







Successful Climate Adaptation:
Tijuana River Valley

Danielle Boudreau ♦ Aug 2015♦ Successful Adaptation Working Group

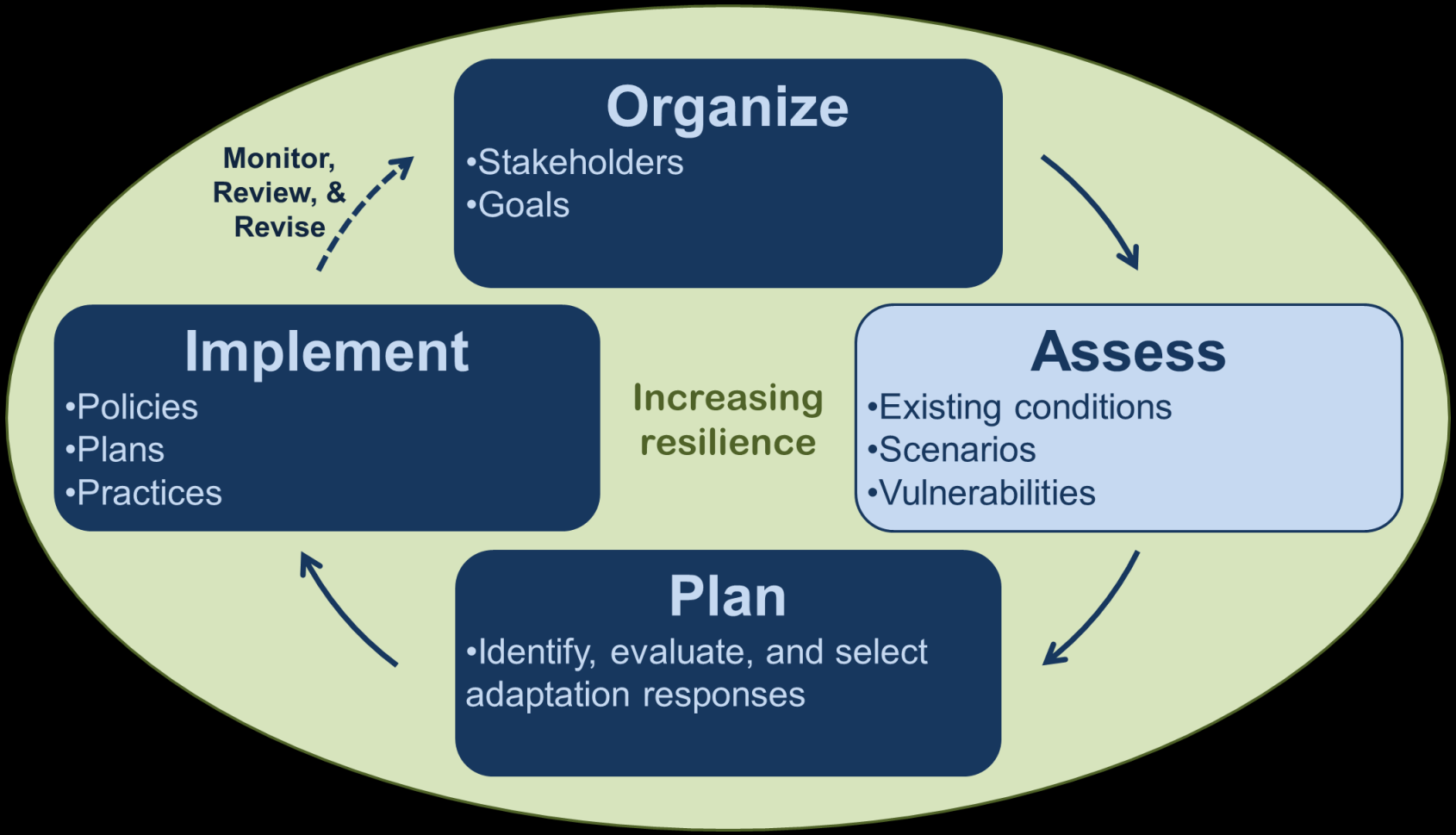
WHY WE ARE HERE TODAY?

