Options to manage dredged material

Queensland Ports Association | Fact Sheet

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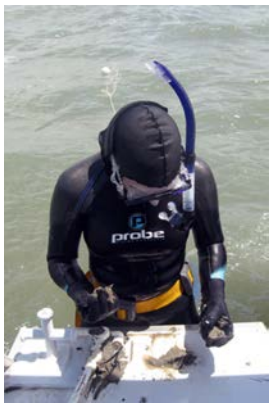
- *Queensland ports in locations adjacent to the Great Barrier Reef Marine Park (GBRMP) play an important role in the overall stewardship of Australia's iconic reef.*
- *Queensland ports have operated and grown within the Great Barrier Reef World Heritage Area according to strict environmental management practices for more than 30 years, ensuring environmental values are maintained whilst enabling economic growth.*
- *Most sites where dredge material is placed by Queensland ports are located in areas where the seabed is unvegetated, of low environmental value and are distant from sensitive habitats such as corals or seagrasses.*
- *Long term monitoring by Queensland ports has shown port related dredging is well managed and meets all required approval conditions.*
- *There are major environmental and social constraints to placing dredge material on land.*
- *Reuse or recycling options are very limited.*



What do Queensland ports do with dredge material now?

In most cases, material is placed at sea. Dredges or barges relocate the material to a designated placement site where it is placed according to dredging permit conditions.

Most dredge placement sites used by Queensland ports are located in areas where the seabed is unvegetated and are distant from sensitive habitats such as corals or seagrasses. Rigorous monitoring over long periods of time has shown offshore placement of dredge material has only a temporary impact in a localised area, with recovery evident within a relatively short period.

What happens to material that is placed at sea?

Most of the material, mainly sand, clay and mud, remains in the placement site and is colonised by fauna such as worms, prawns and shellfish. Recovery generally occurs within a year. In many cases, monitoring has indicated placement sites may support large numbers of fish of commercial and recreational value. At some ports, finer material may be dispersed by waves and currents to adjacent areas however impacts are generally localised and short-term.

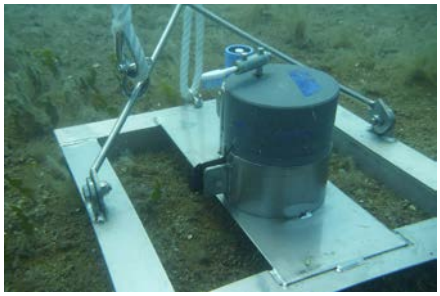
Careful planning of dredge placement activities is undertaken to ensure no unanticipated impacts occur. Dredging permit conditions require comprehensive monitoring of dredge placement activities. Long term monitoring by Queensland ports has shown port related dredging is well managed and meets required approval conditions. Monitoring of seagrass communities near ports has not shown any long term dredging related impacts.

Why not place all dredged material on land?

Whilst seeming a simple option, there are major constraints to placing dredge material on land. Most dredging involves large volumes that would occupy a large area of land (potentially 100's of hectares). Coastal areas of Queensland generally have high conservation or residential value and finding several hundred hectares of flat land close to the water and suitable for storing dredge material is difficult.

The excavated material is pumped to a land based site as slurry (a mixture of sediment and water). Excess water would need to be treated to remove fine particles and ensure clear water was discharged back into the marine environment. It takes years to dry, preventing any access to, or use of, the storage area. Areas need to be fenced off to ensure human and animal safety.





Dredged material from ports is saline and therefore is unsuitable for agricultural and vegetation rehabilitation uses. Establishing any vegetation on spread or stockpiled dredged material is expensive and can take years to become successful. Moving the material from a land based site would involve large numbers of truck movements considering the volumes involved creating community amenity issues and increased greenhouse gas emissions.

Can it be reused or recycled?

Reuse or recycling options are very limited. Most material is fine grained and dark in colour (e.g. silts and muds) making it unsuitable for beach nourishment. It has poor engineering qualities, is saline and is expensive to use for construction purposes. Separating any useful product (such as sand) from dredge material is complex. Large areas of land are required for tailwater ponds and separation costs are expensive making the process unaffordable when compared to similar product available on the local market, which is generally well supplied from land based sources. Turning dredge material into bricks or road base requires large amounts of energy (e.g. use of kilns) and internationally this option is generally only used for contaminated material. Dredge material can be used to fill shallow coastal areas to create land (reclamation) however this also has the potential to cause environmental impacts.

Why not dispose of material far off the coast?

One option often suggested is to dispose of dredge material in deep water (e.g. off the continental shelf) to avoid impacts to inshore areas. However, this would result in dredges spending a long time transporting material offshore making the dredging project longer. Environmental risks would increase at both the dredging site and along the route to the offshore placement site. It could change a three month dredging campaign into a 12 month project.

Energy (fuel) use and associated emissions would be substantial and the cost of dredging would increase. This would lead to increased greenhouse gas emissions, as well as increased costs for ships using the port, ultimately affecting the cost of goods carried by the ships. Additionally, scientific assessments indicate environmental impacts to offshore marine communities may be greater than if the material was placed in inshore areas.

Can we avoid placing dredged material at sea?

Options to place material on land are extremely limited. Nevertheless, land based options are required to be investigated for each dredging project. Results of these investigations must be included in all applications to the Commonwealth to place material at sea. Environmental, social and economic factors are considered when deciding how and where dredge material is placed at sea. Approved placement areas in Queensland appear to function well with impacts generally confined to the placement site.

In some cases, new placement sites need to be established as existing sites reach capacity or for additional volumes associated with port growth (capital dredging). Identification of new sites is based on a detailed site selection process taking into account the environmental and social values of the area and potential impacts. Importantly, an Environmental Impact Study is required to support an application to the Government for a new placement site for capital dredging. This involves input from regulators, scientists, fishermen and community groups.

Is dredge material placed inside the Great Barrier Reef Marine Park?

Some placement sites do exist within the Great Barrier Reef Marine Park (GBRMP) however it is important to note that monitoring occurs to confirm that there are no adverse impacts to any sensitive environmental areas. Queensland ports in locations adjacent to the GBRMP play an important role in the overall stewardship of Australia's iconic reef. This includes investing in in-depth studies which guide sustainable development and protection values of the Great Barrier Reef. Queensland ports have operated and grown within the Great Barrier Reef World Heritage Area according to strict environmental management practices for more than 30 years, ensuring environmental values are maintained whilst enabling economic growth.