Biodiversity Advisory Group
AGENDA

Notice of Meeting:

A meeting of the Biodiversity Advisory Group will be held on:

Date: **Monday 5 August 2024**

Time: **1.00pm**

Venue: **Wakanui Room** (Ground Floor)**, Te Whare Whakatere**
Ashburton Library & Civic Centre, 2 Baring Square East, Ashburton

Membership:

Ashburton District Council	Cr Leen Braam (Chair) Cr Lynette Lovett Cr Richard Wilson Mayor Neil Brown (ex officio) Neil McCann (Group Manager, Infrastructure & Open Spaces) Ian Soper (Open Spaces Manager) Dr Christian Chukwuka (Ecologist/Biodiversity Advisor) Bert Hofmans (Open Spaces Planner)
QEII Trust	Alice Shanks
Ashburton Water Zone Committee	Adi Avnit
Environment Canterbury	Donna Field
Forest & Bird, ACCT	Val Clemens, Edith Smith, Mary Ralston
Awa Awa Rata Reserve	Mary Ralston
Foothills Landcare Group	Gen de Spa
Department of Conservation	Ian Fraser, Brad Edwards
Kanuka Trust	Kim Wall
Mid Canterbury Catchment Collective	Angela Cushnie, Janine Holland, Willy Leferink
Fonterra	Lisa Peer-Adams
Synlait	Nick Vernon
Fish & Game	Nikki Dellaway
Federated Farmers	Mike Salvesen

Biodiversity Advisory Group

Timetable	
Time	**Item**
1:00pm	**Meeting commences**

	ORDER OF BUSINESS	**Page**
1	**Apologies** - Barry Austin, Barry Maister, Mary Ralston, Willie Leferink	
2	**Extraordinary Business**	
3	**Declarations of Interest**	
4	**Confirmation of minutes – 13 May 2024**	**3**
5	**Pudding Hill Weed Control – Project Update**	**6**
6	**Ashburton River Hakatere Shorebird Habitat Management Strategy 2023-2030** - Donna Field	**9**
7	**Ashburton District Biodiversity Strategy Implementation- deliberation on ADBAG led actions**	***Verbal***
8	**Ecologist/Biodiversity Advisor's Report**	**68**
9	**Group Updates**	**87**
9.1	Mt Somers Walkway Society & Lake Heron Conservation	
9.2	Methven Birdsong Initiative	
9.3	Upper Rangitata Gorge Landcare Group	
9.4	Kanuka Mid Canterbury Regeneration Trust	
10	**Terms of Reference** - addition of two new organisations – Methven Birdsong Initiative and Upper Rangitata Gorge Landcare Group.	**89**

4. Biodiversity Advisory Group – 13/05/24

Minutes of a meeting of the Biodiversity Advisory Group held on Monday 13 May 2024, in the Wakanui Room, 2 Baring Square East, Ashburton, commencing at 1.00pm.

Present

Mayor Neil Brown and Councillor Richard Wilson (Acting Chair);

Alice Shanks, Adi Avnit, Edith Smith, Angela Cushnie, Brad Edwards, Kim Wall, Mike Salvesen, Val Clemens, Ian Fraser and Nikki Delaway, Neil McCann (GM Infrastructure & Open Spaces), Ian Soper (Open Spaces Manager), Bert Hofmans (Open Spaces Planner), Dr Christian Chukwuka (Ecologist/Biodiversity Advisor.

In attendance

Andy Hirschberg (DOC) and Mary Jenkin (Governance Support).

1 Apologies

That apologies received from Crs Leen Braam and Lynette Lovett; Nick Vernon, Donna Field, Janine Holland, Barry Austin, Ian Frazer, Lisa Peer-Adams, Mary Ralston and Willie Leferink be accepted.

Wilson/Clemens Carried

2 Extraordinary Business

Nil

3 Declarations of Interest

Nil

4 Confirmation of Minutes

That the minutes of the Biodiversity Advisory Group meeting held on 12 February 2024 be taken as read and confirmed.

Salvesen/Edwards Carried

5 Launch of Ashburton District Biodiversity Strategy

The Group acknowledged the work that has been undertaken to develop the Strategy, noting that the next steps will be to achieve the action plan and look at how parties will work collaboratively. The implementation plan is expected to be complete by 1 July 2024.

Group members commented on the need to look at connections, so groups applying for funding for the same cause don't overlap, and for groups to work more collaboratively for the common goal. It was agreed there would be value in inviting representatives from the various stakeholder groups to speak to the Biodiversity Group about their projects and how they operate.

The Mayor took the opportunity to remind the Biodiversity Group members to submit reports to this forum with specific actions so that Council can understand and consider what is being asked for.

Christian displayed the Biodiversity Project Sites Form on the ADC web (link shown below) Ashburton-district/biodiversity

Recommendation to Council

That Council invites the Upper Rangitata Gorge Landcare Group and the Methven Lions Birdsong Initiative to each nominate a representative to join the Biodiversity Advisory Group.

Wilson/Cushnie Carried

6 Indigenous Nature – Urban Centres

The Ecologist/Biodiversity Advisor led discussion on how indigenous nature can be brought back into New Zealand's urban centres, and referred to Professor Bruce Clarkson's presentation to the Group in February.

Professor Clarkson shared information about buffering, beneficial restoration, and the need to have the correct species of trees for community restoration. Thought and planning about what is beneficial to the district is imperative. How can we achieve this within our Biodiversity Strategy?

Members agreed that careful consideration will be given to the planting of natives versus exotics, and to planting methodology – what plants do well in the district and if the focus should be on dryland species and planting to suit the site.

The Biodiversity Advisory Group agreed that it would be helpful to have a report from Council officers on native plants used in Council projects, and where plants are sourced.

7 Ecologist / Biodiversity Advisor's report

That the Ecologist/Biodiversity Advisor's report be received.

Smith/Avnit Carried

8 Group Updates

- **Synlait planting programme**

It was reported that Synlait are gathering seeds from forest reserves.

- **Forest & Bird**

Noted that Forest & Bird are also involved in trapping.

Spraying of gorse has been undertaken at Ashton Beach (cliff face terrace riser), an area of significant natural vegetation.

Forest & Bird are concerned about wildings from private shelterbelts, particularly D.fir. It was suggested that landowners be approached to discuss how this can be dealt with.

The Group agreed that the details of the upcoming wilding pine event be shared through Council's communications.

- **Lake Heron**

The Advisory Group heard that trapping has been successful at Lake Heron. A wasp problem on the Mt Somers walkway has also been dealt with by DOC. It was noted that wallabies and pigs have been an issue.

- **Kānuka Trust**

The Kānuka Mid Canterbury Regeneration Trust newsletters continue to be sent out a couple of times a year, as a snap-shot of their interactions with schools and community groups, educating about native plants and appropriate plantings for this environment.

- **Ōtūwharekai**

The DOC newsletter will be sent out every six months. Reported successful fledgling in Upper Hakatere/South Ashburton River.

- **QEII Trust**

Discussion on holly weed control - $80,000 spent. The species was introduced in 1860 and spread by Blackbirds and Kererū. The red berry trees need to be removed and it is difficult to eradicate.

ECan will be running a workshop on 19 May at Little River – focus is on garden weeds posing a threat to biodiversity across Banks Peninsula. The Group considered whether a similar event could be held in Ashburton.

- **Mid Canterbury Catchment Collective**

MCCC now has nine catchment groups. Two new groups, Whitcombe Landcare Group (an existing group which has opted to become a member) and Mt Harding Creek are in the process of forming.

A map of the district's catchment boundaries is being finalised.

Hekeao Hinds River hapua is thriving and teeming with wildlife including recent sighting of a bittern. Regarding coordination, this is a significant component of what MCCC are doing as they develop networks across the district, in particular with Kānuka Trust as schools are introduced to the catchment conversations.

The Biodiversity Project Site Survey app web link is shared, as requested.

9 Next Meeting

The next meeting is scheduled for Monday 5 August 2024.

The Group discussed changing the dates of the remaining two meetings this year, due to the clash of meetings for Donna Field. It was agreed to bring the meetings forward a week, to be held on 5 August and 4 November 2024.

The meeting concluded at 3.39 pm.

5. Report on Pudding Hill Stream Weed Control

Christian Chukwuka, CEnvP, Ecologist/Biodiversity Advisor Ashburton District Council
Donna Field – Senior Biodiversity Advisor Environment Canterbury

Recommendation

1. **That** the Biodiversity Advisory Group receives the report on Pudding Hill Stream Weed Control.
2. **That** the Biodiversity Advisory Group advise the project team to seek more funding and continue to eradicate weeds on the Pudding Hill Stream channel.

Summary

- The Ashburton District Biodiversity Advisory Group in 2022 advised Council staff (ADC and ECan) to seek funding and undertake weed control on Pudding Hill Stream.
- The first phase of the project has been completed using a grant from the Ashburton Water Zone Committee ($8,000 + GST).
- The delivery was only within the approved grant. There are more weeds to be removed upstream, and we will revisit the project in Spring 2024 if funds are available.
- The report brings about the opportunity for members to ask questions and seek clarification on any items mentioned.

Report

Preamble:

Pudding Hill stream extends from Mt Hutt forest and serves as a tributary to the Ashburton rivers. The surrounding riverbanks are made up of a mix of matai, podocarp and beech forest with native shrub undergrowth, extending into adjacent reserves and grasslands. The forest is managed by the Department of Conservation and adjoining land owned by Mt Alford Station and Ashburton District Council. The surrounding forested area along the riverbank is a healthy ecosystem with occasional landslides on the hills and weeds encroachment. Along the river and the native forestry is a vigorous regeneration of willows, sycamore trees, larches, Douglas Fir, Cotoneaster, Himalayan honeysuckle, and monkey musk. Recent flooding has also led to gravel deposition and clearing of the stream bed, resulting in downstream weeds dispersal, such as alders and poplars, and willows (grey, crack and basket willows).

Scope of the project:

The proposed project was initiated to remove, along the axis of the riverbank up to 5 km as shown in the attached map, all wilding trees growing along the riverbanks and on adjacent hillside, **all willows (crack, grey and basket willows), wilding pines - Douglas Fir and larches, Cotoneaster, all alder and poplar saplings, Himalayan honeysuckle and all sycamore trees** on the adjacent plantation forestry area that may potentially spread further to the riverbanks.

Purpose of the Project

To protect this pristine environment and prevent further weed dispersal into the native forest and regenerating scrub areas, there is a need for immediate control of all the weeds encroaching and competing with the native vegetation along the riverbank. These include the removal of wildings (larches and Douglas firs on the hillside and along the riverbanks, removal of the willows, alders and poplars seedings on the riverbanks.

Delivery

Weed control was undertaken by Lyndhurst Services over five days in March 2024 to remove the listed weed above. Daily work dairies supplied by the contractor are attached. Weed trees were cut, and stumps were treated with chemicals to prevent regrowth or sprayed using a knapsack sprayer. Chemicals used include mixtures of Grazon, T-max and dye.

The delivery was only within the approved grant. There are more weeds to be removed upstream, and we will revisit the project in Spring 2024 if funds are available.

Project cost

Requested grant:	Approved grant:	Final cost invoiced:
$11,880 + GST	$8,000 + GST	$8000 + GST

Photos are attached below.

Item 6

Ashburton River Hakatere Shorebird Habitat Management Strategy 2023-2030

July 2023

Author:
NIKKI MCARTHUR

Ashburton River Hakatere Shorebird Habitat Management Strategy 2023-2030

Nikki McArthur

17A Ida Street, Redwoodtown, Blenheim 7201

This report was prepared for Environment Canterbury in fulfilment of the Contract for Services dated 23rd March 2023

31st July 2023

Citation:

This report should be cited as:

McArthur, N. 2023. Ashburton River Hakatere Shorebird Management Habitat Strategy 2023-2030. Client report prepared for Environment Canterbury, Ashburton.

Cover Image: A recently hatched banded dotterel (*Charadrius bicinctus*) chick.
Image credit: David Newell / Macaulay Library at the Cornell Lab of Ornithology (ML523505721).

Table of Contents

Executive Summary

The Ashburton River/Hakatere is considered to be one of the most important braided rivers in the Canterbury region for birdlife, supporting 81 species of birds, including nationally- and internationally significant populations of several shorebird species. The Ashburton River/Hakatere and its associated lakes and wetlands have long been an important landscape and food basket for Ngāi Tahu, and the river has been identified as an Important Bird Area by Birdlife International and Forest & Bird.

In 2016 Environment Canterbury (ECan) prepared the Ashburton River/Hakatere Shorebird Management Strategy (AHSMS), setting out management objectives, performance measures and management actions designed to improve the health of shorebird habitats and populations on the Ashburton River/Hakatere between 2016 and 2023.

From 2023 onwards, New Zealand is predicted to re-enter El Niño climactic conditions for the first time since 2016, resulting in lower rainfall in the eastern parts of the South Island and increasing the risk that the Ashburton River/Hakatere will again experience the extremely low summer water flows observed during the years prior to 2016. These low summer flows are likely to exacerbate the adverse impacts of mammalian predators, woody weeds and 4WD vehicles on nesting shorebirds on the Ashburton River/Hakatere from 2023 onwards, underscoring the importance of continuing to manage these threats to maintain high quality habitat for breeding shorebirds on this river.

Based on the review by McArthur (2023) this updated AHSMS delivers a revised set of management objectives, performance measures, monitoring actions and management actions to guide Environment Canterbury's efforts to continue to maintain and improve the shorebird values of the Ashburton River/Hakatere for a further seven-year period, from 2023 – 2030.

1. Introduction

1.1 Background

The Ashburton River/Hakatere is considered to be one of the most important braided rivers in the Canterbury region for birdlife, supporting nationally- and regionally-significant populations of tarapirohe / black-fronted terns (*Chlidonias albostriatus*), tarāpuka / black-billed gulls (*Larus bulleri*), pohowera / banded dotterels (*Charadrius bicinctus*), black-fronted dotterels (*Elseyornis melanops*), ngutu pare / wrybill (*Anarhynchus frontalis*), tōrea / South Island pied oystercatchers (*Haematopus finschi*), poaka / pied stilts (*Himantopus himantopus*) and karoro / black-backed gulls (*Larus dominicanus*) (O'Donnell 1992). A total of 81 bird species have been recorded on the Ashburton River/Hakatere since 1981, 31% of which (23 species) are ranked as Nationally Threatened or 'At Risk' under the New Zealand Threat Classification System (Robertson *et al.* 2021; Crossland 2023).

The Ashburton River/Hakatere has been identified as an Important Bird Area (IBA) by Birdlife International and Forest & Bird. This is based on the presence of five indigenous bird species with local population sizes that trigger IBA criteria, including tarāpuka / black-billed gull, tarapirohe / black-fronted tern, ngutu pare / wrybill, matuku hūrepo / Australasian bittern (*Botaurus poiciloptilus*) and kawau tikitiki / spotted shag (*Stictocarbo punctatus*; Forest & Bird 2016).

The Ashburton River/Hakatere and its associated lakes and wetlands have long been an important landscape and food basket for Ngāi Tahu. For Ngāi Tahu, water is a taonga left by the ancestors to provide and sustain life. All the waterways, their associated tributaries, wetlands and springs are considered significant resources of cultural, spiritual and historical importance to Ngāi Tahu (ECan, 2011). Three Rūnanga consider the zone part of their takiwā, namely Arowhenua Rūnanga, Taumutu Rūnanga and Ngāi Tūāhuriri Rūnanga (Ashburton Zone Committee 2015). In earlier times, the eggs of karoro / black-backed gulls, tarāpuka / black-billed gulls and kakīānau / black swans (*Cygnus atratus*) were harvested for food, as were moulting pārera / grey ducks (*Anas superciliosa*). Native fish species including īnanga (*Galaxias maculatus*), kanakana / lamprey (*Geotria australis*) and tuna / freshwater eels (*Anguilla* spp.) were also important food resources and continue to be harvested by members of the local Rūnanga and the wider local community (John Henry, *personal communication*).

In recent years, a number of groups and agencies, including Environment Canterbury (ECan), the Department of Conservation (DOC), Forest & Bird (F&B) and Braided River Aid (BRaid) have implemented local-scale management actions on the Ashburton River/Hakatere to improve the state of the river and its bird values. In 2016, discussions between these stakeholders identified a need to create an overarching management strategy for the Ashburton River/Hakatere, to better prioritise and coordinate these management actions, and to identify additional threats that needed to be addressed with management. To meet this need, ECan worked with these stakeholders to create the Ashburton River/Hakatere Shorebird Management Strategy (AHSMS), which set out three management objectives and fifteen management actions designed to improve the health of shorebird habitats and populations on the Ashburton River/Hakatere (McArthur & Bell 2016).

The existing AHSMS concluded its seven-year operational lifespan in July 2023, and a review of the efficacy of the strategy was carried out by McArthur (2023). The results of this review have been used to revise and update the AHSMS, to enable ECan and stakeholder groups to continue to maintain and improve the health

of shorebird populations and their habitats on the Ashburton River/Hakatere for a further seven-year period from 2023 to 2030.

1.2 Purpose and scope of this plan

This Ashburton River/ Hakatere Shorebird Habitat Management Strategy has been prepared as an outcome of discussions held between Environment Canterbury, the Department of Conservation and the Ashburton Branch of Forest & Bird.

The purpose of the plan is to facilitate the coordination of management activities aimed at improving habitat quality for the shorebirds of the Ashburton River/Hakatere; to prioritise the implementation of management actions; optimise the use of existing funding; and to support applications for further funding to resource management actions. As such, all of the management and monitoring actions outlined in this plan should be considered as recommendations. Prior to the implementation of any of these actions, all relevant or affected stakeholders should be consulted and be given the opportunity to have input into the planning and implementation of these actions, through the Ashburton River/Hakatere Management Group[1].

The geographic extent of the management plan is the bed of the Ashburton River/Hakatere from the Coastal Marine Area (therefore including the Ashburton River mouth), to the base of the Arrowsmith Range on the Ashburton River/Hakatere South Branch and the Pudding Hill Stream confluence on the Ashburton River/Hakatere North Branch (see Figure 1.1).

[1] The Ashburton River/Hakatere Management Group includes representatives from key stakeholder groups, including but not restricted to: Environment Canterbury, Ashburton District Council, the Department of Conservation, Forest & Bird, Fish & Game, Arowhenua Rūnanga and the Mid-Canterbury Four Wheel Drive Club. Environment Canterbury has been nominated as the agency responsible for convening the Ashburton River/Hakatere Management Group and coordinating the implementation of this management plan.

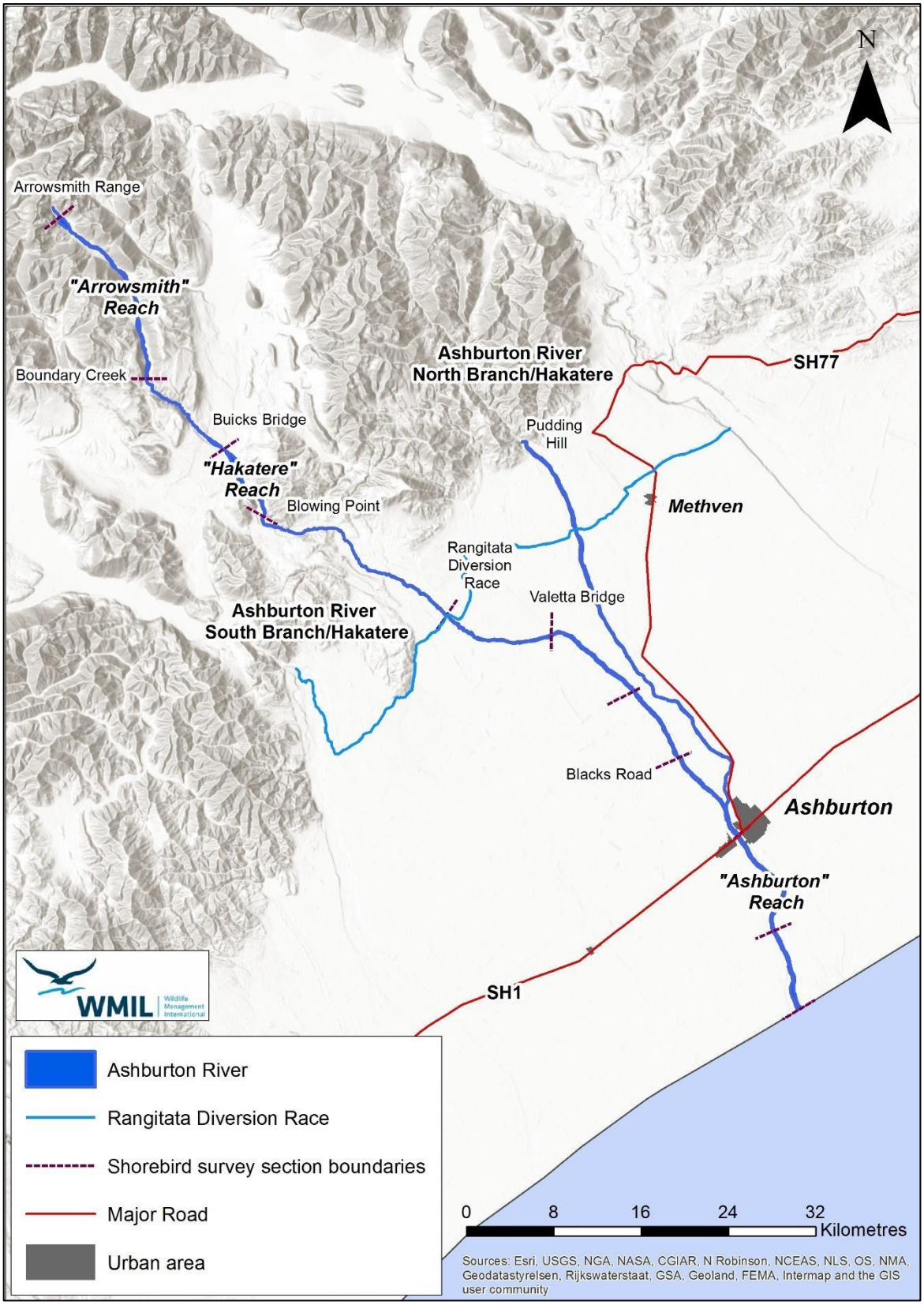


Figure 1.1: Map of the Ashburton River/Hakatere, showing the geographic scope of this management plan (Map reproduced from McArthur & Bell (2016)).

