

Cheetham & Altona Key Biodiversity Area

Annual Health Check Report **2021**



**HOBSONS BAY
WETLANDS CENTRE**

KBA
KEY BIODIVERSITY AREA

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Summary

The Cheetham & Altona Key Biodiversity Area was established in 2009 by Birdlife Australia, initially as an Important Bird and Biodiversity Area. The area qualified as a Key Biodiversity Area (KBA) because of the high numbers of the migratory Red-necked Stint, as well as the numbers of Chestnut Teal and Pacific Gull, all at more than 1% of the global or flyway population of these species. The wetlands have been recognised for some time as an internationally important site, particularly for migratory shorebirds. They have also been noted as significant at national, state and regional scales for the high number of species recorded, high numbers of migratory and other waterbirds, the high incidence of rare species, large numbers of waterfowl, the number of roosting seabirds, and the populations of terrestrial species.

The Hobsons Bay Wetlands Centre has volunteered to act as the Guardian for the Cheetham & Altona KBA and is responsible for preparing an annual health check. This consists of reporting on the status of the three significant species and of their habitats in the KBA. This year's health check was prepared in consultation with managers of the sites that make up the KBA; the City of Hobsons Bay, Parks Victoria, and Melbourne Water.

Status of bird populations

To determine the status of birds in the KBA, population counts from numerous sources were used. These counts covered both birds within the KBA, and birds in other habitats within Port Phillip Bay and wider studies within Australia as a whole.

The Red-necked Stint is a migratory shorebird that travels to Australia every year after breeding in the northern hemisphere. It was found to frequent most sites in the KBA in numbers within the ranges recorded in 2002 to 2007 when the KBA was first established. The number of birds at Cheetham Wetlands has remained relatively stable since 2009, although these numbers are lower than in the two decades prior to that time. Numbers of Red-necked Stints in southern Australia have fallen over time and this may explain the decline at Cheetham since 2005. Bucking this trend is the record for nearby Werribee-Avalon wetlands, where Red-necked Stint numbers have shown a significant increasing trend over the same period.

The Chestnut Teal is an Australian duck species with a relatively small national population compared to most other ducks. Comparison of 2019-20 figures with those of 2002-07 found that it was present in lower numbers in most KBA habitats. The exception was the sand spit at the mouth of Laverton Creek, which is a relatively new habitat that has grown significantly in size since 2007, and which held significant numbers of Chestnut Teal in recent years. It is possible that the teal are relocating across habitats in the KBA in response to changes in habitat and increased disturbance.

Pacific Gulls breed on islands offshore from southern Australia and move to the mainland coast in winter. They were sighted regularly in KBA habitats in 2019-20 and in numbers within the range recorded in 2002-07. There is insufficient data to establish any trends in their numbers although they appear to have also moved their preferred location, with highest numbers being recorded on the sand spit at the mouth of Laverton Creek.

With the benefit of long-term data for the Cheetham Wetlands (1987 to 2020), we have been able to examine trends in other migratory and resident shorebird species that use the KBA. Downward trends were found for the Curlew Sandpiper, Double-banded Plover, Common Greenshank, Marsh Sandpiper, Black-winged-Stilt, Masked Lapwing and Red-capped Plover. All of these species, apart from the Masked Lapwing, have shown declines in southern and inland Australia in other studies, and this may

explain the declines seen at Cheetham. However, the Cheetham populations of some of these species may not accurately represent their populations in the whole KBA. Comparing bird numbers in all KBA habitats between 2002-07 and 2019-20 shows that most of these species, apart from the Curlew Sandpiper and Double-banded Plover, still occur in other habitats outside of Cheetham Wetlands in healthy numbers and thus declines may not be occurring across all habitats in the KBA.

The latest population estimates for shorebird species published by Birdlife Australia have revealed that several more species are present in the Cheetham & Altona KBA in internationally important numbers; the Curlew and Sharp-tailed Sandpipers, and the Double-banded Plover. This warrants an upgrading of the number of trigger species in the Cheetham & Altona KBA that contribute to its significance rating.

The total number of ducks in Cheetham Wetlands was also examined and these appear to be well down compared to earlier years (2002-07). However, ducks are still present in reasonable numbers in the other habitats in the KBA.

Records for 2019-20 showed 22 species of threatened birds that used many of the KBA's wetlands, which is more than the number recorded when the KBA was established in 2009. In addition to the high numbers of threatened migratory shorebirds already discussed above, there are large numbers of Pied Cormorants that use coastal sites (up to 600 at Point Cook), good numbers of several threatened ducks that use the Williamstown Range wetlands, up to 46 Bar-tailed Godwits that were recorded at the Laverton Creek sandspit, and up to 49 Swift Parrots that roosted in eucalypt trees in Truganina Park in the winter of 2019. The Swift Parrot is listed as Critically Endangered, and the count represents over 2% of the world population of the species.

Management of pressures on habitats

Pressures on the habitats in the KBA were considered by management agencies to be the same as those recorded in the first health check in 2018, that is:

- Dams & water management (mostly due to urban stormwater runoff)
- Building development
- Recreation activities
- Invasive plants and animals
- Garbage, solid wastes and other pollution
- Habitat shifting
- Drought and floods.

Overall, the managers believed that these pressures had reduced in extent and severity in a lot of the habitats. This has resulted from the substantial management effort put in over the last ten years. All wetland habitats in this KBA are in public ownership, with many in conservation reserves managed specifically for protection of species and their habitats. This is the case for Cheetham Wetlands and Point Cook Coastal Park which together account for 68% of the KBA area. This does not, however, prevent habitat degradation from occurring there, as seen by historical pollution of RAAF Lake, loss of water to Spectacle Lakes, and coastal erosion breaching saline ponds in Cheetham Wetlands.

Conservation management plans are in place for most of the KBA wetlands and conservation actions are implemented, often with the involvement of local community groups. Although much progress has been made in reducing human impacts, greater effort will be required to reduce impacts on birds. The active involvement of community groups in planning, education and on-ground management will be an essential part of an improved outcome for the KBA.

Acknowledgements

We acknowledge the peoples of the Kulin nation as the Traditional Owners of these lands and waterways and pay our respects to all Elders past, present and emerging.

This report was prepared by Kevin Wood, Committee Member of the Hobsons Bay Wetlands Centre. He would like to acknowledge the many people who helped in the provision of bird data and management information and provided useful comments on the draft report. In particular Golo Maurer, KBA Co-ordinator of Birdlife Australia, Bernie McCarrick and Jillian Wheeler of Parks Victoria, William Steele of Melbourne Water, Andrew Webster and Suzette Rodoreda of the City of Hobsons Bay and Danny Rodgers of the Department of Environment Land Water and Planning. Thanks also to Stephen Davidson of Birdlife Australia, and Richard Leppitt and Rob Mancini who undertook bird surveys in the KBA that were used in this report.

Cover design by Evergreen Design.

1. The Cheetham & Altona KBA

The Hobsons Bay Wetlands Centre Inc. is a non-profit community group seeking to establish a place where everyone can connect with nature to improve their health and wellbeing and be inspired to care for their precious natural environment. Centred in the internationally recognised Cheetham and Altona wetlands, the group has taken on the role of being the Guardian for the Cheetham and Altona Key Biodiversity Area. One of the roles of a Guardian is to complete an annual 'health check' for the Key Biodiversity Area (KBA), and this report summarises the findings of the group's investigations into the status of the KBA in 2021.

1.1 What is a Key Biodiversity Area?

Key Biodiversity Areas are sites of global importance to the planet's overall health and the persistence of biodiversity. The Key Biodiversity Area Partnership was set up in 2016 to prevent the rapid loss of biodiversity by supporting nationally led efforts to identify places on the planet that are critical for the survival of unique plants and animals, and their ecological communities. The partnership and other interested groups have mapped more than 16,000 KBAs worldwide, and over 300 have been declared in Australia, mainly based on their importance for birds.

The KBA program is the successor and extension of BirdLife Australia's Important Bird and Biodiversity Areas (IBAs) which began in 2008. The Cheetham and Altona IBA was declared at that time.

1.2 Features of the Cheetham & Altona KBA

The Cheetham & Altona KBA consists of a complex of wetlands on the north-western shores of Port Phillip Bay, at the edge of Melbourne, and includes:

- The coast between Williamstown and Seaholme including the Jawbone Reserve, and the wetlands of the Range estate,
- the Altona Coastal Park, lower Kororoit Creek and Rowden's Swamp on Kororoit Creek;
- Truganina Swamp adjacent to Laverton Creek, and the mouth of the creek including the enclosing sand spit
- Cheetham Wetlands
- The Spectacle Lakes complex, RAAF Lake and adjacent stretches of muddy coast in Point Cook Park.

These are shown in Figure 1 below.

1.2.1 KBA criteria met

One of the criteria for designating a KBA is met for three bird species in the KBA, and that is Criterion D1, relating to 'Demographic Aggregations'¹; the site predictably holds an aggregation representing greater than or equal to 1% of the global population size of a species, over a season, and during one or more key stages of its life cycle. Such species tend to have specialized ecological requirements due to their dependence on a relatively small proportion of their total range. Their congregatory behaviour makes them inherently vulnerable at the population level. The criterion is modelled on Criterion 6 of the Ramsar Convention for identifying wetlands of international importance and the 1% thresholds apply in this case to the Flyway or Australian populations.

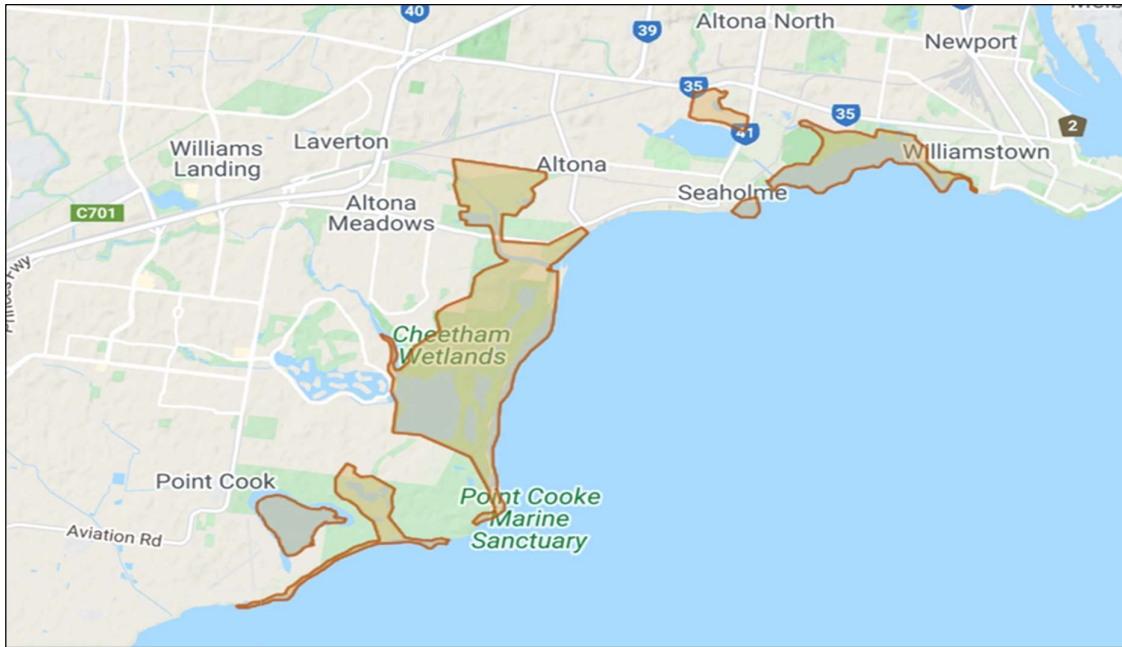


Figure 1. Boundaries of the Cheetham & Altona Key Biodiversity Area on the shores of north-western Port Phillip Bay

The characteristics of the three species that meet the KBA criterion that regularly use the Cheetham and Altona wetlands are shown in Table 1 below. These are known as ‘trigger’ species for the KBA Health Check assessment. The assessment was made at the time of listing, which was 2009, and provides a benchmark to assess current populations of these species, which will be done later in this report.

Species	Current IUCN ² Red List Category	Season	Years of estimate	Population estimate
Chestnut Teal	Least Concern	resident	1999-2006	883 - 2,159 individuals
Red-necked Stint	Near Threatened	non-breeding	1998-2007	4,359 individuals
Pacific Gull	Least Concern	non-breeding	2003-2007	148 - 316 individuals

Table 1. The three bird species found in the Cheetham & Altona KBA in numbers greater than 1% of the world or flyway populations

The KBA listing also notes several other important values:

“The wetlands are also significant at national, state and regional scales for the high total number of species recorded (240), high numbers of migratory and other waterbirds, the high incidence of rare species, the large numbers of waterfowl, the number of roosting seabirds, and the populations of terrestrial species. Nine species are considered threatened in Victoria and one, the Orange-bellied Parrot is endangered nationally but has not been regularly seen in recent years.

Regionally important counts of Red-capped Plover, Banded Stilt, Red-necked Avocet, Sharp-tailed Sandpiper, Curlew Sandpiper and Double-banded Plover. The near threatened Flame Robin was recorded in seven of 103 (7%) Atlas of Australian Birds surveys from 1998 to 2008. Small numbers of Striated Fieldwrens (usually two to four but sometimes up to 16 individuals) have been recorded in quarterly bird counts.

Non-bird biodiversity: The shallow inshore waters of Port Phillip Bay contain diverse and abundant marine species, two areas of which have recently been declared as marine sanctuaries. Populations of Bottlenose Dolphin and Little Penguin feed offshore.”

2 Annual Health Check Requirements

The Health Check consists of entering statistics relating to surveys conducted in the KBA in that time frame and reporting on the state of the habitat for each trigger species in the KBA, current pressures on the KBA and conservation actions that are aimed to help protect it. It has been completed on-line and is not reproduced here in this report.

2.1 State of the KBA

The type and condition of the habitat used by the three trigger species as cited in the 2018 Easter Health Check is shown in Table 2 below.

Species	Habitat	Area Rating	Quality Rating	Habitat Changes
Chestnut Teal	Wetlands and estuaries	Moderate	Good	Increasing disturbance
Red-necked Stilt	Mudflats	Moderate	Moderate	Increasing disturbance
Pacific Gull	Rocky coast and beaches	Moderate	Good	Increasing disturbance

Table 2. KBA assessments for trigger species made at the first Health Check in 2018

2.2 Pressures

Threats to conservation of the KBA and or trigger species have been quantified as part of the 2020 Health Check and are shown in the table below.

