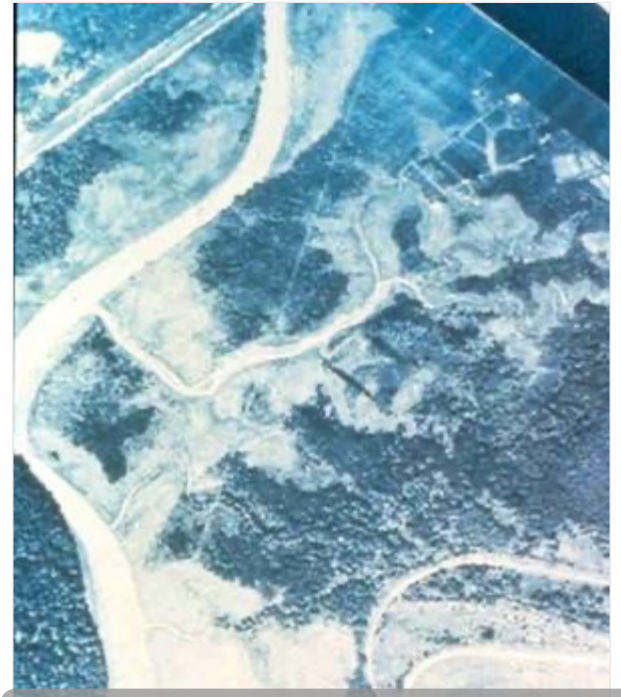
Reflections

on planning, designing, implementing, and maintaining N&NBD

Biohabitats

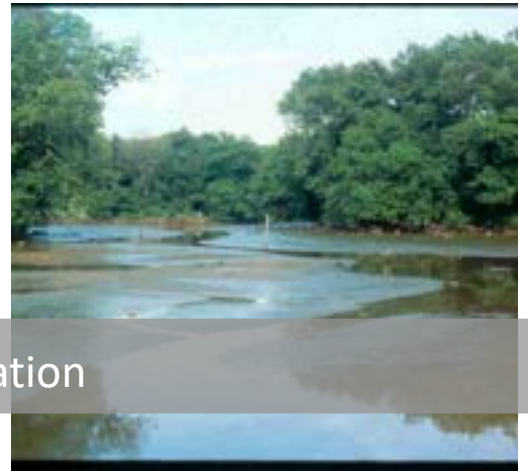
Tinkering

Sandy River Engineered Log Jam for Juvenal Salmonid Fish Habitat



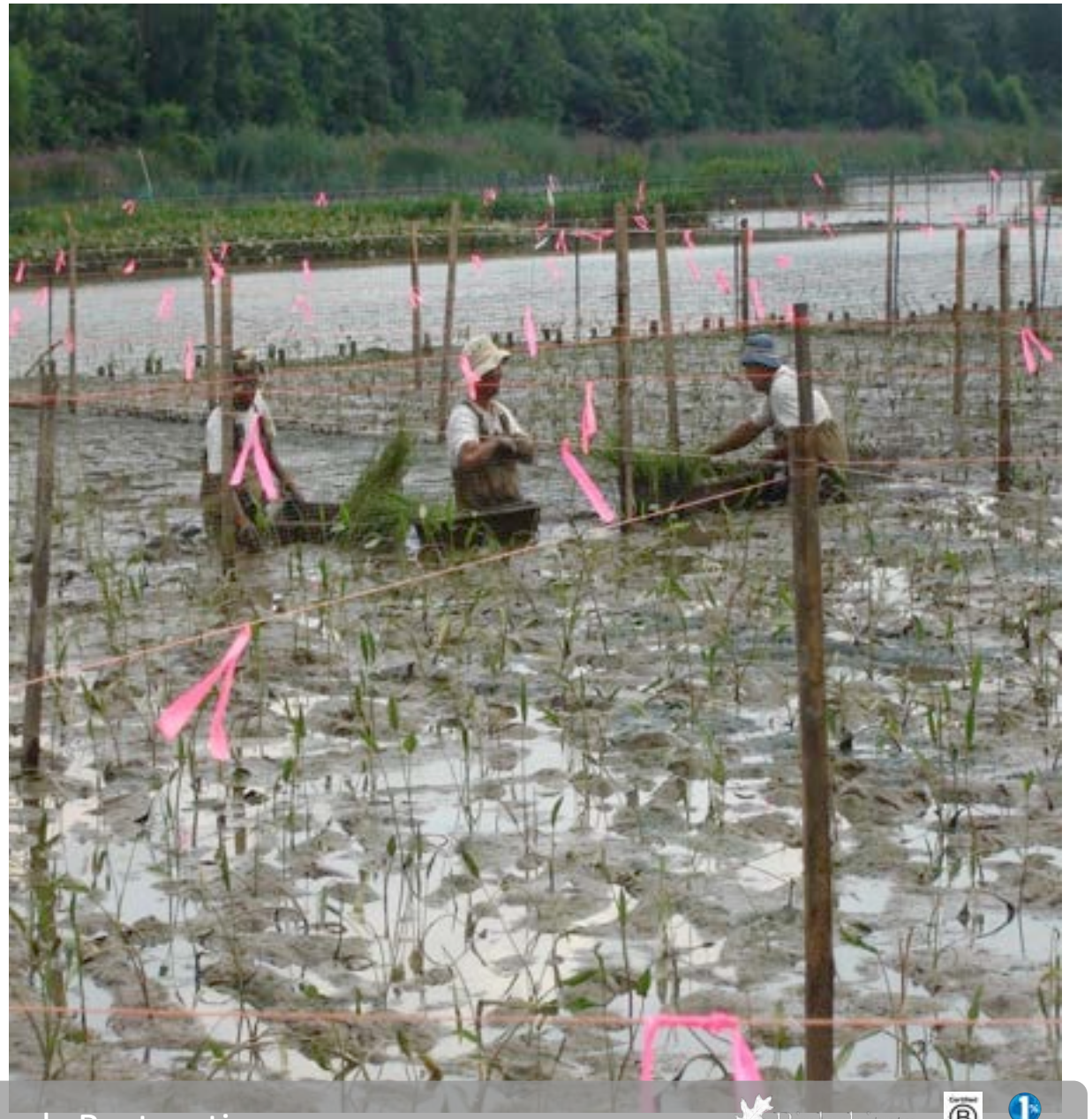
Kenilworth Aquatic Gardens National Park Freshwater Tidal Wetlands Restoration

Biohabitats



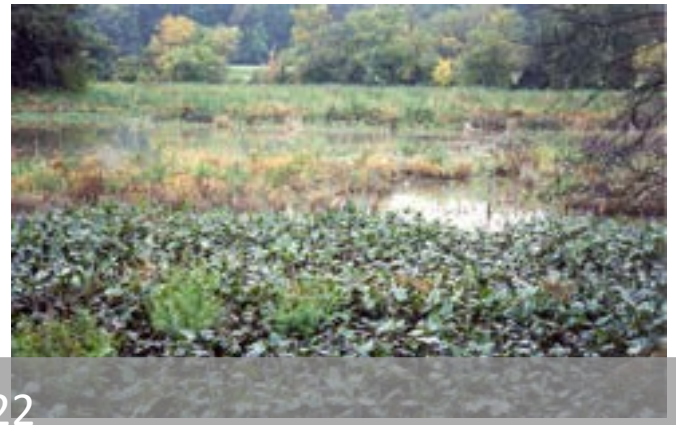
Kenilworth Aquatic Gardens National Park Freshwater Tidal Wetlands Restoration

Biohabitats



Kenilworth Aquatic Gardens National Park Freshwater Tidal Wetlands Restoration

Biohabitats



Biohabitats Natural and Nature Based Design 1985-2022

Biohabitats

Per NOAA tide gauge data, Charleston has experienced **1.07 FT of sea level rise** in the past 100 years.

