

Marine Life Protection Act Initiative



Overview of Spatial Data Layers Available for MPA Planning

Presentation to the MLPA North Central Coast Regional Stakeholder Group
July 10, 2007 • Pacifica, CA

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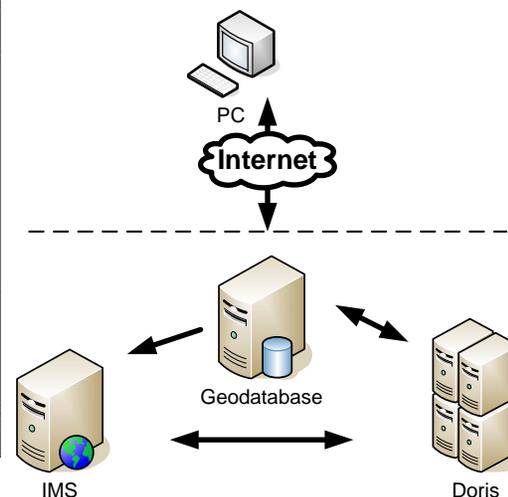
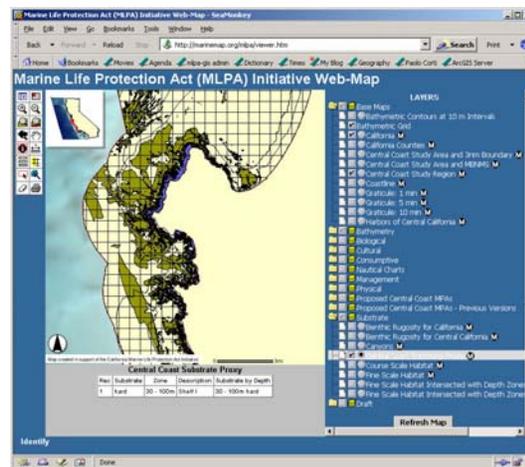
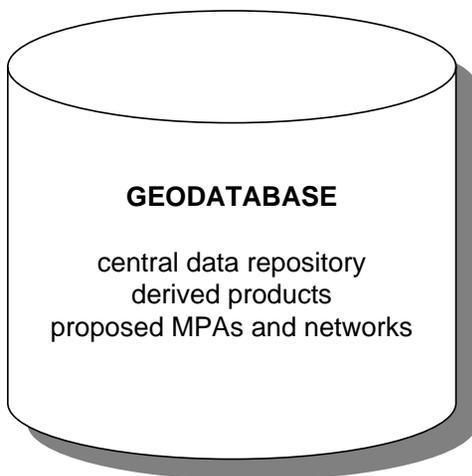