Learn about a process for tracking progress

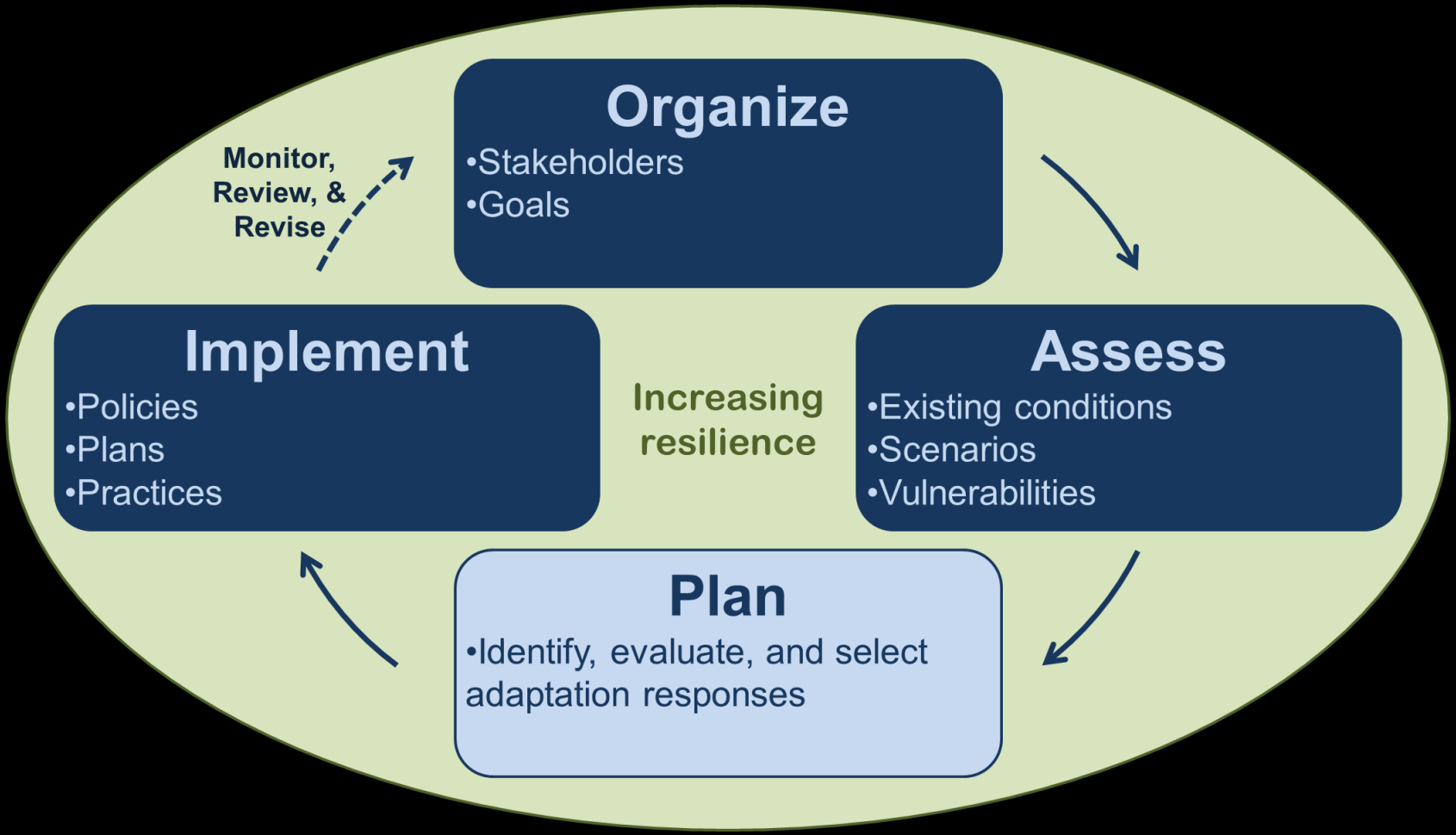
Contribute to a National Dialogue

NATIONAL ESTUARINE RESEARCH RESERVE SYSTEM SCIENCE COLLABORATIVE

Move from Assessment Phase…

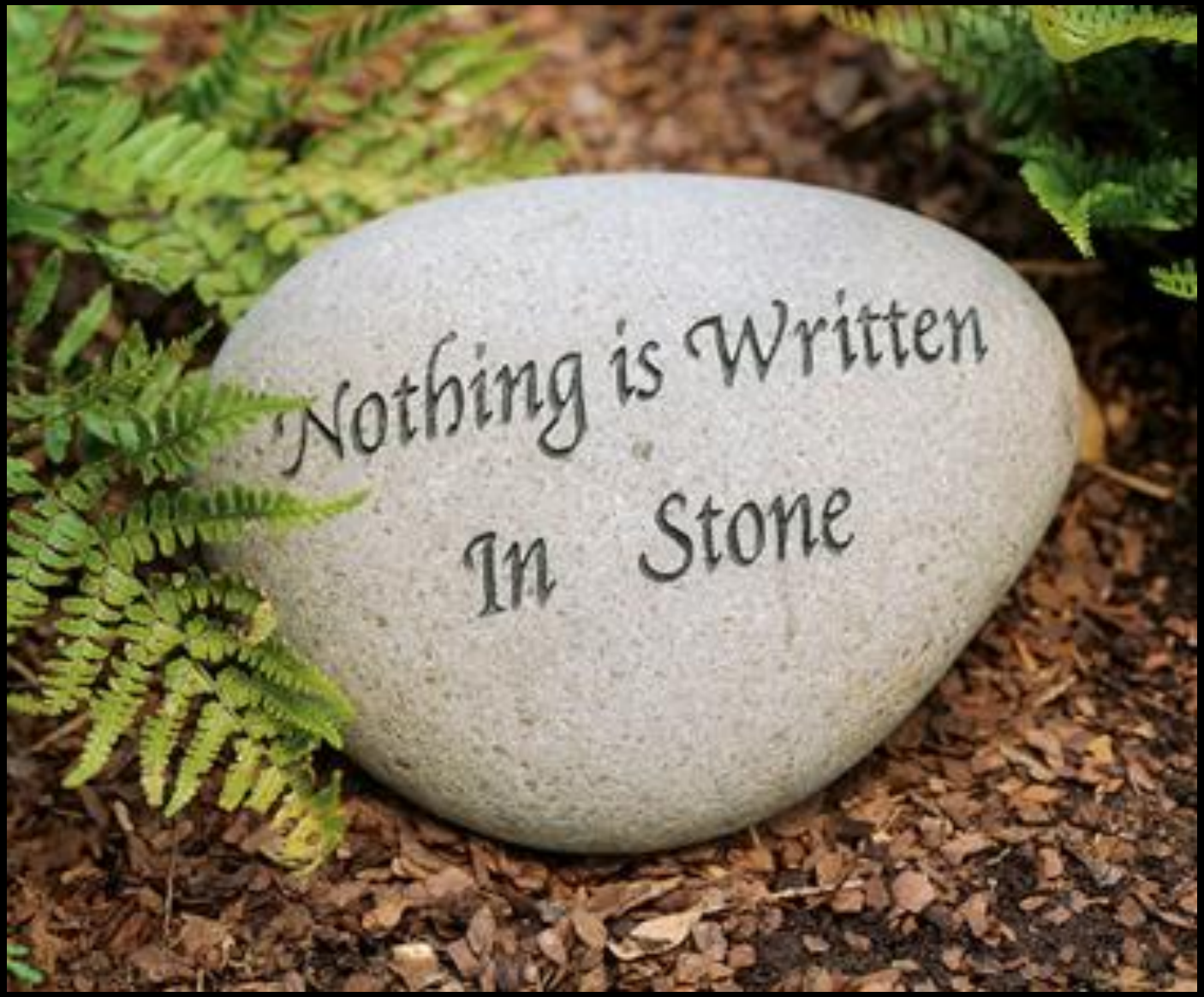


…to Planning Phase



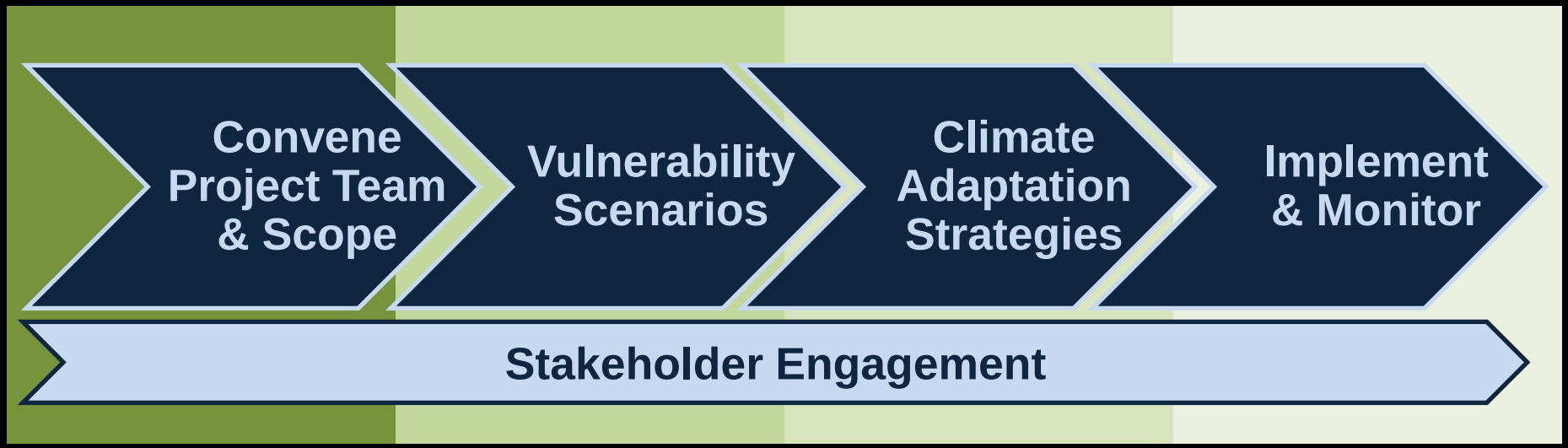
Brainstorm:
Goals & Tracking Progress

Think about success early in the goal setting process


