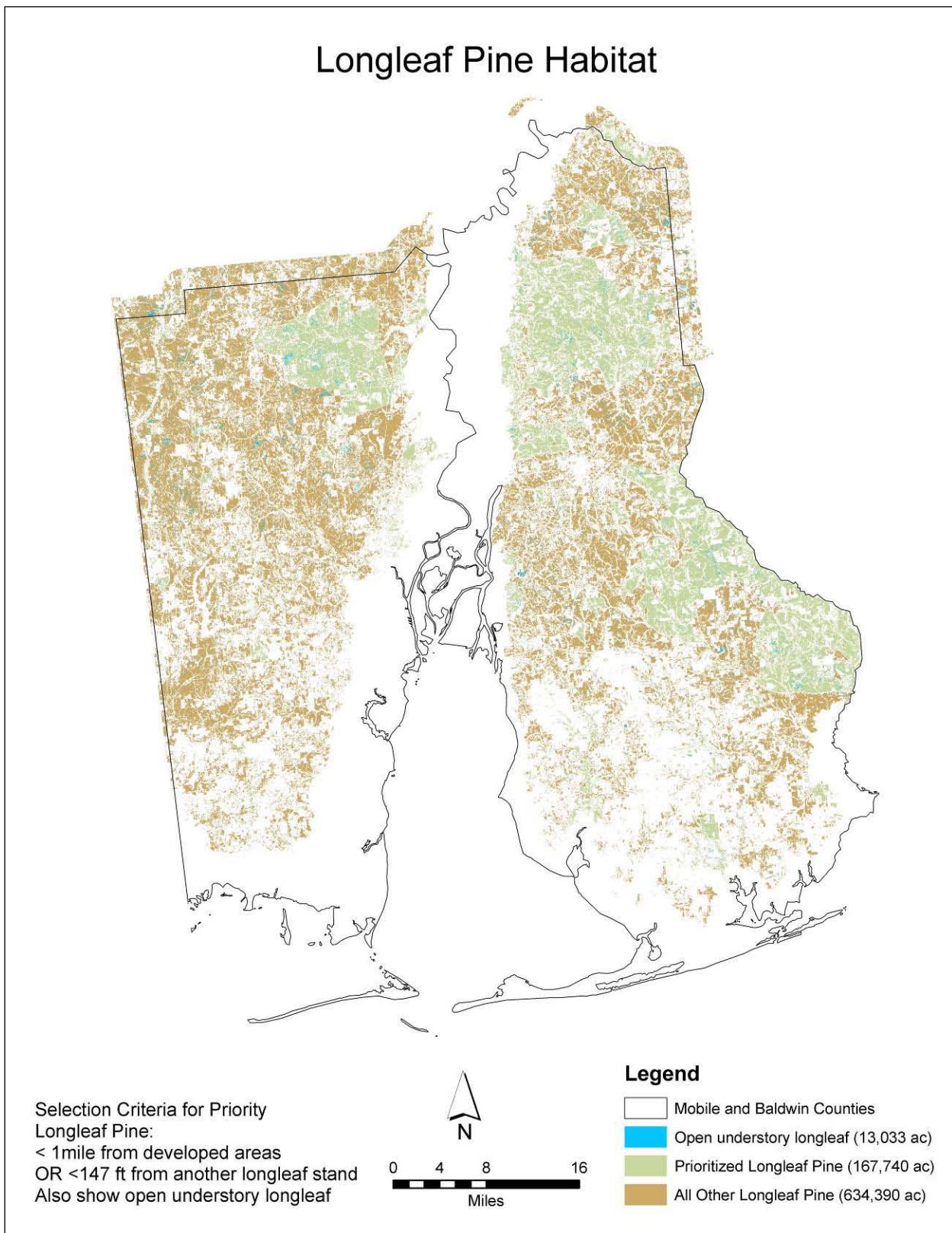
### *Step 2: Habitat Analysis (HPP Module 2)*

1. Perform a new habitat analysis.
  - a. From the Habitats layer dropdown menu, choose *longleaf\_pine\_mod1*.  
Choose distance units: *feet*.  
Choose area units: *acres*.  
Click *Next*.
  - b. Landscape analysis: click on *Nearest Neighbor*.  
Click *Next*.
  - c. Click *New* to add a Custom analysis:
    - i. From the Analysis type dropdown menu, choose *distance to*.  
From the Analysis layer dropdown menu, choose *prot\_land\_Mob\_Bald*.  
From the Field name dropdown menu, choose *dt\_pt*.  
Click *OK*.
2. Save result as ***GP\_LL\_Pine\_06\_22\_09\_run2\_mod2***.

### *Step 3: Data Exploration (HPP Module 3)*

1. From the Map layer dropdown menu, choose *GP\_LL\_Pine\_06\_22\_09\_run2\_mod2*.  
From the Field dropdown menu, choose *dt\_pt*.  
Select *0-5280 feet*.  
Click *Add Selection to Query*.  
Insert an *OR* statement (do not apply the query yet).
2. From the Field dropdown menu, choose *NNneighbor*.  
Select *0-147 feet*.  
Click *Add Selection to Query*.  
Click *Verify*.  
Click *Apply*.
3. Save result as ***GP\_LL\_Pine\_pt\_NN\_06\_23\_09\_mod3***.
4. Click *OK*.

## Map Layout for Longleaf Pine



## Pine Savannah

### Summary Table for Pine Savannah

*Goal: Identify priority pine savannah habitat.*

Objectives	Selection Criteria	HPP Analyses	Available Data for Analyses	Related Data for Habitat Mapper
Identify pine savannah habitat		Grouped classification	Land cover ( <i>gap_update_2005_impervious.img</i> )	
Identify large patches of pine savannah habitat	Patches 0-500 acres	Size	Land cover ( <i>gap_update_2005_impervious.img</i> )	
Identify pine savannah habitat near protected areas	Within 1/2 mile	Distance to protected areas	Protected lands ( <i>prot_land_Mob_Bald.shp</i> )	

### Explanation of Analysis for Pine Savannah

- Pine savannah habitat identified in the GAP data contained some scrub/shrub, mixed pine flatwoods, and savannah and wet prairie. Of the mixed pine savannah habitats, the CHCT wanted to identify large habitat patches within 1/2 mile of currently protected lands—in hopes of expanding these lands in the future.
- No additional data was identified for inclusion in the Habitat Mapper.

### Geospatial Analysis Instructions for Pine Savannah

Data Used For Analysis	Related Data For Habitat Mapper
<ul style="list-style-type: none"><li>• GAP land cover updated with C-CAP (<i>gap_update_2005_impervious.img</i>)</li><li>• Protected lands (<i>prot_land_Mob_Bald.shp</i>)</li></ul>	

### Step 1: Habitat Classification (HPP Module 1)

#### 1. Classify Pine Savannah

- a. Select *Create a new habitat patch file.*  
Click *Next*.
- b. From the Land cover dataset dropdown menu, choose *gap\_update\_2005\_impervious.img*.  
Select the Analysis Extent *Extent of the above selected land cover layer*.  
Click *Next*.
- c. From the Value field dropdown menu, choose *Value*.

