

# TOOLS SELECTION

# What is a Tool?

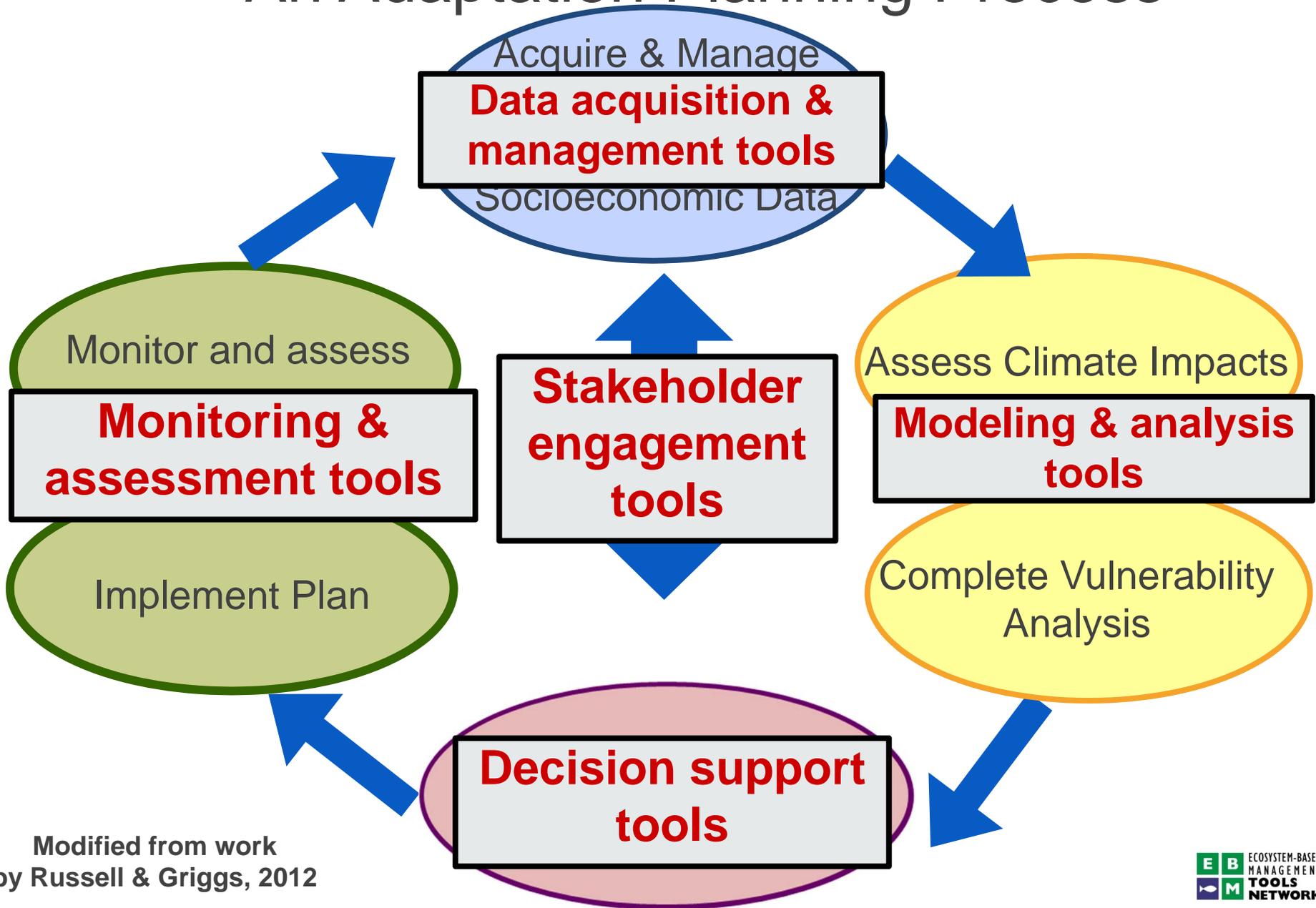
- Documented guidance – how do I do this?
- Data portal – get the information I need
- An interaction device - civic engagement to get the feedback I need
- Model – represent this process
- Decision support system – integrate many data and models to represent a system

## Roles for Tools

The complexity of this work cannot be accomplished without them

- Gathering & managing information
- Conducting advanced spatial analyses and modeling
- Scenario “what if” testing
- Visualization
- Facilitating work across sectors and ecosystems

# An Adaptation Planning Process



Modified from work  
by Russell & Griggs, 2012

# RVAA Process Steps

Crist et al., 2012

## Step 1 Characterization

Policy framework  
Resource Inventory

## Step 2 Prioritize Issues

Resources List  
Mission-Critical Infrastructure List  
Stressors List  
Regional context assessment  
**Tools: Gap Analysis (GIS)**

## Step 3 Data Needs

Sources and Costs  
Availability and Timing  
**Tools: data portals, e.g., DataBasin, Climate Wizard**

## Step 4 Current Conditions

Resource distribution  
Scenario Development Management  
Stressors  
**Tools: Maxent, NatureServe Vista, Envision, HPP**

