

# APPLICATIONS



**NOAA Coastal Services Center**  
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## Habitat Priority Planner → Marsh Migration

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### Introduction

Corridors between marsh habitat areas that are predicted to be impacted by sea level rise, as well as other habitats that may be able to provide refuge or aid in marsh migration, are important in maintaining species and habitat diversity as well as the protective functions that these habitats provide to the human environment.

This document illustrates an example spatial approach to identify corridors for marsh migration as sea level rises in coastal South Carolina. The information and table below show the process steps needed to conduct spatial analysis using the Habitat Priority Planner for the objectives described. Developing a clearly defined goal and objectives helps *spatial analysis* run more smoothly and ensures that the appropriate *datasets* are identified.

### Goal

Identify corridors for marsh migration as sea level rises in coastal South Carolina.

### Objectives

- Identify developed, wetland, and dry upland areas that are predicted to be impacted by marsh migration to identify appropriate areas for protection that may allow habitats to shift naturally with sea level rise.
- Identify areas that are not currently protected to get a clear picture of appropriate areas that are in need of protection to allow for marsh migration.

### Spatial Analysis Steps Using the Habitat Priority Planner

1. Use the Habitat Classification module to run a Grouped Classification on the base dataset, Land Cover. Create three customized groups: Developed, Wetland, and Dry Upland.
2. Use the Habitat Priority Planner's Habitat Analysis module to select a series of analyses that will help identify habitat areas that fit the criteria:
  - Polygon Overlay
    - Identify Developed, Wetland, and Dry Upland areas impacted by Marsh Migration predictions.
  - Presence/Absence
    - Identify areas that are not currently protected but could be to help habitats migrate as sea level rises.

3. Use the Data Explorer module to narrow down from all available habitats to those that meet the specific criteria:
  - Select Dry Upland.
  - Select patches that are overlapped 25 to 100% with predicted marsh migration. In other words, these areas might provide potential wetland habitat in the future as migration occurs due to sea level rise.
  - Select patches not currently protected that could become part of a protection and adaption strategy.

Describe Objectives	Data	Analysis (HPP Module 1 & 2)	Selection Criteria (HPP Module 3)
Developed, Wetland, and Dry Upland areas	2006 C-CAP	Grouped Classification	Dry Upland
Areas impacted by marsh migration in 2050	SLAMM 2050	Polygon Overlay	25% or higher
Areas not currently protected	Protected Lands	Presence/Absence	Absence

### Results

Of the original 93,710 acres of dry upland, the final output from the Habitat Priority Planner shows 1,175 acres of dry upland patches that will potentially be impacted by marsh migration and if protected can allow marsh migration to occur.

