Sustainability of Large Marine Ecosystems: Bridging the Governance and Socio-Economic Gap

Using Geospatial Technology and the Internet to Support Large Marine Ecosystem Programs

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Funding provided by GEF through IOC/UNESCO

Introduction:

- Who am I ?
- What do I do?
- What is my role within the LME Community?

Session Objectives:

- Describe past/present efforts to promote information sharing
- Discuss design and usefulness of an LME GIS KM system
  - Participant discussion
- Open a dialog on data and information standards
  - Participant Discussion

What is a GIS?

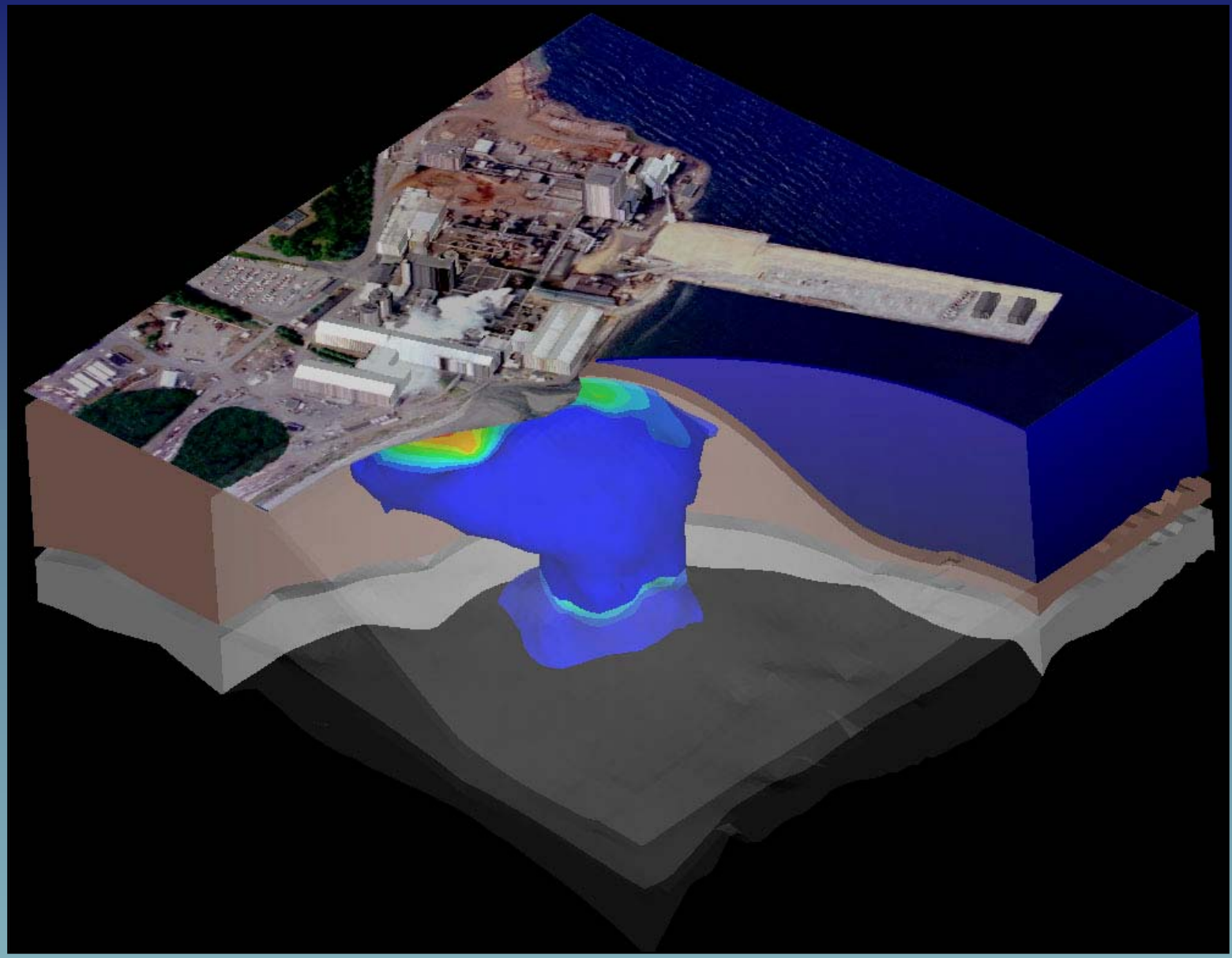
“ A computer system designed to store, manipulate, analyze and display data in a geographic context ”

- ONLY A TOOL!
- Questions and goals must be clearly identified

Making Your Point:

