

**BEFORE A HEARING CONVENED BY THE OTAGO REGIONAL COUNCIL
TO CONSIDER PROPOSED PLAN CHANGE 5A – LINDIS CATCHMENT
INTEGRATED MANAGEMENT**

STATEMENT OF EVIDENCE OF PAUL VAN KLINK

14 MARCH 2016

Introduction

1. My name is Paul van Klink. I am a Fish and Game Officer employed by the Otago Fish and Game Council.
2. I hold a Bachelor of Science degree (majoring in conservation and ecology) from Lincoln University. Prior to my employment with the Otago Fish and Game Council I was employed by, and contracted to the Department of Conservation for approximately 25 years. My field of expertise over most of this period is avifauna conservation and I have worked on several threatened bird species programmes within New Zealand.
3. I first became familiar with the Lindis River since being employed as a Fish and Game Officer with the Otago Fish and Game Council based in Cromwell. I have completed braided river bird surveys on the Lower Lindis River between October 2015 and January 2016.
4. I confirm I have read and agree to apply with the Code of Conduct of Expert Witnesses (2014). This evidence is within my area of expertise, except where I state where I am relying on what I have been told 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.

Summary of Evidence

5. I have been asked to present the findings from two years of braided river bird surveys conducted in the Lower Lindis River.
6. In summary, my evidence will address:
 - a. The survey area and timing of survey
 - b. The braided river bird species that are present in the Lower Lindis River and their conservation status
 - c. The effect of river flow on braided river bird presence in the Lindis River

Executive Summary

7. Braided rivers including the lower Lindis River are under-represented within the Upper Clutha catchment and are significant in terms of habitat and food sources for

many endemic bird species. Although most of the Lindis River is not classified as a braided river the lower 1.5km delta area is braided when the river has sufficient flow.

8. The presence of all of the bird species recorded declined with the reduction of water flow in the Lindis River. The dewatering of entire reaches of the lower Lindis River has a far bigger impact than a river that has reduced flows and is still flowing. The survey data shows quite conclusively that the lower Lindis River would support more braided river birdlife if the water flow was continuous through the summer months.

Survey area and timing of survey



9. The bird surveys were conducted between the months of October and January, starting in October 2014 and finishing in January 2016. Surveys were conducted on average every two weeks with seven surveys being completed in 2014/15 and eight in 2015/16. All surveys concentrated on the Lindis River from the State Highway 8 Bridge downstream to the confluence with the Clutha River/Mata-Au. The survey reach, at approximately 1.5 kilometers in length, was divided into four sections of approximately 375 metres in length and designated A to D (Figure 1). This was done for ease of counting.



The braided river bird species that are present in the Lower Lindis River and their conservation status

10. A total of eight braided river bird or waterfowl species were observed during the surveys (Table 1). Four of the bird species recorded during the surveys (black-billed gull, South Island pied oyster catcher, pied stilt and black-fronted tern) are listed as threatened or at risk in the New Zealand Threat Classification System (Robertson et. al. 2013).
11. Pied stilts and black-fronted tern were the most numerous species observed throughout the survey. They were mainly observed in sections B and C. Two pied stilt nests were located in 2014/15 surveys, however only one pair of pied stilts showed signs of breeding during the 2015/16 surveys.
12. Black-fronted terns were observed flying up and down the survey reach, hawking above the river and on occasion roosting on the river margins. Their numbers decreased markedly when water flow diminished from mid December onwards.
13. The braided river bird surveys have revealed that pied stilts have breed or attempted to breed within the survey area. An anecdotal observation in 2013 shows that black fronted terns were also likely to have be breeding in the area around an island in section B. These birds were in the air and were dive bombing people within 200 metres of them (Niall Watson, pers. comm.).

Table 1. Eight braided river bird and waterfowl species observed during the survey period and their national and conservation status (Robertson et. al. 2013).

<p>Pied stilt (<i>Himantopus himantopus</i>) Order: <i>Charadriiformes</i> Family: <i>Recurvirostridae</i> New Zealand status: Native Conservation status: At Risk - Declining</p>	
<p>Black-fronted tern (<i>Chlidonias albostratus</i>) Order: <i>Charadriiformes</i> Family: <i>Sternidae</i> New Zealand status: Endemic Conservation status: Nationally Endangered</p>	

Black-billed gull (*Larus bulleri*)Order: *Charadriiformes*Family: *Laridae*

New Zealand status: Endemic

Conservation status: Nationally Critical

**South Island pied oystercatcher (*Haematopus finschi*)**Order: *Charadriiformes*Family: *Haematopodidae*

New Zealand status: Endemic

Conservation status: At Risk -Declining

**White-faced heron (*Egretta novaehollandiae*)**Order: *Ciconiiformes*Family: *Ardeidae*

New Zealand status: Native

Conservation status: Not Threatened

**Mallard (*Anas platyrhynchos*)**Order: *Anseriformes*Family: *Anatidae*

New Zealand status: Introduced

Conservation status: Introduced and Naturalised

**Grey teal (*Anas gracilis*)**Order: *Anseriformes*Family: *Anatidae*

New Zealand status: Native

Conservation status: Not Threatened

**Paradise shelduck (*Tadorna variegata*)**Order: *Anseriformes*Family: *Anatidae*

New Zealand status: Endemic

Conservation status: Not Threatened



The effect of river flow on braided river bird presence in the Lindis River

14. River flow data was obtained from the Otago Regional Council's Ardgour Road flow recorder which is situated approximately 2.5 km upstream from the survey area (Section D) at SH8 (Figure 2).
15. Flow data shows that at the start of the bird surveys in both 2014 and 2015 the river was flowing at around 4 cumecs but by mid December the flow had reduced to around 0.5 – 1 cumec. By late December the Lindis flow became disconnected and was only just flowing within the survey area (Figure 3). The decline of braided river bird abundance coincided with the decline in water flows with the last surveys in 2015 and 2016 showing no water in the survey area and no birds being observed (Table 2). It is worth noting that the river flows within the survey area are less than those recorded at the Ardgour Road flow recorder due to surface water being lost to ground over this 2.5 km stretch.

