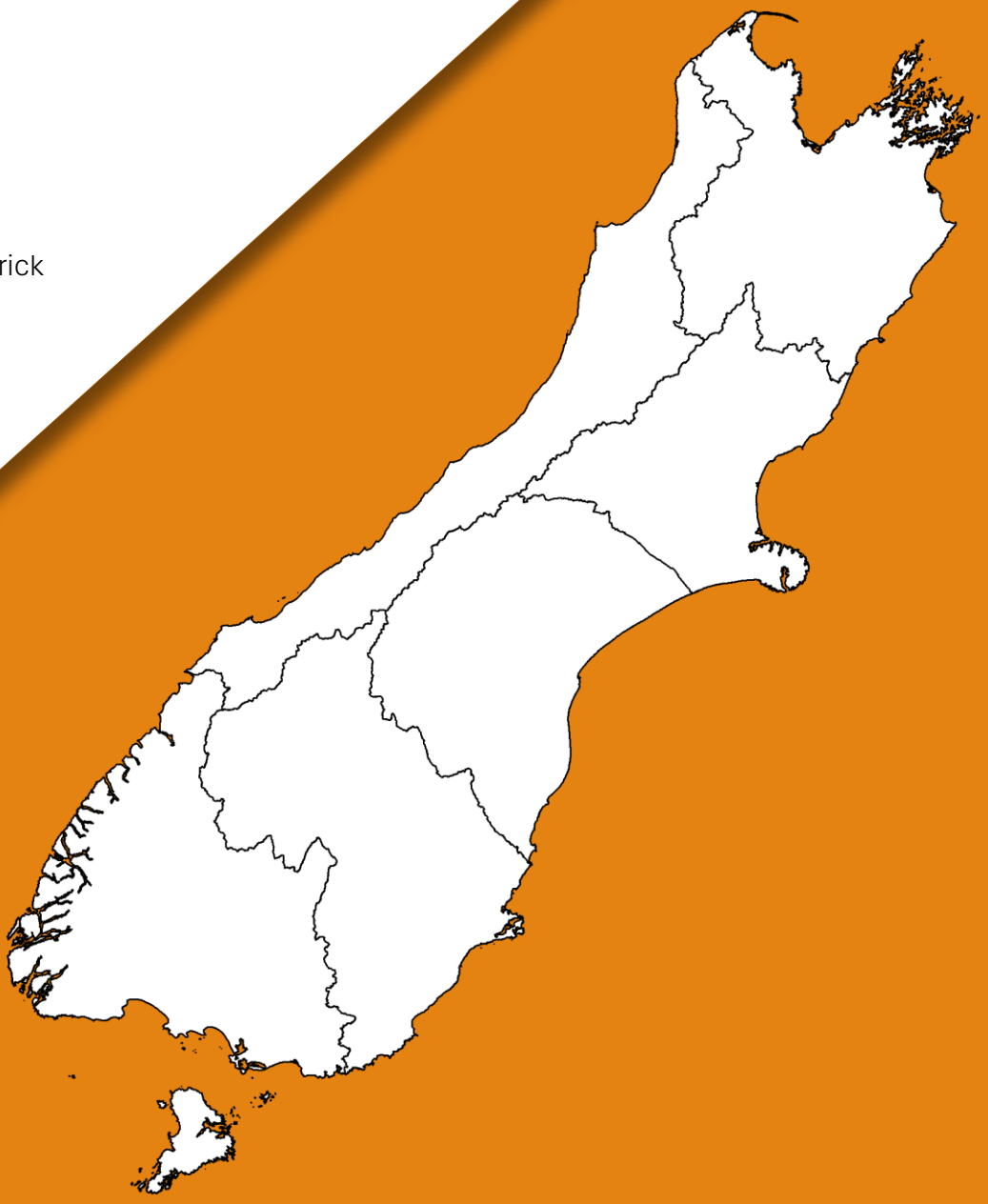
South Island Hunter Harvest Report

2024

M.J. Garrick & H. Sanders Garrick



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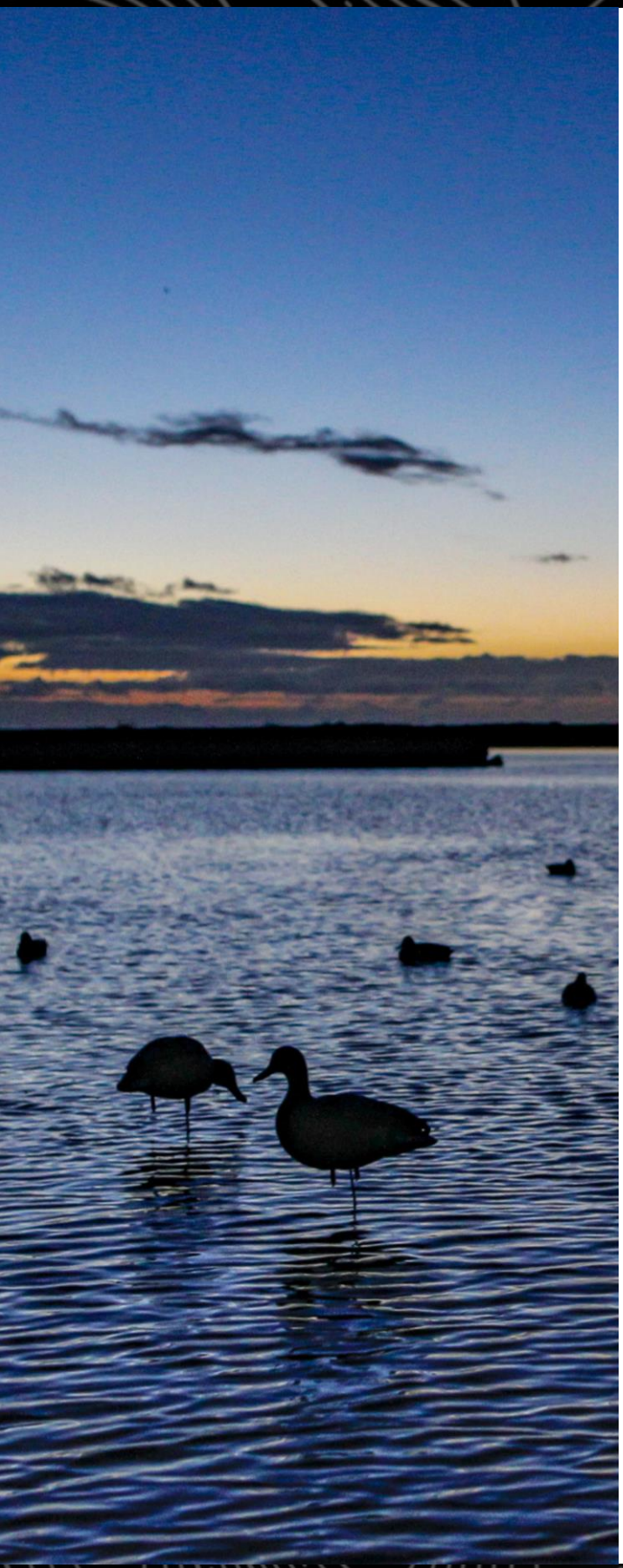
South Island

Hunter Harvest Report



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INTRODUCTION

During the 1993 game bird season, Fish and Game initiated a coordinated telephone harvest survey of full season game bird licence holders to estimate game bird harvest and activity in New Zealand. Each Fish and Game region is responsible to conduct their own surveys of licence holders at set intervals throughout the game bird season. This report represents the first publication of an annual report outlining hunter harvest and activity estimates from data collected from hunter harvest surveys conducted throughout the South Island. These results are presented at both a regional and an island wide level.

By extrapolating the data from individual surveys, Fish and Game staff estimate the number of birds harvested in each region and the number of days hunters spend afield, or hunter days. See Appendix I for more details on the data analysis process.

