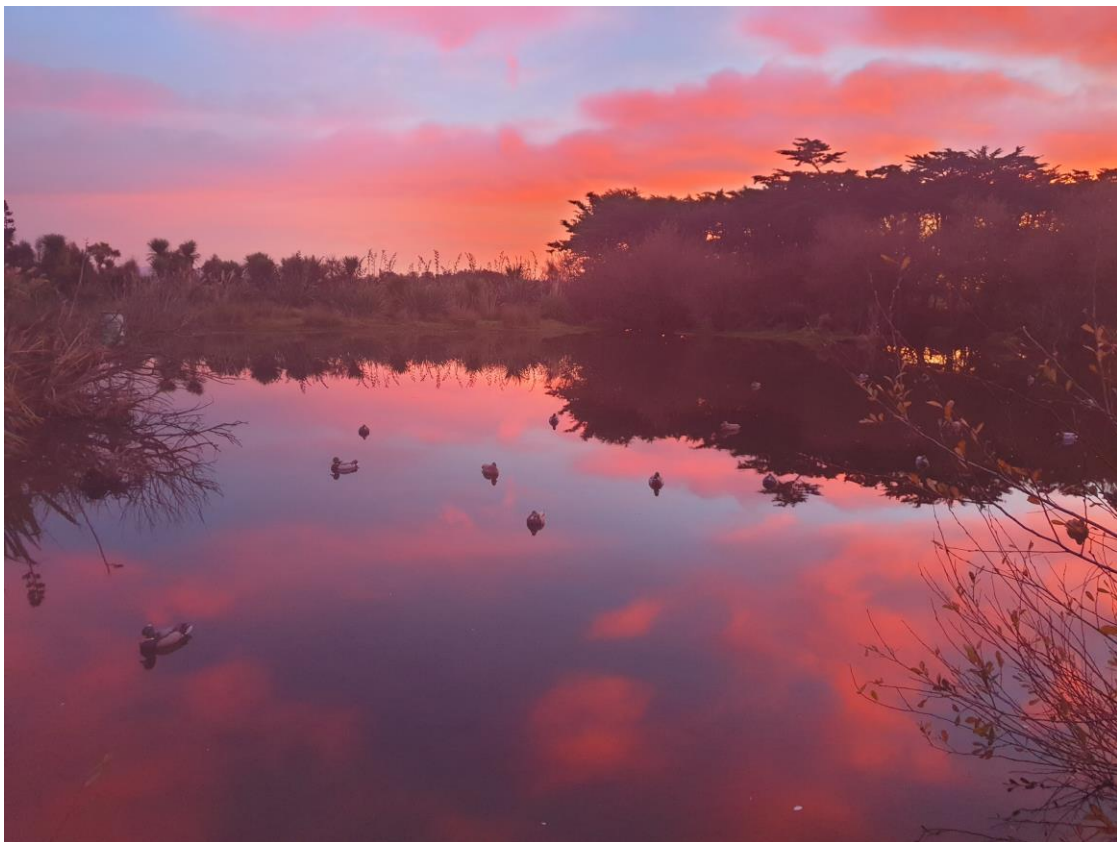


Summary of the 2021 National Gamebird Harvest Survey



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Introduction

The National Gamebird Harvest Survey (NGHS) has been running throughout New Zealand for the last 30 years, with the objective being to monitor trends in the harvest of each gamebird species by recreational hunters who are gamebird licence holders. Landowners hunting without a gamebird licence are not surveyed, however it is assumed that the harvest trends for these hunters is similar to the licence holder trends.

This report summarises estimates of gamebird harvest in North Canterbury by all Fish & Game region gamebird licence holders for the 2021 gamebird hunting season and outlines the changes in average harvest per hunter between 1992 and 2021. The gamebird harvest survey gives Fish & Game an indication of harvest trends over time for most of the gamebird species and helps when setting gamebird regulations. It can also show early indications of populations that might exceed practical and sustainable management levels where control measures may need to be looked at.

Survey Method

The NGHS is carried out in each Fish & Game region as a series of random sample phone surveys of gamebird licence holders. The gamebird hunting season is divided into an opening weekend, then successive two-week interval periods. Random samples of gamebird licence holders are interviewed immediately following the end of each interval and asked to detail any hunting carried out during that interval. Different random samples are selected for each interval, and annually, around half of the licenced hunters in the North Canterbury region are phoned during this survey. Data from the phone survey is then analysed and extrapolated to include all licence holders in the region (2,634 Licences for the 2021 season). See Appendix 2 for a copy of the phone survey.