Pressure Type	Timing	Scale	Severity	Comment
Dams and water management	Happening in last year	Greater than 10 percent	Moderate	Stormwater run off
Building development	Likely within 4years	Don't know	None	Population growth around KBA boundaries and buffer creep
Recreational activities	Happening in last year	More than 50 percent	Moderate	Dogs, walkers, water sports
Invasive plants	Happening in last year	More than 90 percent	Slow	Noxious weeds, etc
Invasive animals	Happening in last year	More than 90 percent	Slow	Foxes, cats, dogs, rabbits
Garbage and solid waste	Happening in last year	Less than 10 percent	Slow	Public area litter, dumped waste

Pressure Type	Timing	Scale	Severity	Comment
Habitat shifting	Happening in last year	More than 10 percent	Slow	Growing sand bar reducing wetlands
Drought	Happening in last year	More than 50 percent	Slow	Climate change impacting flora and fauna
Floods	Happening in last year	More than 50 percent	Don't know	Natural flooding
Other	Happening in last year	More than 90 percent	Slow	Risk of uncoordinated land management due to multiple land managers

Table 3. Pressure assessments on habitats in the KBA from the 2020 KBA Health Check

2.3 Conservation

This section of the Birdlife Australia KBA Health Check template reports on Government, BirdLife Australia, and community actions to manage and maintain the KBA. The sort of information required can be ascertained from what was provided in the 2018 Easter Health Check and reproduced in the 2020 Health Check.

“Government Actions: Legal Protection covers 50 -90 per cent of the KBA and there is a habitat management plan, but it is out of date.

Comments: Part of the KBA is a Ramsar site. Management of the KBA is shared between Hobsons Bay City Council, City of Wyndham, Melbourne Water and Parks Victoria which complicates coordinated action.

Some conservation action has been undertaken:

- 900m of fencing since 2011 to protect foraging habitat for shore birds at Cheetham Wetlands
- HBCC included the KBA in its Biodiversity Strategy and has increased signage
- fencing dog owner education (largely ignored by the community)
- HBCC and BLA produced Hobsons Bay Bird ID book
- local group developing plans for a Wetlands Centre to educate the community.

Birdlife Australia Actions: Provision of community education initiative, interpretive signage, workshops etc...

Other Groups: A need for a ‘friends group’ identified.”

3 The 2021 Health Check

For the 2021 Health Check the Hobsons Bay Wetlands Centre, the Guardian, undertook a different approach from that used in previous years. The group tailored the Pressures and Conservation scoresheets, previously completed at the level of the whole KBA, to be completed at a site level in consultation with the relevant authorities that manage each of those sites. The sites identified were:

1. Cheetham Wetlands, managed by Parks Victoria

2. Point Cook Park (RAAF Lake, Spectacle Lakes, coast and intertidal zone), managed by Parks Victoria
3. Truganina Park (land between Cheetham Wetlands and Laverton Creek), managed by Hobsons Bay City Council (HBCC)
4. Laverton Creek mouth (lower Laverton Creek, below pedestrian bridge, sand spit and coastal areas adjacent to Doug Grant Reserve and Apex Park), managed by Melbourne Water and HBCC
5. Truganina Swamp and Laverton Creek, managed by Melbourne Water
6. Esplanade foreshore (corner east of Millers Road), managed by HBCC
7. Altona Coastal Park, mudflats & lower Kororoit Creek, managed by HBCC and Melbourne Water
8. The Range wetlands and Jawbone Reserve, managed by HBCC and Parks Victoria

3.1 Bird Populations

This section of the report examines the populations of significant birds in the KBA. The first part focuses on the three species listed as ‘trigger species’ for this KBA, and later parts look at a range of other species and bird groups important in the region.

3.1.1 Red-necked Stint

The Red-necked Stint is the most numerous migratory shorebird using the KBA. The International Union for Conservation of Nature (IUCN) is the international body that maintains an authoritative list of the conservation status of the world’s threatened fauna. On the so-called ‘Red List’, the Red-necked Stint is classified as Near Threatened. The species is thought to be declining at a rate approaching the threshold for ‘Vulnerable’ under the population size reduction criterion, according to thirty years of monitoring data from Australia and New Zealand.

The species is restricted to the East Asian-Australasian Flyway and habitat loss at critical stopover sites in the Yellow Sea, between China and North and South Korea, is suspected to be the biggest threat to this species. Up to 65% of intertidal habitat in the Yellow Sea has been lost over the past 50 years, and habitat has been disappearing at more than 1% annually since the 1980s.

The Flyway population is estimated using the latest information from 2020, to number 475,000 individuals of which 80% reach Australia during the non-breeding season³. The estimate for numbers using the KBA in 2009 was 4,359 individuals, which at that time was approximately 1.3% of the estimated global population and 1.6% of the Australian population. The most recent work by Birdlife Australia⁴ sets the 1% level for this species at 4,750 birds and Birdlife Australia still considers that the Point Cook to Williamstown site population has exceeded this, based on 2006 data for Cheetham Wetlands. They thus still support the site’s standing as being of international importance for this species.

The population estimate for Red-necked Stints on which the KBA nomination was based was estimated from summer high tide counts of the Cheetham Saltworks undertaken by the Victorian Wader Studies Group (VWSG) between 1998 and 2007⁵. Most of the Red-necked Stints are considered to roost and feed in the Saltworks at high tide, and often move out to other wetlands as the tide falls. As well as the VWSG counts in Cheetham Wetlands, data are available from a regional bird monitoring program that was undertaken between 2002 to 2007 by local birdwatchers⁶. In this program each of the major wetland habitats in the Altona and Williamstown region was counted on the same day at approximately the same time of day, at monthly intervals, close to a low tide.

Unfortunately for the 2021 Health Check there has not been the same co-ordinated program of counts across all wetlands in the KBA. One co-ordinated count was undertaken in February 2021, but a cold front raised Bay water levels and the mudflats were not exposed by a low to rising tide as predicted. In addition, the Cheetham Wetlands could not be counted on the same day but were counted two days later. As a result, this report will present counts for individual sites and compare these to Red-necked Stint numbers counted at these sites between 2002 and 2007 as well as Cheetham Wetlands counts undertaken as part of shorebird monitoring.

Maximum counts for all sites in the KBA for 2019 and 2020 based on Birdata⁷ and eBird⁸ are compared to those in 2002-07 in Figure 2 below.

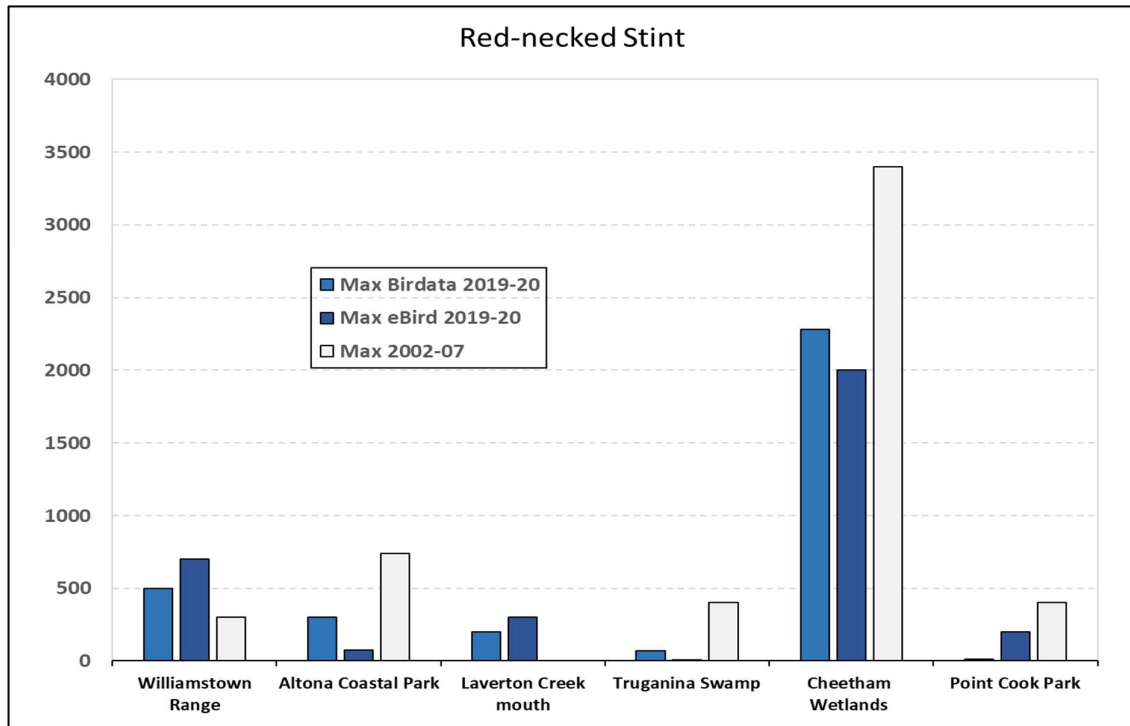


Figure 2. Comparison of maximum Red-necked Stint numbers in different KBA habitats between 2019-20 and 2002-07

The figures show that Red-necked Stints were found to frequent most sites in the KBA in 2019-20 in a pattern similar to that recorded in 2002 to 2007 when the KBA was established. There are some differences though. Truganina Swamp did not hold much water during the shorebird summer to attract them to that site during 2019-20 and thus numbers there are lower. The sand spit at the mouth of Laverton Creek has grown significantly in size and extent since 2007 and now constitutes a large and varied bird habitat. Bird numbers there are higher in 2019-20 than in 2002-07.

For the Cheetham Wetlands we have the benefit of an almost complete count record of summer and winter numbers over 30 years, collected by the Victorian Wader Studies Group. As these are high tide counts, they are likely to represent close to maximum migratory shorebird numbers present in the KBA each year. Shown in Figure 3 below, the numbers in 2020 appear to be relatively stable and consistent with previous years, considering of course, the annual fluctuations that occur with this species given its variable breeding success.

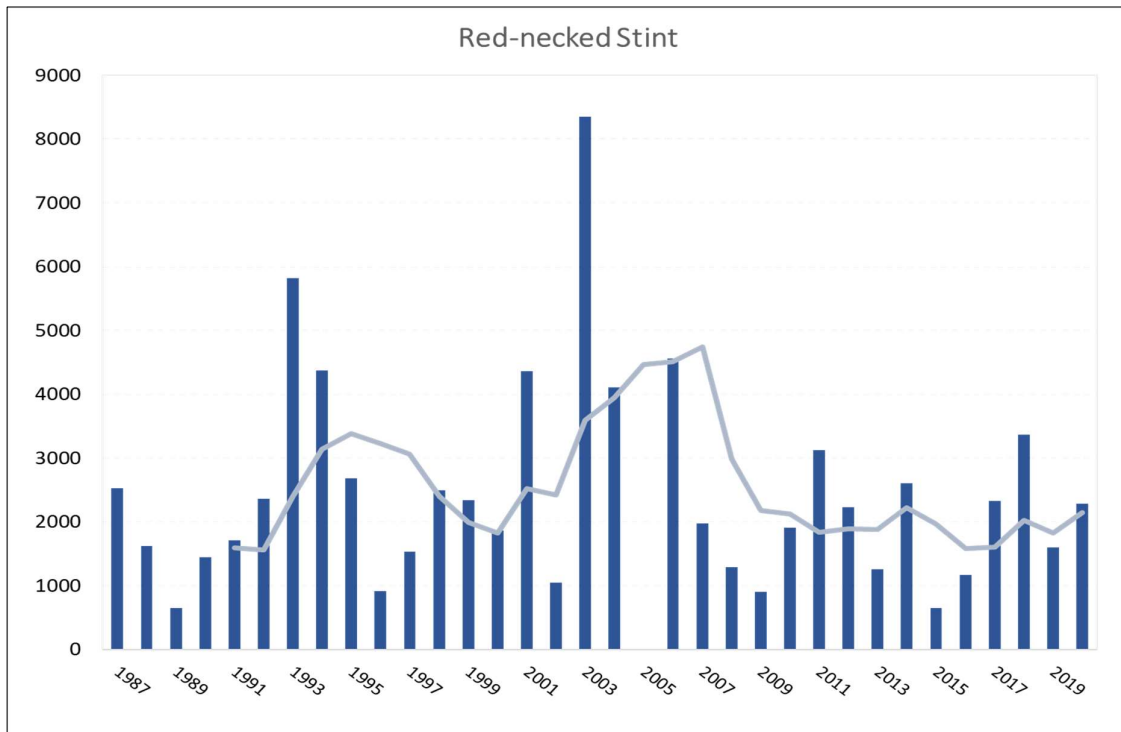


Figure 3. Annual summer numbers and the 5-year moving average for Red-necked Stints at Cheetham Wetlands between 1987 and 2020

Based on the five-year moving average, numbers in the years since the KBA was established (2009) seem to be lower than in the 1990s and 2000s before it was established, but these periods also appear to have had higher numbers than the period in the late 1980s. It is difficult to identify a single trend over this long period, however, it is worth noting that the trend in numbers since establishment of the KBA is the longest period of lower numbers since 1987.

It is worth comparing this pattern with another large stint habitat in the Western Port Phillip Bay Ramsar site, Werribee-Avalon wetlands, for which there are also very reliable records (taken from Birddata). This is shown in Figure 4 below. The pattern at Werribee-Avalon shows higher numbers of Red-necked Stints overall, which is understandable, given the larger areas of habitat there, but also a similar increase in the 2000s up to 2007. The area also shows an increase from 2010 to 2020, which is not seen at Cheetham Wetlands.

A recent analysis of waterbirds at the Western Treatment Plant⁹ (WTP), a major part of the Werribee-Avalon complex, found that February 2020 recorded the second highest count ever of Red-necked Stints, at over 14,000, and the trend in numbers since 1980 is strongly upward. So, it appears that the increasing numbers of stints are in this part of the Werribee-Avalon area. A possible explanation of the increasing numbers at the WTP is the habitat improvement works that have been undertaken there over the last 15 years¹⁰, drawing birds from other habitats within Port Phillip Bay.

