

Pressure Sensitive Fisheries Management

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Purpose

- 1 The purpose of this paper is to seek draft approval of the attached pressure sensitive fisheries options paper to proceed to regional consultation.

Background

- 2 Since the late 1990s/early 2000s Fish and Game have been investigating mechanisms to manage angling pressure and the displacement of resident anglers. This resulted in the instigation of the backcountry licence scheme in 2003, and the Greenstone Controlled Fishery in 2004.
- 3 This proposal seeks to build upon existing mechanisms and expand the range of options available to Fish and Game Councils to manage angling pressure and resident displacement.
- 4 In November 2020 NZC approved an early draft of the attached options paper to proceed to regional consultation, however in discussions with regional staff it was clear that there were a number of amendments that needed to be made to the paper.
- 5 In May 2021 a meeting of staff working in this space was convened in Dunedin, and as a result of the discussions at this meeting the options paper was substantially rewritten to incorporate regional feedback.

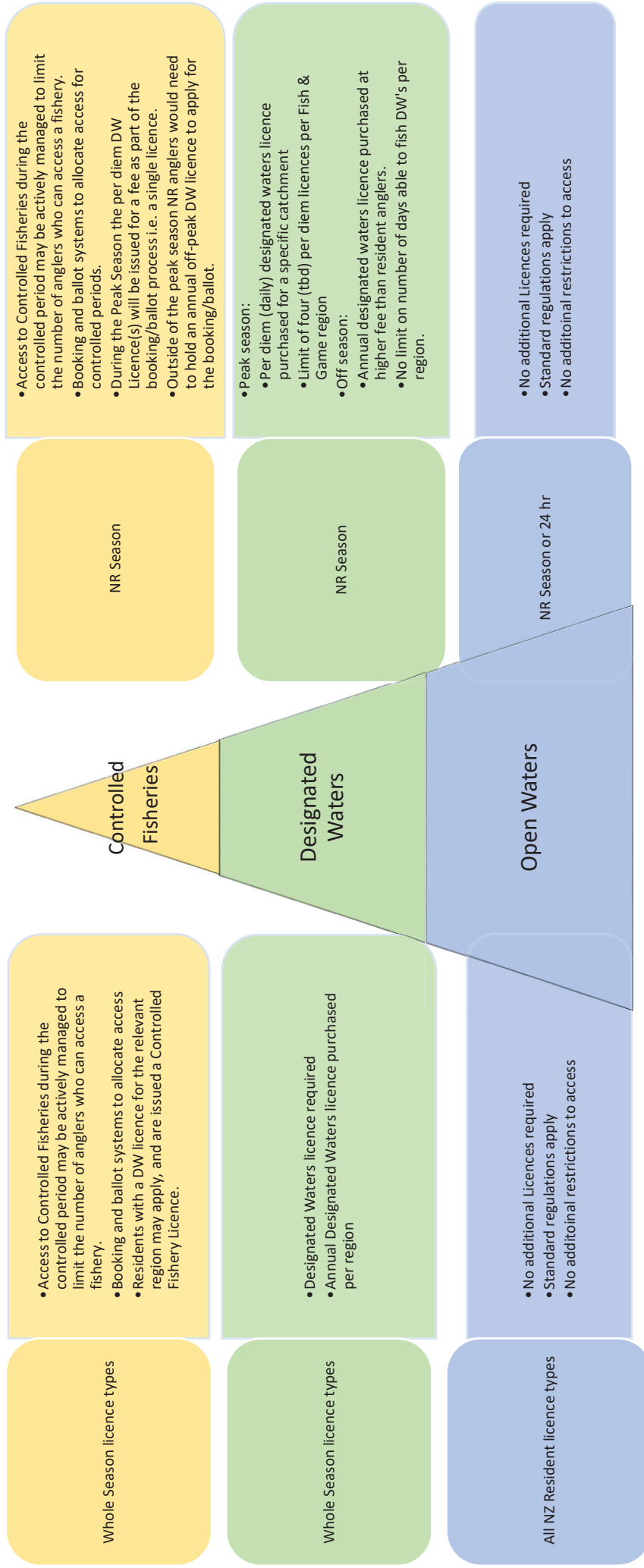
Analysis

- 6 Substantive details are found in the attached proposal however this analysis will provide a brief overview of the proposed system. Reasoning for the proposed management options is contained in the proposal.
- 7 This proposal seeks to build on the existing backcountry and controlled fishery regime, whilst renaming the overall system to a name that is more fit for purpose (as backcountry does not adequately cover rivers such as the Mataura, which is subject to high levels of angling pressure).
- 8 The intention is to create a nationally consistent framework, which could be applied by individual Fish & Game regions as and when required in order to spatially and temporally redistribute angling effort from pressure sensitive localities.

- 9 It is proposed that there would be three tiers of waters (consistent with the status quo), which would have differing levels of restrictions:
 - 9.1 Open Waters
 - 9.2 Designated Waters
 - 9.3 Controlled Fisheries
- 10 The below table sets out a broad overview of these categories and the restrictions:

Resident Anglers

Non-Resident Anglers



- 11 Open Waters:
 - 11.1 Would be general waters subject to no restrictions other than the conditions of the Anglers Notice. There would be no difference for non-resident or resident anglers, other than existing licence fee differences.
- 12 Designated Waters:
 - 12.1 Would be akin to those waters currently listed as Backcountry Fisheries, however it is likely that there would be the addition of several fisheries that whilst subject to pressure do not meet the definition of 'backcountry'.
 - 12.2 In order to fish these fisheries it would be necessary to hold a Designated Waters licence:
 - 12.2.1 For resident anglers it is proposed that this would be a season licence (per region) that covers the entire season (as Backcountry licences currently operate).
 - 12.2.2 For non-resident anglers it is proposed that the Designated Waters programme operates in two periods; off-season (approximately Oct-Nov + April) and high-season (approximately Dec-Mar).
 - 12.2.2.1 In the off-season, non-resident anglers would need to hold an off-season Designated Waters licence, which covered them for the entire off-season period. There would be no limit to the number of days that non-resident anglers could fish on designated waters during the off-season.
 - 12.2.2.2 In the peak season, non-resident anglers would need to purchase a per-diem (daily) designated waters licence for a specified catchment. There would be a limit to the number of per-diem designated waters licences (circa four) that a non-resident angler could purchase per Fish and Game region.
- 13 Controlled Fisheries:
 - 13.1 Would operate virtually as current controlled fisheries operate and represent the highest level of management intervention. Fisheries/beats would be 'reserved' for specific anglers following a booking or ballot process. To apply for a controlled fishery licence resident anglers would be required to hold a season Designated Waters licence. Non-resident anglers would be required to purchase a per-diem (daily) Designated Waters licence (as for non-controlled

Designated Waters), which would be integrated into the booking/ballot process.

- 14 Note: There are a number of specifics, such as the quantity of Designated Waters per diem licences an angler can purchase in a region, the cost of these licences etc that will be refined through the regional consultation process if approved.
- 15 Note: The attached options paper intentionally does not address guided angling, as until we have a guides licence it is difficult to factor guided anglers into a pressure management strategy for a number of reasons. Focus is being put into the guides licence proposal, which is currently being preliminarily reviewed by government departments before being brought back to NZC for finalising.

Financial Implications

- 16 There are no direct financial implications at this stage.
- 17 At the point of implementation, the primary financial implication will be around systems infrastructure to facilitate the purchase of per-diem designated waters licences.
- 18 However, any costs in this sphere should be offset by the licence fees charged and it is estimated this system will be net positive.

Legislative Implications

- 19 The recommendations contained within the attached options paper do not require any legislative/regulatory change other than will be contained in the Sports Fish Licences Fees and Forms Notice and Anglers Notice.

Section 4 Treaty Responsibilities

- 20 There are no s4 Treaty responsibilities at this stage. However, if this progresses there may be a need to consult with iwi partners.

Policy Implications

- 21 The attached options paper, if approved as final following regional Fish and Game consultation, would set operational policy on the management of pressure sensitive fisheries.

Consultation

- 22 There has been significant consultation with regional staff both prior to writing this paper as well as on initial drafts of this paper.

