
*Management and monitoring of shorebirds in the
Ashley-Rakahuri River during the 2012/13 season*



Ashley-Rakahuri Rivercare Group, Inc.

Management and monitoring of shorebirds
in the Ashley-Rakahuri River during the 2012/13 season

A report by:

Nick J Ledgard, Niall C. Mugan

Prepared for:

Ashley/Rakahuri Rivercare Group, Inc.

June 2013

Contents

Summary	4
<hr/>	
1 Introduction	7
<hr/>	
2 Study area and methods	8
<hr/>	
2.1 Study area	8
2.2 Habitat enhancement	8
2.3 Advocacy	8
2.4 Walkway, 4WD track, riverbed access and swimming holes	9
2.5 Predator control	9
2.6 Bird surveys and monitoring	9
2.7 Meetings	10
2.8 Funding	10
3 Results	10
<hr/>	
3.1 Habitat enhancement	10
3.2 Advocacy	10
3.3 Walkway, 4WD track, riverbed access and swimming holes	10
3.4 Predator control	11
3.5 Spring bird counts	12
3.6 Shorebird breeding	12
4 Discussion	16
<hr/>	
4.1 Habitat enhancement	16
4.2 Advocacy	17
4.3 Predator control	18
4.4 Spring bird counts	19
4.5 Shorebird breeding	19
4.6 Funding	22
5 Conclusions	22
<hr/>	
6 Recommendations	23
<hr/>	
7 Acknowledgements	24
<hr/>	
8 References	25
<hr/>	
9 Appendix 1	26
<hr/>	

Summary

Ledgard, N.J., Muga N. 2013. *Management and monitoring of shorebirds in the Ashley-Rakahuri River during the 2012/13 season*. Unpublished report, Ashley-Rakahuri Rivercare Group Inc., Rangiora. 26 pp.

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 9th annual report from the Group.

The majority of funding over the past year has come from local fundraising. Smaller sums have come from donations, plus a share of royalties from sales of the children's book 'Ria the reckless wrybill'.

The main activities undertaken by the Group in 2012-13 were:

- Surveys of bird species in the lower 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, Environment Canterbury 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 on Nov 24. Counts of black-fronted terns and South Island pied oystercatchers were the highest on record. Wrybill numbers were the second highest, pied stilts and banded dotterels the third highest, and black-billed gulls the fourth highest. White-fronted tern numbers were well down on last year's record, but this was only the third year that they have been recorded on the river. With this exception and that of the black-backed gull, numbers were above the 12-year average for all the other main species.

Predator control. In total, 50 potential predators were trapped in 6,373 trap-nights. Predators trapped consisted of 36 hedgehogs, 2 cats, 3 stoats, 3 weasels, 5 rats and 1 ferret. Both trap-nights and predator numbers were higher than in the previous season (5,048 and 36 respectively), with hedgehogs remaining the most trapped predator. The trap-catch rate during the bird breeding season was 0.79 predators per 100 trap nights. Between the start of trapping in 2004 and 2013, there has been an overall decline in trap-catches/100 trap-nights. A post-season trapping period was initiated on March 10, 2012, and ran through to the end of August. During that time, 4482 trap-nights resulted in the capture of 6 cats, 1 stoat, 5 weasels and 10 hedgehogs, giving a trap-catch rate of 0.49 predators.

Monitoring of breeding birds. Seven pairs of wrybills attempted to nest in the study area in 2012-13. This equals the highest recorded and is the same as number recorded in the previous two seasons. However, only four chicks were fledged, for a productivity of 0.57, which is the lowest ever recorded. The estimated number of breeding tern pairs was 60, the second highest on record, but the productivity of 0.42 chicks fledged per pair was just below the long-term average of 0.43. There are no obvious leads as to why colonies can quickly establish and then equally quickly disappear. For the second season running, a good-sized colony of black-billed gulls was present on the river. By the end of October, 230 gulls had gathered at the Rossiters/Pylons site, and this number had grown to 400+ by Nov 9, with approximately 190 nests. Forty percent of nests were lost in a minor flood on Nov 12. By Dec 16, there was a crèche of 106 chicks, but on Dec 24, the crèche was vandalised and around 50% of chicks were stoned to death. The end result was approximately 180 pairs fledging 55 chicks, for a productivity of 0.31 chicks per pair. Forty-nine white-fronted terns started nesting alongside the black-billed gull colony, but left the area after the Nov 12 flood. Productivity was not recorded for pied oystercatchers, pied stilts and banded dotterels during the 2012-13 season, but obvious signs of breeding were noted at many sites.

