

The ERMA[®] Platform

Through a partnership with the University of New Hampshire's Coastal Response Research Center (CRRC), OR&R developed ERMA platforms for New England, the Caribbean, the Arctic, Gulf of Mexico, and the Puget Sound to assist in regional preparedness and response. ERMA is a web-based data management platform that incorporates static base layers along with real-time streams of data into a fast, user-friendly Geographic Information System (GIS). ERMA can integrate oil spill trajectories, with weather, tides, currents, and ship tracking data and place these data in context with, resources at risk and other relevant static data in an easy-to-use format. Unlike many other spatial data systems ERMA data layers can be updated on the fly via special user accounts therefore field or command post users ensure the most accurate and up to date data are available for situational awareness.

ERMA enables a user to quickly and securely upload, manipulate, export, and display spatially referenced datasets, resulting in high impact and fine resolution visualization of integrated data for solving complex environmental response and resource issues. The application is based on Open Source software (PostgreSQL/PostGIS, MapServer, OpenLayers) that meet the Federal Geographic Data Committee standard. Additionally this open source software system base ensures compatibility with other FGDC compliant commercial and Open Source GIS applications that can readily incorporate data from web-served data projects. This compatibility assists in data sharing, leverages existing data projects, and reduces ERMA's updating and maintenance costs. ERMA is fast and easier to use than some proprietary GIS tools and due to the open source software base can be tools can be customized as per stakeholder needs. . ERMA allows users to download data sets of interest and incorporate them into desktop GIS, Google Earth, or into partner GIS internet mapping sites. The Web-based nature of the ERMA platform is critical as it facilitates the integration and synthesis of various types of information, provides a common operational picture for all individuals involved in a response, and improves communication and coordination among responders and stakeholders. ERMA provides resource managers with the information necessary to make informed decisions and the resulting maps are indispensable tools.

ERMA provides non-GIS users with the ability to quickly interact and analyze information. For example, a user can draw a polygon on the screen and upload it as a layer to communicate a recent observation, a region of concern, or a proposed fisheries closure area or restoration project and share this immediately with other webusers. ERMA was designed to leverage existing data and aggregate them to allow for interpretation and display of risk scenarios. Polygons can also be tied to data that intersects and then return a queried report based on the area of interest. ERMA also allows the user to measure distance or draw a perimeter to calculate the area of the polygon.

ERMA has a multi-level security structure. For example, the public can see all publically available layers without having to login, but sensitive information during a spill or for climate change analysis can only be accessed by authorized users. Views (layers) can also be tailored for particular groups like responders, restoration specialists, or legislators.

The data sets used in an ERMA project are determined by the stakeholder community. Thus, part of the proposal includes a budget to conduct workshops to identify data needs and requirements, prioritize data, and identify how stakeholder groups prefer the website to look and feel.