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Use of Geospatial Technologies in the Assessment of Coral Reefs and Abalone Distribution in Sagay Marine Reserve, Central Philippines

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The main objective of this research is to assess the status of coral reefs and the abundance of abalone in Sagay marine reserve that would serve as baseline information for the local government of Sagay, Negros Occidental, Philippines. To achieve this, benthic maps (coming from the July 2005 atmospherically and geometrically corrected Aster image) were produced from which geospatial technologies as remote sensing, GIS and GPS were used as primary tools to produce the benthic habitat maps. These maps were classified with the aid of image processing techniques such as band ratio, principal component analysis and water column correction algorithm. Groundtruth and results from the multivariate classification of the field data were used as training area for the classification of the satellite image and that 8 different habitat types were successfully identified. Post classification and contextual editing produced a final output of an image accuracy of 58.71%.

Reef habitat map showing 4 different zones ranging from very good to damaged zone were produced using the ratio of live and dead corals based on the criteria developed by Thailand's PMBC.

Most of the abalones prefer habitats of dead corals with algae and rubble-algae zones. Furthermore, finding for the potential suitable sites for the abalone was done by considering the factors on habitat type, depth and SST data. Also, one premise can be inferred in that a preferred habitat can only be an area to have been known by the abalone to reside on.