



## West Coast Game Harvest Survey 2022

*Results from annual survey of game bird hunter harvest. May-July 2022.  
West Coast Fish & Game Region.*



*Daniel Shand with a prized shoveler drake on opening morning, May 2022.*

Baylee Kersten, Fish & Game Field Officer, September 2022

## **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 393 adult and junior full season West Coast licence holders harvested an estimated 7,922 game birds from within the West Coast Region for 2022. Inclusion of out of region hunters visiting the West Coast Region increases this estimated total game bird harvest to 13,915 birds.*

*The average West Coast Region game bird licence holder harvested 20 game birds in the 2022 season, compared with 17 game birds during the 2021 season and 18 for the 2020 season (rounded to whole bird figures). This equates to approximately; 9.7 Greylards, 5.6 Paradise Shelduck, 4.0 Pukeko and less than one bird each of Swan and Shoveler. Opening weekend accounted for 41% of the season's harvest by West Coast hunters. Hunter effort by local hunters decreased from the previous season but harvest was up.*

*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 - 2022**

A total of 438 game bird licences were sold on the West Coast during the 2022 season which is below the long-term average (Figure 1). This consisted of 360 whole season adult (GWA), 33 whole season junior (GWJ), 18 whole season child (GWC), 27 adult day (GDA), and 0 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 2022 period. GWA reached their lowest on record in 2019 but fortunately numbers have improved since then (Figure 2).

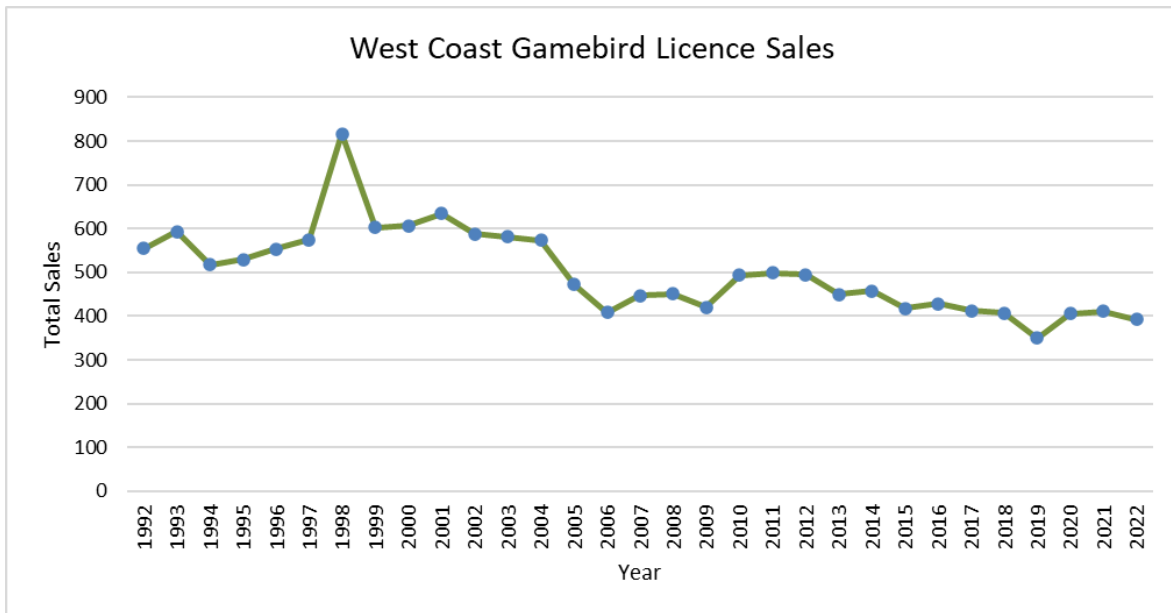


Figure 1. Annual West Coast full season adult and junior game bird licence sales, 1992-2022.