COAST	GEOLOGY	FILE			
Elevation	Ocean	Ocean	Sand	Bedrock	
194	4	1	1	2	3
0	912	0	0	-38.2	-57.7
24	895.2	0	0	-42.9	-60.3
44.4	882.7	0	0	-38	-56.9
56.2	863.5	0	0	-38.9	-55.3
57	853.1	0	0	-42.3	-57.9
69.4	846.4	0	0	-44.9	-62.9
88.7	838.5	0	0	-36.8	-51.1
101.2	843	0	0	-41.5	-52.7
113.7	845.3	0	0	-36	-55.7
145.6	836.2	0	0	-37.6	-48.1
155.8	838.5	0	0	-39.2	-54
185.3	853.3	0	0	-43.5	-59.8
197.1	855.1	0	0	-39.3	-54.2
214.5	850.2	0	0	-37.7	-54.3
236.8	848.8	0	0	-44.9	-56.5
247.2	850.2	0	0	-38.7	-58.1
259.8	852.7	0	0	-38.5	-49.1
276.3	858.3	0	0	-42.1	-54.8
294.2	857.4	0	0	-44.7	-58.2
302.8	856.4	0	0	-40	-60
331.2	854.4	0	0	-38.4	-55.8
349.9	837.4	0	0	-39.7	-53.6
355.4	826.8	0	0	-44.7	-65.7
363	800.9	0	0	-41.3	-57.4
370.8	787.9	0	0	-35.3	-48.3
376.9	767.1	0	0	-36.2	-45.4
387.8	756.4	0	0	-40.6	-59.6
464.8	638.3	0	0	-44.9	-60.2
470.7	607.1	0	0	-35	-44.5
470.7	564.2	0	0	-41.2	-59.6
492.2	472.4	0	0	-37.4	-46.9
500.6	440.3	0	0	-44.9	-57.2
521.5	425.6	0	0	-42.5	-57.7
535.2	398.2	0	0	-42.9	-60.8
529.3	353.3	0	0	-39.9	-59.3
507.8	318.2	0	0	-39.4	-51.7
460.9	253.8	0	0	-42.9	-59.1
421.9	181.5	0	0	-44.8	-56.8
408.2	111.3	0	0	-35.8	-49.4
404.3	66.4	0	0	-42.8	-62.1
402.2	0	0	0	-35.2	-49.8
50	962	0	-10	-35.8	-52.3
74	945.2	0	-10	-44.2	-59.8
94.4	932.7	0	-10	-42.7	-55.9
106.2	913.5	0	-10	-39.9	-47.4

The Power of a Picture:

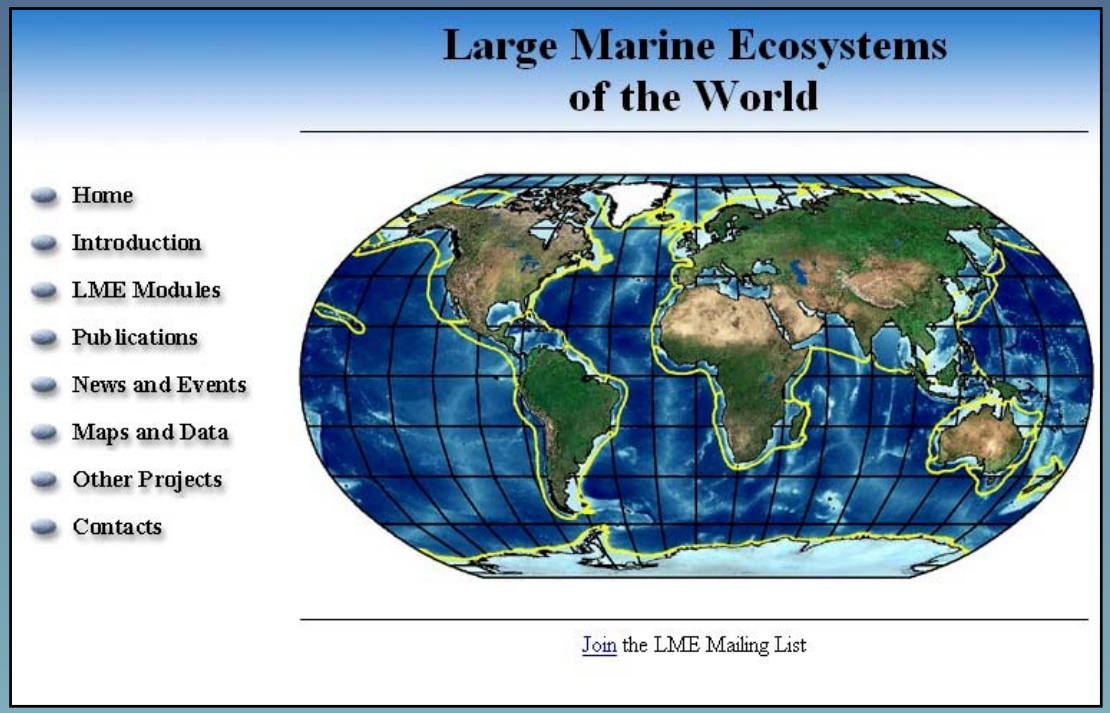


Bringing Information to the People:

The LME Data Distribution Project

Objective: To provide free, dependable, easy access to core LME data (maps, boundary files, module summaries)

Strategy: Capitalize on the power of the Internet



Rationale:

