

COASTAL BIRDS OF THE TASMAN/NELSON REGION

A review of current information



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February 2019



Report prepared for Tasman District Council and Nelson City Council



Recommended citation:

Schuckard, R.; Melville, D.S. 2019. Coastal birds of the Tasman/Nelson Region: A review of current information. Prepared for Tasman District Council and Nelson City Council.

Front cover photo David Melville: High tide roost at Marahau River estuary - Royal Spoonbill, Pied Shag, South Island Pied Oystercatcher, Southern Black-backed Gull, Caspian Tern and Variable Oystercatcher. The adjacent saltmarsh supports Banded Rail and Fernbird. [D.S. Melville]

Coastal birds of the Tasman/Nelson Region

A review of current information

EXECUTIVE SUMMARY

The coastal area of the Tasman/Nelson region has extensive estuaries and large tidal flats that not only are visited by thousands of shorebirds annually but also support important populations of other coastal birds such as such as terns, gulls, rails, cormorants, and herons. Information on the numbers and distribution of coastal birds has been collected by the Ornithological Society of New Zealand/Birds New Zealand during shorebird surveys and these data form the basis for this report. The data are, however, limited since many areas of importance to coastal birds are outside areas surveyed for shorebirds, thus additional information has been incorporated from other Ornithological Society of New Zealand/Birds New Zealand projects, and a variety of published and unpublished sources.

The results confirm the importance of the sites already identified as being *Areas with nationally or internationally important natural ecosystem values* in the **Tasman Resource Management Plan** and *Areas of significant conservation value* in the **Nelson Resource Management Plan**, however two sites listed as 'nationally important' qualify as being of international importance: Motueka Sandspit and Waimea Inlet East, both of which also are of international importance for shorebirds.

Policy 11 of the **New Zealand Coastal Policy Statement** requires that adverse effects of activities are avoided on species identified as being 'Threatened' or 'At Risk' – 17 of the 28 coastal bird species considered in this report are listed as such by the Department of Conservation. Between one and seven Threatened species and between three and ten At Risk species occur in every 10 x 10km survey block around the Tasman/Nelson coastal region. The widespread distribution of many Threatened and At Risk coastal bird species highlights the need for a precautionary approach when considering future coastal management issues within the Tasman/Nelson Region.

A brief review of threats and management issues for coastal birds highlights the need to safeguard existing remaining areas of coastal wetland and terrestrial margin vegetation from loss and degradation, the need to reduce disturbance and the need to control predators.

There are insufficient data to assess population trends for any of the coastal bird species considered in this report. In order that the Tasman District Council and the Nelson City Council can track populations and distributions of coastal birds as part of their 'State of the Environment' monitoring under s35 of the **Resource Management Act** the report makes recommendation for future targeted monitoring programmes. Surveys of breeding colonies of shags, gulls and terns might be achieved by the use of drones/unmanned aerial vehicles (UAVs), once appropriate operating protocols have been established.

Recognising the growing impact of climate change, and in particular sea level rise, consideration should be given to undertaking trial coastal realignment activities as a matter of priority for biodiversity conservation.

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INTRODUCTION

Following an assessment of shorebird populations and a review of their conservation and resource management issues (Schuckard & Melville 2013¹; Melville & Schuckard 2013²), it was recognized that information on 'coastal birds' was also required. This further information is needed in order to better manage activities in the coastal marine environment that may cause disturbance or occupy space. Such activities include disturbance by vehicles, machinery, recreational equipment or people and dogs, and structures including ports, aquaculture, and moorings. For the purposes of this report 'coastal birds' include species such as terns, gulls, rails, cormorants, and herons; whereas 'shorebirds' are wading birds such as dotterels, godwits, and oystercatchers. The more pelagic seabirds such as petrels, shearwaters, albatrosses and gannets are not included in this report, it should be noted however that the Tasman/Nelson coastal marine environment contains areas of importance for the conservation of seabirds^{3,4}.

This report summarises information about the distribution and numbers of coastal birds other than shorebirds recorded during high tide surveys in spring and winter from 1996-1998 and spring, summer and winter surveys in the period 1999-2018. This information is supplemented as appropriate by additional records from other sources to give a more complete picture of coastal birds within the Tasman/Nelson region.

Shorebird surveys at the Top of the South Island started at Farewell Spit in 1961. In 1983 the Ornithological Society of New Zealand/Birds New Zealand (OSNZ⁵) initiated a national shorebird census conducted during winter (June) and spring (November)⁶. In the top of the South Island these surveys have been complemented with a summer (February) count since 1999, to provide additional information on the populations of Arctic-breeding and endemic shorebirds and their use of coastal habitats.

During shorebird surveys observers have been encouraged to record other coastal birds as well. Such information, however has not been collected systematically and therefore is not as comprehensive as that for shorebirds.

¹ Schuckard, R; Melville, D.S. 2013. *Shorebirds of Farewell Spit, Golden Bay and Tasman Bay*. Report prepared for Nelson City Council and Tasman District Council.

² Melville D.S.; Schuckard, R. 2013. *Effects of selected activities on shorebirds in Tasman District: Management issues and options for sites of international importance*. Report prepared for Tasman District Council.

³ Forest & Bird 2014. *New Zealand Seabirds: Sites at Sea, Seaward Extensions, Pelagic Areas*. The Royal Forest & Bird Protection

Society of New Zealand, Wellington, New Zealand.

⁴ Ornithological Society/Birds New Zealand unpublished data.

⁵ *The Ornithological Society of New Zealand (OSNZ)* is now popularly known as *Birds New Zealand* but the term OSNZ is used throughout this report.

⁶ Sagar, P.M.; Shankar, U.; Brown, S. 1999. Distribution and numbers of waders in New Zealand, 1983-1994. *Notornis* 46: 1-43.

Tasman District Council and Nelson City Council contracted the Ornithological Society of New Zealand/Birds New Zealand to review and summarise available information on the distribution and populations of coastal birds, other than shorebirds. The Scope of Works for the contract notes that:

Information on coastal birds is required to meet obligations under s35 of the Resource Management Act for 'State of the Environment' monitoring. This information will be used to prioritise future management and guide research, as well as supporting Policy 11 of the New Zealand Coastal Policy Statement 2010 'To protect indigenous biological diversity in the coastal environment'.

This report provides a review of data for 28 species of coastal birds collected bi-annually between spring 1996 and spring 1998, and tri-annually between 1999 and 2018, together with additional information from both published and unpublished sources to provide a more complete account of coastal birds in the Tasman/Nelson Region. It provides information on:

- Current distribution within the Tasman/Nelson region
- Habitat use
- Population status and trend (if known)

Recommendations for future monitoring and research in the Tasman/Nelson coastal area are provided.



Coastal marsh, Marahau – habitat for Banded Rail and Fernbird [D.S. Melville]

METHODS

Shorebird counts are undertaken over the spring tide period when most birds are concentrated at high tide roost sites. Shorebirds remain at these roosts for several hours until the ebbing tide uncovers the flats and birds are able to resume feeding. As far as possible, sites are counted at the same time to reduce the risk of double counting as a result of movement between sites; all counts are completed within a one-week period. All count data are entered into a database managed by the local OSNZ/Birds New Zealand count coordinator. The 'coastal birds' included in this report are listed in Table 1.

TABLE 1. Coastal bird species included in this report, their conservation status in New Zealand.

THREATENED⁷		
Nationally critical		
Australasian Bittern*	<i>Botaurus poiciloptilus</i>	Matuku hūrepo ⁸
Black-billed Gull	<i>Larus bulleri</i>	Tarāpuka
White Heron	<i>Ardea modesta</i>	Kōtuku
Nationally endangered		
Black-fronted Tern	<i>Chlidonias albostratus</i>	-
New Zealand King Shag*	<i>Leucocarbo carunculatus</i>	-
Reef Heron	<i>Ardea sacra</i>	Matuku moana
Nationally vulnerable		
Caspian Tern	<i>Hydroprogne caspia</i>	Taranui
AT RISK		
At risk – declining		
Banded Rail*	<i>Gallirallus philippensis</i>	Moho pererū
Fernbird*	<i>Bowdleria punctata</i>	Mātātā
Marsh Crake*	<i>Porzana pusilla</i>	Kotoreke
Red-billed Gull	<i>Larus novaehollandiae</i>	Tarāpunga
Spotless Crake*	<i>Porzana tabuensis</i>	Pūweto
White-fronted Tern	<i>Sterna striata</i>	Tara
At risk – recovering		
Pied Shag	<i>Phalacrocorax varius</i>	Kāruhiruhi
Naturally uncommon		

⁷ Robertson, H.A.; Baird, K.; Dowding, J.E.; Elliott, G.P.; Hitchmough, R.A.; Miskelly, C.M.; McArthur, N.; O'Donnell, C.F.J.; Sagar, P.M.; Scofield, R.P.; Taylor, G.A. 2017: Conservation status of New Zealand birds, 2016. *New Zealand Threat Classification Series 19*. Department of Conservation, Wellington. 23 p.

⁸ Maori names after: Checklist Committee (OSNZ). 2010. *Checklist of the birds of New Zealand, Norfolk and Macquarie Islands, and the Ross Dependency, Antarctica* (4th ed.). Ornithological Society of New Zealand & Te Papa Press, Wellington. [It should be noted that not all species have a recognised Maori name.]

Black Shag	<i>Phalacrocorax carbo</i>	Kawau
Little Black Shag	<i>Phalacrocorax sulcirostris</i>	Kawau tūi
Royal Spoonbill	<i>Platalea regia</i>	Kōtoku ngutupapa
NON-RESIDENT NATIVE		
Migrant		
Cattle Egret	<i>Ardea ibis</i>	-
Little Tern	<i>Sternula albifrons</i>	-
White-winged Black Tern	<i>Chlidonias leucoptera</i>	-
Vagrant		
Gull-billed Tern	<i>Geochelidon nilotica</i>	-
Little Egret	<i>Egretta garzetta</i>	-
Plumed Egret*	<i>Ardea intermedia</i>	-
NOT THREATENED		
Little Shag	<i>Phalacrocorax melanoleucos</i>	Kawau paka
New Zealand Kingfisher*	<i>Todiramphus sanctus</i>	Kōtare
Southern Black-backed Gull	<i>Larus dominicanus</i>	Karoro
Spotted Shag	<i>Stictocarbo punctatus</i>	Kawau tikitiki
White-faced Heron	<i>Egretta novaehollandiae</i>	-

20 species of coastal birds have been recorded during shorebird surveys, while information for the other eight (*) has been obtained from eBird and other data, both published and unpublished.

During the period between 1996 and 2018, a total of 43 sites were visited at least once as part of OSNZ's shorebird surveys. Of the 43 sites, 30 sites were visited at least 15 times and 26 sites over 30 times (Figure 1).

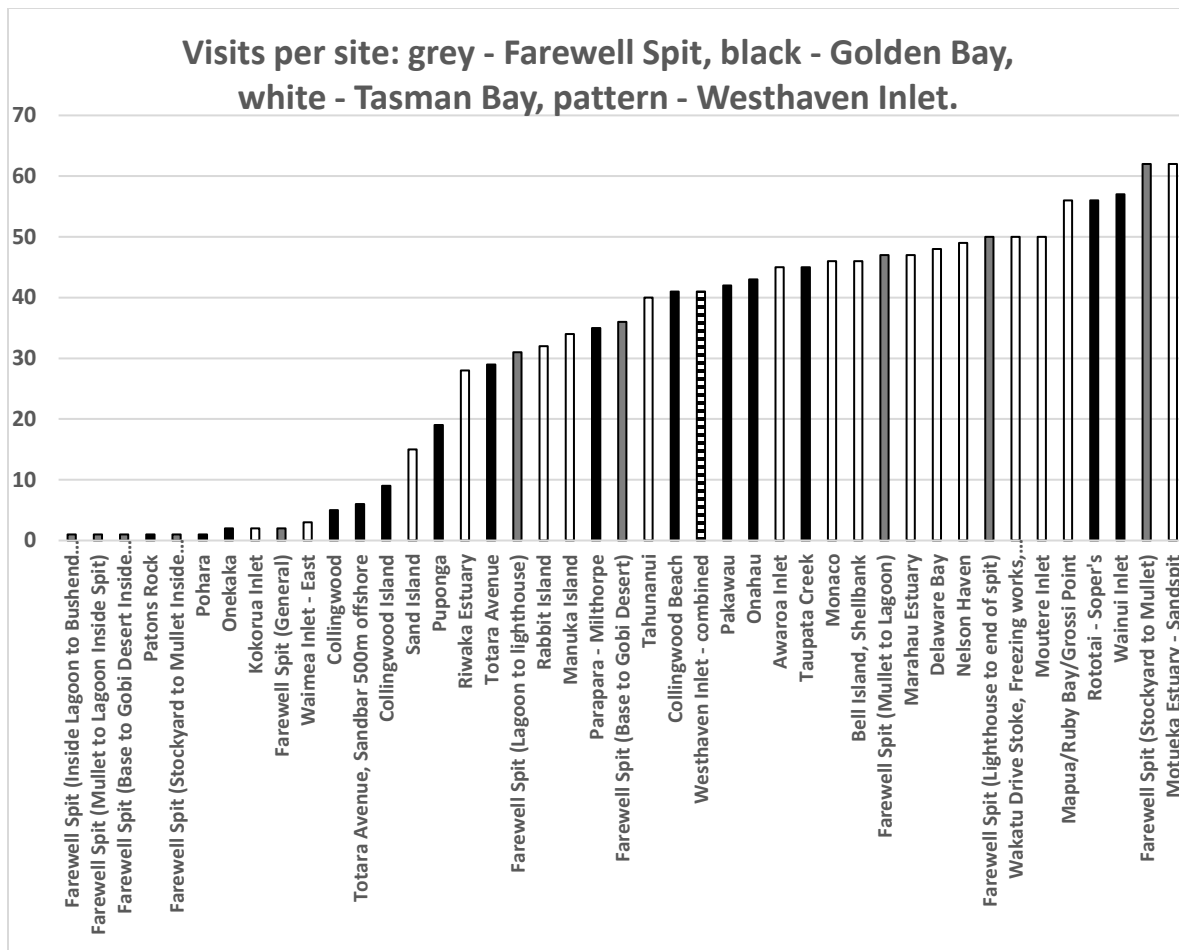


Figure 1. The total number of visits to each site during shorebird surveys in the period 1996 - 2018.

The locations of these sites are shown in Figure 2, and latitude/longitude and New Zealand grid references are given in Appendix 1.

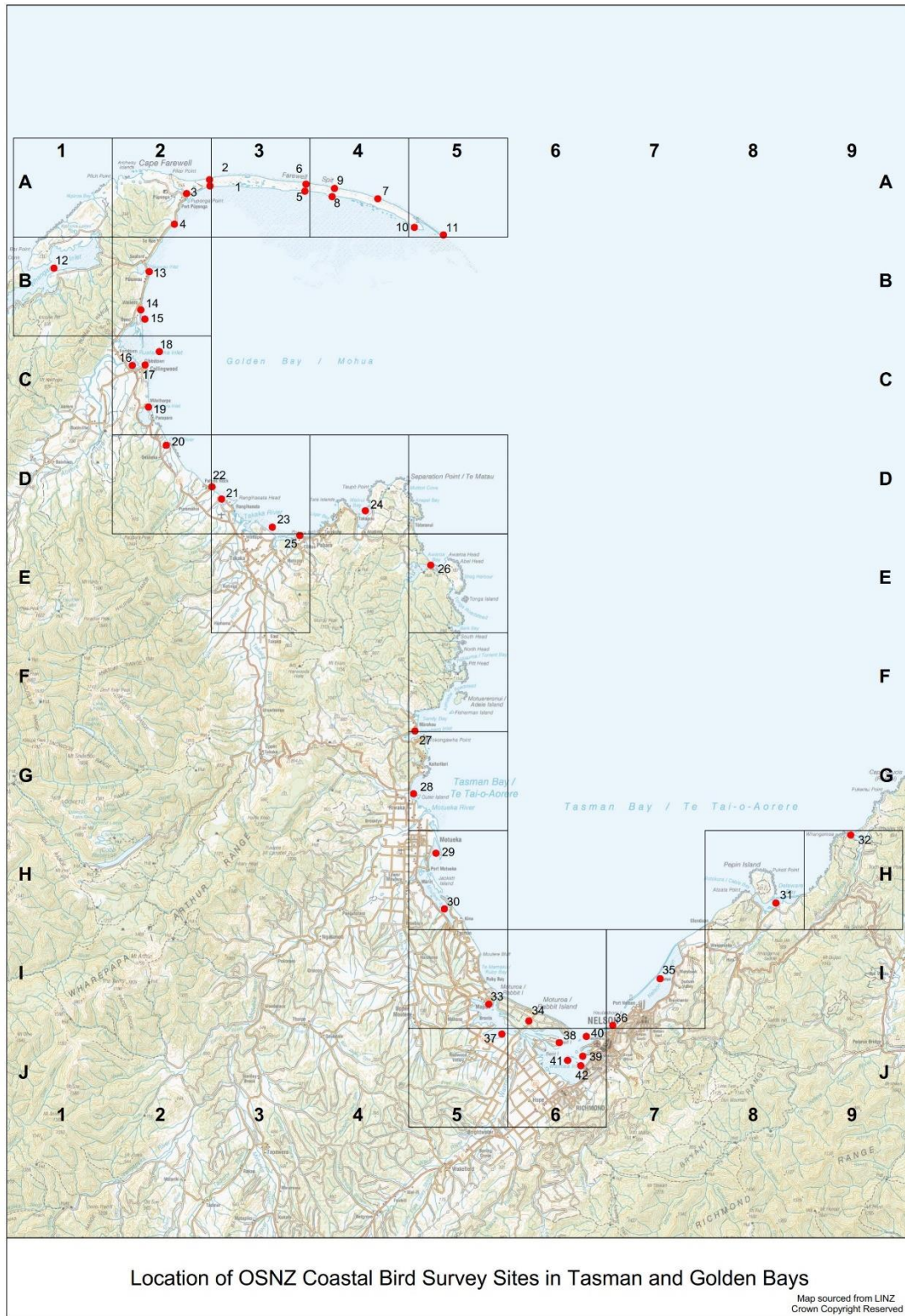


Figure 2. Location of OSNZ coastal bird survey sites and 10 x 10 km Atlas blocks (see text for details).

The distributional information obtained from the regular surveys has been supplemented by information obtained by OSNZ during its bird distribution 'Atlas' project undertaken between 1999 and 2004⁹ when birds were surveyed across New Zealand using a 10 x 10 km grid. Observers were required to complete a standardised form which included information on location, species present and whether breeding, and time and effort spent in each 10 x 10 km grid block. All of the 24 Atlas blocks in the Tasman/Nelson coastal area were visited by between three and more than ten observers/teams for at least 20 hours within the period 1999-2004, most for >50 hours. The boundaries of the 24 10 x 10 km Atlas squares which encompass the Tasman/Nelson coastal area are shown in Figure 2.

Some additional information has been incorporated from unpublished sources, including some eBird¹⁰ records for less commonly recorded species, however no attempt has been made to analyse all eBird records from the Tasman/Nelson region. eBird is OSNZ's general bird recording scheme, which is part of a global network for recording bird observations operated in conjunction with the Cornell Laboratory of Ornithology, USA. eBird records mainly overlapped with the shorebird sites but also added 10 new sites, bringing the total to 53.

Further information from local observers, together with that from both published and unpublished reports has also been incorporated as far as possible to provide a more complete account of coastal birds in the Tasman/Nelson Region in view of the fact that high tide roost sites visited for the shorebird census usually do not include areas of saltmarsh and estuarine vegetation where coastal birds such as Australasian Bitterns and rails occur.

⁹ Robertson, C. J. R.; Hyvönen, P.; Fraser, M. J.; Pickard, C.R. 2007. *Atlas of bird distribution in New Zealand, 1999-2004*. The Ornithological Society of New Zealand.

¹⁰ <https://ebird.org/newzealand/home>

RESULTS

The average total number of the coastal bird species that have been recorded during shorebird surveys in spring, summer and winter are 2,700, 2,300 and 1,550 respectively. Gulls (Laridae), rails (Rallidae), shags (Phalacrocoracidae), terns (Sternidae) and herons, egrets, and bitterns (Ardeidae) comprise almost 90% of all the species involved. These numbers are nearly an order of magnitude less than the numbers of shorebirds recorded during the same periods, viz. about 20,000 shorebirds in the winter, 30,000 in spring and 50,000 in the summer period¹¹.

CONSERVATION STATUS OF COASTAL BIRD SPECIES

Of the 28 coastal bird species in the Tasman/Nelson region, seven are classified by the Department of Conservation¹² as 'Threatened' and 10 as 'At Risk' (Tables 1 and 2). Of the 127 Threatened and At Risk birds in New Zealand 17 (13%) occur in the Tasman/Nelson coastal region (Table 2).

TABLE 2. Number of 'threatened' and 'at risk' coastal bird species in the Tasman/Nelson region compared to the national totals for all birds.

Conservation status	New Zealand	Tasman/Nelson coastal birds	% of national total
Threatened – Nationally Critical	23	3	13
Threatened – Nationally Endangered	15	3	20
Threatened – Nationally Vulnerable	33	1	3
At Risk – Declining	22	6	27
At Risk – Recovering	23	1	9
At Risk – Naturally Uncommon	46	3	7
Total	127	17	13

Of the 24 Atlas grid squares, combining all records from coastal bird surveys, the Atlas, eBird and other sources, all have at least one 'Threatened' species and at least three 'At Risk' species recorded (Figure 3).

¹¹ Schuckard, R; Melville, D.S. 2013. *Shorebirds of Farewell Spit, Golden Bay and Tasman Bay*. Report prepared for Nelson City Council and Tasman District Council.

¹² Robertson, H.A.; Baird, K.; Dowding, J.E.; Elliott, G.P.; Hitchmough, R.A.; Miskelly, C.M.; McArthur, N.; O'Donnell, C.F.J.; Sagar, P.M.; Scofield, R.P.; Taylor, G.A. 2017: Conservation status of New Zealand birds, 2016. *New Zealand Threat Classification Series 19*. Department of Conservation, Wellington. 23 p.

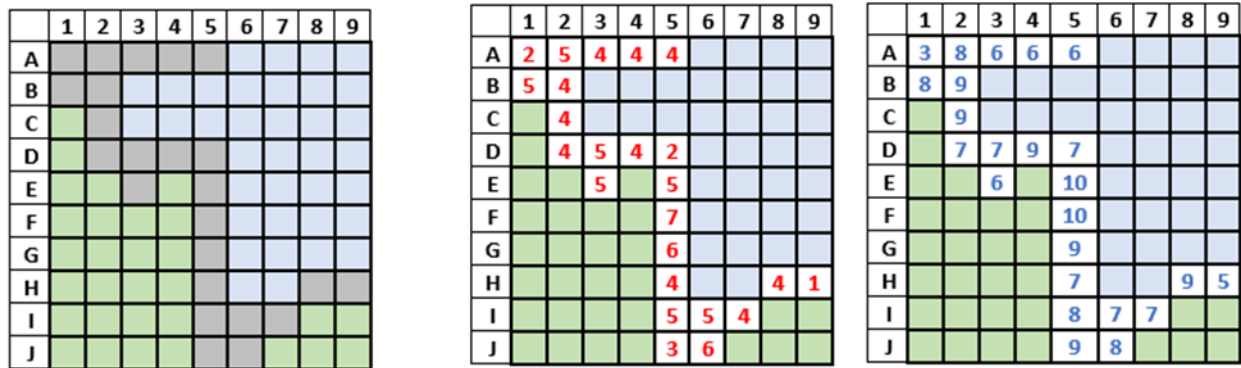


Figure 3. Atlas blocks (10 x 10 km) with the number of ‘Threatened’ and ‘At Risk’ coastal bird species recorded during the OSNZ shorebird census and the Atlas project, together with eBird and other sources. Left- Blocks visited (grey), Middle – Number of ‘Threatened’ species. Right – Number of ‘At Risk’ species.

Details of all ‘Threatened’ and ‘At Risk’ coastal bird species recorded at each site are given in Appendix 1.

To protect indigenous biological diversity in the coastal environment, the *New Zealand Coastal Policy Statement (2010)*¹³ Policy 11 requires that adverse effects of activities on Threatened and At Risk species are avoided. The widespread distribution of many Threatened and At Risk coastal bird species highlights the need for caution when considering future coastal management issues within the Tasman/Nelson Region.

¹³ Anon. 2010. *New Zealand coastal policy statement 2010*. Department of Conservation, Wellington.

SPECIES ACCOUNTS

Nationally critical

Australasian Bittern *Botaurus poiciloptilus*



https://upload.wikimedia.org/wikipedia/commons/f/f0/Australasian_Bittern.jpg

National distribution

Australasian Bittern is uncommon, but widely distributed throughout New Zealand^{14, 15, 16}.

The New Zealand population was estimated to be 900 individuals in the 1980s with steep population declines ever since¹⁷; there is no current population estimate but that given by Wetlands International¹⁸ (1000-1500 birds) is clearly unrealistic. Some New Zealand strongholds suggest a 7% decline per annum for the last 35 years¹⁹. Declines in some areas, including Tasman/Nelson appear to be more recent and greatest between the 1970-1989 and post-1990 periods. Declines in the main strongholds were recorded from an earlier time²⁰.

¹⁴ Robertson, C. J. R.; Hyvönen, P.; Fraser, M. J.; Pickard, C.R. 2007. *Atlas of bird distribution in New Zealand, 1999-2004*. The Ornithological Society of New Zealand.

¹⁵ Heather, B.; Robertson, H. 2015. *The field guide to the birds of New Zealand*. Penguin Random House, Auckland.

¹⁶ Williams, E. 2013 [updated 2018]. Australasian Bittern. In Miskelly, C.M. (ed.) *New Zealand Birds Online*. www.nzbirdsonline.org.nz

¹⁷ Williams, E. 2013 [updated 2018]. Australasian Bittern. In Miskelly, C.M. (ed.) *New Zealand Birds Online*. www.nzbirdsonline.org.nz

¹⁸ Wetlands International 2018. *Waterbird population estimates*. wpe.wetlands.org [accessed 13 December 2018]

¹⁹ Williams, E. 2013 [updated 2018]. Australasian Bittern. In Miskelly, C.M. (ed.) *New Zealand Birds Online*. www.nzbirdsonline.org.nz

²⁰ O'Donnell, C.F.J.; Robertson, H.A. 2016. Changes in status and distribution of Australasian bittern (*Botaurus poiciloptilus*) in New Zealand, 1800s-2011. *Notornis* 63:152-166.