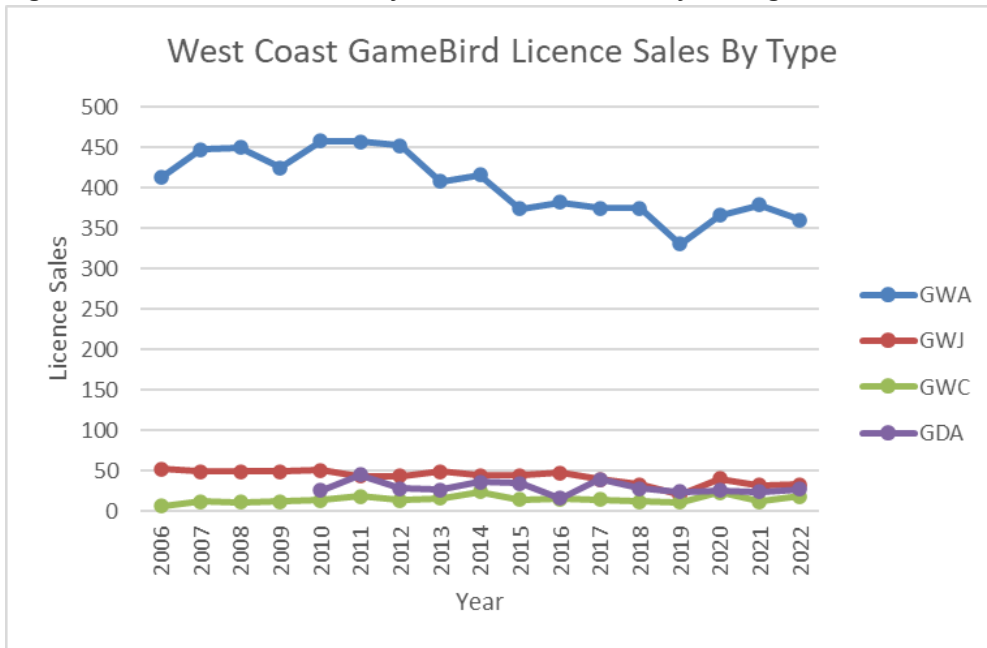


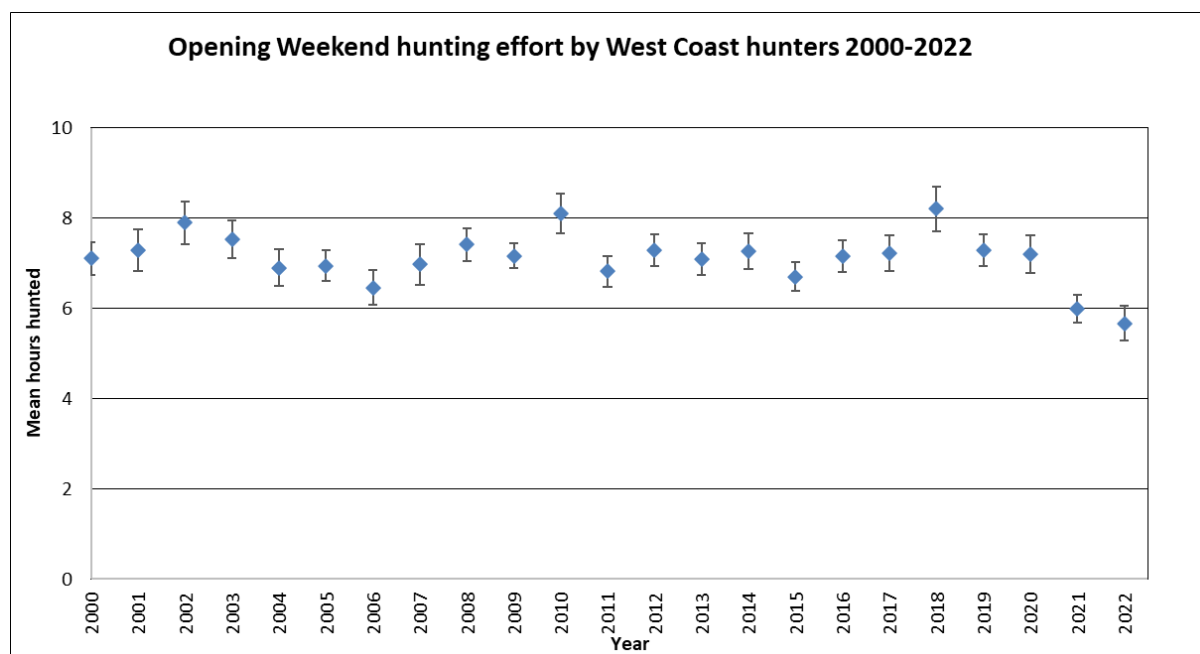
Figure 2. Annual West Coast game bird licence sales by type 2006-2022. Note day licences were only introduced in 2010. GWA=adult full season, GWJ=junior full season, GWC=child full season and GDA=adult day licence.

## Opening Weekend 2022 Hunting Effort, Success, and Harvest

During opening weekend, an estimated 481 active licence holders spent 3,447 hours hunting and harvested 3,665 game birds. Of these 309 (64% of total) were WC hunters who spent 1,748 hours hunting (51% of total) and harvested 2,724 game birds (59% of total). While there were less OOR hunters they still spent 1,372 hours hunting and harvested 41% of the total game birds (Table 2). OOR hunter spent on average an extra 4 hours and 12 minutes hunting over opening weekend (9.9 hours OOR vs 5.7 hours WC). Average hunting effort by WC hunters over opening weekend was the lowest in 22 years (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 2022.*

Hunter/Effort/Species	West Coast Hunter Harvest	Out of Region Hunter Harvest	Total Estimate	Out of Region Hunters Contribution to harvest
Active hunters	309	172	481	36%
Hours	1784	1699	3447	49%
Greyland	1500	759	2259	34%
Paradise Shelduck	569	406	975	42%
Pukeko	64	323	387	83%
Shoveler	32	0	32	0%
Swan	12	0	12	0%
Total Birds	2178	1488	3665	40%



*Figure 3. Average time spent hunting during opening weekend  $\pm$  standard deviation by West Coast hunters 2000-2022.*

Success in terms of game birds harvested per hour favoured WC hunters with WC hunters harvesting 1.25 birds/hour and OOR hunters 0.88 birds/hour. The success of WC hunters on

opening weekend was slightly below average, with the 31-year average being 1.39 birds/hour (Figure 4). West Coast hunters spent 41% of their total hunting effort over the hunting season on opening weekend whereas OOR hunters spent two thirds (67%) of their total hunting effort over the hunting season on opening weekend.

WC hunters mean bag for opening weekend was 7 birds: 4.9 greylards, 1.8 paradise shelduck, and less than one of pukeko, swan and shoveler. OOR hunters mean bag for opening weekend was 8.6 birds: 4.4 greylards, 2.4 paradise shelduck, 1.9 pukeko. No shoveler or swan were recorded shot by OOR hunters surveyed on opening weekend. A further 83 birds were estimated as not retrieved.

