Management and monitoring of shorebirds in the Ashley River during the 2007/08 season



Ashley/Rakahuri Rivercare Group, Inc.

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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. In 2005, the Group became an incorporated society, and in June 2007 received a grant from the Lottery Environment and Heritage Committee to assist it in carrying out its objectives. This is the fourth annual report from the Group.

The main activities undertaken by the Group in 2007/08 were:

- Advocacy and liaison with groups of riverbed users and the general public
- · Control of mammalian predators in areas with concentrations of nesting birds
- Enhancement of public facilities in parts of the river not used by shorebirds
- A survey of bird species in the lower river in November
- Monitoring of bird breeding success
- · Successful application for funding to commission stories for children about wrybills
- Organisation of a meeting to address bird breeding issues on South Island braided rivers
- Attendance at meetings of the resulting BRaid group
- Representation at regional council meetings to form a management strategy for the river.

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

Advocacy and liaison initiatives, in the form of media articles, public talks and advertising continued to raise public awareness of shorebirds in the river and of the Group's activities. The Group was represented at meetings organised by Environment Canterbury to draw up a management strategy for the Ashley/Rakahuri river. The Group also organised a highly successful meeting to address bird breeding issues on all braided rivers; this was attended by over 50 people, and resulted in the official formation of a South Island-wide action group subsequently called *BRaid*. Assistance in the form of advice and funding applications was given to local children's author Jane Buxton, to write a book and a *School Journal* article on wrybills.

Predator trapping resulted in 55 mammals of six species being caught in 3,983 trap-nights, a rate of 1.4 predators/100 trap-nights. As usual, hedgehogs were the most common species trapped.

Enhancement of public facilities in parts of the river not used by shorebirds focussed on native vegetation planting of a riverside walkway, and maintenance of the 4WD track.

High river levels disrupted spring surveys and only one was undertaken, on 24 November 2007. Numbers of wrybills were typical, while those of black-billed gulls and black-fronted terns were below average. Counts of pied stilts, banded dotterels, and spur-winged plovers were above average.

Monitoring of the three key species revealed a season of mixed results. Four wrybill pairs nested in the study area and fledged three chicks. However, adult mortality remains high. A group of black-billed gulls moved around within the river, but only a few pairs laid eggs, and no chicks were fledged. About 30 pairs of black-fronted terns nested at three sites in the study area, and fledged 11-12 chicks.

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, notably in schools
- Give full support to Environment Canterbury's completion and implementation of a longterm management strategy for the Ashley/Rakahuri River, and to the activities of the South Island *BRaid* group.
- Improve liaison and collaboration with commercial shingle extractors.

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. In their natural state, 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 predators, and are degraded by a wide range of human activities.

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

The shorebird values of the Ashley are well-recognised. Following surveys of Canterbury rivers in the 1970s, the New Zealand Wildlife Service ranked their wildlife and conservation values; the Ashley was one of five rivers given the highest possible ranking of 'Outstanding' (O'Donnell & Moore 1983). More recently, the Ashley River and estuary were included in a list of wetland sites of international importance in New Zealand (Cromarty & Scott 1996).

In the past, the river has provided breeding habitat for significant numbers of black-fronted terns (*Sterna albostriata*) 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 one of the most northerly rivers on which wrybills (*Anarhynchus frontalis*) breed, following a southward contraction of the core range of the species over the past century (Riegen & Dowding 2003). All three of these species are endemic (occur only in New Zealand) and are threatened. The wrybill has a declining range and is classified as Nationally Vulnerable. The black-billed gull is classified nationally as in Serious Decline but internationally as Endangered, making it the world's most threatened gull species (BirdLife International 2007). Of most current concern is the black-fronted tern, which is declining rapidly and is classified as Nationally Endangered, the second-highest ranking possible under the New Zealand scheme. Other shorebird species that are in lower threat categories or are not threatened also breed in the Ashley. The New Zealand threat ranking scheme has recently been revised (Townsend *et al.* 2008) and the threat categories of all New Zealand birds are due for review in mid-2008.

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 three grants to assist it in carrying out its aims. In June 2007, a 2-year grant was approved by the Lotteries Environment and Heritage Committee. The activities undertaken since the 2004/05 season have been described in the Group's annual reports (Dowding & Ledgard 2005, 2006, 2007). Those reports outlined the results of bird monitoring, habitat enhancement, predator control, and advocacy initiatives, and made recommendations for future management.

This report documents the management activities and monitoring of birds that were undertaken during the 2007/08 season. Emphasis was again placed on protection of the three key shorebird species: wrybill, black-billed gull, and black-fronted tern. An Activity Chart for 2007/08, which summarises activities by the Group, is shown in Appendix 1.