From the Description field dropdown menu, choose *class\_name*.

Click *Generate Values*.

Click *Next*.

- d. Select Classification Type *Simple*. Check the boxes next to the following land cover classes:
  - 18 – Successional Scrub/Shrub (Clear Cut)
  - 20 – Successional Scrub/Shrub (Other)
  - 28 – East Gulf Coastal Plain Near-Coast Pine Flatwoods – Offsite Hardwood Modifier
  - 29 – East Gulf Coastal Plain Near-Coast Pine Flatwoods – Open Understory Modifier
  - 32 – East Gulf Coastal Plain Treeless Savannah and Wet PrairieClick *Next*.
- e. Either create a file geodatabase, or store the output in an existing file geodatabase.
- f. Save results as *pine\_savannah\_mod1* and click *Finish*.

### Step 2: Habitat Analysis (HPP Module 2)

1. Perform a new habitat analysis.
  - a. From the Habitats layer dropdown menu, choose *pine\_savannah\_mod1*.  
Choose distance units: *feet*.  
Choose area units: *acres*.  
Click *Next*.
  - b. Landscape analysis: the CHCT decided that landscape analyses were not necessary for this habitat.  
Click *Next*.
  - c. Click *New* to add a Custom analysis:
    - i. From the Analysis type dropdown menu, choose *distance to*.  
From the Analysis layer dropdown menu, choose *prot\_land\_Mob\_Bald*.  
From the Field name dropdown menu, choose *dt\_pt*.  
Click *OK*.
  - d. Save result as *GP\_Pine\_Savannah\_06\_16\_09\_mod2*.

### Step 3: Data Exploration (HPP Module 3)

1. From the Map layer dropdown menu, choose *GP\_Pine\_Savannah\_06\_16\_09\_mod2*.  
From the Field dropdown menu, choose *area\_acre*.  
Select *0-500 acres*.  
Click *Add Selection to Query*.  
Insert an *OR* statement (do not apply the query yet).
2. From the Field dropdown menu, choose *dt\_pt*.  
Select *0-2640 feet*.

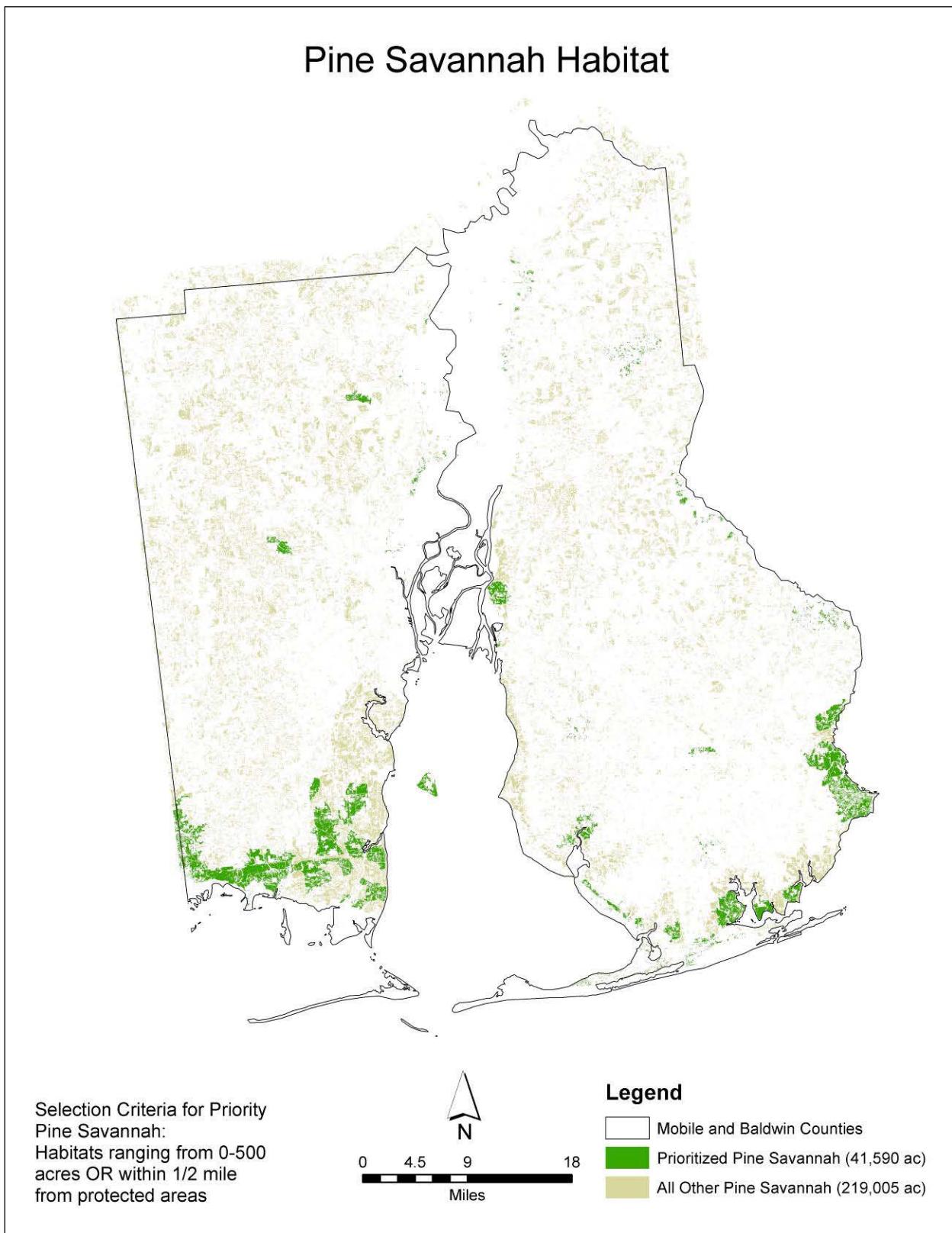
Click *Add Selection to Query*.

Click *Verify*.

Click *Apply*.

3. Save result as ***GP\_Pine\_Savannah\_06\_22\_09\_final\_Prioritization***.
4. Click *OK*.

## Map Layout for Pine Savannah



## **Maritime Forest**

### **Summary Table for Maritime Forest**

*Goal: Identify priority maritime forest habitat.*

Objectives	Selection Criteria	HPP Analyses	Available Data for Analyses	Related Data for Habitat Mapper
Identify maritime forest habitat		Unique classification	Land cover ( <i>gap_update_2005_impervious.img</i> )	
Identify maritime forest habitat adjacent to beach and dune habitat	Within 100 feet	Distance to	Beach and dune habitat ( <i>Beach_Dune_mod2.shp</i> )	
Identify maritime forest habitat adjacent to marsh habitat	Within 100 feet	Distance to	Marsh habitat ( <i>intertidal_mod2_update2.shp</i> )	
Identify maritime forest habitat near protected areas	Within 1,320 feet (.25 miles)	Distance to	Protected lands ( <i>prot_land_Mob_Bald.shp</i> )	
Identify large patches of maritime forest habitat	10 acres or greater	Size	Land cover ( <i>gap_update_2005_impervious.img</i> )	

### **Explanation of Analysis for Maritime Forest**

- The CHCT wanted to locate maritime forest habitat patches that were adjacent to beach, dune, and marsh habitat to allow for migration of these habitats with sea level rise. They also wanted to identify large habitat patches within ¼ miles of currently protected lands—in hopes of expanding these lands in the future.
- No additional data was identified for inclusion in the Habitat Mapper.

