

BEFORE THE CANTERBURY REGIONAL COUNCIL

IN THE MATTER OF The Resource Management Act
1991 (the Act)

AND

IN THE MATTER OF a submission by the Department of
Conservation on proposed Land and
Water Regional Plan, Plan Change 4
Omnibus provisions

Evidence of Andrew Donald Grant
for the Department of Conservation

Dated 29 January 2016

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INTRODUCTION

1. My full name is Andrew Donald Grant
2. I am employed as a Technical Advisor (Ecosystems) with the Department of Conservation Ecosystems and Species Unit.
3. I have a BSc in Zoology from Otago University (1978) and a post graduate Diploma in Wildlife Management from Otago University (1980)
4. I have worked with wildlife and conservation for 35 years, initially with the NZ Wildlife Service Research Section then with the Department of Conservation (DOC). My experience includes: managing a waterfowl research field station; all aspects of endangered species management from recovery planning through to running field programmes (including direct involvement with at least 10 critically endangered bird species and their recovery programmes); extensive field experience in wildlife management, monitoring and survey in a wide variety of locations from remote islands to large mainland habitats; producing recovery plans, operational plans, strategies and other similar planning documents for species and ecosystem management; coordinating and managing conservancy science planning and implementation, and national development of best practice, audit and performance measurement.
5. I have read the Environment Court's Code of Conduct for Expert Witnesses, and I agree to comply with it. My qualifications as an expert are set out above. I confirm that the issues addressed in this brief of evidence are within my area of expertise. I have not omitted to consider material facts known to me that might alter or detract from the opinions expressed.

SCOPE OF EVIDENCE

7. My evidence relates to DOC's submission on Rule 5.148 and will deal with the following:
 - A. Bird habitat in braided river beds
 - B. The effects on ground nesting birds of activities in riverbeds during the breeding season.
8. Braided rivers such as those found on the eastern South Island are rare internationally. The largest proportion (64%) of braided rivers is located in Canterbury, (Appendix 1). Their combination of physical features provide habitat for a range bird species. Many of these

species are braided river specialists and depend on braided rivers for breeding and feeding. In addition many of these species are classified as threatened in some way, (Appendix 2). Native and endemic birds which nest on the riverbeds can be roughly categorised in the following manner:

- i. Small inconspicuous birds which nest in pair territories with inconspicuous nests, eggs, and chicks – banded dotterels, wrybills and black fronted dotterels
 - ii. More conspicuous birds which nest in pair territories with inconspicuous nests, eggs and chicks – pied stilts, black stilts, spur-winged plovers, South Island pied oystercatcher, variable oystercatcher.
 - iii. Conspicuous colony nesters with inconspicuous nests, eggs and chicks – black-fronted tern, black-billed gulls, Caspian terns and southern black-backed gulls
9. Some of these specialist species are very conspicuous as they breed in colonies and often feed in flocks. Others are small and very inconspicuous as their plumage provides camouflage amongst the rocks and their behaviour is often furtive and secretive.
 10. Both the conspicuous and inconspicuous species nest on the ground in rudimentary, very well camouflaged nests. Eggs and chicks are also well camouflaged and are extremely difficult to see. This strategy of having inconspicuous nests and eggs and chicks has evolved to make these very difficult to find by aerial predators and scavengers.
 11. Nests and eggs of braided river bird species are difficult for humans to locate. Even experienced field practitioners have considerable difficulties finding nests and chicks. The photographs in Appendix 3 illustrate some typical nests. Not being aware of the birds, their nests and chicks can, and frequently does, result in a fatal outcome through: trampling; crushing underfoot or under vehicle tires; keeping the adult off a nest too long resulting in eggs and chicks dying from exposure; keeping adults away from nests and giving predators and scavengers an opportunity to take the eggs or chicks; nest abandonment; chicks 'loosing' their parents, and; in the case of gravel extraction having the nest or hiding chick 'shoveled' into the trailer with the gravel.
 10. Given the difficulty in locating cryptic birds and their nests and the nests of obvious birds such as gulls and terns, as well as the rarity of some of these species, my opinion is that Rule 5.148 (10) does not provide enough protection for the nests of these birds. It is virtually impossible for anyone who is not aware of, or looking for nests, to realise that a banded

dotterel or wrybill is in the area and to know where its nest is. It will be more obvious that a tern or black-billed gull is in the area but it is extremely difficult to know where their nests are. Even in a colony situation the location of nests may be over a wide area and not necessarily indicated by where the birds are wheeling and most active after disturbance.

