

MPA NEWS



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New Web-Based Tool Allows Planners to Design MPAs, View Potential Impacts Instantly

A new Web-based tool for planning MPAs has debuted as part of the ongoing initiative to create a network of MPAs off the coast of the U.S. state of California (the Marine Life Protection Act Initiative - see *MPA News* 8:11 and 9:1). The tool, called MarineMap, is allowing stakeholders and resource managers to experiment with different MPA designs on their own computers, at their own pace. The interface is relatively simple: the user clicks-and-drags to draw the outline of an MPA, and MarineMap immediately indicates the ecological and socioeconomic impacts of the proposed MPA design.

MarineMap is far from being the first computerized MPA design tool. Marxan, for example, is a widely used computer program for planning MPAs, including in conjunction with stakeholders (www.uq.edu.au/marxan). But MarineMap is different from past tools in that it does not rely on complex mathematical equations to generate a final answer, and gives users complete control of where they put their MPAs. In addition, because MarineMap is Web-based, it frees the process of MPA planning from the sometimes-stressful environment of stakeholder meetings, says designer Will McClintock of the University of California, Santa Barbara.

"As one might expect, stakeholder meetings are high-pressure venues where heated discussions often occur between parties with radically different viewpoints," says McClintock. "For those who need a more laid-back atmosphere to develop their ideas, MarineMap can be used in the privacy of one's own home." He points out the tool is available to anyone with an Internet connection, and requires no expertise in Geographic Information Systems (GIS). "MPA-planning processes in the past, including with Marxan, have been slowed by having to rely on GIS professionals with expertise in ArcGIS Desktop for all analytical work," says McClintock. "With MarineMap, users are provided immediate feedback on MPA size, habitat representation, economic impacts, etc. Therefore, they can work quickly to design MPAs that maximize ecological benefits while minimizing economic impacts."

When a user draws the outline of an MPA in MarineMap, the program prompts the user to enter:

- A name for the MPA;
- The specific goals and objectives the MPA will meet (e.g., protecting species diversity, providing research opportunities, etc.);
- The type of designation (e.g., state marine reserve, state marine conservation area, etc.); and
- What extractive uses (e.g., commercial halibut fishing by hook-and line) may be permitted within the MPA.

Because MarineMap was developed to meet the specific needs of the Marine Life Protection Act Initiative, the program provides feedback to users on how well their MPAs meet guidelines provided by the initiative's Science Advisory Team. (The team, for example, has specified the minimum and preferred sizes for MPAs and the maximum distance by which MPAs may be separated.) In this way, MarineMap provides transparency, says Charles Steinback of Ecotrust, a collaborator in developing the program. "All of the data and methods that are used by scientists to evaluate MPA proposals are provided by MarineMap," says Steinback. "Stakeholders find out exactly why their MPA proposals succeed or fail in meeting the science guidelines." Using simple editing tools, users can edit their MPA shapes in response to MarineMap's feedback.

The consortium that developed MarineMap - consisting of scientists and technologists from the University of California, The Nature Conservancy, Ecotrust, and Farallon Geographics - is interested in adapting it for use in other marine spatial planning efforts. McClintock says the consortium's use of open-source technologies in developing the program will make its adaptation to other efforts relatively easy, since it will not involve proprietary technologies with complicated licensing issues.

For more information on MarineMap - including introductory guidelines and movie tutorials on logging in, navigating maps, and viewing data layers - go to the project website at <http://marinemap.org/marinemap>.

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