2 Study area and methods

2.1 STUDY AREA

The study area consists of an 18 km stretch of the lower Ashley River, from its confluence with the Okuku River to the State Highway 1 bridge. It was described in some detail in the Group's first annual report (Dowding & Ledgard 2005). A sketch map of the area is shown in Figure 1.

2.2 HABITAT ENHANCEMENT

In previous years, a local gravel-extraction company (Taggart Earthmoving Ltd) has been contracted by the ARRG to remove weeds from specific sites in order to create potential bird breeding areas (see previous reports). No such work was undertaken during the 2007/08 season. However, as part of their commercial gravel-removal operations, Taggarts continued removing shingle from an area of several hectares upstream of Groyne 1. Two medium-sized floods in October 2007 further modified this area, creating more channels and shallow braids, and making it highly suitable habitat for shorebird breeding. Other sites at which shingle removal over the last year has created open areas were Golf Links and Marchmont. Two small areas (<1 ha each) used for nesting by gulls and terns in 2006/07 (the Colony and Marchmont sites) were also hand-cleared of new weed growth by the Group on 10 June and 24 June 2007.

2.3 WALKWAY CREATION AND 4WD TRACK MAINTENANCE

Work continued on the Mike Kean Walkway between the road and rail bridges on the south bank of the river near the Ashley picnic ground. The planting of native species (consisting mainly of cabbage trees, flax and *Hebe*) continued over the 2007 winter, with weed control carried out around those already established.

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, signs were re-instated and maintenance was carried out where holes had become too deep or willows had fallen across the track.

2.4 PREDATOR CONTROL

A range of traps was used to target mammalian predators (mainly cats, mustelids and hedgehogs). They included 12 cage traps, 14 Bushby tunnel traps, 10 Timms traps, 12 DOC 200 traps and 6 DOC 250 traps. Six recentlyreleased Possum Master traps were also bought and tested, but have not proved effective to date. Traps were first set on 08 September 2007 at sites with a history of use by wrybills and blackfronted terns. As the three key bird species occupied territories, traps were added or moved between sites as appropriate by four trappers. Traps were baited with a range of baits (usually salted rabbit or hen eggs), and checked once or twice a week. Three Bushby tunnel traps and one DOC 250 trap were lost during the October floods. The last traps were removed (from the Aerodrome site) on 02 February 2008 after the pair of wrybills there finished breeding and left the area.



Figure 1 Sketch map of the study area in the lower Ashley River. Significant bird breeding localities are shown with solid circles and are labelled with territory names.



2.5 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 Dalziels and Marchmont. Breeding success (productivity) for each species was recorded as the average number of chicks fledged per pair monitored within the study area.

The spring surveys of shorebirds in the study area could not be completed as normal due to high river flows. The survey planned for 06 October was cancelled, and the second survey was delayed until 24 November; 15 people participated in this survey, divided into four groups.

2.6 MEETINGS

During the 2007/08 season, the Group held meetings in the Waimakariri District Council's meeting rooms, Rangiora, on 23 March, 30 May, 22 August (Annual General Meeting), 03 October, and 28 November. Average attendance was 13 members.

Because threats to braided river birds are not confined to the Ashley, the Group initiated and organised a highly successful meeting to discuss management of birds breeding on all braided rivers (see Section 3.3 below). The meeting was held at Rossburn Receptions, Spark Lane, Rangiora on 09 October 2007; the agenda for the meeting is shown in Appendix 3.

During the 2007/08 season, Environment Canterbury organised meetings in Rangiora to discuss the development of a management strategy for the Ashley/Rakahuri river. The Group was represented at a field visit to the river on 06 October 2007, and at meetings on 21 November 2007 and 12 March 2008.

3 Results

3.1 HABITAT ENHANCEMENT

Walkway creation and 4WD track

The Mike Kean Walkway, officially opened on 23 April 2007, is now accepted by the public, and getting increasing use. It is now achieving its objective of providing a walking and dogexercise area in sight of the riverbed, but far enough from it to prevent disturbance to the birds. The walkway's routed sign has been vandalised (graffiti-painted) on two occasions, but no damage was inflicted during the latter half of the season.

The 4WD track continues to get reasonable use, acting as a good alternative to driving in the riverbed itself.

Weed clearance

Areas cleared of weeds by the ARRG or by shingle extractors are described in Section 2.2 above. Since 2005, commercial shingle removal has resulted in much of the riverbed being cleared of weeds in stretches between the Marchmont site to Railway Bridge, and between the Rangiora–Ashley road bridge and the Aerodrome site upriver to the west. These operations have created significant open shingle areas, on which most shorebird breeding has taken place in recent years. In 2007/08, all wrybill pairs, and most terns and gulls that attempted to nest did so in areas associated with shingle removal. It has also become clear that other species, notably banded dotterels, are quick to establish on areas that have been cleared.

