ESI ATLASES

Online Guide

- How to use this online guide
- Files included on this CD-ROM
- How to navigate
- How to print ESI maps
- About ESI mapping
- About the producers of this CD-ROM

Click ➤ to go to section

ESI ATLASES

How to use this online guide

Contents

Page back or page forward

Previous view

Return to start of topic

Go to Contents

Go to Help (this page)

Go to next page

End of topic

ESI ATLASES

Files included on this CD-ROM

- Introduction and shoreline habitat photos
- Legend and how to interpret ESI maps
- Index map showing ESI map coverages
- Metadata

For more information about the contents of this CD-ROM, please continue.

Files included on this CD-ROM (cont.)

WIN_READ.TXT / MAC_READ.TXT. These Readme files explain that Acrobat Reader 3.0 must be installed before the contents of this CD-ROM can be viewed.

ACROBAT. This directory contains Adobe Acrobat Reader 3.0 software for three platforms: Macintosh, Windows, and UNIX. Instructions on downloading the Acrobat Reader are found in the Readme files under each platform directory.

Directory named according to state (e.g., CALIF, S_CAROL). This directory contains this Online Guide (GUIDE.PDF) and a directory called ESI_DATA which contains the Index map, ESI maps, Seasonality tables, associated Introduction and Legend files, and a technical file about the actual data used in the ESI maps.

Files included on this CD-ROM (cont.)

Within the ESI_DATA directory are the following files and sub-directories:

Introduction discussion (INTRO.PDF). This file is a text introduction to the ESI Atlas that explains the purpose and content of the atlas. It lists animal species in the area, gives contacts for human-use features such as parks and marinas, and describes the various shoreline habitats found in the area.

Legend of symbols used, and discussion on how to interpret ESI maps (LEGEND.PDF). This file tells what each color and symbol used in the ESI maps stands for and gives tips for interpreting the map information.

Files included on this CD-ROM (cont.)

Index map (INDEX.PDF). This file is a map of the entire state with the ESI map coverages outlined. The coverage boxes are linked to the screen resolution ESI map pages. Just click the box to jump to the associated ESI map.

Seasonality tables (SEASON.PDF). This file lists the seasonal species data associated with each ESI map. The table shows each species present in the area, whether they are on any State or Federal threatened or endangered species lists and the level of concern, which months the species is present, and the times of various life stages such as nesting or spawning.

The map titles at the top of the page are linked back to the actual ESI map, so to view the ESI map associated with the table, click the title.

Files included on this CD-ROM (cont.)

Screen-resolution ESI maps (LOWRES). This directory contains the 72-dpi screen resolution ESI maps. These are the maps that are accessed through the Index map and that are associated with the Seasonality tables.

The titles of these maps are linked to the Seasonality tables, so to see the seasonality data for a map, click on the map title.

High-resolution ESI maps (HIRES). This directory contains the 300-dpi ESI maps. They are the same maps as the 72-dpi maps except at a higher resolution. They were included so that high-quality printouts of the maps could be produced.

These maps are not linked to any of the other files.

Files included on this CD-ROM (cont.)

Document on how the data was compiled and digitized (METADATA.PDF). This file provides the technical documentation about the data shown on the ESI maps. It details the quality standards for the data, discusses how the spatial data was organized and referenced, and gives complete information about the entities and attributes portrayed on the maps.

How to navigate

Viewing the Index map. Click on the "Index map" text on the "Files Included on this CD-ROM" section of this guide. From there, you can link to the individual ESI maps by clicking in the coverage boxes.

Returning to the Index map. Click from the toolbar to return to the Index map from an ESI map. (NOTE: This button returns to the previous **view**, so if you zoomed into the ESI map, the button will return to the unzoomed view. Click the button again to return to the Index map.)

