Management and monitoring of shorebirds in the Ashley-Rakahuri River during the 2011/12 season

Ashley/Rakahuri Rivercare Group, Inc.

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Prepared for:
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The Ashley/Rakahuri Rivercare Group was formed in 1999. Its main goal is to protect key shorebird populations in the lower reaches of the Ashley/Rakahuri River, between the Okuku river junction and the SH1 road bridge. In 2005, the Group became an incorporated society. This is the 8th annual report from the Group.

Major funding over the past year has come from the second year ($6,000) of a 2-year grant from the World Wildlife (New Zealand) Habitat Fund. Smaller sums have come from donations, a sausage sizzle, plus a share of royalties from sales of the children's book 'Ria the reckless wrybill'.

The main activities undertaken by the Group in 2011-12 were:

- Surveys of bird species in the lower and middle river in November
- Control of mammalian predators in areas with concentrations of nesting birds
- Monitoring of bird breeding success
- Maintenance of riverbed signs to alert public of bird breeding areas
- Advocacy and liaison with schools, special interest groups and the general public
- Improving public awareness via a website, media articles and printed material
- Liaison with Waimakariri Zone Committee, the Ashley-Rakahuri Regional Park and Canterbury water use decision-makers.

Activities were focussed on management to assist the breeding of three threatened species in the river, namely the wrybill, black-billed gull and black-fronted tern.

Bird surveys. The annual bird survey was carried out by 16 members on Nov 27. Bird numbers continue to reflect the improvement of recent years. The count of black-billed gull was the highest on record, and numbers of black-fronted terns and banded dotterels and South Island pied oystercatcher the second highest. Numbers of wrybills were the second highest (just one less than the previous year) if a banded pair known to be on the river but not observed during the survey, is added. For only the second year, white-fronted terns were observed, all in association with a breeding colony. Only two black-backed gulls were counted – the lowest number recorded. Two other surveys on the river were carried out in 2011. One was in the middle section between the Ashley gorge and the Okuku river junction, and the other was in the upper section within Lees valley. These two surveys are reported in Appendix 1.

Predator control. In total, 39 potential predators were trapped in 5,048 trap-nights. Predators trapped consisted of 34 hedgehogs, 2 cats, 1 stoat, 1 weasel and 1 ferret. Both trap-nights and predator numbers were higher than the previous season (3,732 and 32 respectively), with hedgehogs increasing the most (from 23 to 34). Predator control is carried out almost year round, and remains the most time-consuming activity that the Group undertakes. In comparison with other trapping operations on braided rivers, predator numbers and catches appear low.

Monitoring of breeding birds. Monitoring of the three key threatened species revealed a successful season. Eight wrybill pairs were known to nest in the study area, the most ever since regular monitoring began in 2005. They produced six chicks for a productivity of 0.76 chicks per pair – just below the average of 0.83 after 8 years. A productivity rate of 0.75 is considered necessary to maintain a wrybill population. An estimated 70 pairs of black-fronted terns bred on the river, the second highest since 2006 (81 pairs), and the productivity of 0.43 chicks fledged per pair was the third highest recorded. For only the third time since 2000, a good-sized colony of black-billed gulls was present on the river. At the time of the annual survey on Nov 27, 425 were counted. By the season's end, approximately 100 pairs had fledged 71 chicks, for a productivity of 0.71 chicks per pair. For the first time, white-fronted terns nested

on the river. In the Nov survey, 77 were counted, and by the season's end 50 pairs had fledged 14 chicks, for a productivity of 0.28 chicks per pair. The low productivity could be due to the species having to obtain food from the coast, 7 km away. Both species of tern and the black-billed gull appeared to benefit from nesting in close proximity to each other, enjoying an enhanced ability to deter predators. Numbers of other species, such as pied oystercatcher, banded dotterel and pied stilt were also well above average, and with the exception of the oystercatcher, they had a successful breeding season.

The moist season, with regular rainfall, meant that the river maintained a reasonable flow all season, whereas in previous seasons, the river has largely dried up below the railway bridge by soon after Christmas. The consistent water flow probably contributed to breeding success, not only by creating barriers for predators, but also by maintaining water-associated food sources.

The bird survey and regular monitoring indicate that it is probably safe to say that overall, bird populations on the managed lower portion of the river are holding their own.

Awareness / education. During the year, the public and visiting groups were made aware of the Group's activities in the riverbed by creation of a website (www.ashleyrivercare.org.nz); four articles in local newspapers; an article in ECan's Ashley Regional Park newsletter and representation at a Regional Park meeting; a letter to Northern Outlook relative to wrybill becoming Rangiora's symbol; talks to Teuchorium Group, North Loburn school (plus field visit to riverbed), Fernside school and by DOC to many schools using the Group's Powerpoint presentation; presentation to, and representation at, meetings of the Waimakariri Zone Committee, plus a written submission to the Zone Committee's Implementation Plan; a book signing of Jane Buxton's children's book 'Ria the reckless wrybill' in Paper Plus, Rangiora; and placing customised Corflute signs in managed riverbed areas between Sept and Feb. In addition, a regular email update was sent to all Group members during the breeding season. The Group also actively participated in the running of BRaid Inc, a group which aims to improve the ecological welfare of all braided rivers in Canterbury.

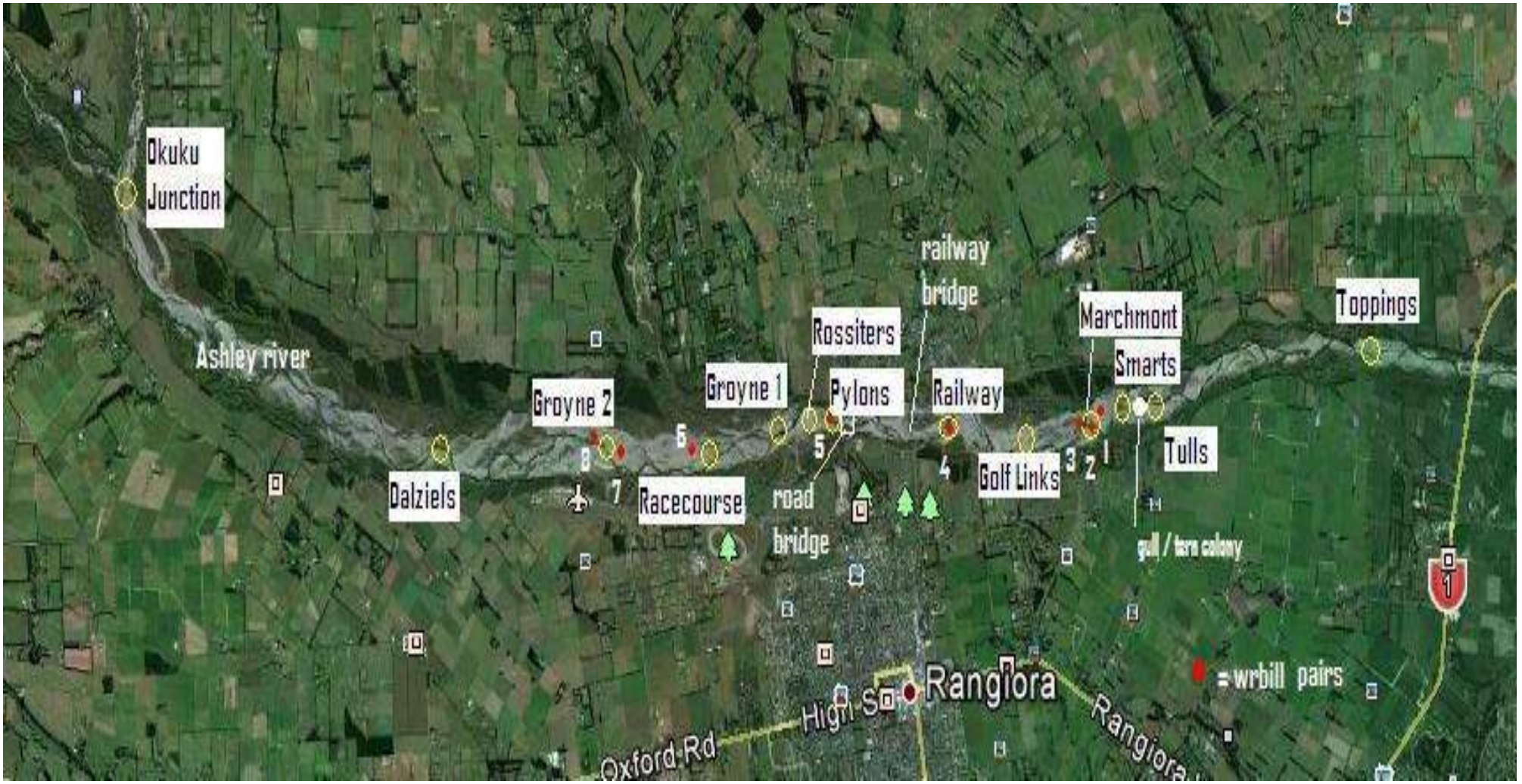
Over recent years, the rising profile of wise water use on the Canterbury plains has brought braided rivers and their management to the fore. During 2011, the Group made a particular effort to keep in touch, and liaise with, the Canterbury Water Management Strategy, the local Waimakariri Zone Committees, and managers of the Ashley-Rakahuri Regional Park. All this bodes well for the professional and long-term management of the Ashley-Rakahuri river, and hence a more secure future for the birds.