- Operates 24/7
- Global coverage
- Consistent data

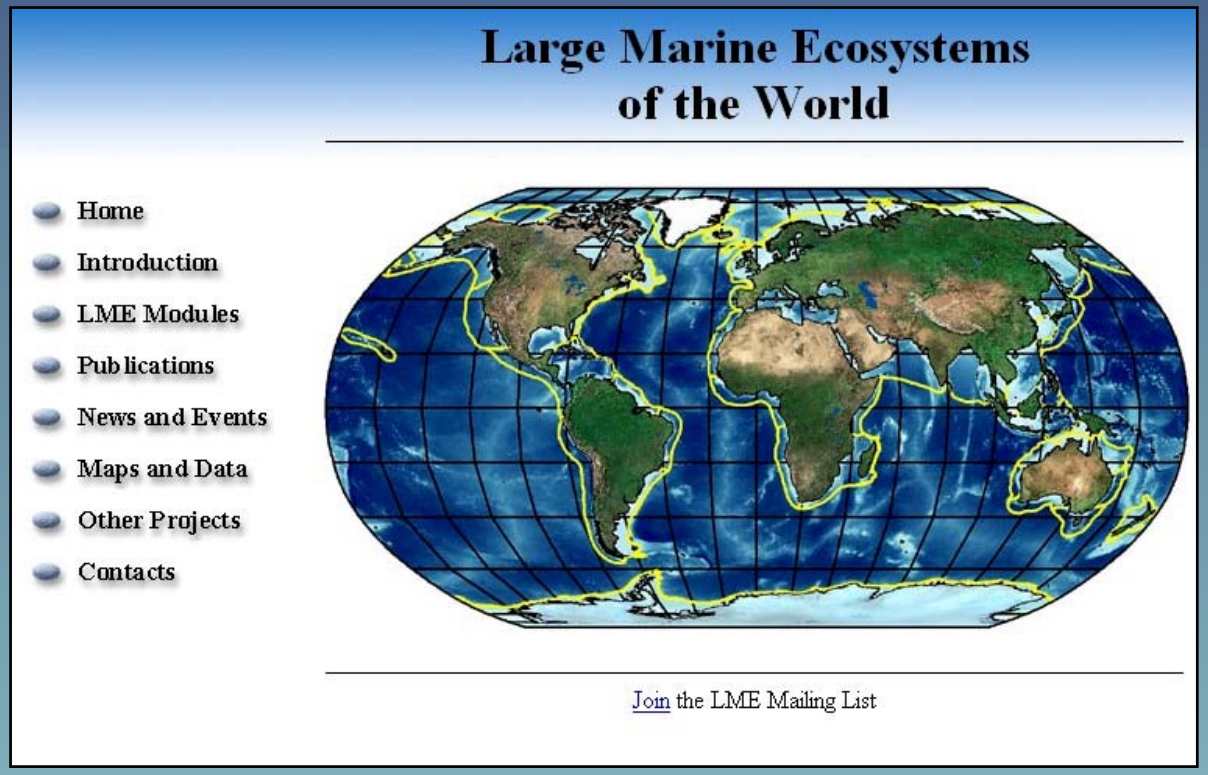
Effectiveness:

- ~ 530k pages served
- ~ 200 / day
- ~ 70 Gb data transferred
- ~ 7000 distinct hosts
- ~ 3200 on mailing list

Inherent Internet Drawbacks:

The Limitations:

- Vast amount of potential
- Inefficient design for KM system
- Too much for 1 person/group with limited time and funds



The Results:

- Limited Content

Is There a Better Way?

- Decentralize data holdings
- Elicit additional help

The Second Generation: Finding a Better Way

Objectives:

- Build a true LME community
- Provide free, dependable, easy access to available LME data and resources

Strategy: Capitalize on technological advances as well as the power of the Internet

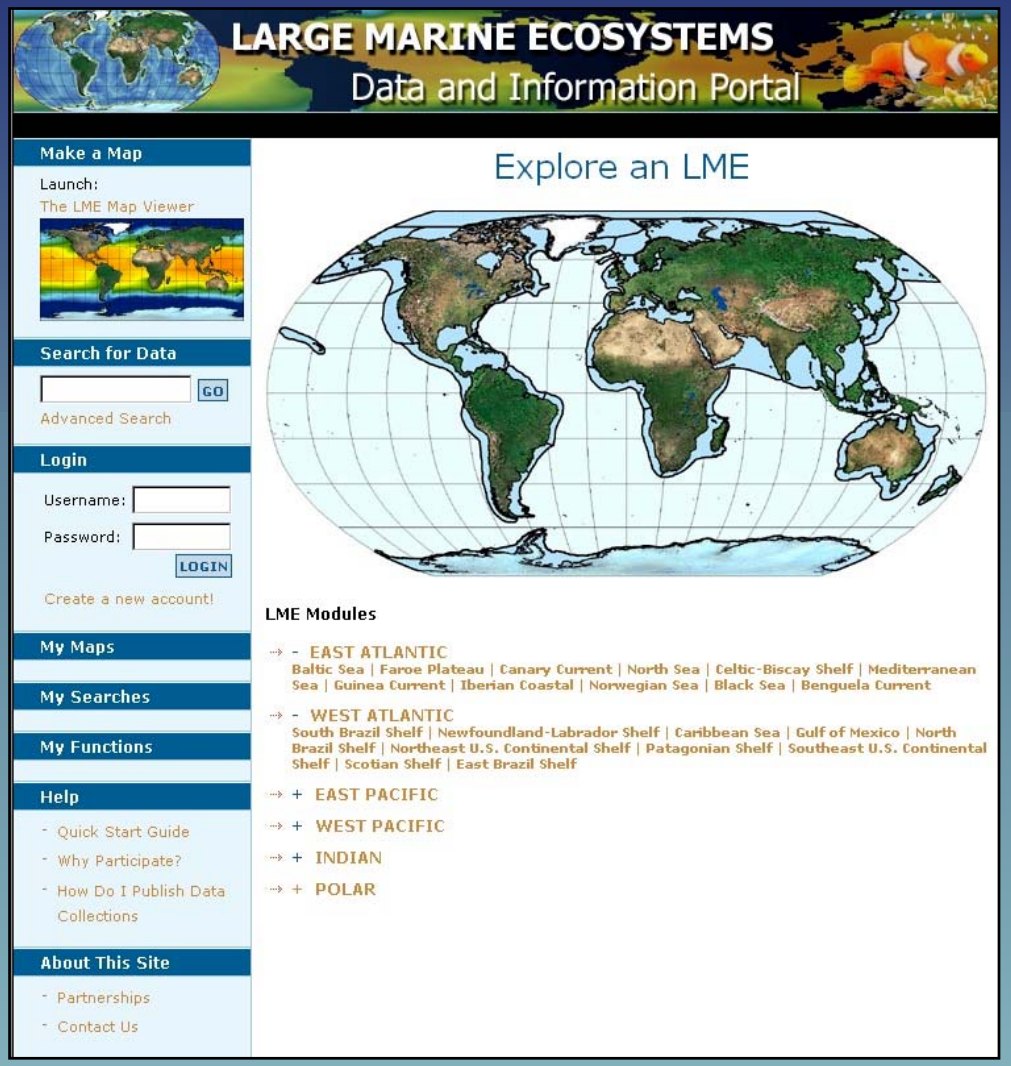
The Second Generation: LME Data and Information Portal

What is a Portal?

