

RENEWABLE NATURAL RESOURCES FOUNDATION

Congress on Building Capacity for Coastal Solutions

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Lessons from the Gulf of Maine

Sponsored by:

National Oceanic and Atmospheric Administration

U.S. Geological Survey

USDA Forest Service

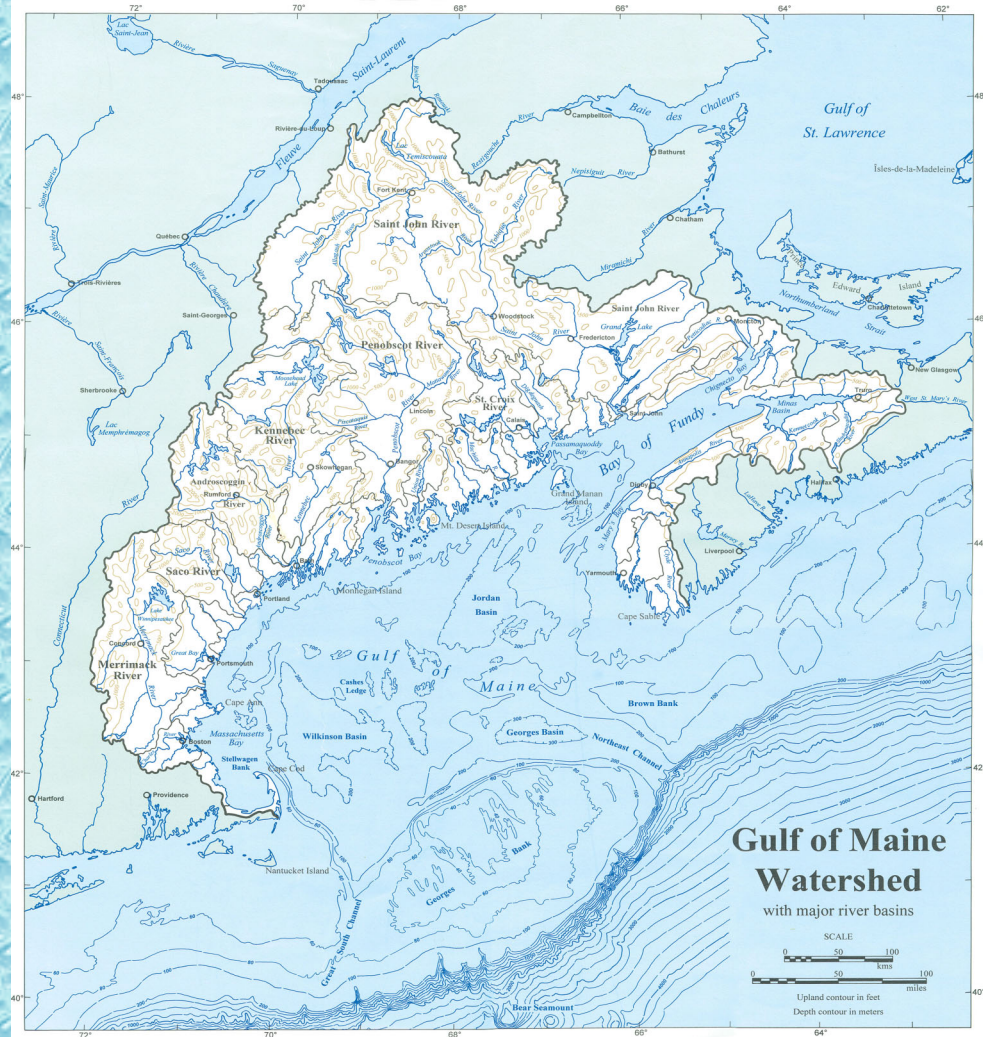
U.S. Environmental Protection Agency

Case Study: The Gulf of Maine

- Lessons in Governance
- Solutions Through IT
- Community Involvement in Scientific Projects