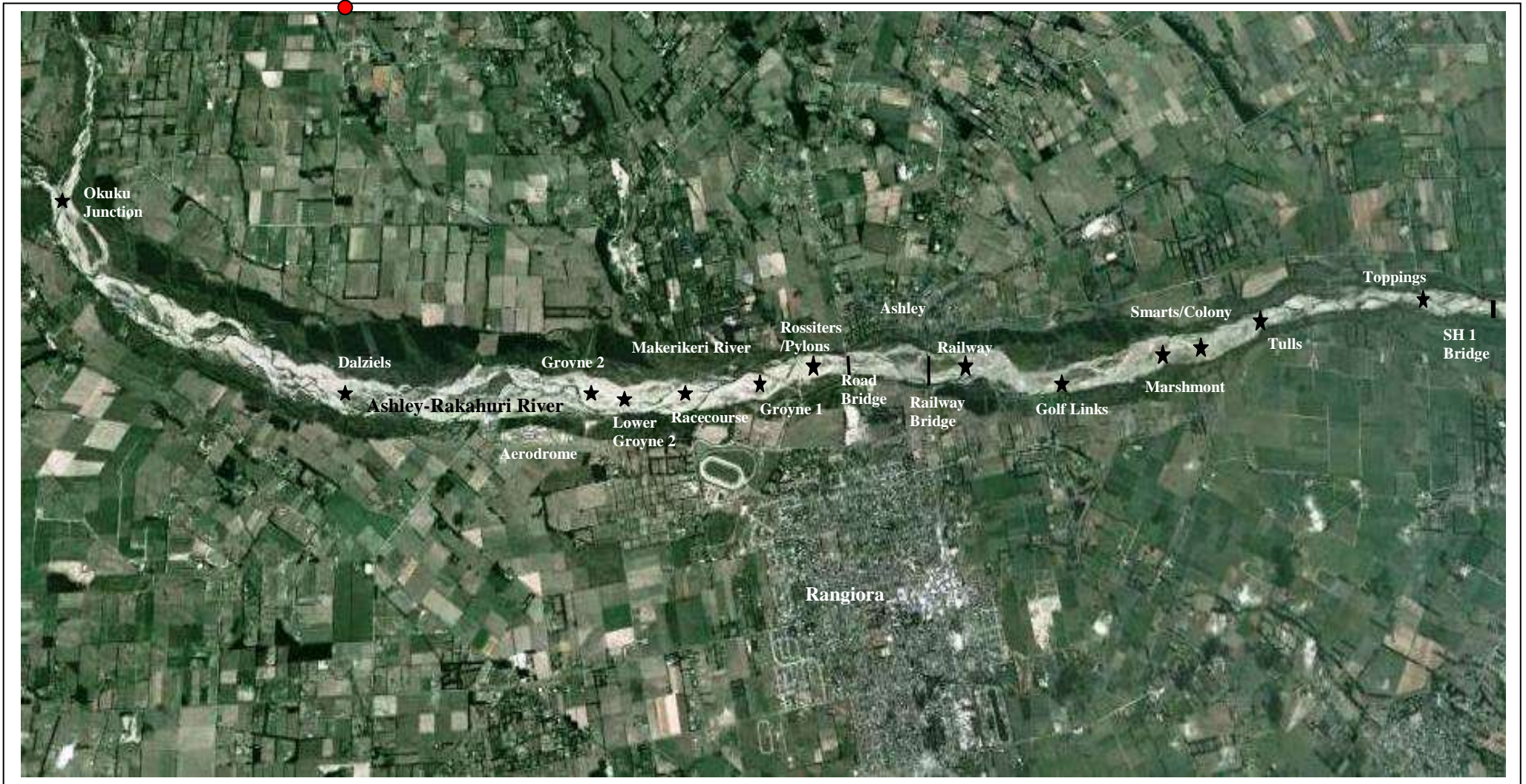
Awareness / education. During 2012-13, thirty-two occasions were used to improve awareness. A highlight was addressing seven schools, one of which produced 41 posters depicting the wrybill in the Ashley-Rakahuri river. These will be used on the riverbed during the breeding season, and in our desk-top calendar. Two hundred calendars were produced for 2013. The Group's webpage had 335 hits over a 6-month period, with the powerpoint address being downloaded 39 times. Five articles appeared in the local printed media. Two were written about the stoning to death of over 50 black-billed gull chicks on Dec 24; this event gained nation-wide media attention. One article was published in the NZ Ornithological Society's 'Southern Bird' magazine. Out on the river, customised

Corflute signs were placed in managed areas during the season. These are probably the most effective tool for minimising human disturbance. The Group continues to work alongside the Ashley-Rakahuri Regional Park and DOC, particularly as they move towards more involvement of communities in conservation decision-making and management. ARRG has also assisted BRaid Inc in raising the profile of braided river birds relative to potential threats from water use for hydro use and irrigation.

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, particularly to schools, 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 fund raising and sponsorship
- Maintain collaboration with commercial shingle extractors and other riverbed users
- 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 decision-makers

Figure 1. Map of lower Ashley-Rakahuri river, showing main breeding areas.



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 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. Halfway to the coast it is joined by its major tributary, the Okuku river. 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-Rakahuri 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, while at the same time recognising other sympathetic users. 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. Currently, the Group is aiming to support itself via fund raising and donations. 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; Ledgard, Spurr and Crossland, 2012), which also record the results of bird monitoring, habitat enhancement, predator control, and advocacy, and make recommendations for future management. The present report documents the management activities and monitoring of birds that were undertaken during the 2012/13 season.

In the past, the river has provided breeding habitat for significant numbers of black-fronted terns and many hundreds of pairs of black-billed gulls. Recently the number of gulls in particular has declined substantially (Dowding & Ledgard 2005), although a colony has been present for the last two seasons. The Ashley-Rakahuri is one of the most northerly rivers 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 Waiau river, but as isolated pairs (Crossland & Schmechel, in prep.). The Ashley birds remain the northern-most population which is known to have been stable for some time. 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 reported in 2008 (Miskelly *et al.* 2009). They have been reviewed more recently (John Dowding, Bird Threat Ranking Group, pers. comm), but this has yet to be officially ratified. The most endangered species on the Ashley-Rakahuri river is the black-billed gull which is now classified as Nationally Critical (the same as the black stilt), and internationally as Endangered, making it one of the world's most threatened gull species (BirdLife International 2007). The next most threatened species on the Ashley-Rakahuri is the black-fronted tern, which is classified as Nationally Endangered, the second-highest ranking possible under the New Zealand scheme. 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-Rakahuri River. Other shorebird species which breed on the river (such as the pied stilt, the South Island pied oystercatcher and the white-fronted tern) are listed as At Risk, or are not threatened.

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. 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.

2.2 HABITAT ENHANCEMENT

Early reports describe a combination of physical hand-pulling and machines (contracted from Taggart Earthmoving Ltd) which was used to remove weeds from specific sites in order to create potential bird breeding areas. However, experience has shown that these cleared areas can only be small and there is no guarantee that birds will use them. Hence, no weed clearance was undertaken in the 2012-13 season. 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 2012, 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, a desk-top calendar, talks (usually accompanied by the Group's powerpoint) to schools, service clubs, land administration agencies and the public, a web page, 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. During the breeding season, customised Corflute signs are placed in managed riverbed areas to inform the public of the location of breeding birds (*see photo*).



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

No planting of native species alongside the Mike Kean Walkway was undertaken over the 2012 winter, but weed control was carried out around those already established. Maintenance was undertaken 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. Over the 2012 winter, Ashley-Rakahuri Regional Park staff completed walkway extensions and a new mountain bike track alongside the river. In December, assistance was given to ECan in the location of swimming holes for the summer season (*see photo*).



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, 2012, 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 February 1, 2013, 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 24 from the Okuku river junction down to the SH1 bridge. It involved 16 members. There was no survey of the 22 km stretch between the Ashley gorge and the Okuku river junction, which was surveyed in 2011 (for the first time since 1981). Nor was there any survey of the Lees Valley section of the river (undertaken by DOC in 2011).

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 Niall Mukan of Keystone Ecology. In the past, John Dowding, another Christchurch-based professional ornithologist, has provided this service, and also undertaken banding (*see photo*)



of wrybill fledglings and adults. His unavailability during the past season has meant that no new banding has been carried out since 2010.

