From [redacted]
Sent: Monday, 14 March 2022 2:57 PM
To: Committee, Public Works (REPS) <pwc@aph.gov.au>
Subject: submission: Great Barrier Reef Marine Park Authority—Douglas Shoal Environmental Remediation

To the committee,

Dredging is likely to disturb sediment potentially damaging the extant reef due to increases in turbidity. The work would need to be slow so as to maintain low levels of peak turbidity. Oxygenation and acidity will be affected by operations potentially devastating the reef. A special containment enclosure could be developed to recursively pass across a grid to contain the turbid sea water as it is dredged.

Reef sediment extracted should be prohibited from sale or diversion and filtered contaminants should be audited before disposal to avoid substitution. An ecologically compatible binder will need to be developed or selected to cement the coral rubble back into stable bulkier configurations to be placed at least at the ocean facing perimeters of damaged sections to ensure a sheltered environment and prevent erosion. basically the gravel needs to be glued together and physically and chemically stabilized somehow. This allows exciting opportunities as external aggregate could also be introduced to address mineral deficiencies, select for specific species and the fluidics and geometry of the lighting of the arrangements can be optimized to encourage growth of preferred species.

A tangential note that I wish to make with the identification of ablative and anti-fouling paint in the shoal is something I have noticed on regional remote islands. The color of paint used on buildings in regional islands matches the colors of common marine coatings for example, bottom blue biocidal paint. I suspect that due to the restricted availability of paint on remote islands and the superior anti-fungal performance of biocidal paint in tropical environments marine paints are being used on buildings and structures in sensitive indo-pacific environments inappropriately where the compatibility with substrates and applications differ -for example basic cementitious substrates- can cause premature flaking and failure of coatings potentially causing environmental damage to the ecosystems. This requires further investigation.

Robert Heron
[redacted]
QLD, 4356