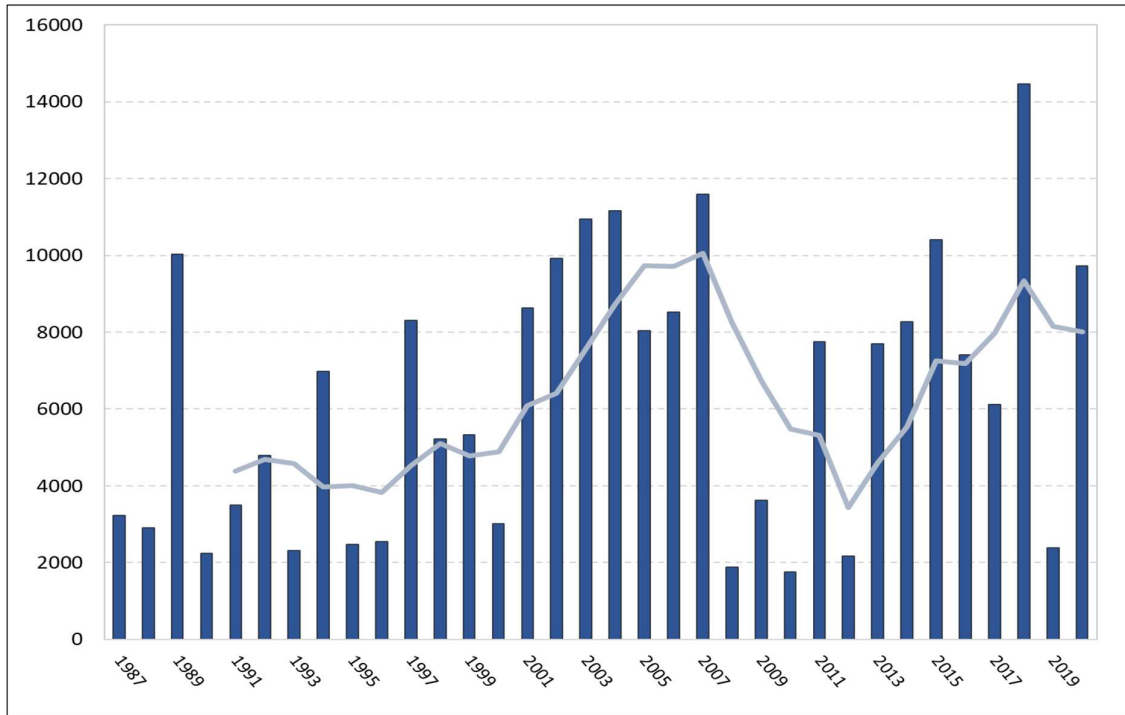


Figure 4. Annual summer numbers and the 5-year moving average for Red-necked Stints at Werribee-Avalon wetlands between 1987 and 2020 (Birddata)

Research by Rob Clemens in his PhD in 2016¹¹ found that Red-necked Stints have decreased significantly in southern Australia since 1996. He found that declines in populations of migratory shorebirds were widespread across Australia and probably reflected their reliance on disappearing East Asian habitats. He also found some evidence for a decline in this species related to deteriorating wetland conditions within Australia itself.

A recent analysis of Australian shorebird numbers by Birdlife Australia¹² also found that Red-necked Stint numbers in the Point Cook to Williamstown area were markedly lower in 2020 compared with their numbers when last reported in 2008 (based on work by Bamford et al¹³). The 2008 population estimate was derived from maximum numbers recorded in years up to and including 2006. Looking at the population numbers for Cheetham Wetlands prior to 2006 (Figure 3), the maximum number of Red-necked Stints recorded was 8,343 in 2003, a population estimate that has never been approached since that time.

Taken together, these assessments indicate that there has been a decline in Red-necked Stint numbers in the KBA since 2002-07, the period of data collection on which the KBA declaration was based.

3.1.2 Chestnut Teal

The Chestnut Teal is an Australian duck species that occurs in variety of terrestrial and wetland habitats but is most abundant on the coast. Unlike many other game species of ducks in Australia its numbers are relatively low. While there is not an accurate estimate of its total population, numbers recorded in the annual survey of wetland birds in eastern Australia recorded only 909 birds in 2020¹⁴. The total number of waterbirds in 2020 was well down compared to the previous year 2019 in the southeast coast section of the survey, but was significantly higher in the Murray Darling Basin, responding to larger areas of wetlands there due to extensive rainfall. The movement of ducks from the southeast coast to the Basin in response to rainfall has been described previously for the Western Treatment Plant¹⁵. The survey has been conducted since 1980 and has recorded two periods of major

population increases to over 15,000 birds in the 1980s and 1990s, but its annual numbers are usually below 1,000 birds. However, its population trend is considered stable, and the IUCN considers its conservation status to be ‘of least concern’.

The total population of Chestnut Teal was estimated to be 100,000 birds in South-eastern Australia by Wetlands International¹⁶ and the 1% threshold set at 1,000 based on the 2012 dataset. With counts of over 2,000 birds in the KBA wetlands in the past, its status as a significant species there is justified.

Table 5 below shows the number of Chestnut Teal in each area of the KBA in 2019-20 compared to numbers in 2002-07.

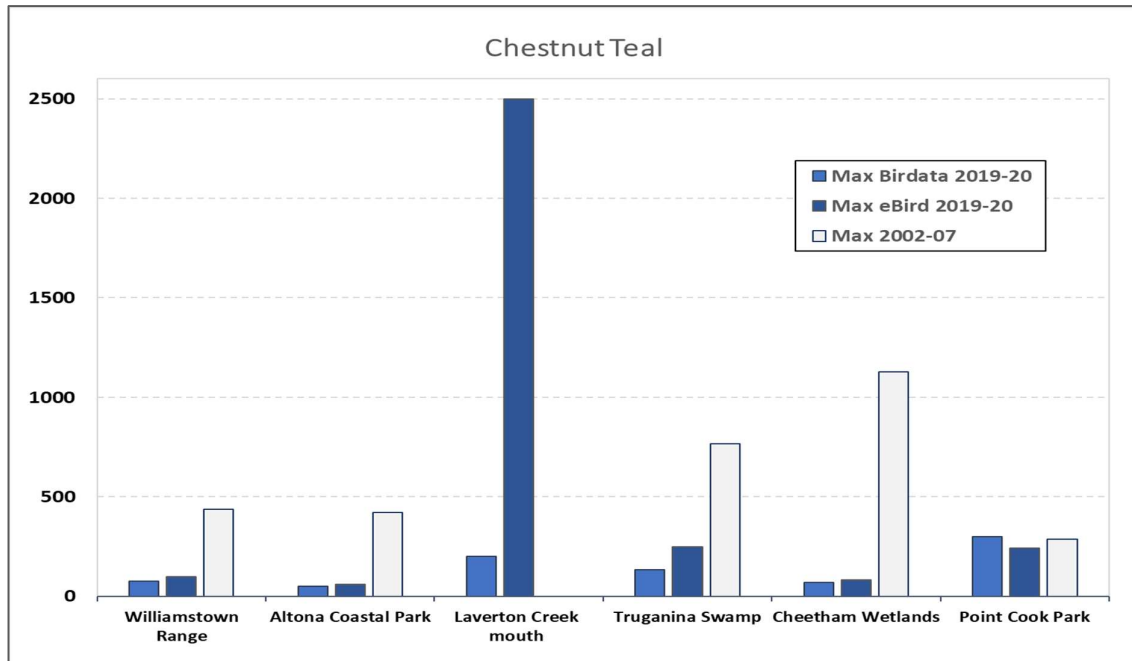


Figure 5. Comparison of maximum Chestnut Teal numbers in different KBA habitats between 2019-20 and 2002-07

The site comparisons show that numbers of Chestnut Teal in most KBA areas are well below those in 2002-07, although not a lot can be concluded from this given the short time frame and the lack of coordinated counts across the KBA. One thing to note is that there were quite a few teal at Laverton Creek mouth, which has increased in habitat significance since 2007. It is possible that the teal are relocating across habitats in the KBA in response to changes in habitat and increased disturbance. Based on the maximum number recorded at the mouth of Laverton Creek in 2020 (2,500) it seems that numbers of Chestnut Teal in the KBA were still at reasonable numbers in 2020. But several areas are showing lower numbers than previously, and it will be important to obtain more site and total counts prior to the next Health Check to establish if more investigation into their habitats in the KBA is required.

These findings can be contrasted with those from the Western Treatment Plant, where high numbers were recorded in 2019-20, following a steady increase there every year since the year 2000¹⁷.

3.1.3 Pacific Gull

The Pacific Gull is Australia’s largest gull and occurs along the coasts of southern Australia. It is more common on the beaches bordering the Southern and Indian Oceans. The gulls breed in colonies on offshore islands, extending from the Furneaux Group in eastern Bass Strait, west to Shark Bay. Its

numbers on the southern shores of Victoria, and in the Cheetham & Altona KBA increase to its maximum during winter when large numbers of juveniles accompany adults to the mainland after breeding.

Numbers appear to be decreasing in parts of its range, particularly in Victoria, thought to be due to competition from the Kelp Gull, and the Pacific Gull has been classified as Near Threatened by the Victorian Government. The Victorian and Tasmanian population was estimated in 2012 (based on 1999 data) to be in the order of 4,950 individuals¹⁸ and with numbers in the KBA of 148 to 316 individuals, this represents more than 3% of the world population.

The counts for KBA areas in the last two years compared to 2002-07 are shown in Figure 6 below.

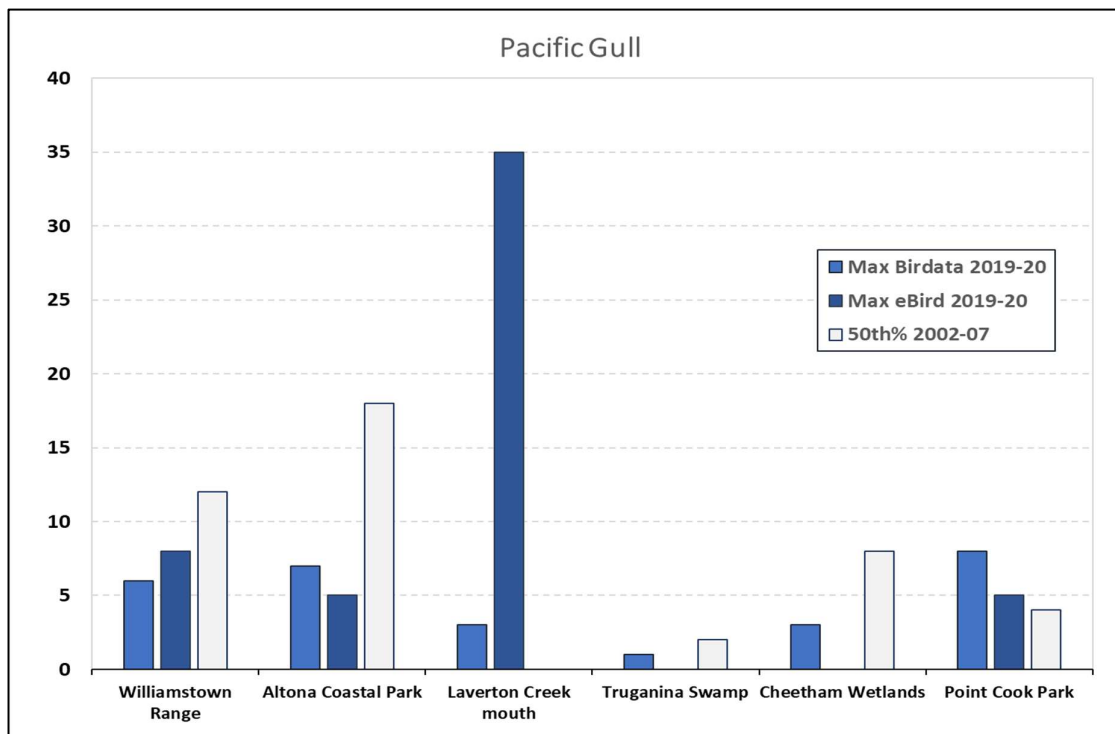


Figure 6. Comparison of maximum Pacific Gull numbers in different KBA habitats in 2019-20 with the 50th percentile numbers in 2002-07

The numbers in the last two years are within the range recorded in the years prior to listing as an KBA, based on comparing maximum numbers in 2019-20 to the 50th percentile figures for these habitats. There is insufficient data at this time to establish any trends in their numbers since the KBA was listed in 2009, although they still appear here regularly. They certainly have moved in their preferred location, with highest numbers being recorded on the sand spit at the mouth of Laverton Creek in recent years.

3.1.4 Other shorebird species

The shorebird data for the Cheetham Wetlands collected by VWVG, spanning the period 1987 to 2020, may provide a useful surrogate to demonstrate trends in other shorebirds across the whole of the KBA.

The data for nine prominent species have been plotted with 5-year moving averages shown. These charts are shown below for the migratory shorebirds Curlew, Sharp-tailed and Marsh Sandpipers,

Common Greenshank and Double-banded Plover, and the resident shorebirds Red-capped Plover, Masked Lapwing, Black-winged Stilt and Red-necked Avocet.

3.1.4.1 Migratory shorebirds

Curlew Sandpiper numbers have been declining in Australia since the 1980s. This is a migratory species that breeds in the northern Hemisphere and has an estimated global population of over one million birds. The IUCN lists the species as Near Threatened as the global population may be declining. The birds that use the East Asian-Australasian Flyway have a population estimated at 90,000 individuals, which constitutes approximately 11-12% of the global population. Analysis of monitoring data from around Australia and New Zealand found that the population had declined by 80.5% in three generations¹⁹, and the species is classified as Critically Endangered in Australia and Victoria.

Declines in Curlew Sandpiper numbers have also been noted by the Victorian Commissioner for Environment & Sustainability in Port Phillip Bay²⁰ and Clemens for southern Australia, both in 2016. Birdlife Australia noted a decline in Curlew Sandpipers between 2008 and 2020 at the Point Cook to Williamstown site, however it also considered that numbers there were high enough now to re-assert the area as internationally important based on the most recent population estimates.

The Cheetham Wetlands is the main habitat used by Curlew Sandpipers in the Cheetham & Altona KBA. The declining trend for this species in the KBA, as shown in Figure 7 below, is consistent with this Australia-wide trend.