- 23 Eight regions have provided direct staff feedback on the options paper and in almost all instances this feedback has been incorporated into the current version of the document.
- 24 Overall, there is broad support amongst regional staff for the attached options paper proceeding to regional consultation, although it was noted in feedback that there is refinement required on some of the specific details contained in the proposal.
- 25 Prior to submission to the Minister, it may also be necessary to undertake public consultation on the proposed changes, which can be done via a survey of licence holders.

Next steps

- 26 If approved, NZ Councils' policy for consultation requires a two meeting cycles time period. This means feedback will be due back from regions in late June or early August.
- 27 NZC staff will form a staff working group with regional staff to incorporate regional feedback and finalise the proposal before bringing a final proposal back to NZC for final approval and subsequent submission to the Minister.
- 28 It is expected that a final approval paper will happen in the August NZ Council meeting.
- 29 Submission to the Minister for policy approval will follow NZC's final approval.

Recommendations

- 1 *That the attached options paper is approved as draft and circulated to regions for formal consultation.*

Fish & Game Proposal for Pressure Sensitive Fisheries Management Regime

Summary

New Zealand's freshwater sports fishery is world renowned as a premier trout fishery and is highly valued by both local and visiting anglers. It provides substantial economic benefits through the commercial guiding industry, the associated retail industry and both domestic and international tourism. The fishery is managed by Fish and Game Councils and the Department of Conservation (solely in the Taupō region), with management supported entirely through sports fishing licence fees and volunteer effort.

New Zealand offers an internationally unique sports fishing experience through the ability to fish for very large trout in clear water amongst astonishing and often remote settings. The nature of the fishing is also uncommon in other parts of the world in that these fish can be first sighted in the water, and then fished for, which is seen by anglers as very desirable. The result is a world-class and unique fishery that is increasingly sought after by both local and visiting anglers.

Two problems have arisen regarding these highly sought-after parts of the New Zealand sports fishery:

- First, angling pressure in select parts of the fishery is exceeding the social and fishability capacity. These fisheries have been labelled by Fish & Game as pressure sensitive fisheries.
- Second, angling pressure in these pressure sensitive fisheries comes disproportionately from non-resident anglers and as a result of this resident anglers have been displaced from the resource

This analysis finds that the first problem can be addressed by the current mechanisms that Fish & Game have to manage pressure, but that the second problem requires additional targeted mechanisms to provide for an equitable division of angling pressure between resident and non-resident anglers and to mitigate the displacement of resident anglers.

Background

Freshwater sports fishery

New Zealand is one of the world's great trout fishing destinations. The modern success and popularity of the trout fishery is in part founded upon the ability to sight fish to large individual trout in clear water, often amidst beautiful scenery. To this extent it is unique on a world scale.

Trout fishing has been a popular leisure activity in New Zealand ever since the Otago Acclimatisation Society instituted the first trout fishing season in 1875, just eight years after brown trout were first introduced to this country. Before long the novelty of such an exotic fishing destination, combined with the size of the trout, meant that anglers were travelling internationally to fish for trout in New Zealand. The visit from American author Zane Grey in the 1920s, and his declaration of New Zealand as an 'anglers el dorado', continued to build our reputation as a destination fishery.

Throughout the latter half of the 20th century a strong industry of professional trout fishing guides arose, primarily catering to international angling tourists. The guiding industry was centred on higher density rivers akin to the Buller, Mataura and Tongariro with occasional forays into more remote destinations. As the use of helicopters as a means of access grew in popularity, more remote rivers began to be fished regularly. These rivers, deep in Kahurangi or the Ruahine Ranges, were advertised by guides to clients as pristine wilderness rivers that saw almost no angling pressure. These wilderness trips, however, did not constitute the basis of a guiding operation but were more typically the exception – the cherry on top of a week's guided fishing. The unguided usership of these rivers, from both domestic and non-resident anglers, is hard to calculate across this period but was substantially lower than current levels.

Across the past thirty years this has changed on a fundamental level. As the value of these fisheries, both from an angling and experiential perspective, became realised by New Zealanders and international anglers alike their angling effort began to increase. The increasing use of helicopters as a form of access in the late 1970s was the catalyst for significant numbers of anglers to suddenly be able to access these remote areas and word quickly spread. Most significant amongst this increase was unguided non-resident anglers. Ascribing any absolute reasons to this increase is difficult, but specific rivers increasingly began to develop a reputation through word of mouth, publication in angling guidebooks and more recently on the internet and in social media. More generally the rise in popularity of headwater fisheries is also linked to the decline in lowland fisheries as a result of environmental degradation. Rivers such as the Oreti, Greenstone and Rangitikei became world famous destination fisheries in their own right. Resultantly they became subjected to increasing levels of angler use, with very high proportions of non-resident usage. Over time the increasing usage of these rivers began to impact on both trout behaviour as well as the overall angling experience. The impacts, and need for regulatory change, were noted as early as 1994 and have been a recurrent theme in New Zealand fisheries management ever since.

Today Fish and Game face a situation where a small percentage of fragile fisheries are receiving an unsustainable amount of pressure that detrimentally impacts upon both angling experience and trout behaviour. These fisheries have been termed 'pressure sensitive fisheries'.

Pressure Sensitive Fisheries

Pressure sensitive fisheries are defined as fisheries where angling pressure is adversely affecting the angling experience. Components to the angling experience are twofold:

- Adverse effects on the fishery itself, such as the catchability, visibility and population dynamics of the fish.
- Adverse effects on the angler's experience independent of the fishing, such as a sense of wilderness and solitude.

The defining feature of these fisheries is that the angling experience they offer is impacted by the angling pressure they receive. There are, however, some characteristics that are common across many (although not all) pressure sensitive fisheries:

- Almost exclusively rivers.
- Clear water.
- Excellent sight fishing.
- High average size of fish.
- High scenic value.
- Often in a wilderness or backcountry setting.

Some of these fisheries are in remote areas with very limited access, whereas others have substantial road access across their length. Angler numbers are typically higher in fisheries with good road access, but the expectation of solitude and wilderness is lower. Conversely, where access is limited to walking or flying, angler numbers are often lower but the impact on the angling experience of each encounter is higher (depending on the perspective of the angler). While pressure sensitive fisheries exist in both islands, the South Island has a high proportion of New Zealand's total pressure sensitive fisheries.

These most-desirable trout fisheries are limited in number and provide a limited number of prime angling spots as the fish will often not reset from being disturbed by a preceding angler for several hours or even a day. To many anglers these are the most desirable trout fishing locations and are therefore sensitive to the amount of angling pressure they can sustain. New Zealand anglers, visitors from overseas, commercial fishing guides, and Fish and Game Councils are all very concerned about the ongoing sustainability of these "pressure-sensitive" trout fisheries. Many of these fisheries are now close to or at a tipping point. The increasing number of anglers and increasing fishing effort on a finite number of fish in a finite number of locations is threatening to destroy the fishing resource and experience.

A reality that also needs to be acknowledged is that there are waterways that provide an equal angling experience to pressure sensitive fisheries, but for some reason do not have the same reputation and accordingly do not receive the same pressure. In other words, the New Zealand angling resource as a whole can accommodate the angling pressure it receives provided that select concentrations of angling effort are redistributed.

Problem definitions

Fish & Game faces two interlinked problems surrounding the management of pressure sensitive fisheries. Because these problems require individual, but co-ordinated, solutions they are addressed separately.

The keystone issue is that a relatively small number of fisheries that, because of their innate characteristics, are sensitive to pressure are receiving an unsustainable amount of angling pressure (**Problem A**). This results in a potential risk to both the resource as well as Fish & Game licence holders' angling experience as rivers begin to exceed their fishability and social carrying capacity.