## Step 5 Forecasts

Scenario Development  
Stressors (future growth, development proposals, climate change)  
**Tools: Visioning, NatureServe Vista, SLAMM, Community Viz, Maxent, VDDT**

## Step 6 Evaluate Effects

Issues, Opportunities, and Conflicts  
**Tools: NatureServe Vista, N-SPECT, VDDT, HPP**

## Step 7 Strategies

Concepts and lists for actions to mitigate undesired effects  
Adaptation  
**Tools: Miradi, NatureServe Vista**

## Step 8 Inform Alternatives

For new or revised plans  
**Tools: NatureServe Vista, Marxan, CommunityViz, N-SPECT, VDDT**

Example of a process tool but coupled with technical tools



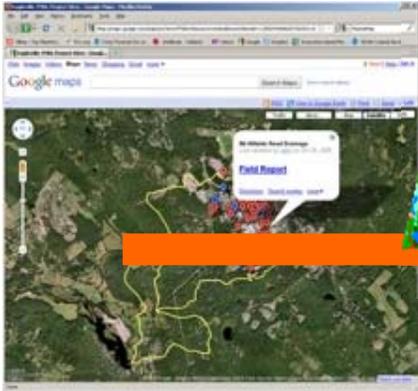
MANAGER'S GUIDE TO  
REFUGE VULNERABILITY ASSESSMENT  
& ALTERNATIVES:  
OVERVIEW AND PRACTICAL CONSIDERATIONS

Final Draft  
June 2012

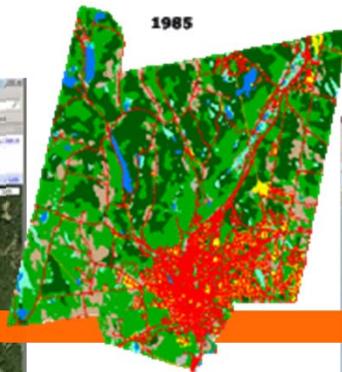


# Technical Tool Categories:

**Visualization  
Tools**



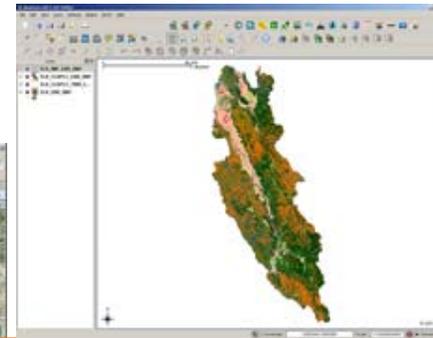
**Web-based  
Tools**



**GIS-based  
DSTs**



**Models**

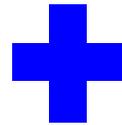
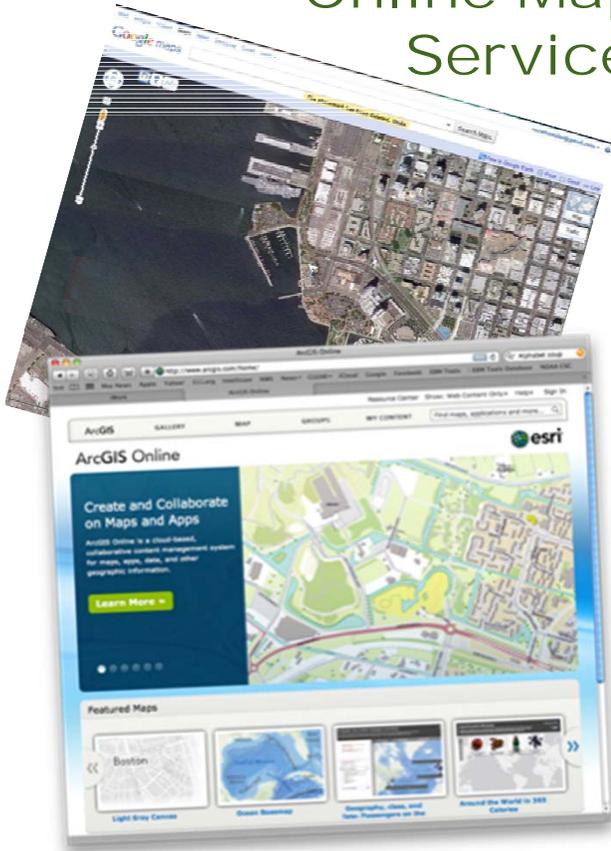


