



OUR REF: C21/620

10 November 2021

Alexis Flipo
A/Senior Natural Resource Management Officer
Department of Planning, Industry and Environment - Crown Lands
PO Box 2215
DANGAR NSW 2309
Via email: alexis.flipo@crowmland.nsw.gov.au

Dear Ms Flipo

Re: s199 Referral # C21/620 for dredging and reclamation work by Port Macquarie Hastings Council associated with excavation of the sand berm at the mouth of Lake Cathie for flood mitigation purposes, Crown Land adjacent Lot 7023 DP1025315, Lake Cathie, PMHC LGA

Reference is made to Crown Lands' pending approval of dredging and reclamation works associated with the above-mentioned project to be undertaken by Port Macquarie Hastings Council forwarded to DPI Fisheries on 14 October 2021.

DPI Fisheries, a division within the Department of Primary Industries, assesses applications for dredging and reclamation works, harm marine vegetation, and obstruction of fish passage in accordance with Part 7 of the *Fisheries Management Act 1994* (FM Act) and the *Policy and Guidelines for Fish Habitat Conservation and Management (2013 Update)* (DPI Fisheries P&G).

Section 199 of the FM Act (refer to Attachment 1) is applicable to this proposal because it pertains to dredging and reclamation works to be authorised by a public authority. Section 199 requires the proposal to be referred to the Minister for Primary Industries and that the public authority considers any matters concerning the proposed works raised by the Minister.

DPI Fisheries has reviewed the subject proposal and associated mitigation measures outlined in the application, in particular, the Port Macquarie Hastings Council REF dated 23 August 2021. It is understood that the proposal is for the periodic excavation of sand material from the beach berm at the mouth of Lake Cathie to form a channel approximately 135m long by 6m wide to a depth of 1.6m AHD, and that the excavated material will be retained within the beach berm area. The purpose of these works is to prevent water levels from exceeding 1.6m AHD which will prevent inundation of private and public infrastructure.

Lake Cathie and Lake Innes are an Intermittent Closed and Open Lake and Lagoon (ICOLL) system and, in accordance with the habitat sensitivity guidelines within the DPI Fisheries P&G, includes a mix of highly and moderately sensitive key fish habitats. The Lake system consists of a large proportion of State Environmental Planning Policy mapped Coastal Wetlands and is an important recreational fishing area. Lake Innes is also an important location for commercial fishing. It is noted that the Lake system has been subject to past anthropogenic impacts including artificial entrance modification.

DPI Fisheries has concerns about the potential adverse ecological impacts of the current proposal. Poorly timed artificial entrance openings of ICOLLS, or works that lead to premature natural openings of ICOLLS, can lead to immediate unintended ecological impacts such as large scale fish kills and, in the case of Lake Cathie, the release of sulphuric acid and trace metals. Poorly timed artificial openings, such as those occurring before periods of drought, can also contribute to long term low level, hypersaline, high temperature water which can compound adverse ecological impacts such as fish kills and habitat loss. Recent scientific data collected by Southern Cross University indicates that there are large stores of soluble iron remaining within the porewaters in sandy sediments within the intertidal zone of the Lake system after the 2020 event which involved the mass translocation of iron floc throughout the system, and that a poorly timed opening of the Lake system may result in further rapid mobilisation of iron floc and acid.

In light of these findings and correspondence with the DPIE – Biodiversity Conservation Unit, DPI Fisheries recommends that in the short to medium term, efforts should be focused on *retaining* water within the Lake system whilst ensuring that the flood risk is minimised. To reduce the possibility of the proposed berm scraping works resulting in ‘channelisation’ and a complete opening of the ICOLL to the ocean resulting in a rapid draw-down of water, DPI Fisheries recommends that the following measures are incorporated into Council’s REF and opening procedure:

- Increasing of the berm scrape ‘dry notch’ channel width from 6m to a minimum of 10m;
- Ensuring that the invert of the berm scrape ‘dry notch’ is no deeper than 1.6m AHD; and
- Ensuring minimal head differential between the upstream lake level and the invert of the berm scrape ‘dry notch’ by ensuring berm scraping works are undertaken prior to water levels reaching 1.6m AHD.

It is understood that Council is developing a Coastal Management Program (CMP) which will incorporate Lake Cathie and Lake Innes, and that the CMP will include a revised Lake Cathie entrance management strategy (EMS) that will consider a range of new scientific information and an analysis of Council assets within the existing inundation zone. DPI Fisheries looks forward to working with Council and other relevant agencies in the development of the EMS and CMP.

The matters raised by DPI Fisheries above are intended to ensure that impacts to key fish habitats will be avoided or minimised to a level consistent with the requirements of the DPI Fisheries P&G and relate to the Department’s responsibilities for ensuring fish stocks are conserved and that there is “no net loss” of key fish habitats upon which they depend. The protection of key fish habitats provides for viable commercial fishing and aquaculture, quality recreational fishing and the continuation of Aboriginal cultural fishing within NSW.



Department of Primary Industries

If you have any queries, please contact me on 02 6626 1375 or jonathan.yantsch@dpi.nsw.gov.au.

