

fine particles can cause higher turbidity (Fourney and Figueiredo, 2017), can take longer to settle out of the water column, can be distributed further (Duclos et al., 2013), and are more harmful to corals (Duckworth et al., 2017; Jones et al., 2015; Nugues and Roberts, 2003; Weber et al., 2006). This could also be the result of dewatering or overflowing scows with water full of the finest sediment particles directly on the reef area. Dredging can also release sediment from deeper strata than might be disturbed by natural events, generating additional sediment not already existing in the system and with distinct mineralogies compared to those found in reef environments (Saussaye et al., 2017; Swart, 2016).

Releasing dredging sediment may also result in acute acidification and/or eutrophication, and, particularly in areas such as shipping channels or ports (Nayar et al., 2007), may also release unwanted contaminants (Eggleton and Thomas, 2004; Jones, 2011; Su et al., 2002), sediment-borne pathogens (Hodgson, 1990; Voss and Richardson, 2006; Weber et al., 2012), or related immune impairment agents.

We therefore also recommend that acidification, eutrophication, contaminant, and pathogen testing also be performed on samples taken during dredging, as these may impact the relative lethality of the sediment released near sensitive environments. Contaminated, fine, or highly eutrophied sediment may require an even lower standard than other types of sediments to be protective of benthic environments.

III. Qualifications of Turbidity Contractors

Qualifications of turbidity contractors was not addressed in the revised draft. We recommend that specific qualifications are required for turbidity monitors, including those conducting baseline analysis, monitoring during the project duration, and after the fact surveys. We also recommend that third-party oversight be implemented and/or improved as a quality control mechanism.

The Air and Water Research Task 1 report points out that, during the Miami Harbor expansion, the major turbidity monitoring contract went to a group with questionable qualifications in turbidity monitoring. The report states, “[t]urbidity monitoring shall be conducted by individuals with prior experience in turbidity monitoring for major dredging projects.” [But] this review can find no details on International Towing and Salvage LLC or their experience or whether they are even in business. No details were provided as to the nature of experience, whether monitoring was deemed “successful”, or the complexity or technical knowledge the contractor should have had.”

IV. Recommended Scientific Studies for Review

Ricardo, G.F., Jones, R.J., Negri, A.P., Stocker, R., 2016. That sinking feeling: suspended sediments can prevent the ascent of coral egg bundles. *Sci. Rep.* 6, 21567.