WAIMAKARIRI
DISTRICT COUNCIL

Ashley-Rakahuri Estuary Bird Counts

September 2019

Contents

WAIMAKARIRI DISTRICT COUNCIL

BIRDS NEW ZEALAND
Te Kāhui Mātai Manu o Aotearoa

Ashley Rakahuri RIVERCARE GROUP

This Document has been prepared by the Waimakariri District Council, Birds New Zealand and the Ashley-Rakahuri Rivercare Group.

Executive Summary

This report has been prepared in partnership with Birds NZ, the Ashley-Rakahuri Rivercare Group and the Waimakariri District Council.

The purpose of the report is to meet the research and monitoring aspirations outlined in the Northern Pegasus Bay Bylaw 2016 Implementation Plan. It also seeks to highlight the unique and diverse range of bird life that can be found at the Ashley-Rakahuri Estuary.

This report presents the findings of bird count data collected by Birds New Zealand (Birds NZ), formerly known as the Ornithological Society of New Zealand Incorporated.

A bird count is described as a count of all individual birds and bird species within a defined area. Birds NZ conducts regular bird counts in the Estuary during summer and winter.

There are two counting sites in the Estuary, the southern portion (Estuary South) and the northern portion (Raupo Berm). Birds are sighted through observation, and then counted using a handheld tally counter. The observer also notes any disturbance to ascertain what affect this might have on the number of birds present. This data is then entered into an excel database and sent to the Council for analysis.

Limitations

The limitations for this data are as follows:

- Bird counts are not always able to accurately record each species. For instance, large, slower birds are more easily sighted than smaller, more mobile bird species.
- Birds can move between counting sites, which can lead to their population being overestimated.
- Disturbance can affect the number of birds present and this may not reflect the total population.
- Bird species may be present when observers are not.

Key Findings

The key findings for this research are as follows:

- There were a number of species in decline during summer. These included: far-eastern curlew and whimbrel, pied oystercatcher and white-faced heron.
- There were a number of species in decline during winter. These included: banded dotterel, bar-tailed godwit, black-fronted tern, black stilt, far-eastern curlew and whimbrel, pied stilt and white-faced heron.
- Despite declines for some species, the total number of key indicator bird species sighted has remained stable in both summer and winter.
- The population of pest species such as Canada Goose has fallen in both summer and winter, while the population of black-backed gulls has increased in both summer and winter.
- The diversity of species sighted during summer at the Raupo Berm has decreased, while the diversity of species sighted during summer at Estuary South has increased.
- The diversity of birds sighted during the winter at both the Raupo Berm and Estuary South has decreased.

Recommendations

Key recommendations include:

- Continuing to carry out bird counts on an annual basis as this information is useful for understanding the effectiveness of protection measures (Birds NZ).
- Maintaining consistency in the methodology used to undertake the bird count. For example, continuing to carry out counts during both summer and winter, to enable results to be compared over time(Birds NZ)
- Regularly reporting and publicising (either through graphs or reports) the results to inform decision makers and the public on the health of the Ashley-Rakahuri Estuary (WDC).

Introduction

The Ashley-Rakahuri Estuary is one of the largest and least modified estuaries in Canterbury.

The estuarine wetlands and mudflats provide an important feeding and roosting ground for a variety of bird species and it is recognised as one of the best shorebird feeding sites on the South Island's eastern coastline. It is known for hosting a variety of international and national migratory birds, as well as rare and endangered riverbed nesting birds.

The formal bird counts undertaken by Birds New Zealand (Birds NZ) have been undertaken from 1997 onwards, with more regular counts being undertaken since 2006. The Ashley-Rakahuri Rivercare Group (ARRG) has for many years monitored bird breeding success and established predator trapping along the 18 kilometre section of the Ashley-Rakahuri River upstream of the State Highway One bridge. This work has been further complimented by a group of volunteers, who in recent years have established predator trap lines around the Ashley-Rakahuri Estuary.

The Estuary is a nationally significant bird habitat and an important migratory staging post for highly threatened river birds. In addition to the environmental benefits of protecting the estuarine habitat, and the birds, animals and native plants within it, the Estuary is a popular site for local and international visitors to see a variety of birds, having earned a reputation with national and international bird watchers.

The purpose of this report is to establish a baseline for bird species in the Ashley-Rakahuri Estuary. It is also to highlight the diversity of bird species that can be found at the Estuary. The report has been produced in response to the research and monitoring aspirations outlined in the Northern Pegasus Bay Bylaw 2016 Implementation Plan. It is one component of a wider research and monitoring programme led by the Waimakariri District Council (WDC, or "the Council") to ensure that future reviews of the Bylaw are evidence-based.

Method

A bird count is defined as a count of all individual birds and bird species within a defined area (in this case the Ashley-Rakahuri Estuary). Birds NZ conducts regular bird counts in the summer and winter seasons, although counts may be undertaken on a more regular basis.

For the purpose of this report, summer counts (February) and winter counts (June) are preferred as they provide the most complete and consistent data record. Where February or June counts were not available (e.g. the bird count was not undertaken in that particular month) the next closest month has been selected provided this still falls within the correct season (e.g. winter or summer).

Birds NZ use two sites for collecting bird count data. The first is the southern portion of the Estuary close to Waikuku Beach (Estuary South) and the second is the northern portion of the Estuary (Raupo Berm). The bird count is done through observation, and birds are counted with a handheld tally counter. If there is a particularly large flock, the number of birds may be an estimate.

The observer also notes any disturbance to ascertain any affect that this may have on the bird populations present. This is important as the Estuary is used for kitesurfing and other recreational activities and these can have an impact on the number of birds present.

Once the count is completed, the information is recorded into a notebook and then entered into an excel database. This database is then sent to the WDC for analysis.

It is important to note that these counts are representative of the Ashley-Rakahuri Estuary only. The conservation status of birds included in this report may have a different trend outside of the Estuary.

Limitations

It is important to acknowledge the limitations of this data. These are as follows:

Accurate Species Counts

One limitation is that bird counts are not always able to accurately record each species that may be present in an area. For instance, birds that are large, slow and less mobile are more likely to be sighted than birds which are smaller, more mobile or dispersed.

Inter-Site Movement

A second limitation is that inter-site movement can occur during the count period. This occurs when a bird that was previously counted at one point travels to the second point and is counted again. If this is to occur multiple times, the number of birds can be overestimated.

Disturbance Affecting Bird Counts

Another limitation of this data is that it does not always accurately reflect the population of a specific species. For example, bird counts are undertaken on a single day and any disturbance can affect this count. In addition, a range of factors can influence whether birds are present at a site. Therefore, these results should be treated as indicative rather than as a true reflection of the total population present at the Estuary.

Key Indicator Species

The following bird species have been highlighted by the Ashley-Rakahuri Rivercare Group as key ecosystem health indicator species.

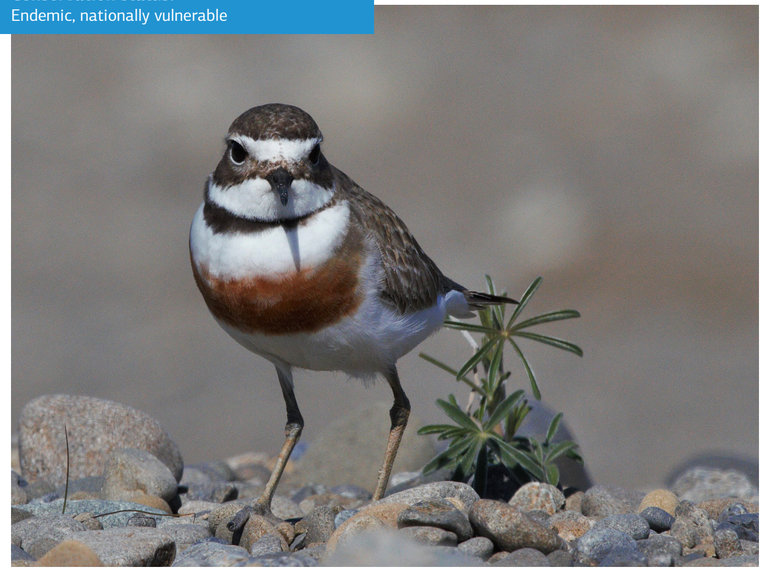
The data includes a separate winter and summer count to give a more accurate reflection of bird numbers. No bird count data is available for the 2012 winter period as no count was undertaken.

