



**Gladstone Conservation Council Inc.**  
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In response to the document which can be found here - <http://portsaustralia.com.au/dredge-report.pdf>

Jan Arens

Fails miserably to articulate why dredging is so necessary. Almost childish statement that the dredging of channels is needed because it is like highway infrastructure maintenance.

The executive summary states the objective of the document

***Assumptions by some stakeholders of widespread and unintended impacts to areas of high conservation value, such as the Great Barrier Reef, are not supported by the results from extensive monitoring of many recent dredging projects in northern Australia undertaken in similar environmental settings.***

*It is important that ports and **regulators inform stakeholders of the effectiveness of existing management measures for dredging**, that recent dredging and dredged material placement projects in northern Australia have not resulted in unapproved impacts to environmental resources of high conservation value and that impacts have been consistent with those approved by regulatory agencies.*

*Improved stakeholder awareness of both the impact assessment process and the actual extent of impacts from recent dredging/ at-sea placement projects would improve public confidence in the environmental management of port related dredging enabling a more informed and factually based discussion on future projects.*

Looks like just some more propaganda.

Their treatment of turbidity/nutrient impacts is important as it shows the selective nature of the interpretations viz.

*Elevated nutrient levels in the water column ...stimulate algae growth with both positive and negative effects...risk of algal blooms, the turbidity created by dredging reduces light and hence may reduce the risk of blooms....*

They make sure to highlight that silver lining, turbidity is good to stop nutrient induced algal blooms

*Disturbance of sediments by dredging may release organic materials that can temporally enhance the population density and diversity of organisms adjacent to the immediate zone of sediment deposition (see Newell et al 1998 for review). In some cases, there may be a short-term measurable beneficial effect for several kilometres (Poiner and Kennedy 1984) Again highlighting the "environmental benefits" of dredging (take note of indicator species "Poiner")*

But what this however shows is that dredging impacts are in fact evident and measurable as opposed to "*Authors report no detectable impact of dredging*"

Some of you may note the denier tactics, if you can't deny impact, then play it down, viz.  
*....nutrient related impacts....any increase in nutrient concentrations is likely to be localised and short-lived and comparable to the effects of storms which affect much more extensive areas (Vic EPA 2001). Adverse effects on eutrophication related (algal bloom) water quality issues are rare because the events are short lived, there is*



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*typically fairly rapid dilution and, relative to the dilution, nutrient release is small (Jones and Lee 1981). Eutrophication issues are more likely to be an issue in enclosed water bodies where rates of dilution are low.*

Remember Gladstone's Western basin Dredging? Officially the ecological distress evident throughout the harbour was attributed to "natural" floods, the largest dredging program in the history of the harbour and the first ever pervasive acid sulphate disturbance in the harbour does not even get a look in.

Keep this in the context with the fact that 50% of the coral cover has been lost between 1985 and 2012

*Based on the world's most extensive time series data on reef condition (2,258 surveys of 214 reefs over 1985–2012), we show a major decline in coral cover from 28.0% to 13.8% (0.53% y<sup>-1</sup>), a loss of 50.7% of initial coral cover. Tropical cyclones, coral predation by crown-of-thorns starfish (COTS), and coral bleaching accounted for 48%, 42%, and 10% of the respective estimated losses, amounting to 3.38% y<sup>-1</sup> mortality rate.*

Now have a close look at the most useful part of the document, APPENDIX A – Capital and maintenance dredging projects and monitoring program information for subtropical and tropical Australian ports page 68 to 90

Have a good look through the dates, volumes and comments.

Note a clear temporal relationship between dredging and the recorded loss of 50% of coral cover. All this dredging was happening while the coral was declining.

Note the pervasive acknowledgement of qualified "localised", "short lived", "minor" impacts due to turbidity/nutrients from dredging activities.

The euphemism is lost when you see

*"dredge...plumes were more extensive...plume turbidity was greater than approved...may have influenced reference sites" where coral mortality up to 20% was actually approved.*

and

*"Water quality trigger exceedances occurred during and after dredging. Model predictions were acceptable for some areas but not others."*

and

*"Dredging may have prevented the normal seasonal recruitment of a deep water transient seagrass species for one year."*

and

*"Authors report no detectable impact of dredging" but also "Reference sites were affected by larger than approved turbidity plumes."*

and

*Major declines in coral and increases in macroalgae at both impact and reference sites. Plumes did not reach coral receptors.*



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and

*Turbidity values and plume extent greater than approved due to larger dredge equipment than assumed in the EIS and seepage from a reclamation area. Turbidity trigger exceedances due to natural events...*

and

*Decreases in fauna abundance and diversity at impact sites (none at control sites) immediately after dredging with increases after 1 year but not to pre dredge levels.*

and

*Exceedances of nickel trigger level during dewatering*

and

*... exceedances of investigation trigger values (not at levels requiring formal reporting to regulator or reactive management actions)*

and

*Permitted impact of <10% net coral mortality at any impact site. Actual impact was <3% net mortality at impact sites.*

and

*Allowed 30% net mortality at impact sites. No discernible impact due to dredging at predicted impact sites other than coral mortality at 1 of 7 impact sites (immediately adjacent to the dredge area). Changes in coral abundance mainly due to natural events (e.g. cyclones). Sites 500 m- 1 km from dredging were influenced by acute and chronic turbidity increases with no measured effects.*

Note the difference between the comments when attributed to the companies themselves, proponents, consultants or what could be considered more "independent" sources of assessment. There is also a growing apologist tone in the comments with time.

They present a body of work, I presume aimed at exonerating dredging, but the detail is in fact damning. Their own data confirms that dredging is NOT without impact. Also note that impacts are hidden behind "approved" or "allowed" morbidity.

They present NO evidence that all these "small and localised" impacts as they call them and



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cumulative approved morbidity are not contributing to the gross and catastrophic decline of coral cover in the GBRWHA. It may be convenient to classify tropical cyclones, coral predation by crown-of-thorns starfish (COTS), and coral bleaching as natural if you want to inflict unnatural dredging impacts. But in fact, rudimentary synthesis shows these impacts to be anthropogenic. What changed after 1985, other than all the vast amount of dredging? What changed the nature of storm activity such that it caused a 50% decline in coral cover. We know of anthropogenic climate change. We seem to have a decent handle on the cause of bleaching due to increased water temperatures. There is increasing evidence of a link between sediment/nutrient supply not only directly impacting the reef but indirectly through the stimulation of juvenile COTS populations. We have been blaming our farmers for that for a long time, so why don't we lay some of that blame at the feet of those who stir up sediments and strip coastal islands of vegetation to build factories, and those who carve roads, gas pipelines and 40,000 drill pads all over our land? Clearly we have our anthropogenic prints all over the decline of our reef.

I don't see many credible scientists refuting a loss of 50.7% of initial coral cover since 1985 and no matter how you dress that up, this fact is truly miserable. I see some suggesting that there is an absence of peer reviewed science linking dredging impacts to reef decline. Even if that is the case, this may be a function of not enough peers actually giving a damn about any linking or worse, not being allowed to make links lest they risk their budgets. But irrespective of that, any scientist promoting the logical fallacy that a lack of evidence constitutes proof that dredging is benign should have their credentials questioned.

This is my two bob's worth,  
Cheers, Jan