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

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EVIDENCE IN CHIEF OF GRANT SOUTH ON BEHALF OF NEW ZEALAND RIVERS ASSOCIATION (INC) AND WHITEWATER NZ (INC)

4 FEBRUARY 2013

INTRODUCTION

1. My name is Grant South and I am 47 years old.

2. I am a past Chairman of the New Zealand Rafting Association (now the New Zealand Rivers Association; having held the position for over ten years) and am still currently on the executive holding a portfolio dealing with Maritime New Zealand issues. I am the director of Hidden Valleys (NZ) Ltd, which is an adventure tourism company established in 1999 and based at Peel Forest near the Rangitata River. It specialises in running many of the more remote rivers around New Zealand and largely with a focus on multi day trips.

3. I am a Sports Fitness and Recreation Industry Training Organisation (SFRITO)-registered assessor for raft guiding, white water rescue, river risk management and weather reading. I helped develop the New Zealand Raft Guide Licensing System. I am currently one of the four registered Senior Assessor Mentors in New Zealand that is put forward by the Industry, and I am responsible for sign off of assessors within the Industry. I have been involved with accident investigation for Maritime New Zealand and also in the role of an expert witness for the defence in the Maritime New Zealand prosecution where a river guide lost his life on the Rangitikei River.

4. During 1987-1989, I organised and led motorbike expeditions through Africa and Central America. I worked for Rangitata Rafts as a guide, head guide and base manager from 1990 to 1993. I became a company director/manager of Rangitata Rafts from 1994-99. During the 1990-2000 New Zealand Winters, I worked on numerous rivers overseas including the Payette and American (USA), Coruh River (Turkey), White Nile (Uganda), Sun Kosi and Trisuli Rivers (Nepal) and the Tully and Barren (Australia). In 2001 I was the captain of New Zealand's six man raft team which competed in the world championship competitions in Japan and Zambia. I have worked as a water safety person on events in New Zealand and off-shore and trained river guides in Borneo and Uganda.

5. I have rafted on numerous New Zealand Rivers in the North and South Islands, including many inaccessible and challenging runs on the South Island's West Coast, which are accessed by helicopter. In addition to my passion for white water rafting, I am a competent and enthusiastic kayaker and have kayaked most of the rivers I have rafted on.

6. 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, 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 MY EVIDENCE

7. My evidence will cover the following points:

   a. Rafting values in the Canterbury region;

   b. Commercial and private rafting;

   c. Water flow and other requirements to retain the rafting values; and

   d. Future requirements.

RAFTING ON RIVERS IN CANTERBURY

8. The rivers that rafting companies primarily use around the Canterbury area are:

   a. the Rangitata River (three sections);

   b. the Rakaia River ;

   c. the Waimakariri River;

   d. the Waiau River;

   e. the Hurunui River; and

f. the Clarence River.

RANGITATA RIVER

9. The three sections run (or used) on the Rangitata River include:

   a. one above the gorge, a flat braided grade 1-2 reach for fishing and float trips;

   b. the Rangitata Gorge, white water trips of grade 4/5; and

   c. the lower river (Klondyke section), a grade 2 reach suitable for school parties and such providing fun water floats.

10. Commercial operators on the river include Hidden Valleys, Rangitata Rafts, Peel Forest Outdoor Pursuits Centre and Alps to Ocean (who use a range of kayaks). Often the river is used by Polytechnic Institutes for training students in the outdoors.

11. The upper braided section of the Rangitata River is a great section of river to introduce youngsters to moving water. For example, based from the moving rafts they can experience swimming in moving water. They also can try their hand at guiding. The river also suits group guiding, perfect for sports teams to perhaps compete amongst other rafts. Hidden Valleys has hosted a number of Australian rules teams on this section.

12. The section is also perfect for fishermen, both national and international. In order to gain access to some prime trout and salmon fishing rafts are used as down river transport. This is because there are only a handful of access points along the way via the road. The scenery is stunning in this section of the Upper Rangitata catchment sitting well with Tourism New Zealand's clean green imaging. Often rafting guests are amazed at the purity of the water and the fact they can scoop water up from the side of the raft and drink it!