Summer and winter have been graphed separately due to the relatively high number of birds present in one season relative to another. When combined it is difficult to visualise the baseline number in a season where there is less birds. Graphing the seasons separately helps to avoid this issue.

Banded Dotterel

Pohowera - Charadrius bicinctus

Conservation status:
Endemic, nationally vulnerable



Pohowera (literally meaning burned chest) is an apt name for this bird, with both genders developing distinctive burnt-red and black bands on their chest for the breeding season. In the breeding season birds undergo behavioural change, and birds that were wary and timid in autumn or winter become bold as they establish territory. Like other typical plovers, the body is held erect and they have a characteristic run-stop-peck-run foraging behaviour in their pursuit of small invertebrates.

Pohowera are present all year-round, though numbers vary according to the seasons. A few birds breed on dry shingle or sparsely vegetated banks within the Estuary, but most breed upstream in the river-bed proper, or at other inland sites, and migrate to the Estuary to over-winter. Birds will often approach human observers or nest right beside busy vehicle tracks or car parks.

While they are New Zealand's most common small plover, their numbers are declining. Nesting on the ground makes these small birds very vulnerable to introduced predators, and vehicle disturbance is also a threat.

Sightings

Summer

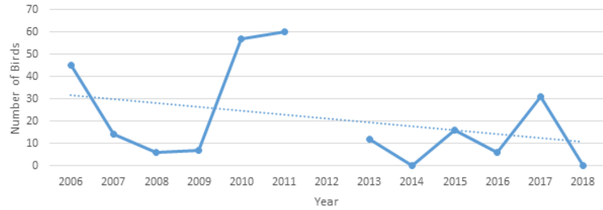
Figure one displays the number of banded dotterel sighted during the summer period from 2006 to 2019. The initial count in 2006 sighted 26, with the most recent count in 2019 sighting 34. The lowest number ever sighted was one in 2011, and the highest number sighted was 34 in 2019. The overall trend suggests that banded dotterel numbers are slightly increasing despite a sharp decline in 2011 and 2012.

Winter

Figure two displays the number of banded dotterel sightings during the winter period from 2006 to 2018. The initial count in 2006 sighted 45, and there were none sighted in the most recent count in 2018. The highest number ever sighted during the winter period was 60 in 2011. The overall trend suggests that banded dotterel numbers during the winter period are declining since a large spike in 2011.

Figure 1: Banded Dotterel Sightings in Summer

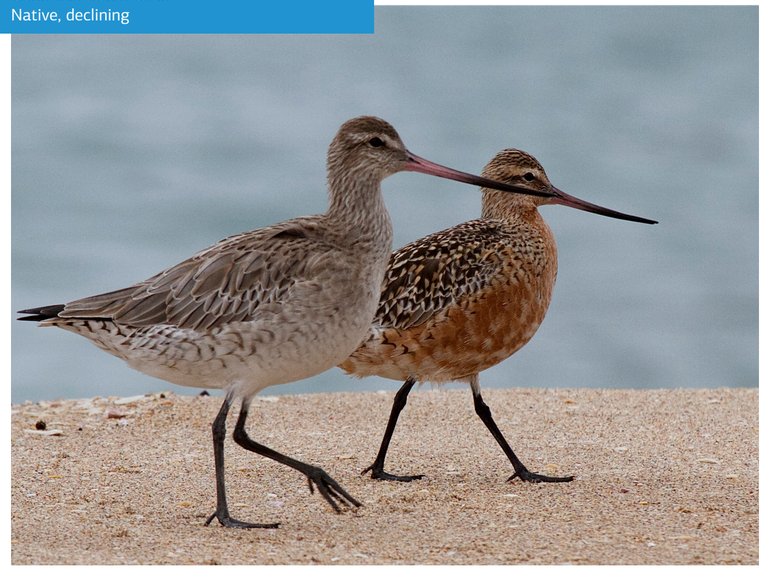
Figure 2: Banded Dotterel Sightings in Winter



Bar Tailed Godwit

Kuaka - Limosa lapponica

Conservation status:
Native, declining



These were birds of mystery for Maori, the whakatauki 'Kua kite te kohanga kuaka?" (who has seen the nest of the kuaka?'). This refers to the birds only being visitors here, breeding in the northern hemisphere tundra around the Arctic Circle.

Bar Tailed Godwits arrive in spring, often thin from their non-stop 11,000 kilometre flight from Alaska, in North America. They are New Zealand's most common migrant wader, with some 75,000 birds making the long flight. As soon as they land the birds begin feeding to put weight back on for the long flight home at the beginning of the New Zealand autumn.

Bar-Tailed Godwit numbers further south in the Avon-Heathcote Estuary can number in the thousands, but little more than 100 birds visit the Ashley-Rakahuri Estuary. They can often be seen together in a single roosting flock above the high tide mark, before spreading out during low tide to feed in the mud flats.

Bar Tailed Godwits that stay overwinter are generally younger birds that are yet to reach maturity or adults not fit enough to migrate. For young birds, successful breeding seasons in the Arctic are affected by the lemming cycle and weather in the breeding grounds.

Sightings

Summer

Figure three displays the number of bar-tailed godwit sightings during the summer period from 2006 to 2019. The initial count in 2006 sighted 86, with the most recent count in 2019 sighting 101. The lowest number sighted was 69 in 2018, and the highest number sighted was 145 in 2014. The overall trend suggests that bar-tailed godwit numbers have remained relatively stable in summer.

Winter

Figure four displays the number of bar-tailed godwit sightings during the winter period of 2006 to 2018. The initial count in 2006 sighted nine, with the most recent count in 2018 sighting none. The highest number sighted during winter was 24 in 2009/2010. The overall trend suggests that bar-tailed godwit numbers are declining during the winter season.

Figure 3: Bar-Tailed Godwit Sightings in Summer

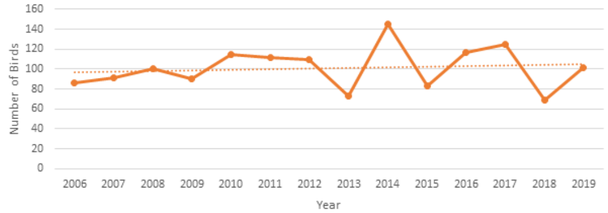
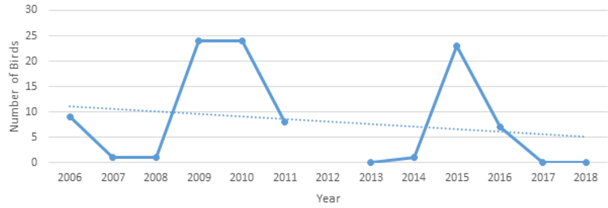


