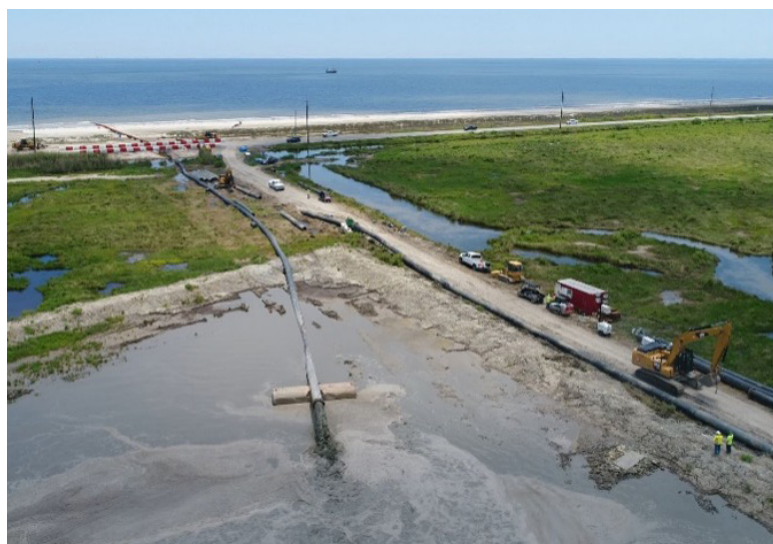


## Coastal Wetlands

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Oyster Bayou marsh creation.<sup>1</sup>

DESCRIPTION	Measures that contribute to the restoration and/or sustainability of coastal wetland landscapes including hydrologic restoration, marsh creation and river diversions.	
HOW DOES IT MITIGATE FLOOD RISK?	<b>Surge and wave attenuation:</b> The reduction in peak water levels and wave heights associated with the dissipation of energy by wetland vegetation.	
WHAT OTHER BENEFITS DOES IT PROVIDE?	<ul style="list-style-type: none"> <li>+ <b>Habitat restoration/enhancement:</b> Changing the physical, chemical, or biological characteristics of a site with the goal of returning or improving the natural functions to the lost or degraded native habitat.</li> <li>+ <b>Improved water quality:</b> Increasing suitability of water for a particular use based on selected physical, chemical and biological characteristics.</li> <li>+ <b>Carbon sequestration:</b> The process by which carbon dioxide is removed from the atmosphere and held in solid form in the landscape.</li> <li>+ <b>Recreation:</b> Providing recreational opportunities such as birdwatching and hiking.</li> </ul>	
SCALABILITY	Individual projects planned at scale can have watershed effects.	
Advantages Relative to Traditional Flood Management	Potential Barriers or Issues Relative to Traditional Flood Management	Potential Synergies with other NBS
<ul style="list-style-type: none"> <li>+ Low maintenance.</li> <li>+ Passive operation.</li> <li>+ Extensive experience in Louisiana.</li> </ul>	Effectiveness for coastal storm risk reduction is highly dependent on location and extent of the wetlands and the character—intensity, track and speed of forward movement—of the storm.	<ul style="list-style-type: none"> <li>+ Coastal Dune Restoration.</li> </ul>

## Coastal Wetlands

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RESOURCES	
EVALUATION TOOLS	DESIGN SUPPORT
<ul style="list-style-type: none"> <li>+ <b>ADvanced CIRCulation model (ADCIRC):</b> <a href="https://adcirc.org/">https://adcirc.org/</a></li> <li>+ <b>STeady State Spectral WAVE (STWAVE):</b> <a href="https://csdms.colorado.edu/wiki/Model:STWAVE">https://csdms.colorado.edu/wiki/Model:STWAVE</a></li> <li>+ <b>Integrated Compartment Model (ICM):</b> <a href="https://github.com/CPRA-MP">https://github.com/CPRA-MP</a></li> <li>+ <b>USACE Ecosystem Restoration Model Library:</b> <a href="https://cw-environment.erd.c.dren.mil/model-library.cfm?CoP=Restore&amp;Option=Search&amp;Type=Restore&amp;Id=ALL">https://cw-environment.erd.c.dren.mil/model-library.cfm?CoP=Restore&amp;Option=Search&amp;Type=Restore&amp;Id=ALL</a></li> <li>+ <b>INVEST Habitat Quality:</b> <a href="http://releases.naturalcapitalproject.org/invest-userguide/latest/urban_flood_mitigation.html">http://releases.naturalcapitalproject.org/invest-userguide/latest/urban_flood_mitigation.html</a></li> <li>+ <b>Open Source Conservation Planning Software:</b> <a href="https://www.landscapepartnership.org/maps-data/gis-planning/conservation-planning/conservation-planning-software">https://www.landscapepartnership.org/maps-data/gis-planning/conservation-planning/conservation-planning-software</a></li> <li>+ <b>Automated Geospatial Watershed Assessment (AGWA) Tool:</b> <a href="https://www.epa.gov/water-research/automated-geospatial-watershed-assessment-agwa-tool">https://www.epa.gov/water-research/automated-geospatial-watershed-assessment-agwa-tool</a></li> <li>+ <b>INVEST Carbon Storage and Sequestration:</b> <a href="http://releases.naturalcapitalproject.org/invest-userguide/latest/carbonstorage.html">http://releases.naturalcapitalproject.org/invest-userguide/latest/carbonstorage.html</a></li> <li>+ <b>INVEST Coastal Blue Carbon:</b> <a href="http://releases.naturalcapitalproject.org/invest-userguide/latest/urban_flood_mitigation.html">http://releases.naturalcapitalproject.org/invest-userguide/latest/urban_flood_mitigation.html</a></li> </ul>	<ul style="list-style-type: none"> <li>+ <b>CPRA Marsh Creation Design Guidelines 1.0:</b> <a href="https://cims.coastal.louisiana.gov/DocLibrary/DocumentSearch.aspx?Root=0&amp;Folder=0#">https://cims.coastal.louisiana.gov/DocLibrary/DocumentSearch.aspx?Root=0&amp;Folder=0#</a></li> <li>+ <b>International Guidelines on Natural and Nature-Based Features for Flood Risk Management:</b> <a href="https://ewn.erd.c.dren.mil/?page_id=4351">https://ewn.erd.c.dren.mil/?page_id=4351</a></li> </ul>
CASE STUDIES	<ul style="list-style-type: none"> <li>+ <a href="https://lacoast.gov/new/Projects/Default.aspx">https://lacoast.gov/new/Projects/Default.aspx</a></li> <li>+ <a href="https://cims.coastal.louisiana.gov/outreach/projects/OPL_Full_page.html">https://cims.coastal.louisiana.gov/outreach/projects/OPL_Full_page.html</a></li> </ul>



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1 <https://cims.coastal.louisiana.gov/outreach/projects/ProjectView?projID=CS-0059>