



West Coast Game Harvest Survey 2023

*Results from annual survey of game bird hunter harvest. May-July 2023.
West Coast Fish & Game Region.*



Hunters returning to their vehicles after a successful first day at the Karamea organised hunt, July 2023.

Baylee Kersten, Fish & Game Field Officer, October 2023

Summary

Fish & Game has a statutory role under the Conservation Act 1987 to monitor hunter satisfaction. An annual telephone survey is performed during the regular game bird season from May to July. The data is considered an estimate of actual harvest and is intended for internal management purposes only. A combined 382 adult and junior full season West Coast licence holders harvested an estimated 7,138 game birds from within the West Coast Region for 2023. Inclusion of out of region hunters visiting the West Coast Region increases this estimated total game bird harvest to 13,040 birds.

The average West Coast Region game bird licence holder harvested 19 game birds in the 2023 season, compared with 20 game birds during the 2022 season and 17 for the 2021 season (rounded to whole bird figures). This equates to approximately; 6.1 Greylards, 8.9 Paradise Shelduck, 3.1 Pukeko and less than one bird each of Swan and Shoveler. Opening weekend accounted for 35% of the season's harvest by West Coast hunters. Hunter effort and harvest by local hunters decreased from the previous season.

Staff Recommendations are: That the council receives this report; That the current season duration and bag limits remain unchanged; That organised events and targeting young hunters aged 16-30 for recruitment continues.

Introduction

Fish & Game West Coast Region has a statutory role under the Conservation Act 1987 to monitor hunter satisfaction. An annual telephone harvest survey is performed during the regular game bird season from May to July. Fish & Game have conducted a game bird harvest survey using telephone interviews of the licence holder database since 1992. The data is considered an estimate of actual harvest. The data is intended for internal management purposes only.

Methods

Seven telephone surveys were undertaken over the length of the regular game bird season. The first survey was undertaken after opening weekend and the remainder undertaken at fortnightly intervals until the end of the season. 100 interviewees were randomly selected from the West Coast licence holder database for each telephone survey.

The data presented in this survey is split into two sections: that obtained from opening weekend and from the whole season. Only birds actually retrieved during hunting are used in the analysis although an estimate is made of birds not retrieved. As surveys are undertaken across all Fish & Game Regions simultaneously an estimate of out of region hunting is obtained and attributed to the region where the hunting took place.

Licence holders from the West Coast Region are referred to as 'West Coast hunters' (WC hunters) in this report. Licence holders from other regions who harvested birds on the West Coast are referred to as 'Out of Region hunters' (OOR Hunters). Unlicensed hunters and those hunting under the landowner/occupier exemption are not surveyed.

Game bird licence sales fluctuate from year to year, therefore, to compare harvest between years, the data is adjusted to represent the mean or average licence holder. Unadjusted harvest is referred to as total harvest.

Hunting effort is calculated by dividing the total hours hunted by the number of hunters to give an average per hunter. For opening weekend this is calculated per active hunter while for the whole season it is calculated per licence holder.

Hunting success, or the rate of harvest is calculated by dividing the total number of birds harvested by total hunting effort giving a figure of birds harvested per hour of hunting effort (birds/hr).

Results

West Coast Game bird licence holders - 2023

A total of 442 game bird licences were sold on the West Coast during the 2023 season which is below the long-term average (Figure 1). This consisted of 352 whole season adult (GWA), 30 whole season junior (GWJ), 27 whole season child (GWC), 30 adult day (GDA), and 3 junior day (GDJ) licences. The largest drop has been in sales of GWA licences which make

up on average 83% of total sales in the 2006 to 2023 period. GWA reached their lowest on record in 2019 but fortunately numbers have improved since then (Figure 2).

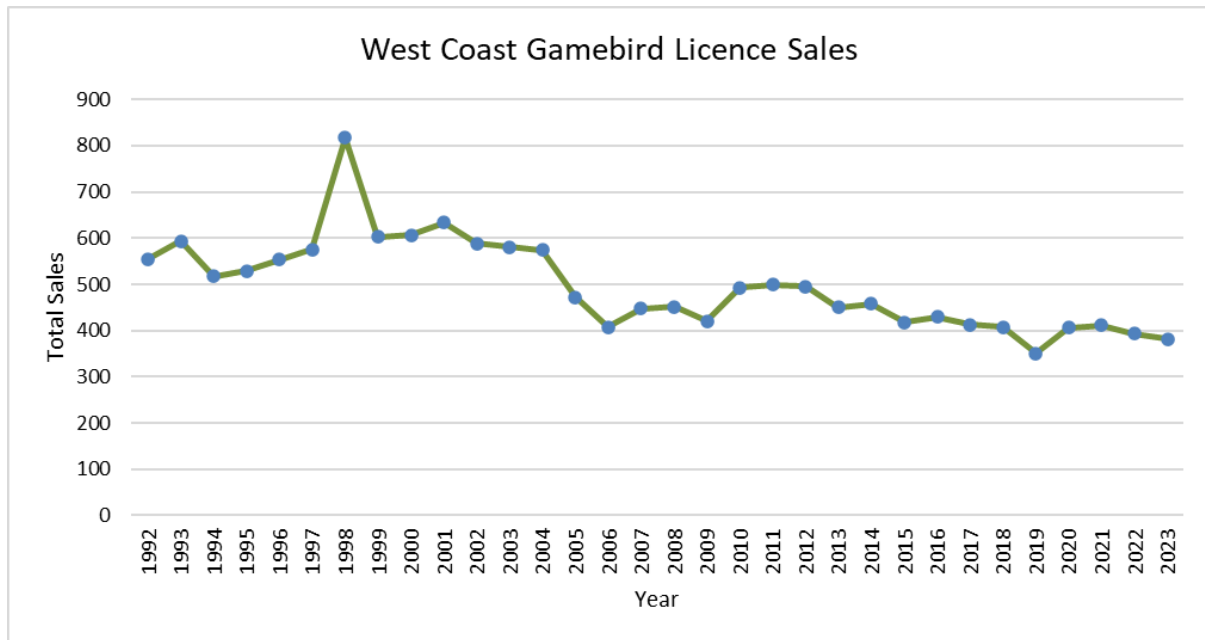


Figure 1. Annual West Coast full season adult and junior game bird licence sales, 1992-2023.

