

Offset and Wetlands Notes

18 October 2021

(Attendees: Dr Gary Bramley (GB), Dr Phillip Grove (PG), Michael Harding (MH), Dr James Griffiths (JG)).

A. Description of site and surrounding environment

It was agreed that there is very little information about the site because it was not specifically surveyed prior to vegetation removal. The matters we are addressing were not well documented prior to the seeking of consent.

B. Description of the extent of wetlands removed in relation to which consent is being sought

The estimates provided by The Ecology Company of extent of wetlands removed have been accepted at face value as a reasonable estimate given the recognised constraints.

From the perspective of MH and PG, the issue is not just the extent of the wetlands removed, it is the loss of a system of which wetlands were a part (a key part, because they were what conferred significance), but not the only part. Again, as with question A, there is an issue of poor documentation of the extent and values prior to removal. The important point is the loss of wetland and other ecological values, as well as loss of wetland extent.

C. What are the ecological values of the wetlands that have been lost with the removal of the wetlands?

Again, hard to be certain given the information constraints. It is noted that seepages are a naturally uncommon ecosystem.

PG's position is that the focus of effects management should be on specific significant (in the RMA sense) values which have been affected, rather than in response to a perceived 'overall' or aggregated assessment of ecological values.

MH's position is that the wetlands were part of a broader hydrological and ecological system, including sparse *Coprosma dumosa* shrubland, and that the loss of that ecosystem is not addressed under the current proposal.

GB, PG and MH agree the area within which the wetlands were present was ecologically significant under CRPS criteria.

D. What impact has the removal of the wetlands/ other mining activities had on the wider wetland habitat outside the MOA?

MH hasn't considered downstream effects but noted that downstream wetlands had been affected by discharges and that is an effect for which he considers compensation is warranted. JG pointed out that upstream of confluence point of water from CC02 with the Tara Gully stream there are non-mining land uses that will influence the Tara Gully downstream.

There is a difference of opinion between the hydrologists as to whether impact of MOA excavation (and removal of upslope material) on the hydrology of the north-western slopes have had time to manifest.

JG: Anecdotal data suggests that to date there has been no impact on the raised spring or seepage wetland in that area.

PG: The uncertainty with respect to the hydrological effects, particularly in relation to the raised bog, is the reason why ECan see monitoring as critical, and that there be an opportunity for further protection or compensation if monitoring indicates the values have been affected.

GB: Agree monitoring is helpful, but only if the effects due to mining can be separated from effects of other landuse, which I don't consider is possible in this case.

GB, MH and PG agree that the raised bog has high ecological values, being an unusual wetland type.

GB, MH and PG agree that it is essential that the hydrology and water quality effects are adequately addressed because if not then it would be very difficult/impossible to get a good ecological outcome.

E. What other land uses in the vicinity of the MOA are likely to be impacting the wider wetland habitats outside the MOA? Can you distinguish the effects of these land uses from the potential effects of mining in the MOA?

Neither MH nor PG have considered this. There will be effects, but it would be speculative to try and determine what those might be. However, MH and PG consider that the issue of potential future effects of other land uses on remaining significant wetland habitats adjoining/downstream of the MOA is one that should be carefully considered in developing a meaningful compensation package for effects of the MOA on wetlands.

F. Lizard habitat

1. What is the extent and values of lizard habitat lost on account of works that consent is now sought for?

There is no survey data or information to inform this matter. Tonkin and Taylor concluded that there may have been lizards present and a Lizard Rehabilitation Plan was prepared.

MH: The condition around enhancement of lizard habitats with respect to the North ELF consents do not appear to have been effective. The areas where it was undertaken are now surrounded by pine trees and aren't expected to provide lizard habitat long term. How will the applicant address this? It is not factored in to the current compensation proposal.

2. What values would the current or alternative potential offsetting/ compensation options provide for lizard habitat?

Any habitat provided for lizards by wetland restoration would be very different from the habitats lost. The alternative option proposed at the North Property has possible opportunities for lizard habitat creation/enhancement, but the value of this can't be quantified until the areas are surveyed.

G. Proposed offsetting / compensation options

Definition of offsetting/ compensation

3. Experts to provide agreed summary of the concepts of offsetting/compensation to inform the below discussion.

GB, MH and PG agree that formal offsetting is unlikely to be achievable and the proposal comprises compensation.

