Senate Standing Committee on Environment and Communications
Legislation Committee
Answers to questions on notice
Environment portfolio

Question No: 201

Hearing: Additional Budget Estimates

Outcome: Agency

Programme: Great Barrier Reef Marine Park Authority

Topic: Dredging Impacts

Hansard Page: N/A

Question Date: 4 March 2014

Question Type: Written

Senator Urquhart asked:

Can you please explain the risks to marine life associated with dredging? Can you please explain some of the risks associated with dredging activities and extreme weather events?

Answer:

Dredging and disposal activities pose a range of risks to marine life. It is for this reason they require a permit in the Great Barrier Reef Marine Park so that they can be closely managed to avoid and mitigate these risks.

The effects of dredging activities are well documented and can include: seabed disturbance; removal or modification of habitats; loss of species, including benthic (sea bed) organisms and injury or mortality to species of conservation concern; changes in species behaviour; degradation of water quality including increased turbidity levels; changes to hydrodynamics and coastal hydrology; increased underwater noise; and an increased risk of oil spills.

Once material is extracted from the seafloor during dredging, it requires disposal. Disposal sites may include ocean disposal sites, near-shore reclamation areas and land-based receiving facilities. Each of these disposal options carries different risks. For ocean disposal (also known as sea dumping), the localised effects at the sea dumping site are well documented and are similar to those listed above for dredging.

Less well understood are the broader regional and cumulative effects of all development pressures, including individual dredging and sea dumping events, on the declining inshore biodiversity of the Great Barrier Reef World Heritage Area. The drivers of dispersal and movements of sediments in inshore waters, both natural and human induced, are complex and the full extent and magnitude of potential cumulative impacts is often difficult to predict, requiring very sophisticated modelling and monitoring programs. This is particularly important when these cumulative effects happen during critical periods for important ecological functions, for example, seagrass reproduction.

The negative impacts of dredging and seadumping, such as increased turbidity, can be mitigated through careful management, including the placement and timing of these activities. Such planning can minimise impacts to sensitive communities and species including reducing potential impacts on seagrass survival and coral growth, especially if undertaken in recognition of and response to broader regional conditions.

Risks of Extreme Weather: Heat waves, floods and cyclones are the three major types of extreme weather that pose risks to Reef ecosystems. Storms and cyclones mobilise significant quantities of sediment over extensive areas of the sea floor, creating turbid water conditions which can affect the health and resilience of marine communities and species. Floods add significant loads of new sediments to the marine environment. It is not possible to precisely compare the risks from extreme weather with those of dredging and sea dumping, because they occur at very different spatial and temporal scales, as well as typically occurring at different times of year. None-the-less, any individual Severe Tropical Cyclone (category three or above) is likely to have more negative impact on the Reef than an individual dredging and sea dumping event. Extreme weather was directly responsible for approximately 58 per cent of coral death on the Great Barrier Reef between 1985 and 2012. The most significant (48 per cent) has been associated with cyclones and the remaining 10 per cent has been associated with mass bleaching events driven by heat waves.