Nothing is Written
In Stone

CURRV UPDATE

Project



Modified timeline from: *Adapting to Rising Tides: Assessing Climate Change Vulnerability* (2011). BCDC.

Climate Adaptation

Reduce the vulnerability of natural and human systems

Scope

- Sea Level Rise
- Riverine Flooding

VULNERABILITY SCENARIOS

Why scenario planning?

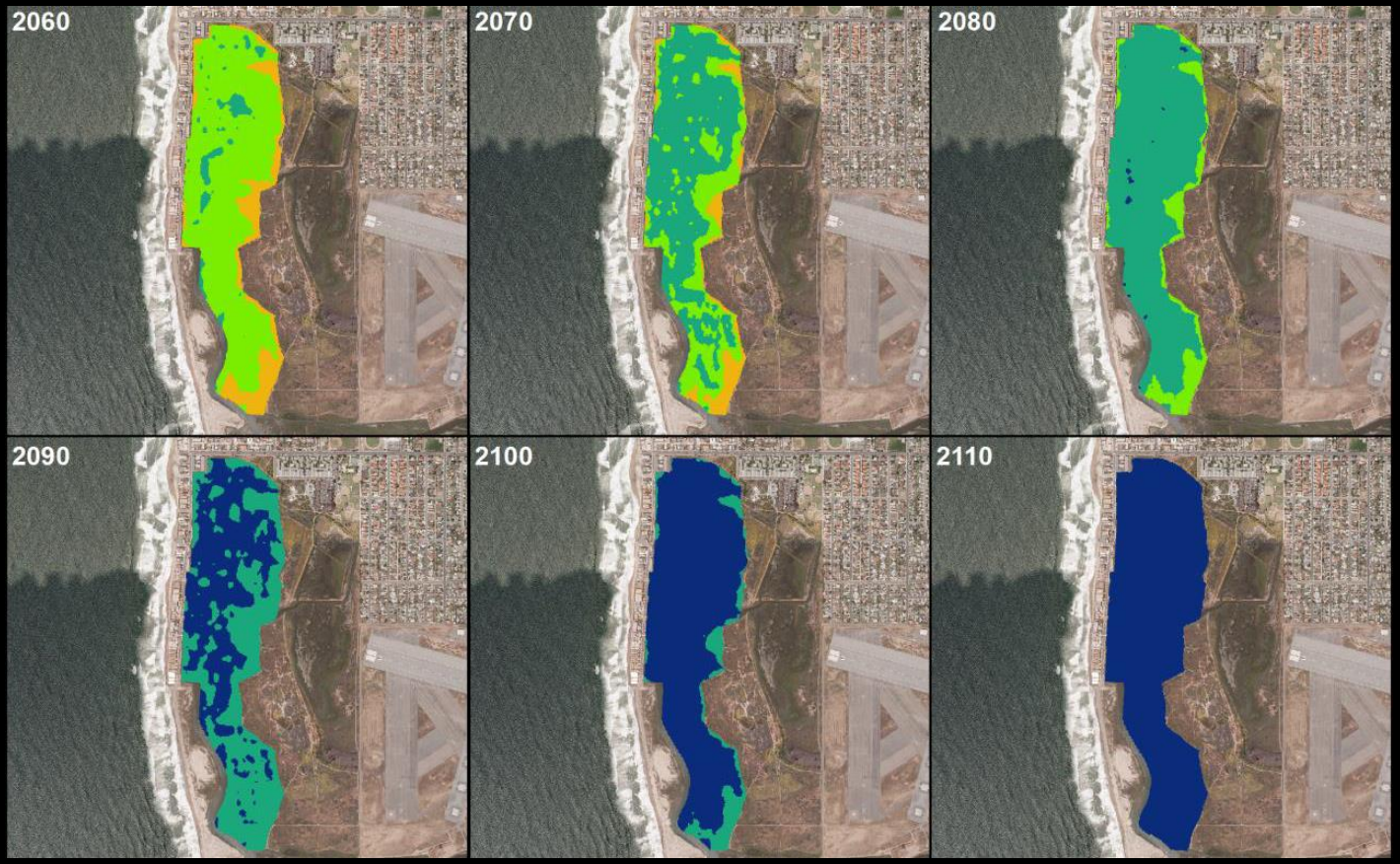
What are scenarios?