Survey Results

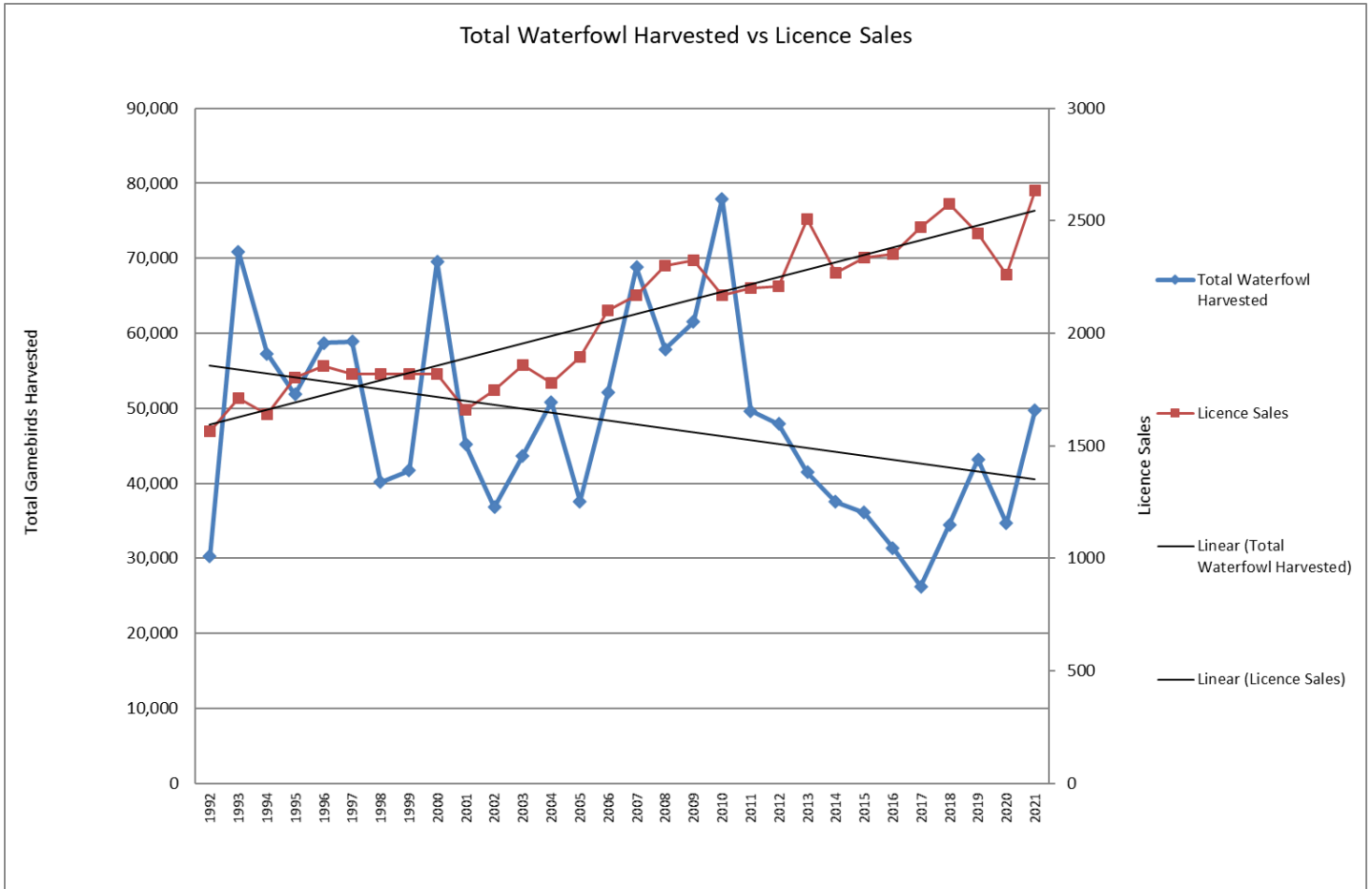


Figure 1. Total Waterfowl harvested and licence sales.

This shows that over the past two and a half decades, we have seen a trend of increasing gamebird licence sales in the North Canterbury region. Total waterfowl (upland game excluded) harvested has fluctuated significantly between years, ranging from a low of 26,000 to a high of almost 80,000. Total waterfowl harvested has fluctuated significantly since this survey began. Most species of waterfowl experienced a high harvest in 2010 followed by a significant drop to 2017, which is likely the result of un-favorable climatic conditions. Total harvest has since improved to historic average numbers.

