A Hero’s Journey Across the Ocean

Dawn Wright, Ph.D., GISP
Esri Chief Scientist
We all agree that are MANY challenges facing the oceans. GIS technology has long provided effective solutions to similar problems on land. But our mission is to take what we’ve learned on land and apply GIS more effectively to the oceans.
In 1989 Esri designed and developed the prototype of an ArcInfo-based solution for recording the movement of marine spills. This application, eventually moved to ArcView GIS, became the Marine Spill Analysis System (MSAS). A number of government agencies and consulting firms adopted MSAS.

Starting in 1989, Charles Convis made Esri conservation GIS grants for ocean conservation mapping and marine species protection programs to the groups below. Our relationships with many of these groups has continued to this present day. Also we're starting a new AGOL grant program and some of the first marine ones are the South American cetacean folks. The IUCN has recently added thousands of species range maps, including many marine species, to AGOL under the "IUCN Red List Range Maps" group.
ESRI Ocean GIS Special Exhibition at the 1999 Esri UC, with Sylvia Earle as keynote speaker and a special area of the Map Gallery that many of us old timers participated in with maps and demos.

During that decade Esri's ocean GIS efforts were mainly in charting and navigation, helping to develop:
- The Digital Nautical Chart (DNC) for the National Imagery and Mapping Agency (NIMA)
- a Navigation Ship's System project for NIMA
- A hydrographic information system (HIS) for the Maritime Administrations of Finland and Sweden

In addition Esri developed the National Ocean Service Map finder for NOAA and a data model for the Minerals Mgmt Service (now BOEM)

Jim Ciarrocca and Joe Breman were standouts in interfacing with and supporting the ocean SCIENCE community
Oceans team members at this time included the following (and all but two are still with Esri):
Katsura Matsuda - Marine Data Model - products team
Jeff Donze - NOAA Account Manager & Earth Observation Alliance rep
Geoff Wade - Natural Resources Industry Sector Marketing
Steve Snow – Industry Solutions – Hydrographic solutions
Brian Cross & Tim Kearns - Hydrographic Services / Solutions
Dick Lawrence - Professional Services (Environmental Projects)
Dan Zimble - Technical Marketing, Sciences team, ESRI Federal
Jeanne Foust - Data Interoperability and Open standards
Esri Ocean GIS History

These were our main partners in 2007
We are at a historic juncture here at Esri with a formal ocean GIS initiative, fully launched in 2012.
Our virtual team has grown from 10 to nearly 40.
The Ocean GIS Initiative
Esri’s Commitment to Understanding Our Oceans

esriurl.com/oceanbook
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System for the management, discovery and composite modeling of bathymetric data & metadata.
GRIB = Gridded Information in Binary Form

GRIB is a WMO format for gridded data used by meteorological centers for storing and exchanging meteorological charts and other patterns of wind, sea state, temperature, etc. In other words, GRIB files are computer generated forecast files.
A major revision of BTM to make it compatible with ArcGIS 10.x, the provision of Arc toolboxes for specific functions, a Python add-in so that all code (including model parameters and settings) is easier to edit and manage, a simple interface that recreates the full "wizard" experience of the previous release, and a much improved Excel-based classification dictionary reader. The rugosity function has also been updated to a new “vector ruggedness” measure of terrain. In the future, certain functions will be ported to web geoprocessing services deployed as REST endpoints.
Given the apparent demand for the model in the ocean community, Esri will fully supporting the model as a community-based information model/template. The Maritime Team has upgraded the model for use with ArcGIS 10 and has used it for a few demos in combination with the ArcGIS Nautical Solution. But with the development of ArcGIS for Maritime--Bathymetry in 10.1 there is great potential for further leveraging Arc Marine. An initial starting point is discussion with the Raster Team to review how to leverage the mosaic dataset in places where the raster catalog is currently being used, but there is much more to update. A new plan should be developed to implement the data model into a Esri geodatabase (including the ability to use a file rather than just a personal geodatabase), and best practices to define the web service platform. It should be newly validated against use cases, cartographic and user requirements. The tutorial should also be updated to incorporate a broader range of ocean datasets and possible workflows with the model. Some have sought to combine Arc Marine with Arc Hydro, Arc Hydro Groundwater, and other data models, which should also be investigated further.
Recent Blog Posts

Esri and the Science Community (07/06/2013)
Shawn Otto, CEO and cofounder of ScienceDebate.org recently pointed out: “We are poised over the next 40 years to create as much new knowledge as we have in the past 400 years. At the same time, our major unresolved policy problem is over population… Continue reading →

Invitation to participate in an Esri software Usability Study at the User Conference (06/21/2013)
The Esri development team would like to invite you to participate in a moderated and recorded usability study of a new application for GIS professionals currently under development. Who we’re looking for… Existing ArcGIS for Desktop users ArcGIS Online and App… Continue reading →

