

**IN THE MATTER** MacKenzie District Proposed Plan  
Change 19

**AND** The Submission of Jet Boating New  
Zealand Incorporated

**AND** The Submission of the Department of  
Conservation

## **STATEMENT OF EVIDENCE OF JAMES NORMAN JOLLY**

### **1. QUALIFICATIONS AND EXPERIENCE**

- 1.1 My full name is James Norman Jolly. I am Director and Prinipal Ecologist of Jolly Consulting Limited. I hold the qualifications of M.Sc (Hons equiv.) in Zoology from the University of Canterbury. I have been a professional ecologist for the past forty years and have specialised in avifauna for twenty six years. I was a scientist in the Forest Research Institute from 1975 – 1979 working on possum control. From 1979 – 1989 I was a scientist in the NZ Wildlife Service/Department of Conservation working on kiwi. Since 1989 I have worked as a wildlife consultant, writer, and lecturer, as well as having a significant input into district plans and other resource management issues.
- 1.2 During the last seventeen years I have either organised or assisted with surveys of riverbed birds in the Wairau River (Marlborough), Upper and Lower Waimakariri River, Ashburton River, both the Upper and Lower Rangitata, the Orari and Opihi Rivers. I have assessed the factors affecting birds on both the Wairau, Rangitata and Ashburton Rivers and presented evidence to both the Special Tribunal and the Environment Court hearings of the Rangitata Water Conservation Order and the proposed Wairau Hydro-electric Scheme. I also submitted evidence on riverbed birds on behalf of Rangitata Diversion Race Management Ltd for their resource consent application to take water from the Rangitata and Ashburton Rivers. I gave a paper to the Australasian Ornithological Congress on the birds of the Rangitata River and gave a presentation to Environment Canterbury's Orari Catchment Management Strategy on birds of the Orari river and its review of gravel extraction resource consent conditions (birds).

1.3 I confirm that I have read and am familiar with the “Code of Conduct for Expert Witnesses” in the Environment Court Practice Note (31 March 2005). The evidence I have presented relies on my expertise, on the scientific literature, on my experience using jet boats on bird surveys, and on jet boating frequency in the Upper Waitaki Basin as supplied by the Jet Boating New Zealand. I agree to comply with the Code.

## **2. SCOPE OF MY EVIDENCE**

2.1 My statement of evidence will cover the following topics:

2.2 (a) The reasons for the need for my evidence with regard to a submission by the Department of Conservation (DOC).

2.3 (b) The avifauna environment of the Upper Waitaki basin

2.4 (c) An assessment of the threats to birds in the Upper Waitaki Basin

2.5 (d) My comments on the submission of the Department of Conservation

2.6 (e) My recommendations as to the Plan conditions for jet boating on the Cass, Dobson, Godley, and Tasman Rivers.

## **3. MACKENZIE DISTRICT COUNCIL PLAN CHANGE 19 AND DEPARTMENT OF CONSERVATION SUBMISSION – JET BOATING**

3.1 Section 7A.1.1 provides for: “Permitted Activities on or within Lakes Benmore, Tekapo and Ruataniwha and all rivers other than the Opihi and Opuha” including (Section 7A.1.1.b) “Non-commercial motorised and non-motorised activities”.

3.2 In submission 169, The Department of Conservation requests that “Rule 7A.1 amend by adding the Godley, Tasman, Cass, and Dobson to rivers which are not controlled through this rule” and further that (7A.1.1.b) “amend by requiring non-commercial motorised and non-motorised activities to only have access to a water body via a formed access or boat ramp”.

3.3 In effect this would make motorised activities on these rivers non-complying:

3.4 “In Section 7A.4 Opihi and Opuha Rivers:

- Non-commercial non-motorised activities – permitted
- Commercial non-motorised is Discretionary
- **Motorised is Non-complying”**

3.5 Jet Boating NZ supports the MacKenzie District Council’s Proposed Plan Change 19 original provisions and opposes Department of Conservation’s submission on the grounds that there is no evidence provided that indicates that jet boating has any more than a less than minor effect on riverbed birds.

