
*Management and monitoring of shorebirds in the
Ashley-Rakahuri River during the 2014/15 season*



The black-fronted tern is a fickle breeder on the Ashley-Rakahuri river

Management and monitoring of shorebirds
in the Ashley-Rakahuri River during the 2014/15 season

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Prepared for:

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Summary

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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 11th annual report from the Group.

The Group is now self-funded, with finances coming from a trap making and selling project, donations and local awareness initiatives, plus a share of royalties from sales of the children's book 'Ria the reckless wrybill'.

Activities were focussed on management to assist the breeding of three threatened species in the river, namely the wrybill (ngutupare), black-billed gull (tarapuka) and black-fronted tern (tarapirohe). To this end, the main actions undertaken involved on-going bird population surveys, predator control, population monitoring and improving awareness through advocacy to the public and river management decision-makers.

Bird surveys. The annual bird survey was carried out on 15 Nov 2014. Bird numbers continue to reflect the improvement of recent years. A record number of wrybills were counted (21). Just as pleasing was the record figure for black-fronted terns (263). Numbers of other species were similar to 2014, and well above the long-term average. The one exception was the black-billed gull – numbers were down on the previous three seasons.

Predator control. In total, 52 potential predators were trapped in 7,560 trap-nights, giving a trap-catch rate during the bird breeding season of 0.66 (11-year mean is 1.02). Predators trapped consisted of 35 hedgehogs, 6 cats, 7 stoats, 3 weasels and one ferret. The number of trap-nights was the highest ever, with hedgehogs remaining the most trapped predator. The 11 mustelids caught was one more than the previous highest of 10. A post-season trapping period was initiated during February, 2014, and ran through to the end of August. The 4477 trap-nights resulted in the capture of 17 hedgehogs, 8 cats, 1 stoat, 1 weasel, and 1 ferret, for a winter trap-catch rate of 0.64.

Monitoring of breeding birds. At least ten pairs of wrybills attempted to breed in the study area in the 2014-15 season - a record number, the previous best being seven. At least three pairs double-brooded ie., followed up the successful fledging of chick(s) from their first brood with success from a second brood. A minimum of 10 pairs raised 13 chicks, for a productivity of 1.3 chicks fledged per pair. This is the highest productivity figure since monitoring began in 2004. Black-fronted terns concentrated breeding in four colonies of 10-20 pairs. As in previous years, the numbers of nesting pairs declined as the season progressed. In total, approximately 60-80 pairs fledged 45-50 chicks for a minimum productivity of 0.56. For the 4th year running, a colony of black-billed gulls gathered close to the Ashley road bridge. By Oct 24, 500 birds were present and some egg laying had commenced, but by the evening they had all gone. There were no obvious reasons for this sudden abandonment. Elsewhere, at least four pairs nested, with five chicks probably fledged. Productivity was not recorded for pied oystercatchers, pied stilts and banded dotterels, but obvious signs of breeding were noted at many sites.

Awareness / education. During 2014/15, thirty-two occasions were used to improve awareness. A definite highlight was being a finalist in the 'Protecting our Biodiversity' section of the 2015 Green Ribbon Awards (June 4). Another highlight was the designing and commissioning of a Group logo. The Group's powerpoint presentation was shown on eight occasions (including six schools). Displays were erected at five sites – including the opening of the new Ashley river bridge (Feb 21), and the Ohoka Farmers Market. In order to keep the general public informed, nine articles appeared in 'The Press' and local papers, plus our website was maintained, and a Facebook page was started in early 2015. Assistance was given to DOC during their Conservation Week programme, plus the Group was represented at a DOC braided river workshop in Geraldine on April 28-29. Seven thousand bookmarks featuring the rare and endangered braided river birds were printed – the aim is to give one to every primary school child in N. Canterbury. The Group remained closely associated with staff from DOC, the Waimakariri District Council and local Zone Committee, ECan and the Ashley-Rakahuri Regional Park.. 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.

Conclusion. The 2014/15 season was above average both in terms of numbers counted, and breeding success (black-billed gulls excepted). When this is combined with analysis of long-term data gathered since 2000, one can conclude that management actions by the Group have contributed to the increasing bird populations on the Ashley-Rakahuri river, and that continued management of birds breeding in the riverbed is justified. Looking into the near future, the major challenges involve maintaining/improving predator control, learning more about adult bird survival (more banding required), and the on-going challenge of maintaining public interest.

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
- Create and maintain riverbed islands for bird breeding
- Utilise high public profile to maintain finances via local fund raising, donations 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.
- Maintain and improve collaboration with ECan's Biodiversity Programme, the Waimakariri Zone Committee and Canterbury Water Management Strategy's decision-makers, iwi and Fish and Game.

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 estuary where the Ashley-Rakahuri drains into the Pacific Ocean has large areas of tidal mudflats, and is recognised as one of the best shorebird feeding sites on the South Island's eastern coastline.

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 'Regional' 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, 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 supports itself by local 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; Ledgard and Mugan, 2013), 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 2014/15 season. An analysis of longer-term results since 2000 is given in the 2013-14 report.

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. Over the last 20 years the number of gulls in particular has declined substantially (Dowding & Ledgard 2005), although a colony has been present for three of the last four 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 as a few isolated pairs on the Waiau river, which is about 70 km north of the Ashley-Rakahuri. 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 national populations and are considered threatened.

The threat categories of all New Zealand birds were revised in 2012 and the results reported by Robertson *et al.* (2013). 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 the world's most threatened gull species (BirdLife International 2014). 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 MANAGEMENT

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, the reliance is on natural floods to clear away weeds (see 3.1), and no Group weed clearance was undertaken in the 2014-15 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 2014, but the Group intends to do more of this work in the future.

The construction of a new bridge over the Ashley-Rakahuri river (Cones Road) was undertaken during 2014, with the official opening on February 21, 2015. During construction a close liaison was kept with the contractors and the Waimakariri District Council, and no unusual bird breeding disturbance was noted.

2.3 ADVOCACY

Advocacy and liaison, in the form of media articles, talks (usually accompanied by the Group's PowerPoint presentation - to schools, service clubs, land administration agencies, a braided river workshop and the public), a web page and Facebook site, sales of a children's book and bookmarks, displays in Rangiora and the Ohoka Farmers market (photo), plus 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.

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

The walkway and bike track along the south bank and the 4WD track on the north bank between the end of Rossiter's Road and the Makerikeri River aim to encourage recreational activities away from the actual riverbed. No new planting of native species alongside the walkway was undertaken by the Group over the 2014 winter, but weed control was carried out around those already established. Clearance was completed for most of the walking and mountain bike tracks blocked by trees blown over during a major storm on September 10, 2013. The same storm felled many of the radiata pine plantations planted in the berm area between the riverbed and the stopbanks, particularly on the north bank. Their removal over summer, followed by preparation of the sites for replanting, has opened up the berm for vehicle and bike use, thereby enabling further access into the riverbed. In September 2014, a digger was used to close all 4WD access ways into the core bird breeding area (except the major ones). During construction of the new bridge, no access was possible into the river or under the bridge, and this appeared to reduce vehicle and bike movements – particularly upriver from the bridge. In December, assistance was given to ECan in the location of swimming holes for the summer season, although a rapidly drying river from the New Year on did not allow them to attract much use.