### **Geospatial Analysis Instructions for Maritime Forest**

Data Used For Analysis	Related Data For Habitat Mapper
<ul style="list-style-type: none"><li>• GAP land cover updated with C-CAP (<i>gap_update_2005_impervious.img</i>)</li><li>• Protected lands (<i>prot_land_Mob_Bald.shp</i>)</li><li>• Beach and dune habitat (<i>Beach_Dune_mod2.shp</i>)</li><li>• Intertidal marsh habitat (<i>intertidal_mod2_update2.shp</i>)</li></ul>	

### *Step 1: Habitat Classification (HPP Module 1)*

1. Classify Maritime Forest
  - a. Select *Create a new habitat patch file*. Click *Next*.

- g. From the Land cover dataset dropdown menu, choose *gap\_update\_2005\_impervious.img*.  
Select the Analysis Extent *Extent of the above selected land cover layer*.  
Click *Next*.
- h. From the Value field dropdown menu, choose *Value*.  
From the Description field dropdown menu, choose *class\_name*.  
Click *Generate Values*.  
Click *Next*.
- i. Select Classification Type *Simple*. Check the box next to the following land cover class:  
**15 – East Gulf Coastal Plain Maritime Forest**  
Click *Next*.
- b. Either create a file geodatabase, or store the output in an existing file geodatabase.
- c. Save results as ***maritime\_mod1*** and click *Finish*.

#### *Step 2: Habitat Analysis (HPP Module 2)*

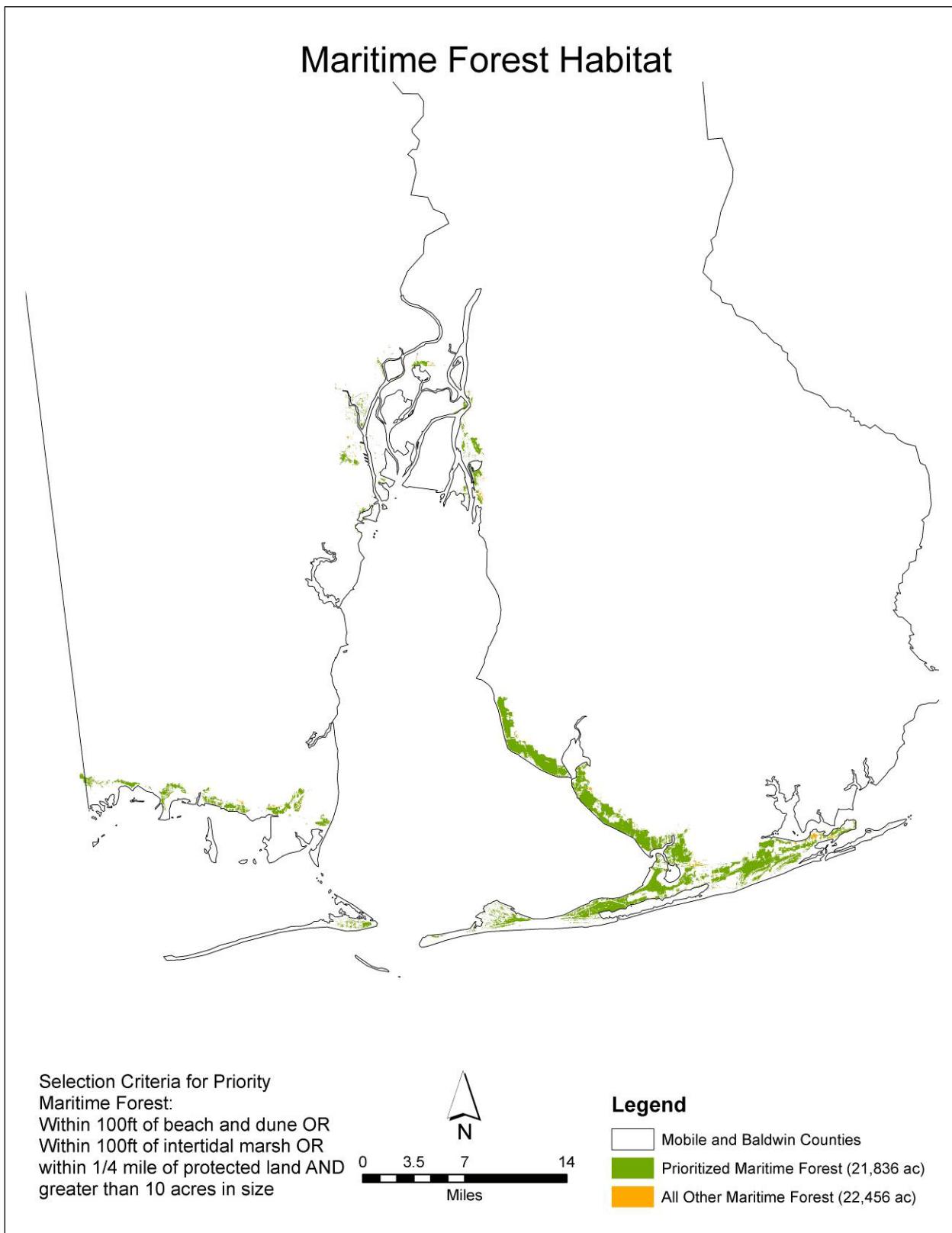
1. Perform a new habitat analysis.
  - a. From the Habitats layer dropdown menu, choose *maritime\_mod1*.  
Choose distance units: *feet*.  
Choose area units: *acres*.  
Click *Next*.
  - b. Landscape analysis: the CHCT decided that landscape analyses were not necessary for this habitat.  
Click *Next*.
  - c. Click *New* to add a Custom analysis:
    - i. From the Analysis type dropdown menu, choose *distance to*.  
From the Analysis layer dropdown menu, choose *prot\_land\_Mob\_Bald*.  
From the Field name dropdown menu, choose *dt\_pt*.  
Click *OK*.
    - ii. From the Analysis type dropdown menu, choose *distance to*.  
From the Analysis layer dropdown menu, choose *beach\_dune*.  
From the Field name dropdown menu, choose *dt\_bd*.  
Click *OK*.
    - iii. From the Analysis type dropdown menu, choose *distance to*.  
From the Analysis layer dropdown menu, choose *intertidal\_marsh*.  
From the Field name dropdown menu, choose *dt\_marsh*.  
Click *OK*.

- d. Save result as ***GP\_maritime\_mod2\_june\_run2***.

