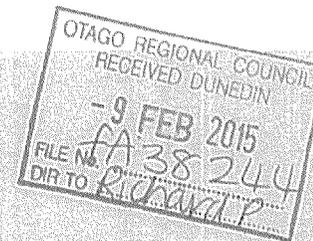




# SUBMISSION FORM (Print clearly on both sides)

## Proposed Plan Change 3C (Waiwera catchment minimum flow) to the Regional Plan: Water for Otago

(Form 5, Clause 6 of the First Schedule, Resource Management Act 1991)



Office use only

Name of submitter:

Ken Telford.

Organisation (if applicable):

Postal address:

27 Telford Road.

D. R. D.

Clinton

Postcode:

9584

Telephone:

027 242 8653

Email:

ken@hellchores.co.nz.

Please Note. I am out of the country from 17 Feb -> 8th March. Would appreciate you considering this when setting dates to speak in support.

I wish/ do not wish (circle preference) to be heard in support of my submission.

If others make a similar submission, I will will not consider presenting jointly with them at a hearing (circle preference).

Signature:

*Ken Telford*

Date: 04-02-15

(of submitter, or person authorised to sign on behalf of person making submission).

Trade competitor's declaration (if applicable)

I could gain through trade competition from a submission, but my submission is limited to addressing environmental effects directly impacting my business

Signature:

Note that all submissions are made available for public inspection

SUBMISSIONS MUST BE RECEIVED BY 5.00 PM MONDAY 16 FEBRUARY 2015.



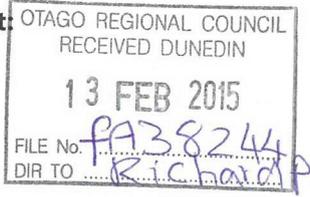
Send to:  
Freepost ORC 497  
Otago Regional Council  
Private Bag 1954  
Dunedin 9054

Please turn over

1 State what your submission relates to and if you support, oppose or want it amended	2 State what decision you want the Otago Regional Council to make	3 Give reasons for the decision you want made
<p>E.g. amend provision 'y'</p> <p>amend. Schedule 2A.</p>	<p>E.g. provision 'y' should say</p> <ul style="list-style-type: none"> <li>- wish to raise the minimum flow</li> <li>- wish to adjust primary allocation.</li> </ul>	<p>E.g. I want provision 'y' changed because..</p> <ul style="list-style-type: none"> <li>- various. <ul style="list-style-type: none"> <li>- historical</li> <li>- environmental</li> <li>- cultural</li> </ul> </li> </ul>

**Richard Pettinger**

**From:** Gemma Wilson  
**Sent:** Friday, 13 February 2015 9:04 a.m.  
**To:** Richard Pettinger  
**Subject:** FW: New submission: Submissions form - Proposed Plan Change 3C (Waiwera catchment minimum flow)



**From:** JotForm [mailto:noreply@jotform.com]  
**Sent:** Thursday, 12 February 2015 5:53 p.m.  
**To:** Gemma Wilson  
**Subject:** New submission: Submissions form - Proposed Plan Change 3C (Waiwera catchment minimum flow)

<u>Question</u>	<u>Answer</u>
Name of submitter:	Phil Neame
Organisation (if applicable):	PJ & AM Neame Ltd.
Address	Street number / name: 1862 Clinton Highway, 2 RD Clinton Post code: 9584
Telephone:	(03) 4157 874
E-mail	<a href="mailto:paneame@xtra.co.nz">paneame@xtra.co.nz</a>
I wish / do not wish to be heard in support of my submission:	I wish to be heard
If others make a similar submission, I will / will not consider presenting jointly with them:	I will consider presenting jointly
Signature: (of submitter, or person authorised to sign on behalf of person making submission)	

Trade competitor's declaration (if applicable): I could gain through trade competition from a submission, but my submission is limited to addressing environmental effects directly impacting my business

1. State what your submission relates to and if you support, oppose or want it amended:

My submission relates to option two of the minimum low flow for primary allocation of the proposed plan change for the Waiwera River.

I also would like to see any water that is used for dairy shed use to be measured and uploaded to the Regional Council.

2. State what decision you want the Otago Regional Council to make:

To ratify option number two, and to make water meters mandatory for any water that is taken for dairy shed usage.