13. The Rangitata Gorge is seen as one of the best one day raft trips in the country by both locals and international visitors. One of the reasons for this is the consistent water flow and the range of flows available during the season. In contrast many rivers around the globe lose their grading steadily throughout the season as they rely on snowmelt, and become less challenging at low flows. The Rangitata at low flows can become more challenging.

14. In a busy season Rangitata Rafts may raft up to 5000 people down the river over summer.

15. The Gorge is exceptionally well suited to commercial rafting in the fact that it starts off with a stunning back drop of the Two Thumb Mountain range. On the upper flat water section, it is perfect for training and briefing people on how to raft safely as a team. Then the rapids build in grading as you enter the gorge section. The first of the rapids are grade 2 and then they build on up through the grades to 4 to 4+. The other great thing is that after the most intense rapids down through the Pinch the river eases back to grade 2 and 3. People really enjoy this part of the trip taking the opportunity to jump from rocks and try swimming in the deep current.

16. The lower Rangitata section has some fun grade water with waves that break over the boats. The section has been used for adventure races as part of a multi-sport course. It is best suited to giving our youth a rafting experience and teaching them how to enjoy rivers and most importantly to enjoy them safely. Peel Forest Outdoor Pursuits Centre does a great job of this hosting school groups throughout the summer.

RAKAIA RIVER

17. The Rakia River is mostly run down through the Gorge, a section of grade 2 water. It is a great short duration float trip. Hidden Valleys offer this trip often with a jet boat trip up the river and a float back

down, starting and finishing at the Gorge Bridge. The trip is typically suited to family groups, fishing parties, groups of older aged people looking to have a river experience, and also sports teams combining the river trip with other activities.

18. Commercial companies operating on the river include but are not limited to Rafting and Moore, Hidden Valleys, Rangitata Rafts, Alps to Ocean, and Full On (using inflatable kayaks).

19. The Rakaia, because it is so close to Christchurch, is popular for its half day float trips and like other rivers in Canterbury is used on many occasions for team building and team type events. Rafting the Rakaia is also a popular alternative for skiers in the winter months because of bad weather conditions on the mountain.

WAIMAKARIRI RIVER

20. The Waimakariri River at low to medium flows is a grade 2 float. Run as either a big day out, an overnight journey, part of a greater journey like or as the Coast to Coast. It is also a good introductory multi-day raft trip and ideal for teaching and training people. Hidden Valleys is getting a good number of enquiries from groups that are keen to design and complete their own versions of the Coast to Coast.

21. Travelling by raft has enabled many to experience the beauty of the main Gorge. The Gorge is a very rewarding experience for people travelling from one side of the Island to the other. The river travel is a major portion of the distance. Once again participants marvel at the clarity of the water and being able to drink from the river, and swim and fish along the way.

HURUNUI RIVER

22. This river has been a Canterbury classic for rafting for many years. At different stages commercial rafting has been investigated and trialled

with varying levels of success; in part it had been a struggle competing against the well-established Rangitata River day trip out of Christchurch.

23. As with the other Canterbury Rivers there are different sections that can be rafted. The big draw card is that you pretty much have road access all the way along the length of the upper sections, meaning you can tailor your trip to suit abilities, confidence and the time available. It is well used by the Christchurch Polytechnic and Institute of Technology outdoor education course and it has everything re features and varying flows to help teach the full skills package of a modern day raft guide. Rafting and Moore and Hidden Valleys are two commercial companies that run the river and there are a number of private raft owners that run the river.

24. The Upper Hurunui River from the Sisters Gorge through the Maori Gully section and on through the Hawarden gorge to the Balmoral plains represents one of the most readily accessible Canterbury high country river runs. Along its length at medium flows it has a number of moderate grade rapids that make it an ideal trip for families, school groups and people who do not want to experience the higher grades of the Rangitata gorge.

25. As the North branch is lake fed the river maintains a base flow that is still an enjoyable day out and the South Branch introduces natural runoff and flow variability to the main stem. It is this variability of flow that results in the Hurunui being such a great resource to the local white water community.

26. As well as day trips and even the occasional overnight trip the Hurunui is ideally suited as a training river. The NZ Rivers Association has used it as a venue for its Annual River Rescue courses. As well Christchurch Polytechnic has used it for a training river for the students enrolled in the Outdoor programmes.