Tasman/Nelson distribution

In the Tasman/Nelson region, the Australasian Bittern has been recorded from 11 sites and 8 of the 24 Atlas survey blocks (Figure 4). All records are of individual birds. The freshwater swamp at Mangarakau, Golden Bay (not a coastal site) supported some 15 calling males in 2017²¹, while using an acoustic recorder, one was recorded calling at Otuwhero Inlet in 2015²².

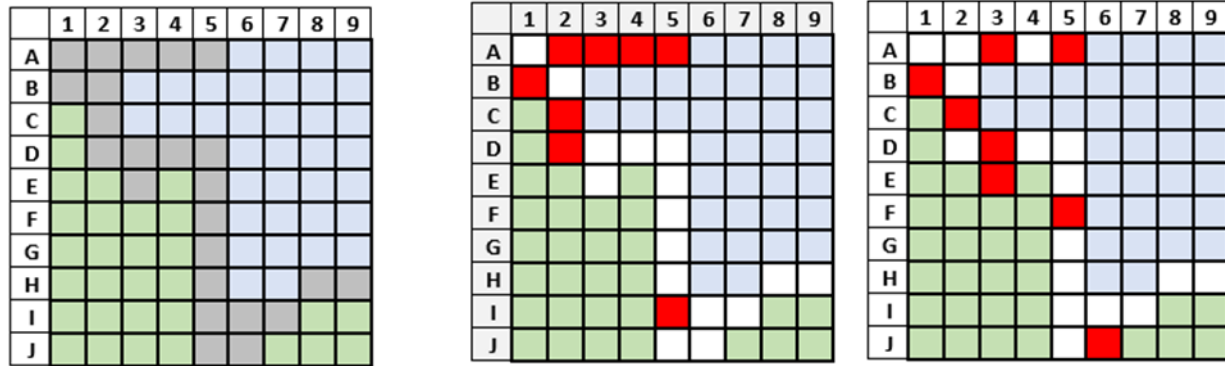


Figure 4. Distribution of Australasian Bittern *Botaurus poiciloptilus* in the Tasman/Nelson region. Left – Atlas blocks surveyed during OSNZ shorebird surveys (grey). Middle – species occurrence from Atlas data (red present, white absent) 1999-2004. Right – species occurrence during OSNZ shorebird surveys together with additional observations (red present, white absent) 1996-2018.

Habitat

Bitterns occur in both freshwater and brackish wetland habitats, but most commonly the former²³.

Threats

The decline of bitterns followed the destruction of 90% of their wetland habitat. Ongoing habitat loss is still considered one of their greatest threats, although predators, poor water quality, and reduced food availability may also have contributed to population declines. Restoration of hydrology, water quality and aquatic food supplies of wetlands is a fundamental precursor for the future of this species. Fragmentation of wetlands should be addressed and amalgamation of wetland remnants should become an important pillar of coastal conservation management. Predator control combined with restoration of wetlands while maintaining regional wetland networks is required to stabilize the decline of this species. Bitterns are extremely sensitive to disturbance and large undisturbed networks of wetlands are required by this species²⁴.

²¹ Robyn Jones in litt.

²² Hutzler, I. 2015. Wetland bird survey – Abel Tasman National Park, October/November 2015. Final report for Project Janszoon. Unpublished MS.

²³ O'Donnell, C.F.J.; Robertson, H.A. 2016. Changes in status and distribution of Australasian bittern (*Botaurus poiciloptilus*) in New Zealand, 1800s-2011. *Notornis* 63:152-166.

²⁴ O'Donnell, C.F.J.; Robertson, H.A. 2016. Changes in status and distribution of Australasian bittern (*Botaurus poiciloptilus*) in New Zealand, 1800s-2011. *Notornis* 63:152-166.

Black-billed Gull *Larus bulleri*



Paul Davey - [https://commons.wikimedia.org/wiki/File:Black-billed_Gull_\(5\)_edit.JPG](https://commons.wikimedia.org/wiki/File:Black-billed_Gull_(5)_edit.JPG)

National distribution

Black-billed Gull is endemic to New Zealand, being widely distributed ^{25,26,27}.

Tasman/Nelson distribution

In the Tasman/Nelson coastal region Black-billed Gulls are widespread, being recorded from 32 sites and 16 of the 24 Atlas survey blocks (Figure 5).

²⁵ Robertson, C. J. R.; Hyvönen, P.; Fraser, M. J.; Pickard, C.R. 2007. *Atlas of bird distribution in New Zealand, 1999-2004*. The Ornithological Society of New Zealand.

²⁶ Heather, B.; Robertson, H. 2015. *The field guide to the birds of New Zealand*. Penguin Random House, Auckland.

²⁷ McClellan, R.K.; Habraken, A. 2013 [updated 2017]. Black-billed Gull. In Miskelly, C.M. (ed.) *New Zealand Birds Online*. www.nzbirdsonline.org.nz

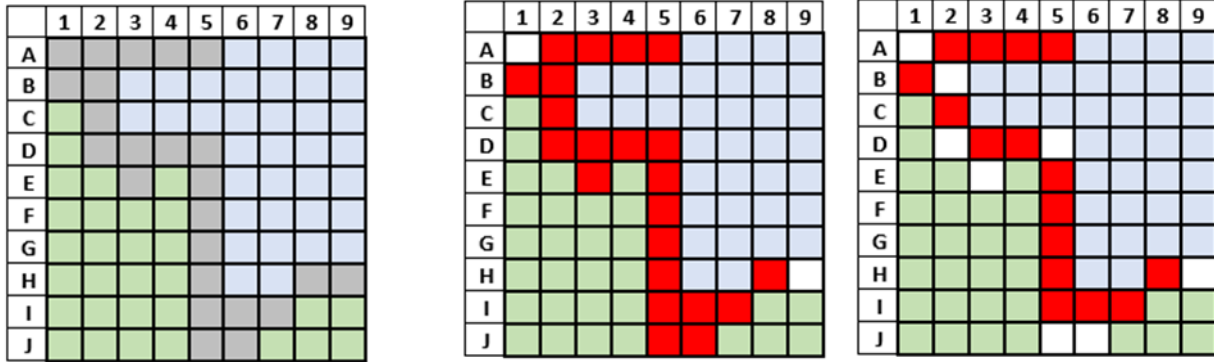


Figure 5. Distribution of Black-billed Gull *Larus bulleri* in the Tasman/Nelson region. Left – Atlas blocks surveyed during OSNZ shorebird surveys (grey). Middle – species occurrence from Atlas data (red present, white absent) 1999-2004. Right – species occurrence during OSNZ shorebird surveys (red present, white absent) 1996-2018.

The highest numbers were recorded during the 2000 winter census at Rototai, Golden Bay (334). High numbers have also been recorded from Farewell Spit (150, winter 2017). In Golden Bay and Farewell Spit, the highest numbers are recorded in the winter, while in Tasman Bay the highest numbers are recorded in the spring and summer period (Figure 6). This likely reflects that breeding has been recorded, albeit in small numbers, at Motueka Sandspit [15 pairs 2016/17²⁸, about 60 pairs in December 2018 (D.S. Melville unpublished)], and Sand Island in the Waimea Estuary [no longer available due to erosion]; even smaller numbers nest in Golden Bay – 11 pairs in 2015/16 (one at Totara Avenue, ten at Rototai) and none in 2014/15 and 2016/17²⁹.

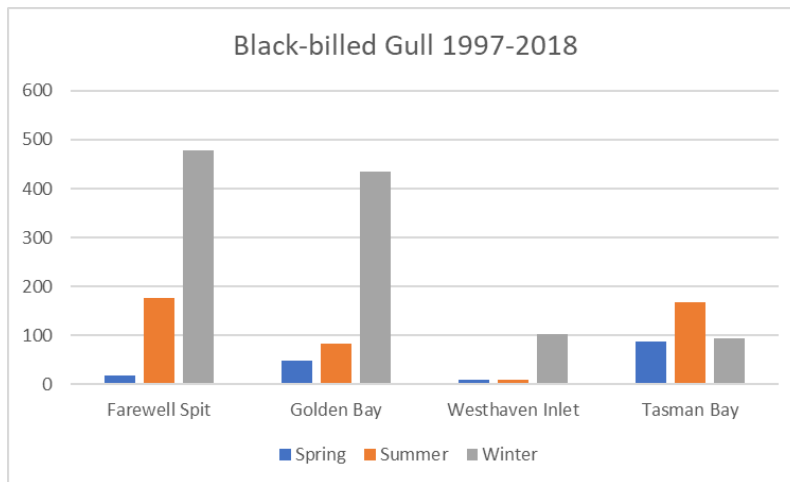


Figure 6. Cumulative totals per season of Black-billed Gulls in the Tasman/Nelson region recorded during shorebird surveys.

²⁸ Mischler, C.P. 2018. Estimating the breeding population of Black-billed Gulls *Larus bulleri* in New Zealand, and methods for future count surveys. *Notornis* 65: 67-83.

²⁹ Mischler, C.P. 2018. Estimating the breeding population of Black-billed Gulls *Larus bulleri* in New Zealand, and methods for future count surveys. *Notornis* 65: 67-83.

There is some movement of Black-billed Gulls even within one breeding season – two marked birds nested on Motueka Sandspit in 2016/17 having previously been washed out on the Wairau River, Marlborough earlier in the same season (Figure 7).



Figure 7. Mixed breeding colony of ‘Nationally critical’ Black-billed Gulls and ‘At risk – declining’ Red-billed Gulls and White-fronted Terns, Motueka Sandspit, November 2016. Inset bottom left - individually-marked Black-billed Gull – this bird had attempted to breed earlier in the same season on the Wairau River, Marlborough but was washed out in a flood. [D.S. Melville]

Habitat

Black-billed Gulls mostly breed in braided rivers on sparsely vegetated gravels, but some nest on the coast. In the non-breeding season, they occur on the coast³⁰.

Threats

Black-billed Gull is one of the most threatened gull species in the world. In 2008 the total population was estimated at 90,000 mature individuals³¹. Most of the birds were recorded from Southland (70%) and only 5% of the birds were nesting in North Island. The conservation status of this species was changed from Nationally Endangered to Nationally Critical in 2013. A survey of breeding birds in 2016-2017 found a total of 60,256 nests, however this is not thought to indicate an increase in the population but rather results from different survey methods³².

³⁰ McClellan, R.K.; Habraken, A. 2013 [updated 2017]. Black-billed Gull. In Miskelly, C.M. (ed.) *New Zealand Birds Online*. www.nzbirdsonline.org.nz

³¹ McClellan, R.K.; Habraken, A. 2013 [updated 2017]. Black-billed Gull. In Miskelly, C.M. (ed.) *New Zealand Birds Online*. www.nzbirdsonline.org.nz

³² Mischler, C.P. 2018. Estimating the breeding population of Black-billed Gulls *Larus bulleri* in New Zealand, and methods for future count surveys. *Notornis* 65: 67-83.

Data from Southland's four main rivers indicated a decline of more than 80% in 30 years³³. A wide range of factors are thought to be contributing to the decline of this species, including predators (including native Swamp Harriers *Circus approximans* and Southern Black-backed Gulls), weeds covering suitable breeding habitat in braided rivers, changes in agricultural practices, disturbance by people, dogs and vehicles, access to suitable food resources in the marine environment and warming ocean temperatures. Other threats to coastal breeding Black-billed Gulls include loss of habitat from floods and storm surges, as well as construction of rock revetments and other structures³⁴.

White Heron *Ardea modesta*



Bernard Spragg - [https://commons.wikimedia.org/wiki/File:White_heron,__\(Egretta_alba_modesta\)_\(29061007688\).jpg](https://commons.wikimedia.org/wiki/File:White_heron,__(Egretta_alba_modesta)_(29061007688).jpg)

National distribution

New Zealand has a small but stable population of between 150-200 birds³⁵. The only New Zealand breeding colony, of about 30 pairs, is on the Waitangiroto River, Westland. Birds arrive at the breeding colony in August and leave at the end of the breeding season around December. During the nonbreeding

³³ McClellan, R.K. 2009. The ecology and management of Southland's Black-billed Gulls. Thesis, University of Otago, Dunedin, New Zealand.

³⁴ McClellan, R.K.; Habraken, A. 2013 [updated 2017]. Black-billed Gull. In Miskelly, C.M. (ed.) *New Zealand Birds Online*. www.nzbirdsonline.org.nz

³⁵ Adams, R. 2013 [updated 2017]. White Heron. In Miskelly, C.M. (ed.) *New Zealand Birds Online*. www.nzbirdsonline.org.nz

season they are widely distributed along the coasts of both North and South Islands, with occasional records inland ^{36,37,38}.

Tasman/Nelson distribution

White Herons occur in the Tasman/Nelson region during the non-breeding season when they disperse from the breeding colony in south Westland, being recorded from both freshwater and brackish habitats but are most often seen in estuaries.

In the Tasman/Nelson region, White Herons usually occur singly, but occasionally up to three birds can be found together. White Heron is widespread and has been recorded from 17 sites and 13 of the 24 Atlas survey blocks (Figure 8). The highest numbers have been recorded from Westhaven Inlet during the winter period. The highest total number in the district was 9 during the winters of 2000 and 2003. It appears that the number of White Herons in the district may be declining since 2004.

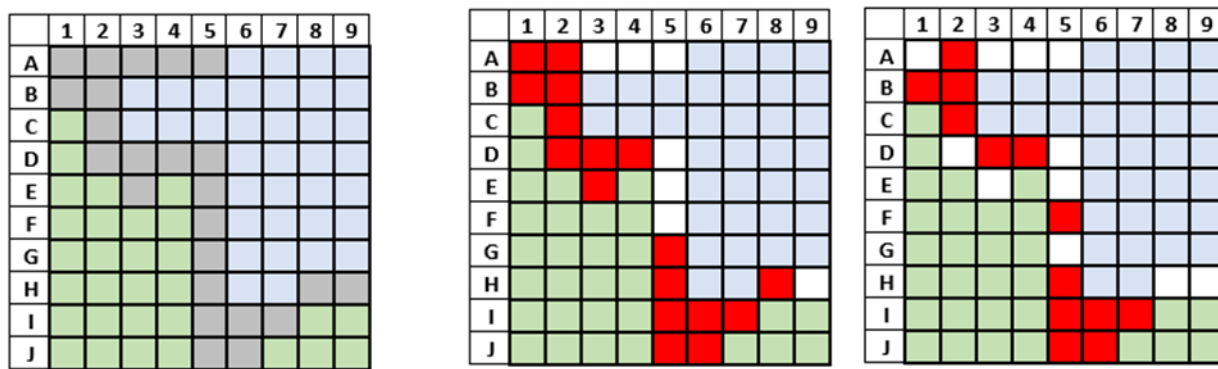


Figure 8. Distribution of White Heron *Ardea modesta* in the Tasman/Nelson region. Left – Atlas blocks surveyed during OSNZ shorebird surveys (grey). Middle – species occurrence from Atlas data (red present, white absent) 1999-2004. Right – species occurrence during OSNZ shorebird surveys (red present, white absent) 1996-2018.

Habitat

White Herons are recorded from both freshwater and brackish habitats but are most often seen in estuaries, although occasionally they occur in wet pastures³⁹ and have even been recorded eating small birds in a garden at Hope⁴⁰.

³⁶ Robertson, C. J. R.; Hyvönen, P.; Fraser, M. J.; Pickard, C.R. 2007. *Atlas of bird distribution in New Zealand, 1999-2004*. The Ornithological Society of New Zealand.

³⁷ Heather, B.; Robertson, H. 2015. *The field guide to the birds of New Zealand*. Penguin Random House, Auckland.

³⁸ Adams, R. 2013 [updated 2017]. White Heron. In Miskelly, C.M. (ed.) *New Zealand Birds Online*. www.nzbirdsonline.org.nz

³⁹ Heather, B.; Robertson, H. 2015. *The field guide to the birds of New Zealand*. Penguin Random House, Auckland.

⁴⁰ W.A. Cook, unpublished.

Threats

The nesting site, which has been occupied since before 1865, is protected as a Nature Reserve. The most common cause of mortality in New Zealand is birds being hit by cars⁴¹.

Nationally endangered

Black-fronted Tern *Chlidonias albostratus*



Renke Lühken - https://commons.wikimedia.org/wiki/File:Black-fronted_Tern,_Greymouth,_New_Zealand.jpg

National distribution

Black-fronted Tern is endemic to New Zealand, being widely distributed; it breeds inland along braided rivers, and in the nonbreeding season occurs mostly along the east coast of the South Island, foraging offshore^{42,43,44}.

⁴¹ Adams, R. 2013 [updated 2017]. White Heron. In Miskelly, C.M. (ed.) *New Zealand Birds Online*. www.nzbirdsonline.org.nz

⁴² Robertson, C. J. R.; Hyvönen, P.; Fraser, M. J.; Pickard, C.R. 2007. *Atlas of bird distribution in New Zealand, 1999-2004*. The Ornithological Society of New Zealand.

⁴³ Heather, B.; Robertson, H. 2015. *The field guide to the birds of New Zealand*. Penguin Random House, Auckland.

⁴⁴ McClellan, R.K.; Habraken, A. 2013 [updated 2017]. Black-billed Gull. In Miskelly, C.M. (ed.) *New Zealand Birds Online*. www.nzbirdsonline.org.nz

Tasman/Nelson distribution

Black-fronted Terns are widely dispersed along the coastline of the Tasman/Nelson region, being recorded from 14 of the 24 Atlas blocks and 22 sites (Figure 9). Most birds are recorded during summer and winter from Farewell Spit (Max: 120 and 109, winter 2006 and 2009), Motueka Sandpit (Max: 62, winter 2015) and the Sand Island (Waimea) (Max 124, summer 2011) and 103 at Bell Island Shellbank (summer 2000) – it should be noted that although these records were in ‘summer’ they refer to birds after the end of the breeding season. Wetlands International currently⁴⁵ gives the 1% population threshold as 45 birds, thus all of these sites rate as being of international importance in accordance with Criterion 6 of the Ramsar Wetland Convention.

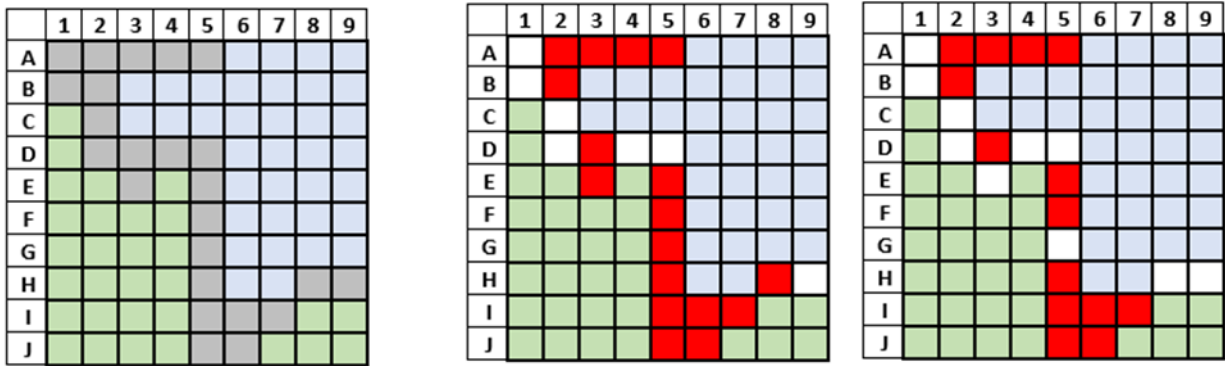


Figure 9. Distribution of Black-fronted Tern *Chlidonias albostrigatus* in the Tasman/Nelson region. Left – Atlas blocks surveyed during OSNZ shorebird surveys (grey). Middle – species occurrence from Atlas data (red present, white absent) 1999-2004. Right – species occurrence during OSNZ shorebird surveys (red present, white absent) 1996-2018.

Black-fronted Terns have occasionally attempted to nest near the mouth of the Motueka River by the State Highway 60 bridge, but they have been unsuccessful due to disturbance, especially from whitebaiters.

Habitat

Black-fronted Terns breed only on braided riverbeds, mostly in the eastern and southern South Island, from Marlborough to Southland⁴⁶, with very small numbers occasionally attempting to nest inland in Tasman District on the Buller (and tributaries such as the Howard and Maitakitaki Rivers), Waimea and Motueka Rivers. The regional importance of the Motueka and Buller rivers for native birds, including Black-fronted Terns, was identified through a River Values Assessment (RiVAS) process^{47,48}. Black-fronted

⁴⁵ Wetlands International. 2018. *Waterbird population estimates*. wpe.wetlands.org [accessed 10 November 2018]

⁴⁶ Bell, M. 2013. Black-fronted tern. In Miskelly, C.M. (ed.) *New Zealand Birds Online*. www.nzbirdsonline.org.nz

⁴⁷ Gaze, P.; James, T.; Hughey, K. 2010. Part B. Native birds in Tasman District: application of the River Values Assessment System (RiVAS). pp. 81-92 in Hughey, K.; Baker, M-A. (eds.). *The River Values Assessment System: Volume 2: Application to cultural, production and environmental values*. LEaP Research Report No. 24B. Lincoln University, Canterbury.

⁴⁸ Sinner, J.; Fenemor, A.; Kilvington, M.; Allen, W.; Tadaki, M.; Baker, M-A. 2012. Valuing our waters – a case study in Tasman District. Prepared for Ministry of Science and Innovation. Cawthron Report No. 2107. 118 p. plus appendices.

Terns gather in winter flocks of up to 300 birds (and occasionally as many as 1,000 birds) at coastal estuaries and lagoons⁴⁹.

Threats

The species has an estimated population of between 5,000-10,000 (8,325 in 2010) individuals and a reduction of 50% over the next 30 years is predicted⁵⁰. This is a result of habitat loss and low breeding success. The most significant cause of their demise is predation by introduced mammals: rats (*Rattus* spp.), Stoats (*Mustella ermina*), Ferrets (*Mustella furo*), feral Cats (*Felis catus*), and Hedgehogs (*Erinaceus europaeus*). Also, Southern Black-backed Gulls and Swamp Harriers are known to predate on the eggs and chicks⁵¹. Rock revetments in rivers also may result in loss of breeding habitat.

New Zealand King Shag *Leucocarbo carunculatus*



Sabine's Sunbird - https://commons.wikimedia.org/wiki/File:New_zealand_king_shag.jpg

⁴⁹ Bell, M. 2013. Black-fronted tern. In Miskelly, C.M. (ed.) *New Zealand Birds Online*. www.nzbirdsonline.org.nz

⁵⁰ O'Donnell, C. F. J.; Hoare, J. M. 2011. Meta-analysis of status and trends in breeding populations of black-fronted terns (*Chlidonias albobriatus*) 1962-2008. *New Zealand Journal of Ecology* 35: 30-43.

⁵¹ Bell, M. 2013. Black-fronted tern. In Miskelly, C.M. (ed.) *New Zealand Birds Online*. www.nzbirdsonline.org.nz

National distribution

New Zealand King Shag is endemic to New Zealand, being almost entirely confined to the Marlborough Sounds^{52,53,54}. The global population declined 24% between 2015 and 2018 from 834⁵⁵ mature individuals to 634⁵⁶ respectively.

Tasman/Nelson distribution

Between 1 January 2015 and 6 October 2016, seven New Zealand King Shags were recorded from Tasman Bay (Figure 10), likely related to five different individuals⁵⁷.

- 2 individuals in juvenile first year plumage (four records)
- 1 mature individual
- 2 individuals in second year plumage

These records come from Adele Island, Tonga Island and Tokongawa Point, Kaiteriteri (Figure 11) and present the greatest number of New Zealand King Shags recorded outside their usual distribution in the Marlborough Sounds. New Zealand King Shag records from Tasman Bay are about 60km west from the nearest colony at Rahuinui, western D’Urville Island; since they seldomly disperse more than 25km from their colony these records so far from the main colonies are atypical⁵⁸.

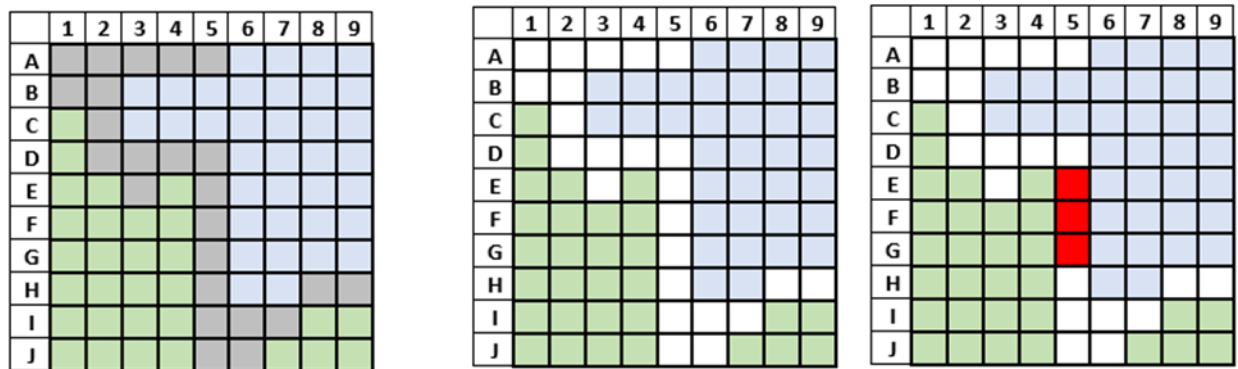


Figure 10. Distribution of New Zealand King Shag *Leucocarbo carunculatus* in the Tasman/Nelson region. Left – Atlas blocks surveyed during OSNZ shorebird surveys (grey). Middle – species occurrence from Atlas data (red present, white absent) 1999-2004. Right – species occurrence based on additional observations (red present, white absent) 2015-2016.