11. As it is so difficult to locate nests and birds even when within a few meters of a bird or nest, in my opinion it is unrealistic to expect that people extracting gravel will be able to avoid disturbing nesting birds by identifying the presence of nests or young from up to 100m away.
12. The breeding season of braided river birds commences as early as August and ends as late as March. During this time the smaller braided river birds such as banded dotterels and wrybill are vulnerable as they are very secretive so as not to draw attention to themselves or their nests. When disturbed they move away quietly and very stealthily. Once chicks hatch they leave the nest immediately and follow the parents around to feed. If disturbed the parents deploy various tactics to draw the person/predator away from the chick, such as feigning injury. This means the focus is on the conspicuous adult and not the hiding chicks which could be quite a distance from the adult. Incubation is typically around 25-30 days and chicks fledge after 5-6 weeks (are able to fly). The exact period of nesting is not fixed and can be quite variable due to habitat conditions such as flooding delaying nesting, or flooding destroying nests and birds re-nesting once conditions become suitable again. However, seasonal factors dictate that breeding will not commence before August and all breeding will be completed by March so in the months either side of this time there is little danger of disturbance or threat to these birds.
13. Given the difficulty of finding birds and eggs which are so well adapted to be hidden in a stony riverbed, the most effective way to avoid disturbing them is to avoid activities in braided river beds during the breeding season. That could be achieved by amending condition 10 of rule 5.1.48 to be time based rather than observation based. In other words, instead of relying on individuals to determine whether or not sensitive bird species are around before excavating gravel, the rule could be amended to provide that gravel extraction is only permitted from March to July inclusive.
14. In addition to disturbance, gravel extraction can change the nature of the habitat and as a result leave it in a condition less suitable for braided river birds. The process of extracting gravel can result in significant holes and channels where gravel has been removed. It is important to ensure the riverbed has been left in a state which does not compromise its

habitat characteristics. This can be addressed simply by ensuring the riverbed is left in a reasonably flat and debris free condition after the gravel has been extracted. The goal should be that after gravel is extracted the riverbed should be reasonably flat (not have extensive channels and holes) and have clean gravel.

SUMMARY

- 14.** When undertaking activities in braided river beds, it is extremely difficult to avoid disturbing breeding birds and their nests, because they are inconspicuous and very difficult to find. The best way to avoid disturbing breeding birds as a result of gravel extraction is to carry out that activity outside the breeding season.

APPENDICES

Appendix 1.

Appendix 1. Extent of terrestrial habitats on braided river habitats in New Zealand (From Department of Conservation Draft Rare Ecosystems Database). Note these data are indicative only because mapping the precise extent of braided rivers depends on precision of base data and spatial definition of habitat types . (O'Donnell et al 2015)

Region	Active riverbed (ha)	Recent floodplain (ha)	Total area (ha)	%
Canterbury	103103	61067	164170	63.9
Nelson-Marlborough	16614	4265	20879	8.1
North Island	5511	152	5663	2.2
Otago	13181	4327	17508	6.8
Southland	4926	5097	10023	3.9
West Coast	28127	10736	38863	15.1
Total	171462	85644	257106	100.0

