

# **ESI Workshop**

## **NOAA Disaster Response Center, Mobile, Alabama**

### **May 1-3, 2012**

A gathering of 40 ESI users took place in Mobile, Ala., May 1-3, 2012. The group represented a variety of federal agencies including five different NOAA offices, the U.S. Coast Guard (USCG), and the U.S. Fish and Wildlife Service (FWS). State participants came from Texas, Florida, California, Delaware, and New York. Other participants provided input relevant to their work in industry or from the NGO perspective. Participants came from 15 different states and Portugal.

## **Tuesday, May 1**

The meeting was kicked off by an introduction and review of the meeting purpose and goals by Jill Petersen and Mark Dix. Charlie Henry, representing NOAA's Disaster Response Center (DRC), provided an introduction to the new DRC facility as well as information on logistics for the next few days. Each participant gave a brief introduction which included their affiliation, primary role in spill response, and at least one way they had used ESI maps. The introductions captured the diversity of the participants, promising an exciting 2.5 days to follow.

Summaries of the sessions, broken out by agenda topic, follow.

### **Jill Petersen (NOAA): Status of the current ESI mapping projects**

**Florida Panhandle:** The current version is from the early 90s, with an update to the shoreline completed in the late 90s. Mapping of a new version is in progress and was funded and supported by Florida Fish and Wildlife Research Institute (FWRI) and NOAA. The expected delivery date for the digital data (there will be no hard-copy maps produced at this time) is late summer of 2012.

**South Florida:** This area is being mapped with funding and support from FWRI, NOAA, and the U.S. Coast Guard. As with the Panhandle, there will not be a hard-copy product produced as part of the contract with Research Planning, Inc. (RPI). The anticipated date for delivery of the digital data is December 2012.

**West Peninsular Florida:** The state of Florida (FMRI) has funding slated for the start of an update for this area.

**Texas:** An update to the upper coast of Texas is underway. Texas Government Land Office (TGLO) employed a state agency for shoreline update, which was completed earlier this year. NOAA is funding the biology and human-use data collection and ESI map integration which will be done by RPI. A modified hard copy map will be produced as part of the RPI effort.

**Louisiana:** The wealth of data available from the recent disasters in the area (Deepwater Horizon spill and Hurricanes Katrina and Rita, in particular), as well as the shoreline change resulting from the hurricanes, prompted the update of the Louisiana ESI. This project is being funded by NOAA and USCG and is currently underway.

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**Jill Petersen (NOAA):** [Review of the ESI User Survey](#) [PPT, 14.2 MB]

The user survey represents an effort to assess the strengths and weaknesses of the current ESI maps and data. Questions attempted to address a range of topics including:

Who are our users?

How do they currently use ESI maps and data?

What data do they find most/ least useful and why?

What formats do they use most?

What can be done to improve their ESI “experience”?

Results of the survey were shown on posters hung around the room. Participants were encouraged to post additional comments and vote on the sample maps. The agenda roughly followed the flow of the survey. In break-out groups and discussions, participants were urged to keep in mind what others have addressed in the survey. [The [survey results](#) [PDF, 9.1 MB] are also available in PDF format.]

### **Shoreline, Biology, and Human-Use Data Collection and Integration: Current Practices, Challenges, and Future Perspectives**

**Mark White (RPI):** [Task-based approach](#) [PPT, 168 KB]

The RPI staff present at the workshop represent 60-80 years of experience with ESI mapping. In addition to the shoreline ranking and classification, RPI organizes the biology and human-use data meetings and integrates that, as well as other relevant maps and data, into the standard ESI format. RPI is also a heavy-user of the final ESI product, writing many RARs (resource at risk reports) and STRs (shoreline treatment recommendations).

**3 main components of ESI maps:** Shoreline classification, biological resources, and human-use resources. Biology is built on top of the shoreline (hydro) data (build a Hydro layer). It is important to have the biology and management areas use the shoreline as a common delimiter of the area. In other words, biology polygons that end at the land/water interface should use the same line as the shoreline for that particular boundary.

