



West Coast Game Harvest Survey 2020

*Results from annual survey of game bird hunter harvest. May-July 2020.
West Coast Fish & Game Region.*



Hunters targeting paradise shelduck opening day in Grey Valley, May 2020.

Baylee Kersten, Fish & Game Field Officer, August 2020

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 406 adult and junior full season West Coast licence holders harvested an estimated 7116 game birds from within the West Coast Region for 2020. Inclusion of out of region hunters visiting the West Coast Region increases this estimated total game bird harvest to 11274 birds.

The average West Coast Region game bird licence holder harvested 18 game birds in the 2020 season, compared with 15 game birds during the 2019 season and 18 for the 2018 season (rounded to whole bird figures). This equates to approximately; 8.7 Greylards, 6.6 Paradise Shelduck, 1.6 Pukeko and less than one bird each of Swan and Shoveler. Opening weekend accounted for 47% of the season's harvest by West Coast hunters. Hunter effort and harvest by local hunters increased from the previous season.

Staff Recommendations are: That the council receives this report; That organised events and targeting young hunters aged 16-30 for recruitment continues; That the following three regulation recommendations be considered during our next three yearly gamebird regulation review in December 2022: 1. That the bag limit for pukeko in the Northern West Coast be increased to 20 to align with the bag limit in South Westland; 2. That a pukeko summer season is changed to begin the first of January and end the third weekend in March as well as increase the summer season bag limit to 10; 3. That the summer paradise shelduck season be extended a week, being from the first weekend till the third weekend in March.

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

Six telephone surveys were undertaken over the length of the regular gamebird season. Please note the season was delayed and shortened three weeks due to Covid 19 lockdown restrictions and therefore survey frequency was altered slightly from previous years. The alterations being one less survey and a one-week survey period at the end of the season. The first survey was undertaken after opening weekend and then four were undertaken at fortnightly intervals until a one-week interval survey at the end of the season. 120 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 - 2020

A total of 457 game bird licences were sold on the West Coast during the 2020 season which is below average but up on last season's lowest figure on record (Figure 1). This consisted of

366 whole season adult (GWA), 40 whole season junior (GWJ), 23 whole season child (GWC), 25 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 2020 period (Figure 2). The mean age of WC whole season licence holders has steadily increased until 2019 but this season saw a drop of two and half years (Figure 3). The age demographic of licence holders shows a distribution skewed towards hunters 50+ years old but 2020 season has significantly shown growth in number of younger hunters (Figure 4).

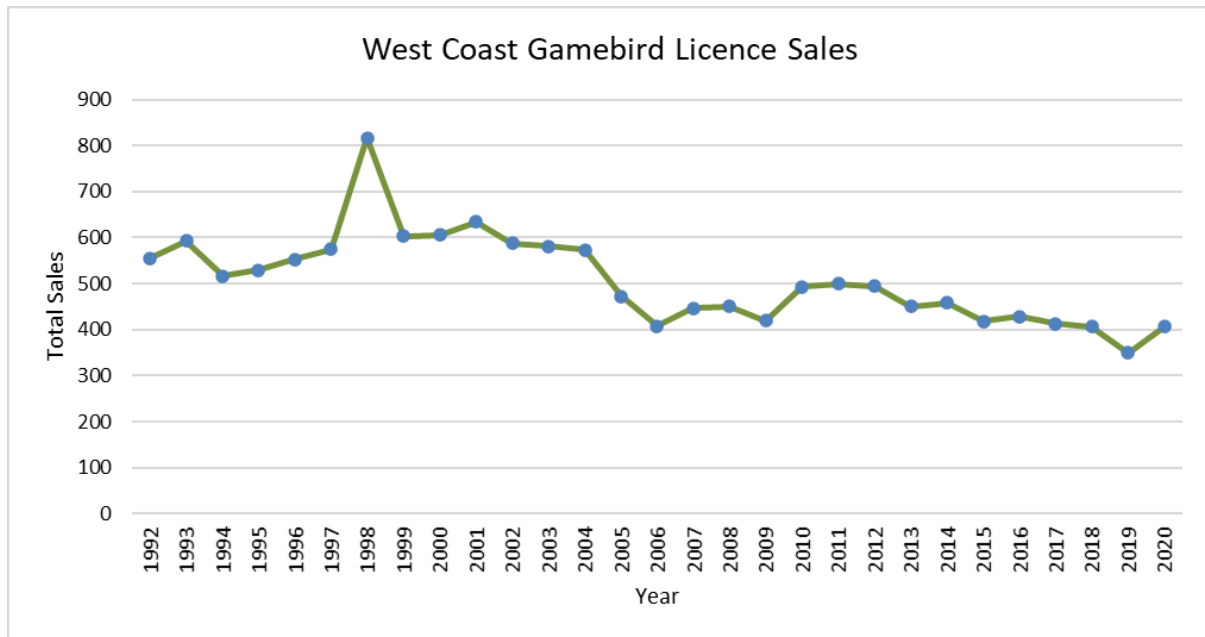


Figure 1. Annual West Coast full season adult and junior game bird licence sales, 1992-2020.

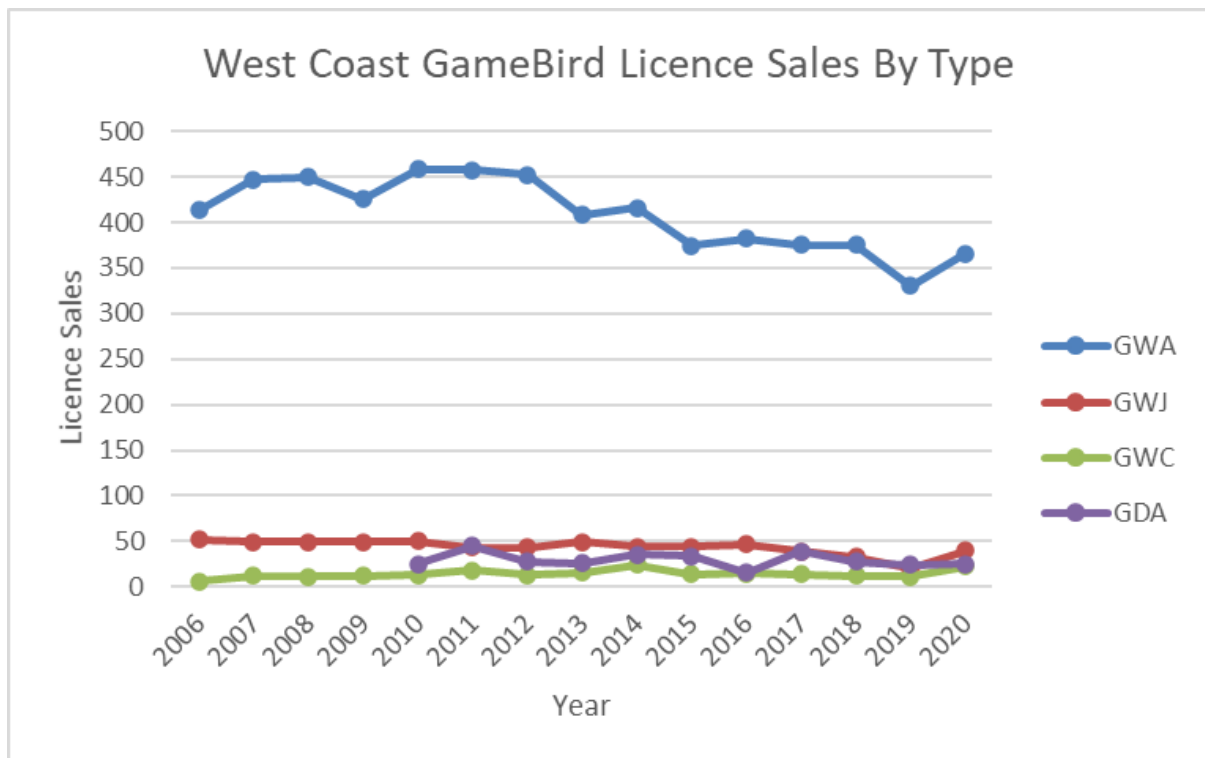


Figure 2. Annual West Coast game bird licence sales by type 2006-2020. Note day licences were only introduced in 2010. GWA=adult full season, GWJ=junior full season, GWC=child full season and GDA=adult day licence.

