

## **Environmental Sensitivity Index Mapping**

he most widely used approach to sensitive environment mapping in the United States is NOAA's Environmental Sensitivity Index (ESI). This approach systematically compiles information in standard formats for coastal

shoreline sensitivity, biological resources, and humanuse resources. ESI maps are useful for identifying sensitive resources before a spill occurs so that protection priorities can be established and cleanup strategies designed in advance. Using ESIs in spill response reduces environmental consequences of the spill and cleanup efforts.

Sensitive environment mapping must be an integral component of overall spill planning. Sensitivity maps are not an end in themselves; rather, they are a starting point for prevention, planning, and response actions. The resource definitions in

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NOAA's sensitivity maps provide guidance for local organizations developing spill plans. Manuals such as the Mechanical Protection Guidelines, the Shoreline Assessment Manual, and the Shoreline Assessment Job Aid are examples where the ESI definitions are the basis for effective, site-specific planning.

## **ESI Data Formats**

Hard Copy Maps ESI data are published as 11"x17" laminated maps, bound in an atlas that

covers a logical geographic region. Due to production costs and the cumbersome nature of this format, these atlases have a fairly limited distribution. However, individual maps can be ordered from the Office of Response & Restoration, or printed from the PDFs described below.

**Portable Document Format Maps** ESI maps are also available on CD/DVD in portable document format (PDF), allowing users to print multiple copies of an area of interest or individual map pages at varying scales. In addition, the PDFs include links that allow users to navigate from the index page to the area of interest and from there to the "back of the map," where seasonality and species details are listed. The atlas also includes introduction pages containing representative photos with shoreline descriptions and response considerations.

Free ESI Viewer The ESI Viewer is a freeware mapping and database engine that allows viewing, printing, and simple queries of the ESI data. The Viewer runs on Windows or Macintosh platforms and allows users without access to other mapping software an opportunity to explore the digital vector ESI data. ESI atlases available in the Geodatabase format have an updated ESI Viewer that runs on Macintosh OS-X and Windows Vista platforms, as well as Windows 2000 or Windows XP. Atlases not yet available in the Geodatabase format run only in Classic mode on the Macintosh and are not compatible with Windows Vista.

**ArcView 3.x Project** An ArcView 3.x project and the supporting shape files are also available. Each major data element corresponds to a theme with links to a comprehensive flat file data structure. As with the ESI Viewer, layers are color coded to match the standard ESI data format. The shape files may be used with this project in order to take advantage of the preset database links, or they can be imported into other projects or software that support the shape file format.

**MOSS Formatted Files** All ESI data layers are also provided in a MOSS file format. This is a simple ASCII format that can be imported directly into a MOSS GIS system or is suitable for writing translators to bring the data into other mapping software.

**.E00 Files** ESI data are provided in their native, double-precision ESRI format as .e00 files. These files, along with the relational database files provided, are used to produce the hard copy atlas.

**Geodatabase** Newer ESI atlases are also published in a Geodatabase format along with an .mxd file that displays the data in ArcMap 9.x using standardized ESI colors and symbology. Links to the data tables are established within the .mxd. A number of ESI tools have been developed to ease searches and queries on the tables by attribute and/or by geography. These tools are provided on the ESI CD/DVD. However, it is recommended that the most recent versions and/or additions be downloaded from http://response.restoration.noaa.gov/esitoolkit. Older atlases are routinely being updated to this format. Check the ESI availability page to see updates to the status given on the back of this page.

## **How to Get ESI Data**

Order ESI CDs, DVDs and/or hard copy maps at: http://response.restoration.noaa.gov/esi\_getesi

ESI CDs and DVDs may also be downloaded from the NOS Data Explorer site. Detailed instructions for download are available at the above link, or proceed directly to the Data Explorer site: http://nosdataexplorer.noaa.gov/

For additional information about ESI data go to: http://response.restoration.noaa.gov/esi or write: orr.esi@noaa.gov



