



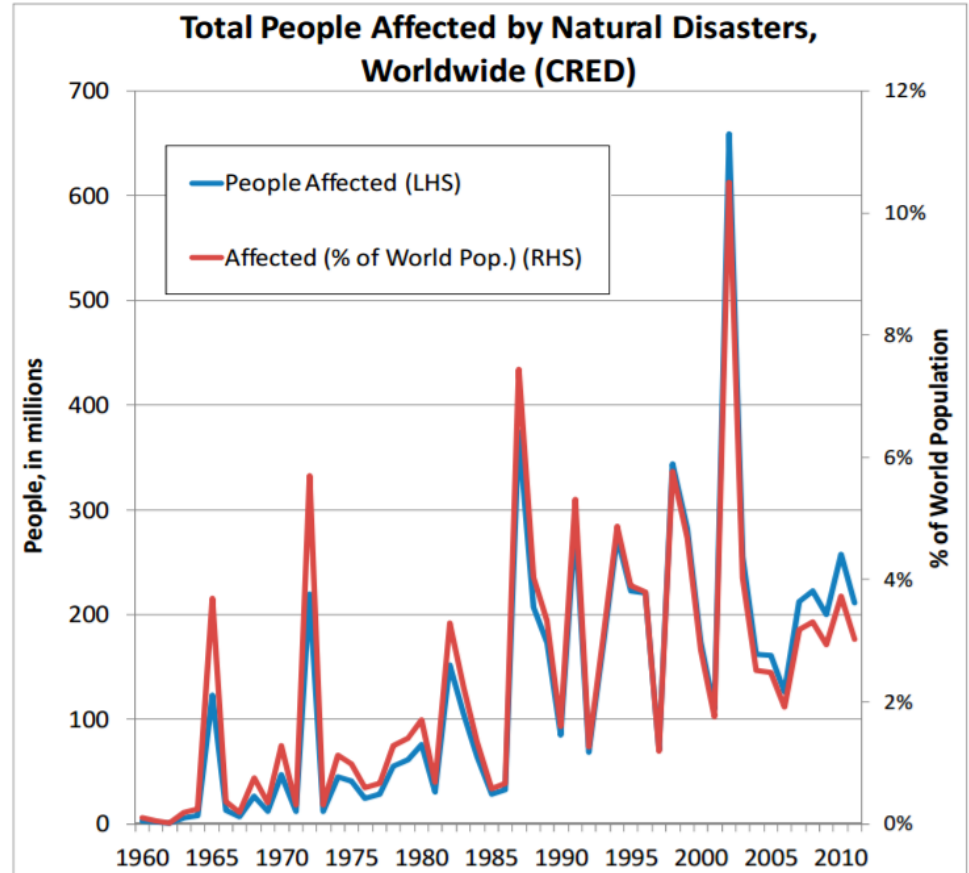
NATURAL & NATURE-BASED SOLUTIONS FOR RISK REDUCTION & RESILIENCE