There are 9 tasks to the collection/integration process. These are outlined in the PPT provided.

**Zach Nixon (RPI):** [Shoreline presentation](#) [PPT, 10.2 MB]

The ESI shoreline classification is the first and oldest classification of its type. It is a national standard (Arctic to tropics) with a 35-year history. It is a standardized classification with a focus on oil spill response.

In the shoreline ranking, estuarine rankings are used most. Less used are lacustrine and riverine rankings. There can be up to 3 codes for each shoreline section.

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General process: Obtain vector shoreline, merge with other polygonal data, evaluate imagery sources (oblique and vertical), acquire imagery via overflight (if needed), and do the shoreline classification (digitally). The NOAA National Shoreline (consists of a shoreline vector products from a variety of sources) is used occasionally, but more often other shoreline data sets (state-provided vector shorelines, imagery sources, etc.) are used. Often, the most recent is the most accurate. Adjacent habitats are reviewed, so the shorelines match categorically.

Imagery Sources: Oblique imagery/aerials are the most helpful. Examples:  
<http://www.bing.com/maps>, <http://www.californiacoastline.org>.

The best available shoreline is overlaid on the most recent imagery, and modified as needed. Sources of the shoreline are documented in the metadata. Shorelines are represented by lines with up to 3 ESI types; tidal range, marshes, etc. are represented by polygons. Classification requires low tides on clear days for the most accurate mapping.

**Challenges:**

- Geometry matching is a challenge – avoiding GIS "spaghetti" by matching the habitats to the vector shoreline
- Classification consistency – as documented in the ESI guidelines
- Minimum mapping unit (MMU) – the smallest alongshore length of shoreline mapped as separate segment. Higher resolution data sets are more common now.
- Regional differences (does "exposed" mean the same thing in Alaska and Maryland?)

**Shoreline Classification systems – What is the relevance to ESI mapping?**

- **ShoreZone** – Shoreline Geologic Unit Classification; used by NOAA Fisheries
- **CMECS** (Coastal and Marine Ecological Classification System) Structure – a *standard* for coding coastal marine habitats

**Group Break-Out Reporting for [Shoreline discussion session](#)** [PDF, 32.0 KB]

**Chris Boring (RPI): [Biological Resource presentation](#)** [PPT, 15.9 MB]

Methods and challenges of biology data collection: RPI has employed a number of different approaches to workshop data collection and data reviews. Along with the expert input at these workshops, existing digital and hard copy maps are researched and used as appropriate. The mapping extent has varied over the years and by area. For example, South Florida mapping is using the EEZ (exclusive economic zone); other mapping in Florida has utilized a 10-mile shoreline buffer.

**Group Break-Out Reporting for [Biological Resources discussion session](#)** [PDF, 32.5 MB]

**Chris Boring (RPI): Socioeconomic Resources / Human-Use Features (SOCECON):**

Should we include additional socioeconomic resources? Are some relevant socioeconomic resources missed because they are presented as biology? An example is fisheries data. Fish data are mapped as a

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biology element. Some commercial and recreational fishery sites are included in the human-use layer as point data. Should fishery boundaries be mapped in the management layer and include the area boundaries? These data are often available and economically relevant to spill impacts. These areas were mapped in California as a grid attributed with species fished and months when they are fished.

Should we expand on subsistence fisheries data?

Other considerations:

Managed lands/areas – Would it be helpful to identify them as State, Federal, NGO, etc.?

Human-Use Attributes – What should be included? Brian House suggested that ownership isn't important to include for response purposes. It clutters up the data. There are better sources for that information.

Aquaculture/marine culture is a growing industry that needs to be considered.

Water intakes for aquariums and other facilities.

Boat ramps are a "moving target" in some atlases, such as Florida. During the Deepwater Horizon (DWH) spill, people asked about boat ramps that they had noted on ESI maps. Going back to the source of the data is useful in these situations.

Concern: Socioeconomic and management layers tend to receive the least attention of all the ESI features. How could they be improved/expanded in general?