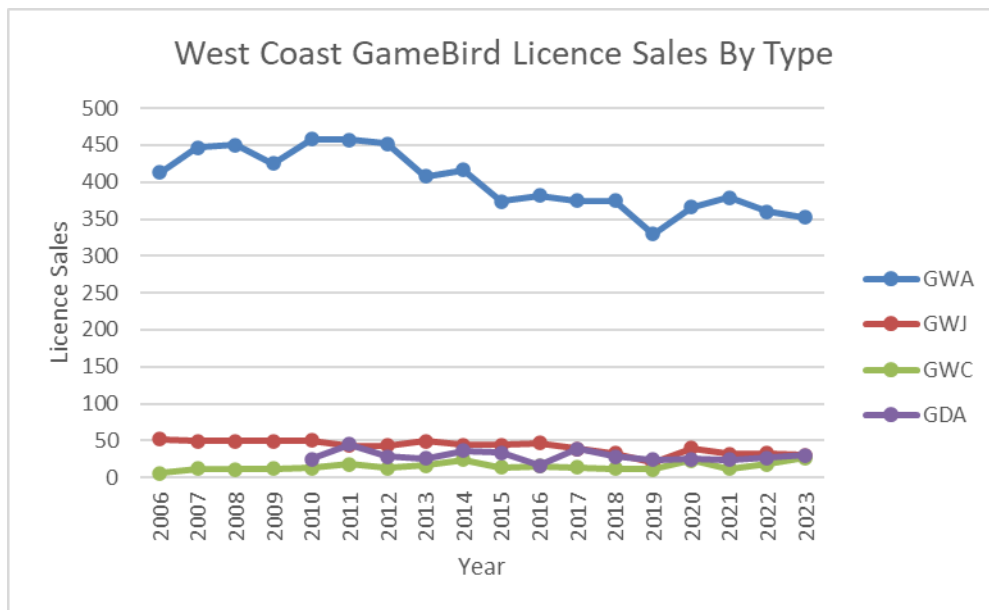


Figure 2. Annual West Coast game bird licence sales by type 2006-2023. Note day licences were only introduced in 2010. GWA=adult full season, GWJ= junior full season, GWC=child full season and GDA=adult day licence.

Opening Weekend 2023 Hunting Effort, Success, and Harvest

During opening weekend, an estimated 527 active licence holders spent 4,197 hours hunting and harvested 4,406 game birds. Of these 290 (55% of total) were WC hunters who spent

1,833 hours hunting (44% of total) and harvested 2,521 game birds (57% of total). While there were less OOR hunters they still spent 2,364 hours hunting and harvested 43% of the total game birds (Table 2). OOR hunter spent on average an extra 3 hours and 40 minutes hunting over opening weekend (10 hours OOR vs 6.3 hours WC). Average hunting effort by WC hunters over opening weekend was up on the last two seasons (Figure 3).

Table 2: Summary of ‘Out of Region Hunters’ influence on estimated total effort and species harvest in the West Coast Region during opening weekend 2023.

Hunter/Effort/Species	West Coast Hunter Harvest	Out of Region Hunter Harvest	Total Estimate	Out of Region Hunters Contribution to harvest
Active hunters	290	237	527	45%
Hours	1833	2364	4197	56%
Greylard	1104	537	1641	33%
Paradise Shelduck	1207	1141	2348	49%
Pukeko	179	117	297	40%
Shoveler	4	0	4	0%
Swan	27	89	116	77%
Total Birds	2521	1885	4406	43%

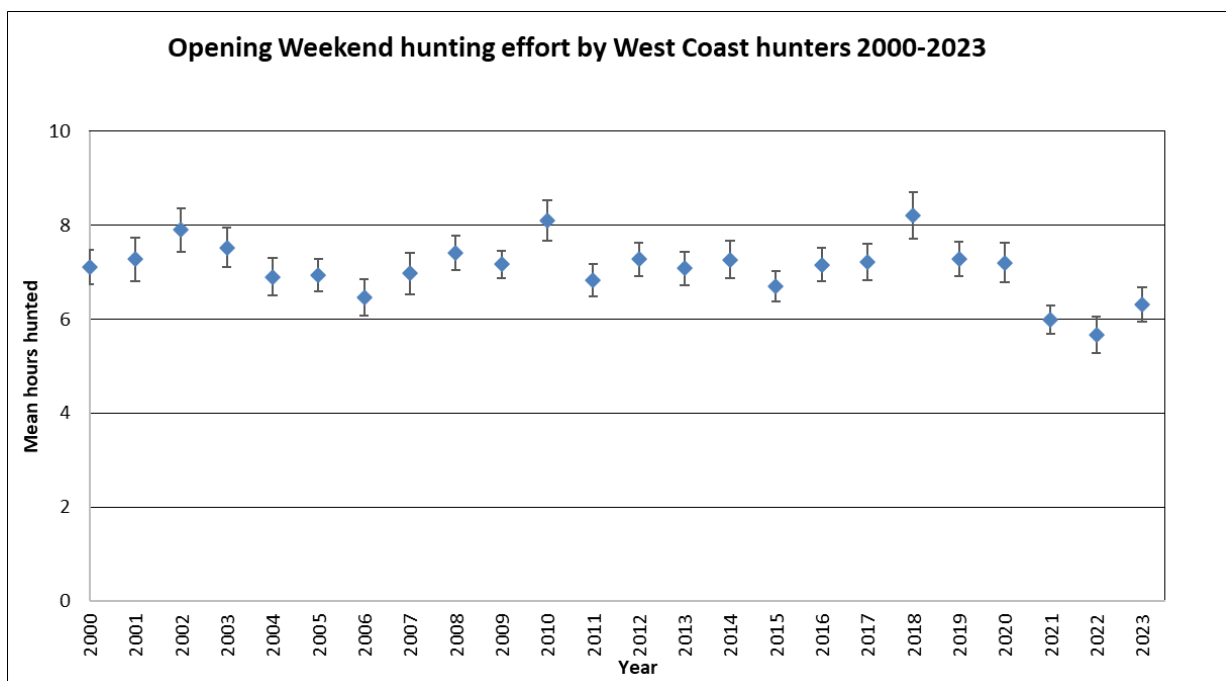


Figure 3. Average time spent hunting during opening weekend ± standard deviation by West Coast hunters 2000-2023.

Success in terms of game birds harvested per hour favoured WC hunters with WC hunters harvesting 1.38 birds/hour and OOR hunters 0.80 birds/hour. The success of WC hunters on opening weekend was similar to the 32-year average, being 1.39 birds/hour (Figure 4). West Coast hunters spent 50% of their total hunting effort over the hunting season on opening weekend whereas OOR hunters spent 53% of their total hunting effort over the hunting season on opening weekend.

