

BEFORE THE INDEPENDENT COMMISSIONERS

IN THE MATTER of the Resource Management Act
1991

AND

IN THE MATTER of the Proposed Canterbury Land
and Water Regional Plan

**EVIDENCE IN CHIEF OF GRAEME WILSON ON BEHALF OF
THE WHITEWATER CANOE CLUB (INC) AND WHITEWATER NZ (INC)**

4 FEBRUARY 2013

INTRODUCTION

1. I am Graeme John Wilson, Vice President of Whitewater NZ (Inc) (Whitewater NZ) and Conservation Officer of the Whitewater Canoe Club (Inc) (WWCC). I am a former president and vice president of the WWCC, and have co-ordinated the WWCC's trip list.
2. I have been paddling for eight years and typically paddle up to grade 3 (intermediate) white water with an occasional grade 3+ run.
3. I have paddled extensively on Canterbury rivers, including various sections of the Clarence, Boyle, Hope, Waiau, Hurunui, Waimakariri, Ashley and Rangitata Rivers. I have paddled a number of other rivers around the South Island including the Buller, Matakītaki, Mangles, Matiri, Arnold, Grey, Crooked, Taipo, Rai, Pelorus, and Waihopai, Rivers. I have rafted the Rangitata Gorge, the Mangahao in the North Island and the Grand Canyon of the Colorado River in the USA.
4. I have presented and submitted to a range of hearings and parties on white water recreation including:
 - a. the Special Tribunals considering the proposed Water Conservation Order (WCO) for the Hurunui and changes to the Rakaia WCO;
 - b. on the Central Plains Water applications, including the various appeals and final decisions on some of the conditions, most significantly in relation to flows and intake structures;
 - c. to a number of the Zone Committees – including the Waimakariri, Hurunui-Waiāu, Christchurch-West Melton, Ashburton, Selwyn Waihora and Rangitata zone committees – both in general sessions and specifically on draft zone implementation plans;
 - d. to the Canterbury Water Management Strategy (CWMS) working group during the development of the CWMS strategy;

- e. to the West Coast Regional Council on its proposed land and water plan and during the Mokihinui hearing process; and
 - f. negotiating mitigation with Trustpower for the impact of the proposed hydro scheme on the Arnold river and discussions with developers such as Hurunui Water Project and Meridian about the impact of their schemes.
5. I am a Chartered Accountant, and hold Master of Commerce (Hons) and Bachelor of Commerce degrees from the University of Canterbury. I am a former co-convenor of the New Zealand Institute of Chartered Accountants' Sustainability Special Interest Group.
 6. The WWCC is based in Christchurch, has approximately 200 members and has been in existence for over thirty years. The WWCC is affiliated to Whitewater NZ.
 7. Whitewater NZ (formerly the New Zealand Recreational Canoeing Association (NZRCA)), which represents around 30 clubs and 1,000 members, is the national body representing the recreational paddlers who use New Zealand's white water¹ rivers. Whitewater NZ seeks to preserve white water resources and canoeable waterways and has a mandate from the New Zealand Canoe Federation to represent all canoeing disciplines on conservation matters.
 8. This evidence is on behalf of the WWCC and Whitewater NZ, and is complementary to the evidence provided by Dr Rankin on behalf of Whitewater NZ. In general we have tried to avoid significant repetition, but I endorse Dr Rankin's excellent and extensive evidence.
 9. I confirm that I have read and have complied with the Code of Conduct for Expert Witnesses. This evidence is within my area of expertise,

¹ White water includes all grades of white water as defined by the International Scale of Whitewater Difficulty and ranges from Grade 1 (moving water) to Grade 6 (unpaddleable except in rare circumstances).

except where I state that I am relying on facts or information provided by another person. I have not omitted to consider material facts known to me that might alter or detract from the opinions that I express.

SCOPE OF EVIDENCE

10. My evidence will address kayaking values in the Canterbury region, and in particular:
 - a. A WWCC perspective; values and use ;
 - b. Inventory of Canterbury kayaking rivers ;
 - c. Other Christchurch Canoe Club activities, eg, flat water and down river racing, Brass Monkey races;
 - d. Water flow requirements to retain values; and
 - e. Extending the kayaking boundaries, future paddling requirements and values.