**Toolkits**



# Starting Simple: Online Mapping and “Mashups”

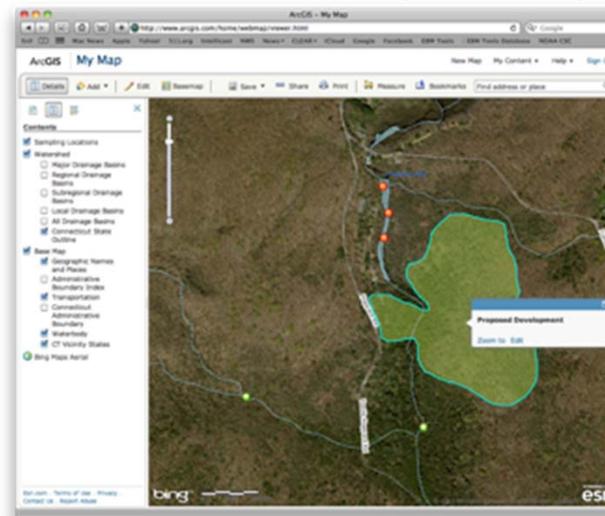
Online Mapping Services



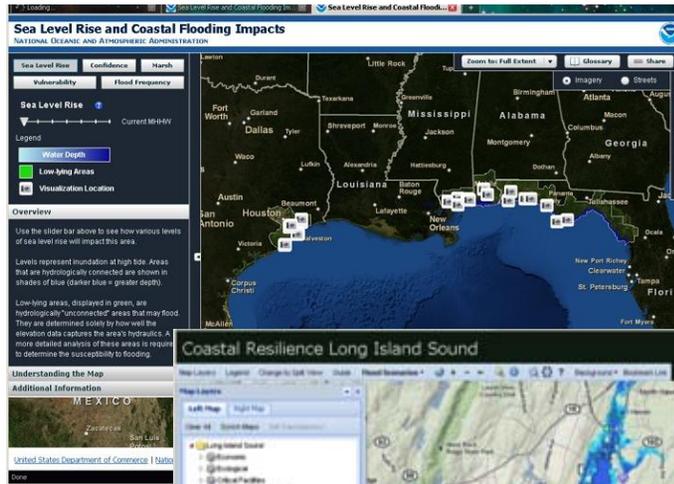
Your Data



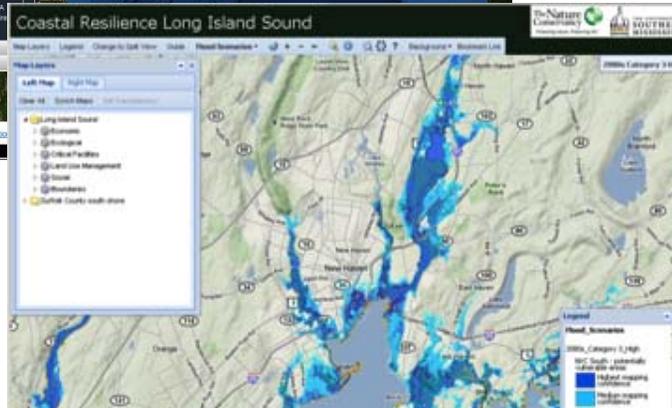
New “Mashup” Map



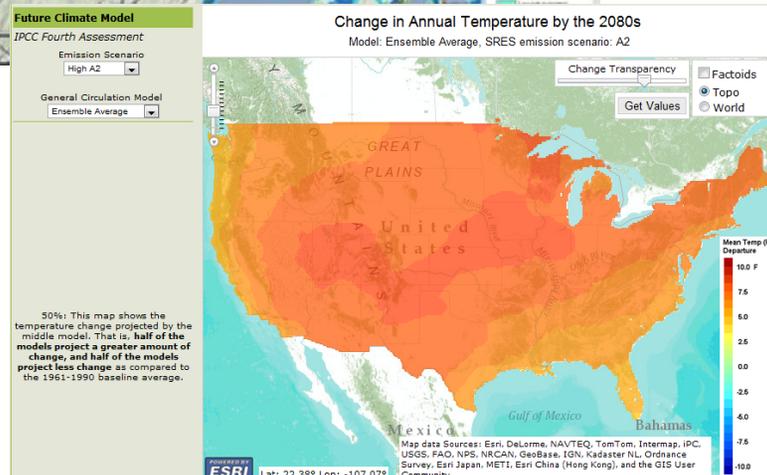
# Web-based Tools



**SLR and Coastal Flooding Impact Viewer**  
(NOAA CSC)  
Geographic Focus: National



**Coastal Resilience**  
(The Nature Conservancy & Partners)  
Geographic Focus:  
Regional/Local (LIS, GOM,  
Florida Keys, Ventura area in CA)



**Climate Wizard**  
(TNC, U. Washington, U. So. Mississippi)  
Geographic Focus:  
US/Global

# Pros & Cons of Web-Based Tools

## Pros

- Easy to start: its all been done for you
- Usually easy to use: good interfaces and limited options

## Cons

- Often limited to pre-run packaged analyses
- Usually limited to its data, can't integrate local data
- Often can't readily save and download data and your results for further work