WC hunters mean bag for opening weekend was 8.7 birds: 3.8 greylards, 4.2 paradise shelduck, and less than one of pukeko, swan and shoveler. OOR hunters mean bag for opening weekend was 8.0 birds: 2.3 greylards, 4.8 paradise shelduck, and less than one of pukeko and swan. No shoveler were recorded as shot by OOR hunters surveyed on opening weekend. A further 69 birds were estimated as not retrieved.

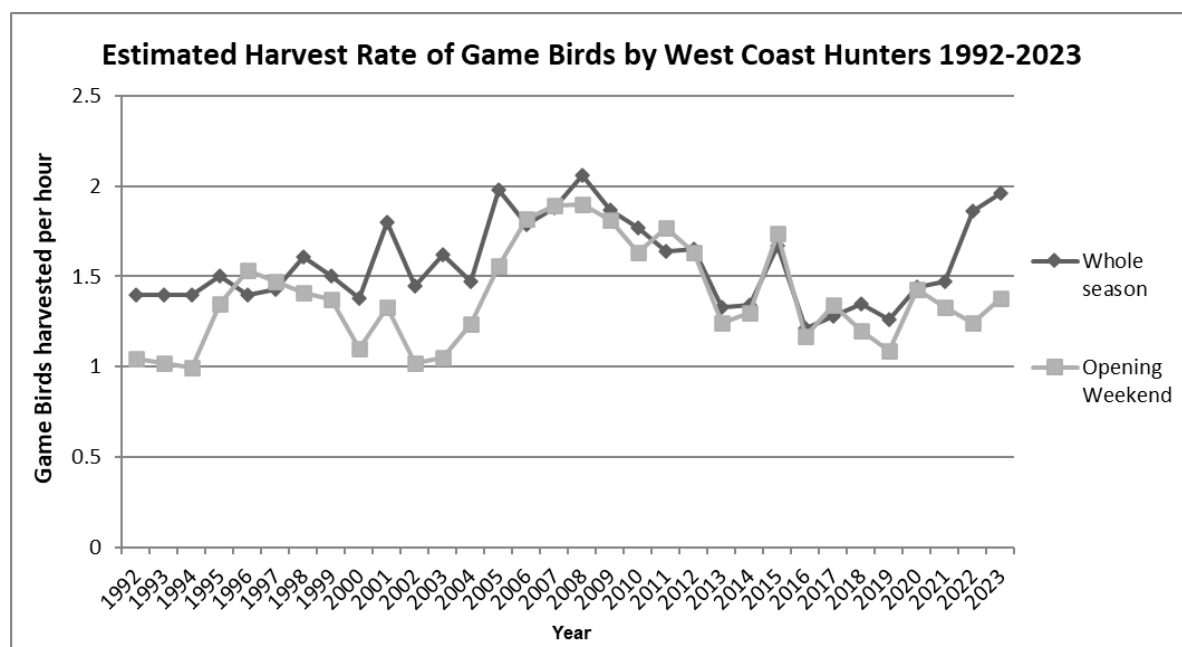


Figure 4: Game bird harvest rate by West Coast licence holders, opening weekend compared with whole season harvest rate 1992-2023.

2023 Full Season Hunting Effort, Success, and Harvest by species

Over the full 2023 game bird season all hunters combined spent 8,072 hours hunting and harvested 13,040 game birds. WC hunters spent an estimated 3,645 hours hunting (45% of total) and harvested 7,138 game birds (55% of total). OOR hunters spent 4,427 hours hunting and harvested 5,902 game birds (Table 3). WC hunters spent an average 9.54 hours hunting over the season. This is the lowest effort per hunter observed since the survey begun (Figure 5). There continues to be a noticeable decline in both total hours hunted, and total game birds harvested by WC licence holders when compared to earlier years of the game harvest survey (Figure 6).

Table 3: Summary of ‘Out of Region Hunters’ influence on estimated total effort and species harvest in the West Coast Region during the 2023 gamebird season.

Effort/Species	West Coast Hunter Harvest	Out of Region Hunter Harvest	Total Estimates	Out of Region Hunters Contribution to harvest
Hours	3645	4427	8072	55%
Greylard	2466	1695	4161	41%
Paradise Shelduck	3395	1955	5350	37%
Pukeko	1192	2150	3342	64%
Shoveler	8	0	8	0%
Swan	77	102	179	57%
Total Birds	7138	5902	13040	45%

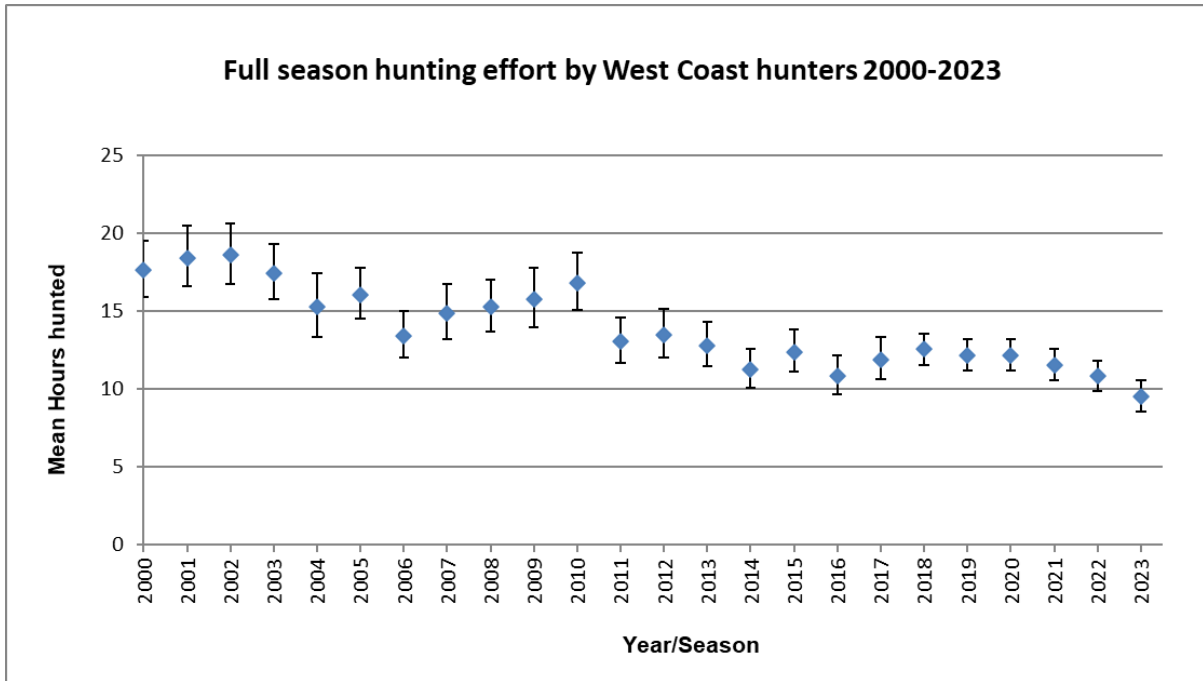


Figure 5. Average time spent hunting during the regular game bird season \pm standard deviation by West Coast hunters 2000-2023.