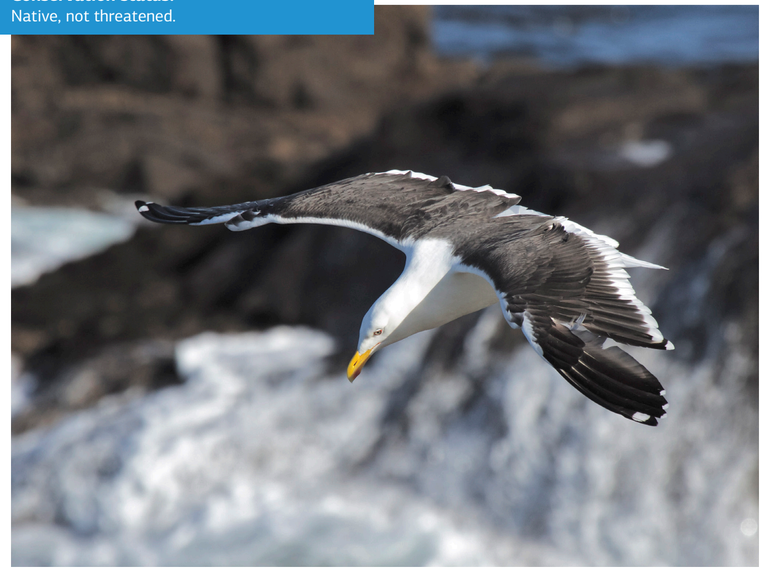
Figure 4: Bar-Tailed Godwit Sightings in Winter



Black-Backed Gull

Karoro - Larus dominicanus

Conservation status:
Native, not threatened.



The black-backed gull is a native bird and is a natural predator of other smaller birds that live and breed on the Estuary, especially chicks and eggs.

The birds that are preyed upon have evolved defences against predation, which normally help to keep the population in balance.

Unfortunately, human activity (such as habitat change, open rubbish and offal tips, and dumping food waste) means black-backed gull numbers are now much higher than would naturally be found in unmodifed environmentsl. This produces a far higher level of predation on the more threatened river and estuary bird species. To try to correct the balance on the Ashley-Rakahuri Estuary, as well as in other areas throughout New Zealand, black-backed gull numbers are being controlled to try and bring numbers down.

Sightings

Summer

Figure 27 displays the number of black-backed gull sightings during the summer period from 2006 to 2019. The initial count in 2006 sighted 136 birds with the most recent count in 2019 sighting 320. The lowest number ever sighted was 87 in 2009 and the highest number ever sighted was 363 in 2016. The overall trend suggests that the number of black-backed gull during the summer is increasing.

Winter

Figure 28 displays the number of black-backed gull sightings during the winter period from 2006 to 2018. The initial count in 2006 sighted 133, with the most recent count sighting 280. There were no sightings during 2010/2016, and the highest number ever sighted in winter was 359. The overall trend suggests that black-backed gull numbers during winter are stable.

Figure 27: Black-Backed Gull Sightings During Summer

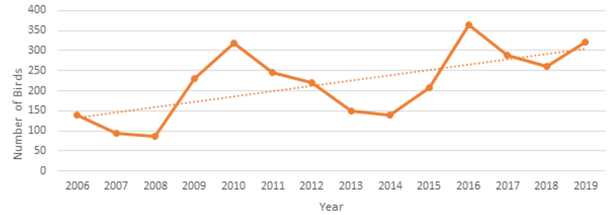
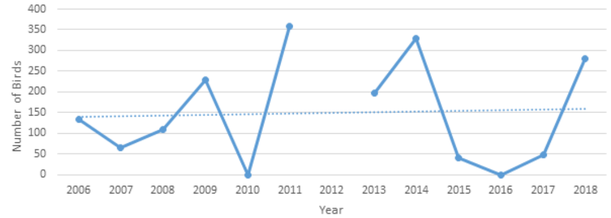


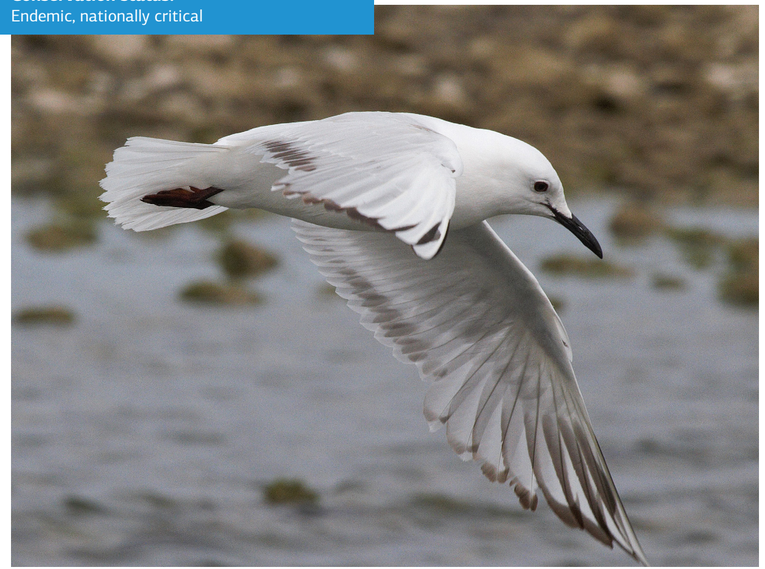
Figure 28: Black-Backed Gull Sightings During Winter



Black-Billed Gull

Tarāpuka – Larus bulleri

Conservation status:
Endemic, nationally critical



Found only in New Zealand, the black-billed gull is the world's most endangered gull species. This does not mean 'rarest' as these birds still exist in relatively high numbers. However, their population throughout the South Island has declined rapidly, some 80 percent within the last 30 years.

The Ashley-Rakahuri Estuary is an important over-wintering site for these threatened birds. They gather in large flocks, often mixed in with red-billed gulls and terns. As spring approaches, they can be seen performing acrobatic flights, hovering over the water to snatch incoming whitebait and other small fish.

Black-billed gull, after feeding up at the Estuary, disperse upstream to breed in noisy colonies amongst Canterbury's braided river channels, including the Ashley-Rakahuri River. A good indication of local breeding success can be the number of juvenile gulls seen at the Estuary at the beginning of autumn.

Sightings

Summer

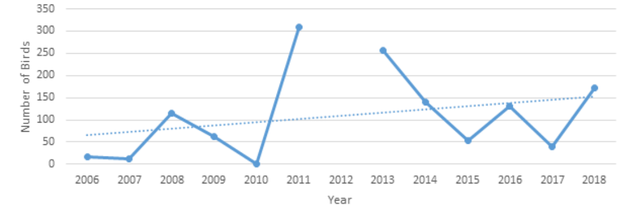
Figure five displays the number of black-billed gull sightings during the summer period from 2006 to 2019. The initial count in 2006 sighted 21 birds with the most recent count in 2019 sighting 50. The lowest number sighted during summer was 10 in 2011, and the highest number sighted was 167 in 2017, although this was followed by a steep decline. Despite this, the overall trend suggests that the number of black-billed gulls is increasing.

Winter

Figure six displays the total number of black-billed gulls sighted during the winter period from 2006 to 2018. The initial count in 2006 sighted 17, and the most recent count in 2018 sighting 171. There were none sighted in 2010 and the highest number ever sighted during winter was 310. The overall trend suggests that the number of black-billed gulls in the winter is increasing.

Figure 5: Black-Billed Gull Sightings in Summer

Figure 6: Black-Billed Gull Sightings in Winter



Black Fronted Tern

Tarapirohe - Chlidonias albostriatus

Conservation status:
Endemic, nationally endangered

One of three species of tern regularly seen on the Ashley-Rakahuri Estuary, (along with white-fronted tern and Caspian tern) the black-fronted tern is seen there in higher numbers during autumn and winter.