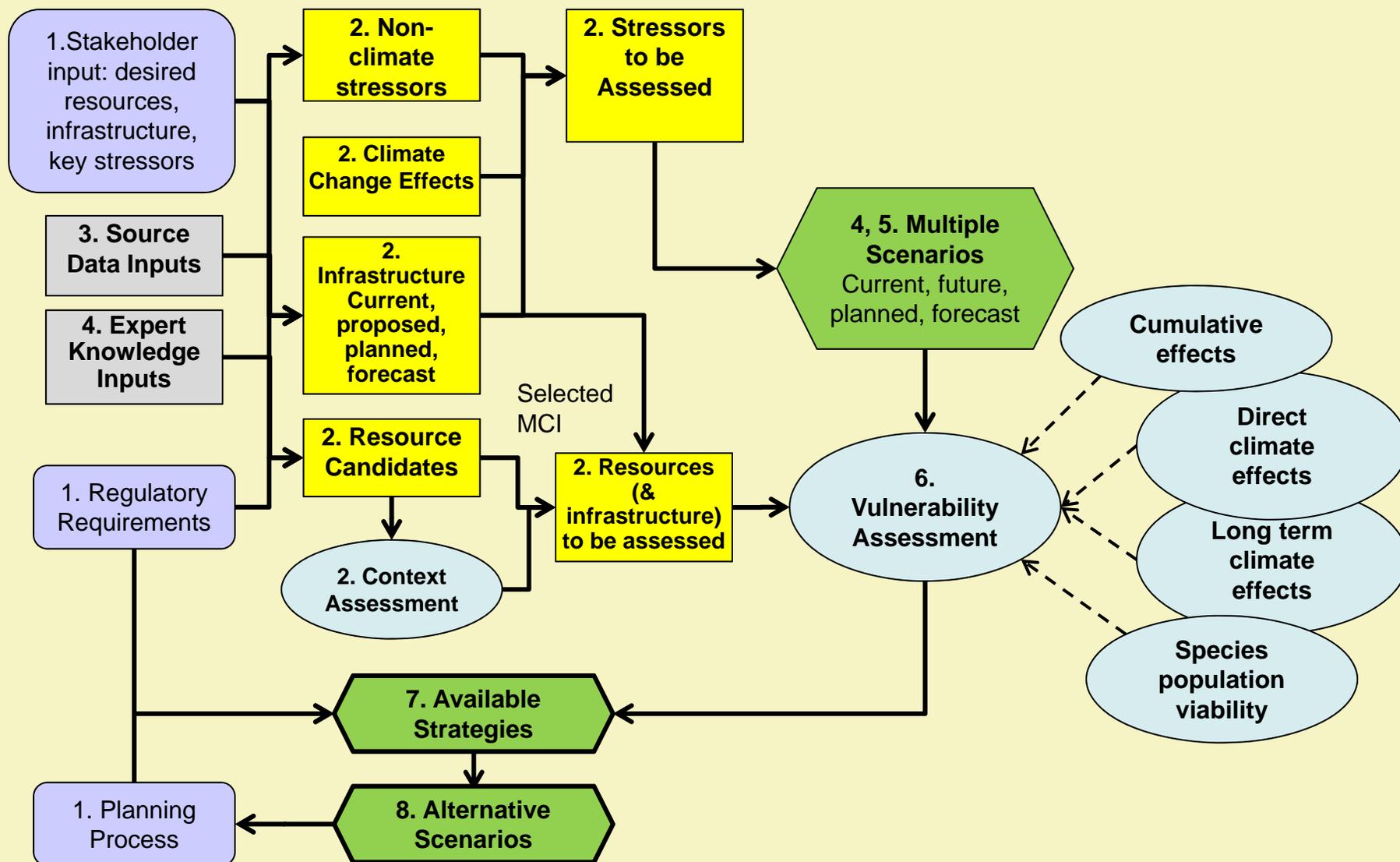
**SO YOU WANT TO DO MORE  
YOURSELF?**

# Steps in Assembling a Toolkit

1. Produce an information workflow that supports your project objectives & decision product needs
2. Search & select tools that can produce the needed products from available data
3. Filter selection for tools that meet your resource/capacity
4. Try to pick tools that are able/proven to work together if possible

# Information Workflow for RVAA Process

Context; Time, Funding, Geography, Policies, Leadership, Current efforts, etc



# Challenges in choosing & using tools

Complicated & confusing to find the right tool

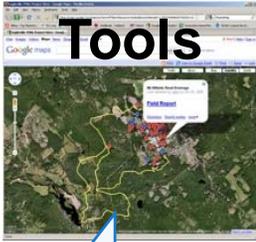


Require considerable capacity, learning more than a few tools is hard!

