
*Management and monitoring of shorebirds
in the Ashley River during the 2010/11 season*



Ashley/Rakahuri Rivercare Group, Inc.

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July 2011

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Summary

Dowding, J.E.; Ledgard, N.J. 2011. *Management and monitoring of shorebirds in the Ashley River during the 2010/11 season*. Unpublished report, Ashley/Rakahuri Rivercare Group Inc., Rangiora. 18 pp.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. In 2005, the Group became an incorporated society. This is the sixth annual report from the Group.

Major funding over the past year has come from the first year (\$6,000) of a 2-year grant from World Wildlife – New Zealand. A grant of \$2000 was made by the Harcourts Foundation, plus there was royalty income (c. \$300) from sales of the children's book 'Ria the reckless wrybill'.

The main activities undertaken by the Group in 2010/11 were:

- A survey 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
- Enhancement of public facilities in parts of the river not used by shorebirds
- Advocacy and liaison with schools, special interest groups and the general public
- Liaison with Waimakariri Zone Committee and Canterbury water use decision-makers.

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

Advocacy and liaison, in the form of media articles (two in local papers), an article in 'Avenues' magazine, public talks and advertising (including a screen-vista over 4 months in a Christchurch cinema – Rangiora cinema closed by earthquake) continued to raise public awareness of shorebirds in the river and of the Group's activities. Publicity officers in the Waimakariri Area of the Department of Conservation (DOC) used the Group's Powerpoint to address over fifteen schools and groups (such as cubs and scouts). A children's book 'Ria the reckless wrybill', written by local member, Jane Buxton, was launched in Rangiora on September 15 as part of Conservation Week. A member photographer, Lynley Cook, took a number of high quality photos on the river, which are now available on a Flickr site. The Group has presented, or had representation, at meetings of the Canterbury Water Management Strategy (field visit to look at dam proposal in Lees valley), the Waimakariri Zone Committee and the Ashley-Rakahuri Regional Park.

Predator trapping resulted in 32 mammals of four species being caught in 3,732 trap-nights, at a catch rate of 0.85 predators per 100 trap-nights. Predator populations remain relatively low, although hedgehog numbers appear to be rising after past reductions due to major flooding.

Enhancement of public facilities in parts of the river not used by shorebirds focussed on native vegetation planting of a riverside walkway, maintenance of the 4WD track and assistance with the selection of swimming hole sites in the summer.

High river levels disrupted the planned spring bird surveys and only one survey could be undertaken (November 20, 2010). Bird numbers were generally above average, with the highest-ever counts of pied stilt, banded dotterel, wrybill and black-fronted terns. These surveys have been undertaken annually since 2000 and indicate that overall the birds are at least "holding their own"

Monitoring of the three key threatened species revealed a season which could be described as 'of mixed success'. Seven wrybill pairs were known to nest in the study area, the most ever since regular monitoring began in 2005. They produced eight chicks for a productivity of 1.1 chicks per pair – the highest recorded to date. Black-fronted tern productivity was

disappointing, with only 12 chicks raised from 50 nesting attempts (productivity of 2.4). The reasons for this failure are uncertain, although human disturbance is suspected at one site. No black-billed gulls nested on the river during 2010-11; their success depending entirely on whether or not a colony (often of hundreds of birds) chooses to locate on the river.

Over recent years, the rising profile of wise water use on the Canterbury plains has brought braided rivers and their management to the fore. Consequently, extra resources are being channelled in this direction through the Canterbury Water Management Strategy and the district Zone Committees, and into more practical on-site operations as part of the Ashley-Rakahuri Regional Park creation. The Group has kept in regular contact with these agencies, particularly the local Waimakariri Zone Committee, which oversees the Ashley-Rakahuri river. We realise that their interest and activities bode well for the professional and long-term management of the river, and hence a more secure future for the birds. However, we also need to watch out for the potential adverse effects of some proposals, such as the damming of the Ashley-Rakahuri river in Lees valley.

