

**ORARI-TEMUKA-OPIHI-PAREORA ZONE WATER MANAGEMENT COMMITTEE-
FOR THE WORKSHOP OF 17 JULY 2017**

Report for Agenda Item No *

**Prepared by Jason Grant, Kevin Payne and Mark Adams
Upper Opihi-Opuha Catchment Group**

Outcomes and Solutions Sought by the Upper Opihi-Opuha Catchment Group

1. PURPOSE OF REPORT

The OTOZ Zone Committee (ZC) is now entering the 'solutions seeking' phase of the Healthy Catchments Project. The Upper Opihi/Opuha Catchment Group has been invited to attend the ZC's workshop on the 17th July 2017 to discuss with its members the catchment groups understanding of the catchment, its issues and possible solutions.

This Report provides an introduction to the catchment group and presents the key topics of importance that the group consider should be considered through the Healthy Catchments Project.

2. The Upper Opihi-Opuha Catchment Group

2.1 Group formation

The Opuha Catchment Group have been meeting since August 2014. Informed by a field trip around the catchments waterways, the group identified a range of topics that they wanted to learn more about and consider further. The group have since spent some time considering a number of these topics and these discussions contribute to this Report being presented to the ZC.

The Upper Opihi Catchment Group formed around the same time, and soon focussed attention on the key area of concern – the high nitrate concentration in the Opihi being contributed by the Glenfield stream. The group undertook some water quality monitoring, undertook field trips and worked with ECan to understand what the monitoring was showing. Unfortunately the group experienced some turnover in facilitators and as a result lost some momentum.

At a joint meeting of the Upper Opihi and Opuha Catchment Group in February 2017, the groups decided there were efficiencies to be gained from merging into one group, and have continued to work together since under the umbrella of the Upper Opihi-Opuha Catchment Group.

2.2 Purpose of the Upper Opihi-Opuha Catchment Group

The purpose of the Upper Opihi-Opuha Catchment Group is as follows:

Greater community awareness and understanding of our interaction with the local catchment to ensure that:

The quality of the Upper Opihi and Opuha Rivers and Lake Opuha are maintained and improved to a swimmable state and the river flows protect instream values, while maintaining profitability, farming and recreation.

3. KEY ISSUES/ITEMS OF DISCUSSION

3.1 Water quality / nutrient limits

The Upper Opihi-Opuha understand the two main inflows into Lake Opuha, the North and South Opuha, to be generally low in DIN, DRP, Suspended solids and e.coli. Additionally, the two recreation water quality monitoring sites in Lake Opuha – Ewarts Crn boatramp and Recreation Reserve – are both currently graded as ‘Good’ – largely based on ecoli monitoring (rolling 5 year). The catchment group seek that this high quality state of the waterways be maintained long term.

The catchment group are also aware, however, that the OTOP current state of ground water report identifies Ashwick Flat as an area where an increase in nitrate concentrations in groundwater is being detected. We also understand that Glenfield Stream which runs through the Ashwick Flat area is considered by ECan to be a significant contributor to the increase in nitrate and nitrate nitrogen in the Opihi River at Tondros Rd downstream of Fairlie.

In the ‘in-zone gains’ scenario, ECan identified that a 9% reduction in N loss beyond GMP was required to meet drinking water standards in the groundwater in the Ashwick Flat area. The catchment group believe a 9% reduction in N loss is achievable through the targeted implementation of nutrient mitigation practices through Farm Environment Plans without the need for regulation prescribing certain numbers based on modelled losses. As a catchment group, and with the assistance of industry and using the knowledge gained through the Farmer Reference Group set up by ECan, we believe we are in a good place to have targeted discussions about the practices that can be implemented on-farm and across the catchment to work towards the water quality outcomes sought. The catchment group understand the ECan Land Management Advisory team has committed resources into this area and we are willing to engage and work with ECan staff to investigate the causes and solutions to the high groundwater nitrate hotspot areas.

The catchment group wish to see further long-term monitoring undertaken in the Ashwick Flat groundwater and surface water system to continue to build our knowledge

and understanding of the nitrate sources, and believe the recommendations of the Zone Committee should reflect the fact that this is an 'on-going story'.

The catchment group believe there may also be the opportunity for larger scale catchment mitigations, and believe these need to be explored and 'on the table' as part of the Healthy Catchment Project. In particular, the group would like to spend some time understanding and considering the role of the stockwater race system in the catchment and potential improvements that could be made to water and nutrient efficiency. The catchment group will be working on this over the next few months.