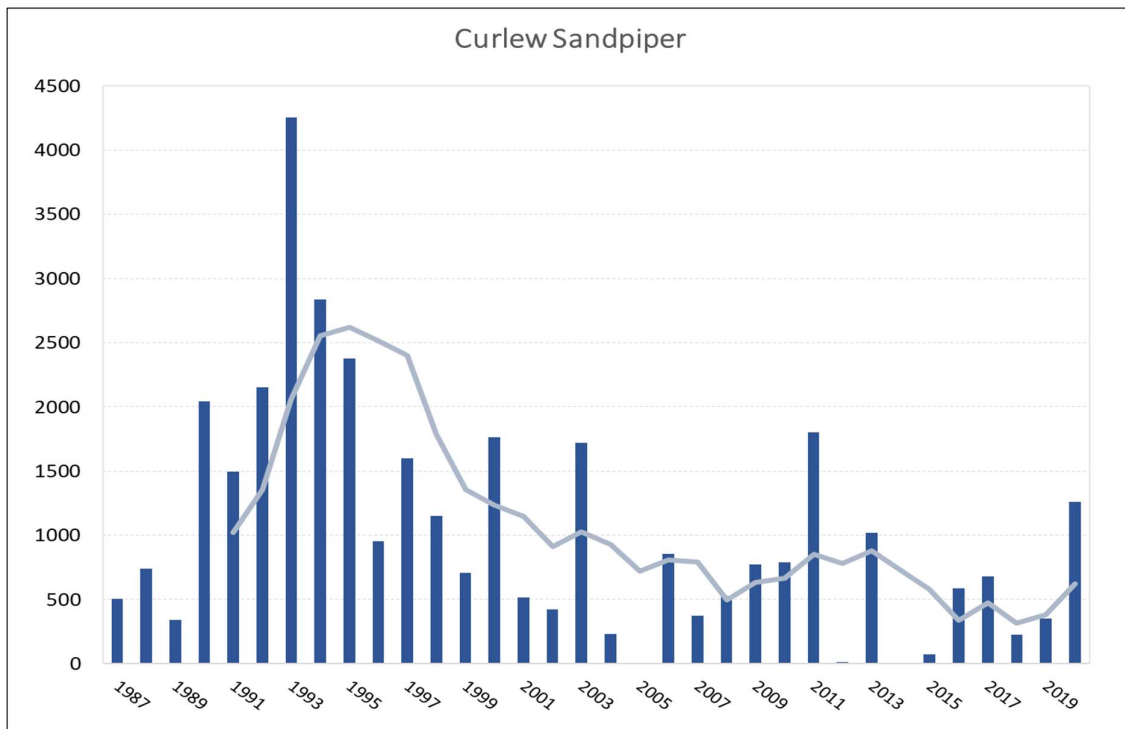


Figure 7. Annual summer numbers and the 5-year moving average for Curlew Sandpipers at Cheetham Wetlands between 1987 and 2020

The Sharp-tailed Sandpiper is another migratory shorebird that occurs in significant numbers in Port Phillip Bay wetlands with over 4,000 recorded regularly at Werribee-Avalon in recent years. The species is in the IUCN category of ‘Least Concern’ and is not considered to be threatened in Victoria. It is, however, another species listed in several international treaties and a contributor to the Western Port Phillip Bay Ramsar site listing.

There appears to have been a decline in numbers in the Cheetham Wetlands as shown in Figure 8 below. This trend is not evident at the Western Treatment Plant however, where numbers have increased over the same period. However, Clemens did report a decline in Sharp-tailed Sandpipers in southern and coastal Australia and considered that this species was more dependent on inland wetland conditions than other species and was vulnerable as a result. Birdlife Australia reported declines in the species in the Point Cook to Williamstown area in 2020, but also elevated the area to international importance based on the latest population estimates.

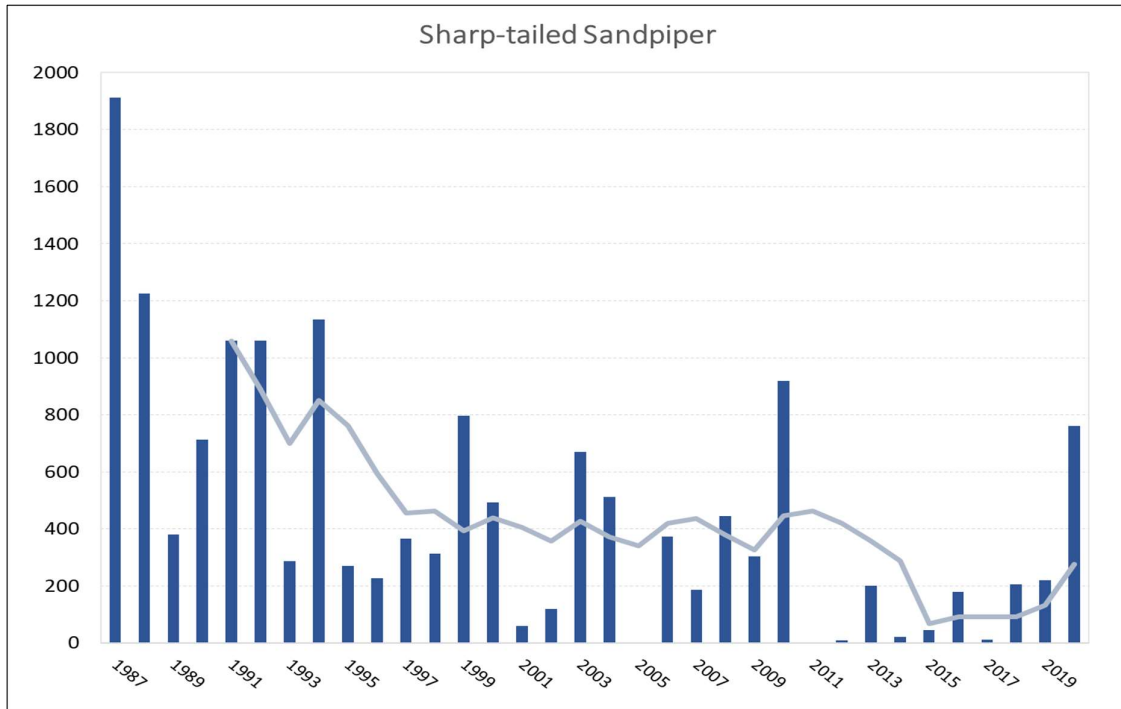


Figure 8. Annual summer numbers and the 5-year moving average for Sharp-tailed Sandpipers at Cheetham Wetlands between 1987 and 2020

Another perspective on the long-term data set for Cheetham Wetlands is that it can misrepresent bird populations in the KBA as it is based on only a single annual sample, at one site. In the Cheetham & Altona KBA birds move between habitats, and depending on the species, won't necessarily all move back to Cheetham Wetlands as the tide rises. To check whether the VWSG data is providing an accurate representation of Curlew Sandpiper numbers in the KBA we have compared population count data for 2019-20 with 2002-07. Both time periods had multiple counts each year, providing a better representation of the actual population numbers at that time. These are compared in Figure 9.

The maximum count between 2002 and 2007 at Cheetham Wetlands was 1,002 birds, which is higher than any of the single summer count figures shown in Figure 8 above. In addition, the data for 2019-20 shows that birds can also be present in significant numbers at some other habitats in the KBA, indicating that the Cheetham Wetland annual counts may underestimate the total KBA population for this species. It is possible then, that Sharp-tailed Sandpiper numbers may not have declined in the whole KBA since 2009.

The Double-banded Plover breeds in New Zealand in summer and migrates to Australia in winter. The species has recently been listed as Near Threatened by the IUCN due to population declines in its range in New Zealand. Evidence of trends in the wintering numbers in Australia is conflicting and some declines have been seen in some parts of its range. Numbers have also apparently declined at

Cheetham (Figure 10), its preferred habitat in the KBA, although the lack of winter counts in recent years does complicate the interpretation of the data. Birdlife Australia found that numbers in the Point Cook to Williamstown area had declined since 2008, and that numbers there were again of international importance in the context of their latest population estimates in 2020.

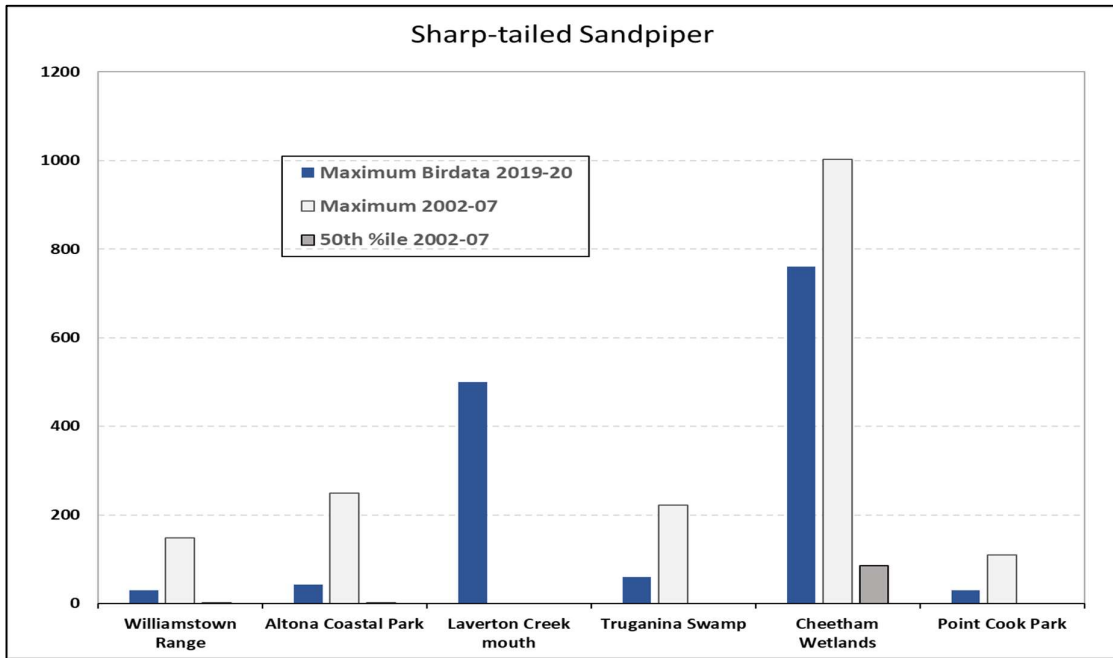


Figure 9. Comparison of maximum Sharp-tailed Sandpiper numbers in different KBA habitats in 2019-20 with the 50th percentile numbers in 2002-07

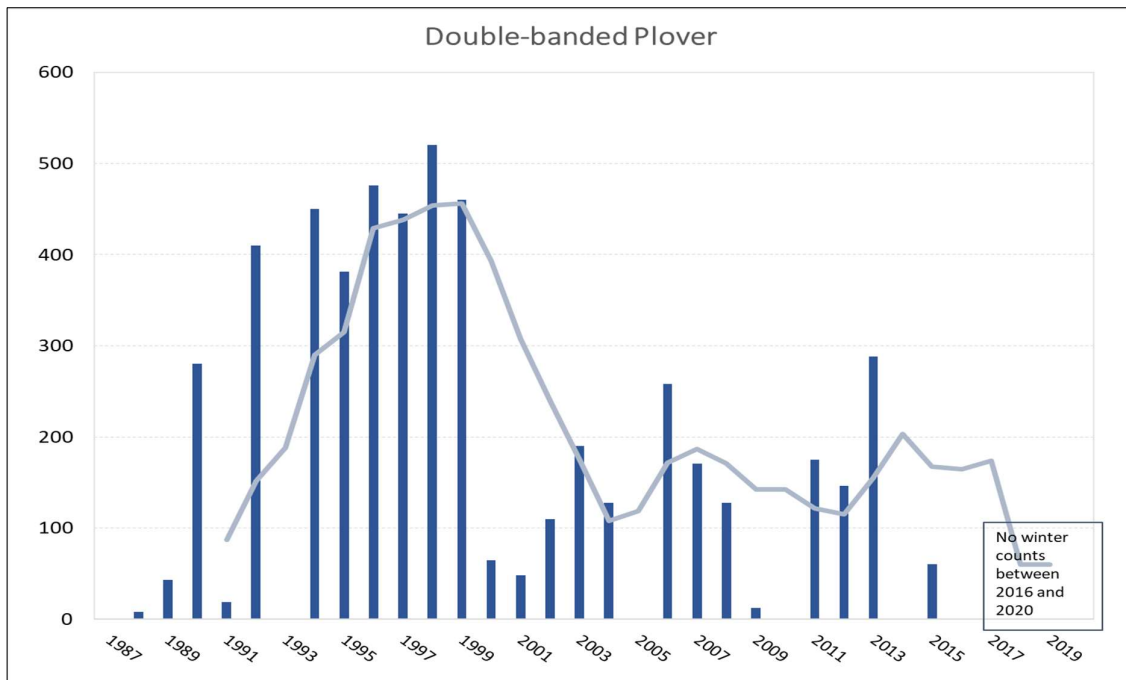


Figure 10. Annual winter numbers and the 5-year moving average for Double-banded Plovers at Cheetham Wetlands between 1987 and 2020

The Common Greenshank and Marsh Sandpiper are also migratory shorebirds that breed in the Northern Hemisphere and are listed in several international treaties for the protection of migratory shorebirds. Both are listed as Vulnerable in Victoria.

Both species occur in the KBA in modest numbers, of less than 100 individuals, but declines appear to be occurring in their numbers since 1987. Figure 11 shows the trend for the Common Greenshank in Cheetham Wetlands. A declining trend has also been found at the nearby Western Treatment Plant for Common Greenshank where numbers in 2020 have fallen to approximately ten individuals. Clemens reported a decline in both species in southern and inland Australia.