1.3 Shorebird values of the Ashburton River/Hakatere

The Ashburton River/Hakatere is considered to be one of the most important braided rivers in the Canterbury region for birdlife, supporting nationally- and regionally-significant populations of tarapirohe / black-fronted terns, tarāpuka / black-billed gulls, pohowera / banded dotterels, black-fronted dotterels (*Elseyornis melanops*), ngutu pare / wrybill , tōrea / South Island pied oystercatchers, poaka / pied stilts (*Himantopus himantopus*) and karoro / black-backed gulls (*Larus dominicanus*; O'Donnell, 1992). A total of 81 bird species have been recorded on the Ashburton River/Hakatere since 1981, 31% of which (23 species) are ranked as Nationally Threatened or 'At Risk' under the New Zealand Threat Classification System (Robertson *et al.* 2021; Crossland 2023).

The Ashburton River/Hakatere has been identified as an Important Bird Area (IBA) by Birdlife International and Forest & Bird. This is based on the presence of five indigenous bird species with local population sizes that trigger IBA criteria, including tarāpuka / black-billed gull, tarapirohe / black-fronted tern, ngutu pare / wrybill, matuku hūrepo / Australasian bittern and kawau tikitiki / spotted shag (Forest & Bird, 2016).

The Ashburton River/Hakatere and its associated lakes and wetlands have long been an important landscape and food basket for Ngāi Tahu. For Ngāi Tahu, water is a taonga left by the ancestors to provide and sustain life. All the waterways, their associated tributaries, wetlands and springs are considered significant resources, of cultural, spiritual and historical importance to Ngāi Tahu (ECan, 2011). Three Rūnanga consider the zone part of their takiwā, namely Arowhenua Rūnanga, Taumutu Rūnanga and Ngāi Tūāhuriri Rūnanga (Ashburton Zone Committee, 2015). In earlier times, the eggs of karoro / black-backed gulls, tarāpuka / black-billed gulls and kakīānau / black swans were harvested for food, as were moulting pārera / grey ducks. Native fish species including īnanga (*Galaxias maculatus*), kanakana / lamprey (*Geotria australis*) and tuna (*Anguilla* spp.) were also important food resources and continue to be harvested by members of the local Rūnanga and the wider local community (John Henry, *personal communication*).

The South Branch of the Ashburton River/Hakatere supports much larger numbers of shorebirds than the North Branch of the river (O'Donnell, 1992). On the South Branch, three reaches of river support a particularly high diversity and/or density of shorebirds. The 17 km "Arrowsmith Reach", from the base of the Arrowsmith Range downstream to the Boundary Creek confluence supports relatively high numbers of pohowera / banded dotterels, tarapirohe / black-fronted terns and pīhoihoi / New Zealand pipits (*Anthus novaeseelandiae*; O'Donnell, unpublished data). Further downstream, the 9 km "Hakatere Reach" also supports relatively high numbers of pohowera / banded dotterels, tarapirohe / black-fronted terns and pīhoihoi / New Zealand pipits, together with a small number of ngutu pare / wrybill (Grove, 2005; Cochrane, 2015; O'Donnell, unpublished data). Downstream from the "Hakatere Reach" the river becomes much more channelised and shorebirds become either rare or absent. Shorebird numbers begin to increase again downstream from the Rangitata Diversion Race, with particularly high densities of pohowera / banded dotterels, poaka / pied stilts, tōrea / SI pied oystercatchers and tarapirohe / black-fronted terns found on the 27 km "Ashburton Reach" between Blacks Road and the coast. The 18 km section of this reach between the SH1 Bridge and the coast also provides habitat for the majority of the black-fronted dotterels found on the Ashburton River/Hakatere (Figure 1.2; O'Donnell, unpublished data).

An outstanding feature of the "Ashburton Reach" of the river is the exceptionally large number of tarāpuka / black-billed gulls that typically use this reach as breeding habitat during the summer months (Figure 1.3). Historically, the Ashburton River/Hakatere South Branch has had some of the highest counts of tarāpuka / black-billed gulls of any braided river surveyed, with just under 11,000 birds recorded in 1986 and counts of over 10,000 birds recorded in 1982, 1984 and 1987 (O'Donnell, 1992). Gull numbers have declined in

more recent years, however breeding colonies of several thousand birds still typically establish each summer, usually either immediately upstream, or downstream of the SH1 Bridge (Schmechel, 2008; McClellan, 2015; Mischler & Bell, 2016a; O'Donnell, unpublished data). During the 2014/15 breeding season, a colony of 9,545 tarāpuka / black-billed gulls was recorded on the lower Ashburton/Hakatere River, the largest colony recorded in the Canterbury region that year (McClellan, 2015). During the 2015/16 breeding season, two much smaller colonies comprised of 1,198 and 203 birds were situated near the SH1 Bridge and at the Ashburton River mouth respectively (Mischler & Bell, 2016a). This sudden drop in gull numbers between 2014/15 and 2015/16 is thought to be due to a large number of gulls relocating from the Ashburton River/Hakatere to the Rangitata River mouth during the second year, possibly in response to extensive woody weed growth in the bed of the lower Ashburton River/Hakatere (Mischler & Bell, 2016a).

The Ashburton River mouth provides important year-round habitat for a large number of shorebird and waterfowl species, with more bird species having been recorded at this site than at any other location in the Ashburton District (Crossland, 2023). An outstanding feature of the river mouth is the very large concentrations of kawau tikitiki / spotted shags that roost on the shingle spit at the mouth of the river during autumn and winter. Flocks of up to 6000 spotted shags have been observed roosting at the river mouth (Crossland, 2016), most likely comprised of juvenile and post-breeding adult birds from the nearby Banks Peninsula population (Doherty & Bräger, 1997). The river mouth and shingle spit also provides important breeding habitat for tarāpuka / black-billed gulls (Mischler, 2016) and pohowera / banded dotterels during summer months. During autumn and winter, the river mouth and shingle spit also provides foraging and roosting habitat for a range of coastal and freshwater bird species, including māpunga / black shags (*Phalacrocorax carbo*), tōrea / SI pied oystercatchers, tōrea pango / variable oystercatchers (*Haematopus unicolor*), tarāpunga / red-billed gulls (*Larus novaehollandiae*), tara / white-fronted terns (*Sterna striata*), tarapirohe / black-fronted terns and tara nui / Caspian terns (*Hydroprogne caspia*; eBird, 2002).

Between 1981 and 2015 there have been significant declines in the numbers of tarapirohe / black-fronted terns, tarāpuka / black-billed gulls, pohowera / banded dotterels, tōrea / SI pied oystercatchers and poaka / pied stilts counted each summer on the Ashburton River/Hakatere South Branch (O'Donnell, 1992; O'Donnell, unpublished data). These declines are likely to have occurred due to a combination of ongoing habitat loss and loss of habitat quality resulting from declining mean low flows, the encroachment of woody weeds into open gravel habitats and depredation by mammalian predators (O'Donnell, 1992). In more recent years, these declines have been partially offset by the local recovery of pohowera / banded dotterels, tarapirohe / black-fronted terns and ngutu pare / wrybill in the "Hakatere Reach" of the Ashburton River/Hakatere South Branch, likely a consequence of the intensive pest animal and weed control work that has been carried out by Environment Canterbury and the Department of Conservation along this stretch of river and in the surrounding landscape since 2003 (Cochrane, 2015; O'Donnell, unpublished data).

In contrast to the ongoing declines being observed in a number of these locally-breeding shorebird species, annual counts of black-fronted dotterels have steadily increased since 1981. Black-fronted dotterels are a recent coloniser to New Zealand having first been recorded in Hawkes Bay in 1954 (Brathwaite, 1956). This increase in the number of black-fronted dotterels observed on the Ashburton River/Hakatere is likely a consequence of the ongoing range expansion of this species in New Zealand in recent decades (Robertson et al, 2007). At present, black-fronted dotterels are mainly restricted to the "Ashburton Reach" of the Ashburton River/Hakatere South Branch, but are steadily expanding their distribution upriver, having now been recorded as far upstream as the Valetta Bridge (O'Donnell, unpublished data).

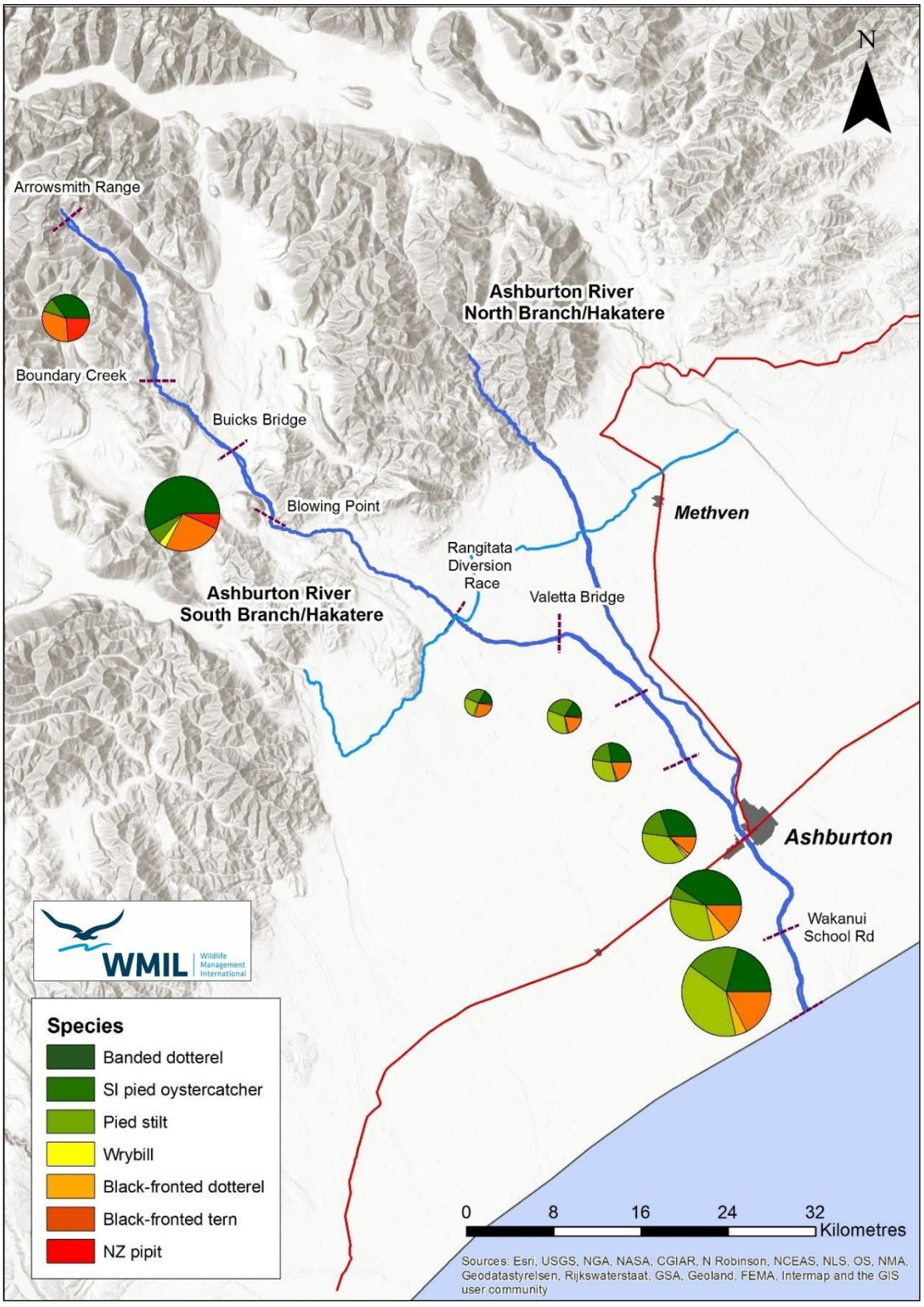


Figure 1.2: Mean relative abundance of shorebirds (excluding gulls) along the Ashburton River/Hakatere South Branch between 2006 and 2015 (Map reproduced from McArthur & Bell (2016)).

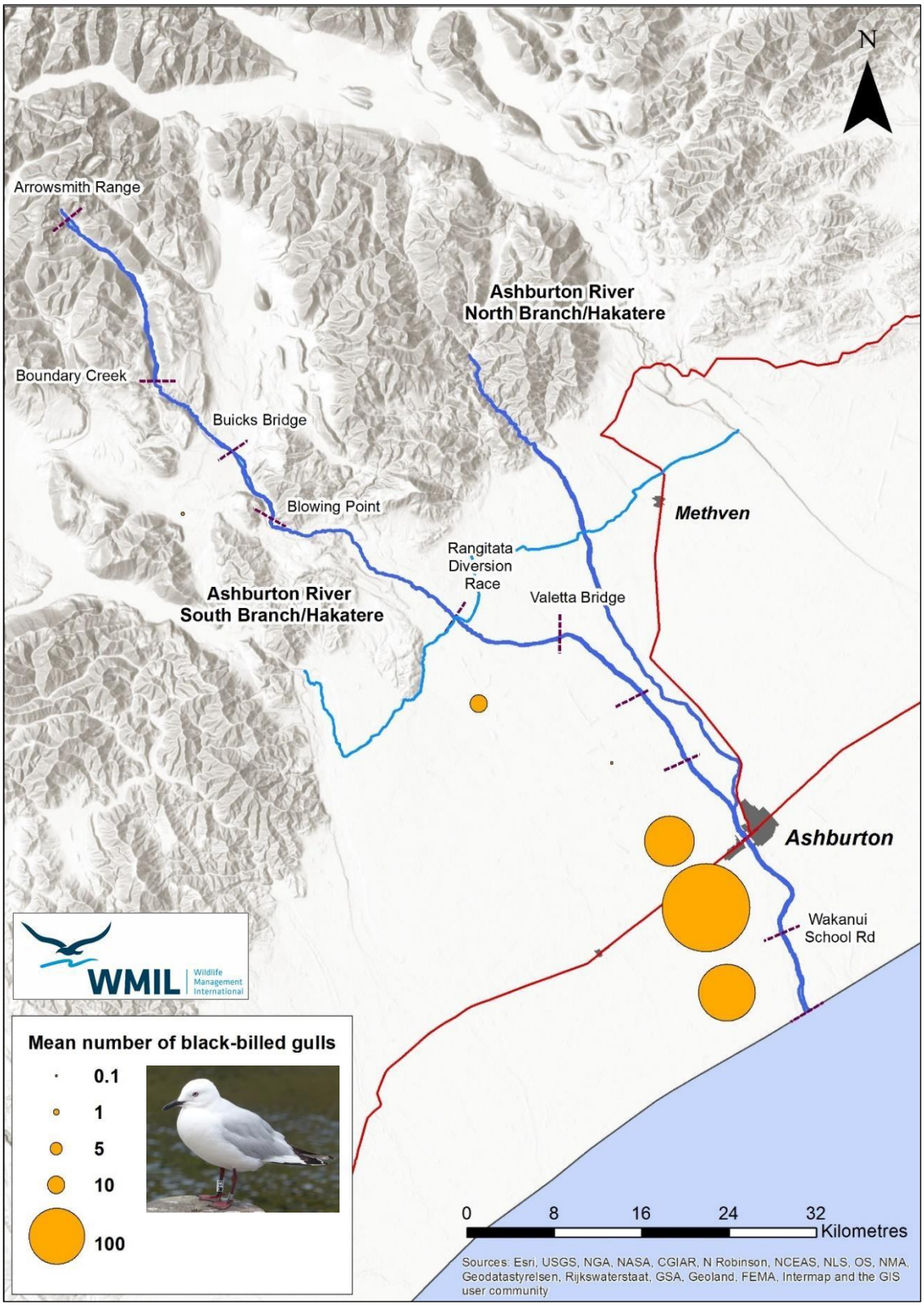


Figure 1.3: Mean annual counts of tarāpuka / black-billed gulls along the Ashburton River/Hakatere South Branch between 2006 and 2015 (Map reproduced from McArthur & Bell (2016))

1.4 Threats to the shorebird values of the Ashburton River/Hakatere

Water abstraction

The maintenance of natural flow regimes on braided rivers has long been recognised as being essential for maintaining high quality feeding and breeding habitat for shorebirds (Hughey, 1985, 1997, 1998; Hughey et al, 1987). A high diversity of microhabitats, including both shallow and deep water, runs and riffles of intermediate depth and dry gravel beaches and islands of different heights is needed to maintain the full diversity of riverbed-nesting birds on braided rivers (Hughey, 1985; Hughey et al, 1989, Rebergen, 2011 and 2012).

Abstraction of water from rivers and the consequent reduction in mean and peak flows reduces the size and number of small channels and gravel islands in rivers and reduces the total area of aquatic feeding habitat for birds (Bowden et al, 1982; Robertson et al, 1983; Hughey, 1987). Furthermore, braided rivers are naturally unstable habitats, and it's this feature that naturally limits the establishment of woody vegetation and allows the maintenance of the large areas of open gravel habitats required by riverbed-nesting shorebirds. The lower and less variable flows resulting from water abstraction can reduce the natural erosion and scouring of the riverbed, leading to dramatic increases in woody weed growth such as that seen on the lower Ashburton River/Hakatere within the last 30 years (Miall, 1977; O'Donnell 1992). In extreme situations, if flows are reduced to the extent that channels dry up (as can occur in the lower reaches of the Ashburton River/Hakatere North Branch) there will be an almost total loss of local shorebird populations (e.g. Maloney 1999).

The Ashburton Zone Implementation Programme clearly identifies that the authorised takes from the Ashburton River/Hakatere are so great that the river is being placed under severe pressure (ECan, 2011). It states that "there is widespread recognition…of the pressure the river is under from reduced flows due to significant consumptive use and the impacts of changing land use…" According to the ZIP, both summer and winter flows in the Ashburton River/Hakatere are over-allocated. Summer allocations currently represent 191% of the Seven Day Mean Annual Low Flow (7DMALF) and winter allocations represent 133% of the 7DMALF (ECan, 2011).

These high rates of water abstraction are likely to be exacerbating the impacts of other threats to shorebird values mentioned below. For instance, O'Donnell (2000) states that "river flows and [woody] weed problems appear to be closely linked", due to the fact that lower flows create more stable gravel habitats into which woody weeds can invade more easily. Similarly, lower river flows can reduce the number and area of gravel islands that provide comparatively safe nesting habitat for shorebirds due to being less accessible to mammalian predators (Bell & McArthur, 2016).

Flood protection management activities

A number of the activities carried out by local authorities to manage the risk of flooding can have detrimental impacts on shorebirds and their habitats. Disturbance of dry gravel habitats during woody weed removal, gravel extraction, gravel ripping or contouring activities carried out during the breeding season can lead to the local destruction of nests and chicks, reducing the productivity of shorebird populations (Cameron, 2013 & 2015; McArthur et al, 2015). The construction of stopbanks, rock groynes, willow planting, gravel island removal and channel straightening can increase river channelisation and reduce habitat quality for shorebirds (O'Donnell, 2000; Rebergen 2011 & 2012).

Conversely, some of these activities can have positive impacts on locally-breeding shorebirds provided that local losses of nests, eggs and chicks are minimised. In the absence of large, regular floods, the mechanical disturbance of dry gravels during gravel extraction, gravel ripping or contouring activities can help reduce woody weed encroachment and maintain open habitats for shorebirds. On the Ruamāhanga River and its tributaries in the Wairarapa region these activities appear to have helped to maintain stable or increasing populations of pohowera / banded dotterels, black-fronted dotterels and tarāpuka / black-billed gulls over the past 30 years, during which time shorebird populations on nearby rivers not subject to flood protection activities have declined (Rebergen, 2011; 2012; McArthur et al, 2015).