BRaid, a group which promotes protection of all braided river ecosytems in Canterbury, was the brainchild of the Ashley-Rakahuri group and came into existence in 2007. It ran a very successful training course at Glentui, Oxford, from Sept 26-28 attended by 22 participants. This should help in the formation of other community-driven rivercare groups.

Recommendations for future management include:

- Continue predator control, annual surveys, monitoring activities and banding, focussing on the three key threatened shorebird species
- Explore new technologies to reduce time and effort spent on controlling predators
- Continue advocacy initiatives by Group and through outside agencies such as DOC
- Try to create and maintain riverbed islands for bird breeding
- Utilise high public profile to seek funding via local sponsorship
- Maintain and improve collaboration with commercial shingle extractors
- Continue full support to the BRaid group
- Support Environment Canterbury's Ashley-Rakahuri Regional Park plan.
- Maintain and improve collaboration with ECan's Biodiversity Programme, the Waimakariri Zone Committee and the Canterbury Water Management Strategy's Regional Committee

Figure 1. Map of lower Ashley-Rakahuri river, showing main breeding areas (yellow circles ○), wrybill breeding sites (red dots ● 8 of them) and black-billed gull / black-fronted tern colony (white dot – 1 only).



1 Introduction

The braided rivers of the South Island are a unique habitat of outstanding importance to endemic wildlife (Cromarty & Scott 1996, Dowding & Moore 2006). In particular, they provide breeding habitat for a range of threatened shorebird species, some of which depend largely or entirely on braided rivers for their survival. Braided rivers commonly have large areas of bare, mobile shingle, multiple channels, and variable flows (O'Donnell & Moore 1983). However their ecological values are increasingly threatened; most have been invaded by weeds and introduced mammalian predators, and are further degraded by a wide variety of human activities.

The Ashley-Rakahuri river, with Rangiora township at mid-right. Arrows mark the core breeding area during 2011-12, starting from Groyne 2 by the aerodrome (bottom left), heading east past the Racecourse and Railway and ending up at Tulls, 3 km from SH1 bridge.

The Ashley-Rakahuri is a medium-sized river located in North Canterbury. From the Ashley Gorge, the river flows east and enters the sea about 25 km north of Christchurch. In contrast to the larger snow-fed rivers, the Ashley-Rakahuri is fed by rainfall from the foothills and has relatively low flow rates.

The shorebird values of the Ashley-Rakahuri are well-recognised. The Ashley River and estuary are included in a list of wetland sites which meet criteria prescribed to be of international importance by the International Union for the Conservation of Nature (IUCN) (Cromarty & Scott 1996). Following surveys of Canterbury rivers in the 1970s and early 1980s, the New Zealand Wildlife Service ranked their wildlife and conservation values; the Ashley-Rakahuri was one of five rivers given the highest possible ranking of 'Outstanding' (O'Donnell & Moore 1983). Declining bird numbers over the last 25 years have led to a more recent classification of 'national' importance (Hughey *et al.* 2010).

The Ashley-Rakahuri Rivercare Group (ARRG) is a community group formed in 1999 to assist with management of the lower reaches of the Ashley River. Its main aims are to protect shorebirds and their habitat in the riverbed, to monitor breeding success, and to promote these activities to the wider public. In 2005, the Group became an incorporated society. Since 2004, the ARRG has received four grants to assist it in carrying out its aims. Initially, funding was supplied by the Pacific Development and Conservation Trust and the New Zealand National Parks and Development Foundation. During 2006/07, the principal sponsor was the Habitat and Protection Fund of World Wildlife Fund (WWF) - New Zealand. In June, 2007, a 2-year grant was approved by the Lotteries Environment and Heritage Committee. A partial extension was granted through to December 1, 2009. In July, 2010, a further 2-year grant was approved by WWF-New Zealand. The activities undertaken since 2004 have been described in the Group's annual reports (Dowding & Ledgard 2005, 2006, 2007, 2008, 2009, 2010; Ledgard & Dowding 2011), which outlined the results of bird monitoring, habitat enhancement, predator control, and advocacy, and made recommendations for future management. The present report documents

the management activities and monitoring of birds that were undertaken during the 2011/12 season.

In the past, the river has provided breeding habitat for significant numbers of black-fronted terns and hundreds of pairs of black-billed gulls. Recently the number of gulls in particular has declined substantially (Dowding & Ledgard 2005). The Ashley is one of the most northerly on which wrybills breed, following a southward contraction of the core range of the species over the past century (Riegen & Dowding 2003). Wrybill have recently been recorded breeding again on the Hurunui and Waiau Rivers, but as isolated pairs (Crossland & Schmechel, in prep.). The Ashley birds remain the northern-most stable population. These three key species have been the main focus of management activities of the Group; all are endemic, have declining populations and are considered threatened.

The threat categories of all New Zealand birds were reviewed in 2008 (Miskelly *et al*. 2009). Arguably, of most concern is the black-fronted tern, which is classified as Nationally Endangered, the second-highest ranking possible under the New Zealand scheme. The black-billed gull is also classified as Nationally Endangered, and internationally as Endangered, making it the world's most threatened gull species (BirdLife International 2007). The wrybill has a declining range and is classified as Nationally Vulnerable, as is the banded dotterel, which is considerably more common on the Ashley River. Other shorebird species that are in lower threat categories (such as the pied stilt, the South Island pied oystercatcher and the white-fronted tern) or are not threatened, also breed in the Ashley-Rakahuri.

2 Study area and methods

2.1 STUDY AREA

The study area consists of an 18 km stretch of the lower Ashley-Rakahuri river, from its confluence with the Okuku River to the State Highway 1 road bridge (see photo on page 6 for core stretch). It was described in detail in the Group's first report (Dowding & Ledgard 2005) and an updated Google-based map of the area is presented in Figure 1.

In addition, during 2011 the Group was involved in bird surveys above the core study area, between the Okuku River junction up to the Ashley gorge, plus DOC undertook a survey in Lees valley (see Appendix 1).

2.2 HABITAT ENHANCEMENT

In previous years, a combination of physical hand-pulling and machines (contracted from Taggart Earthmoving Ltd) has been used to remove weeds from specific sites in order to create potential bird breeding areas (see previous reports). However, experience has shown that there is no guarantee that birds will use such sites. Hence, weed clearance is undertaken mainly as a Group 'team-building' activity. Birds breed most successfully on islands surrounded by good water flows (McClellan 2009). In the past some islands have been created by earth-moving machinery. None was carried out in 2011, but the Group intends to do more of this work in the future.

2.3 ADVOCACY

Advocacy and liaison, in the form of media articles, public talks, a web site, cinema screen vistas and advertising (both by Group members and local DOC officers) are used to raise public awareness of shorebirds in the river and of the Group's activities. The Group presented addresses, or had representation, at meetings of the Canterbury Water Management Strategy, the

Waimakariri Zone Committee (a submission presented) and the Ashley-Rakahuri Regional Park. During the breeding season, customised Corflute signs are placed in managed riverbed areas to inform the public of the location of breeding birds.

2.4 WALKWAY, 4WD TRACK, RIVERBED ACCESS AND SWIMMNG HOLES

Taggart's digger excavating a swimming hole off the end of Groyne 1 just before Christmas, 2011.

