

IN THE MATTER of the Resource Management Act
1991

AND

IN THE MATTER of an application to amend the
Water Conservation (Buller River)
Order 2001 pursuant to section 216
of the Act

BY Nelson Marlborough Fish and
Game Council

**APPLICATION BY NEW ZEALAND FISH AND GAME COUNCIL AND
NELSON MARLBOROUGH
FISH AND GAME COUNCIL TO AMEND WATER CONSERVATION
(BULLER RIVER) ORDER 2001**

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1. **APPLICATION TO AMEND ORDER**

- 1.1 The applicant applies to amend the Water Conservation (Buller River) Order 2001 ("the Order").

2. **NAME AND ADDRESS OF APPLICANT**

- 2.1 The applicant is the New Zealand and Nelson Marlborough Fish and Game Councils ("Fish and Game").

- 2.2 Fish and Game is the statutory manager of sports fish and game birds under Parts VA and VB of the Conservation Act 1987 and Part II of the Wildlife Act 1953 and their associated regulations and notices. In particular, under Section 26Q of the Conservation Act,

(1) The functions of each Fish and Game Council shall be to manage, maintain, and enhance the sports fish and game resource in the recreational interests of anglers and hunters, and, in particular...

(e) In relation to planning,—

(i) To represent the interests and aspirations of anglers and hunters in the statutory planning process; and

(vii) To advocate the interests of the Council, including its interests in habitats:

3. **BACKGROUND AND WATER BODY CONCERNED**

- 3.1 The former Nelson Acclimatisation Society and South Island Council of Acclimatisation Societies (now Fish and Game) originally applied in 1987 for a National Water Conservation Order for the Buller River and its upper tributaries, including the Gowan River.

- 3.2 The reason for the original application by the former Acclimatisation Societies was to recognise and protect the various waters providing or sustaining outstanding trout fisheries in the Buller River system. A variety of waters were identified and protected for their trout fisheries and for other purposes through this long and sometimes difficult process, culminating in the Water Conservation Order (the Order) which was gazetted in July 2001.

- 3.3 The Gowan River was the subject of considerable litigation before the then Planning Tribunal in considering the original Water Conservation Order application. At that time Tasman Energy was exploring the feasibility of a run of the river hydroelectric power scheme similar, in terms of potential effects on the river, to the proposal now being put forward by the Majac Trust. Parties to the Gowan River issue at that time included Fish and Game, the Department of Conservation, Maruia Society, Tasman Energy and the Tasman District Council. The latter had assumed both the interests of the former Nelson Marlborough Regional Council, which was neutral in its view on the application, and the territorial local authority, which sought to retain the potential for a take of 1 cumec as possible irrigation in water-short parts of the District. All these parties, with the exception of Tasman Energy, were able to agree to the conditions pertaining to the Gowan River, particularly in relation to its flow.

- 3.4 The Planning Tribunal then saw fit, after extensive negotiation and subsequent litigation, to include the Gowan in the order for its rafting amenity only, with the full suite of provisions to protect this amenity included as agreed by the various proponents to the order. While Fish and Game was naturally disappointed that its specific interest in the fishery was not recognised, the provisions protecting the

rafting amenity also served to protect the fishery, so Fish and Game's principal objective was attained. For this reason Fish and Game did not appeal the decision even though it did not recognise the outstanding fishery of the Gowan River.

- 3.5 Therefore Fish and Game has always seen the Gowan River as having an outstanding fishery. This application has been prompted by an application by the Trustees of the Majac Trust to amend the Order by reducing the restrictions the Order places on alterations to the naturally occurring flow in the Gowan River. If the Order was amended in this way the Majac Trust would be able to apply for resource consents to set-up a hydro-electric scheme.

4. NATURE OF APPLICATION

- 4.1 Fish and Game seeks an amendment to the Order to recognise the outstanding nature of the Gowan River trout fishery and its contribution to the outstanding trout fisheries in Lake Rotoroa and the Buller River. Fish and Game also seeks amendments to maintain fish passage, change the threshold at which a change in flow is permitted in the Gowan River and otherwise improve the effectiveness of other parts of the Order.