Environment Canterbury and Ashburton District Council have statutory responsibilities under the Resource Management Act (1991) for the management of flood risks from the Ashburton River/Hakatere. Measures taken to manage flood risks posed by the river include the construction of stopbanks, the planting of willows to protect and stabilise river banks and gravel extraction, woody weed control and channel straightening to streamline flows and to maintain the flood-bearing capacity of the active riverbed (Boyle, 2012).

Recreational use of the riverbed

Unintentional disturbance by people and vehicles can cause localised losses of eggs, chicks and adult birds during the breeding season (O'Donnell & Moore, 1983; Robertson et al, 1983), Similarly, the prolonged or repeated disturbance of roosting birds can cause them to abandon habitual roost sites, increasing competition for remaining disturbance-free habitats (Woodley, 2012). The effects of prolonged or repeated disturbance of birds are difficult to quantify, however by increasing energy expenditure and/or reducing time spent roosting and foraging, higher rates of disturbance may reduce the survival and productivity of affected birds, potentially contributing to population declines (Pfister et al, 1992; Lord et al, 1997).

On the Ashburton River/Hakatere, disturbance impacts are likely to occur mainly during the shorebird breeding season (August – February), as the majority of the shorebirds that breed on the Ashburton River/Hakatere migrate to coastal sites elsewhere during the non-breeding season (Heather & Robertson, 2015). Disturbance impacts are likely to be highest closer to urban centres and in the vicinity of river access points, so the "Ashburton Reach", with its proximity to Ashburton township and multiple legal access points to the river is particularly at risk to disturbance impacts (Figure 1.4).

The Ashburton River mouth, and particularly the shingle spit, is at risk from disturbance caused by 4WDs, fishers and other recreational users all year round. The shingle spit provides important breeding and roosting habitat for a large variety of shorebird species year-round and is a particularly important roosting sites for large numbers of kawau tikitiki / spotted shags.

Figure 1.4: Convoy of 4WD vehicles driving through a tarapirohe / black-fronted tern colony the lower Ashburton River/Hakatere, October 2015. Adult tarapirohe / black-fronted terns can be seen flying around the rear (right hand) vehicle. In this case the disturbance was unintentional, the occupants of the vehicles believed that the birds were nesting in the lupins, so drove on the open shingle in an attempt to avoid damaging nests. Source: Forest & Bird.

Vandalism and illegal hunting

Vandalism and the illegal hunting of shorebirds can cause catastrophic losses of adult birds, eggs and chicks, leading to sudden and drastic local population declines. Most of New Zealand's shorebird species are relatively long-lived with comparatively low reproductive rates (Dowding & Murphy, 2001; Heather & Robertson, 2015). Due to these life history traits it can take many years or decades for shorebird populations to recover from sudden, catastrophic mortality events.

Some species are particularly vulnerable to vandalism and hunting due to negative public perception and a history of persecution (Woodley, 2012). Gulls are particularly at risk, due to their ubiquitous distribution and scavenging behaviours. An added complication is that relatively few people can reliably distinguish between tarāpuka / black-billed gulls (At Risk, Declining, and absolutely protected under the Wildlife Act, 1953) and karoro / black-backed gulls (Not Threatened, and one of our few native species that is not legally protected). Shags are another group of birds that have a history of illegal persecution, due to an erroneous assumption that they compete with fishers for commercial, recreational and sport fish (Dickinson, 1951).

On the lower Ashburton River/Hakatere, two shorebird species are particularly at risk of vandalism or illegal hunting. The large tarāpuka / black-billed gull colony that typically establishes each summer in the vicinity of the SH1 Bridge is a very large and conspicuous feature and has attracted the attention of vandals in the past. In November 2008, a vehicle was intentionally driven through this colony, causing the deaths of 110

adults and destroying an unknown number of eggs and chicks. (Schmechel, 2008). Following a similar incident in November 2012, a man was prosecuted and sentenced to two months' imprisonment for driving his vehicle into the colony, destroying an unknown number of nests and eggs (Ashburton Guardian, 2013).

The very large concentrations of kawau tikitiki / spotted shags that roost on the shingle spit at the Ashburton River mouth is similarly at risk. Despite the fact that kawau tikitiki / spotted shags feed almost exclusively at sea and forage up to 15km offshore (Heather & Robertson, 2015), some members of the local community are calling for the kawau tikitiki / spotted shags at the Ashburton River mouth to be culled, due to a belief that they're competing with recreational fishers for freshwater fish and mahinga kai species (John Henry, *personal communication*). In January 2016, over 50 birds including 16 tarāpuka / black-billed gulls, four tara / white fronted terns, one tōrea / SI pied oystercatcher and one kawau tikitiki / spotted shag were illegally shot at the Ashburton River mouth (Edith Smith, *personal communication*).

Woody weeds

Introduced weeds such as broom (*Cytisus scoparius*), gorse (*Ulex europaeus*), Russell lupin (*Lupinus polyphyllus*), sweet briar (*Rosa rubiginosa*) and willow (*Salix spp.*) are particularly invasive in braided river habitats and pose a significant threat to shorebird populations (O'Donnell & Moore 1983; Brown 1999). Woody weeds reduce the total area of open gravel habitats available to shorebirds and are also likely to increase the channelisation of the river, leading to the loss of minor braids and gravel islands which provide particularly high-quality shorebird foraging and nesting habitat. Furthermore, dense stands of woody weeds provide shelter and cover for mammalian predators, so likely contribute to higher depredation rates on breeding shorebirds (O'Donnell & Moore, 1983; Robertson et al, 1983; O'Donnell 1992; Hughey & Warren 1997 and Rebergen et al, 1998).

The two upper reaches of the Ashburton River/Hakatere South Branch that currently support high numbers of shorebirds (the "Arrowsmith" and "Hakatere" reaches described above) are both relatively weed-free at present, however the Hakatere Reach is now being encroached upon by broom, sweet briar, Russell lupin, yellow tree lupin, false tamarisk (*Myricaria germanica*) and grey willow (*Salix cinerea*; Figure 1.5).

On the lower reaches of the Ashburton River/Hakatere, particularly the "Ashburton Reach" described above, weed encroachment has been steadily worsening since the early 1980s. O'Donnell (1992) observed that there had been a "considerable increase in the extent and encroachment of introduced shrubs, particularly broom, gorse and…willows" on the river between 1981 and 1990. He also noted that there was a strong relationship between the extent of woody weed encroachment observed and the total abundance of shorebirds counted along the river. Since the early 1980s, shorebird numbers have steadily declined as weed encroachment has worsened, although shorebird numbers temporarily bounced back following major flood events that cleared woody vegetation from large areas of riverbed. Such events only provided temporary improvement in habitat quality however, as woody weeds typically re-colonised these clear areas of riverbed within 3-4 seasons following a major flood event. Based on these observations, O'Donnell (1992) concluded that "if the wildlife values are to be maintained [on the Ashburton River/Hakatere], then weed control is essential."

Woody weed growth within Ashburton Reach has been particularly severe during the 2-3 years prior to 2016, with the majority of gravel beaches and islands now covered in dense thickets of broom and yellow tree lupin (*L. arboreus*) (Figure 1.6). This weed growth has led to rapid, local declines in several shorebird species, and likely caused a large number of tarāpuka / black-billed gulls to abandon their traditional nesting site near the SH1 Bridge last summer, in favour of nesting at the Rangitata River mouth (O'Donnell, unpublished data; Mischler & Bell, 2016a).

Figure 1.5: Broom and Russell lupin infestation on the true left bank of the "Hakatere Reach" of the Ashburton River/Hakatere South Branch. Source: Cochrane (2015).

Figure 1.6: Extensive tree lupin infestation and prospecting tarāpuka / black-billed gulls on the Ashburton River/Hakatere near the SH1 Bridge in late September 2015. Source: Edith Smith/Forest & Bird.

Mammalian predators

There is now a very large body of evidence demonstrating that introduced mammalian predators including feral cats (*Felis catus*), ferrets (*Mustela furo*), stoats (*M. erminea*) and hedgehogs (*Erinaceus europaeus*) have a major impact on the survival and productivity of riverbed-nesting shorebirds and are contributing to ongoing population declines of several species. Species such as ngutu pare / wrybill, pohowera / banded dotterels and tarapirohe / black-fronted terns are particularly vulnerable to predation (e.g. Rebergen et al, 1998; Dowding & Murphy, 2001; Sanders & Maloney, 2002; Bell & McArthur, 2016; Figure 1.7).

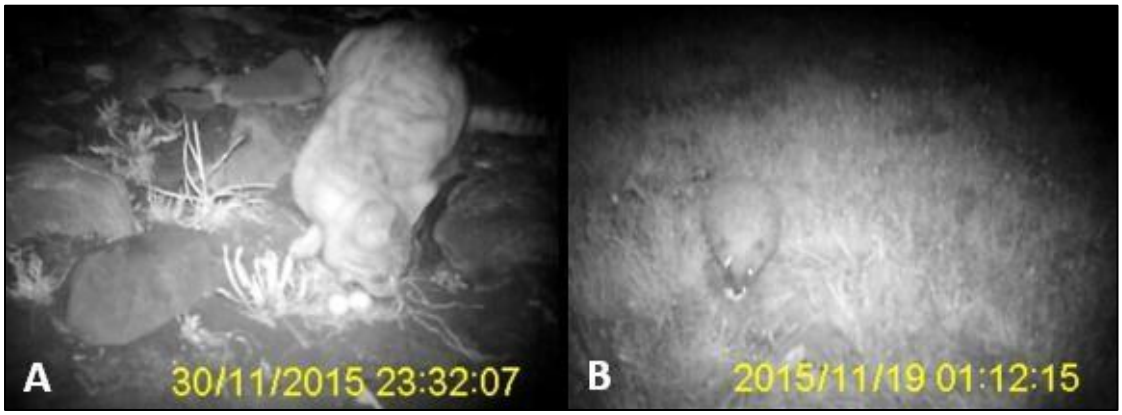


Figure 1.7: A feral cat (A) and a hedgehog (B) preying on black-fronted tern nests on the Upper Clarence River, November 2015. Source: Bell & McArthur, (2016).

All of these predator species are present and widespread on the Ashburton River/Hakatere and are regularly trapped in predator control operations underway in both the Hakatere and Ashburton Reaches of the river (Cochrane, 2015). Local increases in the abundance of shorebirds in the Hakatere Reach since 2003 indicate that the trapping programme on this part of the river is succeeding in reducing depredation rates by mammalian predators (O'Donnell, unpublished data). However, predators are likely to be contributing to the ongoing declines in shorebird numbers being observed from the Valetta Bridge downstream to the sea.

Karoro / black-backed gulls

There is a growing body of evidence demonstrating that karoro / black-backed gulls can be significant predators of other shorebird species, including tarāpuka / black-billed gulls and tarapirohe / black-fronted terns. Impacts are likely to be highest when large numbers of karoro / black-backed gulls are co-existing with these more vulnerable species, and particularly when nesting colonies are situated in close proximity (Mischler & Bell, 2016b). Although karoro / black-backed gulls are a native species, they have benefited substantially from the human settlement of New Zealand, and their numbers are now substantially higher than at any time in the past (Heather & Robertson, 2015). As a result, black-backed gulls are one of the few native bird species that are not afforded any level of protection under the Wildlife Act (Miskelly, 2013).

The Ashburton River/Hakatere South Branch supports a very large breeding population of karoro / black-backed gulls. Numbers are relatively low in both the Arrowsmith and Hakatere Reaches, the latter being a consequence of culling operations carried out by Environment Canterbury (Grove, 2005). Karoro / lack-backed gull numbers continue to be very high on the lower reaches of the Ashburton River/Hakatere from the Rangitata Diversion Race downstream, particularly the reaches between Valetta Bridge and Shearers Road and the "Ashburton Reach" between Blacks Road and the sea (Figure 1.8). During summer months,

breeding colonies comprising up to 2500 birds have been recorded on these lower reaches of the river (O'Donnell, unpublished data).

Table 1.1 below summarises the key threats impacting the bird values of the Ashburton River/Hakatere that are described above and identifies which reaches of river are being affected by each threat. The codes alongside each threat correspond to the management objectives listed in Table 2.1, which in turn correspond to the management activities listed in the Operational Plan (Table 3.1). These codes are used to ensure that each management action taken is targeted at reducing or eliminating one or more specific threats that have been identified.

Many of the threats identified here can, and do, interact with each other. For example, higher rates of water abstraction can increase the rate of woody weed encroachment into the open gravel habitats required by nesting shorebirds. Furthermore, the effects of these threats on local shorebird populations can be both direct (e.g. vandalism of tarāpuka / black-billed gull colonies causing local losses of adults, eggs and chicks) and indirect (e.g. woody weeds providing improved habitat for mammalian predators and leading to an increase in depredation rates on shorebirds). Figure 1.9 below summarises the interactions between the various threats summarised in Table 1.1, and how each threat directly or indirectly impacts local shorebird populations.

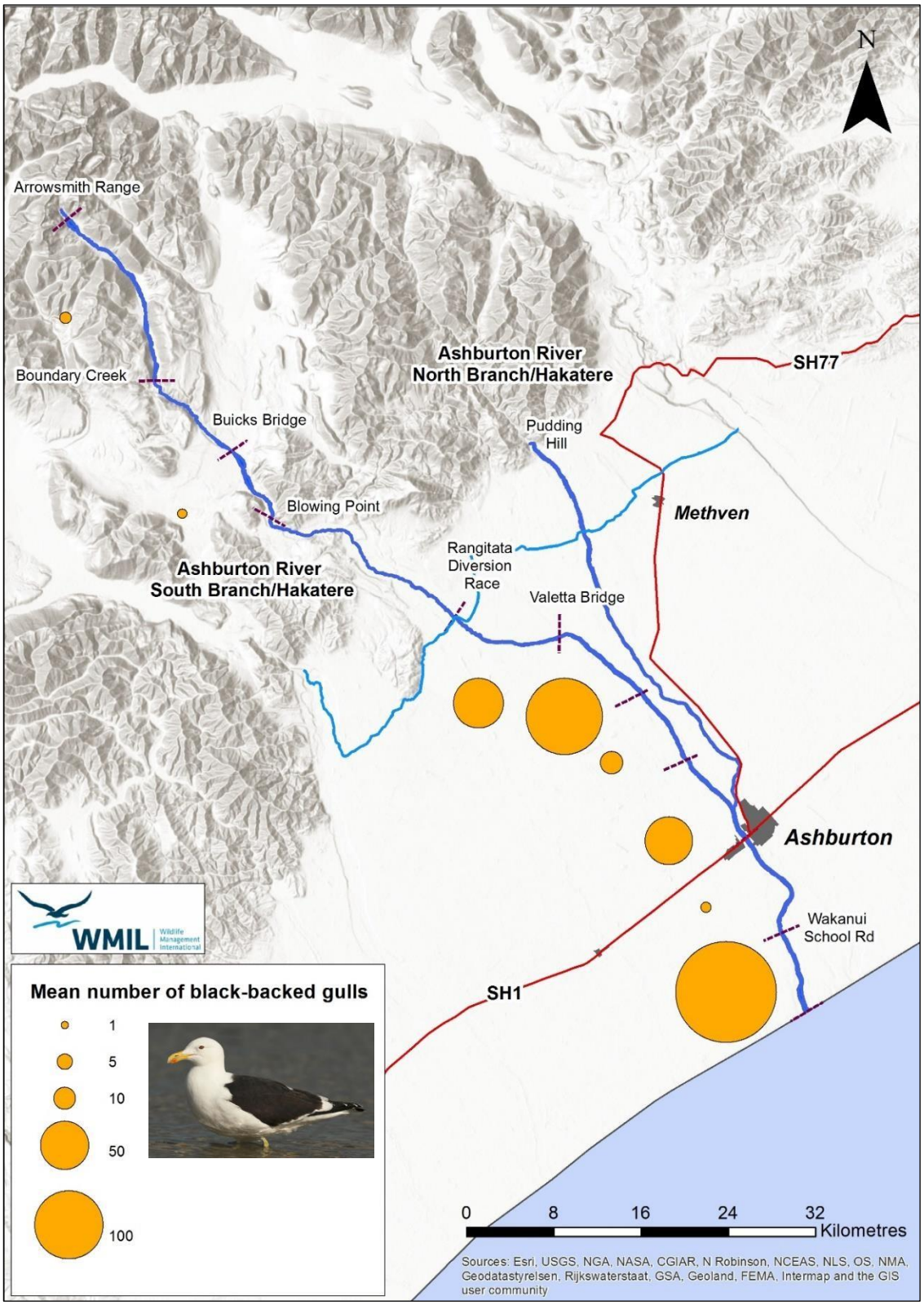


Figure 1.8: Mean annual counts of karoro / black-backed gulls along the Ashburton River/Hakatere South Branch between 2006 and 2015 (Map reproduced from McArthur & Bell (2016)).

Table 1.1: Key threats to river bird values on the Ashburton River/Hakatere (SB = Ashburton River/Hakatere South Branch; NB = Ashburton River/Hakatere North Branch)

Threat code	Threat and impact on river bird values	Affected area(s)
Human activities		
HA-1*	The high level of water abstraction is reducing mean water flows in the river, likely increasing the rate of woody weed encroachment in open gravel habitats and improving predators' ability to access and depredate shorebird eggs, chicks and adult birds. Low water flows are also likely to be improving 4WD and foot access in the riverbed, leading to higher rates of human disturbance of nesting shorebirds.	SB: From the Inverary Bridge to the sea; NB: From Pudding Hill to the NB/SB confluence
HA-2*	ECan flood protection management activities, including aerial spraying and mechanical removal of weeds, gravel extraction, stopbank and rock groyne construction and willow planting has the potential to disturb nesting shorebirds when activities are carried out during the breeding season. The cumulative effects of these activities may also lead to greater channelization of the riverbed over time, reducing the overall extent and quality of shorebird habitat on the river.	SB: From the Inverary Bridge to the sea. NB: From Pudding Hill to the NB/SB confluence.
HA-3	Recreational users, including 4WDs, fishers, dog-walkers and bird-watchers have the potential to disturb shorebirds, resulting in localised losses of eggs and chicks and lower annual productivity.	Entire river.
HA-4	Intentional vandalism and illegal hunting or culling of local bird populations can result in catastrophic losses of adults, chicks and eggs. Species at particular risk include black-billed gulls and spotted shags.	From SH1 road bridge to river mouth.
Pest plants		
PP-1	Woody weeds (primarily broom, gorse, lupin and willow spp.) are encroaching on the riverbed and reducing the area of open gravel habitats used by locally-breeding shorebirds. Woody weeds also provide improved habitat and cover for mammalian predators.	SB: From Buicks Bridge to the sea NB: From Pudding Hill to the NB/SB confluence.
Pest animals		
PA-1	Introduced mammalian predators (principally possums, mustelids, cats and hedgehogs) are reducing the survival and productivity of locally-breeding shorebirds by preying on eggs, chicks and adult birds.	Entire river
PA-2	Native karoro / black-backed gulls are likely to be reducing the productivity of other (threatened) shorebird species by preying on eggs and chicks. The presence of large karoro / black-backed gull colonies on the river may also the area of habitat available to these more threatened shorebird species due to competitive exclusion and predator avoidance behaviours.	SB: From the Valetta Bridge to the sea.

* Any threats marked with an asterisk are not addressed by actions in this management plan. In the case of HA-1 above, this threat is being addressed in other planning documents, namely the Canterbury Water Management Strategy, Ashburton Zone Implementation Programme and Canterbury Land and Water Regional Plan which together provide a framework for addressing water abstraction issues in the Ashburton River/Hakatere catchment (CWMS, 2010; ECan 2011; ECan, 2015). In the case of HA-2, this threat is being addressed in the Code of Practice documents governing activities carried out by ECan for the purposes of flood management (ECan 2015b; 2015c). However, in order to effectively manage the shorebirds of the Ashburton River/Hakatere, it is important to be aware of all existing threats to the bird values of the river, hence the inclusion of these threats in the table above.