2.7 MEETINGS

During the 2012/13 season, the Group held meetings in the Department of Conservation's offices on River Road, Rangiora, on June 21, Sept 27 (AGM), November 21, and February 21. Seventeen members attended the AGM, with an average of 16 at other meetings.

2.8 FUNDING

Over the last year the Group's main finances have come from local fund raising. Most were obtained from sausage sizzles, a percentage of royalties from the sale of Jane Buxton's children's book 'Ria the reckless wrybill', and from private donations.

3 Results

3.1 HABITAT ENHANCEMENT

There was no hand-clearing of weeds on the river during 2012. Floods of 200 and 260 cumecs during August (see Appendix 2) cleared large areas where woody weed growth was light, but was not sufficient to remove larger weeds or vegetation on higher ground.

3.2 ADVOCACY

During the 2012/13 breeding season, more than thirty opportunities were taken to make sure that the public are kept aware of the Group's activities in the riverbed. These are listed in Appendix 1. Highlights were presenting our Powerpoint address to seven schools and having six articles published in local papers and journals.

During 2012, the Group remained closely associated with staff from DOC, the Waimakariri District Council, ECan the Ashley-Rakahuri Regional Park, representatives of which usually attend our meetings. ARRG also contributes actively 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.

Ashley-Rakahuri Regional Park. After being formally launched in 2010, the Ashley-Rakahuri Regional Park is now an operational reality. During 2012, more work was undertaken alongside the river, mainly in the form of access ways and parking, often associated with new grass recreational areas. On October 14, ARRG assisted with the opening of new walkways and mountain bike tracks alongside the Ashley-Rakahuri river. The Group keeps in close contact with Park rangers, who are not only well aware of the bird breeding situation, but go out of their way to assist with improving awareness, monitoring and minimising human disturbance.

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 – as is the new mountain bike track opened during 2012. 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. The September day spent showing a digger where to close off access tracks was well worthwhile, although there are always attempts to breach the blockages and some are successful. Due to

filling in by a number of small freshes over 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, 50 potential predators were trapped in 6,373 trap-nights. Predators trapped consisted of 36 hedgehogs, 2 cats, 3 stoats, 3 weasels, 5 rats and 1 ferret. Both trap-nights and predator numbers were higher than in the previous season (5,048 and 36 respectively), with hedgehogs remaining the most trapped predator. Details of trapping periods, trap-nights and captures at each site are shown in Table 1.



Table 1 Results of predator trapping in the Ashley River, 2012/13 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	1/09/12 – 15/11-1/2/13	1097	1	1	0	9	2	0
North bank Bridge – G2	1/09/12 – 27/1-1/2/13	4017	1	1	3	14	3	1
Railway	1/11/12 – 1/2/13	276	0	0	0	1	0	0
Golf Links – Tulls	1/09/12– 31/01/13	1013	0	1	0	12	0	0
Totals		6373	2	3	3	36	5	1

The trap-catch rate during the bird breeding season (50 predators/6373 trap-nights) was 0.79 predators per 100 trap nights.

A post-season trapping period was initiated from the Marshmont site up to Groyne 2 (about 7 km) on March 10, 2012, and ran through to the end of August - when the spring bird breeding season trapping began. During that time, 4482 trap-nights resulted in the capture of 6 cats, 1 stoat, 5 weasels and 10 hedgehogs. Therefore, the trap-catch rate during this winter season (22 predators/4480 trap-nights) was 0.49 predators per 100 trap nights.

Table 2 summarises trap nights and trap catch during the bird breeding season (August – January inclusive) from 2004-2012. It is pleasing to note the decline in catches/100 trap-nights over this period.

Table 2. Predator trap-nights and trap-catch between 2004 and 2012

Season	Trap nights	Cat	Stoat	Weasel	Hedgehog	Rat	Ferret	Other	Catch/100 trapnights
2004-05	4092	4	4	6	46	1	0		1.5
2005-06	3834	8	2	0	62	0	0		1.9
2006-07	3445	3	2	1	45	1	0	2 mice	1.6
2007-08	3983	4	3	4	39	3	0	2 mice	1.4
2008-09	3980	7	5	1	17*	0	0		0.75
2009-10	3981	3	3	2	17	1	1		0.68
2010-11	3732	3	4	2	23	0	0		0.51
2011-12	5048	2	1	1	34	0	1		0.78
2012-13	6373	2	3	3	36	5	1		0.79

*Major drop in hedgehog numbers probably due to large flood in Feb 2008

3.5 SPRING BIRD COUNTS

Survey figures from 24 November 2012 are shown in Table 3, with results of earlier counts shown for comparison.

Table 3 Results of the bird count undertaken in the Ashley-Rakahuri River (from Okuku junction down to SH1) on November 24, 2012. Counts from previous years, plus the 12-year mean, are shown for comparative purposes

Species	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	Ave
Black shag	18	3	#	8	7	2	2	10	9	6	2	5	6	7
Little shag	3	6		4	7	6	2	4	0	17	6	13	11	7
SI Pied oystercatcher	25	22		22	37	22	5	26	27	32	20	35	38	26
Variable oystercatcher	0	0		0	2	0	0	0	0	0	0	0	0	0
Pied stilt	229	82		138	140	137	68	164	131	196	233	194	209	160
Black stilt	0	0		0	2	1	1	1	1	1	0	0	0	1
Banded dotterel	199	130		169	213	245	84	237	198	233	260	250	248	206
Wrybill	17	7		16	9	7	5	9	8	13	18	15	17	12
Spur-winged plover	18	nc		13	27	149	37	116	11	39	15	89	55	51
Black-backed gull	26	nc		10	27	3	5	12	10	19	19	2	11	13
Black-billed gull	314	3		0	10	1	213	13	16	2	41	425	202	103
Black-fronted tern	74	44		102	28	26	180	89	81	124	192	190	200	111
White-fronted tern	0	0		0	0	0	0	0	0	0	8	77	6	8
Caspian tern	0	0		4	0	0	1	0	0	0	0	0	0	1

nc – not counted

No survey possible in 2002

Bird numbers continue to reflect the improvement of recent years. This is elaborated further in the Discussion section.

3.6 SHOREBIRD BREEDING

Locations of shorebird territories are shown in Figure 1. Three minor floods of between 70-100 cumecs in September, October and November did displace some nests in lower reaches of the river (see Appendix 2).

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

Seven (possibly 8) pairs of wrybills attempted to breed in the study area in the 2012-13 season.