The planting of native species, particularly alongside the Mike Kean Walkway continued over the 2011 winter, with weed control carried out around those already established. Maintenance was carried out on the 4WD track, which runs along the berm area on the north bank between the end of Rossiter's Road and the Makerikeri River. The walkway and 4WD track aim to encourage recreational activities away from the actual riverbed. In September-October, all 4WD access ways into the core bird breeding area (except the major ones) were closed off. On December 19, assistance was given to ECan in the location and creation of swimming holes for the summer season.

2.5 PREDATOR CONTROL

A range of traps was used to target mammalian predators (mainly cats, mustelids and hedgehogs). They included cage traps, Bushby tunnel traps, Timms traps, PossumMaster traps and DOC 200 and 250 traps. Traps were first set on September 1, 2011, at sites with a history of use by nesting birds. As the three key bird species occupied territories, traps were added or moved between sites. Traps were baited with a range of baits, usually salted rabbit or hen eggs, and checked once or twice a week. The last of these traps were removed on January 30, 2012, after the breeding season had finished. Another post-season trapping period was started in March, 2012.

2.6 BIRD SURVEYS AND MONITORING

The annual spring survey of all resident birds was undertaken on Nov 27 from the Okuku river junction down to the SH1 bridge. It involved 16 members.

For the first time since 1981, the 22 km stretch between the Ashley gorge and the Okuku river junction was surveyed by six members on November 29, and on November 23 a survey of the Lees Valley section of the river was undertaken by DOC (reported in Appendix 1).

Monitoring of wrybills, black-billed gulls, and black-fronted terns during the breeding season was carried out as described in previous reports (Dowding & Ledgard 2005, 2006, 2007), and began this season in September. From then until late January, riverbed visits were undertaken at least 2 times every week, with most efforts concentrated in the core bird breeding area between Groyne 2 and the Tulls Road site. Breeding success (productivity) for each of these species was recorded as the average number of chicks fledged per pair. Professional assistance, particularly in determining productivity, was given by Andrew Crossland of Limnodromus International, Christchurch. In the past, John Dowding, another Christchurch-based professional ornithologist,

has provided this service, and also undertaken banding of wrybill fledglings and adults. His unavailability during the past season has meant that no new banding was carried out in 2011.

2.7 MEETINGS

During the 2011/12 season, the Group held meetings in the Department of Conservation's offices on River Road, Rangiora, on August 18, Sept 29 (AGM), December 1, and Jan 26. Twenty-two members attended the AGM, with an average of 14 at other meetings.

2.8 FUNDING

Over the last year the Group's main finances have come from the second year funds of a 2-year grant from the World Wildlife Habitat Protection Fund. Smaller amounts were obtained from a sausage sizzle outside the Warehouse on December 18, a percentage of royalties from the sale of Jane Buxton's children's book 'Ria the reckless wrybill', and from private donations.

Group members fund raising with a sausage sizzle outside the Warehouse in Rangiora.

3 Results

3.1 HABITAT ENHANCEMENT

Group members clearing weeds out from Groyne 1 in July. A good flood 3 months later swept weeds from all this area.

Weed clearance

On July 2, eight members cleared about 1 ha of riverbed weeds off Groyne 1. A flood of over 300 cumecs on October 19 cleared weeds from significant areas of riverbed. This flood also swept away most nests, but resulted in large clear areas of good bird-nesting habitat for subsequent new breeding attempts.

Ashley-Rakahuri Regional Park

After being formally launched in 2010, the Ashley-Rakahuri Regional Park is now an operational reality. During 2011, significant works were undertaken alongside the river, mainly in the form of access ways and parking, often associated with new grass recreational areas. The Group has been kept closely informed of developments, and Park rangers are not only well aware of the bird breeding situation, but go out of their way to assist with monitoring and minimising human disturbance. As with many such new developments, vandalism, particularly of signs and bollard barriers, has been a problem, but this appeared to lessen over time.

3.2 ADVOCACY

During the 2011/12 breeding season, the public and visiting groups were made aware of the Group's activities in the riverbed by:

- Creation of website (www.ashleyrivercare.org.nz) in February, 2012.
- Four articles in local newspapers - *Northern Outlook* (July 16, July 20 and Oct 22, 2011; March, 2012) and mention in *Hurunui News* (Sept 1).
- Article in ECan's Ashley Regional Park Newsletter (Sept) and 'Living Here' (Oct). Representation at a Regional Park meeting (June 13).
- Letter to Northern Outlook relative to wrybill becoming Rangiora's symbol (Dec 17).
- Talks to Teuchorium Group (Aug 8); a visiting Elderhostel group from the USA (Nov 17, visit to riverbed); North Loburn school (Nov 18, plus field visit to riverbed); Fernside school (Feb 29, plus field visit to estuary) and by DOC to many schools using the Group's Powerpoint presentation.
- Waimakariri Zone Committee. Presentation to, and representation at, meetings (June 23, Sept 5, Sept 30, Nov 7). Written submission to Zone Implementation Plan (Oct 17).
- Book signing of Jane Buxton's children's book 'Ria the reckless wrybill' in Paper Plus, Rangiora on July 28.
- Placing customised Corflute signs in managed riverbed areas (Sept 2011 – Jan 2012).

During 2011, the Group remained closely involved in management of the Ashley River Regional Park, and actively participated in the running of BRaid Inc, a group which aims to improve the ecological welfare of all braided rivers in Canterbury.

A regular email update was sent to all Group members during the breeding season.

Group member, Geoff Swailes, showing North Loburn school children birds on the river.

3.3 WALKWAY, 4WD TRACK, RIVERBED ACCESS AND SWIMMING HOLES

The Mike Kean Walkway, which was officially opened on 23 April 2007, is now accepted by the public, and getting increasing use – especially as it is now part of wider Ashley-Rakahuri Regional Park developments. The 4WD track continues to get reasonable use, acting as a good alternative to driving in the riverbed itself. However, its rugged contours are only attractive to the more adventurous drivers. Due to a cooler spring and summer, the swimming holes attracted less use than normal, but certainly helped in focusing recreational use away from core bird breeding sites.

3.4 PREDATOR CONTROL

In total, 39 potential predators were trapped in 5,048 trap-nights. Predators trapped consisted of 34 hedgehogs, 2 cats, 1 stoat, 1 weasel and 1 ferret. Both trap-nights and predator numbers were higher than in the previous season (3,732 and 32 respectively), with hedgehogs increasing the most (from 23 to 34). Details of trapping periods, trap-nights and captures at each site are shown in Table 1.

Stoat caught in a DOC 200 trap by gull/tern colony

Table 1 Results of predator trapping in the Ashley River, 2011/12 season. Locations are shown in Figure 1 (to be supplied). Trap-nights are not corrected for sprung/occupied traps.

Location	Trapping period	Trap-nights	Captures					
			Cat	Stoat	Weasel	Hedgehog	Rat	Ferret
South bank Groyne 1 – 2	1/09/11 – 3/12/11	1094	0	0	0	7	0	0
North bank Bridge – G2	1/09/11 – 1/01/12	1863	1	0	1	8	0	0
Railway	15/09/11 – 31/12/11	858	0	0	0	11	0	0
Golf Links – Marchmont	25/09/11– 30/01/12	1233	1	1	0	8	0	1
Totals		**5048**	**2**	**1**	**1**	**34**	**0**	**1**

The trap-catch rate during the bird breeding season was 0.78 predators per 100 trap nights.

A post-season trapping period was initiated in March, 2012, and results will be included in the report for 2012-13.

3.5 SPRING BIRD SURVEYS

Survey figures from 27 November 2011 are shown in Table 2, with results of earlier counts shown for comparison.

Table 2 Results of the bird count undertaken in the Ashley River (from Okuku junction down to SH1) on November 27, 2011. Counts from previous years, plus the 10-year mean, are shown for comparative purposes

Species	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	Ave
Black shag	18	3	#	8	7	2	2	10	9	6	2	5	7
Little shag	3	6		4	7	6	2	4	0	17	6	13	6
SI Pied oystercatcher	25	22		22	37	22	5	26	27	32	20	35	25
Variable oystercatcher	0	0		0	2	0	0	0	0	0	0	0	0
Pied stilt	229	82		138	140	137	68	164	131	196	233	194	156
Black stilt	0	0		0	2	1	1	1	1	1	0	0	1
Banded dotterel	199	130		169	213	245	84	237	198	233	260	250	202
Wrybill	17	7		16	9	7	5	9	8	13	18	15	11
Spur-winged plover	18	nc		13	27	149	37	116	11	39	15	89	51
Black-backed gull	26	nc		10	27	3	5	12	10	19	19	2	13
Black-billed gull	314	3		0	10	1	213	13	16	2	41	425	94
Black-fronted tern	74	44		102	28	26	180	89	81	124	192	190	103
White-fronted tern	0	0		0	0	0	0	0	0	0	8	77	8
Caspian tern	0	0		4	0	0	1	0	0	0	0	0	1

nc – not counted # No survey possible in 2002

White-fronted terns were first observed in 2010 (8 birds not far above the SH1 bridge), and it is notable that the number increased to 77 in 2011. These were all seen between the Tulls and Smarts sites where they bred alongside a colony of black-billed gulls.

