# Automated mapping of marine habitats from marine sonar and bathymetric data

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This project will investigate innovative ways of developing automated methods for the multi-use interpretation of marine geophysical data. We will apply image segmentation techniques that we have developed for processing radar data for flood mapping and other terrestrial applications based on surface texturing. Such techniques are readily applicable to marine geophysical data, as has been confirmed through our initial exploratory work.

The first phase of this research consists of developing and comparing different automated algorithms to extract features of high scientific/conservation value as well as sedimentary boundaries from existing geophysical datasets. These algorithms will be based on fusing expert knowledge and morphological image processing techniques commonly applied to terrestrial imagery from active radar sensors. The objective of the project will be to automatically filter raw acoustic data in order to define boundaries and identify features of interest, and validate these methods against existing ground truth data. We envisage a second phase involving acquisition of new data to enable us to blind test the developed algorithm(s) and also produce freeware software tools implementing the most successful algorithms for widespread use.