*Step 3: Data Exploration (HPP Module 3)*

1. From the Map layer dropdown menu, choose ***GP\_maritime\_mod2\_june\_run2***.  
From the Field name dropdown menu, choose ***dt\_bd***.  
Select ***0-100 feet***.  
Click ***Add Selection to Query***.  
Insert an ***OR*** statement (do not apply the query yet).
2. From the Field name dropdown menu, choose ***dt\_marsh***.  
Select ***0-100 feet***.  
Click ***Add Selection to Query***.  
Insert an ***OR*** statement (do not apply the query yet).
3. From the Field name dropdown menu, choose ***dt\_pt***.  
Select ***0-1320 feet***.  
Click ***Add Selection to Query***.  
Insert an ***AND*** statement (do not apply the query yet).
4. From the Field name dropdown menu, choose ***area\_acre***.  
Select ***>10 acres***.  
Click ***Add Selection to Query***.  
Click ***Verify***.  
Click ***Apply***.
5. Save result as ***GP\_maritime\_final\_prioritization\_6\_22\_09***.
6. Click ***OK***.

## Map Layout for Maritime Forest



## Appendix B: Parcel Assessment Details

Note that the intended use of the online Habitat Mapper is to identify landscape-level patterns and major functional niches for conservation and land use planning applications. The parcel assessment provided should be used only as a screening-level tool to aid in decision making. The online maps represent the best available data at the time of tool development. They are not a substitute for site surveys and all features should be verified with a site visit.

### Mobile County Parcels Geospatial Analysis Instructions

Data Used For Analysis
<ul style="list-style-type: none"><li>• Mobile County Parcels (<i>parcel_ownership</i>)</li><li>• Prioritized Beach and Dune (<i>BeachDune_mod3_update</i>)</li><li>• Prioritized Pine Savannah (<i>GP_Pine_Savannah_06_22_09_final_Prioritization</i>)</li><li>• Prioritized Longleaf Pine (<i>GP_LL_Pine_pt_NN_06_23_09_mod3</i>)</li><li>• Longleaf Pine Open Understory (<i>ll_pine_open_understory</i>)</li><li>• Prioritized Maritime Forest (<i>GP_maritime_final_prioritization_6_22_09</i>)</li><li>• Prioritized Intertidal Marshes and Flats for Storm Protection (<i>intertidal_mod3_dev</i>)</li><li>• Prioritized Intertidal Marshes and Flats for Species Protection (<i>intertidal_mod3_species</i>)</li><li>• Prioritized Sub Aquatic Vegetation (SAV) (<i>SAV_Mod3</i>)</li><li>• Marine SAV (<i>Marine_SAV</i>)</li><li>• Oyster (<i>oyster</i>)</li><li>• Prioritized Watersheds for Conservation (for Stream and River protection) (<i>conservation_watersheds</i>)</li><li>• Prioritized Watersheds for Restoration (for Stream and River protection) (<i>restoration_watersheds</i>)</li><li>• Prioritized Riparian Buffers for Conservation (<i>cons_buffers_final</i>)</li><li>• Prioritized Riparian Buffers for Restoration (<i>rest_buffers_final</i>)</li><li>• Prioritized Freshwater Riverine Wetlands (<i>priority_riverine_wetlands_1</i>)</li><li>• Non-Riverine, Freshwater Wetlands (<i>non_riverine_wetlands</i>)</li></ul>

#### Step 1: Habitat Classification (Habitat Priority Planner (HPP) Module 1)

1. Classify Mobile County Parcels. (Note: To prepare the parcel layer for analysis, the shapefile must be run through the Habitat Classification Module.)
  - a. Select *Create a new habitat patch file*.  
Click *Next*.
  - b. From the Land cover dataset dropdown menu, choose *parcel\_ownership.shp*.  
Select the Analysis Extent *Extent of the above selected land cover layer*.

- Click *Next*.
- c. From the Description field dropdown menu, choose *assess\_num (this is the parcel ID number)*.  
From the Value field dropdown menu, choose *Create Value Field*, based on the class field *Assess\_num*.  
Click *Generate Values*  
Click *Next*.
  - d. Select the Classification Type *Unique*.  
Click *Select All*.  
Click *Next*.
  - e. Either create a file geodatabase, or store the output in an existing file geodatabase.
  - f. Save results as ***mobile\_mod1*** and click *Finish*.

#### *Step 2: Habitat Analysis (HPP Module 2)*

1. Perform a new habitat analysis.
  - a. From the Habitats layer dropdown menu, choose *mobile\_mod1*.  
Choose distance units: *miles*.  
Choose area units: *acres*.  
Click *Next*.
  - b. Landscape analysis: landscape analyses were not necessary for this analysis.  
Click *Next*.
  - c. Click *New* to add a Custom analysis:
    - i. From the Analysis type dropdown menu, choose *polygon overlay*.  
From the Analysis layer dropdown menu, choose *BeachDune\_mod3\_update*.  
From the Field name dropdown menu, choose *po\_BeachDune*.  
Click *OK*.
    - ii. From the Analysis type dropdown menu, choose *polygon overlay*.  
From the Analysis layer dropdown menu, choose  
*GP\_Pine\_Savannah\_06\_22\_09\_final\_Prioritization*.  
From the Field name dropdown menu, choose *po\_Pine\_Sav*.  
Click *OK*.
    - iii. From the Analysis type dropdown menu, choose *polygon overlay*.  
From the Analysis layer dropdown menu, choose  
*GP\_LL\_Pine\_pt\_NN\_06\_23\_09\_mod3*.  
From the Field name dropdown menu, choose *po\_longleaf*.  
Click *OK*.
    - iv. From the Analysis type dropdown menu, choose *polygon overlay*.  
From the Analysis layer dropdown menu, choose *ll\_pine\_open\_understory*.

From the Field name dropdown menu, choose *po\_ll\_pine\_open\_understory*.  
Click *OK*.

- v. From the Analysis type dropdown menu, choose *polygon overlay*.  
From the Analysis layer dropdown menu, choose  
*GP\_maritime\_final\_prioritization\_6\_22\_09*.  
From the Field name dropdown menu, choose *po\_maritime*.  
Click *OK*.
- vi. From the Analysis type dropdown menu, choose *polygon overlay*.  
From the Analysis layer dropdown menu, choose *intertidal\_mod3\_dev*.  
From the Field name dropdown menu, choose *po\_intertidal\_mod3\_dev*.  
Click *OK*.
- vii. From the Analysis type dropdown menu, choose *polygon overlay*.  
From the Analysis layer dropdown menu, choose *intertidal\_mod3\_species*.  
From the Field name dropdown menu, choose *po\_intertidal\_mod3\_species*.  
Click *OK*.
- viii. From the Analysis type dropdown menu, choose *polygon overlay*.  
From the Analysis layer dropdown menu, choose *SAV\_mod3*.  
From the Field name dropdown menu, choose *po\_SAV*.  
Click *OK*.
- ix. From the Analysis type dropdown menu, choose *polygon overlay*.  
From the Analysis layer dropdown menu, choose *Marine\_SAV*.  
From the Field name dropdown menu, choose *po\_marine\_sav*.  
Click *OK*.
- x. From the Analysis type dropdown menu, choose *polygon overlay*.  
From the Analysis layer dropdown menu, choose *oyster*.  
From the Field name dropdown menu, choose *po\_oyster*.  
Click *OK*.
- xi. From the Analysis type dropdown menu, choose *polygon overlay*.  
From the Analysis layer dropdown menu, choose *conservation\_watersheds*.  
From the Field name dropdown menu, choose *po\_con\_wshed*.  
Click *OK*.
- xii. From the Analysis type dropdown menu, choose *polygon overlay*.  
From the Analysis layer dropdown menu, choose *restoration\_watersheds*.  
From the Field name dropdown menu, choose *po\_rest\_wshed*.  
Click *OK*.
- xiii. From the Analysis type dropdown menu, choose *polygon overlay*.  
From the Analysis layer dropdown menu, choose *cons\_buffers\_final*.