As in previous years, floods were significant in keeping areas clear of weeds. In particular, a series of major floods in October modified a large area between the Aerodrome and Groyne 1, removing steep banks and changing water flow from two main channels to a greater number of

smaller, shallow braids. Following these floods, there was a marked increase in the number of birds present in this stretch of the river. A flood in February 2008 cleared regenerating weeds.



Ashley River in flood, looking upstream from Groyne 1, October 2007

3.2 PREDATOR CONTROL

In total, 55 potential predators were trapped in 3,983 trap-nights. Predators trapped consisted of 39 hedgehogs, 4 cats, 3 stoats, 4 weasels, 3 rats and 2 mice. Details of trapping periods, trapnights and captures at each site are shown in Table 1.

Location Trapping period Trap-Captures [nights Cat Stoat Weasel Hedgehog Rat Mouse Colony none set Dalziels 8/09/07 - 12/12/07 Aerodrome 08/09/07 - 02/02/08 north bank south bank 16/09/07 - 02/02/08Racecourse 08/09/07 - 04/01/08 **Big Island** 26/08/06 - 27/01/07 Groyne 1 none set Rossiters none set Railway 20/10/07 - 28/12/07Golf Links 16/10/07 - 13/01/08 Marchmont 16/10/07 - 13/01/08 **Totals**

Table 1Results of predator trapping in the Ashley River, 2007/08 season. Locations are shown in
Figure 1. Trap-nights are not corrected for sprung/occupied traps.

Trapping rates varied up to 10-fold between sites. The greatest number of predators (17) and the highest capture rate (2.3 captures/100 trap-nights) were at the Aerodrome site.

3.3 ADVOCACY

During the 2007/08 breeding season, the public were made aware of the Group's activities in the riverbed by:

- Two articles in the local Northern Outlook newspaper (12 September and 17 October 2007).
- One article in *The Press* and one in *Ashburton Guardian* promoting the *BRaid* meeting (September 2007).
- An article in Environment Canterbury's newsletter Living Here (February 2008).
- A nightly Screenvista presentation for 4 months in the Rangiora cinema (August-November 2007).
- Talks to special interest groups, using a specially prepared PowerPoint presentation, included: Ashley/Rakahuri River strategy planning meeting (20 June 2007) *BRaid* workshop (09 October 2007) Rangiora Tramping Club (23 October 2007)
- Customised Corflute signs placed in managed riverbed areas throughout the season.

The Group was well represented at meetings (on 06 October, and 21 November 2007, and on 12 March 2008) organised by Environment Canterbury to draw up a long-term management strategy for the Ashley/Rakahuri River.

The Group also organised a meeting to address bird breeding issues on all braided rivers. This was held in Rangiora on October 9 and was attended by 53 people from as far afield as Blenheim and Twizel. A wide range of interests were represented, with delegates from local government, the Department of Conservation, Fish & Game, professional ecologists, members of NGOs (OSNZ and RF&BPS), gravel-extraction companies, and community-based volunteers.

The primary outcome of the meeting was the decision to form a South Island-wide braided river action group, subsequently called *BRaid*. The main objectives of the group have been to foster discussion and share information between stakeholders interested in the issues surrounding human impacts on birds breeding in braided rivers. The group was officially created on 04 March 2008, and held its first formal meeting on 24 April 2008.

Considerable assistance, in the form of advice and application for funds, was given to local author Jane Buxton, to write a storybook about wrybills for children, plus an article for the *School Journal*. A successful application to the Lotteries Board for writing the book story was made and approved (11 December 2007), with a subsequent application for publication funding made in May 2008. A photo-shoot for pictures to accompany the *School Journal* article occurred on 21 October 2007, and the article was published in late May 2008.

A weekly email update was circulated to all ARRG members during the breeding season.



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3.4 SPRING BIRD SURVEYS

As noted above (Section 2.5) high river flows prevented the normal October survey being carried out. Results of the survey undertaken on 24 November 2007 were collated by Eric Spurr and are shown in Table 2, with results of earlier counts shown for comparison.

Table 2Results of the bird count undertaken in the Ashley River in November 2007. Counts from
the previous three years are shown for comparative purposes.