BRaid, a group which promotes protection of all braided river ecosystems in Canterbury, was the brainchild of the Ashley-Rakahuri group and came into existence in 2007. We remain closely involved in its activities (sharing a common chairman). Proposals for a training course on braided river bird management (now funded), and the employment of a braided river conservation co-ordinator (as yet unfunded) should help in the formation of other community-driven rivercare groups.

Recommendations for future management include:

- Continue predator control, annual surveys, monitoring activities and banding, focussing on the three key threatened shorebird species
- Continue advocacy initiatives by Group and through outside agencies such as DOC
- Try to create and maintain riverbed islands for bird breeding
- Continue full support to the 'BRaid' group
- Maintain and improve collaboration with ECan's Biodiversity Programme, the Waimakariri Zone Committee and the Canterbury Water Management Strategy's Regional Committee
- Maintain and improve collaboration with commercial shingle extractors.
- Support Environment Canterbury's Ashley-Rakahuri Regional Park plan.

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. 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. Following surveys of Canterbury rivers in the 1970s, 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). More recently, the Ashley River and estuary were also included in a list of wetland sites of international importance in New Zealand (Cromarty & Scott 1996).

The Ashley-Rakahuri Rivercare Group (ARRG) is a community group formed in 1999 to assist with management of the lower reaches of the Ashley River. Its main aims are to protect shorebirds and their habitat in the riverbed, to monitor breeding success, and to promote these activities to the wider public. In 2005, the Group became an incorporated society. Since 2004, the ARRG has received four grants to assist it in carrying out its aims. During 2006/07, the principal sponsor was the Habitat and Protection Fund of World Wildlife Fund (WWF) -New Zealand. In June, 2007, a 2-year grant was approved by the Lotteries Environment and Heritage Committee. A partial extension was granted through to December 1, 2009. In July, 2010, a further 2-year grant was approved by WWF-New Zealand. The activities undertaken since 2004 have been described in the Group's annual reports (Dowding & Ledgard 2005, 2006, 2007, 2008, 2009, 2010), which outlined the results of bird monitoring, habitat enhancement, predator control, and advocacy, and made recommendations for future management. The present report documents the management activities and monitoring of birds that were undertaken during the 2010/11 season.

In the past, the river has provided breeding habitat for significant numbers of black-fronted terns (*Sterna albobriata*) and thousands of pairs of black-billed gulls (*Larus bulleri*). Recently the number of gulls in particular has declined substantially (Dowding & Ledgard 2005). The Ashley is one of the most northerly on which wrybills (*Anarhynchus frontalis*) breed, following a southward contraction of the core range of the species over the past century (Riegen & Dowding 2003). These three key species have been the main focus of management activities of the ARRG; all are endemic, have declining populations and are considered threatened.

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

2 Study area and methods

2.1 STUDY AREA

The study area consists of an 18 km stretch of the lower Ashley-Rakahuri river, from its confluence with the Okuku River to the State Highway 1 bridge. It was described in detail in the Group's first report (Dowding & Ledgard 2005) and an updated sketch map of the area is given in the 2009/10 report.

2.2 HABITAT ENHANCEMENT

In previous years, a combination of physical hand-pulling and machines (contracted from Taggart Earthmoving Ltd) has been used to remove weeds from specific sites in order to create potential bird breeding areas (see previous reports). However, experience has shown that there is no guarantee that birds will use such sites. Hence, weed clearance is undertaken mainly as a Group 'team-building' activity..

2.3 ADVOCACY

Advocacy and liaison, in the form of media articles, public talks 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. A children's book 'Ria the reckless wrybill', written by local member, Jane Buxton, was launched in Rangiora on September 15. A member photographer, Lynley Cook, took a number of high quality photos on the river, which are now available on a Flickr site. The Group presented, or had representation, at meetings of the Canterbury Water Management Strategy, the Waimakariri Zone Committee and the Ashley-Rakahuri Regional Park. Customised Corflute signs are placed in managed riverbed areas to inform the public of the location of breeding birds. The Group assists with the selection of swimming hole sites in the early summer, in order to avoid bird nesting areas.

2.4 WALKWAY AND 4WD TRACK MAINTENANCE

The planting of native species, particularly alongside the Mike Kean Walkway continued over the 2010 winter, with weed control carried out around those already established. Maintenance was carried out on the 4WD track, which runs along the berm area on the north bank between the end of Rossiter's Road and the Makerikeri River.