An associated issue is that a disproportionate amount of the angling pressure in these fisheries comes from non-resident anglers (**Problem B**). As outlined above, New Zealand's trout fishery is world-renowned and is a source of significant angling tourism. The average non-resident angler exhibits different behaviour patterns to the average domestic angler, showing a strong preference for fishing rivers and a very high rate of backcountry river usership. These patterns, in conjunction with the reputation of certain fisheries, has meant that non-resident angling effort can constitute as much as 79% of total angling effort during peak summer months.¹ As a result of this level of angling pressure New Zealand resident anglers are being displaced from these fisheries, either temporally (i.e. fishing the location at different times of the year), spatially (i.e. fishing different locations) or totally (i.e. not fishing).²

Problem A: Select fisheries are subject to an unsustainable amount of angling pressure.

New Zealand's headwater trout fisheries, as a result of the lower numbers of trout, the clear water and the response of the trout to disturbance, can only accommodate a relatively low number of anglers each day whilst maintaining the angling quality. The exact numbers are dependent upon the specific fishery (length, access opportunities and fishing characteristics), but overall the social carrying capacity of these waterways is relatively low. Angling success is only one component to the angling experience that is impacted by pressure and in fact often ranks below solitude, scenic and wilderness factors in many anglers' values. This view is echoed in a 1994 NIWA report 'Headwater Trout Fisheries in New Zealand', which suggested the '...possible need to restrict the numbers of anglers able to fish in some areas in order to maintain quality of fishing [in terms of both catch rates and the aesthetic features of peace and solitude].³ Accordingly, both the fish and the experiential aspects are vulnerable to pressure.

There are then two distinct threads to Problem A: the impact of angling pressure on the physical resource and angling success and the impact of angling pressure on the angling experience.

Problem A1: The impact of angling pressure on the physical resource and angling success

¹ Cohen Stewart, *Angler use of the upper Oreti trout fishery during the 2018/19 and 2020/21 fishing season*, Southland Fish and Game Council, 2021.

² Hayes & Lovelock, *Analysis of the recreational freshwater angling behaviours of overseas visitors to New Zealand*, Dunedin, New Zealand. Department of Tourism, University of Otago (2016).

³ Jellyman, D. J. & Graynoth, E., 'Headwater trout fisheries in New Zealand', New Zealand Freshwater Research Report No. 12, NIWA, Christchurch, 1994

New Zealand's backcountry fisheries typically feature relatively low numbers (<20 fish per/km) of large (>50cm) trout. Accordingly, the resource is far more susceptible to pressure than many of its international equivalents because of the low numbers of fish and the ability to fish to (and thus disturb) individual fish. Research has demonstrated a clear correlation between fishing pressure and probability of angling success in remote backcountry rivers, as naïve trout were the least likely to cease feeding and hide in reaction to angling attempts and were the most likely to take a fly.⁴ It has also been observed that trout caught and released in a remote river were rarely observed out feeding the following day. Given the relatively low numbers of fish, and the tendency of caught (or even displaced) fish to not be available to subsequent anglers for a period, angling pressure in New Zealand can, therefore, substantially alter fish behaviour in both a relatively short time and with relatively little angling effort.

Research does, however, conclude that a balance can be reached in fisheries subjected to sustained pressure where the impacts of pressure stabilise over time.⁵ On more heavily fished rivers fewer fish proportionate to the population of the river will be seen and caught than in a remote and unpressured fishery, but overall quality angling can still be experienced. There is, therefore, a balance that needs to be met by New Zealand's sports fisheries managers where angling pressure is kept to sustainable levels that ensures appropriate levels of angling success can be attained.

Problem A2: The impact of angling pressure on the angling experience

As noted above, the angling experience encompasses a number of themes beyond simply angling success. One of the key components of the angling experience for those anglers fishing backcountry fisheries is solitude, with the result that angling encounters (actual or otherwise – i.e. seeing boot prints) can be detrimental to the angling experience. In many international destinations angling encounters are expected, and the collegiality of the encounter can add to the angling experience. There are areas and fisheries in New Zealand where this is the case, however research demonstrates that with regard to pressure sensitive fisheries angling encounters are typically viewed negatively. In a 2002 Cawthron 'Backcountry River Fisheries' report it was determined that 36% of angler encounters were always considered to be negative, with just 12% always positive (49% thought it could be either).⁶ Non-residents, who comprise a significant proportion of backcountry anglers, showed the most negative opinions of angler encounters. The same study also demonstrated that as difficulty of access increases tolerance of encounters decrease. Given many pressure sensitive fisheries are remote and have difficult access it is a safe assumption that encounters on these waterways will be perceived more negatively than the average encounter in a more accessible locality. The survey results also demonstrated that angler encounter rates were, in 2002, within the tolerable limits but that they already exceeded the preferable encounter rate. Subsequent increases in non-resident licence sales

⁴ Roger Young & John Hayes, 'Angling Pressure and Trout Catchability: Behavioural Observations of Brown Trout in Two New Zealand Backcountry Rivers', *North American Journal of Fisheries Management*, 24:4, 1203-1213

⁵ John Hayes, 'Backcountry River Fisheries Seminar: Proceedings & Update of Research', Cawthron Report No. 727, Cawthron Institute, Nelson, 2002; It should be noted that this was 17 years ago, and that these statistics may well be very different today, particularly for New Zealand resident anglers that feel displaced from certain rivers.

⁶ John Hayes, 'Backcountry River Fisheries Seminar: Proceedings & Update of Research', Cawthron Report No. 727, Cawthron Institute, Nelson, 2002; It should be noted that this was 17 years ago, and that these statistics may well be very different today, particularly for New Zealand resident anglers that feel displaced from certain rivers.

combined with habitat loss in lowland fisheries⁷ have led to a further increase in backcountry angling and encounter rates.

Sports fisheries managers are, therefore, required to manage angling pressure in order to ensure that the high-quality angling experience that pressure sensitive fisheries are renowned for is retained going forwards, and require the mechanisms to address potential increases in angling pressure moving forwards.

Problem B: Angling pressure in pressure sensitive fisheries comes disproportionately from non-resident anglers, resulting in the displacement of resident anglers from the resource.

Non-resident anglers currently contribute a disproportionate percentage of total angling effort in pressure sensitive fisheries. In total, they comprised approximately 15% of total licence holders in the 2019/20 season. However, in peak summer periods on pressure sensitive fisheries, surveys undertaken by Fish & Game have shown non-resident usage percentages as high as 79%, and typically well in excess of 60%. There is clearly, therefore, a high focus on pressure sensitive fisheries amongst non-resident anglers. A likely reason for this is that certain rivers have an international reputation because they embody the aspects of New Zealand's trout fishery that are internationally unique, and these attract a disproportionate amount of the total non-resident angling effort as compared to resident angling effort. Currently the only management distinction made between resident and non-resident licence holders is that non-resident licence holders pay a licence fee of 1.35x the resident licence fee. For the 2020/21 angling season the resident fee was \$133, meaning the non-resident fee was \$180.

The issue of an unsustainable level of non-resident pressure on prized resources is not limited to sports fishing and is common to the wider tourism industry. A prime example of this is the Department of Conservation's trial of differential pricing for the premier Great Walk huts.⁸ This trial is motivated by similar considerations to those impacting on pressure sensitive fisheries, namely a disproportionate concentration of international attention in highly localised areas. Whilst Great Walk hut nights in peak periods are a finite resource (i.e. they are a bookable resource with a maximum number of possible bookings), as compared with pressure sensitive fisheries as a theoretically infinite resource, the implications on the angling experience from excessive usage means that there is a finite amount of high quality angling experiences that a pressure sensitive fishery can offer.

It is very important to note that there are a number of distinct categories of non-resident anglers, many of whom do not contribute to the pressure on pressure sensitive fisheries through significant angling effort.⁹ Non-resident day licence holders are the least likely to fish backcountry waters (only 20% of their effort is in backcountry waters) and show a much stronger preference for lakes than other categories. Accordingly, their impact on pressure

⁷ Jellyman, D. J., Unwin, M. J. and James, G. D., (2003). Anglers' perceptions of the status of New Zealand lowland rivers and their trout fisheries. NIWA Technical Report 122 ISSN 1174-2631 prepared for Fish & Game New Zealand.

⁸ Department of Conservation, *Great Walks Differential Pricing Trial 2018/19 Evaluation*, New Zealand.

