

Directions for using CREST to determine locations for mitigation projects

Step 1: Visit <https://resilientcoasts.org/#Home> and click on “Start Using CREST”

Step 2: Collapse the “Map Layers” menu by clicking on the layers icon next to “Map Layers.”

Note: Map layers can be used if you want to change the base map or see the data as layers on the map.

Step 3: Use the search tool (looks like a magnifying glass) to locate Phoenix, LA. Phoenix is up river from Pointe A la Hache near a bend that is nearly parallel with Lafitte. Use a map with Phoenix labeled to help students compare the location to the map on CREST.

Step 4: When students have identified a possible location for their mitigation project, they can use the “Draw Area on Map” button to define the area and get more information on the location. Select “Draw Area on Map” and use your cursor (it will look like a + now) to set at least three points to define the area to investigate by clicking, dragging, and connecting the points. Use “Delete Last Point,” “Cancel,” or “Finish” as needed.

Step 5: Choose a Resilience Hub (labeled on the map with a number and a boundary) and click on it to find out more information about its suitability for projects. Scroll through the panel of information on the left to investigate various information about the selected Resilience Hub. Hover over the score to get a more precise number for each topic. Toggle between the “Graph” and “Table” views as needed (located under the “Draw Area on Map” button). Download data if desired (also below the “Draw Area on Map” button). To investigate a neighboring Resilience Hub, click on the “Overview” button (also under the “Draw Area on Map” button) and choose a new hub, or click “Remove All” and start a new search.

What does the data mean?

Resilience Hubs: “Areas of open lands and protected space that are most suitable for resilience-building efforts. Hubs are ranked by priority, given the level of exposure that nearby assets have to flood-related threats and the presence and abundance of fish and wildlife species within and surrounding the Hub.”

Community Exposure Index: “The product of the Asset and Threat Indices, which suggests areas on the landscape where community assets are potentially exposed to flood-related threats.”

Community Asset and Threat Indices

Community Asset Index: “Index of community assets critical to the recovery of an area and human population. High values suggest areas with a higher, cumulative prevalence of community assets on the landscape.”

Threat Index: “Index of flood-related datasets, including storm surge scenarios and landscape characteristics that exacerbate flood potential. High values in the Index represent those areas on the landscape where there are multiple high values of individual inputs.”

Aquatic and Terrestrial Indices

Aquatic Index: “An index of priority aquatic species and their habitats, ranked by HUC-10 watershed. A high value represents watersheds where the most priority species and their habitats are present.”

Terrestrial Index: “An index of priority terrestrial species and their habitats, ranked by HUC-10 watershed. This Index also includes Important Bird Areas, which transcend watershed boundaries. A high value represents areas where the most priority species, their habitats, and important bird areas are present.”

Community Asset Inputs

Population Density: “A ranking of population density by census blocks based on the 2016 American Community Survey. Areas are ranked from low to high using the ratio of people per square kilometer.”

Social Vulnerability: “Communities that are socially vulnerable using the Demographic Index in EPA’s EJSCREEN dataset. Census blocks above the 80th percentile are ranked from low to high, depicting areas of lower median incomes and minority populations.”

Critical Facilities: “Facilities such as schools, hospitals, and police and fire stations that are important to recovery efforts when a community is faced with a flood-related event. All facilities are given the same presence rank.”

Critical Infrastructure: “Infrastructure in and around communities that are integral to a community’s ability to recover from a flood event, including primary highways, power plants, and rail lines, among others. High values suggest areas where multiple infrastructure overlap.”

Threat Inputs

Impermeable Soils: “Those areas with poor water drainage potential, including both less-porous soils and areas with high-intensity development. High values suggest that areas contain soils with poor drainage potential and/or a prevalence of developed, impervious surfaces that may pool during flooding or heavy precipitation events.”

Soil Erodibility: “Those areas that contain soil characteristics that have a high susceptibility of soil particle detachment by water. This may include areas that have high silt content or migratory systems such as beaches and dunes. High values suggest that areas carry an increased potential for erosion due to flooding or heavy precipitation events.”

Flood Prone Areas: “Areas considered by FEMA to be in the 100- and 500-year flood zones, as well as the floodway. Frequently and occasionally flooded soil designations are used to identify areas outside of FEMA coverage. Highest values suggest areas directly in the floodway, whereas low values suggest occasionally flooded soils outside of the floodplain.”

Sea-Level Rise: “NOAA’s sea level rise scenarios ranked from low to high, with low being a 5-foot scenario and high being a 1-foot scenario. These ranks are used to suggest the more imminent threat of a 1-foot rise in sea level versus a 5-foot rise that may eventually occur.”

Storm Surge: “Based on the impacts from modeled hurricane storm categories, storm surge is ranked from low to high, with low being a 5-foot surge and high being a 1-foot surge. As a 1-foot surge is more likely to occur than a 5-foot surge, areas within the 1-foot designation are ranked with higher values.”

Geological Stressors: “The geologic conditions of the landscape that can exacerbate the level of threat represented from other inputs. Conditions that are highlighted in this input include both landslide susceptibility and subsidence.”

Areas of Low Slope: “The percent rise of the elevation of the landscape, given values from low to high. High values indicate those areas that are very low lying and more likely to retain water and flood.”