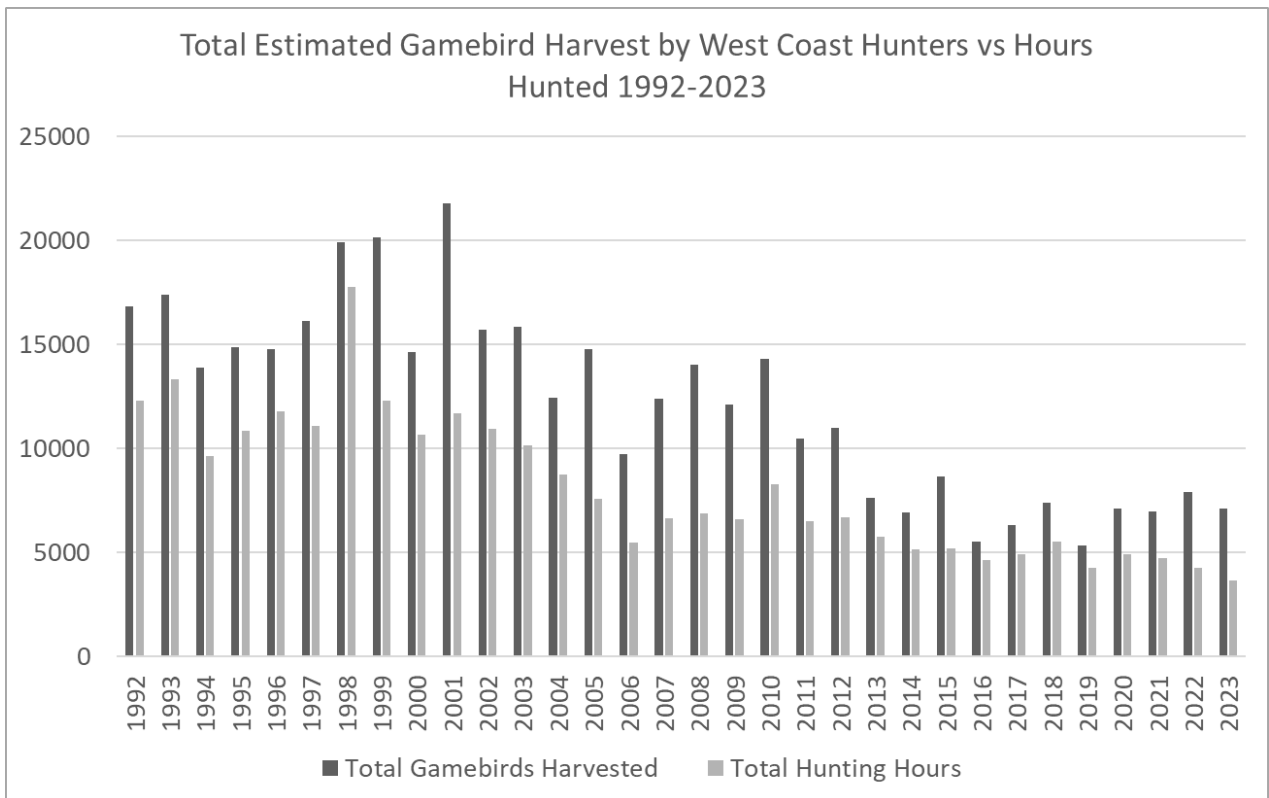


Figure 6: Estimates of game birds harvested by West Coast licence holder's vs hours spent hunting.

Success in terms of game birds harvested per hour favoured WC hunters with WC hunters harvesting 1.96 birds/hour and OOR hunters 1.33 birds/hour. The success of WC hunters over the 2023 hunting season was high, being the third highest success rate in the 32-year data set. (Figure 4).

WC hunters mean bag for the 2023 season was 18.7 birds: 6.1 Greylards, 8.9 Paradise Shelduck, 3.1 Pukeko and less than one bird each of Swan and Shoveler. There has been an increase in the portion of the bag made up of species other than greylards in the last five seasons relative to previous years as hunters diversify their bags (Figure 7). A further 483 birds were estimated as not retrieved.