- Internally consistent descriptions of possible future states of the world
  - Informed by best available science (Plausible)
- Not forecasts or predictions
- Each scenario is one alternative representation of the future

(Moore et al. 2013, and NPS 2013)

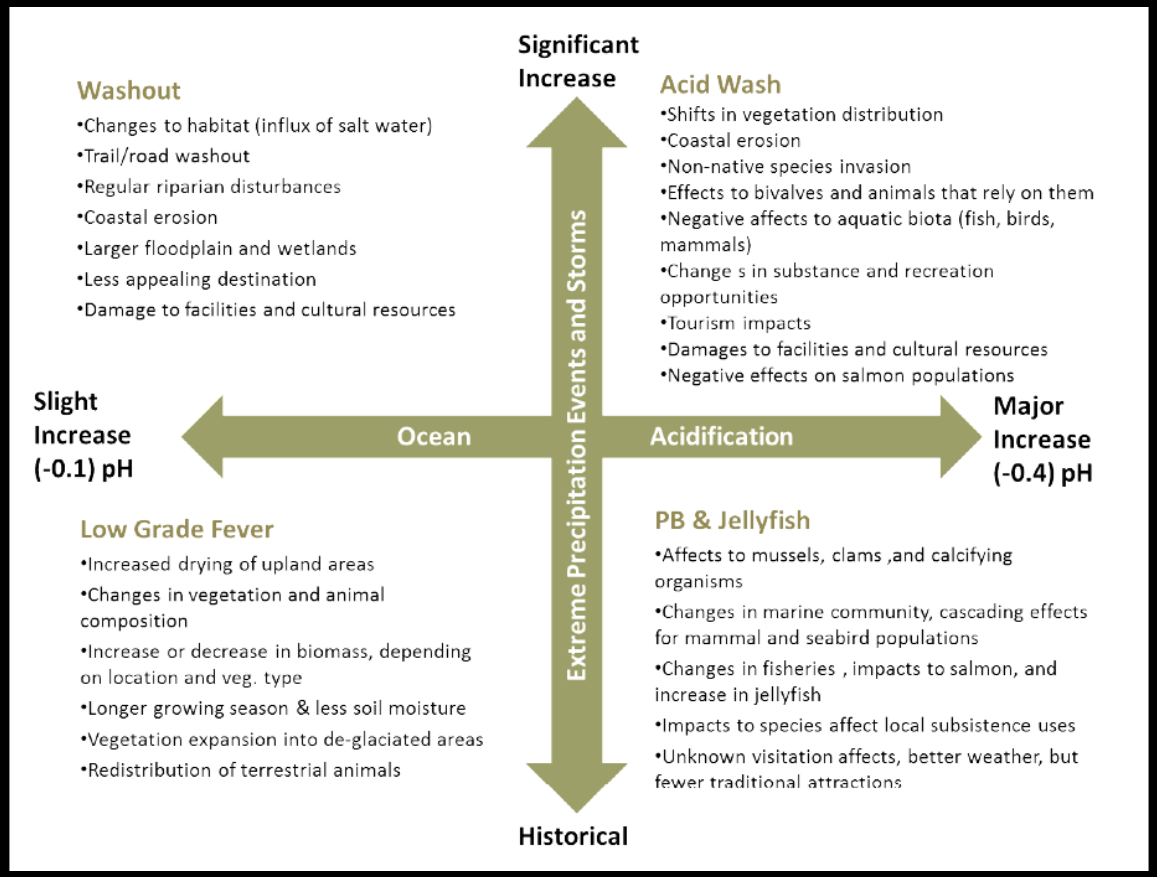
Scenarios take many forms…

- Sea level rise (high, med, low)



Scenarios take many forms…

- Local climate adaptation planning



Using Scenarios to Explore Climate Change: A Handbook for Practitioners (2013). National Park Services: Climate Change Response Program.