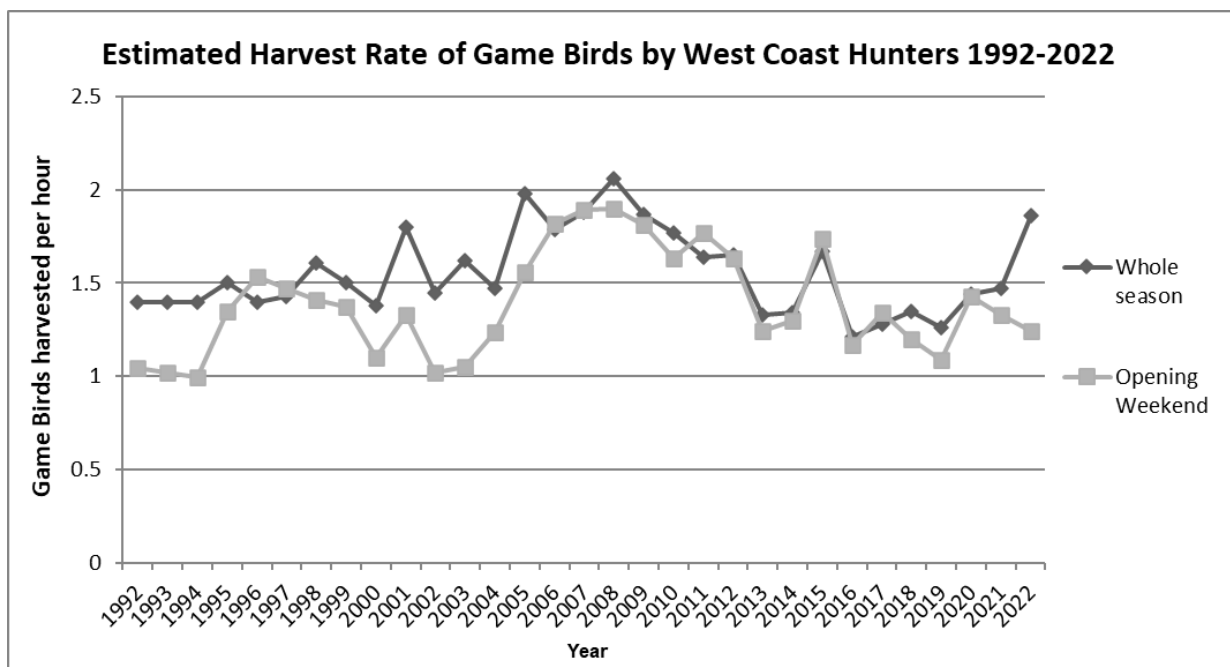


Figure 4: Game bird harvest rate by West Coast licence holders, opening weekend compared with whole season harvest rate 1992-2022.

### 2022 Full Season Hunting Effort, Success, and Harvest by species

Over the full 2022 game bird season all hunters combined spent 7,963 hours hunting and harvested 13,915 game birds. WC hunters spent an estimated 4,261 hours hunting (54% of total) and harvested 7,922 game birds (68% of total). OOR hunters spent 3,702 hours hunting and harvested 5,993 gamebirds (Table 3). WC hunters spent an average 10.84 hours hunting over the season. This is slightly lower than recent seasons but can be contributed to reduced effort opening weekend (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 2022 gamebird season.

Effort/Species	West Coast Hunter Harvest	Out of Region Hunter Harvest	Total Estimates	Out of Region Hunters Contribution to harvest
Hours	4261	3702	7963	46%

<b>Greyland</b>	3929	1700	5628	30%
<b>Paradise Shelduck</b>	2192	956	3147	35%
<b>Pukeko</b>	1574	3337	4912	68%
<b>Shoveler</b>	53	0	53	0%
<b>Swan</b>	175	0	175	0%
<b>Total Birds</b>	7922	5993	13915	30%

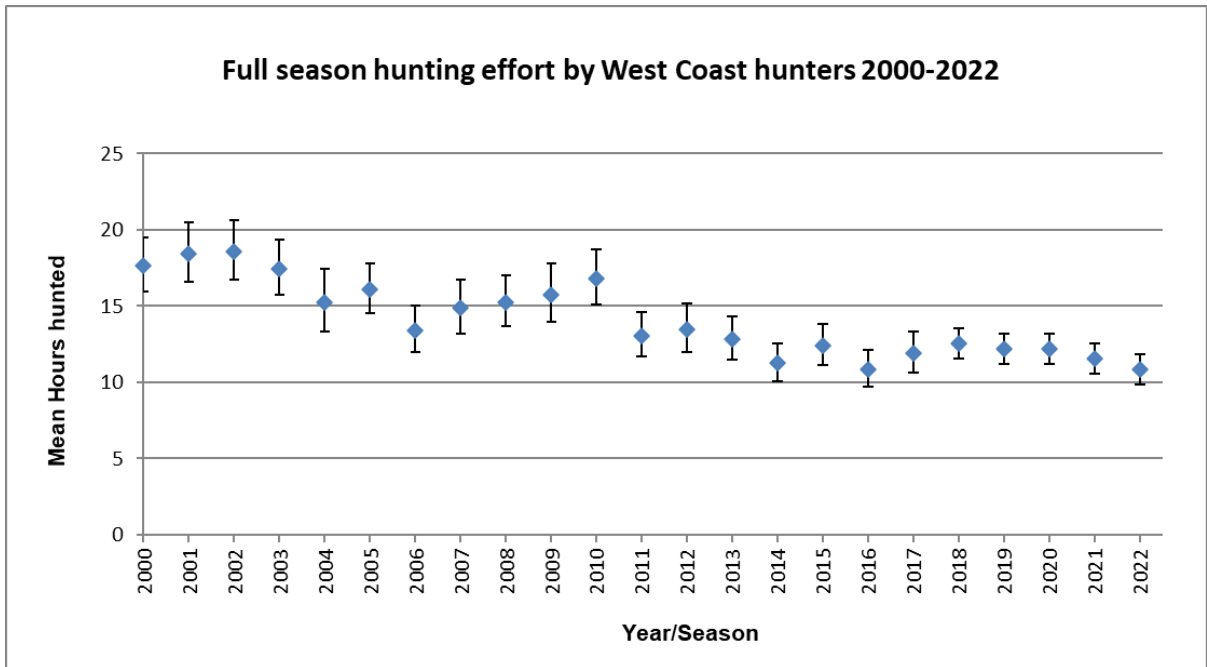
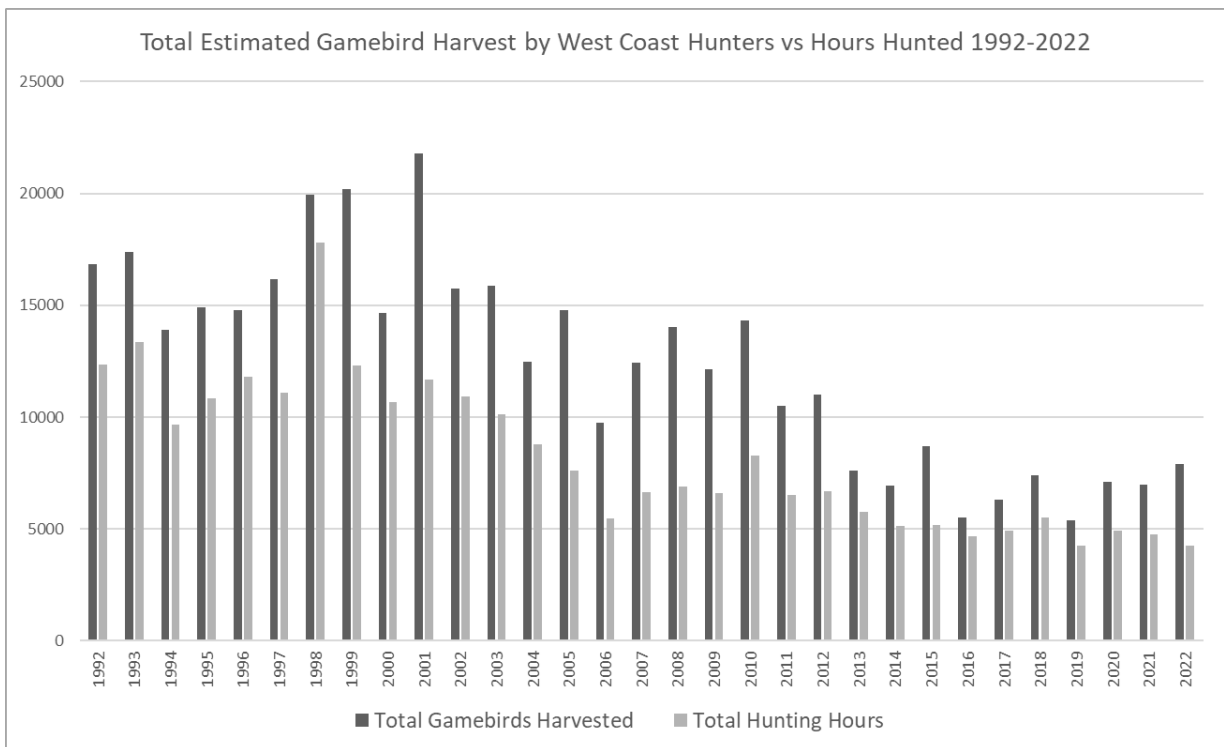


