

## Riparian Vegetation Restoration

1 of 2

Buffalo Bayou in Houston, Texas.<sup>1</sup>Nelson Creek in Walker County, Texas.<sup>2</sup>

DESCRIPTION	Planting or enhancement of riparian vegetation to reduce erodibility of channel banks, stabilize channels and attenuate flood flows.	
HOW DOES IT MITIGATE FLOOD RISK?	<b>Flood attenuation:</b> Reduction in peak discharge of a flood by slowing of channel flows.	
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> </ul>	
SCALABILITY	Small-scale application with potential for cumulative effects at watershed scale.	
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, once vegetation is established.</li> <li>+ Passive operation.</li> </ul>	<ul style="list-style-type: none"> <li>+ Contribution to flood risk reduction may be marginal unless revegetation is extensive.</li> <li>+ Susceptible to disease, fire and other hazards.</li> </ul>	<ul style="list-style-type: none"> <li>+ Natural Channel Design.</li> <li>+ Floodplain Restoration/Preservation.</li> </ul>

## Riparian Vegetation Restoration

2 of 2

RESOURCES	
EVALUATION TOOLS	DESIGN SUPPORT
<ul style="list-style-type: none"> <li>+ <b>National Stormwater Calculator:</b> <a href="https://www.epa.gov/water-research/national-stormwater-calculator">https://www.epa.gov/water-research/national-stormwater-calculator</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>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>Iowa DNR River Restoration Toolbox:</b> <a href="https://www.iowadnr.gov/Environmental-Protection/Water-Quality/River-Restoration/River-Restoration-Toolbox">https://www.iowadnr.gov/Environmental-Protection/Water-Quality/River-Restoration/River-Restoration-Toolbox</a></li> <li>+ <b>Riparian Restoration on Farms and Ranches in TX:</b> <a href="http://bexar-tx.tamu.edu/files/2012/07/Riparian-Restoration-on-Farms.pdf">http://bexar-tx.tamu.edu/files/2012/07/Riparian-Restoration-on-Farms.pdf</a></li> </ul>
CASE STUDIES	<p>Case Studies of Riparian and Watershed Restoration in the Southwestern United States—Principles, Challenges, and Successes: <a href="https://pubs.usgs.gov/of/2017/1091/ofr20171091.pdf">https://pubs.usgs.gov/of/2017/1091/ofr20171091.pdf</a></p>

1 <http://www.savebuffalobayou.org/?cat=16>

2 <http://bexar-tx.tamu.edu/files/2012/07/Riparian-Restoration-on-Farms.pdf>



LOUISIANA  
WATERSHED  
INITIATIVE