- A master website of relevant links

Strengths:

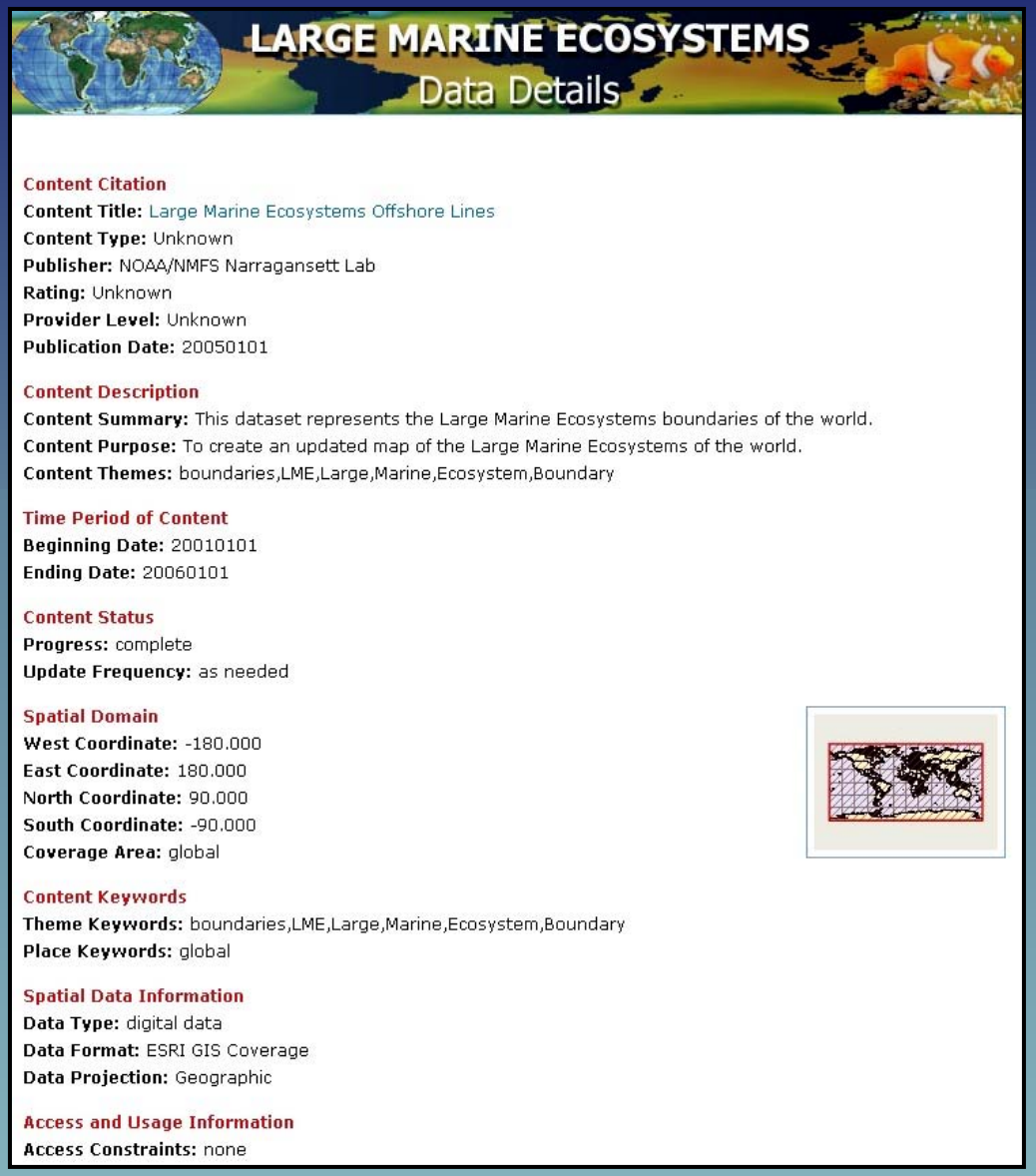
- Searchable database
- Content added/maintained by users
- Comprehensive, relevant content
- Little effort required by any one group