A Tour of the Gulf of Maine

- US & Canada
- Watershed is 70,000 sq. miles
- 85 M w/in 1-day
- 2000 point source discharges
- Array of protected areas



Lessons Learned

- Focus on regional needs shared by all partners
- Maintain continuity in commitment, leadership, and staffing
- Build capacity and empower others to act

Focus on Regional Needs

Principles

- Issues that require regional collaboration
- Inclusive in priority setting
- Build lasting and productive relationships
- Choose priorities, adopt measurable objectives, create baselines & track progress

Good, Bad and Ugly

- Shared vs. common
- Need time to set priorities
- Collegial & genuine
- Hallmark is Action Plan
 - Measurable
 - Resources for baselines and to track progress
 - Held accountable

Maintain Continuity in Staffing, Commitment and Leadership

Principles

- Issues that require regional collaboration
- Inclusive in priority setting
- Build lasting and productive relationships
- Choose priorities, adopt measurable objectives, create baselines & track progress

Good, Bad and Ugly

- Participation & turnover
- Inertia and culture
- Working in a regional setting
- “Other duties as assigned”

Build Capacity and Empower Others to Act

Principles

- Networking & sharing
- Sustain partnerships
- Celebrate success
- Make your agenda theirs
- Patience is a virtue

Good, Bad & Ugly

- 15-years to create a foundation w/cracks
- Partnering is key to leveraging resources and results

Ocean Governance Recommendations

- Incubate a network of bottom-up ecosystem councils within a federal framework with robust stakeholder participation
- Substantially improve federal agency coordination & increase investments in management, science, monitoring & observing, information delivery, and capacity building

Solutions Through IT

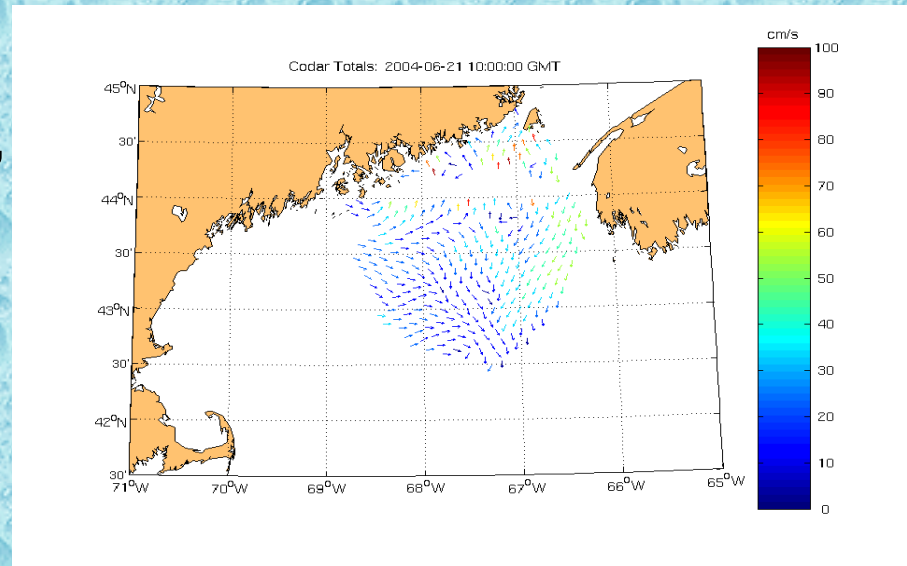
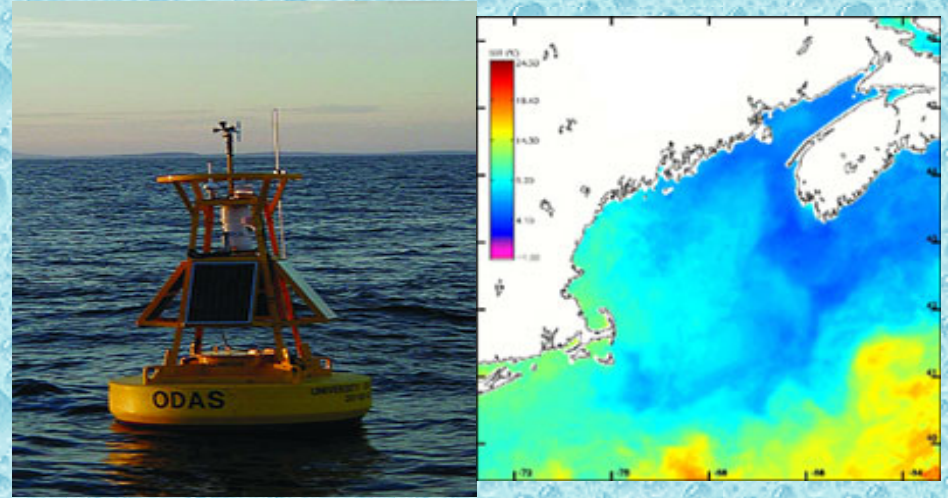
- Gulf of Maine Ocean Observing System (GoMOOS) was established to provide data and information for the public and private sectors to solve practical problems, predict events, and further understand natural systems in the Gulf of Maine and is designed to be consistent with IOOS