27. The Upper reaches above Maori Gully contain a consistent flow and the water at mostly grade 2 is ideal for teaching students the basics of rafting or conditioning guests for the more technical rapids found in the Maori Gully section. Maori Gully is a well-known and well respected section of river where the rapids are grade 3, and which provide great technical features so the raft must be manoeuvred in and around rocks, holes and waves and giving participants a real sense of achievement. Beyond Maori Gully one can carry on and do a multi-day trip down through the Hawarden Gap, or even on down through the Lowry Peaks Gorge to the bridge on SH1. The river is very accessible to Christchurch and again suits all age groups and interest groups.

28. The scenery, quality of white water, variability of flows, moderate grade rapids, clarity of water, use of the resource and proximity to Christchurch make the Hurunui a river of national significance. It was recently recommended for a Water Conservation Order.

WAIAU RIVER

29. The Waiau River has everything you could ask for in a river for rafting and for that matter any river pursuit. Like many of the rivers in Canterbury there are many sections. Each section can serve a different purpose, or be tailored for certain groups or different purposes.

30. The Waiau River below Hanmer has been used for many years offering float trips for a couple of hours. This section is perfect for a wide range of people. The section is scenic and has good features that are suitable for rafts to play on the water, such as in and out of eddies and using small surf waves and small hydraulics. The river is deep enough to have people swimming beside the rafts. It is used commercially by Thrill Seekers based out of Hanmer, Hidden Valleys, Rafting and Moore and once again by the Polytechnics for raft training.

31. The Upper Waiau River above the Hope confluence has only really been rafted in recent times but is destined to become one of the best multi-day rafting trips in New Zealand. It is remote, technical, scenic, challenging in places, and has great camping, making for a wonderful experience for people to enjoy a very complete river journey.

32. To access the head waters, where you can start rafting, options include hiking in over Ada Pass via the St James walk way or driving in over Mailing Pass. Flying in by helicopter from Hanmer is a stunning way to get to the river.

33. The clarity of the water is always commented on, as is the swimming and fishing along the way. En route out to the Hope River there is a unique section of river called the Narrows, where the river passes through solid rock walls and is only a few metres wide. Below here the river stays in a gorge with rock walls of around 100 metres high.

34. I have talked to a number of people who have rafted some of the more well-known technical rivers used for multi-day trips around New Zealand and the Upper Waiau River has rated above them all.

THE CLARENCE RIVER

35. This river is considered a classic river journey of nearly 200km on mostly grade 2-3 white water and fast becoming a must do river trip for New Zealanders, comparable to cycling the Otago Rail Trail. The river trip passes through a number of stunning and outstandingly scenic gorges. River trips like this, world-wide, are few and far between. This is a world class trip.

36. Commercial operators using this river include Clarence River Rafting, Hidden Valleys and NOLS (the American based National Outdoor Leadership School who operate in various countries throughout the world and who run month long canoe trips on the river). Many

polytechnics use this river as an end of year course journey, or as an intense raft/river training trip. Most trips start over the hills behind Hanmer at the confluence of the Acheron, although, during high water in the early season, trips can start from the source at Lake Tennyson. Trips take out often at the beach and river mouth North of Kaikoura.

37. The Clarence is a classic float trip. I think it is important here to differentiate between what we in the industry call white water trips and float trips. In the US this is clearly understood; in New Zealand this is not so. White water trips are generally considered to be grade 3 and above and float trips are at the lower grades. The Clarence River falls into the latter category.

38. The great thing about float trips, and the Clarence River in particular, is that people of all ages, interests and fitness levels can experience the great places that our free flowing rivers can take us too. On these trips we often host retired people from all walks of life. Many of our trips provide inspiration to outdoors people who now cannot shoulder a heavy pack for days, but with river travel they can continue to enjoy the back country areas and all they have to offer. As operators we love to see families taking part in this trip. There is nothing like seeing our New Zealand youth playing around camp, cooking on open fires, and swimming in our rivers; it is about as good as it gets sharing a quality experience together as a family. Many a time we operators have heard the comments and received the feedback that this has been their best family holiday ever!