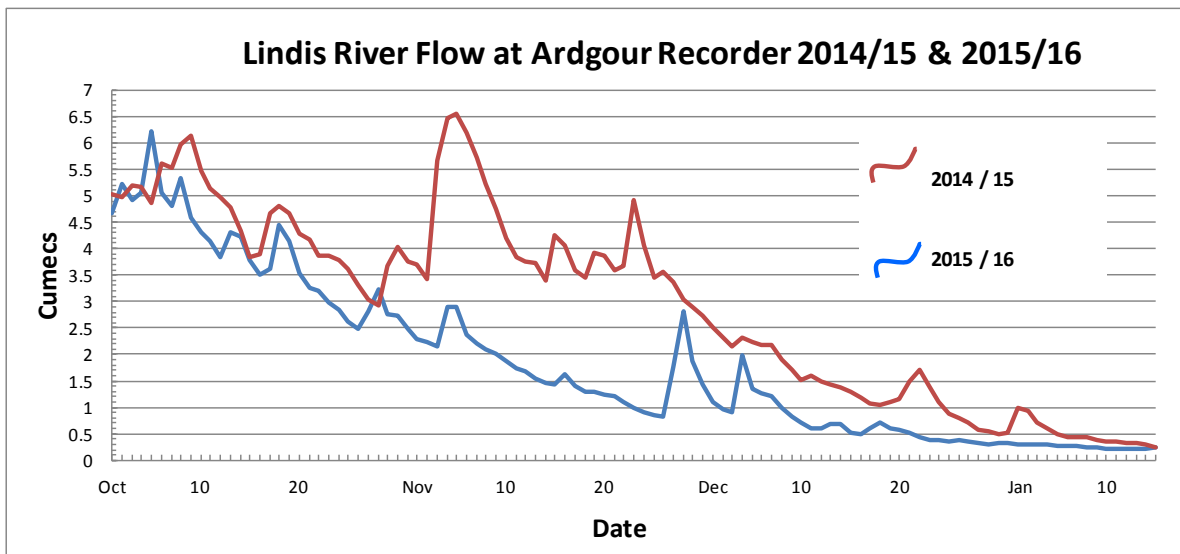


Figure 2. Flows recorded at the Otago Regional Council Ardgour flow recorder from 1 October to 15 January for both 2014/15 and 2015/16.

Table 2. Bird count data from the Lower Lindis River, showing species observed by month October – January, 2014/2015 and 2015/2016.

Species	Numbers observed 23 & 30 October 2014	Numbers observed 16 & 30 October 2015	Comments
Pied stilt	72	24	2 surveys completed in both 2014 and 2015
Black-fronted tern	35	25	
Black-billed gull	3	3	
South Island pied oystercatcher	3	4	
White-faced heron	1	0	
Mallard	12	10	
Paradise shelduck	8	0	
Sub-totals per month	114	66	
	Numbers observed 25 November 2014	Numbers observed 13 & 25 November 2015	Comments
Pied stilt	7	23	1 survey completed in 2014, 2 surveys completed 2015
Black-fronted tern	2	33	
South Island pied oystercatcher	0	2	
White-faced heron	0	1	
Mallard	0	6	
Paradise shelduck	2	0	
Grey teal	0	2	
Sub-totals per month	11	67	
	Numbers observed 1, 11 & 16 December	Numbers observed 11, 23 & 28 December	Comments

	2014	2015	
Pied stilt	20	28	3 surveys completed in both 2014 and 2015
Black-fronted tern	4	20	
Black-billed gull	3	0	
South Island pied oystercatcher	7	5	
White-faced heron	2	2	
Mallard	2	0	
Sub-totals per month	38	55	
	Numbers observed 26 January 2015	Numbers observed 8 January 2016	Comments
	No birds recorded	No birds recorded	1 survey completed in both 2015 and 2016
Total count	163	188	



Figure 3. 28 December 2015, flows in the Lindis River are reduced to a trickle and are disconnected. Ten days later there was no water and no braided river birds present within the survey area.

Conclusion

16. For braided river birds, vulnerability to predators is a major concern. As flows decrease, predator pressure increases. The likely outcome is for birds to either be potentially killed by predators, or, more likely to be displaced, potentially leaving behind a nest, which is also vulnerable.
17. Braided river habitat is important to many endemic and threatened bird species. The lower Lindis riverine habitat is under-represented in Central Otago. Braided river bird numbers declined to a point where there was a complete cessation of birdlife activity. This coincided with the loss of flow and subsequent loss of riverine habitat in both early January 2015 and 2016.

References

Robertson, H. A.; Dowding, J. E.; Elliot, G. P.; Hitchmough, R. A.; Miskelly, C. M.; O'Donnell, C. F. J.; Powlesland, R. G.; Sagar, P. M.; Scofield, R. P.; Taylor, G. A. 2013. Conservation status of New Zealand birds, 2012. New Zealand Threat Classification Series 4. *Department of Conservation, Wellington*