From the Field name dropdown menu, choose *po\_con\_buffers*.  
Click *OK*.

- xiv. From the Analysis type dropdown menu, choose *polygon overlay*.  
From the Analysis layer dropdown menu, choose *rest\_buffers\_final*.  
From the Field name dropdown menu, choose *po\_rest\_buffers*.  
Click *OK*.
  - xv. From the Analysis type dropdown menu, choose *polygon overlay*.  
From the Analysis layer dropdown menu, choose  
*priority\_riverine\_wetlands\_1*.  
From the Field name dropdown menu, choose *po\_riv*.  
Click *OK*.
  - xvi. From the Analysis type dropdown menu, choose *polygon overlay*.  
From the Analysis layer dropdown menu, choose *non\_riverine\_wetlands*.  
From the Field name dropdown menu, choose *po\_non\_riverine\_wetlands*.  
Click *OK*.
- d. Save result as *mobile\_mod2\_final*.

## Baldwin County Parcels Geospatial Analysis Instructions

Data Used For Analysis
<ul style="list-style-type: none"><li>• Baldwin County Parcels (<i>Baldwin_Parcels</i>)</li><li>• Prioritized Beach and Dune (<i>BeachDune_mod3_update</i>)</li><li>• Prioritized Pine Savannah (<i>GP_Pine_Savannah_06_22_09_final_Prioritization</i>)</li><li>• Prioritized Longleaf Pine (<i>GP_LL_Pine_pt_NN_06_23_09_mod3</i>)</li><li>• Longleaf Pine Open Understory (<i>ll_pine_open_understory</i>)</li><li>• Prioritized Maritime Forest (<i>GP_maritime_final_prioritization_6_22_09</i>)</li><li>• Prioritized Intertidal Marshes and Flats for Storm Protection (<i>intertidal_mod3_dev</i>)</li><li>• Prioritized Intertidal Marshes and Flats for Species Protection (<i>intertidal_mod3_species</i>)</li><li>• Prioritized SAV (<i>SAV_Mod3</i>)</li><li>• Marine SAV (<i>Marine_SAV</i>)</li><li>• Oyster (<i>oyster</i>)</li><li>• Prioritized Watersheds for Conservation (for Stream and River protection) (<i>conservation_watersheds</i>)</li><li>• Prioritized Watersheds for Restoration (for Stream and River protection) (<i>restoration_watersheds</i>)</li><li>• Prioritized Riparian Buffers for Conservation (<i>cons_buffers_final</i>)</li><li>• Prioritized Riparian Buffers for Restoration (<i>rest_buffers_final</i>)</li><li>• Prioritized Freshwater Riverine Wetlands (<i>priority_riverine_wetlands_1</i>)</li></ul>

- Non-Riverine, Freshwater Wetlands (*non\_riverine\_wetlands*)

### *Step 1: Habitat Classification (HPP Module 1)*

1. Classify Baldwin County Parcels. (Note: To prepare the parcel layer for analysis, the shapefile must be run through the Habitat Classification Module.)
  - a. Select *Create a new habitat patch file*.  
Click *Next*.
  - b. From the Land cover dataset dropdown menu, choose *Baldwin\_Parcels.shp*.  
Select Analysis Extent *Extent of the above selected land cover layer*.  
Click *Next*.
  - c. From the Description field dropdown menu, choose *PID (this is the parcel ID number)*.  
From the Value field dropdown menu, choose *Create Value Field*, based on the class field *PID*.  
Click *Generate Values*  
Click *Next*.
  - d. Select the Classification Type *Unique*.  
Click *Select All*.  
Click *Next*.
  - e. Either create a file geodatabase, or store the output in an existing file geodatabase.
  - f. Save the file as ***baldwin\_mod1*** and click *Finish*.

### *Step 2: Habitat Analysis (HPP Module 2)*

1. Perform a new habitat analysis.
  - a. From the Habitats layer dropdown menu, choose *baldwin\_mod1*.  
Choose distance units: *miles*.  
Choose area units: *acres*.  
Click *Next*.
  - b. Landscape analysis: landscape analyses were not necessary for this analysis.  
Click *Next*.
  - c. Click *New* to add a Custom analysis:
    - i. From the Analysis type dropdown menu, choose *polygon overlay*.  
From the Analysis layer dropdown menu, choose *BeachDune\_mod3\_update*.  
From the Field name dropdown menu, choose *po\_BeachDune* .  
Click *OK*.

- ii. From the Analysis type dropdown menu, choose *polygon overlay*.  
From the Analysis layer dropdown menu, choose  
*GP\_Pine\_Savannah\_06\_22\_09\_final\_Prioritization*.  
From the Field name dropdown menu, choose *po\_Pine\_Sav*.  
Click *OK*.
- iii. From the Analysis type dropdown menu, choose *polygon overlay*.  
From the Analysis layer dropdown menu, choose  
*GP\_LL\_Pine\_pt\_NN\_06\_23\_09\_mod3*.  
From the Field name dropdown menu, choose *po\_longleaf*.  
Click *OK*.
- iv. From the Analysis type dropdown menu, choose *polygon overlay*.  
From the Analysis layer dropdown menu, choose *ll\_pine\_open\_understory*.  
From the Field name dropdown menu, choose *po\_ll\_pine\_open\_understory*.  
Click *OK*.
- v. From the Analysis type dropdown menu, choose *polygon overlay*.  
From the Analysis layer dropdown menu, choose  
*GP\_maritime\_final\_prioritization\_6\_22\_09*.  
From the Field name dropdown menu, choose *po\_maritime*.  
Click *OK*.
- vi. From the Analysis type dropdown menu, choose *polygon overlay*.  
From the Analysis layer dropdown menu, choose *intertidal\_mod3\_dev*.  
From the Field name dropdown menu, choose *po\_intertidal\_mod3\_dev*.  
Click *OK*.
- vii. From the Analysis type dropdown menu, choose *polygon overlay*.  
From the Analysis layer dropdown menu, choose *intertidal\_mod3\_species*.  
From the Field name dropdown menu, choose *po\_intertidal\_mod3\_species*.  
Click *OK*.
- viii. From the Analysis type dropdown menu, choose *polygon overlay*.  
From the Analysis layer dropdown menu, choose *SAV\_mod3*.  
From the Field name dropdown menu, choose *po\_SAV*.  
Click *OK*.
- ix. From the Analysis type dropdown menu, choose *polygon overlay*.  
From the Analysis layer dropdown menu, choose *Marine\_SAV*.  
From the Field name dropdown menu, choose *po\_marine\_sav*.  
Click *OK*.
- x. From the Analysis type dropdown menu, choose *polygon overlay*.  
From the Analysis layer dropdown menu, choose *oyster*.  
From the Field name dropdown menu, choose *po\_oyster*.