USE AND VALUE OF OTHER RIVERS IN THE CANTERBURY REGION

39. A number of other rivers offer higher than normal flow or flood raft runs that are valued and a number of these other runs that have been run in Canterbury either by conventional rafts or catarafts or pack rafts are listed in Appendix I. These include the Ashley, Orari and Opihi Gorges. Although they can only be run when there is sufficient water in them they offer great opportunities to get out on the water and visit ‘new’ less run reaches of river. In different flow levels these rivers

always feel like ‘new’ or different rivers and as we do not run them so often it is great for keeping up the skill levels and motivation by running less well known water. Two of the rivers, the Ashley and the Opihi offer tight technical rafting water requiring finesse and team work to negotiate tight steep rapids without getting hung up. It is exciting getting out on the water in a ‘new’ flow, this is what New Zealand outdoors people are about.

40. Modern day self-bailing conventional rafts mean we can run continuous rapid sections and can relatively safely handle higher flows in smaller rivers. Previously, with fixed floor rafts this was not so safe or possible, as once rafts filled up with large volumes of water from waves crashing over them they would be unmanageable and more likely to pin or wrap and get hung up on rocks and would take a long time to bail out (or extricate from a wrap or pin).

41. Other less conventional rafts, such as lightweight single person pack rafts, are being used more and more by people exploring smaller back country and remote rivers.

FLOW AND OTHER REQUIREMENTS NEEDED TO RETAIN VALUES

42. It is extremely important to have natural flows and good water quality retained in our rivers so that they remain useful and viable for us to use. Commercial operators are marketing many trips throughout Canterbury and New Zealand to the New Zealand public and international guests. Operators are encouraging youngsters into the outdoors and teaching them the skills and values of being there. New Zealand rafting operators are show casing the outstanding scenery, magical places and natural habitats of New Zealand.

43. If we lose natural flows we may end up with not enough flow to operate or flows where the trip quality and water quality are compromised to the point where guests have a negative experience.

This can have a serious flow on effect on our businesses, seeing less and less people venturing out into the outdoors.

44. As rafting operators we rely on natural flows to assist the rafts with our downstream progress. Without good flows in our rivers and combined with afternoon head winds progress can become too arduous and physically demanding for guests. On multi-day trips such as the Clarence River, which is run over four nights and five days, these considerations are at the forefront for us when running these river journeys.

45. Another crucial point is that whilst on these river journeys we use the rivers to supply drinking water from the main river and the side streams. Why should we keep our rivers natural and healthy? Another perhaps better question is why shouldn't we given our knowledge of what has happened elsewhere throughout the rest of the world. Clean clear water is needed for health and for wellbeing, for our youth to use for recreation and most importantly for the health of our ecosystems and the balance of nature that supports us all. Without them we will not survive.

46. The flow requirements of rafters on the rivers we use in Canterbury are generally the same as those presented and discussed by Dr Rankin in his evidence. As mentioned in section 7.35 and Table 4 of his evidence, Dr Rankin discussed flows required for rafting on the Rangitata River from Klondyke down to Lynn Stream or Peel Forest as determined by Mr Wayne Keenan, Director of the Peel Forest Outdoor Pursuits Centre. Dr Rankin concluded the flows required for rafting in this reach were the same as those that would best suit advanced white water kayakers.

47. As a general rule the flows we need as rafters would typically be those that more experienced kayakers would prefer, and these typically are on the higher end of the flow range rather than lower end of the flow range. The primary reason for this is that in higher flows the white

water hydraulic features found on rivers are normally larger and so give a more exciting ride in a raft. In addition, rock features on which rafts might get caught on in lower flows might be covered, or more room might be available to get around them in higher flows.