11. Note that within my evidence I will use the terminology “kayaking” and “canoeing” interchangeably. Kayakers sit in their enclosed craft and paddle with a double-ended paddle. Canoeists normally use open undecked craft in which they kneel and paddle with a single-bladed paddle.

WHITEWATER CANOE CLUB ACTIVITIES

12. The WWCC provides an environment for Club members to enjoy white water kayaking and canoeing with fellow members. WWCC members paddle a wide range of rivers, primarily in the Canterbury, West Coast, Buller and Otago regions. Some of our members paddle primarily on trips organised by our club – typically we organise at least one trip each week of our season, which commences at the start of September and finishes at the end of May. Some members paddle only occasionally on club trips, paddling instead with groups of friends and contacts. Others paddle a mix of club and private trips.

13. The international river grading system acknowledges six grades of white water, broadly described as follows:
 - a. Grade 1- flat moving water. Current is slow to moderate, and the route is obvious so little need to manoeuvre is required.
 - b. Grade 2 - moving water with a few obstacles and challenges. Some ability to manoeuvre is required. Water features such as small waves, hydraulics and drops exist. The route is reasonably clear.
 - c. Grade 3 - intermediate water. Ability to manoeuvre in turbulent water is required. Water features such as irregular waves, hydraulics and drops exist. Route requires experience to determine, and a self-recovery roll is important.
 - d. Grade 4 - advanced. Very challenging water. Frequently checked from the bank prior to running and often safety is put in place using throw-ropes beforehand. The way through the rapid is often not obvious so a sound ability to manoeuvre in powerful and turbulent water is required. Water features such as large and irregular waves, powerful hydraulics and significant drops exist. Route requires experience to determine and a reliable self-recovery roll is extremely important.
 - e. Grade 5 - expert. This steps up again on grade 4. Extremely difficult, and extremely consequential if mistakes are made.
 - f. Grade 6 – the limit. Rarely if ever run. Highly risky even for the top tier of paddlers.

14. These grades are sometimes expressed with intermediate steps – for example, a grade 3+ run is harder than a grade 3, but not as hard as a grade 4 run. Sometimes a grade 3+ run might be described as a grade 4- run.

15. A trip or run down a section or reach of river tends to take its grade from the overall average difficulty provided that there is an alternative to paddling the most difficult, or crux section. In most cases this alternative involves leaving the river and carrying or portaging the

kayak around the rapid and putting in safely below. For example, the Hurunui River has a grade 3-4 rapid known as Devil's Fang Falls on an otherwise grade 2+ section. Paddlers unable or unwilling to run the Falls can take out above the rapid, carry their boats around it, and put back on the water below it. In some cases it is not possible or practical to do so. Where it is not possible to get past a point by leaving the river – eg, the presence of a steep-walled gorge – the crux rapid defines the level of the run.

16. The WWCC does not run club trips above grade 4, but informal networks of experienced paddlers within the club scene and outside the club scene will band together and run water above grade 4. We believe that in such difficult water it is more appropriate for a smaller group who know and trust one another to paddle together, than to have people meet for the first time at the put-in for such a run – which can happen.

17. There are a variety of kayaking activities undertaken by WWCC members. These include flat water racing, downriver and wild water racing, white water paddling or touring, play boating, slalom paddling, canoe polo (which can be undertaken indoors or outdoors) and creek boating. The rivers of Canterbury provide an ideal place to partake in many of these activities. Some environments can be used by others – for example, the stretch of the Avon at Kerrs Reach is used extensively by rowers as well as kayak racers, the latter particularly for training purposes. The skill sets, equipment, environments required, and challenges posed, differ significantly for the different disciplines. Kayaking is not simply one sport – it has many and sometimes complementary disciplines. Some paddlers choose to focus on one discipline whereas others participate in different disciplines, and this is true for many WWCC members.

18. Many kayakers have multiple boats for different disciplines. Long down river racers and multisport boats 5-6m in length, as used in the Coast to Coast, are used for speed but offer little stability and

manoeuvrability. Shorter river-running boats of 2 - 3.5 m in length are designed for handling white water and have more stability, manoeuvrability, and robustness to handle rocks and drops in the river. Short play boats of 1.5 - 2.5 m in length are very slow but are designed to catch water features such as holes, waves, and eddy lines and to perform loops, flat spins, cartwheels and other stunts.