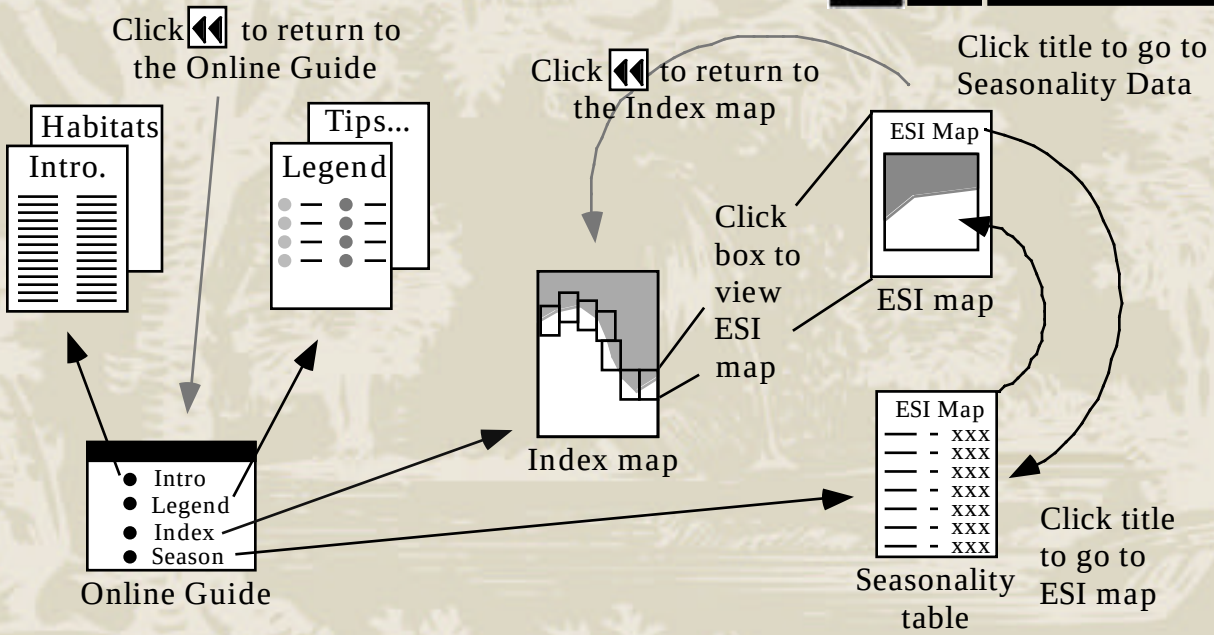
Viewing the Seasonality data. Click the title of the ESI map.

Returning to the ESI map. Click the map name at the top of the Seasonality table.

ESI ATLASES

How to navigate (cont.)

? Contents



For an alternate method of navigation where it is possible to keep multiple files open and to toggle between files using the Window menu, please continue.

Alternate navigation

Instead of using the button, there is an alternate way to navigate among all of the documents on this CD-ROM, but it requires you to change a preference in the Reader 3.0 application. Once this preference is set, multiple files can stay open at the same time. To toggle back and forth, you simply have to select the file you are interested in from the Window menu.

To change the preference:

- Go to the File menu and select Preferences
- Choose General
- In the dialogue box that opens up, **UNCHECK** the "Open Cross Document Links in Same Window" option.
- Select OK.

Once set, the preference will remain, so you will not have to open the dialogue again the next time you use this CD-ROM.

Alternate navigation (cont.)

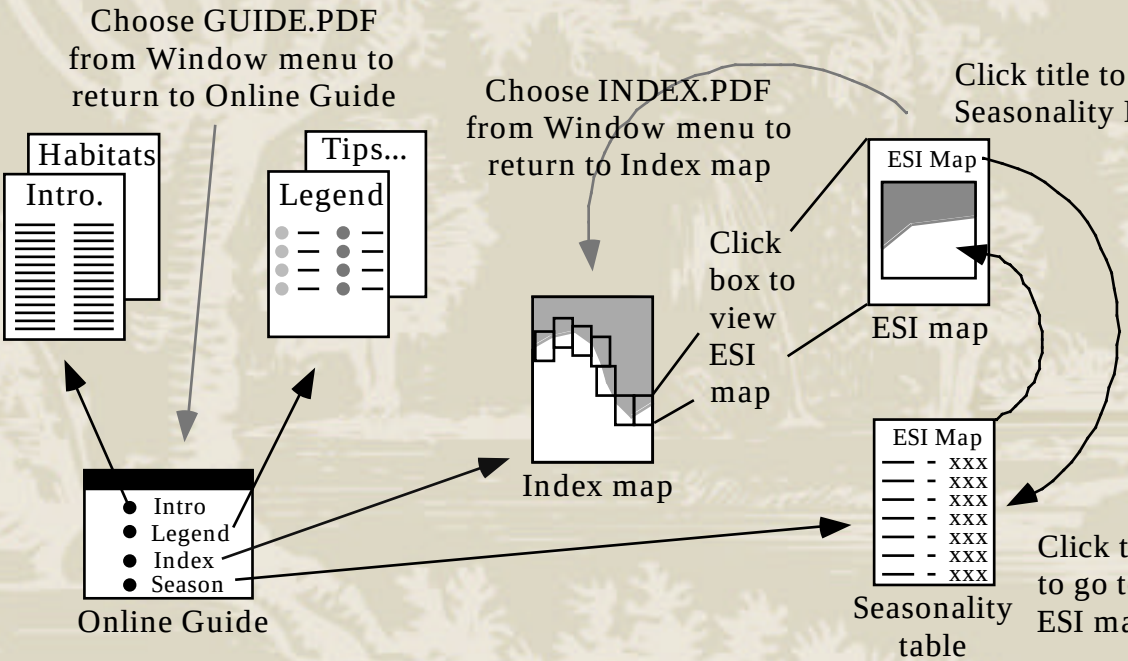
Viewing the Index map. Click on the "Index map" text on the "Files Included on this CD-ROM" section of this guide. From there, you can link to the individual ESI maps by clicking in the coverage boxes.