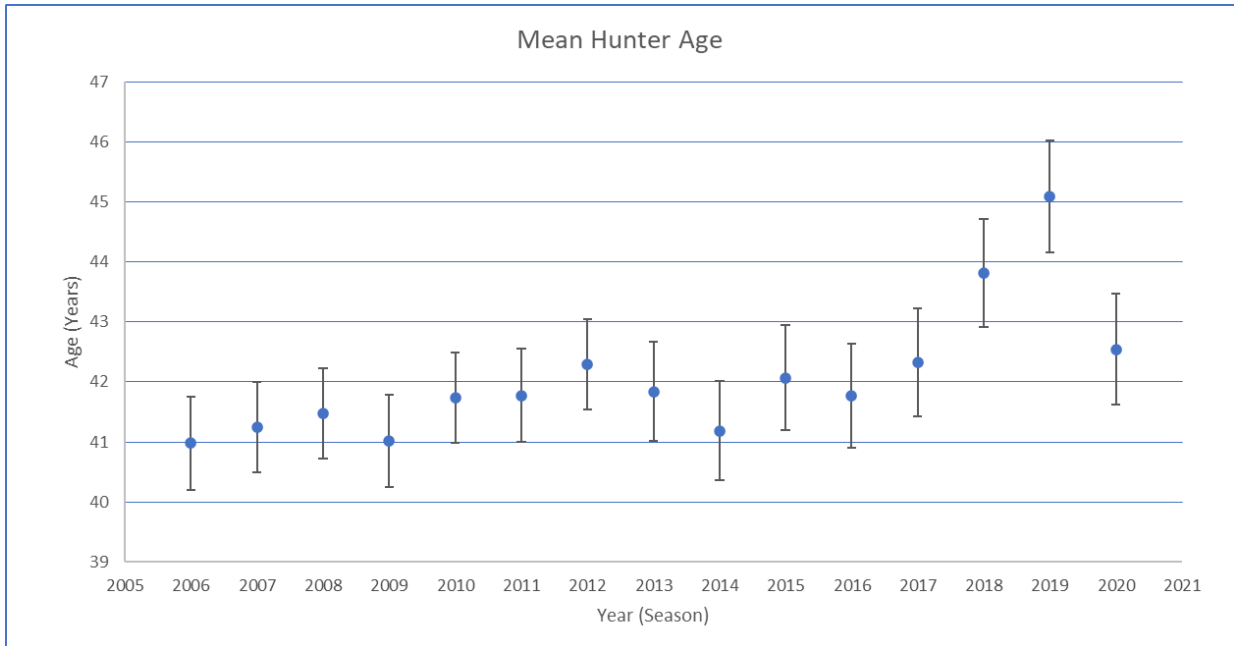


Figure 3. Average age (\pm SE) of West Coast game bird full season licence holders 2006-2020.

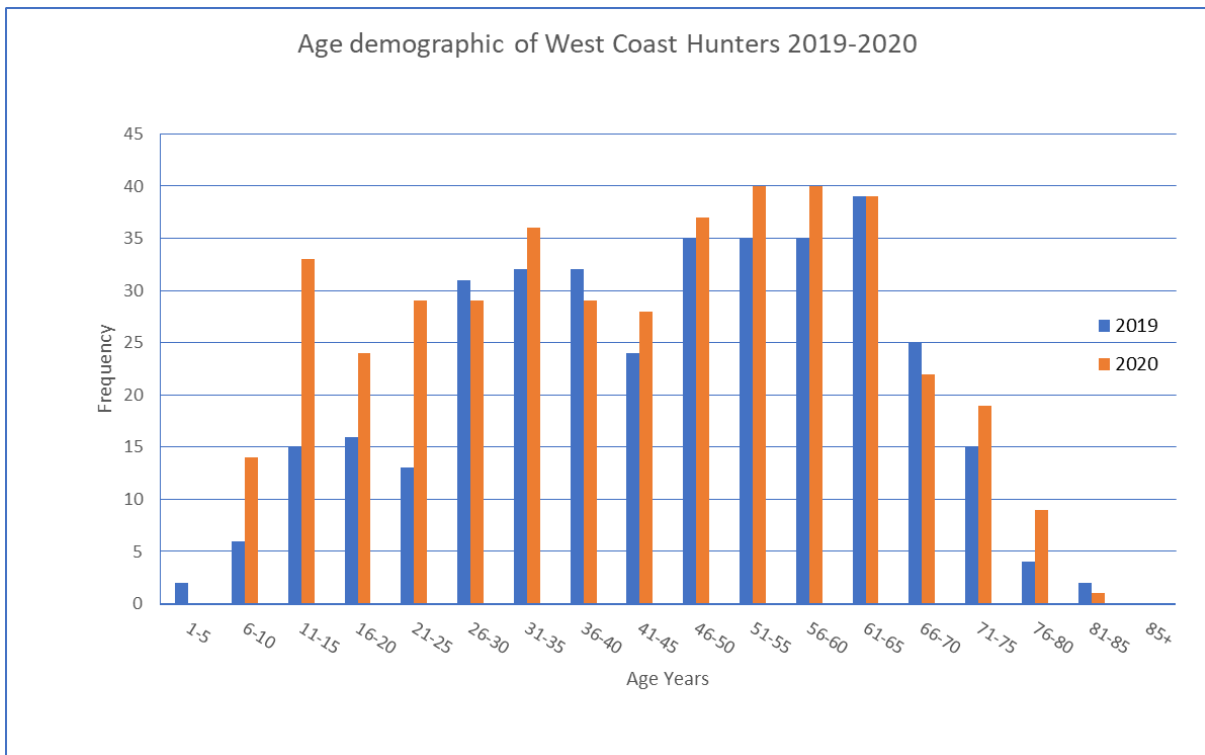


Figure 4. Age demographic of West Coast game bird full season licence holders for 2019 and 2020 season.

Opening Weekend 2020 Hunting Effort, Success and Harvest

During opening weekend, an estimated 479 active licence holders spent 3521 hours hunting and harvested 5833 game birds. Of these 328 (68% of total) were WC hunters who spent 2,359 hours hunting (67% of total) and harvested 3371 gamebirds (58% of total). While there were less OOR hunters they still spent 1,162 hours hunting and harvested 42% of the total game birds (Table 1). OOR hunter spent on average an extra half an hour hunting over opening weekend (7.65 hours OOR vs 7.20 hours WC). Average hunting effort by WC hunters over opening weekend was similar to historic levels (Figure 5).