Bird numbers continue to reflect the improvement of recent years. Table 2 shows that the 2011 count of black-billed gull was the highest on record, and numbers of black-fronted terns and banded dotterels and South Island pied oystercatcher the second highest. Numbers of wrybills were the fourth highest, but if a banded pair known to be on the river but not observed during the survey, is added, the figure becomes the second highest (just one less than the previous year). Only two black-backed gulls were counted – the lowest number recorded. In addition to the

above, the following were also observed; 9 Canada geese, 65 mallard ducks, 30 paradise shelduck (plus 3 ducklings), 2 grey teal and 26 white-faced herons.

Results of the 2011 surveys undertaken in the middle section of the river (Ashley gorge to Okuku river junction), and in the upper Lees Valley section, are presented in Appendix 1.

3.6 SHOREBIRD BREEDING

Locations of shorebird territories are shown in Figure 1 *(not added yet).*

Wrybills

Banded birds are identified by their colour-band combinations, bands are recorded left leg first and top to bottom (possible colours are: O=orange, R=red, B=blue, Y=yellow, G=green and W=white). M=metal, UB=unbanded.

Breeding pairs

Eight pairs of wrybills attempted to breed in the study area in the 2011-12 season.

1. Male: UB Female: UB

This pair, were first located just above the Smarts access track on Sept 24, and again on Sept 30. They were possibly the same UB pair that raised two chicks at this site last year. On Oct 18, they gave strong indications of a nest on the central island halfway between Smarts and Marchmont sites. However, the Oct 19 flood eliminated this nest. Single birds were seen flying in the area on Oct 23 and 26, and both birds appeared to be back in residence on Oct 30, with strong indications of a nest on the mid-river island on Nov 6. The nest was never found, but parent behaviour indicated that chick(s) had hatched on Dec 1, and a flying juvenile was seen on Dec 31, and again on Jan 10 with two UB adults.

Result: One chick fledged.

2. Male: UB Female: UB

This pair was also first seen on Sept 24 at Marchmont about 200 m above the Smarts pair. A male bird, presumably of this pair, was seen on Sept 30, but no wrybills were seen in the area for some weeks thereafter. These birds were different from the Smarts pair, as all four birds were present on Sept 24. There is a possibility that these birds moved upriver to become either pair 5 or 8, as these were first seen where they eventually nested on Sept 24 and Sept 26 respectively.

Result: No chicks fledged (no nest was ever found).

3. Male: UB Female: YO-RO

This pair was first seen at the Marchmont site very late in the season, on Jan 9, when a nest with a single egg was also found. The female was seen a week later, but on subsequent visits no wrybills were seen nearby, and the nest was consequently considered abandoned. YO-RO and an UB male first appeared at the Groyne 2 site in the 2009-10 season with a 2-egg nest, but these were abandoned and did not hatch. In the 2010-11 season, YO-RO and a UB mate nested at the Racecourse site and fledged 1 chick.

Result: No chicks fledged.

Female wrybill (YO-RO) arrived late and soon abandoned eggs.

4. Male: BW-BW Female: WO-G
This pair was first seen on Sept 22 at the Railway site, the same site where they nested (and the male was first banded) in the 2010-11 season (WO-G was then WO-GO), when they hatched 2 chicks which failed to fledge. WO-GO and a UB mate hatched chicks at this site in 2009, but they also failed to fledge. In 2011, a 2-egg nest was found on Oct 15, but the nest was destroyed by the Oct 19 flood. The pair was back on site by Oct 24, and even though regularly sighted thereafter, no sign of a nest or nesting behaviour was observed. Both birds were present on Nov 19 and WO-G was last seen on Dec 2. BW-BW was seen a few times at Groyne 2 in early Jan, being last observed there on Jan 8.

Result: No chicks fledged.

5. Male: UB Female: UB
This pair was first observed at the Pylons site, just east of Rossiters, on Sept 24. Nesting was suspected on a mid-river island on Oct 9, but this would have been destroyed by the Oct 19 flood. The birds had returned to the site a week later, and on Nov 8 a 2-egg nest was found on an island under the pylons – just 300m upriver from the Rangiora-Ashley road bridge. On Nov 28 adult behaviour indicated that at least one chick had hatched, and a flying juvenile was observed on Jan 3.

Result: 1 chick fledged.

6. Male: WO-M Female: WO-WY
This pair nested in the Racecourse area, with WO-M first seen on Oct 1. They nested in the same area in 2009 and just down river closer to Groyne 1 in 2010, fledging 1 chick in both seasons. They may have laid eggs before the Oct 19 flood, but this would have destroyed the nest. A 2-egg nest was found on Nov 8, and the nest was empty on Dec 13. A lone chick, capable of flying was seen on Jan 3, and WO-M was observed with a flying juvenile off Groyne 1 on Jan 13.

Result: 1 chick fledged.

7. Male: O(W)-R Female: B(O)-(Y)O
Both these birds have lost bands – almost in unison. O-R used to be OW-R (from 2009) and before that OW-RW, and B-O used to be B-YO (from 2009) and BO-YO before that. This season, B-O was first seen just below Groyne 2 on Oct 1, and together with O-R on Oct 10. They could well have had a nest, but this would have been destroyed by the Oct 19 flood. They were back on site by Oct 23 and suspected of nesting on Oct 31. Their behaviour indicated chick(s) on Dec 17, and one was seen on Dec 21, and a flying juvenile was observed on Jan 6.

Result: 1 chick fledged.

8. Male: UB Female: UB
This pair nested out off Groyne 2, about 300 m above pair 7. Both birds were first seen on Sept 26 and a 2-egg nest was found on the south bank on Oct 7 – only to be destroyed by the Oct 19 flood. They were back at the same site on Oct 23, but soon shifted to the north bank, where a 2-egg nest was found on Nov 7. Two small chicks were observed on Dec 10, with both seen flying on Jan 11.

Result: 2 chicks fledged.

Overall result: 8 pairs* fledged 6 chicks, for productivity of 0.75 chicks fledged per pair. *Possibly only 7 pairs as pair 2 did not indicate nesting and could have relocated to become pair 5 or 8. In which case, productivity would have improved to 0.86.

Black-fronted terns

Before the Oct 19 flood, black-fronted terns were mainly concentrated off Groyne 1, where 40 were seen on Sept 21 and 30 on Oct 16. In addition, 14 birds were seen at Marchmont on Sept 24, and around 20 were seen at Toppings on Oct 16. Any eggs laid before Oct 19 would have been destroyed by the flood. Birds remained in the vicinity of Groyne 1 until the end of the season (maximum of 20 on Oct 28), but there was no sign of nesting. On Oct 30, 5–6 pairs were observed just above Smarts and two 2-egg nests were located, but by Nov 3 nesting had finished (1 broken egg found) and only 6 birds were seen in the vicinity. On Dec 1, a colony of over 30 birds were located at Railway with an estimated 12 nests, but 2 days later the nests were deserted and only four adults were seen. On Nov 10, a colony of 40 birds was located on a mid-river island just above Tulls and this grew to an estimated 100 birds on Nov 19. Numbers declined after this date, until by early January an estimated 40 adult birds and 14 chicks and juveniles had moved 200 m upriver to Smarts. On Jan 9, six adults, one large chick and a flying juvenile were seen at Toppings. The same day a total of 30 adults and 18 fledged juveniles were counted between Marchmont and the 2nd powerlines below Tulls. On Jan 25, 40 adults and 14 flying juveniles were observed at Marchmont – almost certainly originating from the Tulls colony. In early Dec, a colony started to settle about 300 m above Groyne 2. These birds (or at least some of them) may have relocated from the Railway site. By early January, at least 30 birds appeared to be feeding around 15 chicks. On Jan 30, twenty adults were seen with 14 flying juveniles.