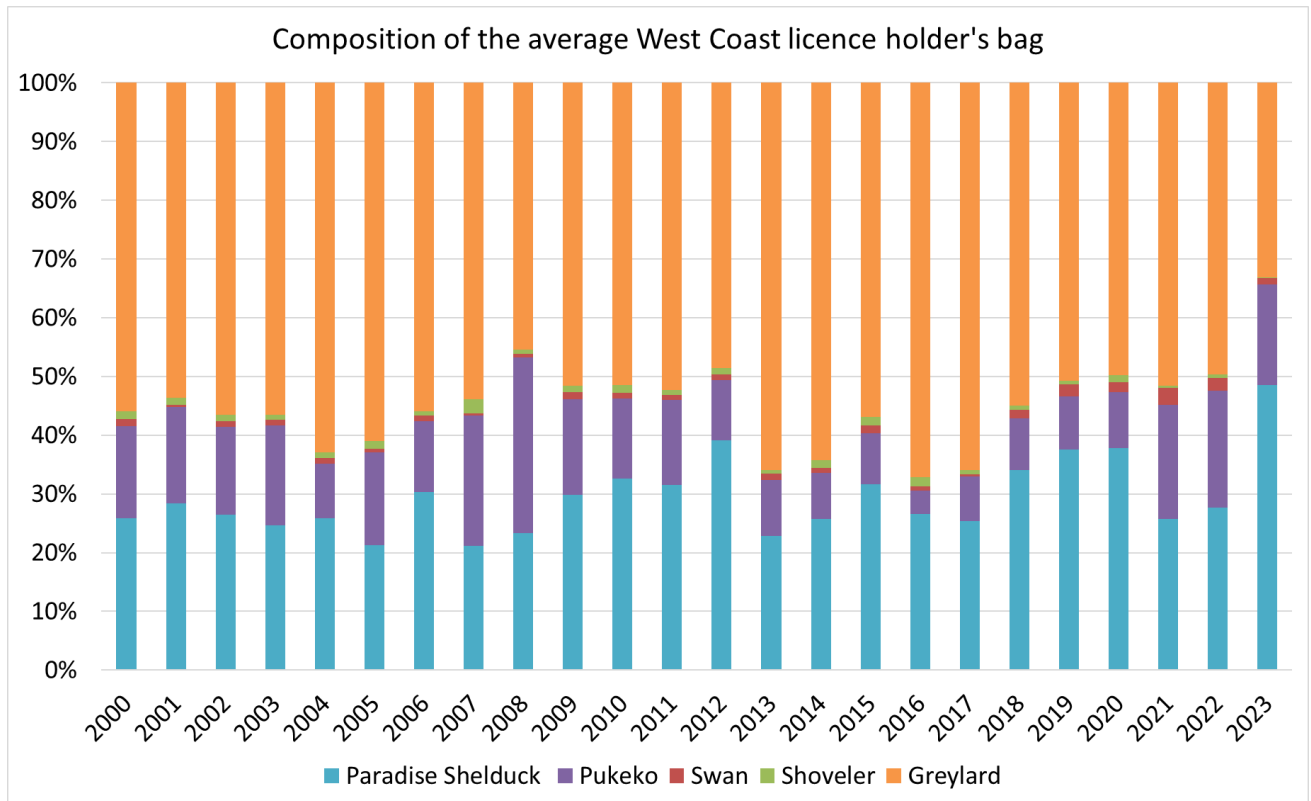


Figure 7: Estimated game bird bag composition of West Coast licence holders from 1992-2023.

Harvest by Game Bird Species

Of the West Coast licence holders surveyed, for the first time since the survey began, Paradise Shelduck were the most harvested game bird, accounting for 48% of the annual harvest. 'Greylard' or combined Grey and Mallard ducks were the second most harvested bird at 33%, followed by Pukeko 17%, Swan 1% and Shoveler 0.1% (Figure 8).

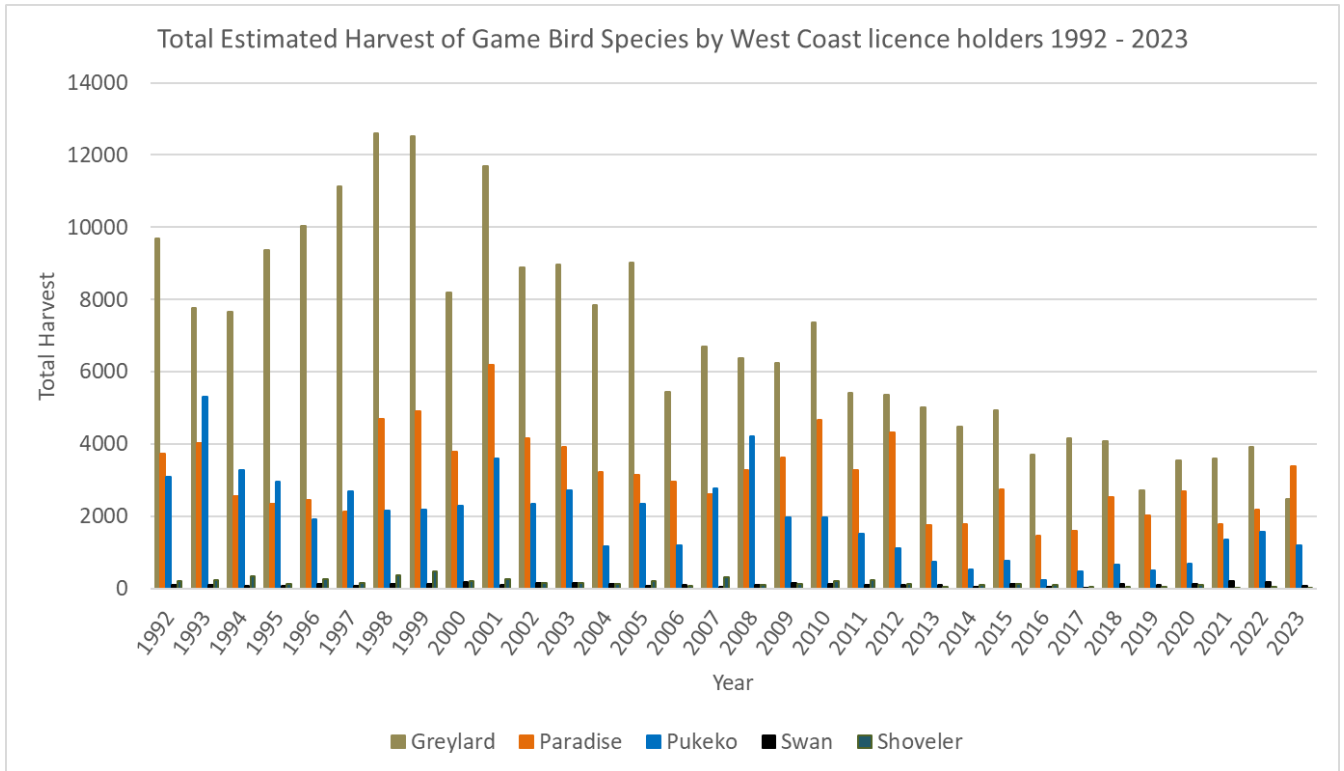


Figure 8: Estimated game bird harvest within the West Coast Region by West Coast licence holders from 1992-2023.

Greylard

In the 2023 game bird season, West Coast licence holders harvested 2,466 Greylards in total. Inclusion of OOR hunter harvest brought the total estimated Greylard harvest for 2023 to 4,161 (Figure 9). There is nine years of data available to correlate annual trend counts with total harvest (Figure 10).