**Dr. Jeff Short (Oceana): [Identifying Important Ecological Areas](#) [PPT, 83.3 MB]**

Jeff worked as a research chemist with NOAA during the *Exxon Valdez* spill response. He now works with Oceana on Alaska science and decision-making in the Arctic.

Mapping of Important Ecological Areas (IEAs) employs rigorous methods.

ESIs should continue moving from a 2D coastal framework to a 3D framework, especially in the Arctic, with sea ice and key pelagic feeding/hunting areas.

IEA hotspots are geographically delineated areas, for example, migration routes, subsistence areas, sensitive seafloor habitats, breeding/spawning areas. Belugas, eiders, grey whales, spotted seals, bow whales, etc., tend to congregate in particular areas. IEAs integrate this information to determine the relative impact harmful events would have with regard to the overall ecosystem health.

**Richard Knudsen (Florida – Fish & Wildlife Research Institute): [Use of ESI Atlases/Data in Contingency Planning and Response](#) [PPT, 30.4 MB]**

Florida employs a Marine Resources GIS (MRGIS). It currently has 1,300+ layers w/metadata in SQL/SDE.

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ESI mapping use in Florida included mapping “trigger zones” during the DWH. Polaris (SCAT contractor) used the ESI linework in SCAT segmentation. FWRI has continued this work around Florida and up the coast.

GIS applications during DWH – The state EOC used GATOR. FLEX Map Viewer and USCG Enterprise GIS were also used. A SharePoint site was set up. This enabled counties to download (PDF) maps and offer suggestions to better protect resources.

**ESI in Florida**

Florida ESIs currently consist of 6 atlases which include 303 maps, 190 species, and 50 T/E species. The data are now available as PDF and paper maps, but the digital data are more complex and provide greater information. The ESIs are integrated into Florida’s Geographic Response Plans (GRPs) and that information is available on disk and via the website. The Coast Guard liked the approach to the GRPs and map presentation, so FWRI has continued with coverage of Puerto Rico, South Carolina, Georgia, Mississippi, and Alabama. The area committees have also reviewed and bought in on the approach used for the GRPs.

Map Elements for GRPs: Priority protection areas: A, B, C (w/data sheet), boom/skimmer placement, risk sites, equipment sites, access information, staging areas, collection areas (natural or desired), special resource areas, and Command Post locations (for example, the Disaster Response Center would be mapped; a hotel might be another potential location or a Command Post).

The GRP Maps (8.5" x 11") are based on ESI maps (11" x 17"). The GRP is one long, hyperlinked PDF.

To see the various formats available, visit <http://ocean.floridamarine.org/acp>.

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## **Wednesday, May 2**

GRP process: At the beginning of each session, participants are educated about ESIs, then asked to identify sensitive areas, using a prioritization system. This consists of diamonds, ranging from 3 diamonds (A – Protect First) to two diamonds (B – Protect after A Areas) to one diamond (C – Protect after B Areas).

**Group Break-Out Reporting for [GRP discussion session](#)** [PDF, 36.3 KB]

### **ESI Data Access and Delivery: Tools and On-Line Services**

#### **Jill Petersen (NOAA): Demo of ESI ArcMap tools and NOAA's free ESI Viewer software**

One of the primary distribution formats of the ESIs is Esri's geodatabase (GDB) and a supporting map document (.mxd). The currently available GDBs were developed in ArcGIS 10. The advantage of the GDB is that everything is in one file. The concept is demonstrated by showing the Central California .mxd. A variety of tools to support the data are now available.

Tool 1 enables the user to query map objects within a specified layer (for example BIRDS). Map objects can be selected in any of the selection tools within ArcGIS. The related attributes for each of these objects are highlighted and shown in the biofile.

Another tool enables query by attribute. Here you specify your search criteria (for example, nesting birds in May) and the related map objects are highlighted. Example shown: Marine mammals that are Breed4 (molting) in May.