In this report, we detail hunter activity and waterfowl harvest for hunters across the South Island of New Zealand, and for each South Island region of Fish and Game. This report is specific to South Island hunters, and does not include data from hunters from the North Island.

Game species included in this report are mallard (rakiraki), grey ducks (pārera), paradise shelducks (pūtangitangi), Australasian shovelers (kuruwhengi), pūkeko, and black swans (kakīānau). For the purposes of this report, mallards and grey ducks are combined and are referred to as greylards.

In 2024, Fish & Game staff recorded data from

2,725 hunts

over the course of

5,426 surveys

SOUTH ISLAND

Hunter Days

During the 2024 season, hunters reported spending 49,493 days afield hunting waterfowl.

Hunt days in 2024 were slightly fewer than the estimated hunt days for the 2023 hunting season.

The long-term average is 54,511 hunter days, with a declining trend since 2015.

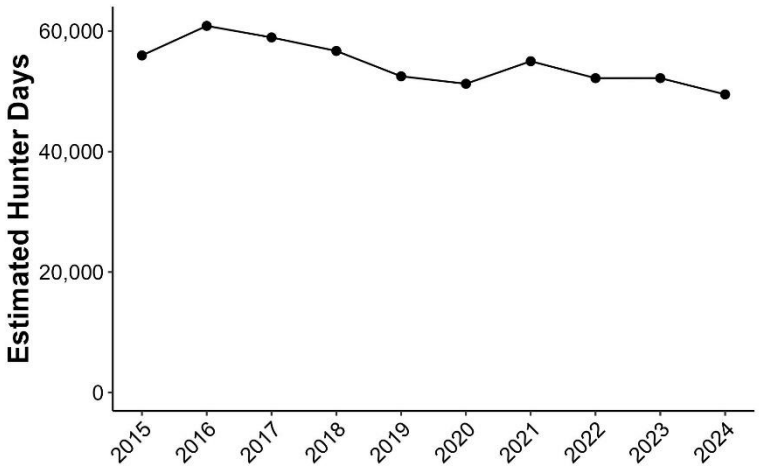

Figure 1. The number of estimated hunter days by year for the South Island of New Zealand, 2015-2024.

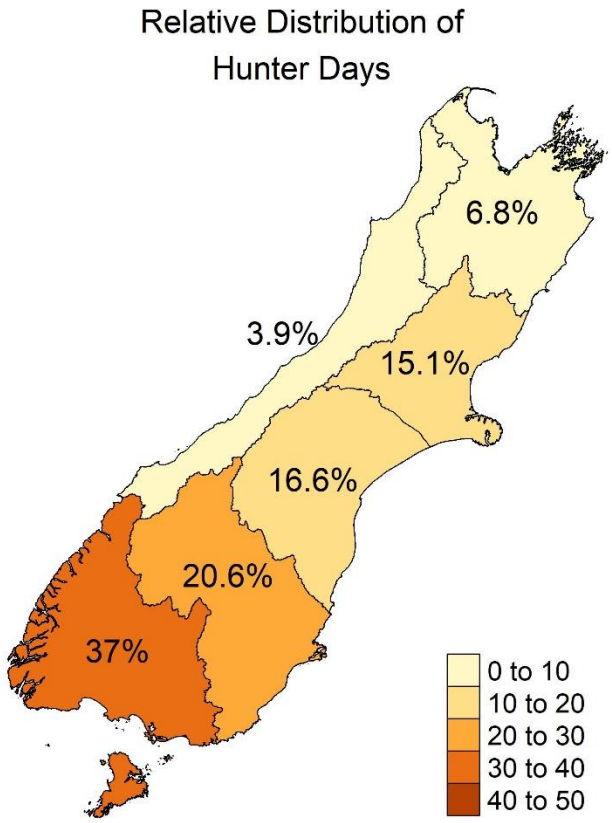

Figure 2. The percent of total days hunted on the South Island that were recorded in each region in 2024.