#### **4. AVIFAUNA OF THE UPPER WAITAKI BASIN**

4.1 The Upper Waitaki Basin, including the Tasman, Godley, Cass, and to a less extent the Dobson Rivers, is nationally important in terms of both abundance and diversity of riverbed nesting birds (Maloney et al. 1997).

4.2 Significant Species present:

a. South Island pied oystercatcher. Conservation Status: At Risk, in decline. NZ endemic

Present on all four rivers nesting in pairs, usually on open river shingle. Can feed in the water with their long bill as opposed to the smaller waders. Widespread nesting in the South island. Migrate to the northern North Island in winter.

b. Pied Stilt. Conservation status: Not threatened.

Present on all four rivers also nesting in pairs or loose agregations often near pools and swamp as well as on open riverbeds. Can also feed in the water with their long legs and bills. Nest throughout New Zealand and in Australia and South Western Pacific. New Zealand residents migrate to the coast or northern North island in winter. Hybridise with black stilts.

c. Black stilt (kaki). Critically endangered NZ endemic.

Currently nest only in the Upper Waitaki Basin most or all birds from captive rearing. Probably present in all four rivers. Only approximately 80 remaining pure breeds in the wild plus hybrids with pied stilts. Natural nesting sites usually in more stable sidestreams, pools and swamps but also on banks in riverbeds (Pierce, 2013 ). Can feed in water as with pied stilts but appear to be adapted to feeding in silty water with a

sweeping bill action unlike pied stilts. Feed on insects and especially their larvae, other invertebrates and small fish.

d. Banded dotterel. Conservation status: Threatened

Abundant in all four rivers a small wader that nests in open riverbed throughout New Zealand. Nest in pairs on open riverbed. Feed at edges of main and side channels on insects. Migrate after breeding to northern New Zealand and Australia.

e. Wrybill. Conservation status: Threatened NZ endemic

The high country rivers of Canterbury and Otago are the only nesting sites of wrybill. Nest in pairs on open riverbed shingle. Relatively abundant in all four rivers. A small wader that feed on insects at the edges of streams and by reaching under stones with their curved bills. Migrate to northern New Zealand in the non-breeding season.

f. Southern black-backed gull. Conservation status: An unprotected common native species

Abundant throughout New Zealand and the temperate Southern Hemisphere. Breed in large colonies on riverbeds including the rivers of the Upper Waitaki. A large, mobile, omnivore that is a significant predator at the nests of other riverbed birds.

g. Black-billed gull. Critically endangered, NZ endemic.

Probably present in at least low numbers in all four rivers but nest in much higher numbers in lowland rivers throughout the South island and in some parts of the North Island. Can nest on open riverbeds, nearby farmland, and coastal dunes, and in dense colonies. Tend to move to the coast after breeding. Feed primarily on insects and small fish by dipping into water or catching insects aerially and by following the plough.

h. Black-fronted tern. Nationally endangered NZ endemic

Present in significant numbers, and probably nesting, in all four rivers. Nest in loose colonies in open riverbed often close to streams. Breed throughout South Island braided rivers and on a few North island rivers. Feed primarily on insects and small fish by dipping or plunging into water or catching insects aerially, and by following the plough.

i. Caspian tern. Protected naturally uncommon species

This is a large tern with an almost world-wide distribution that is present in New Zealand primarily on high-country rivers and coastal estuaries. Probably present in low

numbers in all four rivers. Nest in open riverbeds, sometimes in association with black-backed gulls, and on coastal dunes and shingle banks. Feed mostly on small fish and some invertebrates.

## **5. THREATS TO RIVERBED BIRDS OF THE UPPER WAITAKI BASIN**

### **5.1 Predation**

There can be no doubt that predation has been, and probably still is, the most important impact on riverbed birds in the Upper Waitaki Basin as it is elsewhere (e.g. Keedwell et al, 2002; Pierce, 1986; Rebergen et al, 1998). Some species are more vulnerable than others and that is probably indicated by their level of threatened status. The endangered black stilts, black-fronted terns and black-billed gulls are likely to be the most vulnerable to predation. There has been mammal predator control on the Tasman River for many years and that appears to be reflected in improved nesting success for most species (e.g. Cleland, 2007). However, it appears to be most difficult to improve nesting success of these endangered species across the whole Upper Waitaki Basin. The Government's recent announcement of \$4.5 million for the first three years of a new predator control programme for the Upper Waitaki is an indication of how serious the problem is.