Integrating information & results across tools can be challenging

Factors to Consider:

Visualization

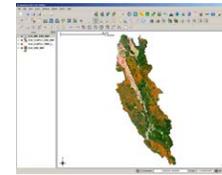


Tools



Web-based  
Tools

GIS-based  
DSTs



Models

Toolkits



FUNCTIONALITY

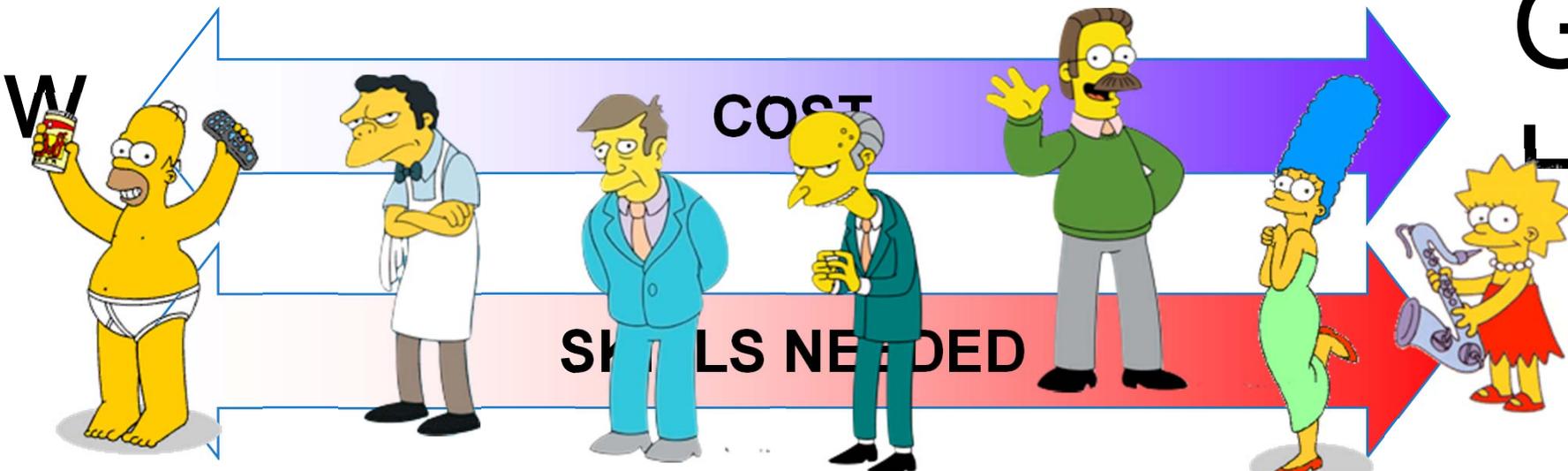
LEARNING CURVE

COST

SKILLS NEEDED

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## For the Serious DIY: Toolkits

- Planning projects have diverse needs and issues
- Generally not a single, one-size-fits-all tool available
- Still, there are many tools that can address parts of your needs, SO....

I built my toolkit in just one weekend!