- 4.2 Fish and Game seeks the amendments shown in Appendix 1. These provide a higher minimum flow but enable more water to be taken in proportion to the river's flow, to enable a flow regime which better reflects the natural flows in the Gowan River and which should be adequate to protect the trout fishery. As an alternative the existing restrictions on altering the flow in the Gowan River should be retained to protect the outstanding trout fishery

- 4.3 In Appendix 1 provisions marked as ~~strikeout~~ are deletions and provisions underlined are additions.

5. REASONS FOR APPLICATION

- 5.1 Fish and Game submits that the Gowan River is outstanding as a trout fishery and this outstanding amenity value should be recognised, sustained and protected in accordance with section 199 of the Resource Management Act 1991 ("the Act"). This is based on three aspects; high trout numbers, challenging fishing and contribution of trout numbers to other outstanding fisheries in the upper Buller.

- 5.2 This application is being made following the recent decision of the High Court in *Talley and Ors v Fowler and Ors, CIV 2005-485-000117*, which determined that the Special Tribunal did not have jurisdiction under the Majac applications to consider protecting the Gowan River's trout fishery. It is hoped that this application will be joined to the application by the Trustees of Majac Trust to amend the provisions of the Order with respect to the same waterbody so that both can be heard by the Special Tribunal together.

High trout numbers

- 5.3 Tierney and Jowett (1990) described the results of the so-called '100 Rivers' survey of 158 sites in 88 larger rivers undertaken during the late 1980s. This survey included drift dive assessments of all these sites in what was, and still is, the most comprehensive overview of river salmonid fisheries in New Zealand. The Gowan River was then identified as having the highest numbers of trout per unit area of any of the sites in New Zealand, with similar numbers of fish being found on subsequent occasions (Fish and Game drift dive data from 1995, 1996 and 2004, summarised in Figure 1).

5.4 This high fish biomass is supported by a dense and diverse range of macroinvertebrates (Harding, 1994), which feed on the abundant periphyton growing on the boulder cobble substrate of the river in the stable lake-fed river flows which are further supplemented by primary production in Lake Rotoroa.

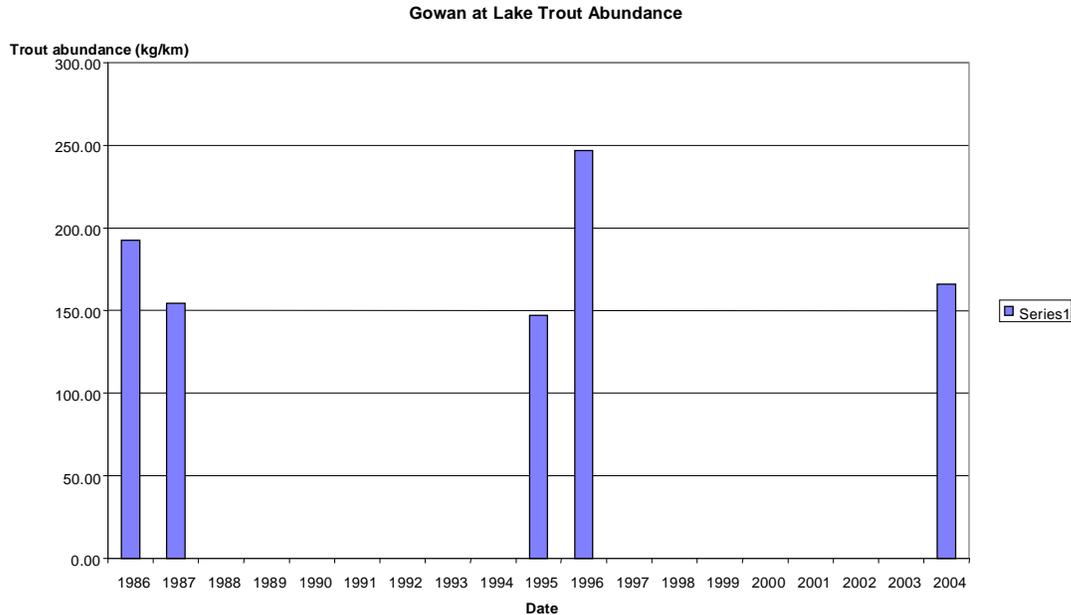


Figure 1 Drift Dive records from the upper Gowan River site. Note that in New Zealand, only the Gowan River has fish numbers over 200 kg/km