If you were to attempt to offset, the goal would be like for like, i.e., create seepage wetlands of a similar type and ecological value. Although they would have different ecological values, restoration of any other seepage wetlands affected by livestock at the North Property should be considered.

Some underlying principles of compensation are considered below.

Given the proposal is compensation, the focus should be on the sustainability of the proposal and that it can be secured in perpetuity. Like for like should be a guide (i.e. replace values where possible), including with respect to lizard habitat.

MH is of the opinion that compensation shouldn't just focus on a vegetation type, but on a functional and intact ecosystem, because that is what he considers has been lost.

Additionality is important (e.g. with respect to OIO requirements).

Compensation needs to demonstrate a clear net gain in biodiversity. Because we can't quantify what was lost, the compensation needs to be a clear and justified gain in biodiversity. There is not enough detail to account for losses and gains so to attempt to do that would be futile.

From an ecological perspective, what would a good compensation package look like?

Preference would be to look at Bush Gully Stream as a first consideration because it is the closest and most relevant to the effects (GB, MH)

It should protect the full ecological and hydrological functioning of the compensation area (MH)

Provide protection of the hydrology in that part of the catchment from surrounding/adjoining land uses (MH, PG, GB)

Have control over the land use so that the proposal is more likely to be sustainable (MH, PG, GB).

MH and PG consider that control over land use (e.g. by legal protection) to protect existing significant wetland and other ecological values is more useful and sustainable than restoration or enhancement of degraded wetlands. However, there is also value in restoration actions. The compensation package should include both.

MH and PG consider that ideally it would include protection of the existing/remaining wetlands to the northwest of the MOA. If, as is suggested by CCM, future land uses (farming and/or forestry) are likely to adversely impact on remaining wetlands northwest of the MOA, these wetlands would seem to be obvious priority candidates for consideration in the compensation package.

Protection of similar habitats to those lost (MH, PG)

Allow for ecological change/succession e.g. becoming more woody (GB, MH, PG)
Include lizard habitat (GB, MH, PG)

If Bush Gully Stream is not practical then consider options elsewhere within the Selwyn River/Te Waihora catchment (PG)

Current proposed package

4. What values would the proposed offsetting/ compensation on the North Property and Bush Gully Wetland provide?

Enhanced wetland values.

MH: Wouldn't provide an intact system and doesn't address ecological functioning.

PG: Agree with MH.

5. Will the proposed package provide sufficient offsetting/ compensation for the values that have been lost (why/why not)?

MH: No. It doesn't address the loss of a functioning ecosystem.

PG: Agree with MH.

6. What are the risks that relate to the achievement of the proposed offsetting/compensation and how can these risks be mitigated?

Risk of non-compliance (mitigated by monitoring and a bond)

Risk of upstream/adjoining land use effects (mitigate by shifting location or by acquiring land in the 'right' location, increase area to provide buffer)

Risk of weeds and/or pests (mitigated by management via plan, although noted that deer are not included as a pest in the WMP and should be)
Future development (mitigated by protection in perpetuity)
Risk of hydrology being permanently altered (mitigated by monitoring and acquiring land to manage future hydrology)

Alternative compensation proposal

7. What values would the potential alternative offsetting/compensation on the North Property identified at paragraphs 127 – 129 of Dr Bramley's evidence provide?

GB, MH and PG agree that a larger area provides additional value and potentially additional/different opportunities for enhancing ecological values. We are not in a position to be specific about what those might be because of a lack of survey of the area.

MH noted that it is still only part of a larger system, although it includes more terrestrial habitat.

H. Wetland Management Plan

1. Appropriateness of Wetland Management Plan for providing the proposed offsetting/compensation proposed and any suggested amended to the Wetland Management Plan.

The WMP is generally appropriate, the key underlying risk is the risk of non-completion or non-compliance. The experience of all ecologists involved is that compliance monitoring shortfalls mean we cannot rely on consent conditions and management plans to deliver ecological outcomes. Our preference therefore is for 'upfront' compensation before activation of consent i.e. legal protection of significant areas and payment of bond to fund management actions (e.g. fencing, weed and pest control) as required if conditions are not complied with.

2. What are the required objectives of the Management Plan?

Objectives 1 and 2 are appropriate. The remaining objectives may not be achieved because the scale of the proposal is insufficient to achieve them on its own.

Stock exclusion from Bush Gully wetland should be included, to allow for future management changes.

Feral pig and deer control should be an objective.

J. Griffiths



P. Grove



G Bramley



M Harding