Result: In total, an estimated 70 pairs (3 at Toppings, 40 at Tulls, 12 at Railway and 15 at Groyne 2) fledged 30 chicks, for minimum productivity of 0.43 chicks per pair.

Black-billed gulls

Until mid November, very few black-billed gulls were present on the river (3 on Oct 24 at Groyne 1), until 60 were seen just above Tulls on Nov 12. On Nov 19, 30 were present with 4 sitting on nests. Numbers continued to rise with over 200 and over 300 estimated to be present on Nov 23 and 26 respectively. At the time of the annual survey on Nov 27, 425 were counted. On Dec 11, it was estimated that there were 92 nests at the Tulls colony, although this is probably an undercount as some nests were in depressions or behind vegetation and not easily seen from the point of observation. The first chick was seen on Dec 17. On Jan 14, 146 adults were counted, but chick numbers were hard to estimate. On Jan 25, a creche of 68 chicks was approaching fledging stage. In addition, 1 newly fledged juvenile was observed flying above the crèche, and later the same evening 2 very recently fledged juveniles were seen with 11 adults at the rivermouth. On Jan 25 the Tulls colony site was walked over and disused nests counted. A total of 134 nests were identified – 20 in the west sub-colony, 11 in the mid sub-colony and 103 in the east sub-colony. Not all of these nests may have been laid in, and not all may have been active at the same time – observations of chicks suggest that the oldest were at least 2 weeks older than the youngest. A best estimate of nesting pairs is 100+.

Result: Approximately 100 pairs fledged 71 chicks, for a productivity of 0.71 chicks per pair.

White-fronted terns

This species was not recorded in annual surveys until 2010, when 8 were counted with no nesting observed. In 2011, the first two were seen alongside the gulls on Nov 12 at Tulls. By Nov 19, this had risen to 13 with 7 nests. On the Nov 27 survey, 77 were counted, all at the Tulls colony – nesting close alongside the black-billed gulls. On Dec 11, there were 62 present in two groups with 41 and 8 nests respectively. The first chicks were noted in early January, and on Jan 10 there were 160 adults present. However, for some reason, the good adult and nest counts did not develop into comparable chick numbers – the most ever counted in January was 14. Only 19 definite white-fronted tern nests were found on the colony check on 25 Jan but this is considered an undercount as nests have minimal material and are easily missed. On 25 Jan only 14 adults and 4 large chicks remained at the Tulls site. On the same day, another 206 (comprising adults with a handful of juveniles) were counted roosting at the rivermouth.

For the first time, white-fronted terns nested within the study area (at Tulls).

Result: Approximately 50 pairs fledged 14 chicks, for a productivity of 0.28 chicks per pair.

Pied oystercatchers

Although 35 were counted in the survey of Nov 27, no nests were found and few chicks or fledglings were recorded. Pairs with newly fledged juveniles were noted between Marchmont and Golflinks, and near the 2nd powerlines downstream of Tulls on Jan 9.

Banded dotterels

Banded dotterels nested throughout the study area. The number seen on the Nov 27, 2011 survey was only just below the record number observed in 2010, and although no attempt was made to record productivity, a number of nests were found and chicks seen. Good numbers were particularly noticeable at Smarts, Marchmont, Railway, Rossiters, Groyne 1, Groyne 2 and 1 km above Dalziels. Flocks of flying juveniles were seen in January, e.g. 13 at Marchmont on Jan 23, and a mixed flock of 46 adults and juveniles immediately downstream the SH1 bridge on Jan 24. Their productivity was not recorded, but small chicks (1–2 weeks old) were noted as late as Jan 9, suggesting that some pairs raised two broods.

Pied stilts

Many pairs of pied stilts bred in the study area. As with the banded dotterels, high survey numbers on Nov 27 appeared to be reflected in a good breeding season. Many juveniles were seen, plus family flocks later in the season, e.g. 24 at Tulls on Jan 13; 22 downstream of Tulls on Jan 9, and 22, 500 m above the rivermouth on Jan 17. Their productivity was not recorded.

Winged attack. Pied stilt v. photographer.

Black stilt

The black stilt (GK-OW) which bred on the river (always with a pied mate) for many years up to 2009, was not seen on the riverbed in 2010 or 2011, but a banded bird was present at the estuary in early January, 2012.

Caspian tern, black-backed gull and spur-winged plover
Caspian terns were occasionally noted on the river during the breeding season (2 at Tulls on Nov 12), but none were seen to breed. Black-backed gulls were also low in numbers and mostly seen at Marchmont (a high of 7 on Sept 30, 4 on Nov 10). No breeding was noted. No spur-winged plovers were found nesting, but they were often seen on the river and were present in high numbers later in the season (55 at Groyne 2 on Jan 8; 368 in 4 flocks between Tulls and Smarts on Jan 9; 88 at Groyne 2 on Jan 11 and 70 at Tulls on Jan 13).

4 Discussion

The three key shorebird species in the Ashley-Rakahuri river face three main threats, and the Group's activities continue to be focussed on reducing impacts from these.

1. The three species require a largely bare substrate for nesting, and weed growth in the riverbed results in loss of breeding habitat. In the past, the Group has cleared weeds from small selected sites, and contracted commercial gravel extractors for clearance of other new areas, but weed clearance of large areas is now left to natural floods.

2. Introduced mammalian predators reduce survival and productivity. The Group undertakes predator control at sites where the three key species breed.

3. Disturbance by people, dogs, and vehicles reduces breeding success. The Group attempts to reduce disturbance by undertaking a range of advocacy and information initiatives, and installing signs on the river during the breeding season.

4. Surveys of bird populations and monitoring of breeding success. The Group does an annual bird survey in November, and monitors nesting attempts and fledging success to determine productivity

4.1 HABITAT ENHANCEMENT

The only weed removal by hand was carried out off Groyne 1 by 8 members on July 2. The objective was mainly for Group 'team building' purposes, given the practical difficulties and cost of clearing and maintaining large weed-free areas at many sites, and the fact that there is no guarantee that birds will use them for breeding. On this occasion the area cleared was not used by breeding birds before a major flood of over 300 cumecs on October 19. Although this flood swept away most nests, it resulted in large clear areas of good bird-nesting habitat for subsequent new breeding attempts.

The Oct 19 flood cleared away both weeds and nests. However, most birds were renesting within 2 weeks.

A weed-free riverbed is not only attractive to birds, but it can also encourage greater use by off-road vehicles (trail bikes, ATVs and 4WDs), especially if access tracks remain after summer riverbed operations such as shingle extraction or stopbank repair. For this reason, all but the major access tracks were blocked off by ECan in September. On the north bank, many of the blockages created by a digger the previous year remained effective.

Concrete blocks preventing vehicle access to riverbed.

Research has shown how bird breeding success is greatest on islands with a reasonable flow of water surrounding them (because this restricts access for predators such as hedgehogs and cats). The major gull and tern colony between the Smarts and Tulls sites was on an island, as was the tern colony above Groyne 2. The moist season, with regular rainfall, meant that the river maintained a reasonable flow all season, so that some water was always present around these islands. In previous seasons, the river has largely dried up below the railway bridge by soon after Christmas. Hence, the consistent water flow probably contributed to the good breeding success, not only by creating barriers for predators, but also by maintaining water-associated food sources. The Group, in conjunction with commercial shingle extractors, could do more to create and maintain such island habitat.

4.3 ADVOCACY

The Group's advocacy efforts over the past years continue to improve local awareness of the problems faced by riverbed birds, and of the Group's activities to protect them. A highlight was the creation of a website (www.ashleyrivercare.org.nz) in conjunction with the Rangiora-based promotion agency, VisitWaimakariri. At this stage, it is just a single page and aims simply at stating the Group's existence and describing its purpose - although a pdf of the Group's Powerpoint address is also included. During 2011-12, four articles and one letter were written for the local media (Northern Outlook, North Canterbury News and Hurunui News), two articles appeared in ECan publications, a 'sausage-sizzle' was held outside The Warehouse, and the Group's Powerpoint address was presented at a number of schools, often in conjunction with a visit by DOC staff. Members of the Group accompanied two school visits to the field (one to the river and one to the estuary). A book-signing session of local children's author Jane Buxton's book 'Ria the wreckless wrybill' was held in Rangiora shop. The nightly Screenvista presentation which has screened in local cinemas for the past 5 years, was not shown during 2011, as a result of Rangiora's cinema being closed due to earthquake damage.