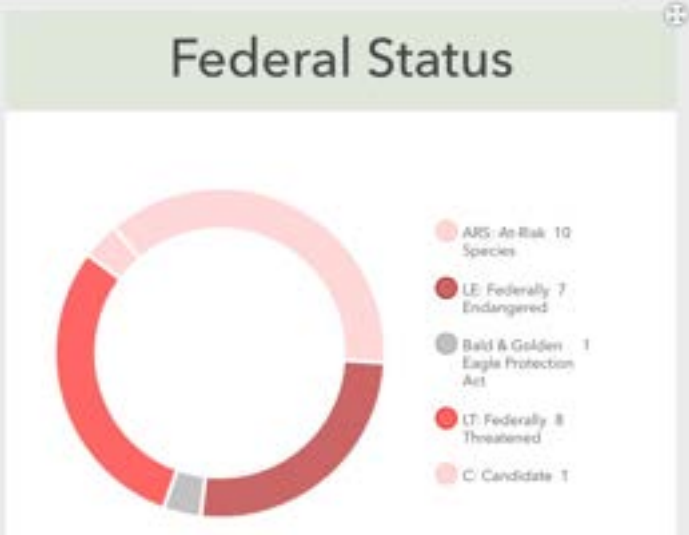
…**almost 1/2 the total amount of sea level rise in the last 100 years has been in the last 20 years…** That means the rate of sea level rise is increasing faster now than in the past.

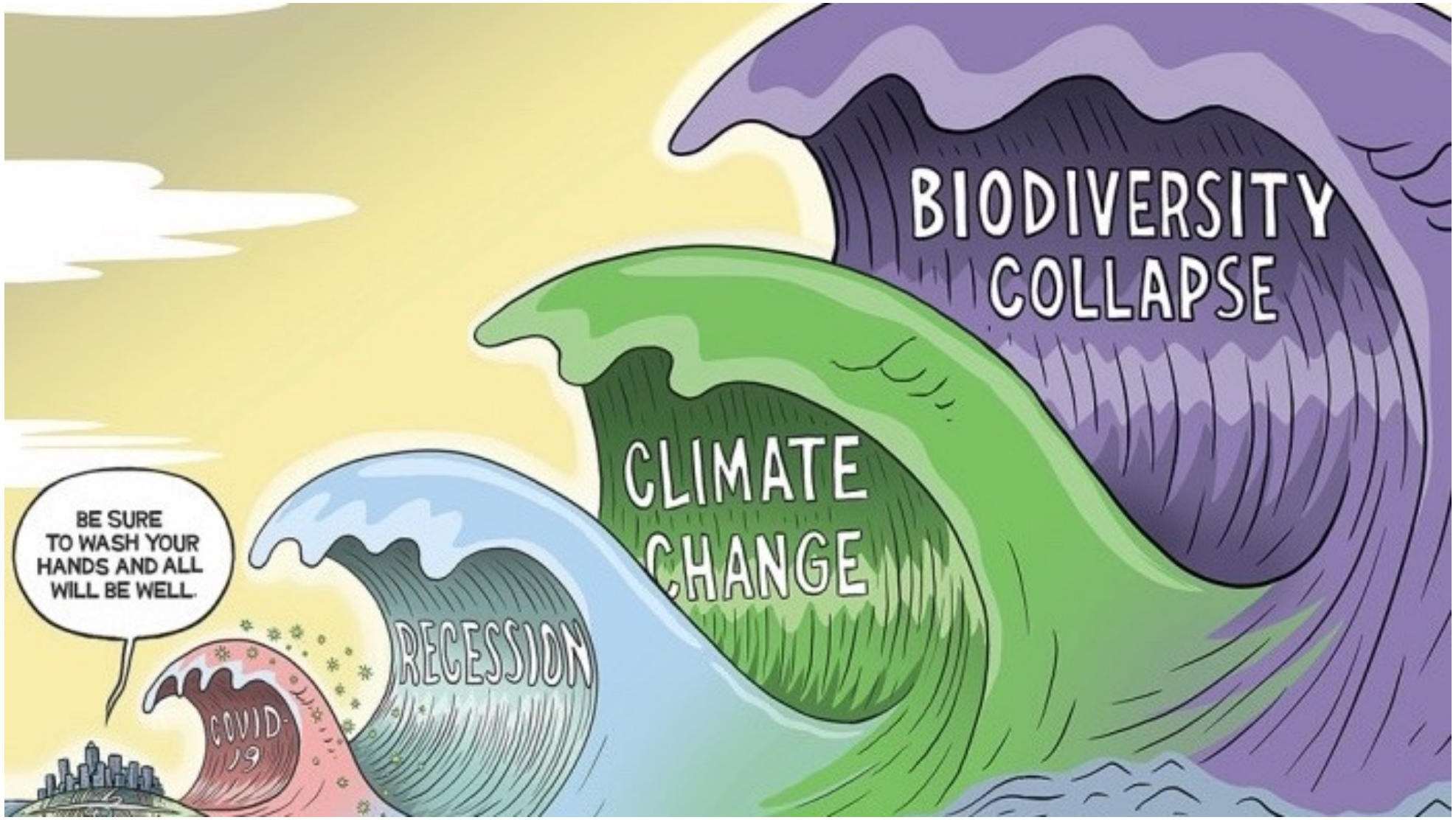
Flooding in Charleston, South Carolina after Hurricane Matthew in October 2016. USCG / Petty Officer 3rd Class Alexandria Preston

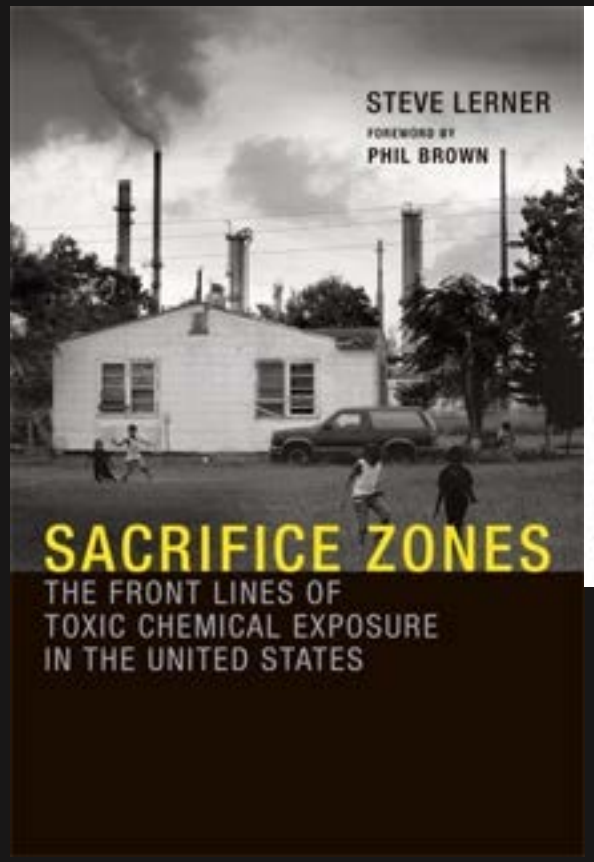
Tracked Species

250

in the selected county




BIODIVERSITY COLLAPSE
CLIMATE CHANGE
RECESSION
COVID-19
BE SURE TO WASH YOUR HANDS AND ALL WILL BE WELL.