Species	Nov 2007	Dec 2006	Nov 2005	Nov 2004
Black shag	10	2	2	7
Little shag	4	2	6	7
South Island pied oystercatcher	26	5	22	37
Variable oystercatcher	0	0	0	2
Pied stilt	164	68	137	140
Black stilt	1	1	1	2
Banded dotterel	237	84	245	213
Wrybill	9	5	7	9
Spur-winged plover	116	37	149	27
Southern black-backed gull	12	5	1	27
Black-billed gull	13	213	3	10
Black-fronted tern	89	180	26	28
Caspian tern	0	1	0	0

Counts of most species were typical of previous years, although the numbers of pied stilts, banded dotterels, and spur-winged plovers were above average.

Numbers of black-billed gulls were well below those in 2007 because there was no large breeding colony in the river in 2007/08. There were also fewer black-fronted terns than in the previous season, but numbers of this species are also known to fluctuate.

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

Four pairs of wrybills attempted to breed in the study area in the 2006/07 season.

1. Male: GO-BY Female: UB

This pair occupied part of the Aerodrome territory, around the shallower channel near the south bank. They were seen displaying on 26 October and a 2-egg nest was found on 02 November,

when the male was caught and colour-banded. Both eggs had hatched by the last week of November, and the family moved several hundred metres downstream. Both chicks were banded (one on 19 December and the other on 21 December), and both fledged shortly afterwards. The pair nested again (overlapping their broods) and had a third chick by mid-January. This chick also fledged, but was not banded.

Result: Three chicks fledged from two broods.

2. Male: OW-RW Female: BO-YO

In 2006, the female of this pair had paired with a new UB male. Either that pair divorced, or the male was lost late in the 2006/07 season (or over winter). In 2007/08, BO-YO was paired with OW-RW and they occupied a territory downstream of the Aerodrome site, on the northern side of Big Island. They may have nested in October, but would almost certainly have lost that nest in the floods that month. A second nest must have been present in November, but was not found. The pair were defending 2 chicks on 11 December, but these had disappeared by 19 December, when both adults were seen in the same area foraging quietly. They had left the river by the last week of December.

Result: No chicks fledged.

3. Male: RO-M Female: UB

This pair again occupied the downstream end of the Railway territory, in the vicinity of Groyne 22. As in 2006/07, both birds were particularly secretive, and very difficult to monitor. RO-M's behaviour suggested there was a nest upstream of Groyne 22 in late September, but this was probably lost in the October floods. By 05 December, the pair appeared to have a second nest in the same area but none was found. Neither bird appears to have been seen after mid-December.

Result: No chicks fledged.

4. Male: UB Female: UB

This was a new pair in the river. Early in the season they were seen several times at Marchmont, then moved upstream slightly to Golf Links, where they were found with a 2-egg nest on 03 December. This nest was close to a well-used 4WD track, and had one tyre track less than 2 m away. Driftwood branches were collected and piled together below the nest to encourage drivers to drive around it (see photograph below). Both eggs hatched about the end of December and the chicks survived for about a week. By 08 January, the river had dried out completely at the Golf Links site; the chicks had disappeared and the adults had left the area.

Result: No chicks fledged.



Barrier of sticks installed to reduce risk of wrybill nest being crushed. Arrow shows nest location. Golf Links site, December 2007.

Black-fronted terns

Groups of black-fronted terns bred at three sites during the 2007/08 season, but in smaller numbers than in 2006/07. The largest group was on the north side of the river at Marchmont, where 15 nests were present on 02 November. By 29 November, many of these nests had disappeared, and vehicle tracks were obvious through the area. Only one nest remained in the original colony, but there were four new nests nearby, closer to the main channel. Four of these are known to have hatched, and three recently-fledged chicks were seen in January. About 12 pairs nested in the Big Island – Groyne 1 area; four of these nested with a small group (five pairs) of black-billed gulls in the middle of Big Island, and had fledged one chick by 14 December and a second by 19 December. A second group of eight or nine pairs nested in a loose colony several hundred metres downstream, just above Groyne 1, and had fledged three or four chicks by 11 January. Elsewhere, a solitary pair nested at Golf Links and fledged two chicks, and another solitary pair nested at Railway and fledged one chick.

Result: 29-30 pairs fledged 11-12 chicks, for productivity of 0.37-0.41 chicks per pair.

Black-billed gulls

A group of at least 300 gulls moved around the study area during the season, apparently attempting to establish a colony at various locations.

A large colony began to form at Marchmont in late October, and a count from a photograph confirmed at least 310 birds present on 02 November. By 11 November, the majority of these birds had deserted the area, and only two pairs (with nests) remained. By 11 December, five pairs had nested (among four pairs of terns) in the middle of Big Island; one of these nests was still being incubated on 14 December but all had been abandoned by 17 December. After this date, only small groups of birds were seen loafing or foraging, and it appears that the majority of the birds either nested outside the study area or abandoned for the season in November.