Opening weekend accounted for 45% of total hunter days across the South Island during the 2024 game bird season.

The majority of hunter days were spent in Southland (37%), followed by Otago (21%), and Central South Island (17%).

The relative distribution of hunter days in 2024 was largely similar to the long-term average for each region.

Harvest

Greylards

During the 2024 season, hunters harvested an estimated 200,539 greylards across the South Island.

This represents, roughly, a 10% decrease from the 2023 season harvest.

The long-term average number of greylards harvested is 248,542, 24% more than the 2024 harvest. The long-term trend in greylard harvest is largely stable.

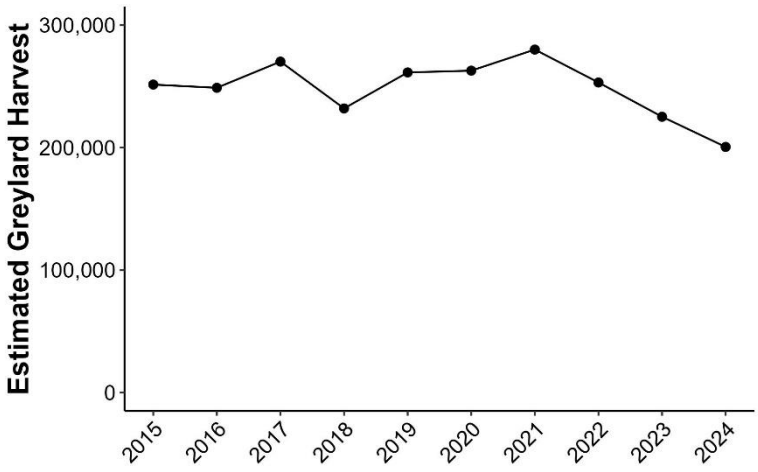

Figure 3. The number of estimated greylards harvested by year on the South Island of New Zealand, 2015-2024.

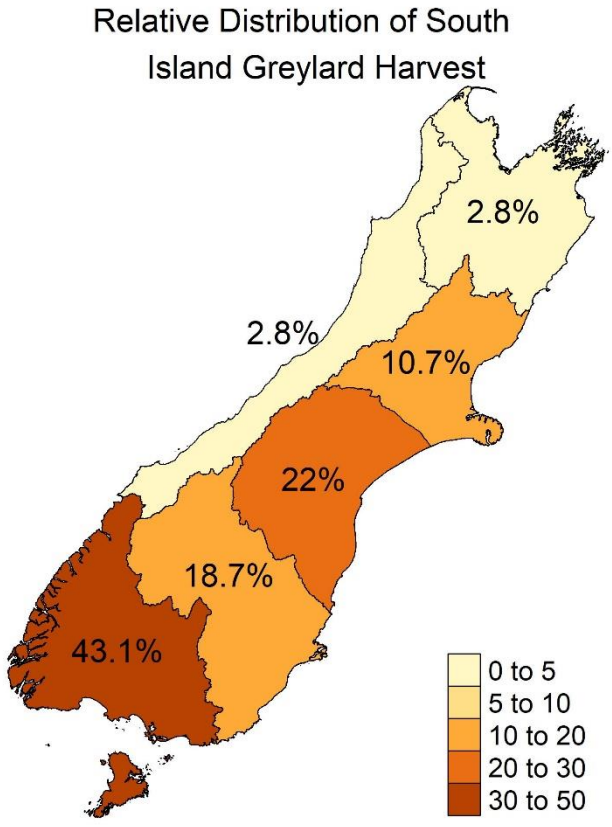

Figure 4. The percent of total greylards harvested on the South Island that were harvested in each region in 2024.

Opening weekend accounted for 60% of total greylard harvest across the South Island during the 2024 game bird season.

The majority of greylards were harvested in Southland (43%), followed by Central South Island (22%) and Otago (19%).

While the proportion of greylards harvested varies by a few percentage points year to year, the relative distribution of greylard harvest across the South Island has been largely similar since 2015.

