

Aerial Trend Counts of Paradise Shelduck and Black Swan 2020



Report Compiled by Steve Terry : February 2021

INTRODUCTION

1. Fish & Game conduct annual aerial trend counts of Paradise Shelduck / Pūtakitaki (hereafter mainly referred to as paradise shelduck), Black swan / Kakīnui (hereafter mainly referred to as black swan).
2. The annual aerial trend count of paradise shelduck and black swan was undertaken in the North Canterbury Fish & Game region on the 25th January 2021.
3. Due to financial constraints, only sites which have historically had reasonably high numbers of paradise shelduck and black swan were counted during the 2021 trend count flight. These sites were similar to the sites counted in 2020. When the historic data was extrapolated using high count areas versus total counts, it is estimated that only approximately 20% of the total population count in 2021 may have been missed.
4. Black swan population trend counts were less affected, as 80-85% of the regional population typically resides in the low country band, (Te Waihora / Lake Ellesmere, Lake Forsyth / Wairewa and the Estuary and Bromley oxidation ponds).
5. White swan are no longer recorded, as the areas these have traditionally been seen in reasonable numbers are no longer flown.

METHODS

6. Paradise shelduck moulting sites throughout the North Canterbury region are flown by a fixed-wing plane and the number of bird's present are counted. Consistency is achieved by using three observers counting which then reach a consensus of numbers of birds in each mob. Despite having three observers counting birds separately, the tally count per person, per mob, rarely differs. This consistency in the count method gives staff confidence that the number of game birds counted is reasonably accurate.
7. Shelduck moulting sites can and do change, for example ponds may dry up and additionally, many new irrigation ponds have been created in the last decade. Any new areas located during this trend count are added to the moulting site database and are included in the table of results if counted. Over time, when any new significant sites are subsequently found to be regular moulting sites, they may also become part of the annual flight plan.
8. Individual bird species are allocated to nominated observers on the flights, although all observers confer at the time to obtain consistency (with the exception of Lake Ellesmere and the Bromley oxidation ponds, where each observer counts a separate species due to the high numbers of all species present). If a flight pass does not satisfy the observers with a count confidence, the population area is immediately re-flown and counted again.

9. For the black swan trend count, the main population areas continue to be flown.

RESULTS

Paradise Shelduck / Pūtakitaki

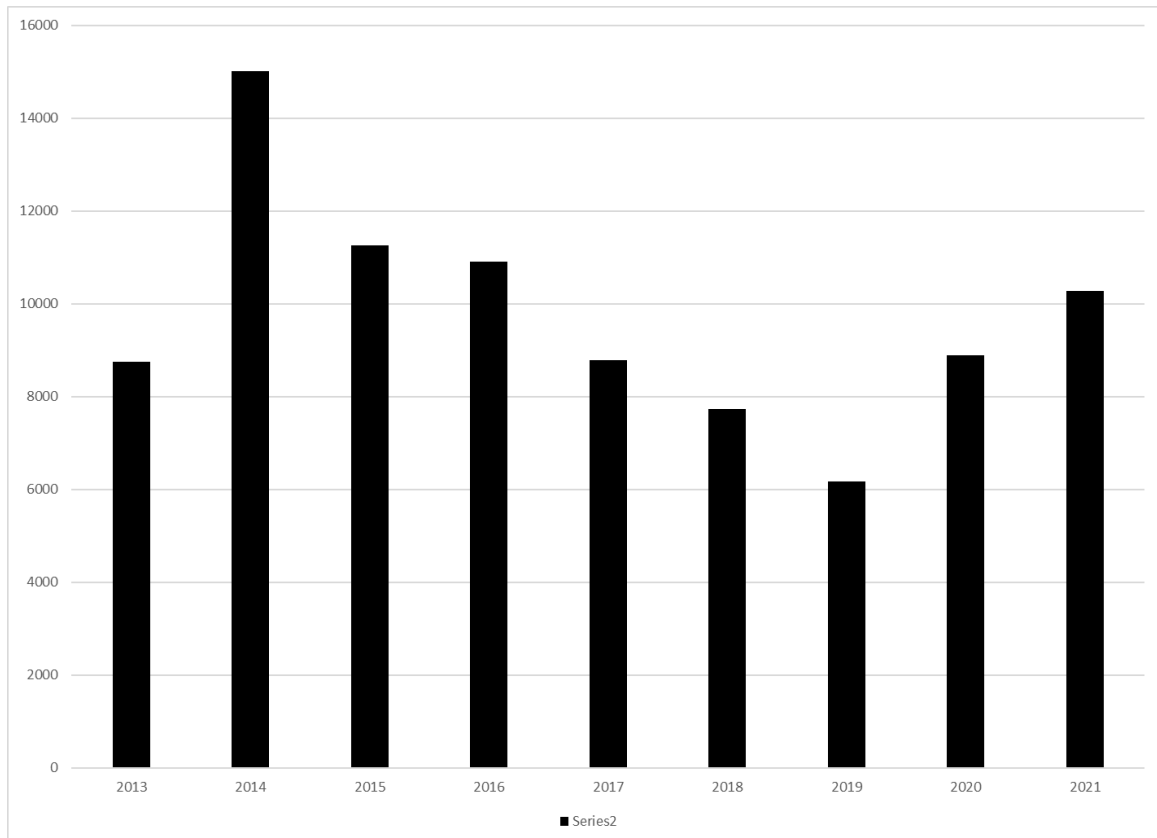


Figure 1. Paradise shelduck / Pūtakitaki population trend count data collected from North Canterbury Fish & Game region.