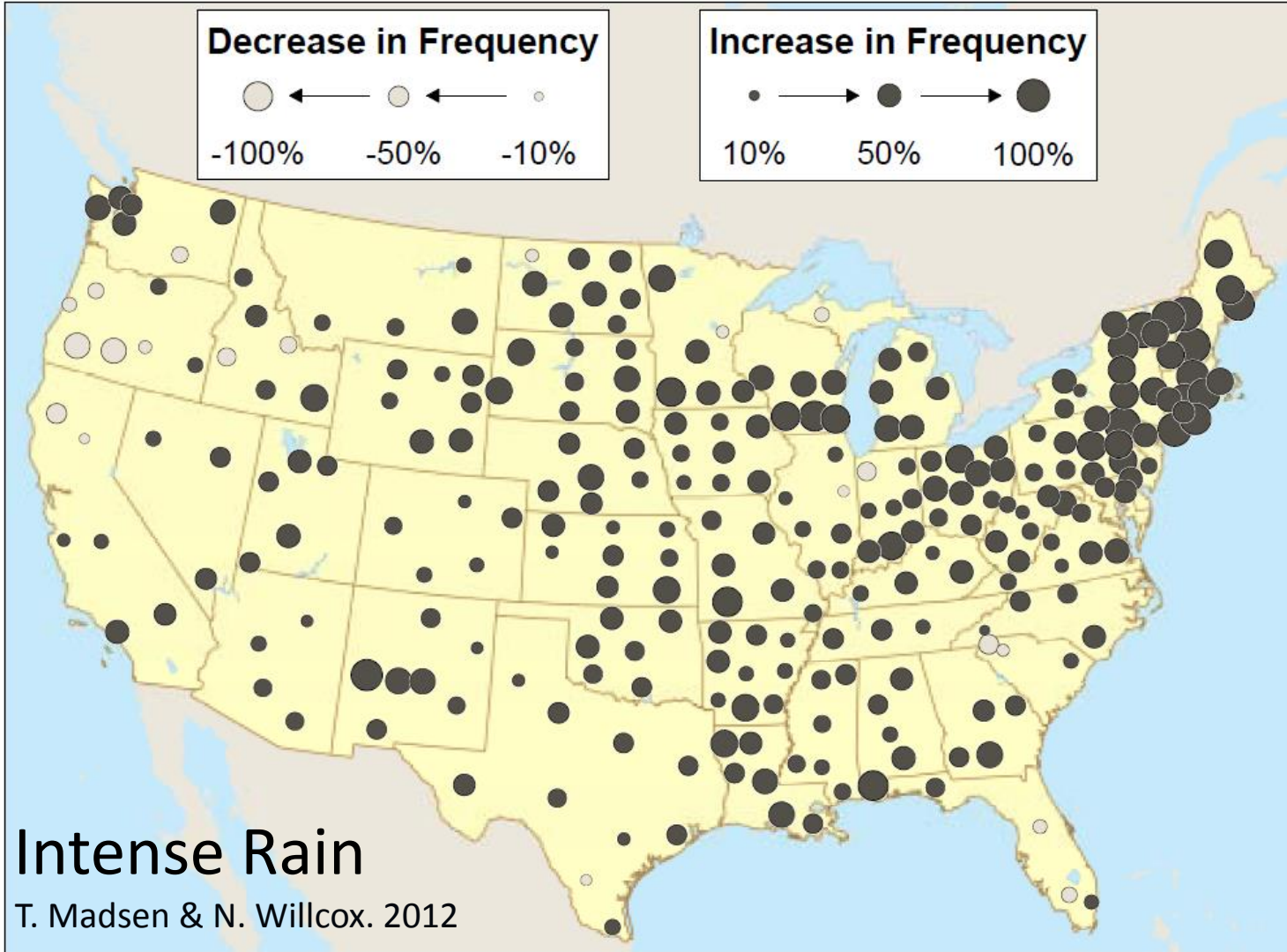
OUR REALITY



THE NATURE CONSERVANCY




N. Laframboise and B. Loko. 2012. Int'l Monetary Fund



OUR VISION



ALL OVER THE WORLD
NATURAL INFRASTRUCTURE PROTECTS
**PEOPLE, COMMUNITIES
AND LIVELIHOODS**
FROM STORMS AND FLOODS



Seawalls and levees
destroy habitat and block
natural processes

Stumpy Point, North Carolina



Floodplains, barrier islands,
and wetlands provide storm
protection and habitat

Virginia Coast Reserve

An aerial photograph of a coastal landscape. A wide, light-colored sandy beach runs diagonally from the bottom left towards the top right. To the left of the beach is a body of water, possibly a marsh or lagoon, with green and brown vegetation. To the right of the beach is the ocean, with blue water and white waves breaking on the shore. The sky is a pale blue.

--Nature-based approaches are the intentional use of natural features and functions as integral part of addressing a human need

--Protection and restoration of natural processes and systems explicit part of the desired project outcome.

Virginia Coast Reserve

How do we operationalize Nature Based Solutions?

Build natural function into project design -- avoiding environmental impacts is not sufficient.

Protection and restoration of nature need to become a project purpose.

Designing to meet multiple needs and provide multiple benefits is key
– creates synergies and new opportunities.



Green Infrastructure for Resilient Communities

- Store & convey water
- Keep people & structures out of harm's way
- Reduce wave heights & storm surge
- Provide greenspaces, greenways & recreational opportunities
- Reduce summer heat & improve air quality
- Reduce erosion & sedimentation
- Provide habitat for fish & wildlife



Community/urban features

- Bio-swales, stormwater recharge areas
 - Green roofs
 - Rainwater harvesting
 - Green streets/Green parking lots
 - Tree canopies
- Greenways, walkways and bikeways
 - Parks and recreational areas
 - Permeable pavement
 - Rain gardens, victory gardens



Flood - River Features

- Reconnecting river to floodplains
- Levee setbacks and realignments
- Flood bypasses
- Conserving/restoring river corridors
- Conserving/restoring wetlands
- Establishing flood water detention areas
- Fish/flood friendly culverts/bridges
- Establishing farm filter strips