How is GIS Meeting the Needs of Ocean (and other) Sciences? Plus, Minus, Interesting… (05/28/2013)
Among the most important activities at the Esri Ocean Summit (November 7–8, 2012; see prior blog post 1 and prior prior blog post 2) were the breakout groups, where participants were asked to identify major barriers to the use… Continue reading →

Introducing the Multidimension Supplemental tools (05/24/2013)
The Multidimension Supplemental toolbox Version 1.1 is a collection of nine tools that extend the functionality of the core tools of the Multidimension toolbox. These tools can be used as-is or you can modify them to handle specific use cases. The following… Continue reading →
Spatial Sampling in the Ocean: A Modest Proposal
By Dawn Wright on May 7, 2013

At the Earl Oceans Summit there were several "halfway conversations" about a lack of spatial sampling tools in ArcGIS and how this had led people to use Hawth's Tools (now Geospatial Modelling Environment) and other approaches in order to perform ... Continue reading →

Stay Connected with the Oceans & Maritime Communities with an RSS Feed
By Dawn Wright on May 6, 2013

As you know, Earl is seeking to serve user communities across many application domains by way of the ArcGIS Resource Center. The Oceans community therein is THE place to connect in order to keep up with the latest and greatest ... Continue reading →

Setting a New Course for the Arc Marine Data Model
By Dawn Wright on April 3, 2013

On April 2, 2013, an informal working group of twenty-five (including four Earl staff members) participated in a 1.5-hour webinar to discuss the development of a new, improved version of the Arc Marine Data Model (also known as the "Marine Data" ... Continue reading →

New updates to the Ocean Basemap
By ArcGIS Content Team on March 20, 2013

2013's first update to the Ocean Basemap (Ocean_Basemap) map service includes a few new areas of higher

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GIS for Exploration, Ecosystems, Energy, and Climate Change

Registration Open

Esri Ocean GIS Forum
November 5-7, 2013 | Redlands, California

The Esri Ocean GIS Forum is about you and the work you do for marine and coast environments. Meet ocean professionals who will share their experiences using GIS for ocean research, protection, and planning. Talk with GIS experts about how to put your project on the fast track to success.

The Ocean GIS Initiative

This free e-book details Esri's Ocean GIS Initiative, including our commitment to and strategic plans for ocean science, resource management, and conservation. Read the eBook.

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REDLANDS: Noted oceanographer to give keynote address (via Lynndyl @ OceanGISForum)

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2012 Esri Oceans Summit

On November 7-8, 2012, Esri held the first and only Esri Oceans Summit in Redlands, California. This was an invitation-only, high-level strategy workshop attended by intermediate to advanced ocean GIS analysts and developers, including many long-time users of Esri software. More than 50 attendees triumphed over agency travel restrictions, budget cuts, busy schedules, the aftermath of Hurricane Sandy, and other obstacles in order to attend. They came ready to discuss with more than 40 Esri employees the various GIS functional requirements for ocean science, justification for and validation of such approaches, use cases, and the like. Much of the Summit was recorded, and the videos are collected in this e-book.
Esri president Jack Dangermond and Esri's chief scientist Prof. Dawn Wright welcome attendees to the 2012 Esri Oceans Summit.
Contribute a Chapter to a New Esri Press Book, Ocean Solutions, Earth Solutions

Society needs solutions from policy makers that are underpinned by good, digestible science. Therefore, Esri Press invites you to submit your work to be considered for inclusion in a forthcoming book about use-inspired ocean science and realistic solutions for the oceans and thus the earth. This volume will be largely based on presentations at the Esri Ocean GIS Forum, and it will pioneer good scholarship and encourage best practices. It will also serve the greater goal of reaching government decision makers, resource managers, and ocean/coastal GIS science researchers and practitioners. You may also submit geospatial data with your chapter, which will be assigned its own DOI, as well as Python scripts, geoprocessing workflows published as packages or services, static map packages, desktop extensions, mobile apps, and other supplementary material. Esri story maps are highly encouraged. All chapters will be peer reviewed.

The submission deadline is March 17, 2014.

Submissions should be focused on topics, such as how to:
- Effectively plan the exploration and discovery of the undiscovered parts of our planet.
- Better avoid ocean disasters and engineer rescues, thus ensuring ocean safety.
- Redesign the ocean, including managing and mitigating conflict among multiple simultaneous uses of the ocean.
- Sustainably extract energy, food, and other services from the ocean.

We encourage submissions from the following ocean and coastal sectors:
- Research and exploration
- Ecosystems and environment
- Coastal protection and marine spatial planning
- Fisheries and aquaculture
One call to action is to please stay with us via these many resources.
So I hope this lends some context to the very important discussions that we are now going to have. But first a coffee break