3. Give reasons for the decision you want made:

Option two provides economic certainty for the Primary Allocation takes and provides for native fish and brown trout population.



# SUBMISSION FORM (Print clearly on both sides)

## Proposed Plan Change 3C (Waiwera catchment minimum flow) to the Regional Plan: Water for Otago

(Form 5, Clause 6 of the First Schedule, Resource Management Act 1991)



3  
Office use only

Name of submitter:

Tony Andersson

Organisation (if applicable):

Westridge Farm Ltd

Postal address:

408 Waiwera Gorge Road,  
R.D.2, Clinton 9584

Postcode:

9584

Telephone:

0274 473809

Email:

tonykath57@gmail.com

I wish / ~~do not wish~~ (circle preference) to be heard in support of my submission.

If others make a similar submission, I will / ~~will not~~ consider presenting jointly with them at a hearing (circle preference).

Signature: J.H. Cunder Date: 6.2.15

(of submitter, or person authorised to sign on behalf of person making submission).

### Trade competitor's declaration (if applicable)

*I could gain through trade competition from a submission, but my submission is limited to addressing environmental effects directly impacting my business*

Signature: \_\_\_\_\_

Note that all submissions are made available for public inspection

SUBMISSIONS MUST BE RECEIVED BY 5.00 PM MONDAY 16 FEBRUARY 2015.



Send to:  
Freepost ORC 497  
Otago Regional Council  
Private Bag 1954  
Dunedin 9054

Please turn over

1 State what your submission relates to and if you support, oppose or want it amended	2 State what decision you want the Otago Regional Council to make	3 Give reasons for the decision you want made
E.g. amend provision 'y'	E.g. provision 'y' should say	E.g. I want provision 'y' changed because..
Current minimum flow	Alter the proposed minimum flow. Increase proposed minimum flow.	Future river health values.
Historical river/water take.	Provide evidence of the historical water take.	To review the primary water take.

**Richard Pettinger**

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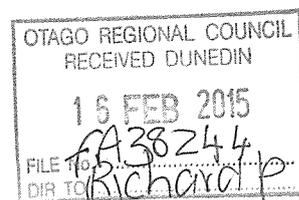
**From:** Kathryn Gale <kathryn.gale@ktkoltd.co.nz>  
**Sent:** Monday, 16 February 2015 2:40 p.m.  
**To:** Policy Reply  
**Cc:** edward.ellison@xtra.co.nz; rewi.anglem@gmail.com; maureen.wylie@xtra.co.nz  
**Subject:** Proposed Plan Change 3C - Waiwera Catchment  
**Attachments:** Kai Tahu Submission - Plan Change 3C (Waiwera Catchment Minimum Flow).pdf

Tēnā koe

Please find attached the submission of Te Rūnanga o Ōtākou, Waikoau Ngāi Tahu Rūnaka (South Otago) and Hokonui Rūnanga on this plan change.

Ngā mihi ki a koe, Kathryn

*Kathryn Gale  
Intern  
Kai Tahu ki Otago Ltd Consultancy*



✉ [kathryn.gale@ktkoltd.co.nz](mailto:kathryn.gale@ktkoltd.co.nz)

1st Floor,  
258 Stuart Street  
PO Box 446, Dunedin, New Zealand

☎ +64 (3) 477 0071  
🌐 [www.ktkoltd.co.nz](http://www.ktkoltd.co.nz)

<b>SUBMISSION</b>	
<i>Form 5, Clause 6 of the First Schedule, Resource Management Act 1991.</i>	
<b>TO:</b>	Otago Regional Council
<b>DATE:</b>	16 February 2015
<b>PLAN CHANGE:</b>	Proposed Plan Change 3C (Waiwera catchment minimum flow) to the Regional Plan: Water. The plan change proposes to establish minimum flows, allocation limits, and monitoring sites for the Waiwera River.
<b>KĀI TAHU KI OTAGO PAPATIPU RŪNAKA</b>	Te Rūnanga o Ōtākou, Waikoau Ngāi Tahu Rūnaka (South Otago) and Hokonui Rūnanga (collectively Kāi Tahu)
<p>Kāi Tahu <b>supports</b> this plan change.</p> <p>Kāi Tahu <b>does</b> wish to be heard in support of this submission at a hearing, and requests an opportunity to expand on this submission. If others make a similar submission, we will consider presenting a joint case with them.</p>	