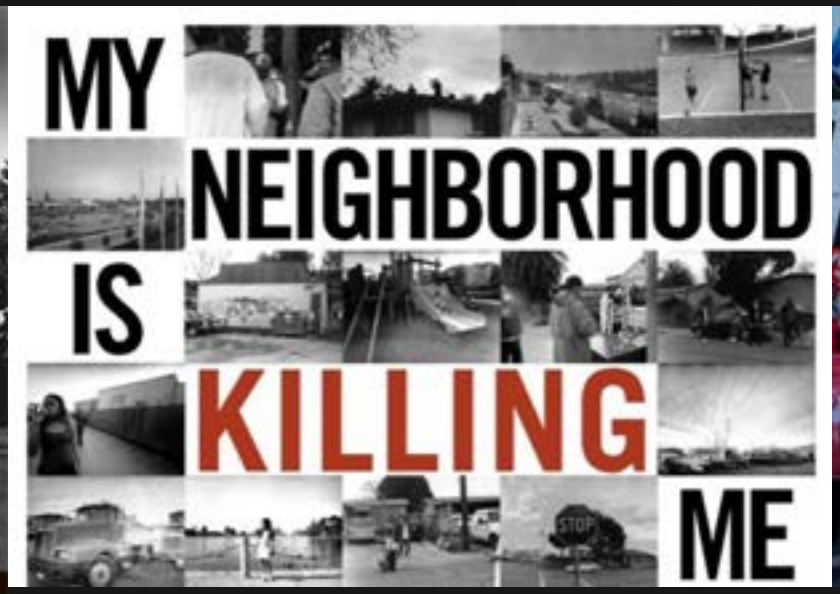
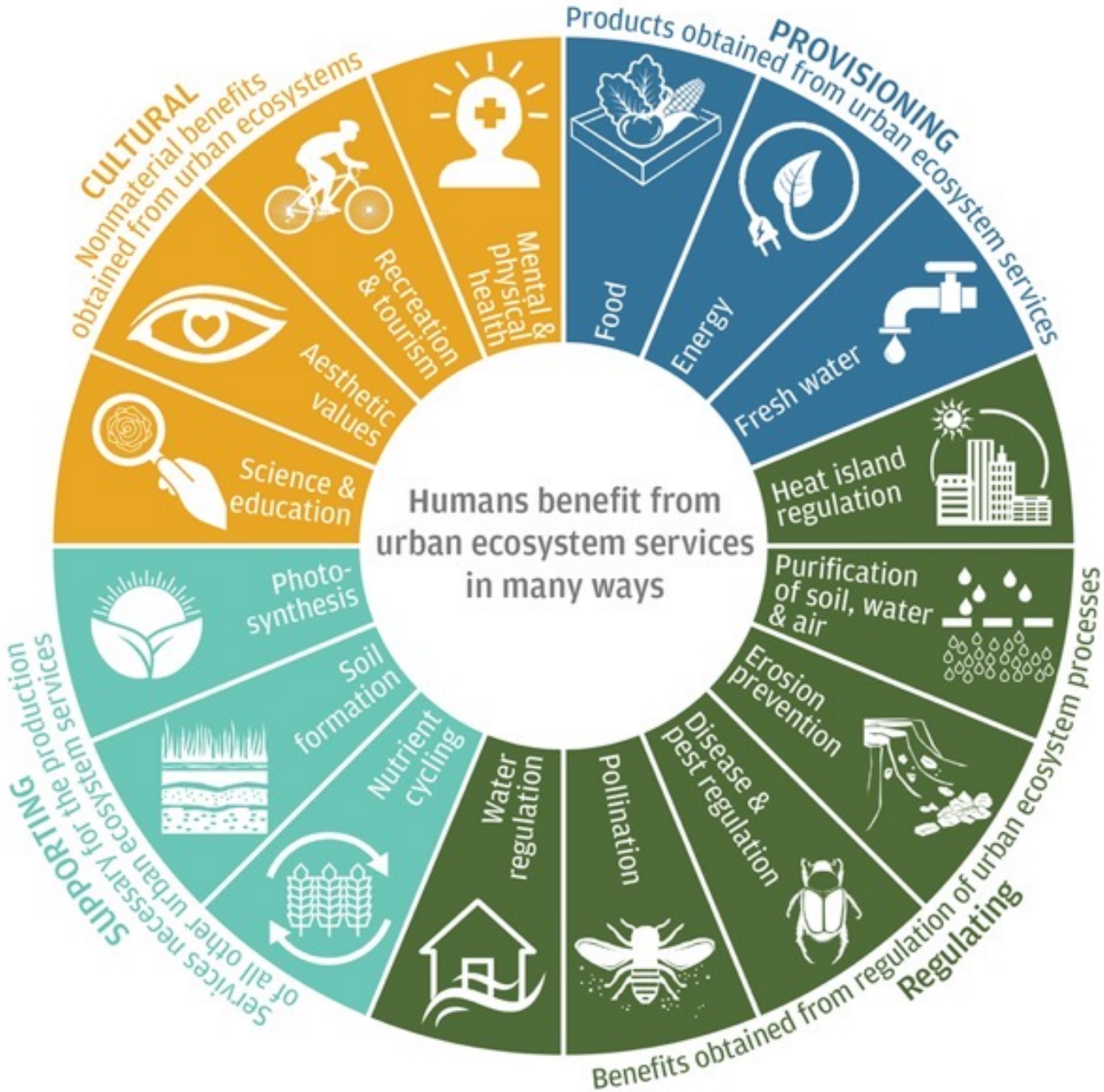


Image Source: Sojourners Magazine


Products obtained from urban ecosystem services
PROVISIONING
Food
Energy
Fresh water
Benefits obtained from regulation of urban ecosystem processes
Regulating
Heat island regulation
Purification of soil, water & air
Erosion prevention
Disease & pest regulation
Pollination
Water regulation
Services necessary for the production of all other urban ecosystem services
SUPPORTING
Nutrient cycling
Soil formation
Photo-synthesis
Nonmaterial benefits obtained from urban ecosystems
CULTURAL
Science & education
Aesthetic values
Recreation & tourism
Mental & physical health
Humans benefit from urban ecosystem services in many ways