2.5 PREDATOR CONTROL

The area trapped was around the major bird breeding sites on the Ashley-Rakahuri river (see Map 1), extending over approximately 12 kms from the Tulls site in the east (NZTopo50-BW24; E157180, N510880) upriver to the Hillcrest Road site in the west (NZTopo50-BW23; E155920, N510820).

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. After the winter trapping season, when the birds started to arrive in September, traps were concentrated at sites with a history of use by nesting birds and added or moved as required. 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 in early February 2015, after the breeding season had finished. A post-season trapping period was started in March 2015.



Wild cats are targeted with Timms traps

2.6 BIRD SURVEYS AND MONITORING

The annual spring survey of all resident birds was undertaken on November 15 from the Okuku river junction down to the SH1 bridge. It involved 18 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 (last undertaken by DOC in 2011).



Feeding wrybill, showing how bent bill is used to probe for insects under stones.

Monitoring of wrybills, black-billed gulls, and black-fronted terns during the breeding season was carried out as described in previous reports (e.g., Dowding & Ledgard 2005, 2006, 2007), and began this season in September. Riverbed visits were undertaken at least 2 times every week until early February, with most efforts concentrated in the core bird breeding area between the Tulls Road site and Hillcrest Road. Breeding success (productivity) for each of these species was recorded as the average number of

chicks fledged per pair. No colour-banding of wrybills was carried out during the season.

2.7 MEETINGS

During the 2014/15 season, the Group held meetings in the Department of Conservation's offices on River Road, Rangiora, on June 19, September 18 (AGM), October 30 (finance sub-committee), November 20, and February 19. Twelve members attended the AGM, with an average of 11 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 making and selling DOC 200 traps (photo), sausage sizzles, displays, 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 2014. Major floods in the autumn (mid-April - 480 cumecs) and early winter (June - 260 cumecs)) cleared large areas, in good preparation for the breeding season. During the season itself, there were no freshes greater than 35 cumecs (see Appendix 2.) Consequently, high river flows did not threaten the breeding birds. However, towards the end of the season, a drying river allowed easier access for land-based predators, and from Christmas on, shallow water feeding habitat became increasingly scarce. During January river flows ceased completely for most of the stretch between the railway bridge and SH1, leaving remnant pools where birds often concentrated. Further upriver, shorter sections became dry between the new road bridge and Hillcrest road.

3.2 ADVOCACY

During the 2014/15 breeding season, many opportunities were taken to make sure that the public were kept aware of the Group's activities in the riverbed. These are listed in Appendix 1. A



Geoff Swailes and Joan Miles (centre) representing the Group at the Green Ribbon Awards finalist's night in Parliamentary House, Wellington.

definite highlight was being a finalist in the 'Protecting our Biodiversity' section of the 2015 Green Ribbon Awards (June 4 - photo). Another highlight was the designing and commissioning of a Group logo. During the year, the Group's powerpoint presentation was shown on eight occasions (including six schools). The largest audiences were at two gatherings involving U3A and Grey Power. Displays were erected at five sites – including the opening of the new Ashley river bridge (Feb 21), and the Ohoka Farmers Market. On May 30, the Group's long-term survey and breeding results were presented at the Birds NZ conference and AGM in Blenheim. In order to keep the general public informed, nine articles appeared in 'The Press' and

local papers, plus our website (www.ashleyrivercare.org.nz) was maintained (by the District Council's VisitWaimakariri office), and a Facebook page was started in early 2015 (<https://www.facebook.com/ashleyrivercare>). Assistance was given to DOC during their Conservation Week programme, plus the Group was represented at a DOC braided river workshop in Geraldine on April 28-29. Seven thousand bookmarks featuring the rare and endangered braided river birds were printed – the aim is to give one to every primary school child in N. Canterbury.

During 2014, the Group remained closely associated with staff from DOC, the Waimakariri District Council and Zone Committee, ECan and 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.

The Group keeps in close contact with Ashley-Rakahuri Regional 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

As the trees blown over in the Sept., 2013 storm were cleared up, normal use of the Mike Kean Walkway and the new mountain bike track resumed – although no passage was allowed under the ends of the new road bridge while under construction. For the same reason, access into the river alongside the bridge and travel under the bridge was prohibited, and this certainly led to less vehicle and bike movements up the riverbed during the breeding season. The use of a digger in the spring to close off tracks running from the berm into the river also lessened vehicle access (photo), although there are always attempts to breach the



blockages and some are successful. As mentioned in 2.4 above, plantation clearance over summer, followed by preparation of the sites for replanting, did open up the berm for vehicle and bike use, thereby enabling further access into the riverbed. Plus a shingle extraction operation over summer in the lower reaches of the Makerikeri created a major track into the Ashley/Rakahuri riverbed. These will require special attention before the 2015 bird breeding season gets underway. As in previous years, swimming holes were dug prior to Christmas, but attracted less use than normal due to rapidly decreasing water flow from Christmas on.

3.4 PREDATOR CONTROL

In total, 52 potential predators were trapped in 7,560 trap-nights. Hence, the overall trap-catch rate during the bird breeding season was 0.66 predators per 100 trap nights.

Predators trapped consisted of 35 hedgehogs, 6 cats, 7 stoats, 3 weasels and one ferret. The number of trap-nights was the highest ever, with hedgehogs remaining the most trapped predator. Eleven mustelids were caught, one more than the previous highest number of 10 (caught in the first season of trapping - 2004). Details of trap nights and trap catches since 2004 are shown in Table 1. It is pleasing to note the significant decline in catches/100 trap-nights over this period.

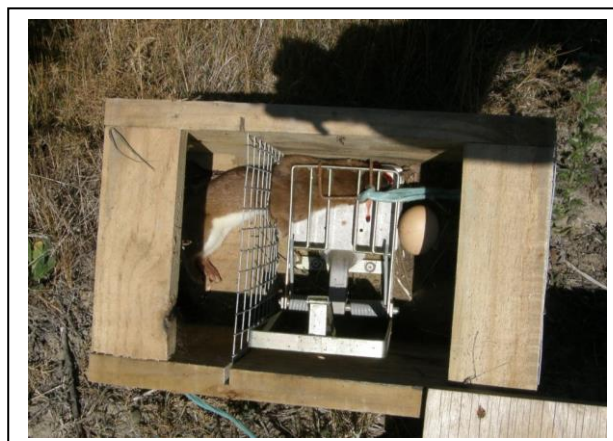
Table 1. Predator trap-nights and trap-catch from September 1, 2014 to January 31, 2015

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
2013-14	5786	4	2	3	28	0	0		0.65
2014-15	7560	6	7	3	35	0	1		0.66
Mean	4710	4.2	3.3	2.4	34.7	1	0.4		1.02

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

A post-season trapping period was initiated from the Railway site up to Groyne 2 (about 5 km) during February, 2014, and ran through to the end of August - when the spring bird breeding season trapping began. During that time, the 4477 trap-nights resulted in the capture of 17 hedgehogs, 8 cats, 1 stoat, 1 weasel, and 1 ferret. Therefore, the trap-catch rate during this winter season was 0.64 predators per 100 trap nights.

DOC 200 traps are used to target mustelids.



3.5 SPRING BIRD COUNTS

Survey figures from 15 November 2014 are given in Table 3, with results of earlier counts shown for comparison.