Harvest

Paradise Shelducks

During the 2024 season, hunters harvested an estimated 57,478 paradise shelducks across the South Island.

This represents, roughly, a 2% increase from the 2023 season harvest.

The long-term average number of paradise shelducks harvested is 52,256, 9% less than the 2024 harvest. There is an increasing trend in paradise shelduck harvest since 2015.

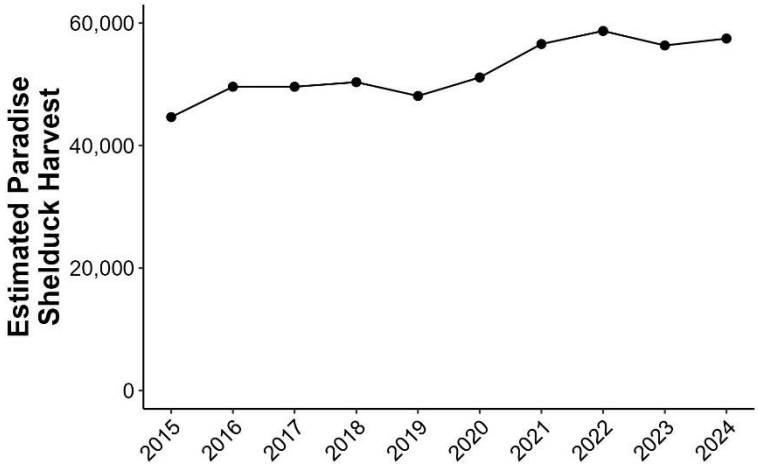

Figure 5. The number of estimated paradise shelducks harvested by year on the South Island of New Zealand, 2015-2024.

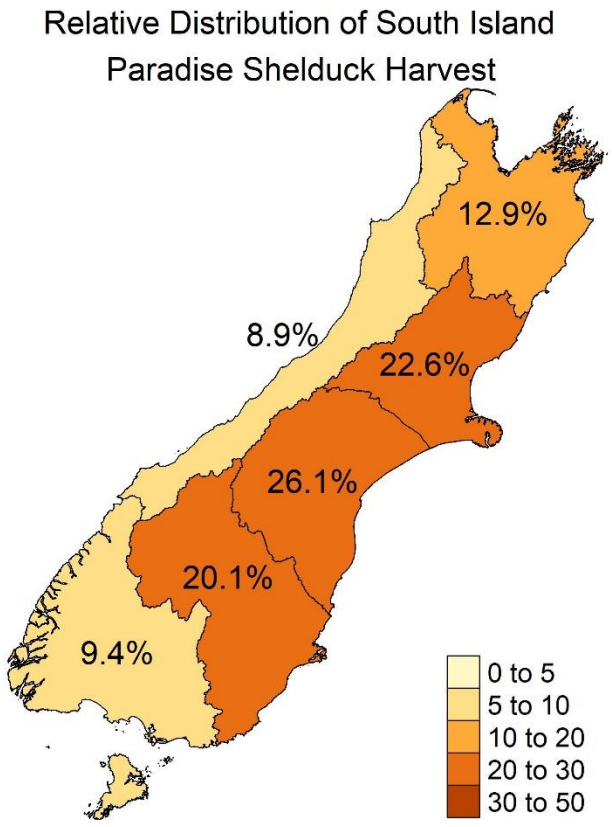

Figure 6. The percent of total paradise shelducks harvested on the South Island that were harvested in each region in 2024.

Opening weekend accounted for 53% of total paradise shelduck harvest across the South Island during the 2024 game bird season.

Three regions shared a similar portion of the estimated paradise shelduck harvest: Central South Island (26%), North Canterbury (23%) and Otago (20%).

Proportional harvest of paradise shelduck in Southland has been halved relative to the 2023 season. Relative harvest has also decreased in Otago, but only by 4%.

Relative harvest has increased in North Canterbury by 7%, in Nelson/Marlborough by 6%, and in CSI by 3%.