10. In 2021, 10,280 paradise shelduck were counted, which is an upward trend compared to the 2020 count of 9,435. Since records began in 1996 there has been a steady increase in paradise shelduck numbers in the North Canterbury region.

Please note that in 2011 and 2012 no flights were carried out. Since then, a number of new sites have been added to the list, therefore numbers of paradise shelduck reported prior to then is not comparable to recent years counts.

Black Swan / Kakīnui

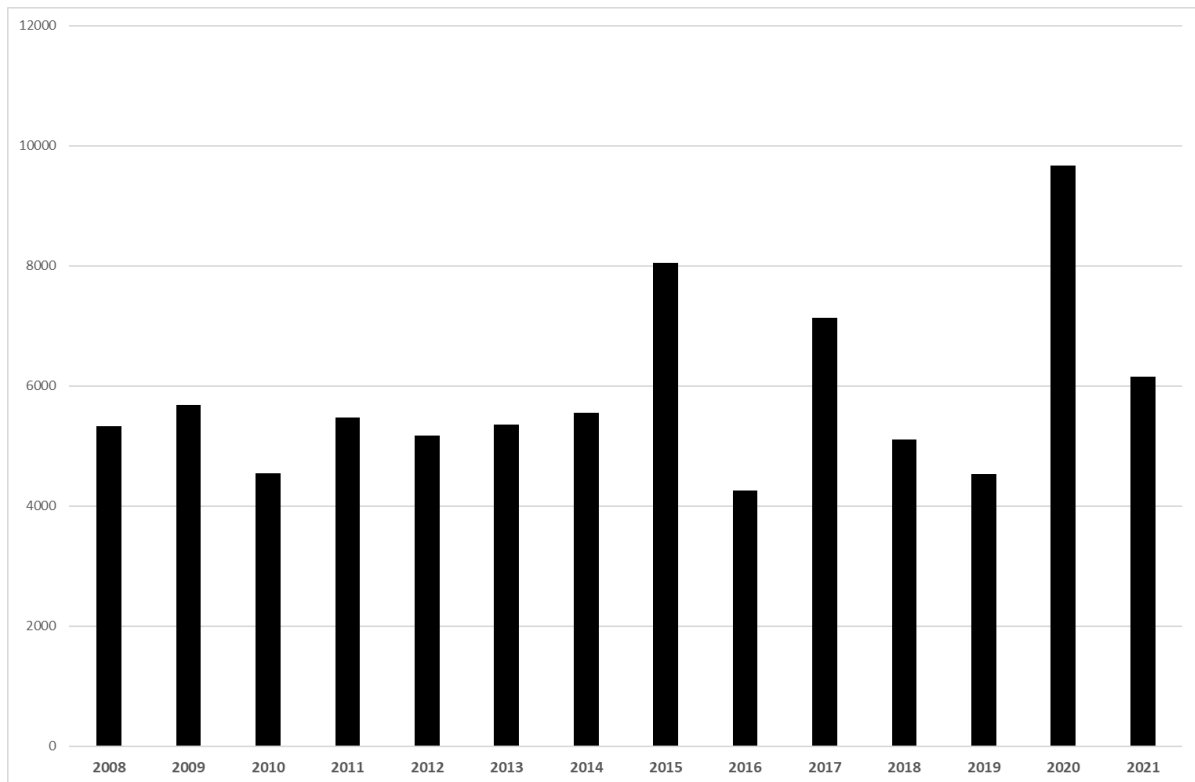


Figure 2 - Black swan / Kakīnui population trend count data collected from North Canterbury Fish & Game region.

11. In total 6,149 black swan were counted in the 2021 trend count. This number has decreased dramatically from the 2020 count of 9,674, but is up on the 2019 count of 4,539.
12. Very few signets were counted in 2021 compared with large numbers in 2020, in line with anecdotal reports from hunters. This is not unusual for the species, as population trends have displayed large changes periodically throughout the 25 years of monitoring. In the 2016 trend count almost halved from 2015 and then bounced back the following season.
13. Black swan signet survival is not only subject to feed availability for adults, it is also dependent on favorable winter / spring climatic conditions. Mild winters will likely also contribute to successful breeding seasons. While trend counts suggest this species can have a large annual fluctuation in population size, the effects of interannual variability or inaccuracies in the aerial survey methods have not yet been investigated in detail.
14. Ngai Tahu, in collaboration with Manaaki Whenua / Landcare Research and University of Canterbury, are currently undertaking a multi-disciplinary research project focused on black swans at Te Waihora (Lake Ellesmere). Researchers are aiming to develop a framework that provides the basis for informed and inclusive decision-making about environmental conservation and management of Black swan / Kakīnui.

