



# California Marine and Coastal Geospatial Information Management System Scoping Study

Kearns & West and  
The Spatial Collaborative

October 14, 2011

This report was prepared by Kearns & West and the Spatial Collaborative. It was funded by the California Ocean Protection Council and advised by the California Coastal and Marine Geospatial Working group (See Appendix H for Working Group members).

**Kearns & West** is a collaborative solutions and stakeholder engagement firm with offices in San Francisco, Washington, D.C., Portland, and Sacramento. Kearns & West has more than 25 years of experience conducting stakeholder, conflict, and information needs assessments; developing and implementing engagement and outreach plans; and designing and providing neutral third-party facilitation to support collaborative planning and decision-making processes in the water, coastal environmental, ocean, land use, and energy sectors.

**Spatial Collaborative** is geared toward scoping, evaluating, developing and implementing geospatial tools for collaborative decision-making. Our team includes geospatial developers, planners and marine scientists with experience in large-scale planning initiatives, including marine protected area planning in California, conservation zoning in England, and marine spatial planning in New Zealand. As a team, we help organizations evaluate their planning objectives, define and develop web-based applications that facilitate the use of geospatial information by non-technical users.

## Executive Summary

California's shoreline and coastal waters are among its most valuable assets. Successful stewardship of these resources requires effective management and sharing of, and access to, scientific information, including geospatial information. In recent years, changes in computing power, available data, and software are enabling unprecedented uses of geospatial information for analysis and decision-making the world over. These new uses of geospatial information improve our understanding of our environment, enable more comprehensive and transparent planning, and help engage stakeholders across scales, and at speeds, that were previously impossible.

In California, geospatial data are currently housed in many different agencies and databases, using different standards for quality control and varying formats and spatial-temporal resolutions. This heterogeneity hinders agencies' abilities to collaborate and communicate effectively in their planning and permitting work. It also presents significant problems for conducting increasingly comprehensive marine and coastal ecosystem-based management, which requires sharing and integrating these data, as well as displaying the data in publicly-accessible formats to support decision-making processes.

In 2010, the California legislature and the Governor recognized this challenge and signed into law Assembly Bill 2125, which tasked the California Ocean Protection Council (OPC) with assessing how California coastal and marine-focused state agencies could better gather, manage, share and utilize geospatial information and technologies to manage the state's coastal and ocean environment. In early 2011, Kearns & West and the Spatial Collaborative were selected to conduct this assessment, resulting in this scoping study.

*Key findings from the scoping study consultations include:*

- All agencies report the need for a commonly accessible coastal and marine Information Management System (IMS) through which to access geospatial information and no existing California-based web atlas or geospatial information management system evaluated during this study addresses the complete set of features and requirements identified;
- The dominant use of geospatial information is by non-technical users using web mapping applications and Google Earth. Web services and "out of the box" software solutions can provide essential functionality for visualizing and more easily sharing data across organizations and agencies as well as inter-operate with other IMSs and databases;
- Previous experiences with distributed and centralized IMS architectures have shown strengths and weaknesses for each approach, depending upon data holder capabilities, and a hybrid approach could capitalize upon the strengths of both architectures; and
- Long-term staff support and funding are required to support an effective IMS. A Data Librarian and Data Diplomats could greatly enhance state inter-agency data sharing and maintenance of a coastal and marine IMS.

*The resulting recommendations that emerged from these findings include<sup>1</sup>:*

1. A California coastal and marine geospatial IMS should be searchable and viewable through a dedicated web atlas<sup>2</sup>, with the ability to view, overlay, print, and/or download geospatial data in several formats, including through GIS web services within ArcGIS Desktop;
2. The architecture of the IMS should be organized with a hybrid approach, supporting both centralized and distributed data sources;
3. The IMS should have staff support through a data librarian and data diplomats; and
4. The IMS should be housed and funded in such a manner so as to enable it to be a long-term resource for California agencies.

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<sup>1</sup> A complete description of the findings is included in Section 5, and more detailed recommendations are included in Section 6.

<sup>2</sup> Such a resource might also be referred to as a geospatial data atlas, data viewer, internet map service, web mapping application, web portal, or web viewer.