19. Each style of kayaking requires a different environment, although some cross-over can exist. Multisport boats can be used on the Avon and Waimakariri Rivers, and the Waimakariri can be the starting point for using white water river-running boats, creek boats and play boats, although the Hurunui River offers a far better and outstanding environment for white water enthusiasts developing white water skills.
20. In 2009 Sport and Recreation New Zealand released figures which indicated that about 210,000 adults participated in all forms of kayaking or canoeing in the survey year – 6.4% of the adult population². Kayaking in general is not a fringe sport. In fact, kayaking and canoeing had more participants than snow sports!

KAYAKING VALUES

21. Key determinants of white water amenity value for a river section include, but are not limited to:
 - a. Whitewater value;
 - b. Landscape value;
 - c. Use value;
 - d. Scarcity value; and
 - e. Status value.

² Sport and Recreation New Zealand (2009). Sport and Recreation Profile: *Canoeing/Kayaking – Findings on the 2007/08 Active NZ Survey*.

22. White water value is primarily determined by the quality of the white water features and experience on the river section and the availability of suitable water flows on the river section.
23. A mix of different grades and types of white water within a region and nationally is highly valued as it allows beginners to learn and develop on increasingly harder water and it provides for a variety of paddler abilities and preferences.
24. Quality of the white water experience is generally determined by a number of elements including:
 - a. number, variety and quality of hydraulic features (eg waves, holes, eddies, drops) within a section and at different flow rates³;
 - b. overall character of a river section including the gradient and volume of the river (e.g., low volume, high gradient pool drop vs. continuous low gradient but large volume river sections);
 - c. continuity of white water features; the more the better ;
 - d. water quality including water clarity, purity and ability to support ecosystems and individual species; and
 - e. availability of the river section is determined by the percentage of time that the key white water features most highly valued by paddlers exist. This is primarily determined by flow.
25. The setting within which white water recreation occurs is an important determinant of white water amenity value. River sections, catchments and regions which are natural or unmodified, of high scenic beauty or high wilderness feeling are often considered to have higher **landscape values**.

³ Hydraulic features on the same river section may change dramatically with different flows. This variety in experiences on the same section is highly valued by paddlers so long as the hydraulic features are retained and remain valued.

26. **Use value** is primarily determined by the frequency of usage but high use is not necessary to make a river highly valued. Some rivers because of their difficulty, flow patterns, remoteness or other factors may not be run frequently but are highly valued when run because of the white water experience they offer.
27. The distance a user has travelled, and the amount of time and expense required to paddle a river section can also be an indication of its value. The origin of users can be a valuable indication of a river's relative importance locally, regionally, nationally and internationally.
28. The extent to which the key landscape, white water values or type of experience⁴ for which the river or section of river is rare within a region or wider context (e.g., nationally or internationally) is an indication of **scarcity value**.
29. The extent to which a river section, catchment or region has social and/or cultural value (e.g., historical importance, iconic status amongst paddling community) locally, regionally, nationally and internationally is an indication of **status value**.

KAYAKING IN CANTERBURY RIVERS

Inventory of Kayaked Canterbury Rivers

30. We have recently provided Environment Canterbury with a draft kayaking inventory which lists the known sections kayaked on Canterbury Rivers (see Appendix III of Dr Rankin's evidence [1]). The inventory lists the grade of the river or run or reach, the use made of it, the number of types of activities carried out on it, how accessible it is and how frequently flows are available. The schedule does not ascribe any relative values to the rivers.

⁴ For example, the experience of a multi-day wilderness river trip is quite different from a "park and play" session on a specific hydraulic feature(s) of a river section. Both are highly valued by paddlers.

31. When comparing and determining the relative values of rivers there are a number of factors that need to be considered. For example, very large numbers of kayakers from the Arawa Canoe Club paddle fast, long, down-river racing boats at Kerrs Reach on the flat moving water of the Avon River and on the lower Waimakariri River down to the SH1 bridge, which are grade 1-2. These two rivers are exceptionally important to these club members (the club has about 500 members). However, many WWCC white water paddlers consider this type of water to be introductory water only, and most specialise in running white water between grade 2+ and 4, and normally prefer white water that is full of hydraulic features. Thus to the WWCC members who do not use these reaches they are not as important or valued.