⁵² Robertson, C. J. R.; Hyvönen, P.; Fraser, M. J.; Pickard, C.R. 2007. *Atlas of bird distribution in New Zealand, 1999-2004*. The Ornithological Society of New Zealand.

⁵³ Heather, B.; Robertson, H. 2015. *The field guide to the birds of New Zealand*. Penguin Random House, Auckland.

⁵⁴Schuckard, R. 2013 [updated 2017]. New Zealand King Shag. In Miskelly, C.M. (ed.). *New Zealand Birds Online*. www.nzbirdsonline.org.nz

⁵⁵ Schuckard, R.; Melville, D.S.; Taylor, G. 2015. Population and breeding census of New Zealand king shag (*Leucocarbo carunculatus*). *Notornis* 62: 209-218.

⁵⁶ Schuckard, R. 2018. King Shag Census 2018. Client Report New Zealand King Salmon. Unpublished.

⁵⁷ Robertson, S. 2017. Is King Shag expanding its distribution range? *Birds New Zealand* 13: 4.

⁵⁸ Schuckard, R. 2013 [updated 2017]. New Zealand King Shag. In Miskelly, C.M. (ed.). *New Zealand Birds Online*. www.nzbirdsonline.org.nz

Habitat

New Zealand King Shags occur on rocky islands throughout the year where they nest and roost overnight. They forage in water depths down to about 50m⁵⁹.

Threats

Due to their very restricted range New Zealand King Shags are at risk from activities that impact the deep benthic communities where they forage, disturbance to colonies/roosts and oil spills^{60,61}. Stochastic events, such as cyclonic winds, can create adverse weather conditions for New Zealand King Shags. In particular wash-outs of nests can be severe at some lower lying, exposed colonies.

Reef Heron *Egretta sacra*



Glen Fergus - https://en.wikipedia.org/wiki/Pacific_reef_heron#/media/File:Eastern_Reef_Egret_-_dark_morph.jpg

⁵⁹ Schuckard, R. 2013 [updated 2017]. New Zealand King Shag. In Miskelly, C.M. (ed.). *New Zealand Birds Online*. www.nzbirdsonline.org.nz

⁶⁰ Taylor, G. 2000. *Action plan for seabird conservation in New Zealand. Part A: threatened seabirds*. Threatened Species Occasional Publication No.9. Department of Conservation, Wellington.

⁶¹ Schuckard, R. 2013 [updated 2017]. New Zealand King Shag. In Miskelly, C.M. (ed.). *New Zealand Birds Online*. www.nzbirdsonline.org.nz

National distribution

The New Zealand Reef Heron population is estimated at only 300-500 birds. Reef Herons are sedentary and usually seen singly, being distributed around the rocky coasts of the North Island and the Top of the South Island^{62,63,64,65}.

Tasman/Nelson distribution

Reef Heron is absent from most of the sites where shorebird surveys are conducted (Figure 12) due to lack of suitable habitat. Highest numbers recorded in the area are from Wainui and Westhaven Inlet in Golden Bay and from Waimea and Marahau in Tasman Bay. Up to three birds have been recorded from these sites.

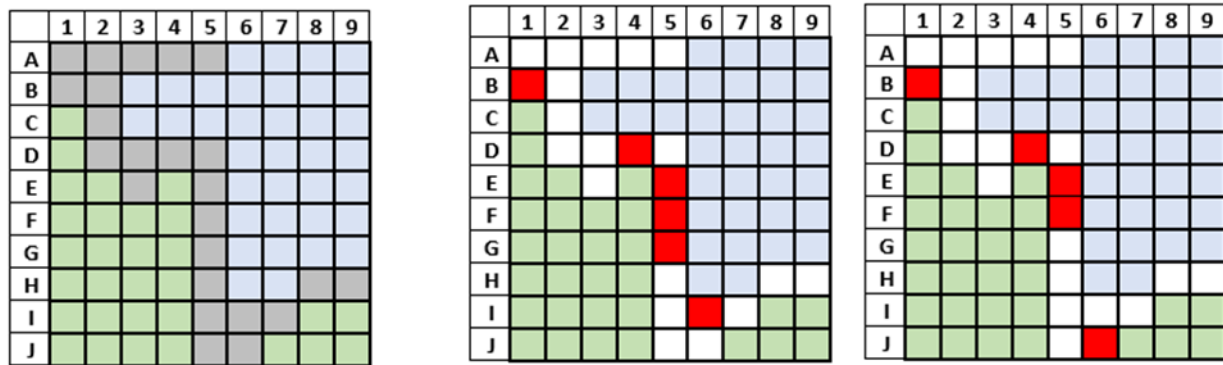


Figure 11. Distribution of Reef Heron *Egretta sacra* in the Tasman/Nelson region. Left – Atlas blocks surveyed during OSNZ shorebird surveys (grey). Middle – species occurrence from Atlas data (red present, white absent) 1999-2004. Right – species occurrence during OSNZ shorebird surveys and additional observations (red present, white absent) 1996-2018.

Habitat

Reef Heron, as the name suggests, is largely restricted to rocky coasts.

Threats

The coastal habitat occupied by the Reef Heron is affected by disturbance from coastal development with increasing encounters with people and dogs⁶⁶.

⁶² Robertson, C. J. R.; Hyvönen, P.; Fraser, M. J.; Pickard, C.R. 2007. *Atlas of bird distribution in New Zealand, 1999-2004*. The Ornithological Society of New Zealand.

⁶³ Heather, B.; Robertson, H. 2015. *The field guide to the birds of New Zealand*. Penguin Random House, Auckland.

⁶⁴ Adams, R. 2013. Reef Heron. In Miskelly, C.M. (ed.) *New Zealand Birds Online*. www.nzbirdsonline.org.nz

⁶⁵ Bell, M. 2010. A census of Reef Herons (*Ardea sacra*) in the Marlborough Sounds. *Notornis* 57: 152-155.

⁶⁶ Adams, R. 2013. Reef Heron. In Miskelly, C.M. (ed.) *New Zealand Birds Online*. www.nzbirdsonline.org.nz

Nationally vulnerable

Caspian Tern *Hydroprogne caspia*



J.J. Harrison - https://commons.wikimedia.org/wiki/File:Hydroprogne_caspia_ralphs_bay.jpg

National distribution

Caspian Terns are widespread around the coast of New Zealand but remain uncommon in New Zealand; it is thought that the national population is about 1,300-1,400 breeding pairs^{67,68,69}.

Tasman/Nelson distribution

Caspian Terns are widespread in the Tasman/Nelson coastal region, being recorded from 37 sites and 18 of the 24 Atlas blocks (Figure 12).

⁶⁷ Robertson, C. J. R.; Hyvönen, P.; Fraser, M. J.; Pickard, C.R. 2007. *Atlas of bird distribution in New Zealand, 1999-2004*. The Ornithological Society of New Zealand.

⁶⁸ Heather, B.; Robertson, H. 2015. *The field guide to the birds of New Zealand*. Penguin Random House, Auckland.

⁶⁹ Fitzgerald, N. 2013. Caspian Tern. In Miskelly, C.M. (ed.) *New Zealand Birds Online*. www.nzbirdsonline.org.nz

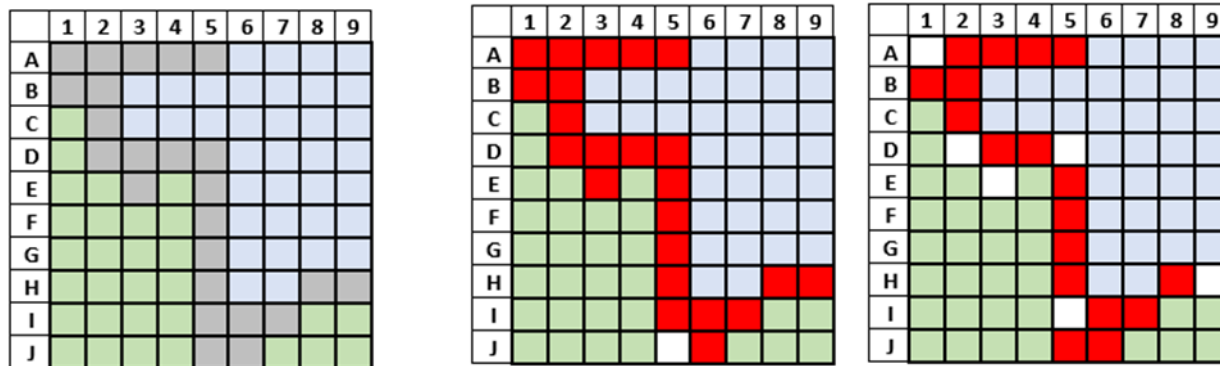


Figure 12. Distribution of Caspian Tern *Hydroprogne caspia* in the Tasman/Nelson region. Left – Atlas blocks surveyed during OSNZ shorebird surveys (grey). Middle – species occurrence from Atlas data (red present, white absent) 1999-2004. Right – species occurrence during OSNZ shorebird surveys (red present, white absent) 1996-2018.

About 7% of the national number of breeding pairs^{70,71} are in the Tasman/Nelson region dispersed over three colonies: Bell Island, Rototai and Farewell Spit. During the non-breeding season Caspian Terns disperse from their breeding colonies and are found throughout the coastal area – but some birds travel greater distances; marked birds from the Bell Island colony being recorded as far North as Auckland⁷².

Highest numbers in the area are recorded from Rototai (Spring 2001 – 147) Farewell Spit (Winter 2010 – 121), Waimea (Spring 2007 – 72). These numbers however highlight the limitations of the counts associated with the shorebird census – the Bell Island colony (the only colony regularly surveyed outside the wader count programme) had at least 35 nesting pairs in 2017.

Habitat

Mostly coastal, but also inland, especially in Canterbury and the central North Island⁷³.

Threats

Like all tern species, Caspian Terns are susceptible to nest disturbance e.g. by people, dogs, and vehicles. Effects of disturbance by people is exacerbated by predation on eggs and chicks by Southern Black-backed Gulls and Red-billed Gulls. Predation by introduced mammals such as feral Cats, Stoats and Ferrets has been recorded⁷⁴. Caspian Terns also often get nests washed out by high spring tides – they may re-lay⁷⁵.

⁷⁰ Bell, M.; Bell, B.D. 2008. Population numbers of the Caspian Tern (*Sterna caspia*) in New Zealand. *Notornis* 55: 84-88.

⁷¹ Fitzgerald, N. 2013. Caspian Tern. In Miskelly, C.M. (ed.) *New Zealand Birds Online*. www.nzbirdsonline.org.nz

⁷² W.A. Cook unpublished.

⁷³ Fitzgerald, N. 2013. Caspian Tern. In Miskelly, C.M. (ed.) *New Zealand Birds Online*. www.nzbirdsonline.org.nz

⁷⁴ Fitzgerald, N. 2013. Caspian Tern. In Miskelly, C.M. (ed.) *New Zealand Birds Online*. www.nzbirdsonline.org.nz

⁷⁵ W.A. Cook unpublished.

At risk – declining

Banded Rail *Gallirallus philippensis*



Department of Conservation - <https://www.doc.govt.nz/nature/native-animals/birds/birds-a-z/banded-rail-moho-pereru/>

National distribution

Banded Rail has a disjunct distribution occurring throughout the northern part of the North Island, the Top of the South Island, and on Stewart Island^{76,77,78}.

Tasman/Nelson distribution

Banded Rail has not been recorded during shorebird surveys as the sites do not include large areas of saltmarsh which is the preferred habitat for this species where they typically stay in dense vegetation and forage usually no more than 6m from the vegetation edge. A specific survey in 2011-2012 to determine the presence/absence of Banded Rail across the Top of the South Island⁷⁹ showed that the species was widespread but generally in low numbers throughout most of the wetlands and coastal estuaries (Figure 13).

⁷⁶ Robertson, C. J. R.; Hyvönen, P.; Fraser, M. J.; Pickard, C.R. 2007. *Atlas of bird distribution in New Zealand, 1999-2004*. The Ornithological Society of New Zealand.

⁷⁷ Heather, B.; Robertson, H. 2015. *The field guide to the birds of New Zealand*. Penguin Random House, Auckland.

⁷⁸ Bellingham, M. 2013. Banded Rail. In Miskelly, C.M. (ed.) *New Zealand Birds Online*. www.nzbirdsonline.org.nz

⁷⁹ Cook, W.A. Survey of Banded Rail 2011/2012. Tasman, Nelson and Marlborough District. Unpublished.

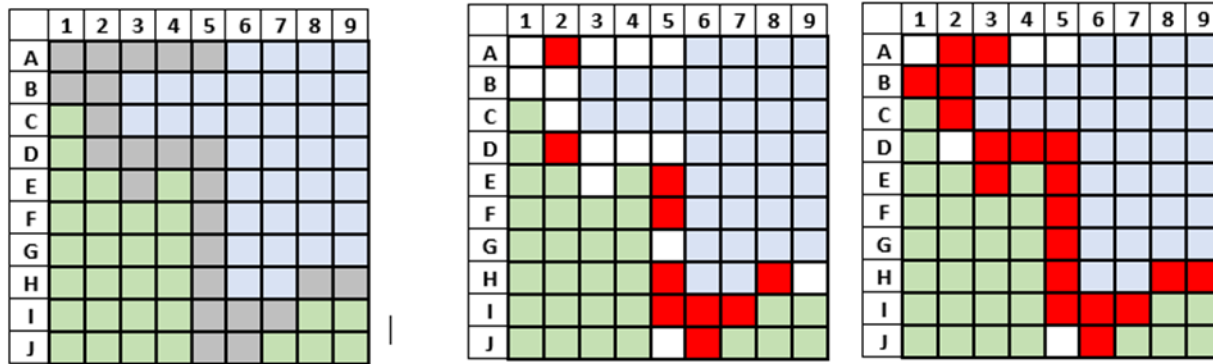


Figure 13. Distribution of Banded Rail *Gallirallus philippensis* in the Tasman/Nelson region. Left – Atlas blocks surveyed during OSNZ shorebird surveys (grey). Middle – species occurrence from Atlas data (red present, white absent) 1999-2004. Right –species occurrence based on additional observations (red present, white absent) 1996-2018.

Habitat

Banded Rails in the South Island are restricted to large saltmarshes in Tasman, Nelson and Marlborough with stands of Sea Rush *Juncus maritimus*, and mixed stands of Jointed Rush *Leptocarpus similis* and Marsh Ribbonwood *Plagianthus divaricatus*. Banded Rails are only found in marshes with a regular supply of freshwater, possibly associated with the presence of the snail *Potamopygrus estuarinus*, which occurs in brackish water and is an important item in the diet of Banded Rails⁸⁰.

Threats

Territories are about 1.5ha/pair⁸¹, meaning that very small or fragmented saltmarshes are unlikely to support Banded Rails. Wetland loss around the Tasman/Nelson region coast has reduced available habitat and increased fragmentation of what remains, while increased residential development of the coastal hinterland will have increased disturbance and the risk of predation by Cats. Nonetheless, Banded Rail are recorded, at least occasionally, from small habitat areas close to urban development^{82,83,84,85}.

In the early 1980s Elliot (1989)⁸⁶ estimated that there were about 100 pairs across the Top of the South (Tasman, Nelson and Marlborough), but it is thought likely that numbers have declined since then. Subsequent surveys have shown that Banded Rails continue to be generally widely distributed in suitable

⁸⁰ Elliott, G. 1989. The distribution of Banded Rails and Marsh Crakes in coastal Nelson and the Marlborough Sounds. *Notornis* 36: 117-123.

⁸¹Bellingham, M. 2013. Banded Rail. In Miskelly, C.M. (ed.) *New Zealand Birds Online*. www.nzbirdsonline.org.nz

⁸² Moorhouse, R. 2017. Results of Nelson Nature, Environmental Monitoring – coastal habitats shorebird survey – October 2016 to January 2017. Unpublished MS.

⁸³ North, M. 2018. Nelson City coastal ecosystems: site values, threats and management priorities. Draft report – unpublished.

⁸⁴ Harper, G.A. 2015. Nelson Nature shorebird survey 2015. Unpublished MS.

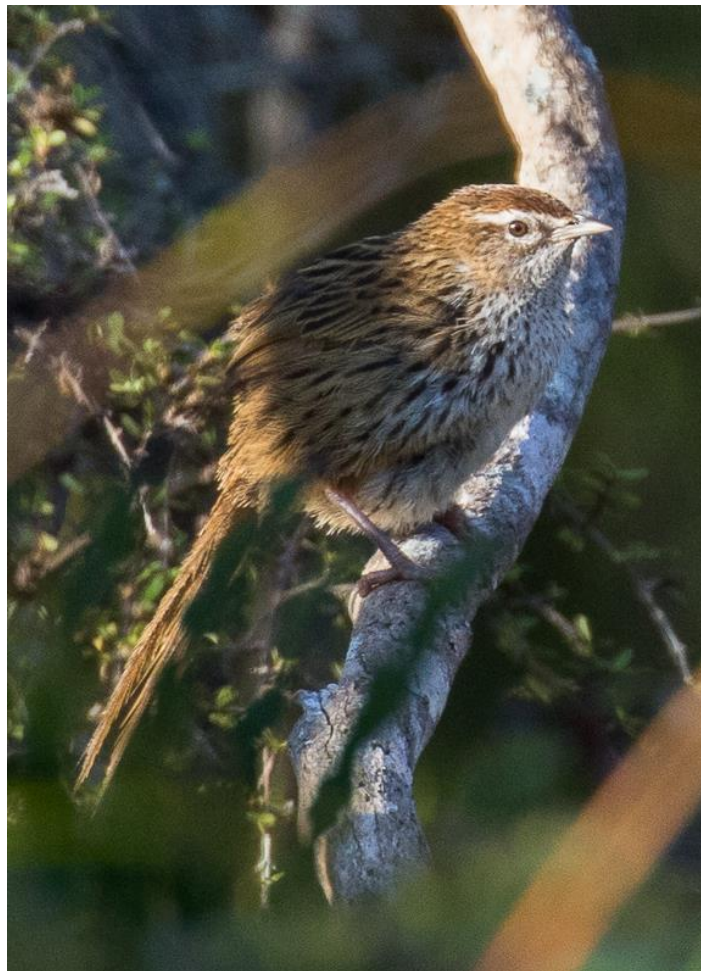
⁸⁵ Brownlie, k. 2018. Banded Rail survey in Waimea estuary 5 August 2018. Unpublished MS.

⁸⁶ Elliott, G. 1989. The distribution of Banded Rails and Marsh Crakes in coastal Nelson and the Marlborough Sounds. *Notornis* 36: 117-123.

habitat^{87,88}, but numbers may vary considerably. Thus in 1990 there was no evidence of Banded Rails in the Moutere Inlet⁸⁹, yet in 1998/1997 tracks were seen in six different saltmarsh areas there⁹⁰.

Banded Rails, especially juveniles, may disperse widely, meaning that areas of suitable habitat may be recolonised in the event of a local extinction, e.g. as a result of predation, provided that there are viable source populations producing young. Predator control, as in the Abel Tasman National Park and around Waimea Inlet, needs to be sustained if these areas are to continue to contribute to the long-term viability of Banded Rails in the Tasman/Nelson Region.

Fernbird *Bowdleria punctata*



Francesco Veronesco - https://commons.wikimedia.org/wiki/File:New_Zealand_Fernbird_-_Okarito,_New_Zealand.jpg

⁸⁷ Cook, W.A. Survey of Banded Rail 2011/2012. Tasman, Nelson and Marlborough District. Unpublished.

⁸⁸ Hutzler, I. 2015. Wetland bird survey – Abel Tasman National Park, October/November 2015. Final report for Project Janszoon. Unpublished MS.

⁸⁹ Elliott, G. 1990. Banded Rail distribution in Tasman Bay and the Marlborough Sounds, winter 1990. Department of Conservation, unpublished MS.

⁹⁰ Lurling, J.J.F. 1998. The distribution of Banded Rails in the Moutere and Waimea Inlets, Nelson, 1997-1998. Unpublished MS.

National distribution

Fernbird is a New Zealand endemic, occurring throughout much of the North Island and western and southern areas of the South Island^{91,92,93}.

Tasman/Nelson distribution

Fernbirds have not been recorded during shorebird surveys as the sites do not include large areas of tidal wetlands which is the preferred habitat. However, Fernbirds have been recorded from almost Atlas block along the coast in the Tasman/Nelson region during other surveys (Figure 14). Fernbirds can be easily overlooked unless specifically targeted in surveys, and thus the apparent increase in distribution suggested in Figure 14 cannot be taken as necessarily reflecting a genuine increase. During a recent survey (2018) in Waimea Inlet, only one Fernbird was sighted, despite 15 sites apparently having suitable habitat – predation was suggested as a likely cause for limiting Fernbird survival and nesting success around the Waimea Estuary⁹⁴. During a survey in Abel Tasman National Park in 2015, Fernbirds were recorded at 7 sites⁹⁵. Fernbird numbers at Paremata Flats are reported to have declined despite extensive predator control⁹⁶ – the cause(s) of this are unknown.

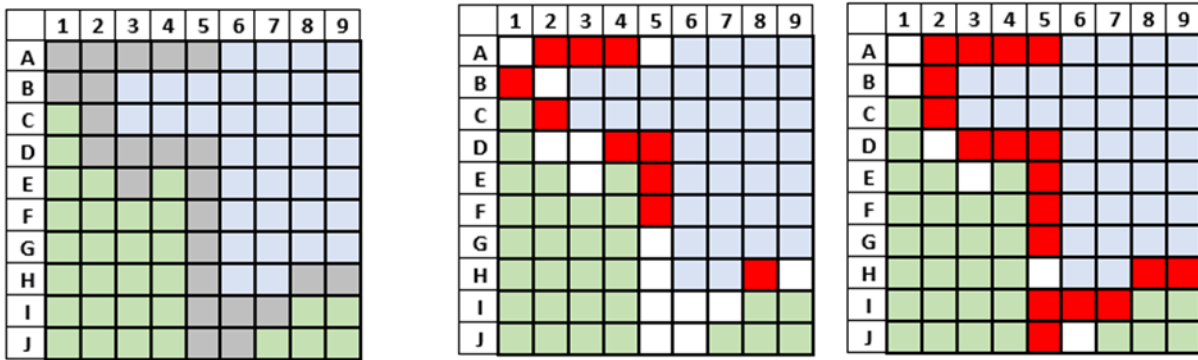


Figure 14. Distribution of Fernbird *Bowdleria punctata* in the Tasman/Nelson region. Left – Atlas blocks surveyed during OSNZ shorebird surveys (grey). Middle – species occurrence from Atlas data (red present, white absent) 1999-2004. Right – species occurrence based on additional observations (red present, white absent) 1996-2018.

Habitat

Fernbirds occur through a diverse range of habitats including wetlands with dense low vegetation such as reedbeds and pakihi, tussock grassland and dry shrubland^{97,98}.

⁹¹ Robertson, C. J. R.; Hyvönen, P.; Fraser, M. J.; Pickard, C.R. 2007. *Atlas of bird distribution in New Zealand, 1999-2004*. The Ornithological Society of New Zealand.

⁹² Heather, B.; Robertson, H. 2015. *The field guide to the birds of New Zealand*. Penguin Random House, Auckland.

⁹³ Miskelly, C.M. 2013. Fernbird. In Miskelly, C.M. (ed.) *New Zealand Birds Online*. www.nzbirdsonline.org.nz

⁹⁴ Hutzler, I. 2018. Fernbird survey in Waimea Estuary. Report to the Tasman Environmental Trust. Unpublished MS.

⁹⁵ Hutzler, I. 2015. Wetland bird survey – Abel Tasman National Park, October/November 2015. Final report for Project Janszoon. Unpublished MS.

⁹⁶ I. Price pers. comm.

⁹⁷ Miskelly, C.M. 2013. Fernbird. In Miskelly, C.M. (ed.) *New Zealand Birds Online*. www.nzbirdsonline.org.nz

⁹⁸ Heather, B.; Robertson, H. 2015. *The field guide to the birds of New Zealand*. Penguin Random House, Auckland.

Threats

Introduced predators and loss of wetland habitats has severely reduced the distribution of this species⁹⁹.

The numbers of Fernbirds at Farewell Spit increased dramatically following a 1080 drop in 2007. Whereas previously Fernbird was only recorded from the Lighthouse area, after the 1080 application the species was commonly recorded from the whole length of Farewell Spit, suggesting high breeding productivity; however, within two years numbers had dropped dramatically¹⁰⁰. The cause for the subsequent decline is not known, but may have resulted from an increase in predation.

Despite its reputed 'weak' flying ability, Fernbird can disperse quite widely, juveniles being found more than 20km from the nearest breeding population¹⁰¹. If suitable habitat is maintained with low predator populations there is potential for natural (re) establishment of Fernbird in the Tasman/Nelson coastal region.

Marsh Crake *Porzana pusilla*



Peter Jacobs - [https://commons.wikimedia.org/wiki/File:Almost!_\(6165018831\).jpg](https://commons.wikimedia.org/wiki/File:Almost!_(6165018831).jpg)

⁹⁹ Miskelly, C.M. 2013. Fernbird. In Miskelly, C.M. (ed.) *New Zealand Birds Online*. www.nzbirdsonline.org.nz

¹⁰⁰ Ornithological Society of New Zealand unpublished.

¹⁰¹ Heather, B.; Robertson, H. 2015. *The field guide to the birds of New Zealand*. Penguin Random House, Auckland.

National distribution

Marsh Crakes have a nationwide distribution but are most common in the South Island^{102,103,104}.

Tasman/Nelson distribution

Marsh Crake has not been recorded during shorebird surveys as the sites do not include suitable habitat. Marsh Crake was recorded in two blocks during the Atlas project: Awaroa and Marahau. More recent records from eBird, but not part of the shorebird survey observations, show a slightly wider distribution (Figure 15) compared to the Atlas project, but it is unclear whether this reflects a genuine increase. Due to its secretive habits, no New Zealand population estimate is available.