Visualizing the Future

Management Sectors

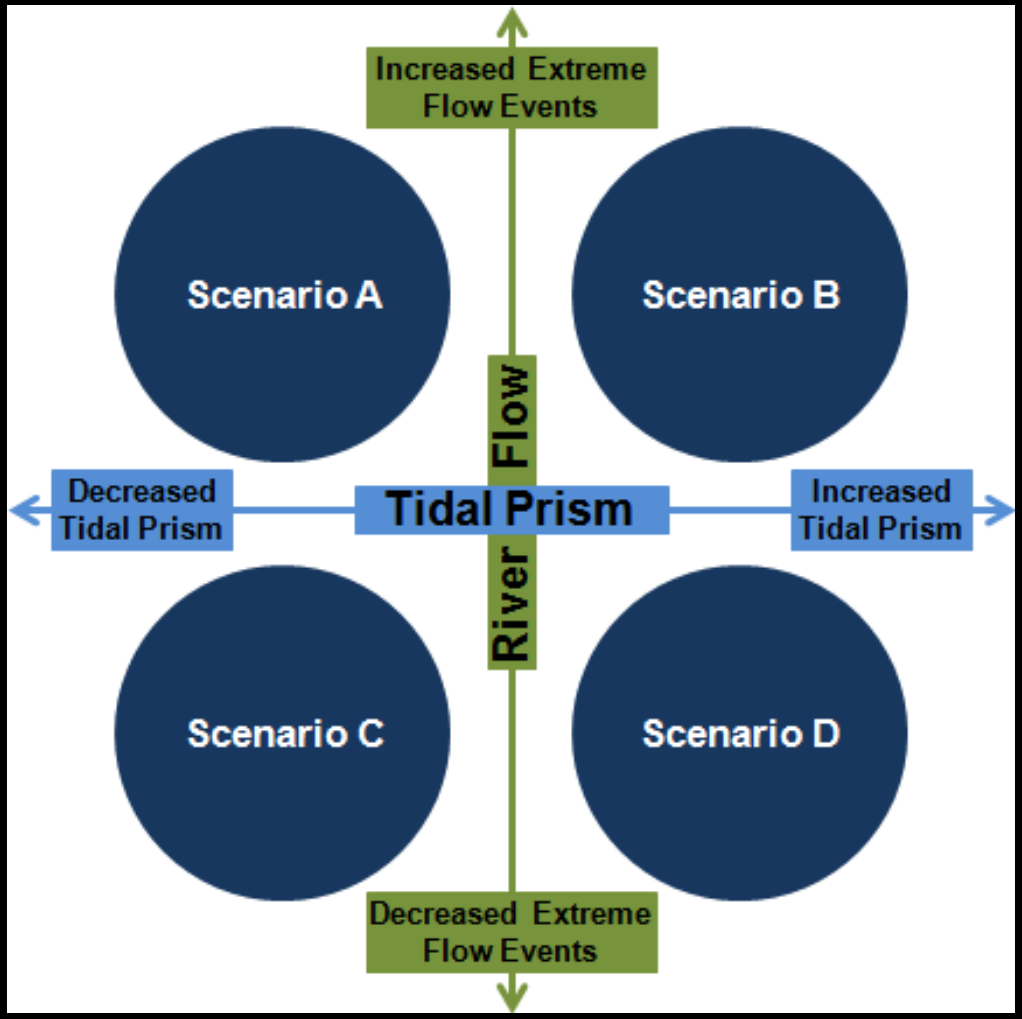
Natural Environment

- Beaches & sand dunes
- Tidal channels & mudflats
- Salt marsh
- Salt flats
- Wetland-upland transition zone
- Fresh-brackish marsh
- Riparian
- Upland

Built Infrastructure

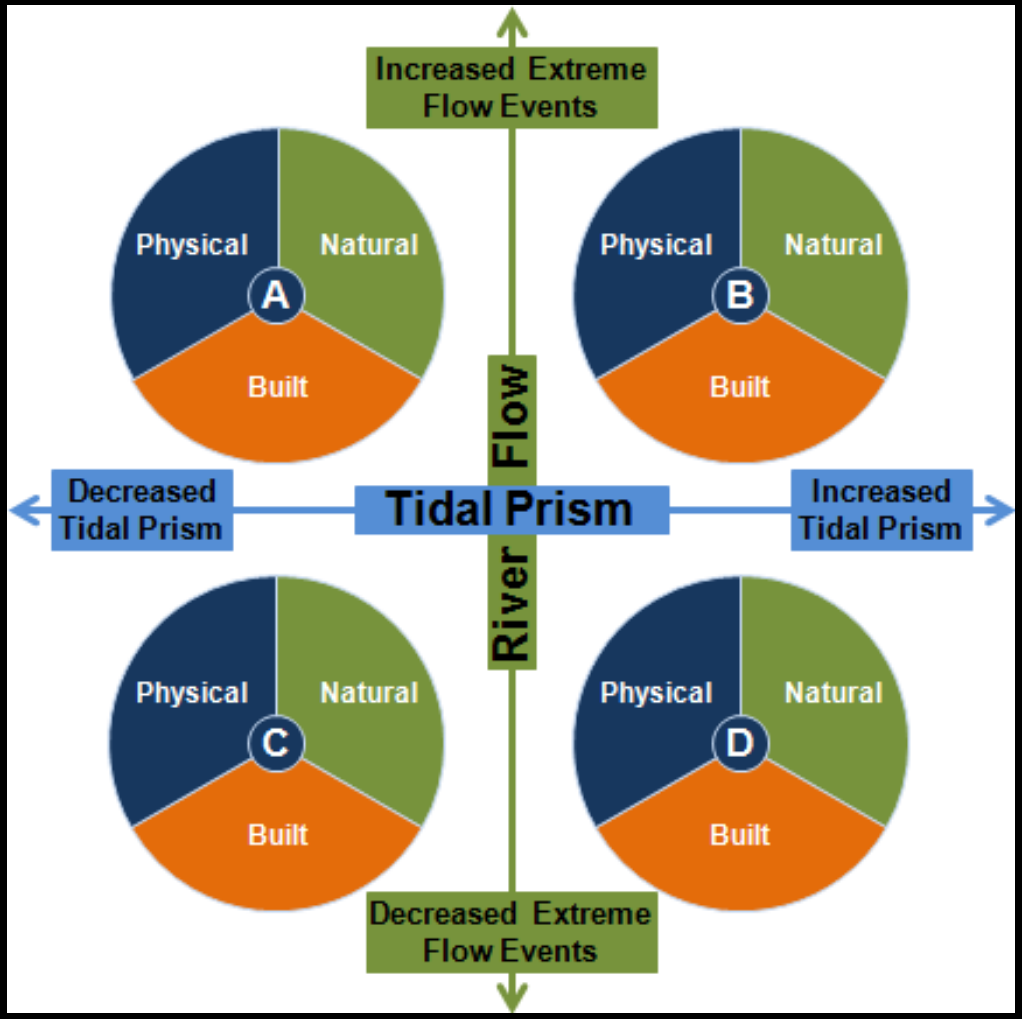
- Cultural & historical resources
- Parks, recreation, & public access
- Agriculture
- Navy
- Border Patrol
- Stormwater management & flood control
- Wastewater management
- Transportation

CURRV Scenarios

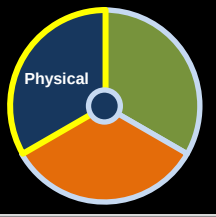


Moore et al. (2013). *Scenario planning for climate change adaptation.*;
Using Scenarios to Explore Climate Change: A Handbook for Practitioners (2013). National Park Services: Climate Change Response Program.