GoMOOS

- GoMOOS serves the entire region and is viewed as a public service utility.
- It is incorporated as a nonprofit with multi-sector membership including universities, port authorities, industry, government, and non-profits.
- The governing board is elected from the membership

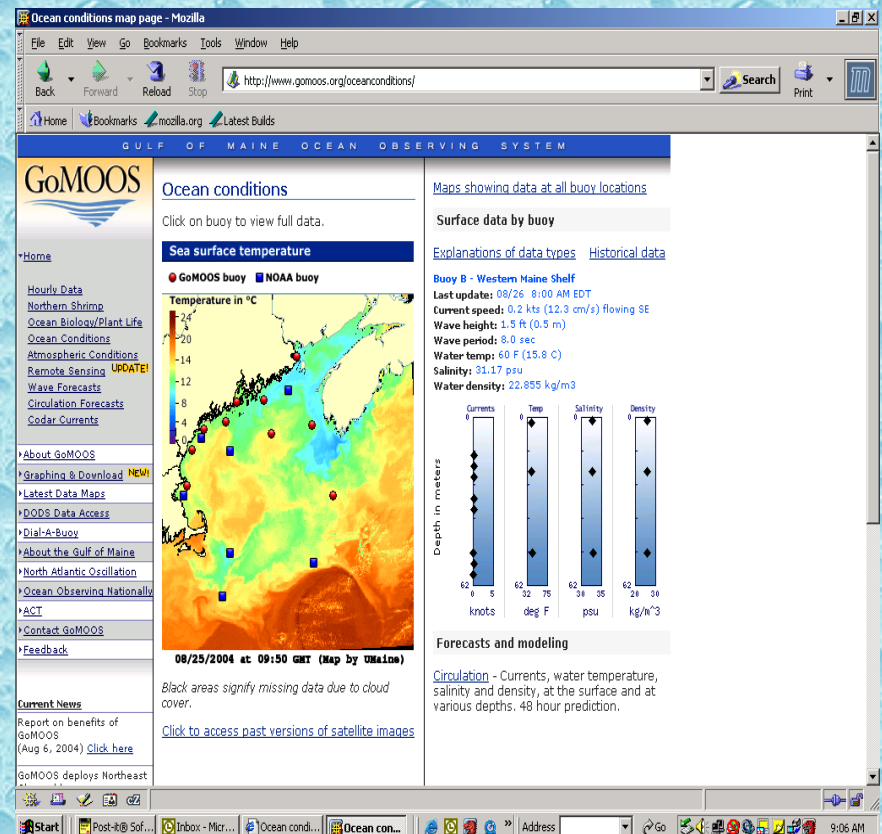
Data Acquisition

- Buoys -- Near real-time oceanographic and meteorological conditions
- Satellite -- Big picture view of the Gulf of Maine
- Models -- Forecasts of Gulf wide circulation, temperature, salinity and waves
- HF Radar -- Hourly maps of surface currents