Challenging fishing

5.5 The Gowan River, despite its high trout biomass, is a challenging river to fish due to its closely vegetated riverbanks, large boulders and slippery substrate, steep gradient and fast water velocity and few accessible fishing locations. Few anglers attempt to fish the Gowan as it is particularly difficult to land fish without considerable skill, but the river is fished extensively by those relatively few anglers who have the time to learn its secrets. The Gowan therefore has the attributes of a remote back country fishery in terms of angler usage, but with the advantage of being within striking distance of other more heavily fished areas (such as Lake Rotoroa and the Buller River upstream and downstream of the Gowan confluence). One advantage for those anglers who have learnt where and how to fish the river is that the large numbers of fish means getting a fish hooked is relatively easy. Anglers experienced on this river consider that reduced flows may not improve the fishing, which is often associated with the entry of side channels into the main flow. Such channels are significantly reduced or even dried up by occasional naturally occurring low flow events. As a lake fed river, the Gowan is often available at times when other rivers cannot be fished, which makes it popular with knowledgeable locals and fishing guides and their largely overseas clients. Consequently the needs of local industry and the community favour recognising, sustaining and protecting this outstanding fishery (section 207(b) of the Act).

5.6 Access to the river is provided in the form of an almost continuous Queen's Chain along 89% of the true left bank and 95% of the true right bank of the Gowan (Fish and Game, unpublished data). Although not formed along the whole river and often not apparent on the ground, this public land, largely legal road, adjacent to the river,

ensures a right of public access to the river for angling and protection of river banks. Fish and Game has identified six access points to the river in an angler access pamphlet and with signs, although some of these go missing from time to time. In some locations, access has been made more difficult by the illegal locking of a gate on a public road, or because of difficulty of practical walking access, which can reduce angler use. Most adjacent landowners, however, have no difficulties with public access to the river.

Contribution of trout numbers to other outstanding fisheries in the upper Buller

- 5.7 As well as being outstanding in its own right as a fishery, the Gowan River makes a substantial contribution to the production of trout in the upper Buller River system. Trout spawned and reared in the Gowan and its immediate tributaries make a significant contribution to the numbers of fish caught in Lake Rotoroa and the adjacent parts of the Buller River, both recognised as outstanding for their brown trout fisheries. A lack of impediment to fish movement in the upper Buller, including the Gowan, improves the resilience of the fishery and enables brown trout and other fish to move as appropriate to the most suitable habitats, (Young, 2002).
- 5.8 In 1994-5, at the time of the last hearings into the Gowan River trout fishery, conventional scientific wisdom was that brown trout, by comparison with rainbow trout, were sedentary and did not migrate to any significant extent (eg Frost & Brown, 1967, p. 51). This was based largely upon tagging studies where brown trout were usually found only a short distance from where they were tagged, even after quite extensive time periods. More recently, however, radiotracking and energetics studies have shown brown trout will migrate considerable distances each year, not necessarily just to spawn, but also to feed in more suitable areas or avoid unsuitable water temperatures, (eg Strickland et al, 1998; Wilson and Boubee, 1995). These trout sometimes then return to locations at or near where they had formerly resided. Fishing diary records from Lake Rotoroa have also shown an increase in trout numbers in the lake after the 1994 Gowan River flood, when locals noted an influx of fish attributed as from the river (Parker, unpublished).
- 5.9 In addition to supporting a high biomass of trout, the Gowan, including its various side channels and its tributaries such as Marr Creek and New Creek are highly productive as spawning and rearing environments for juvenile fish, to supplement the high trout numbers in the Gowan and nearby Buller River system. The Gowan is particularly good as a spawning and rearing environment due to its stable flows. Although suitable spawning gravels are not abundant in the Gowan, any suitable areas are heavily used by spawning fish and productivity of parts of the river is very high, (Fish and Game unpublished records).
- 5.10 In making its decision on the Gowan River trout fishery, the then Planning Tribunal argued that while the numbers and density of trout in the Gowan were higher than any other river fishery in the country, this was not in itself an outstanding feature, as the numbers of anglers in the Gowan are relatively small. In other words, a fishery is a product of both the numbers of fish and the number of anglers. Fish and Game submits that a fishery can be outstanding by virtue of fish numbers due to its outstanding fish habitat qualities, angling effort or unique angling characteristics or its contribution to other outstanding waters and that the Gowan is outstanding on all three grounds. Ironically, the Planning Tribunal found the eel fishery of the nearby Lake Rotoroa to be outstanding, even though as a National Park the fishery receives no fishing at all. It should be noted, also, that Clause 10 of the Order has the effect of ensuring fish passage for both trout and native fish (including eels), where these fisheries are identified as being outstanding features. It is submitted that this should