CURRV Scenarios in 3 Parts

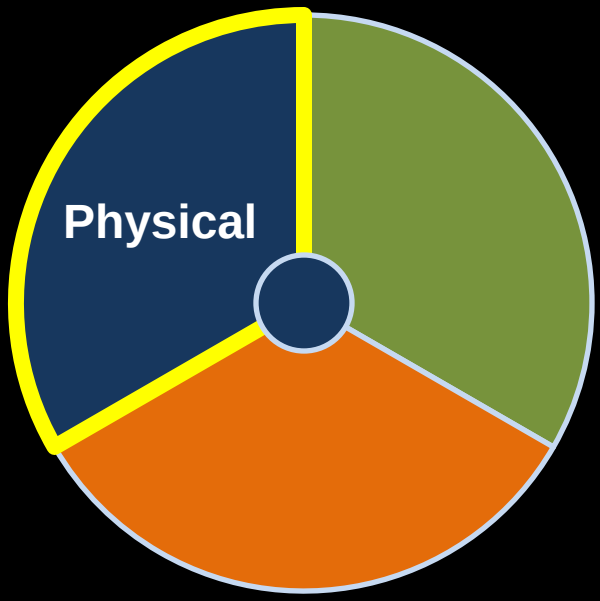


Part I: Physical Landscape



Characteristics

- River-ocean connection
- Sediment dynamics
- Flooding & inundation
- Water residence time
- Surface- and ground-water salinity



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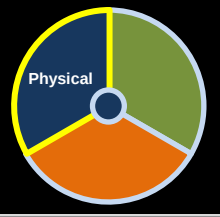
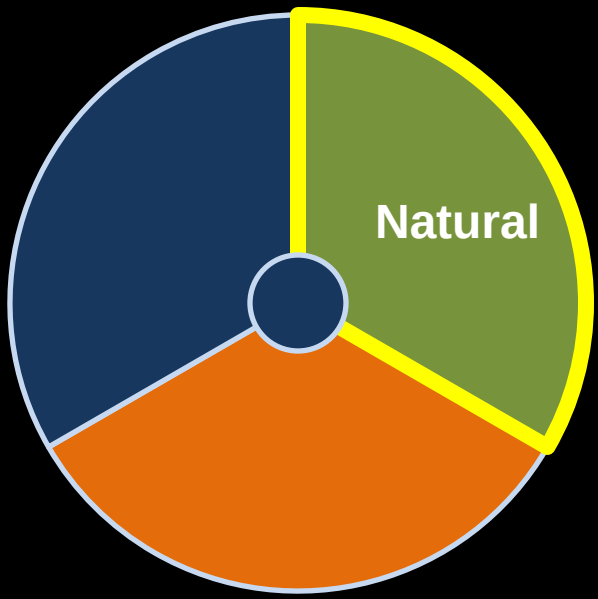


Scenario A	Scenario B	Scenario C	Scenario D
River-Ocean Connection			
Mostly Closed	Open	Closed	Mostly Open
Sediment Dynamics			
Moderate Sediment Export & Riverine Sedimentation	Increased Sediment Export & Beach Sedimentation	Decreased Sediment Export & Riverine Sedimentation	Moderate Sediment Export & Beach Sedimentation
Flooding & Inundation			
Severe Riverine Flooding	Riverine Flooding & Coastal Flooding / Inundation	Riverine Flooding	Coastal Flooding / Inundation
Water Residence Time			
Long Residence Time	Shortest Residence Time	Longest Residence Time	Short Residence Time
Surface- and Ground-Water Salinity			
Increased Freshwater Influence with Variability	Saltwater Influence with Freshwater Pulses	Variability with Increased Freshwater Influence	Greatest Saltwater Influence

Part II: Natural Habitat Vulnerabilities

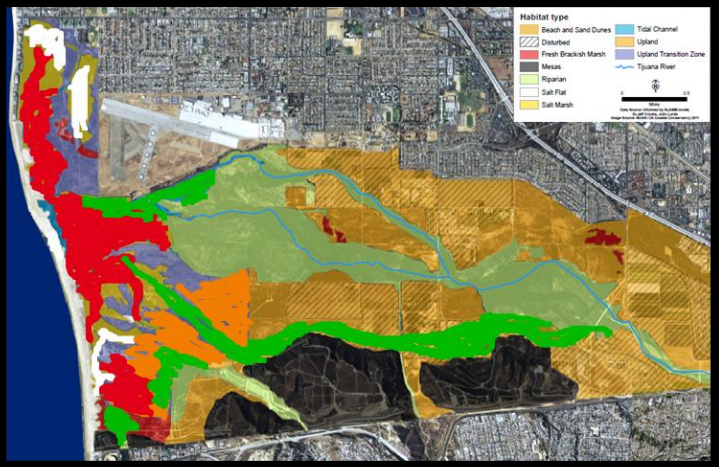
Management sectors

- Beaches & sand dunes
- Tidal channels & mudflats
- Salt marsh
- Salt flats
- Wetland-upland transition zone
- Fresh-brackish marsh
- Riparian
- Upland

