

Tools for Coastal-Marine Ecosystem-Based Management

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EBM Tools Program



EBM/EAM

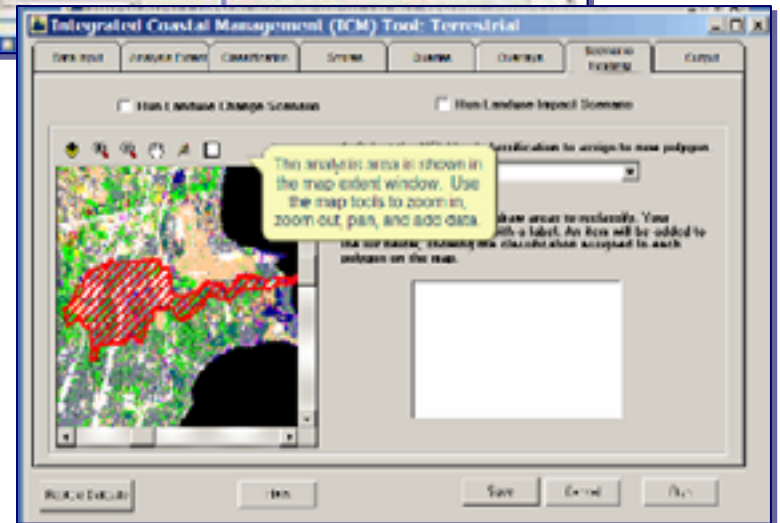
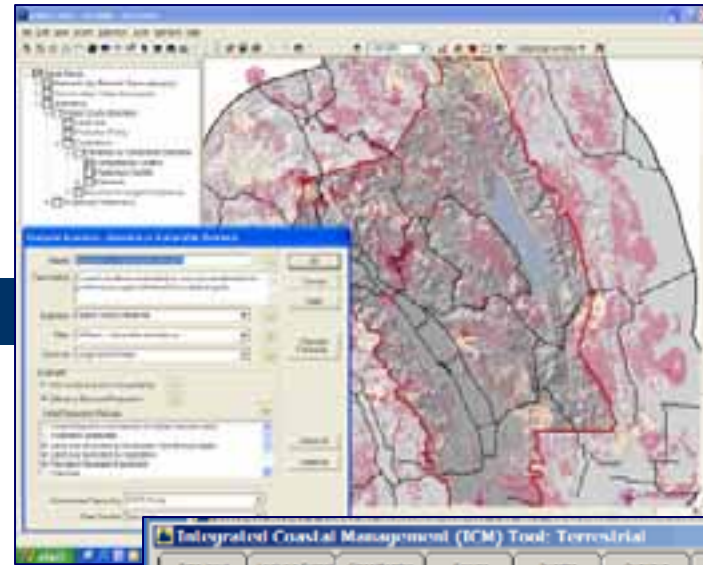
- Accounts for ecological, social, and economic goals
- Considers ecological boundaries, not just political
- Uses adaptive management
- Incorporates understanding of ecosystem processes
- Accounts for uncertainty
- Engages multiple stakeholders in collaborative process



