

Written Response to Outstanding “Day 1” and “S42A” Questions to CRC

1. Are there any footnotes attached to Variation 1’s Table 11(a) that should also be attached to Variation 2’s Table 13(a)?

Response (Matthew McCallum-Clark/Adrian Meredith): The ecology advice received for Variation 1 was to set out a range of footnotes that would largely reflect ‘current state’, and this required enabling of some exceedances of the outcome values. For the Hinds/Hekeao area, the data indicates the outcomes were consistently achieved 10-15 years ago in Hinds waterways, but will require improvements (predominantly of flow) to be achieved in future.

We also recognise the response to Commissioner Sheppard’s question on the scope of the submissions for these footnotes, to which the answer was that there was no scope in the submissions (copied below).

Overall, we now recommend that the suggested footnote 2 be deleted.

*(“DS 8.23 Would the Council have authority to make the suggested amendment to Table 13a?
“Response: As no submissions have been lodged requesting the inclusion of the interpretation notes, it would only be possible for the notes to be included under clause 16(2) of Schedule 1 of the RMA. Under clause 16(2) a local authority may make an amendment, without using the Schedule 1 process, to its proposed policy statement or plan to alter any information, where such an alteration is of minor effect, or to correct any minor errors.”)*

2. Why is it recommended to change the titles for Table 13(j) and 13(k) to Targets instead of say Targets/Limits? Does that recommended change provide suitable ‘shelf life’ for those tables?

Response (Matthew McCallum-Clark): The titles were changed to reflect the final column of each of the tables, which reads “Target to be met by 2035” or similar.

However, and on reflection, this column heading is not appropriate where such a ‘target’ is already met, and therefore should be redefined as a limit. On an initial review, this appears to apply particularly to Table 13(j), where the Hill-fed Upland ‘targets’ would be more appropriately considered as ‘limits’. This position will be confirmed in the reply version of the variation.

8. Table 13a: Why is the value for Cyanobacteria 50%, when CDHB/Public Health seek 20%? (See page 6 and 7 of Alistair Humphrey’s evidence)

Response (Adrian Meredith/Matthew McCallum-Clark): The appropriate outcome target for cyanobacteria mat coverage depends upon the current state, achievability of outcome and the use made of the waterbody.

The NZ Periphyton guidelines set a bottom line of 60% cover for aesthetics/recreation waterbodies, but the NZ Guidelines for Cyanobacteria in Recreational Fresh Waters set three classes (<20% cover = surveillance; 20-50% cover = alert mode; >50% cover = action mode) to protect for toxicity risk from recreational contact with cyanobacteria mats. We have recommended:

- *A conservative <20% cover for the upland hill-fed sites because of their accessibility, potential use, good water quality, and current lack of such growths.*
- *<50% cover for the lower hill-fed sites (i.e. lower Hinds River) because of current limited recreational use, groundwater enriched water quality, and seasonal high levels of such growths at present.*
- *<50% cover for the spring-fed plains [drains] sites because of current limited recreational use, and groundwater enriched water quality. We also note the limited suitable growth habitat to support problem growths*

Probably the biggest reason to not consider all waterways to be limited to <20% cover was because most areas are not recognised as 'recreational water quality sites' and because the two lower waterway categories are dominated by highly enriched groundwater and so possess many of the drivers increasing the risks for occurrence of such cyanobacteria mat growths. It is therefore unlikely to be reasonable or achievable to consistently expect to maintain these waterways at or below a level of 20% cover. We therefore recommend the outcomes be maintained at the category below having to notify public health warnings.

DS9.141 In the third sentence, it is suggested that a resolution of the Overseer version issue is near. Will an up-to-date description of progress on this be given to the hearing commissioners on 16 June?

RvV 9.141 Can you explain what the resolution of the Overseer issue involves?

Response (Bob Bower/Matthew McCallum-Clark): The modelling platform Overseer has been used to support the Hinds/Hekeao Plains technical assessment, both during the on-farm nutrient modelling (MRB, 2014) and to develop inputs to the Hinds/Hekeao water quality modelling. This modelling has been undertaken to provide the Ashburton Zone Committee with estimates of catchment nitrate-nitrogen loads based on various land use and mitigation scenarios (Scott, 2014). New versions of Overseer are released periodically, with these updates intended to improve the accuracy of the model as new technical information becomes available and research results are validated.

The use of Overseer in ECan planning processes is complicated by version changes. Version changes need to be addressed in:

1. *The water quality modelling technical assessments conducted during the community consultation period, which can lead to catchment load limits and nutrient caps.*

2. *The use of Overseer derived fixed values in policies and rules, such as thresholds, targets and limits.*

Publically ECan has been working hard to share the latest information about Overseer and its application to land use management with the general public and stakeholders. Some of these recent outreach messages have been shared in the press (Appendix 1) and in community meetings (Appendix 2).

Overseer Version 6.2 (April 2015) has a number of changes from the previous version, including a refined 'irrigation module' that could lead to changes in nutrient budgets. ECan has identified that the main changes with Overseer 6.2 relate to soil information and the irrigation module.

For soils, the model is now more compatible with information derived from the S-Map soils database. For irrigation, a substantial overhaul of the irrigation module has been undertaken and these improvements incorporated in the model. Essentially these changes allow Overseer to model a much great variety of irrigation management practices, including ones that result in significantly higher drainage (and consequent risk of leaching) than before. This improvement offers the potential to better characterise current practice and more accurately evaluate moving to improved irrigation practices.