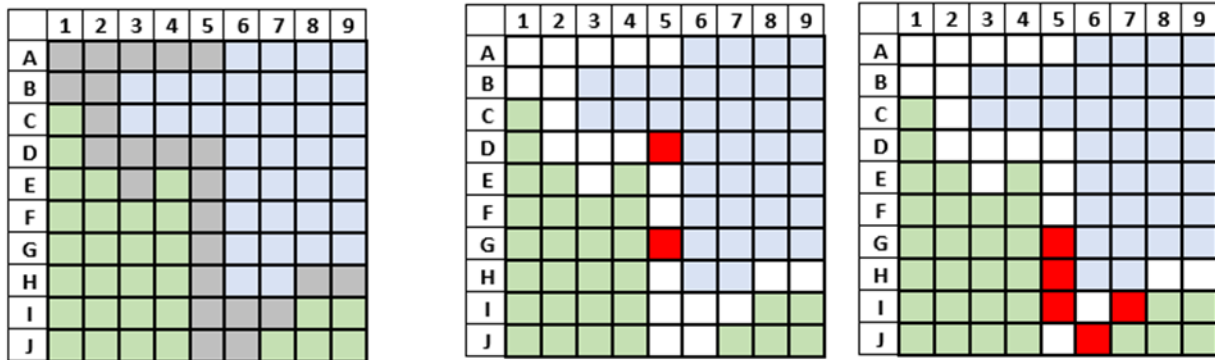


Figure 15. Distribution of Marsh Crake *Porzana pusilla* in the Tasman/Nelson region. Left – Atlas blocks surveyed during OSNZ shorebird surveys (grey). Middle – species occurrence from Atlas data (red present, white absent) 1999-200. Right – species occurrence based on additional observations (red present, white absent) 1996-2018.

Habitat

Mostly in Raupo *Typha orientalis* and Purei *Carex secta* swamps, but also in saltmarshes in the South Island^{105,106}.

Threats

Marsh Crakes are threatened by wetland destruction and predation by introduced mammals¹⁰⁷.

¹⁰² Robertson, C. J. R.; Hyvönen, P.; Fraser, M. J.; Pickard, C.R. 2007. *Atlas of bird distribution in New Zealand, 1999-2004*. The Ornithological Society of New Zealand.

¹⁰³ Heather, B.; Robertson, H. 2015. *The field guide to the birds of New Zealand*. Penguin Random House, Auckland.

¹⁰⁴ O'Donnell, C.F.J. 2013 [updated 2017]. Marsh Crake. In Miskelly, C.M. (ed.) *New Zealand Birds Online*. www.nzbirdsonline.org.nz

¹⁰⁵ Heather, B.; Robertson, H. 2015. *The field guide to the birds of New Zealand*. Penguin Random House, Auckland.

¹⁰⁶ O'Donnell, C.F.J. 2013 [updated 2017]. Marsh Crake. In Miskelly, C.M. (ed.) *New Zealand Birds Online*. www.nzbirdsonline.org.nz

¹⁰⁷ O'Donnell, C.F.J. 2013 [updated 2017]. Marsh Crake. In Miskelly, C.M. (ed.) *New Zealand Birds Online*. www.nzbirdsonline.org.nz

Red-billed Gull *Larus novaehollandiae*



Alan Vernon - https://commons.wikimedia.org/wiki/File:Red_Billed_Gull,_on_South_Island,_New_Zealand.jpg

National distribution

Red-billed Gulls breed around the coasts of New Zealand with a few inland in the North Island. It is the most numerous gull around the coasts^{108,109,110}.

Tasman/Nelson distribution

Red-billed Gulls are recorded throughout the Tasman/Nelson coastal area (Figure 16). Nelson Haven and Tahunanui have the highest number of Red-billed Gulls in the Top of South Island, with several records of more than 1,000 birds, mostly in the summer time.

¹⁰⁸ Robertson, C. J. R.; Hyvönen, P.; Fraser, M. J.; Pickard, C.R. 2007. *Atlas of bird distribution in New Zealand, 1999-2004*. The Ornithological Society of New Zealand.

¹⁰⁹ Heather, B.; Robertson, H. 2015. *The field guide to the birds of New Zealand*. Penguin Random House, Auckland.

¹¹⁰ Mills, J.A. 2013 [updated 2017]. Red-billed Gull. In Miskelly, C.M. (ed.) *New Zealand Birds Online*. www.nzbirdsonline.org.nz

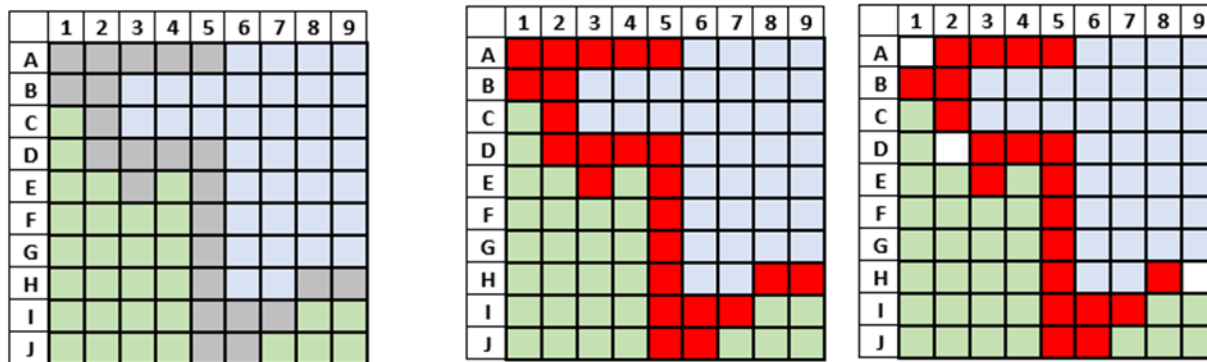


Figure 16. Distribution of Red-billed Gull *Larus novaehollandiae* in the Tasman/Nelson region. Left – Atlas blocks surveyed during OSNZ shorebird surveys (grey). Middle – species occurrence from Atlas data (red present, white absent) 1999-2004. Right – species occurrence during OSNZ shorebird surveys (red present, white absent) 1996-2018.

Breeding of Red-billed Gulls has been recorded from Nelson Haven, Sand Island, Motueka Sandspit and Bird Island near Collingwood. About 400 Red-billed Gulls were present during the December 2016 breeding season on the Nelson Boulder Bank¹¹¹; there has been a colony at this site since at least 1943-44¹¹².

Habitat

Red-billed Gulls occur in estuaries, harbours and open coasts, and also forage in urban areas and on wet pastures.

Threats

A nationwide survey of Red-billed Gulls between 2014-2016 showed significant declines compared with a comparable survey in the 1960s¹¹³; from about 40,000 breeding pairs to about 30,000 breeding pairs. The biggest colony of Red-billed Gulls, at Kaikoura¹¹⁴, started to decline in 1994 and had more than halved by 2003¹¹⁵. Colonies where mammalian predators are controlled have shown an increase in the population over the same time span. It is also thought that climate-induced fluctuation in the availability of krill

¹¹¹ Moorhouse, R. 2017. Results of Nelson Nature, Environmental Monitoring – coastal habitats shorebird survey – October 2016 to January 2017. Unpublished MS.

¹¹² Gurr, L. 1953. A note on the breeding age of Red-billed Gulls (*Larus novaehollandiae scopulinus*) at Nelson, N.Z. *Notornis* 5: 185.

¹¹³ Frost, P.G.H.; Taylor, G.A. 2018. The status of the red-billed gull (*Larus novaehollandiae scopulinus*) in New Zealand. *Notornis* 65: 1-13.

¹¹⁴ Mills, J.A. 2013 [updated 2017]. Red-billed Gull. In Miskelly, C.M. (ed.) *New Zealand Birds Online*. www.nzbirdsonline.org.nz

¹¹⁵ Mills, J.A.; Yarrall, J.W.; Bradford-Grieve, J.M.; Morrissey, M.; Mills, D.A. 2018. Major changes in the Red-billed Gull (*Larus novaehollandiae scopulinus*) population at Kaikoura Peninsula, New Zealand; causes and consequences: a review. *Notornis* 65: 14-26.

euphausiids (a principal food of the birds during the breeding season), has a negative effect on breeding success¹¹⁶.

Spotless Crake *Porzana tabuensis*



Frankzed - https://commons.wikimedia.org/wiki/File:Porzana_tabuensis_-Crop.jpg

National distribution

Widely distributed in the North Island but much rarer in the South^{117,118,119}.

Tasman/Nelson distribution

Spotless Crake is very secretive, but responds to playback of recorded calls¹²⁰. It has been reported calling at two sites - Awaroa and Marahau (Figure 17)¹²¹.

¹¹⁶ Mills, J.A.; Yarrall, J.W.; Bradford-Grieve, J.M.; Uddstrom, M.J.; Renwick, J.A.; Merilä, J. 2008. The impact of climate fluctuation on food availability and reproductive performance of the planktivorous red-billed gull *Larus novaehollandiae scopulinus*. *Journal of Animal Ecology* 77: 1129-1142.

¹¹⁷ Robertson, C. J. R.; Hyvönen, P.; Fraser, M. J.; Pickard, C.R. 2007. *Atlas of bird distribution in New Zealand, 1999-2004*. The Ornithological Society of New Zealand.

¹¹⁸ Heather, B.; Robertson, H. 2015. *The field guide to the birds of New Zealand*. Penguin Random House, Auckland.

¹¹⁹ Fitzgerald, N. 2013 [updated 2017]. Spotless Crake. In Miskelly, C.M. (ed.) *New Zealand Birds Online*. www.nzbirdsonline.org.nz

¹²⁰ Heather, B.; Robertson, H. 2015. *The field guide to the birds of New Zealand*. Penguin Random House, Auckland.

¹²¹ Hutzler, I. 2015. Wetland bird survey – Abel Tasman National Park, October/November 2015. Final report for Project Janszoon. Unpublished MS.

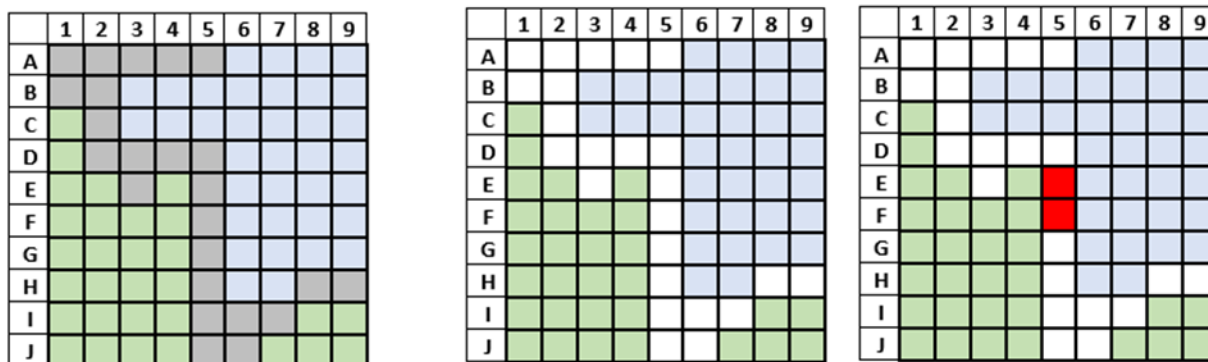


Figure 17. Distribution of Spotless Crake *Porzana tabuensis* in the Tasman/Nelson region. Left – Atlas blocks surveyed during OSNZ shorebird surveys (grey). Middle – species occurrence from Atlas data (red present, white absent) 1999-2004. Right – species occurrence based on additional observations (red present, white absent) 1996-2018.

Habitat

Predominantly a bird of freshwater wetlands with shallow water, dominated by dense emergent vegetation, particularly Raupo *Typha orientalis*, but also sedge and reed¹²².

Threats

No population estimates are available however extensive decline in its prime habitat of lowland wetlands, together with introduced mammalian predators is likely to have severely reduced the species in terms of both number and distribution¹²³.

White-fronted Tern *Sterna striata*



Byron Chin - <https://www.flickr.com/photos/48282656@N00/40642534272>

¹²² Fitzgerald, N. 2013 [updated 2017]. Spotless Crake. In Miskelly, C.M. (ed.) *New Zealand Birds Online*. www.nzbirdsonline.org.nz

¹²³ Fitzgerald, N. 2013 [updated 2017]. Spotless Crake. In Miskelly, C.M. (ed.) *New Zealand Birds Online*. www.nzbirdsonline.org.nz

National distribution

White-fronted Terns are widespread and common around New Zealand coasts but numbers are reduced in winter when many, especially juveniles, migrate to southeast Australian waters^{124,125,126}.

Tasman/Nelson distribution

White-fronted Terns have been recorded from 36 sites and 20 of the 24 Atlas blocks (Figure 18). The highest numbers are recorded from Farewell Spit (winter 2007 – 2200 and summer 2011 – 1632) and Rototai (spring 2001 – 1100).

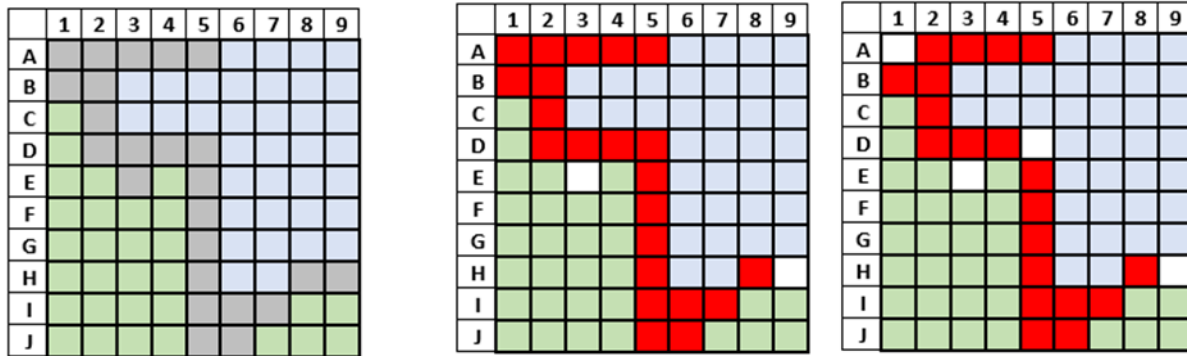


Figure 18. Distribution of White-fronted Tern *Sterna striata* in the Tasman/Nelson region. Left – Atlas blocks surveyed during OSNZ shorebird surveys (grey). Middle – species occurrence from Atlas data (red present, white absent) 1999-2004. Right – species occurrence during OSNZ shorebird surveys (red present, white absent) 1996-2018.

Breeding of White-fronted Terns along the Tasman/Nelson region coast has been recorded from Motueka Sandspit, Bell Island, Nelson Boulder Bank and Sand Island. In 1997, about 5% of the 11,500 breeding pairs recorded in New Zealand was breeding in the Tasman/Nelson region¹²⁷.

Habitat

A coastal species nesting and roosting on rocky coasts, shellbanks and sandbars.

Threats

The New Zealand population has declined markedly over the last 40 years and is currently regarded as ‘At Risk – Declining’. White-fronted Terns often nest together with Red-billed Gulls and colonies are vulnerable to disturbance by people and dogs¹²⁸.

¹²⁴ Robertson, C. J. R.; Hyvönen, P.; Fraser, M. J.; Pickard, C.R. 2007. *Atlas of bird distribution in New Zealand, 1999-2004*. The Ornithological Society of New Zealand.

¹²⁵ Heather, B.; Robertson, H. 2015. *The field guide to the birds of New Zealand*. Penguin Random House, Auckland.

¹²⁶ Mills, J.A. 2013. White-fronted Tern. In Miskelly, C.M. (ed.) *New Zealand Birds Online*. www.nzbirdsonline.org.nz

¹²⁷ Powlesland, R. 1998. Gull and tern survey. *OSNZ News* 88: 3-9.

¹²⁸ Mills, J.A. 2013. White-fronted Tern. In Miskelly, C.M. (ed.) *New Zealand Birds Online*. www.nzbirdsonline.org.nz

At risk – recovering

Pied Shag *Phalacrocorax varius*



Bernard Spragg - <https://www.flickr.com/photos/volvob12b/31946398723>

National distribution

Pied Shags occur around much of the coast of New Zealand^{129,130,131}.

Tasman/Nelson distribution

Pied Shags occur throughout the Tasman/Nelson coastal region (Figure 19). They breed in mature trees at a number of sites along the Tasman/Nelson coasts including the Nelson Boulder Bank, Rough Island, Jacket Island, and Split Apple Rock. No detailed survey has been conducted.

¹²⁹ Robertson, C. J. R.; Hyvönen, P.; Fraser, M. J.; Pickard, C.R. 2007. *Atlas of bird distribution in New Zealand, 1999-2004*. The Ornithological Society of New Zealand.

¹³⁰ Heather, B.; Robertson, H. 2015. *The field guide to the birds of New Zealand*. Penguin Random House, Auckland.

¹³¹ Powlesland, R.G. 2013 [updated 2017]. Pied Shag. In Miskelly, C.M. (ed.) *New Zealand Birds Online*. www.nzbirdsonline.org.nz

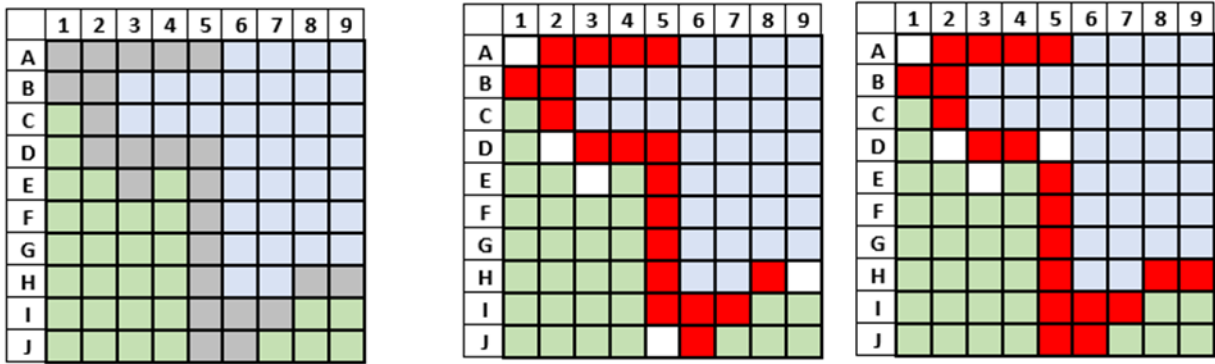


Figure 19. Distribution of Pied Shag *Phalacrocorax varius* in the Tasman/Nelson region. Left – Atlas blocks surveyed during OSNZ shorebird surveys (grey). Middle – species occurrence from Atlas data (red present, white absent) 1999-2004. Right – species occurrence during OSNZ shorebird surveys (red present, white absent) 1996-2018.

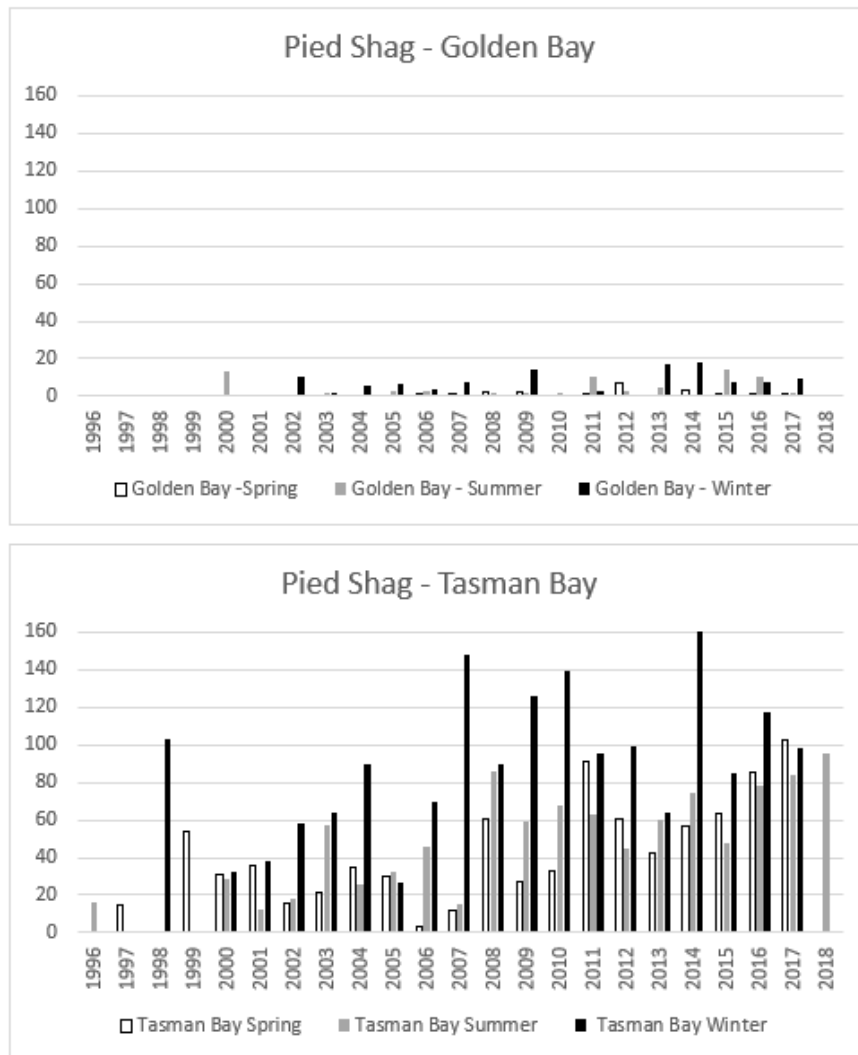


Figure 20. Seasonal occurrence of Pied Shags at sites in Golden and Tasman Bays.

Birds recorded during shorebird surveys are usually roosting on sand beaches. Pied Shags are more common in Tasman Bay compared to Golden Bay (Figure 20). Highest numbers are counted on Motueka Sandspit (Winter 1998 – 103, Winter 2007 – 109) and Rabbit Island (Spring 2011 – 59).

Habitat

The Pied Shag is a coastal species, only occasionally occurring inland at coastal lagoons and lakes. It is generally a solitary forager, predominantly feeding in coastal marine waters less than 10 m deep¹³².

Threats

Estimating the national population is complicated by the fact that the species breeds throughout the year – in 2013 the national breeding population was estimated at 3,159 pairs in 220 colonies – which potentially extrapolates to 6,400 pairs if there are two breeding populations¹³³. The central New Zealand population has increased considerably since the 1980s but mostly in Marlborough and Canterbury. Wildlife Management International (2013)¹³⁴ estimated the Tasman/Nelson population to be about 100 pairs, but indicated that numbers may now be declining, despite an increase in the number of breeding sites - this being in contrast to Butler (2008) who noted an increase in numbers¹³⁵. Pied Shags are occasionally caught in fishing gear¹³⁶ and colonies in close proximity to human habitation are sometimes removed – as happened to the Rocks Road, Nelson colony in 1990¹³⁷.

¹³² Powlesland, R.G. 2013 [updated 2017]. Pied Shag. In Miskelly, C.M. (ed.) *New Zealand Birds Online*. www.nzbirdsonline.org.nz

¹³³ Wildlife Management International. 2013. *Pied Shag: A national population review*. Report prepared for the Department of Conservation.

¹³⁴ Wildlife Management International. 2013. *Pied Shag: A national population review*. Report prepared for the Department of Conservation.

¹³⁵ Butler, D.J. 2008. *Tasman biodiversity overview*. Tasman District Council.

¹³⁶ Wildlife Management International. 2013. *Pied Shag: A national population review*. Report prepared for the Department of Conservation.

¹³⁷ Hawkins, J.M.; Heinekamp, H.F. 1992. Relocation of Pied Shag colony in Nelson City. *Notornis* 39: 95-98.

Naturally uncommon

Black Shag *Phalacrocorax carbo*



J.J. Harrison - https://commons.wikimedia.org/wiki/File:Phalacrocorax_carbo_Vic.jpg

National distribution

Black Shags occur throughout New Zealand both coastally and on inland waters^{138,139,140}.

Tasman/Nelson distribution

Black Shags are recorded, usually in small numbers, along the coast of the Tasman/Nelson region (Figure 21). They are most common in Tasman Bay (highest number Winter 2001 – 49) and Farewell Spit (highest numbers in - Summer 2000 – 63 and Winter 2009 – 81).

¹³⁸ Robertson, C. J. R.; Hyvönen, P.; Fraser, M. J.; Pickard, C.R. 2007. *Atlas of bird distribution in New Zealand, 1999-2004*. The Ornithological Society of New Zealand.

¹³⁹ Heather, B.; Robertson, H. 2015. *The field guide to the birds of New Zealand*. Penguin Random House, Auckland.

¹⁴⁰ Powlesland, R.G. 2013. Black Shag. In Miskelly, C.M. (ed.) *New Zealand Birds Online*. www.nzbirdsonline.org.nz

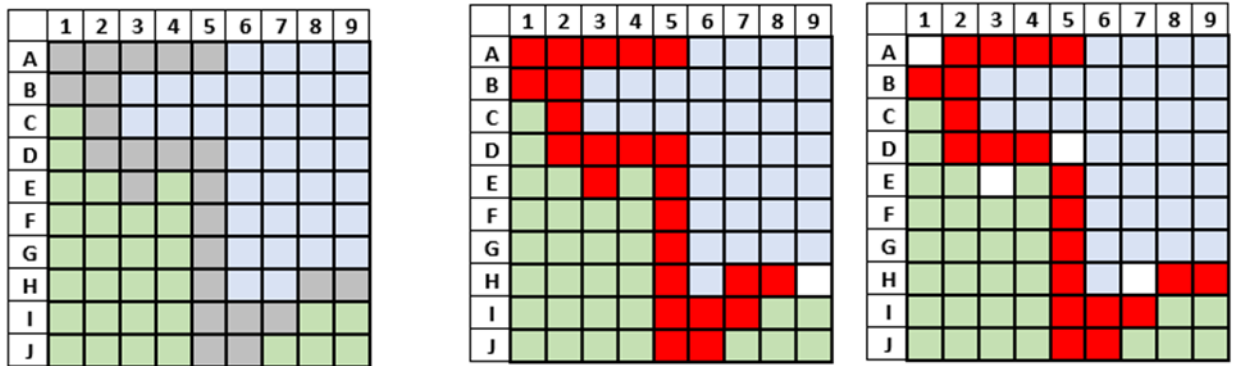


Figure 21. Distribution of Black Shag *Phalacrocorax carbo* in the Tasman/Nelson region. Left – Atlas blocks surveyed during OSNZ shorebird surveys (grey). Middle – species occurrence from Atlas data (red present, white absent) 1999-2004. Right – species occurrence during OSNZ shorebird surveys (red present, white absent) 1996-2018.

