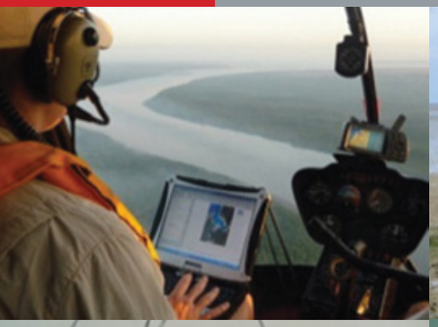






Maintaining Safe Port Operations - Port of Cairns

FACT SHEET

Working with leading scientists to maintain our environmental management best practices and keeping the channel safe

Ports North has, over the past 15 years, undertaken significant studies and monitoring of the dredging within Trinity Bay including a five-year partnership with James Cook University (JCU), completed in 2002, as well as a 15-year seagrass monitoring program with JCU. The JCU Seagrass Studies have consistently reported no impacts to seagrass attributable to maintaining safe port operations. All other studies confirmed only very localised and temporary impacts to water quality and marine ecology within the predicted and approved levels.

Safe port operations require regular maintenance of the shipping channel. Without it, the channel would continue to accumulate mud and silts to a level that would make it unsafe for vessels. In time, the Port of Cairns would become completely inaccessible.

Port North is committed to maintaining safe port operations and to understanding and minimising any potential environmental impacts of our operations.

Ports North

www.portsnorth.com.au

The Port of Cairns is located in Trinity Bay and was established more than 100 years ago.

Cairns continues to be a vital trade and tourism port for the region, supporting import and export industries for sugar, agriculture and fuel (including avgas for the airport), general cargo, marine servicing and shipyards, mine supply and tourism as well as the naval operations at HMAS Cairns.

To support these operations and industries, Ports North maintains a man-made shipping channel, which stretches 11kms seaward from the Cairns Marlin Marina, to ensure ships can enter and leave the harbour safely.

Annual maintenance of the shipping channel is required due to the natural flow of mud and silts (sediment) from currents, wind and waves. As the channel depth is greater than the sea bed, sediment becomes trapped in the channel and must be removed to ensure continued safe and efficient port operations. Without yearly maintenance, the Port would quickly not be safe and close down causing a devastating impact on the regional economy.

That is why Ports North maintains the channel by dredging. The mud and silts are removed using a modern, Australian-based dredger, the “Brisbane”, which was built in Cairns. It is fitted with the latest technology to minimise environmental impacts.

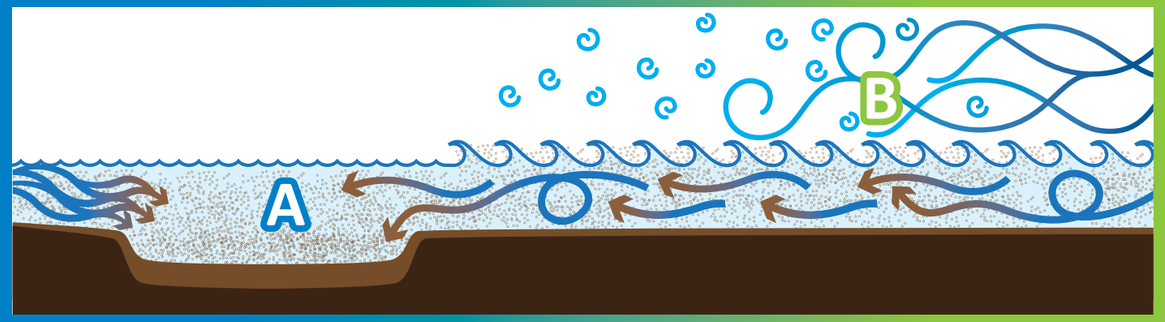
Dredging is highly regulated and subject to strict laws, environmental guidelines and monitoring. The amount of dredged material varies from year to year depending on the amount of siltation built up due to weather, such as strong winds, floods or cyclones.