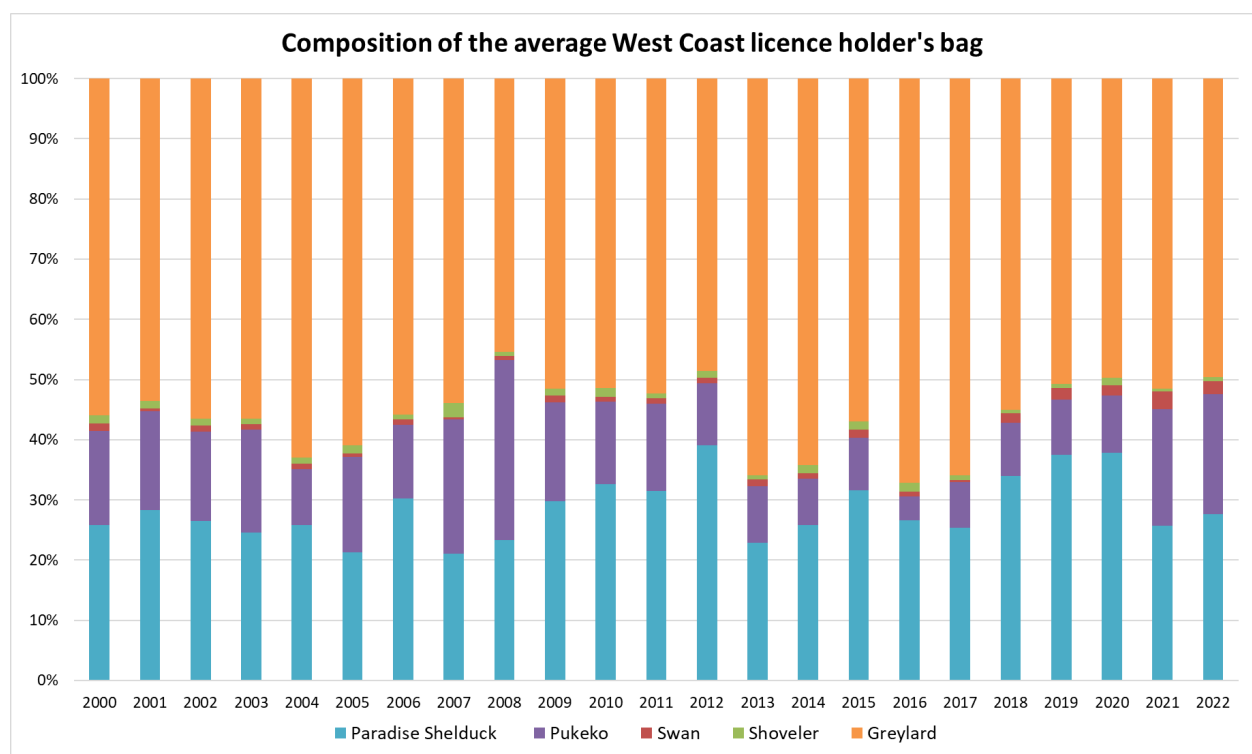
Figure 5. Average time spent hunting during the regular game bird season  $\pm$  standard deviation by West Coast hunters 2000-2022.