The Seasonal Summary tool creates a new geodatabase for the ESI data that fall within a user-specified area (this can be any shape(s) on a layer shown; it does not have to be a layer within the GDB) and that occur during a specified seasonality. You also get a text report listing

1. the species present in that area during the specified month(s). Breeding activities in May and species of concern (breeding or T/E) are highlighted.
2. a summary of human-use resources.
3. a summary of the ESI shoreline types occurring in the area, including their length in meters and overall percentage of coverage for the area.

#### Round 2:

A map layout is also created. Currently, the legend and back-of-the-map are generated using a series of python scripts and require processing by ERD. At some point, it is hoped that these scripts can be integrated into either the seasonal tool or a separate tool so users can also generate these PDFs. The scripts require Pdftk and ReportLab, which are non-distributable freeware.

The back of the map is a summary of the seasons specified. For this reason, the monthly tabular format wasn't used. The thought behind this may be revisited.

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A symbol style has been created for each of the ESI atlases. These contain all of the biology and human-use symbols, as well as shoreline symbols that permit the multiple-type/multiple-color ESI lines to be properly symbolized. The ESI line symbology is stored in the carto layer, available with each of the downloadable geodatabase packages.

ESI Viewer: The ESI Viewer uses MARPLOT and FileMaker Pro. It provides the ability to view the ESI digital data even if you have no proprietary GIS software. This is packaged as a self-extracting executable that places the programs and data in the appropriate directories. Once installed, users are able to query map objects and create queries on all of the biology and human-use attributes. The mapping portion of the view is MARPLOT, which is part of the CAMEO suite of products. CAMEO and MARPLOT are moving to online versions, so at some point, this may be another option for online use of the ESI data.

**Robby Wilson, Robb Wright, Nipa Parikh (NOAA Special Projects Office, SPO): [Online Mapping Services and Custom Applications](#)** [PPT, 8.2 MB]

Together, Robby, Robb, and Nipa have about 75 years of GIS experience. A current emphasis in their office is packaging data sets for use on smart phones, tablets, and other portable devices. They have been active users and supporters of the ESI data. One such project is the integration of ESIs for support of the federally-mandated, interagency Coastal and Marine Spatial Planning (CMSP) effort.

**Robb Wright (NOAA SPO): [Packaging ESI PDFs as Web Services](#)** [PPT, 11.8 MB]

Robb demonstrated the potential of a seamless Web presentation of the existing ESI PDFs. The project was initiated during the Deepwater Horizon spill. Data have been loaded for the Gulf of Mexico.

**Nipa Parikh (NOAA SPO): [A customized application for online viewing of the ESI](#)** [PPT, 5.7 MB]

Background: There have been a number of attempts by non-NOAA agencies to publish ESIs online. None have been successful in presenting the data with underlying related data attributes. This application allows viewing and object query of all of the ESI layers. It may be possible in the future to make this application compatible with a variety of portable devices.

The data are presented by atlas (state or geographic region). There is a selection of maps to use as the backdrop:

- The tiled ESI PDF maps
- Raster Nautical Charts (updated monthly)
- Esri Basemap layers
- ESI hydro layer

The ESI biology, human-use and ESI shoreline layers can be turned on and queried. The biology map objects are linked to the biofile, which provides the user information on species present, seasonality, concentration, and T&E status. This is set up as a one-to-many relationship. The biofile is further linked to the source data table, so users can select that link and view information on the data providers.

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Esri Map Server did not allow support for the related tables. The ESI biology and human-use map objects are meaningless without access to the data behind them. For this reason, the custom application was the method of choice.

**Mark White and Chris Locke (RPI):** [ESI Data online @ ESOnline – Pilot Project](#) [PPT, 19.6 MB]

RPI offers another approach to presentation of the ESI PDFs online. In 2009, RPI put the ESI data into Google Earth using KMLs and KMZs. The focus was Google Earth. They also want to investigate use of Google Maps on smart phones and tablets. The pilot project is available at <http://esionline.researchplanning.com>. It is several years old, and may have some broken links.