1. Male: UB Female: UB

A UB female bird was first seen at the Smarts/Colony site on Oct 10, and 5 UB birds were present a month later (Nov 12). Wrybills were seen on virtually all subsequent visits, and a 2-egg nest was found at the western end of the main island on Nov 28. However, on Dec 9 no wrybills were present and the eggs had disappeared. A UB female was seen on Dec 31, and a pair with 2 flying juveniles were seen on Jan 3 – but there is no reason to believe that they were hatched at this site, and it is more likely that they came from further upriver. The last sighting was a UB pair on Jan 13.

Result: No chicks fledged.

2. Male: UB Female: YO-RO

This pair avoided detection until Nov 26, when they were seen with a chick which was feathered and is presumed to have fledged soon after. No nest was found. It is likely that this pair is the same as was first seen at the Marchmont site very late in the 2011-2012 season, on Jan 9, when a nest with a single egg was also found. YO-RO was seen a week later, but on subsequent visits no wrybills were seen nearby, and the nest was consequently considered abandoned. YO-RO and a 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: One chick fledged.

3. Male: BW-BW Female: UB

This pair was first seen at the Railway site on Oct 11, and observed regularly through to Dec 18, although BW-BW was often alone, indicating the presence of a nest (which was never found). On Dec 29, the pair were observed with a flying juvenile, and BW-BW was last seen on Jan 19. BW-BW and WO-G first nested at this site in the 2010-11 season (when BW-BW was first banded, and WO-G was WO-GO). They hatched 2 chicks which failed to fledge. Last season, on Oct 15, 2011, a 2-egg nest was found, but the nest was destroyed by a flood on Oct 19. Despite the pair being regularly sighted thereafter, no sign of renesting was observed. Both birds were present on Nov 19 and WO-G was last seen on Dec 2 (and has not been seen since). BW-BW was seen a few times at Groyne 2 in early Jan, 2012, being last observed there on Jan 8. WO-GO and a UB mate hatched chicks at this site in 2009, but they also failed to fledge.

Result: One chick fledged.

4. Male: UB Female: UB

A UB female was first seen at the Rossiters/Pylons site on Oct 2. A UB pair were observed on the mid-river island in early December, but even though the occasional UB adult was seen through to early January, there was no obvious sign of nesting. Last season, a 2-egg nest was found on the island at this site on Nov 8, and a flying juvenile was observed on Jan 3.

Result: No chicks fledged.

5. Male: WO-M Female: WO-WY

WO-M was first seen at the Racecourse site on Sept 16. On Sep 30, he was present with 2 UB birds (together with a Shore Plover close by!). WO-WY was not seen until Nov 14, when there was also a chick present. Both adults were seen with a chick on Nov 25, and again on Dec 5, when the chick was flying. This pair nested in the same area last season, and 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 a lone chick (capable of flying) was seen on Jan 3. They nested in the same area in 2009 and just down river closer to Groyne 1 in 2010, fledging 1 chick in both seasons.

Result: 1 chick fledged.

6. Male: M-R Female: B(O)-(Y)O

M-R may be O-R as he nested with B-O at the same Lower Groyne 2 site last season. They were both seen, along with a UB pair, very early in the 2012-13 season on Aug 5. They were present on most visits through to Nov 2, but were not seen thereafter. Despite much searching, no nest was found or chicks seen. This pair raised a single chick at this site in the 2011-12 season. UB birds were often seen in this area, but were most likely the pair at Groyne 2 just upriver.

Result: No chicks fledged.

7. Male: UB Female: UB

This pair was probably first seen with M-R and B-O on Aug 5, and observed alone out from Groyne 2 on Sep 11. No nest was found, but they were seen regularly through to the end of November, when their behaviour indicated the presence of chick(s). The male was seen with a flying juvenile on Dec 29. This pair nested at the same site last season, and fledged 2 chicks.

Result: 1 chick fledged.

In November, a lone wrybill was twice seen about 1km upriver from Dalziels. It's agitated behaviour indicated nesting, but no birds were found on subsequent visits.

Overall result: 7 (possibly 8) pairs fledged 4 chicks, for productivity of 0.57 chicks fledged per pair.

Black-fronted terns

Black-fronted terns attempted to nest in small colonies on at least 5 sites, but most did not last through to the chick stage. A small colony of 10-12 pairs were found a few hundred meters above the SH1 road bridge during the annual survey on Nov 24. However, they were not present when checked a couple of weeks later, so it is unlikely that any chicks fledged. Around 30 birds were seen on an island in the lower Marshmont area on Sep 30, with some showing nesting activity, but none were present on Oct 11. By the end of October, 10-20 birds were concentrated by the Pylons just above the Rangiora road bridge, and on Nov 21 6 pairs had nests on the central island, with a few more pairs upriver below the power lines. On Dec 20, at least one juvenile was seen flying, but it appeared that nesting had been disrupted by human disturbance and a small flood on Nov 12 (see App 2), as on Dec 9 a new 2-egg nest was found. Three juveniles were later seen flying in this area, and it is unlikely that many more fledged. Furthest up-river, terns started settling off Groyne 2 in late September and on Nov 21 there were an estimated 10-15 pairs on the mid-river island. A flying juvenile was seen on Nov 27, but about this time activity on the island ceased. This may have led to 6 pairs relocating 200m further upriver on Dec 8, when a 1-egg nest was found. The largest colony eventually settled in the Racecourse area in late December, with 20+ pairs present on Dec 29. On Jan 2, flying juveniles could be seen, with at least 3 brown-down chicks, plus some pairs still on eggs. On Jan 19, 70 adults were present, plus 15 flying juveniles, and this number had grown to over 160 adults plus around 25 flying juveniles on Feb 1. This flock probably represented most of the adults and juveniles then present on the river. The flock had shrunk to about half this size by Feb 19, when large sections of the river were becoming dry.

Result: As birds moved about the river throughout the season and appeared to reneest in different sites, it is difficult to estimate total nests and chicks fledged. However, an estimated 60 pairs (10 above the SH1 bridge, 10 at Rossiters/Pylons, 25 at Rossiters and 15 at Groyne 2) fledged 25 chicks, for maximum productivity of 0.42 chicks per pair.