Pied oystercatchers

Fewer pairs of oystercatchers were located than in previous seasons. Five pairs definitely attempted to breed, one each at Colony, Dalziels, Big Island, Railway and Marchmont. Three chicks are known to have fledged (one each at Dalziels, Big Island, and Railway for average productivity of 0.60 chicks per pair. A large chick disappeared at Marchmont in late December or early January, and a dead adult was found in the territory on 11 January.

Black stilt

In 2006, the resident black stilt (GK-OW) paired with a pied stilt and bred unsuccessfully at the upstream end of the Dalziels site. In 2007/08, GK-OW was in the same territory, again paired with an unbanded pied stilt (possibly the same mate). The two birds were defending a 4-egg nest on 02 November. Four chicks hatched; three had fledged by 21 December (when they were still being aggressively defended by both parents), and the fourth fledged a few days later.



Black stilt GK-OW, Dalziels, August 2007

Pied stilts

Many pairs of pied stilts bred in the study area, particularly in the Dalziels/Priors territories, on Big Island, and in the Golf Links-Marchmont area. Their productivity was not recorded, but they appeared to have a successful season, with many large chicks and juveniles seen in January.

Banded dotterels

Banded dotterels nest throughout the study area. A number of chicks hatched before the October floods and survived them, but many nests must have been lost, as re-nests were common in November. As previously, fledging success was only recorded for a sample of pairs breeding in the areas that were monitored regularly. In these areas, 21 pairs fledged at least 17 chicks, for minimum productivity of 0.81 chicks fledged per pair.

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. The Group clears weeds from small selected sites, and relies on commercial gravel extractors and floods for clearance of other areas.

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

There are obvious practical difficulties and costs to the ARRG of maintaining large weed-free areas in different parts of the river, and there is no guarantee that birds will subsequently use them for breeding. In 2007/08, hand-clearing of weeds was therefore restricted to two small sites. Both of these had been used for breeding in 2006/07; at the Colony by black-billed gulls and at Marchmont by black-fronted terns. In 2007-08, the Colony site was not used again, but terns (and other species) did use the area cleared at Marchmont. However, the contribution of hand-weeding to the overall cleared area within the Ashley/Rakahuri River is minor, compared to the area cleared by floods and shingle extraction. If weed clearance by volunteer groups is carried out in the future, it will be carried out primarily for 'team building' and to involve the public in the Group's management activities in the river.

In 2007-2008, gravel extraction cleared large areas of weeds in the Racecourse, Golf Course and Marchmont sections of the river. Subsequently, all three were used at times for breeding by the three key species. Along the north bank of the river, Taggarts Earthmoving were contracted to close off access tracks created during flood control works, and this exercise was successful. The Group will continue to maintain good relationships with commercial gravel extractors and involve them in the creation (and maintenance) of suitable habitat. It is now almost accepted practice for shingle operators to contact the Group prior to initiating extraction, seeking assurance that their work will not disturb breeding birds. Experience suggests that some species can tolerate machines working nearby, with little apparent impact, but caution is still required.

However, one area which still needs attention is the 'manicuring' of extraction sites after extraction is complete, in order to make them as suitable for the birds as possible. Without onsite supervision by someone who knows what is needed, the end results can be poor, despite the best intentions of the machine operator. As noted in the Group's 2006/07 report, the actions most likely to produce good shorebird breeding habitat following gravel extraction include:

- (a) levelling of the area to provide a flat substrate with good all-round visibility,
- (b) manipulation of flows to create islands (where predation and disturbance are likely to be lower) and shallow braided sections (which provide feeding habitat),
- (c) sloping of steep banks along channels (to allow chicks access to feeding areas),
- (d) blocking or ripping of haul roads (to reduce vehicle and pedestrian access).

The floods of October 2007 helped to widen channels and create shallow braided areas, as well as clear weeds. However, re-growth is taking place, and if birds are to return to these areas, the Group will have to contract machinery to clear weeds before the 2008/09 season.

4.2 PREDATOR CONTROL

The number of trap-nights in 2007/08 was about 15% higher than in 2006/07, and the capture rate was slightly lower at 1.4 captures per 100 trap-nights (1.6 in 2006/07). The most common predator trapped was again the hedgehog (Table 1), which at 71% of the total catch was slightly below the range of 75-86% in the previous three seasons. More mustelids were caught than in the previous year, but the total of seven is still not particularly high. The number of cats trapped is again low, and this is probably because few traps capable of catching cats are deployed.

The programme is very dependent on recruiting volunteers who are prepared to make a major commitment and trap over a 4-5 month period each season. This is likely to be an ongoing challenge for the Group. However, trapping is an absolutely essential part of the programme and must continue. Paid professional trapping (particularly targeting cats) is an option that the Group may have to consider in future, even if only for a short period at the start of the season to provide an initial knock-down.