The Estuary is an important over-wintering stop for these birds, from where they disperse to riverbed breeding colonies. They nest only on the braided riverbeds of the eastern and southern South Island, from Marlborough to Southland.

In early spring, after they have developed distinctive breeding plumage of solid black caps and bright orange bills and legs, birds gather in courting flocks, parading and posting and enticing potential mates with fish. Pairs also engage in aerobatic bonding flights. Local whitebait fishers sometimes call them “whitebait birds”, as they will hover over and plunge dive on whitebait shoals, sometimes en masse, showing the fishers where the bait fish are.

Sightings

Summer

Figure seven displays the number of the black-fronted tern sighted during the summer period from 2006 to 2019. The initial count in 2006 sighted nine, while the most recent count sighted six. There were no sightings in 2009, and the highest number sighted was 11 in 2016. The overall trend suggests that the number of black-fronted tern during summer is stable despite a steep decline between 2016 and 2017.

Winter

Figure eight displays the number of black-fronted tern sighted in the winter period from 2006 to 2018. The initial count in 2006 sighted 125, with the most recent count in 2018 sighting 61. There were no sightings in 2010, and the highest number sighted was 260 in 2014. Despite a large flock sighted during 2014, the overall trend suggests that the number of black-fronted tern during the winter period is declining

Figure 7: Black-Fronted Tern Sightings in Summer

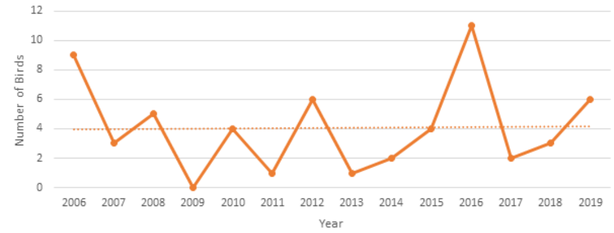
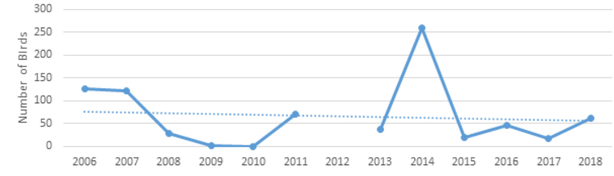


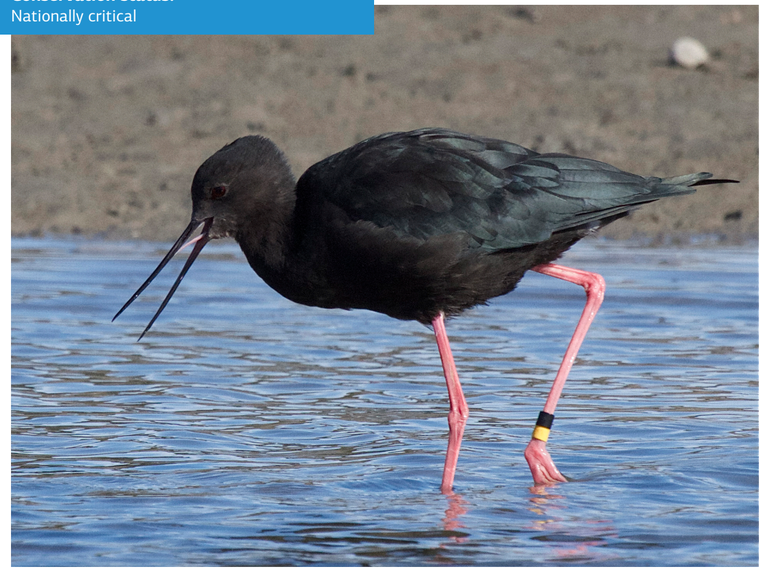
Figure 8: Black-Fronted Tern Sightings in Winter



Black Stilt

Kaki - Himantopus novaezelandiae

Conservation status:
Nationally critical



Kaki are regarded as the world's rarest wading bird, with only around 100 remaining, and most of the population stemming from chicks reared in captivity. The Ashley-Rakahuri Estuary plays host to one or two birds throughout the year, though there can be periods of absence when birds move inland to breed.

In recent years a banded black stilt female has remained permanently at the Estuary (circa three years) and has paired with a pied male, producing hybrid offspring. These cross-bred chicks are often seen in the Estuary at the end of the breeding season, still associating with their parents. The official figures below record a maximum of two black stilt on the estuary but in the winter of 2017, bird watchers noted three birds, the regular female referred to above and two banded birds showing the remnants of juvenile plumage.

The Ashley-Rakahuri Estuary is part of a study of alternative release sites for captive reared birds to reduce the risk of relying only on Mackenzie Country release points. Benefits of the Ashley-Rakahuri site are that black stilt already visit there regularly and predator trapping lines have recently been established. However, the high population of pied stilt increases the risk of hybrid breeding.

Sightings

Summer

Figure nine displays the number of black stilts sighted during the summer period from 2006 to 2019. There were no sightings in the initial count in 2006, and the most recent count in 2019 sighted one. The highest number sighted was two in 2009/2010. The overall trend suggests that the number of black stilts during the summer period is stable.

Winter

Figure ten displays the number of black stilts sighted in the winter period from 2006 to 2018. The initial count in 2006 sighted one, and there were no sightings in the most recent count of 2018. The highest number sighted during the winter season was one and this occurred in multiple years. The overall trend suggests that the number of black stilts during the winter period is declining. However, there have not been sufficient sightings during winter to establish this as a reliable trend

Figure 9: Black Stilt Sightings in Summer

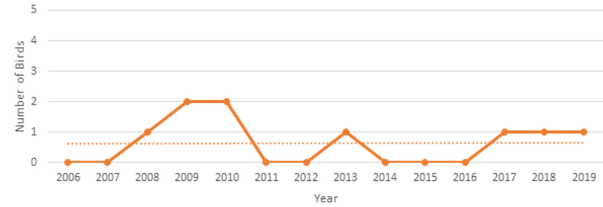
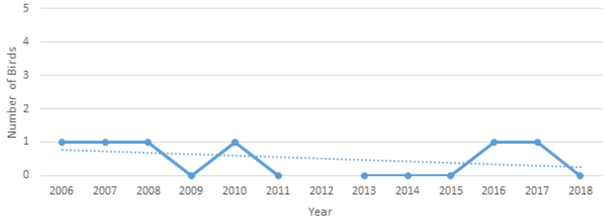


Figure 10: Black Stilt Sightings in Winter



Far-Eastern Curlew and Whimbrel

Conservation status:
Native, vagrant

Far-Eastern Curlew
Numenius madagascariensis

The far-eastern curlew is the largest wader in New Zealand. It also has the longest bill of any wader at around 20 cm in length. It is a regular summer visitor to New Zealand but in very small numbers, with probably fewer than 10 each summer since the mid 2000's, and usually at only a handful of sites. It is rare to see more than one whimbrel at the Estuary. They tend to be shy birds that stay well away from areas of the Estuary where people regularly visit.

Conservation status:
Native, migrant

Whimbrel
Numenius phaeopus

Whimbrels are large shorebirds which migrate to New Zealand from Artic breeding grounds in small numbers. Most records are during the summer but a few birds occasionally overwinter. At the Estuary they are usually seen in the company of bar-tailed godwits, from which they differ in being darker, having a striped head and a strongly down-curved bill.

Sightings

Summer

Figure 11 displays the number of far eastern curlew and whimbrel sighted in the summer period from 2006 to 2009. The initial count in 2006 sighted six and the two most recent counts in 2018 and 2019 sighted none. The maximum number ever sighted was eight in 2009, although numbers declined sharply from 2009 to 2011. The overall trend suggests that the number of far eastern curlew and whimbrel sighted during summer is declining.