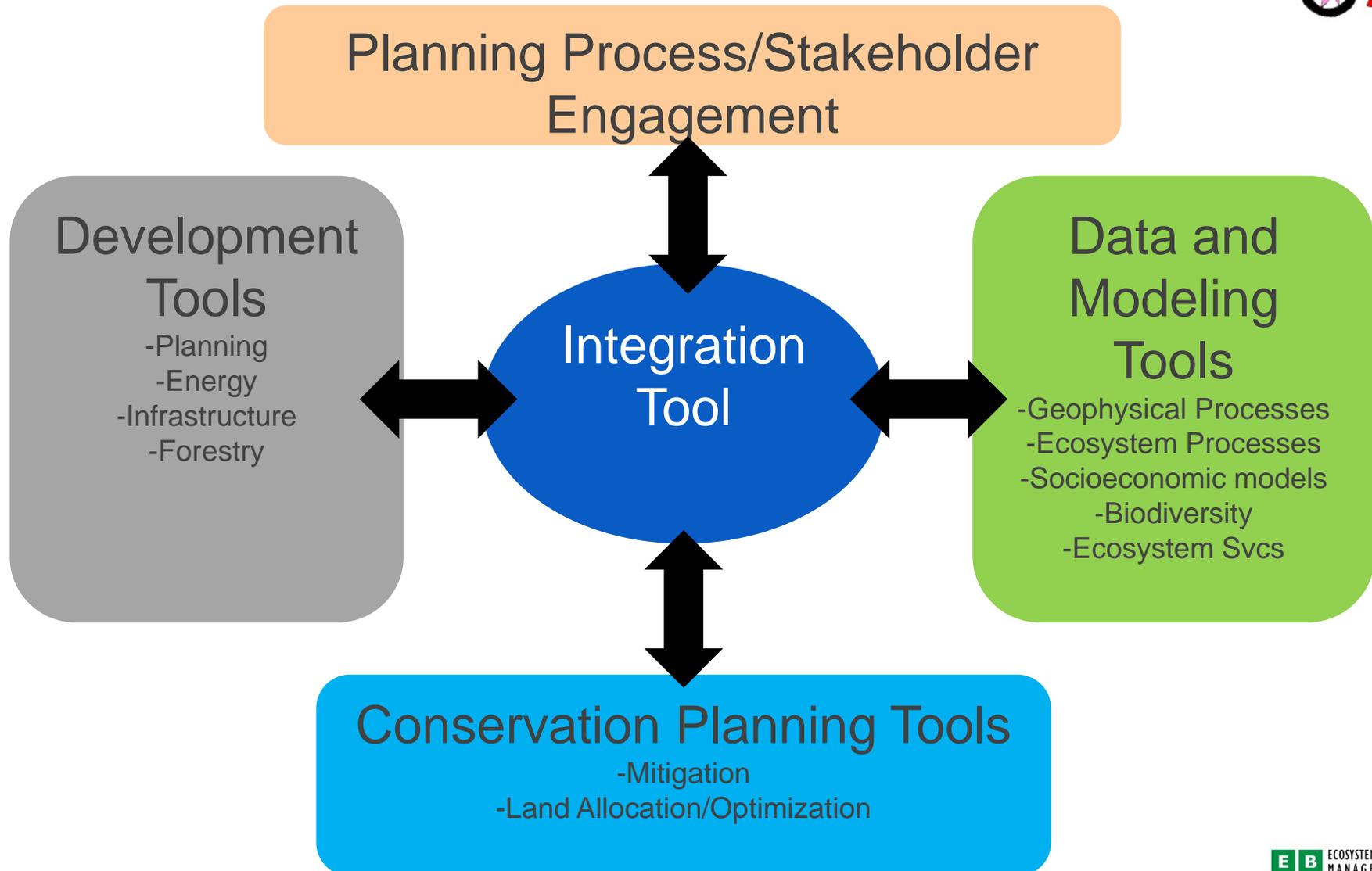


Linking groups of tools through an interactive process gives the flexibility to address an almost unlimited number of issues, with existing tools.