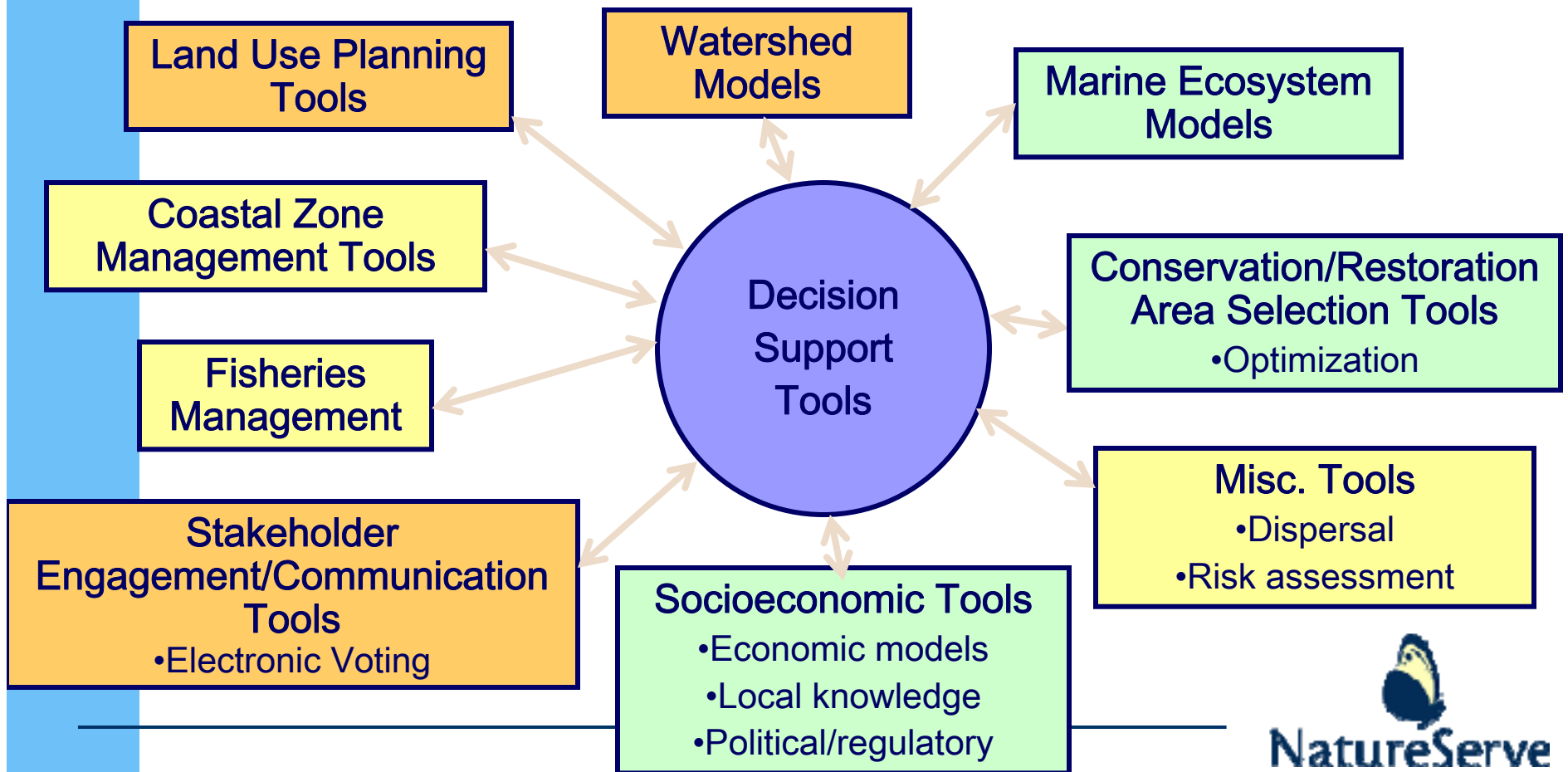
Photo by Kip Evans, Courtesy of MBNMS/NOAA

EBM Tools

- Software
- Goals:
 - Account for science AND stakeholder values
 - Deal with multiple, competing objectives



Interoperability not “super-tool”



Where Tools Can Help

Preparation

- Synthesize scientific understanding of ecosystem function

Set goals

- Define elements to be managed
- Characterize element viability requirements
- Characterize community goals for economic and social development
- Establish quantitative management goals

Draft Management Plan

- Generate management scenarios
- Facilitate stakeholder visualization of scenarios
- Incorporate stakeholder feedback into scenarios
- Facilitate stakeholder voting on alternative management options



NatureServe EBM Tools Survey

the David &
Lucile Packard
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Methodology for 2004 Survey

- Developed draft EBM framework to determine tool functionality needed
- Identified currently-available software tools useful for EBM in coastal and marine environments
 - Other tool surveys
 - Web searches
 - Interviews with developers
- Created tools database (> 100 tools)
- Prioritized tools based on breadth, uniqueness, proven usefulness, sustainability
- Results available at www.natureserve.org/prodServices/ebm