Harvest

Australasian Shoveler

During the 2024 season, hunters harvested an estimated 2,390 shoveler across the South Island.

This represents roughly an 18% increase from the 2023 season harvest.

The long-term average number of shovelers harvested is 3,345, 40% more than the 2024 harvest. There is no evident trend in shoveler harvest since 2015.

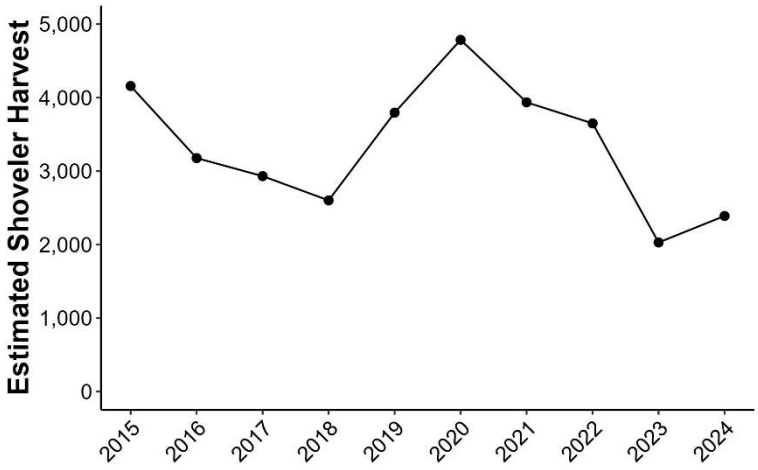

Figure 7. The number of estimated Australasian shoveler harvested by year on the South Island of New Zealand, 2015-2024.

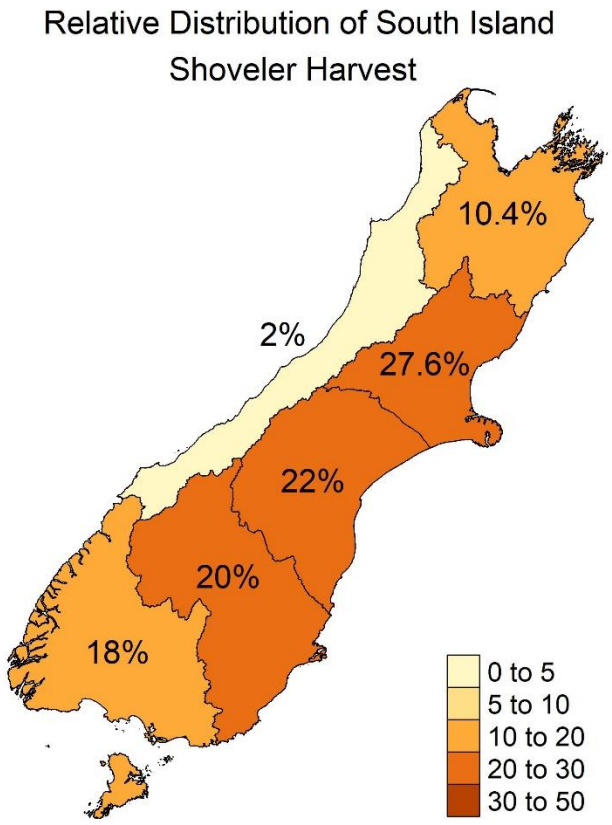

Figure 8. The percent of total Australasian shoveler harvested on the South Island that were harvested in each region in 2024.

Opening weekend accounted for 47% of total shoveler harvest across the South Island during the 2024 game bird season.

The majority of shoveler harvest occurred in North Canterbury (28%), followed by Central South Island (22%), and Otago (20%).

Compared with the 2023 season, relative shoveler harvest has decreased by 5% in North Canterbury and 1.5% in Southland. Relative shoveler harvest has increased by 2% in Central South Island and 1.5% in Nelson/Marlborough, the West Coast, and Otago.

Harvest

Black Swans

During the 2024 season, hunters harvested an estimated 5,416 black swans across the South Island.

