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Submission on the EIS for the Capital Strategic Dredging Project, South Arm, Hunter River

The EIS for the Capital Strategic Dredging Project, South Arm, Hunter River, fails to address the ***upstream*** impacts of dredging the South Arm. Previous deepening of the Hunter River by dredging has caused significant upstream increases in the tidal range by as much as 100mm at Stockton Bridge and by 250mm at Hexham Bridge (Umwelt 2002). This tidal range increase has been linked to the devastation of saltmarsh and the concomitant proliferation of mangroves throughout the Hunter Estuary (Herbert 2007). About 67% of the saltmarsh had disappeared by the 1990s (Williams *et al*. 2000) and I estimate that the loss is now approaching 90%. Further deepening of the river by dredging will add to the tidal range increase that has already been experienced. Increased tidal range is also threatening the stability of the Kooragang Dykes with numerous breaches developing along its length. Remedial placement of rip rap and aggregate by National Parks and Wildlife Service (NPWS) has commenced in order to prevent further deterioration of the Dykes. The Dykes is one of the most important high-tide shorebird roosts in the estuary.

In the past, there has been ***no*** recognition of the upstream ecological problems caused by dredging and harbour deepening. The proposed dredging of the South Arm of the Hunter River will add to the problems of tidal range increase and accelerate the incursion of mangroves into the small amount of remaining saltmarsh. This will lead to further ecological changes that will adversely impact on migratory and non-migratory shorebirds, fish and prawn productivity. Expanding mangroves have caused the loss of roosting and foraging areas for shorebirds throughout the estuary. As a result considerable effort and expense by the Hunter Bird Observers Club, Kooragang Wetland Rehabilitation Project and NPWS have been directed at removing mangroves from key shorebird habitats at Stockton Sandspit and on Ash Island (Swan, Wader and Milhams Ponds). The proposed dredging will exacerbate all the problems which have been caused by previous dredging.

The following points need to be addressed:

- Upstream tidal range increase should be recognised and cumulative impacts addressed
- The magnitude of the tidal range increase needs to be quantified before the EIS can state, as it has, that: "the project is unlikely to impact on the hydrology of the Hunter River" (Volume 1, page 43)
- After the tidal range increase has been quantified the cumulative impacts on upstream estuarine habitats should be assessed
- Impacts that will result include:
  - further loss of saltmarsh (now declared an endangered ecological community)

- further proliferation of mangroves (especially into saltmarsh ponds, onto sandflats and onto estuarine beaches and sandspits - all of which are foraging and/or roosting sites for shorebirds)
- subsequent loss of saltmarsh ponds by direct mangrove invasion
- loss of saltmarsh and saltmarsh ponds for shorebirds and other waterbirds
- loss of saltmarsh that provided habitat for invertebrate larvae, eggs and micro-organisms that in turn supported fish and prawn productivity
- any additional increase in tidal range will further exacerbate difficulties for roosting shorebirds during spring tides (i.e. the net area available for roosting on estuarine beaches, sandspits and on the Dykes will be decreased in areas that are already critical)
- additional increase of tidal range will threaten to break through low-lying parts of the Kooragang Dykes, adding to the existing breaches
- existing breaches in the Kooragang Dykes will also experience increased rates of erosion

❖ Mitigation measures that should be considered include:
- the installation of tidal control devices on estuarine creeks to protect critical saltmarsh habitat from the effects of the tidal range increase (something that should have been done after past dredging operations)
- provision of compensatory habitat for loss of saltmarsh
- removal of mangroves that have, or are, transgressing into saltmarsh ponds
- commitments to ongoing mangrove control in areas of critical habitat
- commitments to repair existing breaches in the Kooragang Dykes to prevent further erosion
- commitments to raise low-lying parts of the Kooragang Dykes before further breaches develop
- there may be other mitigation measures that may be appropriate but have not been discussed here

REFERENCES

Herbert, C. (2007). Mangrove proliferation and saltmarsh loss in the Hunter Estuary. *The Whistler* **1**: 38-45 (available online at http://www.hboc.org.au)

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Umwelt (Australia) Pty Ltd. (2002). 'Shifting Sands at Stockton Beach'. (Report prepared for Newcastle City Council: Newcastle).

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