**Currently being served (for some states):**

- Index of all ESI atlases
- ESI shoreline
- Oblique photos
- ESI PDF maps downloadable from NOAA
- ESI PDF map overlays (grayscale DRGs removed from the PDFs)
- Grid of T/E counts for Alabama (hot spots)
- Links to video tutorials and ESOnline users guide

Alabama was used for a test location.

MapTiler (open source) was used to tile the raw graphics files.

They have also published an ESI shoreline in Google Earth with legend and supporting information.

Oblique photos: A KML features point information showing the location/direction of the photos taken by using a small triangle. These are hyperlinked to the photo which is brought up in a PHP viewer. The viewer allows viewing of consecutive photos using the "previous" and "next" option. The KMLs are for use in Google Maps. Most of the photos are not currently available to the public (i.e., have not been delivered to NOAA).

RPI currently has oblique photos for 7-8 states. These photos were collected as part of the ESI shoreline classification phase of the ESI project. There are a few gaps in overflights so coverage may not be complete.

Tutorial Videos – The goal is to present information in 2 minutes or less. There are several up and running on YouTube (<http://esionline.researchplanning.com>).

The mobile industry is really converging on iPhone and Android. Blackberry is struggling. GIS app - Third party KMLs can't be loaded. ERMA (Environmental Response Management Application) will probably become a mobile app. There are projectors that can project to screen from a phone. There are also special goggles to project information.

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**George Graettinger and Amy Merten (NOAA OR&R Spatial Data Branch): [ESIs in ERMA](#)** [PPT, 12.9 MB]

The Environmental Response Management Application (ERMA) is an online mapping tool for visualizing environmental information relevant to oil spills, climate change, and natural disasters. It is Web-based and provides centralized access to information. It is accessible through any Web browser; no special software is needed.

ERMA can support multiple levels of access to the data, allowing publishing of proprietary/preliminary data. A sample of users includes the response community, NRDA community, Trustees, and the public.

ERMA provides a standardized user interface. Users can build customized maps using layers. Spatial bookmarks and a virtual slide deck are some of the special features.

ERMA promotes data sharing. Most everything ingested (unless proprietary/restricted) is available for download.

There are many standard ERMA data sets available in all ERMA geographic areas. These include: Google layers - aerial, terrain, roads; ESI data layers. Incident-specific layers might include trajectories, shoreline oiling, and sampling data. Photography, spreadsheets, documents, etc. can also be attached.

ERMA supports a variety of sections/units: Operations, Environmental, Situation, UC, JIC.

ERMA uses ESI data to support response, NRDA, shoreline assessment for SCAT/cleanup, sensitive area identification, T/E species identification and status, as well as RAR (resource at risk) reporting.

The ERMA team is creating for partnership with EPA a standalone ERMA, which provides additional features to meet EPA's requirements.

An API has been created to support access to the related data tables.

ERMA versions have been created for: New England, Atlantic/Delaware Bay, Caribbean, Gulf of Mexico, Southern California, Puget Sound, and Arctic. Some data layers/groupings are common to all ERMA versions. One of these—"Natural Resources, Habitats, and Managed Areas"—is where the ESI data reside.

There are a variety of query tools to do lightweight queries on the ESI data, such as the U.S. FWS iPaC (Information, Planning, and Conservation) System.

In addition to the ESIs, there are two other sources for biological information provided in ERMA: NatureServe and FishBase.

One of the ESI API tools provides functionality to quickly generate RAR summaries for specified areas of interest.

Next Steps:

- Expand use of data services for ESI in ERMA
- One-click geographic species/habitat listing

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- Refine report output (currently, kind of cumbersome) – both summary and detail
- Add map thumbnail to report output
- Expand PDF-link support in Report output

**Richard Knudsen (Florida F&W Research Institute): Florida Marine Spill Analysis System (FMSAS)**

**Use of ESIs for Oil Spill Response and Planning**

Background: Mandates by the state led to the development of the Florida Marine Spill Analysis System (FMSAS). Part of the OPA 90 Governor's Task Force recommendations included update and enhancement of existing ESI atlases, and automation of ESI atlases (among other recommendations).