## 1. Introduction

- 1.1 Te Rūnanga o Ōtākou, Waikoau Ngāi Tahu Rūnaka (South Otago) and Hokonui Rūnanga (collectively Kāi Tahu) are Manawhenua in the Waiwera Catchment.
- 1.2 Kāi Tahu has assessed Proposed Plan Change 3C (Waiwera catchment minimum flow) that establishes minimum flows, allocation limits, and monitoring sites for the Waiwera River.
- 1.3 Kāi Tahu appreciates the precautionary approach taken by the Otago Regional Council to the management of freshwater resources in this catchment.

## 2. Te Rūnanga o Ngāi Tahu Freshwater Policy (NTFP)

- 2.1 The focus of the NTFP is the management of freshwater resources within the Kāi Tahu rohe. The NTFP outlines the environmental outcomes sought by Kāi Tahu and the guiding freshwater management principles, respectively:
  - Water is central to all life. It is a taonga left by the ancestors to provide and sustain life. It is for the present generation as tangata tiaki to ensure that the taonga is available for future generations.
  - Water plays a unique role in the traditional economy and culture of Kāi Tahu.

- Water has an inherent value that should be recognised in the event of potentially competing uses.
- Water is a holistic resource. The complexity and interdependency of different parts of the hydrological system should be considered when developing policy and managing the water resource.

### 3. Kāi Tahu ki Otago Natural Resource Management Plan 2005 (the Plan)

3.1 The Kāi Tahu ki Otago Natural Resource Management Plan 2005 is the principal resource management planning document for Kāi Tahu ki Otago. The kaupapa of the plan is Ki Uta ki Tai (Mountains to the Sea), which reflects the holistic Kāi Tahu ki Otago philosophy of resource management.

3.2 The Plan expresses Kāi Tahu ki Otago values, knowledge and perspectives on natural resource and environmental management issues. The Plan is an expression of kaitiakitanga. While the Plan is first and foremost a planning document to assist Kāi Tahu ki Otago in carrying out their kaitiaki roles and responsibilities, it is also intended to assist others in understanding tangata whenua values and policy.

3.3 The Plan is divided into catchments, with specific provisions for the whole Otago area and each catchment. This plan contains objectives and policies that are relevant to the proposed plan change, respectively:

#### Objectives

- The spiritual and cultural significance of water to Kāi Tahu ki Otago is recognised in all water management.
- The waters of the Otago Catchment are healthy and support Kāi Tahu ki Otago customs.
- Habitats and the wider needs of mahika kai, taoka species and other species of importance to Kāi Tahu ki Otago are protected.
- Flow regimes are consistent with the cultural values of Kāi Tahu ki Otago and are implemented throughout the Otago Region.

#### Policies

- To promote the cultural importance of water to Kāi Tahu ki Otago in all water management within the Otago Region.
- To promote catchment-based management programmes and models, such as Ki Uta Ki Tai.
- To protect and restore the mauri of all water.

- To promote minimum flow regimes for rivers that recognise and provide for Kāi Tahu ki Otago cultural values and the healthy functioning of associated ecosystems.

3.4 The objectives and policies of the Kāi Tahu ki Otago Natural Resource Management Plan 2005 align with those of the Te Rūnanga o Ngāi Tahu Freshwater Policy. The flow regime for the Waiwera Catchment should recognise and provide for Kāi Tahu cultural values and for the healthy functioning of ecosystems.

#### 4. Kāi Tahu Association with the Waiwera Catchment

4.1 Council in setting allocation limits and minimum flows for the Waiwera catchment is required to recognise and provide for the relationship of Kāi Tahu and their culture and traditions with the Waiwera River.<sup>1</sup>

4.2 The following Kāi Tahu cultural values, beliefs and uses for the Waiwera River are identified in the Regional Plan: Water for Otago.<sup>2</sup>

- **Kaitiakitanga:** The exercise of guardianship by Kai Tahu in accordance with tikanga Māori in relation to Otago’s natural and physical resources, including the ethic of stewardship.
- **Mauri:** Life force. The mauri of a river is most recognisable when there is an abundance of flow and the associated ecosystems are healthy and plentiful. This is an important element in the relationship that Kāi Tahu has with the water bodies of Otago.
- **Wāhi Taoka:** Treasured resources, values and sites that are valued and reinforce the special relationship that Kāi Tahu has with Otago’s water resources.
- **Mahika kai:** Places where food is procured or produced including eels, whitebait, kanakana (lamprey), kokopu (galaxiid species), koura (fresh water crayfish), fresh water mussels, indigenous waterfowl, and watercress.