Black-billed gulls

On Oct 10 a colony of 220 gulls was observed (some carrying nesting material) at the Tulls site, but by Oct 14 none were present. In early December, a few pairs returned and 4 were sitting on nests by Dec 10 (with a small colony of white-fronted terns alongside), but all gulls were absent 2 weeks later. On Oct 31, 230 gulls had gathered by the Pylons below the end of Rossiters Road, and this number had grown to 400+ by Nov 9, with most pairs on nests (190 counted at end of season). A minor flood (80 cumecs – App 2) wet the colony on Nov 12 (*see photo*), but 100+ nests survived. Eight

pairs relocated and nested on the mid-river island just downriver, with 1 pair renesting upriver off Groyne 1. On Dec 5, there were 180 adults present at the main colony, with 47 chicks counted. One Dec 16, a crèche of 106 chicks, accompanied by 50 adults had moved 100m upriver, but was back at the nesting site on Dec 20. The 8 nests downriver and the one upriver had been abandoned. On Dec 24, the crèche of chicks was vandalised and around 50 chicks stoned to death. The remainder escaped onto the water and moved downriver, where 55 chicks were counted on Dec 29 (*see photo*). A small fresh divided the crèche into 2 halves on Jan 3, but they reunited, and by Jan 6 just 25 were left in the crèche, with the remainder presumed fledged and flying. By Jan 9, there were no juveniles left on the river.



Result: Approximately 180 pairs fledged 55 chicks, for a productivity of 0.31 chicks per pair. Productivity would have been twice this figure, if the vandals had not killed half the chicks.

White-fronted terns

This species was first recorded in annual surveys in 2010, when 8 were counted, but no nesting was observed. In 2011, 77 were counted nesting alongside the black-billed gull colony at Tulls. Similarly in 2012, when white-fronted terns started nesting with the gull colony at Rossiters/Pylons, where 9 were present on Nov 2. By Nov 9, this had risen to 49 birds. However, their nests did not survive the Nov 12 flood (see Appendix 2), and none returned after this date. In addition, 30 were counted (with 6 on nests) on Dec 10 alongside gulls nesting of the end of Kings Ave below SH1, but no chicks eventuated.

Result: Approximately 20 pairs began nesting above the SH1 bridge, but few got beyond egg laying and no fledglings resulted.

Pied oystercatchers

Although 38 were counted in the survey of Nov 24, no nests were found and only a few chicks or fledglings were recorded during the season. In late December, pairs with newly fledged juveniles were noted at Smarts/Colony, Rossiters/Pylons and the Racecourse site.

Banded dotterels

Banded dotterels nested throughout the study area. The number seen on the Nov 24 survey was only just below the record number observed in 2010. 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, Rossiters/Pylons, Groyne 1, Racecourse and Groyne 2. The first banded dotterel was seen on August 5, and the first nest (3 eggs) found at Groyne 1 on Sep 20. However, in January the normal flocks of flying juveniles were not noted. Their productivity was not recorded.

Pied stilts

Many pairs of pied stilts bred in the study area. As with the banded dotterels, high survey numbers on Nov 24 appeared to be reflected in a good breeding season. Many juveniles were observed, although the large post-season family flocks seen at the end of last season, were not noted this season. Their productivity was not recorded.

Black stilt

The black stilt (GK-OW) which bred on the river (always with a pied mate) for many years up to 2009, has not been seen on the riverbed since. However, a banded bird was present at the estuary between December and the end of February (Bev Alexander, pers. comm.).

Caspian tern, black-backed gull and spur-winged plover

Caspian terns were occasionally noted on the river during the breeding season (3 at Tulls on Nov 8), but none were seen to breed. On Sept 18, 23 black-backed gulls were observed at Golf Links, and although individuals or pairs were often seen, numbers remained low throughout the season. No breeding was noted. No spur-winged plovers were found nesting, but 30 were seen at Tulls on Sep 30, and the usual flocks were present late in the season (50 at Tulls on Jan 13) and in early winter (45 on May 12).

4 Discussion

The 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 – with particular focus on assisting the wrybill, black-fronted tern and black-billed gull.

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 is now left to natural floods.
2. Introduced mammalian predators reduce survival and productivity. The Group undertakes all year predator control, with particular attention to 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.

The success of the above management themes are assessed by an annual survey of bird populations, plus monitoring of breeding success, in order to determine productivity (number of chicks fledged per nesting pair of adults).

4.1 HABITAT ENHANCEMENT

No artificial weed removal is now undertaken, as the areas involved can only be small and past experience is that they have been rarely used by breeding birds. Floods are the only effective

means of clearing large areas of weeds, and hopefully, these occur before the main breeding season gets underway in September. Two minor floods (200 and 260 cumecs – see Appendix 2) in early August, only cleared light weed cover from lower-lying reaches of the river. Hence, many nests ended up located close to river level and were threatened by three lesser floods (between 50-100 cumecs) over the September and December period. One of 80 cumecs on November 12 (Appendix 2) almost swept away the newly-established black-billed gull colony at Rossiters/Pylons, resulting in the loss of around 40% of nests, plus the departure of 49 white-fronted terns which were present alongside the gulls. Small black-fronted tern colonies elsewhere on the river were also displaced by these floods. Wrybill nests probably escaped damage, as they are usually found on slightly higher ground.

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, the Group advises on the blocking off of all but the major access tracks early in the season. Without a doubt, this reduces vehicle access, but drivers are quick to utilise any that remain negotiable.

Research has shown how bird breeding success is greatest on islands with a reasonable flow of water surrounding them, as this restricts access for predators such as hedgehogs and cats. There was water around the major gull colony at Rossiters/Pylons for much of the season, but it was not deep enough to deter all 4WD'ers (see photo) or the individual(s) who stoned the crèche of chicks just before Christmas. The Group, in conjunction with commercial shingle extractors, could do more to create and maintain good island habitat.

4.2 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. Appendix 1 lists 32 occasions used to improve awareness.

The increased number of school visits resulted from writing to all local schools at the start of the season. In the long-term, talks to schools are likely to be the most effective, as children readily absorb interesting messages and influence adults. Plus they can produce material for use elsewhere. For example, forty-one pupils at Ashgrove School each made posters (see photo) depicting the wrybill in the Ashley-Rakahuri river. These will be used on the riverbed during the breeding season, and in our desk-top calendar for 2014. The 2013



des-top calendar went out for sale in January. The main aim was to improve awareness, so they were sold at cost price only. Two hundred were produced, and by mid-2013 around forty remained unsold. Over a 6-month period, our webpage (www.ashleyrivercare.org.nz) has had 335 hits, and the powerpoint address has been downloaded 39 times. This is good news, but the site must be kept current and regularly updated if it is to remain attractive and relevant. During 2012-13, five articles appeared in the local media (Northern Outlook, North Canterbury News and the Press). Two were written as a result of the stoning to death of over 50 black-billed gull chicks on Dec 24. The culprits are not likely to be caught, but one result was a short period of wide media attention which we would not have attracted otherwise. This national attention could be described as the 'silver lining' to an otherwise very dark cloud.