⁹ Hayes & Lovelock, *Analysis of the recreational freshwater angling behaviours of overseas visitors to New Zealand*, Dunedin, New Zealand. Department of Tourism, University of Otago (2016).; The research distinguishes between those non-residents living outside of New Zealand and those providing New Zealand addresses. The statistics on whole season licence holders used here are for those non-residents living outside of New Zealand.

sensitive fisheries is small. Of non-resident whole season licence holders the vast majority are fly anglers, and their angling effort is concentrated in the South Island (40.1% fish Nelson Marlborough, 40.4% West Coast, 29.4% North Canterbury, 47.5% Central South Island, 53% Otago and 44.4% Southland). There is also a clear preference for river fishing, rather than lake fishing, with 80.8% of total non-resident angling effort taking place on rivers. Most anglers spent between one and two weeks fishing in New Zealand, although 7.8% fished for more than 30 days. Whilst overall lowland rivers were the most fished, there was still a very high backcountry river usership rate amongst non-residents (32% of total Australian angling effort, 50% of UK effort and 52% of USA effort). Over the total non-resident whole season licence holders the backcountry angling use rate is approximately 34%. There is also a very high rate of return non-resident anglers, with 50% of those surveyed visiting annually and 20% visiting more than once a year. Accordingly, there is a substantial amount of 'local knowledge' held by non-resident anglers, and this knowledge is often shared within international communities of anglers.

Fish & Game endeavours to include angling etiquette information in its regulation booklets and online. Concepts, such as not fishing the same pressure sensitive fishery on multiple consecutive days or allowing adequate amounts of water for other anglers, are well understood by resident anglers, but are less commonly understood by non-resident anglers (although return and regular visitors are aware of this etiquette). Currently, fisheries managers do not possess a mechanism to enforce etiquette such as this.

While non-resident anglers typically demonstrate some of the highest satisfaction ratings, there is also mounting concern amongst this group regarding the increasing pressure on New Zealand's waters (particularly in the backcountry) and that this is degrading from the unique and wild nature of the fishery. What constitutes crowding differs for different people, although non-resident anglers typically have a higher encounter tolerance rate than resident anglers.¹⁰ Similarly, a frequently noted reason for choosing New Zealand over other angling destinations was that it was not crowded (60% of non-resident whole season licence holders whose primary motivation for the trip is angling noted this). However, non-residents, as well as residents, have changed their angling patterns based on increasing encounter rates and those that currently visit are broadly tolerant of the current usage levels.

As a result of the increased angling pressure and, perhaps more pertinently, as a result of the perception of increased angling pressure on pressure sensitive fisheries, New Zealand anglers are being displaced from these fisheries.¹¹ Displacement can take multiple forms; temporal displacement is when an angler changes the time of the year that they fish a, spatial displacement is when an anglers chooses to fish a different river, and total displacement is where an angler chooses to cease fishing entirely. All three forms of displacement occur on New Zealand's pressure sensitive fisheries.

In 2002 15% of anglers surveyed for the Cawthron Backcountry Fisheries report stated that they avoided backcountry rivers because of perceived crowding. More recent analysis in 2019 by the University of Otago's Tourism Department has demonstrated that crowding continues to result in substantial levels of displacement.¹² For all 8 of the studied rivers, resident anglers have changed their fishing behaviour in response to crowding. In 6 of the 8

¹⁰ Rowan Strickland & John Hayes, *Angler Response to a Trial Permit System in the Greenstone and Caples Rivers*, Cawthron Institute, June 2005.

¹¹ Hayes & Lovelock, *Analysis of the recreational freshwater angling behaviours of overseas visitors to New Zealand*, Dunedin, New Zealand. Department of Tourism, University of Otago (2016).

¹² Stuart Hayes & Brent Lovelock, *Angler Displacement on and from pressure-sensitive rivers in Otago and Southland*, University of Otago, 2019

surveyed rivers, more than 25% of anglers now fish less often than they have previously because of crowding and for half of the rivers more than 20% of anglers that had historically fished them had stopped fishing them entirely because of crowding. Particularly significant are the statistics for the Upper Oreti River, which registered 79% non-resident usage in peak periods, where 45% of anglers fish it less often because of the crowding and 32% have ceased fishing it completely. This research demonstrates both the displacement of resident anglers and the correlation between the displacement of resident anglers and high levels of non-resident usage.

Displacement occurs, in this instance, because the angling experience (encompassing both angling success as well as less tangible qualities) is diminished as a result of angling pressure. Because resident anglers demonstrate a lower degree of encounter tolerance than non-resident anglers, as pressure sensitive fisheries become oversubscribed the first group to cease fishing them is typically resident anglers. This reduction in resident angling effort in pressure sensitive fisheries in turn feeds back into the disproportionate non-resident angling effort.

Displacement further occurs where there is a belief, even if not borne out by actual use rates, that the angling experience would be diminished by the perceived angling pressure. This has been labelled perception-displacement. As anglers are displaced through actual crowding this experience is communicated to other anglers, who are then displaced because of the reputation of crowding. Often this perception-displacement is of a more general nature than anglers not fishing specific rivers because they have experienced actual crowding and may prove an impediment to newer anglers experiencing aspects of the New Zealand freshwater angling resource.

It is worth noting that internationally the displacement of resident anglers from highly sought-after fisheries is not uncommon, and the same phenomenon also features frequently in the non-angling tourism sphere (including, as noted above, with DOC Great Walk huts). In British Columbia it motivated a management regime dubbed 'Quality Waters', which began in 1990 and has been through several iterations and fine-tuned at each step. The management steps undertaken there have resulted in increased resident satisfaction, whilst still providing excellent angling opportunities for non-resident anglers.

Current management mechanisms are unable to achieve parity between resident and non-resident anglers, nor mitigate displacement, and particularly perception-displacement, by providing specific opportunity for resident anglers.

Lessons from COVID-19

The recent border closures as a result of COVID-19 provide an interesting opportunity to consider the angling behaviour of resident anglers in the absence of non-resident anglers. For the 2020/21 sports fishing season and continuing into the 2021/22 season New Zealand's borders have been closed (with the brief exception of the trans-Tasman bubble that fell largely outside of the main sports fishing season), meaning that non-resident angling has been negligible in this period.

On a broad scale, resident licence sales for the 2020/21 season increased by 9% as compared with the season prior however this is believed to be more influenced by the increase in domestic tourism stemming from the inability to travel internationally than from the availability of pressure sensitive fisheries. Anecdotal evidence nationally has, however, suggested that in the absence of non-resident anglers there has been a major upswing in the number of resident anglers fishing pressure sensitive fisheries. This is supported by the substantial increase in resident Backcountry licences issued, with 3,506 issued for the

2020/21 season (where there were no non-resident anglers) compared with 2,163 issued for the 2019/20 season (where there were resident anglers). Although Backcountry licences cannot be directly equated to use of backcountry fisheries, they are strongly indicative as they are a prerequisite for use.

The one area in which Fish & Game has empirical evidence is for the Ōreti River in the Southland region, which has a well utilised beat system comprising 11 total beats. Annual surveys run on the same methodology in the 2018/19 and 2020/21 seasons demonstrated a 450% increase in resident anglers in the 2020/21 season in the absence of non-resident anglers.¹³ This can likely be attributed to two primary reasons; an increase in actual opportunity resulting from lower overall beat occupancy and an increase in perceived opportunity resulting from the knowledge that there will be no non-resident anglers. Overall, this evidence strongly suggests that where there is either increased opportunity for resident anglers, or the perception of increased opportunity, in an area which is typically subject to high non-resident angler use, there will be an increase in resident angler use.

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¹³ Cohen Stewart, *Angler use of the upper Oreti trout fishery during the 2018/19 and 2020/21 fishing season*, Southland Fish and Game Council, 2021.

Objectives and criteria for solutions

Objectives

- A. To spatially redistribute angling pressure from fisheries subject to unsustainable angling pressure towards fisheries that can sustain increased angling pressure.
- B. To temporally redistribute angling pressure from fisheries subject to periods of peak unsustainable angling pressure towards periods where angling pressure is lower.