Returning to the Index map. Choose "INDEX.PDF" from the Window menu.

Viewing the Seasonality data. Click the title of the ESI map.

Returning to the ESI map. Click the map name at the top of the Seasonality table.

Alternate navigation (cont.)



How to print ESI maps

To print a page from this CD-ROM, open the file you wish to print and select "Print" from the File menu. (For higher quality prints, we recommend that you print from the high-resolution maps. See note on print quality.) These files can be printed on any Postscript® compatible printer. The maps are in 11"x17" format, so you will need to adjust the map size accordingly to fit your printer output. Select "Shrink to fit" or "Fit to page" from your Page Setup menu to automatically scale the map to paper sizes other than 11"x17".

How to print ESI maps (cont.)

The procedure for having the maps printed at a commercial printshop will vary depending on where you go. The computer that you use will need Acrobat Reader 3.0 (included on this CD-ROM). The computer must have the 3.0 version because using an older version will cause irregularities in viewing and printing.

In order to give you a general idea of what might be involved, here are the printing costs from a local printshop: We used a computer for 10 minutes, which cost $4.00. There was a one-time $10.00 charge for the use of another computer that was used to set up the print files for the color copier (which was the only machine with 11"x17" color printing capability). Then, each color copy cost $1.99, but this charge decreases with volume. So to print two pages was about $19.50 (incl. tax), or about $9.75 per page. To print 50 pages would have been about $125.00 (incl. tax), or about $2.50 per page.

Note on Print Quality

This CD-ROM includes a directory of high-resolution maps. They contain the same information viewed on-screen, except at a higher resolution. The on-screen views use the lower resolution maps because they open up faster. The higher resolution maps produce better quality prints, so we suggest that you print from these. The high-resolution maps are in a directory called "HIRES" inside the ESI_DATA directory inside the State directory. Please note that these high-resolution maps are not linked to Seasonality data.

About ESI mapping

The most widely used approach to sensitive environment mapping in the United States is NOAA's Environmental Sensitivity Index (ESI) approach. This approach systematically compiles information in standard formats for coastal shoreline sensitivity, biological resources, and human-use resources. The ESIs are an important tool in emergency spill response, where their use helps to reduce the environmental consequences of the spill and cleanup efforts.

About ESI mapping (cont.)

The primary objective of spill response in the United States, after protecting human life, is to reduce the environmental consequences of the spill and cleanup efforts. This objective is best achieved when ESI maps are used to identify the locations of sensitive resources before a spill occurs, so that protection priorities can be established and cleanup strategies developed in advance. Since their inception in 1979, ESI atlases have been prepared for most of the U.S. shoreline, including the Great Lakes, Alaska, Hawaii, and the Trust Territories.

About ESI mapping (cont.)

To be effective, sensitive environment mapping must be an integral component of overall spill planning activities. Sensitivity maps are not an end in themselves, rather they are a starting point for prevention, planning, and response actions. The definitions in the NOAA sensitivity maps provide guidance that local organizations use to develop plans. Recently published manuals, including the ***Mechanical Protection Guidelines*** and the ***Shoreline Countermeasures*** series for temperate, tropical, Arctic, and freshwater environments are examples where the ESI definitions are the basis for site-specific planning.