Winter

Figure 12 displays the number of far eastern curlew and whimbrel sightings during the winter period from 2006 to 2018. There were three sightings in 2008, and there have not been any sightings since. The overall trend suggests that far eastern curlew and Whimbrel is declining.

Figure 11: Far Eastern Curlew and Whimbrel in Summer

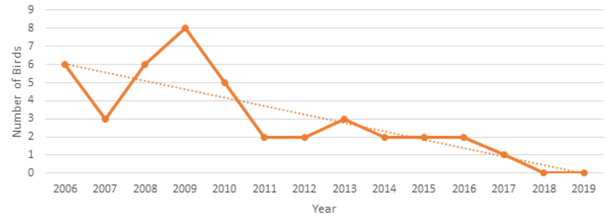
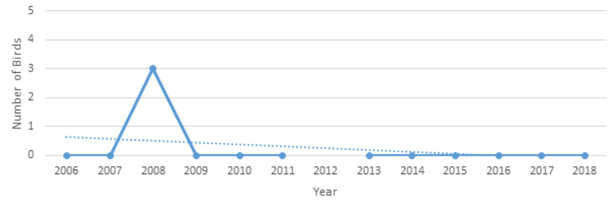


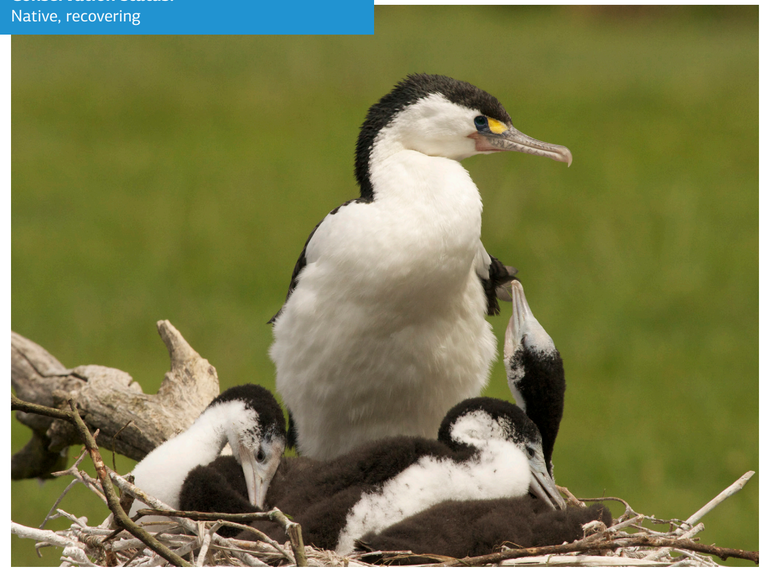
Figure 12: Far-Eastern Curlew and Whimbrel Sightings in Winter



Pied Shag

Kāruhiruhi - Phalacrocorax varius

Conservation status:
Native, recovering



One of four species of shag (cormorant) regularly seen on the Ashley-Rakahuri Estuary, the pied shag breeds in willow trees beside the wetland ponds at the entrance to Waikuku Beach village.

Being a large shag, the breeding adults are striking, with the skin in front of the eye becoming bright yellow, the base of bill pink, or pink-red, and the eye-ring a vivid blue. It is seen throughout the Estuary, usually fishing alone , but gathering in resting flocks along the tops of sand and shingle banks, usually near water. They are also regularly seen on tree branches or driftwood in their classic spread-wing pose drying their feathers.

Sightings

Summer

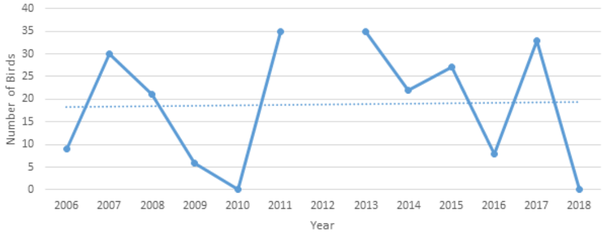
Figure 13 displays the number of pied shag sightings in the summer period from 2006 to 2019. The initial count in 2006 sighted 21, with the most recent count in 2019 sighting 48. The lowest number sighted was 13 in 2010 and the highest number sighted was 55 in 2014. The overall trend suggests that the number of pied shags is increasing.

Winter

Figure 14 displays the number of pied shags sighted during winter from 2006 to 2018. The initial count in 2006 sighted nine and there were no sightings in the most recent count in 2018. The highest number ever sighted was 35 in 2011 and 2013. The overall trend suggests that pied shag numbers are stable, although the number of sightings has been volatile.

Figure 13: Pied Cormorant Sightings in Summer

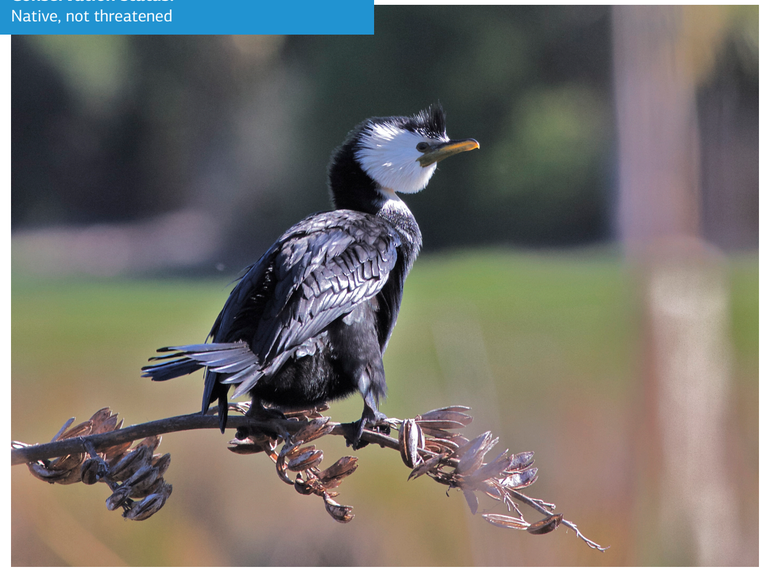
Figure 14: Pied Cormorant Sightings in Winter



Little Shag

Kawau paka - Phalacrocorax melanoleucos

Conservation status:
Native, not threatened



Little shags are found throughout the Estuary including well upstream in the Ashley-Rakahuri River, Taranaki Stream and Saltwater Creek. They nest alongside pied shags in the breeding colony beside the wetland ponds at the entrance to Waikuku Beach village.

Little shags can be confusing to identify as they have the most variable plumage patterns of any of New Zealand's shags. They are always black on the back and wing, but the face, throat, breast and belly plumage can range from completely black through to white, with a range of partial combinations in between.

Sightings

Summer

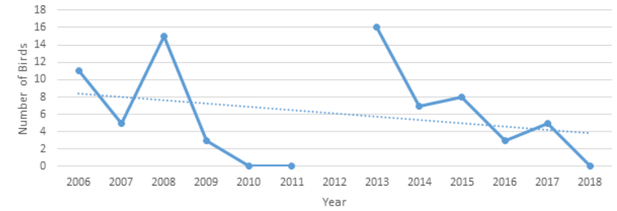
Figure 15 displays the number of little shag sightings during summer from 2006 to 2019. The initial count in 2006 sighted ten, with the most recent count in 2019 sighting 15. The lowest number sighted was one in 2011 and the highest number sighted was 20 in 2013. The overall trend suggests that little shag numbers are slightly increasing.