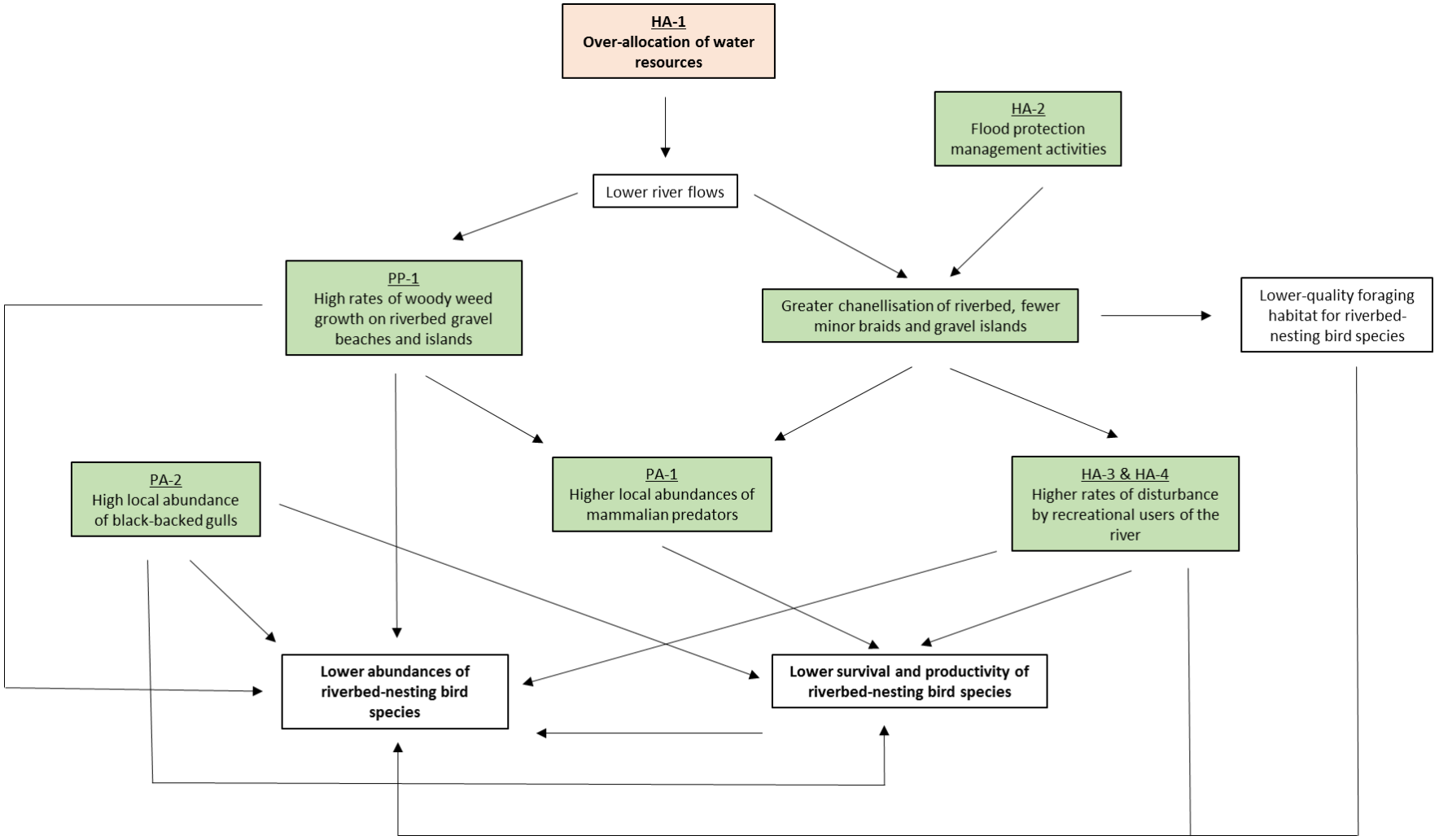


Figure 1.9: Interactions and effects of key threats to the shorebird values of the Ashburton River/Hakatere.

1.5 Landowners and stakeholders

Environment Canterbury Regional Council

The roles and functions of Environment Canterbury Regional Council (ECan) are set out by the Local Government Act (2002). Among these functions, ECan is responsible for managing the effects of using freshwater, land, air and coastal waters, by developing regional policy statements and through the issuing of consents under the Resource Management Act (1991). ECan is also charged with managing rivers in the Canterbury region in order to mitigate soil erosion and for flood control under the Soil Conservation and Rivers Control Act (1941).

Regional Councils have a statutory requirement to take into account a range of natural and cultural values under the Resource Management Act. These include recognising and providing for the protection of significant habitats of indigenous fauna from inappropriate subdivision, use and development (Section 6c) and recognising the relationship of Māori and their culture with taonga (Section 6e). There is also a requirement to have a particular regard to the intrinsic values of ecosystems (Section 7d).

The broad policy direction for ECan is described in the Canterbury Regional Policy Statement (ECan, 2013), and includes:

1. ***Chapter 8, Objective 3, Policy 4*** *Areas of indigenous vegetation and habitats of indigenous fauna…should be protected from adverse effects*
2. ***Chapter 9, Objective 1, Policy 1*** *Flow regimes and water levels should be set to protect basic instream values including ecological values*
3. ***Chapter 10, Objective 1, Policy 1*** *Land use activities should avoid causing significant adverse effects on the significant habitats of indigenous flora and fauna within the beds of rivers and lakes and their margins.*

Environment Canterbury is responsible for flood management activities on the lower reaches of the Ashburton River/Hakatere, including woody weed control, the construction and maintenance of stopbanks and groynes, riparian willow planting and gravel extraction. ECan's Flood Protection staff have indicated a willingness to assist with some of the management actions listed in this plan, including providing technical support regarding the creation and maintenance of gravel islands to provide safe nesting habitat for shorebirds.

Environment Canterbury staff have also provided technical advice and carried out advocacy work to support the efforts of local Forest & Bird members to protect the SH1 tarāpuka / black-billed gull colony.

Since 2003, Environment Canterbury has funded intensive pest animal and weed control work in the Hakatere Reach of the Ashburton River/Hakatere to improve the breeding success of locally-breeding shorebirds. ECan similarly funds pest control work in the lower Ashburton River/Hakatere, between the SH1 Bridge and the sea.

Environment Canterbury also jointly operates the Ashburton Zone Committee, which is charged with implementing the Canterbury Water Management strategy in the Ashburton Zone.

Ashburton District Council

The Ashburton River/Hakatere catchment falls within the Ashburton District, for which the Ashburton District Council is the territorial authority. The roles and functions of the Ashburton District Council are largely set out by the Local Government Act (2002). Among these functions, the Ashburton District

Council is responsible for the provision of local infrastructure including water, sewerage, stormwater and roads; and controlling the effects of land use, and the effects of activities on the surface of lakes and rivers.

In 2010 the Ashburton District Council established the Biodiversity Working Group, a team of people from across the Ashburton District with an interest in the district's natural environment. A key purpose of the Biodiversity Working Group is to prepare and implement a Biodiversity Action Plan, the purpose of which is to provide a clear set of objectives to coordinate biodiversity protection work in the Ashburton District (ADC, 2011).

Ashburton District Council also jointly operates the Ashburton Zone Committee, which is charged with implementing the Canterbury Water Management strategy in the Ashburton Zone.

Ashburton Zone Committee

The Ashburton Zone Committee is one of 10 water zone committees in the Canterbury Region established as part of the Canterbury Water Management Strategy 2009 (ECan, 2011). The Ashburton Zone Committee operates as a joint committee of Ashburton District Council and Environment Canterbury but includes representatives from the wider community.

The purpose and function of the committee is to facilitate community involvement in the development, implementation, review and updating of a Zone Implementation Programme that gives effect to the Canterbury Water Management Strategy in the Ashburton Zone. The Ashburton Zone Implementation Programme was published in November 2011 and subsequent to this the Ashburton Zone Committee has led the development of a new minimum flow regime for the Ashburton River/Hakatere which has now been incorporated into the Canterbury Land and Water Regional Plan (Ashburton Zone Committee, 2015; ECan, 2015). In addition to this planning work, the Ashburton Zone Committee has been driving on-the-ground actions to improve the state of freshwater resources, including the distribution of almost $500,000 to 33 community-led biodiversity projects (Ashburton Zone Committee, 2015).

Land Information New Zealand (LINZ)

Land Information New Zealand (LINZ) is a central government agency responsible for managing land titles, geodetic and cadastral survey systems, topographic and hydrographic information and managing Crown property. The active beds of most braided rivers are crown land administered by the Commissioner of Crown Lands and are managed by LINZ on behalf of the commissioner. Among other roles, LINZ undertakes weed and animal pest control on crown land including on braided rivers (O'Donnell et al, undated).

LINZ currently funds gorse and broom control on the upper reaches of the Ashburton River/Hakatere South Branch, upstream of Hakatere (http://www.linz.govt.nz/crownproperty/using-crown-property/biosecurity/control-programmes; accessed 29/9/2016).

Department of Conservation

The Department of Conservation (DOC) is the central government agency charged with conserving New Zealand's natural and historic heritage. The Conservation Act (1987) sets out the majority of DOC's responsibilities and roles, which includes administering and enforcing another 25 Acts of Parliament, including the Wildlife Act (1953) and the Reserves Act (1977).

On the Ashburton River/Hakatere, DOC has worked in the past to enforce the Wildlife Act by investigating a number of cases of intentional vandalism and illegal hunting of absolutely protected bird species (e.g. Schmechel, 2008; Ashburton Guardian, 2013). DOC staff have also provided support and technical advice regarding the management of the SH1 tarāpuka / black-billed gull colony and have been supporting the management of braided river habitat management in the Hakatere Reach by monitoring the nesting success of several shorebird species and by leading weed control efforts within the Hakatere Conservation Park.

Arowhenua Rūnanga

The Arowhenua Rūnanga is one of 18 regional Papatipu Rūnanga that exist to uphold the mana of the Ngāi Tahu people over the land, the sea and the natural resources in their respective takiwā. The Arowhenua Rūnanga therefore provides representation of Ngāi Tahu interests at the local level, by engaging with local government agencies and the wider community (Te Rūnanga o Ngāi Tahu, 1996).

The Arowhenua Rūnanga, along with Tuahuriri and Taumutu Rūnanga have representatives on the Ashburton Zone Committee to represent the interests and views of their respective Rūnanga regarding water management issues in the Ashburton Zone.

Forest & Bird

Forest & Bird is New Zealand's leading independent conservation organisation working to protect and restore New Zealand's wildlife and wild places.

The Ashburton Branch of Forest & Bird has a particular focus on protecting and managing the biodiversity values of braided rivers in the area, including the Ashburton River/Hakatere. Branch members have been instrumental in lobbying for the preparation of this management plan and have advocated for improvements in the management of the Ashburton River/Hakatere for many years. Branch members have also provided invaluable assistance in carrying out annual shorebird counts along up to 124 km of the Ashburton River/Hakatere since the early 1980s, creating a 35-year dataset describing the state and trends in shorebird populations on the river (O'Donnell, 1992; Don Geddes, personal communication). This dataset has now been used both to identify high priority reaches of the river for biodiversity management (Grove, 2005) and to demonstrate that the Ashburton River/Hakatere met Birdlife International's criteria to be designated an Important Bird Area (Forest & Bird, 2016).

Ashburton Branch members have also been involved in the monitoring and management of the SH1 black-billed gull colony, and the installation and maintenance of signage at river access points upstream and downstream of the colony. Branch members have also been assisting the Department of Conservation to carry out wilding conifer control in the Hakatere Conservation Park over a number of years.

BRaid

BRaid is an Incorporated Society formed in 2006 by individuals from across the South Island who shared a concern about the declining state of New Zealand's braided river species and ecosystems. BRaid functions as an umbrella group, working to protect, enhance and restore braided river ecosystems through cooperation and partnership with iwi, individuals, schools, community groups and government departments (http://braid.org.nz/about-braid/; accessed 29/09/2016).

In the past, BRaid has worked with the Ashburton branch of Forest & Bird to raise community awareness of the bird values and threats to the Ashburton River/Hakatere, with a particular emphasis on the SH1 tarāpuka / black-billed gull colony.

Birds New Zealand

Birds New Zealand (the Ornithological Society of New Zealand, Inc.) is an incorporated society dedicated to the study of birds in New Zealand. A key aim of the society is to assist the conservation and management of birds by providing information from which sound management decisions can be derived (OSNZ, 2006).

Members from the Canterbury Region of Birds New Zealand have been involved in the shorebird surveys that have been carried out on the Ashburton River/Hakatere since 1981 and have assisted with raising awareness of the shorebird values of the Ashburton River/Hakatere among the general public. Canterbury Region members have also carried out regular bird counts and surveys at the Ashburton River mouth, and some of these counts are publicly accessible on the New Zealand eBird database, an online open-access bird observation database jointly administered by Birds NZ and the Cornell Lab of Ornithology.

Mid-Canterbury Four Wheel Drive Club, Inc.

The Mid-Canterbury Four Wheel Drive Club is an Incorporated Society affiliated to the New Zealand Four Wheel Drive Association catering for 4WD enthusiasts based in the mid-Canterbury area. The club holds monthly meetings and regular trips as well as off-road training for its members. The Ashburton River/Hakatere is one venue for club trips, however the club has a long-standing policy not to run trips in the river during the shorebird nesting season, between September and December.

The Club believes that the majority of the off-road vehicles disturbing nesting shorebirds on the Ashburton River/Hakatere are being operated by non-Club affiliated 4WD owners who view the Ashburton River/Hakatere as a convenient and accessible location to use their vehicles. Unfortunately, many of these 4WD enthusiasts appear to be oblivious of the damage that their activities are doing to nesting shorebirds.

Fish & Game

Fish & Game New Zealand manages, maintains and enhances sports fish and game birds and their habitats in the best long-term interests of present and future generations of anglers and hunters. Fish & Game is a “user pays, user says” non-profit organisation that receives no government or taxpayer money (http://www.fishandgame.org.nz/about-fish-game; accessed 29/9/2016).

The Ashburton River/Hakatere is popular with local salmon and trout anglers, particularly early in the season, when there is the possibility of catching sea run brown trout (*Salmo trutta*). The Hakatere Huts on the north bank of the river mouth is a popular access point to the river mouth for anglers, and good fishing water is found in the Ashburton River/Hakatere North Branch, upstream of SH72 and in the Ashburton River/Hakatere South Branch upstream from the junction of Taylors Stream at Valetta.

Hakatere Hut Owners

The Hakatere Hut owners maintain houses and bachs at a small settlement on the northern bank of the Ashburton River mouth. In the past these owners have had input into shorebird management work on the Ashburton River/Hakatere through a group called the Ashburton River mouth Action Committee (ARMAC). This group have organised signage to be erected at the Ashburton River mouth providing visitors with information on the birds of the area. The Hakatere Hut Owners are also some of the main users of the Ashburton River mouth area, often gaining access to the river mouth via the Croys Road gate.

2. Management Objectives

2.1 Management Objective One

Management objective one of the AHSMS aims to ensure that:

> ***There is a large and productive tarāpuka / black-billed gull colony present on the "Ashburton Reach" of the river during most years.***

This management objective is further subdivided into five performance measures designed to provide quantitative measures of whether this management objective has been met. These performance measures are:

> ***1a: Numbers of tarāpuka / black-billed gulls breeding on the "Ashburton Reach" are stable or increasing.***
>
> ***1b: In flood-free years, an average of 0.8 chicks fledge per nest*** *(limited to monitoring of tarāpuka / black-billed gull productivity to those gull colonies that are situated on artificially constructed raised gravel islands at both the river mouth and downstream of the SH1 bridge)*
>
> ***1c: No adult mortality is being caused by local human-induced factors such as vandalism or disturbance. Additional efforts be made to further reduce disturbance caused by recreational users.***
>
> ***1d: Prioritise the construction and maintenance of raised, weed-free gravel islands both at the river mouth and downstream of the SH1 bridge.***
>
> ***1e: Environment Canterbury to establish a standard, detailed field protocol for quantifying the number of tarāpuka / black-billed gulls nesting on the lower Ashburton River / Hakatere each season and requires all future monitoring to be carried out according to this protocol.***

Due to the high frequency of spring flooding on the lower Ashburton River / Hakatere, and the difficulty and expense of measuring tarāpuka / black-billed gull fledging success, it is recommended that performance measure 1b limits the monitoring of tarāpuka / black-billed gull productivity to those gull colonies that are situated on artificially constructed raised gravel islands at both the river mouth and downstream of the SH1 bridge. By restricting productivity monitoring to these islands, monitoring resources will be focused on quantifying the performance of these islands, which are designed to minimise the risk that spring and summer flooding poses to breeding tarāpuka / black-billed gulls. This review of the tarāpuka / black-billed gull monitoring data collected to date has noted that the ornithologists involved in conducting this monitoring between 2016 and 2023 have employed a variety of methods to estimate the number of gulls breeding on the lower river each year. Breeding population estimates have been variously expressed as the number of apparently occupied nests, the number of breeding pairs and the number of breeding adults, and survey methods have included ground-based counts of the total number of adult birds present at colonies, complete counts of the number of apparently occupied nests from aerial photographs and counting the number of occupied nests within a randomised sub-sample of plots within colonies (Keystone Ecology 2017; Bell & Harborne 2019; Crossland 2019; Crossland 2020; Crossland 2021; Crossland 2022; Crossland 2023). This variation in

the methodologies used creates a challenge when attempting to directly compare counts of nests or breeding birds collected using different methods from one year to the next and increases the risk that trends in the number of breeding tarāpuka / black-billed gulls on the lower Ashburton River/Hakatere may be partially obscured by the increased variability introduced into the dataset as a consequence of differing field methodologies. For this reason, it is recommended that Environment Canterbury establishes a standard, detailed field protocol for quantifying the number of tarāpuka / black-billed gulls nesting on the lower Ashburton River/Hakatere each season and requires all future monitoring to be carried out according to this protocol.

2.2 Management Objective Two

Management objective two of the AHSMS aims to ensure that:

> ***There are stable or increasing populations of pohowera / banded dotterels, black-fronted dotterels, tōrea / SI pied oystercatchers, ngutu pare / wrybills and tarapirohe / black-fronted terns on the Arrowsmith, Hakatere and Ashburton reaches of the river.***

This management objective is translated into one performance measure which is designed to provide a quantitative measure of whether this management objective has been met. This performance measure is:

> ***2a: Annual shorebird counts show that shorebird numbers are stable or increasing on the Arrowsmith, Hakatere and Ashburton reaches.***

To quantify whether these performance measures are being achieved, performance monitoring action M2 of the AHSMS recommends that annual counts of shorebirds be carried out along the following three selected reaches of the Ashburton River/Hakatere:

- The Arrowsmith Reach, comprising 17 km of the upper Ashburton River/Hakatere between the base of the Arrowsmith Range and the confluence with Boundary Creek.

- The Hakatere Reach, comprising 9 km of the mid-Ashburton River/Hakatere between Buicks Bridge and Blowing Point

- 54 km of the South Branch of the Ashburton River/Hakatere, from the Rangitata Diversion Race to the

As with the tarāpuka / black-billed gull monitoring work, the high frequency of spring flooding on the lower Ashburton River / Hakatere in recent years has greatly hampered efforts to conduct shorebird counts on the lower reaches of the river (Colin O'Donnell, *personal communication*). Despite these difficulties, it is recommended that efforts to conduct annual surveys on the Arrowsmith Reach of the Ashburton River/ Hakatere between the base of the Arrowsmith Range and Boundary Creek; the Hakatere Reach of the Ashburton River between Buick's Bridge and Blowing Point; and the lower reach of the Ashburton River between SH1 and the sea be continued.

2.3 Management Objective Three

Management objective three of the AHSMS aims to ensure that:

> ***Disturbance of shorebirds and waterfowl at the Ashburton River mouth by people and vehicles is minimised year-round, and the river mouth continues to support a high diversity and abundance of shorebird and waterfowl.***

This management objective is further subdivided into two performance measures designed to provide quantitative measures of whether this management objective has been met. These performance measures are:

> ***3a: Monthly bird counts show that the diversity and abundance of shorebirds and waterfowl is stable or increasing over time.***
>
> ***3b: No adult mortality is being caused by local human-induced factors such as disturbance or illegal hunting. Additional efforts to manage the adverse impacts of this activity on the river mouth's avifauna be implemented.***
>
> ***3c: Environment Canterbury continues to engage a suitably experienced contractor to carry out these monthly counts, with no change to the survey methodology or reporting format or frequency.***

To quantify whether these performance measures are being achieved, performance monitoring action M3 of the AHSMS recommends that monthly counts of all shorebird and waterfowl species occurring in the Ashburton River/Hakatere river mouth, including on the shingle barrier spit separating the river mouth from the sea, be carried out.

3. Management Actions

3.1 Management Action A1

Management action A1 of the AHSMS involves convening an Ashburton River/Hakatere Management Group comprised of representatives from key stakeholder groups to coordinate and oversee the implementation of the AHSMS. In the AHSMS it was recommended that each year Environment Canterbury would prepare an annual report summarising the management outcomes and monitoring results for the Ashburton River/Hakatere and that the management group would meet at least twice a year, once in April to review the previous year's annual report and once in June to plan the upcoming year's work programme (McArthur & Bell 2016).