Habitat

Generally, Black Shags feed alone, but if prey is abundant, they also may form flocks to forage cooperatively. Foraging takes place in both marine coastal waters and rivers and fresh water ponds. Birds recorded during shorebird surveys are usually roosting on sand beaches.

Threats

In 2012 the national population was estimated to be between 5000-10,000 mature individuals. The species is sensitive to disturbance by people and some are killed by fishing gear including occasional drownings in set-nets and being caught on hooks¹⁴¹.

¹⁴¹ Powlesland, R.G. 2013. Black Shag. In Miskelly, C.M. (ed.) *New Zealand Birds Online*. www.nzbirdsonline.org.nz

Little Black Shag *Phalacrocorax sulcirostris*



Bernard Sragg - <https://www.flickr.com/photos/volvob12b/28181390979>

National distribution

Little Black Shags are widespread both around the coast and inland in the North Island, but are predominantly coastal in the South Island, where most occur in the Top of the South^{142,143,144}.

Tasman/Nelson distribution

Flocks of Little Black Shags can be found in particular during the winter in Tasman Bay. In the winter of 2015, 119 birds were recorded from the eastern Waimea Inlet. The species has been recorded from 13 sites and 21 Atlas blocks (Figure 22).

¹⁴² Robertson, C. J. R.; Hyvönen, P.; Fraser, M. J.; Pickard, C.R. 2007. *Atlas of bird distribution in New Zealand, 1999-2004*. The Ornithological Society of New Zealand.

¹⁴³ Heather, B.; Robertson, H. 2015. *The field guide to the birds of New Zealand*. Penguin Random House, Auckland.

¹⁴⁴ Armitage, I. 2013 [updated 2017]. Little Black Shag. In Miskelly, C.M. (ed.) *New Zealand Birds Online*. www.nzbirdsonline.org.nz

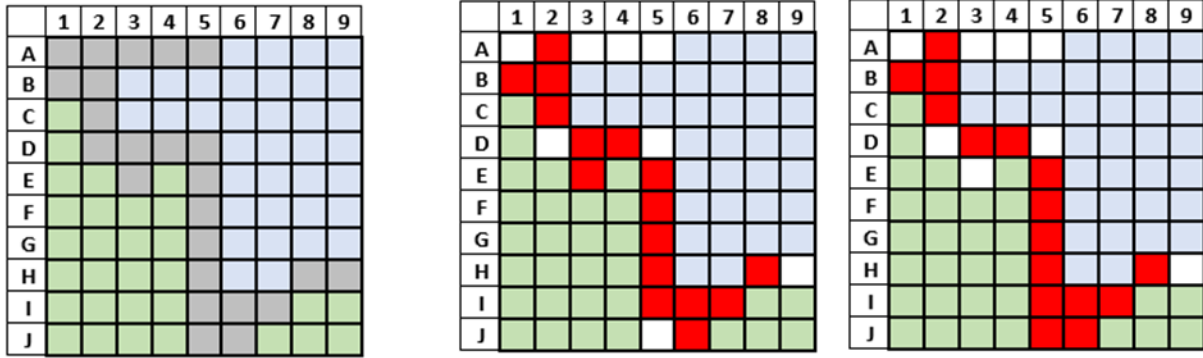


Figure 22. Distribution of Little Black Shag *Phalacrocorax sulcirostris* in the Tasman/Nelson region. Left – Atlas blocks surveyed during OSNZ shorebird surveys (grey). Middle – species occurrence from Atlas data (red present, white absent) 1999-2004. Right – species occurrence during OSNZ shorebird surveys (red present, white absent) 1996-2018.

Habitat

In the Tasman/Nelson region the Little Black Shag is a coastal bird usually found foraging in flocks which ‘herd’ fish in shallow waters.

Threats

The population is unknown (probably several thousand and probably slowly increasing). Foraging birds are at risk from set nets¹⁴⁵.

Royal Spoonbill *Platalea regia*



Francesco Veronesi - [https://commons.wikimedia.org/wiki/File:Royal_Spoonbill_-_New_Zealand_\(38491851044\).jpg](https://commons.wikimedia.org/wiki/File:Royal_Spoonbill_-_New_Zealand_(38491851044).jpg)

¹⁴⁵ Armitage, I. 2013 [updated 2017]. Little Black Shag. In Miskelly, C.M. (ed.) *New Zealand Birds Online*. www.nzbirdsonline.org.nz [updated 9 June 2014]

National distribution

Royal Spoonbills colonised New Zealand in the past century, the first breeding being reported in 1949. In 1979 the New Zealand population was estimated at 26 birds. The most recent winter census in 2012 estimated a total of 2,360 birds¹⁴⁶. A colony and nest count during the 2013-14 breeding season found 19 colonies with at least 614 nests¹⁴⁷; a further breeding site was discovered in January 2019¹⁴⁸. After breeding, birds disperse to estuaries and coastal wetlands around the country^{149,150,151}.

Tasman/Nelson distribution

The species is widespread and usually gregarious, being recorded from 19 of the 24 Atlas grid squares and 31 sites (Figure 23). Most individuals are recorded during the winter census from Farewell Spit (2000 – 137, 2001- 111) and Tasman Bay (2014- 141, 2017- 121). The central part of Farewell Spit, Westhaven Inlet, Waimea Inlet, the Moutere Inlet and Mapua have consistently high numbers during the winter period. The species is not breeding in the Tasman/Nelson Region as yet. Birds banded at breeding colonies at Wairau Lagoon, Marlborough and in Otago have been observed in the Tasman/Nelson region¹⁵².

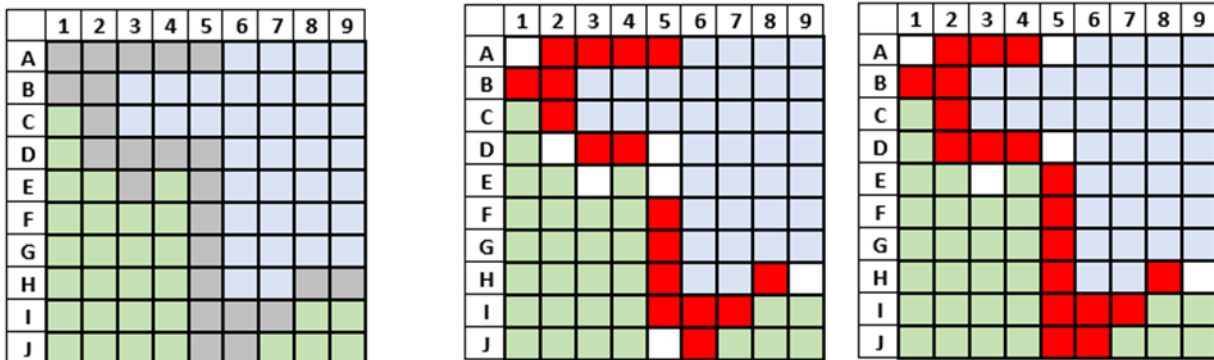


Figure 23. Distribution of Royal Spoonbill *Platalea regia* in the Tasman/Nelson region. Left – Atlas blocks surveyed during OSNZ shorebird surveys (grey). Middle – species occurrence from Atlas data (red present, white absent) 1999-2004. Right – species occurrence during OSNZ shorebird surveys (red present, white absent) 1996-2018.

¹⁴⁶ Thompson, M., Schweigman, P. 2014. Results of Royal Spoonbill colony and nest census, 2013/2014. *Birds New Zealand* 3: 12-13.

¹⁴⁷ Thompson, M., Schweigman, P. 2014. Results of Royal Spoonbill colony and nest census, 2013/2014. *Birds New Zealand* 3: 12-13.

¹⁴⁸ P. Rhodes. Eastern Curlew and new spoonbill breeding area – Haldane Estuary. Posted on BirdingNZ 13 January 2019.

¹⁴⁹ Robertson, C. J. R.; Hyvönen, P.; Fraser, M. J.; Pickard, C.R. 2007. *Atlas of bird distribution in New Zealand, 1999-2004*. The Ornithological Society of New Zealand.

¹⁵⁰ Heather, B.; Robertson, H. 2015. *The field guide to the birds of New Zealand*. Penguin Random House, Auckland.

¹⁵¹ Szabo, M.J. 2013 [updated 2017]. Royal Spoonbill. In Miskelly, C.M. (ed.) *New Zealand Birds Online*. www.nzbirdsonline.org.nz

¹⁵² Schweigman, P.; Cash, W.F.; Thompson, M.P. 2014. Seasonal movements and survival of royal spoonbill (*Platalea regia*) breeding in New Zealand. *Notornis* 61: 177-187.

Habitat

Royal Spoonbills generally prefer freshwater to saltwater but can inhabit both; in New Zealand most birds occur in coastal habitats.

Spoonbills feed while wading in water, and eat mainly fish, including flounders, shrimps and other crustaceans, aquatic insects, and frogs¹⁵³.

Threats

Royal Spoonbills are sensitive to disturbance during the both breeding and non-breeding seasons, and are vulnerable to development and recreational activities; there was a noticeable reduction in the number of spoonbills using the estuarine area adjacent to Rough Island, Waimea Inlet following the development of the equestrian park¹⁵⁴.

Non-resident native – migrant

Cattle Egret *Ardea ibis*



Dick Daniels - https://commons.wikimedia.org/wiki/File:Cattle_Egret_breeding_plumage_RWD.jpg

¹⁵³ Schofield, R. 2013. Cattle Egret. In Miskelly, C.M. (ed.) *New Zealand Birds Online*. www.nzbirdsonline.org.nz

¹⁵⁴ Cook, W.A.; Cooper, D. 2000. Birds of Waimea Inlet, Nelson. Unpublished MS.

National distribution

Since the first record in 1963, the Cattle Egret has become a regular winter visitor to New Zealand from Australia¹⁵⁵. It is widely distributed in New Zealand; the population peaked in the late 1980s since when numbers have declined^{156,157}.

Tasman/Nelson distribution

Small numbers of Cattle Egrets are recorded in winter around Tasman Bay (Figure 24), with a maximum of 8 individuals recorded from the Mapua area. Cattle Egrets usually frequent pastures and only occasionally occur in/around estuaries.

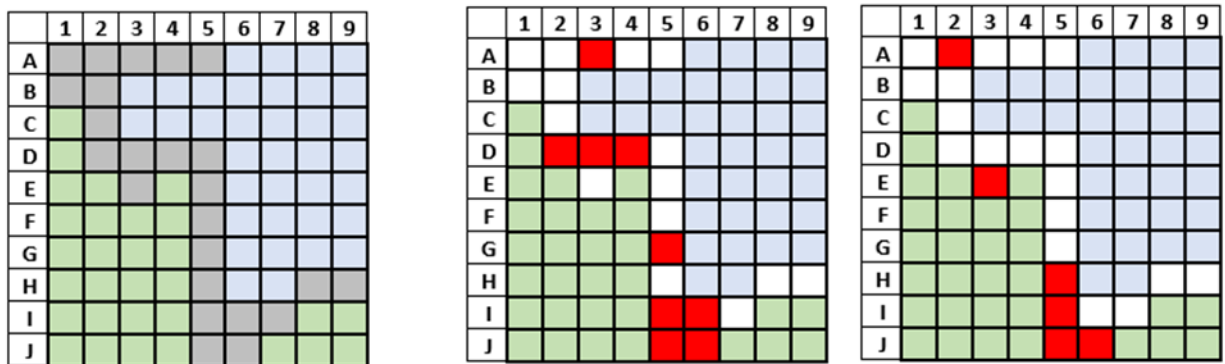


Figure 24. Distribution of Cattle Egret *Ardea ibis* in the Tasman/Nelson region. Left – Atlas blocks surveyed during OSNZ shorebird surveys (grey). Middle – species occurrence from Atlas data (red present, white absent) 1999-2004. Right – species occurrence during OSNZ shorebird surveys (red present, white absent) 1996-2018.

Habitat

Usually in damp pasture associating with Sheep *Ovis aries* and Cattle *Bos taurus*.

Threats

None known in New Zealand.

¹⁵⁵ Schofield, R. 2013. Cattle Egret. In Miskelly, C.M. (ed.) *New Zealand Birds Online*. www.nzbirdsonline.org.nz

¹⁵⁶ Robertson, C. J. R.; Hyvönen, P.; Fraser, M. J.; Pickard, C.R. 2007. *Atlas of bird distribution in New Zealand, 1999-2004*. The Ornithological Society of New Zealand.

¹⁵⁷ Heather, B.; Robertson, H. 2015. *The field guide to the birds of New Zealand*. Penguin Random House, Auckland.

Little Tern *Sternula albifrons*



J.J. Harrison - https://commons.wikimedia.org/wiki/File:Sternula_albifrons_2_-_Little_Swanport.jpg

National distribution

The Little Tern is a scarce non-breeding migrant from Asia, and Australia^{158,159,160}.

Tasman/Nelson distribution

Most records in Tasman/Nelson region are from Farewell Spit, Motueka Sandspit and Waimea Inlet (Figure 25). Largest numbers are consistently recorded from Bell Island Shellbank, Waimea Inlet (Summer 2002 – 3 and Spring 2003, 2004 and 2005 – 3). As many as 100 Little Terns may occur in New Zealand each year, with occasionally larger numbers¹⁶¹.

¹⁵⁸ Robertson, C. J. R.; Hyvönen, P.; Fraser, M. J.; Pickard, C.R. 2007. *Atlas of bird distribution in New Zealand, 1999-2004*. The Ornithological Society of New Zealand.

¹⁵⁹ Heather, B.; Robertson, H. 2015. *The field guide to the birds of New Zealand*. Penguin Random House, Auckland.

¹⁶⁰ Southey, I. 2013. Little Tern. In Miskelly, C.M. (ed.) *New Zealand Birds Online*. www.nzbirdsonline.org.nz

¹⁶¹ Southey, I. 2013. Little Tern. In Miskelly, C.M. (ed.) *New Zealand Birds Online*. www.nzbirdsonline.org.nz

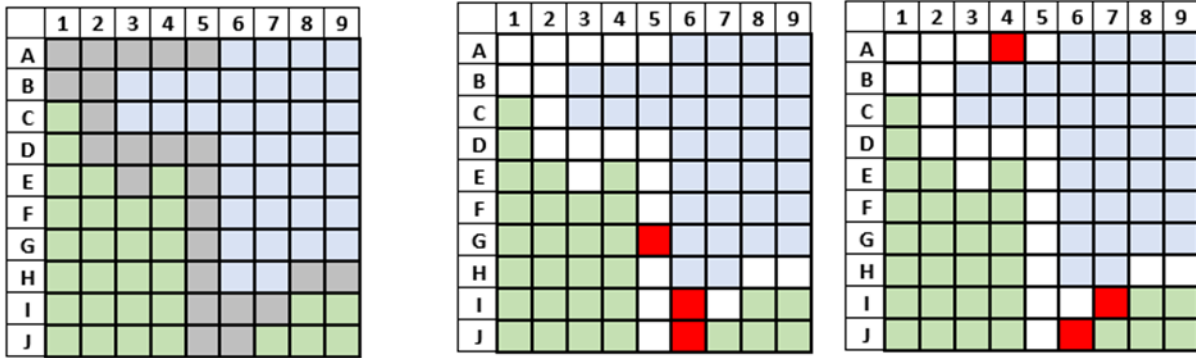


Figure 25. Distribution of Little Tern *Sternula albifrons* in the Tasman/Nelson region. Left – Atlas blocks surveyed during OSNZ shorebird surveys (grey). Middle – species occurrence from Atlas data (red present, white absent) 1999-2004. Right – species occurrence during OSNZ shorebird surveys (red present, white absent) 1996-2018.

Habitat

Little Terns inhabit sheltered coastal waters.

Threats

None known in New Zealand.

White-winged Black Tern *Chlidonias leucopterus*



Hiyashi Haka - <https://www.flickr.com/photos/hiyashi/18404086290/in/photostream/>

National distribution

White-winged Black Tern is an uncommon migrant, with probably less than 20 birds occurring each year. There have been four breeding records^{162,163,164}.

Tasman/Nelson distribution

White-winged Black Terns have been recorded from Farewell Spit (Summer 2005 – 1), Bell Island Shellbank, Waimea Inlet (Summer 2001 – 2 and Summer 2003 – 1) and Nelson Haven (Spring 2015 – 2 and Winter 2015 – 1) (Figure 26).

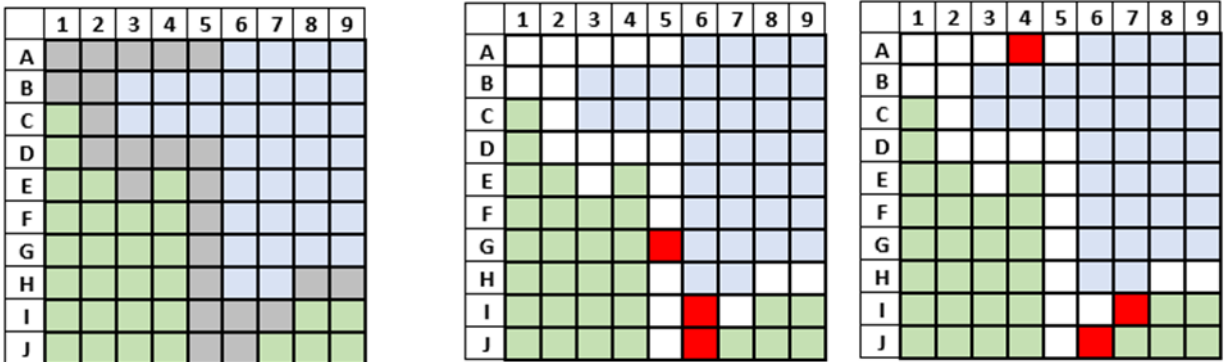


Figure 26. Distribution of White-winged Black Tern *Chlidonias leucopterus* in the Tasman/Nelson region. Left – Atlas blocks surveyed during OSNZ shorebird surveys (grey). Middle – species occurrence from Atlas data (red present, white absent) 1999-2004. Right – species occurrence during OSNZ shorebird surveys (red present, white absent) 1996-2018.

Habitat

White-winged Black Terns favour shallow coastal lagoons and small estuaries and associated wetlands, less often large harbours. They are primarily insectivorous, specialising on aquatic insects captured by dipping, hawking or occasionally plunging; occasionally also taking terrestrial insects¹⁶⁵.

Threats

Nesting birds usually associate with Black-fronted Tern colonies. Several nests are known to have been predated¹⁶⁶.

¹⁶² Robertson, C. J. R.; Hyvönen, P.; Fraser, M. J.; Pickard, C.R. 2007. *Atlas of bird distribution in New Zealand, 1999-2004*. The Ornithological Society of New Zealand.

¹⁶³ Heather, B.; Robertson, H. 2015. *The field guide to the birds of New Zealand*. Penguin Random House, Auckland.

¹⁶⁴ Pierce, R.J. 2013 [updated 2017]. White-winged Black Tern. In Miskelly, C.M. (ed.) *New Zealand Birds Online*. www.nzbirdsonline.org.nz

¹⁶⁵ Pierce, R.J. 2013 [updated 2017]. White-winged Black Tern. In Miskelly, C.M. (ed.) *New Zealand Birds Online*. www.nzbirdsonline.org.nz

¹⁶⁶ Pierce, R.J. 2013 [updated 2017]. White-winged Black Tern. In Miskelly, C.M. (ed.) *New Zealand Birds Online*. www.nzbirdsonline.org.nz

Vagrant

Gull-billed Tern *Geochelidon nilotica*



Ron Knight - https://commons.wikimedia.org/wiki/File:Geochelidon_nilotica_Birdsville,_South_Australia_1.jpg

National distribution

The Gull-billed Tern is a vagrant to New Zealand^{167,168}.

Tasman/Nelson distribution

An influx of this species to New Zealand occurred during the winter of 2011¹⁶⁹, since when there have been sightings of single birds at Farewell Spit, Motueka Sandspit and Bell Island (Figure 27).

¹⁶⁷ Heather, B.; Robertson, H. 2015. *The field guide to the birds of New Zealand*. Penguin Random House, Auckland.

¹⁶⁸ Southey, I. 2013 [updated 2017]. Gull-billed tern. In Miskelly, C.M. (ed.) *New Zealand Birds Online*. www.nzbirdsonline.org.nz

¹⁶⁹ Southey, I. 2013 [updated 2017]. Gull-billed tern. In Miskelly, C.M. (ed.) *New Zealand Birds Online*. www.nzbirdsonline.org.nz

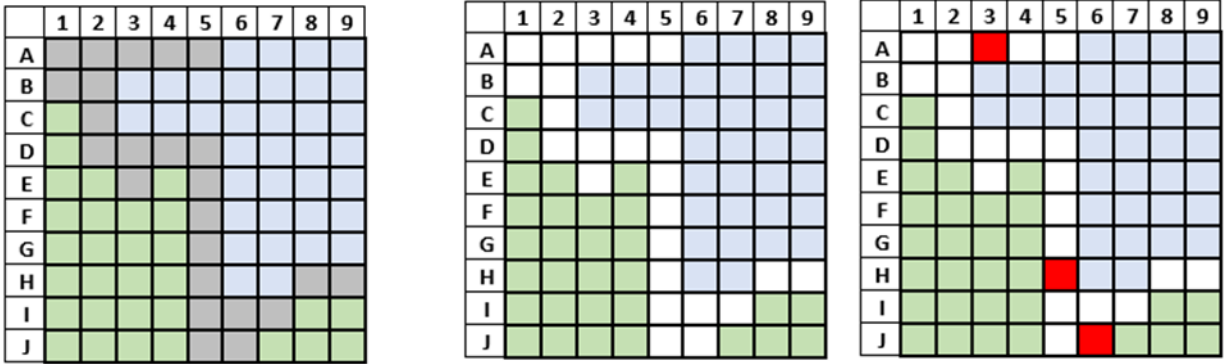


Figure 27. Distribution of Gull-billed Tern *Geochelidon nilotica* in the Tasman/Nelson region. Left – Atlas blocks surveyed during OSNZ shorebird surveys (grey). Middle – species occurrence from Atlas data (red present, white absent) 1999-2004. Right – species occurrence during OSNZ shorebird surveys and additional records (red present, white absent) 1996-2018.

Habitat

Gull-billed Terns usually occur in estuaries and on sheltered coasts in New Zealand¹⁷⁰.

Threats

None known in New Zealand.

Little Egret *Egretta garzetta*



Glen Fergus - https://commons.wikimedia.org/wiki/File:Little_Egret_foot.jpg

¹⁷⁰ Heather, B.; Robertson, H. 2015. *The field guide to the birds of New Zealand*. Penguin Random House, Auckland.

National distribution

Little Egret is a scarce, non-breeding migrant, visiting New Zealand in small numbers, with up to five present in most years^{171,172,173}.

Tasman/Nelson distribution

Little Egret has been recorded from Waimea Inlet (Figure 28).

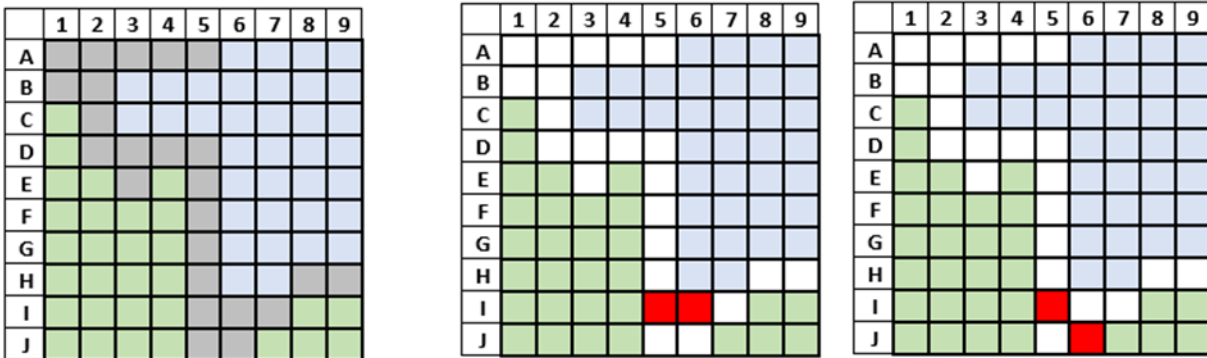


Figure 28. Distribution of Little Egret *Egretta garzetta* in the Tasman/Nelson region. Left – Atlas blocks surveyed during OSNZ shorebird surveys (grey). Middle – species occurrence from Atlas data (red present, white absent) 1999-2004. Right – species occurrence during OSNZ shorebird surveys (red present, white absent) 1996-2018.

Habitat

Little Egrets usually frequent coastal wetlands and estuaries.

Threats

None known in New Zealand.

¹⁷¹ Robertson, C. J. R.; Hyvönen, P.; Fraser, M. J.; Pickard, C.R. 2007. *Atlas of bird distribution in New Zealand, 1999-2004*. The Ornithological Society of New Zealand.

¹⁷² Heather, B.; Robertson, H. 2015. *The field guide to the birds of New Zealand*. Penguin Random House, Auckland.

¹⁷³ Seabrook-Davison, M.N.H. 2013 [updated 2017]. Little Egret. In Miskelly, C.M. (ed.) *New Zealand Birds Online*. www.nzbirdsonline.org.nz

Plumed Egret *Ardea intermedia*



Lip Kee - [https://commons.wikimedia.org/wiki/File:Intermediate_Egret_\(Egretta_intermedia\)_-_Flickr_-_Lip_Kee.jpg](https://commons.wikimedia.org/wiki/File:Intermediate_Egret_(Egretta_intermedia)_-_Flickr_-_Lip_Kee.jpg)

National distribution

Plumed Egret is a very scarce, non-breeding visitor to New Zealand, there having been some 18 records^{174,175,176}.