apply to the Gowan for both trout and eel populations need to be able to freely traverse the Gowan River.

- 5.11 In summary, Fish and Game submits that there are several differences in our understanding of the value of the trout fisheries of the Gowan now compared with the previous hearing in 1994 - 1995. Firstly, the evidence in support of the large trout biomass remains strong; secondly, there is new evidence of the use of the river by anglers and its special nature and thirdly and most crucially, there is new evidence of the extent to which brown trout migrate and are able to contribute to the outstanding adjacent Buller and lake fisheries due to fish spawning and rearing in the Gowan. For these reasons it is submitted that the trout fishery, and contribution to trout fishery be added as outstanding characteristics of the Gowan River, in the Water Conservation Order.

What is required to sustain the outstanding Gowan River trout fishery?

- 5.12 The Gowan supports such high fish numbers due to a variety of factors. The high water quality, including water clarity for diurnal feeding trout and stable water temperatures conducive to maximum trout growth; stable flows which both lack floods and have few low flows; highly productive invertebrate food resource from both instream productivity and the lush terrestrial riparian vegetation; freedom of fish movement to take advantage of suitable conditions for growth and reproduction; refuge areas and side channels for fish spawning, rearing and growth all contribute to this productivity.

River flow requirements for brown trout in the Gowan

- 5.13 Fish and Game has asked for, and contributed to, investigations into the flow requirements of fish in the Gowan River at various times over the last 10 years or so. The most recent review and investigations were undertaken after discussions at an in person meeting between Fish and Game and the Majac Trust's advisors in 2004.
- 5.14 The largest question at issue is the relevance of the instream flow incremental methodology (IFIM) developed by Mr Ian Jowett of NIWA at a location in the upper river to the flow needs of trout in the Gowan. The initial IFIM results suggested a maximum habitat for trout at a flow of about 5 cumecs, which seemed not to recognise the high trout biomass, and that flows have only once reached the supposedly ideal flow to provide for trout habitat. In other words, the actual trout numbers seemed to contradict the model's prediction.
- 5.15 Three possible reasons were advanced at the 2004 meeting of technical experts as to why the actual numbers of fish were so high. First, the actual water velocity where trout were feeding might be considerably less than the average velocity measured. Second, water depths may vary from the model predictions and third, the high invertebrate numbers may reflect the 'supercharging' of the food supply from the seston, or primary production in the waters of Lake Rotoroa. This supercharging effect presently supplements productivity in the Gowan River to an unknown extent. It may be significantly curtailed if the proposed Majac scheme was to proceed as about half or more of the water from the river is drawn off into the scheme's head race, hence the importance of at least maintaining the current restrictions in the Order to protect the trout fishery.
- 5.16 Another matter of considerable uncertainty is the applicability of the IFIM model to the part of the Gowan River which would be affected by the Majac proposal. Effectively all of the modelled reach lies upstream of the proposed diversion into the head race of the scheme. Mr Jowett has indicated that he considers the river is

somewhat different in this upper area, being all in a single channel, with generally a boulder substrate, relatively low gradient and relatively deep, by comparison with the river downstream of the proposed intake. The Gowan River in this reach has multiple channels over about two thirds of the distance of the proposed scheme. There is a variety of habitat available for fish in these reaches, from small, slow moving channels to steep drop-offs. This variety includes various substrate sizes, accesses for angling, spawning and rearing areas for trout and native fish. It is difficult to compare this part of the river with the reach which was modelled using IFIM. The effects on trout habitat of reducing flows in this part of the river will certainly differ from the single channel areas upstream and would almost certainly require higher flow minima to safeguard adequate fish production.