#### 5. Kāi Tahu Submissions

5.1 Kāi Tahu has assessed Proposed Plan Change 3C Waiwera Catchment.

5.2 Kāi Tahu supports the setting of allocation limits and minimum flows for the Waiwera catchment, respectively:

---

<sup>1</sup> Resource Management Act 1991, Section 6(e)

<sup>2</sup> Regional Plan: Water for Otago, Chapter 4 and Schedule 1D. In addition, umu were identified during the community workshops.

Waiwera Catchment	
Primary Allocation (Schedule 2A)	
Minimum Flow at Maws Farm monitoring site	Primary allocation limit
260 l/s (October to April ) (84% of MALF)	150 l/s (48% of MALF)
400 l/s (May to September)	

Waiwera Catchment	
First Supplementary Allocation Block (Schedule 2B)	
Minimum Flow at Maws Farm monitoring site	Supplementary Allocation Block
500 l/s	100 l/s

### Depth and Continuity of Flow

5.3 Kāi Tahu places a high value upon the preservation and enhancement of their relationship with their ancestral rivers. While there are many intangible qualities associated with the spiritual presence of rivers, the elements of physical health that Kāi Tahu uses to assess rivers include:

- Aesthetic qualities e.g. clarity, natural character and the presence of indigenous flora and fauna.
- Life-supporting capacity and ecosystem robustness.
- Depth and velocity of flow.
- Continuity of flow.
- Productive capacity; and
- Fitness for cultural usage.<sup>3</sup>

5.4 The Kāi Tahu relationship with the Waiwera River is characterized by life in and around the river and by the river having a strong continuity and variability of flow.

5.5 Kāi Tahu submits that the proposed minimum flow regime supports a strong continuity and variability of flow from the headwaters of the Waiwera River to the confluence with the Clutha / Mata-au.

<sup>3</sup> Tipa, G (2008) Strath Taieri Irrigation Group Cultural Impact Assessment

## **Mahika Kai**

5.6 Mahika kai practices remain at the heart of Kāi Tahu tribal identity. Protecting the habitats and the wider needs of mahika kai, taoka species and other species of importance is a fundamental objective for Kāi Tahu ki Otago.

5.7 Kāi Tahu recognises the pressures irrigation and other uses of fresh water have placed on mahika kai. Of the vast number of mahika kai areas and species utilised historically, few remain accessible today.<sup>4</sup> Tipa and Nelson (2009) make the following observation:

*Irrigation in particular has contributed to the loss of mahinga kai because it has enabled the development of inland areas for farming and changed not only the land use but the intensity of that land use. These changes, together with the impact of damming, diverting and abstracting water, have directly impacted the habitat of mahinga kai species.*

5.8 The increasing loss of mahika kai areas and species has heightened the importance of retaining and protecting those that remain. The Waiwera River provides habitat for tuna (long-fin eel), Roundhead galaxiid, Common bully and Upland bully. A flow of 260 l/s at the Waiwera minimum flow site will ensure the sustainability of native fish species in the Waiwera River during low summer flows.<sup>5</sup>

5.9 Kāi Tahu submits that the proposed plan change provides for in-stream habitat and for the wider needs of mahika kai, taoka species and other species of importance to Kāi Tahu ki Otago.