Table 1: Summary of ‘Out of Region Hunters’ influence on estimated total effort and species harvest in the West Coast Region during opening weekend 2020.

Hunter/Effort/Species	West Coast Hunter Harvest	Out of Region Hunter Harvest	Total Estimate	Out of Region Hunters Contribution to harvest
Active hunters	328	152	479	32%
Hours	2359	1162	3521	33%
Greyland	1719	1196	2915	41%
Paradise Shelduck	1358	986	2344	42%
Pukeko	239	262	501	52%
Shoveler	38	0	38	0%
Swan	17	17	34	50%
Total Birds	3371	2462	5833	42%

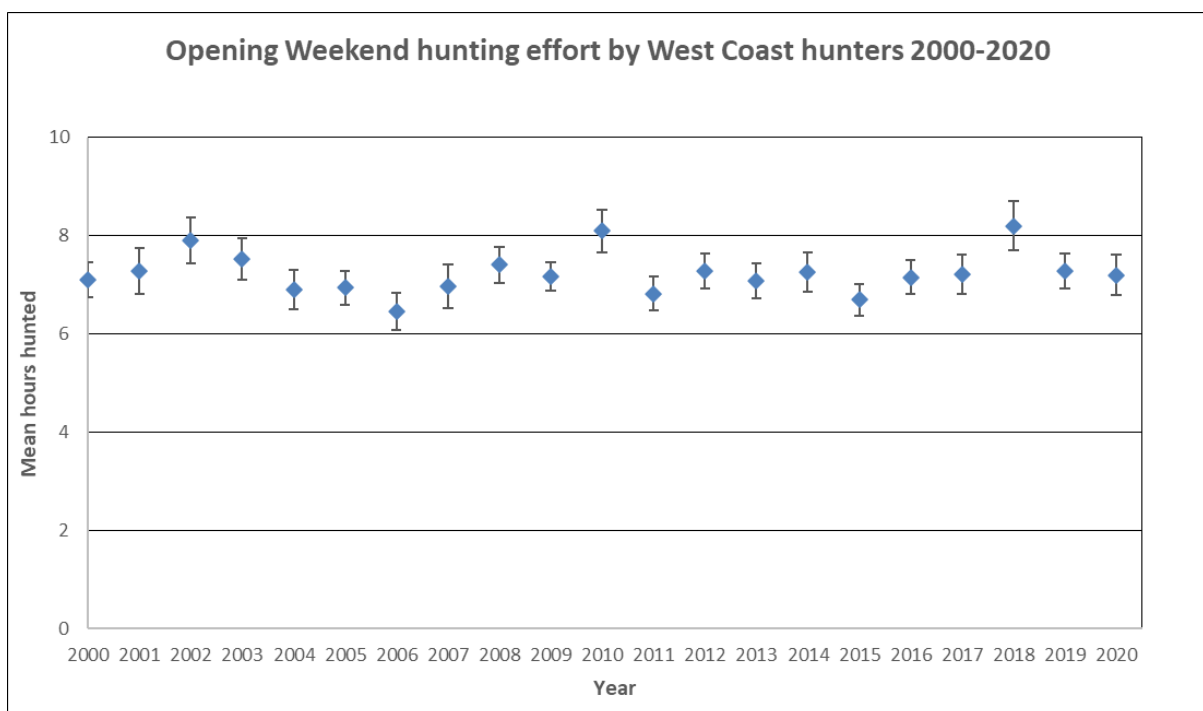


Figure 5. Average time spent hunting during opening weekend \pm standard deviation by West Coast hunters 2000-2020.

Success in terms of game birds harvested per hour favoured OOR hunters with WC hunters harvesting 1.43 birds/hour and OOR hunters 2.12 birds/hour however the success of WC hunters on opening weekend was above average (Figure 6). West Coast hunters spent just

under half (48%) of their total hunting effort over the hunting season on opening weekend whereas OOR hunters spent over half (57%) of their total hunting effort over the hunting season on opening weekend.

WC hunters mean bag for opening weekend was 10 birds: 5.3 greylards, 4.1 paradise shelduck, and less than one of pukeko, swan and shoveler. OOR hunters mean bag for opening weekend was 16 birds: 7.9 greylards, 6.5 paradise shelduck, 1.7 pukeko less than one of swan. No shoveler were recorded shot by OOR hunters surveyed on opening weekend. A further 277 birds were estimated as not retrieved.

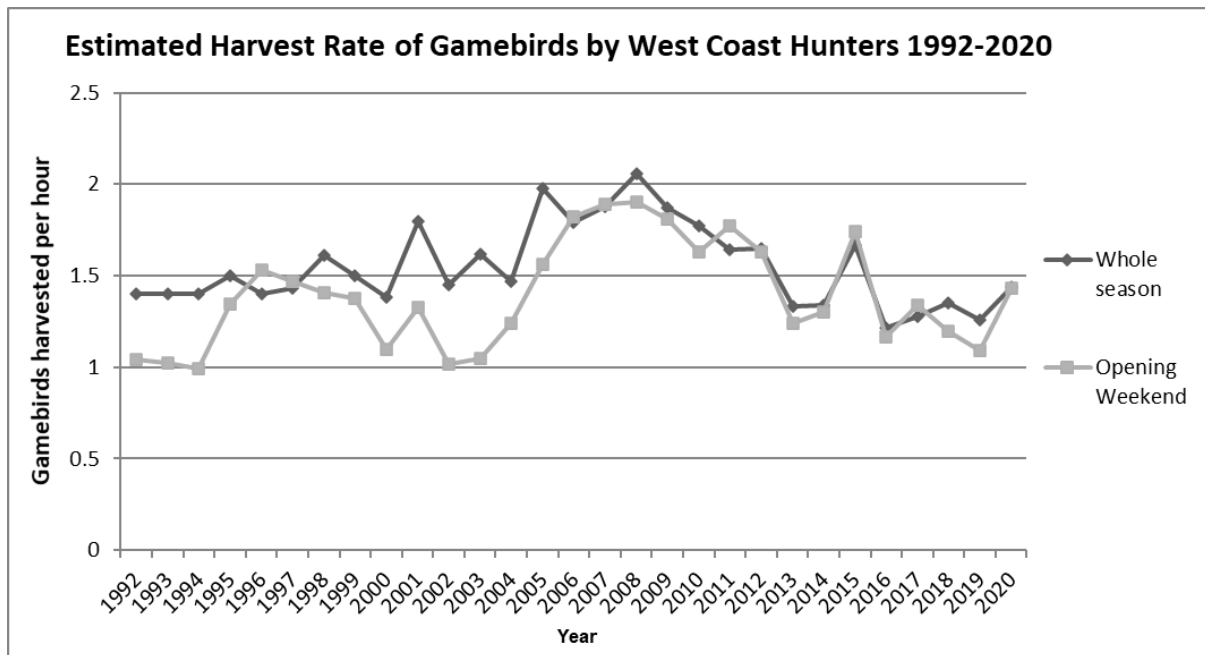


Figure 6: Game bird harvest rate by West Coast licence holders, opening weekend compared with whole season harvest rate 1992-2020.