Criteria for solutions

Any solution intended to meet **Objective A** needs to meet the following criteria:

- 1. Ensure that access restrictions do not have a detrimental impact on anglers not fishing pressure sensitive fisheries.
- 2. Management costs for pressure sensitive fisheries are met, where possible, by the users of these fisheries.
- 3. Be efficient and minimise the cost of enforcement.
- 4. Be flexible to reflect changing usage statistics
- 5. Efficiently and reliably provide data on the physical use of pressure-sensitive trout fisheries by anglers
- 6. Provide data on social pressures affecting pressure-sensitive trout fisheries
- 7. Provide data on fishery impacts of resident verses non-resident anglers.
- 8. Be part of a nationally consistent framework, whilst allowing for specific regional characteristics.

Any solution intended to meet **Objective B** needs to meet the following criteria:

- 1. Minimise restrictions on non-resident anglers not fishing pressure sensitive fisheries.
- 2. Seek spatial and temporal redistribution of non-resident angling effort.
- 3. Address the perception of crowding, as well as actual crowding.
- 4. Ensure that management mechanisms do not further deter resident anglers.

Options analysis

This section considers options for addressing each of the problems described above.

Options for Problem A: Select fisheries are subject to an unsustainable amount of angling pressure.

Reducing total angling pressure on pressure sensitive fisheries could be achieved by expanding Fish & Game's current pressure management mechanisms.

Expand current pressure management systems

Fish and Game currently have three primary mechanisms to manage pressure in pressure sensitive fisheries, which could be expanded to cover a wider range of waters.

Backcountry licences

The backcountry licence, although coming into fruition subsequent to both the beat system and controlled fisheries, has become the most widespread tool. Currently seven Fish and Game regions – Wellington, Nelson/Marlborough, West Coast, North Canterbury, Central South Island, Otago and Southland - have designated backcountry fisheries, which require an angler to hold a backcountry licence in order to fish them. 26 rivers are currently covered by this system. All beat system and controlled fisheries also require a backcountry licence. The backcountry licence is available as a free endorsement for all whole season (resident and non-resident) licences (previously the Rangitikei backcountry fishery had a fee to cover insurance, but this has been retracted). It can either be selected at the point of purchase, or at a later date. Endorsements apply on a per region basis, and an angler intending to fish backcountry fisheries on both the West Coast and in Otago would need to apply for each of these endorsements.

The primary purpose of the backcountry licence is to allow Fish and Game to survey users of these fisheries and generate information on encounter rates, success and overall experience. In that way it is a valuable tool to inform management strategies for pressure sensitive fisheries, although it does not itself manage pressure. The only limitation it imposes is the requirement to have a full season licence, which likely means a small number of anglers that only hold short-term licences either choose not to fish a backcountry water or fish it without the licence endorsement.

The backcountry licence allows Fish and Game to gather data on backcountry fisheries through surveys conducted on backcountry licence holders. However, it does not actually manage pressure or restrict/control access in any sense. There is further a degree of misalignment between the name of the licence 'Backcountry Licence' and pressure sensitive fisheries, in that not all pressure sensitive fisheries are backcountry fisheries (such as the upper Mataura River). Accordingly, while a backcountry licence will comprise a part of a pressure sensitive management scheme it does not singularly provide a solution to Problem A, nor Problem B.

Beat Systems

Official beat systems are currently in place on three fisheries: the Oreti River in Southland, the Wairau River in Nelson/Marlborough and the Nevis River in Otago. These function on a first come first served basis, where an angler parks their vehicle in a specified position marked by signage to demonstrate their intention to fish the beat. Beats are established lengths of river, again marked by signage. Anglers fishing a beat have confidence that they will not encounter another angler ahead of them on their beat, which allows them to pace

their angling at their discretion. Anglers arriving to find a beat occupied are welcome to fish in behind the other party. In general, the beat system, particularly the more established system on the Oreti, appear to be well-regarded by anglers and have improved angling opportunities. Likely the greatest benefit is that other anglers that arrive subsequently have clear information about where angling effort is located, and these anglers then can choose whether to fish in behind the other party or fish another location. The result is that this mitigates actual angler encounter rates by providing anglers the ability to avoid a probable encounter if they desire.

Beat systems, however, have limitations. Foremost is that it is a voluntary system that relies on the co-operation and understanding of anglers and cannot ultimately be enforced. Beat systems are also able to be subverted by parties leaving vehicles at the specified beat parking spot overnight, allowing them to arrive the following day at their leisure. Their application is also largely limited to areas with good road access, and as a result they can only be applied to certain pressure sensitive fisheries.

Whilst beat systems do provide a partial solution to Problem A, and it is recommended that they are expanded to a wider range of fisheries, they do not solve or assist with Problem B.

Controlled Fisheries

Controlled fisheries represent the most regulatory and restrictive approach Fish and Game has attempted to manage pressure in sensitive fisheries in that they actively limit the number of anglers that can fish a river in a set period. There are currently four controlled fisheries in operation: the Greenstone River in Otago and the Ettrick Burn in Southland which operate on a booking system, and the Clinton and Worsley Rivers in Southland that operate on a ballot system. For booked controlled fisheries a beat must be booked online, and the booking can be made up to five days in advance of the fishing date. Only one party may book a beat per day, although that party can comprise multiple anglers (two in the Greenstone, and up to four in the Ettrick Burn – all of whom must have a backcountry licence). For balloted controlled fisheries the angler applies to the Southland Fish and Game Council to be put into a ballot, with one party selected to fish each beat per available day.

For the Greenstone River the controlled period applies during the peak months of February and March and comprises three individually bookable beats. In contrast, the Ettrick burn controlled fishery applies across the course of the season as its primary function is to limit angling traffic to minimise disturbance to the population of Takahē in the valley. It comprises one beat and only two angling parties are permitted into the valley each week: one on Wednesday and the other on Saturday.

Controlled fisheries are an extremely effective tool for controlling angling pressure and mitigating encounter rates. They ensure anglers have unimpeded fishing for the day by allocating specific sections of a river to each party. They are also enforceable, unlike beat systems, and failure to comply with these restrictions may lead to prosecution. It also provides comprehensive and accurate data of angling effort throughout the controlled period. Controlled fisheries, therefore, represent an excellent solution to Problem A in that they are able to limit the total amount of angling effort.

They do not, however, offer a solution to Problem B in their current format because they cannot distinguish between resident and non-resident anglers. It is also probable that there would be a negative reaction from resident anglers if too many waterways were placed within such a heavily regulated system. This view is supported by research that demonstrates New Zealand anglers are more opposed to regulations than non-resident

anglers, meaning controlled fisheries may in fact be counter-productive to addressing displacement of resident anglers.

Expansion and steps moving forward

There is scope to expand aspects of Fish & Game's current pressure sensitive management system as a solution to addressing Problem A on a national basis, rather than simply in isolated areas.

It is appropriate for there to be an overarching licencing mechanism, as the backcountry licence currently operates. However, it is suggested that the name be changed to better reflect the range of waters this licence is intended to apply to. It is recommended that the terminology of this toolkit transitions away from managing 'backcountry' fisheries towards a more generic term to better reflect the diversity of waters subject to problematic angling pressure. This would mean that waters such as the upper Mataura River, which do not fit into the definition of a backcountry fishery but that receive heavy angling pressure and require special management attention, are covered. Discussions amongst Fish & Game staff at a 2021 pressure sensitive fisheries workshop demonstrated broad support from a transition away from 'backcountry' but identified several potential issues with terms such as 'pressure sensitive fisheries' or 'classified waters'. In particular, there was concern that publicly identifying rivers as pressure sensitive may result in a self-perpetuating narrative around the levels of pressure on these waterways and similarly that ascribing a title that suggested these rivers have an elevated status could counter-productively increase pressure. Ultimately staff preference was for a generic term such as 'Designated Waters'.

For the purpose of this paper where the specific licencing mechanism is being referred to, the term Designated Waters will be used. Where the general pressure sensitivity of a river is being referred to, the term pressure sensitive fisheries will be used.