Overview

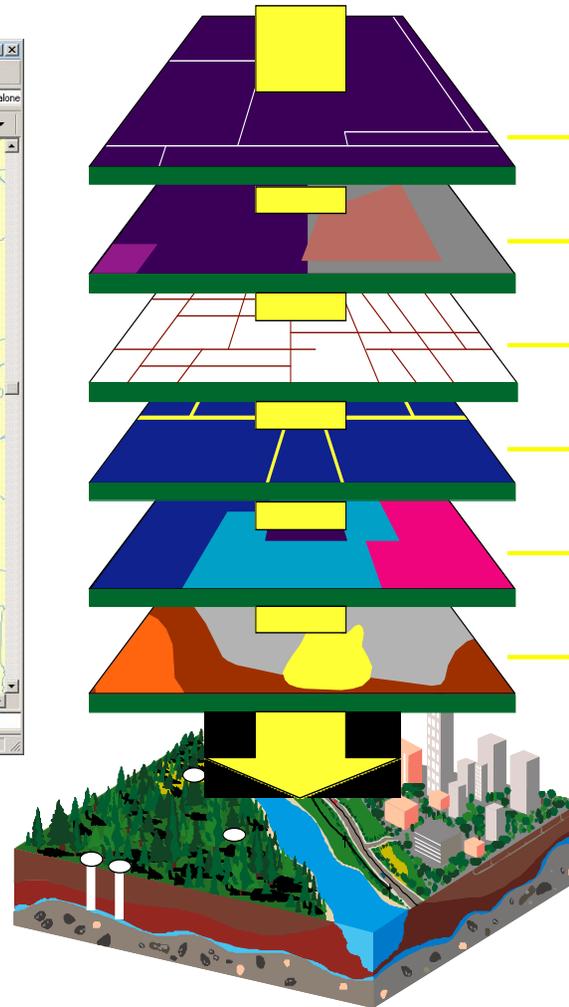
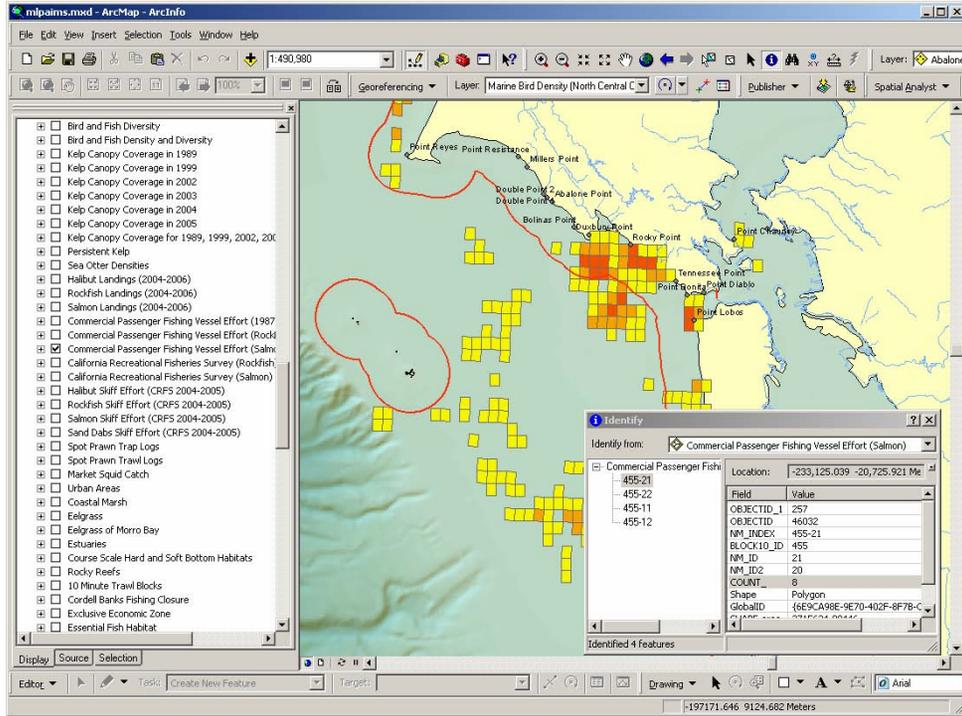
- GIS Overview
- The Internet Map Service (IMS)
- Basic Analysis and Cartography
- Accessing the Geodatabase
- Assessing Data Quality

GIS Overview: What is GIS?

- A Geographic Information System (GIS) is a system of computer software, hardware, data and personnel to help manipulate, analyze and present information tied to a spatial location.
- MLPA Geographic Information System
 - **Spatial database (“geodatabase”)**
 - **Web based mapping and analysis software**
 - **Server and desktop computer systems**
 - **The GIS Team**



GIS Overview: Why have a GIS?