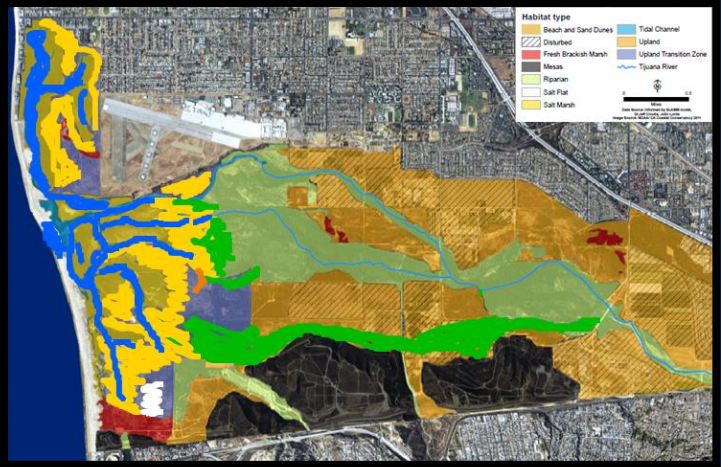


Part II: Natural Habitat Vulnerabilities

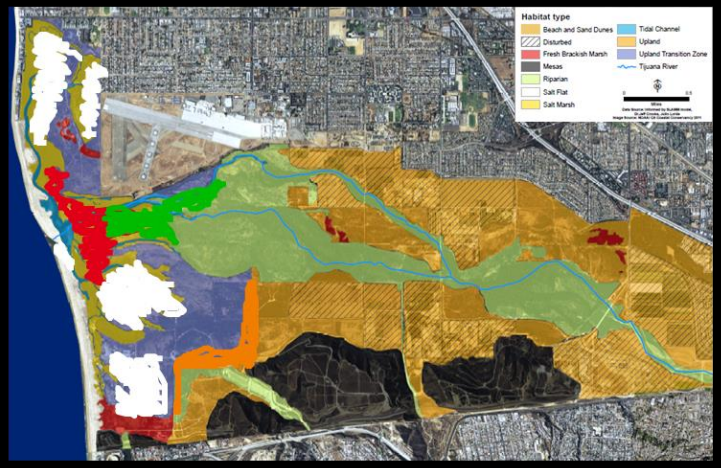
Scenario A



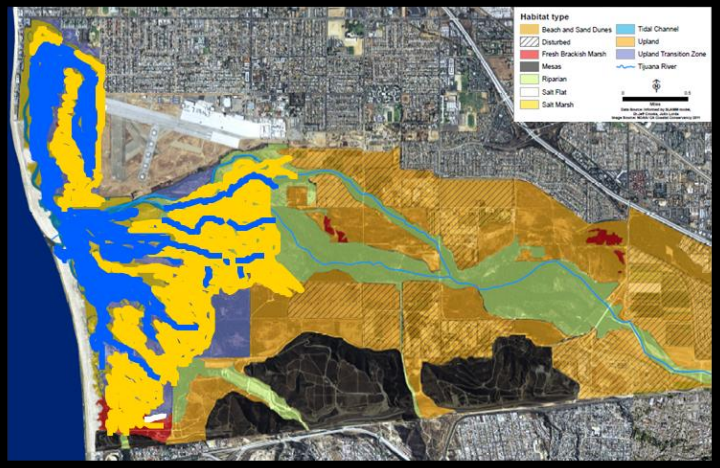
Scenario B



Scenario C

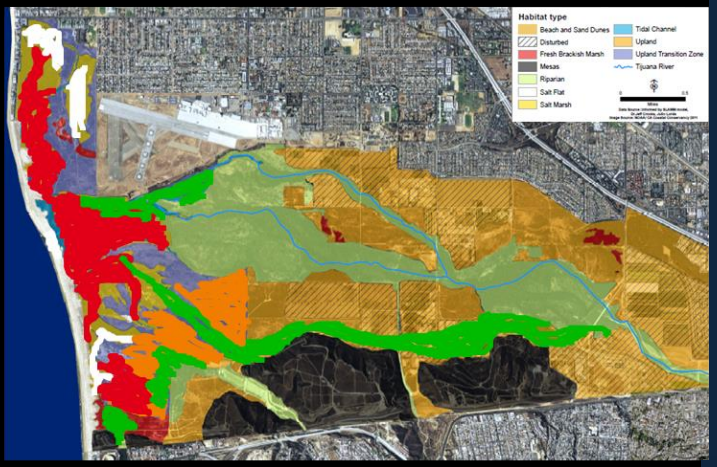


Scenario D

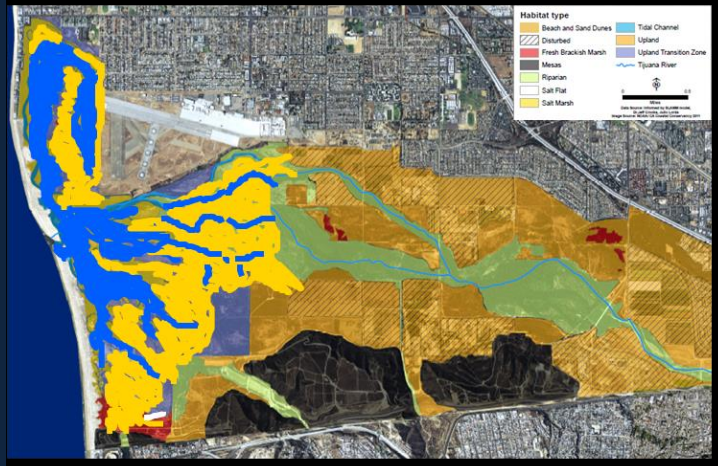


Part II: Natural Habitat Vulnerabilities

Scenario A

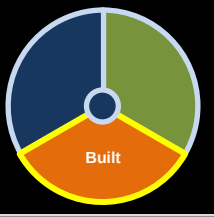


Scenario D



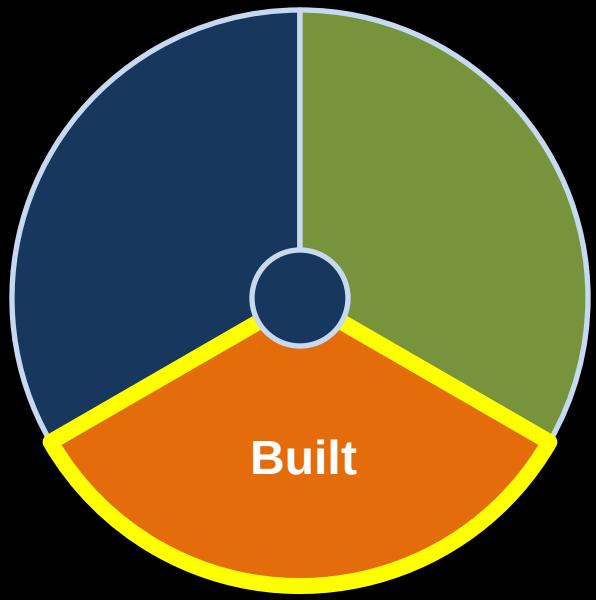
Part II: Natural Habitat Vulnerabilities

Part III: Built Enviro. Vulnerabilities

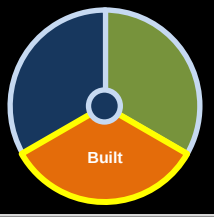


Management sectors

- Cultural & historical resources
- Parks, recreation, & public access
- Border Patrol
- Navy
- Agriculture
- Stormwater management & flood control