Floodplain Reconnection and Stormwater Management, Anne Arundel County, MD

ILLUSTRATION BY LUISA RIVERA/YALE E360

Redhorse Bend Nature Preserve Restoration, , Freemont, OH

Biohabitats

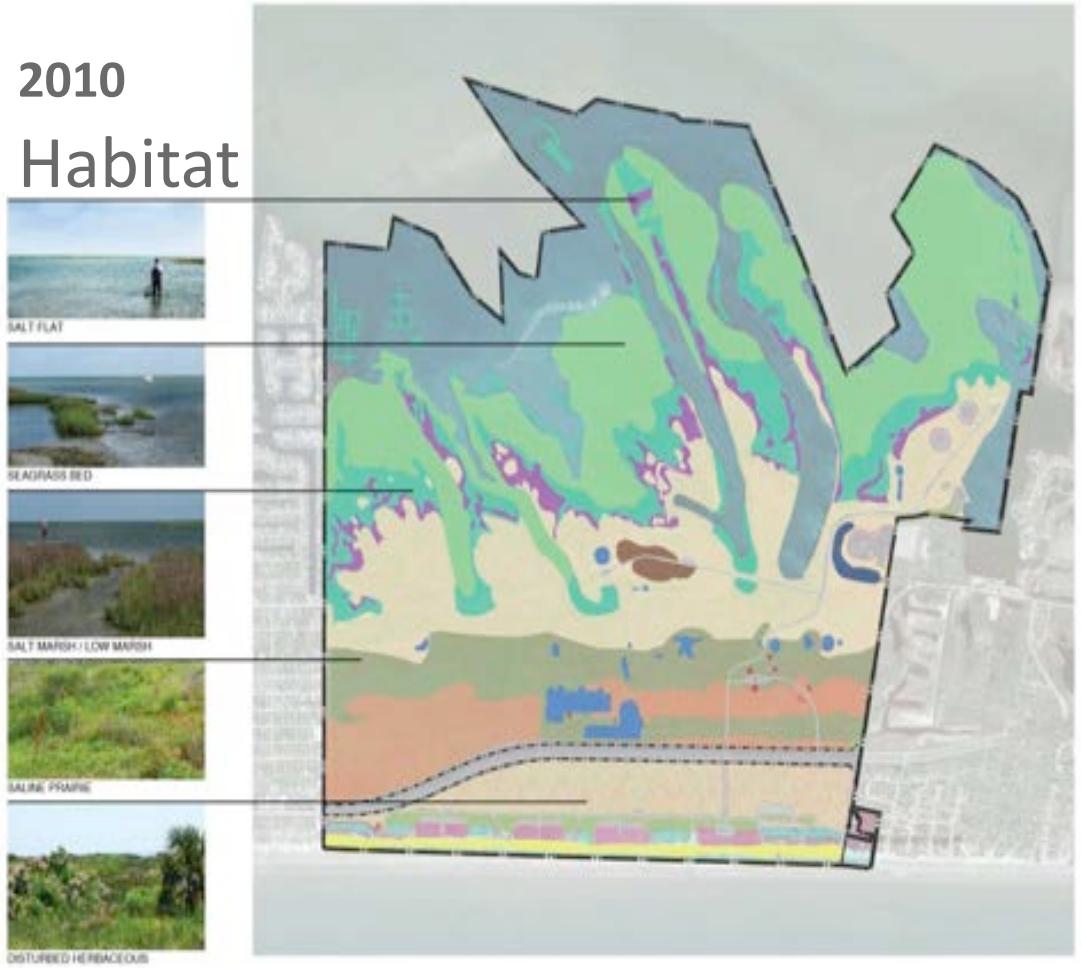
Flooding in North Charleston, South Carolina, in the aftermath of Hurricane Joaquin in 2015

