

## Hurunui Biodiversity Trust Braided Riverbed Birds Event - Summary of Presentations by Prof Ken Hughey and Zipporah Ploeg (ECan)

### Culverden Rugby Club, and Mackenzie and Faulkner properties

30<sup>th</sup> November 2022

#### Introduction

Braided rivers support an assemblage of birds, fish, reptiles, invertebrates, plants, lichens, mosses, and fungi, adapted to a dynamic physical environment, harsh exposed conditions, and variation in temperature and rainfall which are found nowhere else. Several bird species live only in New Zealand.

Braided riverbed birds nest on the ground, which means eggs and chicks are very vulnerable to predation by introduced mammals and other impacts (e.g., off road vehicles). This is a critical problem which will lead to slow decline and probably to the eventual extinction of some of these species if it is not addressed.

The problem is made worse by spread of woody weeds which harbour predators and restrict nest sites, reduced flows associated with water abstraction, predation by southern black-backed gulls and harrier hawks which have reached unnaturally high numbers (due the availability of much greater food resources on arms, at rubbish dumps, etc), and direct disturbance through gravel extraction, trampling by stock, and vehicle access.

#### Birds of the Waiau Uwha

Species	Population Size	Age of Oldest Banded Bird	Threat Status (2021)	Threat Status (revised 2022)
Black-fronted tern	1,000-5,000	18.9 years	Threatened - Nationally Vulnerable	Threatened – Declining
Banded dotterel	5,000-20,000	20+	Threatened – Nationally Vulnerable	At Risk – Declining
Wrybill	5,000-5,500	20.8	Threatened - Nationally Vulnerable	Threatened - Nationally Increasing
Black-billed gull	70,000+	43.5	Threatened – Nationally Critical	At Risk – Declining

From the above table it is clearly not good, but amongst the not good is some good news. The threat status of some species is improving, e.g., the wrybill, and this is due to improved habitat management in the Mackenzie Basin on some rivers, e.g., the Ashley.

*How did we get in this situation?*

(1) The problem is not new; Edgar Stead's 1932 'The Life Histories of NZ Birds', details weed and mammalian predator issues on the Rakaia in the very early 1900s.

(2) It was also predictable, because we were, and still are to some extent, a 'Daniel Boone' economy. Dams were built (Waitaki and Clutha), rivers diverted and dried up (Pukaki), and large quantities of water abstracted (Rangitata, Opihi, Hurunui, others) with little to no thought of nature conservation implications.

### **Environment Canterbury Projects (2016-2022)**

Over the past five years Environment Canterbury has undertaken conservation projects to improve breeding outcomes from braided riverbed birds in Amuri Basin.

Two 'refuge' islands were formed on the Hurunui and Waiua Uwha rivers, along with targeted predator control (trapping) and weed removal.

At the Black-fronted Tern colony which was visited at this event, the package of interventions resulted in a fledging rate of 30% (vs 15% on the nearby 'control' island).

The project cost was \$250,000 per year, which also incorporated a monitoring component so that we can learn from this work.

#### *What has been learned*

We know that islands help exclude predators, but it is important to make islands high enough to elevate nesting areas above small to medium sized floods.

Trapping has not always been effective in preventing predation. Control of cats and mustelids may relate to rat infestations which have been a major problem in some years. Trapping is difficult to get right, and we are still learning about what might be the most cost-effective management for braided rivers.

The role of voluntary efforts on adjacent or nearby farms is not well understood but is probably a significant opportunity. A large amount of voluntary cat control takes place on adjacent farmland (20 cats per year reported on the Mackenzie property we visited). Rabbits (which are a production pest) sustain populations of cats and mustelids at times of year when birds are not nesting.

### **Developing a Way Forward - Opportunities for Action**

The key message for the day was:

*We must focus on the desired outcome to achieve the most value from Community resources – If the outcome we want is to increase bird populations we need to look at the most cost-effective things we can do to achieve that.*

There are good prospects for ongoing interventions in the Waiua Uwha River which has a large flow and therefore more chance of water being maintained around nesting islands.

We now know that some islands in some years deliver high productivity without predator control – perhaps we could achieve more through simple interventions like vegetation control, or deep ripping gravel islands (to help maintain a pattern of dynamic river braids) and reduce weeds such as willows and lupins.

The way we manage vegetation on riverbanks may also need to be considered. Since they were fully retired from grazing these areas have become dominated by rank grasses which will provide cover for rodents and other predators.

While transitioning from exotic vegetation to native vegetation is a high priority action in lowland riparian areas, and a great deal can be done with committed effort, it is costly and requires a significant level of control of the environment over an extended period.