These regular meetings of the Ashburton River/Hakatere Management Group have proven useful for coordinating management and monitoring actions on the Ashburton River/Hakatere, and for facilitating communication between key stakeholder groups and agencies. For this reason, it is recommended that the management group continue to meet at least once per year between April and August, to review the management and monitoring actions carried out during the previous 12 months, to discuss emerging issues and to plan the following 12 months work. It is strongly recommended that ECan produces a brief, but concise annual report prior to each of these meetings, summarising the management and monitoring work carried out during the preceding 12 months. These reports will have three functions, namely they will:

1. Provide Ashburton River/Hakatere Management Group members with a concise and complete picture of the management and monitoring work carried out on the Ashburton River/Hakatere over the previous 12 months and whether the AHSMS is on track to achieving its objectives.

2. Identify any ongoing and emerging issues that need to be discussed by members of the Ashburton River/Hakatere Management Group as a matter of priority during subsequent meetings.

3. Provide a permanent and concise record of the management and monitoring work completed on the Ashburton River/Hakatere each year, to assist with future efforts to assess whether or not AHSMS management objectives have been achieved, and to review and update the AHSMS when required.

A recommended structure for these annual reports can be found in Appendix Two of this report.

Management Action A2

Management action A2 of the AHSMS involves creating and/or maintaining one or more gravel islands just downstream from the SH1 bridge, to provide safer breeding habitat for tarāpuka / black-billed gulls. In the 2016-2023 AHSMS it was recommended that these islands be engineered to ensure the islands were weed-free, separated from the adjacent riverbanks by relatively deep, free-flowing water channels, and were built to a height sufficient to reduce the likelihood that they would be inundated or submerged during a flood event (McArthur & Bell 2016).

During the lifespan of the 2023-2030 AHSMS is recommended that ECan constructs and maintains at least two large, raised gravel islands in the "Ashburton Reach" of the Ashburton River/Hakatere, one in the vicinity of the preferred nesting area immediately downstream of the SH1 bridge, and another in the vicinity of the preferred nesting area at the Ashburton River/Hakatere river mouth. It is recommended that these islands be built up to a height of at least 1.5m above the active bed of the river (i.e., modelled on height of the island in Figure 3.2), to provide nesting gulls with a high level of protection against spring floods. During years in which the bed of the Ashburton River/Hakatere is relatively weed free, it is also recommended that decoy gulls and nest materials be placed on these raised islands to maximise the chance that tarāpuka / black-billed gulls will choose to nest on them.

From late 2023 New Zealand is forecasted to re-enter an El Niño climatic cycle for the first time since 2016, and one of the strongest El Niño cycles observed in the past 80 years[2]. El Niño climatic conditions are predicted to bring dry, drought-like conditions to the eastern South Island, potentially bringing to the recent period of frequent flooding on the Ashburton River / Hakatere to an end, and instead causing periods of extreme low river flows during the summer months. Extreme low flows on the Ashburton River / Hakatere are predicted to lead to increases in mammalian depredation rates as previously isolated gravel islands become connected to the banks of the river as minor channels dry up. For this reason, it will be important to ensure that comparatively deep channels are excavated around the perimeter of these artificial gravel islands. It is also recommended that ECan engages in discussion with Rangitata Diversion Race Management Ltd (RDRML) to explore whether there are any opportunities for RDRML to manipulate the timing or quantity of water releases into the Ashburton River/Hakatere to increase the quantity of water flowing down the Ashburton River/Hakatere during times of extreme low flows, or to avoid further exacerbating the adverse impacts of spring flooding on nesting shorebirds.

[2] https://www.newstalkzb.co.nz/news/national/el-nino-incoming-nz-s-climate-to-take-rapid-turn-withinweeks/; accessed 23rd September 2023.

Management Action A3

Management action A3 of the 2016-2023 AHSMS involved carrying out mechanical clearance of woody weeds from an eight-hectare area of the bed of the Ashburton River/Hakatere immediately downstream of the SH1 bridge, to provide open gravel nesting habitat for tarāpuka / black-billed gulls. In the AHSMS it was recommended that weed control should be planned to be carried out annually if needed (McArthur & Bell 2016).

As the 2016-2023 AHSMS pointed out, a complete reliance on major flood events to keep the "Ashburton Reach" of the Ashburton River/Hakatere free of woody weeds is likely to result in severe periodic weed infestations similar to those observed during the 2-3 years prior to the July 2017 flood. It is now well known that these severe weed infestations can lead to rapid and substantial local declines in shorebird populations on the river. To prevent this from occurring in the future, it is recommended that ECan establishes a contingency fund to enable the Council to fund woody weed control to prevent major infestations from re-establishing. This work is likely only going to be required if the interval between major flood events extends to greater than 3-5 years.

Management Action A4

Management action A4 of the 2016-2023 AHSMS involved trapping mammalian predators in the vicinity of the SH1 tarāpuka / black-billed gull nesting colony. In the AHSMS it was recommended that traps be established at 100m spacings up to 2km upstream and downstream of the engineered islands and weed-controlled area established under management actions A2 and A3, and that the trapping network be designed to target the full suite of shorebird nest predators, including cats (*Felis catus*), mustelids (*Mustela* spp.), hedgehogs (*Erinaceus europaeus*), rats (*Rattus* spp.) and possums (*Trichosurus vulpecula*). It was further recommended that traps be serviced once every two weeks, between July and February inclusive (McArthur & Bell 2016).

In recent years, tarāpuka / black-billed gull nesting activity in the vicinity of the SH1 bridge has become more intermittent, possibly as a result of recent spring flooding and/or bird deterrent devices being installed on nearby commercial buildings to discourage gulls from roosting or nesting on them (Donna Field, *personal communication*). Tarāpuka / black-billed gulls continue to nest regularly at the Ashburton River/Hakatere river mouth, however (Keystone Ecology 2017; Bell & Harborne 2019; Crossland 2019; Crossland 2020; Crossland 2021; Crossland 2022; Crossland 2023). Given this, it is recommended that mammalian predator trapping be carried out within 2km of any tarāpuka / blackbilled gull colonies that form anywhere on the "Ashburton Reach" of the Ashburton River/Hakatere, rather than solely at those colonies that form in the vicinity of the SH1 bridge. It is further recommended that mammalian predator control be prioritised towards any colonies that form on the artificial raised gravel islands constructed as part of Management Action A2 (Table 4.3), as the productivity of these colonies are less likely to be adversely impacted by spring floods than those situated on lower-lying, natural islands. Mammalian predator control should involve establishing a single trap line along each bank of the river, with alternating DOC150 and DOC250 traps placed at 100m spacings and an additional Timms trap deployed at every second DOC trap. It is recommended that traps be baited with fresh rabbit meat and that traps be serviced fortnightly until all of the gull chicks have fledged.

Management Action A5

Management action A5 of the 2016-2023 AHSMS involved investigating the implementation of a total ban on vehicle and foot access within 200m of the SH1 tarāpuka / black-billed gull colony, to reduce the risk of either intentional or unintentional disturbance of the colony. In the AHSMS it was recommended that signage be installed at river access points 500m upstream and downstream of the colony and on the adjacent riverbed and temporary fencing be erected around the colony to identify its location to river users (McArthur & Bell 2016).

It is recommended that ECan continues to employ these measures as part of a broader community education and advocacy campaign designed to prevent or minimise losses of breeding tarāpuka / black-billed gulls, nests, eggs or chicks on the "Ashburton Reach" in the future. Specifically, it is recommended that ECan continues its existing arrangement with the Mid Canterbury Four Wheel Drive Club to maintain and run a 4WD park for off-road vehicle users on river berm land owned by ECan. Furthermore, it is recommended that ECan maintains a readiness to respond to the formation of tarāpuka / black-billed gull colonies on the "Ashburton Reach" of the Ashburton River/Hakatere by:

- Deploying large concrete blocks to temporarily block off near vehicle river access points that create the risk of directing vehicle traffic towards active gull colonies

- Deploying signage at nearby river access and vantage points informing the public of the significance of the gull nesting colonies, and of measures people should take to avoid disturbing nesting birds

- Where needed, installing temporary biodegradable fencing around active gull colonies to visually delimit the colonies and create a visual deterrent to prevent people and vehicles from venturing too close to the colonies

- Issuing media releases informing the general public of the presence of the colonies; the steps that ECan is taking to protect the colonies and the measures that river users should take to avoid disturbing nesting birds.

Resources will need to be put aside to allow for the regular checking, maintenance and repair of concrete blocks, signage and fencing in the vicinity of gull colonies to ensure they remain functional and in a good state of repair, and this infrastructure should be removed as soon as possible once all gull chicks have fledged, to avoid unnecessary restrictions to the subsequent recreational use of the riverbed.

Management Action A6

Management action A6 of the 2016-2023 AHSMS involved designing an education and advocacy programme to raise awareness in the Ashburton Community of the shorebird values of the Ashburton River/Hakatere, the threats they face and the measures they can take to avoid unintentionally disturbing birds while recreating on the river. In the 2016-2023 AHSMS it was recommended that such a programme could include press releases and social media posts, particularly in the lead up to each shorebird breeding season, and an annual 'open day' held on the river for recreational 4WD users (McArthur & Bell 2016).

It is recommended that ECan continues to employ these measures as part of a broader community education and advocacy campaign designed to prevent or minimise disturbance to nesting shorebirds on the "Ashburton Reach" of the Ashburton River/Hakatere. Specifically, it is recommended that ECan continues its existing arrangement with the Mid Canterbury Four Wheel Drive Club to maintain and run a 4WD park for off-road vehicle users on river berm land owned by ECan. Furthermore, it is recommended that ECan continues to communicate with the general public using both the conventional and social media; to deploy educational signage at river access and vantage points and to use events such as the "Bridge to Beach Poker Run" as opportunities to engage with members of the local off-roading community.

Management Action A7

Management action A7 of the AHSMS involves conducting woody weed surveillance in the "Arrowsmith Reach" of the Ashburton River/Hakatere. In the AHSMS it was recommended that ground surveys be carried out once every two years to check for new infestations of woody weeds including willow (*Salix* spp.), broom (*Cytisus scoparius*), sweet briar (*Rosa rubiginosa*), gorse (*Ulex europaeus*), Russell lupins (*Lupinus polyphyllus*) and false tamarisk (*Myricaria germanica*). It was further recommended that any new infestations found should be GPSed and a plan be developed for their control or eradication (McArthur & Bell 2016).

The "Arrowsmith Reach" of the Ashburton River/Hakatere remains largely weed-free and therefore provides high quality habitat for the threatened shorebird species that breed on the river. For this reason, it is recommended that ECan continues to carry out biennial weed surveys to detect, map and control any new infestations of woody weeds that establish along this reach of the river. It is also recommended that ECan and DOC work together to design and install signage and/or posters in huts or at key access points to the "Arrowsmith Reach", encouraging hunters and trampers to report any weed infestations they encounter on the river to ECan.

Management Action A8

Management action A8 of the AHSMS involves trapping mammalian predators on the "Hakatere Reach" of the Ashburton River/Hakatere. In the AHSMS it was recommended that the pre-existing animal control work being carried out on the "Hakatere Reach" be continued in its existing form on an annual, ongoing basis (McArthur & Bell 2016).

It is recommended that ECan continues to implement this mammalian predator trapping work in its current form, both to maintain the outcomes of the predator trapping work carried out to date, and to achieve further improvements in the health of local shorebird populations. It is also recommended that ECan carries out 6-montly audits of the trapping network to inspect whether the trap network is being maintained in good repair all year round. It is recommended that one audit be carried out no less than one month prior to the beginning of the shorebird nesting season (mid-September) to allow time for any problems identified to be rectified before shorebirds begin nesting.

Management Action A9

Management action A9 of the AHSMS involves carrying out woody weed control on the "Hakatere Reach" of the Ashburton River/Hakatere. In the AHSMS it was recommended that existing weed control work planned for the Hakatere Reach continues as planned, and that additional funding be sought to extend weed control downstream towards Blowing Point Bridge, targeting species including broom, Russell lupin, grey willow (*Salix cinerea*), gorse, sweet briar, poppies and false tamarisk (McArthur & Bell 2016).

It is recommended that ECan and DOC continue to work together to survey and control invasive woody weeds within this reach of the river.

Management Action B1

Management action B1 of the 2016-2023 AHSMS involved the progressive clearance of woody weeds from sequential 30ha block of the bed of the Ashburton River/Hakatere immediately downstream of the weed-controlled area created at the SH1 tarāpuka / black-billed gull colony under management action A3. In the 2016-2023 AHSMS it was recommended weeds be cleared using machinery rather than by using herbicides, with at least three 30ha blocks being treated on a ca. 3-year rotation (McArthur & Bell 2016).

As the AHSMS points out, a complete reliance on major flood events to keep the "Ashburton Reach" of the Ashburton River/Hakatere free of woody weeds is likely to result in severe periodic weed infestations similar to those observed during the 2-3 years prior to the July 2017 flood. It is now well known that these severe weed infestations can lead to rapid and substantial local declines in shorebird populations on the river. To prevent this from occurring in the future, it is recommended that ECan establishes a contingency fund to enable the Council to fund woody weed control to prevent major infestations from re-establishing in this reach of the river. This work is likely only going to be required if the interval between major flood events extends to greater than 3-5 years.

Management Action B2

Management action B2 of the 2016-2023 AHSMS involved the progressive extension of mammalian predator control in 5km increments immediately downstream of the SH1 tarāpuka / black-billed gull predator control area established under management action A4. In the AHSMS it was recommended that this predator trapping network will likewise consist of traps spaced 100m apart, using traps designed to target the full range of mammalian predators known to depredate shorebird nests. It was further recommended that traps be arranged in a single trap line on either side of the river, and that traps be serviced every two weeks between July and February inclusive (McArthur & Bell 2016).

To maintain and build upon these predator control efforts on the "Ashburton Reach" of the Ashburton River/Hakatere, it is recommended that ECan continues to support the local community-led trapping efforts at both the Hakatere Huts and at Ashton Beach, including extending the Hakatere Huts trap network downstream to include the northeastern portion of the Ashburton River/Hakatere river mouth immediately adjacent to the Hakatere Huts. It is further recommended that ECan utilizes the funding received to offset the potential adverse effects of the Waverly Wind Farm to expand predator trapping on the "Ashburton Reach" of the Ashburton River/Hakatere to control predators along the entire length of river between the SH1 bridge and Wakanui School Road. It is recommended that this be achieved by implementing two additional pieces of work. Firstly, ECan will set up and supervise a community group recruited from the Lake Hood and Ashburton communities to service a network of traps installed in the river berm on either side of the river from Lake Hood downstream to Wakanui School Road. Secondly, ECan will engage a contractor to carry out predator trapping on the river berm between SH1 and Lake Hood, with this trapping network being contiguous with that being serviced by the Lake Hood/Ashburton community group. It is recommended that ECan adopts a similar trap layout and servicing regime to that employed on the "Hakatere Reach" of the river, to maximise the likelihood that these trapping efforts will deliver similar improvements to local shorebird populations to that seen in the "Hakatere Reach". Both the "Hakatere Reach" and the stretch of river from SH1 to Wakanui School road each support approximately 20-30% of the pōhowera / banded dotterels counted on the Ashburton River/Hakatere during recent counts. Once these additional trapping efforts are implemented on the "Ashburton Reach" of the river therefore, between 40-60% of the pōhowera / banded dotterels breeding on the Ashburton River/Hakatere will be benefitting from these combined predator control efforts.

Management Action B3

Management action B3 of the AHSMS involves controlling karoro / black-backed gulls (*Larus dominicanus*) nesting between the Valetta Bridge and the sea. In the AHSMS it was recommended that gulls be controlled using a combination of egg-pricking and the poisoning of adult birds using alphachloralose paste (McArthur & Bell 2016).

Several very large karoro / black-back gull colonies remain on the lower Ashburton River/Hakatere and these likely pose a risk to other shorebird species nesting on the river. Karoro / black-backed gulls are likely to be reducing the productivity of other (threatened) shorebird species on the Ashburton River/Hakatere by preying on eggs and chicks, and the presence of large karoro / black-backed gull colonies on the river may also reduce the area of habitat available to these more threatened shorebird species due to competitive exclusion and predator avoidance behaviours (Bell & Harborne 2018). For

this reason, it is recommended that ECan continues to reduce the number of karoro / black-backed gulls nesting on the lower Ashburton River/Hakatere between the Valetta Bridge and the sea, by engaging suitably qualified and experienced contractors to undertake alphachloralose poisoning operations on active karoro / black-backed gull colonies.

Management Action B4

Management action B4 of the AHSMS involves investigating measures to reduce levels of off-road vehicle disturbance at the Ashburton River/Hakatere river mouth. In the 2016-2023 AHSMS it was recommended that a number of measures should be investigated, including the installation of signage at key access points to the river mouth; undertaking a community education and advocacy campaign; building relationships with special interest groups such as the Mid-Canterbury Four Wheel Drive Club and Fish & Game; reviewing legal access points to the river mouth and investigating options for their temporary or permanent closure; and developing an alternative area for use by recreational off-road vehicle enthusiasts (McArthur & Bell 2016).

These measures appear to have been successful at reducing levels of off-road vehicle disturbance at the Ashburton River/Hakatere river mouth (Crossland, 2021). For this reason, it is recommended that ECan continues to employ these measures as part of a broader community education and advocacy campaign designed to prevent or minimise disturbance to nesting shorebirds on the "Ashburton Reach" of the Ashburton River/Hakatere. Specifically, it is recommended that ECan continues to maintain its informal "internationally significant bird habitat" and associated vehicle access bypass track at the river mouth and investigates the feasibility of preparing and submitting an application to the Ramsar Secretariat to have the lower Ashburton River/Hakatere designated as a wetland of international importance under the Ramsar Convention on Wetlands. It is also recommended that ECan opposes efforts to develop the offroad motorbike area at the end of Lower Beach Road into a permanent motorbike park, and instead work with the relevant groups and agencies to identify an alternative location for a motorbike park, further away from the Ashburton River/Hakatere river mouth.

It is now firmly established that the Ashburton River/Hakatere river mouth provides roosting habitat for up to 25% of the national and global population of kawau tikitiki / spotted shags, and therefore supports the largest concentration of kawau tikitiki / spotted shags recorded anywhere in New Zealand (Crossland 2023). The national conservation status of kawau tikitiki / spotted shags has substantially worsened in recent years, shifting from "Not Threatened" to "Threatened – Nationally Vulnerable" during the most recent re-assessment carried out in 2021 (Robertson *et al.* 2021). This worsening status is due to a very significant, recent and ongoing decline in the number of breeding pairs occupying Banks Peninsula, a site used by 30-50% of the global population of this species[3] (Andrew Crossland, *personal communication*). Breeding habitat was lost as a result of landslides triggered by the devastating Canterbury earthquakes of 2010-2011, and the population has failed to recover since then. Populations in the North Island are also declining, with kawau tikitiki / spotted shags now on the verge of local extinction in the Hauraki Gulf, and a marked decline observed in Wellington Harbour over the past 20 years (Robertson *et al.* 2021; Shane Cotter, *personal communication*). The global

[3] It is these birds breeding on Banks Peninsula that roost on the shingle barrier spit at the Ashburton River/Hakatere river mouth.

population kawau tikitiki/spotted shags is now estimated to total 60,000 breeding birds, with an estimated rate of population decline of 60% over three generations.

The large number of kawau tikitiki / spotted shags that occur at the Ashburton River/Hakatere river mouth primarily use this site for roosting, therefore the key threat that they face at this site will be disturbance by 4WD vehicles, dogs and people traversing the shingle spit on foot. Given the worsening conservation status of this species; the significant decline that has recently been observed in the Banks Peninsula breeding population; and the very large number of individuals that use the shingle spit at the Ashburton River/Hakatere river mouth, it is recommended that ECan and Ashburton District Council work together to implement a total year-round ban on the use of motorised vehicles and the walking of dogs on the spit. It is also recommended that ECan and Ashburton District Council work together to investigate options for installing fencing, bollards or concrete blocks to close off vehicle access points onto the spit from both the Hakatere Huts and Ashton Beach, and that ECan installs educational signage describing the importance of the site for kawau tikitiki / spotted shags and providing clear guidance on the minimum distance that walkers should maintain between themselves and roosting shags, to prevent any accidental disturbance.

Management Action C1

Management action C1 of the AHSMS involves investigating measures to reduce levels of off-road vehicle disturbance in the "Ashburton Reach" of the Ashburton River/Hakatere. In the 2016-2023 AHSMS it was recommended that a number of measures should be investigated, including the installation of signage at key river access points; undertaking a community education and advocacy campaign; building relationships with special interest groups such as the Mid-Canterbury Four Wheel Drive Club and Fish & Game; and reviewing legal access points to the river and investigating options for their temporary or permanent closure (McArthur & Bell 2016).