As the concept of a Designated Waters licence becomes familiar to anglers across the country there is also scope to significantly expand the waters covered by this licencing regime to encompass all pressure sensitive waters in the country. Currently there is no cost associated with the backcountry licence, and the appropriateness of this will need to be considered moving forward in light of the infrastructure costs of a pressure sensitive management system and the cost of enforcement. Internationally the concept of a 'stamp' applied to the licence when fishing either an area that has a higher management cost, or when targeting a species that has a higher management cost, is well accepted. It is recommended that Fish & Game consider placing a fee on backcountry licences or any equivalent system that replaces it. This would be consistent with Objective A, as only those anglers using these fisheries would be required to purchase the licence meaning that the management cost was more closely met by the user base.

Beat systems have proven to be one of the most effective and least intrusive mechanisms to address angling pressure. They do not necessarily reduce total angling effort, but they do reduce some of the negative impacts of high angling effort by lowering encounter rates and accordingly improve the angler experience. This paper recommends the expansion of voluntary beat systems to all appropriate pressure sensitive waters with road access along their length, or pressure sensitive waters subject to day trip use where access is from a common and established point.

Finally, the expansion of controlled fisheries should be considered as an intensive step for rivers subject to the highest level of angling pressure and where the angling experience is being severely impacted as a result. However, it is recommended that caution is exercised in

expanding controlled fisheries too widely given the potential for resident anglers to find restrictions less palatable than non-residents.

Problem B: Angling pressure in pressure sensitive fisheries comes disproportionately from non-resident anglers, resulting in the displacement of resident anglers from the resource.

Reducing the proportion of non-resident angling pressure in pressure sensitive fisheries, and addressing the displacement of resident anglers, could be achieved through five options:

1. Non-resident licence fee increase
2. Fees for Designated Waters
3. Limiting number of Designated Waters days per month
4. Controlled fisheries with set residency quota
5. Resident only periods

Non-resident licence fee increase

One of the most commonly advocated for mechanisms to control the disproportionate non-resident usage of pressure sensitive fisheries amongst resident anglers is to increase the resident licence fee. Currently non-resident licence fees are set at 1.35x the resident licence fee rate for adult licences, and at varying rates for junior and child licences:

Licence Type	Resident	Non-resident
Wholeseason Adult	\$133	\$180
Day Adult	\$21	\$34
Wholeseason Junior	\$27	\$34
Day Junior	\$5	\$20
Wholeseason Child	Free	\$34
Day Child	Free	\$20

Certain licence categories are also only available to resident anglers, such as the Local Area, Loyal Senior, Family, Short Break, Long Break and Winter licences.

As a proportion of resident licence fees, New Zealand’s non-resident licence fees are quite cheap by international standards for fisheries of that quality as the following table demonstrates:

Country/State	Resident	Non-Resident	Non-resident Proportion
New Zealand (excl. Taupō)	\$133	\$180	1.35x resident
Taupō, New Zealand	\$99	\$129	1.3x resident
British Columbia, Canada (steelhead)	\$36 licence, \$25 steelhead stamp, \$15 classified waters licence = CA\$76 (NZ\$86)	\$80 licence, \$60 steelhead stamp, \$40/day Class 2 classified waters ticket or \$20/day Class 2 classified water ticket = CA\$140 (NZ\$157+per diem fee)	2.3x resident + per diem fee

Washington, USA (salmon/steelhead)	\$36 licence, \$8.75 Columbia Basin endorsement = US\$44.75 (NZ\$68)	\$84.5 licence, \$8.75 Columbia Basin endorsement = US\$93.25 (NZ\$141.5)	2.1x resident
Oregon, USA (salmon/steelhead)	\$41 licence, \$40.5 salmon/steelhead tag, \$9.75 Columbia Basin endorsement = US\$91.25 (NZ\$138.5)	\$103.5 licence, \$60.5 salmon/steelhead tag, \$9.75 Columbia Basin endorsement = US\$173.75 (NZ\$264)	1.9x resident
Alaska, USA (salmon/steelhead)	\$29 licence, \$10 salmon stamp = US\$39 (NZ\$59)	\$145 licence, \$100 salmon stamp = US\$245 (NZ\$372)	6.3x resident
Nova Scotia, Canada	CA\$42 (NZ\$47)	CA\$157.4 (NZ\$166)	3.7x resident
Quebec, Canada (salmon)	\$22.79 licence, \$50.99 salmon tag = CA\$73.79 (NZ\$83)	\$81.54 licence, \$163.30 salmon tag = CA\$244.93 (NZ\$276)	3.3x resident

Based upon this analysis, it would suggest that there is scope to increase the non-resident angling fee substantially to bring New Zealand's fees into line with international standards for fisheries of comparable quality. However, one of the key criteria for Objective B is that impacts on non-resident anglers not fishing pressure sensitive waters are minimised. In total only 34% of non-resident angling is undertaken on backcountry waters (which is indicative of time spent in waterways likely to be considered pressure sensitive). The majority of non-resident angling effort, especially amongst day licence holders, is in waters that are not likely to be pressure sensitive. At a certain point increasing fees will inevitably result in declining participation from non-resident anglers, including a decline in non-resident use of pressure sensitive fisheries, however it is probable that this user group, being typically the most passionate and committed category of visiting anglers will be the least price sensitive. As a result, the impact would be likely first felt amongst non-resident anglers that do not contribute to the pressure on pressure sensitive fisheries.

The consideration of a non-resident licence fee increase to make our fee scheme more closely aligned to international standards is a separate matter for Fish & Game to consider, however a blanket non-resident licence fee increase is not recommended as part of a pressure sensitive fisheries management system because it is inconsistent with the criteria of minimising the impact on anglers not fishing pressure sensitive fisheries.

Specific Fees for Designated Waters

1. Per-diem fees for non-resident anglers

Instituting a per diem fee for non-resident anglers fishing Designated Waters in peak periods would ensure that licence price increases exclusively impact those anglers that are contributing to the pressure in pressure sensitive fisheries. A Designated Waters licence would be supplemental to the standard Fish & Game licence, rather than instead of and would only be available for purchase by those anglers that can acquire a current

backcountry licence i.e. wholeseason licence holders. A per diem licence fee for select fisheries follows the same principle as the above section on general non-resident licence price increase but localises the impact to the resource rather than the broader user group of non-residents.

Whilst there is no domestic precedent for a per diem licence fee specific to certain rivers, internationally a similar system has been in force in British Columbia since 1990. The institution of the system was motivated by recurrent complaints that 'some waters in the Skeena River system have persistent steelhead angler-use issues – crowding, disproportionate numbers of non-resident anglers or guided anglers, lack of opportunities for resident anglers, illegal guiding, poor angler etiquette – all contributing to a degraded quality of angling experience.'¹⁴ This is effectively an identical issue pattern to what is confronting New Zealand's pressure sensitive fisheries.

British Columbia's 'Classified Waters' system today requires resident anglers to purchase an annual stamp at a cost of CA\$15, which allows them to fish the listed waters unrestricted throughout the season. In contrast, non-resident anglers are required to purchase a ticket for each day that they wish to spend on a classified water during the peak period (many waters remain unlisted and can be fished on a basic non-resident licence). These are priced at CA\$40/day for a Class I water and CA\$20/day for a Class II water. Tickets are purchased online via the general licence sales system and can be purchased on the day or in advance. Tickets do not grant an angler exclusive use of that section of water (as a controlled fishery booking would), but simply gives them the right to legally fish it.

This is analogous to the Department of Conservation's differential pricing trial for select Great Walk huts, which demonstrated that price was an effective mechanism to redistribute non-resident usership.¹⁵ Particularly pertinent to the current situation is that the proportion of New Zealand resident Great Walk bed nights increased from 40% in 2018 to 54% in 2020 amongst huts subject to the differential pricing, and the total number of New Zealand resident Great Walk bed nights increased by 18%. Across the four trial sites non-resident bed nights declined, but the non-resident contribution to the cost of managing these walks increased.

In New Zealand, given the fact that each specific water or section of water accommodates fewer backcountry trout anglers than the equivalent British Columbian steelhead river accommodates, the system would be required to provide flexibility in the event that another angler is already at the intended water. Accordingly, it is recommended that the per diem licence be applicable to a catchment, rather than specific river or stretch of river as it is in British Columbia. For instance, an angler in New Zealand would purchase a Karamea catchment Designated Waters licence, rather than a Leslie River – a Karamea tributary – licence).