Table 2 Results of the bird count undertaken in the Ashley-Rakahuri River (from Okuku junction down to SH1) on November 15, 2014. Counts from previous years, plus the 15-year mean, are shown for comparative purposes

Species	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	Ave
Black shag	18	3	nc	8	7	2	2	10	9	6	2	5	6	3	4	6
Little shag	3	6	nc	4	7	6	2	4	0	17	6	13	11	19	5	8
SI Pied																
oy'catcher	25	22	19	22	37	22	5	26	27	32	20	35	38	23	32	26
Variable																
oy'rcatcher	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0
Pied stilt	229	82	70	138	140	137	68	164	131	196	233	194	209	247	230	165
Black stilt	0	0	0	0	2	1	1	1	1	1	0	0	0	0	0	1
Banded dotterel	199	130	115	169	213	245	84	237	198	233	260	250	248	301	263	217
Wrybill	17	7	6	16	9	7	5	9	8	13	18	15	17	19	21	13
Spur-winged plover	18	nc	16	13	27	149	37	116	11	39	15	89	55	65	37	49
Black-backed gull	26	nc	11	10	27	3	5	12	10	19	19	2	11	17	7	13
Black-billed gull	314	3	5	0	10	1	213	13	16	2	41	425	202	364	23	109
Black-fronted tern	74	44	165	102	28	26	180	89	81	124	192	190	200	156	263	128
White-fronted tern	0	0	0	0	0	0	0	0	0	0	8	77	6	2	0	6
Caspian tern	0	0	0	4	0	0	1	0	0	0	0	0	0	1	0	1

nc – not counted

Bird numbers continue to reflect the improvement of recent years. A record number of wrybills were counted – 21, with the previous best being 19 in 2013. Just as pleasing was the record figure for black-fronted terns – 263, the previous best being 200 in 2012. Numbers of other species were similar to 2013, and well above the long-term average. The one exception was the black-billed gull – as no colony was present, numbers were down on the previous three seasons. Further details are given in the Discussion section (4.4).

3.6 SHOREBIRD BREEDING

Locations of shorebird territories are shown in Figure 1. There were no major 'nest-destroying' floods during the 2014-15 breeding season (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

Ten pairs of wrybills attempted to breed in the study area in the 2014-15 season. This is a record number, the previous best being seven for each of the years 2010 - 2013. Two of the pairs involved a banded bird known to also attempt breeding at a second site.

1. Male: UB Female: UB (later YO-RO)

This pair nested at the Smarts site on the north bank. A UB pair were first seen on Sept 18, when a nest was suspected. On Oct 27 a pair were acting chick-like, and were usually present on visits during November, but no chicks were observed. On Dec 6 a pair, with one identified as YO-RO, were seen vigorously defending two very young chicks, plus a flying juvenile was observed nearby – possibly YO-RO's fledged chick from Groyne 2 (see pair 6 below). Although YO-RO was observed defending her territory in late December and early January, when the river was

drying up fast, and a large remnant pool attracted up to 6 wrybills (plus many other birds), no chicks from the second brood were seen to survive to fledging state. The pools had completely dried up by Jan 19. In 2013 a UB pair was seen at this site on two occasions in the spring, but no nest was found. YO-RO was first seen nesting (unsuccessfully) at Groyne 2 in 2009, and was successful (one chick fledged) at the same site last season (2013). In the intervening years she nested at the Racecourse site (2010 – 1 chick) and at the Marshmont site (2011 and 2012 – 1 chick).

Result: One chick fledged (possibly YO-RO's from Groyne 2).

2. Male: UB Female: UB

In late October, a UB pair was noted at the Railway site, and on Dec 13 were observed acting very chick-like. On Dec 28 a UB adult was present with a flying juvenile, but early in January the river had completely dried out and no further birds were seen. The nest of a UB pair was found at this site in 2013, and a chick was observed. However, it did not reach the flying stage.

Result: One chick fledged.

3. Male: UB Female: OG-RY

OG-RY was noted at the Rossiters/Pylons site on August 25 - one of the first wrybills to be observed on the river. She was seen with a UB mate on Oct 10, but not again at this site. No nest was ever found. OG-RY was next seen at the Groyne 2 site on Nov 30, where she fledged one chick (see 5 below). OG-RY was banded in 2013, when she bred with a UB mate, nested and hatched eggs at this site. However, no chicks were observed to fledge.

Result: No chicks fledged.

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

This banded pair were first seen off Groyne 1 site on Sept 6. No nest was found, but the pair were acting chick-like in late October, and a flying chick was observed on Nov 29. On Dec 12, WO-WY was located with a small chick in a seepage area on the north bank. This chick was seen on a number of occasions in early Jan., and observed flying on Jan 16. Hence it appears that this pair double-brooded and successfully fledged 2 chicks. This pair may well have nested a second time in 2013, as they were seen defending territory after a flying juvenile was observed in mid November. However, no second nest or chick were ever seen. The pair raised a chick just upriver at the Racecourse site in 2012.



WO-WY with chick (top left) from second brood. Double brooding is not common on the Ashley.

Result: 2 chicks fledged (1+1).

5. Male: UB Female: OG-RY

On Nov 30, OG-RY plus a UB bird were seen at the lower Groyne 2 site. OG-RY had previously been observed with a UB mate at the Rossiters/Pylon site on August 25, but no nest was found, and the pair were not seen after Oct 10 (see 3 above). A flying chick (estimated at 10 days old) was seen with OG-RY off Groyne 2 on Dec 22.

Result: 1 chick fledged

6. Male: UB Female: YO-RO

YO-RO and a UB mate were first seen on Aug 18 disputing territory with BW-BW off Groyne 2 – the first wrybill sightings on the river for the 2014 season. No nest was found, but on Oct 10 YO-RO and a UB mate were observed acting chick-like off Groyne 2, and a few days later observed with what appeared to be a chick. YO-RO, still acting chick-like was again observed on Oct 23, but not subsequently – so no fledged chick could be confirmed at this site. YO-RO was next seen on Dec 6 at Smarts defending two young chicks with a flying juvenile nearby (see pair 1 above).

Result: No chicks fledged.

7. Male: UB Female UB

UB pairs were first observed off Groyne 2 in mid-September, and a 2-egg nest of a UB pair was found 300m below Groyne 2 on Oct 2. The eggs had hatched by Nov 4, and by Nov 18 the pair had moved a single chick 300m downriver to the Racecourse site, where the chick was fledged.

Result: 1 chick fledged

8. Male: BW-BW Female: UB

BW-BW plus a UB mate were first seen just above Groyne 2 site on Aug 18 – along with YO-RO and mate, the first sightings on the river. A nest was suspected in mid-Sept and 2 eggs were found on Sept 20. On Oct 23 the pair were seen acting chick-like, and on Nov 15 were observed with two flying juveniles. A second nest was found just above Groyne 2 on Dec 19, and a fledged chick observed in late January. This pair successfully raised a chick at the same site in 2013.

Result: 3 chicks fledged (2 & 1)

9. Male: UB Female: UB

The area off Groyne 2 attracted at least five wrybill pairs. The UB pairs were difficult to follow closely, but on more than one occasion UB birds acting chick-like, or with a chick in attendance were seen for some 100s of meters above Groyne 2. On Nov 18 a UB bird with a flying juvenile was seen 300m above Groyne 2. UB birds acting chick-like were also seen above Groyne 2 (the furthest up was just below Dalziels) on Nov 30, and Dec 6, 15 and 22, plus UB birds with flying juveniles were seen on Jan 15 and 22.

Result: 1 chick fledged (estimate)

10. Male: OW-BY Female: UB

The nest of this pair was found on the north bank at the Hillcrest road site on Sept 26. The pair was still present on Oct 17, but the eggs were gone and no sign seen of the pair from Oct 29 on. This pair first nested at the Hillcrest site in 2013, and successfully raised one chick.