The Hurunui River and Its Values

32. Of all the kayaking rivers in Canterbury the Hurunui River is critically important to the WWCC and the kayaking community in Canterbury and nationally. No other river can act as a substitute for it in Canterbury. Dr Rankin in his evidence briefly mentioned the key values and features of this outstanding waterway so I will limit my comments to those particularly relating to the use of the river by our club. The Hurunui River was recently recommended for a Water Conservation Order (WCO).
33. Most commonly we run four stretches of river, namely
- a. the Top Gorge to the Jollie Brook
 - b. Jollie Brook to the Seaward River
 - c. Maori Gully, and
 - d. Below Maori Gully through the Hawarden Gap and Gorge to the Peaks Station.
34. We run the lower sections of the river below the Mandamus confluence less commonly, and access difficulties restrict our use of the South Branch.



Boulder rapid above Dozy Stream, Hurunui River, grade 2 water– February 2008

35. In March 2009 we conducted a telephone survey of our club members to provide a snapshot of the use made of different reaches of the Hurunui River by members of the WWCC in 2008 and over their paddling careers. At the time we had 190 members [2].
36. Over their paddling careers respondents had logged up a total of 11,449 paddling trips on different reaches of the Hurunui River. On average they paddled about ten reaches of the Hurunui River per year.
37. Some individuals had done a very large number runs on a number of reaches throughout their paddling careers, e.g. an estimated 400 runs down Maori Gully. Whereas these numbers may appear to be

excessive they are quite real and reflect the interest in kayaking and use of a valued resource by older paddlers who obviously never tire of the river and what it offers. It reflects the attractiveness of the setting and the reliability of the flows, and a sense of difference - that is, different flows provide a different experience.



Kayaker on Hawarden Gap trip, Hurunui River, grade 2 water - May 2008

38. Flow preferences were provided by participants in the survey. The preference for medium flows on most reaches, such as the Jollie Brook run down to the South Branch or the Seaward River, probably arises from the preference of more experienced paddlers in some reaches wanting medium to higher flows because of the bigger and more powerful hydraulics produced. On those same reaches beginners would want lower flows so that the water was not as intimidating and swift.
39. Many experienced paddlers showed a strong preference for a full range of flows in Māori Gully. This is likely because more experienced

paddlers prefer different hydraulic features in the run on their visits to the river, and do enjoy features produced at high, medium or low flows, and which the natural flow variation provides.

40. Virtually all of the respondents in the WWCC March 2009 survey noted the scenic values of the Hurunui. These statements - “Scenic”, “clean pure river”, “middle of nowhere”, “feels like you’re enclosed in a gorge”, “beautiful there – wilderness at its best” – are just a handful of the responses. The Hurunui’s scenic values are spectacular in their own right.



Bedrock rapid (Elevator) in Maori Gully, Hurunui River, grade 3 water - February 2008

Valued Features of the Hurunui River

41. The Upper Hurunui Waters offer an outstanding white water resource as mentioned in Dr Rankin’s evidence because of:

- a. the moderating influence of Lake Sumner on floods and flows meaning all year flow availability and variability;
 - b. the reliable flows are augmented by the variable flows contributed by the South Branch;
 - c. the section from Jollie Brook to the South Branch confluence and down to the Seaward River is an incredibly important area for beginners, because at most flows it is suitably graded for them;
 - d. the river offers outstanding kayaking white water over the full range of flows for novices through to experts alike on a number of different reaches with very different features;
 - e. the river has one of the best pieces of grade 3 white water in the country on it; namely the run down Maori Gully;
 - f. the river is very safe and egress in many reaches is very easy making it ideal for taking novices off the river when needed and for accessing different runs;
 - g. the stunning scenery and wilderness feel of different runs on the river; and
 - h. the river is very close to Christchurch and is the one reason why white water kayaking is so strong in Canterbury.
42. Another key reason for kayakers wanting a range of flows is the development of new river features as floods and freshes can modify the river by creating new rapids, and also can clean out vegetation from the river channel.
43. Every year the WWCC conducts introductory training courses, where we introduce approximately twenty new people to white water. Time spent on the relatively safe waters of the Hurunui is critical to development.