Other new promotion initiatives were the drafting of a hand-out flier; an A2 sign for use with displays, talks and fund-raising events; a bookmark and artwork depicting riverbed birds by a local artist. It is proposed that these, together with a desk-top calendar, be completed by the end of 2012.

Out on the river, customised Corflute signs were placed in managed areas during the season – these are essential to minimise human disturbance during the breeding season.

With the rising national interest in the use of water has come greater recognition of the ecology of river systems. In Canterbury, the Canterbury Water Management Strategy (CWMS) is being implemented, with local input via Zone Committees. The Ashley-Rakahuri river is overseen by the Waimakariri Zone Committee. The Group has written a submission to the Zone Implementation Plan (ZIP), applied for Immediate Steps funding (for new traps) and attended four of their meetings.

The Ashley-Rakahuri Regional Park was launched in mid-2010. The Regional Park concept is integral to ensuring the long-term professional management of the river, and to this end the Group has kept in close touch with developments. Limited resources means that future Park managers will probably have to liaise increasingly closely with community groups such as the

Group. The same can be said for DOC, following on-going Government cost-cutting, accompanied by statements relative to the importance of private sector and community inputs.

The Group remains actively involved in the running of BRaid Inc, a group which aims to improve the ecological welfare of all braided rivers in Canterbury. Nick Ledgard (Group chairman) is currently BRaid Chairman. BRaid ran a very successful training course on the management of braided river birds from September 27-29, 2011. This attracted 22 participants, including a number of Group members. BRaid also carried out a reconnaissance survey of birds in the upper Waimakariri River on Nov 21-22, 2011. This was the first such survey since 1996. Hopefully, the end result of BRaid will be more community groups to assist breeding birds on local rivers – for which the Ashley-Rakahuri Rivercare Group can act as a model. As an example of this progress, a Waimakariri Rivercare Users Group (WRUG) was formed in 2010.

On the international scene, the Ashley River and estuary meets the IUCN criteria for a wetland of international importance, but it has not been formally recognised as an Internationally Important wetland (i.e. a Ramsar Site). There may be future opportunities for the Ashley-Rakahuri Group to pursue this further.

4.2 PREDATOR CONTROL

The number of trap-nights in 2011/12 was 32% higher than that for 2010/11, and the number of predators trapped increased from 32 to 39, although the trap-catch rate during the breeding season dropped to 0.78 (0.85 the previous season). The increased predator numbers is attributable to many more hedgehogs being caught (a rise from 23 to 34). This may be due to a greater number of trap nights, but probably reflects a continuing hedgehog recovery after the severe floods of 2008 and 2009 (peak flows of over 1100 and 500 cumecs respectively) removed large areas of good cover. Despite the extra trap-nights, the numbers of cats and mustelids caught were less than in the previous season – one less cat (from 4 to 3) but only a third the number of mustelids (down from 6 to 2). The reasons for this are unclear, but a major cause could well be the low numbers of rabbits (a staple food for the likes of mustelids and cats), which have not recovered since the arrival of RCD in 1998. Even though rabbit sign is not hard to detect, the principal author of this report saw just 2 rabbits all season, despite the fact that he spent many hours on the river every week.

This situation may not remain for long, as resistance to RCD is rising elsewhere in the country.

Terns and gulls nesting together at the Tulls colony. Jointly, they appear more successful at keeping predators at bay.

A post-season trapping period was initiated in March, 2012, and results will be included in the report for 2012-13. The post-season trapping figures for 2011 were included in the 2010-11 report.

Despite the increased work, the trapping team remains small, and the Group continues to try to attract more volunteers. The Group needs to keep well informed of new predator control techniques being developed which could mean significantly less time and effort than the present-day trapping. Such techniques involve the use of self-setting traps and user-friendly poisons.

Investigations into shorebird predation on other braided rivers, such as the Waimakariri (Dale McEntee, pers comm.) and Wairau (Steffens *et al*, 2011) rivers have revealed significant losses to avian predators such as black-backed gulls and harrier hawks. On the lower reaches of the Ashley-Rakahuri the numbers of black-backed gulls remain very low, with only 2 observed during the annual November survey and a maximum of 7 seen on one other occasion. In the

middle section of the river from the Okuku river junction up to the Ashley Gorge none were seen during the November survey. In strong contrast, the November DOC survey in Lees Valley located a colony of 765 birds (see Appendix 1). It is interesting that these birds seemed to stay inland and did not use the downstream reaches of the river as a movement corridor to the estuary and sea. Swamp harriers (harrier hawks) are not counted in the annual surveys, but are common on the Ashley-Rakahuri. Even though they are frequently seen being chased away by breeding birds, no actual predation has been observed on the river in recent years.

4.4 SPRING BIRD COUNTS

The 2011 annual survey of the lower reaches of the Ashley-Rakahuri was supposed to take place on Nov 19, but the river was too high (13 cumecs at the Ashley Gorge), so it was postponed to the following Saturday, Nov 26. The river was still a little high (11 cumecs), so it was postponed again to Sunday, Nov 27, when the river flow was 10 cumecs and sufficiently fordable to allow 16 volunteers to complete the survey.

Counts for all species except black shag and black-backed gull (lowest ever) were above average. Of particular note were a large well-established colony of over 400 black-billed gulls, two smaller colonies of white-fronted terns (in association with the black-billed gulls) and a scattered colony of black-fronted terns – all at the same Tulls site. This was only the third gull colony since recent surveys were started in 2000, and the first time that white-fronted terns have been recorded breeding in a colony and so far up-river (around 7km from the coast). Wrybills numbered 15, but as the banded pair at the Railway site was not seen during the survey, the actual total on the river was at least 17. This would be the second equal most wrybills counted, and just one less than the record number recorded in 2010. Apart from the Group's 10 years of annual surveys, we have information from four previous surveys going back to 1963. This means that long-term bird population trends are now becoming better understood – probably more so than on most other braided rivers in the country. While populations of the endangered species continue to decline nationally, the Ashley-Rakahuri figures indicate that the local numbers are being at least maintained.

Discussion of results of the 2011 surveys undertaken in the middle section of the river (Ashley gorge to Okuku river junction), and in the upper Lees Valley section, is presented in Appendix 1.

4.5 SHOREBIRD BREEDING

Wrybills

Eight pairs attempted to nest in the study area in 2011-12. This is the highest number recorded since regular monitoring began in 2004 (7 in 2010, 6 in 2004 and 2009) – although one UB pair did not remain where first seen for long, and could have relocated up-river, which would mean seven pairs nested. Six chicks were fledged, for a productivity of 0.75 chicks raised per pair (0.86 for seven pairs), which is below the 8-year average of 0.83. However, an average of 0.83 is encouraging, and 0.75 is acceptable, as this figure is considered the threshold necessary to maintain a wrybill population (John Dowding, pers. comm.). Good adult survival is also essential for long-term success, as it is with many of this country's native birds. On the Ashley-Rakahuri this is still a concern (Dowding & Ledgard 2006) as many banded birds have disappeared - although some birds are consistently returning to breed. The 2011 pair, OW-RW (male) and BO-WO (female) are the longest surviving birds on the river, with both recorded as breeding in 2003 – but with different mates. OW-RW was recorded as missing in 2005 and 2006, but BO-YO (now B-O) has bred

Recently fledged wrybill chick off Groyne 1. Note paler colour and no chest band.

every year since 2003. OW-RW returned (as OW-R) in 2007, when they first bred together. They chose different mates in 2008, but have bred together in the Groyne 2 area in 2009, 2010 and 2011.

No banding of wrybills was attempted in 2011, due to the only licensed bander, John Dowding, being committed to helping with the bird rescues associated with the stranding of the *Rena* in the Bay of Plenty. John fully intends to continue his banding attempts in 2012.

Black-fronted terns

Although the November survey recorded the second highest numbers of black-fronted terns since regular surveys began in 2000, breeding success for this species remains variable. The estimated number of breeding pairs was 70, the second highest since 2006 (81), and the productivity of 0.43 chicks fledged per pair was the third highest recorded. The long-term average over 8 years is 0.43, but how this relates to long-term species maintenance is unknown.

The reasons for the low success rate remain unclear, with no obvious leads as to why colonies can quickly establish and then equally quickly disappear. For example, 5-6 pairs were observed just above Smarts and two 2-egg nests were located on Oct 30, but by Nov 3 nesting had finished (1 broken egg found) and only 6 birds were seen in the vicinity. It was the same with a colony of over 30 birds at Railway with an estimated twelve nests. Two days after they had been located, the nests were deserted and only four adults were seen. There were no obvious reasons why these desertions occurred.