These measures appear to have been successful at reducing levels of off-road vehicle disturbance in the "Ashburton Reach" of the Ashburton River/Hakatere (Crossland, 2021; Donna Field, *personal communication*). However, this reduction of 4WD activity in the river has also coincided with a period of La Niña climactic conditions in New Zealand, resulting in higher rainfall and river flows in the Ashburton River/Hakatere catchment. These higher river flows have made it more difficult for 4WD vehicles to access and traverse the lower reaches of the Ashburton River/Hakatere, so may also explain this observed reduction in 4WD activity in recent years (Donna Field, *personal observation*). From late 2023 New Zealand is forecasted to re-enter an El Niño climatic cycle for the first time since 2016, and one of the strongest El Niño cycles observed in the past 80 years. El Niño climatic conditions are predicted to bring dry, drought-like conditions to the eastern South Island, potentially bringing to the recent period of frequent flooding on the Ashburton River / Hakatere to an end, and instead causing periods of extreme low river flows during the summer months. These extreme low flows on the Ashburton River / Hakatere may lead to a future increase in 4WD vehicle use on the lower reaches of the river. For this reason, it is recommended that ECan continues to implement measures designed to prevent or minimise 4WD vehicle disturbance to nesting shorebirds on the "Ashburton Reach" of the Ashburton River/Hakatere. Specifically, it is recommended that ECan continues its existing arrangement with the Mid Canterbury Four Wheel Drive Club to maintain and run a 4WD park for offroad vehicle users on river berm land owned by ECan. Furthermore, it is recommended that ECan continues to communicate with the general public using both the conventional and social media; and

to deploy concrete blocks, temporary fencing and educational signage at river access and vantage points and at tarāpuka / black-billed gull colonies where appropriate.

Management Action C2

Management action C2 of the 2016-2023 AHSMS involved assessing the feasibility of gazetting the Ashburton River/Hakatere river mouth as a Scenic Reserve under the Reserves Act (1977). In the AHSMS it was recommended that ECan works with the Department of Conservation to conduct this feasibility assessment.

Since the implementation of the 2016-2023 AHSMS, two further options for recognising the shorebird values of the Lower Ashburton River/Hakatere and strengthening the management and protection of those values have emerged. One option is to apply to have the lower reaches of Ashburton River/Hakatere, from the North/South Branch Confluence to the river mouth, listed as a wetland of international importance under the Ramsar Convention on Wetlands. The Ramsar Convention is an international treaty for the conservation and sustainable use of wetlands to which New Zealand is a signatory (Ramsar Convention Secretariat 2016). Since coming into force in 1975, over 2,400 sites around the world have been identified as wetlands of international importance using one or more of the nine criteria listed in the convention, including seven sites in New Zealand (Ramsar Convention Secretariat 2021). The use of Ramsar Convention criteria to identify internationally important shorebird habitats has become a widely accepted and applied approach throughout the world (Weller et al. 2020), and the avifauna values of the lower reaches of the Ashburton River/Hakatere are likely to meet at least four of these nine criteria, namely:

- **Criterion 2:** A wetland should be considered internationally important of it supports vulnerable, endangered, or critically endangered species or threatened ecological communities.

- **Criterion 3:** A wetland should be considered internationally important if it supports populations of plant and/or animal species important for maintaining the biological diversity of a particular biogeographic region.

- **Criterion 4:** A wetland should be considered internationally important if it supports plant and/or animal species at a critical stage in their life cycles or provides refuge during adverse conditions.

- **Criterion 6:** A wetland should be considered internationally important if it regularly supports 1% of the individuals in a population of one species or subspecies of waterbird. (Ramsar Convention Secretariat 2016)

For example, recent bird monitoring data collected as part of the implementation of the AHSMS clearly demonstrate that the Ashburton River/Hakatere river mouth provides roosting habitat for up to 25% of the global population of kawau tikitiki / spotted shags (Crossland 2023) and that the lower reaches of the Ashburton River/Hakatere from the North/South Branch confluence to the sea supports just over 1% of the global population of pōhowera / banded dotterels.

The second option for strengthening the management and protection of the shorebird values of the lower Ashburton River Hakatere is to develop the lower reaches of the river from the North/South Branch Confluence to the sea into a regional park administered by ECan. The Council currently operates three regional parks in the Canterbury region, one each on the banks of the Waimakariri and Ashley Rakahuri Rivers and another on the eastern shoreline of Lake Tekapo. Managing the lower reaches of the Ashburton River/Hakatere as a regional park would give ECan a greater ability to manage the recreational use of the river with the need to maintain its natural values, including its coastal and shorebird fauna.

As first steps towards implementing these two options, it is recommended that ECan carries out an investigation into the feasibility and utility of applying for Ramsar status for the lower Ashburton River/Hakatere between the North/South Branch confluence and the Ashburton River/Hakatere river mouth. This investigation should focus on consulting with the Department of Conservation and the other river stakeholders listed in the AHSMS to assess the willingness of these groups and organisations to support the application process. It is also recommended that ECan conducts a separate investigation into the feasibility, utility and cost of creating a regional park and employing a dedicated river ranger for the lower Ashburton River between the North/South Branch confluence and the Ashburton River/Hakatere river mouth. These two investigations will need to be carried out with some degree of integration, as the implications of a Ramsar wetland being managed as a regional park, and a regional park being designated as a Ramsar wetland, will need to be explored as part of these investigations.

The 2023-2030 AHSMS: A Summary

4.1 Management Objectives

Table 4.1 provides a summary of the revised set of management objectives and performance measures in this 2023-2030 AHSMS. A more detailed explanation for these suggested revisions can be found in the *Ashburton River/Hakatere Shorebird Habitat Management Strategy: A Review* (McArthur 2023).

Table 4.1: Management objectives and performance measures of the 2023-2030 AHSMS

Objective No.	Objective	Performance Measure No.	Performance Measure
1.	There is a large and productive tarāpuka / black-billed gull colony present on the "Ashburton Reach" of the Ashburton River/Hakatere during most years.	**1a.**	Numbers of tarāpuka / blackbilled gulls breeding on the "Ashburton Reach" are stable or increasing.
		1b.	An average of 0.8 chicks fledge per nest at any tarāpuka / black-billed gull colonies located on artificially engineered raised islands created on the "Ashburton Reach" of the river.
		1c.	No adult mortality is being caused by local human induced factors such as vandalism or disturbance. Additional efforts be made to further reduce disturbance caused by recreational users.
		1d.	Prioritise the construction and maintenance of raised, weed-free gravel islands both at the river mouth and downstream of the SH1 bridge.
		1e.	Environment Canterbury to establish a standard, detailed field protocol for quantifying the number of tarāpuka / black-billed gulls nesting on the lower Ashburton River / Hakatere each season and requires all

Objective No.	Objective	Performance Measure No.	Performance Measure
			future monitoring to be carried out according to this protocol.
2.	There are stable, or increasing populations of pōhowera / banded dotterels, black-fronted dotterels, tōrea / SI pied oystercatchers, ngutu pare / wrybill and tarapirohe / black-fronted terns on the "Arrowsmith", "Hakatere" and "Ashburton" reaches of the river.	**2a.**	Annual shorebird counts show that numbers of adult pōhowera / banded dotterels, black-fronted dotterels, tōrea / SI pied oystercatchers, ngutu pare / wrybill and tarapirohe / black-fronted terns counted on the "Arrowsmith", "Hakatere" and "Ashburton" reaches of the river are stable or increasing.
3.	Disturbance of shorebirds and waterfowl at the Ashburton River/Hakatere river mouth by people and vehicles is minimised year-round, and the river mouth continues to support a high diversity and abundance of shorebirds and waterfowl.	**3a.**	Monthly bird counts show that the diversity and abundance of shorebirds and waterfowl at the Ashburton River/Hakatere river mouth is stable or increasing over time.
		3b.	No adult mortality of shorebirds or waterfowl is being caused by local humaninduced factors such as disturbance or illegal hunting. Additional efforts to manage the adverse impacts of this activity on the river mouth's avifauna be implemented.
		3c.	Environment Canterbury continues to engage Andrew to carry out these monthly counts, with no change to the survey methodology or reporting format or frequency.

Performance Monitoring Actions

Table 4.2 provides a summary of the revised set of performance monitoring actions in the 2023-2030 AHSMS. A more detailed explanation for these suggested revisions can be found in the *Ashburton River/Hakatere Shorebird Habitat Management Strategy: A Review* (McArthur 2023).

Table 4.2: Performance monitoring actions of the 2023-2030 AHSMS

PMA No.	Performance Monitoring Action	Frequency	Detail
M1	"Ashburton Reach" tarāpuka / black-billed gull colony monitoring	Annual	Weekly checks of artificial raised gravel islands constructed in the "Ashburton Reach" of the river shall be carried out each year between October and January inclusive, and the number of adult gulls, active nests and fledglings present on each island shall be recorded. Numbers of adult gulls and active nests present within breeding colonies situated elsewhere within the "Ashburton Reach" shall also be recorded, as and when these colonies form. ECan will develop a detailed, standard monitoring protocol for fieldworkers to follow, to maximise the quality and consistency of the data being collected.
M2	Annual shorebird counts in the "Arrowsmith", "Hakatere" and "Ashburton" reaches	Annual	Annual counts of shorebirds present on the "Arrowsmith", "Hakatere" and "Ashburton" reaches of the Ashburton River/Hakatere shall be carried out between October and December inclusive. Separate shorebird counts will be recorded for each 1km section of the reaches being surveyed, to allow spatial patterns in the relative abundance of shorebirds to be mapped in greater detail. ECan will seek funding to engage a shorebird count coordinator to organise and lead these counts each year, to maximise the likelihood that these counts will be carried out during an appropriate window of fine weather and flood-free river conditions each year.
M3	Monthly shorebird and waterfowl counts at the Ashburton River/Hakatere river mouth	Monthly	Monthly counts of all shorebirds and waterfowl present at the Ashburton River/Hakatere river mouth will continue to be carried out using the standard methodology that has been developed by Andrew Crossland.

4.3 Management Actions

Table 4.3 provides a summary of the revised recommended set of management actions in the 2023-2030 AHSMS. A more detailed explanation for these suggested revisions can be found in the *Ashburton River/Hakatere Shorebird Habitat Management Strategy: A Review* (McArthur 2023) and a draft operational plan and budget for these management actions can be found in Appendix One.

Table 4.3 Management actions of the 2023-2030 AHSMS

MA No.	Management Action	Frequency	Detail
A1	Convene and administer the Ashburton River/Hakatere Management Group	Annual	The Ashburton River/Hakatere Management Group will meet at least once per year between April and August, to review the management and monitoring actions carried out during the previous 12 months, to discuss emerging issues and to plan the following 12 months work. Prior to each meeting, ECan will produce and circulate an annual report (see Appendix 2 for a recommended report structure) summarising the management and monitoring work carried out on the Ashburton River/Hakatere during the preceding 12 months.
A2	Community education and advocacy ("Ashburton Reach" and the Ashburton River/Hakatere river mouth)	Annual	ECan will continue to work with the Mid Canterbury Four Wheel Drive Club to maintain the 4WD park on river berm land. ECan will deploy concrete blocks, signage and temporary biodegradable fencing around tarāpuka / black-billed gull colonies to reduce the risk of recreational river users accidentally disturbing the nesting gulls. ECan will continue to communicate with the general public via media releases and social media and shall maintain educational signage at key river access points and vantage points along the length of the "Ashburton Reach". ECan will oppose the establishment of a motorbike park at Ashton Beach and shall work with affected parties to find a more suitable location.

MA No.	Management Action	Frequency	Detail
A3	Implement a total vehicle and dog ban on the shingle barrier spit at the Ashburton River/Hakatere river mouth to protect roosting kawau tikitiki/spotted shags	Annual	ECan and Ashburton District Council will work together to implement a total year-round ban on the use of motorised vehicles and the walking of dogs on the spit. ECan and Ashburton District Council will also work together to investigate options for installing fencing, bollards or concrete blocks to close off vehicle access points onto the spit from both the Hakatere Huts and Ashton Beach, and that ECan will install educational signage describing the importance of the site for kawau tikitiki / spotted shags and providing clear guidance on the minimum distance that walkers should maintain between themselves and roosting shags, to prevent any accidental disturbance.
A4	Mammalian predator trapping at "Ashburton Reach" tarāpuka / black-billed gull colonies	Annual, as required	ECan will carry out mammalian predator trapping within a 2km radius of any tarāpuka / black-billed gull colonies that form anywhere on the "Ashburton Reach" of the Ashburton River/Hakatere. Mammalian predator control will be prioritised towards any colonies that form on the artificial raised gravel islands constructed as part of Management Action A4, as the productivity of these colonies are less likely to be adversely impacted by spring floods. Mammalian predator control will involve establishing a single trap line along each bank of the river, with alternating DOC150 and DOC250 traps placed at 100m spacings and an additional Timms trap deployed at every second DOC trap. Traps be baited with fresh rabbit meat and that traps be serviced fortnightly until all of the gull chicks have fledged.

MA No.	Management Action	Frequency	Detail
A5	Construction and maintenance of artificial raised gravel islands for nesting tarāpuka / black-billed gulls in the ”Ashburton Reach”	Annual, as required	ECan will construct and maintains at least two large, raised gravel islands in the “Ashburton Reach” of the Ashburton River/Hakatere, one in the vicinity of the preferred nesting area immediately downstream of the SH1 bridge, and another in the vicinity of the preferred nesting area at the Ashburton River/Hakatere river mouth. These islands be built up to a height of at least 1.5m above the active bed of the river to provide nesting gulls with a high level of protection against spring floods. During years in which the bed of the Ashburton River/Hakatere is relatively weed free, ECan will place decoy gulls and nest materials on these raised islands to maximise the chance that tarāpuka / black-billed gulls will choose to nest on them.
A6	Engage with Rangitata Diversion Race Management Ltd to explore opportunities to manage water releases into the Ashburton River/Hakatere	Annual, as required	ECan will engage in discussion with Rangitata Diversion Race Management Ltd (RDRML) to explore whether there are any opportunities for RDRML to manipulate the timing or quantity of water releases into the Ashburton River/Hakatere to increase the quantity of water flowing down the Ashburton River/Hakatere during times of extreme low flows, or to avoid further exacerbating the adverse impacts of spring flooding on nesting shorebirds.
A7	Community-led mammalian predator trapping (“Ashburton Reach” from Lake Hood to Wakanui School Road)	Annual	ECan will establish and supervise a community group recruited from the Lake Hood and Ashburton communities to service a network of traps installed on the river berm on either side of the Ashburton River/Hakatere from Lake Hood downstream to Wakanui School Road. ECan will fund the purchase and installation of traps and bait, and the training of volunteers. Traps will be serviced by members of the community group on an ongoing basis, with biennial audits and trap maintenance inspections being carried out by ECan. Mammalian predator control will involve establishing a single trap line along each bank of the river, with alternating DOC150 and DOC250 traps placed at 100m spacings and an additional Timms trap deployed at every second DOC trap. Traps be baited with fresh rabbit meat and traps be serviced fortnightly between August and February inclusive.

MA No.	Management Action	Frequency	Detail
A8	Community-led mammalian predator trapping ("Ashburton Reach" at Hakatere Huts and Ashton Beach)	Annual	ECan will continue to support the local community-led trapping efforts at both the Hakatere Huts and at Ashton Beach, by continuing to supply volunteers with traps, signs and baits. ECan will also work with the Hakatere Huts trapping volunteers to extend the Hakatere Huts trap network downstream to include the north-eastern portion of the Ashburton River/Hakatere river mouth north to the base of the shingle barrier spit, to protect a concentration of dotterels and oystercatchers nesting on the shingle beaches in the vicinity of the shingle spit.
A9	Mammalian predator trapping ("Ashburton Reach" from SH1 bridge to Lake Hood)	Annual	ECan will engage a contractor to carry out annual predator trapping on the Ashburton River/Hakatere between the SH1 bridge and Lake Hood, with this trapping network to be contiguous with that being serviced by the community group outlined in management action A5 above. Mammalian predator control will involve establishing a single trap line along each bank of the river, with alternating DOC150 and DOC250 traps placed at 100m spacings and an additional Timms trap deployed at every second DOC trap. Traps be baited with fresh rabbit meat and traps be serviced fortnightly between August and February inclusive.
A10	Woody weed control in "Ashburton Reach" (contingency fund)	As required	ECan will establish a contingency fund to enable the Council to fund woody weed control to prevent major weed infestations from re-establishing on the "Ashburton Reach" of the Ashburton River/Hakatere. This work is likely only going to be required if the interval between major flood events on the river extends to greater than 3-5 years.

MA No.	Management Action	Frequency	Detail
A11	Mammalian predator trapping in the "Hakatere Reach"	Annual	ECan will continue to implement mammalian predator trapping work in the "Hakatere Reach" of the Ashburton River/Hakatere, both to maintain the outcomes of the predator trapping work carried out to date, and to achieve further improvements in the health of local shorebird populations. ECan will carry out biannual audits of the trapping network to inspect whether the trap network is being maintained in good repair all year around. One of these audits will be carried out no less than one month prior to the beginning of the shorebird nesting season (mid-September) to allow time for any problems identified to be rectified before shorebirds begin nesting.
A12	Woody weed control in the "Hakatere Reach"	Annual	ECan and DOC will continue to work together to survey and control invasive woody weeds within this reach of the river, targeting species including broom, Russell lupin, grey willow, gorse, sweet briar, poppies and false tamarisk.
A13	Weed surveillance in the "Arrowsmith Reach"	Biennial	ECan will carry out biennial weed surveys to detect, map and control any new infestations of woody weeds that establish in the "Arrowsmith Reach" of the Ashburton River/Hakatere. ECan and DOC work together to design and install signage and/or posters in huts or at key access points to the "Arrowsmith Reach", encouraging hunters and trampers to report any weed infestations they encounter on the river to ECan.
B1	Karoro / black-backed gull control on the lower Ashburton River/Hakatere	As required	ECan will reduce the number of karoro / black-backed gulls nesting on the lower Ashburton River/Hakatere between the Valetta Bridge and the sea, by engaging suitably qualified and experienced contractors to undertake alphachloralose poisoning operations on active karoro / black-backed gull colonies.

MA No.	Management Action	Frequency	Detail
B2	Investigation into the feasibility and utility of applying for Ramsar status for the lower Ashburton River between the North/South Branch confluence and the Ashburton River/Hakatere river mouth	One-off project	ECan will carry out an investigation into the feasibility and utility of applying for Ramsar status for the lower Ashburton River/Hakatere between the North/South Branch confluence and the Ashburton River/Hakatere river mouth. This investigation will focus on consulting with the Department of Conservation and the other river stakeholders listed in the AHSMS to assess the willingness of these groups and organisations to support the application process. This investigation will also examine what implications the creation of a regional park will have for this Ramsar application.
B3	Investigation into the feasibility, utility and cost of creating a regional park and employing a dedicated river ranger for the lower Ashburton River between the North/South Branch confluence and the Ashburton River/Hakatere river mouth	One-off project	ECan will carry out an investigation into the feasibility, utility and cost of creating a regional park and employing a dedicated river ranger for the lower Ashburton River between the North/South Branch confluence and the Ashburton River/Hakatere river mouth. This investigation will also examine what implications a Ramsar designation would have for the management of a regional park.

Acknowledgements

This management strategy was initiated by Donna Field, Land Management & Biodiversity Advisor at Environment Canterbury. A big thank you to Donna for sourcing a large amount of the information summarising recent management and monitoring efforts on the Ashburton River/Hakatere, and for a number of useful discussions that informed this review. Thank you also to Andrew Crossland, Colin O'Donnell and Edith Smith for providing shorebird monitoring data and answering questions relating to this review. Andrew Crossland, Donna Field and Rebecca Lunt all provided useful comments and corrections on earlier drafts of this report.

References

Ashburton Zone Committee, 2015. *Annual report for the community 2015.* http://ecan.govt.nz/publications/Council/azc-annualreport-2016.pdf; accessed 19/08/2016.

Bell, M.D.; Harborne, P. 2018. C*anterbury Southern Black-backed Gull/ Karoro Strategy.* Unpublished Wildlife Management International Technical Report to Environment Canterbury.

Bell, M.; Harborne, P. 2019. The use of an Unmanned Aerial Vehicle to census large breeding colonies of black-billed gull (*Larus bulleri*) and white-fronted tern (*Sterna striata*) at the Ashburton River/Hakatere River mouth. *Notornis* 66: 95-97.

Crossland, A. 2019. *Ashburton Rivermouth bird monitoring report for year April 2018 – March 2019.* Client report prepared for Environment Canterbury, Ashburton.

Crossland, A. 2020. *Ashburton Rivermouth bird monitoring report for year April 2019 – March 2020.* Client report prepared for Environment Canterbury, Ashburton.

Crossland, A. 2021. *Ashburton Rivermouth bird monitoring report for year April 2020 – March 2021.* Client report prepared for Environment Canterbury, Ashburton.

Crossland, A. 2022. *Ashburton Rivermouth Hapua bird monitoring report for year April 2021 – March 2022.* Client report prepared for Environment Canterbury, Ashburton.

Crossland, A. 2023. *Ashburton Rivermouth Hapua bird monitoring report for year April 2022 – March 2023.* Client report prepared for Environment Canterbury, Ashburton.