- 5.17 A major issue in the use of IFIM in the Gowan is that the average water velocity is considerably higher than that preferred by trout, being on average nearly 0.7 m/sec rather than the less than 0.4 m/sec preferred by adult brown trout. Trout are observed in the Gowan in velocity refuges behind rocks or other cover. Unlike other rivers, the average water velocity was not reflecting the water velocity where fish were feeding. In addition, trout were found in deeper water than usual due to the upper 'white water' being unsuitable for occupancy by fish. This matter was investigated by a joint team of Cawthron and Fish and Game staff in May 2004, with the results being forwarded to Ian Jowett to enable him to recalibrate his IFIM model. This recalibration suggests optimal flows for maximum adult brown trout habitat occur close to the median flow in the Gowan River. No measurements of the increased productivity of river invertebrates from the lake seston have been made and how the scheme drawing the bulk of the river's flow out of the river might affect fish productivity downstream. Nor has any consideration, or even mention, been given in Mr Jowett's draft evidence of the effects of flow alterations to the multiple channel reach of the river.
- 5.18 Another flow issue which Mr Jowett refers to in his 6th of September draft evidence is the effect of flow fluctuation on river health. Analysis of the flow record and superimposing the proposed power scheme's flow regime on three consecutive years (1983, 1984 and 1985) representing a wet, average and dry year of the record, this suggests that the river might be left at the minimum flow of 9 cumecs for, respectively 52, 181 and 73 days in each of those years. As the Gowan has a naturally stable flow, it is vulnerable to being "flatlined" at a constant 9 cumecs, which is likely to allow massive growth of periphyton, which is known to reduce habitat quality for both invertebrates, on which fish feed, and for the fish themselves directly. Fish and Game submits that in order to protect the outstanding fishery, any altered flow would have to provide flow fluctuations sufficient to slough off periphyton and maintain a healthy invertebrate community on which the fishery depends.

Water Quality Issues

- 5.19 The Gowan's water quality is presently close to ideal water quality for salmonid production. The black disc visibility or water clarity in the Gowan seldom drops below about 5 m and can reach more than 12 m. Smith (1994) advised that any black disc visibility of more than 6.9 m is in the top 5% nationally. This both enables trout to see and feed on the abundant invertebrate food resource and the angler to spot the trout for sight fishing.
- 5.20 The Gowan provides an ideal and stable temperature for salmonid production. Brown trout attain fastest growth in water temperatures of 13°C. At temperatures less than 4°C they will lose condition, while above 19°C they will stop feeding, and become increasingly stressed at 24°C and may die at temperatures above 26°C. Although it has not been measured regularly, temperatures at the Longford gauge

near Murchison are largely influenced by water temperatures in the Gowan and upper Buller, both lake fed rivers. These show the stable and suitable flows which are available in the Gowan.

- 5.21 Other water quality parameters are not sought for amendment and Fish and Game submits that they should be retained as in the present Water Conservation Order.

Damming

- 5.22 Clause 7 of the Order refers to the prohibition on damming, which Fish and Game seeks is retained to be sure that fish passage will be retained. We submit that the word 'prevent' is less appropriate than the suggested word of 'impede' in relation to the measure of whether a structure should be regarded as a dam for the purposes of this section. The issue, from a fish passage perspective, is that dams should not be allowed which would impede fish movement. Use of the word 'prevent' might imply that any structure which reduces fish passage from many hundreds of fish per annum to one fish per annum does not prevent fish passage, but would have a significant effect on the fishery.

Channel Form

- 5.23 Clause 8a refers to channel form and braiding pattern, which this application should not alter. The multiple channel nature of the Gowan in the reach which would be affected by lowered flows due to the proposed power scheme would have the effect of drying up at least some of these channels. The channels are important for spawning, juvenile fish production and for angling at a variety of flows, but they rarely dry up under natural flow conditions. It would be possible for anglers to access islands and other channels and later find themselves stranded if water levels were to change relatively quickly. Fish and Game submits that this condition should be retained and applied as currently worded.