# Toolkit Structure



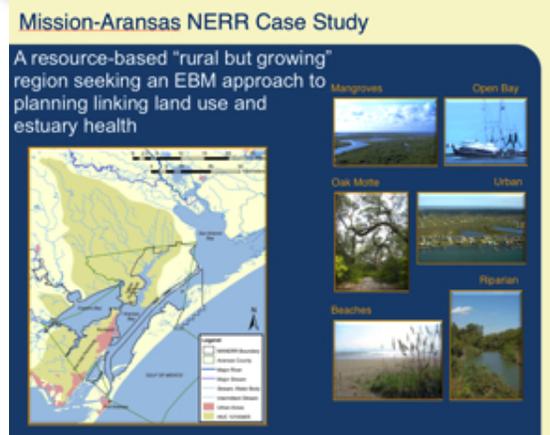


## Integrated Planning for Resilient Communities

Berkeley-Charleston-Dorchester, SC

### Function:

Supports integrated hazard- and ecosystem-based land use planning

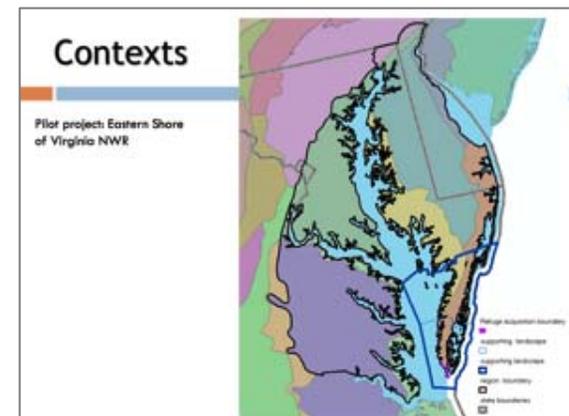


## Integrated Land-Sea Planning Toolkit

Mission-Aransas NERR, TX

### Function:

DST to assess the effects of urbanization on water quality and biodiversity



## Refuge Vulnerability Assessment Toolkit

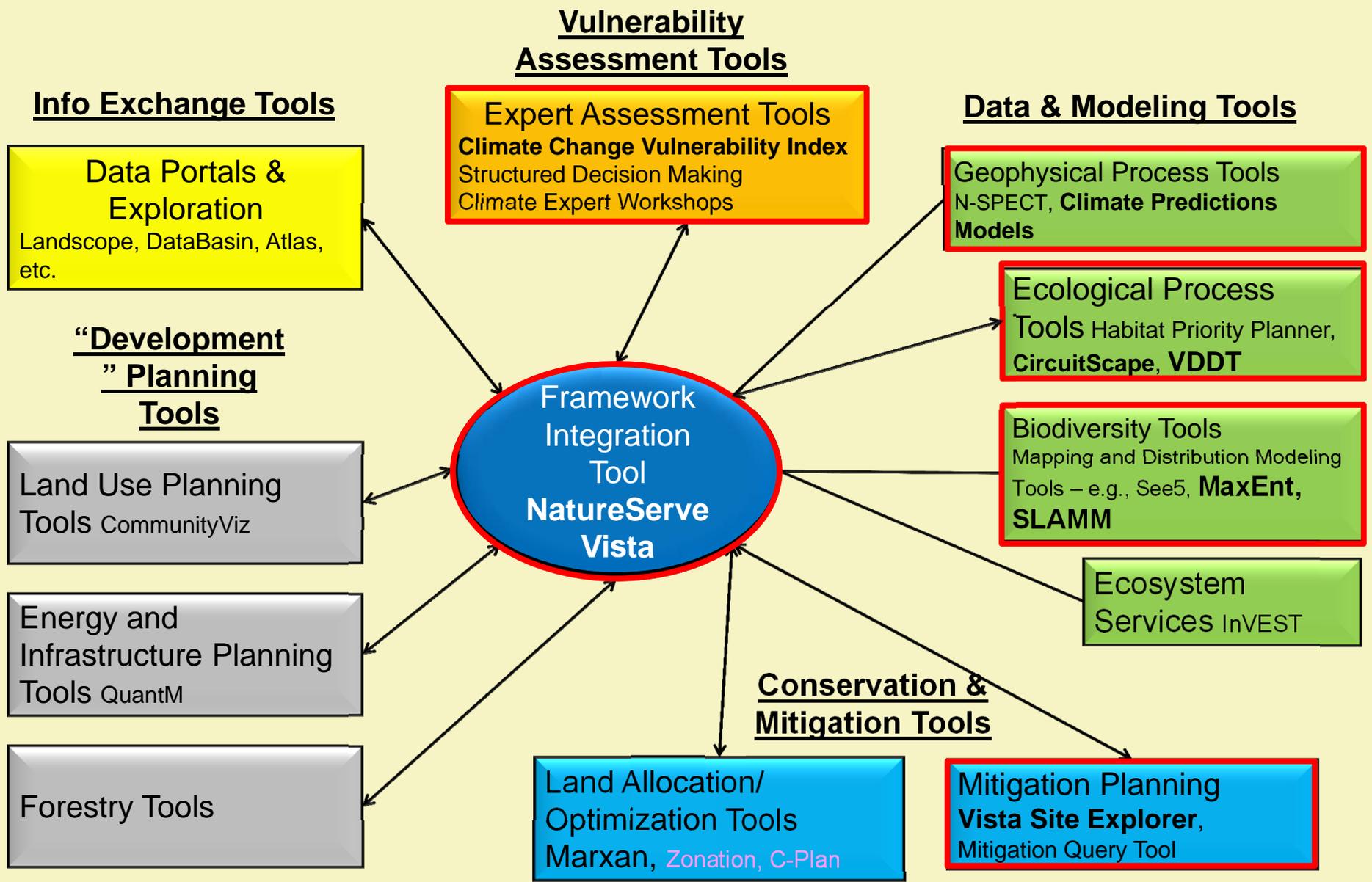
VA, NV, CA

### Function:

Cumulative effects assessment for wildlife refuges and evaluate management scenarios