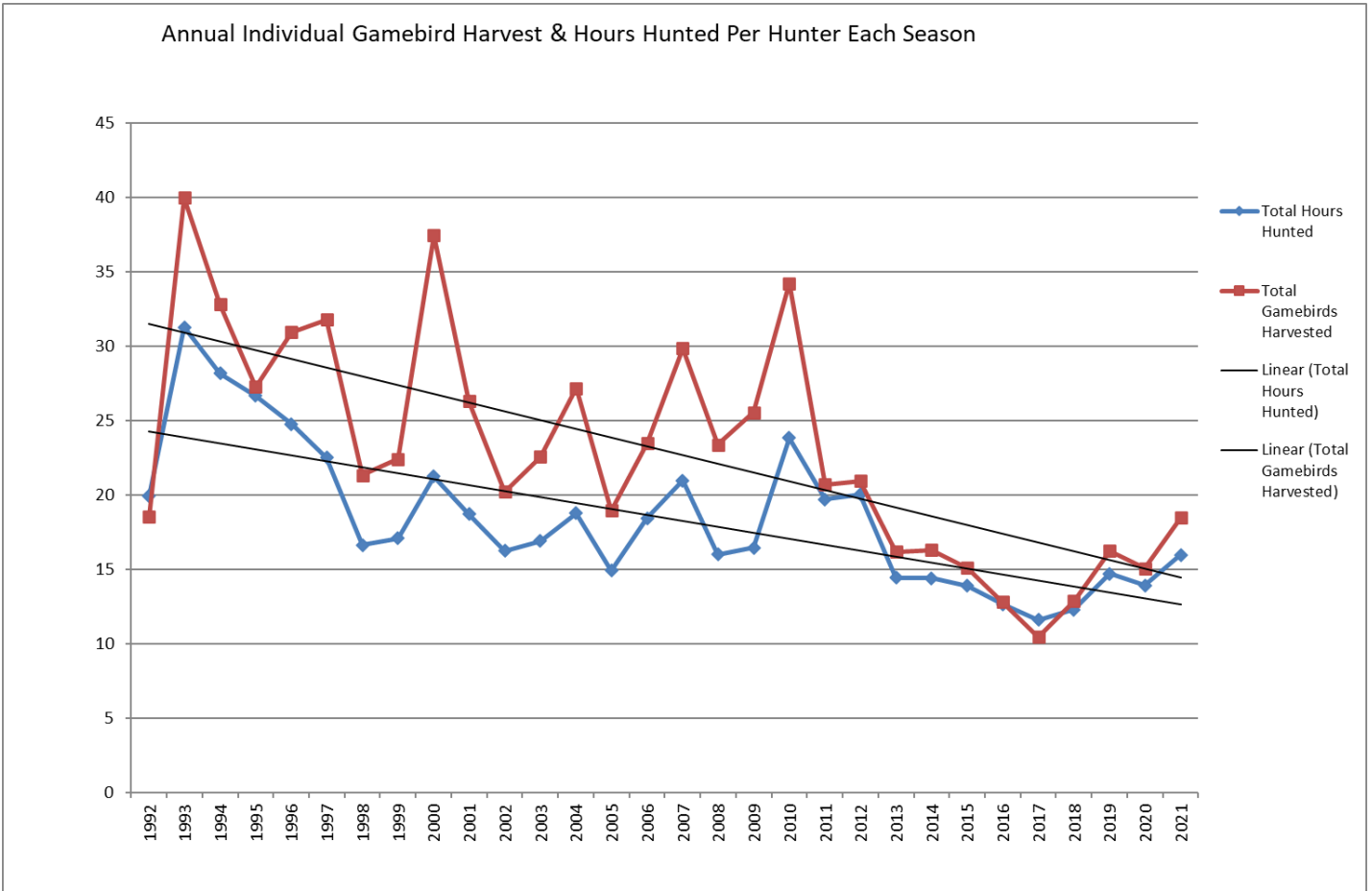


Figure 2. The average number of gamebirds harvested per licence holder each season, along with the average number of hours hunted by each hunter.

Both these figures have seen significant fluctuations between seasons with both trending down. With the number of Fish & Game licenced hunters generally increasing over this period, this shows a significant decreasing trend in the average individual harvest rate. This may also be compounded by an increasing trend of gamebird hunters that only hunt during the first weekend of the season.