**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 1.86 birds/hour and OOR hunters 1.62 birds/hour. The success of WC hunters over the 2022 hunting season was high, being the fourth highest success rate in the 31-year data set. (Figure 4).

WC hunters mean bag for the 2022 season was 20 birds: 9.7 Greylards, 5.6 Paradise Shelduck, 4.0 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 197 birds were estimated as not retrieved.



**Figure 7: Estimated game bird bag composition of West Coast licence holders from 1992-2022.**

### Harvest by Game Bird Species

Of the West Coast licence holders surveyed, ‘Greylard’ or combined Grey and Mallard ducks made up 49% of the annual harvest. Paradise Shelduck were the second most harvested bird at 28%, followed by Pukeko 20%, Swan 2% and Shoveler 1% (Figure 8).



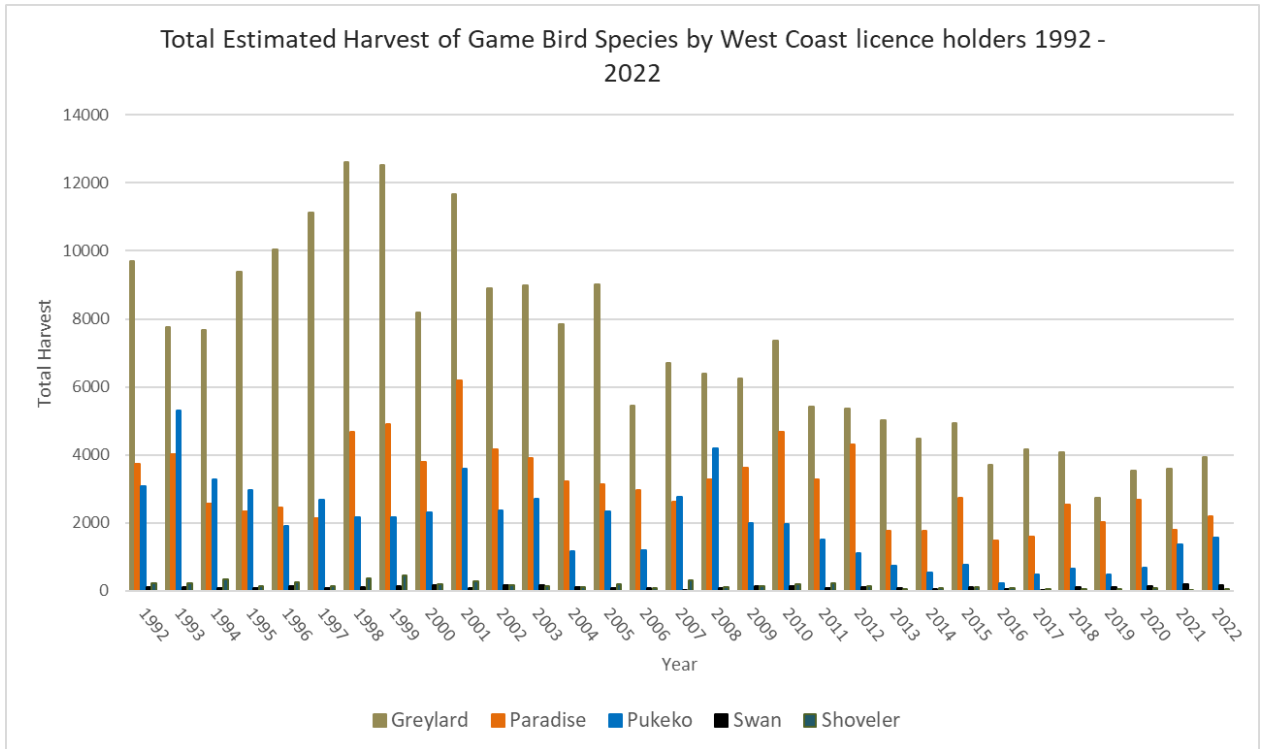


Figure 8: Estimated game bird harvest within the West Coast Region by West Coast licence holders from 1992-2022.

### Greylard

In the 2022 game bird season, West Coast licence holders harvested 3,929 Greylards in total. Inclusion of OOR hunter harvest brought the total estimated Greylard harvest for 2022 to 5,628 (Figure 9). There is eight years of data available to correlate annual trend counts with total harvest (Figure 10).