About ESI mapping (cont.)

There are three general types of information found in ESI maps: habitats ranked according to geomorphological characteristics, sensitivity to spilled oil, natural persistence of oil, and ease of cleanup; biological resources including oil-sensitive animals and plants, with information at the species level; and human-use resources, such as high-use amenity beaches, parks, and marine sanctuaries. The intertidal habitat ranking scheme is based on an understanding of the complete coastal environment, not just the substrate type and grain size. Key to the rankings is an understanding of the relationships between physical processes and substrates that produce specific geomorphic shoreline types and predictable patterns in oil behavior and sediment transport patterns. The habitat ranking system has been widely incorporated into spill decision-making aids including manuals, matrices, and planning documents.

About ESI mapping (cont.)

Recent work has focused on extending the original methodology for open coastal areas to inland rivers, and smaller ponds and streams. The strategy emphasizes standard map formats for electronic and hard-copy output. NOAA is undertaking a comprehensive program to provide electronic access to new ESI data and to existing data formerly available only as hard-copy maps. Our strategy is to make digital ESI data available on CD-ROM and via the Internet. Selected ESI atlases will be available in Portable Document Format for viewing and printing and in formats appropriate for use with Geographic Information System software.

About ESI mapping (cont.)

For more information about ESI maps, contact the Hazardous Materials Response and Assessment Division at:

NOAA / HAZMAT
7600 Sand Point Way N.E.
Seattle, WA 98115

E-mail: library@hazmat.noaa.gov

Or, visit the ESI Home Page at:
http://www-orca.nos.noaa.gov/projects/esi/esiintro.html

About the producers

- Hazardous Materials Response & Assessment Division

Departmento de Recursos Naturales y Ambientales

United States Coast Guard

United States Department of the Interior

United States Environmental Protection Agency

About the producers (cont.)

Hazardous Materials Response and Assessment Division

HAZMAT draws on two decades of experience in responding to oil spill emergencies and resolving the often longer-term problems presented by hazardous waste sites. Equally important are the advances that HAZMAT scientists have made in improving the state of knowledge about the best methods to protect the nation's coastal zone. These advances include HAZMAT's internationally recognized CAMEOâ program, used by 6,000 organizations worldwide; hydrodynamic and trajectory spill models that set a national standard for operational presentation of pollutant movement and spreading in the environment; a watershed-wide knowledge base; and ecological risk assessments that are critical to understanding the issues associated with protecting the environment effectively and for the long term.

About the producers (cont.)

HAZMAT's response to spill emergencies and waste site problems has given it a reputation for rapid, well-thought-out, yet cost-effective environmental protection decisions. Ultimately, HAZMAT strives to advance the state of knowledge about oil and hazardous materials interactions and effects in coastal environments by integrating response efforts with research, development, and international technology transfer.

Every year, millions of gallons of oil and other chemicals spill into U.S. waters, often caused by marine vessel accidents or leaked by hazardous waste sites across the nation into environmentally sensitive habitats. NOAA scientists work closely with Federal On-Scene Coordinators to respond to about 100 accidental spills and investigate the consequences of about 400 hazardous waste site releases each year.

About the producers (cont.)

In the last decade, major spill responses have included the 1989 *Exxon Valdez* spill in Prince William Sound; the 1995 *Morris J. Berman* spill off Puerto Rico; the *North Cape-Scandia* spill off the Rhode Island coast in the winter of 1996; and the barge *Buffalo 292* spill off Galveston. HAZMAT's expertise has also been sought internationally, ranging from the 1978 *Amoco Cadiz* spill off France, the 1991 Arabian Gulf oil well fires and oil spill, the *Katina P* grounding off Mozambique in 1992, to the *Wellborn* spill off Madagascar in 1994.

As with its spill response efforts, HAZMAT's waste site investigations encompass virtually every U.S. coast, including Trust Territories, the Great Lakes, the Gulf of Mexico, Alaska, and Hawaii.

About the producers (cont.)

The following is a selection of products and services that reflect HAZMAT activity in the pollution response and hazardous waste arena.