Environment Canterbury, 2011. *Ashburton Zone Implementation Programme.* Publication No. R11/77, Environment Canterbury Regional Council, Christchurch, New Zealand.

Forest & Bird, 2016. *New Zealand Seabirds: Sites on land, rivers, estuaries, coastal lagoons and harbours.* The Royal Forest and Bird Protection Society of New Zealand, Wellington, New Zealand.

Keystone Ecology, 2017. Lower Ashburton Riverbird monitoring 2016/17 summary report. Client report prepared for Environment Canterbury, Ashburton.

McArthur, N. and Bell, M. 2016. *Ashburton River/Hakatere shorebird habitat management strategy.* Client report prepared for Environment Canterbury. Wildlife Management International Ltd, Blenheim.

McArthur, N. 2023. *Ashburton River/Hakatere Shorebird Habitat Management Strategy: A Review*. Client report prepared for Environment Canterbury. Wildlife Management International Ltd, Blenheim.

Mischler, C.P. and Bell, M.D. 2016. Canterbury black-billed gull (*Larus bulleri*) aerial survey 2015-16. Unpublished technical report prepared for Environment Canterbury Regional Council. Wildlife Management International Ltd, Blenheim, New Zealand.

O'Donnell, C.J.F. 1992. Birdlife of the Ashburton River, Canterbury, New Zealand. Canterbury Conservancy Technical Report Series 1, Department of Conservation, Christchurch, New Zealand.

O'Donnell, C.F.J.; Monks, J.M. 2020. Distribution, long term population trends and conservation status of banded dotterels (*Charadrius bicinctus bicinctus*) on braided rivers in New Zealand. *Notornis* 67: 733–753.

Ramsar Convention Secretariat, 2016. *An introduction to the Ramsar Convention on Wetlands, 7th Ed.* Ramsar Convention Secretariat, Gland, Switzerland.

Ramsar Convention Secretariat, 2021. *The List of Wetlands of International Importance.* Ramsar Convention Secretariat, Gland, Switzerland.

Robertson, H.A.; Baird, K.A.; Elliott, G.P.; Hitchmough, R.A.; McArthur, N.J.; Makan, T.D.; Miskelly, C.M.; O'Donnell, C.J.F.; Sagar, P.M.; Scofield, R.P.; Taylor, G.A. and Michel, P. 2021. *Conservation status of New Zealand birds, 2021.* New Zealand Threat Classification Series 36, Department of Conservation, Wellington.

Weller, D.; Kidd, L.; Lee, C.; Klose, S.; Jaensch, R. and Driessen, J. 2020. *Directory of Important Habitat for Migratory Shorebirds in Australia*. BirdLife Australia, Melbourne.

Appendix Two

The annual report to the Ashburton River/Hakatere Management Group is designed to have three functions, namely:

1. To provide Ashburton River/Hakatere Management Group members with a concise and complete picture of the management and monitoring work carried out on the Ashburton River/Hakatere over the previous 12 months and whether the AHSMS is on track to achieving its objectives.

2. To identify any ongoing and emerging issues that need to be discussed by members of the Ashburton River/Hakatere Management Group as a matter of priority during subsequent meetings.

3. Provide a permanent and concise record of the management and monitoring work completed on the Ashburton River/Hakatere each year, to assist with future efforts to assess whether or not AHSMS management objectives have been achieved, and to review and update the AHSMS when required.

To minimise the work required to compile this report; to enable the report to be compiled progressively throughout the year as the AHSMS's management and monitoring actions are completed; and to achieve the functions listed above, it is recommended that the following structure be adopted for the annual report:

Executive Summary

A one-page summary of the number of AHSMS management and monitoring actions carried out over the past 12 months, and any important ongoing or emerging issues that need to be addressed by members of the Ashburton River/Hakatere Management Group.

Introduction

A one-page introduction briefly outlining the purpose of both the AHSMS and the functions of this annual report. This introduction only needs to be written once, and then copied into subsequent annual reports.

1. Management actions completed

A table listing each of the 16 AHSMS management actions listed in this report; itemising which of these management actions have been implemented over the past 12 months; providing hyperlinks to more detailed reporting copied into the appendix and summarising any ongoing or emerging issues

associated with each management action that require further discussion by the Ashburton River/Hakatere Management Group.

It is envisaged that Table 4.3 in this report can be used to populate the first four columns of this annual report table, with two additional columns detailing actions that have been implemented and any issues arising, e.g.:

MA No.	Management Action	Frequency	Detail	Implemented?	Issues arising
A4	Construction and maintenance of artificial raised gravel islands for nesting tarāpuka / black-billed gulls in the ”Ashburton Reach”	Annual, as required	ECan will construct and maintains at least two large, raised gravel islands in the “Ashburton Reach” of the Ashburton River/Hakatere, one in the vicinity of the preferred nesting area immediately downstream of the SH1 bridge, and another in the vicinity of the preferred nesting area at the Ashburton River/Hakatere river mouth.	Yes (See Appendix One for photos and brief report of island construction; See Appendix Three for tarāpuka / black-billed gull colony monitoring report)	One of two constructed islands not used for nesting; recommend the management group considers trialing the use of decoys and artificial nests to attract gulls

This table, and the Appendices to the annual report can be gradually populated throughout the 12 months leading up to the annual Ashburton River/Hakatere Management Group meeting, as various monitoring reports, trapping reports and other correspondence detailing the management of the Ashburton River/Hakatere are received.

2. Monitoring actions completed

A table listing each of the three AHSMS monitoring actions listed in this report; itemising which of these monitoring actions have been implemented over the past 12 months; providing hyperlinks to more detailed reporting copied into the appendix and summarising any ongoing or emerging issues associated with each monitoring action that require further discussion by the Ashburton River/Hakatere Management Group.
It is envisaged that Table 4.2 in this report can be used to populate the first four columns of this annual report table, with two additional columns detailing actions that have been implemented and any issues arising, e.g.:

PMA No.	Performance Monitoring Action	Frequency	Detail	Implemented?	Issues arising
M1	"Ashburton Reach" tarāpuka / black-billed gull colony monitoring	Annual	Weekly checks of artificial raised gravel islands constructed in the "Ashburton Reach" of the river shall be carried out each year between October and January inclusive, and the number of adult gulls, active nests and fledglings present on each island shall be recorded. Numbers of adult gulls and active nests present within breeding colonies situated elsewhere within the "Ashburton Reach" shall also be recorded, as and when these colonies form. ECan will develop a detailed, standard monitoring protocol for fieldworkers to follow, to maximise the quality and consistency of the data being collected.	Partially (See Appendix Three for tarāpuka / black-billed gull colony monitoring report)	Some weekly checks weren't conducted due to inaccessibility of artificial islands during spring floods and due to a shortage of volunteer labour. Gulls didn't nest on one of two artificial islands this year.

This table, and the Appendices to the annual report can be gradually populated throughout the 12 months leading up to the annual Ashburton River/Hakatere Management Group meeting, as various monitoring reports, trapping reports and other correspondence detailing the management of the Ashburton River/Hakatere are received.

3. Issues for discussion

A bullet-point list containing each of the ongoing or emerging issues listed in the tables of the preceding two sections of the report, with some more detailed explanation/background to each of these issues, and options to address each issue (if known). Consideration should be given to listing these issues in priority order with the most urgent/severe issues listed first.

Appendices

The appendices to this report will contain verbatim copies of monitoring reports, trapping summaries and other correspondence describing the management and monitoring actions carried out and monitoring results. This material can be pasted into the appendices of this annual report as they are received throughout the 12 months prior to the annual Ashburton River/Hakatere Management Group Meeting.

8. Report from the Council Ecologist/Biodiversity Advisor

Christian Chukwuka, CEnvP, Ecologist/Biodiversity Advisor

Recommendation

That the Biodiversity Advisory Group receives the report from the Ecologist/Biodiversity Advisor.

Summary

- The purpose of this report is to provide the Biodiversity Advisory Group with an update on projects carried out by the Biodiversity Advisor since the last meeting held in May 2024.
- The report brings about the opportunity for members to ask questions and seek clarification on any items mentioned.

Report

1. Biodiversity Strategy Implementation

Council staff have met with few stakeholders to discuss some aspect of the strategy implementation where they have inputs. Actions for ADBAG to lead will be discussed today.

We will be providing updates twice a year to ADBAG on progress of the implementation.

2. Plantation Road investigation

We have consulted with the neighbouring landowners. Staff are currently preparing a report for the elected members.

The road is used by both landowners to move stock to another paddock, which will be difficult if the road is closed. Due to that, we agreed with the landowners that the road would remain open as an unformed legal road.

The landowners suggested that the Council should extend the fenceline forward up to 6 metres from the shelterbelt to merge all the native vegetation into one single-fenced area. The fenced area will also be elevated and included in the Council layer of ASCV in the District layer. However, recognising the site as an ASCV does not affect an existing activity, sheep grazing, cattle movement, irrigation, farming and adjoining shelterbelt. Adverse effects from these activities will be managed voluntarily with the landowners.

3. Community/External Engagement

a. MPI/MCCC Community Workshop held at Staveley Hall on 20 June 2024– Council staff attended and spoke briefly at the community water forum held for the farmers Catchment Group at the Staveley, organised by the Ministry for Primary Industries staff. The main focus of the workshop was native plantings and their ecological benefits. Colin Meurk was recommended by the Council Ecologist/ Biodiversity Advisor to speak on monitoring of native plants, ecosystem services, and plant design for riparian. Over 50 participants attended the event.

b. Canterbury Biodiversity Champions meeting

The Council Ecologist/Biodiversity Advisor attended the last Canterbury Biodiversity Champions meeting with Cr Richard Wilson. The discussion was around each Council LTP action on biodiversity, biodiversity stocktakes draft report, and Canterbury Biodiversity Strategy process updates. As outlined at the meeting, the Council Ecologist/Biodiversity Advisor will make a presentation on the ADC Biodiversity Strategy at the next Canterbury Biochampions meeting in September. A copy of the Regional Stock take is attached for your perusal. It compared the current day with the last stock take in 2021. ***Pages 71-86***

c. Methven Birdsong Initiative

Council staff are continuing to work with the Methven Birdsong Initiative Group to get their idea underway. The group has been loaned four A220 traps and four A22 for trapping on Council land – walkway and cemetery. Health and Safety sign-off is underway and conversation is ongoing for native planting at the back of the Garden of Harmony. Discussion is continuing with the Methven Community Board, Council Property team, and leaseholders/stakeholders to develop a landscape management plan as a first step, to capture all strategic views for the site.

4. Completed and Ongoing Projects (Planting and Pest Management)

a) ***Rakaia Gorge Biodiversity Planting***

Stage two planting of the Rakaia Gorge biodiversity planting site was completed. We planted new areas and in-fill planting of 2023 plantings using over 700 eco-sourced native plants.

b) ***Pest Control at Awa Awa Rata Reserve***

We completed the pest animal control programme for the winter season at Awa Awa Rata Reserve and the surrounding forest. We dispatched over 80 pest animals, including possums, deer, hares and feral cats. The bush had grown back a lot since the beginning of the pest control programme a year ago. The next phase of the pest control will be in late spring 2024.

c) ***Rakaia Gorge Control***

Weed control at Rakaia Gorge Campground and surrounding native areas and ASCV sites. We are coordinating with landowners and leaseholders for wider weed control around the campground and ASCV sites. Russel lupins, old man beards, and wild cotoneasters are among new weeds identified that have not existed around this area in the past.

Canterbury Regional Biodiversity Stocktake 2023 Update

Contents

Background

A stocktake of local government biodiversity actions, priorities and opportunities was initially completed in October 2021.

To support the Canterbury Biodiversity Champions, Environment Canterbury staff engaged with biodiversity staff across the region to compile a region-wide understanding of the context and delivery of biodiversity management across all local government agencies in Canterbury. Information from this stocktake was presented to both the Canterbury Biodiversity Champions (a group of councillors endorsed by the Mayoral Forum, representing city, district and regional council across Canterbury) and the Mayoral Forum[1].

There is a wide range in population across the councils in Canterbury, ranging from approximately 4,000 to 400,000 resident populations. Biodiversity issues, land environments and uses vary significantly across the region.

In 2021, the stocktake identified that all councils are undertaking some biodiversity actions, often in collaboration with their communities. However, all councils also perceived challenges in aligned strategic direction, landowner engagement, supporting community groups, engaging with Papatipu Rūnanga, implementing comprehensive monitoring programmes (where is it, how is it and if we've taken any action, is it working?) and regulatory actions (notably undertaking compliance actions in response to biodiversity loss).

Update overview

In 2023, following the local government elections, Councillors from across Waitaha were again nominated to represent their councils as Biodiversity Champions. At their first meeting, they requested updated information on the state of indigenous biodiversity management across the region. Building on the previous process, gathering information for this report was streamlined with a focus on updating existing information.

This report updates the 2021 Stocktake information a d compares the stocktake information from 2021 and late 2023. The situational analysis section provides commentary on how councils are fulfilling their biodiversity responsibilities. The situational analysis information is further condensed into six main themes to generally describe the current delivery of biodiversity outcomes in Canterbury. Regional, shared priorities and opportunities have been identified as well as highlighting specific opportunities that could be undertaken by the Canterbury Biodiversity Champions group. Key statistics have been compiled to enable quick reporting on the changes to date.

The information is intended to be used for a range of purposes; supporting the strategic direction for biodiversity work across Waitaha, providing a foundational understanding of local government actions and priorities to support the revitalisation of the Canterbury

[1] See from page 35 or 290 printed on the document: https://www.canterburymayors.org.nz/wp-content/uploads/Board-Pack-for-Canterbury-Mayoral-Forum-Canterbury-Mayoral-Forum-19-Nov-2021-v8-1.pdf

Biodiversity Strategy as well as aiding the advocacy work of the Canterbury Biodiversity Champions.

Methodology

The information which informed the Stocktake Report in 2021 was collected via in-person interviews with council staff. The update to the report was less direct, with staff responding to survey questions via email in October 2023. There were additional questions included in the 2023 survey specific to implementation of the National Policy Statement for Indigenous Biodiversity (NPSIB)[2]. The survey was also conducted prior to the 2023 Coalition Government's proposed resource management reforms, which would pause mandatory implementation of new Significant Natural Areas and review broader implementation under the NPSIB.

Nine out of the ten Canterbury Councils responded via email to the survey. One council provided an overview of their current work programme and biodiversity focus via an online meeting. For this reason, the information is still relevant but not directly comparable for all questions.

The responses are described by 'council', however, it is important to note that this relates to the staff feedback and perceptions, rather than position of the council as a whole.

Summary of findings 2023

A wide array of organisations have responsibilities or interest in biodiversity management and achieving strategic and well-aligned approaches to protect and maintain the region's biodiversity is challenging.

While there are significant contextual differences for councils, with ratepayer bases and geographic area varying significantly, there are common themes which apply across all councils in the delivery of biodiversity management.

Since 2021, nearly all councils increased their biodiversity actions in some way (either via funding, staffing, work delivery, or have signalled future scoping work), with only one council noting an overall decrease in resourcing.

One shift which was indicated across councils was the intention to commence financial or programme planning to support the required implementation of the NPSIB. Two councils indicated there was no intention to undertake any scoping or programming to meet requirements of the NPSIB.

There has been an increase in the appetite for strategic management of biodiversity. Three councils have initiated or completed community-based consultation on district-wide Biodiversity Strategies. These strategies establish biodiversity leadership within districts, and each notes alignment with a variety of strategic regional and national biodiversity planning documents.

Councils identified an opportunity to strengthen and further develop the degree to which local government across Canterbury is aligned, between councils and with other agencies

[2] The National Policy Statement for Indigenous Biodiversity was gazetted June 2023.

and organisations. This included aligning priorities and communications, in addition to establishing shared technical resources.

Many of the same challenges councils identified in 2021 continued to persist in 2023. A wide range of challenges were raised by councils, however, the most widely felt challenge was the availability of funding, both council and private, for biodiversity management.

2023 Stocktake at a Glance

KEY UPDATES ON 2021 INFORMATION

TRENDING UP

- Strategic & connected approach to biodiversity management
- Preparation for NPSIB implementation
- Non-regulatory support to incentivise biodiversity action

NEW

- Regional Biodiversity monitoring framework progress
- Preparation to engage on the CBS
- Biodiversity Staff Hui
- Community mis-information spreading

NO CHANGE

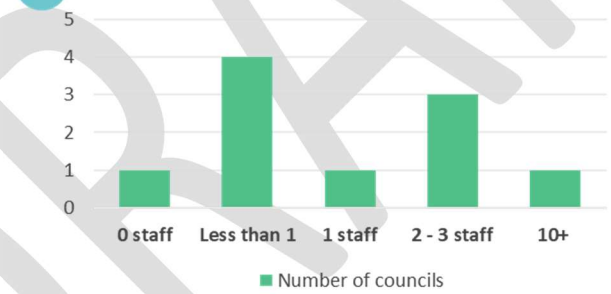
- Continued biodiversity loss
- Limited, inconsistent use & resource for regulatory tools
- Insufficient funding and resource
- Lack of good quality biodiversity information

District Biodiversity Strategies

4 Councils have **existing** strategic direction documents for Biodiversity management

3 Councils are currently progressing **new** biodiversity strategies / natural environment plans

Full Time Employees



Council implemented tools

- Council programme implementation
- Biodiversity outcome focused projects
- Contestable funding
- Biodiversity as part of other projects
- Biodiversity as part of infrastructure maintenance

4 gather external funding

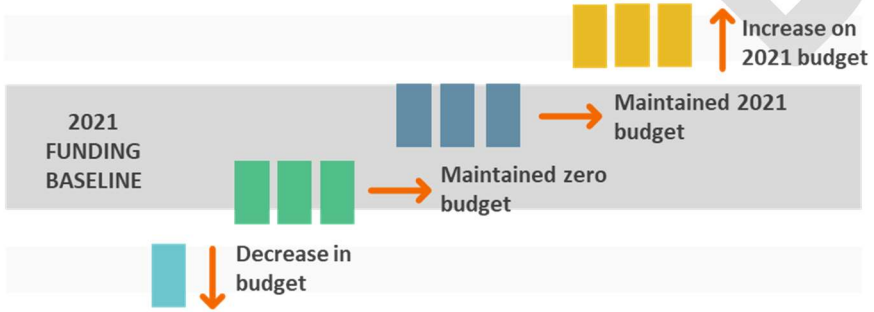
7 have contestable funds

6 fund biodiversity projects

6 fund BAU biodiversity programmes

4 (at least) offer rates rebates

Council Changes in Biodiversity Funding



- Rating funds (not incl. external funding)
- Amounts are imprecise due to multi-outcome projects

Situational Analysis

No consistent strategic approach (within or amongst councils)

- 2021 summary: While councils give effect to the Canterbury Regional Policy Statement to differing degrees, biodiversity actions within council are heavily influenced by competing council priorities and the availability of budget and resource. There is a lack of cohesion and coordination, both within councils, but also across councils and other agencies.

- 2023 update:
  - Four Councils have an existing biodiversity/natural environment strategy, action plans or specific biodiversity policy and three councils are progressing new biodiversity/natural environment strategies.
  - A region-wide council biodiversity staff forum has been established and meets on a quarterly basis.
  - Two councils have noted an increase in the collaborative approach they are taking with other councils, agencies or stakeholders.
  - Environment Canterbury has initiated steps to revitalise the Canterbury Biodiversity Strategy.

Lack of information (to inform management)

- 2021 summary: Canterbury as a region is still a long way from understanding where all high value biodiversity is located and the specific pressures to these and the actions necessary to maintain them.

- 2023 update:
  - No substantial changes on the identification of significant natural areas, however, most councils commented on the commencement of planning and work to secure resource or funding to support future identification programmes on the timeline indicated in the NPSIB.
  - Specifically, council staff are signalling the need to resource SNA identification through their Long Term Plans (LTPs).
  - One council specifically noted the lack of baseline information to inform and prioritise biodiversity action.
  - At a regional scale, science work is underway to support the Regional Policy Statement Review. This information will improve regional information on the state of indigenous biodiversity.

No comprehensive biodiversity monitoring

- 2021 summary: There is some project-specific or ad-hoc terrestrial monitoring undertaken at district level. Environment Canterbury primarily monitors freshwater ecosystems, but the current programme is not exhaustive and does not collect all the information needed.

- 2023 update:
    - Two councils have signalled that proactive monitoring programmes are either in place or being considered.
    - Environment canterbury has made progress in scoping the development of a regional monitoring framework. The outcomes will be reported into the Mayoral Forum. Councils have noted interest in collaborating on approaches for regional monitoring.

Regulatory mechanisms insufficient

- 2021 summary: All territorial authorities have some rules in their district plan for biodiversity, however, it was identified in 2021 that these do not offer a high level of protection. Compliance, monitoring and enforcement is undertaken in an ad-hoc or reactionary way, if at all. Most councils have considerable work to identify and survey all Significant Natural Areas (SNAs), but some included additional budget and resource in their 2021-2031 LTPs.