Data Management and Product Development

- Data management
 - Processing, distributing, and archiving
- Data/Information product development
 - Identifying users needs
 - Developing tools to meet user requirements



Issues to Integrating Data

- Many organizations collect data but:
 - Data is stored in different formats
 - Limited connectivity between data sets
 - No standard way to discover data
 - Difficulty in integrating data from different sources
 - Unique policies and procedures per institute

Gulf of Maine Spatial Data Project: Addressing data sharing issues

FGDC/GeoConnections Cooperative
Agreements Program:

- Create an environment for data sharing in the Gulf of Maine based on adopted international standards
- Demonstrate data sharing between US and Canadian institutions for a common geographic region—the Gulf of Maine

Gulf of Maine Spatial Data Project Outcomes

- Access and integrate data in real time from multiple sources
- Address dynamic resource management issues using shared spatial data
- Ensure the widest range of potential users of spatial data have access for their specific application

GoMOOS Proposal and Project Steps

- Identify Partners and Data
- Implementing data interoperability standard
- Develop a portal for sharing and integrating data
- Develop a demonstration tool that uses data for specific issue
- Document project issues and solutions

IT can do a lot, but there are limits...

- IT is only a tool
- Information \neq Knowledge
- Need organizational support to develop, implement, and maintain
- Requires commitment across institutions for the sharing of data

IT Conclusions

- IT can enhance information sharing and lead to better decision making
- Institutions can implement existing interoperability standards for spatial data to allow for dynamic access to information needed for decision making
- Community involvement is needed in developing new standards e.g. Marine Metadata Initiative (MMI)
- Institutional barriers can be overcome by commitment to long term partnership and working together to develop joint IT solutions

Community Involvement in Scientific Projects

- Three case studies used to show the importance of community involvement and how to engage local resource users
 - Penobscot Bay Project
 - Cod and haddock spawning mapping
 - Northeast Regional Cod Tagging Program

Penobscot Bay Project

- Examined larval lobster transport mechanisms by combining satellite data with local knowledge to sustain the lobster fishery
- Collaboration between the federal government, state of Maine, fisherman, and NGO's
- Fisherman played a key role in data collection and analysis

Penobscot Bay Project

- Project outcomes included:
 - An ecological characterization captured in a GIS database and made widely available
 - Adoption of data and techniques by the Maine Department of Marine Resources
 - Cooperation among fishermen, scientists, and managers in development of a predictive model
 - Development of an ecosystem orientation for a wide range of coastal management issues

Cod and Haddock Spawning Mapping

- Used information acquired through interviews with fishermen and then compiled into a series of GIS maps and analyzed to make a hypothesis about the collapse of the fishery
- Outcomes include:
 - An understanding of the complexity and importance of near-shore spawning patterns
 - Utilization of the data by the Maine Department of Marine Resources to institute a five-year seasonal spawning closure
 - Preservation of historic information for future management issues

Northeast Regional Cod Tagging Program

- Designed to improve understanding of cod movement in the Gulf of Maine and provide new information on essential habitat and behavior with the ultimate goal of expanding the information base for Atlantic cod
- Fishermen are given financial incentives to return fish tags to the project coordinator
- Lessons learned:
 - Need for local knowledge in efficiently finding fish for research
 - Applied projects invoke a strong interest by local resource harvesters
 - Ecosystem or even population scale fisheries fieldwork requires longevity

Conclusions for effective coastal solutions for fisheries issues in the Gulf of Maine

- Must have funding and monitoring systems that are effective over a longer time scale
- Spatially fine scales and species interactions must be taken into consideration
- Local organizations, educational institutions, fishermen and communities can provide an effective research and management network
- Cooperation, cooperation, cooperation