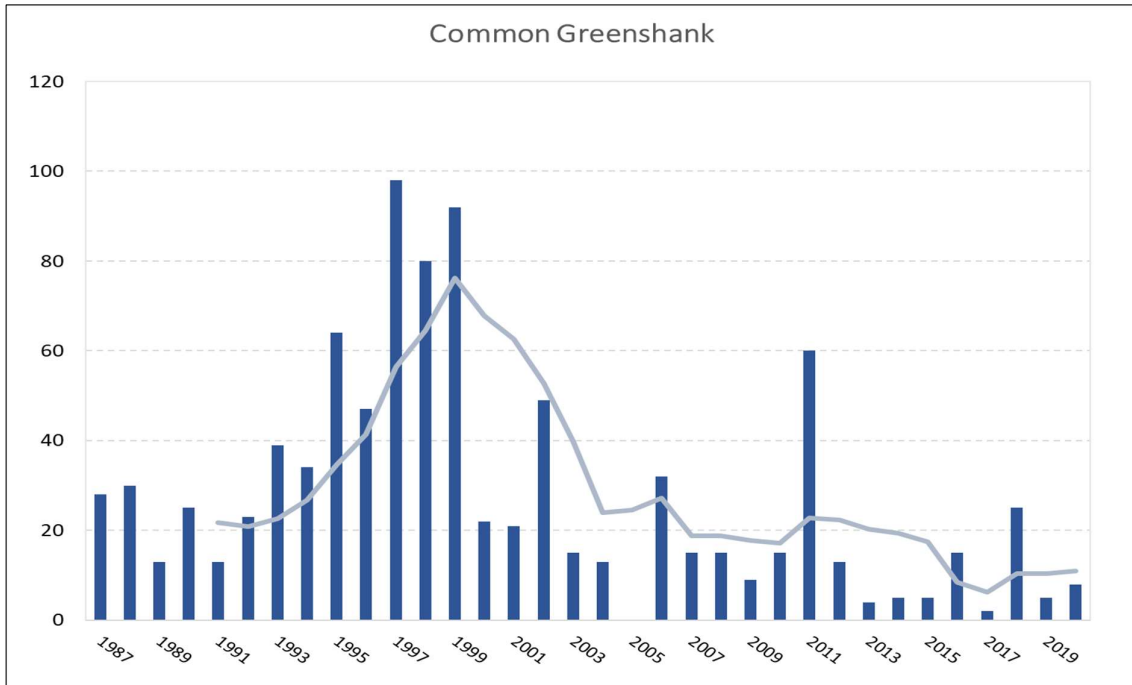


Figure 11. Annual summer numbers and the 5-year moving average for Common Greenshanks at Cheetham Wetlands between 1987 and 2020

Examining the numbers of Common Greenshanks in other habitats in the KBA provides a different perspective on the population dynamics for Cheetham Wetlands shown above. While we do not have the benefit of time series over a long period, it is possible to compare their numbers between 2002-07 and 2019-20. These are shown in Figure 12 below. The maximum recorded for Cheetham between 2002 and 2007 is 33 individuals, which does accord with the numbers found in the time series in Figure 11 (in 2006). However, the maximum found between 2019 and 2020 was also 33 individuals, which is much higher than the counts for 2019 and 2020 in Figure 11. In the other habitats of the KBA, maximum numbers are lower in 2019-20 than they were in 2002-07, although these are usually higher than the 50th percentile values. This may support the evidence of a decline in Common Greenshanks as seen at Cheetham Wetlands, but more data will be required for confirmation.

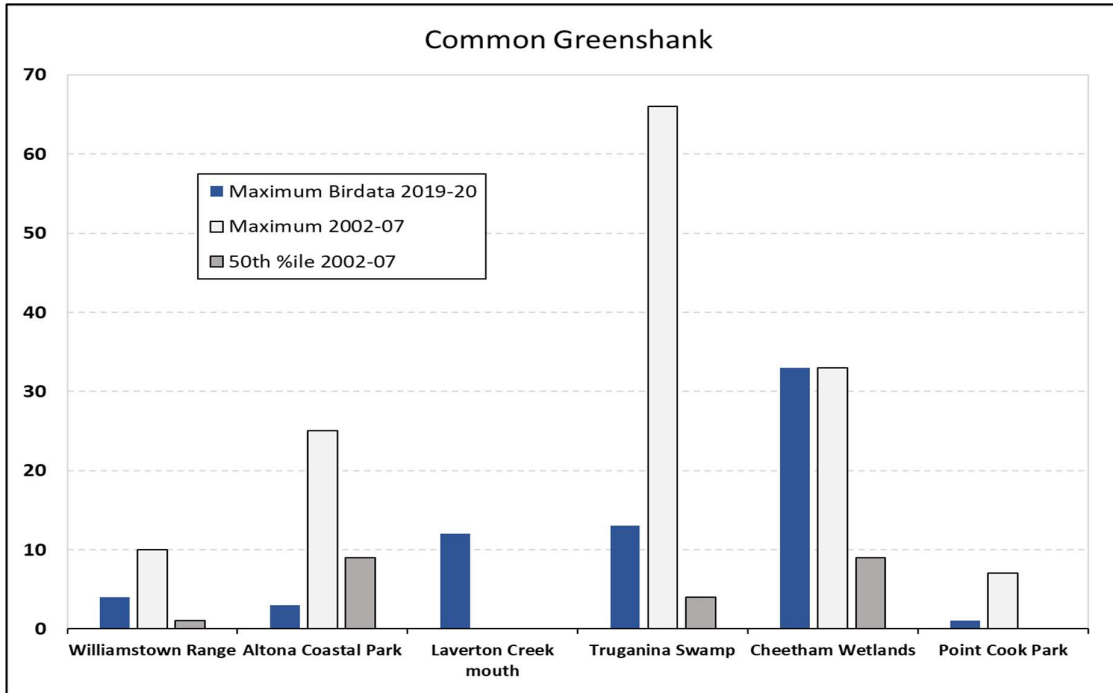


Figure 12. Comparison of maximum Common Greenshank numbers in different KBA habitats in 2019-20 with the maximum and 50th percentile numbers in 2002-07

The population numbers of Marsh Sandpipers at Cheetham Wetlands are shown in Figure 13 below. There does appear to be a decline in numbers visiting the area every year since 2003, and this is supported by declines reported for this species in southern Australia by Clemens. However, the Commissioner for Environment and Sustainability²¹ found that Marsh Sandpiper numbers significantly increased in Port Phillip Bay up to 2016, and numbers at Western Treatment Plant have apparently remained comparatively steady.

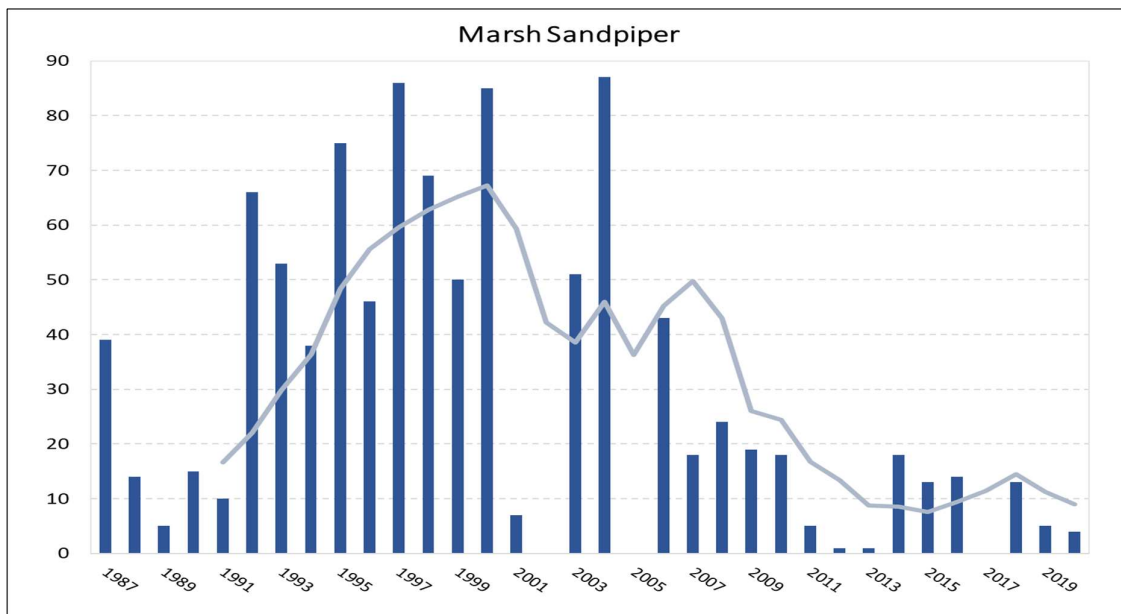


Figure 13. Annual summer numbers and the 5-year moving average for Marsh Sandpipers at Cheetham Wetlands between 1987 and 2020

Examining the numbers at different habitats in the KBA (Figure 14) reveals a more complicated picture for the region. While the 2002-07 maximum for Cheetham Wetlands is consistent with the VWSG data (60 individuals), there was a higher count for 2019-20 from Birddata than for the VWSG data, and there are increased numbers of birds at other habitats in the region. It is possible that the birds are preferring other habitats such as the sand spit at the mouth of Laverton Creek and Truganina Swamp.

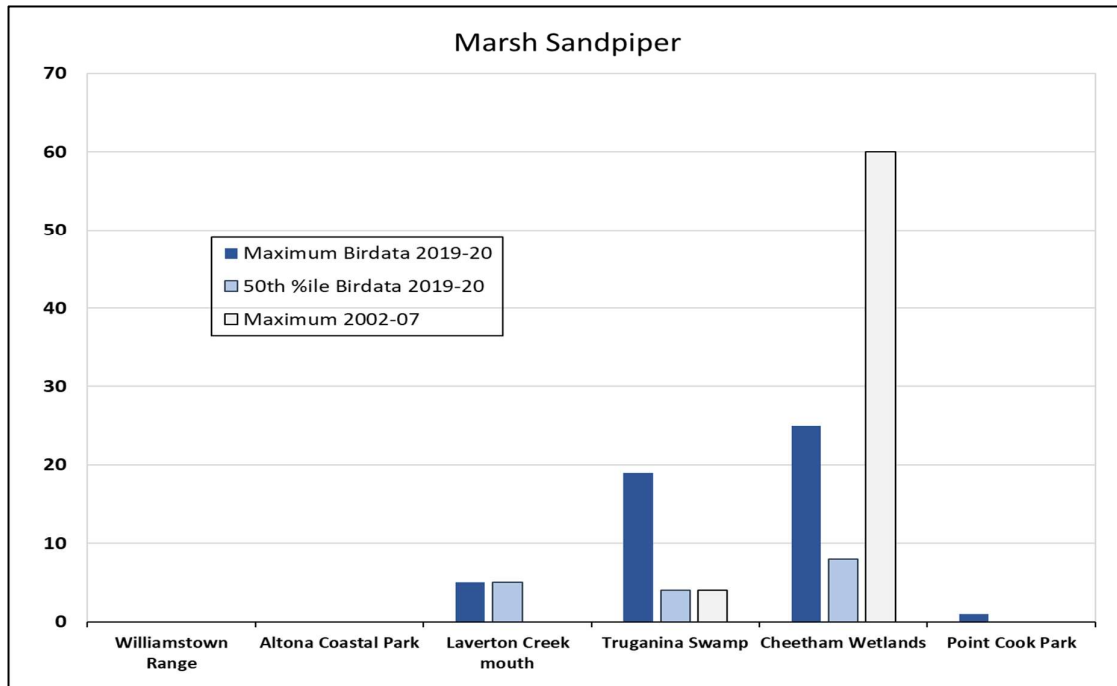


Figure 14. Comparison of maximum Marsh Sandpiper numbers in different KBA habitats in 2019-20 with the maximum numbers in 2002-07

3.1.4.2 Australian shorebirds

Masked Lapwings, Red-capped Plovers and Black-winged Stilts are Australian shorebirds that have all shown a decline at Cheetham, as shown in Figures 15, 16 and 18. The decline in Masked Lapwing numbers at Laverton-Altona was also reported by the Commissioner for Environment and Sustainability in 2016 together with declines at Swan Bay and Mud Islands. However, numbers did not change significantly when annual count data from the five major shorebird areas in Port Phillip Bay were combined. Numbers at the Western Treatment Plant have also increased over this time. Declines at Cheetham & Altona may be a result of relocation away from this KBA.

Red-capped Plovers counted in the VWSG program may not accurately represent their population in the whole KBA. Comparing data between 2002-07 and 2019-20 (Figure 17) shows that numbers at Cheetham Wetlands in both time periods were much higher than counted in the VWSG program. While numbers were lower in 2019-20 than the earlier period, there were still quite a few birds present at Point Cook Park and Altona Coastal Park. Numbers of Red-capped Plovers at nearby Western Treatment Plant wetlands do not show a downward trend over the last 20 years, however Clemens found that they had declined in southern Australia overall.