Winter

Figure 16 displays the number of little shag sightings during winter from 2006 to 2018. The initial count in 2006 sighted 11 birds, and the most recent count sighting none. The highest number ever sighted was 16 in 2013. The overall trend suggests that little shag numbers in winter are declining.

Figure 15: Little Pied Cormorant Sightings in Summer

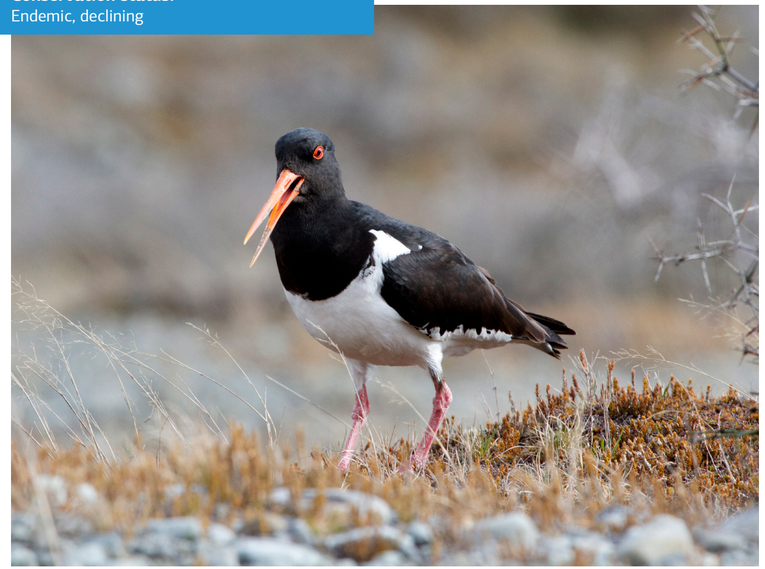
Figure 16: Little Pied Cormorant Sightings in Winter



South Island Pied Oystercatcher

Torea - Haematopus finschi

Conservation status:
Endemic, declining



The South Island pied oystercatcher (SIPO) is the most abundant oystercatcher in New Zealand. It is found on most estuaries, with numbers greatest during the period December to July. Fewer birds remain in coastal areas during the rest of the year, with most of the population moving to inland South Island riverbeds and farmland to breed.

On the Estuary, SIPO are frequently confused with the pied morph of the variable oystercatcher (Haematopus unicolor), which is also abundant on the Estuary. Variable oystercatcher can be all black, fully pied, or a mottled in between. The best way to tell a SIPO from a pied morph variable oystercatcher is that the line between white and black will be very sharp and clean on the SIPO, but more mottled on the variable. Resting SIPO's with their wings folded have a white 'hook' visible around the shoulder of the wing, and this is generally absent with pied variables.

Sightings

Summer

Figure 17 displays the total number of pied oystercatcher sightings during summer from 2006 to 2019. The initial count in 2006 sighted 264, and the most recent count in 2019 sighted 191. The lowest number sighted was 61 in 2012 and the highest number sighted was 473 in 2008. The overall trend suggests that pied oystercatchers are declining in summer.

Winter

Figure 18 displays the total number of pied oystercatcher sightings during winter from 2006 to 2019. The initial count in 2006 sighted 82, and the most recent count in 2018 sighted 12. The lowest number sighted was 12 in 2018 and the highest number sighted was 312 in 2017. The overall trend suggests that pied oystercatcher numbers are stable during winter.

Figure 17: Pied Oystercatcher Sightings in Summer

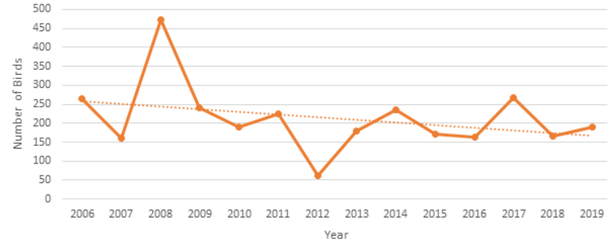
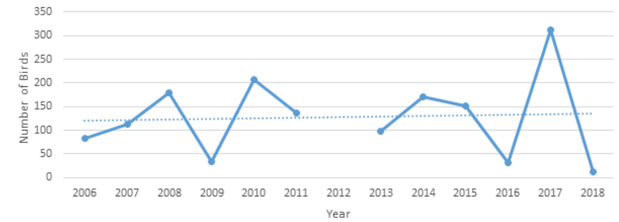


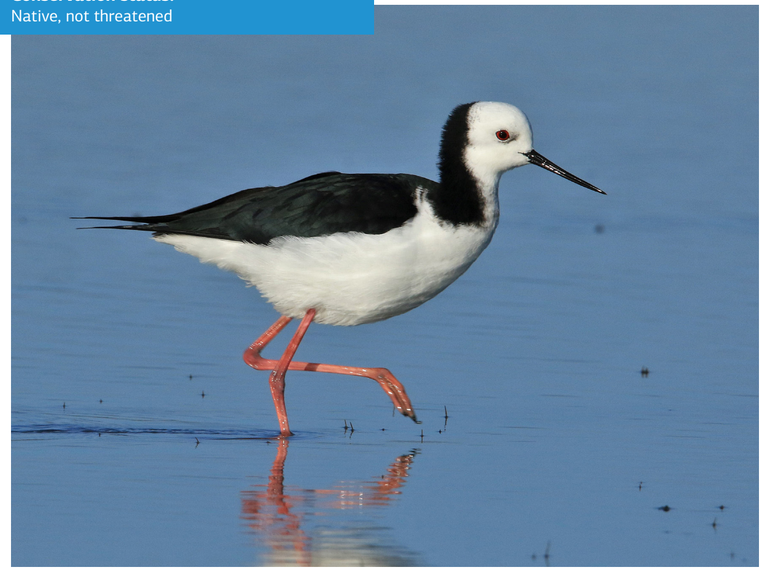
Figure 18: Pied Oystercatcher Sightings in Winter



Pied Stilt

Poaka - Himantopus himantopus

Conservation status:
Native, not threatened



Some of these distinctive black and white waders breed within the Estuary, but most move inland to breed along the river channels. Regardless of where they breed, the nests are always near water. They occasionally nest alone but mostly in colonies. Inland breeding birds often return to the Estuary for the winter.

At the Estuary, pied stilt gather in large communal flocks to rest between tides, or roost overnight, where they are sometimes joined by the occasional black stilt. When disturbed, or approached by humans, they emit a loud piercing 'yapping' noise.

Sightings

Summer

Figure 19 displays the number of pied stilt sightings during summer from 2006 to 2019. The initial count in 2006 sighted 54, and the most recent count in 2019 sighted 88. The lowest number sighted was eight in 2012, and the highest number sighted was 88 in 2019. The overall trend suggests that pied stilt numbers are increasing in summer, especially after 2017.

Winter

Figure 20 displays the number of pied stilt sightings during winter from 2006 to 2018. The initial count in 2006 sighted 89, with the most recent count in 2018 sighting 31. There were no sightings in 2014, and the highest number ever sighted was 114 in 2010. The overall trend suggests that pied stilt numbers are decreasing during winter.