48. For example, the flows preferred for paddling the lower Ashley Gorge are discussed by Dr Rankin. He mentions that whereas a minimum flow of 10 cumecs or even less might be sufficient and preferred by some paddlers first running the Gorge, more experienced kayakers would likely prefer flows above 30 cumecs. The same would apply to rafters, namely we would often prefer flows above 30 cumecs, because at such flows the hydraulics in the river are larger, there is more room to move around the river and rocks that would catch our rafts at lower flows are more covered at the higher flows. The same would apply for the run on the lower Clarence River from Glen Alton Bridge down to the sea, where like experienced kayakers, many rafters would prefer flows >100cumecs, to provide 'big water' and a roller coaster ride in the run. There are exceptions to this general rule, for example in rivers where flows are concentrated in the river bed (such as in Maori Gully in the Upper Hurunui and in parts of the Upper Waiau) a variety of flows are best to meet our needs, but the rule does provide some general guidance on meeting our requirements.

49. Thus, the flows needed to retain our resources are similar to those outlined by Dr Rankin in Table 1 of his evidence with the caveats above.

50. Like kayakers and river buggers, we need bed features in rivers that provide valued white water features under certain flows left intact. If impoundment or removal of river bed features, or re-engineering of river bed courses or features without retaining the white water forming features is performed, it will result in a loss of or destruction of valuable stretches of runnable river. We also need bank and flood protection works to be carefully constructed so that they, or the detritus that can result from them if they collapse or are eroded, do not become lethal to river users. This can occur, for example, where

willow trees are used along river banks and fall into the river creating dangerous hazards or where structures such as ‘sputniks’ (concrete block cubes with railway iron protruding from them often linked together by wire rope) are released from collapsed banks and make their way into the river flow. Such features pose an extreme pin hazard that can wrap and destroy a raft or drown someone pinned on them.

CONCLUDING COMMENTS

51. Many of the rivers of Canterbury have unique features, starting with the back drops of the South Island’s main divide mountains. Often the rivers start out as, or relatively quickly become, wide and braided or have braided sections, and then pass down through narrow gorges before opening out into yet more braids onto the Canterbury plains. In many corners of the world free flowing rivers are being destroyed and New Zealand is fast becoming the only place world-wide that has natural flows and free flowing rivers. People are already coming to New Zealand for our rivers and mountains that are at this time still relatively untouched. They are only going to become more and more ‘touched’ as time goes on unless we recognise and protect their intrinsic values.

52. We often introduce the general public to our New Zealand Rivers and often find that they have no idea of the importance and the possibilities the rivers provide. We change people’s lives on these river trips and often their direction and purpose. We will be the poorer as a nation without our rivers in their free flowing and healthy state. They are a reflection of our health as a community.

53. We ask that you commissioners incorporate into the proposed Canterbury Land and Water Plan strong rules. These rules must recognise and protect the extreme value of many of our outstanding waterways and other waterways in Canterbury used by the community for recreation, as required by the Canterbury Water Management Strategy. What remains for our community to have by way of river

recreation opportunities if you put in place rules that do not protect some of our precious resources for posterity and only put in place rules that permit the widespread use of water for the benefit of farmers or hydroelectricity development? We will never be able to feed or power the world but we can do this for our country and keep our best freshwater resources intact for our children and future generations to enjoy for recreation and other purposes such as tourism.

Grant South

4 February 2013

REFERENCE

1. Statement of Evidence of Douglas Alexander Rankin on behalf of Whitewater NZ (Inc), Evidence to be presented to the Hearing Commissioners on the Proposed Canterbury Land and Water Regional Plan, April 2013.

Appendix I: Use of Canterbury Rivers and Waterways by Rafters

PURPOSE OF SCHEDULE

To identify those waterways that are used by rafters, and to indicate their use by rafters. Reference to paddling in this schedule refers to rafters.

NOTE: This data is unsuitable for use in a multi variate analysis (MVA) or Multi Criteria Analysis (MCA) study.

There are no high or low scores, simply descriptions.