All these promotional activities take considerable time and effort, but if awareness is to be continued at a high level, such effort must be maintained on an annual basis.

Out on the river, customised Corflute signs were placed in managed areas during the season (*see photo*). These are essential to minimise human disturbance during the breeding season, and are probably the most effective tool for that purpose.

There is a rising national interest in the use of water, particularly for irrigation. One consequence has been that braided rivers are the target of increasing attention, as local Zone Committees (ZC) reach the final stages of decision-making relative to water allocation. The Waiau-Hurunui ZC is furthest down this track, with the Waimakariri ZC (which includes the Ashley-Rakahuri river) close behind. Even though the Canterbury Water Management Strategy has ‘environment’ as a first order priority, ahead of ‘irrigation’ (a second order priority), the pressure is on to cater for farming first. ARRГ is working alongside BRaid to promote the uniqueness of our braided rivers and their ecosystems, with the intention of addressing all the Zone Committees to this end before the end of the year. The option of water use for irrigation will be with us for decades to come, but if we lose our braided river birds they will be gone forever.



The Ashley-Rakahuri Regional Park was launched in mid-2010. Even though the long-term professional management of the river lies largely in the hands of the Regional Park, limited resources means that future 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 about the importance of private sector and community inputs relative to achieving good conservation outcomes.

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 has run very successful training courses on the management of braided river birds in September 2011 and 2012 and a further course is booked for 2013. BRaid also carried out a survey of birds in the upper Waimakariri River on Nov 5-8, 2012. This was the first full survey since 1996, and was supported by a number of ARRГ members. 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 Waiau rivercare group was shown the ARRГ powerpoint address on June 6, 2013 and intends to start predator control and bird monitoring this coming season.

On the international scene, most of Canterbury’s braided rivers, including the Ashley-Rakahuri and its estuary are being proposed for Important Bird Area (IBA) status. IBA’s have legal recognition for conservation protection in many off-shore countries.

4.3 PREDATOR CONTROL

The number of trap-nights during the 2012/13 breeding season was the highest ever (26% higher than the previous year), and the number of predators trapped increased from 39 to 50, although the trap-catch rate during the breeding season (0.79) was almost precisely the same as the previous season (0.78). Hedgehogs remain the most trapped predator, and are almost back to the numbers caught prior to the severe floods of 2008 and 2009 (peak flows of over 1100 and 500 cumecs respectively). This may be due to a greater number of trap nights, but probably reflects a continuing hedgehog recovery after the 08/09 floods removed large areas of good cover. Numbers of wild cats were the lowest ever, but this may be due to the winter trapping started in

2012, when wild cats (6) were caught in higher proportions than other predators. Despite the extra trap-nights, the overall numbers of predators caught remain low when compared to catches in other braided rivers. 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. This situation may not remain for long, as resistance to RCD is rising elsewhere in the country.

A post-season trapping period was initiated in March, 2012. This resulted in a lower catch rate (0.49) compared to that obtained during the breeding season (0.79), but as stated above, this seems to be the best time for trapping wild cats. Past experience indicates that cats may be slow to reoccupy the territories of trapped animals, so it is hoped that winter removals may lead to lower cat numbers during the bird breeding season.

Despite the increased work, the trapping team remains small, and the Group continues to try to attract more volunteers. For this reason, the Group needs to keep well informed of new predator control techniques being developed - which could mean significantly less time and effort than needed for 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 low. The survey number (11) was below average (13), but a flock of 23 was observed at Golf Links early in September. Of particular note was a pair of black-backed gulls which positioned themselves alongside the black-billed gull colony at Rossiters/Pylons for 3 weeks in December. Despite frequent attack from the smaller gulls, they were seen to prey inside the colony on two occasions, and there can be little doubt that they helped themselves to eggs and young chicks at other times. Control using a rifle would not have been difficult, but shooting is not permitted on the river. However, if this situation arises again in the future, permission to shoot should be sought. 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 2012 annual survey of the lower reaches of the Ashley-Rakahuri took place on Nov 24. Table 2 shows that the 2011 counts of black-fronted terns and South Island pied oystercatchers were the highest on record, and numbers of pied stilts and banded dotterels the third highest. Numbers of wrybills were the second highest. White-fronted tern numbers (6) were well down on last year's record of 77, but this was still only the third year that they have been recorded on the river. With this exception and that of the black-backed gull, numbers were above the 12-year average for all the other main species, which suggests that they are at least 'holding their own' on the Ashley-Rakahuri river. In addition to the above, the following were also observed during the annual survey; 6 Canada geese, 19 mallard ducks, 48 paradise shelduck and 28 white-faced herons. Of particular note earlier in the season was a banded Shore Plover observed alongside three wrybills at the Racecourse site on Sep 30.

4.5 SHOREBIRD BREEDING

Wrybills

Seven pairs attempted to nest in the study area in 2012-13. This equals the highest recorded and equals the number recorded in the previous two seasons. However, only four chicks were fledged, for a productivity of 0.57, which is the lowest ever recorded (the next lowest was 0.6 in 2008). The reasons for this are unclear, and were not helped by the fact that, despite many hours

of patient observation, only one nest was located (at Smarts/Colony), and only 1 chick was seen before it had reached the feathered stage. Hence, it was not possible to determine when failure may have occurred. Amongst the fourteen birds (7 pairs) that did breed, only six were banded. Two pairs (WO-M/WO-WY and M-R/B-Y) are the same as last season and nesting in the same sites, although M-R and B-Y disappeared early in the season (Nov 2) and were not seen thereafter. Of the remaining two banded birds, BW-BW returned to the same Railway site, but with a new mate, as his mate of last season (WO-G) has not been seen since Dec 2, 2012. YO-RO also bred with a UB male in the same vicinity (Marchmont) as 2011-12. Last season, seven of 14 breeding birds (seven pairs) were banded (WO_G has since disappeared), and the year before (2010-11) when the last banding was undertaken, eight birds were banded (BO-WR since missing). Since banding began in 2001, twenty-one wrybills have been colour banded. Nine of these were not seen again after the year of banding, and four of these were fledglings when banded. All the above does not indicate high adult survival, which is essential for long-term wrybill success. Like many of this country's native birds, their survival strategy is to have a long life and not to rely too much on regular breeding success. This strategy can only succeed if adult mortality is low.