Figure 19: Pied Stilt Sightings in Summer

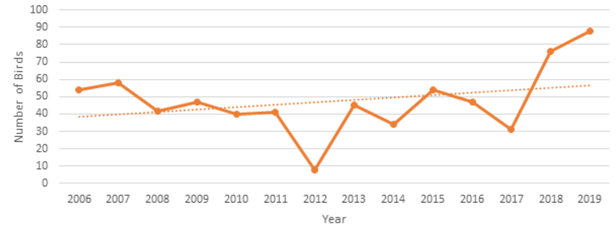
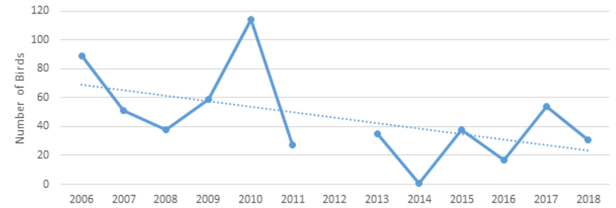


Figure 20: Pied Stilt Sightings in Winter



White-faced Heron

Matuku moana - Egretta novaehollandiae

Conservation status:
Native, not threatened

White-faced heron are the most common heron on the Ashley-Rakahuri Estuary and are frequently seen prowling the mudflats and shallows hunting for crabs, fish and eels. Often lone feeders, they do sometimes gather in small flocks where the feeding is particularly good.

In the breeding season they develop elaborate long plumes on their backs and reddish breast and leg plumes. They build nests in the tall macrocarpas and other pines around the edge of the Estuary. In places where people regularly walk, white-faced heron become quite used to humans and can be approached quite closely.

Sightings

Summer

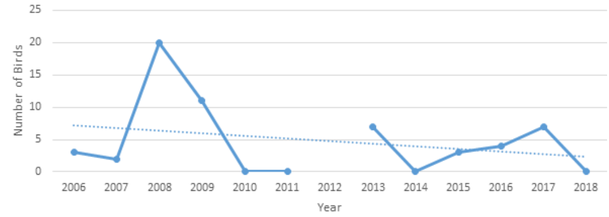
Figure 21 displays the total number of white-faced heron sightings during the summer from 2006 to 2019. The initial count in 2006 sighted 12, and the most recent count in 2019 sighted 12. The lowest number sighted was three in 2011 and the highest number sighted was 14 in 2009. The overall trend suggests that white-faced heron numbers are decreasing slightly during summer.

Winter

Figure 22 displays the number of white-faced heron sightings during the winter from 2006 to 2018. The initial count in 2006 sighted three and there were no sightings in the most recent count in 2018. The highest number sighted during winter was 20 in 2008, but numbers declined sharply in the years following. The overall trend suggests that white-faced heron numbers are declining in winter.

Figure 21: White-Faced Heron Sightings in Summer

Figure 22: White-Faced Heron Sightings in Winter



Total Number of Key Indicator Species

Summer

Figure 23 displays the total number of birds sighted during summer from 2006 to 2019. The initial count in 2006 sighted 511 and the most recent count in 2019 sighted 551. The lowest number of birds ever sighted was 345 in 2012, and the highest number ever sighted was 778 in 2008. The overall trend suggests that bird numbers during summer are stable.

Winter

Figure 24 displays the total number of birds sighted during winter from 2006 to 2018. The initial count in 2006 sighted 394 and the most recent count in 2018 sighted 280. The lowest number ever sighted was 209 in 2009 and the highest number recorded was 652 in 2011. The overall trend suggests that bird numbers during winter are stable.

Figure 23: Key Indicator Species Numbers During Summer

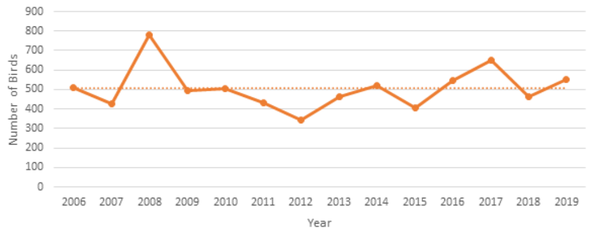
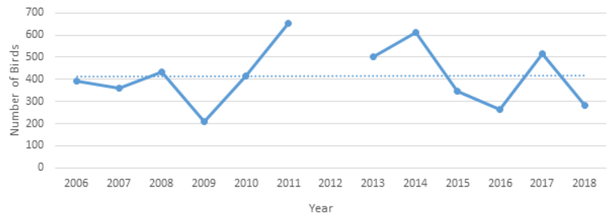


Figure 24: Key Indicator Species Numbers During Winter



Notable Sightings

Department of Conservation records note more than 100 different species of bird have been seen on the Ashley-Rakahuri Estuary. Some of these are one-off or very rare visitors, others seasonal migrants, and still others permanent residents.

This great variety of birds is indicative of the variety of habitats and food sources in the Estuary and its comparatively unmodified status. In addition to the indicator species noted above, the following are some of the other birds of interest that are regularly seen on the Estuary.

Wrybill

Ngutupare – Anarhynchus frontalis

Conservation status: Endemic, nationally vulnerable

The wrybill is a small plover that breeds only in the braided rivers of the South Island. It is the only bird in the world with a laterally-curved bill (always curved to the right), which it uses to reach insect larvae under rounded riverbed stones.

Their plumage is grey throughout their life stages, which is the perfect camouflage among the greywacke shingle of the riverbeds.

Wrybill are internal migrants, spending their winters in the harbours and estuaries of the upper North Island, then returning each spring to the braided rivers of the South Island to breed. As most of those birds come to Canterbury, the Ashley-Rakahuri Estuary is an important staging post for wrybill.

Adults migrating to the rivers in spring, and both fledglings and adults returning to the North Island in winter, stop over at the Estuary to feed up for the journey. Flocks of more than 50 have been observed on the Estuary in early to mid-August before the birds head to the rivers to breed. Of these, only a dozen or so pairs are known to nest upstream on the Ashley-Rakahuri River,and the remainder disperse to other rivers in Canterbury and Southland. There is some evidence, still being investigated, that Ashley-Rakahuri River breeding birds, when not taking turns on the nest, sometimes fly back to the Estuary to feed.

White Heron

Kotuku – Ardea modesta

Conservation status: Native, nationally critical

The Ashley-Rakahuri Estuary is an over-wintering site for a just a few kotuku. While gregarious at New Zealand's only breeding colony for these birds, near Okarito, white heron lead solitary lives in the non-breeding months. This means that, with rare exceptions, only one bird is likely to be seen on any given part of the Estuary, and kotuku will defend this territory against other kotuku that might try to move in.

This solitary life is possibly the inspiration for the very famous whakatouki, "He kotuku rerenga tahi", translated as the white heron is seen but once, which also signifies a very rare or significant event.

Royal Spoonbill
Kotuku ngutupapa – Platalea regia

Conservation status: Native, naturally uncommon

Royal spoonbill numbers appear to be increasing on the Estuary, although to date the evidence for this is anecdotal. From a distance they can be mistaken for white heron, but these large, bulky birds have a very different, hunched-over profile, quite different to the tall and slender profile of the heron. They are also more likely to be in a flock rather than alone. In the breeding season adults develop distinctive head plumes, and a yellow breast patch.

Variable Oystercatcher
Torea pango - Haematopus unicolor

Conservation status: Endemic, recovering

Unlike the South Island Pied Oystercatcher, the variable oystercatcher breeds within the Ashley-Rakahuri Estuary, often startling people with loud, low flight attacks when they inadvertently walk too close to nests or chicks.