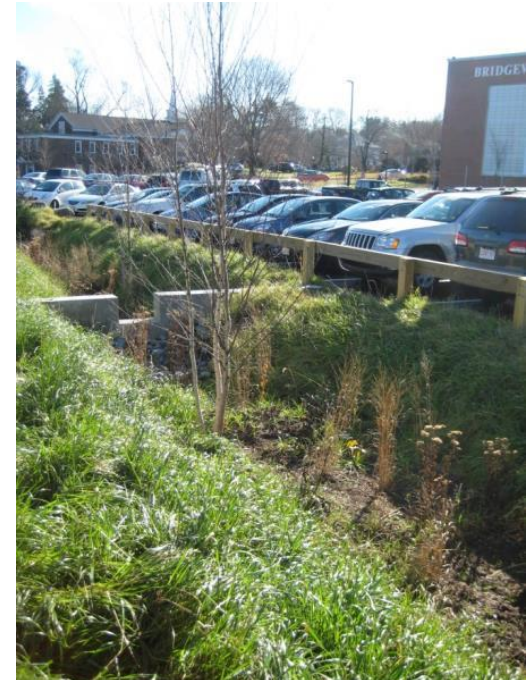
Coastal Features

- Conserving/restoring coastal marshes
 - Conserving/restoring beaches and dunes
 - Conserving/restoring oyster and shellfish reefs
 - Conserving/restoring coral reefs
- Building living shorelines
 - Conserving/restoring intertidal flats
 - Conserving/restoring mangroves



Bioretention system at Bridgewater State University

- Parking lot retrofit
- Two bioretention systems with monitoring
- Improved water quality
- Reduced flooding, improved safety



Woloski Park Buyout



Resilient Taunton Watershed Network

– *Working together for a better future*

What we are offering:

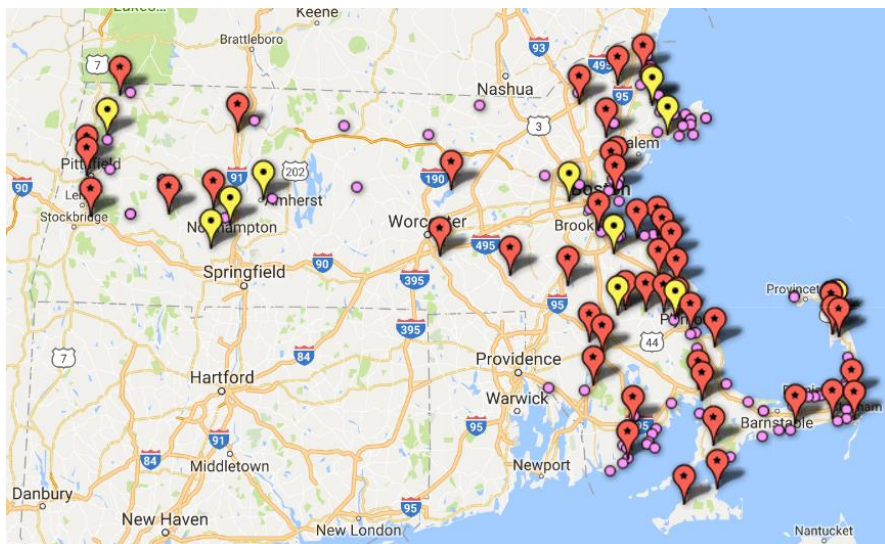
The RTWN has recently received some funding and would be interested in working with towns or groups who are interested to work with us on any of the following:

- Resilience Roundtables – facilitated cross community conversations to discuss cost effective solutions to issues you define such as flooding or culvert upgrades
- Municipal Training Program
- Use of various tools (including mapping and green infrastructure tools)
- Peer review of development proposals
- Community Resilience Self-Assessment
- Assistance identifying ways to meet regulations such as MS4 and the Water Management Act
- Prioritizing culvert replacements and redesign /modification for safety, fish passage, flood reduction



A watershed is an area that drains to a common waterway, such as a river. The blue area above comprises the Taunton River Watershed.





On average, upgrade of the 3 culverts in the study was **38% less expensive** than in-kind replacement and maintenance over 30 years.



THE NATURE CONSERVANCY

New England Coastal Resilience



THE NATURE CONSERVANCY

The Naturally Resilient Communities Partnership



American Planning Association
Making Great Communities Happen



S A S A K I



 Naturally **RESILIENT** Communities

2020 RESULTS

PROTECT MILLIONS OF PEOPLE — PARTICULARLY IN VULNERABLE COASTAL COMMUNITIES — BY USING NATURE TO SAFEGUARD AGAINST STORMS, FLOODS AND RISING SEAS

TRANSFORM HOW INFRASTRUCTURE IS PLANNED, FINANCED AND BUILT, AND SHIFT 10% OF GLOBAL INVESTMENT — \$100 BILLION — TO NATURAL SOLUTIONS

INSPIRE LASTING CHANGE BY DEMONSTRATING NATURE'S ABILITY TO PROTECT PEOPLE AND PLACES COST EFFECTIVELY