The largest colony was at Tulls, where nesting was closely associated with colonies of black-billed gulls and white-fronted terns. This ties in with the highest productivity for terns (0.68) recorded in 2006, which was also in association with a large colony of black-billed gulls. It has been observed elsewhere that the terns appear to enjoy the added protection afforded by the gulls. Although having noted that, the best productivity was from a late-establishing colony just above Groyne 2, where there were no nesting gulls. This colony, and that at Tulls, would have benefitted from the good summer river flows, which ensured a continuing supply of local food as well as the isolated island status of their nesting sites.

It appears that black-fronted terns succeed best with everything going for them. To that end, the Group needs to ensure a weed-free site on a water-surrounded island, good predator control and adequate signage to deter human disturbance.

Black-billed gulls

Success with this species depends primarily on whether a colony chooses to nest on the riverbed. After a slow start to the 2011 season, a colony began to establish just above Tulls in mid November. At one stage this exceeded 400 birds in four groups, covering about 100 m of riverbed. This was only the third time since 2000 that a good-sized colony has established on the river. The productivity of 0.71 was close to that obtained (0.75) by the last large colony in 2008. As indicated above, such numbers can benefit other species such as the black-fronted tern and the white-fronted tern (both also nesting at Tulls), which profit from the better protection afforded by the more aggressive gulls. Success would have been aided by the proximity of predator traps, which caught 1 cat, 1 stoat, 1 weasel, 1 ferret and 3 hedgehogs while the birds were nesting. Once the birds had departed, a close inspection of the site revealed virtually no sign of predation (broken eggs or chick remains).

There is another possible success requirement about which even less is known – and that is the adequacy of food supplies, both for adult birds and chicks. In the case of the Tulls colony, adult birds could often be seen feeding in paddocks under irrigators on a nearby dairy farm. The role

of farm paddock irrigation in providing food sources is currently overlooked. Perhaps this feeding option for both gulls and terns could be enhanced by cultivation of adjacent paddocks to promote insect and worm availability?

Black-billed gulls feeding under irrigation just 500m from colony with chicks.

White-fronted terns

This species nested at Tulls in close association with the black-billed gulls. White-fronted terns had not been recorded nesting previously (at least since 2000), and at Tulls were 7 km from the coastal habitats which are their preferred nesting environment. However, due most probably to human disturbance and invasion of open sandy environments by exotic marram grass and pines, white-fronted terns have not nested on Pegasus Bay beaches or estuaries for many years. The closest regular breeding colonies are on cliffs and rock stacks on Banks Peninsula and the coastline north of the Waipara river mouth. White-fronted terns breed from time to time on the Waimakariri riverbed and this is probably the origin of birds that nested on the Ashley in 2011-12. The nests were in two groups of 41 and 8 nests each, sited about 100 m apart, and right alongside nesting black-billed gulls. The first chicks were noted in early January, and even though there were 160 adults present on Jan 10, comparable chick numbers did not eventuate. The first chicks were noted in early Jan, but the most ever counted was 14 in mid-January. It appeared that most chicks did not survive long after hatching; the dried remains of 3 small chicks were found after the site had been vacated. The cause of death could have been starvation, as the adults appeared to bring in all their food from the coast, 7 km away.

Other species

As stated in the Results above, productivity was not recorded for pied oystercatchers, pied stilts and banded dotterels. Although good numbers of oystercatchers were counted during the Nov 27 survey, and obvious signs of nesting were noted before the Oct 19 flood, there were few indications of breeding after the flood, and only small numbers of fledglings were recorded. In previous years, chicks have often been seen, so the reasons for their scarcity in 2011 are unknown. Pied stilts and banded dotterels nested in good numbers during 2011, and although productivity was not monitored, sufficient chicks plus family groupings of stilts and flocks of flying dotterel juveniles were seen later in the season to indicate that productivity was at least average (0.7 for dotterels over 5 years, not recorded for pied stilts). Andrew Crossland, who has monitored banded dotterel and pied stilt breeding success on both lowland Canterbury and Mackenzie Basin rivers, was of the opinion that numbers of chicks and juveniles observed in 2011 for both species were higher than most rivers he has monitored. The black stilt, which has bred on the riverbed in previous years, was not seen on the river in 2011 but it may have bred near-by as it was observed down at the Ashley-Rakahuri / Saltwater Creek estuary in mid-January, 2012.

No doubt, all these other species would have benefitted from the lower predator numbers and less human disturbance associated with the management targeted at wrybills, black-fronted terns and black-billed gulls.

During the Nov survey, 89 spur-winged plovers were counted – the third highest number recorded since 2000. No nesting was observed, but large flocks were seen in the river after Christmas. One was often seen close to the gull and tern colonies at Tulls, and another off Groyne 2, where two wrybill pairs fledged chicks. There are records elsewhere of plovers disturbing breeding birds (J Dowding, pers comm.) but this has not been observed on the Ashley-Rakahuri.

The major flood (>300 cumecs) of Oct 19 destroyed all existing nests, and gave a good opportunity to observe the time taken for birds to return to nesting sites and lay new eggs. All the wrybill pairs were observed back on site within 1 week, and all but one pair indicated renesting within 2 weeks. This ties in with observations of flood impacts in the upper Waitaki River (Simon Elkington, DOC, Rangiora, pers. comm.). Although the Railway pair quickly relocated after the flood, and remained on-site for some weeks, they never renested. All the new nests found were in the same sites, but usually some distance (up to 200 m) from the first nest location. The impact of the flood on black-fronted terns and black-billed gulls could not be observed as they had not begun nesting. Spur-winged plovers seemed to be mainly loafing in sizeable flocks when observed on the river. This suggests they are using the riverbed as roost (particularly at night) and are feeding mainly on farm paddocks. This is a pattern observed for the species in the post-breeding season on many Canterbury braided rivers (Andrew Crossland, pers. comm.).

4.6 FUNDING

Over the last year the Group's finances have come primarily from the second year funds of a 2-year grant from the World Wildlife Habitat Protection Fund, with smaller amounts from donations, a sausage sizzle and royalties from the sale of Jane Buxton's children's book 'Ria the reckless wrybill'. The WWF funding concludes in mid-2012. The Group now has a sufficiently high profile in the Rangiora area to seek local sponsorship to cover its annual expenses of around $5-6,000. This would not only have the advantages of involving greater local participation and exposure, but there would probably be less time and effort needed than there is with applying for funds from 'traditional' funding agencies, which also involve detailed reporting and accountability procedures.

5 Conclusions

In terms of productivity of the three key shorebird species (wrybill, black-fronted tern and black-billed gull) in the Ashley-Rakahuri River, the 2011/12 season was above average in terms of both numbers counted in the annual survey, and breeding success (productivity). A definite highlight was the good-sized colonies of black-billed gulls and black-fronted and white-fronted terns at Tulls. There is little doubt that the prospects of breeding success are enhanced with the combined nesting of more than one species. Numbers of other species, such as pied oystercatcher, banded dotterel and pied stilt were also well above average, and with the exception of the oystercatcher, they enjoyed a successful breeding season – aided by good river flows all season. Therefore, it is probably safe to say that overall, bird populations on the managed portion of the river are holding their own. However, continued intensive management will be required if this situation is to be maintained.

The Group continues to maintain a high profile relative to public awareness and education, assisted by agencies such as DOC which frequently use material provided by the Group. During 2011, the Group has made a particular effort to keep in touch, and liaise with, the Canterbury Water Management Strategy, the local Waimakariri Zone Committees, and managers of the Ashley-Rakahuri Regional Park. All this bodes well for the professional and long-term management of the Ashley-Rakahuri river, and hence a more secure future for the birds.

Looking into the near future, two challenges are to utilise our high public profile to secure longer-term funding by local sponsorship, and to make use of new predator control technologies. Predator control is not only vital for continued bird breeding success, but every year it takes up more of the Group's time than any other single activity.

6 Recommendations

1 Continue predator control, annual bird surveys, monitoring activities and banding - focussing on the three key threatened shorebird species.

Justification
Effective predator control will be essential if the three species are to survive in the river. Collection of information through surveys and monitoring is vital, as it informs future management and decision-making. Banding provides information on survival, pairing and movements of individual birds.