Tasman/Nelson distribution

There is one record from the Atlas (Figure 29).

¹⁷⁴ Robertson, C. J. R.; Hyvönen, P.; Fraser, M. J.; Pickard, C.R. 2007. *Atlas of bird distribution in New Zealand, 1999-2004*. The Ornithological Society of New Zealand.

¹⁷⁵ Heather, B.; Robertson, H. 2015. *The field guide to the birds of New Zealand*. Penguin Random House, Auckland.

¹⁷⁶ Hammond, P. 2013 [updated 2017]. Plumed Egret. In Miskelly, C.M. (ed.) *New Zealand Birds Online*. www.nzbirdsonline.org.nz

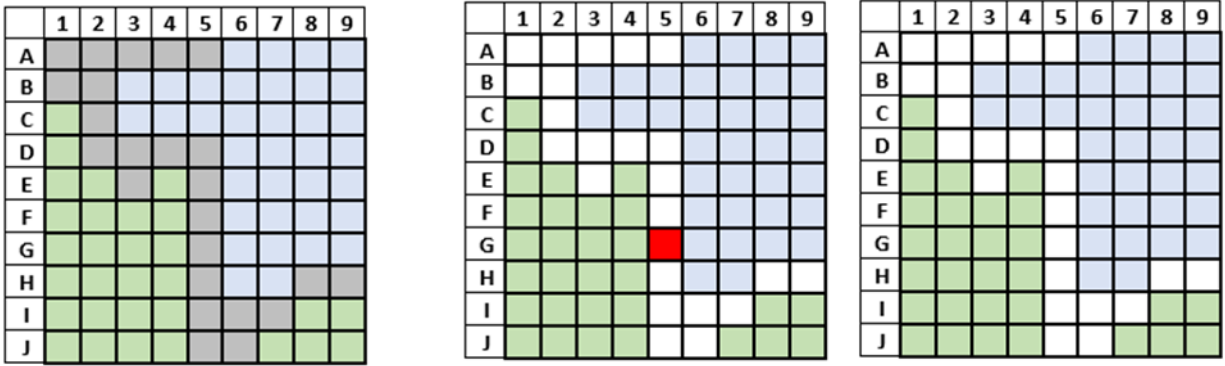


Figure 29. Distribution of Plumed Egret *Ardea intermedia* in the Tasman/Nelson region. Left – Atlas blocks surveyed during OSNZ shorebird surveys (grey). Middle – species occurrence from Atlas data (red present, white absent) 1999-2004. Right – species occurrence during OSNZ shorebird surveys (red present, white absent) 1996-2018.

Habitat

Plumed Egrets occur in a range of wetland habitats, but prefer freshwater to brackish sites. They may feed in paddocks in association with Cattle Egrets¹⁷⁷.

Threats

None known in New Zealand.

Not threatened

Little Shag *Phalacrocorax melanoleucos*



J.J. Harrison - https://commons.wikimedia.org/wiki/File:Microcarbo_melanoleucos_Austins_Ferry_3.jpg

¹⁷⁷ Heather, B.; Robertson, H. 2015. *The field guide to the birds of New Zealand*. Penguin Random House, Auckland.

National distribution

The Little Shag is widespread throughout New Zealand in both freshwater and coastal areas^{178,179,180}.

Tasman/Nelson distribution

Little Shag is widespread in the Tasman/Nelson region being recorded from 31 sites and 19 Atlas blocks (Figure 30). Tasman Bay has the highest number of Little Shags with up to 87 in the winter of 2003. Moutere Inlet is the site with the highest number recorded consistently with a maximum of 58 recorded in the winter of 2003.

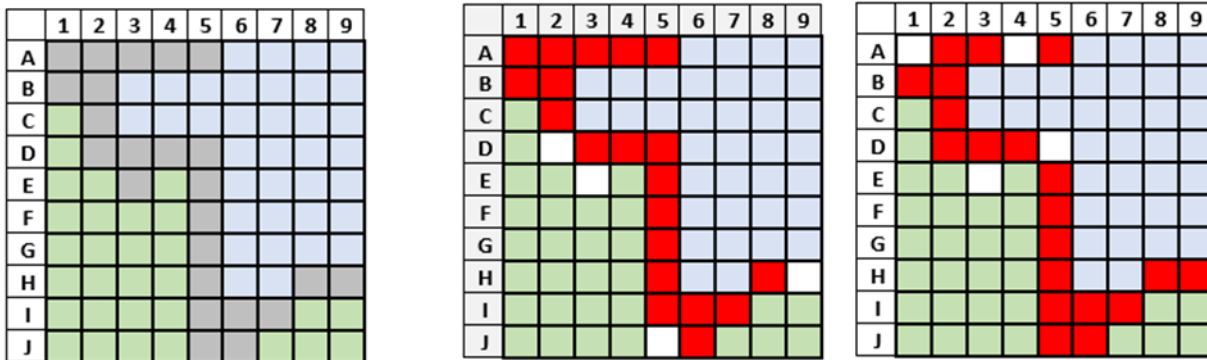


Figure 30. Distribution of Little Shag *Phalacrocorax melanoleucos* in the Tasman/Nelson region. Left – Atlas blocks surveyed during OSNZ shorebird surveys (grey). Middle – species occurrence from Atlas data (red present, white absent) 1999-2004. Right – species occurrence during OSNZ shorebird surveys (red present, white absent) 1996-2018.

Habitat

Little Shags occur in a wide variety of both freshwater and brackish habitats; it was observed in more than 50% of the survey blocks throughout New Zealand covering marine and freshwater habitats during OSNZ's Atlas survey project (1999-2004)¹⁸¹.

Threats

The species is increasing in central New Zealand but has almost disappeared from the northern regions. Nationally, the breeding population is estimated to be 5,000 -10,000 pairs. Foraging efficiency of shags is most strongly influenced by the availability of prey¹⁸². Even a small reduction in prey density may prevent birds meeting their energy requirements. Pollution of marine and freshwater, and habitat degradation

¹⁷⁸ Robertson, C. J. R.; Hyvönen, P.; Fraser, M. J.; Pickard, C.R. 2007. *Atlas of bird distribution in New Zealand, 1999-2004*. The Ornithological Society of New Zealand.

¹⁷⁹ Heather, B.; Robertson, H. 2015. *The field guide to the birds of New Zealand*. Penguin Random House, Auckland.

¹⁸⁰ Taylor, M.J. 2013. Little Shag. In Miskelly, C.M. (ed.) *New Zealand Birds Online*. www.nzbirdsonline.org.nz

¹⁸¹ Robertson, C. J. R.; Hyvönen, P.; Fraser, M. J.; Pickard, C.R. 2007. *Atlas of bird distribution in New Zealand, 1999-2004*. The Ornithological Society of New Zealand.

¹⁸² Grémillet, D.; Wilson, R.P. 1999. A life in the fast lane: energetics and foraging strategies of the great cormorant. *Behavioral Ecology* 10: 516-524.

can have a profound impact on shag species. A range of species are known to be part of the diet, e.g. small fish, eels, crustaceans, frogs, tadpoles and insects. Foraging birds may be caught in set-nets.

New Zealand Kingfisher *Todiramphus sanctus*



Dave Young - <https://www.flickr.com/photos/dcysurfer/3673104617>

National distribution

New Zealand Kingfishers occur throughout the North Island and much of the lowland South Island^{183,184,185}.

Tasman/Nelson distribution

New Zealand Kingfishers have not been recorded as part of the shorebird surveys, but the Atlas and other supplementary records (including eBird) show the species occurring throughout the coastal region (Figure 31). Kingfishers in the Tasman/Nelson region are altitudinal migrants with those that breed inland moving to the coast in winter¹⁸⁶.

¹⁸³ Robertson, C. J. R.; Hyvönen, P.; Fraser, M. J.; Pickard, C.R. 2007. *Atlas of bird distribution in New Zealand, 1999-2004*. The Ornithological Society of New Zealand

¹⁸⁴ Heather, B.; Robertson, H. 2015. *The field guide to the birds of New Zealand*. Penguin Random House, Auckland.

¹⁸⁵ McKinlay, B. 2013 [updated 2017]. Sacred Kingfisher. In Miskelly, C.M. (ed.) *New Zealand Birds Online*. www.nzbirdsonline.org.nz

¹⁸⁶ Taylor, R.H. 1966. Seasonal and altitudinal distribution of Kingfishers in the Nelson District. *Notornis* 13: 200-203.

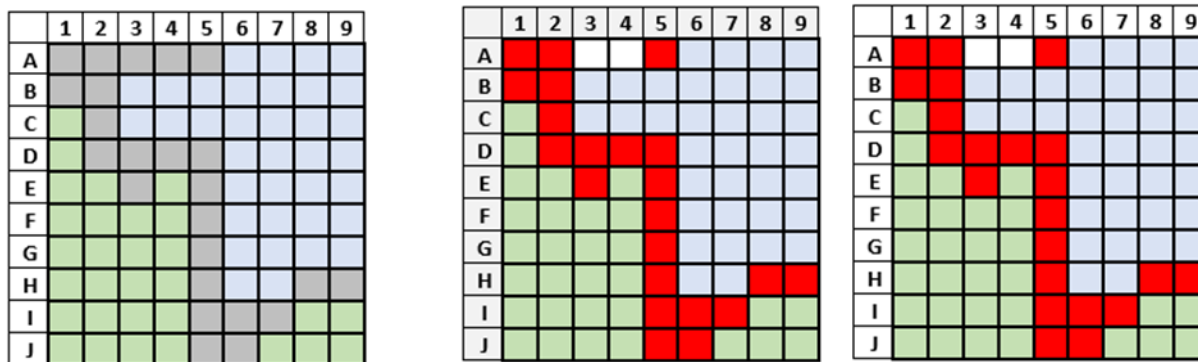


Figure 31. Distribution of New Zealand Kingfisher *Todiramphus sanctus* in the Tasman/Nelson region. Left – Atlas blocks surveyed during OSNZ shorebird surveys (grey). Middle – species occurrence from Atlas data (red present, white absent) 1999-2004. Right – species occurrence during OSNZ shorebird surveys with additional observations (red present, white absent) 1996-2018.

Habitat

Kingfishers occur in a wide range of habitats including forest, farmland with scattered trees, river margins, estuaries and even rocky coasts.

Threats

Kingfishers may have benefitted from forest clearance which has resulted in increased forest edge habitat. They are occasionally killed by Cats, and many are stunned or killed as a result of flying into glass windows¹⁸⁷.

Southern Black-backed Gull *Larus dominicanus*



Bernard Spragg - <https://www.flickr.com/photos/volvob12b/30142527461>

¹⁸⁷ McKinlay, B. 2013 [updated 2017]. Sacred Kingfisher. In Miskelly, C.M. (ed.) *New Zealand Birds Online*. www.nzbirdsonline.org.nz

National distribution

The Southern Black-backed Gull occurs throughout New Zealand in both coastal and inland areas (away from forests)^{188,189,190}.

Tasman/Nelson distribution

The Southern Black-backed Gull is found throughout the Tasman/Nelson coastal area (Figure 32). Highest recorded numbers are from Farewell Spit. In the winter of 2001 (1,273) and winter 2003 (1,569). It breeds at many locations around the Tasman/Nelson coast including areas of clear fell on Rabbit Island, at Motueka Sandspit, Nelson Boulder Bank and Farewell Spit, and rocky cliffs around Abel Tasman National Park.

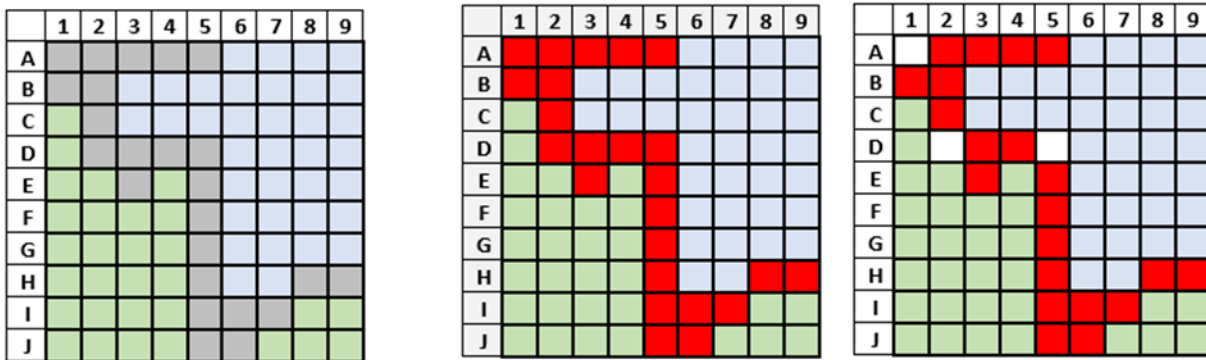


Figure 32. Distribution of Southern Black-backed Gull *Larus dominicanus* in the Tasman/Nelson region. Left – Atlas blocks surveyed during OSNZ shorebird surveys (grey). Middle – species occurrence from Atlas data (red present, white absent) 1999-2004. Right – species occurrence during OSNZ shorebird surveys (red present, white absent) 1996-2018.

Habitat

Southern Black-backed Gulls occur in a very wide range of habitats from inland pastures and rivers beds, to recently ploughed land, urban areas, refuse dumps, and coastal and marine areas¹⁹¹.

Threats

Southern Black-backed Gull is one of only two native bird species not protected under the Wildlife Act. Gulls are occasionally scared from the York Valley landfill site by shooting^{192,193}.

¹⁸⁸ Robertson, C. J. R.; Hyvönen, P.; Fraser, M. J.; Pickard, C.R. 2007. *Atlas of bird distribution in New Zealand, 1999-2004*. The Ornithological Society of New Zealand

¹⁸⁹ Heather, B.; Robertson, H. 2015. *The field guide to the birds of New Zealand*. Penguin Random House, Auckland.

¹⁹⁰ Miskelly, C.M. 2013. Southern Black-backed Gull. In Miskelly, C.M. (ed.) *New Zealand Birds Online*. www.nzbirdsonline.org.nz

¹⁹¹ Heather, B.; Robertson, H. 2015. *The field guide to the birds of New Zealand*. Penguin Random House, Auckland.

¹⁹² Baines, J.; Buckenham, B.; Taylor, N. 2001. Host communities: siting and effects of facilities. An analysis of host community experience of the York Valley Landfill (Nelson Region). Working Paper FS9. Public Good Science Fund Contract TBA 802.

¹⁹³ D. Stephenson, Tasman District Council pers. comm.

Spotted Shag *Stictocarbo punctatus*



Bernard Spragg - <https://www.flickr.com/photos/volvob12b/27960541926>

National distribution

Spotted Shags occur mainly around the South Island in coastal waters out to 16 km, entering inlets and estuaries to feed and roost. They are more localised on the west coast of the South Island, around Stewart Island, and parts of the North Island, including the Hauraki Gulf, West Auckland, Hawke's Bay and Wellington Harbour. The strongholds for Spotted Shags are the Marlborough Sounds, Banks Peninsula and Otago coast. They are concentrated around breeding sites during summer, dispersing to other coastal areas in winter to form large flocks, usually within 200 km of the breeding grounds^{194,195,196}.

Tasman/Nelson distribution

Spotted Shags occur around the Tasman/Nelson coast, mostly on rocky shores, but small numbers are found roosting on sandy beaches and are recorded during shorebird surveys (Figure 33). There is a large (but uncounted) breeding population on the Tata Islands, Golden Bay and small numbers along the Abel Tasman coast including Adele Island; a few nest at Pepin Island. Numbers increase in the winter.

¹⁹⁴ Robertson, C. J. R.; Hyvönen, P.; Fraser, M. J.; Pickard, C.R. 2007. *Atlas of bird distribution in New Zealand, 1999-2004*. The Ornithological Society of New Zealand

¹⁹⁵ Heather, B.; Robertson, H. 2015. *The field guide to the birds of New Zealand*. Penguin Random House, Auckland.

¹⁹⁶ Szabo, M.J. 2013 [updated 2017]. Spotted Shag. In Miskelly, C.M. (ed.) *New Zealand Birds Online*. www.nzbirdsonline.org.nz

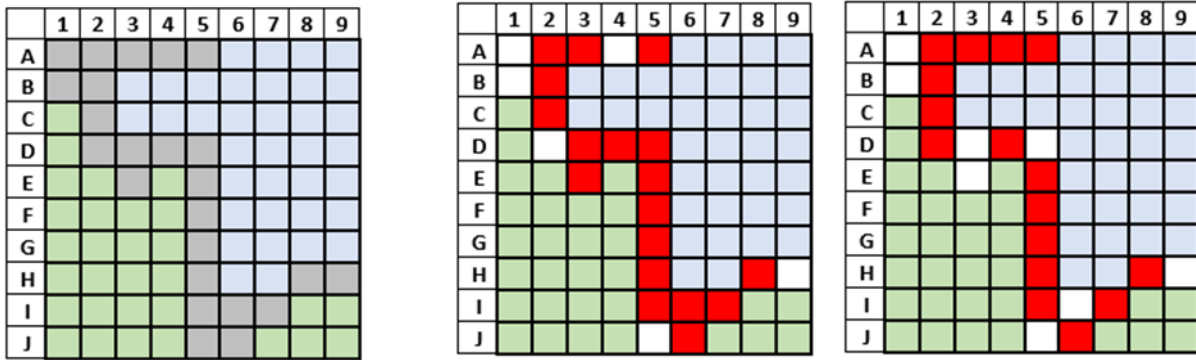


Figure 33. Distribution of Spotted Shag *Stictocarbo punctatus* in the Tasman/Nelson region. Left – Atlas blocks surveyed during OSNZ shorebird surveys (grey). Middle – species occurrence from Atlas data (red present, white absent) 1999-2004. Right – species occurrence during OSNZ shorebird surveys (red present, white absent) 1996-2018.

Spotted Shag diet consists of small fish and marine invertebrates, squid and plankton. Spotted Shags often have a mass of small stones ('rangle') in their gizzards, the function of which is debated, with possibilities including to function as ballast, to grind up food, and to create an inhospitable environment for gut parasites.

At Tata Beach, Golden Bay Spotted Shags come ashore in the early morning to regurgitate rangle stones; observations by local residents suggest a marked decline in the numbers of birds over the past decade (Figure 34). The reason(s) for this are unknown.

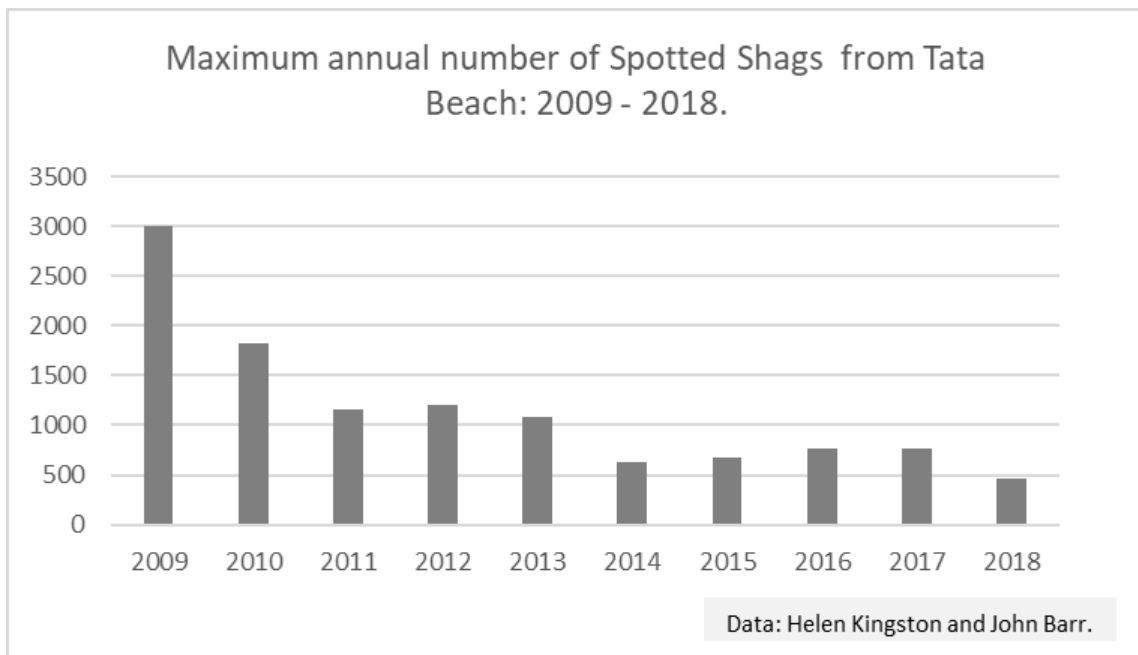


Figure 34. The maximum number of Spotted Shags recorded on Tata Beach, Golden Bay each year 2009-2018. Data courtesy of Helen Kingston and John Barr (unpublished).

Habitat

Spotted Shags occur in estuaries, harbours and coastal waters around New Zealand¹⁹⁷.

Threats

Spotted Shags have been illegally shot in other parts of New Zealand and they are occasionally caught in fishing gear, especially set nets¹⁹⁸. Disturbance to birds coming ashore to void range stones may be contributing to the reduced numbers at Tata Beach¹⁹⁹.

White-faced Heron *Egretta novaehollandiae*



Glen Fergus - https://commons.wikimedia.org/wiki/File:White-faced_Heron.jpg

National distribution

The White-faced Heron is New Zealand's most common heron, despite being a relatively new arrival to this country, having self-introduced in the 1940s, being found throughout the country except in montane areas^{200,201,202}.

¹⁹⁷ Heather, B.; Robertson, H. 2015. *The field guide to the birds of New Zealand*. Penguin Random House, Auckland.

¹⁹⁸ Szabo, M.J. 2013 [updated 2017]. Spotted Shag. In Miskelly, C.M. (ed.) *New Zealand Birds Online*. www.nzbirdsonline.org.nz

¹⁹⁹ H. Kingston and J. Barr pers. comm.

²⁰⁰ Robertson, C. J. R.; Hyvönen, P.; Fraser, M. J.; Pickard, C.R. 2007. *Atlas of bird distribution in New Zealand, 1999-2004*. The Ornithological Society of New Zealand

²⁰¹ Heather, B.; Robertson, H. 2015. *The field guide to the birds of New Zealand*. Penguin Random House, Auckland.

²⁰² Adams, R. 2013 [updated 2017]. White-faced Heron. In Miskelly, C.M. (ed.) *New Zealand Birds Online*. www.nzbirdsonline.org.nz

Tasman/Nelson distribution

White-faced Heron is widespread throughout the Tasman/Nelson coastal district, being recorded from almost every Atlas grid square and site (Figure 35). The numbers for this species are severely underestimated due to its wide distribution, with many birds frequenting pasture land. Highest numbers were recorded in Tasman Bay in Spring 2003 (202), in particular from the central Waimea Estuary; Manuka Island has regular counts of around 100 birds throughout the year.

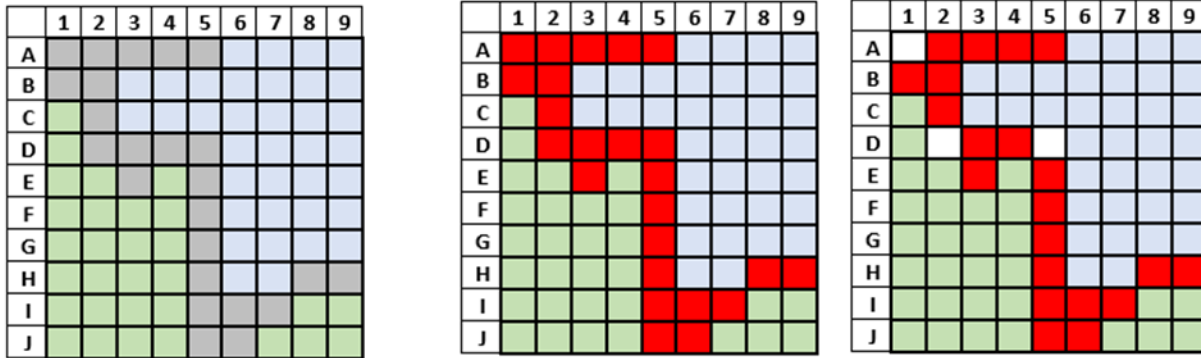


Figure 35. Distribution of White-faced Heron *Egretta novaehollandiae* in the Tasman/Nelson region. Left – Atlas blocks surveyed during OSNZ shorebird surveys (grey). Middle – species occurrence from Atlas data (red present, white absent) 1999-2004. Right – species occurrence during OSNZ shorebird surveys (red present, white absent) 1996-2018.

Habitat

White-faced Herons occur in a wide variety of habitats ranging from coastal and freshwater wetlands to damp farmland. They consume a wide range of prey, including small fish, crabs, worms, insects, spiders, mice, lizards, tadpoles and frogs^{203,204}.

Threats

Occasionally White-faced Heron chicks are reported with deformed bills²⁰⁵, similar to that reported by Lo (1981)²⁰⁶, but the cause(s) of this are unknown.

²⁰³ Heather, B.; Robertson, H. 2015. *The field guide to the birds of New Zealand*. Penguin Random House, Auckland.

²⁰⁴ Adams, R. 2013 [updated 2017]. White-faced Heron. In Miskelly, C.M. (ed.) *New Zealand Birds Online*. www.nzbirdsonline.org.nz

²⁰⁵ R. Stocker pers. comm.

²⁰⁶ Lo, P.L. 1981. White-faced Heron fledgling with a deformed bill. *Notornis* 28: 133-134.

CONSERVATION ASSESSMENT

This report updates information on coastal birds provided in earlier publications^{207,208,209,210} and complements that provided in a current review of the Nelson coast²¹¹. It is apparent, however, that the counts of coastal birds made as an adjunct to OSNZ's shorebird surveys provide little quantitative data that can be used to monitor populations. This results from the fact that most coastal birds occur much more widely than the limited areas of the shorebird high tide roost sites – thus, for example, rails and Fernbird occur almost entirely in dense saltmarsh/coastal vegetation, while shags are very widely distributed with only small numbers coming to roost where shorebirds congregate.