Parameter	Definition/Type	Rating Scale
Grade	**River grade according to the International River Grading System**	1 = easy; 2 = intermediate difficulty; 3 = moderately difficult; 4 = very difficult; 5 = extremely difficult; these scales refer to low to high river flows but not flood flow regimes where grades may be higher. An explanation of the scale is provided at the bottom of the Table.
Use	**Frequency rafters use the resource**	1 = rarely, if ever; 2 = very occasionally paddled; 3 = occasionally paddled; 4 = often paddled; 5 = regularly paddled/popular
User Ability	**Number of classes of paddlers of different ability that use the resource**	For rafting we shall split the resource into commercial use where even novice paddlers are rafted on upper grade water (denoted by prefix C) and recreational use, where we shall rate it 1-5. 1 = Beginner, 2 = Novice,3 = Intermediate, 4 = Advanced and 5 = Expert.
Activity spectrum	**Number of activities that the resource is used for**	1 to 5; determined by adding up the number of activity types that the resource supports and is/has been used for selected from the following five groups: day trips, training and instruction, raft supported kayak trips, school trips and overnight multi day trips. For example, if a stretch of river is used for day trips, school trips and training and instruction then the activity spectrum score would be 3. If a run was only used for day trips then the score would be 1. If a run was used for all five

		activities then the score is 5.
Accessibility	**Access to the river**	1 = walking or helicopter; 2 = 4WD only; 3 = unsealed; 4 = secondary roads; 5 = urban or SH. Note access only applies to the ability to get to the get in and get out and does note include access to roads during the trip, which is absent in many runs.
Availability	**Availability dictated by suitable flows**	1 = rarely available (<10%); 2 = occasionally available (10-20%); 3 = often available (20-60%); 4 = frequently available (60-95%); 5 = always available (100%)
Flow requirements	**Flows in cumecs**	Flows in cumecs (cubic metres per second); no flow requirements are given as they are a complex function of user ability, user activity (activity spectrum), river grade and geomorphology, and user preference. The New Zealand Rivers Association can provide guidance in this area when requested for specific rivers.
Disclaimer:	*There are no overall scores. This schedule simply identifies those waterways of interest to kayakers, and gives an indication of parameters associated with that current use. There will be rivers not mentioned here that have been and are kayaked and the inclusion or absence of any rivers in this schedule does not construe any particular value or lack thereof.*	

Index #	Zone	River Catchment	Tributary	Section	Grade	Use	User Ability	Activity Spectrum	Accessibility	Availability	Flow requirements (cumecs)	Modifications	Threats
1	Kaikoura	Clarence	Clarence	Lake Tennyson to Bridge	3	2	2	2	3	2	see rating scale		
2	Kaikoura			Bridge to Jack's	2	1	2	2	3	1	see rating scale		Cattle in

				Pass									river
3	Kaikoura			Jack's Pass to Acheron	2	2	2	3	3	2	see rating scale		Cattle in river
4	Kaikoura			Acheron to Glen Alton	3	4	C3	3	3	4	see rating scale		
5	Kaikoura			Glen Alton to SH1	3	4	C3	3	3	4	see rating scale	Irrigation, protection works	gravel removal,
6	Kaikoura		Acheron	Five Mile Stream to conf	4	2	4	3	3	3	see rating scale	Locked gate	
7	Hurunui-Waiau	Waiau	Waiau	Maling Pass to Edwards conf	4	3	C3	3	2	4	see rating scale	Cycleway	
8	Hurunui-Waiau			Edwards to Hope conf	4	3	C4	3	2	4	see rating scale		Access via Glenhope barred
9	Hurunui-Waiau			Hope to Hanmer conf	2	2	C2	4	5	5	see rating scale		
10	Hurunui-Waiau			Hanmer to Leslie Hills	3	4	C2	5	5	5	see rating scale		

11	Hurunui-Waiau			Leslie Hills to Waiau	2	1	3	2	4	4	see rating scale		hydro, irrigation
12	Hurunui-Waiau			Waiau to SH1	2	1	3	2	4	4	see rating scale		
13	Hurunui-Waiau			SH1 to sea	2	1	2	2	4	4	see rating scale		
14	Hurunui-Waiau		Lewis		3	1	3	3	5	3	see rating scale		
15	Hurunui-Waiau		Boyle, upper		4	2	3	2	1	3	see rating scale		4WD road access barred
16	Hurunui-Waiau		Boyle	Engineer's camp down	3	3	C3	3	5	5	see rating scale		
18	Hurunui-Waiau		Hope	Boyle conf to Waiau conf	2	1	C1	2	5	5	see rating scale		
21	Hurunui-Waiau	Hurunui	North branch	N Branch upper	2	1	2	1	1	3	see rating scale		
Index #	**Zone**	**River Catchment**	**Tributary**	**Section**	**Grade**	**Use**	**User Ability**	**Activity Spectrum**	**Accessibility**	**Availability**	**Flow requirements (cumecs)**	**Modifications**	**Threats**
22	Hurunui-Waiau	Hurunui		Lake Sumner	1	1	2	2	2	5	see rating scale		dam, paid 4WD access

