

Fisheries Habitat - Integrated Database Development for U.S. West Coast Groundfish and their Habitats

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Abstract

The goal of this project is the creation and use of a comprehensive, helpful and easily accessible, multi-layer GIS database and associated web-site for groundfish habitat in the Pacific Northwest. The most direct and immediate need for such a database is as a tool for use by fishery managers to support future marine fisheries management decisions. This information also relates directly to the consultation responsibilities of fishery management councils under the essential fish habitat provisions in federal law, and will serve as a resource for other agencies and entities in their decision processes. The database will provide marine researchers ready access to available information in order to establish and test hypotheses concerning marine habitat and resource distribution and change; limited data availability often constrains the questions that can be productively addressed. The database is a geologic, geophysical, and bathymetric system of data, metadata, and interpretive and derivative layers created from the raw data. The raw data sources include multi and single beam bathymetry, numerous sidescan sonar surveys, academic and oil industry rock, dredge and core samples, academic and oil industry seismic reflection data. These main data sources are augmented by auxiliary data from submersible observations, cable route surveys, cable burial video, trawl video, and others. These basic layers will be integrated into a bottom type classification, an iterative process that cannot be completely objective, but will include geologic interpretation of the data. Seismic reflection data for example, can be used to interpret rock outcrop, though the surface return in archived industry data cannot generally be used to distinguish other lithologies. Each interpretive layer will be tested against similar layers derived from other sources to iteratively converge on the best-fit classification. Derivative layers include slope, drainage, geologic structure and others. In areas of low data density, slope angle can be used as a crude predictor of rock outcrop, and will be combined with the data-based interpretive layers where no other data exist.