It is suggested that this system may not need to operate for the entire angling season, but exclusively the peak summer period of December – March because surveys undertaken by Fish and Game have demonstrated that non-resident angling is heavily concentrated in this

¹⁴ Dolan, A, 'Recommendations of the Working Groups, Skeena Quality Waters Strategy Angling Management Plans', Alan Dolan and Associates, 2009, [Accessed online: <http://www.env.gov.bc.ca/skeena/qws/docs/WGRRecommendations.pdf>]

¹⁵ Department of Conservation, *Great Walks Differential Pricing Trial 2018/19 Evaluation*, New Zealand.

period. Outside of this period an annual fee could apply. This would achieve the temporal redistribution of non-resident anglers.

It is also recommended that there is a limit on the number of consecutive days that a Designated Waters licence can be purchased for each catchment, which would be determined based on the regional Fish and Game Council's understanding of the number of days angling that a Designated Waters catchment provides. This would achieve the spatial redistribution of non-resident anglers. The British Columbia Classified Waters systems limits the number of consecutive days that a non-resident angler can fish the same section of water to eight (there is no limit for resident anglers). However, there are some resource differences between New Zealand and British Columbia that mean this would not be appropriate for New Zealand. The majority of British Columbia's Classified Waters pertain to anadromous fisheries, where the fish are running up a river to spawn and accordingly fishing the same stretch for a sustained period does not necessarily pressure the same fish as they are moving upstream. In contrast, the majority of New Zealand's pressure sensitive fisheries are based upon resident fisheries where the fish are static and where it is not considered appropriate for an angler to fish the same stretch of water for even two consecutive days. The impact of each individual angler on the fishery is likely greater in New Zealand than British Columbia, meaning that the number of consecutive Designated Waters licences that can be issued for the same catchment should be much lower. However, if the limit on the number of Designated Waters licences a non-resident angler can purchase in a season per Fish & Game region, which is set out in the subsequent section, is actioned then this would effectively function as the limit on the number of consecutive licences that can be purchased.

The system would operate on the following basis:

- Non-resident anglers are required to purchase a per diem licence when fishing Designated Waters in the peak angling period of December-March.
 - Outside of this period they would purchase an annual Designated Waters licence.
 - Per diem Designated Water licences are issued per catchment.
 - There is a limit on the number of consecutive licences that can be purchased per catchment.
- Or
- There is a limit on the number of Designated Waters licences a non resident angler can purchase in a season per Fish & Game region (as set out in the subsequent section)

This system would have an additional benefit of providing accurate and detailed data on non-resident angling effort in pressure sensitive fisheries down to catchment level per day across the peak angling periods. This would allow high quality analysis to be undertaken relatively automatically each year, which would then be fed into refinements of the system.

Instituting such a system would seek to use price as a mechanism during peak season to distribute non-resident angling effort to other fisheries less subject to pressure sensitivity (spatial distribution) and to other periods of the year (temporal distribution). The following effects, consistent with the criteria for Objectives A and B, would result from instituting a per diem licence fee for non-resident anglers:

- Only non-resident anglers seeking to fish pressure sensitive waters would be impacted.
- Per diem Designated Waters fees would result in users of pressure sensitive fisheries more directly contributing to the cost of their management.

- By using a per diem system extremely accurate and detailed data on angling frequency and effort would be generated, facilitating informed future management decisions.
- Non-resident anglers would be temporally and spatially redistributed by the additional fees required to fish pressure sensitive fisheries.
- As a result of the redistribution of non-resident angling pressure, resident displacement would be mitigated.

Currently there are two primary impediments to the establishment of this system. Firstly, it would be necessary to obtain policy approval from the Minister of Conservation in the form of the Sports Fish Licences, Fees and Forms Notice, which is the secondary legislation that would contain the per diem licencing regime. Secondly, there would need to be infrastructure upgrades made to Fish and Game's licence sales system to allow for the sale of per diem licences as well as the collection of the data from these sales. Neither of these should be seen as impossible hurdles and if this proposal progresses both of these will be addressed as a part of the project.

Overall, it is recommended that this option be advanced as part of a solution to Problem B, with the specifics around pricing and operations to be determined as this proposal progresses.

2. Annual Designated Waters fees for resident anglers

Fish & Game's current backcountry licence scheme operates on a zero-fee licence by endorsement system for non-resident and resident anglers alike. It is proposed that, along with per-diem licence fees for non-residents fishing Designated Waters, resident anglers should pay a nominal annual fee to fish Designated Waters.

This serves two primary purposes; it provides a contribution to management costs by the users of the resource and it will increase survey data accuracy. The reason for the increased accuracy in survey data is that if there is a fee (even a minimal fee) anglers will be more likely to endorse their licence only if and when they are actually going to fish a pressure sensitive fishery as opposed to selecting all backcountry regions at the start of the season on the potential that they might fish them. Accordingly, Fish & Game would have a more accurate estimate of the number of resident anglers using these fisheries.

In general, pressure sensitive fisheries are remote fisheries not located near population centres. As a result, there is significant cost and effort require to access them (as well as to manage them), meaning that the imposition of a small annual fee is unlikely to be a barrier to resident participation. However, there are exceptions to this and to mitigate any barriers to anglers being able to enjoy their home waters it is proposed that there is no fee for a pressure sensitive licence for the region in which you purchase your licence. For instance, an angler that purchased their wholeseason adult licence in North Canterbury could apply for a North Canterbury Designated Waters licence at no fee, but if they wanted to purchase a West Coast Designated Waters licence this would be available for a fee.

Preliminary internal discussions suggested that an annual fee of \$5-10 per region would be appropriate for resident anglers. However, further research on the specifics of the pricing scheme is required as well as an assessment of the social appetite for this fee amongst resident anglers.

Limits on Designated Waters licences

Currently no mechanism exists to regulate the number of days that non-resident anglers can spend on pressure sensitive waters in a set period during the peak summer period. Although not applicable to all non-resident anglers, there is a tendency amongst certain demographics of non-resident anglers to effectively cherry-pick the best of the best during a visit to New Zealand and spend the majority of a trip on pressure sensitive fisheries.

If the above per diem licence fee mechanism is instituted for peak periods, it is recommended that there is an additional restriction on the number of Designated Waters licences that a non-resident angler can purchase in peak periods per Fish & Game region per season. The exact number of days will be determined as this proposal progresses; however, it is suggested that approximately four designated waters licences per non-resident angler per Fish and Game region is adopted as a starting point. Whilst the per diem licence fee will redistribute some non-resident angling effort from pressure sensitive fisheries, price is not an absolute barrier to participation and a select group of anglers will be willing to pay increased daily fees (even substantially increased) for a sustained period. Accordingly, to ensure the equitable redistribution of non-resident anglers, to achieve parity between resident and non-resident anglers use of these fisheries and to increase the opportunities available to resident anglers to offset the displacement currently occurring it is necessary to put in place some absolute limitations on access.

As noted above, the British Columbia system limits the number of consecutive days on each piece of water to 8 days but places no limit on the total number of Quality Waters licences a non-resident angler can purchase in a season. However, as also noted above there are substantial resource differences between the two fisheries meaning that the impact of individual anglers on the New Zealand fishery is likely far higher and thus the number of days (both consecutive and total) that non-resident anglers should be able to fish pressure sensitive fisheries needs to be lower.

Permitting the purchase of four Designated Waters licences per region provides balance in that it offers ample opportunity for non-resident anglers to experience some of the premier fisheries that New Zealand has to offer, whilst precluding them from exclusively concentrating their angling effort on these fisheries in an unsustainable fashion that displaces resident anglers. Pressure sensitive fisheries comprise a relatively small part of the overall resource, and there would still be exceptional angling opportunities available to non-resident anglers that would not be subject to any additional regulations; i.e. when a non-resident angler reaches their limit they would not have to stop fishing entirely in that region but simply fish areas that are not deemed pressure sensitive and subject to the additional regulations. It also encourages anglers to visit multiple Fish and Game regions, rather than concentrating angling effort in just one locality.