## **6. Decision Sought**

6.1 That the Otago Regional Council adopts the proposed allocation limits and minimum flows for the Waiwera catchment.

Nahaku noa, Na



**Chris Rosenbrock**

Manager

---

<sup>4</sup> Tipa, G and Nelson, K (2009)

<sup>5</sup> Otago Regional Council (2006) *Management Flows for Aquatic Ecosystems in Waiwera River*

**Address for Service:**

Tim Vial

Principal Planner

KTKO Ltd,

PO Box 446

Dunedin 9054

Phone Number: (DD) (03) 471 5480

E-mail: [tim@tkold.co.nz](mailto:tim@tkold.co.nz)

**Richard Pettinger**

---

**From:** Geoff Deavoll <gdeavoll@doc.govt.nz>  
**Sent:** Monday, 16 February 2015 1:22 p.m.  
**To:** Policy Reply  
**Subject:** Plan change 3C Waiwera - DOC submission  
**Attachments:** DOCDM-1549626 - Waiwera Plan change 3C - DOC submission.doc

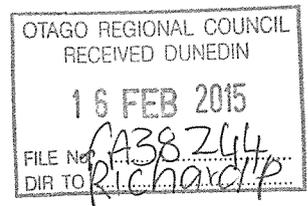
Good afternoon,

Please find attached the submission of the Director General of Conservation on Plan Change 3C to the Otago Regional Plan Water with regarding the minimum flow and allocation regime for the Waiwera River.

I will be available to discuss the details of this submission further if required. My contact details are given below

Regards

Geoff

**Geoff Deavoll**

Resource Management Planner - *Kai Whakamaherehere Penapena Rawa*  
Policy and Regulatory Services Group  
Department of Conservation - *Te Papa Atawhai*  
72 Moorhouse Avenue, PO Box 4715, Christchurch 8140  
DDI:03 371 3712 VPN:5412

Conservation for prosperity *Tiakina te taiao, kia puawai*  
[www.doc.govt.nz](http://www.doc.govt.nz)

Caution - This message and accompanying data may contain information that is confidential or subject to legal privilege. If you are not the intended recipient you are notified that any use, dissemination, distribution or copying of this message or data is prohibited. If you received this email in error, please notify us immediately and erase all copies of the message and attachments. We apologise for the inconvenience. Thank you.



The general reasons for the submission are that the decisions sought are necessary for the proposed Regional Plan: Water Plan Change 3C to achieve the purpose of the:

- Resource Management Act 1991 (RMA), and
- The National Policy Statement of Freshwater Management (2014), and
- The Otago Regional Policy Statement, and
- Otago Regional Plan: Water, and
- The Conservation General Policy, and
- The Otago Conservation Management Strategy, and
- Are in accordance with sound resource management practice, and
- Protecting the Waiwera freshwater fishery, and
- Protecting the life-supporting requirement of native fish, and
- Protecting the life-supporting flow requirements for the Lower Clutha flathead galaxias and the Gollum galaxias.

Further specific reasons and decisions sought are given in Attachment A to this submission. Where any decision sought in Attachment A seeks specific wording inserted in a specific place, the decision sought includes the following words:

'or words to like effect, and/ or in some other appropriate location in the Water Regional Plan.'

The submission also includes such consequential amendments as are necessary to give effect to this submission.

I wish to be heard in support of my submission.

If others make a similar submission, I will consider presenting a joint case with them at a hearing.



.....  
Phil Melgren  
Conservation Partnerships Manager (Southland)  
Invercargill  
Pursuant to a delegation from the Director-General of Conservation  
A copy of the delegation may be viewed at the Departmental offices located at  
Conservation House - Whare Kaupapa Atawhai, 18 - 32 Manners Street,  
Wellington 6011





(1) The specific provisions of the Proposed Plan Change that my submission relates to are:		(2) My submission is that:		(3) I seek the following decision(s) from Otago Regional Council:
Page Number	Sub-section/ Point	Oppose/support (in part or full)	Addition and Reason(s) where appropriate	
			link to give effect to and implement Section 12 rules on Water Take, Use and Management under section 67 (1) RMA.	
<b>Chapter 12 – Rules: Water Take, Use and Management</b>				
4	121.4.2 Schedule 2A catchment areas	Support	<ul style="list-style-type: none"> <li>➤ Addition of “Waiwera (Maps B13 and B15), and”</li> </ul> <b>Reasons</b> <ol style="list-style-type: none"> <li>1. Appropriate to include into Policy 6.4.5 as it gives effect to section 67 (1) RMA, Part II RMA, NPS Freshwater and Otago RPS.</li> <li>2. Required to give effect and implement Policy 6.4.5 (b) of the Water Plan</li> </ol>	Retain as notified
6	Schedules 2A-2B	Support	Addition of schedules for: <ul style="list-style-type: none"> <li>➤ minimum flow of 260 L/s (October to April) 400L/s (May</li> </ul>	Retain as notified