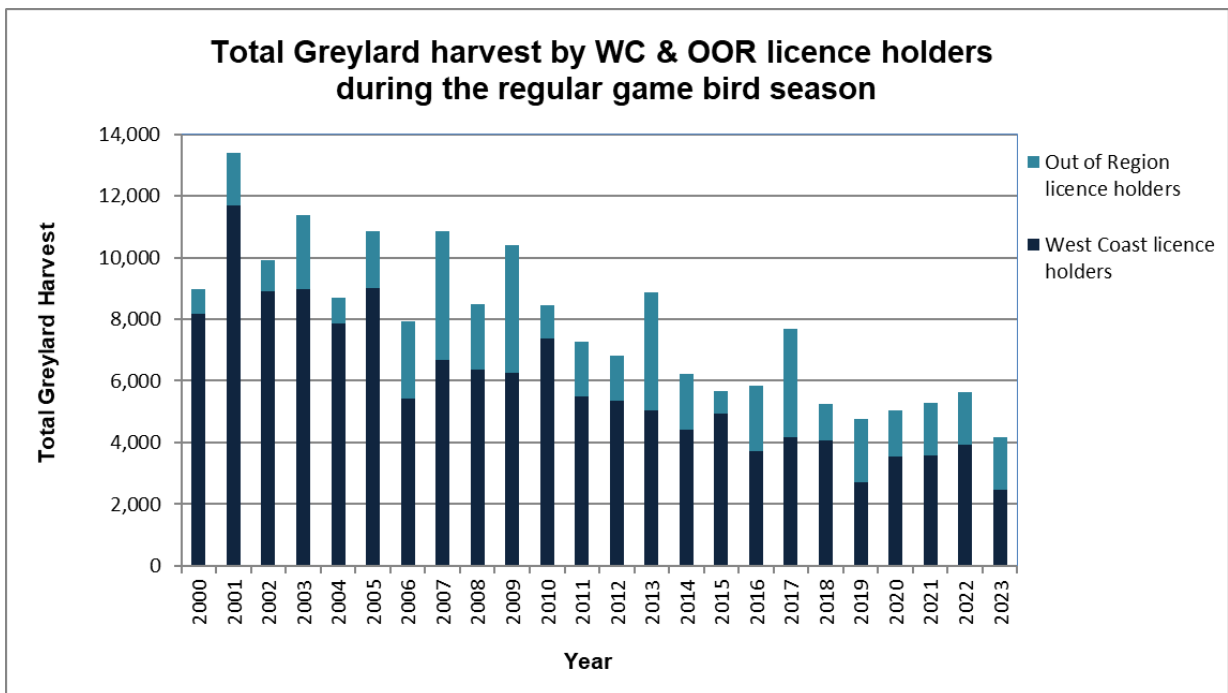


Figure 9: Estimated Total Greylard harvest for the West Coast Region, 2000-2023.

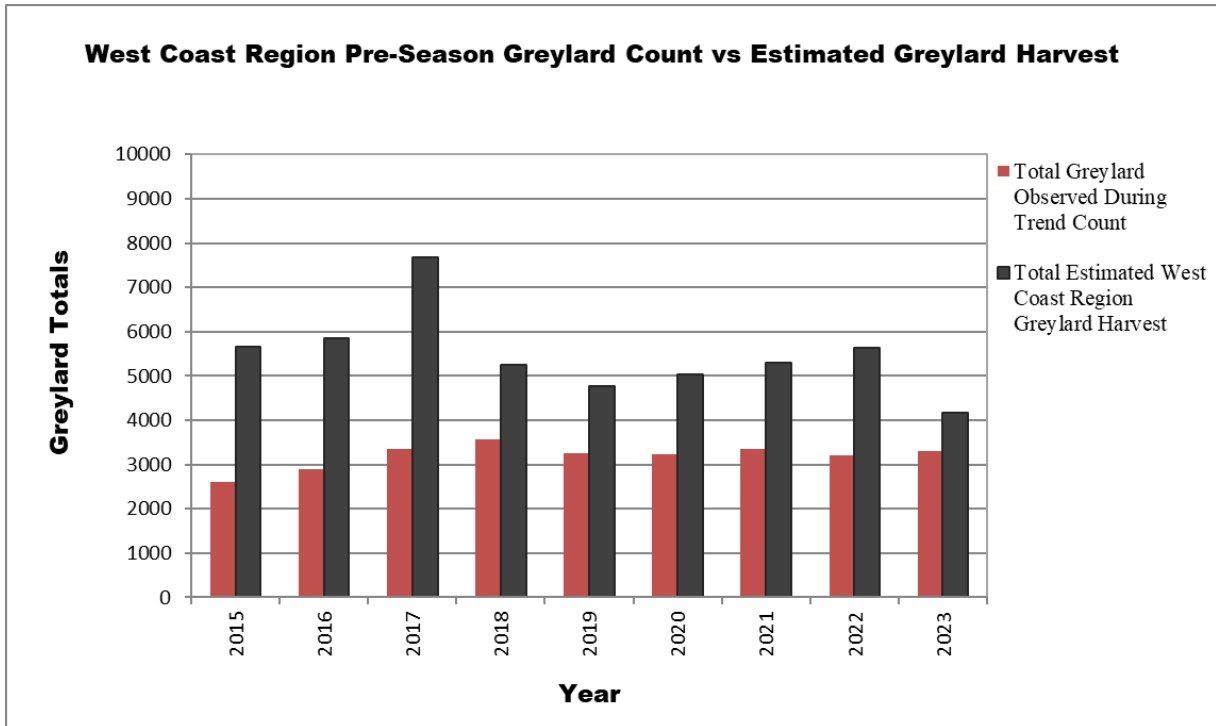


Figure 10: Total Greyland harvest vs trend count results for the West Coast Region.

Paradise Shelduck

In the 2023 game bird season West Coast licence holders harvested an estimated total of 3,395 Paradise Shelduck. Inclusion of out of region hunters brought the estimated total to 5,350 Paradise Shelducks (Figure 11). There is limited correlation between total harvest and annual moult trend counts (Figure 12).