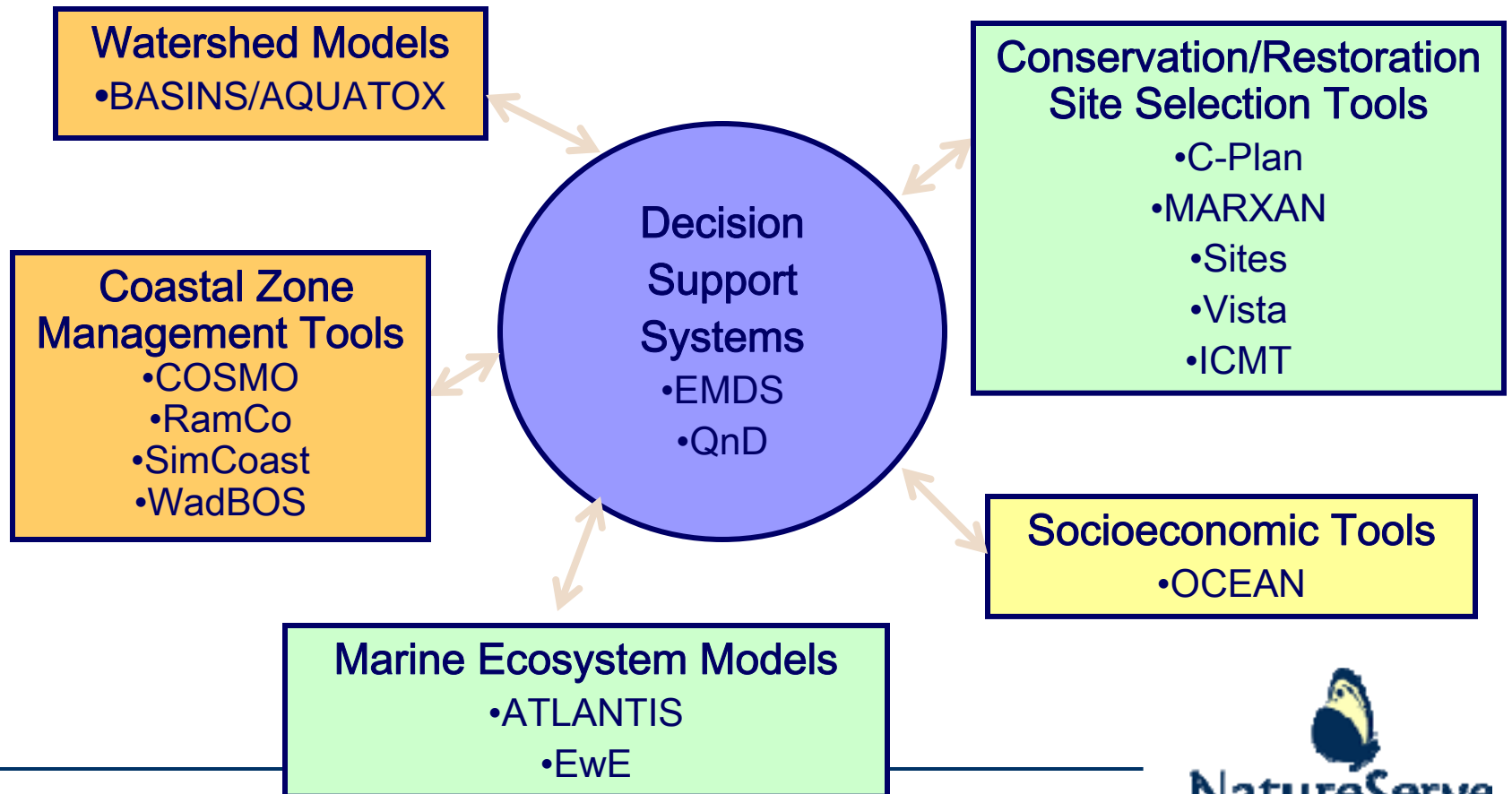
Survey Results

- Good news
 - Lots of tools and interest in tools
 - A lot of functionality out there
 - Most tools claim transferability among scales and geographic regions
- Bad news?
 - Lots of great tools lack sound business plan and are out-dated
 - Lots of tools very specific
 - Lots of gaps in functionality



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Preliminary Priority Tools



Tool Gaps

- Incorporate socioeconomic data and goals
 - Economics
 - Diverse stakeholder objectives
 - Political environment
 - Regulatory hurdles
- Account for land-sea interaction
- Include confidence/uncertainty estimates
- Provide monitoring and adaptive management support
- Help mine and process data
- Designed for long-term, widespread use
- Framework tools that link diverse tools and support EBM implementation



Photos by Steve Spring, Palm Beach County Reef Rescue and Reuven Walder, SPAWN

Next Steps

- Add other relevant tools to database
- Verify tool information with developers
- Serve database on web
 - www.placematters.com
- Forum for user feedback on tools
- Refine EBM process model
- Match tools to EBM process model and specific policy questions

PLACEMATTERSTOOLS.COM

Here are the items we found that matched your criteria:
 A B C D E F G H I J K L M N O P Q R S T U V W X Y Z
 Click on the name of any tool to see details.