## **Status of Our ESI Atlases**

Alabama/2007 Alaska: Aleutian Islands/2002 Bristol Bay/2004 Cook Inlet/Kenai Peninsula/2002 Kodiak Island & Shelikof Strait/1997 Norton Sound & Pribilof Is./1983 Prince William Sound/2000 SE Alaska/1992/2001 No. Slope/Chukchi/2005 NW Artic/2002			•	•	•	•	•
Aleutian Islands/2002 Bristol Bay/2004 Cook Inlet/Kenai Peninsula/2002 Kodiak Island & Shelikof Strait/1997 Norton Sound & Pribilof Is./1983 Prince William Sound/2000 SE Alaska/1992/2001 No. Slope/Chukchi/2005 NW Artic/2002			•	•	:	•	•
Bristol Bay/2004 Cook Inlet/Kenai Peninsula/2002 Kodiak Island & Shelikof Strait/1997 Norton Sound & Pribilof Is./1983 Prince William Sound/2000 SE Alaska/1992/2001 No. Slope/Chukchi/2005 NW Artic/2002			•	•	•	•	•
Cook Inlet/Kenai Peninsula/2002 Kodiak Island & Shelikof Strait/1997 Norton Sound & Pribilof Is./1983 Prince William Sound/2000 SE Alaska/1992/2001 No. Slope/Chukchi/2005 NW Artic/2002	•		•	•	•	•	•
Kodiak Island & Shelikof Strait/1997 Norton Sound & Pribilof Is./1983 Prince William Sound/2000 SE Alaska/1992/2001 No. Slope/Chukchi/2005 NW Artic/2002	•		•	•	•	•	•
Norton Sound & Pribilof Is./1983 Prince William Sound/2000 SE Alaska/1992/2001 No. Slope/Chukchi/2005 NW Artic/2002	•	•	•	•	•	•	•
Prince William Sound/2000 SE Alaska/1992/2001 No. Slope/Chukchi/2005 NW Artic/2002	•	•	•	•	•	•	•
No. Slope/Chukchi/2005 NW Artic/2002	•	•	•	•	•	•	
NW Artic/2002	•	•	•	•		-	
*	•	•	•		•	•	•
	•	•		•	•	•	•
Western Alaska/2003			•	•	•	•	•
American Samoa/2004 California:	•	-	•	•	•	•	•
No. California/1994		•		•			
So. California/1995	•	•	•	•	•	•	•
Central California/2006	•	•	•	•	•	•	•
San Francisco Bay/1998	•	•	•	•	•	•	•
Connecticut/2001	•	•	•	•	•	•	
Delaware, New Jersey*, Pennsylvania/1996	•	•	•	•	•	•	
Florida:							
Apalachicola River/1984						•	
East Florida/1996 South Florida/1996						:	•
St. Johns River/1997	•					•	•
West Florida/1995	•					•	•
West Peninsular - 1/1996	•					•	•
West Peninsular - 2/1996	•					•	•
Georgia/1997	•	•	•	•	•	•	
Great Lakes:							
Lake Erie System/1985	•					•	
Lake Huron/1994	•					•	
Lake Michigan, Eastern Shore/1985 North Lake Michigan/1994						:	
South Lake Michigan/1994	•					•	
West Lake Michigan/1994	•					•	
Lake Ontario/1993	•					•	
Lake Superior/1994	•					•	
St. Lawrence River/1985	•					•	
Guam - CNMI/2005	•	•	•	•	•	•	•
Hawaii/2001	•	•	•	•	•	•	•
Honduras/2000	•	•	_	•	_	_	
Louisiana/2003 Maine EVI/2007**	:	•	•	•	•	:	•
Maryland/2007	•	•	•	•	•	•	•
Massachusetts/1999	•	•	•	•	•	•	
Mississippi/1995	•	•	•	•	•	•	•
New Hampshire/2004	•	•	•	•	•	•	•
New Jersey:							
Delaware, New Jersey*, Pennsylvania/1996	•	•	•	•	•	•	
New York-New Jersey Metropolitan Area/2001	•	•	•	•	•	•	
New York: Hudson River/2006							
Long Island/1985	•	•	•	•	•		•
New York-New Jersey Metropolitan Area/2001	•	•	•	•	•	•	
St. Lawrence River/1983						•	
St. Marys River/1986						•	
Nicaragua/2000	•	•		•			
North Carolina/1996	•	•	•	•	•	•	•
Oregon:							
Columbia River/2004	•	•	•	•	•	•	•
Outer coast/1986						•	
Pennsylvania:							
Delaware, New Jersey*, Pennsylvania/1996 Puerto Rico/2000	:					:	
Rhode Island/2001	•	•	•	•	•	•	-
South Carolina/1996	•	•	•	•	•	•	•
Texas - Upper Coast/1995	•					•	
U.S. and British Virgin Islands/2000	•	•	•	•	•	•	•
Virginia/2005	•	•	•	•	•	•	•
Washington:							
Columbia River/2004	•	•	•	•	•	•	•
Outer coast/1986			_			•	
Puget Sound and Strait of Juan de Fuca/2006  * New Jersey south of Barnegat Inlet.	•	•	•	•	•	•	•

<sup>\*</sup> New Jersey south of Barnegat Inlet.

\*\* product of the state of Maine and distributed by ORR