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 25 September, 2010, 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. These traps were removed on February 12, 2011, after the breeding season had finished. Another, post-season trapping period, was started on March 11, 2010 and ended in September 25.

2.6 MONITORING

Monitoring of wrybills, black-billed gulls, and black-fronted terns was carried out as described in previous reports (Dowding & Ledgard 2005, 2006, 2007), and began this season in September. Most monitoring effort was concentrated in the core study area between the Aerodrome and Marchmont sites. Breeding success (productivity) for each of these species was recorded as the average number of chicks fledged per pair within the study area. In addition to the regular monitoring of breeding birds during the season, a survey of all birds is undertaken in the spring from the Okuku river junction down to the SH1 bridge. In the past this has been attempted in both October and November. However, too many October surveys have had to be cancelled due to high river flows, so now a single survey is carried out in November. Fifteen volunteers in four groups undertook the 2010 survey on November 20.

2.7 MEETINGS

During the 2010/11 season, the Group held meetings in the Department of Conservation's offices on River Road, Rangiora, on August 5 (AGM), December 16, and May 12. Average attendance was 14 members.

3 Results

3.1 HABITAT ENHANCEMENT

Weed clearance

No weed clearance was carried out by the Group in 2009. A good flood of over 500 cumecs in May meant that there were large clear areas of good bird-nesting habitat at the start of the breeding season later in the year.

Ashley-Rakahuri Regional Park

On July 1, 2010, the Ashley-Rakahuri Regional Park became a reality. The Group has been closely involved in the planning for this Park, as it not only includes the core section of the river in which the ARRG operates (between SH1 and the Okuku river junction), but it also addresses management to promote successful bird breeding. Funding cut-backs have slowed early implementation of the Park's plan, but a start on developing recreational areas alongside the stopbanks during the 2011 autumn will help to keep people out of the riverbed.

Walkway creation and 4WD track

The Mike Kean Walkway, which was officially opened on 23 April 2007, is now accepted by the public, and getting increasing use – especially as it is now part of wider Ashley-Rakahuri Regional Park developments. The 4WD track continues to get reasonable use, acting as a good alternative to driving in the riverbed itself. However, its rugged contours are only attractive to more adventurous drivers.

Blocking of 4WD entrances to riverbed

The Group provides location assistance to ensure that excess 4WD entrances to the riverbed are closed off prior to the breeding season. This was carried out at the end of October, 2010, with the aid of a digger paid for by ECan..

3.2 PREDATOR CONTROL

In total, 32 potential predators were trapped in 3,732 trap-nights. Predators trapped consisted of 23 hedgehogs, 3 cats, 4 stoats and 2 weasels. Numbers were very similar to the previous season, when 27 predators were trapped - with hedgehog numbers increasing the most (from 17 to 23). 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, 2010/11season. Locations are shown in Figure 1. 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	27/09/10 – 23/01/11	912	1	1	0	12	0	0
North bank Bridge – G2	25/09/10 – 12/02/11	2446	2	1	2	4	0	0
Railway	25/09/10 – 20/12/10	164	0	1	0	4	0	0

Golf Links - Marchmont	25/12/10 – 04/02/11	210	0	1	0	3	0	0
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Totals		3732	3	4	2	23	0	0
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The trap rate during the bird breeding season was 0.85 predators per 100 trap nights. During the post-season trapping period seventeen predators were caught (4 cats, 2 stoats, 10 hedgehogs and 1 rat) during 3320 trap nights, for a trap rate of 0.51.