- Wastewater management
- Transportation



Part III: Built Enviro. Vulnerabilities



Management sectors

- Cultural & historical resources
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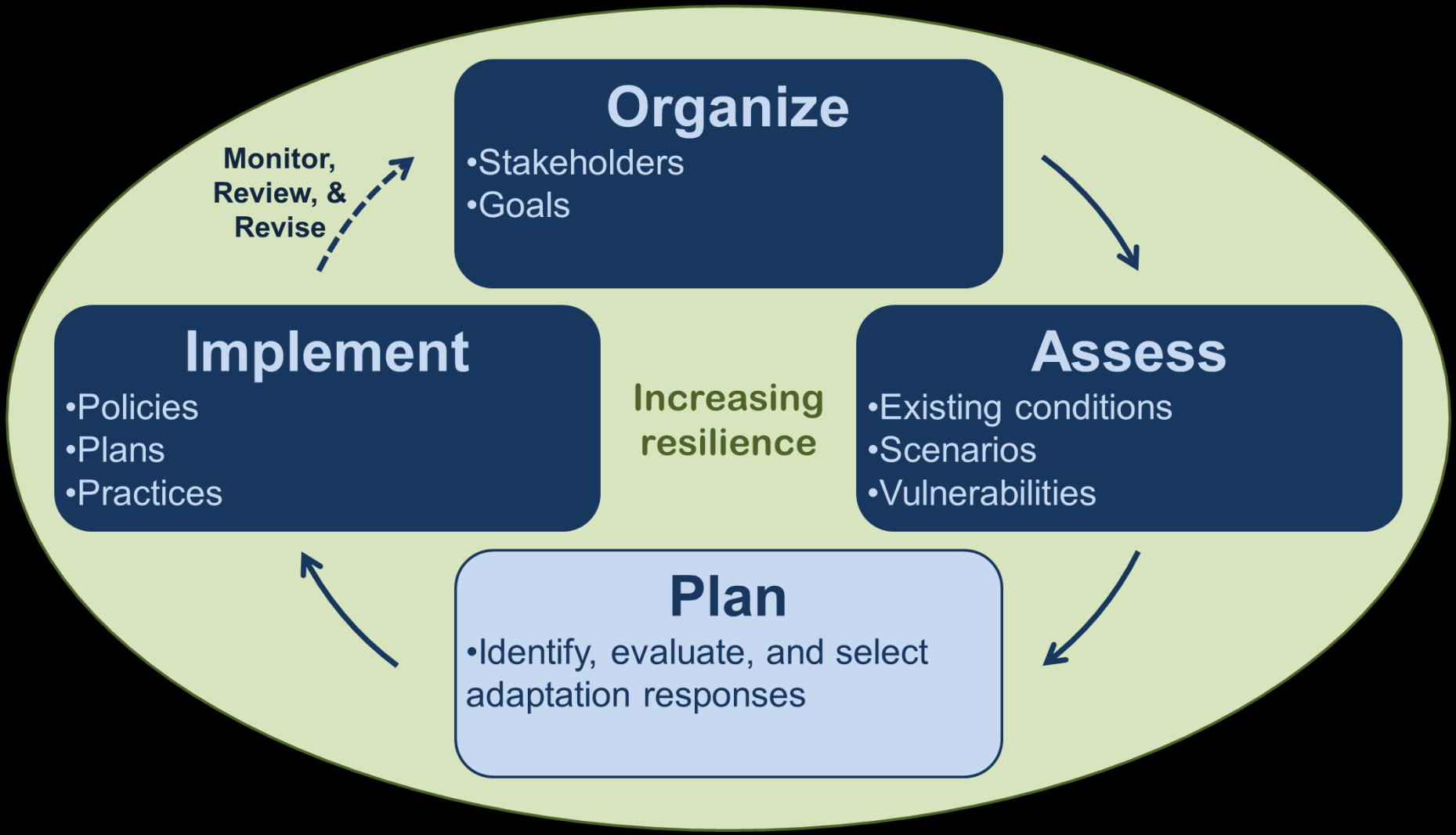
- Transportation

Vulnerability
Very High
High
No change
Low
Very low

Moving Forward



Adapting to Rising Tides: Assessing Climate Change Vulnerability (2011). BCDC;
Scanning the Conservation Horizon (2011), National Wildlife Federation.

Why we are here?
Putting the puzzle pieces together

Learn from each other, Brainstorm, Gather input…

Questions?

Contact info:

Danielle Boudreau ♦ dboudreau@trnerr.org

Website:

http://www.trnerr.com/currv/

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