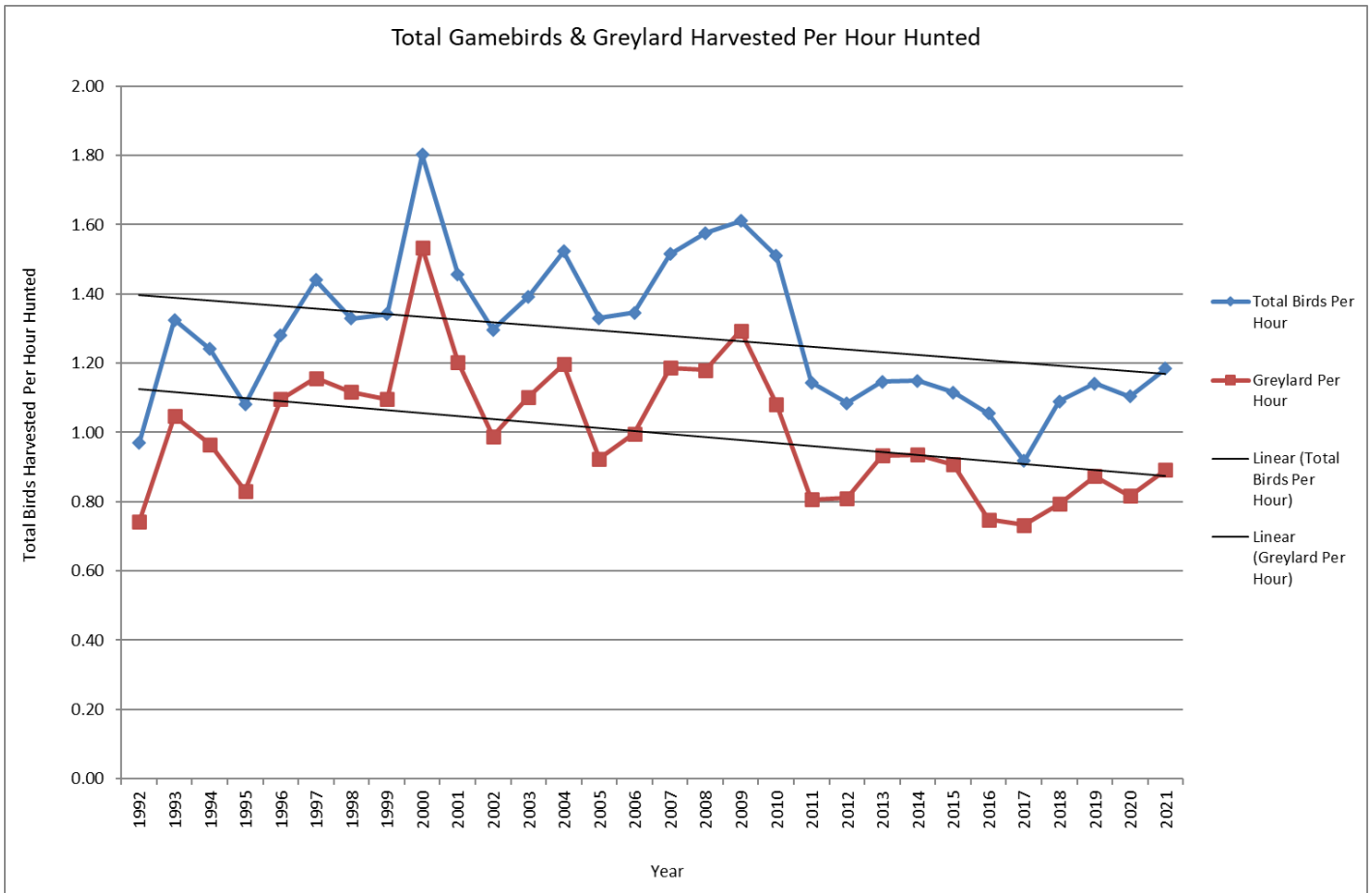


Figure 3. Average number of gamebirds harvested per hour by each hunter and also the average number of greylards (mallards and grey ducks including hybrids of the two) harvested per hour by each hunter.

The majority of birds harvested are greylards and this trend is therefore similar to the total harvest.

Figure 4. Mallard duck harvest trending down.

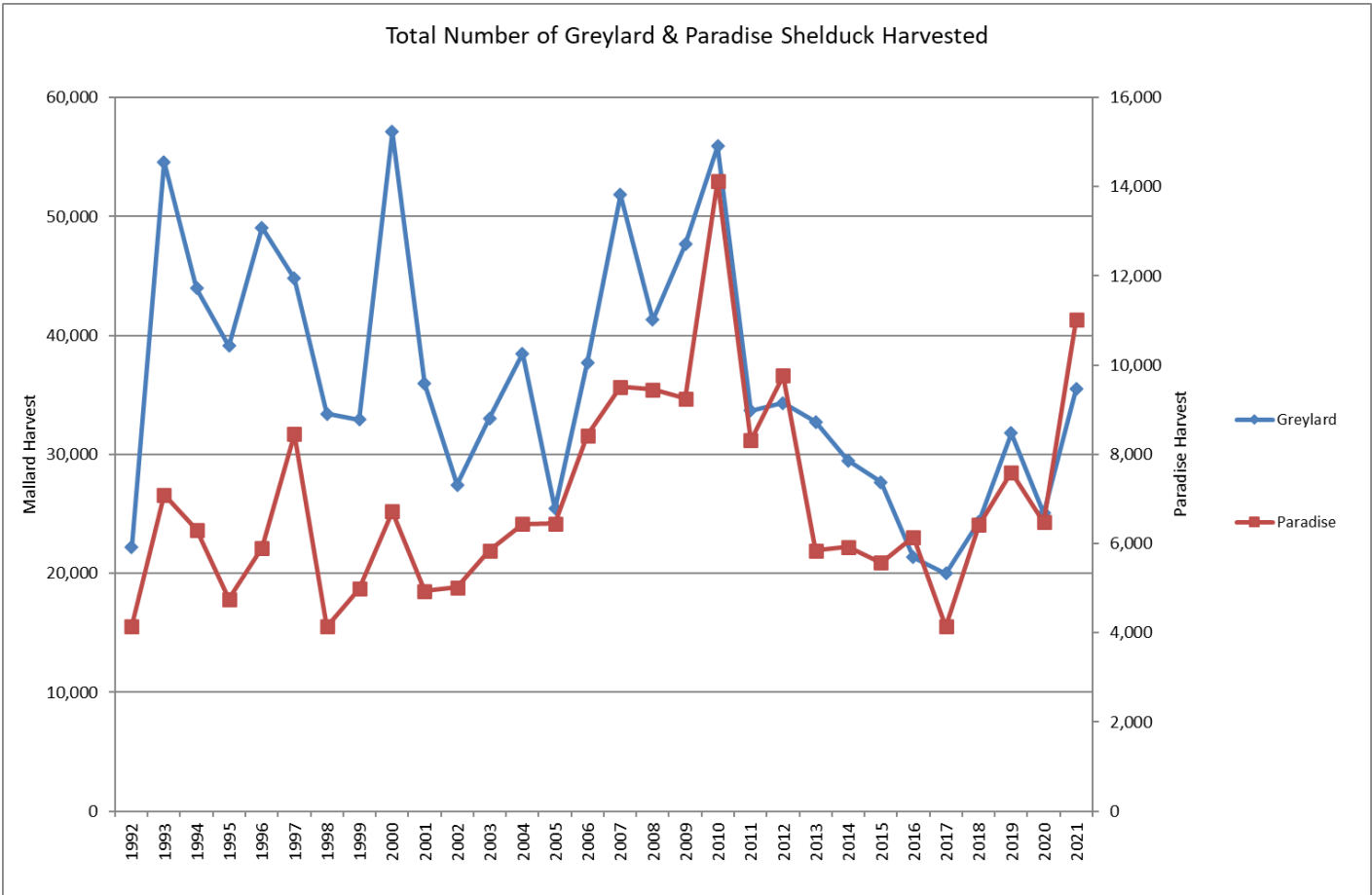


Figure 4. Greylard and paradise shelduck harvest. Although showing large annual fluctuations, appear to have had similar trends in harvest each year.