LME Data and Information Portal : Key Features

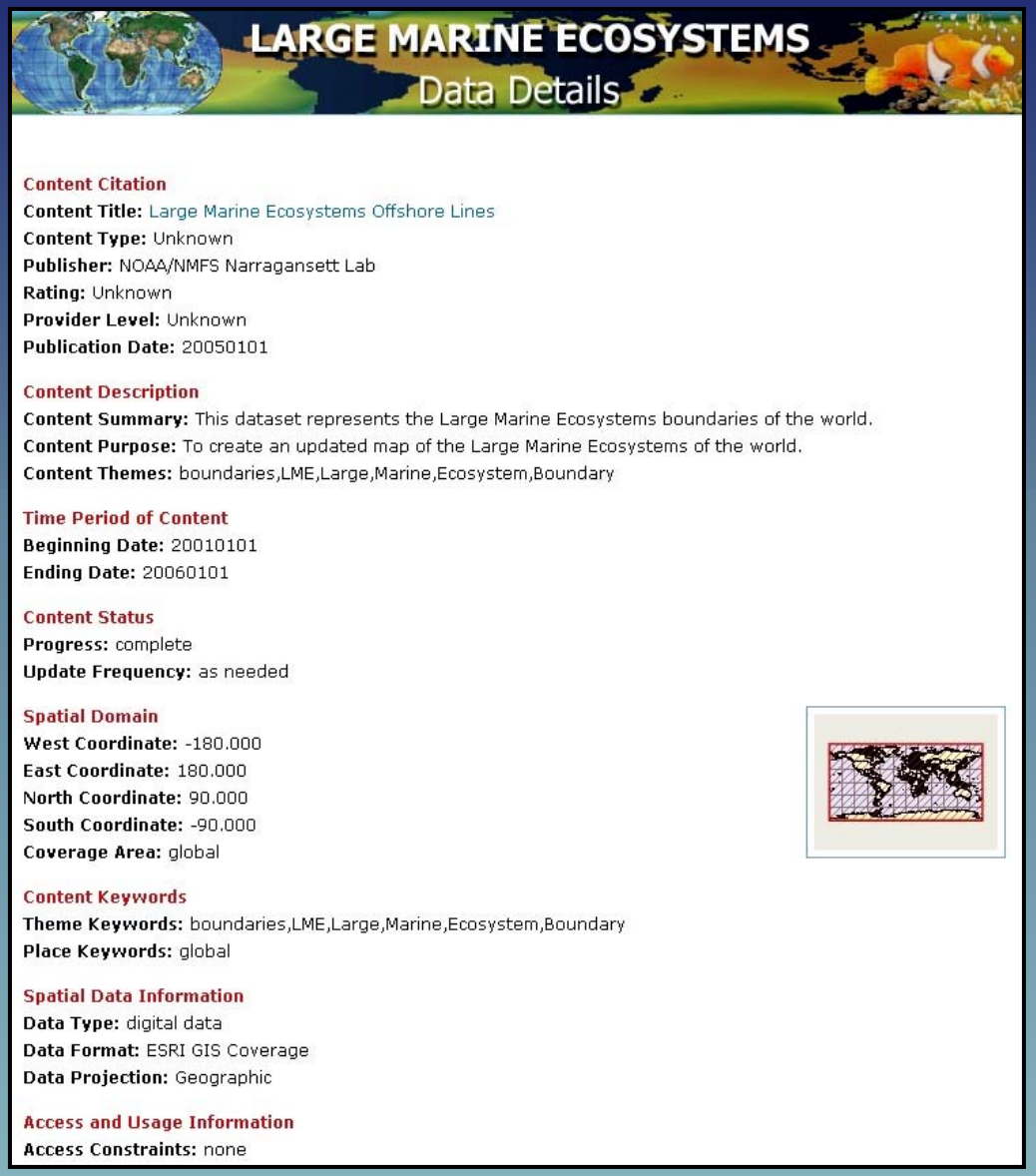
Key Features:

- Searchable
  - Metadata database
    - What is metadata?
      - Who, What, When, Where, Why
    - What can be searched?
      - Location, Data Format, Content
- Content decided by users
  - Links/metadata added via internet
  - Users maintain full control of data
- Online Forum
  - Ask questions, solve problems



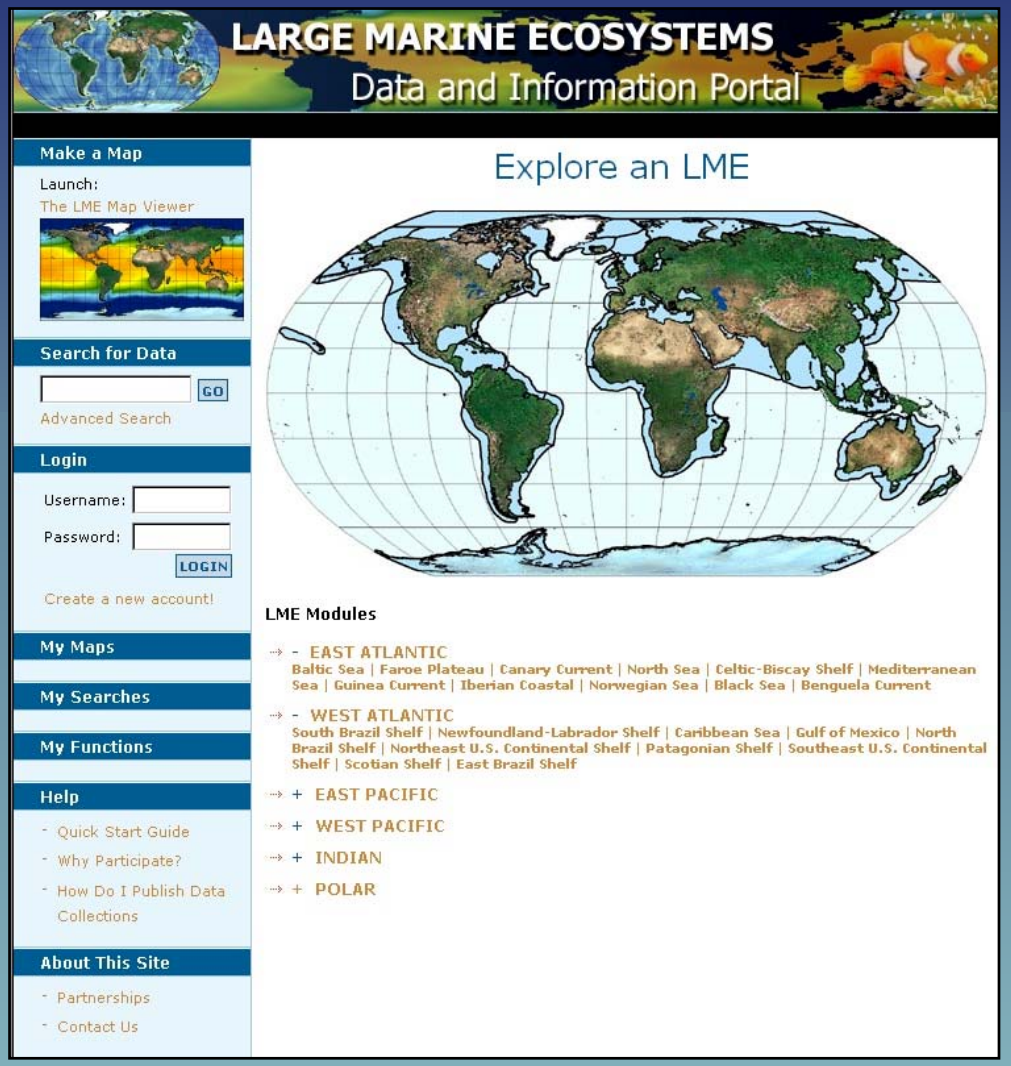
LME Data and Information Portal : The Practical Side of Metadata