- 2023 update:
    - Four councils have notified District Plans since the last stocktake. One council reported that the new rules provide for better protection of indigenous biodiversity.
    - One council has proposed regulatory incentives, in the form of on-site development right incentives, via a resource consent, in exchange for the protection and restoration of a mapped SNA.
    - Most councils continue to note that compliance, monitoring and enforcement is a challenge to resource or undertake in a proactive way. However, one council noted that, at the time of the survey, they were undertaking prosecution for vegetation clearance.
    - Environment Canterbury has initiated a full review of the regional planning framework and undertaken preliminary engagement. The Regional Policy Statement includes direction to the management of indigenous biodiversity and there will be ongoing opportunities for consultation and feedback.

Range of non-regulatory mechanisms inadequate to prevent decline

- 2021 summary: There are good examples of biodiversity work underway, but it was not considered sufficient to bring about meaningful change on a regional scale. Presently, some smaller councils have no biodiversity specific resource at all, and do not deploy any non-regulatory measures as part of their biodiversity work.

- 2023 update:
    - Non-regulatory biodiversity incentives, including SNA and covenant rates relief have been considered by some councils.
    - Three councils noted increases in external funding to support biodiversity outcomes, while another two noted general increases in funding available to support biodiversity projects or landowner assistance.

- Two councils noted new educational programmes within their regions, and four councils commented on an increase in advocacy or provision of community support.
- One council noted a reduction in external contestable funding supporting biodiversity outcomes.
- Four councils described biodiversity projects being delivered on Council land, or on other sites in collaboration with others.
- Environment Canterbury maintained its biodiversity specific funding and increased contestable funding.

Biodiversity undervalued relative to other Council priorities

- 2021 summary: Council support for biodiversity management can be variable depending on the issue and timing.

- 2023 update:
  - One council has reported a decrease in council prioritisation for biodiversity implementation.
  - One council noted councillor perceptions that biodiversity is a 'nice to do'.
  - Another council outlined council preference to take a voluntary approach to listing SNAs.
  - While not necessarily impacting council priorities, it was noted that some in the community hold strong views and are vocal in sharing their distrust of councils in the mapping of SNAs.

(Note: SNA implementation has been identified as an area by the Coalition Government to be paused pending review. This has resulted in some questioning and uncertainty regarding the implementation or increased funding for biodiversity programmes.)

Insufficient resource and budget allocated

- 2021 summary: Finding sufficient budget to fund biodiversity work can be a challenge, even for larger councils. Where resource and budget is insufficient, council activities are limited to regulatory methods.

- 2023 update:
  - Most councils noted insufficient funding to achieve intended biodiversity outcomes, either at council level or support for landowners to maintain SNAs.
  - One council has faced significant decreases in both FTE and financial resources to deliver biodiversity protection.
  - Many councils noted the high costs landowners face to maintain and protect biodiversity (particularly where the best form of protection involves fencing).
  - One council noted that while annual funding has been maintained, it has not kept in line with inflation levels.
  - The cost and availability of external technical expertise was noted by three councils.
  - One council noted that DOC has a very large estate with limited funding to manage it adequately, including the managing weeds which threaten biodiversity. The same council also noted a misalignment of agency processes and priorities.

- Compliance and enforcement was noted by one council as being time consuming and costly, while another noted that progressing resource consent compliance relating to ecological values required external expertise.

Opportunities

- 2021 summary: There was interest in developing a holistic approach to biodiversity management across the region, both within and across councils. Increased regional leadership, including coordination, funding and technical support for NPSIB implementation were highlighted as potential opportunities. Opportunities included expanding and upscaling biodiversity delivery through partnerships (councils, other agencies, groups and supporting more community and Rūnanga-led projects).

- 2023 update:
  - Increased resource or funding was commonly identified as an opportunity for councils to better deliver their role in biodiversity management. This included funding for more in-house ecologists, as well as being able to develop incentives to landowners, enable strategic land purchase, and undertake pest management in key areas.
  - Opportunities exist to continue to development alignment and partnership across agencies (Department of Conservation (DOC) and Land Information New Zealand (LINZ)), local government, both across and within councils and. One council noted that value in establishing formal Alignment Programme for spatial across district councils, Environment Canterbury, DOC and LINZ has ensured that the relationships are well maintained and provides consistency of approach.
  - Shared technical resources across local government as well as greater support for mapping and identification of SNAs was of interest to a number of councils.
  - Councils noted the benefit of clear national and regional leadership to direct biodiversity effort and to clarify roles and responsibilities. One Council suggested an opportunity for pursuing a higher adjudication role for decision-making on mapping and ensuring local and regional consistency.
  - One council directly noted the opportunity through the Canterbury Biodiversity Strategy to identify and align key tasks and resources for implementation as a district scale. A number of the points raised as opportunities would be key actions to be considered as part of the review and may sit well in an implementation plan to support the delivery of the strategy.

Challenges

- 2021 summary: A range of challenges were raised by councils with several key themes emerging. The most significant concern related to the lack of the capacity to undertake biodiversity work as a result of insufficient budget and resources. This encompassed both available staff time as well as internal staff technical expertise.

  Political support was highlighted as an issue. Several councils said that gaining council support for biodiversity management can be a challenge, and even where councils are

generally supportive, this can depend on the issue and timing. Landowner trust and access to private land was highlighted as a challenge.

Poor coordination and cohesion between stakeholders and a lack of clarity in roles and responsibilities across the system was another commonly raised theme.

The ability to take proactive action under regulatory frameworks to provide for good biodiversity outcomes was cited as a concern. For example, the likely future changes to farming.

- 2023 update:
  - Adequate funding to enable council delivery was commonly raised, with seven councils highlighting this as a challenge.
  - Four councils commented on the challenge of mis-aligned priorities or coordination gaps for biodiversity management. This spanned a range of circumstances, including within Council, as well as external stakeholders. This applied to the approach for SNA identification, to focus areas for work programmes, as well as the broader perspective of prioritising biodiversity protection vs development.
  - Councils also viewed community trust and engagement as a challenge, experiencing landowner opposition to SNA identification, restricted access to private land and the spread of misinformation.
  - Three councils faced challenges due to uncertainties caused by the changing legislation.
  - Land-use pressures posed another challenge for councils with pressure for housing development, carbon farming and increasing area for irrigated pasture grazing being hot topics.

Main themes highlighted by situational analysis

- There is a lack of good quality information to inform biodiversity work.
- The range of non-regulatory initiatives deployed by TAs is inadequate to prevent biodiversity decline.
- There is limited comprehensive biodiversity monitoring undertaken across the region.
- There is insufficient resource and budget available to protect and manage biodiversity.
- Regulatory mechanisms are inconsistently applied and are insufficient to do the job.
- There is significant interest and momentum within local government to work collaboratively at an officer level. Resources could be utilised to support this.

Recommended priorities and opportunities for a regional approach

Review of the Canterbury Biodiversity Strategy

The review of the Canterbury Biodiversity Strategy is underway. There are requirements in the National Policy Statement for Indigenous Biodiversity for regional councils to develop strategies in collaboration with territorial authorities, tangata whenua, communities and other identified stakeholders. This work has been funded by Environment Canterbury and opportunities are provided for co-development with Papatipu Rūnanga and significant collaboration territorial authorities and other stakeholders. The review is positioned as a 'revitalisation' and seeks to support the direction and principles set within the existing strategy, feedback has identified that signatories find that much of the current strategy remains fit for purpose and provides good regional direction.

The CBS establishes an overarching roadmap that identifies biodiversity priorities and responsibilities across Canterbury. It provides a pathway to significantly upscale biodiversity management across the region. The NPSIB contains mandatory direction for the development of regional biodiversity strategies. While the review of the CBS had been signalled as a priority as part of Environment Canterbury's 2021 Long Term Plan, establishment of a governance arrangements and working groups for the review had been deferred awaiting the final version of the NPSIB.

Key aspects to address through the review process include:

- shared priorities that are agreed across local government, and which inform/guide local work programmes. How these shared priorities are approached by TAs may vary to suit local needs.
- governance and implementation models, both during review and subsequent implementation of the strategy.
- developing a strong implementation plan that cascades through to all local government and relevant stakeholders.
- influencing national developments, e.g. input into ANZBS implementation planning, development of a national monitoring framework, etc, to provide a Canterbury context.

Recommended Biodiversity Champion role: support and input into the review process and implementation of future Strategy actions.

Improved regional data, monitoring and reporting

Both regional and district monitoring required to support a regional approach.

Baseline data, monitoring and reporting will be the keystone of future decision-making and implementation planning, and telling the story of the progress that is made.

Environment Canterbury has commenced scoping a regional monitoring programme. The scoping work is in the final year of the of a three-year work programme. The scope of the work programme is aligned to the NPSIB requirements for a regional monitoring plan. Following the completion of the scoping package, recommendations on delivery of a biodiversity monitoring plan will be provided to Environment Canterbury Council.

Recommended Biodiversity Champion role: Inform and advocate at each council – encourage and support consistent regional monitoring and reporting approaches.

Canterbury Biodiversity Champions Advocacy and Support

A key focus for the Biodiversity Champions Group is to promote, advocate for and support biodiversity management within each member's home council. This includes raising awareness and initiating biodiversity progress, issues and opportunities at council forums, and advocating for the work staff are going to address biodiversity management. They also have an important role in building relationships with Ngā Papatipu Rūnanga, local landowners and community, businesses and industry to promote the value of biodiversity management and achieve outcomes for indigenous biodiversity.

Recommended Biodiversity Champion role: Work collectively to identify shared opportunities and challenges. Advocate for biodiversity at each council.

Council Biodiversity Officers Hui

Biodiversity staff across the councils have been meeting since mid-2022 to share knowledge and advice on implementation and technical issues relating to supporting indigenous biodiversity protection and programmes within their districts. This forum provides opportunities to create shared implementation responses and communications as well as aligning district operational priorities. The hui also provides a single point of contact for Environment Canterbury at the officer level across the region.

Recommended Biodiversity Champion role: Provide governance support for staff participation in biodiversity hui. Advocate for opportunities arising from staff hui sessions – alignment, efficiency, shared approaches and resources.

Aligned implementation of the National Policy Statement for Indigenous Biodiversity

Councils were asked an additional set of questions relating to the specific implementation of the NPSIB. These questions were not included in the original stocktake. The overall

response from council staff was a high degree of support to work more closely with staff from the other Canterbury councils to provide consistency in implementation programmes and the messaging and communications supporting NPSIB work programmes. There was also interest in working with Environment Canterbury to assist with an initial region-wide analysis to support SNA identification work.

Recommended Biodiversity Champion role: Support clear and correct messaging for the community to understand the biodiversity challenges and opportunities.

Key statistics

Full time equivalent staff resource

Noting that some councils have listed monitoring and compliance and planning staff resource, these resources, especially in the smaller councils are unlikely to be dedicated full time to biodiversity work. While this resourcing may contribute to varying degrees of biodiversity delivery, for reporting purposes, this has not been included as there is not a high enough threshold of certainty and comparability across councils. This may be better understood as council staff resource available to support biodiversity management.

- One council has no dedicated biodiversity staff resource.
- Four councils have less than 1 dedicated resource.
- One council has 1 dedicated resource.
- Three councils have 2 – 3 dedicated resources.
- Environment Canterbury exceed 10 dedicated biodiversity staff resource.

Annual biodiversity funding

Similar to identifying actual dedicated staff resource, determining exact biodiversity funding can be difficult to confirm, especially where actions are delivered by multiple sections of council or for projects or work that may have a secondary benefit to biodiversity but is undertaken primarily for another purpose (for example water quality).

- One council has had significant reductions in funding.
- Three councils continue to have no dedicated budget for biodiversity.
- Two councils have maintained previous budgets with no change to quantum amounts.
- Three councils have had increases in biodiversity budgets.
- Four councils have signalled that greater funding will be proposed or discussed as part of long-term plan consultations.

Biodiversity Strategy Development

- Four Councils have an existing biodiversity/natural environment strategy, action plans or specific biodiversity policy.
- Three councils are currently progressing new biodiversity/natural environment strategies.

NPSIB Implementation Programmes

Engaging with Papatipu Rūnanga

Most councils noted that they are in the process of developing or strengthening relationships with Rūnanga in their districts. Over half of the councils noted that regional support would be welcomed to engage with Ngā Papatipu Rūnanga to determine the extent they wish to be involved in identifying acknowledged taonga to be identified in district plans.

In-house technical resource

There is a mix of in-house capacity across the councils to implement and action the effects management requirements for indigenous biodiversity, especially outside of SNAs. Some councils noted that review consent applications are reviewed by both consent planners and biodiversity staff, while some noted there was no capacity and one council noted that external specialists are engaged to undertake this work.

Region-wide desktop SNA analysis

Councils were asked if a region-wide desktop analysis would aid NPSIB implementation and provide a starting point to undertake further community communication and on-the-ground verification. Staff from eight councils responded this would be a valuable resource and assist with council biodiversity work programming. One council has already undertaken comprehensive SNA identification for their region, and they noted that the usefulness of this would depend on the output of the regional analysis and whether it would provide additional value to their existing reports.

Other tools to support NPSIB Implementation

Staff outlined several wider supports that would aid in the implementation of the NPSIB. Some of these included more information sharing, training across the region, one council sought stronger external direction to set biodiversity priorities. Tools and funding to identify, verify and monitor SNAs were noted. Increasing regional consistency and enable aligned implementation of the NPSIB was outlined as a key support. One council noted that a funded regional biodiversity forum would greatly assist with NPSIB outcome delivery.

Opportunities for collaboration

Staff also outlined a strong desire to work closely together across the region to meet more frequently to share information and develop consistent communications. One council noted the potential value in holding a workshop with ecologists and consultants to develop a consistent SNA interpretation. Also noted was the opportunity to establish roles and actions through the Canterbury Biodiversity Framework. One council noted a limitation in capacity to engage more frequently.

Regional biodiversity monitoring protocols

Councils were asked about the extent they wished to be involved in developing a regionally consistent biodiversity monitoring protocol and or guidance. Noting, that individual council data and information could feed into the regional monitoring framework which is currently in the scoping stage. There was a high level of interest from council staff wishing to be involved in this work, with two councils noting limitations in terms of in-house expertise and the time resource to be able participate.

9. Group Activity Updates

9.1 Forest & Bird

- 40 years of Winter bird surveys on the Ashburton Lakes.
- Discussion on the function and future of Ashburton Biodiversity Advisory Group.

9.2 Mt Somers Walkway Society & Lake Heron Conservation–

Things have been fairly quiet over the last couple of months; however the animals have been caught when the traps have been cleared. The odd cat, stoat, ferret and rat has fallen victim to our 200 odd traps, including a pure white stoat.

We are struggling to get enough volunteers at the moment, always some away, and some recovering from health issues.

It is pleasing to get sponsorship from the ADC and DOC for some updated traps; these will make it easier and will increase the kill rates, many thanks. We look forward to the Spring when it's warmer and the catch rates increase.

9.3 Methven Birdsong Initiative

The aim of our Group is to bring back native birdsong to Methven and its surrounds

We will do this by trapping pests, starting with the Methven walkway (14 km track around Methven), building up a trap library to start residents trapping in private houses, planning to create a native sanctuary as an extension to the Garden of Harmony in central Methven.

We are also planning to establish native corridors from the foothills to Methven to encourage native bird movement into town, and we're working with school students to link into biodiversity objectives in the school curriculum.

9.4 Upper Rangitata Gorge Landcare Group

The Upper Rangitata Gorge Landcare Group (Inc) was formed in 1990 by farmers in the Upper Rangitata and was incorporated in 2012.

The Upper Rangitata community wanted to restrict the broom and gorse that was quickly taking over in the riverbed. They had tried previously to control these weeds with little money or help outside of the community. In 1990 the farmers invited all the Government agencies and local agencies to a meeting seeking commitment from all parties to a coordinated approach to the control of invasive weeds and pests in the riverbed.

LINZ eventually committed to providing annual funding on the condition that the Landcare Group, Government agencies and local government also all annually contribute financially. This was agreed to, and it was the start of the Landcare Group and Government agencies and local government working together on predominantly weed and pest control in the Upper Rangitata riverbed and its tributaries. Years later, Fish and Game also committed annual funding into Deep Creek. This collaboration ensures that the management of the Upper Rangitata Riverbed both protects and enhances the habitat for native flora and fauna in this iconic braided river system.

Annually, Landcare Group members commit financially, along with hundreds of volunteer hours both in meetings, planning and with community spray days held out in the riverbed.

Covering an area of 19,500 ha, it has been a long battle, and will continue to be so, but the relatively clean looking riverbed is something for us all to be immensely proud of.

The Upper Rangitata is a world-renowned braided river system providing relatively weed free glacier catchments in almost pristine condition. It is the hope of the Landcare Group members that the ongoing weed and pest control work will help to retain in perpetuity the awesome vista of the magnificent mountains and clear braided river, for all to enjoy.

9.5 Kānuka Mid Canterbury Regeneration Trust

An update on the Trust's projects and future endeavours will be provided at the meeting.

Biodiversity Advisory Group

Terms of Reference

Purpose and Scope

The purpose of the advisory group is to:

- Facilitate the implementation of the Ashburton District Biodiversity Action Plan
- Maintain partnerships between local and regional organisations with an interest in the management of indigenous biodiversity
- Provide a forum for discussion and community-wide promotion of biodiversity
- Be a conduit for the Council relationship building with the landowner and general public where appropriately
- Provide advice to Council on biodiversity related matters e.g. ADC Natural and Built Environments grant applications

Membership

Representatives on the working group were invited based on their organisation's participation in developing the Canterbury Regional Biodiversity Strategy, and/or their ability to contribute to the implementation of the Ashburton District Biodiversity Action Plan.

Ashburton District Council	Mayor, Neil Brown (ex officio) Cr Leen Braam (Chair) Cr Lynette Lovett Cr Richard Wilson Neil McCann (GM Infrastructure & Open Spaces) Ian Soper (Open Spaces Manager) Dr Christian Chukwuka (Ecologist/Biodiversity Advisor)
Mid Canterbury Catchment Collective	Angela Cushnie, Janine Holland, Willy Leferink
QEII Trust	Alice Shanks
Environment Canterbury	Donna Field, Henry Winchester
Ashburton Water Zone Committee	Adi Avnit
Forest & Bird	Edith Smith, Val Clemens, Mary Ralston
Foothills Landcare Group	Gen de Spa
Ashburton Community Conservation Trust	Edith Smith, Val Clemens
Federated Farmers	Mike Salvesen
Awa Awa Rata Reserve	Mary Ralston
Department of Conservation	Ian Fraser, Brad Edwards
Fish & Game	Nikki Dellaway
Fonterra	Lisa Peers-Adams
Synlait	Nick Vernon
Kanuka Trust	Kim Wall
Mt Somers Walkway Society & Lake Heron Conservation Society	Barry Austin
Methven Birdsong Initiative	Barry Maister (New)
Upper Rangitata Gorge Landcare Group	Sally Stevens (New)

Speaking rights will be granted to one member of each of the advisory group member organisations at each meeting.

Membership of the group may be amended to include representatives from other organisations. This will be at the discretion of the Ashburton District Council.

To form a quorum, the attendance of representatives from at least 6 of the advisory group member organisations, in addition to at least two ADC local representatives, is required.

Representatives from other organisations may be invited to attend advisory group meetings as the need arises.

Members may send alternates in their place or nominate another person from their organisation if they are unable to attend a meeting.

Names and organisations above may change over time as requested by the members without going through formal term of reference review.

Meeting Frequency

Meet four times a year, with the option for one additional meeting if required.

Delegations

The representatives on the working group are expected to:

- Meet to facilitate the implementation of the Ashburton District Biodiversity Action Plan
- Form project groups where appropriate to work towards specific actions in the Biodiversity Action Plan
- Share information, both on organisational initiatives and collaborative initiatives, to support better decisions and knowledge of biodiversity
- Communicate and consult with one another in a flexible and open way
- Maintain confidentiality where appropriate
- Represent their organisations' policies
- Respect other organisations' governance and policy approaches and priorities in the district / region, and seek a consensus approach to work with these

Ashburton District Council Biodiversity Funding

The Ashburton District Council has an annual fund of $15,000 available for biodiversity projects. Funding applications are accepted twice annually, in February and August, however if the total fund is distributed in February another funding round will not be held.

Applications for a biodiversity grant are to be referred to the Biodiversity Advisory Group for comment, before going to Council for their decision on the funding applications.

Reporting

The Ashburton District Biodiversity Advisory Group will report to Council.

Costs & Expenses

It is acknowledged that being a member of the advisory group will involve a commitment of members' time and energy, and will involve travel to Ashburton District Council to attend meetings. These costs will be met by the organisation(s) or group(s) that members represent. Costs of meetings and associated catering will be met by Ashburton District Council.

Meetings will generally be held in the Council meeting rooms, and may be held in other venues throughout the district as appropriate.

Adopted

9 April 2020 *(Reviewed 02/23)*