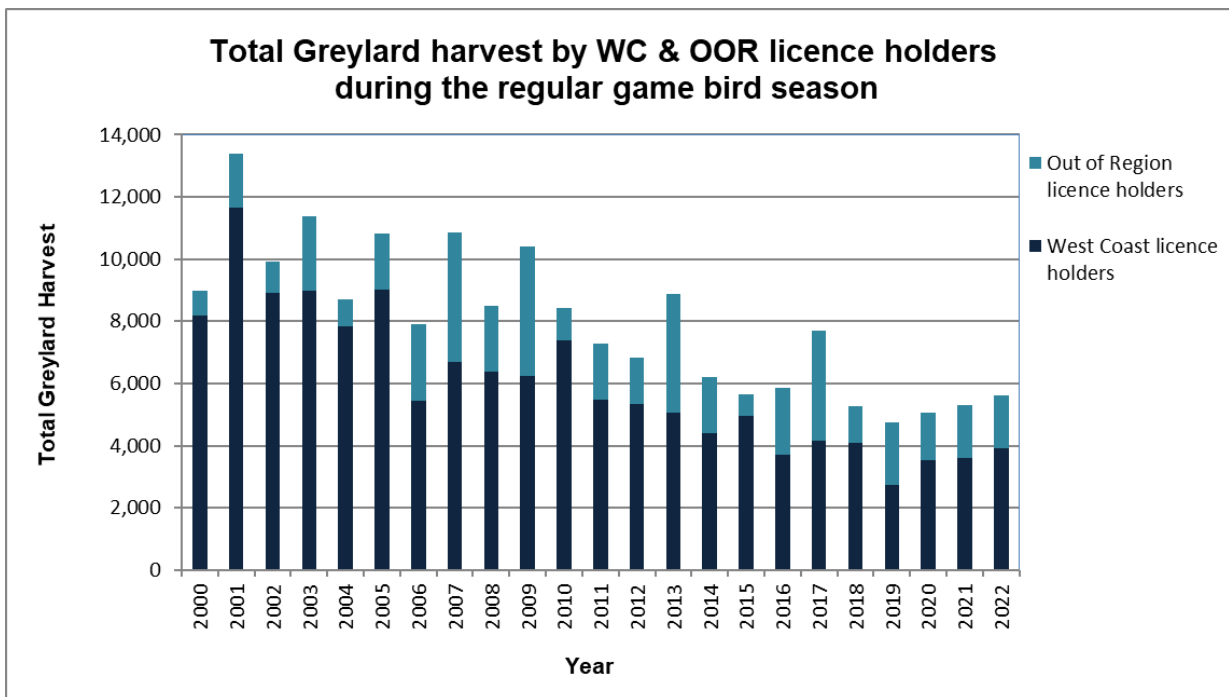


Figure 9: Estimated Total Greylard harvest for the West Coast Region, 2000-2022.

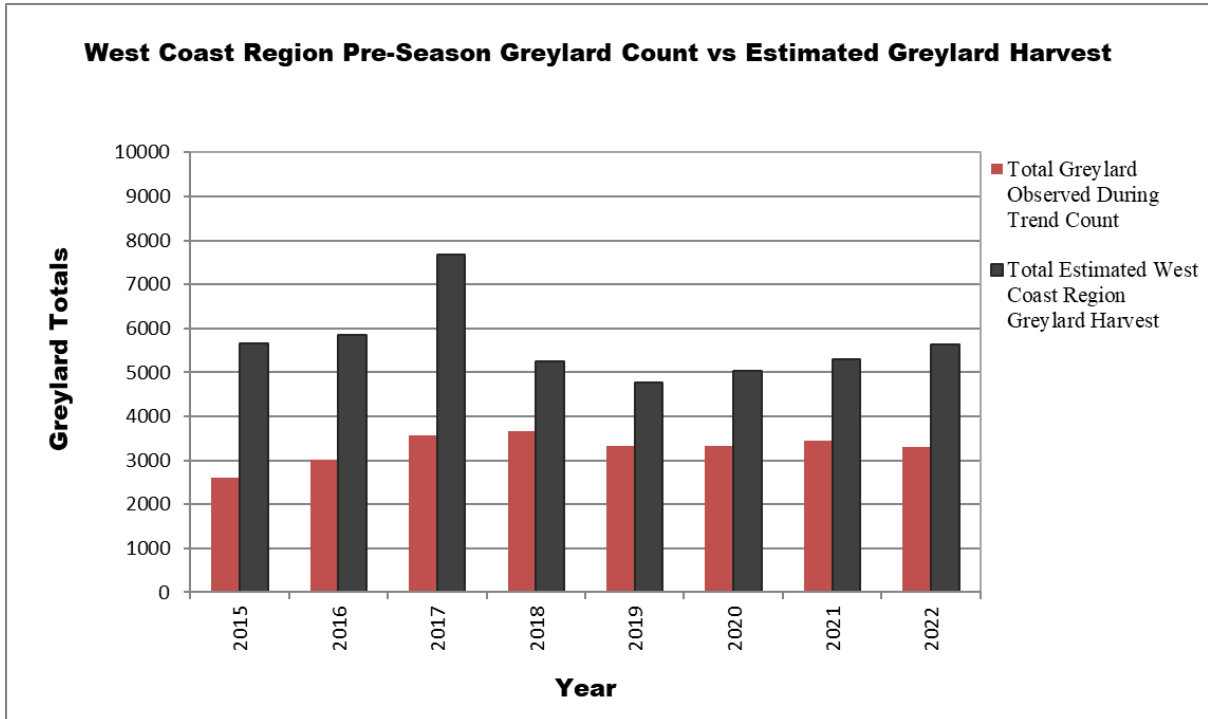


Figure 10: Total Greylard harvest vs trend count results for the West Coast Region.

### Paradise Shelduck

In the 2022 game bird season West Coast licence holders harvested an estimated total of 2,192 Paradise Shelduck. Inclusion of out of region hunters brought the estimated total to 3,147 Paradise Shelducks (Figure 11). There is limited correlation between total harvest and annual moult trend counts (Figure 12).