23	Hurunui-Waiau		North branch	Lake to Sisters St	2	2	2	2	2	5	see rating scale		irrigation, paid 4 WD access
24	Hurunui-Waiau		North branch	Sisters St to JollieBrook	2	3	C3	5	3	5	see rating scale		irrigation
25	Hurunui-Waiau		North branch	JB to S Branch	2	5	C3	5	3	5	see rating scale		irrigation
26	Hurunui-Waiau			S Branch conf to Seaward	2	5	C4	5	3	5	see rating scale		irrigation
27	Hurunui-Waiau			Seaward to Surveyors St	3	5	C4	5	3	5	see rating scale		irrigation
28	Hurunui-Waiau			Surveyors to Mandamus	3	3	C4	4	3	5	see rating scale		irrigation
29	Hurunui-Waiau			Mandamus to SH7	2	2	2	3	3	4	see rating scale		irrigation
30	Hurunui-Waiau			SH7 to SH1	2	2	2	3	3	4	see rating scale		irrigation
31	Hurunui-Waiau			SH1 to sea	2	2	2	3	3	4	see rating scale		irrigation
32	Hurunui-Waiau		South branch	S Branch upper	3	2	3	3	2	3	see rating scale		dam, paid 4 WD access
33	Hurunui-Waiau		South branch	Nth Esk conf to	3	2	4	3	2	2	see rating scale		paid 4 WD

				bridge									access
45	Waimakariri	Ashley		Lees valley	2	1	2	1	3	1	see rating scale	land development	dam
46	Waimakariri			Upper gorge	2	3	3	2	3	2	see rating scale	land development	dam
47	Waimakariri			lower gorge	3	4	4	3	3	2	see rating scale	land development	dam and tunnel
48	Waimakariri			Picnic area to Rangiora	2	2	2	2	4	2	see rating scale	low flow	
49	Waimakariri			Rangiora to SH1	2	2	2	2	4	2	see rating scale	low flow	
50	Waimakariri			SH1 to sea	1	3	2	2	4	2	see rating scale	low flow	
51	Waimakariri		Okuku	gorge	4	3	3	3	3	3	see rating scale	fences across bed	irrigation
Index #	**Zone**	**River Catchment**	**Tributary**	**Section**	**Grade**	**Use**	**User Ability**	**Activity Spectrum**	**Accessibility**	**Availability**	**Flow requirements (cumecs)**	**Modifications**	**Threats**
53	Central Canterbury Alpine Rivers	Waimakariri		upper in APNP	2	1	2	2	1	3	see rating scale		

54	Central Canterbury Alpine Rivers			Whites Br to Waimak Gorge Br	2	5	C3	5	4	5	see rating scale		
55	Central Canterbury Alpine Rivers			Gorge Br to SH1	2	4	2	2	4	5	see rating scale	diminished flow	CPW
56	Central Canterbury Alpine Rivers			SH1 to sea	1	3	2	2	5	5	see rating scale	river works	
57	Central Canterbury Alpine Rivers		Bealey	upper	4	2	2	2	5	3	see rating scale		
58	Central Canterbury Alpine Rivers			Arthurs's Pass to Klondyke	2	2	2	2	5	4	see rating scale		
61	Central Canterbury Alpine Rivers		Broken River		3	2	2	3	3	2	see rating scale		
63	Central Canterbury Alpine Rivers	Rakaia		above Lake Stream	2	2	2	2	1	5	see rating scale		
64	Central Canterbury Alpine Rivers			Lake Stream through Gorge	2	3	C2	3	3	5	see rating scale	diminished flows	TrustPower scheme
65	Central Canterbury Alpine Rivers			Gorge to SH1	2	1	2	2	4	5	see rating scale	diminished flows	TrustPower scheme