4.3 ADVOCACY

Overall, there is little doubt that the Group's advocacy efforts over the past 4 years have resulted in a much higher local awareness of the problems faced by riverbed birds, and of the Group's activities on the Ashley River.

Core advocacy activities, such as media articles, talks to special-interest groups, customised Corflute signs placed in managed riverbed areas during the season, and a nightly Screenvista presentation at the Rangiora cinema, are described in more detail in Section 3.2 above. Attempts to speak at more schools were hampered by difficulties in arranging suitable times to coincide with appropriate curriculum activities. Greater effort is intended in this area during the 2008/09 season, and should be enhanced by linking talks to Jane Buxton's wrybill story, which was published in the School Journal in May 2008. This story is based on the ARRG's activities in the Ashley/Rakahuri River, and is likely to be widely read, as the Journal is distributed to all primary schools in the country.



Male wrybill GO-BY, about to be released after banding. Aerodrome, November 2007

With the help of a Lotteries Board grant, Jane Buxton has also written a children's book '*Ria the reckless wrybill*'. It is to be illustrated by a well–known children's artist, Jenny Cooper, and has received approval from a major publisher, Mallinson Rendell. A funding application has been submitted to assist with publication costs, and it is hoped that the book will be ready for sale by Christmas 2008. The ARRG will receive 25% of all royalty payments.

During 2007/08, the Group was closely involved in the preparation of an Ashley/Rakahuri River management strategy. Meetings were attended and submissions made, before the first draft of the plan was produced in May 2008. The Group's activities are destined to become an integral part of the formal management of the river (overseen by Environment Canterbury), thus ensuring more professional and long-term efforts, and a more secure future for the birds on the river.

In the last report, a Group initiative was described which aimed to bring about better awareness and environmental management for all braided rivers in the South Island. The ARRG was instrumental in organising and promoting a workshop entitled '*BRaid – aiding breeding birds on braided rivers*', held in Rangiora in October 2007. Since that time, two meetings held in March and April 2008, have seen the movement get firmly established as the *BRaid* group. The end result should enable many more braided rivers to receive the same local community-based attention as is presently focused on the Ashley/Rakahuri River. Currently, *BRaid* is jointly chaired by two members of the ARRG.



Adult black-fronted tern, Big Island, November 2007

4.4 SPRING BIRD COUNTS

As in 2006, high river flows at the time of the planned October survey allowed only the November survey to be carried out in 2007. Overall, numbers of most species were typical of recent years, the biggest difference being the lower number of black-billed gulls; as this species is highly mobile and there was no breeding colony in the study area at the time of the survey, this is not surprising. Wrybill numbers were typical and consistent with results from monitoring of breeding pairs. Pied stilt numbers were the highest recorded in five years.

We now have records of spring bird numbers over a five-year period. However, numbers can differ substantially from year to year for a variety of reasons, and continuing these counts (and doing two each season whenever possible) is essential in the long-term.

4.5 SHOREBIRD BREEDING

Wrybills

The overall result in the 2007/08 season was that four pairs fledged three chicks, for productivity of 0.75 chicks fledged per pair. All three chicks were produced by one pair, which double-brooded. The pair at Golf Links failed when their stretch of the river dried up completely in January, but pairs at Big Island and Railway failed when there was still water in the river.

The number of pairs in 2007/08 was the same as in the previous season, but banding indicates that adult birds continue to be lost, and further emphasis may need to be placed on control of cats and stoats around wrybill breeding sites.

Black-fronted terns

About 30 pairs of terns nested within the study area in 2007/08, compared to 81 pairs in 2006/07. Productivity was also lower, at about 0.39 chicks fledged per pair (0.68 in 2006/07). Like black-billed gulls, black-fronted terns appear to be highly mobile and exhibit low breeding-site fidelity. These characteristics make following population trends at a local level particularly challenging.

Black-billed gulls

In contrast to 2006/07, the 2007/08 season was unsuccessful for this species in the Ashley, with only a handful of nests laid in the study area before the group of more than 300 birds abandoned the river. No chicks were fledged.

Other species

Minimum productivity was recorded for three other shorebird species in the river. Pied oystercatchers produced 0.50 chicks per pair in 2007/08 (slightly up on the past two years) but fewer pairs than usual were recorded in the study area. Productivity of banded dotterels was higher than in recent years, and the black stilt/pied stilt pair at Dalziels fledged four chicks.

5 Conclusions

In terms of productivity of the three key shorebird species in the Ashley River, the 2007/08 season was less rewarding than the highly successful 2006/07 season. The number of pairs of wrybills remained constant, but no black-billed gull colony established, and fewer pairs of black-fronted terns nested in the study area. Breeding populations of gulls and terns in the river fluctuate annually (as they do in other rivers), and continued management will be required if they are to persist locally.