Ryan Johnson/Flickr

Wildfire plume over Santa Fe, New Mexico 2022

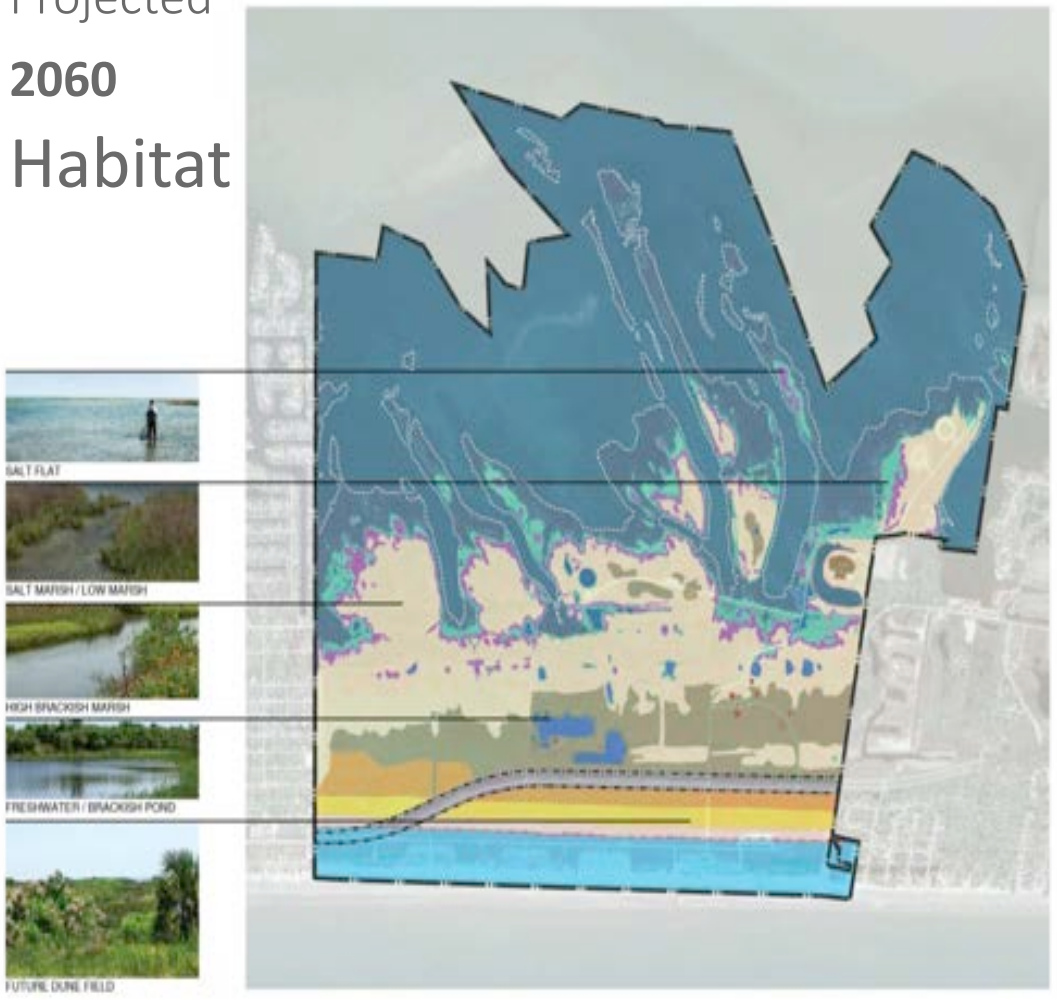
Erin English

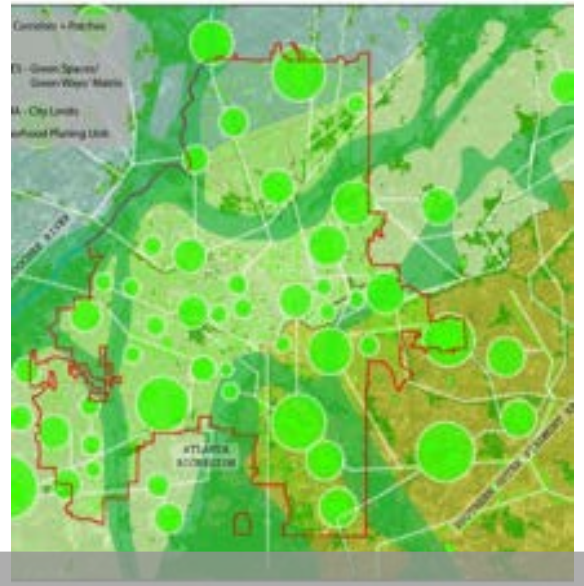
2010
Habitat

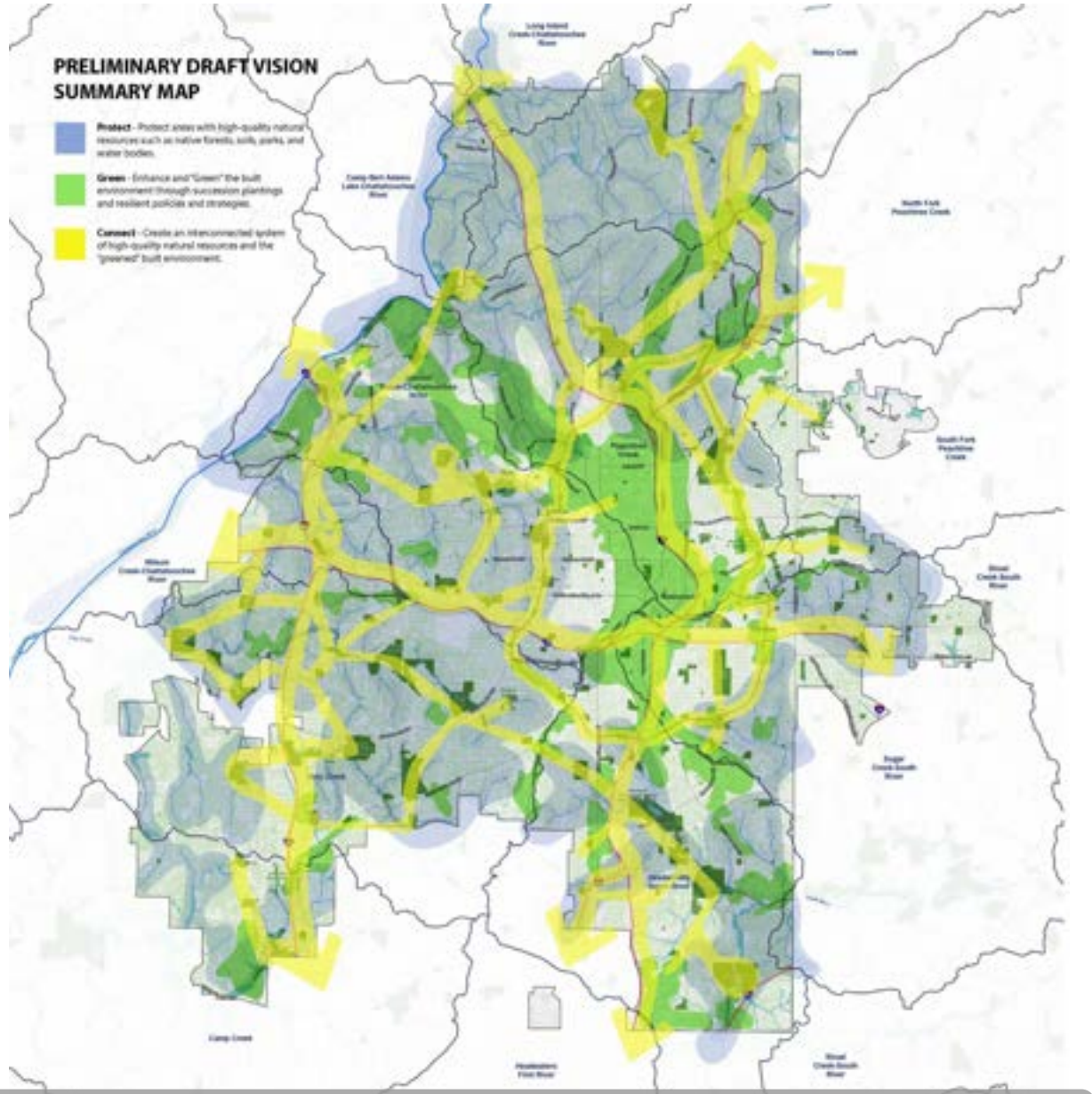


Projected

2060
Habitat







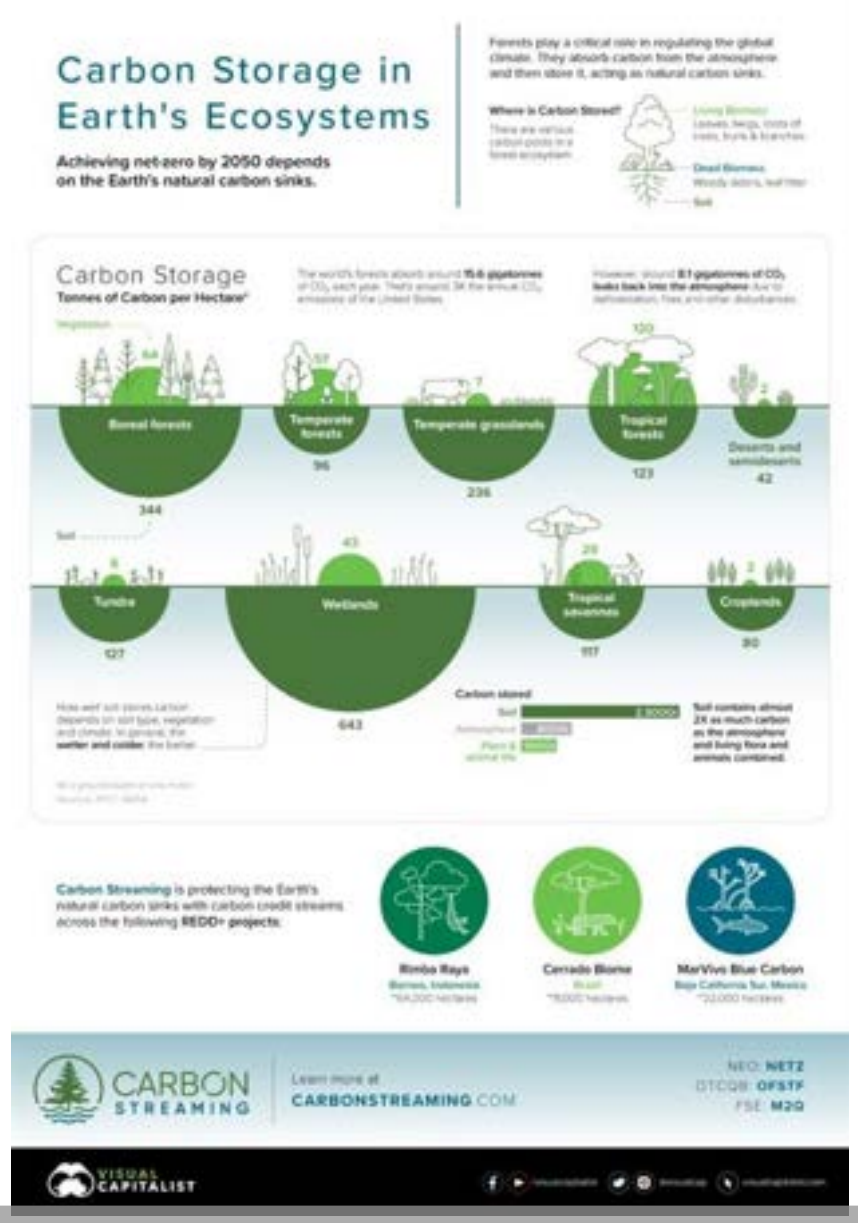
Urban Ecology Framework – Atlanta Nature, Atlanta, GA


