Progress Report SP 2010-008

Effects of the Gorgon Project dredging program on the marine biodiversity of the Montebello/Barrow Islands marine protected areas

Marine Science

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Project status as of July 11, 2016, 1:52 p.m.

Approved and active

Document endorsements and approvals as of July 11, 2016, 1:52 p.m.

Project Team	granted
Program Leader	granted
Directorate	granted

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Context

The Gorgon Project (GP), which is based on Barrow Island, is one of the world's largest natural gas projects and the largest single-resource natural gas project in Australia's history. The plant will include three 5-million-tonne-per-annum LNG trains, with domestic gas piped to the mainland, and a four-kilometre-long loading jetty for international shipping.

The GP includes a dredging program that involves the removal and dumping of approximately 7.6 M tonnes of marine sediment over a period of approximately 18 months. The Gorgon Dredging Offset Monitoring Evaluation and Reporting Project (Gorgon MER) will investigate the potential impacts of the dredging and dumping activities on selected marine communities within the Montebello/Barrow Islands marine protected areas (MBIMPA). This monitoring will also help inform future environmental impact assessments by improving predictions of the spatial scale and nature of the likely impacts of dredging and dumping activities on sensitive marine communities. Additionally, this project will increase the knowledge base of the MBIMPA.

Aims

- Assess the nature and extent of potential impacts of the Gorgon dredging program on the condition of coral, fish and other important ecological communities of the MBIMPA.
- Determine the cause/s of any changes in the condition of the above communities, with particular focus on dredging, dumping and resuspension of spoil.
- Assess the effects of potential confounding natural (e.g. cyclones, disease, predation, bleaching) and other anthropogenic (e.g. fishing) pressures on the condition of coral communities of the MBIMPA.
- Assess the nature and extent of the impacts from the Gorgon dredging program on the social assets of the MBIMPA.

Progress

- Progress has continued on writing the final Gorgon dredging program report, which describes potential impacts of marine construction on bio-physical assets. All chapters have now been internally reviewed.
- A pilot study to examine the utility of identifying coral disease from digital images was carried out.

Management implications

- Phase One of the Gorgon MER project provides Department managers and scientists with a relatively intensive baseline for assessing potential impacts on, and recovery of, coral communities within the MBIMPA, with a particular focus on potential impacts related to the dredging program for the Gorgon Project. Information outputs include temporal condition and related pressure measures for biophysical assets (e.g. coral, finfish and macro-invertebrate communities) that aligns with the Department's marine monitoring program for the MBIMPA.
- The data generated from this monitoring program will also complement Offset E of the Pluto LNG program aimed at improving the capacity of government and industry to manage the impacts of dredging on tropical coral reef communities. The Gorgon MER project also strategically assists the planning for future environmental impact assessments by improving predictions of the spatial scale and nature of the likely impacts of dredging and dumping activities on sensitive marine communities.

Future directions

- Finalisation and publication of the Gorgon MER Phase One final project report.
- Initiation of fieldwork for Gorgon MER Phase Two (longer-term strategic monitoring) that is closely linked to the activity and reporting of the Western Australian marine Monitoring Program.
- Completion of peer reviewed publications and archiving of all data collected.