At the end of the 2008/09 season, active management and monitoring by the ARRG will have been carried out for five years. At that time, an analysis of breeding success of the three key species (and of survival of adult wrybills) over that period is planned. That analysis may aid in directing future management effort.



Wrybill nest, Aerodrome, November 2007

Good public awareness and education remains vital. A major step forward during the current year has been the publication of an article on the wrybill and the Group's activities in the *School Journal*. This has been sent to every primary school in the country.

The Group's aim of improving the breeding success of shorebirds on the Ashley/Rakahuri River, is a long-term one. In this regard it has been particularly pleasing to see the progress made in drawing up an Ashley/Rakahuri River management strategy, driven by Environment Canterbury. It is hoped that the strategy will be implemented within 2-3 years.

Finally, it has been very satisfying to see the efforts of the ARRG being taken up on a South Island-wide scale, via the formation of the *BRaid* group. This group has the aim of improving awareness and environmental management on all braided rivers in the South Island.

6 Recommendations

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

Justification

Continuing predator control is essential if these species are to survive and breed successfully in the river. Surveys and monitoring are vital to inform future management and decision-making. Banding provides information on survival, pairing and movements of individual birds.

2 Continue advocacy initiatives, notably in schools, making full use of the recently published wrybill story in the *School Journal*.

Justification

Awareness has improved significantly in recent years, but it must be maintained and improved by continued effort.

3 Analyse productivity data for the three key species at the end of the 2008/09 season.

Justification

There are now five seasons of data on productivity, which should be sufficient to smooth out annual fluctuations and provide some indication of where and how the Group's management of birds in the river might be improved.

4 Give full support to the *BRaid* group.

Justification

The *BRaid* group aims to improve environmental awareness and management on all South Island braided rivers, so that more braided rivers receive the type of local community-based management that is presently undertaken by the ARRG and others in the Ashley/Rakahuri River.

5 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 clear sites of weeds to a state that encourages successful bird breeding. The ARRG is in a position to advise on measures that will improve these sites.

6 Support the completion and implementation of Environment Canterbury's Ashley/Rakahuri Management Strategy.

Justification

This strategy offers the most effective way of achieving the Group's aim of maintaining key shorebird populations in the Ashley/Rakahuri River. The draft is now complete, and should be approved in the near future.

7. Acknowledgements

We are particularly grateful for the significant 2-year grant received from the

Lottery Environment and Heritage Committee of the New Zealand Lottery Grants Board

which was the major sponsor of the Ashley/Rakahuri Rivercare Group in 2007/08.

Past major sponsors have been the:

- Pacific Development and Conservation Trust
- New Zealand National Parks and Development Foundation
- Habitat and Protection Fund of the World Wildlife Fund New Zealand

The activities recorded in this report would not have been possible without the generous grants from all these organisations.

Other agencies who have offered significant assistance over a number of years are:

- Environment Canterbury
- Waimakariri District Council
- Department of Conservation

The Group also thanks its members and their friends and families for help with bird monitoring, participation in the spring survey, weed clearing, advocacy, and attendance at meetings. Particular acknowledgement must go to the small band of trappers, who weekly maintained many traps over a long season.



Wrybill chick WO-M ready for release after banding, Aerodrome, December 2007

8 References

- BirdLife International. 2007. <u>http://www.birdllife.org/datazone/index.html</u> (viewed 15 August 2007).
- Cromarty, P. & Scott, D.A. 1996. *A Directory of Wetlands in New Zealand*. Department of Conservation, Wellington.
- Dowding, J.E.; Ledgard, N.J. 2005. Management and monitoring of shorebirds in the Ashley River during the 2004/05 season. Unpublished report, Ashley/Rakahuri Rivercare Group. 20 pp.
- Dowding, J.E.; Ledgard, N.J. 2006. Management and monitoring of shorebirds in the Ashley River during the 2005/06 season. Unpublished report, Ashley/Rakahuri Rivercare Group. 20 pp.
- Dowding, J.E.; Ledgard, N.J. 2007. Management and monitoring of shorebirds in the Ashley River during the 2006/07 season. Unpublished report, Ashley/Rakahuri Rivercare Group. 22 pp
- Dowding, J.E.; Moore, S.J. 2006. Habitat networks of indigenous shorebirds in New Zealand. *Science for Conservation 261*. Department of Conservation, Wellington.
- O'Donnell, C.F.J.; Moore, S.M. 1983. The wildlife and conservation of braided river systems in Canterbury. Fauna Survey Unit Report No. 33. New Zealand Wildlife Service, Department of Internal Affairs, Wellington.
- Riegen, A.C.; Dowding, J.E. 2003. The Wrybill *Anarhynchus frontalis*: a brief review of status, threats and work in progress. *Wader Study Group Bulletin 100*: 20-24.
- Townsend, A.J.; de Lange, P.J.; Duffy, C.A.J.; Miskelly, C.M.; Molloy, J.; Norton, D. 2008. *New Zealand Threat Classification System manual*. Department of Conservation, Wellington.