The update of model versions can be problematic if land users are tied to a fixed nutrient loss number in a plan or consent. These types of changes might be managed by:

1. *Providing a planning mechanism whereby a comparative baseline, which has been established using a superseded version of Overseer, can be updated using the Overseer version being applied to test compliance.*
2. *Providing a mechanism for allowing the same relative increases or decreases allowed under a current plan provision, regardless of the absolute number results generated using a new Overseer version.*
3. *Considering whether to convert absolute thresholds into relative measures (relative to baseline and MGM for example).*

While these management methods are helpful at a general level, and are often applied through resource consent processes, methods 2 and 3 are less able to be incorporated into Variation 2. This is a result of the content of Variation 2, the scope of submissions and, most importantly, the currently on-going development of the 'MGM' planning regime, in accordance with Policy 4.11 of the pLWRP.

Appendix 1

15 May 2015

MEDIA RELEASE

Nutrient loss measurement tool upgrade welcomed

Environment Canterbury today welcomed the recent upgrade to the nutrient loss measurement tool, OVERSEER®.

Chief Executive Bill Bayfield said improvements to the irrigation component of OVERSEER® would highlight the significant gains to be made from enhancements to irrigation efficiency.

“It is important to note, however, that while the improvements introduced by OVERSEER® 6.2 will change estimated nutrient loss numbers they will not change the reality with regard to actual nutrient losses,” Mr Bayfield said.

Environment Canterbury is working to help make sure decision-makers are provided with options for dealing with OVERSEER® version changes. “We are committed to working with other councils, the owners of OVERSEER® and industry in seeking solutions to these challenges,” Bill Bayfield said. A plan change later in 2015 will help address them.

“Environment Canterbury wishes to ensure that the focus is on good management practices by farmers and nutrient outputs,” Mr Bayfield said. “OVERSEER® provides a method of benchmarking against good management practices. Its strength is the way it can be used in a relative rather than an absolute way. Our challenge is to develop policy that allows for this.”

Environment Canterbury has moved to assure farmers who have made investment decisions based on previous versions of OVERSEER® that they would not be disadvantaged as a result of these changes.

“The planning framework for land use and water quality interactions is based on management of nutrient outputs rather than inputs,” Bill Bayfield said. “Landowners have maximum freedom to decide how best to manage their land to minimise nutrient losses. This approach, which is of benefit both to farmers and to water quality outcomes, will not change with a new version of the measurement tool.

“It is not Environment Canterbury’s intention to immediately require more farmers to get a consent to farm just because of an OVERSEER® upgrade,” Mr Bayfield concluded. “We will work with individual farmers, industry bodies and zone committees to focus on achieving the outcomes anticipated when the proposed Canterbury Land & Water Regional Plan was drafted.”

For more information on OVERSEER®, go to <http://www.ecan.govt.nz/publications/Plans/lwrp-infosheet-farmers-overseer.pdf>, www.overseer.org.nz

For information on the proposed Land & Water Regional Plan, go to www.ecan.govt.nz/lwrp

Background

OVERSEER® is the management tool that has been selected for estimating nutrient losses from a farming activity under the proposed Canterbury Land & Water Regional Plan.

The OVERSEER® model requires users to enter information about their farming system, such as production, location and soil types.

Based on this information, a nutrient budget is prepared which estimates the long-term average nitrogen loss from a property.

A nutrient budget is prepared for both the “nitrogen baseline” period (1 July 2009 – 30 June 2013), and the most recent four-year period (the nitrogen loss calculation period).

Once these budgets have been prepared, the results should be compared against the rules in the proposed Land & Water Regional Plan to determine whether a farming activity is permitted or requires a consent.

When updates to the OVERSEER® model are made, the most recent version must be used to calculate the nitrogen baseline and nitrogen loss.

Farmers should retain all the farm information/data used to prepare the original nutrient budget because this will be needed to prepare future budgets.

More information

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Appendix 2

Clipping from Ashburton Guardian, (June 2015)

Plan changes words, not numbers

By Maureen Bishop
Proposed changes to Environment

Canterbury's farm nutrient management plan are likely to see the inclusion of narrative rather than hard numbers, farmers attending a nutrient management seminar in Ashburton last week were told.

Leo Fietje, the council's principal planning adviser, said that a plan change was likely later this year.

The figure of 20 kilograms of nitrogen per hectare, which triggers the need for a farm environment plan, was

likely to be replaced with narrative, Mr Fietje said.

He said the council was listening to concerns and adapting.

With 10,000 baseline calculations for nitrate losses required, the industry did not have the capacity to deliver these in a timely fashion, he said.

It was always known that fixed limits would move around against a set model, he said, but they moved more than expected.

Mr Fietje emphasised there was not a problem with the Overseer pro-

gramme, but more with the fixed limits specified in the red zone regulations.

When considering the implementation of the plan, the regional council had been made to think hard about whether Overseer had been used in the right way, he said.

"There is no disagreement there is a need for it, but maybe those hard numbers need to be looked at for their effectiveness."

Farms would need to be registered with the Farm Data Portal. This is a web-based interface

which allows farmers to find out their good management practices and loss rates.

It provided key information to support a consent application, Mr Fietje said and would help determine if the land use was permitted.

It would also collect information for catchment accounting purposes.

Phase two of the system, due after August this year, would be likely to include sub-regional variations, irrigation schemes and auditing, he said.