(1) The specific provisions of the Proposed Plan Change that my submission relates to are:		(2) My submission is that:		(3) I seek the following decision(s) from Otago Regional Council:
Page Number	Sub-section/ Point	Oppose/support (in part or full)	Addition and Reason(s) where appropriate	
			<p>to September) for primary (2A) and secondary (2B) minimum flow of 500 L/s and allocation limits of 150 L/s ( primary) and 100 L/s secondary limit at Maws Farm (MS 16).</p> <p><b>Reasons</b></p> <ol style="list-style-type: none"> <li>1. Minimum flows and allocations as specified in schedules 2A, 2B and 2 C give effect to Part II RMA, NPS Freshwater and Otago RPS.</li> <li>2. The minimum flows give a very high degree of reliability of supply.</li> <li>3. Minimum flows and allocations as specified in schedules 2A, 2B and 2 C give effect to Policy 7(a) and 7(d) of the Conservation General policy (2005).</li> <li>4. These minimum flows and allocations will safeguard the life supporting capacity of the</li> </ol>	

(1) The specific provisions of the Proposed Plan Change that my submission relates to are:		(2) My submission is that:		(3) I seek the following decision(s) from Otago Regional Council:
Page Number	Sub-section/ Point	Oppose/support (in part or full)	Addition and Reason(s) where appropriate	
			Waiwera's aquatic resources and sustain the Waiwera's freshwater fishery values. 5. These minimum flows and allocations rules give effect to the Otago CMS.	
<b>Minor and Consequential Changes</b>				
7	Various	Support	➤ Minor and consequential changes to give effect to the plan change <b>Reason</b> Gives effect to the plan change as detailed in other specific provisions.	Retain as notified
<b>Proposed Maps</b>				
8	Maps B13 and B15	Support	➤ Changes to Maps B11, B13, and B15, C22 and C23 <b>Reason</b> Gives effect to the plan change as detailed in other specific provisions.	Retain as notified

**Richard Pettinger**

---

**From:** Peter Wilson <p.wilson@fish-game.org.nz>  
**Sent:** Monday, 16 February 2015 4:02 p.m.  
**To:** Policy Reply  
**Subject:** Otago Fish and Game Council submission plan change 3C  
**Attachments:** WAIWERA submission.pdf

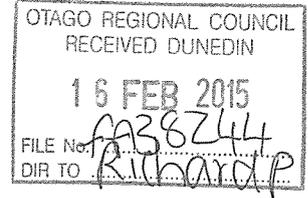
Dear Sir / Madam

Please find attached the submission from the Otago Fish and Game Council on plan change 3C.

We request to be heard at any hearing convened.

Thanks  
Peter

Peter Wilson  
Environmental Officer  
**Otago Fish and Game Council**  
Tel: 03-479-6552  
Cell: 021 151 3486





Otago Regional Council  
Private Bag 1954  
Dunedin

16/02/2015

Dear Sir / Madam

**Re: Proposed Plan Change 3C (Waiwera catchment minimum flow)**

1. This is a submission from the Otago Fish and Game Council on the publicly notified version of proposed plan change 3C (Waiwera catchment minimum flow).
2. The Otago Fish and Game Council (Fish and Game) is the statutory manager of sports fish and gamebird resources within the Waiwera catchment.
3. Fish and Game is not a trade competitor for the purposes of section 308A and other sections of the Act.