Fish Passage

- 5.24 Clause 10 refers to the maintenance of fish passage, which is essential to maintaining the contribution of the Gowan to the productivity of the trout fishery of Lake Rotoroa and the adjacent Buller River in particular. Fish and Game submits that this no damming provision, as currently worded, should be retained as part of the Order and applied to the Gowan River. In addition, more detailed provisions specifying what fish passage requirements need to be met should be included in the order as outlined below. These provisions are modified from those used by Environment Waikato, which are summarised in a report on fish passage in Canterbury (Hardy, 2004) and are more effective and specific in ensuring trout are screened than the previous wording.
- 5.25 Fish and Game submits that, in the light of the new information provided above, the Order should be amended in accordance with the changes suggested in Appendix 1 to recognise and provide for the outstanding amenity of the trout fishery in the Gowan River. In essence Fish and Game suggests that the "trigger" or minimum flow for the Gowan River should be 12 m³/s rather than 9 m³/s and that above this flow an alteration of up to no more than 25% of the naturally occurring instantaneous flow, should be allowed by the Order.

DATED this 3rd day of August 2005

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S W Christensen/M A Baker
Counsel for New Zealand and Nelson Marlborough Fish and Game Councils

ADDRESS FOR SERVICE

The address for service for the Applicant is C/o Anderson Lloyd Caudwell, Barristers & Solicitors, Ground Floor, Otago House, Moray Place/Princes Street Corner, Dunedin.

Documents for service on the abovenamed Applicant may be left at the address for service or may be:-

- (a) Posted to Private Bag 1959, Dunedin; or
- (b) Transmitted by facsimile to (03) 477-3184.

Appendix 1.
Proposed Amendments to Water Conservation (Buller River) Order 2001

6. Waters to be protected—

Because of the outstanding characteristics, features, and values identified in clause 4,—

- (a) the waters specified in Schedule 2 are to be protected in accordance with the restrictions and prohibitions in clauses 7 to 11, as specified in Schedule 2:
- (b) the waters specified in Schedule 3 are to be protected in accordance with the restrictions and prohibitions in clauses 7 and 12, as specified in Schedule 3.

7. Restrictions on damming of waters—

- (1) For the purposes of this clause, damming does not include any intake or deflection structure that does not—
 - (a) harm any salmonid fish spawning or impede the passage of any fish; or
 - (b) prevent the use of the waters for rafting or canoeing; or
 - (c) reduce the wildlife habitat; or
 - (d) intrude visually to the extent that it reduces wild and scenic values
- (2) No resource consent may be granted or rule included in a regional plan permitting the damming of the waters specified in Schedule 2 whenever any of the characteristics in subclause (1) are listed as outstanding in Schedule 2 and that schedule refers to this clause.

8. Restrictions on alterations of river flows and form—

- (a) if the effect of the resource consent or rule would not generally maintain the channel cross-section, meandering pattern, and braided river channel characteristics of the form of any river specified in Schedule 2:
- (b) if the effect of the resource consent or rule would alter the naturally occurring instantaneous flow of the water in any river specified in Schedule 2 by more than 5%.
- (2) The restriction in subclause (1)(a) does not apply in respect of dams, weirs, roads, fords, bridges, access ways, or fish passes lawfully existing on the date this order comes into force.
- (3) Despite anything in subclause (1),—
 - (a) any change in flow permitted in that part of the Buller River specified in item 2 of Schedule 2 must not be greater than 10% of the naturally occurring instantaneous flow:
 - (b) any change in flow permitted in that part of the Buller River specified in item 3 of Schedule 2 must not be greater than 15% of the naturally occurring instantaneous flow:
 - (c) ~~any change in flow permitted in the Gowan River, item 11 of Schedule 2, must not be—~~
 - (i) whenever the naturally occurring instantaneous flow is 16 cumecs or more, any change in flow permitted must not be greater than 15% of the naturally occurring instantaneous flow whenever that flow is 9 cumecs or more; or
 - (ii) whenever the naturally occurring instantaneous flow is between 16 cumecs and 12 cumecs, any change in flow permitted must not result in the less than 12 cumecs of instream flow
 - (ii) whenever the naturally occurring instantaneous flow is less than 12 cumecs, any change in flow permitted must not be greater than 5% of the naturally occurring instantaneous flow whenever that flow is less than 9 cumecs.