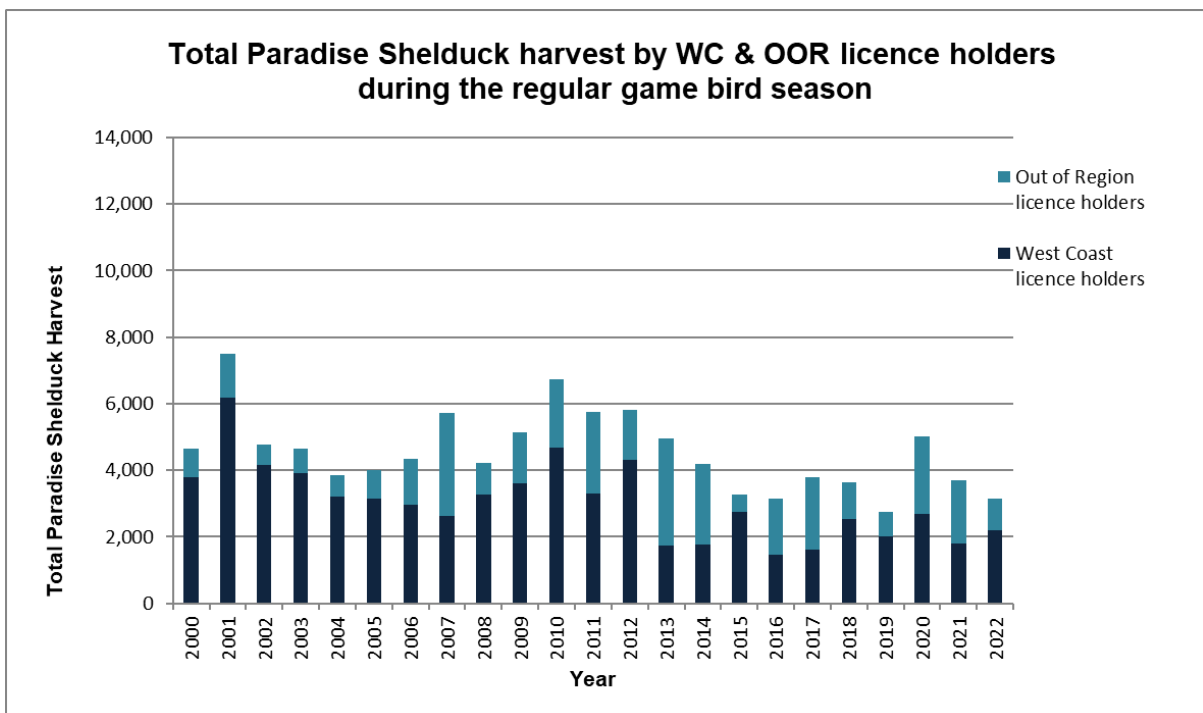


Figure 11: Estimated Total Paradise Shelduck harvest in the West Coast Region 2000-2022.

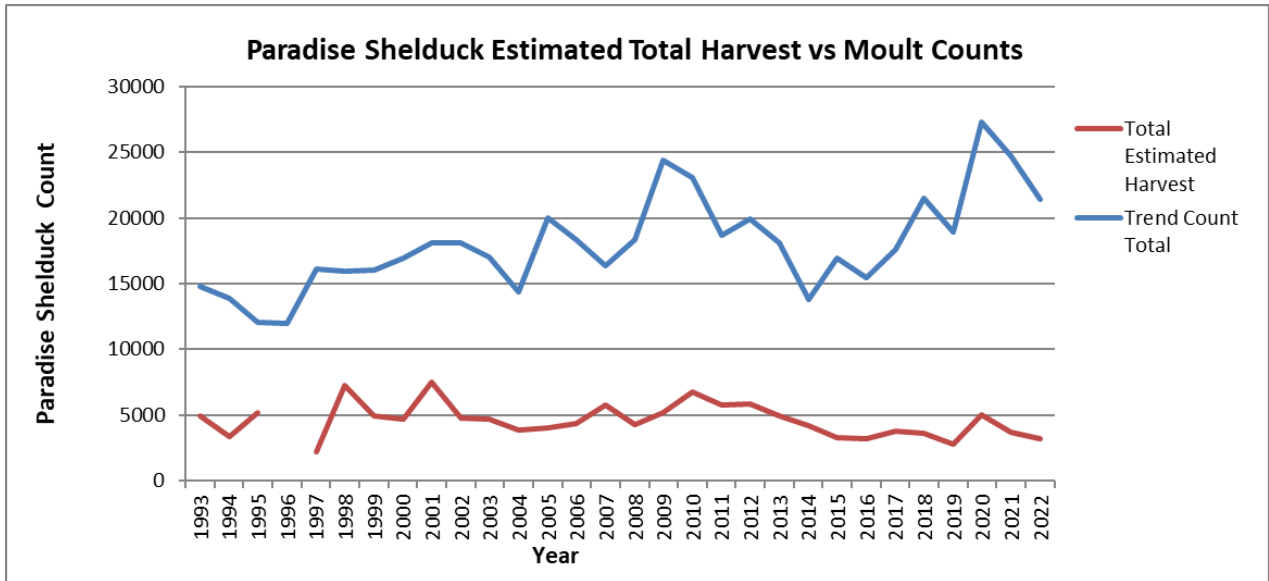


Figure 12: Total Paradise Shelduck harvest vs moult count results for the West Coast Region. (Note: no out of region data available for 1996).

### Pukeko

In the 2022 game bird season, WC licence holders harvested an estimated 1,574 pukeko. Inclusion of out of region hunters brought the estimated total to 4,912 pukeko. This is the third highest harvest since 2000, and significantly up on recent years (Figure 13). There is limited correlation between total harvest and annual trend counts (Figure 14).