*Summary*

4. Fish and Game wishes to support the proposed summer minimum flow of 260 l/s (from 1 October to 30 April).
5. Fish and Game supports the proposed winter minimum flow of 400 l/s (1 May to 30 September) and the proposed primary allocation limit of 150 l/s for the catchment.
6. The proposed summer minimum flow represents 83% of the 7-day mean annual low flow for the Waiwera River (310 l/s, as predicted at the Maws Farm site using the catchment/rainfall method). Using the IFIM methodology, the proposed summer minimum flow of 260 l/s provides approximately 80% of habitat (weighted usable area, m<sup>2</sup>/m) available at MALF for adult brown trout. It is noted however that this is well below both the optimum flows for  
*Statutory managers of freshwater sports fish, game birds and their habitats*

Page 1

**Otago Region**

Cnr Hanover & Harrow Sts, PO Box 76, Dunedin 9054, New Zealand. Telephone (03) 477 9076 Facsimile (03) 477 0146  
[www.fishandgame.org.nz](http://www.fishandgame.org.nz)

adult brown trout of 3 cumecs, and the point of inflection at 1.5 cumecs. The proposed flows are within acceptable habitat availability ranges for juvenile trout and for spawning.

7. However, whilst we support the proposed supplementary allocation block size of 100 l/s, Fish and Game opposes the proposed supplementary minimum flow of 500 l/s, in that it does not provide a space for the river to behave naturally without the manipulation of flows. We request a higher supplementary minimum flow, of 800 lps. Given the flashy nature of the catchment and the frequent high flows, this is only a marginal reduction on the water harvesting opportunity. There are few supplementary consents issued in the catchment, and raising the level from 500lps to 800 lps would occur at little to no economic cost.

#### *Values of the Waiwera*

8. The Waiwera River is recognised as locally important for resident and sea-run brown trout, game bird habitat, and for angling and hunting. These values are listed in the statutory Sports Fish and Game Bird Management Plan for Otago (SFGMP 2003). It supports an adult brown trout fishery, juvenile recruitment, and spawning grounds, as well as providing habitat for shortfinned and longfinned eels, koura, upland and common bully, and galaxiids.
9. The river was visited for 119 angler days in 2007/2008, and 315 angler days in 2002/2003. The drop in angler use may be due to perceived water quality issues and a decline in the fishery, similar to that seen in other lowland South Otago rivers during the same period, such as the Waipahi.
10. The river suffers from reduced water yield due to the drainage of headwater wetlands in the past, and the clearance of tall-tussock grasslands to farmland. Thus, its natural flow regime would have once been greater than it is now. This is a factor worth considering in flow-setting.
11. The hydrograph for the Waiwera (21 April 2010-17 October 2014), measured at Maws Farm shows the following basic flow statistics:

Quantity	Value (cumecs)
Highest recorded flow	35.67
Lowest recorded flow	0.16
Median flow	1.58
Mean flow	2.66

(Source, Otago Regional Council, Maws Farm automatic flow recorder, hourly record)

The river has highly variable flows, given the flashy nature of the catchment, although it does appear to experience summer low flows, such as in 2011/2012 and 2012/2013. Appendix 1 shows this variability by way of a hydrograph.

12. Given the variability in flows and the median flow of 1.5 cumecs, Fish and Game requests a higher supplementary minimum flow of 800 l/s, rather than the proposed 500 l/s. We note that the proposed supplementary minimum flow (or the first supplementary allocation block) for the Pomahaka catchment in plan change 3B has the first block starting at 13 cumecs, which is close to the median flow of 15 cumecs (and the optimum flow for adult brown trout for the Pomahaka). There appears to be a substantial difference in flow setting methodology between catchments in Otago and the reasons for this difference are not explained.

13. The following table provides some background to supplementary flow settings in other catchments of Otago:

<u>Catchment</u>	<u>Supplementary minimum flow (first block)</u>	<u>Median flows (obtained from Schedule 16)</u>	<u>Difference</u>
Kakanui (at Clifton Falls)	1.519 cumecs	1.29 cumecs	22% above median, or 0.229 cumecs above median
Shag (at Craig Road)	0.650 cumecs	1.141 cumecs	56% of median, or 0.491 cumecs below median
Waianakarua (at Browns)	0.311 cumecs	0.78 cumecs	40% of median, or 0.469 cumecs below median
Pomahaka (at Burkes Ford)	13 cumecs	15 cumecs	86% of median, or 2 cumecs below median
Waiwera (at Maws Farm)	0.5 cumecs	1.58 cumecs	31% of median,

based on current proposals

or 1.08 cumecs  
below median.