It’s Alive!
Georgia Tech Biosystems Engineering Building Stormwater Capture, Treatment and Reuse, Atlanta, GA
Biohabitats

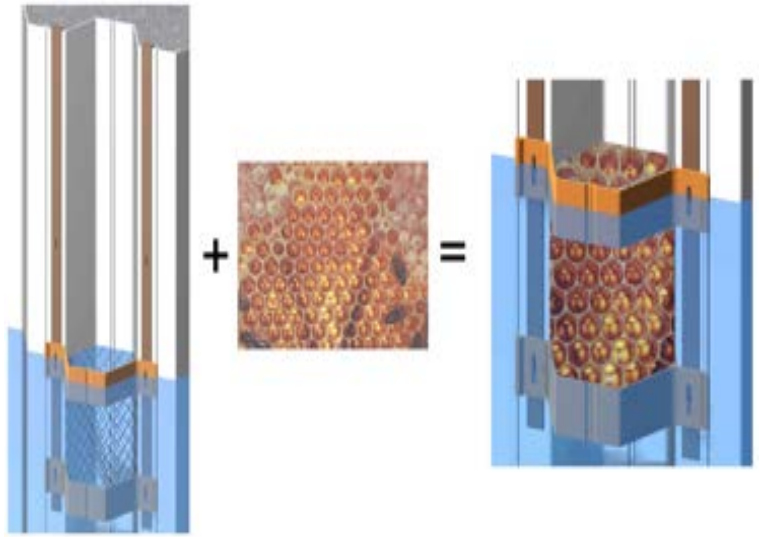
Beaver Creek Floodplain Reconnection and Water Quality Enhancement, Munson Township, OH