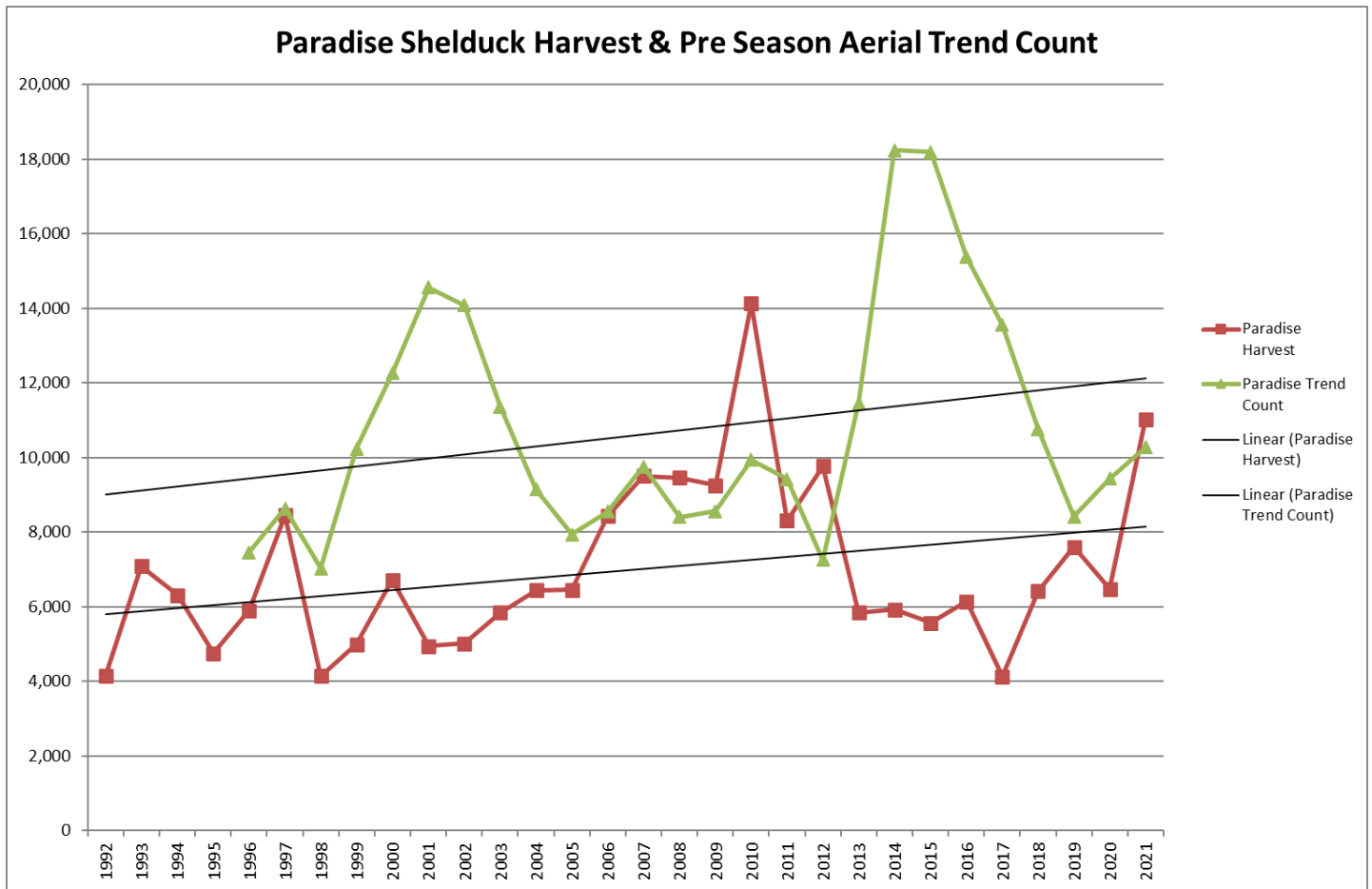


Figure 5. Moulting paradise shelduck aerial trend count carried out in February each year and the total number of paradise shelduck harvested the following gamebird harvest season.

Both trend lines appear to be rising over the period monitored, with large annual fluctuations.