2020 Full Season Hunting Effort, Success and Harvest by species

Over the full 2020 game bird season all hunters spent 6,977 hours hunting and harvested 11,274 game birds. WC hunters spent an estimated 4,945 hours hunting (71% of total) and harvested 7116 gamebirds (63% of total). OOR hunters spent 2032 hours hunting and harvested 4158 gamebirds (Table 2). WC hunters spent an average 12.18 hours hunting over the season, this was very similar to time spent hunting in the last ten seasons although lower than historic levels (Figure 7). 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 8).

Table 2: Summary of 'Out of Region Hunters' influence on estimated total effort and species harvest in the West Coast Region during the 2020 gamebird season.

Effort/Species	West Coast Hunter Harvest	Out of Region Hunter Harvest	Total Estimates	Out of Region Hunters Contribution to harvest
Hours	4945	2032	6977	29%
Greylard	3539	1506	5045	30%

Paradise Shelduck	2690	2314	5004	46%
Pukeko	677	262	939	28%
Shoveler	88	18	105	17%
Swan	123	58	181	32%
Total Birds	7116	4158	11274	37%

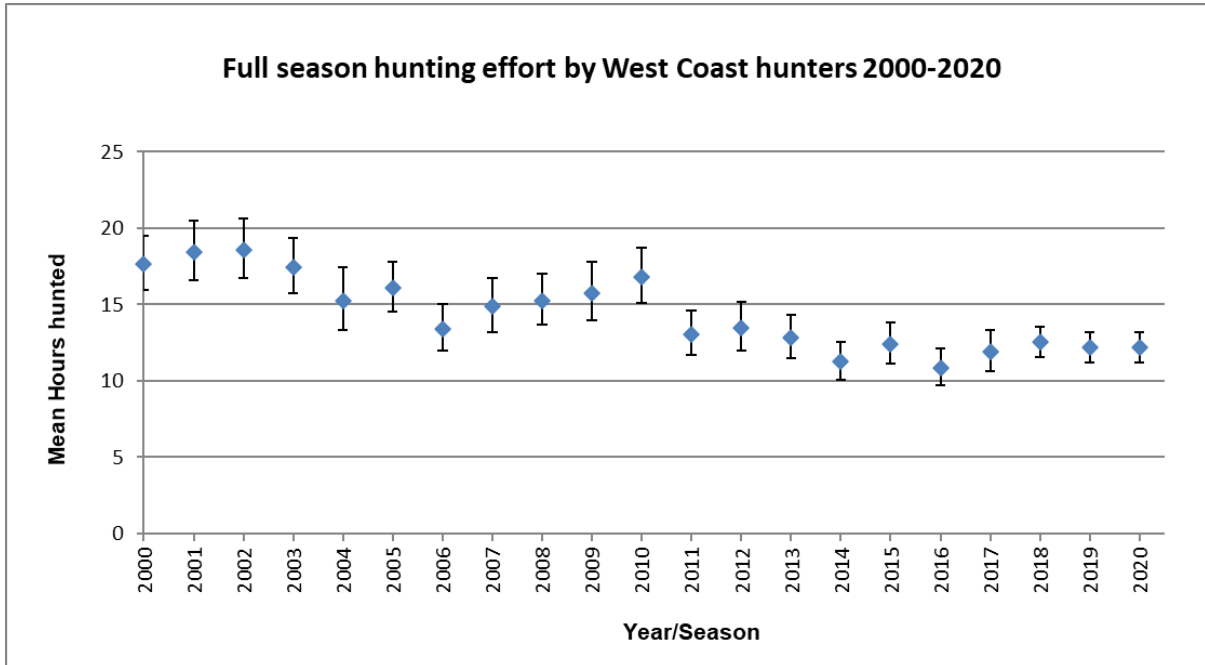


Figure 7. Average time spent hunting during the regular game bird season \pm standard deviation by West Coast hunters 2000-2020.

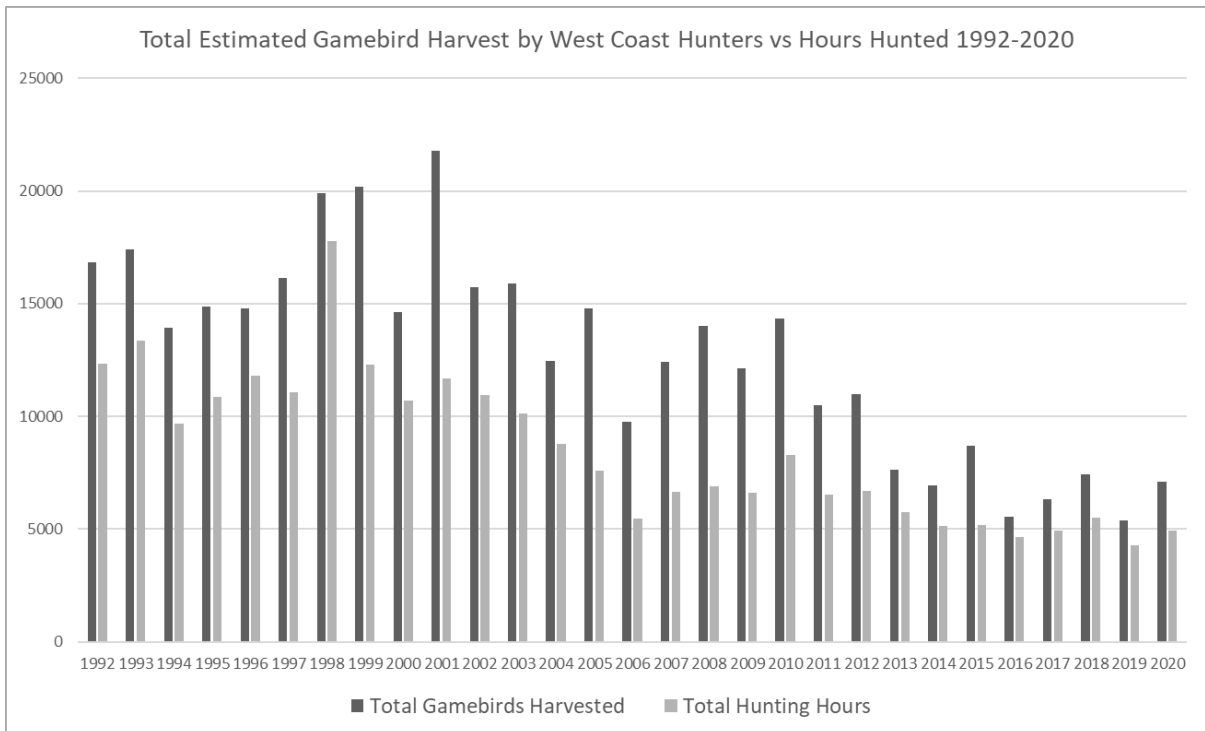


Figure 8: Estimates of game birds harvested by West Coast licence holder's vs hours spent hunting.

Success in terms of game birds harvested per hour favoured OOR hunters with WC hunters harvesting 1.44 birds/hour and OOR hunters 2.05 birds/hour. The success of WC hunters over the 2020 hunting season was up on the four previous seasons and was only 0.1 birds/hour below the long-term average (Figure 6).

