Analysis Name: Wetland Preservation

Map and score those wetlands that are intact, but which are not already permanently preserved via ownership by a conservation group or by easement or deed restriction. Score wetlands as to how many of the desirable factors are present.

Absolute

1. Must be in a potential wetland area, as mapped by the 2024 Potential Wetlands of Puerto Rico dataset.
2. Must be located inside study area as defined by the shoreline polygon mapped by the Advisory Base Flood Elevation Dataset. Islands that were part of Puerto Rico for which we did not have the 2-meter land cover data were excluded from the analysis

Relative

[illegible]

R2 [illegible]

R3 [illegible]

R4 [illegible]

R5 [illegible]

R6 [illegible]

R7 [illegible]

R8 [illegible]

Analysis Name: Potential Wetlands of Puerto Rico

The document outlines the process MES staff employed to create a GIS dataset to indicate the potential presence of wetlands for Puerto Rico.

To create this dataset, MES GIS staff combined three foundational datasets: the US FWS National Wetlands Inventory, the NRCS Soils Surveys, and the NOAA's Coastal Change and Analysis Program (CCAP) 2-meter land cover dataset.

1. US FWS National Wetlands Inventory (NWI): MES obtained the USFWS National Wetlands Layer from the FWS website. This layer contained polygons only if the polygon was a wetland. All polygons from this dataset were considered wetlands.

2. NRCS Soils Surveys: MES obtained all the soils survey area (SSA) for all of Puerto Rico from the NRCS Web Soil Survey (WSS). This included the following SSAs: 682, 684, 686, 688, 689, 700 and 787. These layers covered the entire study area with polygons. Each polygon contained an identifying code (e.g., MUKEY) which connected the polygon to a robust database of soil characteristics. Using the Access database provided by NRCS, MES extracted the detailed characteristics for each soil.

   The following attributes from the NRCS soils database were considered to indicate potential wetland.

   - Soils with a ponding frequency of occasional or frequent;
   - Soils for which hydric status was 'yes;'
   - Soils for which the depth to the seasonal water table was less than or equal to 25cm.

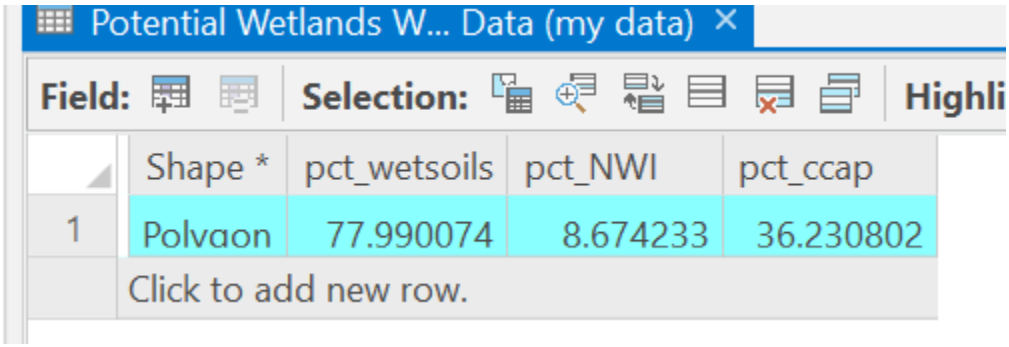
3. NOAA's C-CAP High-Resolution Land Cover, 2010. This 2-meter raster dataset classified land cover for Puerto Rico. MES GIS staff then converted the NOAA land cover dataset to a vector format. Polygons were classified as potential wetlands according to the following system:

Is Wetland	**Land Cover Category**
Considered wetland	Estuarine Aquatic Bed; Estuarine Emergent Wetland; Estuarine Forested Wetland; Estuarine Scrub/Shrub Wetland; Open Water; Unconsolidated Shore; Palustrine Forested Wetland; Palustrine Scrub/Shrub Wetland; Palustrine Emergent Wetland'; Palustrine Aquatic Bed
Not considered wetland	Background; Unclassified; Impervious Surface; Developed, Open Space; Cultivated crops; Pasture/Hay; Grassland; Upland Forest; Scrub/Shrub; Bare Land

MES staff performed a GIS “union” on these three datasets to create a single dataset. Polygons for which none of the attributes indicated wetland were deleted. This new polygon then contained only polygons that were potential wetlands.

If any of the three input data sources indicated that a polygon was a potential wetland, that polygon was included in the Potential Wetlands Mapping, 2024.

MES GIS staff further completed an analysis to determine what percentage of each polygon was covered by the three inputs. Here is a snippet showing a single polygon’s attributes. The sample polygon is covered about 78% with wetland soils; about 8.7% with NWI wetlands; and about 36% of the area was mapped as a wetland on the CCAP 2-meter land cover.



This detailed attribute data is available on Puerto Rico WRR interactive map. The polygons were used in the subsequent analysis, Wetland Preservation, but only to indicate presence or absence of a Potential Wetland.