

2006 Fall Meeting
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Characterization of Sedimentary Deposits Using usSEABED for Large-scale Mapping, Modeling and Research of U.S.Continental Margins

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Geologic maps of offshore areas containing detailed morphologic features and sediment character can serve many scientific and operational purposes. Such maps have been lacking, but recent computer technology and software to capture diverse marine data are offering promise. Continental margins, products of complex geologic history and dynamic oceanographic processes, dominated by the Holocene marine transgression, contain landforms which provide a variety of important functions: critical habitats for fish, ship navigation, national defense, and engineering activities (i.e., oil and gas platforms, pipeline and cable routes, wind-energy sites) and contain important sedimentary records. Some shelf areas also contain sedimentary deposits such as sand and gravel, regarded as potential aggregate resources for mitigating coastal erosion, reducing vulnerability to hazards, and restoring ecosystems. Because coastal and offshore areas are increasingly important, knowledge of the framework geology and marine processes is useful to many. Especially valuable are comprehensive and integrated digital databases based on data from original sources in the marine community. Products of interest are GIS maps containing thematic information such as seafloor physiography, geology, sediment character and texture, seafloor roughness, and geotechnical engineering properties. These map products are useful to scientists modeling nearshore and shelf processes as well as planners and managers. The USGS with partners is leading a Nation-wide program to gather a wide variety of extant marine geologic data into the usSEABED system (<http://walrus.wr.usgs/usseabed>). This provides a centralized, fully integrated digital database of marine geologic data collected over the past 50 years by

USGS, other federal and state agencies, universities and private companies. To date, approximately 325,000 data points from the U.S. EEZ reside in usSEABED. The usSEABED, which combines a broad array of physical data and information (both analytical and descriptive) about the sea floor, including sediment textural, statistical, geochemical, geophysical, and compositional information, is available to the marine community through USGS Data Series publications. Three DS reports for the Atlantic (DS-118), Gulf of Mexico (DS-146) and Pacific(DS-182) were published in 2006 and reports for HI and AK are forthcoming. The use of usSEABED and derivative map products are part of ongoing USGS efforts to conduct regional assessments of potential marine sand and gravel resources, map benthic habitats, and support research in understanding seafloor character and mobility, transport processes and natural resources.

<http://walrus.wr.usgs/usseabed>

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