Generally, the amount of mud and silts stirred up by dredging equates to less than one percent of the volume of mud and silts carried across Trinity Bay each year by natural coastal processes.

Ports North

TRINITY BAY SEDIMENTATION

NATURALLY OCCURRING



A 3,000,000 tonnes of mud and silts per year are carried along the coast into Trinity Bay by winds and currents. This is known as the longshore drift.

Trinity Bay has been filling up with natural mud and silts for 7000 - 8000 years, creating shallow mud flats and a coastline that is moving seaward. Adding to this, mud and silts from land are also washed into the Bay and from the Barron River, especially during floods.

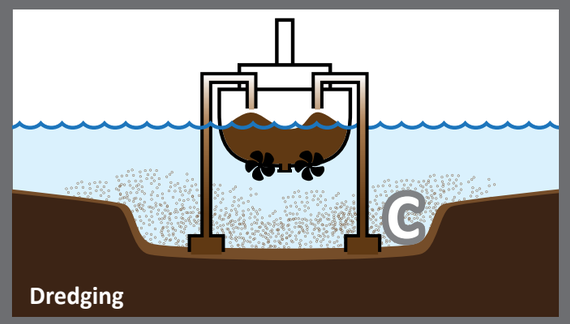
5-10% of mud and silts (up to 300,000 tonnes) settle in the channel due to the deeper water.

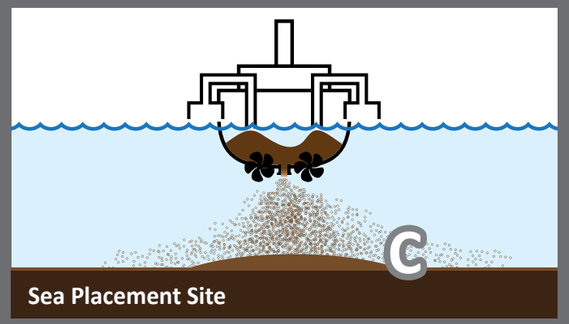
B Strong southerly winds stir up to 1,200,000 tonnes of mud and silts from the seabed at any one time.

The waters inside the Bay are naturally turbid (brown and muddy) as the mud and silts get stirred up (re-suspended) by tidal currents, winds and wave actions. Up to 1,200,000 tonnes of mud and silts may be stirred-up from the muddy seabed during heavy winds or weather events.

Murky waters are common in the bay and the inshore flora and fauna are adapted to such conditions having a high tolerance to mud and silts movement and turbid waters.

DREDGING AND PLACEMENT PROCESSES





C Up to 50,000 tonnes of mud and silts are stirred up by the dredging and placement processes.

Dredging includes two processes.

Firstly, mud and silts are pumped up from the channel bed by two suction heads into the dredger hopper. This process causes some of the mud and silts to be stirred up into the water. This material quickly resettles within 1-2 hours.

Secondly, when the dredge hopper is full of mud and silts, the dredger travels to the sea placement site and releases the mud and silts via large valves from the bottom of the dredge and this material settles to the seabed. Some mud and silts are stirred up by sea currents during the placement process. This has been found to move less then 1km from the placement site before settling.

The placement site, approved by the Great Barrier Reef Marine Park Authority, was selected after extensive environmental studies, has the same muddy seabed conditions and is far removed from coral reefs and seagrass beds.

PROPORTIONATE SEDIMENT EVENTS

MUD AND SILTS OCCURRING DURING NATURAL PROCESSES

Mud and silts carried annually along the coast into Trinity Bay

Mud and silts stirred up by strong winds at any one time

SAFE HARBOUR DREDGING PROCESSES

Mud and silts stirred up during the safe harbour dredging and placement processes

 1 Truck symbol = 1,000 trucks or 25,000 tonnes of mud and silts

The amount of mud and silts stirred up by maintaining safe port operations is minor compared to the naturally occurring processes.