The shorebird count data allowed an assessment of the national and international importance of sites using quantitative criteria, in particular Criterion 6 under the Ramsar Wetland Convention (to which New Zealand is a Party), which states:

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.

The present study has identified three sites (Farewell Spit, Motueka Sandspit and Bell Island/East Waimea Inlet) as meeting Ramsar Criterion 6 and thus being of international importance for Black-fronted Tern (see above). All three of these sites are also recognised as being internationally important for shorebirds²¹².

Davidson *et al.* (1993²¹³) and Davidson & Preece (1994²¹⁴) undertook assessments of the coastal environment between Kahurangi Point and Cape Soucis, and identified sites of national and international importance taking into account a variety of attributes, including biodiversity values, landform and geology. Those sites identified as being of national and international importance were adopted in local resource management planning documents by Tasman District Council (Tasman Resource Management Plan, Chapter 25 Coastal marine area rules, Schedule 25D – Areas with nationally and internationally important natural ecosystem values) and Nelson City Council (Nelson Resource Management Plan, Rules coastal marine area, Appendix 4 Marine areas of significant conservation value). Seven sites currently

²⁰⁷ Walker, K. 1987. *Wildlife in the Nelson region*. New Zealand Wildlife Service. Fauna Survey Unit Report 42.

²⁰⁸ Davidson, R.J.; Stark, K.E.; Preece, J.R.; Lawless, P.F.; Clarke, I.E. 1993. Internationally and nationally important coastal areas from Kahurangi Point to Waimea Inlet, Nelson, New Zealand. Department of Conservation, Nelson/Marlborough Conservancy. *Occasional Publication 14*, 121 p.

²⁰⁹ Davidson, R.J.; Preece, J.R. 1994. Internationally and nationally important coastal areas from Waimea Inlet to Cape Soucis, Nelson, New Zealand: recommendations for protection. Department of Conservation, Nelson/Marlborough Conservancy. *Occasional Publication 15*, 46 p.

²¹⁰ Butler, D.J. 2008. *Tasman District biodiversity overview*. Tasman District Council.

²¹¹ North, M. 2018. DRAFT Nelson City ecosystems: site values, threats and management priorities.

²¹² Schuckard, R; Melville, D.S. 2013. *Shorebirds of Farewell Spit, Golden Bay and Tasman Bay*. Report prepared for Nelson City Council and Tasman District Council.

²¹³ Davidson, R.J.; Stark, K.E.; Preece, J.R.; Lawless, P.F.; Clarke, I.E. 1993. Internationally and nationally important coastal areas from Kahurangi Point to Waimea Inlet, Nelson, New Zealand. Department of Conservation, Nelson/Marlborough Conservancy. *Occasional Publication 14*, 121 p.

²¹⁴ Davidson, R.J.; Preece, J.R. 1994. Internationally and nationally important coastal areas from Waimea Inlet to Cape Soucis, Nelson, New Zealand: recommendations for protection. Department of Conservation, Nelson/Marlborough Conservancy. *Occasional Publication 15*, 46 p.

listed as being of ‘national’ importance in the Resource Management Plans need to be upgraded to ‘international’ status following the assessment of shorebird values by Schuckard & Melville (2013²¹⁵).

Table 3 summarises the conservation values accorded estuaries within the Tasman/Nelson region, and details the number of ‘Threatened’ and ‘At Risk’ coastal bird species recorded at each site.

TABLE 3. Comparison of conservation assessments for estuaries in the Tasman/Nelson region

Site	Davidson <i>et al.</i> 1993, Davidson & Preece 1994	Tasman/Nelson RMP categories	Schuckard & Melville 2013: Shorebirds	This report ‘Threatened’ species of coastal birds	This report ‘At Risk’ species of coastal birds
Big River estuary	National	National	NA	NA	NA
Westhaven Inlet	National	National	International	5	8
Farewell Spit	International	International	International	5	8
Puponga	National	National	NA	2	8
Taupata Creek	NA	NA	N	2	6
Pakawau	National	National	International	3	8
Totara Avenue ²¹⁶	National	National	N	1 ²¹⁷	8
Ruataniwha Inlet	National	National	NA	NA	NA
Collingwood ²¹⁸	NA	NA	International	2	6
Parapara	National	National	N	1	8
Onekaka	National	National	N	1	6
Onahau/Patons Rock	National	National	N	1	6
Waitapu estuaries	National	National	N	NA	NA
Rototai estuary	National	National	International	3	6
Pohara/Motupipi	NA	NA	N	0	4

²¹⁵ Schuckard, R; Melville, D.S. 2013. *Shorebirds of Farewell Spit, Golden Bay and Tasman Bay*. Report prepared for Nelson City Council and Tasman District Council.

²¹⁶ Listed as Waikato Spit in Davidson *et al.* 1993

²¹⁷ Including offshore Sand Bar

²¹⁸ Including Island

Tata Beach estuary	National	National	NA	NA	NA
Wainui Inlet	National	National	N	3	8
Abel Tasman NP estuaries	International ²¹⁹	International	N	5 ²²⁰	10
Marahau	National ²²¹	National	N	5	9
Motueka delta / Sandspit	National	National	International	3	6
Moutere Inlet	National	National	N	3	7
Waimea Inlet	National ²²²	National	International	6 ²²³	9
West Waimea Inlet - Grossi Point/No-Man's Island	Included as Waimea Inlet		International	3	8
East Waimea Inlet - Bell Island Shellbank	Included as Waimea Inlet		International	3	6
East Waimea Inlet - Sand Island	Sand Island not present		International	2	4
East Waimea Inlet - Airport Area	NA	NA	International	3	5
Nelson Haven	National	National	N	3	6
Delaware Inlet	National	National	N	1	7
Whangamoā estuary (Kokorua)	National	National	NA	0	5
Whangamoā River mouth to Cape Soucis	National	National	NA	NA	NA
NA - Not assessed, N - Not nationally or internationally important for shorebirds.					

²¹⁹ Does not include shorebirds

²²⁰ Awaroa Inlet

²²¹ Does not include shorebirds

²²² No-Man's Island considered Internationally important due to presence of rare plants

²²³ Split into Waimea East and Waimea West.

The Tasman/Nelson coastal region generally supports more ‘endangered’ bird species than the national average²²⁴. The presence of ‘Threatened’ and ‘At Risk’ species is important in terms of Policy 11 of the *New Zealand Coastal Policy Statement* which requires that adverse effects on such species should be avoided. This highlights the need for robust assessments of potential adverse effects of proposed activities within the coastal environment. The fact that all sites of both national and international importance for birds are already identified in the relevant Resource Management Plans is of great importance.



Saltmarsh, Waimea Inlet [D.S. Melville]

²²⁴ Robertson, C. J. R.; Hyvönen, P.; Fraser, M. J.; Pickard, C.R. 2007. *Atlas of bird distribution in New Zealand, 1999-2004*. The Ornithological Society of New Zealand, Wellington.

THREATS AND MANAGEMENT ISSUES

The general ecosystem health of estuarine areas in the Tasman/Nelson region is subject to periodic monitoring and assessment^{225,226}, which has included habitat mapping. The assessment of the vulnerability of each site to various environmental stressors has included a general assessment of impacts on 'birds', but without providing any detail.

The Nelson Biodiversity Forum, of which Nelson City Council is part, developed a Biodiversity Strategy in 2007. The current Strategy²²⁷ has two goals: *Active protection of native biodiversity*, and *Ecologically sustainable use of biodiversity*. The Strategy includes under Outcome 1 (Nationally and regionally threatened indigenous species are sustained or restored): *Increase the range and security of the rare, threatened, and/or iconic....fernbird [and], banded rail*. Thus, a number of other 'Threatened' and 'At Risk' species that occur (including breeding) within the Nelson City Council area currently have no specific conservation actions. Tasman District Council currently does not have a biodiversity strategy but work is about (November 2018) to begin on the development of a combined biodiversity and biosecurity strategy.

Notwithstanding the controls provided through Resource Management Plans and guidance for promoting biodiversity contained in the (Nelson) Biodiversity Strategy, there are a number of issues which require particular attention with respect to coastal birds. These are summarised briefly below.

Habitat loss

Coastal dynamics have caused significant erosion of sediments, eliminating some shorebird roost sites, e.g. the eastern end of Rabbit Island, Totara Avenue and some areas at Farewell Spit. However, accretion also has occurred, resulting in the creation of new islands and increasing certain coastal tidal flats, e.g. Sand Island in Waimea Estuary (although this has now nearly disappeared again) and tidal flats near the mouth of Aorere River. Such erosion and deposition will continue in future, likely exacerbated by sea level rise and increased frequency of storm surges. High tide roost sites on sandy beaches and sandbars and spits are expected to continue to be available to coastal birds, albeit not necessarily where they are currently, but there is likely to be an increased frequency in wash outs of nests for species such as gulls, terns, Variable Oystercatcher *Haematopus unicolor* and Banded Dotterel *Charadrius bicinctus* which often nest close to the Mean High Water Spring tide level.

Robertson & Stevens (2012) note that:

65% of the natural vegetated terrestrial 200m margin buffer that historically bordered shorelines in the Tasman region has been highly modified, mainly due to intensive pastoral grazing, residential properties and forestry – modification often extending a long distance inland from the

²²⁵ Robertson, B.; Stevens, L. 2012. *Tasman coast Waimea Inlet to Kahurangi Point: Habitat mapping, ecological risk assessment, and monitoring recommendations*. Prepared by Wriggle Coastal Management for Tasman District Council. 127p + appendices.

²²⁶ Stevens, L.M.; Robertson, B.P. 2017. *Nelson Region Estuaries: Vulnerability Assessment and Monitoring Recommendations*. Prepared by Wriggle Coastal Management for Nelson City Council. 36p + appendices.

²²⁷ Nelson City Council. 2018. Nelson biodiversity strategy – reviewed 2017/2018.

coast. Development within this coastal buffer margin results in decreased resilience of the coast in the face of physical forces (particularly shoreline erosion), and reduced biodiversity.

Additionally, there has been considerable loss of saltmarsh – 30% in Tasman District, with 50% of the salt marsh in the Moutere Inlet having been lost²²⁸. This historic loss of coastal habitat certainly will have negatively impacted a number of species, in particular rails and Australasian Bittern.

There also continues to be further losses of coastal margin to infrastructure development. For example, the construction of the Ruby Bay bypass resulted in fragmentation and the loss of intertidal and supratidal areas at the Dominion Road tie-in²²⁹ (Figure 36).

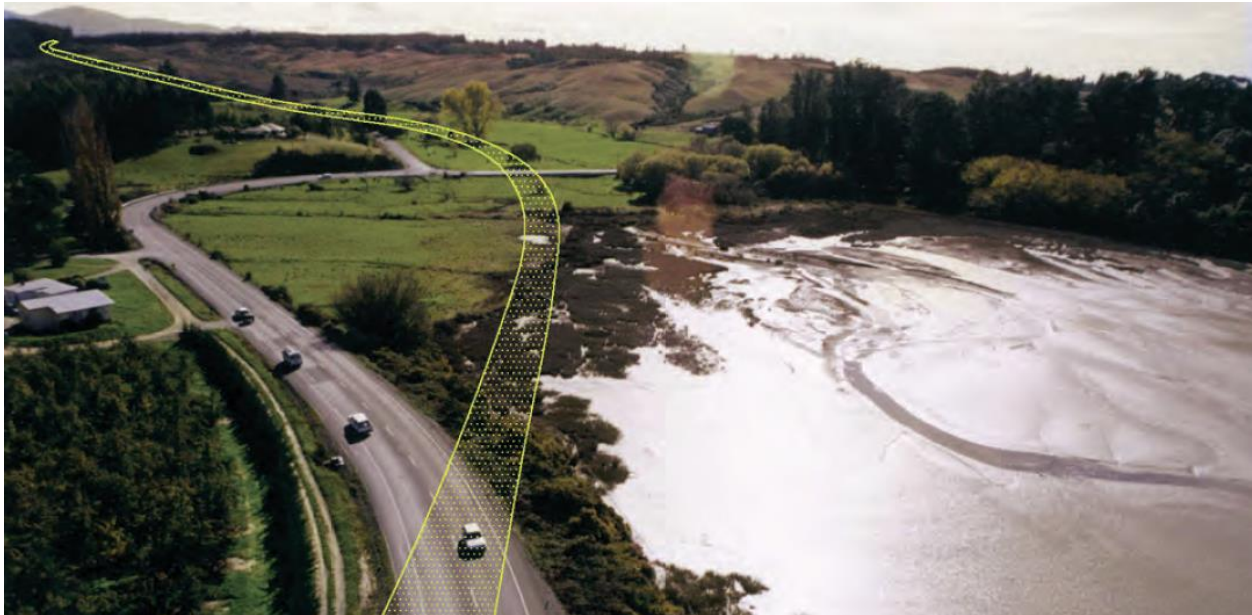


Figure 36. Alignment of Ruby Bay Bypass showing loss and fragmentation of coastal habitat. Image from: Transit New Zealand Ruby Bay Bypass update August 2007.

‘Sporting events’, such as Muddy Buddy (“*the ultimate mud-packed adventure fun run for all abilities*”), may also result in adverse effects, particularly on saltmarsh, even if impacts on the tidal flats are largely reversible²³⁰ (Figure 37). In 2014 a Resource Consent was granted for this activity at Tasman, in the Moutere Inlet given that it appeared that the epifauna recovered within 6 weeks to 6 months following the event. Conditions required the event to stay out of the stream and saltmarsh, keep to the same course within a small area and to pay for offset mitigation for conservation projects around the estuary.

²²⁸ Robertson, B.; Stevens, L. 2012. *Tasman coast Waimea Inlet to Kahurangi Point: Habitat mapping, ecological risk assessment, and monitoring recommendations*. Prepared by Wriggle Coastal Management for Tasman District Council. 127p + appendices.

²²⁹ Transit New Zealand. 2007. Ruby Bay bypass – update August 2007.

<https://www.nzta.govt.nz/assets/projects/Ruby-Bay-Bypass/SH60-Ruby-Bay-Bypass-Update-August-2007.pdf>
[Accessed 12 November 2018]

²³⁰ Stevens, L.; Robertson, B. 2013. *Moutere Inlet 2013 broad scale habitat mapping*. Prepared for Tasman District Council.



Figure 37. Muddy Buddy at Tasman, Moutere Inlet – a site recognised as being of ‘national importance’ in the Tasman Resource Management Plan. In 2019 the event is going to be held in Havelock Estuary, Marlborough – a site identified as being of ‘national importance’ in the Marlborough Resource Management Plan. Elsewhere in New Zealand, e.g. Auckland and Christchurch, such events are held at man-made courses rather than tidal flats. [D.S. Melville]

Sea level rise

Sea level rise as a result of climate change, in places exacerbated by land subsidence, is a growing problem in New Zealand. Policy 24 of the *New Zealand Coastal Policy Statement* requires the Identification of coastal hazards over at least 100 years having regard to, *inter alia*, cumulative effects of sea level rise, storm surge and wave height under storm conditions.

Historically Nelson’s relative sea level rise is reported to be 1.57mm/yr²³¹, slightly lower than the national average.

In December 2017 the Ministry for the Environment issued updated guidance²³² for local governments concerning coastal hazards and climate change. This included a range of sea level rise projections, under which a 1m rise in sea level might occur by the year 2100 out to sometime after 2150, but also noted that sea level will continue to rise for long after 2100, no matter what the actual level by that date.

Such increases in sea level will have potentially major adverse impacts on birds occupying coastal marshes around estuaries in the Tasman/Nelson region. As noted above, much coastal vegetation has already been severely affected by human activities. There is currently little opportunity for the natural migration of coastal marshes landward due to the creation of stopbanks etc. – as such, coastal birds will be subject to ‘coastal squeeze’ – a matter of concern in many parts of the globe^{233,234}.

²³¹ Ministry for the Environment. 2017. Coastal hazards and climate change: Guidance for local government.

²³² Ministry for the Environment. 2017. Coastal hazards and climate change: Guidance for local government.

²³³ Clausen, K.K.; Clausen, P. 2014. Forecasting future drowning of coastal waterbird habitats reveals a major conservation concern. *Biological Conservation* 171: 177-185.

²³⁴ Woodrey, M.S.; Rush, S.A.; Cherry, J.A.; Nuse, B.L.; Cooper, R.J.; Lehmicke, A.J.J. 2012. Understanding the potential impacts of global climate change on marsh birds in the Gulf of Mexico region. *Wetlands* 32: 35-49.

If birds such as Banded Rail are to continue to survive in the Tasman/Nelson region there will be a requirement for habitat restoration/creation, as is also being reported for other rail species elsewhere²³⁵. Robertson & Stevens (2012²³⁶) proposed a target of increasing the area of natural vegetated 200m terrestrial margin by 10% by 2021 and noted that '*where the natural vegetated terrestrial margin is being reduced in area through coastal squeeze, encourage migration inland and explore other possibilities to mitigate or minimise losses*'. Similarly, they proposed a 10% increase in the area of saltmarsh by 2021: '*Expand the area of saltmarsh beds in Tasman estuaries and embayments through plantings and facilitating inland migration in response to sea level rise*'.

There has been considerable community involvement of coastal planting activities in both Tasman District²³⁷ and Nelson City²³⁸, but a long-term strategic plan for adjusting to sea level rise is currently lacking.

Included in the ways to minimise and reduce coastal hazard risk that should be evaluated by local government the Ministry for the Environment²³⁹ includes: *areas for biodiversity change to occur (eg, migration of species)*.

Outcome 5 (Biodiversity is resilient in the face of climate change) of the Nelson Biodiversity Strategy includes the following action: *Complete an inventory of biodiversity and natural features at risk from sea level rise as a basis for future planning of staged coastal retreat for sea level rise with biodiversity objectives included*.

Both Tasman District Council and Nelson City Council are currently undertaking assessments of future possible inundation scenarios as a precursor to community consultation and the development of responses. This will provide valuable information for a review of options for managed coastal realignment for long-term biodiversity conservation, both for coastal marshes and potentially the establishment of new intertidal flats.

Both Tasman District and Nelson City Councils are signatories to the 2010 *Waimea Inlet Strategy*²⁴⁰ (together with the Department of Conservation and the Nelson-Marlborough Fish & Game Council). Following adoption of the *Strategy*, a range of community initiatives have been undertaken in support of various aspects of the *Strategy*. Currently a Draft *Waimea Inlet Action Plan 2018 to 2021*²⁴¹ is being prepared to identify, prioritise, integrate and coordinate actions aimed at achieving the vision of the *Strategy*. The Draft *Action Plan* includes:

1. *Plan for managed retreat of natural ecosystems as sea level rises.*

²³⁵ Roach, N.S.; Barrett, K. 2015. Managed habitats increase occupancy of Black Rails (*Laterallus jamaicensis*) and may buffer impacts from sea level rise. *Wetlands* 35: 1065-1076.

²³⁶ Robertson, B.; Stevens, L. 2012. *Tasman coast Waimea Inlet to Kahurangi Point: Habitat mapping, ecological risk assessment, and monitoring recommendations*. Prepared by Wriggle Coastal Management for Tasman District Council. 127p + appendices.

²³⁷ Gee, S. 2018. Habitat restoration means more banded rail spotted in Waimea Inlet. *Nelson Mail*. <https://www.stuff.co.nz/nelson-mail/news/106241389/habitat-restoration-means-more-banded-rail-spotted-in-waimea-inlet> [Accessed 13 November 2018]

²³⁸ Forest and Bird. 2018. Paremata Flats. <http://www.paremataflats.co.nz/> [Accessed 13 November 2018]

²³⁹ Ministry for the Environment. 2017. Coastal hazards and climate change: Guidance for local government.

²⁴⁰ Waimea Inlet Management Strategy 2010. A collaborative strategy to integrate community values for managing the inlet.

²⁴¹ Waimea Inlet Action Plan 2018 to 2021. Draft 6.4 (revised after feedback). 18 April 2018.

2. Prevent new infrastructure on sites where managed retreat for biodiversity is required.

The Draft *Motueka Ward Reserve Management Plan*²⁴² includes policies:

Take a 'managed retreat' approach to sea level rise by ensuring that coastal hazards and climate change are taken into account in the location, design and construction of all buildings, facilities and improvements, and that facilities and structures in high risk areas are designed to be removable or expendable.

Recognise and provide for the effects of sea level rise and climate change, particularly in relation to native species whose habitat is the coastal margin, where sea level rise projections show that extensive inland migration will be required over the next few decades.

Disturbance

Disturbance from people, dogs, vehicles and craft is a serious problem at a number of high tide roost sites in the Tasman/Nelson region²⁴³. Measures to manage disturbance impacts at shorebird sites were outlined by Melville & Schuckard (2013²⁴⁴) and these are broadly applicable to coastal birds using the same/similar sites. There is an urgent need for protection of The Rototai Sandbar with its Caspian Tern colony which has been subject to severe disturbance in recent years including horse riding and vehicle access.

The Tasman District Dog Control Bylaw requires a dog to be kept under continuous leash control 'on any occasion a dog is likely to injure, endanger, or cause distress to any...protected wildlife'. It also details dog prohibited areas, which include some estuaries such as Onekaka estuary, Parapara Inlet, Ruataniwha Inlet, and Otuwhero estuary (Marahau) (Figure 38). The Nelson City Dog Control Bylaw also prohibits dogs from a number of estuarine wetlands, including Whakapuaka Raupo Swamp, and an area at Paremata Flats.

²⁴² Tasman District Council. 2018. *Motueka Ward Reserve Management Plan*. December 2018.

²⁴³ Melville, D.S. 2002. *A preliminary review of potential human disturbance impacts to birds with reference to the internationally important Waimea Inlet, Nelson, New Zealand*. Submitted to Tasman District Council.

²⁴⁴ Melville, D.S.; Schuckard, R. 2013. *Effects of selected activities on shorebirds in Tasman District: management issues and options for sites of international importance*. Prepared for Tasman District Council. 47 pp.



Figure 38. A dog at Otuwhero estuary, Marahau – not leashed, but apparently well behaved. [D.S. Melville]

The Tasman District Council Bylaw also prohibits dogs from Tata Beach, Golden Bay ‘during the period of New Zealand Daylight Saving Time [30 September to 7 April], and for the remainder of the year from one hour prior to sunrise until one hour after sunrise’²⁴⁵. This measure is aimed at protecting Spotted Shags which come ashore in the early morning. As noted above, the number of Spotted Shags coming ashore has declined over the past 10 years; the cause(s) of this decline are unknown, but disturbance by dogs has been suggested as a contributory factor²⁴⁶.

Growing demands from freedom campers have caused the Tasman District Council to enact the Freedom Camping Bylaw 2017, and designate a number of areas where freedom camping is permitted., including one at Taupata Creek, Golden Bay; a site used as a high tide roost site by 13 ‘Threatened’ and ‘At Risk’ shorebirds and coastal birds²⁴⁷ (Figure 39).

²⁴⁵ Tasman District Council. 2014. Dog Control Bylaw 2014, Schedule 3, Dog prohibited areas.

²⁴⁶ H. Kingston and J. Barr pers. comm.

²⁴⁷ Birds New Zealand. 2017. Submission to Tasman District Council on Draft Freedom Camping Bylaw 2017.



Figure 39. Taupata Creek hightide shore and coastal bird roost site and permitted freedom camping area. [D.S. Melville]

Predation

Predation is thought to be an important factor controlling some wetland birds²⁴⁸, in particular Banded Rail^{249,250} and Fernbird²⁵¹. Community trapping programmes are increasing in the Tasman/Nelson region including in coastal areas^{252,253,254}. In view of the ability of birds such as Banded Rail to disperse widely there is a high likelihood of areas of suitable habitat being naturally colonised if predators are controlled adequately.

²⁴⁸ O'Donnell, C.F.J.; Clapperton, B.K.; Monks, J.M. 2014. Impacts of introduced mammalian predators on indigenous birds of freshwater wetlands in New Zealand. *New Zealand Journal of Ecology* 39: 19-33.

²⁴⁹ Heather, B.; Robertson, H. 2010.5. *The field guide to the birds of New Zealand*. Penguin, Auckland.

²⁵⁰ Parker, K.A.; Brunton, D.H. 2004. Predation of banded rail (*Rallus philippensis*) nests in a saltmarsh habitat. *Notornis* 51: 240-241.

²⁵¹ Parker, K.A. 2002. Ecology and management of the North Island fernbird (*Bowdleria punctate vealeae*). Thesis, University of Auckland.

²⁵² Tasman Environmental Trust. 2018. Battle for the Banded Rail – trapping. <https://www.tet.org.nz/battle-for-the-banded-rail-2.html> [Accessed 13 November 2018]

²⁵³ Project Janszoon. Predator control. <https://www.janszoon.org/our-work/predator-control> [Accessed 14 January 2019]

²⁵⁴ Forest and Bird. Paremata Flats trapping. <http://www.paremataflats.co.nz/get-involved/trapping/> [Accessed 14 January 2019]

RECOMMENDATIONS FOR FUTURE MONITORING AND RESEARCH

OSNZ's shorebird surveys allow the tracking of population trends at a local level²⁵⁵ as well as contributing to both national²⁵⁶ and international²⁵⁷ assessments.

The present review, however, has highlighted that current surveying of coastal birds as an adjunct to OSNZ's shorebird census allows for a broadscale assessment of the area but does not result in robust information regarding distribution or abundance for local biodiversity management.

The Tasman/Nelson region holds nationally and internationally important populations of a number of coastal birds. In order that the Tasman District Council and the Nelson City Council can track populations and distributions of coastal birds as part of their 'State of the Environment' monitoring under s35 of the Resource Management Act the following monitoring programmes are recommended. These have been selected based on the conservation/threat status of the species, the size of local populations of each species, and the practicality of undertaking meaningful monitoring – it is not proposed to monitor all species.

MONITORING

Nationally critical

Australasian Bittern

The OSNZ coastal survey does not include all important sites/potential sites for this species in the Tasman/Nelson region as it occurs in freshwater, as well as brackish habitats. In view of the fact that the Tasman region appears to support in excess of 1% of the national population of this nationally critical species (c3% of all records, both recent and historical²⁵⁸) it is recommended that the distribution of the species be surveyed and the population regularly monitored.