No banding of wrybills was attempted in 2012, due to the only licensed bander, John Dowding, not being available.

Black-fronted terns

Although the November survey recorded the highest numbers of black-fronted terns (200) since regular surveys began in 2000 (average of 111), breeding success for this species remains low and variable. The estimated number of breeding pairs was 60, the second highest since 2006 (81), and the productivity of 0.42 chicks fledged per pair was just below the long-term average over 8-years of 0.43. 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.

During the 2012-13 season, the end result after the failure of small colonies was the concentration of birds in a larger colony during December - at the Racecourse area where a few pairs had started nesting earlier. By the end of December, all stages of breeding were represented, from eggs through to fledged chicks. However, the few egg-nests which were followed individually did not last through to hatching; some were washed out by a small 50 cumec fresh in early January (Appendix 2), but it is unknown why the eggs disappeared from two higher nests. Bird numbers increased steadily at this Racecourse site through to early February, when there were 180-200 birds present, which included at least 25 flying juveniles. Such large gatherings at the end of the season have been seen before, and as all birds spend long periods settled on the ground, they offer an excellent opportunity to use a spotting scope to get a good count of numbers of adults and juveniles.

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. This was only the fourth season since 2003 when a colony was present – the others were 2006, 2007 and 2011. Hopefully, after 2 successive years, regular breeding may become the norm. After a false start at Tulls in early October, the main colony got underway at Rossiters/Pylons at the end of that month, to exceed 400 birds by early November. It was encouraging to see that although an 80 cumec flood (Appendix 2) on Nov 12 wet nearly all nests, the majority survived through to hatching. It was less encouraging to watch a pair of black-backed gulls take up residence alongside the colony, from where they raided eggs and young chicks. Two rifle shots could have solved this problem, but shooting is not permitted on the river. All the same, if such a situation arises in the future, permission will be sought to solve it in this simple fashion. Unfortunately, this colony was located in an area frequently visited by the public. Riverbank signs almost certainly reduced disturbance, but they were still troubled by 4WD vehicles (one was seen to park nearby and had to be moved on in mid December), plus there was stoning of the crèche of chicks just before Christmas. This event resulted in the death of 51 chicks (about 50%) and was not discovered until 2 days later (maggots on some of the dead chicks). There were no known witnesses, and despite national media coverage, it is unlikely that the culprits will ever be identified. The only positive outcome of this tragedy was much improved awareness of the gulls and the river. Since this event, the possibility of having daylight surveillance of a colony during the core breeding period has been discussed, and will be attempted if the birds again nest in a site which is popular with the public. Such surveillance should not only reduce disturbance, but will also give opportunities for visitors to become better acquainted with the birds.

White-fronted terns

In 2011, this species nested on the river, well away from the coast (7km), for the first time. This was at Tulls, in close association with a black-billed gull colony. In 2012, they again chose to start nests alongside the gull colony at Rossiters/Pylons – some 12 km from the coast. However, the flood of Nov 12 (Appendix 2), which washed away 40% of gull nests, also disrupted the 49 terns then present. They departed the site and did not return. Last season, chick survival was poor (productivity of just 0.28), and the cause could have been starvation, as the adults appeared to bring in all their food from the coast. If this was the case, feeding chicks would have been even more difficult at Rossiters/Pylons in 2013, as this site is a further 5 km from the coast.

Other species

Breeding success or productivity was not recorded for pied oystercatchers, pied stilts and banded dotterels during the 2012-13 season, but obvious signs of breeding were noted at many sites - where stilt and dotterel chicks were not hard to observe at the end of the season. Hence, their populations appear to be holding their own. The black stilt, which bred on the river for three consecutive years through to the 2009-10 season, has not been seen since, but may have nested near-by as it was observed down at the Ashley-Rakahuri / Saltwater Creek estuary in December-January.

Spur-winged plovers were present throughout the season, but sizeable flocks were most obvious at the end of the season and through into the autumn and winter. This is a pattern observed for the species in the post-breeding season on many Canterbury braided rivers (Andrew Crossland, pers. comm.).

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.

4.6 FUNDING

Last year the Group felt that it had a sufficiently high profile to raise funds locally and to 'wean' itself from national funding agencies such as the WWF and Lotteries, which have supported ARRГ since the early 2000s. Hence, during the last season finances have come primarily from local sources, including donations and royalties from the sale of Jane Buxton's children's book 'Ria the reckless wrybill'. Most funds have come from sausage sizzles held outside the Warehouse in Rangiora on July 14 and December 15. Local fund-raising not only has the advantages of greater community participation and exposure, but probably requires less time and effort than is involved with applying for finances from 'traditional' funding agencies. These also demand detailed reporting and accountability procedures.

5 Conclusions

Relative to the future success of the three key shorebird species (wrybill, black-fronted tern and black-billed gull) in the Ashley-Rakahuri river, the 2012/13 season was above average in terms of numbers counted in the annual survey, but below average in terms of breeding success (productivity). Wrybills, the best known and icon species of the river, had their poorest breeding season since regular records were started 12 years ago. There was no obvious cause for this, so, hopefully it just represents a dip in the natural ups and downs which occur over the years. Black-billed gull and black-fronted tern numbers appear to be increasing, but breeding success remains low and variable. Numbers of other species, such as pied oystercatcher, banded dotterel and pied stilt were also above average. Hence, 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 and ECan. During 2012, the Group created over thirty opportunities to improve awareness, particularly to schools. Along with BRaid Inc, ARRГ keeps a close watch on decisions surfacing from the Canterbury Water Management Strategy (CWMS) and its component Zone Committees. Even though the CWMS has 'environment' as a first order priority, ahead of 'irrigation' (a second order priority), the pressure is on to cater for farming first. Hopefully, it will not be forgotten that the option of water use for irrigation will be with us for decades to come, but if we lose our braided river birds they will be gone forever.

Looking into the near future, two local challenges are to utilise our high public profile to secure longer-term funding through donations and 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 indicates if the Group is attaining its goal of improved bird numbers, as well as informing 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 the level of this commitment 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. Particular attention should be paid to schools.

Justification

Although awareness has improved significantly since the Group was formed in 1999, it can only be maintained and improved by continued effort. Children are excellent advocates for influencing adults, and future management will be in their hands.

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. Too much water use for hydro generation and irrigation will adversely affect bird numbers. These agencies 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.

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

Justification

A major objective of the plan is the long-term maintenance of key shorebird populations on the Ashley-Rakahuri river.