3.3 ADVOCACY

During the 2010/11 breeding season, the public and visiting groups were made aware of the Group's activities in the riverbed by:

- Two articles in local newspapers - *Northern Outlook* (Nov 10, 2010) and *Hurunui News* (Sept 16, 2010) ; plus an article in the November, 2010 issue of 'Avenues' magazine.
- A nightly Screenvista presentation for 4 months in the Palms cinema, Shirley, Christchurch (Sept, 2010 – January, 2011). Rangiora's cinema was closed due to earthquake damage.
- A presentation at the launching of Jane Buxton's children's book 'Ria the reckless wrybill' in DOC's Rangiora building on September 15 – as part of Conservation Week.
- A field talk to the Waimakariri Zone Committee (Sept 25), plus representation at one of their meetings (May 24, 2011) and a discussion (plus Ppt) with their Chairman (June 23, 2011).
- Representation on a Canterbury Water Management Strategy visit to Lees Valley to discuss proposed dam options (Oct 14).
- Representation at meetings about the Ashley-Rakahuri Regional Park (Oct 13, Nov 14 and June 13, 2011).
- Publicity officers in the Waimakariri Area of the Department of Conservation (DOC) using the Group's Powerpoint as part of addresses to over fifteen schools and groups, such as cubs and scouts.
- Placing customised Corflute signs in managed riverbed areas (Sept 2010 – Jan 2011).

During 2010, a Group member and keen photographer, Lynley Cook, took a number of high quality photos on the river. These are now available on a Flickr site and have been used for Group promotions..

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 (ARRG chairman) is currently BRaid Chairman. BRaid meetings were held in July and October, 2010 and during February and May, 2011. A major step forward was obtaining funding from ECan's Biodiversity Programme for a training course on the management of braided river birds, to be held in September, 2011.

During 2010, the Group also remained involved in planning for the Ashley River Regional Park, the plan for which became operational midway through the year.

A definite highlight for the ARRG was the launch of local member, Jane Buxton's children's book 'Ria the reckless wrybill' in DOC's Rangiora offices on September 15, as part of Conservation Week. More than 50 people attended the launch

In addition, a weekly email update was sent to all Group members during the breeding season.

3.4 SPRING BIRD SURVEYS

Survey figures from 20 November, 2010, are shown in Table 2, with results of earlier counts shown for comparison.

Table 2 Results of the bird count undertaken in the Ashley River on November 20, 2010. Counts from previous years, plus the 10-year mean, are shown for comparative purposes

Species	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	Ave
Black Shag	18	3		8	7	2	2	10	9	6	2	7
Little Shag	3	6		4	7	6	2	4	0	17	6	6
SI Pied Oystercatcher	25	22		22	37	22	5	26	27	32	20	24
Variable Oystercatcher	0	0		0	2	0	0	0	0	0	0	0
Pied Stilt	229	82		138	140	137	68	164	131	196	233	152
Black Stilt					2	1	1	1	1	1	0	1
Banded Dotterel	199	130		169	213	245	84	237	198	233	260	197
Wrybill	17	7		16	9	7	5	9	8	13	18	11
Spur-winged Plover	18	nc		13	27	149	37	116	11	39	15	47
Black-backed Gull	26	nc		10	27	3	5	12	10	19	19	15
Black-billed Gull	314	3		0	10	1	213	13	16	2	41	61
Black-fronted Tern	74	44		102	28	26	180	89	81	124	192	94
Caspian Tern	0	0		4	0	0	1	0	0	0	0	1

nc = not counted

In addition to the above, two black-fronted dotterels and eight white-fronted terns were observed (not far above the SH1 bridge). These are the first recorded during formal surveys, although both species have been seen at other times.

Table 2 shows that the 2010 counts of pied stilt, banded dotterel, wrybill and black-fronted terns were the highest on record.

3.5 SHOREBIRD BREEDING

Locations of shorebird territories are shown in Figure 1.

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 pairs of wrybills attempted to breed in the study area in the 2010-11 season.

1. Male: UB Female: UB

This pair, possibly the same UB pair that raised two chicks at Toppings road last year, occupied the Smarts Road site where a nest was found on October 14. On November 15 they had two small chicks, one of which was metal banded. On the same date a UB male was seen lining a nest scrape, and copulating with a UB female. Two eggs were later seen, but they had disappeared a short time later. Two fledged chicks, presumably from the first nest, were observed at the site in December.

Result: Two chicks fledged.

2. Male: BW-BW Female: WO-GO

This pair occupied the Railway site. WO-GO and a UB male hatched chicks at this site in 2009, but they failed to fledge. On Nov 12 a 1-egg nest was found and on Nov 17, the UB male was caught and banded as BW-BW. Two chicks were seen early in December, but both disappeared not long after.