Yours sincerely

Jonathan Yantsch

Senior Fisheries Manager – Coastal Systems (North Coast)

Authorised delegate of the Minister for Primary Industries under s199

Cc: **Scott Anderson**, Hastings District Fisheries Officer
Bradley Harrison, Fisheries Conservation Compliance Officer
Ben Foster, Port Macquarie Hastings Council
Tina Clemens, DPIE - Crown Lands
John Schmidt, DPIE - EES

Attachment 1

Fisheries Management Act 1994 No 38

Part 7 Division 3 Section 199

199 Circumstances in which a public authority (other than local authority) may carry out dredging or reclamation

- (1) A public authority (other than a local government authority) must, before it carries out or authorises the carrying out of dredging or reclamation work:
 - (a) give the Minister written notice of the proposed work, and
 - (b) consider any matters concerning the proposed work that are raised by the Minister within 21 days after the giving of the notice (or such other period as is agreed between the Minister and the public authority).

- (2) Any such public authority is to notify the Minister of any dredging or reclamation work that it proposes to carry out or authorise despite any matter raised by the Minister. The Minister may, within 14 days after being so notified, refer any dispute to the Minister responsible for the public authority. If the dispute cannot be resolved by those Ministers, it is to be referred to the Premier for resolution.

- (3) In this section, public authority includes the Minister administering the *Crown Land Management Act 2016*.

Attachment 2

MATTERS FOR CONSIDERATION UNDER s199 of the *Fisheries Management Act 1994*

Administration

1. DPI Fisheries recommends the inclusion of a condition that ensures a copy of relevant approval documentation be carried by the proponent or their contractor operating on-site.
Reason – A DPI Fisheries Compliance Officer may wish to check that the works are being undertaken in accordance with relevant approvals.
2. The subject works, including the construction methodology and final built design, should be consistent with the following recommendations:
 - Increasing of the berm scrape 'dry notch' channel width from 6m to a minimum of 10m;
 - Ensuring that the invert of the berm scrape 'dry notch' is no deeper than 1.6m AHD;
 - Ensuring minimal head differential between the upstream lake level and the invert of the berm scrape 'dry notch' by ensuring berm scraping works are undertaken prior to water levels reaching 1.6m AHD; andthe proposal outlined in the s199 referral to DPI Fisheries by Crown Lands on 14 October 2021 including the Port Macquarie Hastings Council REF dated 23 August 2021. Any proposed changes to the methodology or final design should be discussed with DPI Fisheries prior to implementation.
Reason – This s199 consultation has been prepared following an assessment of the potential impacts of the described works upon the aquatic and neighbouring environments. Other works, which were not described in the referral have not been assessed and may have significant adverse impacts.

Erosion and sediment control

3. Sediment entering into waterways can directly impact on key fish habitats. DPI Fisheries recommends that, if Crown Lands authorise the works, the approval incorporates a condition that ensure:
 - Erosion and sediment mitigation devices are erected and managed in accordance with all applicable requirements of the Blue Book (i.e. Landcom [2004], *Managing Urban Stormwater: Soils and Construction* [4th Edition]) (<http://www.environment.nsw.gov.au/resources/water/BlueBookVol1.pdf>); and
 - Stockpiles are located away from adjacent on water land¹, marine vegetation² (saltmarsh, mangrove, and seagrass) and riparian and aquatic vegetation³.*Reason – To ensure that sediment generated by the exposure of soil is not transported into the aquatic environment.*

¹ "Water land" means land submerged by water:

- a) whether permanently or intermittently, or
- b) whether forming an artificial or natural body of water,

and includes *wetlands* and any other land prescribed by the regulations.

Wetlands include marshes, mangroves, swamps, or other areas that form a shallow body of water when inundated intermittently or permanently with fresh, brackish or salt water, and where the inundation determines the type and productivity of the soils and the plant and animal communities.

² "Marine vegetation" means any species of plant that at any time in its life must inhabit water (other than fresh water).

³ "Aquatic vegetation" is a term used to describe native vegetation that inhabits freshwater but does not include noxious weeds within the meaning of the *Noxious Weeds Act 1993*.

Instream works

4. Instream works can impact on key fish habitats. DPI Fisheries recommends that the proponent ensures that:
- Machinery is restricted from entering or working from the waterway unless in accordance best management practice and an agreed work method statement;
 - Machinery is appropriately cleaned, degreased and serviced prior to use at the site and entry into the waterway; and
 - Emergency Spill Kits appropriate for containing and cleaning up petroleum and solvent product spills within waterways be available on site at all times during works.
- Reason – To reduce the threat of an unintended pollution incident impacting upon the aquatic environment.*

Avoiding harming marine vegetation

5. Marine vegetation including seagrass, mangroves, saltmarsh and kelp is not to be harmed or removed during the undertaking of works outlined in this s199 consultation. A separate authority under s205 of the *Fisheries Management Act* 1994 is required to harm marine vegetation.
- Reason – To ensure that impacts on aquatic habitats are appropriately managed and minimised.*

Fish kill contingency

6. DPI Fisheries maintains a fish kill database. To limit the potential of a fish kill incident, DPI Fisheries recommends that the proponent be advised to undertake a visual inspection of the waterway for dead or distressed fish (indicated by fish gasping at the water surface, fish crowding in pools or at the creek's banks) twice daily during the works. Observations of dead or distressed fish should be immediately reported to the Contact Officer by the proponent. If a fish kill occurs, DPI Fisheries recommend works cease until the issue causing the kill is rectified.
- Reason – Fish kills are also potentially contentious incidents from the public perspective. DPI Fisheries needs to be aware of fish kills so that it can assess the cause and recommend ways to mitigate further incidents in consultation with relevant authorities. Work practices may need to be modified to reduce the impacts upon the aquatic environment.*