Click *OK*.

- xi. From the Analysis type dropdown menu, choose *polygon overlay*.  
From the Analysis layer dropdown menu, choose *conservation\_watersheds*.  
From the Field name dropdown menu, choose *po\_con\_wshed*.  
Click *OK*.
  - xii. From the Analysis type dropdown menu, choose *polygon overlay*.  
From the Analysis layer dropdown menu, choose *restoration\_watersheds*.  
From the Field name dropdown menu, choose *po\_rest\_wshed*.  
Click *OK*.
  - xiii. From the Analysis type dropdown menu, choose *polygon overlay*.  
From the Analysis layer dropdown menu, choose *cons\_buffers\_final*.  
From the Field name dropdown menu, choose *po\_con\_buffers*.  
Click *OK*.
  - xiv. From the Analysis type dropdown menu, choose *polygon overlay*.  
From the Analysis layer dropdown menu, choose *rest\_buffers\_final*.  
From the Field name dropdown menu, choose *po\_rest\_buffers*.  
Click *OK*.
  - xv. From the Analysis type dropdown menu, choose *polygon overlay*.  
From the Analysis layer dropdown menu, choose  
*priority\_riverine\_wetlands\_1*.  
From the Field name dropdown menu, choose *po\_riv*.  
Click *OK*.
  - xvi. From the Analysis type dropdown menu, choose *polygon overlay*.  
From the Analysis layer dropdown menu, choose *non\_riverine\_wetlands*.  
From the Field name dropdown menu, choose *po\_non\_riverine\_wetlands*.  
Click *OK*.
- d. Save the file as ***baldwin\_mod2\_final***.

## Appendix C: Priority Habitats Merge

Data Used For Analysis
<ul style="list-style-type: none"><li>• Prioritized Beach and Dune (<i>BeachDune_mod3_update</i>)</li><li>• Prioritized Pine Savannah (<i>GP_Pine_Savannah_06_22_09_final_Prioritization</i>)</li><li>• Prioritized Longleaf Pine (<i>GP_LL_Pine_pt_NN_06_23_09_mod3</i>)</li><li>• Longleaf Pine Open Understory (<i>ll_pine_open_understory</i>)</li><li>• Prioritized Maritime Forest (<i>GP_maritime_final_prioritization_6_22_09</i>)</li><li>• Prioritized Intertidal Marshes and Flats for Storm Protection (<i>intertidal_mod3_dev</i>)</li><li>• Prioritized Intertidal Marshes and Flats for Species Protection (<i>intertidal_mod3_species</i>)</li><li>• Prioritized Sub Aquatic Vegetation (SAV) (<i>SAV_Mod3</i>)</li><li>• Marine SAV (<i>Marine_SAV</i>)</li><li>• Oyster (<i>oyster</i>)</li><li>• Prioritized Watersheds for Conservation (for Stream and River protection) (<i>conservation_watersheds</i>)</li><li>• Prioritized Watersheds for Restoration (for Stream and River protection) (<i>restoration_watersheds</i>)</li><li>• Prioritized Riparian Buffers for Conservation (<i>cons_buffers_final</i>)</li><li>• Prioritized Stream Riparian for Restoration (<i>rest_buffers_final</i>)</li><li>• Prioritized Freshwater Riverine Wetlands (<i>priority_riverine_wetlands_1</i>)</li><li>• Non-Riverine, Freshwater Wetlands (<i>non_riverine_wetlands</i>)</li></ul>

### Run the Merge Tool

1. In ArcGIS, open the Toolbox.
2. Within the Data Management Tools, under the General section, select the Merge tool.
3. Add all of the priority habitats in the above list to the Merge tool.
4. Name the output *all\_habitat\_final*.

## Appendix D: Aliases

The Alabama Habitat Mapper allows users to view additional data sets alongside the prioritized habitats that were identified using Habitat Priority Planner tool. This appendix provides details about how the layers, file names, and attributes in the Habitat Mapper relate to one another.

Intuitive data layer names were renamed in the ArcGIS (.MXD) file used to create the Alabama Habitat Mapper—as were attribute field names in the database accessed by the Habitat Mapper. To limit the attributes displayed with the Habitat Mapper Identify Function (so that only useful attributes are shown to the end user), attribute fields were checked on or off in the .MXD file.

Below are the steps taken to alias and display appropriate attributes in the Habitat Mapper. Some of this work can be avoided if Geographic Information System (GIS) users use naming conventions that match what is to be displayed in the Habitat Mapper.

1. Alias attribute field names:
  - a. In the database used for the Habitat Mapper, right-click on a data layer and go to Properties.
  - b. Select a field from the Field Name box that you would like to alias.
  - c. In the Field Properties box, click on the field name to edit it.
  - d. Change the field name to what should be displayed in the Habitat Mapper.
2. Select aliases for display in the Habitat Mapper:
  - a. In the .MXD used to create the Habitat Mapper, right-click on a data layer and go to Properties.
  - b. Click on the Fields tab and check the box next to the attributes you would like displayed in the Habitat Mapper.

Data Layer Name Displayed in Habitat Mapper	Data Layer File Name in Database	Attribute Fields Checked in .MXD for Habitat Mapper Identify Function	Aliases for Attribute Fields for Habitat Mapper Identify Function
MS-AL Conservation and Restoration Projects	Linked and displayed directly from MS-AL Habitats Database		
<b>Coastal Habitats and Prioritized Areas</b>			
All Prioritized Habitats	<i>all_habitat_final</i>	cls_name	Habitat Name
<b>Freshwater Wetlands</b>			
Prioritized Riverine Freshwater Wetlands	<i>priority_riverine_wetlands_1</i>	area_size, area_acre, area_hectare, cls_name	Square Meters, Acres, Hectares, Habitat Name
All Nonriverine Freshwater Wetlands	<i>non_riverine_wetlands</i>	area_size, area_acre, area_hectare, cls_name	Square Meters, Acres, Hectares, Habitat Name