Result: No chicks fledged.

3. Male: UB Female: BO-WR

This UB pair were first seen on October 30 at the end of Rossiters Road just above the pylons. A 2-egg nest was found (early in November). The female was banded on ??, and on December 10 one young chick was seen which later fledged successfully.

Result: 1 chick fledged.

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

This pair nested out off Groyne 1, probably on the north bank, but the actual nest was never found. A well-grown chick was observed on December 10, and seen flying a few days later.

Result: 1 chick fledged.

5. Male: UB Female: YO-OR

Nested in Racecourse area. YO-OR seen in area acting nest-like on Oct 30. I never found the nest, but Geoff Sw saw a chick out there twice.

Result: 1 chick fledged.

6. Male: UB Female: UB

Just below Groyne 2, but nest not seen. Young chicks seen on Dec 10, later flying.

Result: 2 chicks fledged.

7. Male: OW-R Female: B-YO (formerly BO-YO)

Out off Groyne 2. Seen at end of October. Nest never found. Flying juvenile on Dec 10.

Result: 1 chick fledged.

Overall result: 7 pairs fledged 8 chicks, for productivity of 1.1 chicks fledged per pair.

Black-fronted terns

Black-fronted terns bred at six sites during the 2010-11 season. The highest concentrations were at Smarts/Marshmont (40 birds present on Dec 12), Rossiters Road (50 birds present in mid-November), off Groyne 1 (over 50 birds present in early January) and at the Okuku river junction (over 50 birds present with 15 walking chicks and two flying juveniles on Dec 18). On November 20, a colony of 12 pairs (with egg nests) was seen during the annual survey, but none were present 2 weeks later in early December. A single pair nested at the Racecourse site and acted aggressively on Dec 30 and Jan 9, but were not seen thereafter.

The Okuku river junction colony disappeared over the Christmas/New Year period, and it is assumed that only the two flying juveniles seen on Dec 18 survived. The Smarts/Marshmont birds could well have been the same that were seen earlier, nesting further down the river on Nov 20. By mid-December, it is estimated that at least 12 pairs had nests at Smarts/Marshmont, but these slowly disappeared, with just one chick seen flying on Jan 30. Another of flying age was observed on the ground. The terns in the Rossiters and Groyne 1 area were observed from mid-November (5 egg-nests seen) to late January, and all nesting was probably by the same birds as eggs or chicks were lost and re-nesting attempted. It is estimated that overall, 20 pairs attempted nesting at these two sites. On Jan 9 six birds were seen on nests and four juveniles were flying, while on January 30, six walking chicks were seen plus 2 pairs were still on eggs.

Result: An estimated 50 pairs fledged 12 chicks, for minimum productivity of 0.24 chicks per pair.

Black-billed gulls

Although flocks of gulls were seen on the river at various times – 90 between the road and railway bridges in early September; 20 at Marshmont on October 3, and 16 at Rossiters on Nov 12 – no nests were seen during the season.

Result: No nesting occurred on the Ashley river

Pied oystercatchers

Five pairs attempted to breed in the area between Dalziels and Golf Links Road. Their productivity was not recorded.

Banded dotterels

Banded dotterels nested throughout the study area. The first nest was found in early Sept. Numbers were up on the previous season, and although productivity was not recorded, it appeared to be above the previous season's figure of 0.65 fledged chicks / pair.

Pied stilts

Many pairs of pied stilts bred in the study area, but their productivity was not recorded.

Black stilt

A black stilt (GK-OW) had been resident in the study area for 3 years but was not observed on the Ashley-Rakahuri river in 2010-11.

4 Discussion

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

1. The three species require a largely bare substrate for nesting, and weed growth in the riverbed results in loss of breeding habitat. In the past, the Group has cleared weeds from small selected sites, and contracted commercial gravel extractors for clearance of other new areas, but weed clearance of large areas is now left to natural floods..
2. Introduced mammalian predators reduce survival and productivity. The Group undertakes predator control at sites where the three key species breed.
3. Disturbance by people, dogs, and vehicles reduces breeding success. The Group attempts to reduce disturbance by undertaking a range of advocacy and information initiatives, and installing signs on the river during the season.