Result: No chicks fledged

11. Male: UB Female: UB

This upper Hillcrest site is the furthest up-river that wrybills have been recorded nesting since recent monitoring began in 2004. A UB bird was first noted on Oct 13. No nest was located, but during the Nov 15 survey, a female bird with a flying juvenile was observed. On Dec 16 the pair were still present and acting chick-like. On Dec 30 an adult with an almost fledged chick was present, and on Jan 19 an adult with two flying juveniles was observed.

Result: Three chicks fledged (1 & 2)

Overall result: At least 10 pairs raised 13 chicks, for a productivity of 1.3 chicks fledged per pair. This is the highest productivity figure since monitoring began in 2004 (previous best was 1.1 in 2010).

Black-fronted terns

As in past years, small colonies, and sometimes just one or two pairs of this species, built nests at a number of sites, with varied and often disappointing results. Occasional birds were noted on the river over winter, with numbers starting to build up and courting flights seen during August.

At Tulls, at least 20 pairs were noted with nests during the survey on Nov 15. In mid-Dec they were still present with some fledged chicks and at least 3 pairs still on eggs, but by the end of the month they had all gone, most likely just upriver to Smarts, where 40 adults and flying juveniles were observed. Together with the 3 pairs which nested and hatched chicks in the Smarts area, it is estimated that around 25 chicks reached the flying stage in this part of the river.



Black-fronted tern (foreground) and white-fronted tern – the latter rarely breeds up the Ashley-Rakahuri river.

From there up to just above the new bridge at Rossiters/Pylons (5km) five pairs nested close to the black-billed gull colony just below the new road bridge, but nests with eggs were abandoned when the gull colony deserted on Oct 24. Immediately above the pylons 40 terns were counted on Sept 6, and this had grown to a colony of at least 50 birds by the end of the month. The first birds on nests were seen on Oct 12. Numbers declined from then on – in mid-November it was estimated that 6-8 pairs were feeding chicks, then 4-6 pairs feeding chicks in mid-Dec, with at least one flying. By early January, with the

river drying up, just a single pair were observed. It is estimated that 12-15 pairs nested here, probably fledging 5 chicks.

Between Rossiters/Pylons and Hillcrest (6 km up-river), two pairs nested off Groyne 1 (fledging 2 chicks), one pair nested at Racecourse (1 chick fledged), and 20 birds settled for a couple of weeks off Groyne 2, but were not seen to nest.

At the Hillcrest site, two colonies of terns established 600m apart, both with 10-15 nesting pairs. The first nesting was noted on Oct 15, when 30-40 birds were counted at both sites. Numbers were lower on the Nov 15 survey, but eggs and chicks were seen. By mid-December, no birds were present at the top site, but 6-8 pairs were defending chicks at the lower site. In between these two colony sites, around 20 birds were watched hawking for insects over large ponds created by shingle removal. These ponds continued to attract terns, with 60 present (including 20 juveniles) on Jan 19, and a flock of over 100 on Feb 12. As this was an attractive site, and the river was drying up elsewhere, there is little doubt that the birds congregated here from all over

the river. It is estimated that 20-30 pairs nested at the two Hillcrest sites and that 10-15 chicks were fledged.

Result: Over all the sites, approximately 60-80 pairs of terns nested, fledging 45-50 chicks for a minimum productivity of 0.56.

Black-billed gulls

For the 4th year running, a colony of black-billed gulls gathered at the start of the season near the Pylons site. On October 2, 220 were present. Shortly after this date they moved to an island just below the new bridge, where mating and nest-building was noted amongst 375 birds on Oct 20. By the morning of Oct 24, 500 birds were present, but by the evening they had all gone. A few dozen were noted the following day, but none were seen to return for more than a fleeting visit after that. An inspection on Nov 5 noted 140 nests in various stages of construction, with eggs still in 26 nests, suggesting that egg-laying was at an early stage when the gulls departed. It is suspected that the birds flew to the Waimakariri, as a new colony of over 300 pairs was noted there (Sanctuary Wetland) the following week (Thompson, 2015). Possible reasons for the sudden abandonment of the site after nesting had got underway are discussed in 4.5 below.

Elsewhere on the river, a lone pair of gulls nested alongside the tern colony at Tulls, with another two pairs at the top of the Tulls site. Two fledged chicks were seen in this area on Jan 4., and an almost fledged chick was noted on Jan 19. On Dec 6 a nesting pair was seen at Dalziels, and three adults with two flying juveniles were observed with the terns at Hillcrest in early Feb.

In late Dec/early Jan up to 35 gulls were observed feeding alongside drying pools at Smarts.

Result: Approximately 250 pairs started nesting near the new bridge, but abandoned the site soon after the first eggs were laid. Elsewhere, at least four pairs nested, with five chicks probably fledged.

White-fronted terns

No breeding birds were recorded.

Pied oystercatchers

Pairs defending territories and suspected of nesting were observed at Smarts Colony, Railway, Rossiters/Pylons, Groyne 1, Lower Groyne 2, and Hillcrest (2 pairs). One pair had two nesting attempts at Rossiters/Pylons but fledged no chicks. Chicks were observed at three of the other sites. Others are likely to have attempted breeding elsewhere, as 32 birds were observed during the survey on Nov 15. However, no formal count of pairs or chicks was attempted.

Banded dotterels

Banded dotterels nested throughout the study area. The number seen on the Nov 15 survey (263) was the second highest recorded since surveys began in 2000. Although no attempt was made to record productivity, two nests were found and a number of chicks seen. The first banded dotterel was seen off Groyne 2 on August 4, with twelve noted at the same site on Aug 18. Good numbers were particularly noticeable at Marchmont/Smarts, Railway, Rossiters/Pylons, Groyne 1, Groyne 2 and Hillcrest. Eight pairs were followed between the pylons and the new bridge, fledging seven chicks for a productivity of 0.88. Chicks of a range of ages were noted at most sites during the season, with concentrations of juveniles and adults around drying ponds from late December on. However, the usual small flocks of flying juveniles were not seen in the autumn.

Pied stilts

Many pairs of pied stilts bred in the study area. As with the banded dotterels, high survey numbers on Nov 15 indicated a potentially successful season. Pairs were fairly evenly spread from just above Tulls right through to Hillcrest, but the best breeding sites appeared to be at

Smarts/Colony, Railway, Pylons, off Groynes 1 and 2 and at Hillcrest. Four pairs were followed between the pylons and the new bridge, fledging seven chicks for an impressively high productivity of 1.75. Many juveniles (photo) were observed. Pied stilt 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.



Black-backed gull (photo)

No breeding was observed – although a pair were often seen at the Railway site.

Black-backed gull. These can be voracious predators of the eggs and chicks of other riverbed birds eg., in the Waimakariri river, where hundreds breed annually. Fortunately, it rarely breeds in the lower section of the Ashley-Rakahuri river and is not a major problem.

Caspian tern

Very few Caspian terns were seen on the river, and there was no sign of breeding.

Spur-winged plover

This species is most often seen in flocks on the riverbed over winter. Even though a few pairs could well have bred on the river, they are not a common species during the main part of the season, and nests are never easy to find. The Railway site was most frequented, with flocks of 31, 12 and 16 seen on August 4 and 26 and Oct 20 respectively. On Dec 15, a flock of 150+ birds was observed at Smarts/Colony.