Appendix 1Activity Chart for Ashley-Rakahuri Rivercare Group, Inc.
Plans for the period 01 July 2007 to 30 June 2008.

Month	Bird activity	Group activity
July	Breeding season gets underway	Monthly visits (c. 2 days/month) start by John Dowding (professional ornithologist). Records locations threatened birds are establishing. Trapping begins Vehicle access-ways into riverbed blocked off (ECan)
August	Early birds arrive	Bird monitoring continues – first nests usually found Regular trapping (40+ traps visited 1-2 times weekly) Group meeting (4-5 annually) Signs erected in river at major breeding areas Screenvista showing in local cinema (runs for 4 months)
September	Main season	Trapping and monitoring continue, visiting groups and individuals shown around. Nests and first chicks monitored. Monthly ads in local paper for 4 months - plus at least two articles
October	Main season	Trapping and monitoring continue, visiting groups and individuals shown around. Nests and chicks monitored. Group meeting October bird survey of Ashley River (12+ people) First BRaid meeting for all braided river stakeholders (organised by ARRG)
November	Main season	Trapping and monitoring continue, visiting groups and individual shown around. Nests and chicks monitored. Counting of juveniles and banding of wrybills begins (John D) November bird survey of Ashley river
December	Main season	Trapping and monitoring continue. Last nests found, chicks/juveniles monitored Group meeting (decide on equipment and budget for coming year)
January	Season concluding	Trapping and monitoring continue. Last juveniles monitored. Applications for funding should be well underway (this can take many evenings)
February	Last juveniles fly	Bring in traps, monitoring ends
March		Begin report writing for last season (John D main author) Article in local paper on previous season First Group meeting of year
April		Talks to schools and local groups – over winter months try to speak (show PowerPoint) to four schools, Lions, Rotary, etc Article in local paper advertising volunteer weeding days
May		First Group and volunteer weeding day (favoured breeding sites)
June		Group meeting and AGM Second Group and volunteer weeding day Weed clearance by bulldozer in main breeding sites

From June through to January: Weekly updates are sent by email to all ARRG members. The chairman averages about one email/day on ARRG matters.

Appendix 2River flow (cumecs) at Ashley Gorge during the 2007/08
bird breeding season (from Environment Canterbury website).



River flow - Ashley Gorge in cubic metres per second

Flow in Cumecs

Appendix 3. Agenda for BRaid workshop held at Rangiora, 09 October 2007

'BRaid – assisting breeding birds on braided rivers'						
09 October 2007						
Rossburn Receptions, Spark Lane, Rangiora						
AGENDA						
$\begin{array}{c} 09.30 - 10.00\\ 10.00 - 10.10\\ 10.10 - 10.45\\ 10.45 - 11.20\\ 11.20 - 11.50\\ 11.50 - 12.10 \end{array}$	Arrivals and morning tea Welcome Overview of braided rivers Ashley river case study Waimakariri river case study River Management options	Nick Ledgard* Colin O'Donnell* Nick Ledgard Andrew Crossland* Rob Gerard*				
12.10 - 1.00	Lunch					
1.00 - 1.10 1.00 - 1.30	Explanation of afternoon programme Rob Gerard Workshop 1. User/interest groups meet separately to sort out 'how can we assist' viewpoints					
1.30 – 1.50 1.50 – 2.15	 Group viewpoints reported back Workshop 2. Groups of mixed users meet to co-ordinate viewpoints. Groups should aim to answer two core questions: ~ What actions should be taken once we leave this workshop? ~ How can the statutory bodies assist these actions? 					
2.15 - 2.45	Group viewpoints reported back					
2.45 - 3.00 3.00 - 3.10 3.10 - 3.30	Overview – where to from here? Closing remarks Afternoon tea	Rob Gerard Nick Ledgard				
3.30 onwards	Possible visit to Ashley River - for those with the time.					
 * Speakers. Nick Ledgard Chairman, Ashley-Rakahuri Rivercare Group Colin O'Donnell Scientific Officer and ornithologist, Department of Conservation Andrew Crossland Parks Ranger and ornithologist, Christchurch City Council Rob Gerard Senior Resource Care Co-ordinator, Environment Canterbury 						