This represents roughly a 130% increase from the 2023 season harvest.

The long-term average number of black swans harvested is 3,377, 38% below the 2024 harvest. There is weak evidence of an increasing trend in black swan harvest since 2015.

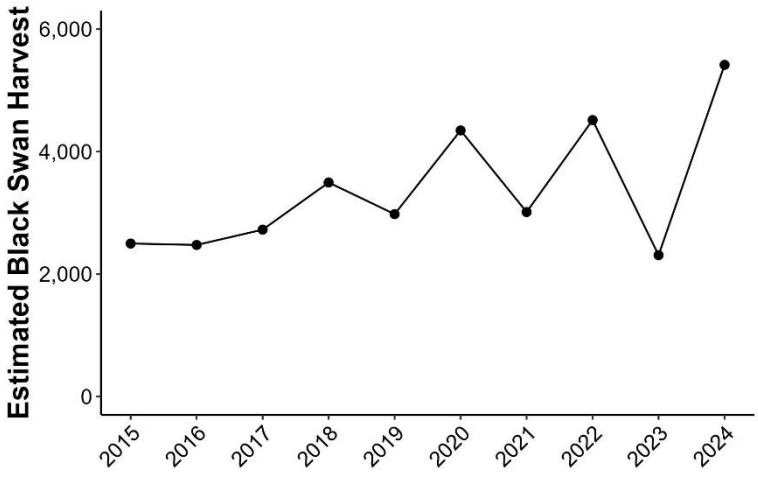

Figure 9. The number of estimated black swans harvested by year on the South Island of New Zealand, 2015-2024.

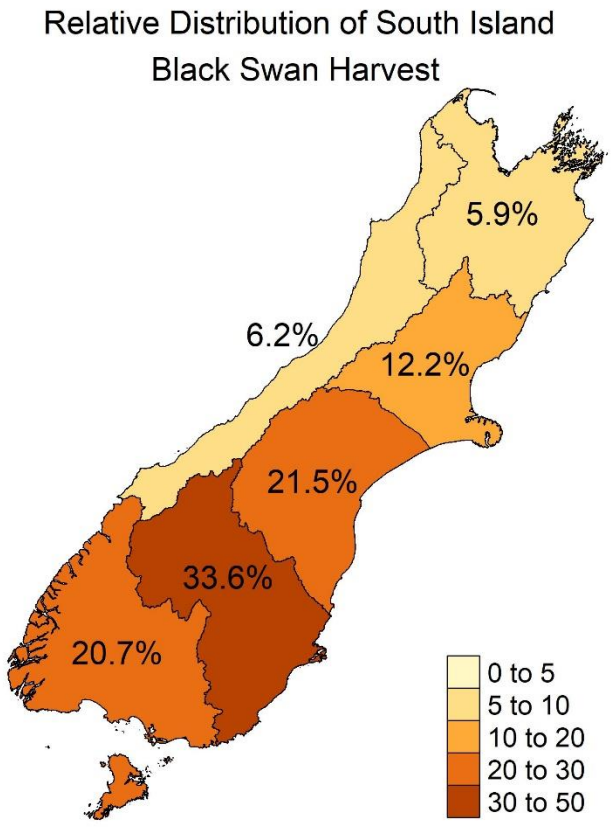

Figure 10. The percent of total black swans harvested on the South Island that were harvested in each region in 2024.

Opening weekend accounted for 24% of total black swan harvest across the South Island during the 2024 game bird season.

The majority of black swan harvest occurred in Otago (34%), followed by Central South Island (22%) and Southland (21%).

Compared with the 2023 season, relative black swan harvest has decreased in North Canterbury by more than 15%. Meanwhile relative harvest has increased in Otago by about 10% and Southland by about 6%.

Harvest

Pūkeko

During the 2024 season, hunters harvested an estimated 2,470 pūkeko across the South Island.

This represents roughly a 14% decrease from the 2023 season harvest.