4 Discussion

The shorebird species in the Ashley-Rakahuri river face three main threats – the invasion of weeds (mainly yellow lupins, broom and gorse), reduced survival and productivity due to introduced predators, and disturbance by human activity. The Group's attention continues to be focussed on reducing impacts from these – with particular focus on assisting the wrybill, black-fronted tern and black-billed gull.

The success of management in reducing the above threats is 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

Weed removal. No artificial weed removal is now undertaken, as the areas involved can only be small and past experience is that they have rarely been used by breeding birds. Floods are the only effective means of clearing large areas of weeds, and are best when they occur before the main breeding season gets underway in September. A major flood in late April 2014, was the largest for many years – 490 cumecs in the Ashley-Rakahuri, plus 290 from the Okuku river. This cleared large areas of weeds, although dead vegetation was widely strewn over the riverbed

once the waters dropped. These clumps of flood-deposited dead vegetation remain a common feature of the river, but it is not known how they affect bird feeding and nesting habits.

Vehicle access. 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 open 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 during the season, even though drivers find a way to negotiate many of them over time. During 2014, it was also noticeable that riverbed driving was much less while the new bridge was under construction, with restricted access alongside into the riverbed and also under the bridge. Vehicle pressure is greatest to the east where there is ready access just above SH1, plus established tracks into the river bed at the end of Toppings Road and at the Tulls, Smarts and Marshmont sites. Vehicle and trail bike access into the riverbed has long been an on-going, and some would say 'increasing' problem. For this reason, discussions were held with staff of the Ashley-Rakahuri Regional Park staff, ECan and the Combined 4WD Club (Nigel Bannan) during the 2015 winter as to how to completely stop vehicle access into the riverbed during the Sept to Jan breeding season.

Island creation. 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. In the autumn of 2015, permission was gained from ECan to experiment with island creation prior to the 2015 season, using machinery to make minor flow adjustments.

Drying river. Dry conditions over the 2014 season led to a rapidly reducing water flow from December on, the main impact of which was for stretches of riverbed below Groyne 2 to dry completely from January on. Such drying in the lower Ashley-Rakahuri has been recorded as occurring every few years since records began. A drying river forces birds to feed around remnant pools, and may impact negatively on chick survival of late-breeding birds – in the form of insufficient food and predation. For example, white-faced herons can predate small chicks, and flocks of herons were noted around remnant water pools at Smarts Colony (5 on Jan 4), Tulls (22 on Jan 19), and between Groynes 1 and 2 (30 on Feb 9). In addition, on Feb 9, eight large black shags were counted around a small pool between the two Groynes.

4.2 PREDATOR CONTROL

The number of trap-nights during the 2014/15 breeding season (7560) was the highest since regular trapping started in 2004. The trap-catch rate of 0.66 predators / 100 nights (Table 1) was very similar to the previous season's (0.65), which was the second lowest recorded since trapping began. This continues the significant downward trend over time (see App 2 in 2013-14 report). Hedgehogs remain the most trapped predator (35), followed by stoats (7), cats (6), weasels (3) and ferrets (1). The composition of predator species caught is different to that caught in other braided rivers. Over 4 years (2009-2012) in the Mackenzie Basin, the percentage of predators trapped was hedgehogs 53%, mustelids 27% and cats 17%, compared to 79%, 13% and 9% in the Ashley-Rakahuri. 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.

During the winter trapping period, the trap-catch rate (0.64) was almost the same as during the breeding season. The percentages of hedgehogs (65%) and mustelids (18%) remain similar, but the percentage of cats (29%) was three times higher than in the summer. As more cats are being caught over the winter months than in the summer, the all-year percentage of cats caught climbs to 18%, very similar to the 17% Mackenzie figure. The reason for the similar percentage of cats in the Ashley-Rakahuri are unknown, especially considering the low numbers of wild rabbits (which may explain the lower percentage of mustelids). However, it could be due to the proximity of rural dwellings, to which feral and free-ranging cats are attracted for food and mating opportunities. The past 3 years show winter to be the best time for trapping wild cats –

22 over the last three winters compared to 12 during the comparative breeding seasons. Past experience indicates that cats may be slow to reoccupy the territories of trapped animals, so it is possible 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, more time-efficient predator control techniques being developed, and also to explore the possibility of employing professional trappers

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. This does not appear to be the case on the Ashley-Rakahuri river. On the lower reaches of the river numbers of black-backed gulls have always been low. The long-term average number is just thirteen, and the survey figure for 2014 was just seven. Swamp harriers (harrier hawks) are not counted in the annual surveys, but are common on the Ashley-Rakahuri. However, even though they are frequently seen being chased away by breeding birds, no actual predation has been observed on the river in recent years.

4.3 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. Appendix 1 lists 35 occasions used to improve awareness, and these are addressed in more detail in the Results section above (3.2).

The long-term future of braided river birds will rest in the hands of today's children. Therefore, it is pleasing to report that more schools (6) were visited than in the previous year (1). This was enabled by being part of a Waimakariri District Council-assisted programme 'Down the Back Paddock', which aims to address all primary schools in N. Canterbury over a 4-year period. At all school visits, every child is given a 'threat of extinction' bookmark, specially designed and printed by the Group to highlight the endangered status of our braided river birds. We have also had 200 more copies of Group member Jane Buxton's childrens book 'Ria the reckless wrybill' printed, as the first edition was sold out. The new printing also contains our logo, which was designed and approved over the last year.



Over the Christmas-New Year period, good exposure to the public was gained at the Ohoka Farmers Market, where we had a display on eight occasions. The Market organisers have 'adopted' the Group as a worthy cause, and collect funds both at Ohoka and in their organic food shop in Rangiora. Our collection of stuffed animals (one of each of the six major predators - photo) was completed during the year, and is an important element of displays and talks to children

Over a 12-month period, our webpage (www.ashleyrivercare.org.nz) has had 1281 hits, up from the 711 figure for the same period last year. This is good news, and the Group goes out of its way to keep the site current, utilising the assistance of the Promotions section of VisitWaimakariri. In late 2014, it was decided that we need to have a greater presence within today's social media, and to this end a Facebook page (<https://www.facebook.com/ashleyrivercare>) was launched in September, 2014. Since then, our linkman, Steve Attwood, has put up 90 posts and attracted 279 page followers: that's people who are choosing to follow the page and get alerts when new material is posted. These include several other conservation groups who when they "like" and or "share" a posting, are then forwarding

the link to their members via their Facebook page. The average number of people reached per post is 265, with the most popular single post reaching 673 people. During 2014-15, nine articles appeared in the local media (Northern Outlook, Hurunui News and the Press), two of which featured the Group's highlight of the year – reaching the finals of the 'Protecting our Biodiversity' category of the 2015 Green Ribbon Awards. The judges were not only impressed by the Group's success in halting the decline in bird numbers on the Ashley-Rakahuri river, but also with our monitoring efforts. They commented that 'the Group's scientific approach to data collection and analysis has set a high standard for what can be achieved by community conservation groups elsewhere in New Zealand and worldwide'. At the Awards, the Group was represented in the Parliamentary Buildings, Wellington, by Joan Miles and Geoff Swailes.

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 (photo) were placed in managed areas during the season. These are essential to minimise human disturbance during the breeding season, and are probably the most effective tool for that purpose. On two occasions during the breeding season, we advertised the opportunity to see the birds on the river as part of a guided visit. Although these were poorly attended, we consider such visits to be important, and a greater effort will be made in this direction in the coming season.