2. Explore new technologies for predator control

Justification
Predator control occupies more of the Group's time than any other single activity. New techniques involving self-setting traps and user-friendly poisons could reduce this considerably.

3. Create and/or maintain islands surrounded by water for bird breeding

Justification
Experience elsewhere has shown that bird breeding is most successful on islands surrounded by water. These would not be difficult to create or maintain using heavy machinery operated by the likes of shingle extractors.

4. Continue advocacy initiatives both by members and other agencies such as DOC, making use of the website, the Powerpoint presentation and printed material such as handout fliers, posters, bookmark and a calendar.

Justification
Although awareness has improved significantly since the Group was formed in 1999, it can only be maintained and improved by continued effort.

5. Seek funding via local sponsorship.

Justification
Obtaining funding from traditional sources such as the Lotteries Board and World Wildlife Fund involves considerable time and effort both in applications and reporting (all carried out by volunteers). The Group now has a sufficiently high profile to seek local sponsorship, which would not only further increase local exposure, but should lessen the time and effort spent securing funding from further afield.

6. Continue full support for BRaid Inc.

   Justification
   BRaid Inc aims to improve environmental awareness and management on all South Island braided rivers, with the end result that more braided rivers should receive the same local community-based attention as is presently focused on the Ashley-Rakahuri river.

7. Maintain and improve collaboration with ECan's Biodiversity Programme, the Waimakariri Zone Committee and the Canterbury Water Management Strategy's Regional Committee.

   Justification
   Decisions on the future use of water from braided rivers rests with these agencies and committees. They also dispense considerable funds for river management.

8. Maintain and improve collaboration with commercial shingle extractors.

   Justification
   Gravel (shingle) extractors are the major commercial users of the Ashley-Rakahuri river, and have opportunities to create weed-free sites and islands surrounded by water that encourage successful bird breeding. The Group is in a position to advise on measures that will improve breeding success.

9. Support the implementation of Environment Canterbury's Ashley-Rakahuri Regional Park plan.

   Justification
   This plan has the Group's aim of maintaining key shorebird populations long-term in the Ashley/Rakahuri river as a major objective.

7. Acknowledgements

We are particularly grateful for the significant 2-year grant approved by the World Wildlife Fund – New Zealand in July 2010. Their Habitat and Protection Fund has been a principal supporter in the past. Other major past sponsors have been the:

- Pacific Development and Conservation Trust
- New Zealand National Parks and Development Foundation
- Lottery Environment and Heritage Committee of the New Zealand Lottery Grants Board

In addition, Jane Buxton, author of the children's book 'Ria the reckless wrybill' is donating 25% of royalties received from sales of the book.

Other agencies and companies who have offered special assistance are Environment Canterbury, the Waimakariri District Council and the Department of Conservation. The Group also thanks its members and their friends and families for help with bird monitoring, participation in the spring survey, advocacy, and attendance at meetings. Particular acknowledgement must go to the small band of trappers, who weekly maintained many traps over a long season.

The activities recorded in this report would not have been possible without the above support.

8 References

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9 Appendix 1

Surveys of the middle and upper sections of the Ashley-Rakahuri.

On Nov 29, 2011, six members carried out a survey of the 22 km stretch of river between the Ashley Gorge and the Okuku River junction. The last comparable survey was undertaken in 1981. On Nov 23, 2011, a survey of the Lees Valley section of the river from just below the upper gorge down to the road bridge just above the lower gorge was undertaken by DOC. This was a repeat of their 2010 survey. Apart from these two 1-day surveys, no other monitoring of birds was undertaken.

Results

Results of bird surveys from the Ashley Gorge to Okuku River junction are presented in Table 3.

Table 3. Results of the bird count undertaken in the Ashley River (Ashley Gorge down to Okuku River junction) on November 29, 2011, and on November 20, 1981 (from Overmars & O'Donnell 1982).

Species	Number of birds (2011)	Number of birds (1981)
Black shag	7	1
Little shag	2	4
Canada goose	7	2
Paradise shelduck	9	6
Grey duck / Mallard	4	33
White-faced heron	16	11
S.I. pied oystercatcher	9	51
Wrybill	0	2
Pied stilt	15	111
Banded dotterel	29	129
Spur-winged plover	18	62
Black-backed gull	0	61
Black-billed gull	0	684-784
Black-fronted tern	9	133

Eleven riverbed bird species were recorded in 2011. The numbers of all species were low. More birds were recorded in the upper sections of the surveyed area, with the exception of the South Island pied oystercatcher and the spur-winged plover. One banded dotterel nest was found with 3 eggs, and 8 Canada goose goslings were seen. The marked difference in bird numbers between 1981 and 2011 is discussed later.

Results of DOC's bird surveys in Lees Valley are presented in Table 4.

Table 4. Results of the bird count undertaken in Lees Valley on Nov 23, 2011, and Nov 11, 2010, from just below the upper gorge to the bridge just above the lower gorge (data supplied by DOC).

Species	Number of birds (2011)	Number of birds (2010)
Black shag	2	5
Little shag	1	0
Canada goose	96	79
Paradise shelduck	23	45
Grey duck / Mallard	5	47
White-faced heron	4	6
S.I. pied oystercatcher	48	35
Wrybill	0	0
Pied stilt	21	40
Banded dotterel	59	84
Spur-winged plover	22	18
Black-backed gull	765	460
Black-billed gull	27	152
Black-fronted tern	35	14

In 2011, all but 10 of the black-backed gulls were in one large colony, whereas in 2010 there were two black-backed gull colonies of 340 and 120 birds. The black-billed gulls were not nesting in 2011 but a colony of 130 birds was present in 2010. The black-fronted terns included two small colonies of 9 and 8 birds respectively, but they were not seen to be nesting.

Discussion

Ashley Gorge to Okuku River junction. Riverbed bird surveys have been made on this section of the Ashley River on two previous occasions: 26 October 1963 (Davis 1964) and 20 November 1981 (Overmars & O'Donnell 1982, unpublished report). The first survey (Davis 1964) was from the Ashley Gorge to the sea, and did not separate birds counted above and below the Okuku River junction, so the results of that survey cannot be compared with the results from 2011. The second survey (Overmars & O'Donnell 1982) was just from the Ashley Gorge to the Okuku River junction, exactly the same stretch of river that was surveyed in 2011. The two surveys were almost exactly 30 years apart.

Apart from black shag, Canada goose, paradise shelduck and white-faced heron, the numbers of other species, especially South Island pied oystercatcher, pied stilt, banded dotterel, spur-winged plover, black-backed gull, black-billed gull, and black-fronted tern, were significantly lower in the 2011 survey than in 1981 (Table 3). Overmars & O'Donnell (1982) recorded 61 southern black-backed gull (including one colony of 10 nests), around 700 black-billed gull (two colonies of >200 nests and 10 nests, respectively), and 133 black-fronted tern (five small colonies), whereas the comparative numbers in 2011 were 0, 0 and 9. They also recorded two wrybill, feeding separately, whereas none were seen in 2011.

Lees Valley. The survey of the Lees Valley section of the river was undertaken by DOC on Nov 23. They also surveyed the same section on Nov 11, 2010. The major feature was high numbers of black-backed gulls, in one large colony in 2011 and two smaller colonies in 2010. This contrasts strongly with just 2 and 19 black-backed gulls seen below the gorge in the lower sections of the river (stretching over 40 km) in 2011 and 2010 respectively. The reasons for this disparity are unknown. There was also a colony of 130 black-billed gulls in 2010, and two small colonies of black-fronted terns in 2011. Surveyors commented on the 'weed-free nice section' of the river between the upper gorge and where the Wharfdale Road crosses the river, compared to the weed choked section from there down to the lower bridge. Most birds, including all colonies, were seen in the upper weed-free section, although numbers of banded dotterels and pied oystercatchers were not too different, with banded dotterels numbering 43 in the upper section and 34 in the lower section (oystercatchers – 27 and 21).

Conclusion

Bird numbers have declined significantly in the Ashley gorge to Okuku junction section of the river, whereas the two Lees valley surveys indicate that reasonable numbers of birds remain there. Whether the present populations on these two sections of the river are static or continuing to decline will only be determined by future surveys. Of particular importance in Lees Valley is the largely unmodified upper half (above Wharfdale Road), which because it is largely weed-free and unrestricted by stop-banks, represents the only remaining stretch of true braided riverbed within the Ashley-Rakahuri.