WC hunters mean bag for the 2020 season was 18 birds: 8.7 Greylards, 6.6 Paradise Shelduck, 1.6 Pukeko and less than one bird each of Swan and Shoveler. This is a significant increase of the portion of the bag made of species other greylards in the last three seasons relative to previous years (Figure 9). A further 470 birds were estimated as not retrieved.

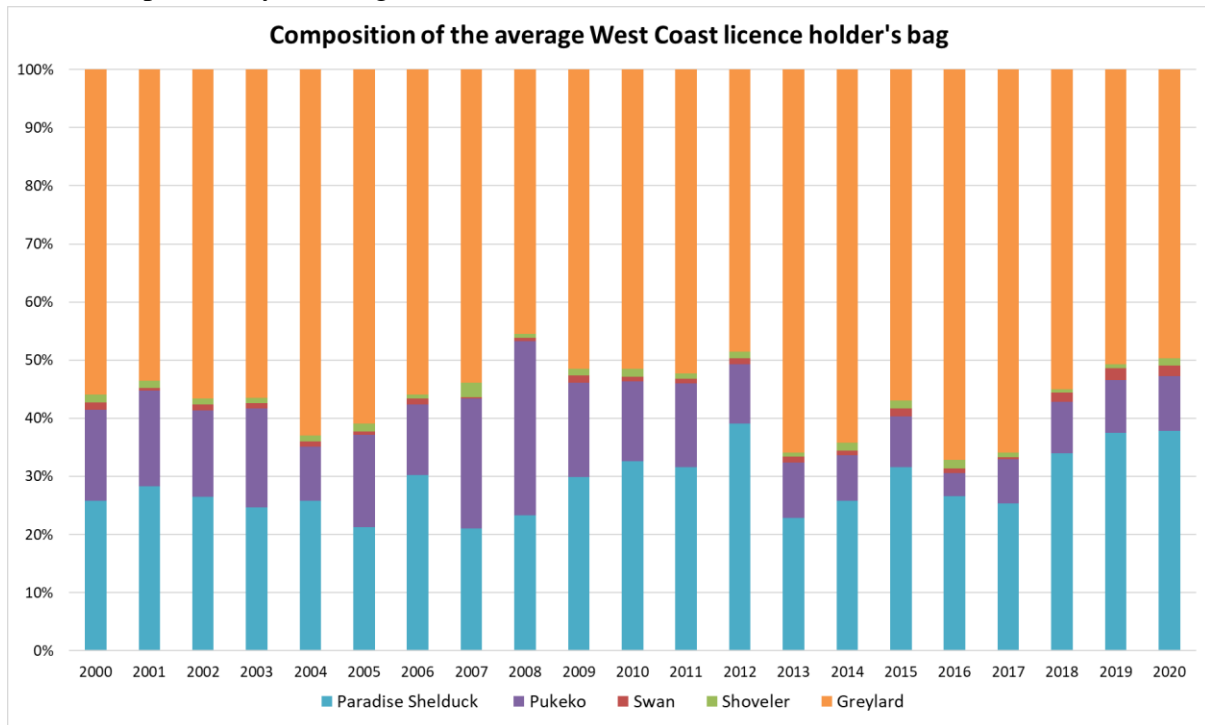


Figure 9: Estimated game bird bag composition of West Coast licence holders from 1992-2020.

Harvest by Game Bird Species

Of the West Coast licence holders surveyed, 'Greylard' or combined Grey and Mallard ducks made up 50 % of the annual harvest. Paradise Shelduck were the second most harvested bird at 38%, followed by Pukeko 9%, Swan 2% and Shoveler 1% (Figure 10).

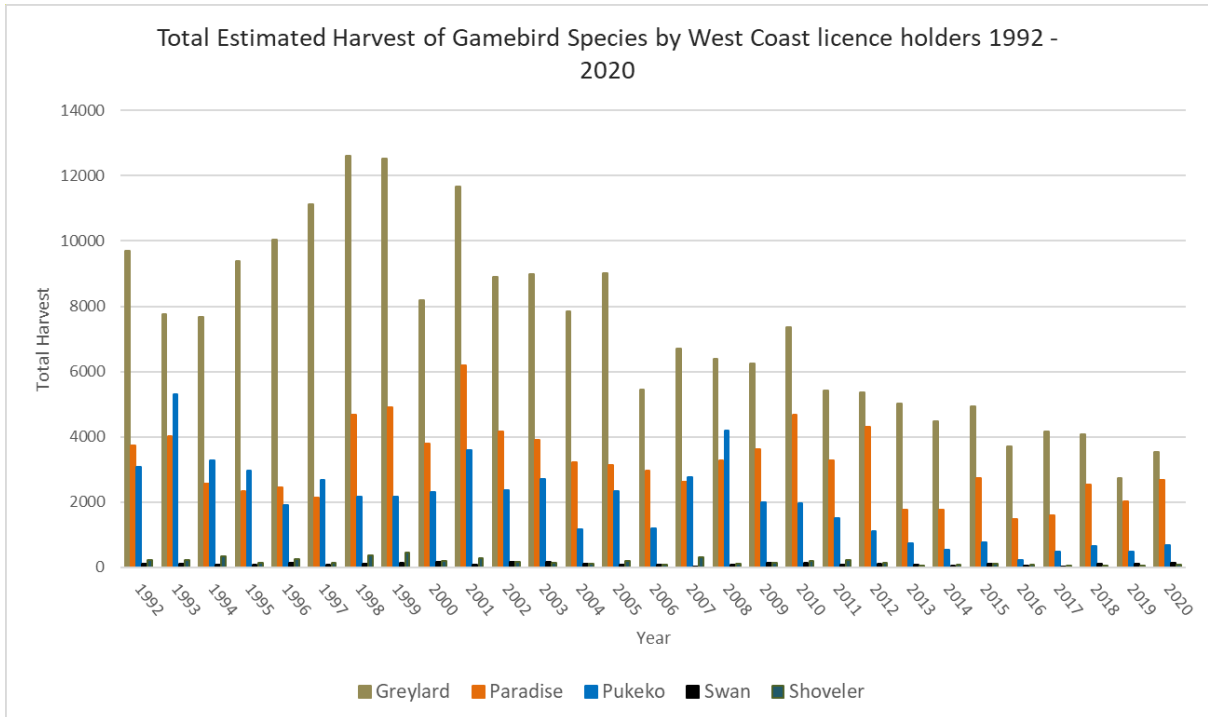


Figure 10: Estimated game bird harvest within the West Coast Region by West Coast licence holders from 1992-2020.

Greylard

In the 2020 game bird season, West Coast licence holders harvested 3539 Greylards in total. Inclusion of OOR hunter harvest brought the total estimated Greylard harvest for 2020 to 5045 (Figure 11). There is six years of data available to correlate annual trend counts with total harvest (Figure 12).