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.

4.4 SPRING BIRD COUNTS

The 2014 annual survey of the lower reaches of the Ashley-Rakahuri took place on Nov 15. Survey results were good (Table 2), supporting the steady improvement of numbers since the Group was formed in 1999. Wrybill numbers did not often reach double figures in the early 2000s, with the average to 2013 being 12 birds. This year we counted 21 – a record number. In addition there were 5 flying juveniles. Even more pleasing was the record figure for black-fronted terns, a species which is known as a very fickle breeder. Colonies start up and eggs will be laid, but then they will suddenly disappear for no apparent reason. Numbers of other species were similar to 2013, and most were well above the long-term average. The one major exception was the black-billed gull, which were well below the previous three seasons. During the breeding season, they are either present in colonies of 100s, or virtually absent. As related in 3.6 above, a colony of 500 got to the nest building and egg-laying stage at a site close to the new river bridge, but then disappeared overnight - most likely to the Waimakariri river where a new colony was noted a few days later. Such behaviour is not uncommon for this species.

This long-term improvement in bird numbers since 2000 was analysed and described in detail in the 2013-14 report (Ledgard and Dowding, 2014).

4.5 SHOREBIRD BREEDING

The Group has been monitoring bird breeding since 2004. During the later years of this period, breeding has tended to concentrate in certain stretches of the river – Tulls to Marshmont, Ashley bridge to Groyne 1, Groyne 2 and most recently, Hillcrest. These four areas stretch over about

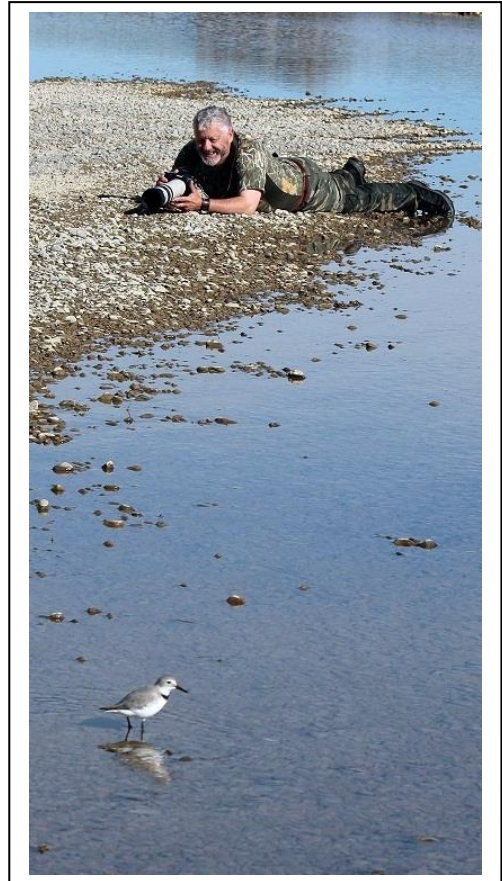
12kms of the total 18km study area. If the concentration of breeding in these sites continues in future years, effective management in terms of trapping and monitoring will become easier.

Wrybills

At least ten pairs attempted to nest in the study area in 2014-15. This equals the highest since records began in 2004. Thirteen chicks reached flying age, for a productivity of 1.3 chicks fledged per pair. This is the highest productivity figure since monitoring began in 2004 – the previous best was 1.1 in 2010.

Most popular site. The most frequented area for wrybills was definitely off Groyne 2. At least six pairs of wrybills attempted to breed in this vicinity, and towards the end of the season it was not uncommon to see four-six UB adults together. Some of these could have been young birds prospecting for future breeding sites.

Double brooding. Of particular note during the 2014-15 season, is the fact that at least three pairs double-brooded ie., followed up the successful fledging of chick(s) from their first brood with success from a second brood. Since 2004, this has only been noted once on the Ashley-Rakahuri river – in the 2007-08 season, when GO-BY bred twice with a UB mate at Groyne 2 and raised three chicks. Two of the 2014 double-brooding pairs involved banded birds which have been present for some years. WO-M and his mate WO-WY first nested not far above Groyne 1 in 2009, and have been in the same vicinity ever since. They fledged a single chick every year, and two in 2014, for a total of seven chicks raised over six seasons. The other banded bird was BW-BW, which was first banded as a breeding adult at the Railway site in 2010, when he nested unsuccessfully with WO-GO. He bred with the same bird at the same site in 2011, but WO-GO disappeared in December, never to be seen again. In 2012, he bred with a UB bird at the Railway site and raised one chick. In 2013, BW-BW bred with a UB mate at Groyne 2 and raised a single chick. This season he and a UB mate successfully fledged 3 chicks for a total of five chicks in five seasons. The third pair to double brood successfully (raising three chicks) was a UB pair at the upper Hillcrest site. This may have been a new pair as no breeding wrybills have been seen at this site before. A fourth 'pair', definitely had two nests at Smarts, but the female of the second nest may have been a different bird. A UB pair was first seen on Sept 18 and a nest was suspected on the north bank. Easiest access was from the south bank, from where birds were observed on most visits, although they were not always easy to see in amongst the rocks, and no chicks were ever noted. On Dec 6 an hour was spent watching them defend two recently hatched chicks. One adult was noted as the banded bird YO-RO, last seen at Groyne 2 on Oct 23, and a week before with what appeared to be a fledged chick. This could be possible, as there were six weeks between her last sighting at Groyne 2 and her positive identification with a UB mate and two young chicks on Dec 6. By the end of a dry Dec there was just two pools left at Smarts, which attracted many birds. It is suspected that the chicks found competition for food intense, as although YO-RO was seen a few times chasing away other birds, no associated chicks were observed – so it is assumed that they did not survive. Since 2009, when she was first seen breeding at Groyne 2, YO-RO has nested at three other sites, and raised four chicks over 6 years.



Steve Attwood photographing wrybill

Expanding breeding area. The length of river used by breeding wrybills appears to be expanding up-river. This is probably due to more young birds bred on the river returning to breed themselves. In 2003 and 2004, breeding birds were seen at three sites above Groyne 2 – Toomebridge (1km above Groyne 2), Priors and Dalziels (almost 3km above Groyne 2). From then until 2013, no breeding pairs were seen more than 300m above Groyne 2. In 2013 a pair (male OW-BY) nested successfully at Hillcrest, which is almost 4km above Groyne 2. The same pair and a UB pair (at upper Hillcrest) nested there in 2014, and at least 2 other UB pairs were seen between Groyne 2 and just below Dalziels. At the eastern end of the study area, a pair bred just once off the end of Toppings road (1.5km above SH1) in 2009. Apart from this pair, the eastern-most breeding sites have been at Marchmont and Smarts (4km above SH1), where wrybills have claimed territory during most seasons. The fewer breeding pairs below Smarts may be due to the fact that the popularity of using machines (4WDs and trailbikes) in the riverbed increases as one approaches SH1.

Banding and adult survival. Amongst the ten pairs that did breed in the 2014-15 season, only six were banded at the start of the season. Two, OG-RY and OW-BY were banded in 2013. Three (WO-M, WO-WY and YO-RO) were banded in 2009, while the fourth (BW-BW) was banded in 2010. None of the other 21 birds banded since 2001 were seen on the Ashley-Rakahuri in 2014-15. This does not indicate a high survival of adults, 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. In order to learn more about long-term survival, the Group needs to get more adults banded, and to push for more investigation into why the level of adult survival on the Ashley-Rakahuri river appears to be so low.