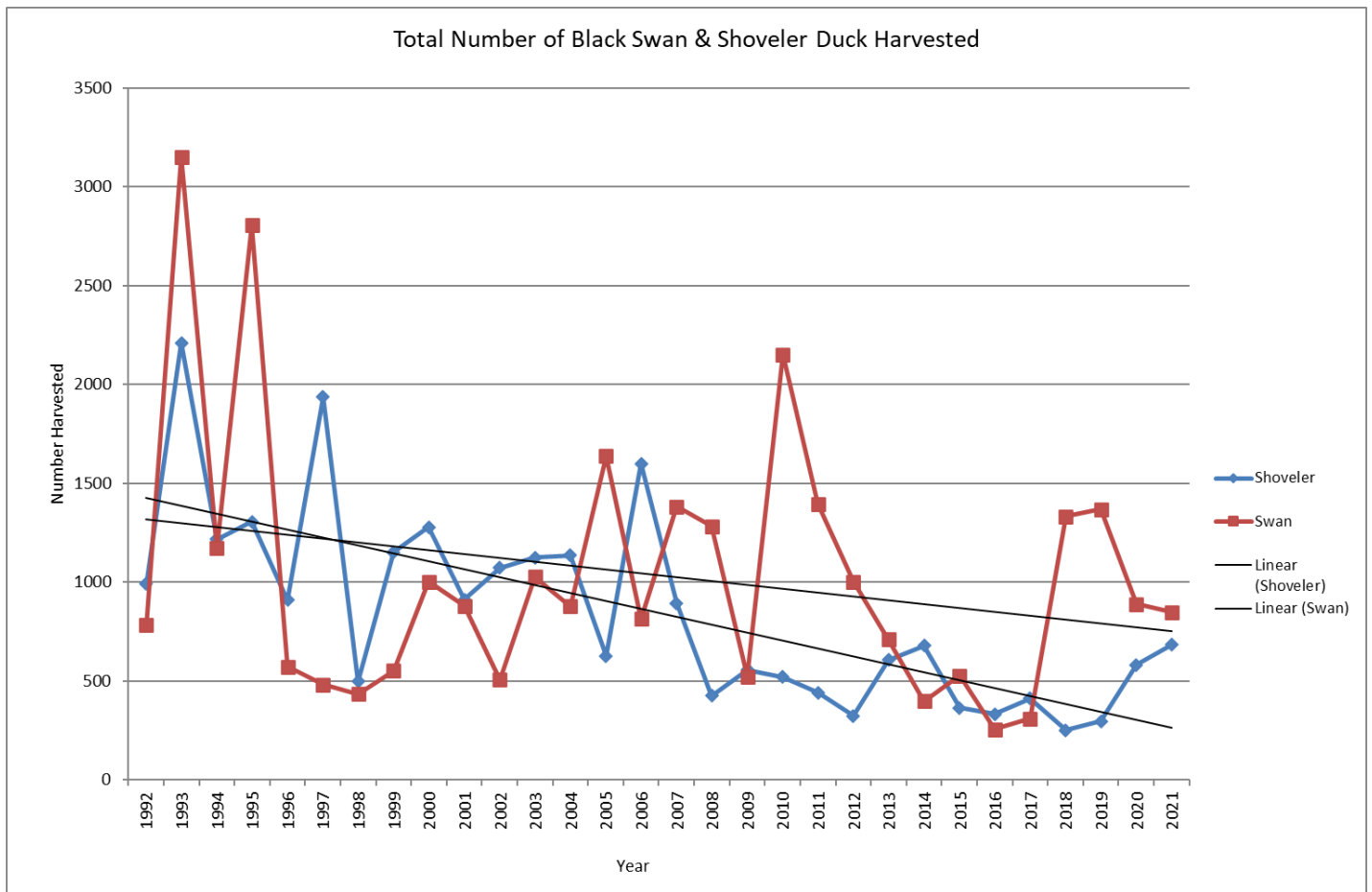


Figure 6. The number of Black swan and Shoveler duck harvested each year.

These two species often appear to have both annual and long-term trends opposing each other, which may be the result of preferring different climatic conditions. With a declining trend in harvest over time, this may also reflect a change in hunter attitude toward the harvest of these two species.

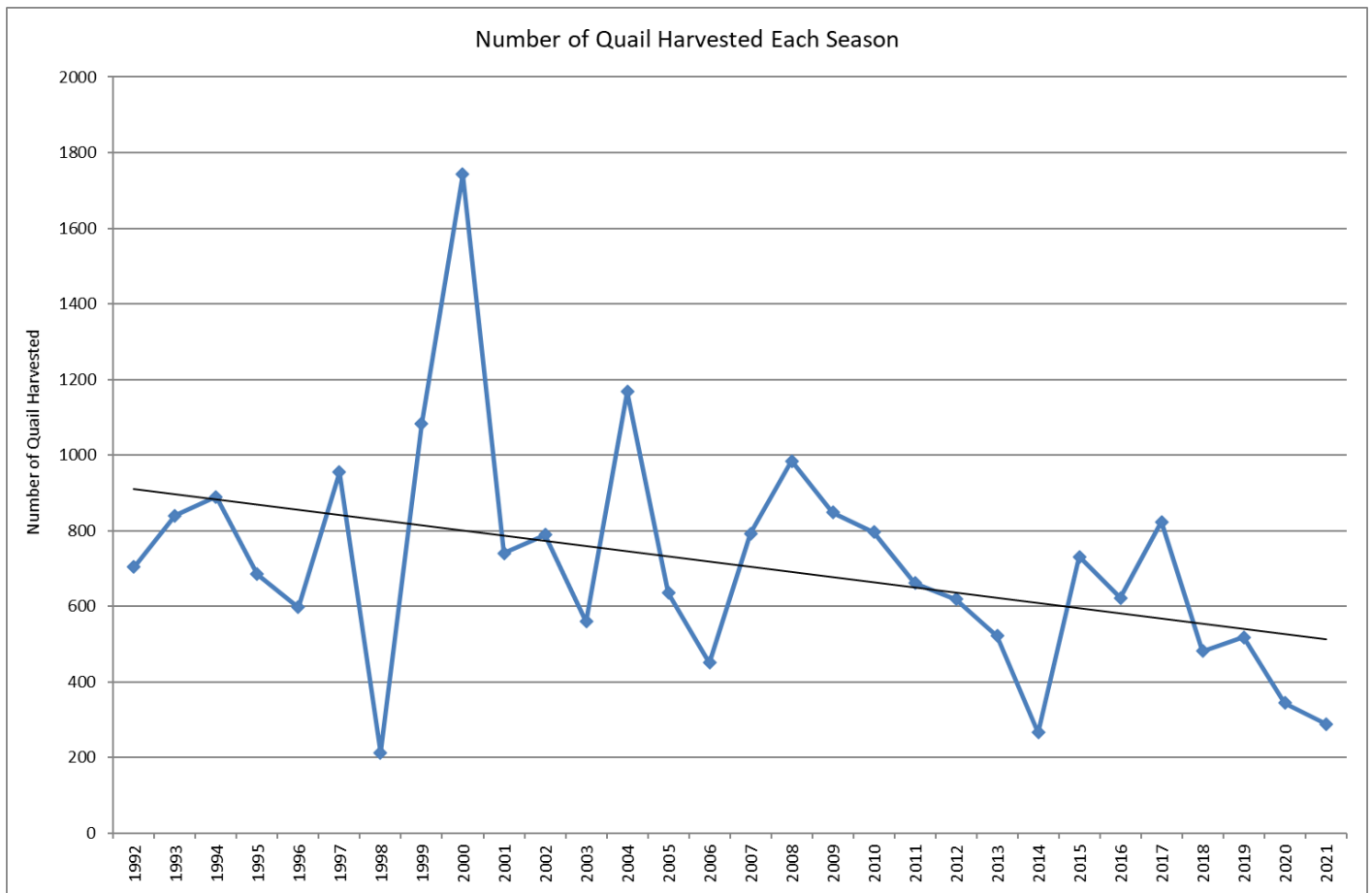


Figure 7. Number of Californian quail harvested each season.