All Riverine Freshwater Wetlands	<i>riverine_wetlands_mod2</i>	area_size, area_acre, area_hectare, cls_name	Square Meters, Acres, Hectares, Habitat Name
<b>Rivers and Streams (via Watersheds Analysis)</b>			
Prioritized Watersheds for River and Stream Conservation	<i>conservation_watersheds</i>	area_size, area_acre, area_hectare, cls_name, PO_imperVIOUS_pct, PA_303dstreams	Square Meters, Acres, Hectares, Habitat Name, Percent of Impervious Overlay, Presence/Absence of Impaired Streams
Prioritized Watersheds for River and Stream Restoration	<i>restoration_watersheds</i>	area_size, area_acre, area_hectare, cls_name, PO_imperVIOUS_pct, PA_303dstreams	Square Meters, Acres, Hectares, Habitat Name, Percent of Impervious Overlay, Presence/Absence of Impaired Streams
All Watersheds	<i>watersheds_mod2</i>	area_size, area_acre, area_hectare, cls_name	Square Meters, Acres, Hectares, Habitat Name
<b>Riparian Buffer</b>			
Prioritized Riparian Buffers for Conservation	<i>cons_buffers_final</i>	area_size, area_acre, area_hectare, cls_name, poly_over_cons_watshds_Pct	Square Meters, Acres, Hectares, Habitat Name, Percent Overlay with Priority Conservation Watersheds
Prioritized Riparian Buffers for Restoration	<i>rest_buffers_final</i>	area_size, area_acre, area_hectare, cls_name, poly_over_rest_watshds_Pct	Square Meters, Acres, Hectares, Habitat Name, Percent Overlay with Priority Restoration Watersheds
30-Meter Riparian Buffer	<i>grouped_30m_buf_mod2</i>	area_size, area_acre, area_hectare, cls_name	Square Meters, Acres, Hectares, Habitat Name
<b>Beach and Dune</b>			
Prioritized Beach and Dune	<i>BeachDune_mod3_update</i>	area_size, area_acre, area_hectare, cls_name, PA_ABM_Hab_Range, PA_Sea_Turtle, Poly_Over_CCL_Clipper_Pct, dt_mari_simple_mod1	Square Meters, Acres, Hectares, Habitat Name, Presence/Absence Alabama Beach Mouse, Presence/Absence Sea Turtle, Percent Overlay with Construction Line, Distance to Maritime Forest
All Beach and Dune	<i>Beach_Dune_mod2</i>	area_size, area_acre, area_hectare, cls_name	Square Meters, Acres, Hectares, Habitat Name
<b>Intertidal Marshes and Flats</b>			
Prioritized Intertidal Marshes and Flats – Hazard Protection	<i>intertidal_mod3_dev</i>	area_size, area_acre, area_hectare, cls_name, DT_dev, dt_100_yr_flood	Square Meters, Acres, Hectares, Habitat Name, Distance to Developed Areas, Distance to 100 Year Flood
Prioritized Intertidal Marshes and Flats – Natural Resource Conservation	<i>intertidal_mod3_species</i>	area_size, area_acre, area_hectare, cls_name, PA_spec_of_con, dt_prot_land_Mob_Bald	Square Meters, Acres, Hectares, Habitat Name, Presence/Absence Species of Concern, Distance to Protected Areas
All Intertidal Marshes and Flats	<i>intertidal_mod2_update2</i>	area_size, area_acre, area_hectare, cls_name	Square Meters, Acres, Hectares, Habitat Name

<b>Sub Aquatic Vegetation</b>			
Prioritized Sub Aquatic Vegetation	<i>SAV_mod3</i>	area_size, area_acre, area_hectare, cls_name, dt_ramp_marina_srvy03 , Distance_To_Dredge , dt_prot_land_Mob_Bald	Square Meters, Acres, Hectares, Habitat Name, Distance to Boat Ramps and Marinas 2003, Distance to Dredge Areas, Distance to Protected Lands
Marine Sub Aquatic Vegetation	<i>Marine_SAV</i>	area_size, area_acre, area_hectare, cls_name	Square Meters, Acres, Hectares, Habitat Name
All Sub Aquatic Vegetation	<i>SAV_Mod2</i>	area_size, area_acre, area_hectare, cls_name	Square Meters, Acres, Hectares, Habitat Name
Invasive Sub Aquatic Vegetation	<i>SAV_invasive_shp_1</i>	Shape_area, acres	Square Meters, Acres
<b>Oyster Reef</b>			
All Oyster Reefs	<i>oyster</i>	area_size, area_acre, area_hectare, cls_name	Square Meters, Acres, Hectares, Habitat Name
Historical Oysters	<i>oyster_1968</i>	name, acres	Name, Acres
<b>Longleaf Pine</b>			
Prioritized Longleaf Pine	<i>GP_LL_Pine_pt_NN_6_23_09_mod3</i>	area_size, area_acre, area_hectare, cls_name, dt_pt, NNeighbor	Square Meters, Acres, Hectares, Habitat Name, Distance to Protected Areas, Nearest Like Habitat Patch
Longleaf Pine Open Understory	<i>ll_pine_open_understory</i>	area_size, area_acre, area_hectare, cls_name	Square Meters, Acres, Hectares, Habitat Name
All Longleaf Pine	<i>GP_LL_Pine_6_22_09_run2_mod2</i>	area_size, area_acre, area_hectare, cls_name	Square Meters, Acres, Hectares, Habitat Name
<b>Pine Savannah</b>			
Prioritized Pine Savannah	<i>GP_Pine_Savannah_6_22_09_final_Prioritization</i>	area_size, area_acre, area_hectare, cls_name, dt_pt	Square Meters, Acres, Hectares, Habitat Name, Distance to Protected Areas
All Pine Savannah	<i>GP_Pine_Savannah_6_16_09_mod2</i>	area_size, area_acre, area_hectare, cls_name	Square Meters, Acres, Hectares, Habitat Name
<b>Maritime Forest</b>			
Prioritized Maritime Forest	<i>GP_maritime_final_prioritization_6_22_09</i>	area_size, area_acre, area_hectare, cls_name, dt_bd, dt_marsh, dt_pt	Square Meters, Acres, Hectares, Habitat Name, Distance to Beach and Dune, Distance to Marsh, Distance to Protected Areas
All Maritime Forest	<i>GP_maritime_mod2_june_run2</i>	area_size, area_acre, area_hectare, cls_name	Square Meters, Acres, Hectares, Habitat Name

Coastal Habitats Base Data			
Bathymetry	<i>bathy_vect</i>	GRIDCODE	Depth Zone
Bay Sediments	<i>Sediment</i>	name	Sediment Type
Land Cover	<i>gap_update_2005_impervious</i>		
Political Boundaries			
Mobile County Parcels	<i>mobile_mod2_final</i>	area_size, area_acre, area_hectare, cls_name, (for the following attribute fields, only identify those that are present within the parcel) po_beach_dune, po_beach_dune_Pct, po_rip_cons, po_rip_cons_Pct, po_longleaf, po_longleaf_Pct, po_maritime, po_maritime_Pct, po_pine_sav, po_pine_sav_Pct, po_intertidal_dev, po_intertidal_dev_Pct, po_intertidal_species, po_intertidal_species_Pct, po_non_riverine_wetl, po_non_riverine_wetl_Pct, po_oyster, po_oyster_Pct, po_ll_pine_open_understory, po_ll_pine_open_understory_Pct, po_Marine_SAV, po_Marine_SAV_Pct, po_oyster_1968, po_oyster_1968_Pct, po_cons_wshed, po_cons_wshed_Pct, po_rest_wshed, po_rest_wshed_Pct, PO_riv_aug, PO_riv_aug_Pct, po_rest_buf, po_rest_buf_Pct, po_SAV, po_SAV_Pct	Square Meters, Acres, Hectares, Parcel ID, (for the following attribute fields, only identify those that are present within the parcel) Acreage Priority Beach and Dune, Percent Priority Beach and Dune, Acreage Priority Riparian Buffers for Conservation, Percent Priority Riparian Buffers for Conservation, Acreage Priority Longleaf, Percent Priority Longleaf Pine, Acreage Priority Maritime Forest, Percent Priority Maritime Forest, Acreage Priority Pine Savannah, Percent Priority Pine Savannah, Acreage Priority Intertidal Marshes and Flats - Hazard Protection, Percent Priority Intertidal Marshes and Flats - Hazard Protection, Acreage Priority Intertidal Marshes and Flats - Natural Resource Conservation, Percent Priority Intertidal Marshes and Flat - Natural Resource Conservation, Acreage Priority Non- Riverine Wetlands, Percent Priority Non-Riverine Wetlands, Acreage Priority Oysters Reefs, Percent Priority Oysters Reefs, Acreage Longleaf Pine Open Understory, Percent Priority Longleaf Pine Open Understory, Acreage Marine Sub Aquatic Vegetation, Percent Marine Sub Aquatic Vegetation, Acreage Historical Oysters, Percent