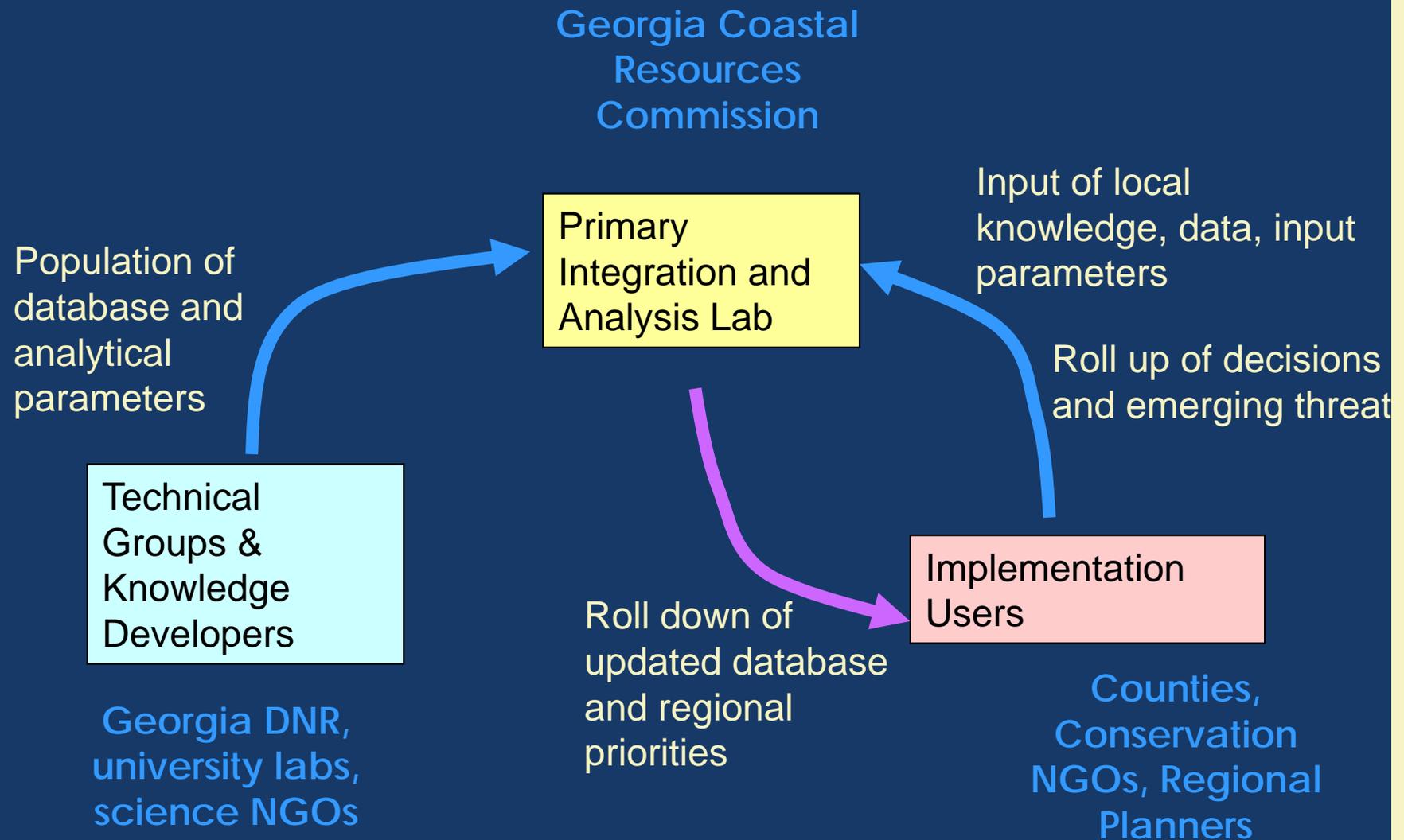


# RVAA Pilots Toolkit



# How to integrate tools & users into a network

## Georgia coastal region example (proposed)



# Tool Resources



ebmtools.org



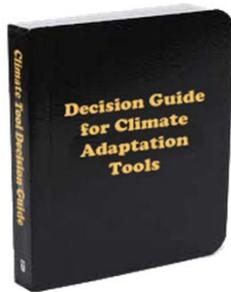
<http://www.csc.noaa.gov/digitalcoast/>

**Tools for Climate Change Adaptation Planning (California)**

Tool Name	Adaptation Planning Tool (APPT)	CEMRA (Community-based Risk Screening Tool - Adaptation and Resilience)	NOAA CSC Coastal Foundation Toolkit	NOAA CSC Roadmap	Ecosystem-Based Management Tools Network	Digital Coast	
<b>Tool Type</b>	Process	Process	Process	Process	Tool Portal	Data and Tool Portal	
<b>Description</b>	Applies various risk analysis methods to assess the impact of climate change on the community and identify the potential of existing and future adaptation and resilience planning efforts.	CEMRA provides a system where to assess the impact of climate change on the community and identify the potential of existing and future adaptation and resilience planning efforts.	NOAA CSC Coastal Foundation Toolkit provides a set of resources to help coastal communities assess their vulnerability to climate change and develop adaptation and resilience planning efforts.	NOAA CSC Roadmap provides a set of resources to help coastal communities assess their vulnerability to climate change and develop adaptation and resilience planning efforts.	A Network of tool providers and practitioners that work to bring conceptual and other tools into planning processes. At the EBM Tools Network website, you can find a variety of information including: practitioners, authors and links to core studies.	Digital Coast is a data and tool portal provided by NOAA Coastal Services Center. The Digital Coast also provides the tools, videos, and information needed to help you find the information most needed by coastal resource management professionals. All tools and data provided in Digital Coast is freely available.	
<b>Risk Features</b>	Process	Process	Process/Procedures	Process	Tool Portal	Data and Tool Portal	
<b>USE Level</b>	Low	Low	Medium to High	Low	Low	Low	
<b>Developer</b>	NOAA Coastal Services Center	NOAA Coastal Services Center	NOAA Coastal Services Center	NOAA Coastal Services Center	EBM Tools Network	NOAA Coastal Services Center	
<b>Price</b>	Free	Free	Free	Free	Free	Free	
<b>Additional Software Needed</b>	NA	NA	ArGIS, Word, other geographic enable	NA	NA	NA	
<b>Link</b>	<a href="http://www.ebmtools.org/">http://www.ebmtools.org/</a>	<a href="http://www.cemra.org/">http://www.cemra.org/</a>	<a href="http://www.noaa.gov/coastal/foundation/">http://www.noaa.gov/coastal/foundation/</a>	<a href="http://www.noaa.gov/coastal/roadmap/">http://www.noaa.gov/coastal/roadmap/</a>	<a href="http://www.ebmtools.org/">http://www.ebmtools.org/</a>	<a href="http://www.dcoast.noaa.gov/">http://www.dcoast.noaa.gov/</a>	
<b>Adaptation</b>							
- Strategic Planning	x	x	x	x			
- Data	x	x	x	x			
- Assess Vulnerability	x	x	x	x			
- Assess Risk	x	x	x	x			
- Develop Plan	x	x	x	x			
- Implement Plan	x	x	x	x			
- Monitoring	x	x	x	x			
- Engage Stakeholders	x	x	x	x			

The original version of this sheet was created by the Ecosystem-Based Management Tools Network and the Sea Grant using National Estuarine Research Reserve. More information and links to tools can also be found on the related EBM Tools page: <http://ebmtools.org/>

## Climate Tools Matrix



## Climate Tools Decision Guide (Coming in 2013)