

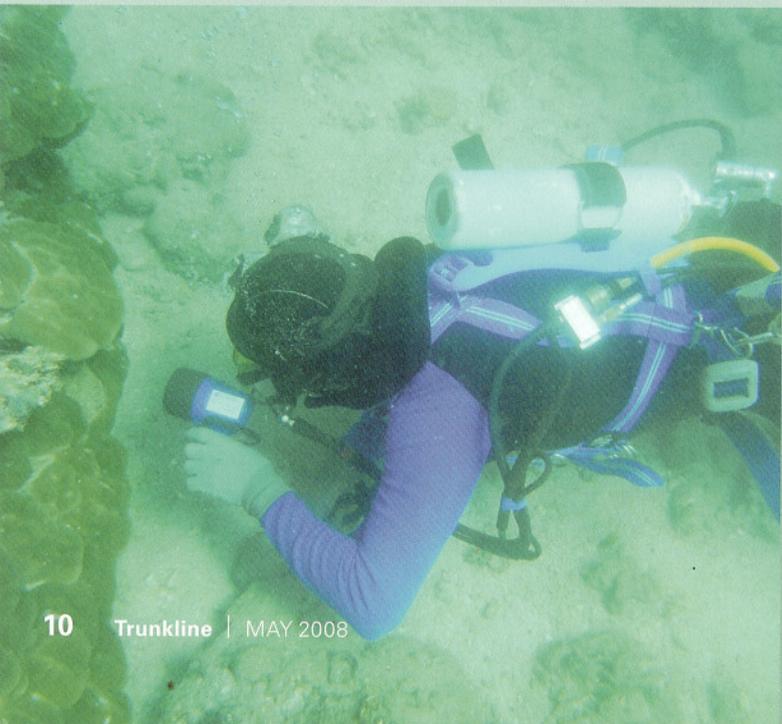
# What lies beneath



Marine monitoring crew in action: Kim Grey, Travis Hurley and Matt Kleczkowski



Water quality monitoring: A diver, above, collects logger data to obtain information for a fortnightly report, while below a fellow biologist uses a UV light to search for coral recruits.



GIVEN the extraordinary scale of the Pluto LNG Project, it's no surprise that the project's environmental team has developed the largest marine monitoring program of its kind in Western Australia.

More than 14 million cubic metres of material will be removed for the shore crossing, trunkline, berth pocket and shipping channel to accommodate the LNG ships that will take Pluto gas to worldwide destinations.

Pluto's corporate affairs and sustainability manager Soolim Carney says achieving this is no easy task, especially in the sensitive environment of Mermaid Sound.

"To minimise our impact on marine life, we have developed a world-class monitoring program to provide early detection of conditions that could affect corals over 1100 square kilometres in Mermaid Sound," she says.

"A key risk factor for corals is sedimentation, where the combination of wind, waves, currents or activities such as dredging, can lift sediment off the seafloor.

"These sediments can drop on to corals, causing stress and cutting out light which is critical to its function and survival."

The initial phase of the monitoring program involved a nine-month baseline survey using a number of newly-developed sedimentation loggers within and outside Mermaid Sound. The loggers give instantaneous data of water quality at 10-minute intervals, determining the conditions in which healthy coral communities exist.

The loggers are now being used as a monitoring tool during dredging to provide early warning of turbidity and plumes in Mermaid Sound that could affect coral health.

Sediment concentrations are also observed using NASA's satellites, which capture an electromagnetic picture of the project area, enabling the project team to monitor the changing intensity and distribution of the dredging plume.

Soolim says Pluto also has a team of marine biologists who spend their days visiting established monitoring sites in Mermaid Sound, taking regular dives to photograph the corals and report on changes in coral condition.

"In late March, our marine biologists responded to the predicted seasonal coral reproduction event in the sound, known as coral spawning," she says.

"As spawning can be influenced by elevated sediment concentrations, dredging was put on hold for more than a week to prevent any disturbance to this natural phenomenon."

## Marine scene

CORAL reefs occupy only 0.1 per cent of the ocean's surface, yet are the world's richest repository of marine biodiversity. They are literally the largest living structures on earth and have survived more than 400 million years. What's more, there are some incredible benefits we gain from corals:

\*Coral reefs are essential for the world's fisheries. The reefs are home to more than 25 per cent of all known marine fish species and thus provide revenue for local communities as well as domestic and international fishing fleets.

\*Coral reefs provide shoreline protection by calming the power of waves during natural hazards.

\*We can also expect coral reefs to contribute in the field of medicine advances. Not many people acknowledge the fact that coral reefs are already being used in treatments for diseases like cancer and HIV.