	Tool ArcGIS 3D Analyst
Description	ArcGIS 3D Analyst is an extension to ArcGIS. It allows you to perform very intensive and analyze surface data using ArcGIS 3D Analyst, you can view a surface from
Website	http://www.esri.com/software/arcgis/extensions/AboutArc3DAnalyst.htm
	Tool CityGreen
Description	A Geographic Information System (GIS) software program for mapping, measuring, and analyzing urban systems. The program consists of three main modules:
Website	http://www.cityfor.org
	Tool Community Image Survey
Description	Based on the visual preference survey developed by architect Aron Levinson, the Community Image Survey is a very effective tool for activating and measuring
Website	http://www.lgc.org/
	Tool CommunityViz - Community Planning and Simulation Software
Description	CommunityViz, from The Green Party Foundation, is transforming the way land-use planning decisions are made. CommunityViz offers an innovative suite of
Website	www.CommunityViz.com
	Tool DELTA
Description	The DELTA model projects changes in urban areas, including changes in the location of households, activities, employment and the amount of road estate

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Planning Process Road Map

Different tools support different stages of community decision making. Below is a list of some of the *different* stages of a typical planning process(1). Click any of the links below to see which tools support that stage of the process.

1. **Engage Stakeholders** – problem identification, determine "big picture" issues and goals, establish measures of success (indicators)
2. **Develop Process** – define process for project implementation
3. **Inventory Conditions** – create data infrastructure to support project (data needs, available data, collecting additional data), identify existing conditions
4. **Analyze Trends** – uncovering and analyzing trends and projections
5. **Explore Design Options** – seek design solutions to problems, form options to address identified goals and issues
6. **Assess Impacts** – direct and indirect impacts from alternative actions including: fiscal, environmental, socio-economic, traffic
7. **Prioritize Options** – through public input and analysis, choose among alternatives
8. **Implement Plan** – utilize implementation tools
9. **Monitor and Update** – set up a monitoring program for goals & policies, update continually

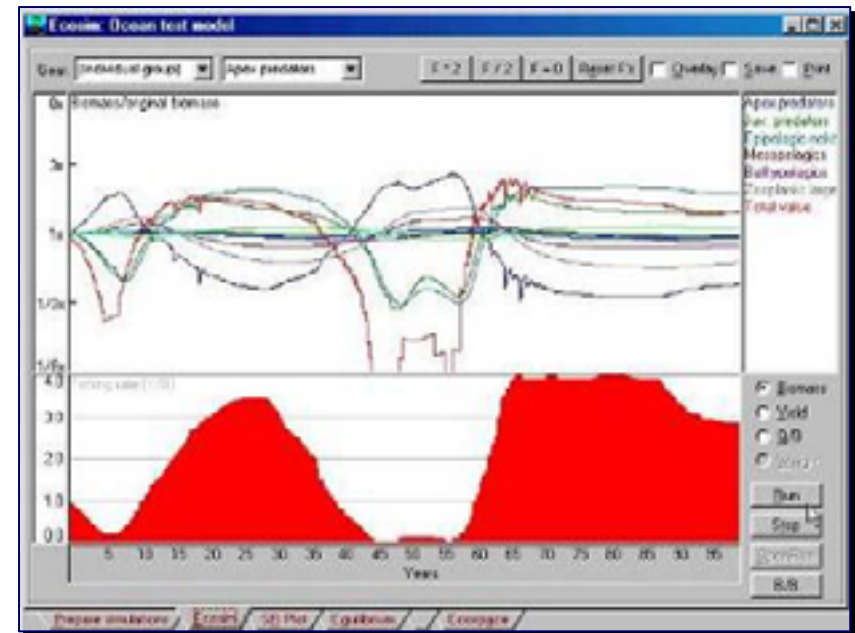
PlaceMattersTools
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Next Steps for Priority Tools

- Finalize list
- Interview developers to learn about plans for tools
- “Lift up the hood” engineering analysis
- Interview previous users to learn about usability
- Work with willing tool developers to develop suite of interoperable tools for EBM implementation



EBM Tools Network

Developing and supporting tools for EBM in coastal and marine environments

the David &
Lucile **Packard**
FOUNDATION


NatureServe
A Network Connecting Science With Conservation

*The Nature
Conservancy.* 
SAVING THE LAST GREAT PLACES ON EARTH


CONSERVATION
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NICHOLAS SCHOOL OF THE
ENVIRONMENT AND EARTH SCIENCES
DUKE UNIVERSITY


NCEAS

- NOAA Fisheries
- NOAA Ocean Service



NOAA Coastal Services Center
LINKING PEOPLE, INFORMATION, AND TECHNOLOGY


BIOGEOGRAPHY TEAM



Other Activities



Courtesy of April
Baker, Chesapeake
Bay VA
NERR/NOAA

- Developing guidelines for tool engineering, sustainability, interoperability
- Developing EBM tool and project evaluation methodology
- Develop EBM tools training and toolkits
- Provide support for tool use in on-the-ground EBM projects
- www.ebmtools.org
 - Launched in September
 - Information about EBM, tools database, and links to data training info, and other resources

More Information

- Contact me:

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- www.natureserve.org/prodServices/ebm