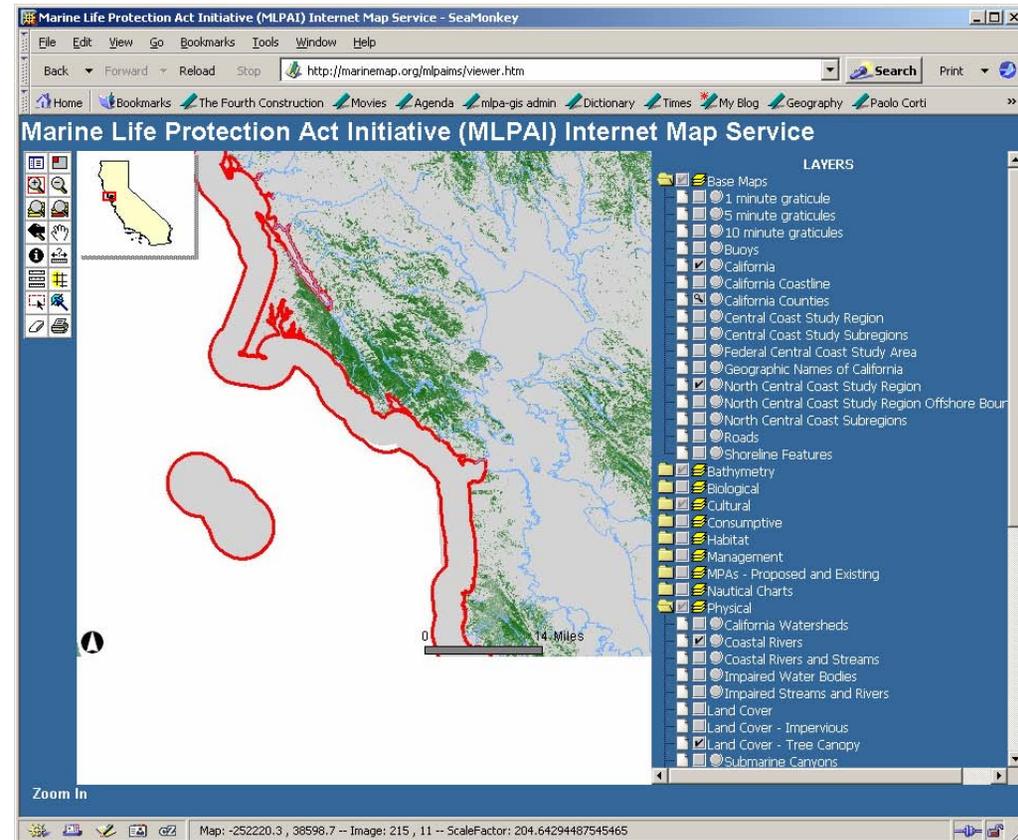
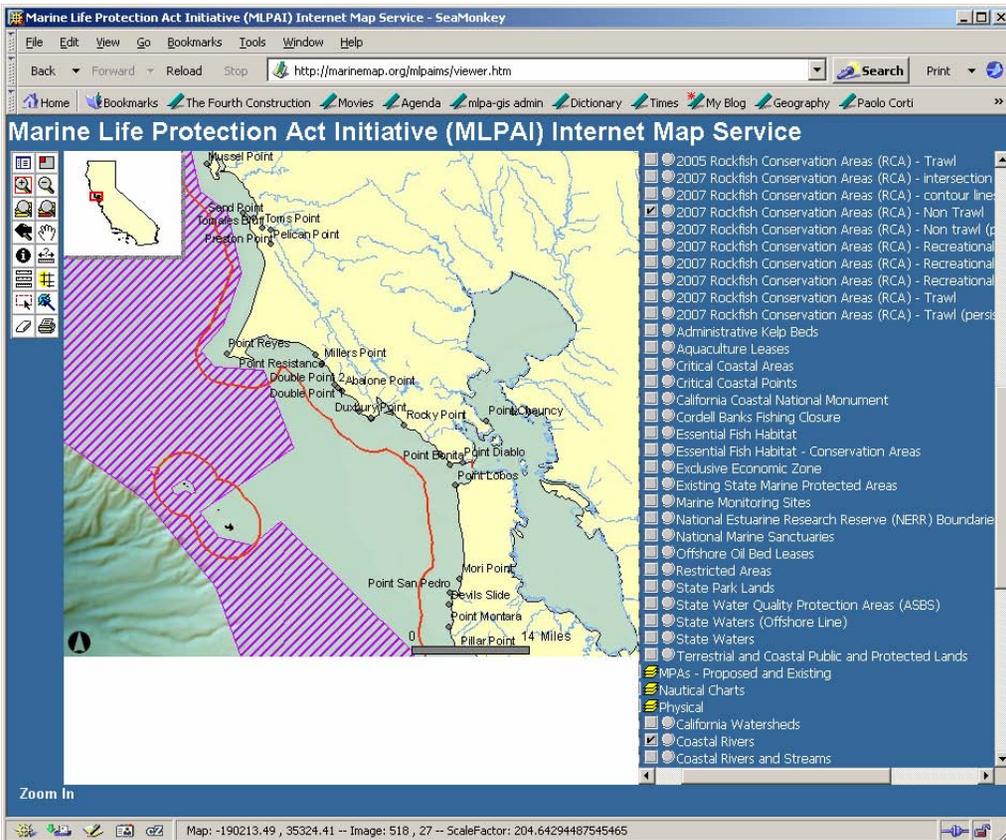
GIS Overview: Data Types

Vector (points, lines, polygons)