Appendix 2 Bird Species recorded on Canterbury braided rivers

Species	Scientific Name	Current Threat Status	Status
Black-billed gull	<i>Larus bulleri</i>	Nationally Critical	endemic
Black-fronted tern	<i>Chlidonias albostratus</i>	Nationally Endangered	endemic
Caspian Tern	<i>Hydroprogne caspia</i>	Nationally Vulnerable	native
Red-billed gull	<i>Larus novaehollandiae scopulinus</i>	Nationally Vulnerable	endemic
Southern black-backed gull	<i>Larus dominicanus dominicanus</i>	Not threatened	endemic
White-fronted tern	<i>Sterna striata striata</i>	Declining	native
White-winged black tern	<i>Chlidonias leucopterus</i>	Migrant	migrant
Black swan	<i>Cygnus atratus</i>	Not threatened	native
Canada goose	<i>Branta canadensis</i>	Introduced	introduced
Cape Barren goose	<i>Cereopsis novaehollandiae</i>	Introduced	introduced
Feral goose	<i>Anser domesticus</i>	Not threatened	introduced
Grey duck	<i>Anas superciliosa superciliosa</i>	Nationally Critical	native
Grey teal	<i>Anas gracilis</i>	Not threatened	native
Mallard duck	<i>Anas platyrhynchos</i>	Introduced	introduced
NZ shoveler	<i>Anas rhynchotis variegata</i>	Not threatened	native
NZ scaup	<i>Aythya novaeseelandiae</i>	Not threatened	endemic
Paradise shelduck	<i>Tadorna variegata</i>	Not threatened	endemic
Black stilt	<i>Himantopus novaeseelandiae</i>	Nationally Critical	endemic
Cattle egret	<i>Bubulcus ibis coromandus</i>	Migrant	migrant
Common sandpiper	<i>Tringa hypoleucos</i>	Vagrant	vagrant
Pied stilt	<i>Himantopus himantopus leucocephalus</i>	Declining	native
SI pied oystercatcher	<i>Haematopus finschi</i>	Declining	native
Spur-winged plover	<i>Vanellus miles novaehollandiae</i>	Not threatened	native
Variable oystercatcher	<i>Haematopus unicolor</i>	Recovering	endemic
White-faced heron	<i>Egretta novaehollandiae</i>	Not threatened	native
Banded dotterel	<i>Charadrius bicinctus bicinctus</i>	Nationally Vulnerable	endemic
Black-fronted Dotterel	<i>Euseyornis melanops</i>	coloniser	native
Turnstone	<i>Arenaria interpres</i>	Migrant	migrant
Wrybill	<i>Anarhynchus frontalis</i>	Nationally Vulnerable	endemic
Black shag	<i>Phalacrocorax carbo novaehollandiae</i>	Naturally uncommon	native
Little shag	<i>Phalacrocorax melanoleucos brevirostris</i>	Not threatened	native
Pied shag	<i>Phalacrocorax varius varius</i>	Nationally Vulnerable	native
Scaup	<i>Aythya novaeseelandiae</i>	Not threatened	endemic
Little black shag	<i>Phalacrocorax sulcirostris</i>	Naturally uncommon	vagrant
NZ kingfisher	<i>Todiramphus sanctus vagans</i>	Not threatened	migrant
Swamp harrier	<i>Circus approximans</i>	Not threatened	native
NZ pipit	<i>Anthus novaeseelandiae</i>	Declining	endemic
Welcome swallow	<i>Hirundo neoxena neoxena</i>	Not threatened	native
Australasian coot	<i>Fulica atra australis</i>	coloniser	native
Bittern	<i>Botaurus poiciloptilus</i>	Nationally Endangered	native
Marsh crake	<i>Porzana pusilla affinis</i>	Relic	native
Pukeko	<i>Porphyrio melanotus melanotus</i>	Not threatened	native
Spotless crake	<i>Porzana tabuensis tabuensis</i>	Relic	native

Endemic – breeds only in New Zealand

Native – breeds in New Zealand and elsewhere but is self introduced and naturalised

Introduced – introduced by human agency and naturalised

Migrant – species which visit New Zealand every year as part of their life history

Straggler – an irregular visitor

Vagrant – transitory unexpected species

Appendix 3 Photographs to demonstrate cryptic nature of braided river birds and nests



Wrybill with eggs (Photo: Dave Murray)



Banded dotterel nest with three eggs (just right of largest rock)



Wrybill nest with two eggs



Wrybill chick



Black-fronted tern nest



Black-billed gull nest with egg and chick



Banded dotterel chick