14. The supplementary minimum flow (first block) seems to be set at a particularly low level for the Waiwera, when compared with other rivers around Otago. Given the catchment size and behaviour, a more appropriate trigger flow would be 0.800 cumecs, which would make it more consistent with other catchments.
15. The Waiwera River is surrounded by intensified farming and has seen an increase in instream nutrient concentration in recent years. The following table details the limits from Schedule 15 of the Regional Plan: Water (RPW) and the results from SOE monitoring:

Contaminant	Schedule 15 limit or target (at or below reference/median flow)	Current concentration (median value, 2006-2011)
Nitrate Nitrite Nitrogen	0.444 mg/L	0.781
Dissolved Reactive Phosphorus	0.026 mg/L	0.027
Ammonia (NH <sub>4</sub> )	0.1 mg/L	Unknown
<i>E Coli</i>	260 cfu/100ml	Unknown

(Sources: Otago Regional Council State of Environment Report, 2006-2011, and Regional Plan: Water)

Please note that the current concentrations are median values as obtained from the ORC State of Environment Report, not the 80<sup>th</sup> percentile values as required by the RPW. As such, the water quality issue is slightly worse than reported above, given that an 80<sup>th</sup> percentile standard is more stringent than median values.

16. Given the above issue with water quality and the likelihood of increased periphyton algal growth in the river, it would be precautionary to provide for more frequent natural flushing events and potentially also for a greater quantity of water within the river for dilution of nutrients. This is another reason to justify a higher supplementary minimum flow starting at least 800 l/s.

17. Research has been carried out on the Waiwera and other South Otago rivers in recent years on assessing the multiple stressors that affect aquatic life. The farmers within the catchment have also been supportive of a precautionary approach to flow setting, which, apart from the supplementary regime, the ORC appears to have heeded.
18. Fish and Game considers that the river is close to fully-allocated for irrigation, and that no substantial further primary allocation is available. It is thus pleasing to see the plan change being advanced before over-allocation occurs.

*Conclusion*

19. Otago Fish and Game supports the plan change with support for the summer minimum of 260 l/s.
20. Otago Fish and Game opposes the supplementary minimum flow (first allocation block) of 500 l/s and request a higher supplementary minimum flow of 800 l/s.
21. Thank you for the opportunity to submit on the proposed plan change. Fish and Game requests to be heard at any hearing convened.

Yours sincerely,



Peter Wilson  
Environmental Officer  
Otago Fish and Game

## Appendix 1 – Submission

Issue	Decision requested	Reasons
Policy 6.45 amendments	Retain notified version	Otago Fish and Game supports the notified version for the reasons stated above
Policy 12.1	Retain notified version	Otago Fish and Game supports the notified version for the reasons stated above
Schedule 2A amendments: Definition of catchment	Retain notified version	
Summer minimum flow of 260 litres per second (1 October to 30 April)	Support	The proposed summer minimum flow represents 83% of the 7-day mean annual low flow for the Waiwera River (310 l/s, as predicted at the Maws Farm site using the catchment/rainfall method). Using the IFIM methodology, the proposed summer minimum flow of 260 l/s provides approximately 80% of habitat (weighted usable area, m <sup>2</sup> /m) available at MALF for adult brown trout. It is noted however that this is well below both the optimum flows for adult brown trout of 3 cumecs, and the point of inflection at 1.5 cumecs. The proposed flows are within acceptable habitat availability ranges for juvenile trout and for spawning.
Winter minimum flow of 400 litres per second (1 May to 30 September)	Support. Otago Fish and Game submit in support of the winter minimum flow proposal of 400 litres per second.	The winter minimum flow proposal provides the necessary flows trout returning to spawn, the development of eggs, and juvenile recruitment.
Primary allocation limits in accordance with Policy 6.4.2(a) litres per second instantaneous flow – 150 lps, Waiwera confluence with Clutha/Mata-Au to headwaters	Support 150 litres per second.	This primary allocation limit will maintain flow variability within the river during summer months, or at least ensure that flow variability is not overly-affected by human activities.
Pomahaka catchment (first supplementary allocation block), 500 litres per second at Burkes Ford	Oppose	Fish and Game requests a supplementary minimum flow (first block) of 800 litres per second to make it more consistent with other catchments around Otago.
Supplementary allocation block (litres per second – instantaneous	Support	This is consistent with the water plan and other catchments across Otago.

flow) – 100 lps