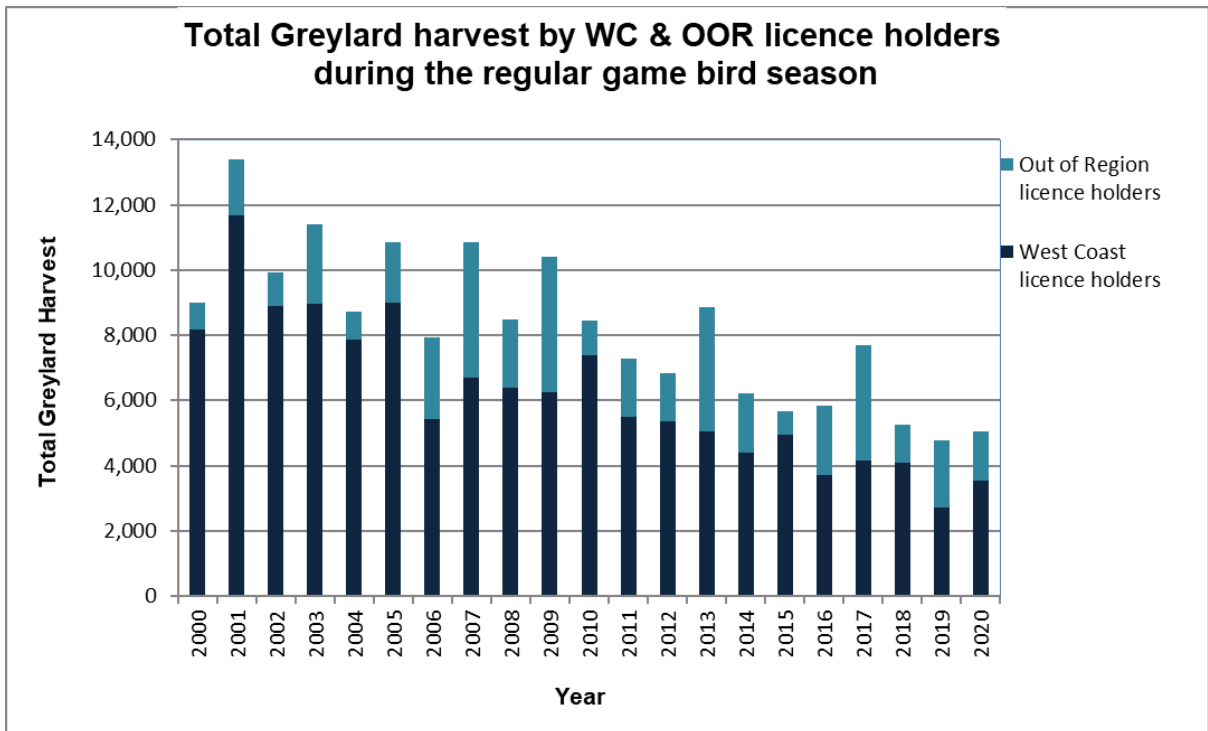


Figure 11: Estimated Total Greylard harvest for the West Coast Region, 2000-2020.

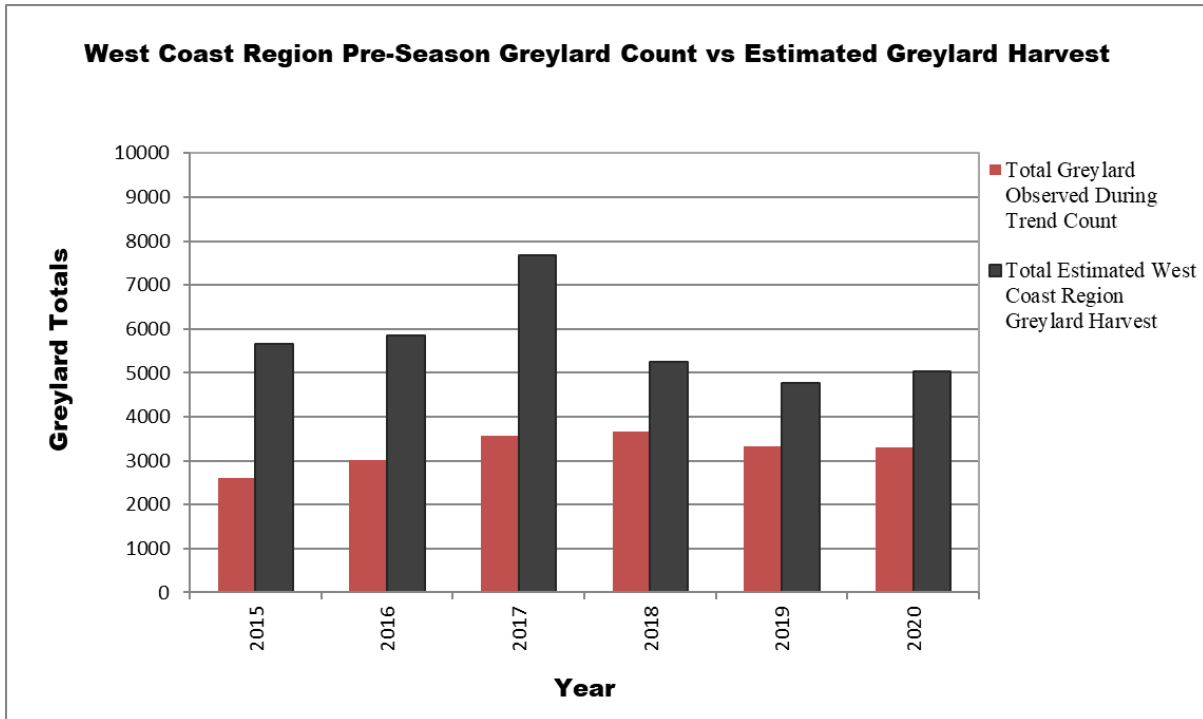


Figure 12: Total Greyland harvest vs trend count results for the West Coast Region.

Paradise Shelduck

In the 2020 game bird season West Coast licence holders harvested an estimated total of 2,690 Paradise Shelduck. Inclusion of out of region hunter brought the estimated total to 5004 Paradise Shelducks (Figure 13). There is limited correlation between total harvest and annual moult trend counts (Figure 14).