Biohabitats

Sandy River Engineered Log Jam for Juvenal Salmonid Fish Habitat

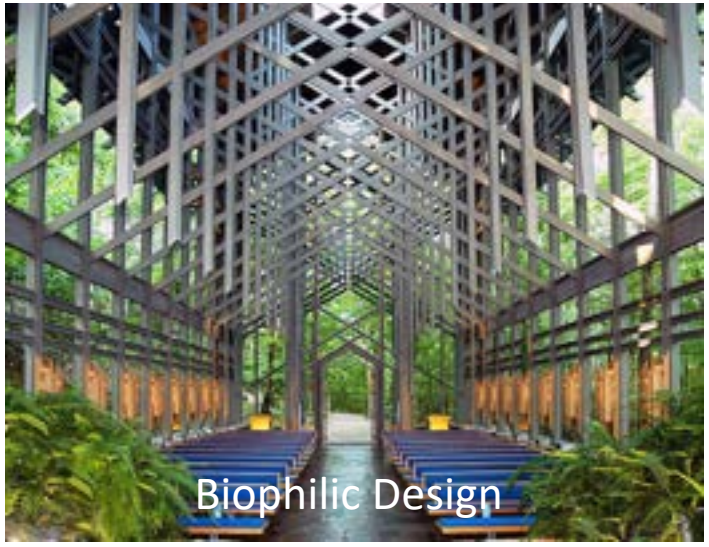


Unity Park Large Wood Habitat Structures, Greenville, SC

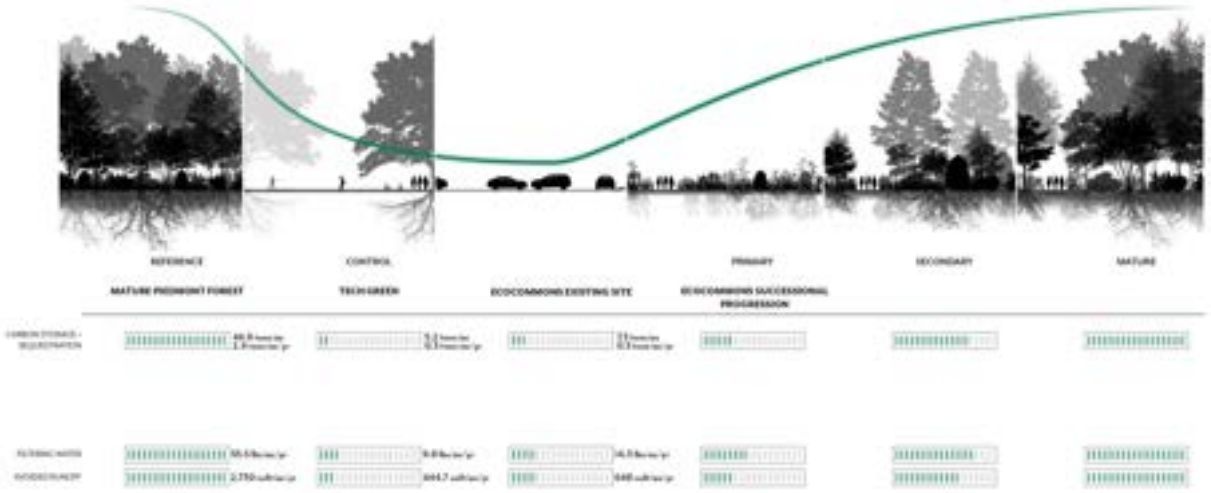


Biomimicry

Bioengineering

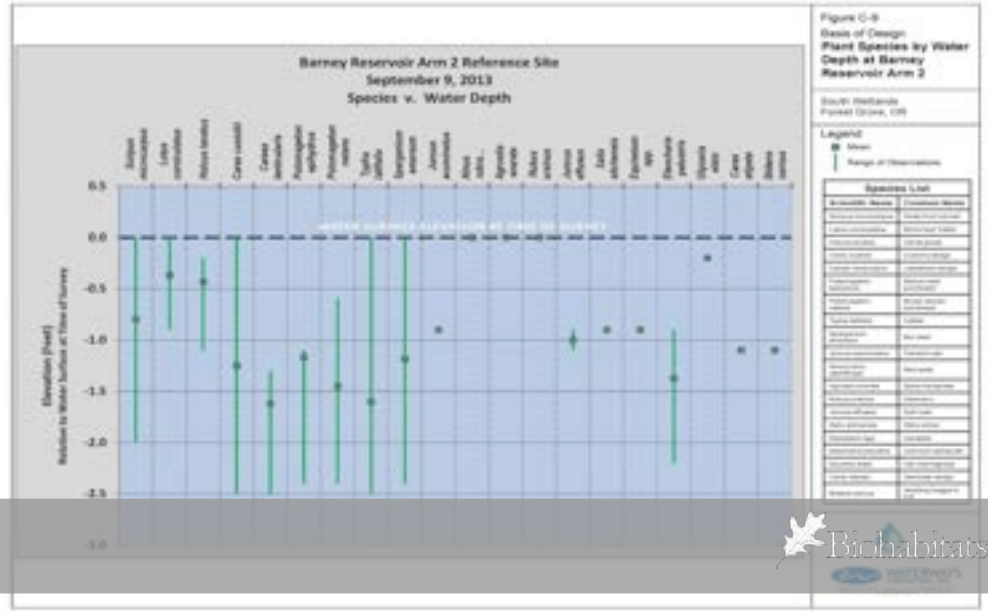


Biophilic Design



Georgia Tech EcoCommons Native Landscape and Stormwater Capture, Atlanta, GA

Biohabitats



Fernhill South Natural Wastewater Treatment, Forest Grove, OR

The first Birds & Brew brought community members together to celebrate new visitor amenities--including the picnic shelter, restroom and water garden--along with construction of the treatment wetlands.

Fernhill South Natural Wastewater Treatment, Forest Grove, OR

Biohabitats

Riot of Reciprocity

Sidwell Friends School Natural Wastewater Treatment & Greywater Reuse, Washington, D.C.

Sidwell Friends School Natural Wastewater Treatment & Greywater Reuse, Washington, D.C.