The catchment group have recently received a presentation outlining the PC5 decisions and what PC5 means for different farming operations. The group are supportive of the following aspects of PC5

- The concept of Good Management Practice (GMP) on-farm
- That by requiring GMP on farm, poor performers are not rewarded
- The use of Farm Environment Plans (FEP) and FEP auditing as a means of ensuring GMP is implemented
- Provides for some flexibility for extensive (low emitting) farms to intensify (though limited to permitted activity thresholds)
- Amendments to the winter grazing definition and thresholds
- Moves away from a fixed N leaching rate to trigger a consent
- Retains the concept of a farming enterprise, which provides some flexibility

The catchment group, however, are concerned or have questions about the following aspects of PC5:

- Concerns around the robustness of the Farm Portal and its ability to produce GMP loss rates that reflect actual GMP practices on farm
- Does not fully provide for the possibility of New Water into the Zone
- Concern that some farming systems land values are capped according to landuse/intensification decisions in the past.

Fundamentally, the catchment group wish to acknowledge the existing diverse landuse in the catchment and how that diversity contributes to a robust, sustainable community.

Recommendations sought:

- That further surface water and groundwater monitoring is undertaken in the Ashwick flat area to continue to build the understanding of the nitrate sources
- That any reduction in nitrogen loss required to meet water quality outcomes is achieved through the targeted implementation of nutrient mitigations in FEPs, education, industry liaison, and ECan Land Management support, under the banner and coordination of the Upper Opihi-Opuha Catchment Group
- That the ZC fully understand the implications of PC5 for the diversity of farming operations in the upper catchments, ranging from extensive sheep to intensive

dairy operations, when deciding whether to adopt PC5 or investigate an alternative nutrient allocation mechanism.

- That the catchment group are provided with the time and opportunity to better understand and consider the stockwater race system and the possible nutrient and water use efficiency gains that could be made, to feed back into the Healthy Catchments Project.

3.2 Mainstem Dam Regime

The catchment group have spent some time understanding and discussing the operating regime of the Opuha Dam and the flow regime of the Opuha and Opihi mainstem. In October 2015, the Catchment Group listed the following 'recommendations/wishes' for how the Opuha Dam should be managed:

- That more variability is built into the flow regime, particularly the introduction of more regular flushes.
- That the flow regime minimises the opportunity for phormidium and didymo growth
- That flushes be coincided with natural high rainfall / flow events
- That any flushes – 'piggyback' or regular – are to come out of the environmental flow 'bucket'.
- That flexibility is built into the sub-regional, to allow it to be adaptable to different seasons, weather conditions etc, in order to maximise both the irrigation and environmental benefits of water.
- That a stakeholder group is retained within the plan to oversee/guide this adaptability
 - o The role of this stakeholder group is formalised
 - o The stakeholder group has bottom lines / principles that it must work to.
- That the operation/implementation of the variable flow regime does not impact on irrigation, recreation or the river environment

The Catchment Group have recently received a presentation from the Adaptive Management Working Group (AMWG) outlining the Proposed Adaptive Flow Regime for the Opihi River the group have developed. The Catchment Group is supportive of this Proposed Regime and believes the outcomes sought by the catchment group are fully integrated into the proposed AMWG regime.

Additionally, it is the view of the Catchment Group that the design of the facility at the dam, with the outlet (power station intake) at the bottom of the lake, may be contributing to water quality issues downstream arising, in particular to low oxygen conditions that are known to occur in the lake during warmer periods. The Catchment Group believe that an alternative, enhanced design that enables water to be taken off at higher levels may result in improvements in downstream water quality by alleviating or avoiding the effects of the seasonal low oxygen conditions, providing the ability to

pull water from appropriate temperatures, as well as potentially reducing the release of sediment downstream.

Recommendations sought:

- The Zone Committee adopt the Adaptive Management Working Group’s (AMWG) proposal for the Opihi River
- That Zone Committee / Environment Canterbury investigate potential funding sources for a variable intake at the Opuha Dam

3.3 Minimum flows:

The OTOP sub-regional plan will review the minimum flows and allocations of the Opihi tributaries.

Approximately 2,800-3,000ha of land is irrigated in the upper catchment tributaries of the North and South Opuha and Upper Opihi (above Raincliff). With the exception of three AN and 1 BN (flood flow) take, all other takes are affiliated to Opuha Water Ltd, which means that while not directly augmented by water released from the Opuha Dam, OWL is required to ‘offset’ their takes from the tributaries, through releases down the main stem. The AN and BN takes are not affiliated to the Opuha scheme and therefore are tied to the Opihi River at SH1.

These upper catchment irrigators have minimum flows both on their tributaries (Table 1) and the main stem of the river at either Saleyards Bridge (SYB) or SH1. Historically, the tributary minimum flow constraints have resulted in restrictions for the above-dam irrigators in most seasons, meaning the historical reliability of irrigation water supply of these upper catchment consent holders is lower than below-dam irrigators.