- cities rivers, habitat boundaries

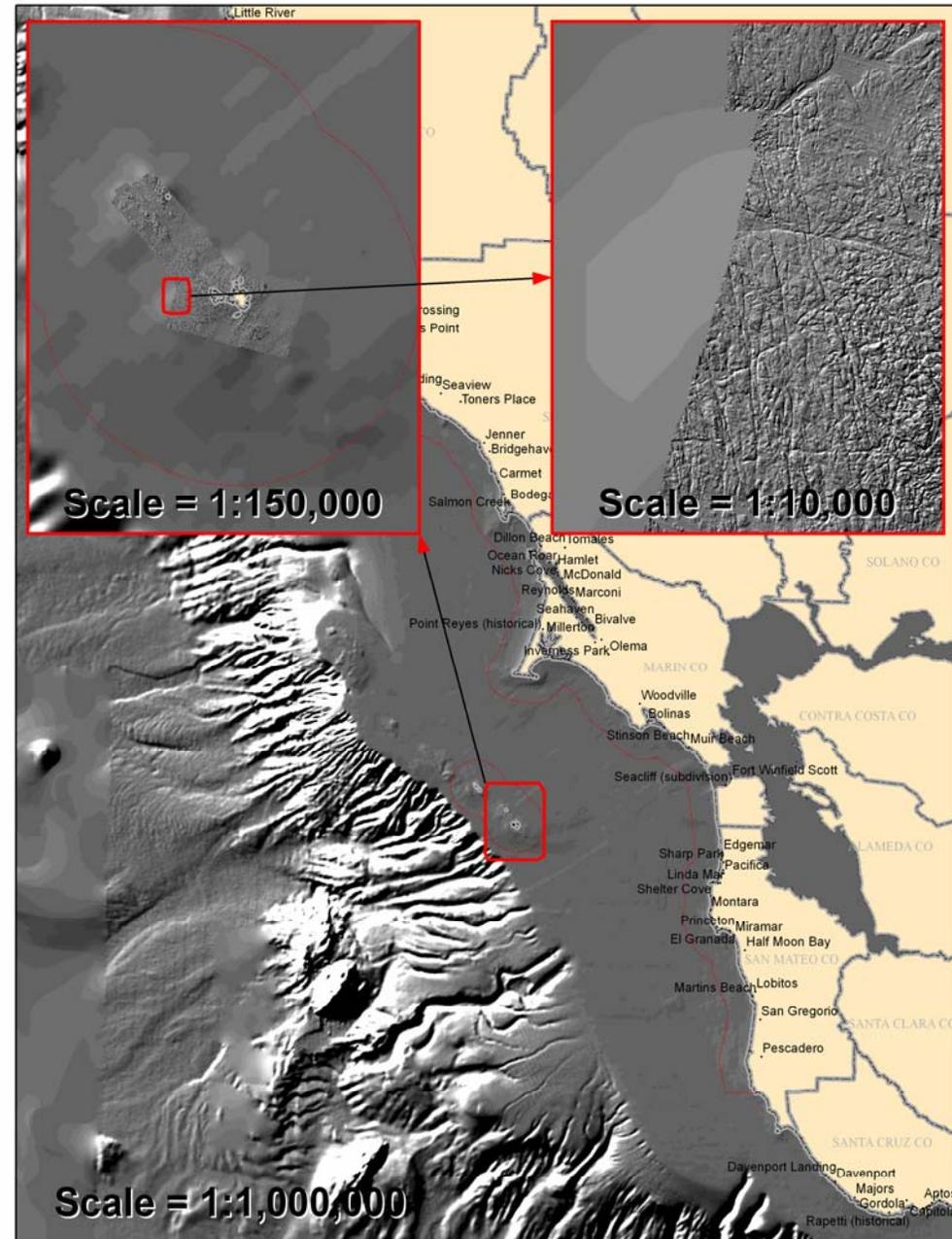
Raster (grids)

- aerial photos, nautical charts



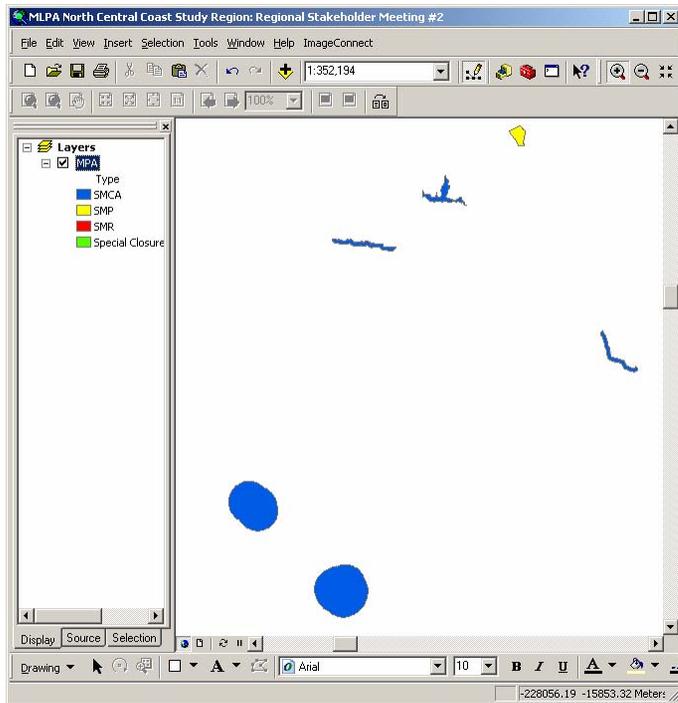
GIS Overview: Resolution & Scale

- Scale is the ratio of map distance to real world distance.
- Data resolution is an important variable to understand when interpreting information at various scales.
 - Lower resolution data are appropriate for interpretation only at small scales (less info per unit area = broad generalization)
 - Higher resolution data may be used at larger scales (more info per unit area = fine details)



GIS Overview: What's in a layer?