4.1 HABITAT ENHANCEMENT

Given the practical difficulties and cost to the Group of clearing and maintaining large weed-free areas at many sites, and the fact that there is no guarantee that birds will use them for breeding, no weed removal by hand weeding was attempted in 2010. A large flood (over 500 cumecs) in May helped to maintain the areas swept of weeds by an even larger flood the previous year.

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. In October, a digger spent a day closing access tracks on the north bank between the road bridge and opposite Groyne 2, directed by a Group member familiar with the area.

Recent research has shown how bird breeding success is greatest on islands with a reasonable flow of water surrounding them (poor access for predators such as cats). The ARRG, in conjunction with commercial shingle extractors, could do more to create such island habitat.

4.2 PREDATOR CONTROL

The number of trap-nights in 2010/11 was a little higher than that for 2009/10, and the number of predators trapped increased from 27 to 32. The overall capture rate was 0.85 per 100 trap-nights, compared to 0.68 for 2009/10. The small increase was mainly due to more hedgehogs being trapped - up from 17 to 23. The rise in hedgehog numbers probably reflects a population recovery after the severe floods of 2009 removed large areas of good cover.

The numbers of predators caught per trap night remains low compared to other braided riverbeds where control is undertaken. 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.

At the end of the 2010-11 bird breeding season it was decided to continue maintaining traps along the north bank (between the road bridge and opposite Groyne 1) during the late summer/autumn period, as it is recognised that higher numbers of predators can be caught at this time, when juvenile animals leave their parents and set out on their own.. This proved to be worth the extra effort, particularly for cats, as 4 were caught, compared to 3 during the breeding season.

Despite the increased work, the trapping team remains small, and the Group needs to attract more volunteers.

4.3 ADVOCACY

The Group's advocacy efforts over the past years continue to improve local awareness of the problems faced by birds, and of the Group's activities to protect them. During 2010/11, two articles were written for the local media articles, an article appeared in 'Avenues' magazine, a 'sausage-sizzle' was held outside The Warehouse, and the Screenvista was run nightly for 4 months in the Palms cinema, Shirley (Rangiora cinema closed due to earthquake). Out on the river, customised Corflute signs were placed in managed areas during the season – these are essential to minimise human disturbance during the breeding season..

A highlight of the ARRG year was the launch of 'Ria the reckless wrybill' by local member and children's book author, Jane Buxton. This was held during Conservation Week at DOC's Rangiora premises and attended by over 50 people. The book not only advocates the plight of the wrybill on braided rivers, but in addition, 25% of royalties go to the Group for use on the river.

In addition to advocacy by Group members, there is also significant promotion by others. For example, publicity officers in the Waimakariri Area of the Department of Conservation (DOC) frequently use the Group's Powerpoint as part of their addresses to local schools and groups, such as cubs and scout.

During 2010, Group member and keen photographer, Lynley Cook, took a number of high quality photos on the river, and posted these on a Flickr website, which she maintains. They have been useful, not only for Group use, but as a reference site for anyone inquiring after photographic material.

With the rising national interest in the use of water has come greater recognition of the ecology of river systems. In Canterbury, the Canterbury Water Management Strategy (CWMS) is being implemented, with local input via Zone Committees. The Ashley-Rakahuri river is overseen by

the Waimakariri Zone Committee. The Group has addressed this committee, and also been represented on a CWMS field visit to Lees Valley, where there are proposals for a large dam to store water for power generation and irrigation use. As this would have a major impact on water flows down the river, the Group is following developments closely.

A major milestone for the Group was the official launch of the Ashley-Rakahuri Regional Park plan in mid-2010. Implementation of the plan has been interrupted by the earthquakes, but the improved signage and development of dedicated recreational areas in the stopbank area (started in the autumn of 2011) will help keep people out of the riverbed during the breeding season. In the long term, the Regional Park concept is integral to ensuring the professional management of the river. The ARRG will continue to function much as it has to date, but exactly how this integrates with Park management has yet to be ascertained. However, it is most likely that the outcome for the birds will be greater allocation of resources, and hence a more assured future over the long term.

