Blue carbon mapping for six mid-Atlantic states
Katie Warnell¹, Lydia Olander¹, and Carolyn Currin²

¹ National Ecosystem Services Partnership, Nicholas Institute for Environmental Policy Solutions, Nicholas School of the Environment, Duke University
² NOAA National Ocean Service (Retired)

Background
These data are the state-specific results from spatial models of the effects of sea level rise on coastal zone habitats and carbon fluxes for six mid-Atlantic states. The regional models, which are available at https://research.repository.duke.edu/concern/datasets/n009w316w?locale=en, were rerun for each state with state-specific model parameters requested by partners from each state.

Input data and models
The models and input data required are included in the regional dataset. State-specific model adjustments are summarized in the table below.

<table>
<thead>
<tr>
<th>State</th>
<th>SLR scenarios</th>
<th>Adjustments to regional model</th>
</tr>
</thead>
<tbody>
<tr>
<td>Delaware</td>
<td>RCP 8.5, 17th and 83rd percentiles (Callahan et al. 2017)</td>
<td>Agricultural land available for marsh migration</td>
</tr>
<tr>
<td>Maryland</td>
<td>RCP 2.6, RCP 4.5, and RCP 8.5, all 50th percentile (Boesch et al. 2018)</td>
<td>Agricultural land available for marsh migration</td>
</tr>
<tr>
<td>New Jersey</td>
<td>Moderate emissions scenario, 83% chance of exceedance and 17% chance of exceedance (Kopp et al. 2019)</td>
<td>Agricultural land and projected future development available for marsh migration</td>
</tr>
<tr>
<td>New York</td>
<td>25th, 50th, and 75th percentiles (NY State Climate Change Regulatory Revisions 2016)</td>
<td>None</td>
</tr>
<tr>
<td>North Carolina</td>
<td>Intermediate-low and intermediate scenarios (Sweet et al. 2017)</td>
<td>None</td>
</tr>
</tbody>
</table>

Output datasets
The output datasets for each state include a set of projected habitat rasters for each sea level rise scenario (one raster for each timestep in the scenario) and a projected carbon flux raster for each sea level rise scenario. Carbon rasters represent the total net carbon flux (positive = sequestration, negative = emissions) from each pixel over the entire analysis period (2010-2124), in units of metric tons CO2e/hectare x 10 (to reduce file size).

- Projected habitat rasters: [state abbreviation]_HabProj_[SLR scenario]_[timestep].tif
- Projected carbon flux rasters: [state abbreviation]_CFlux_[SLR scenario]_MThax10.tif