Layer



Table

NAME	Type	Length_nmi	Area_nmi	Perimete
Punta Gorda	SMR	0	1.56	5.75
Mackerricher	SMCA	3.72	0.57	7.29
Point Cabrillo	SMCA	2.11	0.16	3.68
Russian Gulch	SMCA	1.63	0.06	3.18
Van Damme	SMCA	0.3	0.02	0.59
Manchester and Arena Rock	SMCA	3.2	5.04	9.03
Del Mar Landing	SMP	0.39	0.07	1.19
Salt Point	SMCA	3.42	1.23	7.07
Gerstle Cove	SMCA	0.37	0.01	0.56
Fort Ross	SMCA	1.34	0.09	2.89
Sonoma Coast	SMCA	3.78	0.68	7.34
Bodega	SMR	1.46	0.21	3.19
Tonales Bay	SMP	2.4	0.48	3.04
Point Reyes Headlands	SMCA	4.05	0.6	8.07
Estero de Limantour	SMCA	8.25	0.65	8.62
Duxbury Reef	SMCA	3.02	0.5	6.54
Farallon Islands	SMCA	4.57	10.2	16.19
Fagan Marsh	SMP	2.56	0.37	2.56
Peytonia Slough	SMP	5.66	0.62	5.66
Corte Madera Marsh	SMP	3.66	0.3	3.66
Marin Islands	SMP	3.18	0.6	4.04
Albany Mudflats	SMP	2.32	0.19	2.32
Robert W. Crown	SMCA	0.45	0.01	0.88
Redwood Shores	SMP	8.81	0.91	8.81
Bair Island	SMP	9.66	4	9.66
James V. Fitzgerald	SMP	3.67	0.58	7.47
Ano Nuevo Invertebrate Area	Special Closure	6.15	1.66	12.21
Elkhorn Slough	SMR	16.700001	1.02	16.79
Hopkins	SMR	0.69	0.12	1.89
Pacific Grove	SMCA	3.88	1.16	8.96
Carmel Bay	SMCA	4.98	2.11	9.77
Point Lobos	SMR	5.38	0.9	9.14
Julia Pfeiffer Burns	SMCA	3.01	2	7
Big Creek	SMR	2.65	1.71	6.76
Atascadero Beach	SMCA	1.8	4.78	9.65
Morro Beach	SMCA	1.82	5.15	9.58
Pismo	SMCA	0.33	0.06	1.05
Pismo-Oceano Beach	SMCA	3.43	10.04	12.78