HAZMAT provides critical advice on science and other natural resource issues to the On-Scene Coordinator (OSC) during the Federal Government's responses to coastal oil and hazardous materials spills. Scientific Support Coordinators lead the HAZMAT team at spills, drawing on the team's spill trajectory estimates, chemical hazards analyses, and assessments of the sensitivity of biological and human-use resources to help the OSC make timely operational decisions.

What got spilled? Where will it go? What resources will it hit? How can the impacts be reduced? At each spill, HAZMAT's interdisciplinary scientific team strives to answer these questions by working with industry and local governments to select cost-effective, economically sound cleanup plans.

About the producers (cont.)

HAZMAT's unprecedented, multi-year *Exxon Valdez* spill response illustrates NOAA's unique ability to combine operational, real-time response with useful research. NOAA scientists were on-scene within hours after the *Exxon Valdez* spilled nearly eleven million gallons of crude oil into Prince William Sound, Alaska on March 24, 1989. NOAA's work in 1989 during the operational phase of the spill response laid the foundation for the ten-year shoreline impact studies that began in 1990. These studies evaluate intertidal and shallow subtidal habitat impacts from oiling and shoreline treatment, and assess the influence of oil and mechanical treatment actions on the nature and rate of shoreline recovery. Changes in the chemical properties of oil stranded on shorelines are also being investigated.

Each week, HAZMAT scientists apply the knowledge from this and other response research to help minimize the environmental consequences of spills.

About the producers (cont.)

HAZMAT works to redress environmental effects of hazardous waste sites on coastal and marine waters. HAZMAT coordinates consensus with other Federal and State natural resource trustees to ensure that the proposed actions are environmentally beneficial, scientifically sound, and feasible. HAZMAT Coastal Resource Coordinators, liaisons between NOAA and EPA for Superfund-related trustee activities in seven EPA regions, help EPA to establish the environmental remedy for each site that will best protect and restore the resources that have been damaged. They help EPA identify and assess risks to coastal resources from hazardous waste sites and to develop cost-effective strategies to minimize those risks. The program annually addresses over 400 sites in coastal areas on the National Priorities List. HAZMAT also conducts applied research and technology transfer. Specific areas of expertise include pioneering work in ecological risk assessment, wetlands function/restoration, and sediment toxicity investigations. These efforts improve environmental assessment, remediation, and mitigation techniques at coastal hazardous waste sites.

About the producers (cont.)

The management of complex watershed issues is enhanced by the ability to examine and display varied combinations of information at different spatial scales. HAZMAT designed its watershed projects to give coastal resource managers information and tools to support decision-making for site remediation, dredging and disposal of contaminated sediments, and habitat restoration issues. The watershed projects collect and organize available watershed-wide information on contaminant sources, sediment contaminant and toxicity data, natural resources, and potential habitat restoration projects; and prepare geographical presentations of the information useful in resolving important watershed-wide issues. HAZMAT has developed a database and mapping system to link and display information for a watershed. HAZMAT has applied this approach to four pilot watershed projects: Newark Bay, San Francisco Bay, the Christina River, and the Calcasieu Estuary.

About the producers (cont.)

HAZMAT published CAMEO. This computer program, co-developed with EPA, addresses the needs of emergency responders and hazard planners. The present version of CAMEO contains information for over 4,000 commonly transported chemicals, database templates for storing local specific chemical and planning information, plus ALOHAâ, an air dispersion model that uses digitized maps developed by the Bureau of the Census, and MARPLOTâ, a mapping program. CAMEO provides the means to meet the data management requirements of the Emergency Planning and Community Right-to-Know Act of 1986.

Over 6,000 organizations around the world use CAMEO. The United Nations has adopted this program to help developing countries prepare local emergency response plans. The U.N. has introduced CAMEO to over 50 nations. The CAMEO user community includes all levels of government, as well as academia and private industry.

About the producers (cont.)

Each year HAZMAT provides training to about 100 industry, local government, and Federal agency personnel in the scientific aspects of oil and chemical spill response. This training, conducted in Seattle, the Gulf of Mexico, the Northeast, and Great Lakes helps transfer the knowledge and experience of HAZMAT scientists to the broadest possible audience.

As part of a broad National Ocean Service effort, HAZMAT is managing navigation safety and efficiency projects in San Francisco Bay, Puget Sound, and Cook Inlet and Prince William Sound, Alaska. These projects focus on activities that can help prevent maritime spills.