10. Requirement to maintain fish passage—

No resource consent may be granted or rule included in a regional plan for the waters specified in Schedule 2 unless that resource consent or rule maintains—

- (a) adequate natural or artificial passage for trout through those waters where Schedule 2 identifies trout as an outstanding characteristic; and
- (b) adequate natural or artificial passage through those waters for those native fish that require such passage where Schedule 2 identifies native fish as an outstanding characteristic.

Any intake shall be screened with a mesh size not exceeding 5mm in diameter and shall be constructed so that:

- (i) placement of the intake does not cause stream bed invertebrates to be entrained,
- (ii) that the migration habits and passage of fish are not compromised or adversely affected in any way due to the placement of the intake, and
- (iii) the intake does not result in a navigation hazard.

No resource consent may be granted or rule included in a regional plan for the waters specified in Schedule 2 unless any diversion ensures that the intake velocity does not exceed 0.15 metres per second at all times. The intake shall be cleaned and maintained to ensure that the intake velocity is not exceeded.

11. Restrictions on alteration of water quality—

(1) No resource consent may be granted or rule included in a regional plan permitting a discharge into any of the waters specified in Schedule 2 if, after allowing for reasonable mixing of the discharge with the receiving waters, the discharge would—

- (a) alter the concentration of suspended solids or turbidity in the receiving waters by more than 1 milligram per litre or 1 NTU where the ambient concentration of suspended solids or turbidity is less than or equal to 10 milligrams per litre or 10 NTU respectively; or
- (b) alter the ambient concentration of suspended solids or turbidity in the receiving waters by more than 10 milligrams per litre or 10 NTU where the concentration of suspended solids or turbidity is more than 10 milligrams per litre or 10 NTU respectively; or
- (c) alter the visual clarity of the waters by more than 20%; or
 - (i) by more than 3 degrees Celsius; or
 - (ii) by increasing the water temperature to more than 20 degrees Celsius; or
 - (iii) so as to adversely affect, during their spawning season, the spawning of
 - (A) rainbow and brown trout
 - (B) inanga
 - (C) koaro
 - (D) giant, banded, and short-jawed kokopu
 - (E) alpine, long-jawed, dwarf and common galaxias.

(2) No resource consent may be granted or rule included in a regional plan permitting the discharge into any of the waters specified in Schedule 2 or Schedule 3 unless, after allowing for reasonable mixing of the discharge with the receiving waters,—

- (a) any change in the acidity or alkalinity in the receiving waters, as measured by the pH and attributable to that discharge, would either—
 - (i) maintain the pH within the range of 6 to 9 units; or

- (ii) not allow a change by more than 0.5 units when the natural pH lies outside the range of 6 to 9 units; and
 - (b) there would be no undesirable biological growths attributable to the discharge, including—
 - (i) bacterial or fungal slime growths that are visible to the naked eye; or
 - (ii) seasonal maximum covers of streams or river beds by
 - (A) periphyton as filamentous growth or mats (larger than 3 millimetres thick) exceeding 40%; or
 - (C) 40 grams ash-free dry weight per square metre of exposed surface area; and
 - (c) aquatic organisms are not made unsuitable for human consumption through the accumulation of excessive concentrations of contaminants; and
 - (d) the water is not made unsuitable for recreation by the presence of contaminants, or the median bacterial level of 5 samples or more taken over a period of 30 days would not exceed 126 E coli per 100 millilitres.
- (3) No resource consent may be granted or rule included in a regional plan permitting a discharge into any of the waters specified in Schedule 2 if, after allowing for reasonable mixing of the discharge with the receiving waters, the discharge would reduce the concentration of dissolved oxygen below 80% of saturation.
- (4) For the purposes of subclause (3), if the natural concentration is less than 80% of saturation, the natural level must be maintained or increased.

SCHEDULE 2

PROTECTED WATERS

Item	Waters	Outstanding characteristics or features	Restrictions or prohibitions	and
10	Gowan River	<u>Trout fishery, contribution to</u> <u>trout fishery, Rafting</u>	7, 8(1)(a), 8(2), 8(3)(c), 10, and 11	