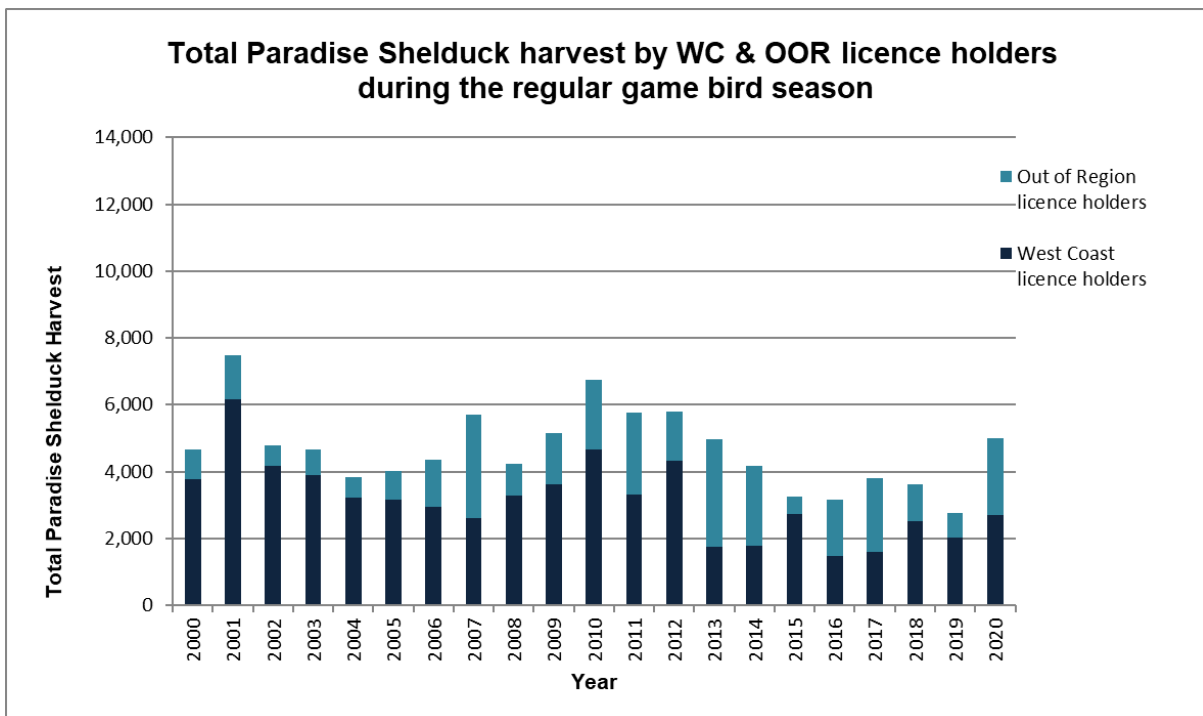


Figure 13: Estimated Total Paradise Shelduck harvest in the West Coast Region 2000-2020.

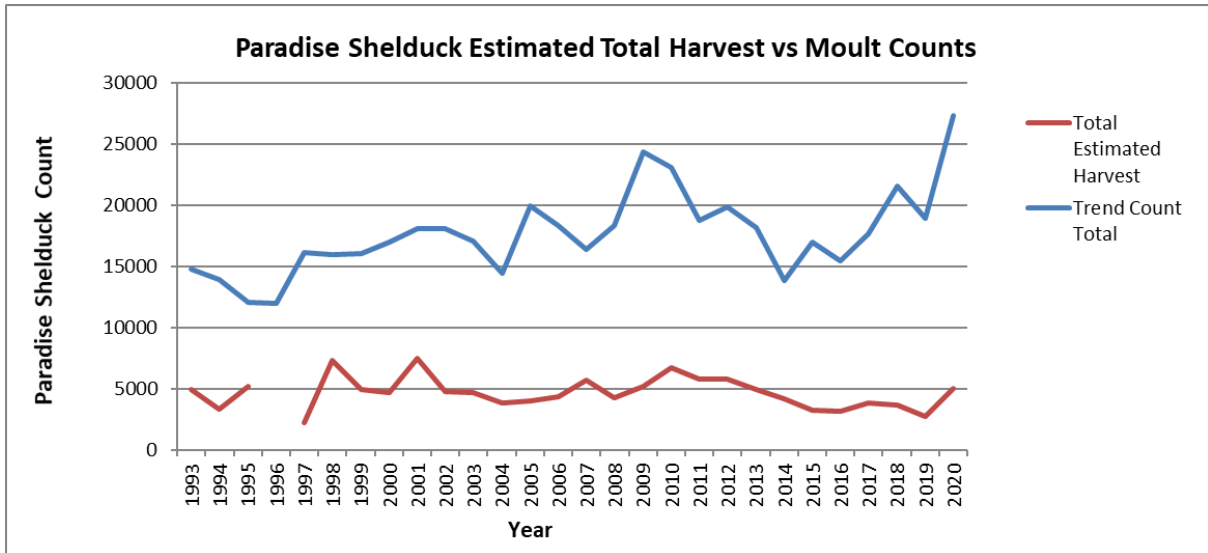


Figure 14: Total Paradise Shelduck harvest vs moult count results for the West Coast Region. (Note: no out of region data available for 1996).

Pukeko

In the 2020 game bird season, WC licence holders harvested an estimated 677 Pukeko. Inclusion of out of region hunter brought the estimated total to 939 Pukeko (Figure 15). There is limited correlation between total harvest and annual trend counts (Figure 16).

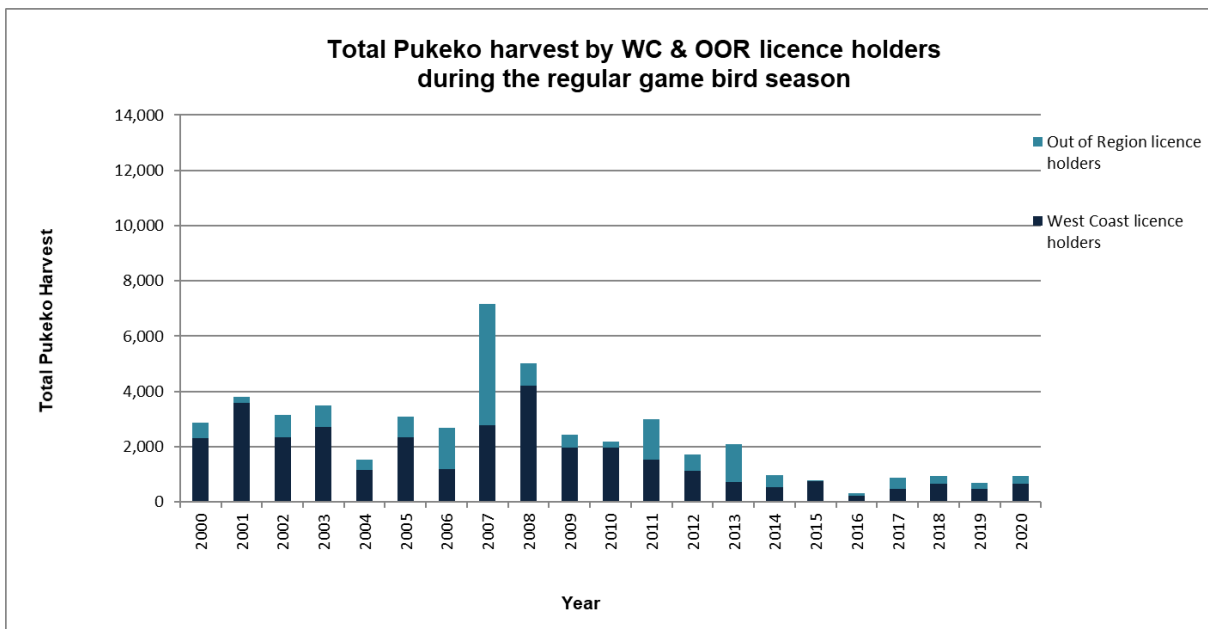


Figure 15: Estimated Total Pukeko harvest in the West Coast Region 2000-2020.

