

<<< Marine Benthic Habitat Mapping Project

Development of coastal regions has resulted in significant anthropogenic impacts in south-west Victoria. The Victorian Marine Habitat Mapping Project surveyed over 500 square kilometres in 14 marine regions within Victorian state waters with the objective of establishing baseline physical and biological information regarding coastal waters.

Using a combination of multibeam sonar bathymetry, backscatter and information collected using towed video systems, the broad objective of the project was to develop a better understanding of the complexity and distribution of marine benthic habitats in Victorian state waters.

The data processing component of the project investigated the application of an automated classification technique to identify substrata and dominant biota and determine whether class separability could be improved by combining derivative backscatter and bathymetry products with classified video information.

VPAC were engaged to participate in the project to leverage expertise in multibeam sonar data processing, management of large spatial datasets, and in the applicability of supervised classification and unmixing techniques.

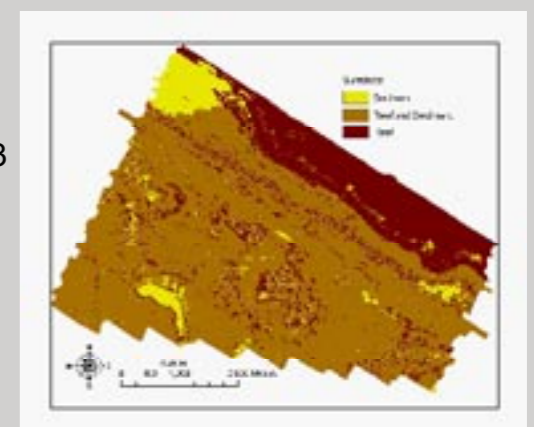
The use of multibeam sonar derivative products and validation data collected using a towed video system allowed for the discrimination of:

- three broad substrate categories
- seven distinct biota classes

The use of integrated backscatter and bathymetry derivative products yielded superior results to either data source in isolation.

Based on the results of this project, supplementary research funds have been secured to conduct further research into the applicability of the project methodology in other areas.

To learn more about the Victorian Marine Habitat Mapping Project, or for further information regarding VPAC's Spatial Information services, please contact Suda Ramachandran at sram@vpac.org or phone +61 3 9647 5435, or visit www.vpac.org.



Substrata classification using an automated decision tree classification approach.

The project objective focused on developing a better understanding of geophysical characteristics and benthic communities in coastal Victoria, Australia.

VPAC's participation involved the development of an automated procedure to process large volumes of multibeam sonar data coupled with georeferenced video "ground truth" data collected off the coast of Victoria.

An automated decision tree classification system was used to classify substrata and dominant biota communities based on georeferenced underwater video ground truth data.

The technique of combining derivative products from the backscatter and the bathymetry datasets was found to improve separability for broad biota and substrata categories over the use of either of these datasets alone.