

GEOIMAGE
CELEBRATING 21 YEARS

Specialists in Satellite Imagery and GeoSpatial Solutions

Geoimage offers targeted solutions for Marine Infrastructure and Coastal Applications

Increasing pressure on the coastal region from development, environmental protection and climate change has led to an increasing need to map, monitor and plan more effectively to accommodate competing demands.

Geoimage has experience in a range of spatially-orientated applications that can assist your business. Read on to see how we can help!



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Shen Neng on the Douglas Reef, April 2010
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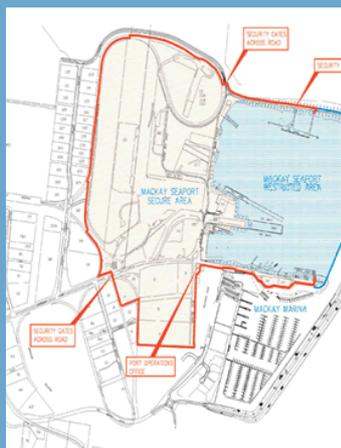
Marina, Mooloolah River © DavidWallphoto.com 2007

Selecting a Site

Both recreational and industrial marine infrastructure competes for space along our coastline. Although infrastructure is planned to minimise the impact on environment and designed with sustainable principles, Geoimage appreciates that different drivers influence the siting of new infrastructure. Site or Route Selection can be undertaken at various phases of a project.

Pre-feasibility or feasibility - Geoimage can source data for land cover and terrain. Geoimage can also generate suitable methodologies to support design principles, fatal flaw analyses and multi-criteria analyses. We can also offer mapping support for Terms of Reference and establishment of WebGIS to support project team decisions.

Pre-FEED and FEED - Geoimage can procure very high resolution satellite data, derive DEM's from the imagery, organise your spatial data management and provide mapping support. Our GeoSpatial team can collate the relevant datasets that influence site and route selection.



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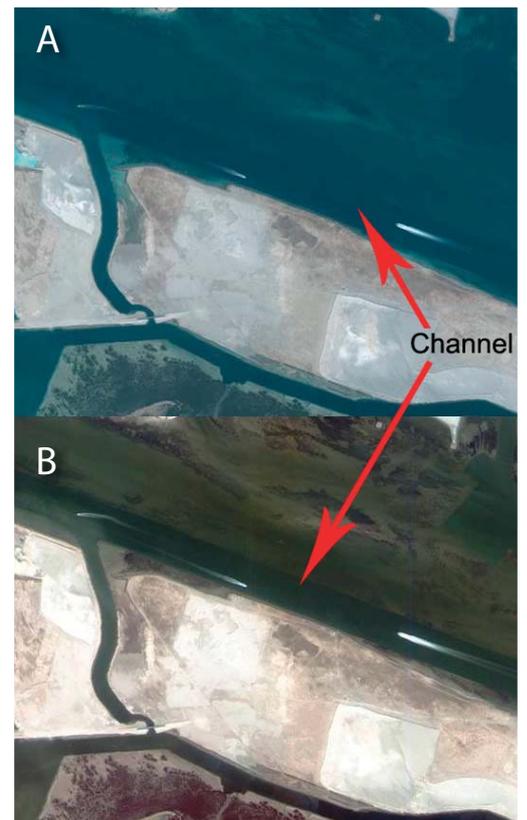
Monitoring Dredging Channels

With new development in coastal areas comes the need to provide access to infrastructure by shipping vessels. Keeping suitable dredging channels clear without impacting the marine environment is an ever-present challenge.

Increasingly agile satellite imagery sources provides the opportunity to acquire regular repeat coverage over sites being dredged to monitor the extent of plumes and the impact on sensitive marine environments adjacent to the site.

Geoimage can provide advice on the frequency of imagery and on the suitability of different platforms to extract features of interest such as dredging channels, plumes, mangroves, sea grass beds and reefs.

A - Red, Green, Blue B - Coastal, Blue, Green



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Monitoring Coastal Areas

Accessibility by vessels to map the shallow water regions around the coast has led to a need to use alternatives. The sensitive intertidal zone and shallow water benthic habitats often need to be monitored for change over time due to impact from development or natural phenomena.

Geoimage can use time series imagery, in combination with other data sources, to report on changes and to assist in the monitoring process.

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Sea Grass and Bathymetry Mapping

Geoimage has worked with University of Queensland (UQ) to map sea grass habitats in the Moreton Bay region. This sensitive habitat that forms part of the Ramsar Wetland and World Heritage Area is under increasing pressure from urban development and shipping. Monitoring not only the presence, but also the range and extent of different species groups is important in understanding the impact this development is having on this precious natural environment.

This series of images maps, using WorldView-2 imagery illustrates the presence of sea grasses (A), the presence of sea grasses over different substrates (B) and the mix of species over those substrates (C). UQ have provided research outcomes that have indicated that satellite imagery from WorldView-2 consistently maps sea grass communities within

similar tolerances to field survey results. They have reported that results for mapping grasses below 3 metres in water were better than using other sources of satellite imagery of a similar resolution.



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Understanding the Marine Environment

Spectral bandwidths of very high resolution satellite imagery have become more suitable for marine monitoring and mapping with the advent of WorldView-2 imagery. Independent research has indicated that bathymetric estimation is consistent with field results and improvements in mapping that have been achieved over a range of benthic habitats. Geoimage can provide advice on the suitability of satellite imagery for understanding this dynamic environment. Call us today to discuss the options available.

Planning for Development

Residential zones along coastal strips are being closely assessed in relation to climate change impact and adaptation. This is influencing the planning of both built and natural resources along our coastline. Satellite imagery, in combination with very high resolution terrain and bathymetry can assist in the interpretation of impacts and the adaptation required to mitigate those impacts. Geoimage can assist in collating spatial datasets and in the analysis and modelling of those datasets.



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How can Geoimage help?

- Image acquisition
- Spatial Data Management and WebGIS
- Marine Infrastructure site selection
- Mapping and Monitoring dredging channels and plumes
- Support for climate change impact assessment
- Mapping and analysis for planning and design
- Sea Grass and benthic habitat mapping

Please contact us at

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