**Goals/capabilities provided by FMSAS include:**

- Quick creation of maps for non-GIS users;
- Resource at risk (RAR) analyses; and
- BioQuery Tool to allow querying of the ESI database by attribute and export of the results to a shapefile.

The operational principles of the FMSAS include: standalone-capable; best available data; enhanced by Web services, but not dependent on them. Work continues to develop new and improved FMSAS Tools for ArcGIS 10.x and beyond.

**Group Discussion: Pros/cons, wish list, reality for online mapping in the future**

**Rob Barron (Texas General Land Office (GLO)): [GeoPDF Integration](#) [PPTX, 6.4 MB]**

This is the 10-year anniversary of the Texas General Land Office (GLO) Oil Spill Toolkit. The toolkit consolidates the ESI and basemaps into one. It utilizes GeoMark tools to place geospatial markups on the GeoPDF files. The GeoPDFs support zooming/marking of a specified latitude and longitude point, as well as supporting distance and area measurement. You are also able to turn layers on and off, make sketches for things, such as boom locations and areas of operational boundaries, and add text descriptions.

The GeoPDFs provided in the tool box were created using TerraGo Technologies (a commercial product requiring licensing). They can be viewed and used in Acrobat by loading a free extension. Esri has the ability to create a GeoPDF, but it does not support all of the features available with the TerraGo software. The Texas GeoPDFs group 53 layers, including the standard ESI data layers (biology, human use and ESI shoreline), Priority Protections areas (labels, polygons, and lines) and Basemap (parks, hydrology, etc.).

## **What the Future Holds for the ESI Hard-copy and PDF Products**

### **Jill Petersen (NOAA) and Mark White (RPI): Maps of the Past and Possible Basemaps**

It is time to move to a new hard copy/cartographic product. The current version is extremely costly to produce, relies heavily on ArcInfo workstation and uses programs developed in AML, usable only in ArcInfo workstation. These are becoming obsolete, and if RPI moves to a different platform for the data collection, they will have to start all over developing programs to replicate the AMLs. In addition, the current hardcopy limits the extent based on the quad limits, and the quads rarely break at logical geographic boundaries.

There are many considerations. First, there is a LOT of information in the introductory section of the atlas. If we move to a different format, we'll need to keep this as part of the deliverable. This is also the case when we may not be delivering any kind of hard copy product.

What basemap do we want to use? Some options include Grayscale DRGs, ArcGIS Basemaps, and Bing or other imagery sources. There may also be additional layers we want to add to the ESI data set and include on the cartographic product, such as roads and gazetteer (place names).

We can use variable grid sizes with ArcMap's mapbook tool. It just needs to be pre-defined. This would allow us to produce maps with more logical boundaries, maps of different scales, etc.

**Group Break-Out Reporting for [Cartographic discussion session](#) [PDF, 47.9 KB]**

## **Thursday, May 3**

### **Mark White/Chris Boring (RPI): ESI Training**

#### **Approaches to training – what we do, what we've done, what we could try:**

Full day stand-alone ESI training event  
GIS/technical presentations  
One-on-one questions  
Short (2-hr) live trainings  
How to use the PDFs  
Mock scenario  
Online video – 10-15 short videos, each 3-5 minutes in length (RPI)  
YouTube videos – ESI in Google Earth – ESI Shoreline, Oblique Photos  
OR&R's tutorial module – Alabama example PDF, ESI Viewer, some of the Arc tools  
ESI training in SOS classes  
Generic PowerPoint presentations  
COMET/UCAR - [http://www.comet.ucar.edu/who\\_about\\_us.php](http://www.comet.ucar.edu/who_about_us.php)  
NOS-produced podcasts (Troy Kitch)  
Using ESI products more in drills

#### **What are some of the topics we should focus on? Considerations?**

Introductory ESI for start of data collection sessions, our goal (a more standardized product would be good)  
More complex topics; introduce new topics to experienced users  
ESI uses beyond spill response  
Introductory, then a longer in-depth topic  
Incorporating ESIs into SCAT  
How we *really* use the data; even sophisticated users don't know the depth of the database  
ESI Tools  
ESI Viewer  
How and why use ESIs in response/planning  
Market towards GIS courses, Ecosystem-Based Management (EBM) tools