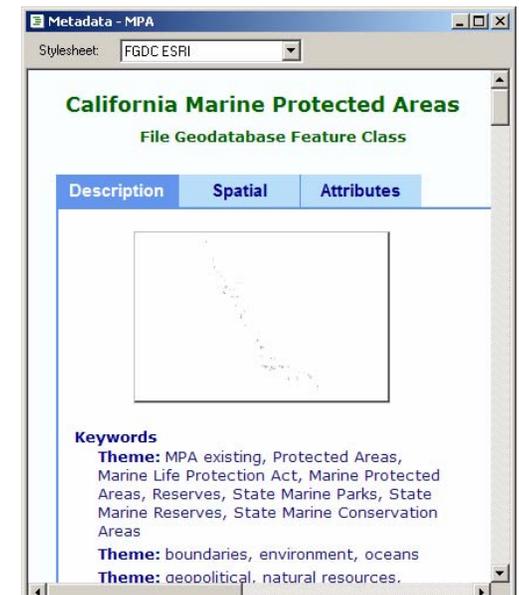
Metadata

Source

Use

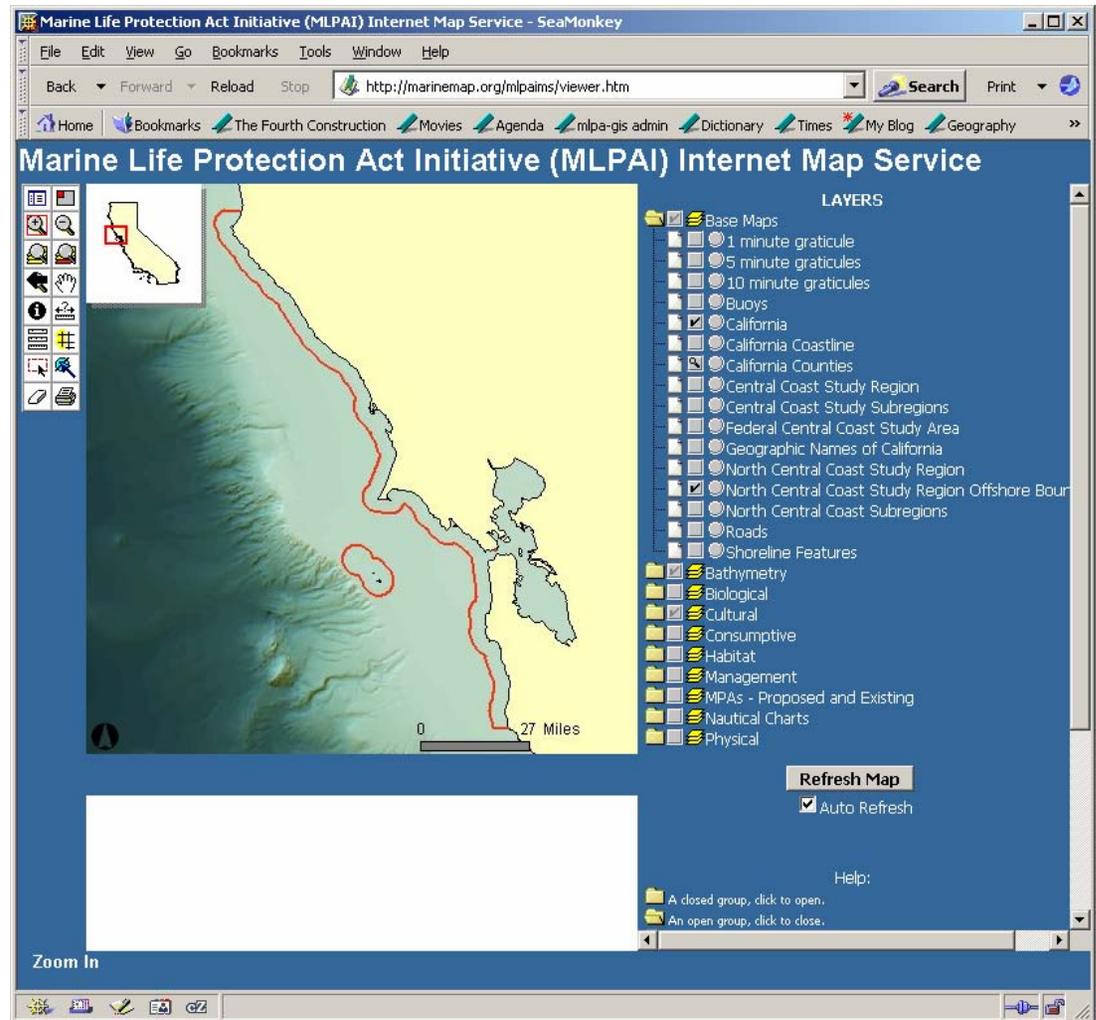
Quality

Description



Geodatabase: What's in there?

- Base
- Bathymetric
- Biological
- Cultural
- Consumptive
- Habitat
- Management
- MPAs
- Nautical Charts
- Physical