44. Although the Maori Gully section is relatively short (2 km or so), it can take two to three hours to work our way down, and it is an ideal place to develop skills and experience. Importantly, Māori Gully “steps up” through the grades as flows increase. The evidence included in Table 7 of the NZRCA WCO [3] application noted that at below 30 cumecs Maori Gully is suitable for paddlers just pushing into grade 3. We view it as important that people can learn to manage harder water on a familiar river, and also access difficulties which are often faced on many west Coast runs. It is rare for a river to retain its hydraulic features over such a wide flow range to the extent that Maori Gully does.



Devil's Fang Falls, Hurunui River, formed as the result of a major flood in 2007, grade 3+-4 water depending on flow - December 2007



The Hawarden Gap, Hurunui River, grade 3 water - May 2008

45. As our intermediate paddlers develop in Maori Gully they can then start to look for harder water either to the south or north – for example, the Ashley (grade 3+), Okuku or Rangitata Gorge (grade 4), Upper Waiau (grade 4) or various Otago rivers – or to the West – for example, the West Coast or Murchison, which offer many runs in excess of grade 3.



Bedrock rapid (Elevator) in Maori Gully, Hurunui River, grade 3
in low flow - February 2008

Values of Other Canterbury Rivers to Kayakers

46. Canterbury has a large number of rivers. In my experience, many people see the open braided rivers as they travel down State Highway 1 and assume that one is the same as the other – without realising the remarkable diversity in the catchments upstream. And even if all Canterbury Rivers were solely braided in character, they're still internationally important for that reason alone. The New Zealand Conservation Authority's report, *Protecting New Zealand's Rivers* (November 2011) [4] notes on page 8 that "New Zealand has a large proportion of the international stock of braided rivers" – and Canterbury has a large proportion of New Zealand's stock. If we lose a river there's simply not an identical one down the road.

47. Other Canterbury rivers within a reasonable distance of Christchurch are extremely valuable in their own right individually, and they all have different attributes which contribute to the overall mix of different rivers within Canterbury. However, because of inconsistent flows or degree of difficulty (either too difficult or not challenging enough for many white water paddlers) they do not provide the amenity offered by the Hurunui for many paddlers.
48. The Ashley River offers a wonderful grade 2 to 3 upper section from Lees Valley down to the middle bridge, and a superb grade 3+ to 4 lower section from the middle bridge down to the campground, but both only when water is available. However, flows are dependent on spring melt or northerly or southerly rain, and consequently for extended periods of time over both summer and winter flows do not support trips. As southerly fronts often arrive and depart quickly the rise in flows is often only a very brief spike which pushes up recorded average flows but has very little impact on median flows. Most of the time when there is sufficient water to run part of the Ashley it is in cold weather. Typically southerly rain is accompanied by snow in winter and by cold winds, and so a risk of hypothermia is ever present.
49. Both sections of the Ashley are committing because they travel down through deep isolated gorges. We only take competent beginners on the easier water offered by the upper section as there is no easy way out in the case of misadventure – the road is able to be easily accessed only at the put-in and take-out of each run, and the other option would be a very steep, very long, climb to the road.
50. The lower section is technically challenging and so is again only the domain of capable developing kayakers. In the event of mishap there is no practical easy way of getting an injured or hypothermic paddler to the road.

51. In summary the Ashley River offers some superb white water but it is subject to a much lower availability and is only suitable for more capable kayakers.
52. The nearby Okuku River is also highly weather-dependent, but offers paddlers an outstanding grade 4 to 4+ experience. This expert level paddling is well above that of the majority of our club members. In the 2009 club survey only around a quarter of the club members reported their paddling ability as being grade 4 or above. When the Okuku is flowing the road is often flooded. Before river gauges were provided, the rule of thumb was that “if you can’t get your vehicle across the river it’s about right!” Vehicle access via the rain-affected farm and forestry roads is also a problem for the Okuku when it’s flowing. The Okuku is a long way from any roads, which means that parties need to be very capable and independent.