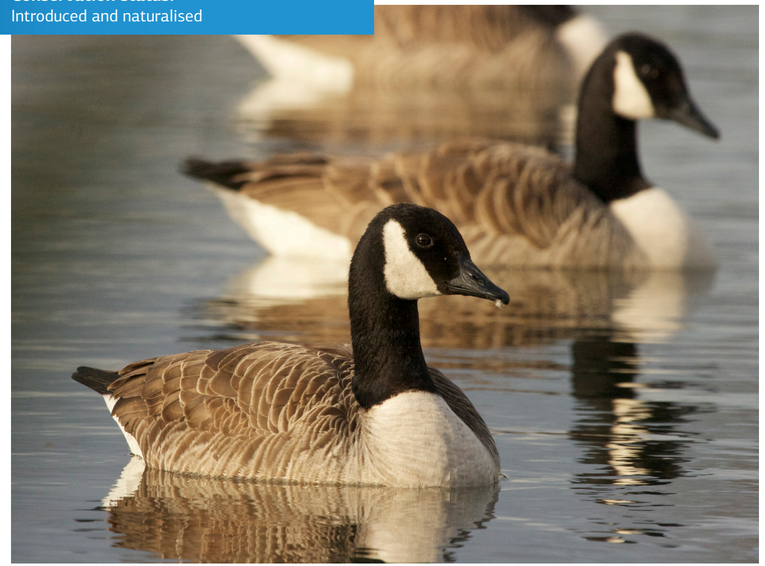
This bird is an example that the authorities who give animals their scientific names, don't always get it right. Haematopus unicolor (one colour) is a reference to the entirely black morph of this bird, which was once thought to be a separate species. We now know that the black, pied and 'smudgy' morphs are all the same species and freely interbreed.

Pest and Exotic Species

Canada Goose

Branta canadensis

Conservation status:
Introduced and naturalised



Introduced to New Zealand as a game bird in the early 1900's, Canada geese are widespread in the South Island and most numerous in the pastoral areas of the eastern foothills of the Southern Alps from Marlborough to Central Otago, and around coastal lakes and lagoons.

Grazing of high-country lakeside pasture, especially autumn-saved pasture, is considered an economic burden for sheep farmers where these geese can descend on pasture in very large numbers. This prompted farmer advocacy to declare the bird a pest, and in 2011 the Canada goose was declared an unprotected species. Hunters occasionally target this species on the Ashley-Rakahuri Estuary.

Sightings

Summer

Figure 25 displays the total number of Canada goose sightings during the summer period from 2006 to 2019. The initial count in 2006 sighted 134 birds, with the most recent count in 2019 sighting none. The highest number ever recorded was 134 in 2006. The overall trend suggests that Canada goose numbers are declining.

Winter

Figure 26 displays the number of Canada goose sightings during the winter period from 2006 to 2018. No birds were sighted in the initial count in 2006 and the most recent count held in 2018. The highest number ever sighted during the winter period was 86 in 2017.

Figure 25: Canadian Goose Sightings During Summer

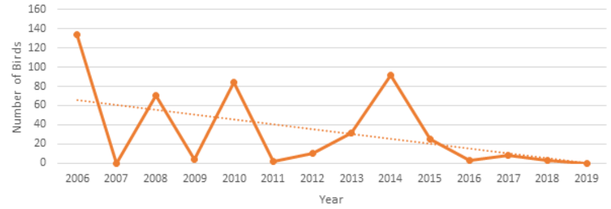
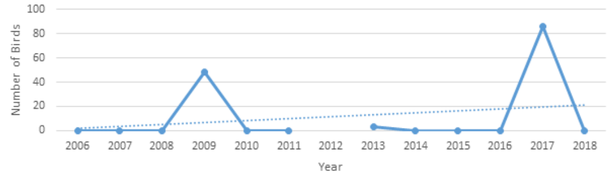


Figure 26: Canadian Goose Sightings During Winter



Species Diversity

Summer

Figure 29 displays the diversity of species at the two observation sites during the summer period from 2006 to 2019.

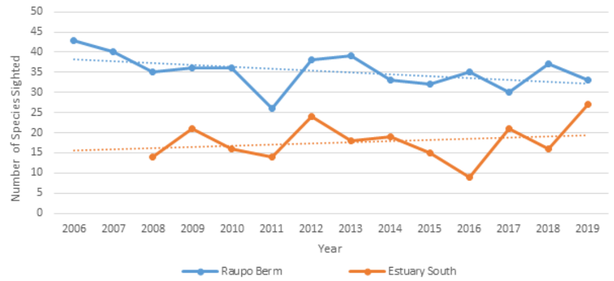
Raupo Berm

The initial count at the Raupo Berm sighted 43 different species, with the most recent count sighting 33. The lowest number of species sighted was 26 in 2011, and the highest number of species sighted was 43 in 2006. The overall trend suggests that the diversity of species at the Raupo Berm is declining during summer.

Estuary South

The initial count at Estuary South sighted 14 different bird species, with the most recent count sighting 27. The lowest number of species sighted was nine in 2016, and the highest number sighted was 27 in 2019. The overall trend suggests that the diversity of species at Estuary South is increasing.

Figure 29: Number of Species Sighted (Summer)



Sightings

Winter

Figure 30 displays the diversity of species at the two observation sites during the winter period from 2006 to 2019.

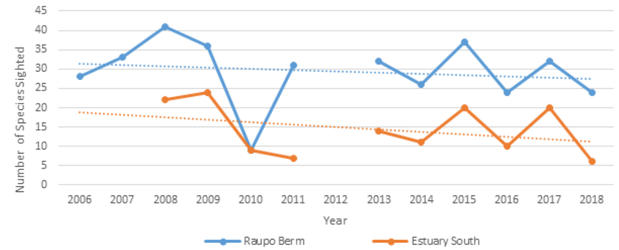
Raupo Berm

The initial count at the Raupo Berm sighted 28 different species, with the most recent count in 2018 sighting 24. The lowest number of species sighted was nine in 2010 and the highest number was 41 in 2008. The overall trend suggests that the number of species is declining.

Estuary South

The initial count in 2008 at Estuary South sighted 22 different species, and the most recent count sighted six. The highest number ever sighted during the winter period was 24 in 2009, and the lowest number was six in 2018. The overall trend suggests that the number of species is declining during the winter period.

Figure 30: Number of Species Sighted (Winter)



Recommendations

There are a number of recommendations arising from this research. These are as follows:

1. Continue Bird Counts

Continue to conduct regular and consistent bird counts for the Ashley-Rakahuri Estuary. Not only is this information useful for estimating bird populations across time, but it can also provide stakeholders and volunteer groups with information on the effectiveness of protection measures such as the NPBB 2016.

2. Maintain Consistency

Continue to carry out bird counts on a regular basis, using consistent methodology. Bird counts should occur during the summer in February and winter in June, as this is the most consistent data stream since 2006. Continuing to collect data during these months gives a more accurate indication of bird populations across time.

3. Regular Reporting

Maintain regular reporting (e.g. through graphs or reports) of bird counts for the Ashley-Rakahuri Estuary. Regular reporting helps to inform decision makers and the public on the status of the Estuary ecosystem. This could be undertaken as a partnership between the ARRG, Birds NZ and the Council. This is dependent on the resources and time demands for each organisation.

Acknowledgements

The Council would like to acknowledge Steve Attwood and Nick Ledgard for supplying the photographs for this report. The Council would also like to thank the Ashley-Rakahuri Rivercare Group and Birds NZ for supplying the bird count data that was used in this report.

Appendix A

Table One: Disturbance Level for Bird Count Sites

The level of disturbance at each count is displayed in Appendix A. Fields that are empty indicate that disturbance was low.

Year	Raupo Berm	Estuary South
2006		
2007	July: High Disturbance (2x low flying microlight aircraft)	
2008	June: Low to Mid (Unspecified Disturbance)	June: Low to Mid (Unspecified Disturbance)
2009		
2010		
2011	February: Moderate Disturbance (Kite Surfers Present) June: Moderate Disturbance (Shooters)	
2012		
2013	July: Moderate Disturbance (Flood)	
2014	Low to Mid (Kite Surfers Present)	
2015		
2016		
2017	February: Moderate Disturbance (Unspecified)	
2018		
2019		

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