MLPA GIS: How to get there

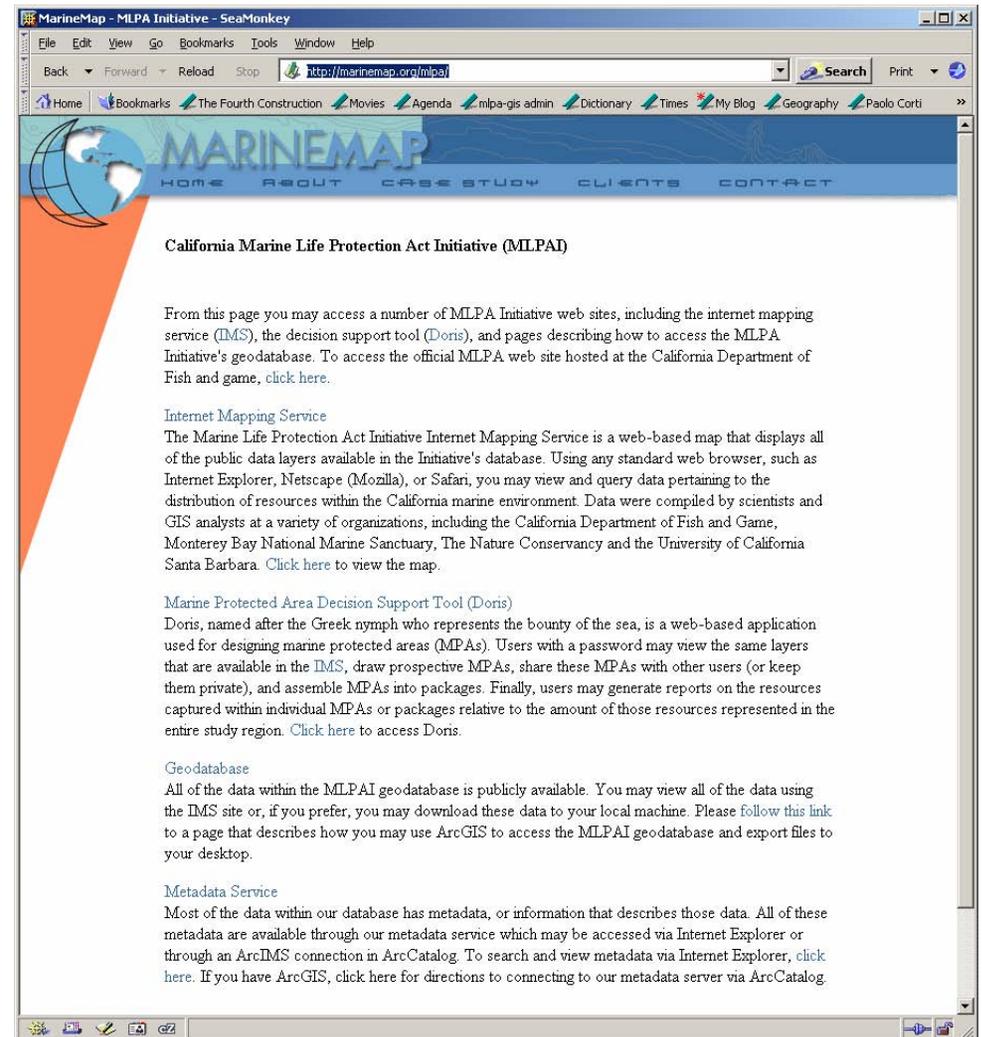
<http://marinemap.org/mlpa>

Links to:

- Internet Map Service (IMS)
- Metadata Server
- Doris (decision support tool)

For expert GIS users:

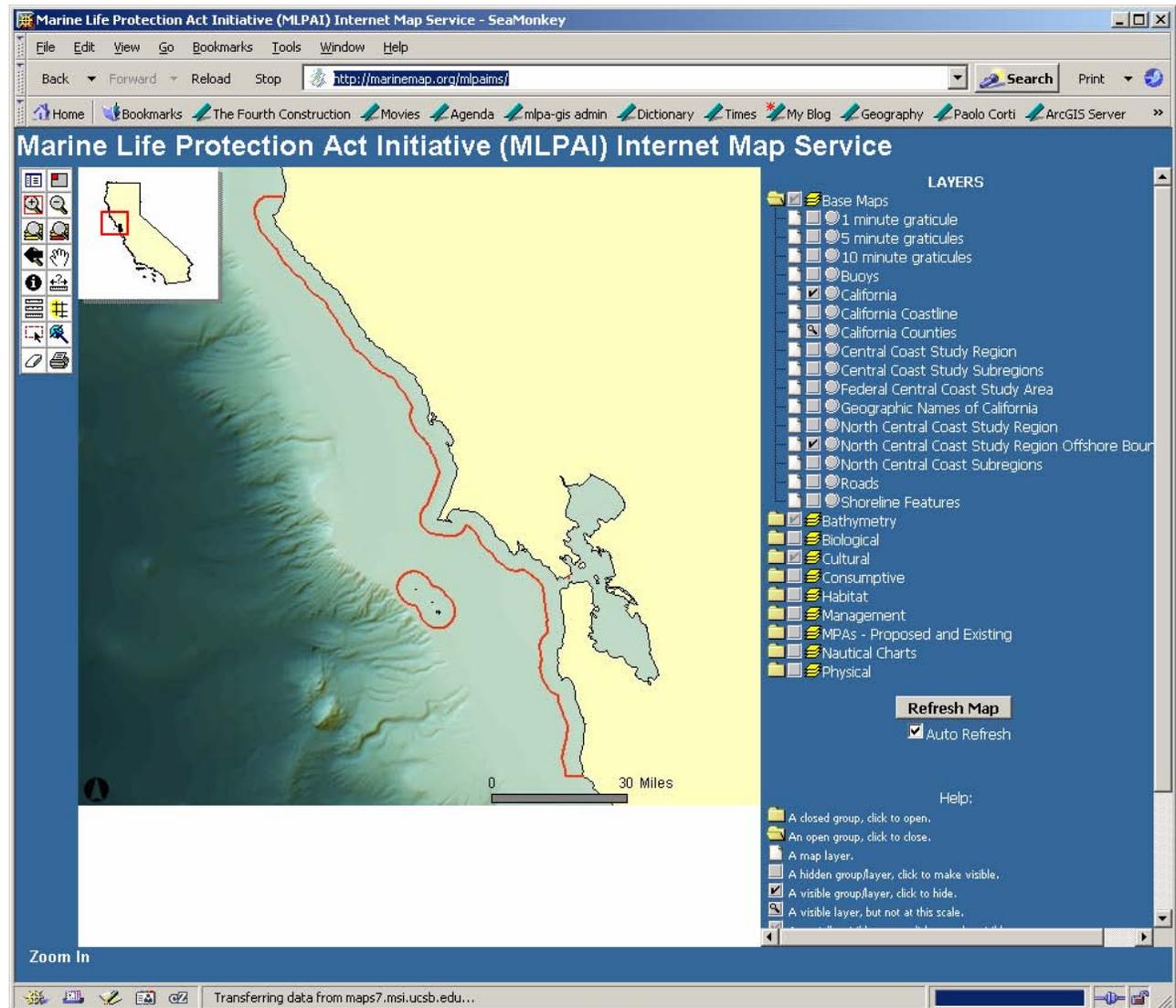
- Instructions for connecting via ArcGIS
- Database download