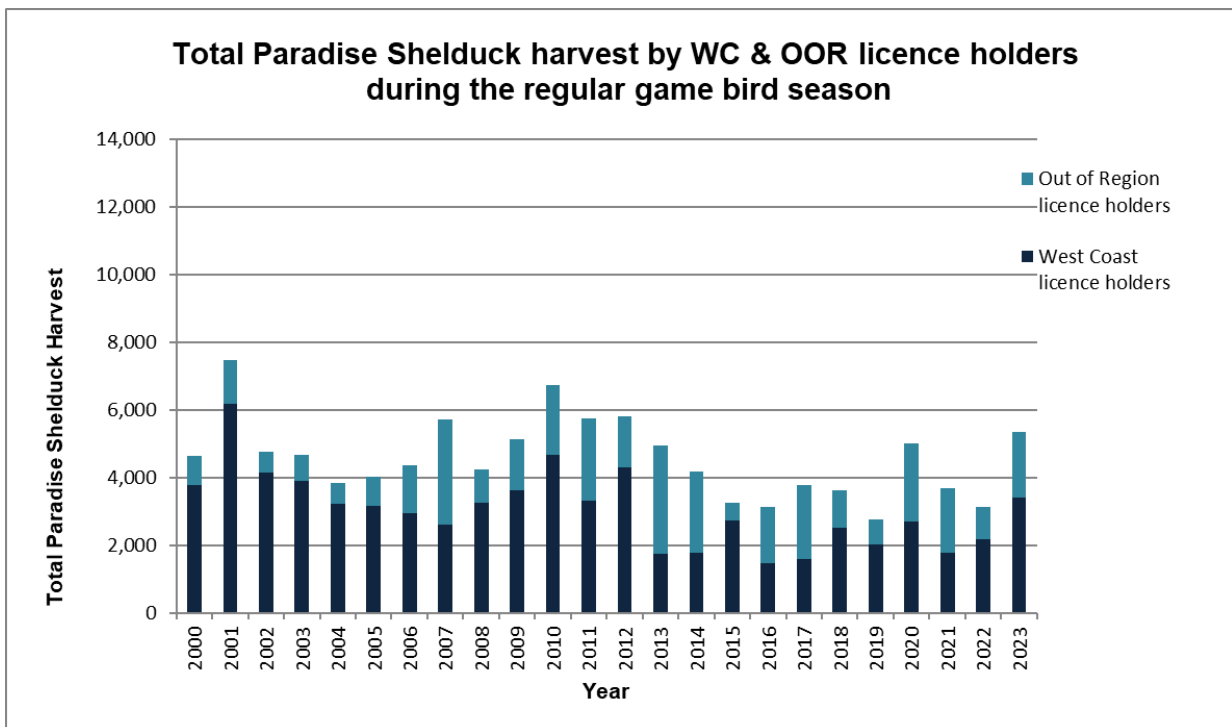


Figure 11: Estimated Total Paradise Shelduck harvest in the West Coast Region 2000-2023.

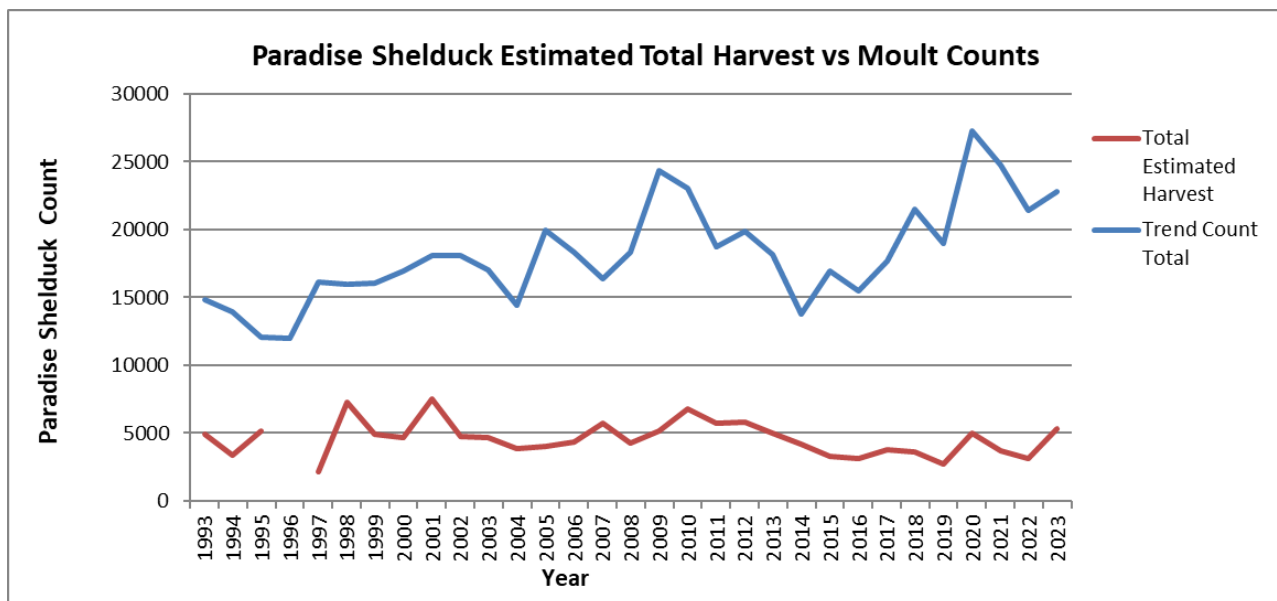


Figure 12: Total Paradise Shelduck harvest vs moult count results for the West Coast Region. (Note: no out of region data available for 1996).

Extra Season: In 2023 there was a summer season for Paradise Shelduck, Pukeko and Swan which was not part of the ‘Game Harvest Survey’ period. Hunters were surveyed on their utilisation of the summer season at the end of the summer season with additional hunters surveyed following the opening weekend survey with data being recorded separately. Please note, with low numbers of hunters surveyed utilising the summer season, there is a large uncertainty associated with estimated harvest.

Approximately 7% or 27 licence holders hunted during the summer season. They bagged on average 8.0 paradise shelduck and 38.3 pukeko for around 5.6 hours hunting. No one surveyed during the summer season had shot swan. This equates to an extra harvest of approximately 219 paradise shelduck and 1,051 pukeko. That is a success rate of 8.3 birds/hr.

Out of region hunters were not included in the survey but assuming trends are similar to the normal game bird season we can reasonably assume that the total harvest by out of region hunters would boost the harvest to around 438 paradise shelduck and 2,102 pukeko (50% of total harvest).

Pukeko

In the 2023 game bird season, West Coast licence holders harvested an estimated 1,192 pukeko. Inclusion of out of region hunters brought the estimated total to 3,342 pukeko. This is down on last season but is still above average (Figure 13). There is limited correlation between total harvest and annual trend counts (Figure 14).