The number of Californian quail harvested each season is declining, likely the result of development of their preferred habitat along river margins

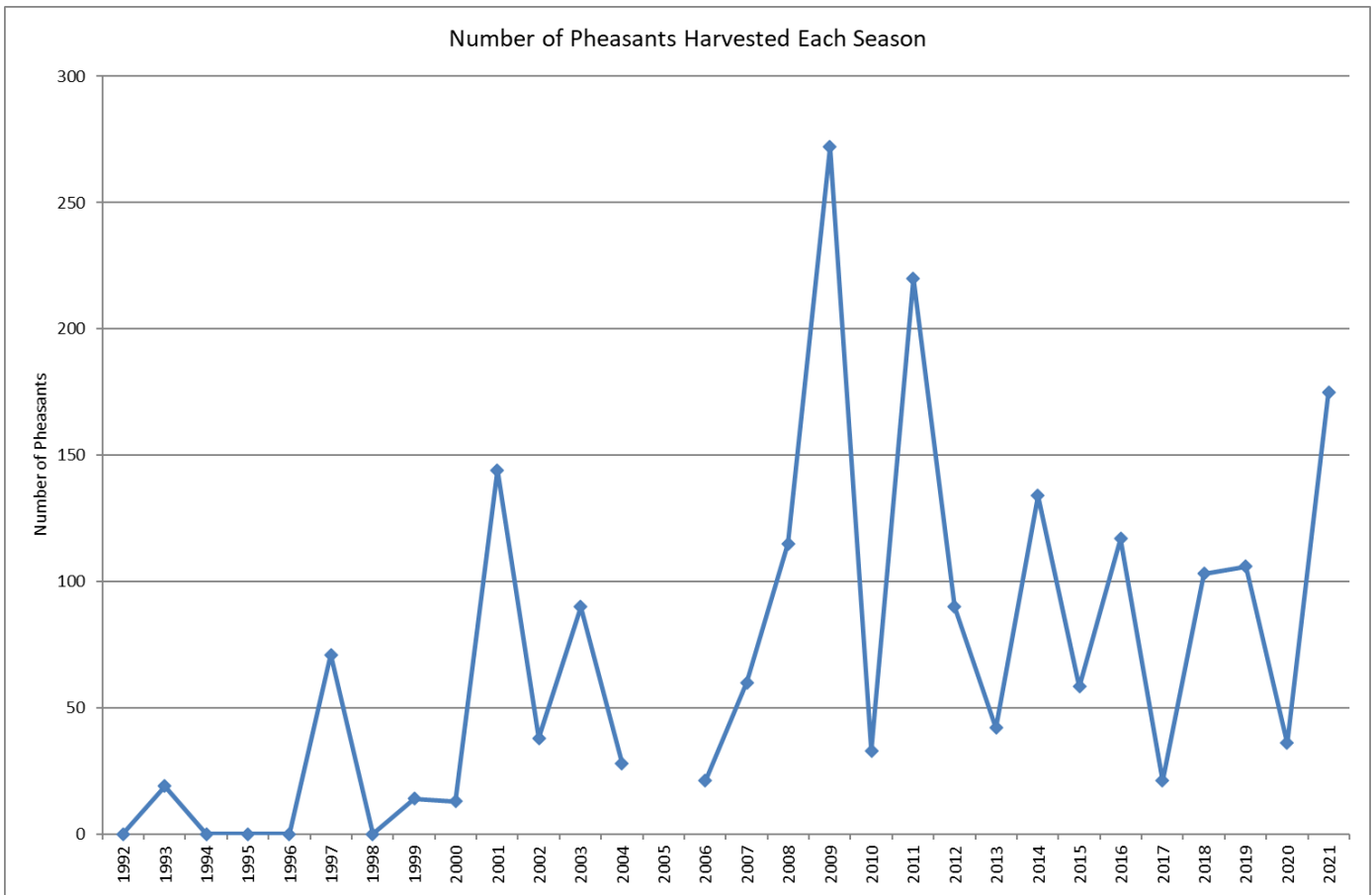


Figure 8. Graph showing the number of pheasants harvested each season.

Pheasant harvest shows high variability with dramatic changes between seasons, likely the result of high and low numbers of hunters surveyed that hunted pheasants each season and the subsequent error this creates when small numbers of variable survey samples are extrapolated to a larger database. For the 2021 hunting season, the pheasant season was tripled from one weekend to three weekends which may also have contributed to the increased harvest.

Anecdotal reports suggest that pheasant numbers have reached a stable population in the southern part of the region and increased in the northern part of the region which is likely the result of historic releases of pheasants in these areas.