Internet Map Service: Demonstration

Standard Web Browsers

- Internet Explorer
- Mozilla (Firefox)
- Safari



Metadata Explorer: Demonstration

Standard web browsers

- Internet Explorer *

Searching by keyword

Browse MLPA folders

The screenshot displays the Metadata Explorer web application in a Windows Internet Explorer browser window. The address bar shows the URL <http://marinemap.org/metadata/>. The browser's menu bar includes File, Edit, View, Favorites, Tools, and Help. The application interface features a search bar with the text "Welcome, Guest" and a search button. Below the search bar, there are sections for "Narrow search by:" with links for Content Types (Data, Documents, Resources), Folders (MLPA), and Themes (Agriculture & Farming, Biologic & Ecologic, Admin & Political Bounds, Atmospheric & Climatic, Business & Economic, Elevation & Derived Prods, Environmental, Geologic & Geophysical, Human Health & Disease, Imagery & Base Maps, Military & Intelligence, Inland Water Resources, Locations & Geodetic Nets, Oceans & Estuaries, Cadastral & Land Descs, Cultural & Demographic, Facilities & Structures, Transportation Networks, Utility Networks). The main content area is titled "Catalog Results" and shows "All Records on Map". It includes a "View:" dropdown set to "Gallery", "Showing: 1-12" results, and "Sort by:" set to "Newest first". The results are displayed in a grid of 12 items, each with a map thumbnail and a title: "1 Minute Graticule for the MLPA Study", "10 Minute Graticules for the MLPA", "100 meter contours", "2005 California Recreational Groundfish Full-Time ...", "2005 Non Trawl Rockfish Conservation Area within C...", "2005 Trawl Rockfish Conservation Area within Calif...", "2007 Rockfish Conservation Area (RCA) Contour Line...", "2007 Rockfish Conservation Areas (RCA) - intersect...", "2007 Rockfish Conservation Areas (RCA) - Non Trawl...", "2007 Rockfish Conservation Areas (RCA) - Non trawl...", "2007 Rockfish Conservation Areas (RCA) - Recreatio...", and "2007 Rockfish Conservation Areas (RCA) - Recreatio...". Each item is labeled as "Downloadable Data". Navigation buttons for "First", "Previous", and "Next" are visible at the top and bottom of the results grid.

Downloading the Entire Geodatabase

http://marinemap.org/mlpa/database/MLPA_Geodatabase.gdb.zip



Yikes!

You must have ArcGIS 9.2 (and patience)



GIS Team

Staff are available to help you with your data and GIS analysis needs:

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Summary

You should now know how to:

- Visualize and query the MLPA geodatabase
- Access and search the MLPA Metadata Server
- Create simple maps
- Use metadata to assess data quality

<http://marinemap.org/mlpa>

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