A survey of calling (booming) males between September and November should be undertaken at Mangarakau Swamp, the coastal wetlands of Westhaven Inlet and the Hadfield Block, Abel Tasman National Park. Birds used to be heard booming in the Pearl Creek area, Waimea Inlet; if wetland restoration is undertaken in the O'Connor block (now a TDC reserve) then Australasian Bitterns should be

²⁵⁵Schuckard, R; Melville, D.S. 2013. *Shorebirds of Farewell Spit, Golden Bay and Tasman Bay*. Report prepared for Nelson City Council and Tasman District Council.

²⁵⁶Sagar, P.M.; Shankar, U.; Brown, S. 1999. Distribution and numbers of waders in New Zealand, 1983-1994. *Notornis* 46: 1-43.

²⁵⁷Studds, C.E.; Kendall, B.E.; Wilson, H.B.; Rogers, D.I.; Clemens, R.S.; Murray, N.J.; Gosbell, K., Hassell, C.J.; Jessop, R.; Melville, D.S.; Milton, D.A.; Minton, C.D.T.; Possingham, H.P.; Riegen, A.C.; Straw, P.; Woehler, E.J.; Fuller, R.A. 2017. Rapid population decline in migratory shorebirds relying on Yellow Sea mudflats as stopover sites. *Nature Communications* 8:14895 | DOI: 10.1038/ncomms14895

²⁵⁸ O'Donnell, C.F.J.; Robertson, H.A. 2016. Changes in the status and distribution of Australasian bittern (*Botaurus poiciloptilus*) in New Zealand 1800s-2011. *Notornis* 63: 152-166.

included in the monitoring programme. This could most easily be accomplished using acoustic recording devices (ARDs). Monitoring protocols should follow O'Donnell & Williams²⁵⁹.

Black-billed Gull

No monitoring is proposed. Only a very small proportion of the national breeding population (<1%) occurs within the Tasman/Nelson coastal region²⁶⁰. Breeding colonies are very unpredictable and would require a complete survey of all sandy coasts throughout the Tasman/Nelson region.

White Heron

No monitoring is proposed – this is best done at the one breeding colony (in Westland).

Nationally endangered

Black-fronted Tern

No monitoring is proposed. The focus on conservation management and monitoring should be on the breeding grounds.

New Zealand King Shag

No monitoring is proposed. The few records from Abel Tasman National Park are exceptional. Tourism operators and visitors should be encouraged to report sightings via eBird.

Reef Heron

No monitoring is proposed.

Nationally vulnerable

Caspian Tern

Currently there are three colonies within the Tasman/Nelson coastal region – only the Bell Island, Waimea Inlet colony is subject to regular monitoring by OSNZ. In recent years the Farewell Spit colony has been

²⁵⁹ O'Donnell, C.F.J.; Williams, E.M. 2015: Protocols for the inventory and monitoring of populations of the endangered Australasian bittern (*Botaurus poiciloptilus*) in New Zealand. Department of Conservation Technical Series 38. Department of Conservation, Wellington. 40 p.

²⁶⁰ Mischler, C.P. 2018. Estimating the breeding population of Black-billed Gulls *Larus bulleri* in New Zealand, and methods for future count surveys. *Notornis* 65: 67-83.

adversely affected by storm damage to the sandbar where the birds nest, while the Rototai colony appears to be subject to extensive human disturbance.

In view of the fact that about 7% of the national population occurs within the Tasman/Nelson coastal region it is recommended that annual monitoring be conducted. This could be done most effectively and with the least disturbance using a drone/unmanned aerial vehicle²⁶¹.

At Risk – declining

Banded Rail

The Nelson Biodiversity Strategy proposes to increase the range and security of Banded Rail, while the Tasman Environment Trust's Battle for the Banded Rail aims to: *increase the numbers and distribution of Banded Rail and other shy margin dwelling birds in wetlands and on the margins of Waimea Inlet. These include Fernbird, Marsh Crake, Spotless Crake and the Nationally [Critically] Endangered Australasian Bittern.*

Any actions aimed at increasing numbers of Banded Rail, such as predator control and planting, are expected to also be of potential benefit to Marsh Crake and possibly Spotless Crake.

Banded Rail presence can be surveyed by searching for footprints and faeces; this requires training for observers²⁶², but is probably the most practical way to determine presence/absence. As such it is expected that future monitoring will continue to use trained volunteers for this task. The Battle for the Banded Rail project currently undertakes a presence/absence survey around Waimea Inlet every two years.

Play back of calls has also been used, but the response of both Banded Rail and Marsh Crake to calls is unpredictable²⁶³. If information about (relative) abundance is required then the use of acoustic recording devices (ARDs)²⁶⁴ or camera trapping^{265, 266} will probably be the most effective methods, however the potential limitations of these methods needs to be recognised^{267,268}.

²⁶¹ Hodgson, J.C.; Mott, R.; Baylis, S.M.; Pham, T.T.; Wotherspoon, S.; Kilpatrick, A.D.; Segaran, R.R.; Reid, I.; Terauds, A.; Koh, L.P. 2017. Drones count wildlife more accurately and precisely than humans. *Methods in Ecology and Evolution* 9: 1160-1167.

²⁶² Brownlie, K. 2018. Banded Rail survey in Waimea Estuary 5 August 2018. Unpublished MS.

²⁶³ Elliott, G. 1989. The distribution of Banded Rails and Marsh Crakes in coastal Nelson and the Marlborough Sounds. *Notornis* 36: 117-123.

²⁶⁴ Duke, E.C.; Ripper, D. 2013. Testing the efficacy of autonomous recording units for monitoring secretive marsh birds. Missouri River Bird Observatory report to the Missouri Department of Conservation's Wildlife Diversity Fund. 13 pp.

²⁶⁵ Colyn, R.B.; Campbell, A.M.; Smit-Robinson, H.A. 2017. The application of camera trapping to assess Rallidae species richness within palustrine wetland habitat in South Africa. *Ostrich* 88: 235-245.

²⁶⁶ Znidarsic, E. 2017. Camera traps are an effective tool for monitoring Lewin's Rail (*Lewinia pectoralis brachipus*). *Waterbirds* 40: 417-422.

²⁶⁷ Stiffler, L.L. 2017. If a rail keks and no one is around, does it make a sound?: Investigating the use of autonomous recording units to monitor King and Clapper Rails. Thesis, West Virginia University.

²⁶⁸ Darras, K.; Batáry, P.; Furnas, B.; Celis-Murillo, A.; van Wilgenburg, S.L.; Mulyani, Y.A.; Tschardtke, T. 2018. Comparing the sampling performance of sound recorders versus point counts in bird surveys: A meta-analysis. *Journal of Applied Ecology* 55: 2575-2586.

Fernbird

The Nelson Biodiversity Strategy proposes to increase the range and security of Fernbird. The Waimea Inlet Forum also is interested in the possible occurrence of Fernbirds around Waimea Inlet. Juvenile Fernbirds may disperse quite widely (>20km²⁶⁹) from the natal area, and so birds from e.g. Paremata Flats could move to Waimea Inlet.

There are opportunities for community participation in surveying for Fernbird²⁷⁰, however probably the most efficient method will be the use of acoustic recording devices (ARDs).

Red-billed Gull

It is proposed that the Red-billed Gull colony on the Nelson Boulder Bank be monitored as part of the White-fronted Tern monitoring (see below).

White-fronted Tern

White-fronted Tern colonies are generally unpredictable, often occupying a site for one or two breeding seasons and then moving – sometimes as a result of disturbance or changing physical conditions, at other times the reason(s) remains obscure. The mixed White-fronted Tern and Red-billed Gull colony by The Cut at the mouth of Nelson Haven is, however, used regularly. Consideration should be given to an annual count of breeding pairs at this site - this could be done most effectively and with the least disturbance by using a drone/unmanned aerial vehicle²⁷¹.

At risk – recovering

Pied Shag

Census of all breeding colonies – to be undertaken quarterly in first year (taking into account that the species breeds throughout the year) and then repeated every 5 years. Consideration should be given to using a drone/unmanned aerial vehicle.

Naturally uncommon

Black Shag

No monitoring is proposed.

²⁶⁹ Heather, B.; Robertson, H. 2010.5. *The field guide to the birds of New Zealand*. Penguin, Auckland.

²⁷⁰ Hutzler, I. 2018. Fernbird survey in Waimea Estuary. Report to the Tasman Environmental Trust.

²⁷¹ Chabot, D.; Craik, S.R.; Bird, D.M. 2015. Population census of a large Common Tern colony with a small unmanned aircraft. *PLoS ONE* 10(4): e0122588.doi:10.1371/journal.pone.0122588

Little Black Shag

No monitoring is proposed.

Royal Spoonbill

Royal Spoonbills are not known to nest in the Tasman/Nelson region at present, however birds are frequently seen attending Pied Shag colonies. Monitoring of Royal Spoonbills should be undertaken at the same time as monitoring of Pied Shags (see above).

Use of drones/unmanned aerial vehicles (UAVs)

It is proposed that counts of several of the above species be undertaken using a drone/unmanned aerial vehicle (UAV). Use of drones/UAVs for bird monitoring is a relatively new technique, but one that is rapidly growing in application. Currently there is little experience with this method in New Zealand. Trials will be required to assess whether or not drones/UAVs can be safely used for the proposed surveys – in particular in determining the height at which to fly that will not cause disturbance to nesting birds²⁷².

RESEARCH

The greatest future challenge facing coastal birds in the Tasman/Nelson region is habitat loss from sea level rise and increasing frequency of storm surges. The response to rising sea levels will require managed coastal realignment and the development of new saltmarshes and coastal vegetation if species such as Banded Rail are to be retained within the Tasman/Nelson region. The development and management of new tidal flats also may be necessary to provide foraging areas for coastal birds such as egrets and herons, as well as shorebirds.

²⁷² Brisson-Curadeau, É.; Bird, D.; Burke, C.; Fifield, D.A.; Pace, P.; Sherley, R.B.; Elliott, K.H. 2017. Seabird species vary in behavioural responses to drone census. *Scientific Reports* 7:17884 DOI:10.1038/s41598-017-18202-3





Figure 40. Storm surge damage and inundation, Tasman Bay, February 2018. [D.S. Melville]

Currently most planting being conducted by community groups locally, and elsewhere in New Zealand, is enhancement/restoration, rather than the creation of new habitats²⁷³. There is little experience of saltmarsh establishment and management in New Zealand, although some projects have been done in Christchurch, such as the Charlesworth Reserve²⁷⁴.

We are not aware of any New Zealand projects to create extensive areas of new intertidal habitats. There are a number of such projects in Europe, for example, the largest being the Royal Society for the Protection of Birds (RSPB) Reserve at Wallasea Island, England, where so far 115 ha of intertidal area comprising saltmarsh, islands, and mudflats have been created on a former arable farm^{275,276}.

The establishment of new intertidal areas is complex, with results not necessarily meeting expectations²⁷⁷.

There are opportunities for trials within the Tasman/Nelson region to explore approaches to coastal realignment at, for example, the Wakapuaka Flats, Nelson and the former O'Connor land adjacent to Pearl Creek (Figure 41).

²⁷³ Tasman District Council. 2010. Restoring saltmarsh communities in Tasman District. 23 p.

²⁷⁴ Regenerate Christchurch. 2018. Ōtākaro Avon River corridor regeneration plan. Land use assessment report – ecological restoration. 47 p.

²⁷⁵ Wright, A.; Townend, I.; Scott, C. 2010. RSPB Wallasea Island Wild Coast Project – lessons for designing managed realignment sites. 44th Defra Flood and Coastal Management Conference, Telford, UK 30th June – 2nd July 2010.

²⁷⁶ Tyas, C. 2017. Wallasea Island Wild Coast Project.

https://www.cieem.net/data/files/Resource_Library/Conferences/2017_East_of_England_Conference/EE_Conf_2017_Talk_1_RSPB_Wallasea_Chris_Tyas.pdf [accessed 15 December 2018]

²⁷⁷ Pendle, M. 2013. Estuarine and coastal managed realignment sites in England. A comparison of predictions with monitoring results for selected case studies. HR Wallingford.

Consideration should be given to undertaking trial coastal realignment activities as a matter of priority for biodiversity conservation.



Figure 41. A ‘king’ tide floods the former O’Connor land adjacent to Pearl Creek, Waimea Inlet. This is a site where managed realignment and habitat creation/restoration could be trialled. [D.S. Melville]

ACKNOWLEDGEMENTS

The surveys upon which this report is based result of the generous donation of many thousands of hours by dedicated volunteers, undertaking fieldwork, at times in very challenging conditions. Without these volunteers this work would not be possible. We would like to thank the following people for their often-long-term commitment to the Ornithological Society of New Zealand/Birds New Zealand wader census project in the Top of the South Island, the Atlas project and other studies:

Bob Adam, Geoff Aitken, Jane Baird, Tim Barnard, Derek Batchelor, Don Bate, Phil Battley, Jacqueline Beggs, Brian Bell, Chris Bell, David Bell, Michael Bell, Richard Bell, Peter Bezier, Rose Blois, Anne Boniface, Jenny Bowker, Sam Bowker-Napp, Alvin Brett, Ruth Buchanan, David Butler, Bill Cash, June Bullock, Mick Clout, Stephen Colquhoun, Jesse Conklin, Peter Cook, Terry Cook, Willie Cook, Don Cooper, Shannel Courtney, Jim Cox, Nicky Crawford, Tony Crocker, Andrew Crossland, Annette Cunningham, Henry Dixon, Bryan Douglas, Kevin Durkan, Andrew Fidler, Charmaine Field, Peter Field, Paul Fisher, John Flux, Meg Flux, Bruce Fowler, Nathan Fry, Peter Fullerton, Samantha Gale, Patsy Garrett, Roger Gaskell, Matthew Gaze, Peter Gaze, Don Geddes, Ken George, Elise Gibbons, Paddy Gillooly, Don Goodale, Enfys Graham, Warwick Greenwood, Lesley Hadley, Richard de Hamel, Jenny Hawkins, Neville Haycock, Edwin Heatherbell, Eileen Heatherbell, Dave Haldane, Frank Harris, Shirley Hayward, Barrie Heather, Henk Heinekamp, Sandy Higgins, Linda Hogan, Glen Holmwood, Derek Howden, Peter Howden, William Hutchinson, Ingrid Hutzler, Carol Jackson, Jon Jackson, Terry Johnson, Robyn Jones, Rose Jorgensen, Tjesse van der Kamp, Amy Kennedy, Helen Kingston, Peter Langlands, Mike Lookman, Vicky Lawrie, Sam Leary, Jeroen Lurling, Betty de Liefde, Sarah Lovibond, Jack Marks, Neil Martin, John Mason, Abby McCall, Cynthia McConville, Derek McLeod, Til Melis, Julia Melville, Vicky Melville, Ian Millar, Alec Milne, Sandra Morris, Janet Mossop, Allan Munro, Marie Neverman, Bev North, Nelson North, Mara Nydegger, Colin O'Donnell, Mike Ogle, Richard Parrish, Peter Paye, Sheila Petch, Chris Petyt, Suzi Philips, Ray Pierce, Margaret Pike, Gillian Pollock, Craig Potton, Ralph Powlesland, John Preece, Gail Quayle, Kelly Quayle, Tessa Quayle, Tim Quayle, Anna Reynolds, Patrick Riddett, Hugh Robertson, Neville Rogers, Debbie Rogers, Tim Rowe, Gerry Rushton, Paul Sagar, Pauline Samways, Anneke Schuckard, Eeuwe Schuckard, Rob Schuckard, Tim Shaw, Anna Simmonds, David Sims, Natascha Sobrino, Ian Southey, Kaye Stark, Adela Steopan, Richard Stocker, Hans Stoffregen, Grace Suckling, Mick Symmons, Graeme Taylor, Rowley Taylor, Andrew Tilling, Gillian Vaughan, Dick Veitch, Yvonne Verkuyl, Elspeth Waghorn, Kath Walker, Simon Walls, Simon Ward, Diana Watson, Sam Westcoast, Carol Widdett, George Wilkinson, Sam Williams, Zack Williams, Peter Wilson, Steve Wood, Stuart Wood, Janice Woon, Trevor Worthy. We would also like to thank any others who we may have inadvertently omitted.

APPENDIX 1.

Locations of sites surveyed and distribution of Threatened and At Risk coastal bird species

Data sources:

- DB – OSNZ Data Base OSNZ
- AP – OSNZ Atlas Project
- EB – eBird
- WC – Willie Cook unpublished data).

						Nationally critical			Nationally endangered			Nationally vulnerable	THREATENED	Total threatened species per grid	At risk – declining						At risk – recovering		Naturally uncommon		AT RISK	Total at risk species per grid	
	Site number	Lat	Long	NZTM East	NZTM North	Australasian Bittern	Black-billed Gull	White Heron	King Shag	Black-fronted Tern	Reef Heron	Caspian Tern			Banded Rail	South Island Fernbird	Marsh Crake	Spotless Crake	Red-billed Gull	White-fronted Tern	Pied Shag	Black Shag	Little Black Shag	Royal Spoonbill			
A1								AP				AP	2	2					AP	AP		AP			3	3	
A2						AP	AP	AP		AP		AP	5	5	AP	AP			AP	AP	AP	AP	AP	AP	AP	8	8
	Farewell Spit (Base to Gobi Desert Inside Spit)	1	-40.51	172.76	1581500								0		WC				DB						2		
	Farewell Spit (Base to Gobi Desert)	2	-40.51	172.76	1581250		DB			DB			2						DB	DB	DB	DB			4		
	Puponga	3	-40.52	172.73	1577525			DB		DB			2		WC	EB			DB	DB	DB	DB	DB	DB	8		
	Taupata Creek	4	-40.55	172.72	1576290		DB	DB					2						DB	DB	DB	DB	DB	DB	6		
A3						AP	AP			AP		AP	4	4		AP			AP	AP	AP	AP	AP	AP	6	6	
	Farewell Spit (Stockyard to Mullet Inside Spit)	5	-40.52	172.88	1589490		DB						1			DB			DB	DB				4			
	Farewell Spit (Stockyard to Mullet)	6	-40.51	172.88	1589600	DB	DB			DB			3						DB	DB	DB	DB	DB	DB	5		
A4						AP	AP			AP		AP	4	4		AP			AP	AP	AP	AP	AP	AP	6	6	
	Farewell Spit (Lagoon to lighthouse)	7	-40.53	172.96	1596870		DB			DB			2						DB	DB	DB	DB			4		
	Farewell Spit (Mullet to Lagoon Inside Spit)	8	-40.52	172.91	1592245					DB			1			DB									1		
	Farewell Spit (Mullet to Lagoon)	9	-40.52	172.91	1592490		DB			DB			2						DB	DB	DB	DB		DB	5		
A5						AP	AP			AP		AP	4	4					AP	AP	AP	AP		AP	5	6	
	Farewell Spit (Inside Lagoon to Bushend Point)	10	-40.55	173.01	1600570	EB							1			EB			DB						2		
	Farewell Spit (Lighthouse to end of spit)	11	-40.56	173.04	1603510		DB			DB			2						DB	DB	DB	DB			4		
B1						AP	AP	AP			AP	AP	5	5		AP			AP	AP	AP	AP	AP	AP	AP	7	8
	Westhaven Inlet - combined	12	-40.59	172.58	1564100	DB	DB	DB			DB		4		WC				DB	DB	DB	DB	DB	DB	7		
B2							AP	AP	AP	AP		AP	4	4					AP	AP	AP	AP	AP	AP	6	9	
	Pakawau	13	-40.59	172.69	1573735		DB	DB		DB			3		WC	EB			DB	DB	DB	DB	DB	DB	8		
	Totara Avenue	14	-40.63	172.68	1572890		DB						1		EB	EB	EB		DB	DB	DB	DB	DB		8		
	Totara Avenue, Sandbar 500m offshore	15	-40.64	172.68	1573300		DB						1						DB	DB	DB				3		
C2						AP	AP	AP				AP	4	4		AP			AP	AP	AP	AP	AP	AP	AP	7	9
	Collingwood	16	-40.68	172.67	1572020	EB	DB	DB					3		WC	EB			DB	DB				DB	5		
	Collingwood Beach	17	-40.68	172.68	1573320		DB	DB					2						DB	DB	DB	DB	DB	DB	6		
	Collingwood Island	18	-40.66	172.70	1574760		DB						1						DB	DB					3		
	Parapara - Milthorpe	19	-40.72	172.69	1573665	EB							1		WC	EB	EB		DB	DB	DB	DB		DB	8		
D2						AP	AP	AP				AP	4	4	AP				AP	AP		AP	AP	AP	AP	4	7
	Onekaka	20	-40.75	172.71	1575460			DB					1						DB	DB	DB	DB	DB	DB	6		
D3						EB	AP	AP		AP		AP	5	5					AP	AP	AP	AP	AP	AP	AP	6	7
	Onahau	21	-40.80	172.78	1581060			DB					1						DB	DB	DB	DB	DB	DB	6		
	Patons Rock	22	-40.79	172.76	1579830								0												0		
	Rototai - Soper's	23	-40.82	172.84	1586195		DB	DB		DB			3		WC				DB	DB	DB	DB		DB	6		
D4							AP	AP			AP	AP	4	4		AP	EB		AP	AP	AP	AP	AP	AP	AP	8	9
	Wainui Inlet	24	-40.81	172.95	1595610		DB	DB		DB			3		WC	EB			DB	DB	DB	DB	DB	DB	8		
D5							AP					AP	2	2	WC	AP	AP		AP	AP	AP	AP			7	7	

	Site number	Lat	Long	NZTM East	NZTM North	Nationally critical			Nationally endangered			Nationally vulnerable		THREATENED	Total threatened species per grid	At risk – declining							At risk – recovering	Naturally uncommon			AT RISK	Total at risk species per grid	
						Australasian Bittern	Black-billed Gull	White Heron	King Shag	Black-fronted Tern	Reef Heron	Caspian Tern	Banded Rail			South Island Fernbird	Marsh Crane	Spotless Crane	Red-billed Gull	White-fronted Tern	Pied Shag	Black Shag		Little Black Shag	Royal Spoonbill				
E3						EB	AP	AP		AP		AP	5	5						AP				AP	AP			3	3
Pohara	25	-40.83	172.87	1588975	5479825								0	5	WC	EB				DB				AP	AP	AP	AP	4	
E5							AP		OT	AP	AP	AP	5	5	AP	AP	EB			AP	AP	AP	AP	AP	AP	AP	AP	8	10
Awaroa Inlet	26	-40.86	173.03	1602225	5476825		DB			DB	DB		3	5	WC	EB			EB	DB	DB	DB	DB	DB	DB	DB	9		
F5							AP		OT	AP	AP	AP	5	7	AP	AP	EB			AP	AP	AP	AP	AP	AP	AP	AP	9	10
Marahau Estuary	27	-41.01	173.01	1600600	5459800	EB	DB	DB		DB	DB		5	5	WC	EB			EB	DB	DB	DB	DB	DB	DB	DB	9		
G5							AP	AP	OT	AP	AP	AP	6	6	EB	EB	AP			AP	AP	AP	AP	AP	AP	AP	AP	9	9
Riwaka Estuary	28	-41.07	173.01	1600490	5453720		DB						1							DB	DB	DB	DB	DB	DB	DB	6		
H5							AP	AP		AP		AP	4	4	AP					AP	AP	AP	AP	AP	AP	AP	AP	7	7
Motueka Estuary - Sandspit	29	-41.12	173.03	1602760	5447710		DB	DB		DB			3							DB	DB	DB	DB	DB	DB	DB	6		
Moutere Inlet	30	-41.17	173.04	1603610	5442080		DB	DB		DB			3		WC					DB	DB	DB	DB	DB	DB	DB	7		
H8							AP	AP		AP		AP	4	4	AP	AP				AP	AP	AP	AP	AP	AP	AP	AP	8	9
Delaware Bay	31	-41.17	173.44	1637160	5442670		DB						1		WC		EB			DB	DB	DB	DB	DB	DB	DB	7		
H9												AP	1	1						AP								1	5
Kokorua Inlet	32	-41.10	173.53	1644730	5449550								0		WC	EB								DB	DB			4	
I5						AP	AP	AP		AP		AP	5	5	AP					AP	AP	AP	AP	AP	AP	AP	AP	7	8
Mapua/Ruby Bay/Grossi Point	33	-41.26	173.10	1608090	5432450		DB	DB		DB			3		WC	EB				DB	DB	DB	DB	DB	DB	DB	8		
I6							AP	AP		AP	AP	AP	5	5	AP					AP	AP	AP	AP	AP	AP	AP	AP	7	7
Rabbit Island	34	-41.27	173.15	1612160	5430750		DB	DB		DB			3							DB	DB	DB	DB	DB	DB	DB	6		
I7							AP	AP		AP		AP	4	4	AP					AP	AP	AP	AP	AP	AP	AP	AP	7	7
Nelson Haven	35	-41.24	173.30	1625440	5435020		DB	DB		DB			3							DB	DB	DB	DB	DB	DB	DB	6		
Tahunanui	36	-41.28	173.25	1620650	5430310		DB						1							DB	DB	DB					3		
J5							AP	AP		AP			3	3				EB		AP	AP	AP	AP	AP	AP	AP	AP	4	9
Manuka Island	37	-41.29	173.11	1609425	5429430			DB		DB			2			EB	EB			DB	DB	DB	DB	DB	DB	DB	8		
J6						EB	AP	AP		AP		AP	5	6	AP		EB			AP	AP	AP	AP	AP	AP	AP	AP	8	8
Bell Island, Shellbank	38	-41.29	173.18	1615240	5428560		DB	DB		DB			3							DB	DB	DB	DB	DB	DB	DB	6		
Monaco	39	-41.31	173.21	1617610	5427190					DB			1							DB	DB	DB	DB	DB	DB	DB	6		
Sand Island	40	-41.29	173.21	1617970	5429190		DB			DB			2							DB	DB	DB				DB	4		
Waimea Inlet - East	41	-41.31	173.19	1616080	5426760								0		WC						DB			DB	DB	DB	4		
Wakatu Drive Stoke, Freezing works, Motorway, Airport	42	-41.32	173.21	1617410	5426230		DB			DB	DB		3							DB	DB	DB	DB	DB	DB	DB	5		