- Workflow is detailed
- Ensures data used appropriately
- Users can assess utility before obtaining data
- Reduces phone calls and e-mail



LME Data and Information Portal

DEMO PORTAL



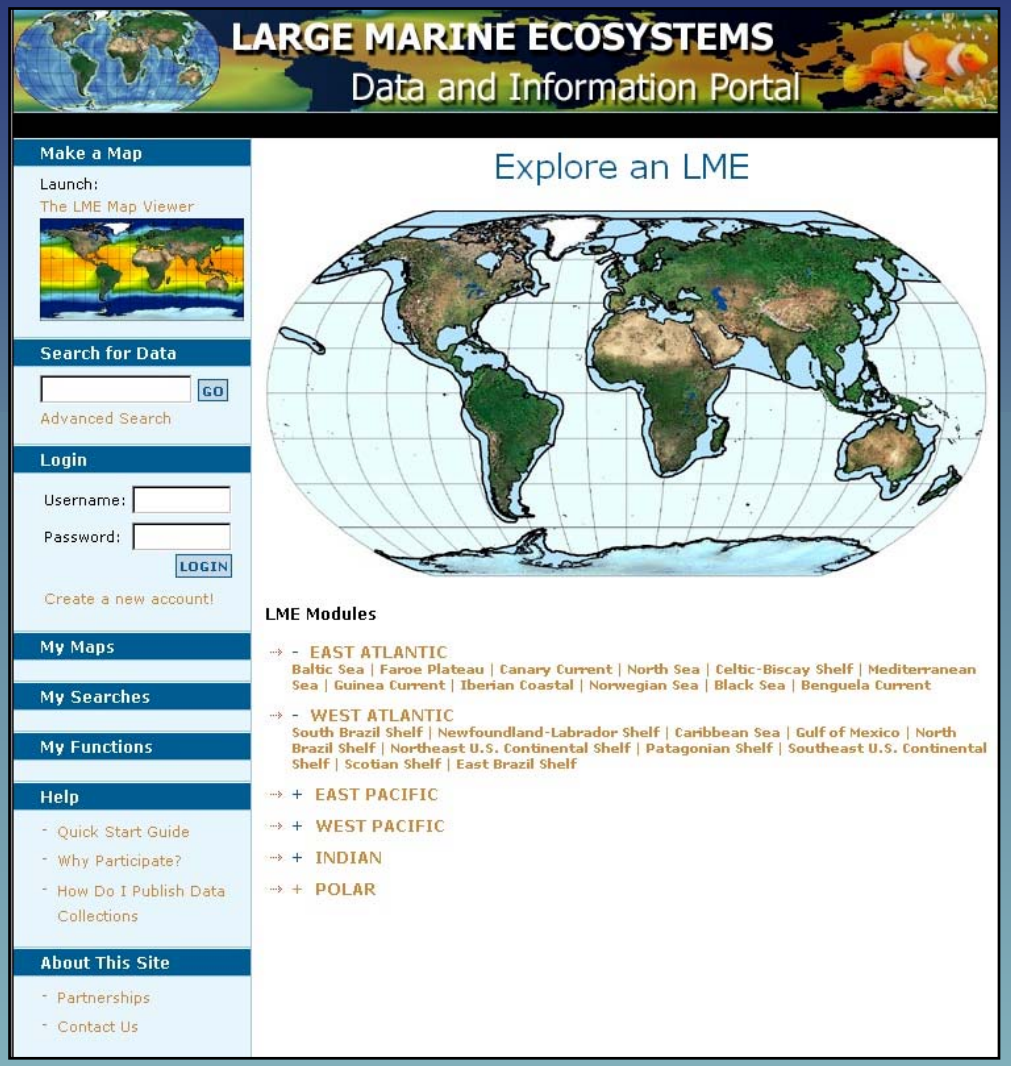
LME Data and Information Portal: Pros and Cons

Why is a portal format better?

- Much richer content
- Users determine content
- Users maintain full control of data
- Information is up-to-date
- No new hardware/software

Why not?