Table 1. Current Minimum Flows

North Opuha @ Clayton Rd Bridge	<ul style="list-style-type: none"> • Current minimum flow of: <ul style="list-style-type: none"> ○ 1 Oct – 14 April: 850 l/s ○ 15 April-30 Sept: 1000 l/s • Additional to min flows above, irrigation must cease when the river temp >25°C
South Opuha @ Monument Bridge	<ul style="list-style-type: none"> • Current minimum flow of <ul style="list-style-type: none"> ○ 1 Sept – 29 April: 500 l/s ○ 30 April - 31 Aug: 800 l/s • Cascade Creek / Morris Rd essentially act as a Water User Group, rationing down to the minimum flow. However this water user group is not formally recognised by ECan
Opihi @ Rockwood	<ul style="list-style-type: none"> • Current minimum flow of <ul style="list-style-type: none"> ○ 1 Nov-31 March: 790 l/s with partial restrictions from 910 l/s. ○ 1 April-31 Oct: 1280 l/s with partial restrictions from 1400 l/s
Smaller tributaries: Gillies Creek @ confluence Coal Stream @ Watts Bridge	<ul style="list-style-type: none"> • Current min flow of 130 l/s • Current min flow of 10 l/s

The catchment group have had some initial discussions regarding the minimum flow regimes of the upper catchment waterways. The catchment group are confident that there is the opportunity to achieve a 'win-win' between in-stream and irrigation demands in the review of minimum flows, through an 'environmental flow regime' rather than a minimum flow. Such a regime would include monthly variable minimum flows, provision for high flows, a cap of allocation at current levels, as well as the use of water user groups to manage periods of water shortage / low flows.

In developing a minimum flow regime for the upper catchment rivers, the Catchment Group believes it is important to provide for:

- The self-management of river users (water users group concept)
- The protection of the native fishery, trout spawning and trout migration
- The protection of current irrigation abstractors, and to maintain or improve their reliability
- The use of the rivers by other users, including recreational anglers and other recreational users, Fairlie community water supply, and others who abstract for domestic or stock water.
- Fairness between above and below dam users – reflected in the minimum flows and reliability

Recommendations sought:

- That the allocation in all 'upper catchment' (Upper Opihi, North Opuha, South Opuha) waterways is capped at current allocation (excluding domestic and stock water) and that this cap protects current users.
- That the plan continues to recognise and provide for the offset of the takes from the upper catchment tributaries (North Opuha, South Opuha, Upper Opihi) by the release of water down the main stem from the Opuha Dam.;
- That the minimum flows of the upper catchment are reviewed to achieve a 'win-win' between in-stream and irrigation demands through a variable flow regime
- That the catchment group gets the time and opportunity, through the Healthy Catchments Project, to engage with key stakeholders to further develop this 'win-win' flow regime, to be presented and considered by the Zone Committee.
- That the full economic and social implications of any changes to minimum flows or allocation limits are fully understood prior to any recommendations/decisions being made.
- That the minimum flow protect the headwaters of the upper catchment rivers which are important for their fishery value.
- That the plan supports the concept of water users groups and the role of a self-management regime in maintaining flows above the minimum required – this has a better environmental outcome than when all users work on their own.
- That new water is considered as a means of relieving the impacts of any increase

in minimum flows or reduced allocation.

- That the Mackenzie District Council community water supply takes are not tied to minimum flows provided a water supply strategy has been developed which restricts the use of water from those supplies during periods of low flow (as is the default in the LWRP).

3.4 New Water

The Upper Opihi-Opuha Catchment Group is concerned with the way that the concept of new water was portrayed at the last round of public meetings. The inference was that bringing new water into the catchment would only drive intensification and that it would create greater nutrient leaching. There was little consideration of the regional economic benefits, and more importantly no consideration given to the potential environmental enhancement opportunities that new water could provide despite the fact that new water would only come into the zone if some of that water was for the environment.

The Upper Opihi-Opuha Catchment Group would seek that the Zone Committee does not dismiss the concept of New Water and the potential solutions it may provide

Recommendations sought:

- The Zone Committee keeps New Water 'on the table' as an option and possible solution.

4. Conclusion

The Upper Opihi-Opuha Catchment Group wish to thanks the Zone Committee for the opportunity to offer some understanding of the catchment, its issues and possible solutions.

We seek to continue to be involved in the development of the 'Solutions Package' for the OTOP Zone and specifically for the Opihi River catchment and look forward to further opportunities to work with and present to you.