Black-fronted terns

Although always present on the river (one of the few native species remaining, albeit in low numbers, over winter), breeding success for this species remains variable, although higher than in most previous years. The estimated number of breeding pairs was 60-80, although it is always difficult to determine if pairs establishing at one site later in the season are the same as those observed earlier at a different site. This number of breeding pairs (60-80) is amongst the highest recorded (the next highest being 81 in 2006 and 70 in 2011), and considerably higher than the 10-year average of 39. The productivity of 0.56 chicks fledged per pair was also above the long-term average of 0.43, which is probably below the rate needed to sustain a viable population over the long term. The reasons for the low success rate remain unclear, with no obvious leads as to why colonies can quickly establish, build nests and lay eggs, and then equally quickly disappear.



Black-fronted tern swooping for insect on surface of pond created from shingle removal.

Experience elsewhere, such as in the Tekapo river in the Mackenzie Basin, is that disturbance from predators (particularly at night?) is a major cause of nest abandonment. At that site, breeding success only improved when an intense trapping programme was started on a tight grid pattern. It also appears that black-fronted terns succeed best when there is a good number of birds present with everything going for them – although two pairs off Groyne 1 and a single pair at Racecourse site did raise three chicks between them. Terns can also benefit from breeding in close association with black-billed gulls which are larger and more vocal and aggressive when defending their nests and chicks from people and predators (see 2013-14 report).

The Group feels that its best strategy for improving tern productivity is to persuade them to nest in a weed-free site on a water-surrounded island, with good predator control and adequate signage to deter human disturbance.

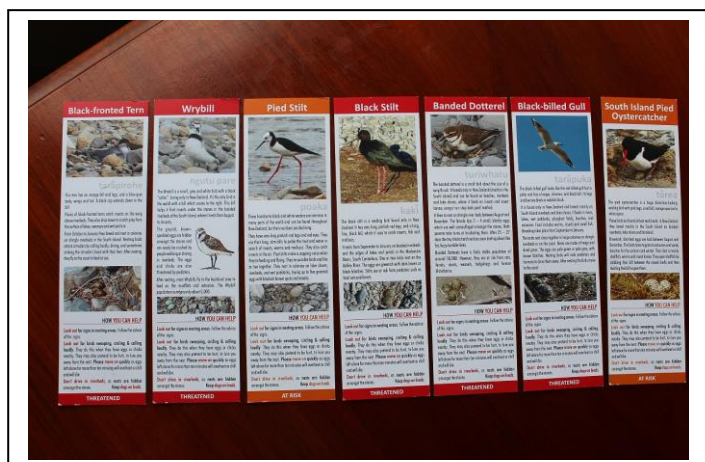
Black-billed gulls

Success with this species depends primarily on whether a colony chooses to nest on the riverbed. This season started well, with a colony starting to assemble in October at the Rossiters/Pylon site, and eventually moving downriver to just below the new bridge, where it grew to 500 birds. Nesting and egg lying had started, before all birds disappeared on October 24. The reason for this sudden site abandonment is unknown, although human disturbance is a possible cause. October 24 was a Friday before a long weekend, when recreational activity would have been greater. In addition, less than 200m upriver there was much construction activity associated with the new river bridge. However, the increased recreational activity over the long weekend was not a factor, as the birds disappeared on the evening before the weekend started. The bridge construction activity could have contributed, although the birds bred successfully right alongside the bridge in 2013, and have shown a high tolerance of human presence elsewhere. One of the largest colonies of black-billed gulls in the S. Island has regularly gathered on the Ashburton river just below SH1, within a 100m of the outskirts of the town. As with the black-fronted terns (see above) lone pairs did nest elsewhere with some success, but a successful future of the species on the river will depend on the regular breeding of colonies of a reasonable size. After many years of no colonies - just one (2006) between 2004 and 2010, they have been present for 3 of the last 4 years, so hopefully they will return in 2015, and their lack of success in 2014 will turn out to be just a blip over the longer term.

Other species

Apart from a small sample in the Pylons area, breeding success or productivity was not recorded for S. Island pied oystercatchers, pied stilts and banded dotterels during the 2014-15 season, but obvious signs of successful breeding were noted at many sites. Hence, their populations appear to be holding their own. During the 2012 and 2013 seasons, white-fronted terns attempted to breed alongside the black-billed gulls, but no attempt to nest has been observed over the last 2 years. The black stilt, which bred on the river for three consecutive years through to the 2009-10 season, has not been seen since – although black stilts in low numbers visit the Ashley-Saltwater creek estuary fairly regularly (three present for most of the 2015 winter).

The continual absence of breeding black-backed gulls on the Ashley-Rakahuri river appears unusual, considering the high numbers which breed on the Waimakariri river, only 20 km to the south. There is also a colony which breeds annually in the upper Ashley-Rakahuri in Lees Valley. The reason for their absence in the lower river is unknown, as the surrounding farmed land is very similar to that occurring alongside the Waimakariri, and good numbers of gulls can often be seen feeding in cultivated and irrigated paddocks close to the Ashley-Rakahuri



The 7 key braided river bird species feature on bookmarks printed by the Group. 7000 are available for giving to primary school children in N. Canterbury

river. Their absence on the riverbed is welcomed, as they can be major predators of eggs and young chicks on other rivers.

Spur-winged plovers were present in low numbers throughout the season. No breeding was observed on the riverbed, although nests in such sites are always hard to find. 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

In 2012 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, since that time finances have come primarily from local sources, including a generous donation from Taggart Earthmoving Ltd, public donations taken by Barbara Warren at the Ohoka Market and her Organic Food Shop in Queen Street, Rangiora, plus royalties from the sale of Jane Buxton's children's book 'Ria the reckless wrybill'. Most funds raised by the Group have come from selling DOC 200 traps built by the Group, and sausage sizzles held outside the Warehouse in Rangiora. The demand for traps is growing, and it is satisfying to be not only raising funds for the Group, but also contributing to reducing predator numbers in the field. As a result of the above, the Group finds its finances to be currently in a very healthy state. Local fund-raising has not only been successful, but has the advantages of encouraging community participation and obtaining better public exposure.

5 Conclusions

Relative to the future success of rare and endangered shorebird species breeding in the Ashley-Rakahuri river, the 2014/15 season was above average both in terms of numbers counted in the annual survey, and breeding success (productivity) - with the exception of black-billed gulls. Wrybills, the best known and icon species of the river, occurred in highest-ever numbers and had a record breeding season. Hopefully, this represents a return of young birds raised on the river in previous years - a factor which should be more accurately determined by a planned increase in banding effort over future years. Black-fronted tern numbers appear to be increasing, but breeding success needs improvement, and management is aimed in this direction (island creation and increased trapping). The success of black-billed gulls depends on the regular presence of breeding colonies (none in 2014), and little extra can be done to ensure that. Numbers of other species, such as pied oystercatcher, banded dotterel and pied stilt were also above average, and breeding success appeared normal.