7. Acknowledgements

We are particularly grateful for major past financial support from:

- World Wildlife's Habitat and Protection Fund
- 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

- BirdLife International. 2007. <http://www.birdlife.org/datazone/index.html> (viewed 15 August 2007).
- Cromarty, P. & Scott, D.A. 1996. *A Directory of Wetlands in New Zealand*. Department of Conservation, Wellington.
- Davis, M.M. 1964. Field study week-end, Canterbury 25th-28th October 1963. *Notornis* 11: 61–62.
- Dowding, J.E.; Ledgard, N.J. 2005. Management and monitoring of shorebirds in the Ashley River during the 2004/05 season. Unpublished report, Ashley/Rakahuri Rivercare Group. 20 pp.
- Dowding, J.E.; Ledgard, N.J. 2006. Management and monitoring of shorebirds in the Ashley River during the 2005/06 season. Unpublished report, Ashley/Rakahuri Rivercare Group. 20 pp.
- Dowding, J.E.; Ledgard, N.J. 2007. Management and monitoring of shorebirds in the Ashley River during the 2006/07 season. Unpublished report, Ashley/Rakahuri Rivercare Group. 22 pp.
- Dowding, J.E.; Ledgard, N.J. 2008. Management and monitoring of shorebirds in the Ashley River during the 2007/08 season. Unpublished report, Ashley/Rakahuri Rivercare Group. 23 pp.
- Dowding, J.E.; Ledgard, N.J. 2009. Management and monitoring of shorebirds in the Ashley River during the 2008/09 season. Unpublished report, Ashley/Rakahuri Rivercare Group. 21 pp.
- Dowding, J.E.; Ledgard, N.J. 2010. Management and monitoring of shorebirds in the Ashley River during the 2009/10 season. Unpublished report, Ashley/Rakahuri Rivercare Group. 20 pp.
- Dowding, J.E.; Moore, S.J. 2006. Habitat networks of indigenous shorebirds in New Zealand. *Science for Conservation* 261. Department of Conservation, Wellington.
- Hughey, K.; O'Donnell, C.; Schmeckel, F.; Grant, A. 2010. Native Birdlife: Application of the river significance assessment method to the Canterbury region. Chapter 10 in Hughey, K.F.D.; Baker, M-A. 2010. The River Values assessment System: Volume 2: Application to cultural, production and environmental values. Land Environment and People Research Report No 24. Lincoln University, Canterbury, New Zealand.
- McClellan, R.K. 2009. The ecology and management of Southland's black-billed gulls. Unpublished PhD thesis, university of Otago, Dunedin, New Zealand. 264 p.
- Miskelly, C.M., Dowding, J.E., Elliott, G.P., Hitchmough, R.A., Powlesland, R.G., Robertson, H.H. 2009. Conservation of New Zealand birds, 2008. *Notornis* 55 (3): 117–135.
- O'Donnell, C.F.J.; Moore, S.M. 1983. The wildlife and conservation of braided river systems in Canterbury. Fauna Survey Unit Report No. 33. New Zealand Wildlife Service, Department of Internal Affairs, Wellington.
- Overmars, F.; O'Donnell, C. 1982. Wildlife survey of the upper Ashley River. Unpublished report. New Zealand Wildlife Service, Christchurch.
- Riegen, A.C.; Dowding, J.E. 2003. The Wrybill *Anarhynchus frontalis*: a brief review of status, threats and work in progress. *Wader Study Group Bulletin* 100: 20–24.
- Steffens, K.E.; Sanders, M.D.; Gleeson, D.M.; Pullen, K.M.; Stowe, C.J. 2011. Identification of predators at black-fronted tern *Chlidonias albostrigatus* nests, using mtDNA analysis and digital video recorders. Available on-line at: <http://www.newzealandecology.org.nzje/>

9 Appendix 1. Promotional activities during 2012-13

Promotion / activity	Date	Comment
Meeting	June 21, 2012	DOC offices, 20 participants
AGM and meeting	Sept 27, 2012	DOC offices, 17 participants
Meeting	Nov 21, 2012	DOC offices, 16 participants
Meeting	Feb 21, 2013	DOC offices, 12 participants
Annual bird survey	Nov 24, 2012	16 participants
Powerpoint address	Sept 11, 2012	Ppt to cubs in Rangiora
Powerpoint address	Oct 3, 2012	Ppt to Probus in Rangiora
Powerpoint address	Dec 7, 2012	Ppt to Marshlands School
Powerpoint address	Dec 10, 2012	Ppt to Swannanoa School
Powerpoint address	Feb 7, 2013	Ppt to Probus, Rangiora
Powerpoint address	Mar 12, 2013	Ppt to Rangiora Borough School
Powerpoint address	Mar 14, 2013	Ppt to Kaiapoi Nth School
Powerpoint address	Mar 25, 2013	Ppt to Sefton School
Powerpoint address	Apr 11 2013	Ppt to Ashgrove School
Powerpoint address	Apr 17 2013	Ppt to Fernside School
Powerpoint address	Apr 29, 2013	BRaid Ppt to OSNZ meeting
School posters	June 6, 2013	Presented with 60+ posters from Ashgrove School
Powerpoint address	June 6, 2013	Ppt to Waiau community group
Northern Outlook	Sept 6, 2012	'Help to bring birds back'
Northern Outlook	Nov 17, 2012	'Group safeguards riverbed birds'
Press	Dec 26, 2012	'Dismay as endangered gull chicks slaughtered'
Calendar	January, 2013	2013 desk-top calendar goes on sale
Northern Outlook	Jan 5, 2013	'DOC too soft: Gull devotee'
OSNZ's Southern Bird	March No 53	'Eventful life of BBG colony on Ashley river'
Northern Outlook	June 8, 2013	'Pupils give rare wrybills boost'
Fund raising	July 14, 2012	Sausage sizzle at Warehouse
Tree planting	Sept 9, 2012	Native planting by river for Park
Public open day	Sept 16, 2012	Display and sizzle at Mt Thomas Open Day
BRaid braided river training course	Sept 25-27, 2012	Glentui Meadows, Ashley Gorge, 22 participants
Public open day	Oct 14, 2012	Display and walk - Bridge picnic area
River visit	Nov 28, 2012	With Rangiora Cub group
Fund raising	Dec 15, 2012	Sausage sizzle - Warehouse

Appendix 2. River flow (cumecs) at Ashley Gorge from July 1, 2012 to June 20, 2013 (from Environment Canterbury website www.ecan.govt.nz). The 2012/13 bird breeding season lasted from August, 2012 to February, 2013.