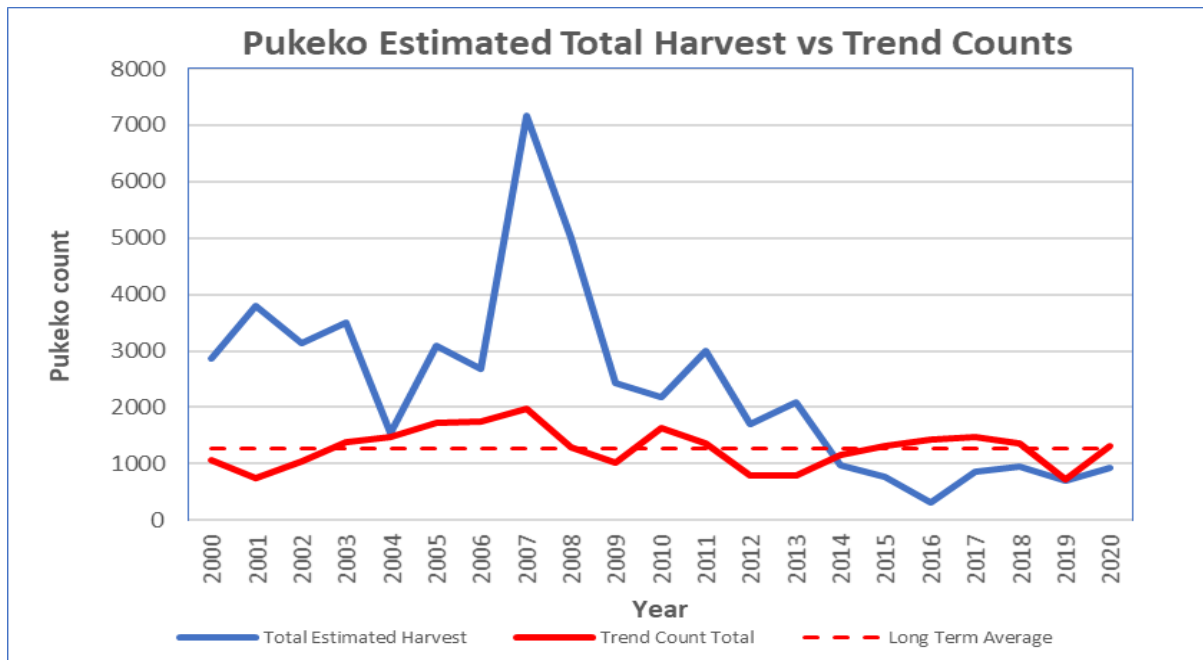


Figure 16: Total Pukeko harvest vs trend count results for the West Coast Region.

Shoveler Duck

In 2020 West Coast licence holders harvested an estimated 88 Shoveler. This equates to less than one bird for each licence holder or 0.22 for the whole season. This seasons 0.22 shoveler per licence holder is twice as high as the 2019 season but below the 20-year average of 0.26 shoveler per licence holder. Inclusion of out of region hunter brought the estimated total to 105.

Black Swan

In 2020 West Coast licence holders harvested an estimated 123 Swan. This equates to less than one bird for each licence holder or 0.33 for the whole season. The last two seasons have been the second and third highest swan harvest per WC licence holder in the last 20 years. Inclusion of out of region hunter brought the estimated total to 181.

Discussion

In light of disruption to the regular gamebird season from Covid 19 lockdown restrictions, the outcome of the 2020 gamebird season was positive. With the West Coast Region being the only region not down on licence sales but instead up on the previous year. In addition to this despite the season being three weeks shorter, hunter's effort was on par with the last seven seasons. Lastly harvest was up on the previous season, with higher success rates despite an increase in younger hunters participating and likely having less experience.

Inclusion of harvest by out of region hunters was significant overall (37% of birds harvested on the West Coast) being up one percent on last season. Their hunting has had a considerable influence in the overall harvest of paradise shelducks for the West Coast Region with out of region hunters harvesting 46% of paradise shelducks. It appears out of region hunters targeted

paradise shelduck this season, with 56% of gamebirds they harvested being paradise shelduck in contrast to the previous season where it was only 24% and they instead targeted greylards predominantly. This is favourable, with West Coast paradise shelduck moult counts being record high, additional hunting pressure from visiting hunters to keep the population in check is positive for relationships with landowners.

Gamebird licence sales were up on last season and were similar to previous years. The growth from last season largely being an increase in hunters aged from 11 to 25 years old. As much as some hunters may have been returning licence holders from 2018, the significant drop in mean age indicates recruitment. This likely is the result of ongoing work by West Coast Fish & Game of actively targeting young hunters for recruitment, in particular aged between 16-30. Continued work should be done to increase participation via events and regular communication as well as increasing gamebird hunting opportunities on the West Coast to aid in uptake.

Organised events such as pukeko drives and responding to paradise shelducks complaints have been well received by licence holders and have as a direct result increased participation, aided new hunters and diversified hunters' harvest. Currently limiting events is competing with greylard hunting taking priority during the regular gamebird season. With current pukeko and paradise shelduck trend counts indicating their population are in healthy states consideration should be given to expand their season and allow for events outside of the greylard period.

Pukeko in particular is an underutilised resource on the West Coast and is a great entry gamebird for new hunters with limited equipment required. By increasing the hunting opportunities of pukeko outside of the regular season not only will it add value to the licence for existing licence holders, it will allow time for experienced hunters to introduce new hunters to the sport without it competing with their time for greylard hunting. Discussion with a few local licence holders regarding increasing summer hunting opportunities likely in the form of pukekos was well received, especially by those who wanted to prepare gun dogs for the upcoming season.

In addition to this it will likely improve relationships with landowners, with more regular hunting pressure on pukeko in problem areas. Complaints and permits over the last seven years have been steadily increasing peaking at 24 last work year. Complaints and permits not only require staff time, but it often results in gamebirds not being shot by gamebird licence holders. Responding to complaints with organised hunts for new hunters is addressing this problem but allowing additional hunting opportunities too may aid in crop predation issues.

Nelson Marlborough Fish & Game have two seasons outside the regular gamebird season for Pukeko in Tasman/Golden Bay Area. These are August to October season, followed by a January and February season. Discussions with field officer Jacob Lucas from Nelson Marlborough Fish & Game revealed that it has been well received by all, with no complaints, no noticeable decline in the population and improved relationships with landowners. Taking

this into consideration, there appears to be good justification to implement a large summer season for pukeko.

In addition to this the Northern West Coast pukeko bag limit needs to be reviewed in light of data collected in this year's trend count. Karamea's count of 656 pukeko was the highest pukeko count ever recorded. The additional sites Birchfield and Barrytown counts of 236 and 282 sit around the average counts for our highest counts South Westland sites. Therefore, it would be beneficial to aid in managing areas of high densities by increasing the bag limit to match South Westlands to allow pukeko drives to not be limited by low bag limits.

The Sports Fish and Game Management Plan for the West Coast Fish and Game Council second goal is to "maximise recreational angling and hunting opportunities." With the current populations of pukeko and paradise shelduck at levels where they can sustain additional harvest, in accordance with our management plan, we should aim to maximise hunting opportunities for licence holders.

Staff Recommendations

- That the council receives this report.
- That organised events and targeting young hunters aged 16-30 for recruitment continues.
- That the following three regulation recommendations be considered during our next three yearly gamebird regulation review in December 2022.
 1. That the bag limit for pukeko in the Northern West Coast be increased to 20 to align with the bag limit in South Westland.
 2. That a pukeko summer season is changed to begin the first of January and end the third weekend in March as well as increase the summer season bag limit to 10.
 3. That the summer paradise shelduck season be extended a week, being from the first weekend till the third weekend in March.