66	Central Canterbury Alpine Rivers			SH1 to sea	1	1	2	2	4	5	see rating scale	diminished flows	TrustPower scheme
70	Ashburton	Ashburton	conf to SH1		2	2	2	1	4	1	see rating scale	diminished flows	
71	Ashburton		SH1 to sea		1	2	2	1	4	1	see rating scale	diminished flows	
72	Ashburton		N Ashburton		3	2	2	3	1	1	see rating scale	diminished flows	
73	Ashburton		S Ashburton	upper	4	2	2	3	2	1	see rating scale		
74	Ashburton			Blowing Point	2	2	2	2	3	4?	see rating scale	diminished flows	
75	Ashburton			to conf N branch	2	2	2	2	4	1	see rating scale	diminished flows	

Index #	Zone	River Catchment	Tributary	Section	Grade	Use	User Ability	Activity Spectrum	Accessibility	Availability	Flow requirements	Modifications	Threats
77	Central Canterbury Alpine Rivers	Rangitata		upper catchment	2	2	C1	2	1	4	see rating scale		

78	Central Canterbury Alpine Rivers			Gorge	4	4	C5	3	3	5	see rating scale		
79	Central Canterbury Alpine Rivers			Klondyke to Peel Forest	3	4	C3	3	3	5	see rating scale	diminished flows	
80	Central Canterbury Alpine Rivers			Peel Forest to Arundel Bridge	2	3	2	3	3	5	see rating scale	diminished flows	
81	Central Canterbury Alpine Rivers			Arundel Bridge to SH1	1	2	2	2	3	5	see rating scale	diminished flows	
82	Central Canterbury Alpine Rivers			SH1 to sea	1	2	2	2	3	5	see rating scale	diminished flows	
83	Orari-Opihi-Pareora	Orari		gorge	3	3	4	3	3	2	see rating scale		
84	Orari-Opihi-Pareora			braided section	1	2	2	2	4	2	see rating scale	diminished flows	
85	Orari-Opihi-Pareora	Opihi		gorge	3	3	3	3	3	2	see rating scale	willows	irrigation
86	Orari-Opihi-Pareora			braided sections	1	2	2	2	3	3	see rating scale	diminished flows	

87	Upper Waitaki	Waitaki	Tekapo WW Course		3	3	4	2	4	1	see rating scale	releases	
88	Upper Waitaki		Tekapo River		3	3	4	3	4	1	see rating scale	dry bed for 60 years	
89	Upper Waitaki		Pukaki		4	3	4	3	4	1	see rating scale	releases into dry bed	
90	Upper Waitaki		Tasman River		3	2	C3	3	4	1	see rating scale	dry bed and lake	
91	Upper Waitaki		Ahuriri	above SH8	3	2	3	3	3	3	see rating scale		
92	Upper Waitaki		Waitaki lower		2	2	2	2	4	5	see rating scale	channelised and choked	
93	Upper Waitaki		Hooker		4	3	3	3	3	5	see rating scale		

International River Grading System (also referred to as Class, especially inside the USA).	
Grade 1	Not difficult. Current is slow to moderate. Course of river obvious. Beginner's water.
Grade 2	Moderately difficult. Faster current. Way down is clear but simple obstructions present. Small stoppers and small drops. Requires basic whitewater skills.
Grade 3	Difficult. Course of river is passable and recognisable from the kayak/canoe. Waves can be high and irregular; boulders and obstructions can be numerous. Requires sound

	whitewater skills.
Grade 4	Very difficult. Route not always clear. Most paddlers inspect from the bank. Rapids continuous, waves can be big and numerous. Very fast current. Water can be heavy. Stoppers are powerful. Paddler required to maneuver continually. Requires an advanced to expert level of skill.
Grade 5	Extremely difficult. Raging, roiling water with pounding waves. Inspection essential because of serious dangers. Water has large drops, narrow passages, complex boulder fields and difficult holes. Difficulties are continuous. Requires absolute expertise.
Grade 6	The extreme. So difficult that navigation is virtually impossible. Consequences of a mistake are extremely serious. Experts avoid water if possible.
(derived from J Evans and Robert R Anderson, *Kayaking: The New Whitewater Sport for Everybody.* The Stephen Greene Press, Brattleboro, Vermont, 1975)	