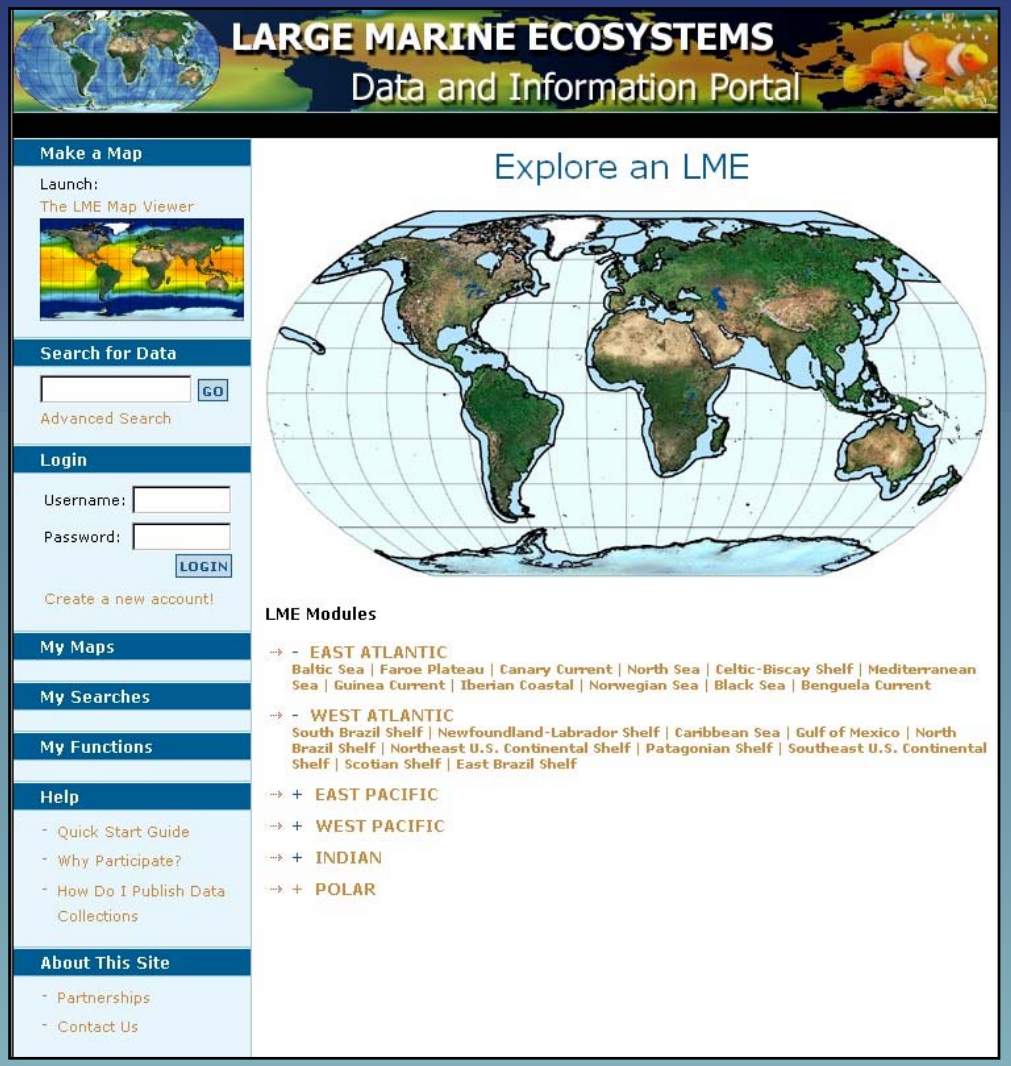
- Requires active user participation



LME Data and Information Portal: Perceived Benefits to LME Community

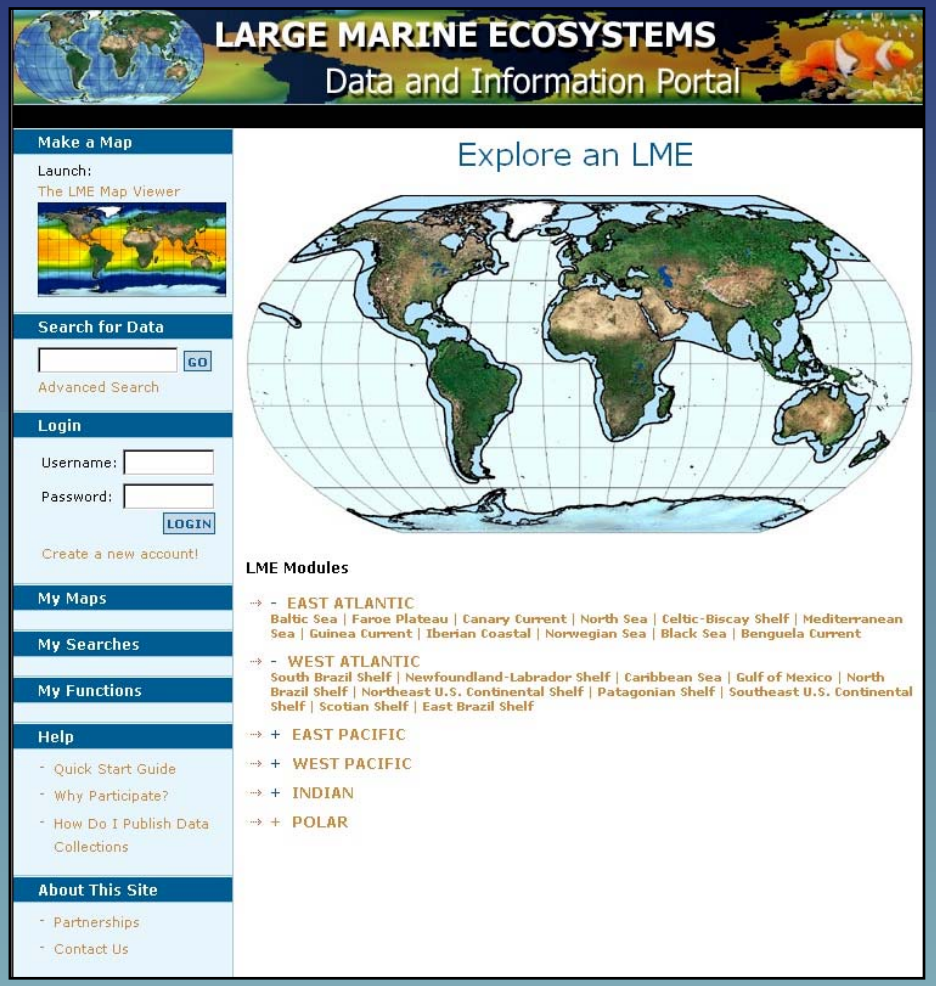
Benefits:

- Builds a true LME Community
- Seamless movement from global to local levels
- Maintain quick and easy distribution
- No specialized software
- Metadata already/should exist
- Identify data gaps
- Consistent data
- Avoid duplication of effort
- Build technological and informational capacity
- Project transparency
- Use participation to justify future funding



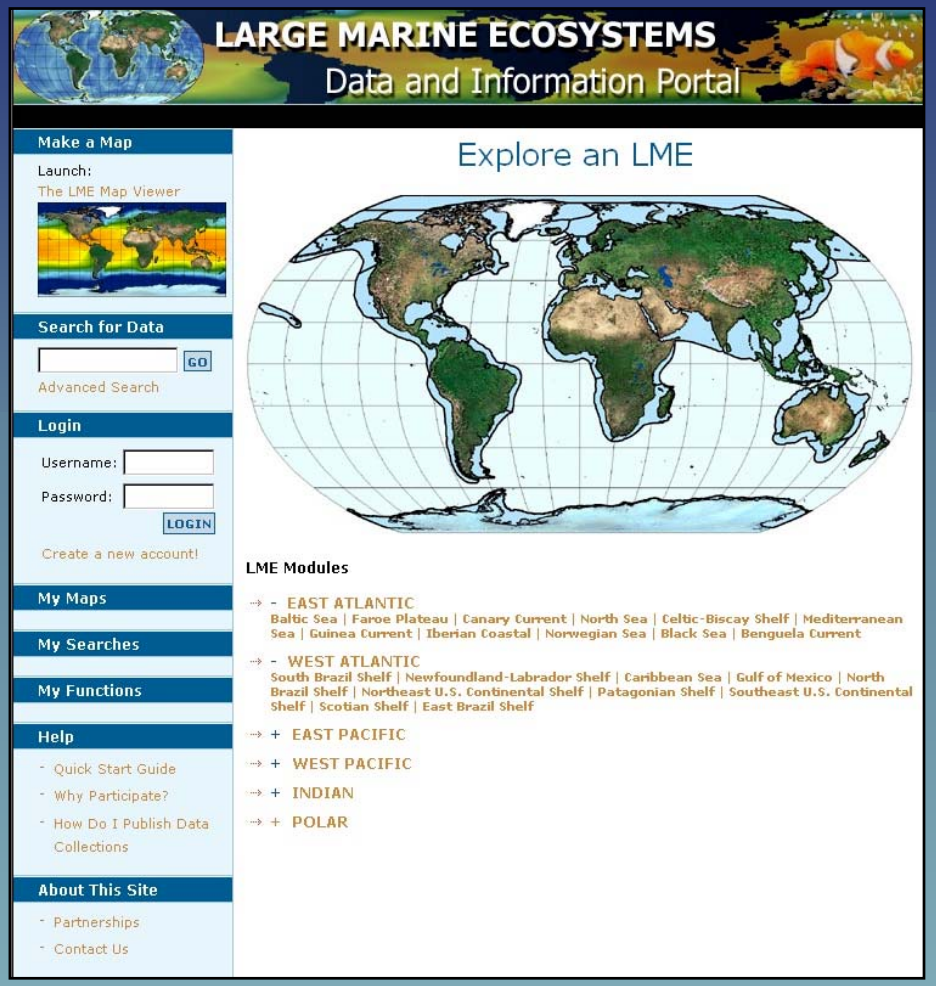
LME Data and Information Portal: Why Share Data?

- Building a GIS is expensive
  - Both capturing and maintaining data
  - Cost sharing is a better way to approach large projects
- Avoid duplication of effort
- User base too small to recoup costs
- Questions are too complex for any 1 group
- Capitalize on institutional strengths
- Database is consistent



LME Data and Information Portal: Open Discussion

- Is this useful?
- Would your group be willing to participate?
- What should be added/removed?
- Any potential problems?
- Your thoughts on data sharing?



Expanding the Roll of the LME Community: Looking Foreword

- Should there be standards within and among LMEs?
  - Data format, documentation, attributes, units of measure, legends, coordinate systems, etc.
- Should there be core datasets?
  - Productivity, fisheries, pollution, socioeconomic factors, governance
- What is the best way to build technological capacity?
- Who will coordinate this?

Expanding the Roll of the LME Community: One Approach

The LME Data and Information Council (LME DIC)

- Representatives from each LME project

Core Principals:

- Data and information shall be freely and easily available.
- Databases shall conform, inasmuch as possible, to standard designs allowing exchange of data within LME's, and across LME boundaries.
- Databases shall be fully documented and meet ISO metadata standards.
- The architecture of the LME Information Network shall be based on simplicity, ease of use, reliability, and it shall strive to avoid redundancy and duplication of effort.
- Standards for database design and dissemination be established by the LME Information Council (LME DIC).
- The LME DIC provide leadership in fostering communication, knowledge exchange, cooperation, and training for and by the LME community.

Expanding the Roll of the LME Community: The LME Data and Information Council

Discussion:

- Is this useful?
- Should this happen?