15. North Canterbury Fish & Game staff look forward to working more closely with iwi and this research team to improve our understanding of black swan populations dynamics and identify ways to improve the management of this species.

DISCUSSION / RECOMMENDATION

16. Based on trend counts, staff currently have no concerns regarding black swan or paradise shelduck regulations, or the hunter harvest numbers of paradise shelduck and black swan. Consultation with Ngai Tahu Advisory Committee for Waterfowl¹ and local iwi groups undertaking cultural harvest of native game birds in North Canterbury, along with guidance from researchers, will be sought before staff make any formal recommendation to council on changes to the 2022/23 game bird regulations.

ACKNOWLEDGEMENTS

17. Thank you to volunteer Steve Coates for his help with the trend count. Also, a special thanks to pilot Hugh Robinson of Canterbury Aviation for his most valuable and historic aerial knowledge of all the ponds throughout our region.

¹ Ngai Tahu Advisory Committee for Waterfowl is a group that acts as a link between mana whenua, crown entities and several partnerships and research projects, most recently to do with black swan.

Appendix 1 – Paradise Shelduck Trend Count Data

Year	2008	2009	2010	2011	2012	2014	2015	2016	2017	2018	2019	2020	2021
Travis Swamp	0	0	100			130	70	60	0	100	180	10	80
Holland's Pond	500	50	50			25	10	120	80	100	180	20	150
Pyramid Valley	300	650	150			350	450	300	220	60	26	120	400
Bromley Ponds/Estuary	200	750	520			12	200	40	520	110	99	140	50
Pegasus Ponds						0	80	120	130	50	113	113	300
Mt. Hutt Station	650	350	450			600	85	300	500	0	150	150	70
Jameson's Pond	0	0	25			0	50	0	120	200	180	150	120
Mt. Palm Station	240	500	100			100	100	180	10	0	80	91	160
The Sisters Pond	250	200	100			180	20	150	90	80	50	124	70
St. Anne's Lagoon	650	600	500			180	280	450	dry	40	242	242	200
Cheviot Township Pond	0	100	100			100	100	30	80	15	100	71	40
Summerhill			100			50	70	160	1030	0	70	263	350
Lake Forsyth	20+	n/f+	1300			400	400	260	550	900	90	200	120
Kaipoi Oxidation Ponds	400	300	1000			2100	1300	500	1100	450	240	220	250
Courtney Pond		350	0			60	10	0	30	0		250	100
High Peak Station Ponds						200	100	200	440	350	180	300	200
Amberley Ponds						300	300	300	300	300	300	300	300
Waikari Township Pond	150	220	400			400	150	40	120	50	30	300	1570
Scargill Pond	220	500	200			800	980	450	500	200	250	600	250
Waimak Irrigation Ponds						200	100	400	0	150	678	670	400
Burnham Oxidation Pond						629	400	800	1050	450	500	800	400
Rangiora Oxidation Ponds	1000	650	750			2000	2000	2800	1300	1600	500	850	2000
Lake Ellesmere	200	150	640			6200	4000	3250	610	2520	1940	2900	2700
Total	4760	5370	6485			15016	11255	10910	8780	7725	6178	8883	10280
Please Note, no counts in 2011 2012													
Orange cells (no record of counting this pond so averages have been applied to previous years data)													
Yellow cells are averages from other years counted													

Appendix 2 – Black Swan Trend Count Data

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
Kaiapoi/Rangi Oxid	0	0	10	0	0	10	0	12	20	15	20	10	40	25
Estuary/Brom	350	350	350	300	520	140	320	650	325	150	69	130	400	280
Ellesmere	4730	4700	3390	4920	4530	4100	4500	5500	3270	6040	4390	4068	8600	4964
Forsyth	150	420	710	150	80	1000	556	1700	455	450	285	130	500	780
Rakaia	50	60	20	0	0	38	92	45	87	78	56	63	n/f	
Waimak		50	56	50	45	30	40	58	8	112	107	44	n/f	
Waiau				50	0	0	10	8	8	3	0	27	n/f	
Hurunui								12	2	14	20	18	n/f	
Coopers Lagoon	20	50	5	0	0	0	0	50	16	10	10	14	0	
Other Areas	25	50	0	0	0	32	20	17	62	165	157	35	134	100
Total	5325	5680	4541	5470	5175	5360	5548	8052	4253	7137	5114	4539	9674	6149