In addition to predation by mammals, black-backed gulls are also a significant predator of nests as demonstrated in the Lower Waitaki (Schlesselman et al. 2018) and Lower Rangitata (Jolly, pers. obs).

### **5.2 Habitat depletion**

Encroachment of farmland and grazing animals and farm vehicles on to riverbeds can result in either loss of suitable habitat or crushing of nests. Much of this loss can be through encroachment on to the braid plain where streams may not occur currently but where braids change after floods (see for example Environment Canterbury's "Bridge Project" and an apparent intrusion of a pivot irrigator on to the braid plain of the Ahuriri River).

The spread of woody shrub weeds (tree lupin, gorse, etc) and Russel lupin is a major problem in braided rivers and reduces the available area of suitable nesting habitat and, in addition, provides shelter for mammalian predators.

### **5.3 Recreation**

Any careless activity on braided rivers can result in loss of nests or disturbance of nesting sites or killing of birds. Four wheel driving can be a major problem but campaigns by 4WD clubs have, I understand, greatly reduced this problem. Dogs are clearly a serious threat, and I have witnessed fishers release their dogs to run free in black-fronted tern colonies.

I will address whether or not jet boating is a risk to riverbed birds in the next section

#### 5.4 Floods and Flood control

Nests, whole colonies and chicks are often lost under natural flood conditions. Any river works during the nesting season can threaten nesting and alter the habitat to the detriment of birds unless carefully managed.

#### 5.5 Hybridisation of black stilts with pied stilts

This a unique but significant problem for black stilts that greatly reduces the number and breeding potential of pure black stilts.

### **6. THE POTENTIAL FOR JET BOATING TO HAVE ADVERSE EFFECTS ON THE TASMAN, GODLEY, CASS, AND DOBSON RIVERS**

6.1 The submission by the Department of Conservation gives no evidence for adverse effects of jet boating on riverbed birds or any indication of what those adverse effects might be. It simply states that: "the rivers are home to significant indigenous biodiversity and the use of these rivers by motorised craft could lead to adverse effects on these species". In the absence of detail, I can only surmise that DOC considers disturbance or noise disturbance and possibly the perceived wash of a passing boat are the adverse effects. It is also difficult to see what has changed for the birds from DOC's agreement since 2006 to jet boating as a permitted activity subject to some conditions (e.g. restrictions in spring).

6.2 I and others who survey birds for Environment Canterbury's gravel extraction consents have experience of frequent and much closer noisy activity by trucks and excavation machinery than that from a jet boat on the water. We find that nesting riverbed birds are remarkably tolerant of noise and machinery activity. Trucks can pass frequently within 10 metres of a nest without the incubating bird lifting off the nest. The Ashley-

Rakahuri Rivercare Group is currently monitoring birds nesting about 25 metres from gravel extraction activities and finding no apparent disturbance to the birds.

