

## About the Matrix

Natural and nature-based solutions have the potential to address a suite of issues across the entire state of South Carolina. Intentionally bringing nature back into our undeveloped lands, our cities and towns, and even our own backyards will lavish our state with a host of ecologic, economic, and social benefits. While designs can be site-specific, not every natural and nature-based solution is appropriate for every issue and location.

As outlined in Steps 1 and 2 of the NNBS Pathways Tool, it is imperative that project goals are identified, and the project site fully researched, before a design is created. This means understanding the size (or scale) of the project, its location in the landscape, and whether it is on developed or undeveloped land, in addition to the conditions indicated in Steps 1 and 2 of the Pathways Tool. To aid the design process, this matrix identifies 36 natural and nature-based solutions that can be used in South Carolina, organized by type. While this is not meant to be a comprehensive list, it connects the selected methods with issues, scale, and zone to guide designers and stakeholders to a method suitable for the project’s location and goals.

### MATRIX LEGEND

**Grey-Green Spectrum**

■ GREY    ■ GREEN    ■ NATURAL

**Scale**

Ⓜ WATERSHED    Ⓒ COMMUNITY    Ⓢ SITE

**Zone**

● COASTAL    ● RIVERINE    ● INLAND

● DEVELOPED    ○ UNDEVELOPED

## Matrix Definitions

### Watershed Scale

Address problems spanning a large geographic area, such as across multiple towns or a large city. Most projects at this scale strive to build interconnected systems of natural areas and open space, requiring long-term planning and coordination.

### Community Scale

Address problems that span across multiple properties. Projects at this scale require some planning and coordination among property owners but are less space-intensive than watershed scale projects.

### Site Scale

Address small-scale, local problems on property that belongs to a single owner. These are projects that a homeowner could do in their own yard, such as managing rainwater where it falls or stabilizing the shoreline in front of their property.

### Coastal Zone

Stabilize the shoreline, reduce erosion, and buffer the coast from storm impacts.

### Riverine Zone

Create and restore the hydrological flow in rivers, streams, and associated habitat.

### Inland Zone

Adaptable to all landscapes.

### Developed

Land that has been built on or heavily altered for human use. May have houses, roads, utilities, and other infrastructure that makes it ready for human habitation or other uses.

### Undeveloped

Land that has not been built on or heavily altered for human use. Lacks buildings, infrastructure, and utilities and is considered vacant or uninhabited by humans. This land could be left in its natural state, used for agricultural purposes, or used for grazing.

**Land Conservation**

landscape scale habitat corridor and path protection



freshwater and coastal wetland protection



rare, threatened, and endangered species habitat protection



ISSUES			
INLAND FLOODING	URBAN FLOODING	COASTAL FLOODING	BIODIVERSITY LOSS

Dark Green	White	White	Dark Green
Dark Green	White	White	Dark Green
Dark Green	White	White	Dark Green

**Habitat / Ecosystem Restoration**

freshwater and estuarine wetland restoration



coastal habitat restoration



river and stream restoration



grassland and shrubland restoration



forest restoration



native plantings



barrier removal (dams, culverts)



Dark Green	White	Dark Green	Dark Green
White	White	Dark Green	Dark Green
Dark Green	White	White	Dark Green
White	White	White	Dark Green
White	White	White	Dark Green
Light Green / Dark Green	Light Green / Dark Green	Light Green / Dark Green	Light Green / Dark Green
Light Green	Light Green	Light Green	White

**ISSUES**

SEDIMENT & SOIL LOSS	SHORELINE EROSION	WATER QUALITY IMPAIRMENTS	DROUGHT	WILDFIRE	AIR POLLUTION	URBAN HEAT
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White	White	Dark Green	White	White	Dark Green	White
White	White	Dark Green	White	White	Dark Green	White
White	White	Dark Green	White	White	Dark Green	White
White	White	Dark Green	White	White	White	White
Dark Green	Dark Green	Dark Green	White	White	White	White
Dark Green	White	Dark Green	White	White	White	White
Dark Green	White	Dark Green	White	Dark Green	Dark Green	White
Light Green / Dark Green	White	Light Green / Dark Green	Light Green / Dark Green	White	Light Green / Dark Green	Light Green / Dark Green
Light Green	White	White	White	White	White	White

**Habitat / Ecosystem Creation**

marsh creation  
 (W) ● ● ○

wetland creation  
 (W) ● ● ● ○

river/stream creation  
 (W) ● ● ● ○

habitat creation  
 (W) ● ● ● ● ● ○

**Soil Conservation**

contour ploughing  
 ● ● ○

crop rotation  
 ● ● ○

riparian buffer strips  
 ● ● ○

**Sediment Management**

thin-layer placement  
 ● ● ● ● ○

sand shoal / island creation  
 or restoration  
 ● ● ● ● ○

**Water Storage & Transportation**

constructed wetlands  
 ● ● ● ●

stormwater ponds  
 ● ● ● ●

stream daylighting  
 ● ● ● ●

tree trenches  
 ● ● ● ●

ISSUES			
INLAND FLOODING	URBAN FLOODING	COASTAL FLOODING	BIODIVERSITY LOSS

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ISSUES						
SEDIMENT & SOIL LOSS	SHORELINE EROSION	WATER QUALITY IMPAIRMENTS	DROUGHT	WILDFIRE	AIR POLLUTION	URBAN HEAT

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	ISSUES			
	INLAND FLOODING	URBAN FLOODING	COASTAL FLOODING	BIODIVERSITY LOSS
<b>Water Filtration</b>				
bioretention ponds S ● ●		■		■
bioswales S ● ●		■		■
rain gardens S ● ●		■		■
permeable pavement S ● ●		■		
<b>Green Space Creation</b>				
parks C ● ●				
greenways C ● ●				
urban gardens S ● ●				■
stormwater parks C ● ●		■		
waterfront parks C ● ●			■	
<b>Built Environment Enhancement</b>				
green roofs S ● ●				■
green facades S ● ●				■
<b>Shoreline Stabilization</b>				
living shorelines S ● ○			■	■
revegetation S ● ○			■	■

	ISSUES						
	SEDIMENT & SOIL LOSS	SHORELINE EROSION	WATER QUALITY IMPAIRMENTS	DROUGHT	WILDFIRE	AIR POLLUTION	URBAN HEAT
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