It further has the benefit of not negatively impacting the majority of non-resident anglers, or even the majority of non-resident anglers that fish pressure sensitive fisheries, as the average non-resident angler stays in New Zealand for between one and two weeks and will not fish more than four days in pressure sensitive fisheries. Similarly, because survey data demonstrates that there is a disproportionate concentration of non-resident angling between December and March (the peak period), it is not recommended that limits would need to apply during off-peak periods as currently there is not an issue with pressure in these periods. However, if a region wished to extend the period during which limits on per diem licences applied because of specific angling pressure outside of the peak period this could be accommodated within the system.

Its restrictions are, therefore, almost exclusively targeted to non-resident anglers that are unsustainably focusing on pressure sensitive fisheries in peak periods. Resultantly it's consistent with the criteria set out for Objectives A and B.

Limiting the total number of days that each non-resident angler can fish pressure sensitive fisheries in peak periods will materially reduce the proportion of non-resident angler usage of these fisheries and will assist in mitigating the displacement of resident anglers. As such it provides a partial solution to Problem B.

Resident only periods

The last remaining option to directly address the displacement of resident anglers is to allocate certain periods on pressure sensitive fisheries for the exclusive use of resident anglers. This provides a defined opportunity for resident anglers thus addressing absolute displacement, but perhaps more importantly it will address perception-displacement. Where an exclusive opportunity for resident anglers exists that is not available to non-resident anglers it offsets the ability for resident anglers to believe they are displaced from the resource. Accordingly, this option would provide a solution to Problem B.

This option does, however, pose a risk of concentrating non-resident angling on pressure sensitive fisheries in to the remaining five days available to them; i.e. the same total angling effort is concentrated into 5 days, as opposed to 7, subjecting the fishery to a greater intensity of pressure. Given the sensitivity of the fisheries themselves (independent of the angling experience) to angling pressure this may result in a poorer angling experience for resident anglers during the resident only periods. This pattern of higher concentrations during the week has been shown to be the case in British Columbia, although as a result of resource differences the impact that this has on resident anglers in British Columbia is much less severe.

The feasibility of this option is also, to a certain extent, dependent on the implementation of the per diem licencing scheme for pressure sensitive fisheries. This system would provide the mechanism to restrict non-resident angling effort on weekends, by simply not issuing Designated Waters licences on Saturday and Sunday. Accordingly, this option would not require any further infrastructure development. It would, as with several of the options contained in this section, require policy approval from the Minister of Conservation as its regulatory foundation would be the Sports Fish Licences, Fees and Forms Notice. As restrictions are increased (i.e. total preclusion of a category of anglers for set periods), the policy approval may be progressively more difficult to obtain and a stronger case with data to substantiate will be necessary. There is also further work to undertake on the legal grounds for precluding non-resident access to a public resource as this may be viewed as unjustifiably discriminatory if not supported with strong data.

One non-regulatory option that could be done currently would be for Fish & Game to advocate that non-residents voluntarily choose to avoid pressure sensitive fisheries on weekends. Many non-resident anglers already do so out of respect for resident anglers, and there is scope for Fish & Game to communicate more directly with non-resident anglers on etiquette questions such as this.

Overall, it is recommended that this option is not implemented currently, and that the success of the alternative solutions to Problem B proposed in this paper are assessed. Across this period more accurate data on pressure sensitive fisheries use will be collected and, if it is shown that the additional measures are not sufficient to address resident

displacement or that perception-displacement remains a substantial factor, a data-based case for resident only weekends can be made.

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Conclusion

New Zealand's pressure sensitive fisheries are at a social and fishability tipping point, and action is required to ensure that the quality angling experience that is cherished by resident and non-resident anglers alike remains into the future.

This analysis finds that Fish & Game's current mechanisms in an expanded form are sufficient to address the total angling pressure that pressure sensitive fisheries are subject to (Problem A), but that they are not sufficient to achieve usage parity between non-resident and resident anglers on pressure sensitive fisheries or to address the displacement of New Zealand anglers from the resource (Problem B). Accordingly, it is recommended that Fish & Game takes two distinct steps in response to the issues currently facing pressure sensitive fisheries.

1. Expand the use of the current toolkit

The current management mechanisms (backcountry licence, ballot systems and controlled fisheries) should be expanded to cover a significantly greater number of fisheries subject to intensive angling pressure.

It is recommended that the terminology of this toolkit transitions away from managing 'backcountry' fisheries towards a more generic term such as 'Designated Waters' to better reflect the diversity of waters subject to problematic angling pressure. It is also suggested that a small annual fee is charged for the resident Designated Waters licence endorsements so that management costs are met as closely as possible by the users of these fisheries.

It is recommended that the beat system is expanded to a wider range of waters. In instances where there is road access along a length of the river, or where there is a single point of access from which multiple sections of a river can be accessed in a day, beat systems provide clarity and certainty to anglers and offset the likelihood of encounters. Whilst not enforceable, an extremely high voluntary compliance rate can be expected as it is typically in all parties' (those already at the river and those arriving to find a beat occupied) interest to not cohabit a beat.

Finally, controlled fisheries represent the most intensive and regulated option for managing fisheries subject to the highest level of angling pressure or where the impact of encountering an angler is greatest (perhaps because of the effort expended to reach the area). In these situations, they are a very successful and valuable tool to control pressure. It is, however, suggested that caution be exercised in rolling these out too widely given the potential for strong regulations to disproportionately disincentivise resident anglers from fishing these locations. However, in a limited number of localities, where alternative mechanisms are not proving successful in redistributing angling pressure, controlled fisheries should be used.

The above steps will result in a system that more accurately reflects the resource that is being managed, which more closely aligns management costs with use, and which has the potential to manage both total pressure and angling encounters. However, it will not significantly adjust the balance of resident and non-resident anglers fishing pressure sensitive fisheries, nor will it mitigate the displacement of resident anglers.

2. Achieving parity and addressing displacement

In order to achieve parity between resident and non-resident angler effort on pressure sensitive fisheries and to mitigate the displacement of resident anglers it is necessary to implement a new set of targeted management mechanisms that directly address this problem.

Because only a relatively small proportion of the total non-resident angling effort is on pressure sensitive fisheries it is not recommended that there be any increase made to the overall non-resident licence price. However, it is recommended that a per diem Designated Waters licence fee is required for non-resident anglers wanting to fish pressure sensitive fisheries in peak summer to spatially and temporally redistribute non-resident angling effort. Based on Department of Conservation trials price has been an effective tool to increase opportunity for residents and achieve usage parity. This further ensures that only those non-resident anglers fishing pressure sensitive fisheries are impacted.

In conjunction with this it is recommended that there be a limit of four pressure sensitive per diem licences that non-resident anglers can purchase per Fish & Game region. Price is not an absolute barrier to participation and providing an absolute limit to the number of days that can be spent on pressure sensitive fisheries will mandate the redistribution of non-resident angling effort. This ensures that all non-resident anglers can experience some of the premier fisheries in New Zealand while precluding exclusive or unsustainable focus on such fisheries. Because of the average length of stay of non-resident anglers this will not impact the majority of non-residents, but only those that are substantially contributing to the pressure in these fisheries.

It is not recommended that resident only periods are instituted at this stage, however it is proposed that angling data be collected and the success of the recommended mechanisms assessed. If resident only periods prove necessary it will be substantially easier to build a case in favour of them if we have strong and accurate data to support it.

Recommendations:

- Expand current pressure management mechanisms to a wider range of waters as appropriate.
- Charge for a Designated Waters licence; residents at a small annual fee, non-residents on a per diem basis.
- Put in place a limit of (circa four) Designated Waters per diem licences per Fish & Game region for non-resident anglers.

Identified Knowledge Gaps:

- Research will need to be undertaken on the pricing schemes for resident and non-resident anglers alike to determine the appropriate fees for Designated Waters licences.
- Research will need to be done to determine the appropriate number of per diem Designated Waters licences that non-resident anglers can purchase per region.