

Mapping Oregon's Territorial Seafloor



Oregon's coastal ocean is wild, beautiful and a treasure for all Oregonians. It is critical to commercial and recreational fisheries and coastal tourism. And it is large – a 900-square-mile territorial sea that extends three miles out from the coast.

However, we currently have detailed bottom mapping of only about 5 percent of this vast area. A thorough knowledge of our nearshore waters, which does not exist, is essential to making effective decisions about management and conservation of ocean resources, modeling the inundation from tsunamis, and many other issues.

In early 2006, twenty scientists signed a scientific consensus statement to support mapping of Oregon's territorial seafloor (dusk.geo.orst.edu/3mile/consensus_statement.pdf). The need for this project has been recognized by the Governor's Office and the Oregon Ocean Policy Advisory Council.

Oregon's seafloor map will be built with local expertise and local knowledge. The effort will be based in a "mini-institute" at Oregon State University that would help students learn a demanding new field. A manager will coordinate data, necessary equipment would be purchased and cutting-edge science perfected – this approach of "habitat mapping" will become a standard eventually used around the world by other resource managers. The map will be public, available on the Internet and downloadable so that every community can use the map for their specific needs and purposes.

The level of detail available with the latest technology is new and invaluable. Coarse-scale bathymetry maps already exist for all of coastal Oregon. But the

territorial seafloor map using multi-beam bathymetry would be a high-resolution product useful for fishery management and coastal tsunami predictions. Its analysis of habitat will be verified by extensive "ground truthing." The end result will be a quantum improvement in managing our dynamic coast and helping decision makers to better understand all aspects of the complex ocean system.

Completion of the territorial seafloor map will require multiple vessels over two summers, at an estimated cost of \$6 million inclusive of processing, purchase and lease of equipment, interpretation and ground-truthing. Creative funding solutions will be sought, including state and federal support as well as private partnerships. Collaboration between scientists and fishermen are one key to the mapping strategy, and chartered local fishing vessels would act as low-cost research platforms.

Oregon is fortunate to have some of the best mapping labs in the country at Oregon State University. The Active Tectonics and Seafloor Mapping Lab of Dr. Chris Goldfinger in partnership with the Davey Jones Locker Seafloor Mapping and Marine GIS Lab of Dr. Dawn Wright, and the Oregon Department of Fish and Wildlife provide the skills and the experience to manage this statewide project. In addition, we have a fishing fleet with experience in research and managing boats in our dynamic environment.

The need for this project is clear. The technology, facilities and expertise exist within the state to implement it. The cost, considering the payoff, is minimal. And the result will be generations of enlightened, informed and more effective ocean management.