Analyses of survey data taken since records began in 2000 was presented in the 2013-14 report (Ledgard and Dowding, 2014). They showed an upward trends for the all the focus species, with statistically significant improvements for black-fronted tern, banded dotterel and pied stilt. The positive trend for wrybill was not quite significant, although this has most likely changed to significant after the high numbers recorded in 2014 survey. The trend for black-billed gull and S. Is pied oystercatcher, although positive, is likely to have stayed statistically not significant. Breeding data since records began in 2004 was also analysed for wrybill and black-fronted terns, but not for black-billed gulls, as colony presence on the river has been so variable. The productivity trend for black-fronted terns was analysed as positive, although not statistically

significant, and this is unlikely to have changed after the 2014 season. However, after the successful 2014 breeding season, further analysis of wrybill productivity could well have moved this result up to significantly positive. At the time of writing, such analysis is currently underway. The pleasing overall conclusion from these analyses is that management actions by the Ashley-Rakahuri Rivercare Group are most likely to have contributed to the increasing bird populations on the river over the last 15 years. As concluded by Monks *et al* (2011), writing about the positive black-fronted tern population trend on the Ashley-Rakahuri river, this 'justifies continued management of birds breeding in the riverbed.'

The Group continues to maintain a high profile relative to public awareness and education, assisted by agencies such as DOC and ECan, particularly staff from DOC's Rangiora Field Base and ECan's Ashley-Rakahuri Regional Park. During 2014-15, the Group created thirty-two opportunities to improve awareness. Most involved media articles, presentations to schools and local groups, and displays at public events. The year's highlight was undoubtedly reaching the finals of the 'Protecting our Biodiversity' category of the 2015 Green Ribbon Awards. Along with BRaid Inc, ARRG also 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.



During all its initial years, the Group relied on outside agencies (eg. Lotteries, WWF) for funds, requiring considerable time and effort in writing applications and supplying reports. Hence, it is pleasing to record that for the last 3 years, the Group has been able to survive on its own fund-raising projects, plus donations. The generosity of the latter is due to our improved public profile.

Looking into the near future, the major challenge involves maintaining/improving predator control, by increasing the number of trappers and trap-nights, and hopefully, utilising new trapping and poisoning technologies. Predator control is vital for continued bird breeding success, but every year it takes up more of the Group's time than any other single activity. Two other challenges are to improve bird nesting habitat, probably by the creation of raised, weed-free islands, and to band more adult birds, particularly wrybills. Islands are known to improve breeding success, whilst the critical issue of adult survival can only be addressed by more closely following individually banded birds. To these challenges and opportunities can be added the traditional challenge of maintaining public interest, and the involvement of the local community in bird management on the Ashley-Rakahuri River. This not only enhances fund raising opportunities, but also helps to reduce human disturbance in the riverbed during the breeding season.

6 Recommendations

- 1 Continue annual bird surveys and monitoring activities - focussing on the three key threatened shorebird species (wrybill, black-billed gull and black-fronted tern)..

Justification

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 providing vital data for future management and decision-making.

2. Maintain / improve predator control and banding activity.

Justification

Effective predator control will be essential if shorebird species, particularly the three key species, are to survive in the river. Banding provides information on adult survival and pairing, plus movements of individual birds.

3. Explore opportunities for increasing trapping effort and using new technologies for predator control

Justification

Predator control occupies more of the Group's time than any other single activity. Improved finances allow for increased trapping effort, plus new techniques involving self-resetting traps and user-friendly poisons could reduce the level of this commitment considerably.

4. 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. If consent can be obtained, these would not be difficult to create or maintain using heavy machinery operated by the likes of shingle extractors.

5. Continue advocacy initiatives both by members and other agencies such as DOC, making use of the website (including social media such as Facebook), 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, plus the utilisation of appropriate modern technologies. Children are excellent advocates for influencing adults, and future management will be in their hands.

6. Maintain 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 not only further increases community exposure, but also lessens the time and effort spent securing funding from further afield.

7. Continue full support for BRaid Inc.

Justification

BRaid Inc aims to improve environmental awareness and management on all South Island braided rivers. It has become a recognised ‘umbrella’ group for maintaining braided river ecosystems. BRaid has a part-time Manager, and regularly organises advocacy workshops and training courses. The end result is that more braided rivers should receive the same local community-based attention as is presently focused on the Ashley-Rakahuri River.

8. Maintain and improve collaboration with ECan’s Biodiversity Programme, the Waimakariri Zone Committee, the Canterbury Water Management Strategy’s Regional Committee, Fish and Game and local iwi/runanga.

Justification

Decisions on the future use of water from braided rivers rests with these agencies and committees. Too much water taken from braided rivers for hydro generation and irrigation will adversely affect bird numbers. These agencies also dispense considerable funds for river management.

9. 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.

10. Support management of Environment Canterbury’s Ashley-Rakahuri Regional Park.

Justification

A major objective of the Park’s plan is the long-term maintenance of key shorebird populations on the Ashley-Rakahuri River.

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9 Appendix 1. Promotional activities during 2014-15

Meetings	June 19, Sept 18, Nov 20, Feb 19 & June 11	DOC offices, 8-14 participants
AGM and meeting	Sept 18, 2014	DOC offices, 13 participants
Annual bird survey	Nov 15, 2014	18 participants
Presentations/Representation		
Powerpoint presentation	July 3, 2014	West Eyreton School
Display, family evening	Sept 26, 2014	Rangiora library
Powerpoint presentation	Sept 30, 2014	U3A, Rangiora Showgrounds
Conservation week evening	Nov 6, 2014	Celebrating DOC partnerships
Hurunui DC Biodiversity event	Nov 7, 2014	Amberley library
Display	Nov 9, 2014	Tuhaitara Open Day, Woodend Beach
Talk	Nov 19, 2014	Rangiora home schoolers
Powerpoint presentation	Nov 20, 2014	Loburn School
Display	Dec 5, 12, 2014; Jan 2, 9, 16, 23, 30, Feb 6 2015	Ohoka Farmers Market (plus fund raising)
Powerpoint presentation	Feb 2, 2015	Grey Power, North Canterbury
Powerpoint presentation	Feb 17, 2015	St Patricks School, Kaiapoi
Display	Feb 21, 2015	Opening of new Ashley bridge
Powerpoint presentation	Mar 16, 2015	Ilam School, Christchurch
Powerpoint presentation	Apr 29, 2015	DOC braided river workshop, Geraldine
Powerpoint presentation	Apr 28 & May 4	Woodend School
Powerpoint presentation	May 30, 2015	OSNZ conference / AGM, Blenheim
Green Ribbon Award finals	June 4, 2015	Finalist 'Protecting Biodiversity', Wellington
Media articles etc		
The Press	Aug 25, 2014	'Share rivers with care'
Hurunui News	Nov 9, 2014	'Giant wrybill lands'
Northern Outlook	Nov 19, 2014	'Volunteers track bird numbers'
Ashburton Guardian	Nov 26, 2014	'It's a tough life for black-billed gulls'
Hurunui News	Feb 12, 2015	'A good season for wrybills'
Northern Outlook	Feb 21, 2015	'Up, down breeding season results'
Northern Outlook	June 6, 2015	'Rivercare group finalist in environment award'
Hurunui News	June 18, 2015	'Rare birds breeding ground at risk'
Hurunui News	June 18, 2015	'Rivercare group reaches finals'
Fund raising		
Sausage sizzles	July 12; Dec 12, 2014	Outside Rangiora Warehouse
Trap making	Oct 14 & 21, 2014; Feb 11, June 16, 11 & 23, 2015	Member's work shed; 180 DOC 200 traps made

Appendix 2. River flow (cumecs) at Ashley Gorge from July, 2014 to June, 2015 (from Environment Canterbury website www.ecan.govt.nz). The 2014/15 bird breeding season lasted from August, 2014 to February, 2015.