The Group continues to be closely involved in BRaid (braided river aid) Inc, a group which aims at bringing about better awareness and environmental management for all braided rivers in the South Island. Group chairman, Nick Ledgard, is also chairman of BRaid Inc. BRaid held regular meetings during 2010, and early in 2011 was awarded funding from ECan's Biodiversity Programme to run a training course (in September) for members of the public wanting to help breeding birds on braided rivers. Hopefully, the end result will be more community groups to assist breeding birds on local rivers – for which the Ashley-Rakahuri Rivercare Group can act as a model. Plans are already underway for a Waimakariri rivercare group.

4.4 SPRING BIRD COUNTS

As in the previous year, high river flows in October allowed only one survey to be carried out in 2010. Hence, it was decided that no more October surveys will be attempted. The 2010 survey took place on November 20, with 15 participants. The numbers of most bird species were higher than the mean for the last 10 years (see Table 2). Pied stilts, banded dotterels, wrybill and black-fronted tern numbers were the highest ever. Black-billed gull numbers were also higher than in most previous years, but this has little significance as so much depends on whether a colony is present or not, and no birds bred on the river in 2010-11. Apart from the Group's 10 years of annual surveys, we have information from four previous surveys going back to 1963. This means that long-term bird population trends are now becoming better understood – probably more so than on most other braided rivers in the country. While populations of the endangered species continue to decline nationally, the Ashley-Rakahuri figures indicate that the local numbers are being at least maintained.

4.5 SHOREBIRD BREEDING

Wrybills

Seven pairs nested in the study area in 2010-11. This is the highest number recorded since regular monitoring began in 2004 (6 in 2004 and 2009). Plus the number of chicks fledged (7) is the highest, with a productivity of 1.1 chicks fledged per pair. This is encouraging, but it will take more years of similar results to determine whether it reflects the benefits of the closer management by the Group. The future will also determine whether the problem of poor adult survival is being overcome. This is essential for longterm success as an integral component of the survival strategy of the wrybill is to live to a ripe old age (as it is with many of this country's native birds).

Black-fronted terns

Although the November survey recorded the highest numbers of black-fronted terns since regular surveys began in 2000, breeding success for this species remains poor. The estimated

number of breeding pairs was 50, the second highest since 81 in 2006, but the productivity was the poorest at 0.24 chicks fledged per pair (next lowest 0.38 in 2005 and 2008).

The reasons for this poor success rate are often not clear, with no obvious leads as to why colonies can suddenly and completely disappear. Birds were seen on eggs in a 12-pair colony below Smarts Road on November 20, but 2 weeks later no sign of the colony could be found. Similarly up at the Okuku river junction, where a healthy colony of at least 40 birds plus 15 walking chicks and 2 flying juveniles (December 18) had almost completely disappeared by January 1, when just two adults were observed flying above the abandoned site. No dead birds were found, but there were signs of vehicles and people having used the site (probably for swimming) in the intervening time, and there were a number of families camping only a few hundred meters down river. In this case, human disturbance seems a likely cause of the colony's failure, and good signage could have made a difference (none present at the time). The colonies at Smarts Road/Marchmont and Rossiters/Groyne 1 also started well with a number of pairs laying eggs. However, bird numbers and nests slowly declined as the season progressed despite adjacent predator traps and signage to deter human trespass. Studies of breeding terns elsewhere found avian predators (mainly black-backed gulls and harrier hawks) to be a major problem. This may be the case on the Ashley, although few black-backed gulls frequent the river. It may be no coincidence that the highest productivity for terns (0.68 in 2006) was achieved when a large colony of black-billed gulls was also present, with the terns adjacent and enjoying the added protection of the gulls.

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.

There is another success requirement about which even less is known – and that is the adequacy of food supplies, both for adult birds and chicks. If this was limiting, the option of improving nearby food sources needs exploring. Perhaps this could be achieved by cultivation of adjacent paddocks to promote insect and worm availability? Gulls and terns can often be seen feeding in intensively managed farmland, especially where there is irrigation.