Rescue practise in Simon's Hole, Maori Gully, Hurunui River, grade 3-4 depending on flow – December 2007

53. The grade 4 Rangitata Gorge run offers a more demanding and therefore less attainable river experience for the majority of WWCC paddlers. We would expect paddlers to be competent in Maori Gully in big water before undertaking their first descent of the Rangitata gorge. The grade 3-4 challenges offered by Māori Gully as flows increase are an ideal training ground for rivers such as the Rangitata or various West Coast trips.
54. The Hurunui, and in particular Māori Gully, provides an important link or step in Canterbury kayaking. Without Māori Gully there would be no reliable white water of sufficient difficulty between the grade 2 runs and the grade 4 run on the Rangitata Gorge. This would make it difficult to acquire the skills necessary to step up to the Rangitata Gorge.
55. The lower Rangitata River is more open and braided than the Upper Hurunui River, and offers a completely different river experience. It offers one of the best examples in New Zealand of a steep gradient, boulder lined, braided river run that produces excellent wave trains very suitable for beginners in the right flows. The Rangitata WCO recognised that the lower Rangitata offers one of the best examples of this type of grade 2 to 3 white water with easy access and safe boating and that it provides an excellent training ground. This type of white water is generated by the high gradient and large boulder size in the bed, which is an unusual feature in rivers of this size and type and so relatively close to the coast. The only other NZ river that has similar rollercoaster white water characteristics is the lower Clarence River.
56. The lower Rangitata River is an excellent coaching and training ground for beginners and trainee instructors, because of the accessibility, predictability and comparative safety of the run, due to clean run outs after rapids – no obstacles present at the bottom of rapids - and the absence of hazards such as trees and other obstructions. It receives a high level of use from a variety of user groups for a variety of purposes ranging from instruction, team

building, personal growth/development courses, multisport and white water recreation. Users range from local schools, clubs, polytechnics, families, clients of the Peel Forest Outdoor Pursuits Centre through to clubs and individual kayakers from further afield. This was also the site of the slalom course at the 1974 Commonwealth Games. However, it often suffers from a lack of sufficient flows.

57. One of the prohibitions placed by the Rangitata WCO relates to the protection of the cross section of the river. The presence of the large boulders in-stream creates valued white water hydraulic features such as waves, holes, and eddies etc. Where boulders are removed from the channels for river protection works the river loses much of its amenity. Massive floods can also reform the rapids on the lower Rangitata – these change due to changes in channel location but also because the large boulders can move around.
58. The Rangitata is also distinct in that it offers a serious grade 4 trip and a grade 2-3 trip, but lacks the important intermediate developmental water offered by the Hurunui.
59. The Waimakariri is paddled by a number of our members (especially those who enjoy down river racing) on a very regular basis, and is highly valued by them. It also receives extensive use from multisporters and others from the down river racing community. However, with the exception of the Brass Monkey race series which we run during winter, the WWCC makes only occasional use of the Waimakariri. The four or five races in the Brass Monkey Series normally attract over 120 paddlers per race. For some competitors this is their first taste of kayak racing.
60. The upper Waimakariri and down through the Waimakariri Gorge has many parts that are open and braided and is a completely different paddling experience from the Upper Hurunui. Arawa Canoe Club in Christchurch has some 500 members who make an enormous amount of use of both the upper and lower Waimakariri. The higher reaches

are used by those running the Coast to Coast, with hundreds paddling a 70km stretch during the event each year, and many more trips during training and orientation. It is also a stunning wilderness overnight trip in a slower white water kayak.

61. The river goes through a spectacular gorge with huge sheer rock cliffs. The water pushes onto bluffs and creates waves, boils and whirlpools, and does much the same as braids meet. As mentioned earlier, multisport boats are inherently unstable – they derive their stability from speed and from the presence of an active paddle in the water. Accordingly, white water that might be more straightforward in a shorter more stable white water river runner poses very real challenges to multi-sport boaters.
62. The WWCC rarely paddles on the Rakaia River these days, but another Christchurch club, the 60-member Down River Kayak Club (DRKC) is the predominant kayaking user. However, fashions change in kayaking as in other things. I am told by some long-standing WWCC members of the days they would paddle the Rakaia gorge, sometimes in big floods with huge boils and waves. There are stories of people and boats being swallowed by the river and returned to the surface downstream. The lower Rakaia is similar to the lower Waimakariri in its characteristics and amenity.
63. The remote and relatively inaccessible Upper Waiau in St James Station offers an outstanding grade 3+-4+ run through stunning gorges and alpine scenery, and the lower section from the Hanmer confluence to Leslie Hills Bridge with grade 1–2+ white water offers a good beginner run. It is, however, further from Christchurch. Although the lower Waiau can be used for beginners in flows below around 100 cumecs, it can rise rapidly in nor' west conditions as it lacks the moderating impact of a Lake Sumner. Such floods can make for extremely exciting paddling with big wave trains, but big holes can develop and any swimmer faces a long time before they can be reunited with their boat. However, the Waiau can also sit at very low

flows for periods of the year which make for a very “scratchy” paddle in a shallow river.