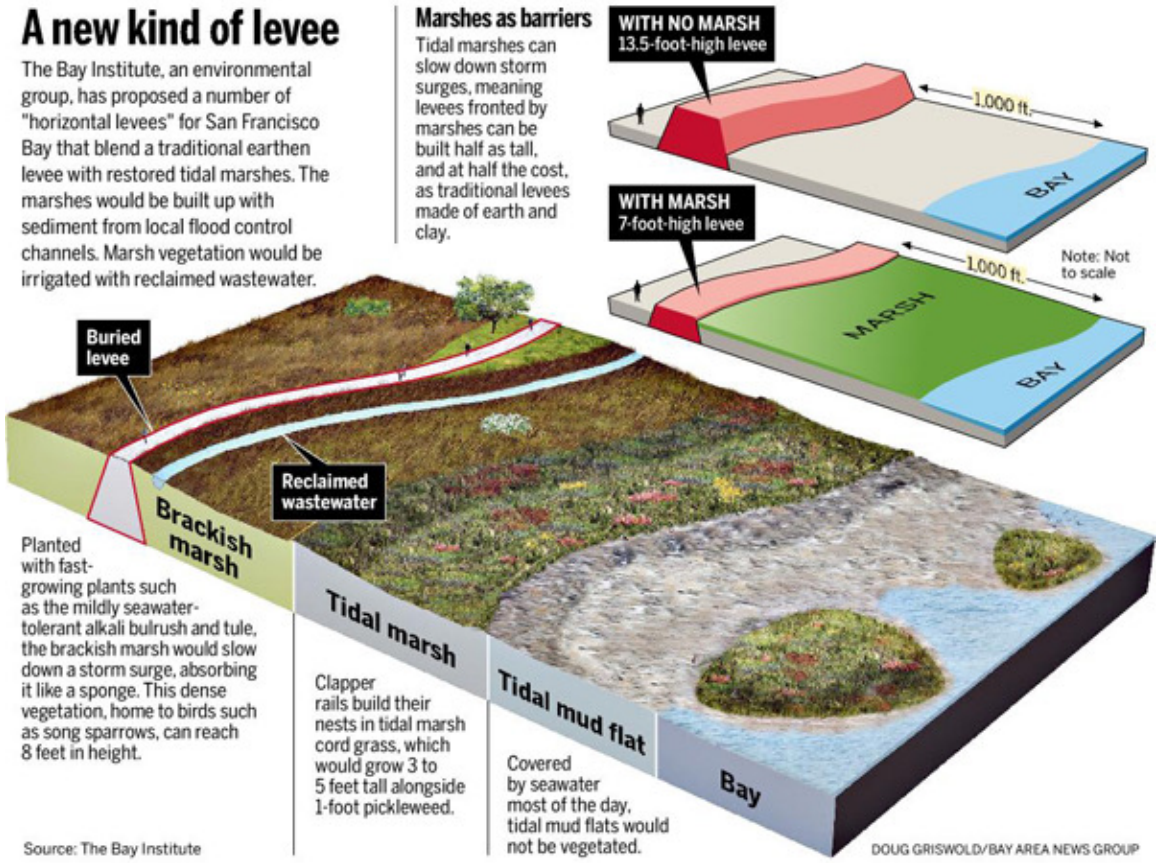
Biohabitats

Resilient by Design North Richmond Nature Based Design, North Richmond, CA

Image - Mithune

Repurposing Infrastructure

enhancing the ecotone



imagine the wall

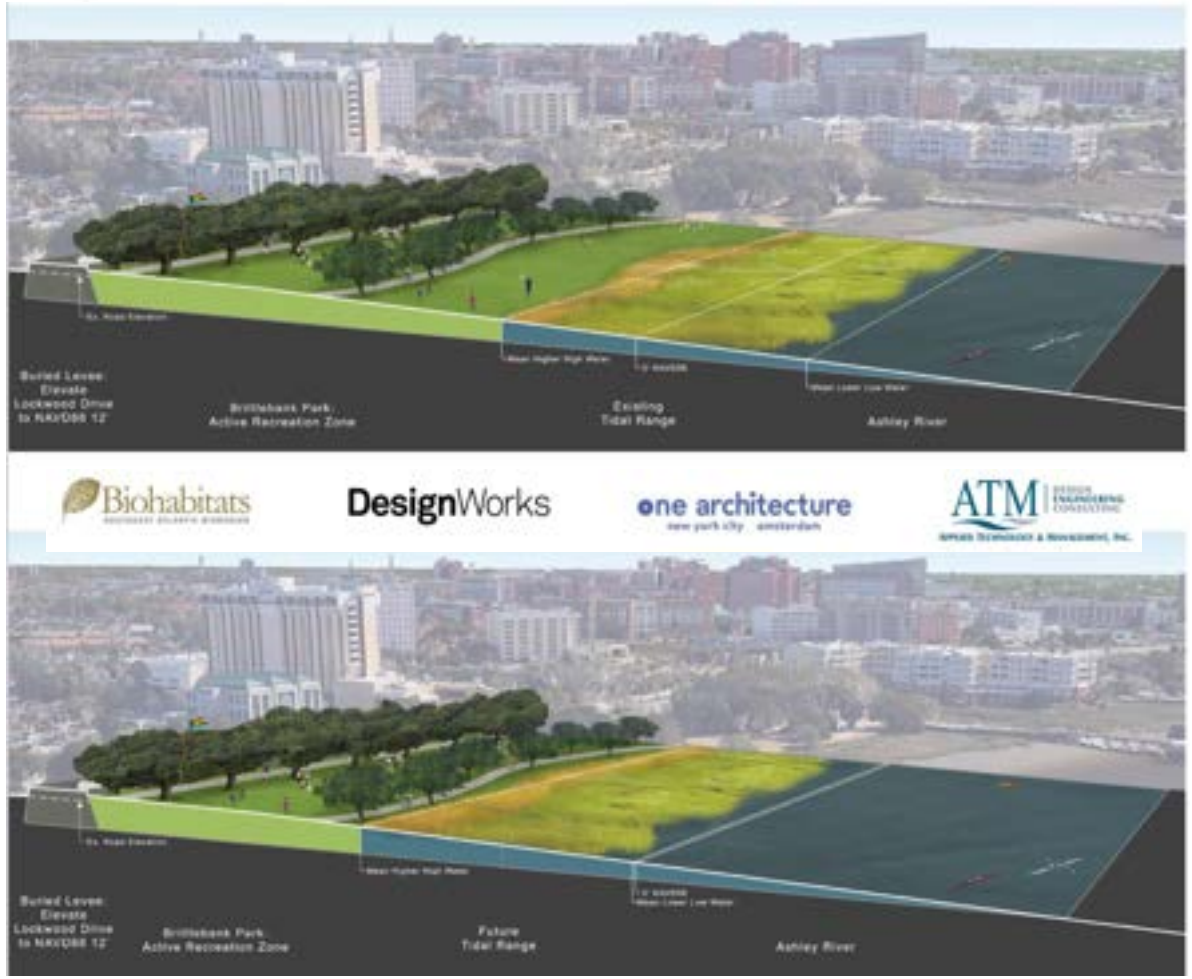


Illustration: DesignWorks

Floodplain reconnection and natural flood attenuation, Washington, DC

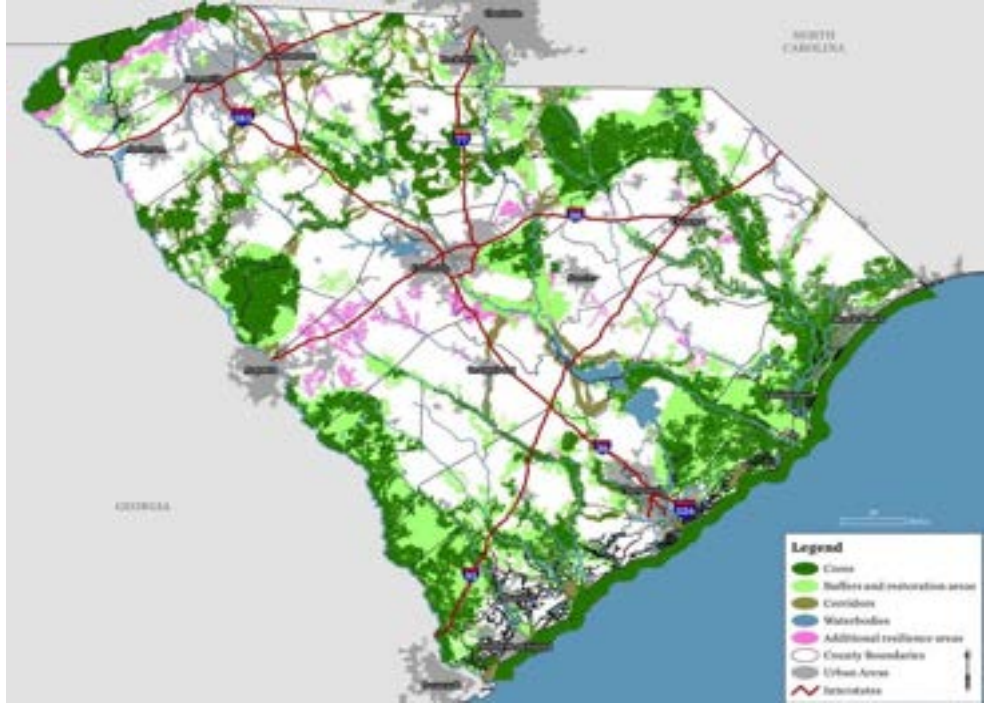
Biohabitats

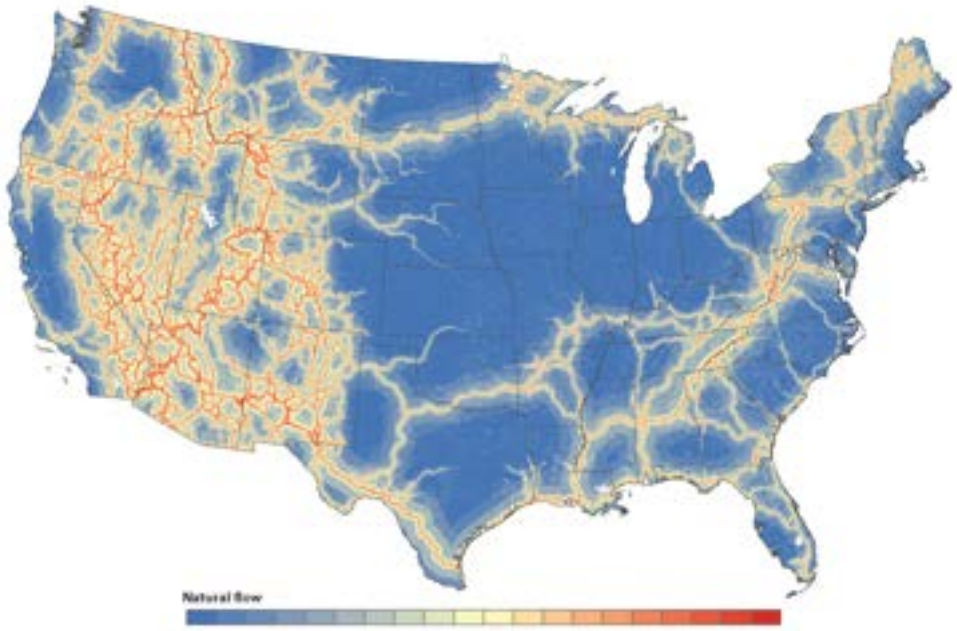
FAR ROC Design Competition Nature-Based Design, Queens, NY

THE EASTERN WILDWAY

Charlottetown
Québec
Fredericton
Halifax
Augusta
Ottawa
Montpelier
Concord
Boston
Albany
Providence
Hartford
Trenton
Harrisburg
Columbus
Annapolis
Dover
Washington, DC
Charleston
Richmond
Frankfort
Raleigh
Nashville
Columbia
Atlanta
Jackson
Montgomery
Tallahassee

THE EASTERN WILDWAY is a vision for wildlife habitat connectivity in the eastern U.S./Canada. Comprised of six ecoregions, the Eastern Wildway provides a framework within which local, state, federal and private land managers can collaborate to connect and restore habitat to ensure the survival of native species and the health of local communities.





Final Reflections

Strand feeding bottlenose dolphins (Tursiops truncatus truncatus)
Photo courtesy of Ellen Jones © Passingbyphoto.com

Using Nature to its Full Advantage

Dr. Brandan Scully, USACE
Todd Martin, City of Columbia
Dr. Liz Fly, TNC
Erin Stevens, Surculus
Dr. Regina Ciphrah, Verbalizing Visions, LLC

Francis Marion Forest; hooded pitcher plant (Sarracenia minor)