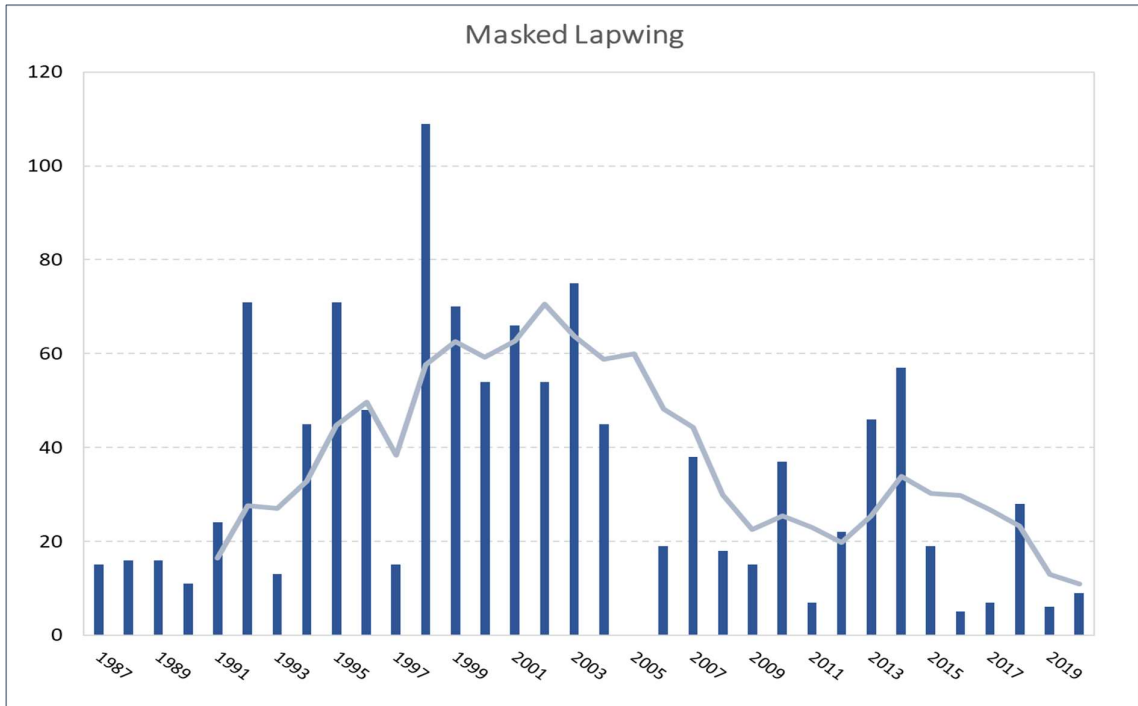


Figure 15. Annual summer numbers and the 5-year moving average for Masked Lapwings at Cheetham Wetlands between 1987 and 2020

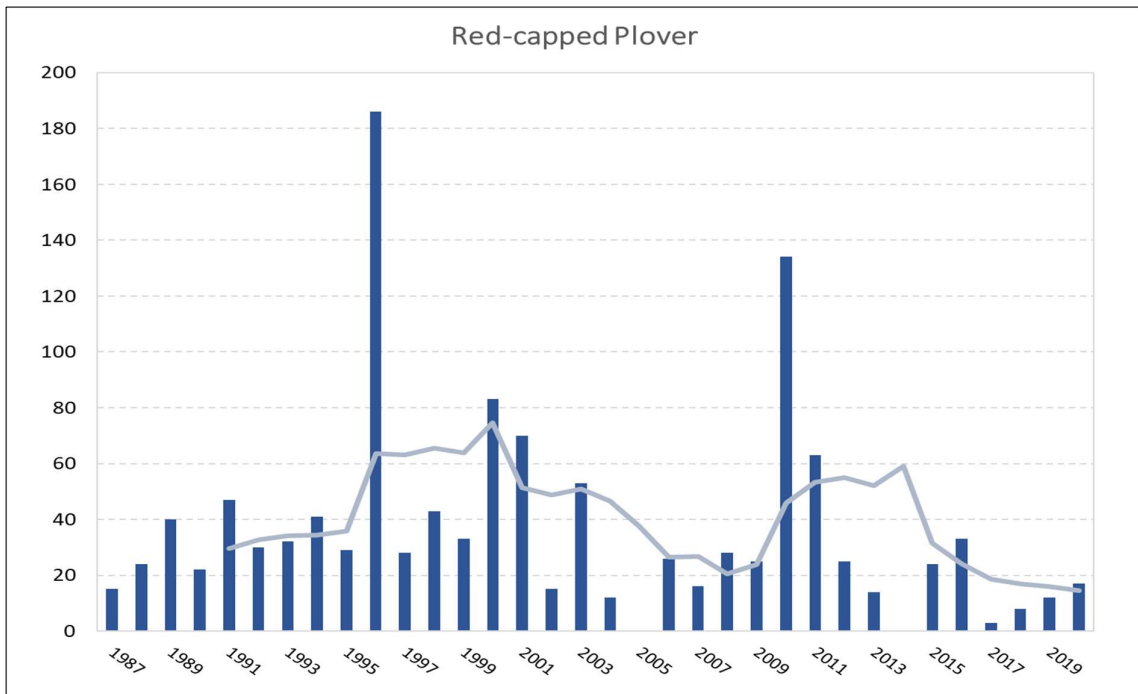


Figure 16. Annual summer numbers and the 5-year moving average for Red-capped Plovers at Cheetham Wetlands between 1987 and 2020

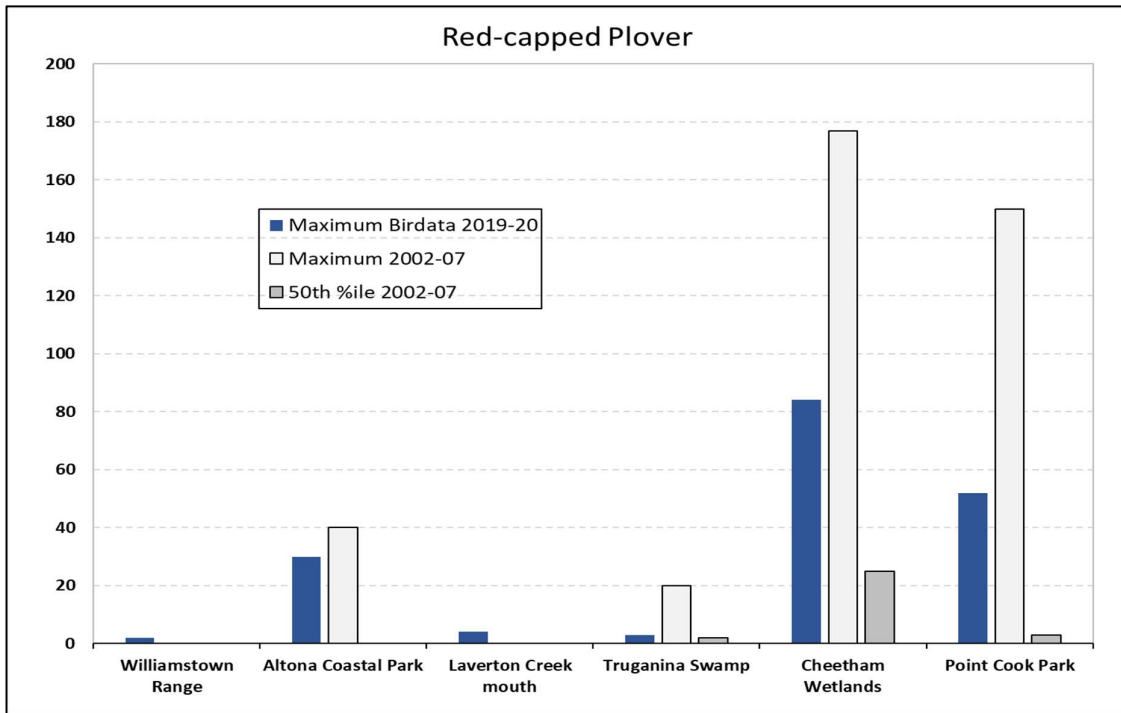


Figure 17. Comparison of maximum Red-capped Plover numbers in different KBA habitats in 2019-20 with the maximum numbers in 2002-07

Black-winged Stilts may have declined at Cheetham Wetlands based on the annual VWSG counts but seemed to have remained steady at most KBA wetlands (Figure 19) based on comparative 2002-07 and 2019-20 data. Their numbers have particularly increased at the Laverton Creek mouth where many are seen on the growing sand-spit and lagoon. It is possible that they have moved into that area from nearby wetlands. The species is more reliant on inland wetlands and Clemens found that their numbers had declined significantly across Australia.

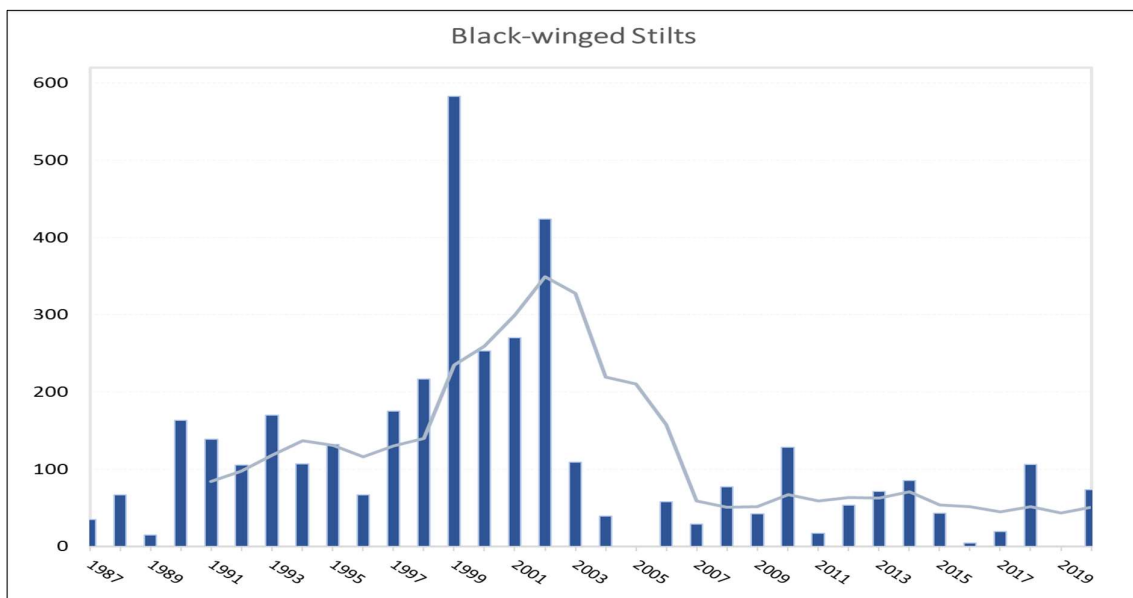


Figure 18. Annual summer numbers and the 5-year moving average for Black-winged Stilts at Cheetham Wetlands between 1987 and 2020

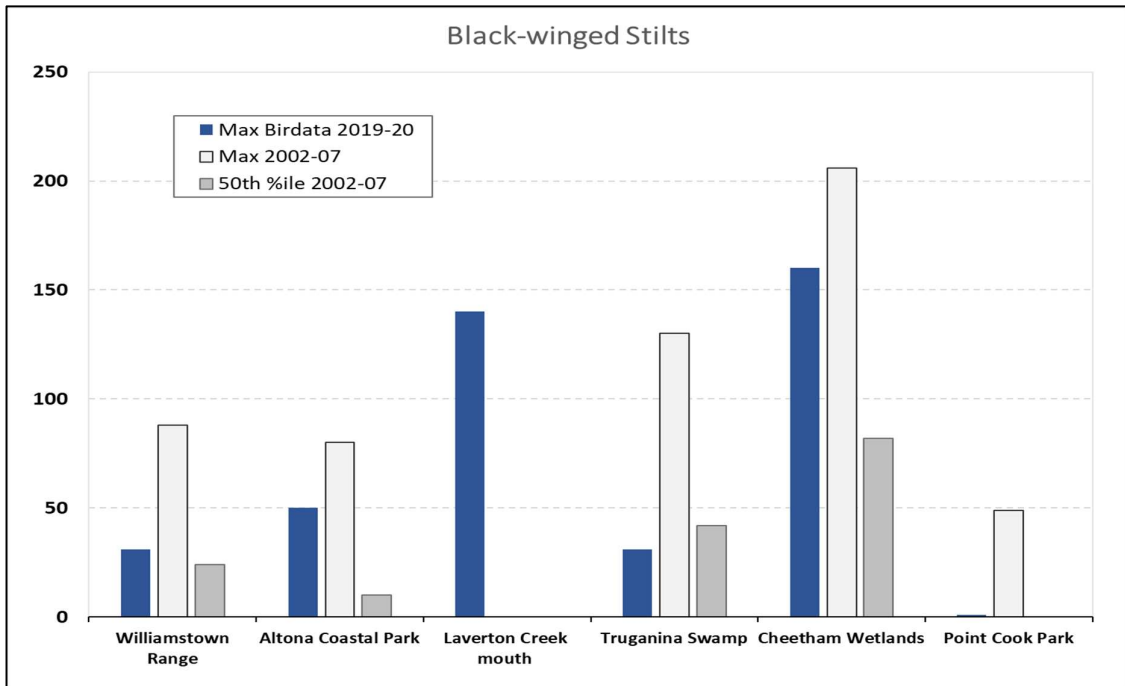


Figure 19. Comparison of maximum Black-winged Stilt numbers in different KBA habitats in 2019-20 with the 50th percentile numbers in 2002-07

Red-necked Avocet numbers appear to have increased over the whole monitoring period at Cheetham Wetlands as shown in Figure 20 as they have also done at the Western Treatment Plant. They have also increased in other KBA habitats between 2002-07 and 2019-20 as shown in Figure 21.

This species relies on inland saline wetlands and moves widely across Australia, depending on rainfall. It appears in large numbers on the coast when inland conditions become dry. Clemens found that they also had declined significantly in Australia, but this is not evident at these coastal habitats.

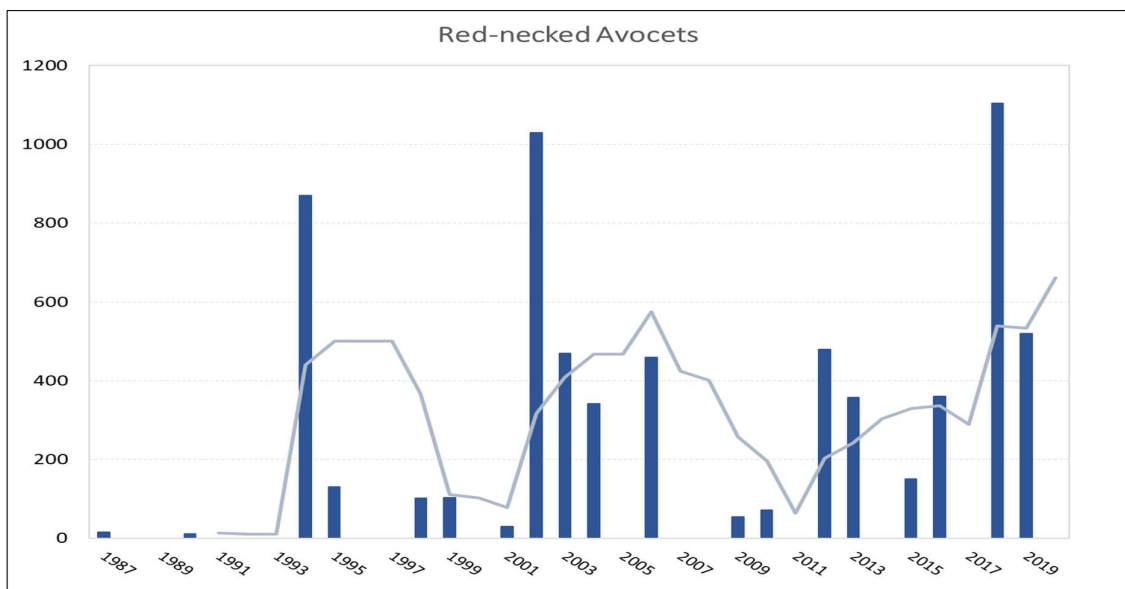


Figure 20. Annual summer numbers and the 5-year moving average for Red-necked Avocets at Cheetham Wetlands between 1987 and 2020