Black-billed gulls

Success with this species depends primarily on whether a colony chooses to nest on the river. None did so in the 2010-11 season. Past colonies have numbered some hundreds and resulted in good productivity – as high as 0.75 from 337 pairs in 2008. As indicated above, such numbers can also benefit other species such as the black-fronted tern, which profit from the better protection afforded by the more aggressive gulls.

Other species

Productivity was not recorded for pied oystercatchers, pied stilts and banded dotterels, but observations throughout the season indicated that oystercatcher productivity was lower, while the productivity of pied stilts and banded dotterels was at least the same, and probably higher than for the previous season. The black stilt/which had in previous years was not seen on the river, but was observed down at the Ashley-Rakahuri / Saltwater Creek estuary..

4.6 FUNDING

Over the past year some funding has been obtained from a sausage sizzle outside the Warehouse on a Saturday morning, a percentage of royalties from the sale of Jane Buxton's book 'Ria the reckless wrybill', and from some small private donations. During 2010, a major donation of \$2000 was given by the Harcourt's Foundation.

Donations are always welcome, but the Group relies mostly on much larger grants, for which it applies when needed. Over the last year the Group's main finances have come from the first year funds of a 2-year grant from the World Wildlife Fund - New Zealand.

5 Conclusions

In terms of productivity of the 3 key shorebird species in the Ashley-Rakahuri River, the 2010/11 season was a good one for wrybill – our best yet. We also had high numbers of black-fronted terns, but the breeding success was poor. No black-billed gulls nested on the river. The number of pairs of these key species fluctuates annually, and it is too early to say whether the success of wrybill and the high numbers of black-fronted terns reflects positive outcomes from the Group's management. In addition, numbers of both pied stilts and banded dotterels were the highest recorded since regular monitoring began in 2000. Therefore, it is probably safe to say that overall, bird populations on the managed portion of the river are holding their own. However, continued intensive management will be required if this situation is to be maintained.

It is pleasing to record that, relative to public awareness and education, the Group's high profile has been maintained, with agencies such as DOC frequently using material provided by the Group – usually the Powerpoint address. The completion and launching of local member, Jane Buxton's, children's book 'Ria the reckless wrybill' was a definite highlight of the year.

The Group also notes the rising profile of wise water use on the Canterbury plains, which brings braided rivers and their management to the fore. Consequently, extra resources are being channelled in this direction through the Canterbury Water Management Strategy and the district Zone Committees, and into more practical on-site operations such as those resulting from the creation of the Ashley-Rakahuri Regional Park. All this bodes well for the professional and long-term management of the river, and hence a more secure future for the birds, although the potential adverse effects of some proposals such as the damming of the Ashley-Rakahuri river in Lees valley, will have to be closely watched.

BRaid Inc, a group which promotes protection of all braided river ecosystems in Canterbury, was the brainchild of the Ashley-Rakahuri group and came into existence in 2007. It has limited resources, but thanks to funding from ECan's Biodiversity Programme, a training course has been organised for September, 2011, aimed at those wanting to assist breeding birds on braided rivers. This, and other proposals such as the employment of a braided river conservation co-ordinator, should help in the formation of other community-driven rivercare groups.

6 Recommendations

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

Justification

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

2. Create and/or maintain islands for bird breeding

Justification

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

- 3 Continue advocacy initiatives both by members and other agencies such as DOC, making use of the Powerpoint presentation and the children's book.

Justification

Although awareness has improved significantly over recent years, it can only be maintained and improved by continued effort.

- 4 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.

- 5 Maintain and improve collaboration with ECan's Biodiversity Programme, the Waimakariri Zone Committee and the Canterbury Water management Strategy's Regional Committee

Justification

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

- 6 Maintain and improve collaboration with commercial shingle extractors.

Justification

Gravel extractors are the major commercial users of the Ashley-Rakahuri river, and have opportunities to create weed-free sites that encourage successful bird breeding. The ARRG is in a position to advise on measures that will improve these sites.

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

Justification

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

7. Acknowledgements

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

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

In addition, Harcourts Foundation generously donated \$2,000, and 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.

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