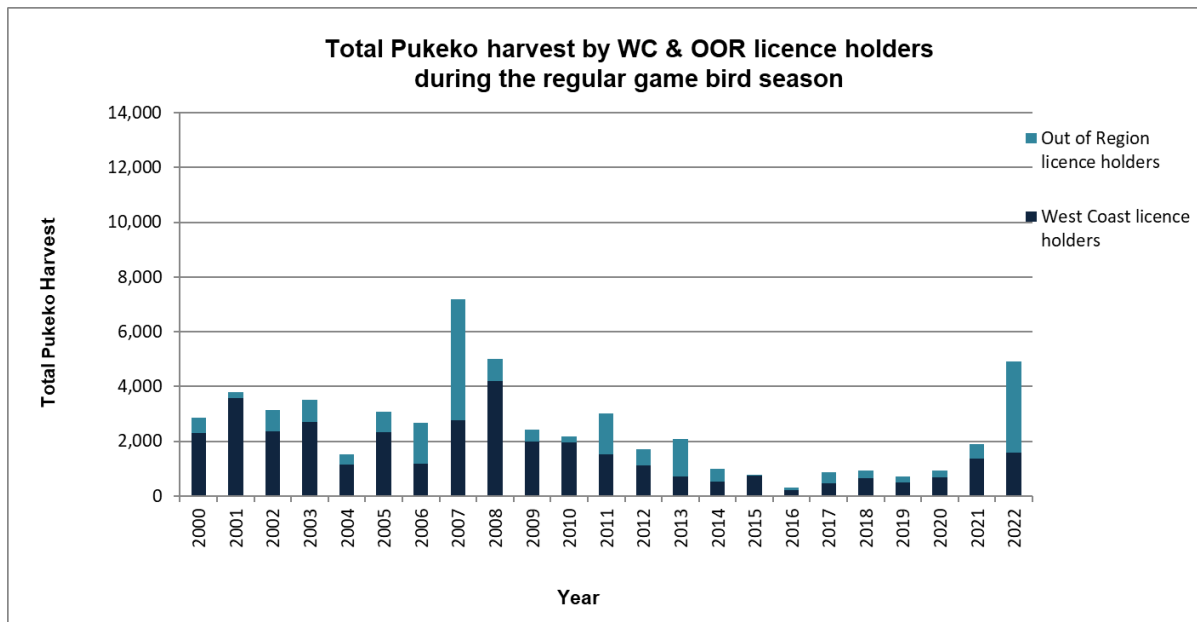


Figure 13: Estimated Total Pukeko harvest in the West Coast Region 2000-2022.

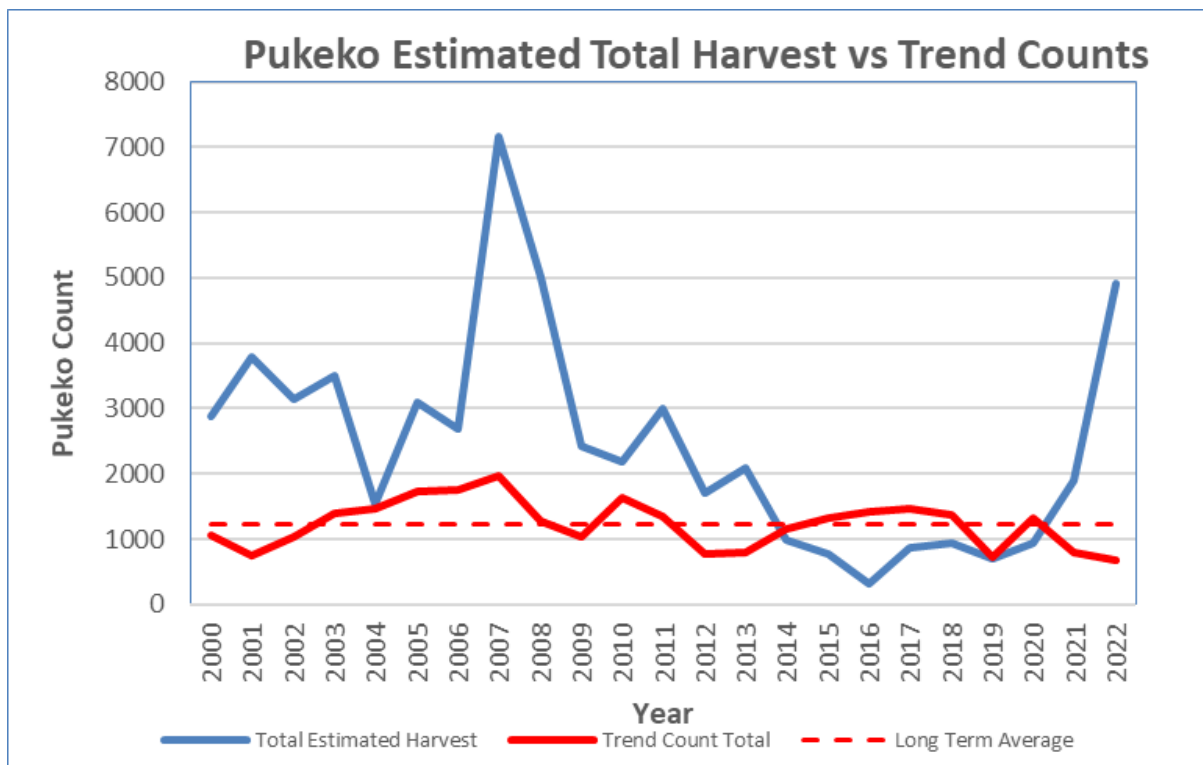


Figure 14: Total Pukeko harvest vs trend count results for the West Coast Region.

### Shoveler Duck

In 2022 West Coast licence holders harvested an estimated 53 Shoveler. This equates to less than one bird for each licence holder or 0.13 for the whole season. This seasons 0.13 shoveler per licence holder is up on the last season’s 0.07 shoveler per licence holder but is also below the 23-year average of 0.25 shoveler per licence holder. No shoveler were recorded as being harvested by out of region hunters.

### Black Swan

In 2022 West Coast licence holders harvested an estimated 175 Swan. This equates to 0.45 swans per licence holder, being the second highest recorded harvest per WC licence holder, coming second to last year. This is a continued trend, with the last five years being consistently high harvest levels of swan per licence holder relative to the previous 18 years. No swan were recorded as being harvested by out of region hunters.

### Discussion

The 2022 game bird season was a successful one for West Coast hunters despite having a tough opening. Success was down over opening weekend, but the odds turned for those that continued to hunt into the season. This was reflected in the harvest of greylards, paradise shelduck, and pukeko, all being up on last season despite less effort spent.

West Coast hunters made good use of the full game bird resource, with diversified bags being common. 50% of the West Coast licence holders season harvest was made up of species other than greylards, with high numbers of both paradise shelduck and pukeko taken. Swan harvest

although still low relative to our more popular game birds, is at elevated levels compared to prior to 2018.

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. Pukeko was recorded as the most hunted bird of visiting hunters, with 56% of their harvest estimated to be pukeko. Meanwhile their contribution to the regional harvest of greylards and especially paradise shelduck, were both down.

With success rates high this year, 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 was not collected, but anecdotal reports suggests that plenty of hunters made use of the season. Despite the additional hunting pressure applied in the summer, the West Coast hunter's success rate, and harvest levels of greylard, paradise shelduck and pukeko, indicate the regular season's hunting was not negatively impacted. Therefore, if populations remain 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.