#### Audience (current and beyond):

- Data providers
- Responders - Coast Guard, OSRO, SSCs, etc.
- Facility managers
- Area planning groups – How to incorporate ESIs in the plan and appropriate uses
- General public – Kiosk at National Parks, Science Days at schools

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Coast Guard Academy – as part of their curriculum (perhaps currently generating GRPs, future responders)

Coast Guard sectors – Is there a feedback loop?

Training at CG PREP exercises

Coast Guard Training Center – Yorktown – for upcoming spill responders. Some SSCs have taught there, also. (Petaluma is the other training facility.) – Getting a chunk of time in their curriculum is tough.

Situation Unit Leader or Planning Section Leader type of class

Cleveland – Group of FOSCRs. ESIs would be a good topic for SSC to present at a later session.

**Group Break-Out Reporting for [Training discussion session](#)** [PDF, 28.8 K]

## **Outreach**

Meetings we could participate in for purpose of outreach:

Esri Int'l User Conference

Regional Response Teams

SE Regional Users Group for Esri (and other regional Esri user conferences)

Esri Research Foundation

Wetlands conference in Galveston

AGU conference (international)

Clean Gulf/Clean Pacific

Gulf of Mexico Alliance (likewise South Atlantic, etc.)

Esri NOAA Booth

Publications:

Esri News (Arc News) - soliciting participation

Other outreach possibilities:

Poster showing the summarized resources, info about the ESI product

Updated one-pager

An Outreach repository – one-pager, introductory video, etc.

**Group Break-Out Reporting for [Outreach discussion session](#)** [PDF, 32.8 KB]

## **Next Steps/Goals**

### **Shoreline Biology/Human Use/Shoreline**

Resolve addition of biology attributes; possible field additions:

Prioritization, derivation, hot spot vs. range-type data, year (of atlas publication? Data source?). One goal of adding additional fields is to increase the ability to layer, prioritize, and be portable. Sometimes ESIs aren't used because the amount of data is overwhelming.

Transfer of oblique photography to NOAA. Needs to be institutionalized. Possibilities: Ingest photos into online photologger, move to ERMA.

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Breeding categories vary regionally. Is there a way to standardize this nationally? Need regional flexibility. Makes it very difficult to develop national tools, products. Can we provide for BIRDS – breed, nest, hatch, molt rather than Breed1, Breed2, Breed3, etc.

Additional fields in ESI layer:

- Shoreline slope and exposure – Survey indicated that people wanted it, but may not understand the cost. We don't want any data removed from the ESIs. If there is a low-cost addition, might want to do that. This would be a purely digital attribute.
- Best management practices for different types of habitats. Can handle that in large databases.
- Shoreline date of production is important to include at the feature level.

**Use of ESIs in Contingency Planning**

Encourage use and ESI-derived cleanup recommendations and best management practices.  
Develop a training module to address ESIs to GRPs.

**ESI Data Access**

ERMA Gulf Response is publicly available.

ESI Online - A lot of options

If you use any Map Book type access, *still* have to have a grid-type basis.

Action Item: Create a special interest group.

**Hard Copy (Cartographic/Static) Maps**

Recognize distinction between custom maps and the standardized, distributable maps/PDFs.

We need to have something the end-users recognize and know how to use.

People want to “see it all.” We shouldn’t remove any data currently shown on the maps/PDFs, but still need a solution so we can see the shoreline, as well. Thematic approach? Layered PDFs?

Final map product should print out at 8.5 x 11.

Action Item – Jill will experiment with the Map Book product and discuss in the proposed List Serve.

GeoPDF for the format now would be great, but maybe not for the product of the future.

Using the T/E/special concern species polygons – pull out as special layer? Currently being done for ERMA. Will be produced as a stand-alone data set (geodatabase and map document).

Move away from quad-based product. Move towards logical geographic regions.