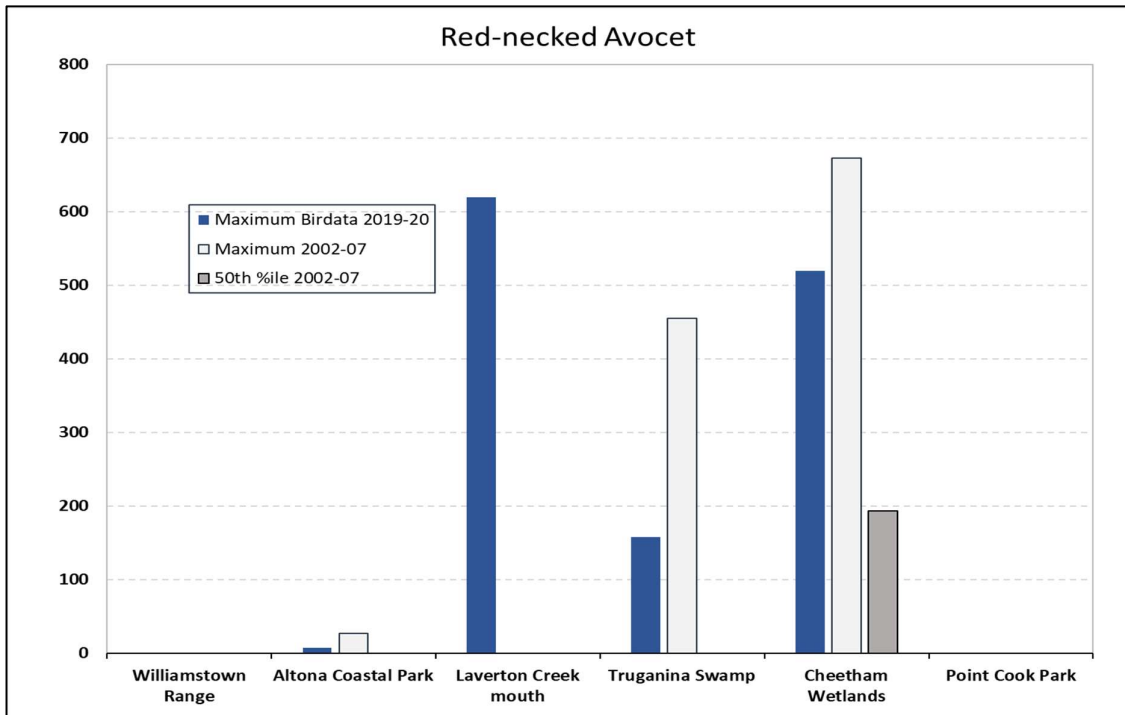


Figure 21. Comparison of maximum Red-necked Avocet numbers in different KBA habitats in 2019-20 with numbers in 2002-07

3.1.5 Waterfowl

Ducks and other waterfowl have always been a prominent component of the bird fauna at all KBA habitats. To establish a picture of how the different habitats compare and whether they have changed in their contribution to duck numbers in the KBA, numbers have been calculated for 2019-20 and 2002-07 and are shown below in Figure 22.

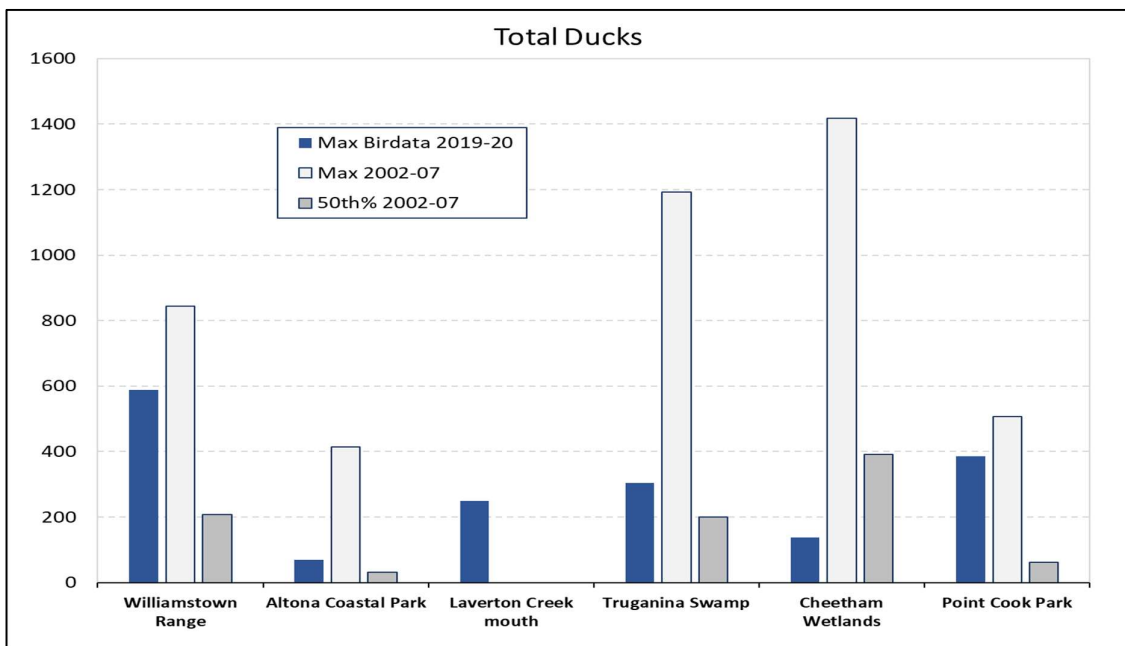


Figure 22. Comparison of maximum numbers of all species of ducks in different KBA habitats in 2019-20 with the 50th percentile numbers in 2002-07

Total duck numbers at most sites during the last two years were within the range recorded at the time that the KBA was established (2002-07), with maximum numbers greater than the 50% percentile value recorded for those sites during 2002-07. That is, the maximums were greater than the number that would be expected at those sites on at least 50% of occasions between 2002 -07.

Again, the exception is Cheetham Wetlands, where total duck numbers for the last two years appear to be well below what would be expected based on the counts during 2002-07. This is not reflected at the Western Treatment Plant in Werribee where 2019-20 numbers were high compared to earlier years. Australian Shelduck numbers at WTP were very high in the last year, in fact the highest ever recorded there at the end of a continually rising trend. This can be contrasted to numbers at Cheetham Wetlands which have fallen from the days when the Saltworks were converted into a wetlands reserve in the 1990s.

3.1.6 Other threatened species

In 2009 the KBA listing support information stated that the area did contain regular records of another nine bird species that were considered threatened in Australia at that time. Records for 2019 and 2020 show 22 species listed as threatened in the IUCN Red List, or under Australian or Victorian classifications within the KBA. Some of these are regular visitors to the wetlands, and sometimes in some numbers, as was the case between 2002-07. Some were only recorded in small numbers or on only one occasion, such as the Eastern Curlew, Black-tailed Godwit and Red Knot. Table 4 below shows the threatened species recorded at wetlands in the KBA during 2019-20, their conservation status, and the maximum numbers seen.

Species	Conservation status	Wetland records 2019-20
Blue-billed Duck	Near Threatened (IUCN) Endangered (Victoria)	Williamstown Range (11) Altona Coastal Park (2)
Freckled Duck	Endangered (Victoria)	Williamstown Range (2) Truganina Swamp (2)
Australian Shoveler	Vulnerable (Victoria)	Williamstown Range (7) Cheetham Wetlands (2)
Hardhead duck	Vulnerable (Victoria)	Williamstown Range (12) Truganina Swamp (5) Altona Coastal Park (3)
Sooty Oystercatcher	Near Threatened (Victoria)	Altona Coastal Park (3)
Great Knot	Endangered (IUCN) Endangered (Victoria)	Laverton Creek mouth (14)
Red Knot	Near Threatened (IUCN) Endangered (Victoria)	Cheetham Wetlands (1)
Bar-tailed Godwit	Near Threatened (IUCN)	Altona Coastal Park (30) Laverton Creek mouth (43)

Species	Conservation status	Wetland records 2019-20
Black-tailed Godwit	Vulnerable (Victoria)	Laverton Creek mouth (1)
Eastern Curlew	Endangered (IUCN) Critically Endangered (Victoria)	Altona Coastal Park (1)
Common Sandpiper	Vulnerable (Victoria)	Cheetham Wetlands (1)
Curlew Sandpiper	Near Threatened (IUCN) Critically Endangered (Victoria & Australia)	Truganina Swamp (21) Laverton Creek mouth (250) Cheetham Wetlands (1260)
Red-necked Stint	Near Threatened (IUCN)	Williamstown Range (500) Altona Coastal Park (300) Truganina Swamp (70) Laverton Creek mouth (200) Cheetham Wetlands (2280) Point Cook Park (10)
Ruddy Turnstone	Critically Endangered (Victoria)	Cheetham Wetlands (1)
Little Egret	Critically Endangered (Victoria)	Williamstown Range (3) Altona Coastal Park (1) Laverton Creek mouth (4) Cheetham Wetlands (4) Point Cook Park (2)
Great Egret	Data deficient (Victoria)	Williamstown Range (3) Altona Coastal Park (2) Truganina Swamp (3) Laverton Creek mouth (2) Truganina Park (4) Cheetham Wetlands (5) Point Cook Park (1)
Swift Parrot	Critically Endangered (IUCN) Endangered (Australia) Endangered (Victoria)	Truganina Park (49)
Pied Cormorant	Near Threatened (Victoria)	Williamstown Range (300) Seaholme Beach (25) Altona Coastal Park (20) Cheetham Wetlands (10) Point Cook Park (600)

Species	Conservation status	Wetland records 2019-20
Royal Spoonbill	Near Threatened (Victoria)	Williamstown Range (13) Altona Coastal Park (10) Truganina Swamp (6) Laverton Creek mouth (4) Truganina Park (9) Cheetham Wetlands (7)
Little Tern	Vulnerable (Victoria)	Williamstown Range (2)
Caspian Tern	Near Threatened (Victoria)	Altona Coastal Park (20)
Whiskered Tern	Near Threatened (Victoria)	Williamstown Range (28) Altona Coastal Park (10) Truganina Swamp (50) Laverton Creek mouth (70) Truganina Park (20) Cheetham Wetlands (450) Point Cook Park (200)

Table 4. Threatened species recorded at KBA during 2019-20 (from Birdata)

Some threatened species occurred in large numbers in some sites in the KBA, such as the Pied Cormorant and Whiskered Tern, and this has been the case for many years. Some other species were found recently in groups of more than ten, the Bar-tailed Godwit and Great Knot, and this is not always the case. A standout record during the last two years was the presence of a significant number of Swift Parrots over three weeks in July 2019 at Truganina Park. The Swift Parrot is listed as Critically Endangered by the IUCN. The supporting information in the IUCN's Red List states that it migrates from its breeding range in Tasmania to mainland Australia. On the mainland, it occurs in eucalypt forest and woodlands, where it feeds principally on nectar from flowering eucalypt species and lerps associated with the trees. During winter, the birds are semi-nomadic and visit a network of traditional sites in reaction to flowering events and lerp availability. In some years, urban landscapes containing indigenous or non-local flowering eucalypts are also readily used, and this is the case at Truganina Park and surrounding parks in Altona. Individuals can travel up to 5,000 kilometres between their mainland wintering grounds and their Tasmanian breeding sites, making theirs the longest migration undertaken by any parrot in the world.

The current population is estimated to be around 2,000 individuals, and with up to 49 individuals roosting in eucalypts in Truganina Park, this constitutes a significant congregation of more than 2% of the world population.

3.2 Management Issues

In discussions with management agencies responsible for the wetland areas in the KBA a number of management issues were identified and ranked. These were the 'pressures' identified in the KBA Health Check framework and were scored according to that framework. The issues are discussed here in relation to each of the habitat areas in the KBA. The scores identified in the interviews have been

entered into the on-line KBA database that is the Health Check. The pressures that are acting on the Cheetham & Altona KBA today are the same as those identified when the KBA was first listed in 2009.

3.2.1 Dams and water management

The most significant element of this pressure that is affecting most areas in the KBA, is contaminated stormwater runoff from existing urban areas and development, as well as some new developments. It was considered to be affecting Cheetham Wetlands, Point Cook Park, Truganina Park, Truganina Swamp, Laverton Creek and the Williamstown Range in the last year, and impacting on at least 50% of these areas with a mostly moderate severity (more than 10%). At Point Cook Park changes to hydrology several years ago, where runoff from newly developed housing estates was diverted out of the catchment, has mostly deprived the Spectacle Lakes of water. These are now mostly dry, and their wetland habitat value completely lost.

3.2.2 Building development

Development of new housing and commercial areas, and redevelopment within existing residential areas was considered to continue to be a pressure that is affecting Cheetham Wetlands, Point Cook Park, Truganina Park, Truganina Swamp and Williamstown Range in the last year or likely in the next year. This development has progressed up close to the boundaries of these sites and reduced buffers adjacent to the wetlands, as was identified in the early Health Checks. However, the largest and most important of these sites have clear boundaries and land status designations that protect the bird habitats from encroachment by development. Due to this, the scale and severity of this pressure was rated as low in scale (affecting less than 10% of the area) and slow in severity (progressing at less than 10% in pace).

3.2.3 Recreation activities

This pressure was identified as significant at all the KBA areas and was considered to have been observed within the last year. The most prevalent activities were dogs off lead, walkers, geocachers, bike riders, kite surfers, people hitting golf balls, bait collectors, and fishermen, while people enjoying nature were issues with bird watchers at the Williamstown Range and Altona Coastal Park causing disturbance, and snorkellers and divers offshore being active at the Jawbone reserve. Trail bike riders gain access to Truganina Park and cause substantial disturbance there.

Recreational activities have been an ongoing pressure since the KBA was first established. The proximity of substantial urban areas to the large coastal reserves where access is relatively easy, creates many opportunities for people to move into bird habitats. In recent years management authorities have employed a variety of methods to reduce or prevent access to sensitive areas and to provide alternative sites for recreation. This is likely to be the reason that site managers have reduced their assessment of the scale and severity of this pressure in this Health Check.

