



The Port of Townsville Limited (POTL) has contracted GHD Pty Ltd to conduct an Environmental Impact Statement (EIS) for the proposed Townsville Marine Precinct Project.

The EIS will involve field investigations as well as an analysis of existing literature relating to the aquatic and terrestrial systems occurring within and adjacent to the project study area. Field assessments will be undertaken for the following:

- Water and sediment quality;
- Marine megafauna<sup>1</sup> (eg dugong, inshore dolphins, marine turtles, sea snakes);
- Seabed dwelling (benthic<sup>2</sup>) organisms;
- Wading and migratory birds;
- Seagrass meadows; and
- Intertidal and terrestrial mangrove and dune communities.

The EIS also includes a range of other assessments including greenhouse gas assessments, traffic assessments, noise and air impact assessments as well as an economic impact assessment.

Most surveys will be carried out across an interseasonal period in late 2008 (some continue for longer), and will be supplemented by historical data where possible to enable informed development of an Environmental Management Plan for the project.

On completion of all field and desktop assessments, advice on potential impacts on animals and plants known to use the project land or marine areas, including any habitat loss or degradation as a result of the proposed development's construction and operational phases and an assessment of any mitigation strategies will be provided. The marine megafauna and bird surveys have a deliberate focus on protected or listed species as these are perceived to be at greatest risk of impact from coastal development. The surveys will, however, include an

assessment of all significant species at an ecologically relevant scale.

Marine field surveys to characterise the aquatic ecosystems of the project area will be undertaken in three phases:

- A marine megafauna habitat utilisation assessment sampled concurrently with water quality;
- A seagrass meadow, benthic fish and macroinvertebrate<sup>3</sup> habitat utilisation assessment; and
- A migratory and wader bird habitat utilisation assessment.

There will also be a focused desktop assessment of historical documents and other, newly available literature. From the current literature, knowledge of flora, fauna, and seabed assemblages will be developed.

## Water and Sediment Quality Assessment

A water and sediment quality field investigation will be conducted over a six month period. The aim is to establish baseline information on the water and sediment quality across seasons and different zones for the Townsville Marine Precinct Project. This will be achieved using both fixed water quality loggers and vessel based monitoring.

Results will provide a baseline of existing water and sediment quality conditions within the project area to inform potential impacts and mitigation strategies.

## Seagrass, Benthic Fish and Invertebrate Surveys

The Department of Primary Industries and Fisheries (DPIF) is currently undertaking seagrass assessments for the POTL and therefore GHD will not undertake further broad scale seagrass meadow assessments. Instead, GHD will focus on collecting information on seagrasses at sample sites within the Precinct area and reference sites adjacent to the Precinct area.

This information will be analysed in conjunction with information provided through the DPIF program to

<sup>1</sup> Fauna are animals. Megafauna are the large animals of a region.

<sup>2</sup> Benthic organisms are those plants or animals living on or in the seabed.

<sup>3</sup> An invertebrate is an animal without a backbone. A macroinvertebrate is an invertebrate large enough to see with the naked eye.

enable ecosystem assessment of the meadows likely to be influenced by any proposed development works in the context of their usage by other species, including megafauna.

GHD will survey the soft sediment subtidal and intertidal habitats to assess the current status of inshore benthic fish and macroinvertebrates and characterise the benthic habitats in the project area. Areas sampled will include the project area and reference sites from the immediate surrounds, including within Ross River and seaward of the project area into Cleveland Bay. Surveys will cover sandy, muddy and rocky habitats and record the animals and plants present within these areas.

### **Marine Megafauna Assessments**

Information available to date indicates that the marine megafauna of conservation significance in the project area may include marine mammals (i.e. inshore dolphins, dugong) and marine reptiles (turtles and seasnakes). These species all occupy inshore coastal environs adjacent to the Great Barrier Reef. Aerial and boat based surveys will be undertaken over a 6 month period to record the current presence and prevalence of these species within the project area and adjacent habitats. Aerial surveys will extend into Cleveland Bay to the north and south of the project area and also record any dugong feeding trails. The activities of these animals when sighted during both survey methods will be recorded to provide information on preferred habitats, usage patterns, foraging or other behaviours.

Information collected through the program will be analysed in conjunction with historical habitat and species distribution data from JCU, EPA and GBRMPA so as to provide a regional context. Existing information on the habitat usage patterns of the project area by megafauna will also be assessed to provide context to observations on habitat utilisation and prevalence of animals.

### **Migratory and Wader Bird Assessment**

The local environs of the Ross River contain important bird habitat for a selection of seabird, waterbird and shorebird species, some of which reportedly occur at the site in significant numbers and are listed on migratory bird agreements (JAMBA, CAMBA). These populations and those that use nearby mangrove, woodland and grassland habitats



may be impacted by the proposed development. Collation and analysis of existing records of bird numbers and behaviour in the area will be made and regional information on bird distributions will be presented and used as a basis for the interpretation of local records of bird species and numbers. Fieldwork will focus on the areas intended for development but extend to nearby habitats including the Ross River sandbanks and associated low tide feeding flats. The fieldwork will include a systematic appraisal of shore and seabird numbers in the area through roost counts, counts during feeding periods and transect counts. Temporal and spatial influences on bird movement and habitat usage patterns will be described from existing data recorded at the site during surveys undertaken in 2004 and 2007.

### **Terrestrial Flora and Fauna**

GHD will conduct a once off interseasonal field exercise to characterise the floral and faunal communities of the foreshore, dune and mangrove systems within the immediate development area and adjacent Ross River banks. This will include an assessment of birds other than wading and migratory shore birds.

Historical aerial photography of the area will also be used to characterise trends in the intertidal vegetation resources to the east of the proposed development and up the mouth of the Ross River. The field program will utilise survey methods recognised by the Queensland EPA to determine the presence and prevalence of plants and animals occupying the banks of the Ross River and adjacent areas to the east of the project area, which may be effected by breakwater developments. Presence of weeds and pest species will also be noted and built into any assessments of impacts and mitigation measures for the project developments.

### **How do I get more information?**

If you would like more information or would like to provide input to the Environmental Impact Study for the Townsville Marine Precinct please contact the project team by:

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