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SeaSketch, the Next Generation of UCSB's MarineMap Program, Will Aid Marine Spatial Planning Around the World

Since 2009, a free Web-based marine mapping and spatial planning program created by UC Santa Barbara scientists has proved to be an essential tool for fishermen and other stakeholders along the California coastline. Now, the next-generation tool is going global.

Thanks to a $500,000 gift by Jack Dangermond, the president and founder of Esri, the world's largest geographic information systems (GIS) software company, Will McClintock and his team of researchers at UCSB's Marine Science Institute are finalizing SeaSketch –– the next generation of MarineMap. SeaSketch will allow people all over the world, even those who are not experts in GIS applications, to create plans designed to protect marine life based on scientific values and governmental policies.

"This application is meant to invite anybody –– regardless of their technical ability –– to the table to draw plans that are automatically evaluated based on objective science," said McClintock, a project scientist at MSI. "Objective science and its criteria tell you right after you've drawn the plan how well it meets science and policy guidelines, and what the economic impact will be to fisheries."

The gift from Esri came about as a result of Dangermond's visit to UCSB in 2011 to meet with Michael Goodchild, the Jack and Laura Dangermond Professor of Geography. When Goodchild learned that Dangermond wanted his company to tackle an oceans initiative, he introduced Dangermond to McClintock.

"When Jack says he wants to take on oceans as a new initiative, it's a big deal," said McClintock. "When my team showed him the application, he said, ‘MarineMap embodies the concept of GeoDesign, something I've been talking about for years.' "

McClintock's MarineMap program provided the conceptual foundation for SeaSketch, a more ambitious application. "We wanted to do this in such a way that it results in conservation benefits in places like the Galapagos, or New Zealand, or Madagascar," McClintock said. "So the half-million dollars does that. Not by itself, but it allows us to leverage additional funds."

Soon after receiving the commitment from Esri, McClintock received a call from an official in the Department of Conservation in New Zealand. "They said, ‘We want to do this,' " McClintock said. "They had seen MarineMap two years before and they'd wanted to do it then, but couldn't afford it. Jack's money made that possible."

The MSI scientists are customizing a SeaSketch program that will address the needs of New Zealand –– "the entire country," according to McClintock. "They have a mandate for ocean conservation planning, to set up conservation areas throughout the entire exclusive economic zone," he said. "SeaSketch will allow them to do their own designing. New Zealand recognizes that, in order for these plans to have the greatest chance of success, you have to let the stakeholders create the plans."

The researchers hope to formally launch the application in August, about the same time that New Zealand will be unveiling its plan for comprehensive marine spatial planning in the Hauraki Gulf near Auckland. "We'll launch it first in New Zealand, but anybody will be able to go in and define study regions. You could go in and say, ‘I want to be planning in Alaska.' If you know where the data are, you can start pointing the application at various sources that are already out there on the Web that are accessible. And you can start immediately drawing plans. Or we can help you with it."

In addition to the New Zealand project, McClintock has been asked by the prime minister of the Cook Islands to help create a plan that will cover a 1 million square kilometer marine park that's been proposed for the South Pacific country. "It's pretty

exciting," McClintock said. "The reason they want to do this is that these Pacific island nations have the most to lose when it comes to the rise in sea levels."

McClintock and his SeaSketch application also will be participating in a partnership with the United Nations Environment Program, as well as with Ben Halpern of UCSB's National Center for Environmental Analysis and Synthesis, and Steven Gaines and Christopher Costello of UCSB's Bren School of Environmental Science & Management. "If you want to do the best possible marine spatial planning in the world, that is the A-Team," McClintock said. "It's the world's best combination of science data and tools required for marine spatial planning."

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SeaSketch

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