3.2.4 Invasive plants

Invasive plants have been identified as a significant pressure that has been affecting all KBA areas with a terrestrial component in the last year. This remains unchanged from the earliest Health Check and is not surprising given that most of these areas have been substantially modified as habitats and weed invasion will be an ongoing management issue for a long time into the future. This is the case for Point Cook Park, Truganina Park, Truganina Swamp and Altona Coastal Park. Some sites, such as the Cheetham Wetlands, Laverton Creek mouth and the saltmarsh at the Williamstown Range, host salt tolerant communities that are more resilient to invasion. The severity is considered by managers to be lower than in past Health Checks for several sites due to the substantial management efforts that have been undertaken and the improved control achieved in important habitat areas.

3.2.5 Invasive animals

Foxes, cats and rabbits were listed as a continuing pressure at many of the habitats in the KBA, although their impact has been managed with control programs and fencing. As a result, they are no longer considered a significant pressure at Cheetham Wetlands and Point Cook Park. At Truganina Swamp and Altona Coastal Park they are still believed to impact on more than 90% of the area but the severity of their impact is considered lower than previous Health Checks.

3.2.6 Problem native species

This is considered a pressure at only two areas in the KBA, Truganina Park and the Williamstown Range. On the Range the freshwater wetlands are affected by *Typha* spp. and other native reeds such as *Phragmites*, which can fill up the wetlands and decrease the available habitat for birds. This is not an unusual issue for created wetlands built in the 90s, where more appropriate wetland plants were not planted to exclude these species. At Truganina Park, which is a heavily modified habitat, several native species, *Eucalyptus botryoides* (Swamp Mahogany), *Acacia saligna* (Blue-leafed Wattle), *Acacia cyclops* (Coast Wattle) and *Leptospermum laevigatum* (Coastal Tea Tree) have become established outside of their natural range. While their future will be reviewed as part of planning for this park, the significance of the eucalypts to Swift Parrots should be considered before any controls are exercised.

3.2.7 Garbage and solid wastes

This is identified as a pressure that has been evident in the last year at most sites except for Cheetham Wetlands, where public access is strictly controlled. Litter, illegal garbage and garden wastes are the major materials dumped in accessible areas where public surveillance is not a deterrent. This is not considered to be an issue of large scale or high severity in terms of its impact on the habitats, but an unfortunate part of managing heavily used public areas on the coast.

3.2.8 Other pollution

This was identified as a pressure at several areas in the KBA and two of these are new issues to be raised. Pollution from urban runoff was considered to have impacted on coastal areas, particularly the Esplanade, Williamstown Range and Laverton Creek mouth, where litter and road pollutants washed into the bay were considered a risk. Water quality results for Altona Beach for 2019/20²² showed that standards for swimming waters were met on most occasions (12 out of 14), which is similar to other beaches in PPB, but contaminated stormwater runoff was affecting this area on occasions. Scale and severity were not considered to be high for this pressure.

At Point Cook Park the RAAF Lake has been found to be polluted by historical dumping and use of PFAS fire retardant at the air base. The use of PFAS at the nearby Laverton Air Base has also been found to have contaminated groundwaters around that area, potentially impacting on Cheetham Wetlands, but the extent and impacts of contamination on bird habitats has not been investigated or detailed in any studies.

3.2.9 Habitat shifting

Changes in habitat was identified as a pressure in three areas of the KBA. At Altona Coastal Park erosion of the coastline has been occurring for many years, reducing the beach, and cutting into the saltmarsh, and altering the plant composition on the foreshore. At the coast on the Altona Esplanade sea walls and barriers have affected sand movement and are expected to have some impact on bird habitats there.

At Cheetham Wetlands coastal erosion at Pond Number 10 has broken through to the pond and reduced shorebird feeding habitat. The sand spit at the mouth of Laverton Creek has been growing for the last 15 years and is now approaching the nearby foreshore at Apex Park. Whilst the growth of

the spit is not considered to be a detrimental pressure, if the spit reached the foreshore it would create an access point from the busy Altona coast that will require active management in the near future.

3.2.10 Drought

Drought was considered a pressure at Cheetham Wetlands, Point Cook Park and Truganina Swamp in the context of climate change potentially impacting on flora and fauna there. At the Williamstown Range drought was considered to create pressure on birds through the alteration of wetland volumes and chemistry. In all these cases this pressure was believed to be occurring on a longer-term time frame.

3.2.11 Floods

Flooding is considered a pressure at Altona Coastal Park that is expected to occur at 5-to-10-year intervals. Floods contribute to erosion of the coastal strip and deposit large amounts of flood debris across the reserve, inundating vegetation communities and introducing weeds.

3.3 Conservation Management Activity

3.3.1 Legal protection status

There have been numerous positive management actions implemented for the KBA in recent years, including in 2020. The status of legal protection arrangements for habitats in the KBA has not changed since the last Health Check, however the KBA does benefit from having all its constituent habitats in public ownership and large areas managed specifically for protection of flora and fauna. The largest areas of habitat, Cheetham Wetlands and Point Cook Park are protected in the Point Cook Coastal Park and some marine areas are in the Point Cook Marine Reserve. All these reserves are managed by Parks Victoria. The Point Cook Park and the southern part of the Cheetham Wetlands are part of the Western Port Phillip Bay and Bellarine Peninsula Ramsar site. In 2020 Parks Victoria applied to have the Ramsar site boundaries extended to include the northern part of the Cheetham Wetlands. Parts of the KBA on the Williamstown Range are covered by the Jawbone Flora and Fauna Reserve and the Jawbone Marine Sanctuary, also managed by Parks Victoria.

3.3.2 Habitat management plans

Management Plans or habitat strategies now cover almost all areas of the KBA. Those parts within the Ramsar area are covered by a Ramsar Site Management Plan prepared in 2018 by the Victorian Department of Environment Land Water & Planning. Implementation of the plan's actions are monitored by a co-ordinating committee of site managers. Point Cook Coastal Park has a management plan and implementation of its actions has been monitored. The plan needs an update. The Cheetham Wetlands are operated in accordance with an operational manual prepared in 2009 designed specifically to protect the site's important avifauna habitats. Most of the sites under the City of Hobsons Bay's management, Truganina Park, Laverton Creek mouth, Altona Coastal Park and the Williamstown Range are covered by a Biodiversity Strategy prepared in 2017, which is being actively implemented. The Range also has a site-specific management plan. Melbourne Water lists Truganina Swamp (excluding Mt St Joseph's Wetland) and the 'Wide Bend' area of lower Kororoit Creek (together with Cherry Lake) as sites of biodiversity significance and these are managed to protect their significant values. Both Truganina Swamp and Cherry Lake/Wide Bend have current management plans. Site management plans are actively implemented with progress tracked annually, and they are to be revised every seven years.

All managers have undertaken conservation management activities during 2020, and some in years before that that have relevance to issues in the KBA today. The highlights provided by the habitat managers are described below.

Hobsons Bay City Council appointed a biodiversity strategy officer in 2020 to implement actions in its 2017 Biodiversity Strategy. Habitat protection was provided by installing dog deterring fencing around coastal wetlands, revegetation, and weed and feral animal controls throughout the year. The dog management program follows from several years of examining dog walker needs and habits, designation of appropriate off-leash areas and fencing and signage. Community education was undertaken through informal engagement by Conservation Rangers within the KBA, tours to the Cheetham Wetlands and organised activities to inform adults and children. On the Williamstown Range Council undertook revegetation and weed management throughout the year. The HBCC Conservation Rangers undertook community education through informal engagement of coast users, and they organised activities and events to inform adults and children.

At the Esplanade and other coastal areas HBCC conducted beach patrols and litter pick-ups and co-ordinated community groups for Clean-up Australia Day. At the Altona Coastal Park HBCC conducted plantings on National Tree Day and corporate planting events.

On the Jawbone Flora and Fauna Reserve, Parks Victoria undertook weed control and revegetation, feral animal control and litter management. Highlights included:

- Weed control around the saltmarsh edge, with targeted removal of kikuyu, African thistle and spiny rush
- Revegetation within the public exclusion area of the Flora and Fauna Reserve where 1,400 indigenous plants were planted in partnership with the Friends of Willy Wetlands
- A pilot project to control Chilean needle grass in remnant native grassland areas using the solarisation technique
- Responsive litter management.

Community conservation groups are active in the KBA with Friends groups working on Truganina Swamp, Kororoit Creek, Skeleton Creek, the Williamstown Range, and the Jawbone Marine Sanctuary. The Friends groups are involved with education and advocacy, as well as planning and participating in various management days with weed control, revegetation and litter control undertaken. The relatively new Hobsons Bay Wetlands Centre Inc. conducted various open days with bird walks and educational events throughout the year and citizen science studies of the saltmarsh.

4 Future Activity

The annual Health Check for the Cheetham & Altona KBA has provided us with an opportunity to look at the state of its habitats, the health of significant species that use it, and the conservation effort that is being applied to it. Several issues stand out as being important to investigate further, and perhaps these sit outside the ongoing management plans and activities that are currently planned or underway.

1. There is a need for a KBA-wide co-ordinated bird monitoring program with counting of all the major wetland areas at least every three months, if not more frequently. This should be undertaken by skilled counters and work together with existing programs that count bird populations in KBA habitats. The growing sand spit at the mouth of Laverton Creek should be surveyed at the same time as Cheetham Wetlands as many birds use both habitats together.

2. Programs are required to identify the ongoing impacts of recreational activities on important habitats and the most appropriate means to reduce these impacts. This is particularly important for the mudflats at Altona Coastal Park and Williamstown Range, and the growing sand spit at the mouth of Laverton Creek.
3. The apparent reduction in bird numbers at Cheetham Wetlands should be investigated further to determine if there have been real declines there, or if birds have moved in their habitat preferences to elsewhere in the KBA or other wetlands in Port Phillip Bay. Establishment of targets to indicate declines or significant changes, such as Limits of Acceptable Change as used at the Seaford-Edithvale Ramsar Site, or trigger levels as used at the Western Treatment Plant, should also be investigated.
4. Means of ameliorating the altered hydrology of the Spectacle Lakes precinct in Pont Cook Coastal Park, should be investigated to halt the loss of avifaunal values that these have caused.
5. An interim management arrangement should be put in place for the eucalypts at Truganina Park that are used by roosting Swift Parrots, pending completion of a full management/restoration plan for this area at some time in the future.
6. Data on other species and communities of conservation significance (e.g., Altona Skipper Butterfly and temperate Australian saltmarshes) should be collected to augment the catalogue of significant species and communities in the KBA.
7. Updates should be made to the KBA's significant species and boundaries based on the latest data from the Directory of Shorebirds in Australia, in particular:
 - a. Including Point Gellibrand and Greenwich Bay in Williamstown in the KBA
 - b. Increasing the number of species that meet the criteria of exceeding 1% of the East Asia-Australasian Flyway population to include Curlew Sandpiper, Sharp-tailed Sandpiper and Double-banded Plover.

5 Endnotes

- ¹ IUCN (2016) *A Global Standard for the Identification of Key Biodiversity Areas*. The IBA criterion met in 2009 was A4i. The criteria for defining a KBA differ slightly from those used to define IBAs, however, the criterion originally used to define this IBA in 2009 was translated into a corresponding KBA criterion in 2018 and is essentially the same
- ² The International Union for the Conservation of Nature (IUCN) maintains a register of the conservation status of species across the world and is considered the authoritative source of information on threatened and endangered species
- ³ Weller, D., Kidd, L., Lee, C., Klose, S., Jaensch, R. and Driessen, J. 2020. *Directory of Important Habitat for Migratory Shorebirds in Australia*. Prepared for Australian Government Department of Agriculture, Water and the Environment by BirdLife Australia, Melbourne
- ⁴ Weller et al op. cit.
- ⁵ The Victorian Wader Studies Group is a non-profit volunteer organisation conducting a long-term comprehensive study of waders and terns throughout Victoria, to be used for shorebird conservation and education in the East Asian- Australasian Flyway. The group works closely with the Australasian Wader Studies Group, which is a special interest group of BirdLife Australia
- ⁶ K. Wood (2007) in litt.
- ⁷ Birddata is an online database of Australian bird observations operated by Birdlife Australia
- ⁸ eBird is an online database of observations on bird distribution and abundance gathered largely by amateurs from across the world set up by the Ornithology Lab of Cornell University USA
- ⁹ Menkhorst, P., Macak, P., Rogers, D., Stamation, K., and Fanson, B. '*Monitoring waterbird populations at the Western Treatment Plant – 2020 annual report*' Arthur Rylah Institute of Environmental Research, Unpublished Client Report
- ¹⁰ Golo Maurer, Birdlife Australia pers. comm
- ¹¹ R.S. Clemens (2016) *Ecology and Conservation of Australian Shorebirds* PhD Thesis University of Queensland
- ¹² Weller et al, op. cit.
- ¹³ Bamford, M., Watkins, D., Bancroft, W., Tischler, G., & Wahl, J. (2008). *Migratory Shorebirds of the East Asian–Australasian Flyway: Population Estimates and Internationally Important Sites*. Wetlands International – Oceania, Canberra.
- ¹⁴ Porter J.L., Kingsford R.T., Francis R. and Brandis K. (2020) *Aerial Survey of Wetland Birds in Eastern Australia - October 2020 Annual Summary Report* Department of Planning Industry & Environment NSW and Centre for Ecosystem Science, School of Biological, Earth and Environmental Sciences, UNSW Sydney
- ¹⁵ Loyn, R.H., Rogers, D.I., Swindley, R.J., Stamation, K., Macak P., and Menkhorst, P. (2014) *Waterbird Monitoring at the Western Treatment Plant, 2000–12* Arthur Rylah Institute for Environmental Research Technical Report Series No. 256
- ¹⁶ Wetlands International (2021). "*Waterbird Population Estimates*". Retrieved from wpe.wetlands.org on Wednesday 14 Apr 2021
- ¹⁷ Menkhorst et al, op. cit.
- ¹⁸ Wetlands International (2021). "*Waterbird Population Estimates*". Retrieved from wpe.wetlands.org on Wednesday 14 Apr 2021
- ¹⁹ IUCN Red List report
- ²⁰ '*State of the Bays 2016*' Commissioner for Environment & Sustainability Victoria
- ²¹ '*State of the Bays 2016*' Commissioner for Environment & Sustainability Victoria
- ²² Environment Protection Authority (2020) *Beach Report and Yarra Watch Results 2019-20* Victoria