

ENVIRONMENT

CASE STUDY | November 2009

Environmental Benefits from New Approach

A dredging project in Mermaid Sound, Western Australia has demonstrated Woodside's commitment to best practice environmental management.

The dredging works were required as part of the Pluto LNG Project and were undertaken in an area within the proposed Dampier Archipelago Marine Park, with no impact to water quality or coral habitats.

The Challenge

The Environmental Impact Assessment for the Pluto LNG Project indicated the potential for coral mortality from induced turbidity and sedimentation as a result of dredging works. In addition, the planned dredging activities had the potential to interfere with coral spawning events in the area.

The challenge for the project team was to develop a technical outcome for the dredging that would preserve the local marine environment, while keeping the project on schedule and on budget.



Environmental monitoring

The Project

An extensive water monitoring program with stringent water quality and health impact limits was established as a condition of government approval for Pluto.

While this type of monitoring would help to reactively manage impacts, Woodside went further and established an additional high density, high resolution "near-field" monitoring program that would provide faster performance feedback to the project team.

A dynamic boat based monitoring program was implemented. The design of the program allowed monitoring to shift in conjunction with the dredge work area to ensure that water quality between the dredge and coral habitat monitoring sites was assessed daily. The boat-based monitoring was supported by daily satellite turbidity mapping.

Dredging trials were conducted outside the Mermaid Sound area to develop an optimal technique that balanced production rates and visible plume generation. The desired technique was then adopted for the more sensitive inner trunkline works.

Previously validated data and new modelling were used to assess the extent to which coral spawn interact with an offshore dredging plume. The project team were then able to develop a dredging schedule to minimise impact on the annual autumn mass coral spawning event.

The dredging and monitoring project was implemented by a multi-disciplinary team comprising, Woodside the dredging contractor and a marine environment consultancy.

Achievements

The trunkline dredging scope was executed without any impact on coral health, with no dredging effects detected at the coral habitat monitoring sites. These sites were 1.5 km from the dredged area.

The revised schedule to minimise impact on the autumn mass coral spawning event also enabled productivity improvements, resulting from less downtime due to previous stoppage periods.

The trunkline dredging scope was executed without any schedule delay.

The investment in studies, endorsements and approvals has set a precedent for Woodside and will have significant application for similar activities in the future, both for Woodside and other industry.



More Information

All stakeholders are invited to contact Woodside for additional information at:

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