64. The river below the Leslie Hills Bridge consists of long stretches of open braided willow-infested water and some spectacularly scenic gorges - but does not provide the variability and mix of features of the Upper Hurunui Waters. Fencing wire is present in the river in a number of places. The lower river is jet boated privately and commercially.
65. At grade 3+-4+, the Upper Waiau run is also a big step up from grade 2 water, and so the ability to develop intermediate paddlers on this river is limited. The river passes through a remote area of back country making egress from the river difficult and also access into the river has been very difficult until recently with DoC taking over responsibility for St James Station. Access was only possible by helicopter or 4-wheel drive or by carrying kayaks and gear over Maling Pass but it is now possible to drive in over Maling's Pass when the road is open. The upper Waiau is still significantly harder than the Hurunui at most flows, and requires a much more substantial time commitment.
66. The Opihi River Gorge offers a grade 3 white water run, but suitable flows are rare and very weather dependent. We have not run a scheduled club trip on the Opihi in recent years because of the uncertainty in flow availability; instead it is more the domain of paddlers who are able to catch it when it is up. The Opihi is also choked by willows down much of its length and this wood in the river poses a safety hazard.
67. The Orari is another foothills river which has good grade 2 to 3 kayaking but only on the rare occasions that flows are running well above normal. The trip has a 150km shuttle (round trip distance from the bottom of the run to pick up a car left at the top of the run) and is willow-choked as it emerges onto the plains.

68. The Boyle River below the Engineer's Camp also provides another great 2-3 white water run that our members use, as does an upper run for creekers in spring flows and after rain.
69. Canterbury also has a very strong presence and place in the national kayaking scene. The WWCC is the largest white water canoe club in Canterbury, and one of the largest kayaking or canoeing clubs in the country. The University of Canterbury Canoe Club (UCCC) club is also very strong and provides large numbers of enthusiastic students with their first taste of white water – and very often that first taste of white water is on the Upper Hurunui Waters. The UCCC also has historically provided many canoe clubs throughout New Zealand with new members once students have graduated and moved to professional positions throughout New Zealand. Members of both clubs move on to paddle white water all around New Zealand and internationally. Much of the reason for the strength in paddling in Canterbury and New Zealand is from a direct result of the presence of the Hurunui River.



Maori Gully, Hurunui River, low summer flow - February 2008

WATER FLOW REQUIREMENTS TO RETAIN VALUES

70. Earlier in my evidence I discussed the impact of a range of flows in the Maori Gully section of the Hurunui River. Changes in flows are important for a number of reasons in maintaining our kayaking values – in summary, they provide a range of experiences, and they change the river environment in a semi-permanent or permanent fashion.

71. The scouring action of a flood created the Devil's Fang Falls rapid on the Hurunui River. The drop in Māori Gully known as Cheesegrater has changed – something in the rocks below the surface has changed, and the rapid has become harder. In recent years a new rapid formed on the Hurunui opposite the South Branch confluence, where a South Branch flood pulse scoured out a section of the bluff opposite, creating a slip which put boulders into the river and exposed some bedrock. A relatively straightforward section of the Waiau, near Marble Point, offered significantly more challenges after a flood cut into the northern bank; created a sharp right hand turn, and gave the section more gradient. Recently the local farmer has used earthmoving equipment to recover the land lost to the erosion – and with it we've lost the rapid. Around three years ago a flood of around 1,000 cumecs flattened-out one section of the Rangitata, but created a new rapid higher up the river.

72. These are simply some of the changes on some of the rivers. Those with a longer paddling history than I have could offer still more examples. In some cases, the changes make a whole river or river section paddleable or non-paddleable; they make changes so that paddlers have to walk around rapids; they push logs into rapids or remove them from rapids. Our rivers are dynamic – many of them are not built of worn bedrock in a constrained channel. Given constant or low flows there is the potential for the dynamism to change. There is a greater likelihood that the smaller rocks and gravels moved along by lower flows would "fill in" river features rather than create new features.