- 6.3 In my experience the wash from a passing jet boat, particularly the smaller private boats that are the activity in question, is minimal and would have little effect at the edge of the river where the birds feed. Hudson (2004) in a study of the effects of jet boats on aquatic birds in a high boat use area (including larger commercial boats) found that wakes were insufficient to wash away nests or birds feeding at the water's edge. He also commented that birds did not appear to be greatly disturbed by frequent boat passages near to their nesting, roosting and feeding areas.
- 6.4 I do think that jet boaters, and any fishers or hunters that they drop off, should take particular care at launching and landing sites. This would be a matter of being aware of the possibility of nests or chicks on the bank and avoiding them.
- 6.5 I have used jet boats for bird surveys on both the Upper Waimakariri River and the Wairau River, Marlborough. The boats were used all day for several days and surveys were repeated for three and two years respectively. The boats dropped surveyors off and picked them up repeatedly throughout the day. We did not experience any disturbance to the birds which included all the species listed above except black stilt. Black stilts tend to nest further away from main channels (Pierce, 2013) than other species and would be at less risk.
- 6.6 Hughey's (2011) findings in a qualitative risk assessment indicated that:
- “1. Jet boating is a low risk to river birds
  2. There are multiple risk reduction options all of which will be effective in reducing any effects from jet boating (e.g. no launching or stopping near nesting colonies of threatened species; keeping to main channels).
- 6.7 Jet Boating NZ have given me estimates of jet boat use of the Godley and Dobson Rivers. It appears to be low usage “in the order of 100 – 300 boat visits per year”. Most boat visits would be from late December to end of April. Nesting and fledging are mostly finished by the end of January. In my opinion, the probability of flightless chicks of riverbed birds feeding in the water at the time of very infrequent passages by boats is minimal.

- 6.8 It is clear to me that all five of the adverse effects on riverbed birds that I have listed, other than jet boating, are significant and need management.

## 7. RECOMMENDATIONS

- 7.1 In my opinion, jet boating on the Tasman, Godley, Dobson and Cass Rivers could continue as a permitted activity as proposed in Plan Change 19 with less than minor effects on riverbed birds.
- 7.2 I suggest that developing awareness for all river users is more appropriate than declaring the activity as non-compliant. Eyes on the river are invaluable.
- 7.3 I suggest that both Jet Boating NZ and DOC make information available to boat users indicating that there are important bird nesting areas on these rivers, including endangered species, and that drivers should keep to the middle of main channels where possible, and take care to avoid nests or chicks at launching and landing points.

## 8. REFERENCES

Cleland, S., E. Wahlberg, S. Stevenson, and R. Maloney. 2007. Predator Control Project Report for Kaki Recovery Programme: A:Tasman Valley B: Ahuriri Valley. Kaki Project Internal Report No. 07/04. Department of Conservation, Twizel Office.

Heather, B.D., Robertson, H.A. 1996 (revised 2000). The field guide to the birds of New Zealand. 440pp. Viking, Auckland.

Hudson, H. 2004. A review of the environmental effects of jet boating in rivers. In R. Greenaway, Gerard, R., and Hughey, K. Jet boating on Canterbury Rivers. 2015. Environment Canterbury Report No. R15/153. 109pp.

Hughey, K. 2011. A comparative risk assessment of jet boating in relation to native birds on Canterbury braided rivers. In R. Greenaway, Gerard, R., and Hughey, K. Jet boating on Canterbury Rivers. 2015. Environment Canterbury Report No. R15/153. 109pp.

Keedwell, R.J., Sanders, M.D., Alley, M., and Twentyman, C. (2002). Causes of mortality of black-fronted terns *Sterna albobriata* on the Ohau River, South Island, New Zealand. Pacific Conservation Biology 8 (3):170-176.



Maloney, R.F., Rebergen, A.L., Nilsson, R.J, and N.J. Wells. 1997. Bird density and diversity in braided river beds in the Upper Waitaki Basin, South Island, New Zealand. *Notornis* 44: 219-232.

Pierce, R.J. 2013. Black stilt. In Miskelly, C.M. (ed.) *New Zealand Birds On Line*.  
[www. nzbirdsonline.org.nz](http://www.nzbirdsonline.org.nz)

Pierce, R.J. 1986. Differences in susceptibility to predation during nesting between pied and black stilts (*Himantopus* spp.). *Auk* 103: 273-80.

Rebergen, A., R. Keedwell, H. Moller, and R. Maloney. 1998. Breeding success and predation at nests of banded dotterel (*Charadrius bicinctus*) on braided riverbeds in the central South Island, New Zealand. *New Zealand Journal of Ecology* 22 (1): 33-41.

Schlesselmann, A-K.V., C.F.J. O'Donnell, J.M. Monks, and B.C. Robertson. 2018. Clearing islands as refugia for black-fronted terns (*Chlidonias albostrigatus*). *New Zealand Journal of Ecology* 42 (2): 137 – 148.