Discussion

With 30 years of data, we can start to see trends in gamebird harvest. There is also some variability between seasons due to climatic and environmental variations, however some of the trends are more likely due to human factors, such as the change in land use of the Canterbury Plains to suit the dairy expansion and development.

Gamebird licence sales have trended up over the last 30 years, however the average individual hunter harvest has trended down. The total gamebird harvest trend shows large annual variation. The data also shows that over the last two decades, hunters are spending less time hunting each year, which may be the result of a generally busier lifestyle today.

Anecdotal evidence suggests that dabbling duck behavior has changed in recent years, likely in part as a result of large-scale conversions to dairying in the region and the removal of shelterbelts and hedges. The creation of large irrigation storage ponds throughout the Canterbury Plains continues to create an increasing number of un-hunted refuge areas for gamebirds.

There are likely to be significant errors associated with the harvest data for species other than greylark and paradise shelduck, as they are not as abundant or hunted to the same level as the more popular species, and therefore hunters targeting these species are surveyed less frequently.

See Appendix 1 for a copy of the survey results.

Appendix 1

2,634 licensed hunters

Table 1. 2021 Data Table & Statistics

	Total	SD	CI lower	CI upper	Mean*	SD	CI lower	CI upper
Waterfowl								
Hours	39,790	2,377	35,393	44,733	15.106	0.902	13.437	16.983
Mallard	34,222	3,031	28,768	40,709	12.992	1.151	10.922	15.455
Grey	1,276	353	742	2,193	0.484	0.134	0.282	0.833
Shoveler	682	188	397	1,171	0.259	0.071	0.151	0.444
Paradise	11,016	1,438	8,529	14,228	4.182	0.546	3.238	5.402
Swan	848	335	391	1,839	0.322	0.127	0.148	0.698
Canada geese	1,147	322	662	1,987	0.435	0.122	0.251	0.754
Pukeko	78	61	17	365	0.03	0.023	0.006	0.139
Upland game								
Hours	2,236	873	1,040	4,807	0.849	0.331	0.395	1.825
Pheasant	175	101	57	541	0.066	0.038	0.021	0.205
California quail	288	162	95	869	0.109	0.062	0.036	0.33
Brown quail								
Chukar								
Not retrieved								
Mallard	653	131	441	968	0.248	0.05	0.167	0.367
Grey	9	9	1	60	0.003	0.003	0.001	0.023
Shoveler	68	59	12	374	0.026	0.022	0.005	0.142
Paradise	267	92	136	525	0.101	0.035	0.052	0.199
Swan	9	9	1	60	0.003	0.003	0.001	0.023
Canada geese	29	29	4	210	0.011	0.011	0.002	0.08
Pukeko								
Pheasant								
California quail								

Appendix 2

Fish and Game New Zealand National Gamebird Harvest Survey – 2021

INSTRUCTIONS FOR INTERVIEWERS.

Hello and welcome to the 2021 National Gamebird Harvest Survey. May I take this opportunity to thank you on behalf of Fish & Game for your assistance with the survey. It is a vital management tool for us to have for game bird management. For the survey to be successful, it is very important that you do the following:

1. Undertake the telephone survey as soon as possible after the last day of the period being surveyed. It is recommended that the phone calls be made during the three days following the end of the survey period, as this means that hunter's responses can be relied upon as being fresh in their minds, and not affected too much by memory impairment.
2. Fill out the forms correctly e.g. only get results for the current survey period, and from individual hunters, not combined hunter bags.
3. Attempt to contact every name on your list in order to reach the required number of responses. Remember that "didn't go shooting during the survey period" is counted as a response.
4. Return the survey forms promptly after you have completed them.

INTERVIEW PROCEDURE.

1. The best time to ring is between 7 pm – 9 pm.

Call the number from your list.

2. Introduce yourself by name, "Hello, I am calling on behalf of North Canterbury Fish & Game, doing a survey to find out how many game birds have been shot throughout the region, so that they can use the estimate of hunter harvest to better manage the game bird resource." Occasionally there will only be initials, and no first name. Make sure you ask for, or are talking to "Mr. (or Mrs.) J. Bloggs, the game bird hunter." This will avoid confusion.

3. Ask the person "Are you willing to answer a few questions about your hunting over the.....last two weeks"? If they decline, thank them and move on to the next person on your list.

4. Generally, the answer is "Yes", so then say "thank you, the hunting period we are interested in is from...to... (from your survey sheet). If they say that they "did not go hunting" during that period, record this on the "Nil Hunting Return" sheet, "thank them" and end the survey. This is a valid response as far as the survey goes.

5. Next ask, "Can you tell me on what days you went hunting during this time" and record the dates on the return sheet.

6. Then ask the following questions, recording the hunter response in the appropriate space on the record sheet:

"Where were you shooting"? (General location to nearest town, river or lake).

“How many hours were you hunting each day”? (Record in the appropriate column).

“What did you personally shoot, and how many of each species”? (Record in the appropriate column).

“Did you shoot any birds, but did not recover them”? (Record in the appropriate column).

“Did you shoot any upland game during this period”? (Record in the appropriate column).

“Thank you for your time,” and end the survey.

7. Keep going through your list until you have at least the 200 required number of responses for opening weekend. Fish & Game will advise the number of completed surveys required for each of the following survey periods. Some hunters will not be home, but you may be given a time or alternative number to try. Please take note of this information, and try to contact them again later.

8. For each survey period, randomly selected hunter’s names will be sent to you. The minimum number of responses that is acceptable will be requested each period and will change as required.

Names of hunters will be emailed in the week prior to each survey period.

If you are having any problems, then please let me know A.S.A.P!