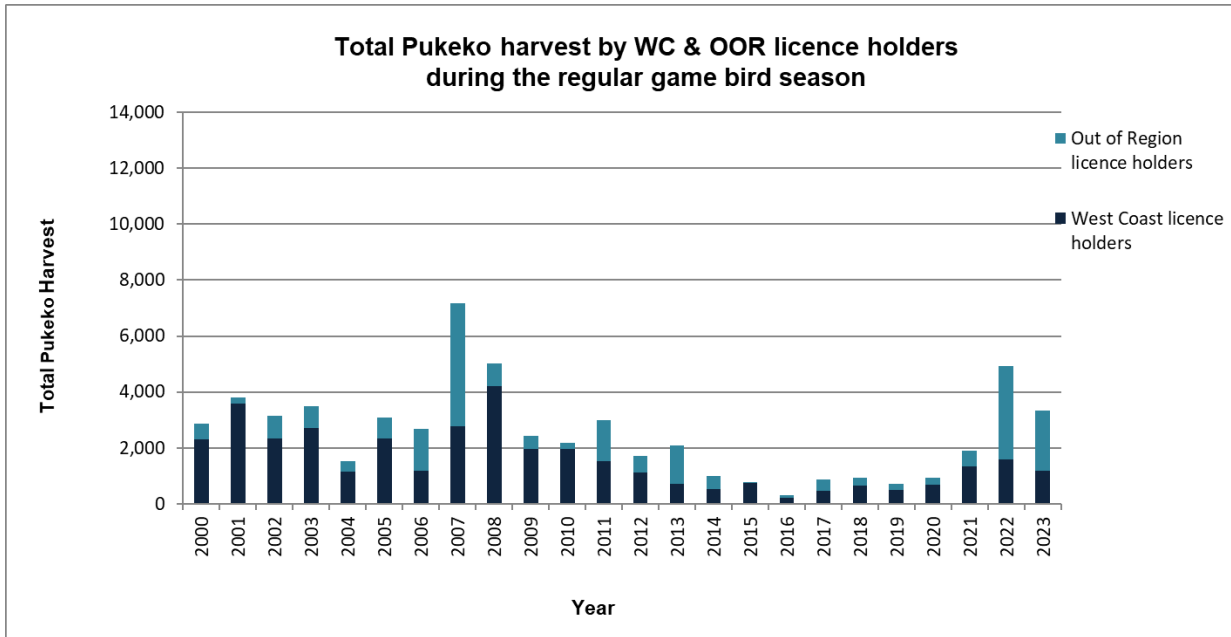


Figure 13: Estimated Total Pukeko harvest in the West Coast Region 2000-2023.

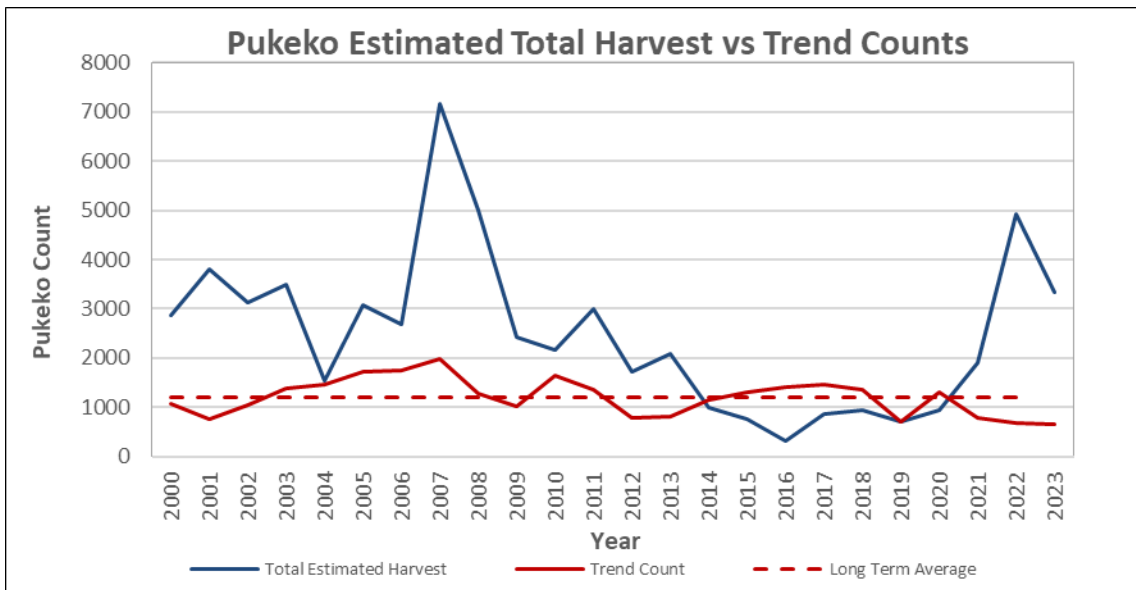


Figure 14: Total Pukeko harvest vs trend count results for the West Coast Region.

Shoveler Duck

In 2023 West Coast licence holders harvested an estimated 8 Shoveler. This equates to less than one bird for each licence holder or 0.02 for the whole season. This seasons 0.02 shoveler per licence holder is down on the last season’s 0.13 shoveler per licence holder and is well below the 24-year average of 0.23 shoveler per licence holder. No shoveler were recorded as being harvested by out of region hunters.

Black Swan

In 2023 West Coast licence holders harvested an estimated 77 Swan. This equates to 0.20 swans per licence holder, which is below the 24 – year average for swan harvest per WC licence holder (0.23). WC harvest was down significantly on the previous five years where above average numbers of swan have been harvested. Out of region hunters brought the total harvest to 179 swan.

Discussion

The 2023 game bird season was a successful one for West Coast hunters despite having an average opening weekend. Success was similar to the long-term average over opening weekend, but this was due to paradise shelduck bringing the average up. Hunting greylards was challenging with the average hunter taking approximately two less greylard home compared to what has been typical for the last 14 years.

Beyond opening weekend, hunters continued to diversify their bags targeting paradise shelduck and pukeko with remarkable success resulting in an extremely high success rate reported for the season. Hunters focusing on paradise shelduck resulted in them being the most hunted game bird for the season, with greylard accounting for only 33% of this season's harvest. Reduce greylard harvest over opening and slightly below levels taken in the remaining season resulted in greylard harvest being down this season. Hunters reporting that the mild winter we experienced made greylard hunting tough.

Hunting wasn't so favorable for out of region hunters, with both their opening and whole season success rates below West Coast hunters. Their opening success was well below average but due to their high levels of effort, they came away with a moderate harvest. Their success lifted greatly for the remainder of the season due to visiting hunters targeting pukeko and paradise shelduck. Pukeko was recorded as the most hunted bird of visiting hunters, with 36% of their harvest estimated to be pukeko, closely following by paradise shelduck.

With success rates high this year for West Coast hunters, the biggest limitation to harvest was participation. This being in the form of both effort and number of licence holders. Organised hunts have been used as a tool to manage elevated levels of game birds while attempting to increase participation. The organised hunts also direct attention to under utilised game bird species, with the levels of pukeko harvest steadily increasing as events increase in popularity. Lastly the organised hunts have greatly improved relationships with landowners ultimately leading to an expanding list of huntable properties. The continuation of organised hunts therefore should be a priority for reasons listed above and the social aspect they provide creating a stronger game bird hunting community.

Data on this year's summer season suggests that the summer season is heavily utilised by a small number of keen hunters. Despite the added hunting pressure applied in the summer, the West Coast hunter's success rate, and harvest levels of paradise shelduck and pukeko, indicate the regular season's hunting was not significantly impacted. Therefore, if populations stay steady, the summer season should remain in place to mitigate landowner complaints, provide additional opportunities to licence holders, and promoted as an opportunity to introduce new hunters to the sport.

Staff Recommendations

- That the council receives this report.
- That the current season duration and bag limits remain unchanged.
- That organised events and targeting young hunters aged 16-30 for recruitment continues.