			Historical Oysters, Acreage Priority Watersheds for River and Stream Conservation, Percent Priority Watersheds for River and Stream Conservation, Acreage Priority Watersheds for River and Stream Restoration, Percent Priority Watersheds for River and Stream Restoration, Acreage Priority Riverine Freshwater Wetlands, Percent Priority Riverine Freshwater Wetlands, Acreage Priority Riparian Buffers for Restoration, Percent Priority Riparian Buffers for Restoration, Acreage Priority Sub Aquatic Vegetation, Percent Priority Sub Aquatic Vegetation
Baldwin County Parcels	<i>baldwin_mod2_final</i>	area_size, area_acre, area_hectare, cls_name, (for the following attribute fields, only identify those that are present within the parcel) po_beach_dune, po_beach_dune_Pct, po_rip_cons, po_rip_cons_Pct, po_longleaf, po_longleaf_Pct, po_maritime, po_maritime_Pct, po_pine_sav, po_pine_sav_Pct, po_intertidal_dev, po_intertidal_dev_Pct, po_intertidal_species, po_intertidal_species_Pct, po_non_riverine_wetl, po_non_riverine_wetl_Pct, po_oyster, po_oyster_Pct, po_ll_pine_open_understory, po_ll_pine_open_understory_Pct, po_Marine_SAV, po_Marine_SAV_Pct, po_oyster_1968, po_oyster_1968_Pct, po_cons_wshed, po_cons_wshed_Pct, po_rest_wshed, po_rest_wshed_Pct, PO_riv_aug, PO_riv_aug_Pct, po_rest_buf, po_rest_buf_Pct,	Square Meters, Acres, Hectares, Parcel ID, (for the following attribute fields, only identify those that are present within the parcel) Acreage Priority Beach and Dune, Percent Priority Beach and Dune, Acreage Priority Riparian Buffers for Conservation, Percent Priority Riparian Buffers for Conservation, Acreage Priority Longleaf, Percent Priority Longleaf Pine, Acreage Priority Maritime Forest, Percent Priority Maritime Forest, Acreage Priority Pine Savannah, Percent Priority Pine Savannah, Acreage Priority Intertidal Marshes and Flats - Hazard Protection, Percent Priority Intertidal Marshes and Flats - Hazard Protection, Acreage Priority Intertidal Marshes and Flats - Natural Resource Conservation, Percent Priority Intertidal Marshes and Flats - Natural Resource Conservation,

		po_SAV, po_SAV_Pct	Acreage Priority Non-Riverine Wetlands, Percent Priority Non-Riverine Wetlands, Acreage Priority Oyster Reefs, Percent Priority Oysters Reefs, Acreage Longleaf Pine Open Understory, Percent Priority Longleaf Pine Open Understory, Acreage Marine Sub Aquatic Vegetation, Percent Marine Sub Aquatic Vegetation, Acreage Historical Oysters, Percent Historical Oysters, Acreage Priority Watersheds for River and Stream Conservation, Percent Priority Watersheds for River and Stream Conservation, Acreage Priority Watersheds for River and Stream Restoration, Percent Priority Watersheds for River and Stream Restoration, Acreage Priority Riverine Freshwater Wetlands, Percent Priority Riverine Freshwater Wetlands, Acreage Priority Riparian Buffers for Restoration, Percent Priority Riparian Buffers for Restoration, Acreage Priority Sub Aquatic Vegetation, Percent Priority Sub Aquatic Vegetation
Mobile and Baldwin County Boundaries	<i>Baldwin_Mobile_counties</i>		
Buffered Mobile and Baldwin County Boundaries	<i>Mobile_Baldwin_3k</i>		
Construction Control Line	<i>cclddline1</i>	Const_Con_Line	Construction Control Line
FEMA Flood Zones	<i>year_flood</i>	Zone_	Flood Zone

<b>Human Uses</b>			
Dredge Locations	<i>Dredge</i>	jobname	Dredge Site
Drinking Water Supply Sites	<i>drinkwater_supply_site</i>	name, WUN	Name, Water Service
Dams	<i>dams</i>	dam_name, river, prm_purpose, owner	Dam Name, River, Primary Purpose, Owner
Boat Ramps and Marinas	<i>ramp_marina_srvy03</i>	ramp_marina	Boat Ramps and Marinas
Shipping Lanes	<i>Shippinglanes_Clip</i>	linkname	Name
Impervious Surface	<i>impervious_2001</i>	Impervious_Surface	Impervious Surface
Developed Areas	<i>developed</i>	area_size, area_acre, area_hectare	Square Meters, Acres, Hectares
Wellhead Protected Areas	<i>Wellhd_Protect_area</i>	P_W_S, source	Water Service, Water Source
<b>Other Ecological Attributes</b>			
Protected Lands	<i>prot_land_Mob_Bald</i>	name, owner_mgr	Site name, Owner/Manager
Impaired Streams	<i>mob_bal_303d_line</i>	waterbody, causes, sources	Waterbody, Causes, Sources
Sea Turtle Nesting Locations	<i>Sea_Turtle</i>	Sea_Turtle_Nest_Sites	Sea Turtle Nesting Locations
Alabama Beach Mouse Habitat	<i>ABM_Habitat_Range</i>	ABMhab	Alabama Beach Mouse Habitat
Streams and Rivers	<i>All_Water_Alabama_Clip</i>	name, class	Stream Name, Stream Class
TNC Aquatic Priority Areas	<i>TNC_aquatic_priority</i>	ca_name	Site Name
TNC Terrestrial Priority Areas	<i>TNC_terr_priority</i>	sitename	Site Name
Offshore Sediment	<i>Surf_sed_Lith</i>	LITH	Sediment Type
2005 C-CAP Land Cover	<i>CCAP_PRJ_2005</i>		
2001 Alabama GAP Land Cover	<i>GAP_PRJ_2001</i>		