

MEMO

**ATTENTION**

Julia Byrne, Paul Barrett (Hawkes Bay Regional Council)

**FROM:**

Shane Kelly

**CC**

Devon Rollo

**DATE:**

20 October 2021

**REGARDING**

Clive River dredging application: Review of ecological assessment.

**BACKGROUND AND SCOPE**

Hawke's Bay Regional Council (HBRC) Regional Asset Manager is seeking consent to dredge accumulated sediment from the lower reach of Clive River using a cutter-suction dredge. Sediment, associated material and water will be piped from the dredge and discharged to the open coast, on the southern head of Clive River. Operations are expected to take around 67 days with the discharge of material occurring for 9 hours per day at a total discharge rate of 500 m<sup>3</sup>/hour, and sediment discharge rate of 100 m<sup>3</sup>/hour (based on 20% sediment content). Overall, 60,000 m<sup>3</sup> of material is expected to be removed from around 124,000 m<sup>2</sup> of riverbed. It is anticipated that this will increase river depths to around 1.6 m below mean sea level.

I have previously provided a review (dated 10 August 2021) of two reports associated with the application:

Mead, S., Atkin, E., Davies-Campbell, J., O'Neill, S. (2019) Lower Clive River sediment sampling and depth probing, and entrance bathymetry and ecological assessment. Client report for Hawkes Bay Regional Council, eCoast, Raglan, New Zealand. 33 pp.

Mead, S., McIntosh, R., Greer, D. (2021) Clive River dredging: Numerical modelling and ecological impact assessment. Client report for Hawkes Bay Regional Council, eCoast, Raglan, New Zealand. 57 pp.

That review highlighted several issues, for which further information was sought from the applicant. In summary, those issues included concerns about:

- The potential for the proposed activities to have significant adverse ecological effects—In my opinion, the significance and cumulative nature of sediment effects on the marine environment suggested that a high level of care should be taken in the consideration of this application. The ecological assessment needs to reflect the scale and significance of potential ecological effects, but I had substantial reservations about its adequacy and robustness. My concerns were exacerbated by the high proportions of fine sediment in the dredge material, and poor sediment quality. I also noted that the predicted depositional footprint and dispersal plumes, although temporary, are: still sizable from a local context; affect an area with high ecological values; and, will potentially compound effects on an environment that is already sediment stressed.
- The sampling and assessment methods used, and their potential to influence on assessment results — I raise particular concerns about the reliability of the benthic ecological results presented, and the lack of ecological data obtained from the proposed

dredging footprint. I noted that these matters had been raised in an earlier S92 request for additional information, but were not addressed in the response to that request.

- The lack of detail provided, and assessment methods in relation to the assessment of effects on birds – I raised specific concerns about the reliability of the bird assessment, which I felt did not adequately: characterise the bird assemblage in Waitangi Estuary and Clive River; the importance of the proposed dredging and disposal areas for birds; and, potential effects on birds. Examples, of available information were provided to assist the Applicant with providing a more detailed and appropriate assessment. Note that the information provided by myself was not comprehensive, and focused only on wetland/coastal birds that I considered could potentially be adversely affected (I excluded passerine bird species because they are unlikely to be adversely affected).
- The reliability of the assessment of effects on fish – In my opinion, the assessment did not adequately: characterise the fish assemblage in Waitangi Estuary and Clive River; the importance of the proposed dredging and disposal areas for fish; or potential effects on fish. Examples of available information were provided to assist the Applicant with providing a more detailed and appropriate assessment.
- The potential for the proposed dredging and disposal to exacerbate the spread of a marine pest, the Australian tubeworm (*Ficopomatus enigmaticus*).

The Applicant has provided additional information in response to the issues raised in my review. Relevant additional information is contained in:

- A revised and updated consent application dated September 2021.
- A revised and updated numerical modelling and ecological impact assessment dated September 2021. The response to the request for further information is provided in Section 6.6.
- A separate response to my previous review in a letter from Dr Shaw Mead (eCoast) to Harry Donnelly (HBRC), dated 27 September 2021.

The additional information:

- Provided no new data on the benthic communities, but information from an assessment I referred to in my previous review was presented in the letter from Dr Mead to Mr Donnelly. In that letter, Dr Mead raised some concerns about some of the details I provided (which are up for debate). Ultimately, Dr Mead and I appear to fundamentally disagree about the adequacy of the ecological sampling methods (I consider the methods used to be bad practice), and the importance of having robust benthic ecological data from the proposed dredging and disposal sites. In my opinion, **the assessment of benthic effects remains a fundamental issue of concern.**
- Provided very little new information on effects on birds, apart from incorporating into the assessment, information that I referred to in my previous memo. I would expect specific information to be provided, on matters such as (but not only):
  - whether bird roosts or nesting sites are present along the river bank (e.g., shags);
  - what, if any species feed in or utilise the river (e.g., kingfisher, white-faced heron, ducks and teal);
  - what wetland species are present in surrounding saltmarsh; and,

- how these species would be affected by the presence of the dredge and dredging activity.
- Provided very little new information on effects on fish, apart from incorporating into the assessment the information that I referred to in my previous memo. At a minimum, I would expect information to be provided on known and potential effects of sediment on fish before conclusions are made about likely effects.
- Proposes to remove Australian tubeworm masses formed on and around the highway bridge piers (as a permitted activity – see page 3 of the revised application) using a mechanical digger and/or by manual removal, with disposal to landfill (revised application). No new information appears to have been provided in the updated ecological assessment, but it continues to note that physical disturbance could trigger a spawning event and recommends that if removal is to occur, it should be carried out in winter when it is known they do not spawn in other parts of the world. That seems reasonable, and if consent is granted, I recommend that consent conditions require removal is done in winter.

Consequently, my conclusions are largely unchanged:

- in my opinion the proposed dredging and disposal activities have the potential to cause substantial adverse ecological effects;
- I still have reservations about the adequacy and robustness of the ecological assessment;
- I do not consider the detail provided in the ecological assessments corresponds with the scale and significance of ecological effects that the activity may have on the environment.