73. Floods also clean debris from river beds, and they remove vegetation which would otherwise choke river beds and create entrapment hazards. In grade 2 braided rivers floods create new braids, new channels, new points where the braids come together - a new and different experience.
74. I've paddled on a flat section of the Waiau at around 400 cumecs. At such flows from above the water I could hear rocks moving and banging, and the constant sound of shingle being pushed along. It is even more impressive to deliberately roll in such flows – the noise of the sediment and rocks moving was very loud.
75. And more water and steeper gradient moves larger rocks and makes more significant changes.
76. Dr Rankin in his evidence has discussed preferred flows for paddlers of different abilities for some rivers. As a club we want to see a wide range of appropriate flows retained on different rivers so that white water values can be retained for a range of users. As well as the matters discussed in the preceding paragraphs, ranges provide different opportunities for individual paddlers (in the way that rapids change with small changes in flows) and also groups of paddlers. For instance, we are unlikely to take beginners on the easy sections of the Hurunui or Waiau Rivers at flows much in excess of 100 cumecs – not because the rivers are inherently more dangerous, but rather because the flows increase the river velocity and recovery time for any swimmer, and beginners might be intimidated and put off by the size and power of the water. However, more experienced kayakers would revel in the white water and features produced by such flows. We would take intermediate kayakers down Maori Gully at flows below about 30 cumecs – once again, bigger flows are pushier and so require experience and a reliable roll to avoid a long swim. On the lower Rangitata it is widely accepted that low flows – around 70 cumecs or below at Klondyke (and whilst the Rangitata Diversion Race is taking off large volumes of water) – are very unsuitable for

kayaking as virtually all the hydraulic features of value are lost so there is essentially little or no white water of value.

77. Dr Rankin in Table 1 of his evidence analyses extensively the flow requirements to preserve our kayaking amenity in Canterbury Rivers. I agree with his excellent summary and support his conclusions. It is of particular importance to note:
- a. that many rivers do not provide flows which can be paddled all year around
 - b. that not all rivers offer the same degree of challenge or amenity
 - c. that as a rule we seek variability, not constancy of flow, and in particular flows that generate white water of value
 - d. that as a rule Canterbury's rivers form a complementary set rather than easily substitutable – that is, if we lose one river, there's not another one the same just down the road
 - e. a minimum environmental flow regime based around 7DMALF is unlikely to meet our requirements and provide for and protect our white water values.

FUTURE DIRECTIONS IN KAYAKING

78. It is difficult to determine where our sport may be in ten years, and its requirements. As I've noted above, there have been some changes in fashion in kayaking. The WWCC commonly paddled the Rakaia two decades ago, but now rarely uses it. Others have now taken our place on the Rakaia. Boats have become more specialised with the development of creek, play, river-runners and multisport boats now replacing "general use" boats from the 1980s. And rivers once thought unrunnable are now being run as skill, experience and boat construction improves. Two years ago I was about to present to the Hurunui Waiau Zone committee, only to have to change my presentation at the last moment when we heard a group had run the Mason River for the first time. The Rangitata Gorge was once believed to be unpaddleable and exceedingly dangerous, but is now paddled regularly and rafted commercially.

79. It's essential for the sport of kayaking that we maintain a variety of valued rivers for paddlers to use, and that those rivers at least have reliable and variable flows.

CONCLUSION AND RECOMMENDATIONS

80. I have read Dr Rankin's conclusions and recommendations as stated in sections 13 and 14 of his evidence, and I endorse his conclusions and recommendations.
81. I also believe it is essential that when considering a flow regime for a river, recreational flows must be properly determined so that sufficient flows providing for white water and recreational values and users are made available. Minimum environmental flows, such as default values in the proposed Canterbury Land and Water Plan, invariably are not sufficient (far too low) to provide for white water enthusiasts. Even the current minimal environmental flow on the Waimakariri at the SH1 bridge, for example, is not desirable at all for recreational flows.
82. Many of our rivers have already suffered significant degradation, and it is important that we protect our remaining rivers and the amenity they offer.

Graeme Wilson

February 2013

REFERENCES

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