The long-term average number of pūkeko harvested is 2,592, 5% above the 2024 harvest. There is a stable long-term trend in pūkeko harvest since 2015.

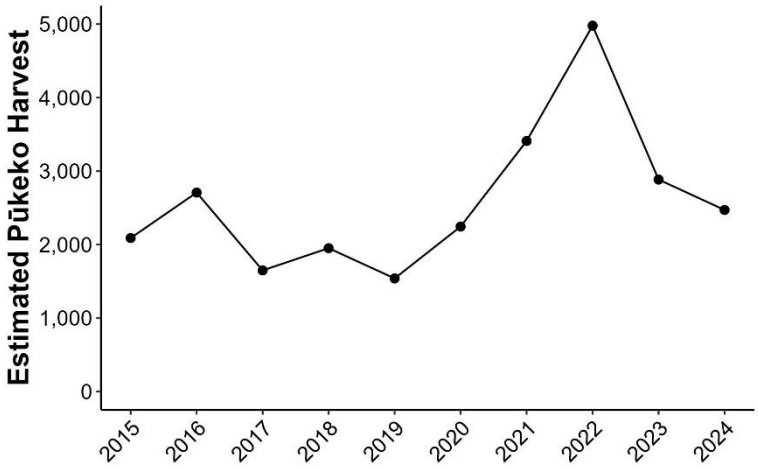

Figure 11. The number of estimated pūkeko harvested by year on the South Island of New Zealand, 2015-2024.

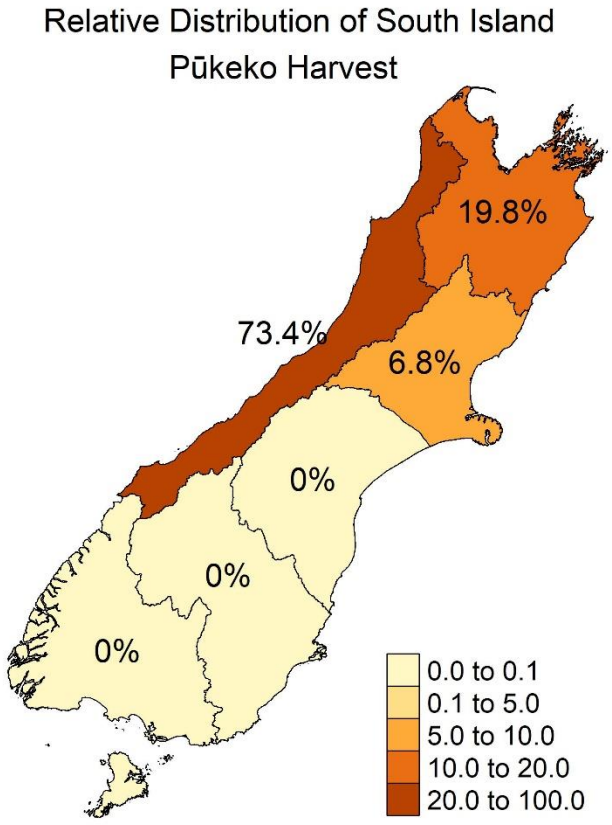

Figure 12. The percent of total pūkeko harvested on the South Island that were harvested in each region in 2024.

Opening weekend accounted for 25% of total pūkeko harvest across the South Island during the 2024 game bird season.

The majority of pūkeko harvest occurred in the West Coast (73%), followed by Nelson/Marlborough (20%).

Compared to the 2023 season, relative harvest has increased in Nelson/Marlborough by nearly 10%, the West Coast has decreased by 8%, and North Canterbury has increased by about 3%.

Central South Island, which constituted 4% of relative harvest in 2023, reported no pūkeko harvest in 2024.

NELSON/MARLBOROUGH

Hunter Days

During the 2024 season, hunters spent an estimated 3,366 hunter days hunting within the Nelson/Marlborough region.

Hunt days increased in 2024 by about 30% relative to the 2023 season.

The long-term average is 3,562 hunter days, with a slight declining trend since 2015.

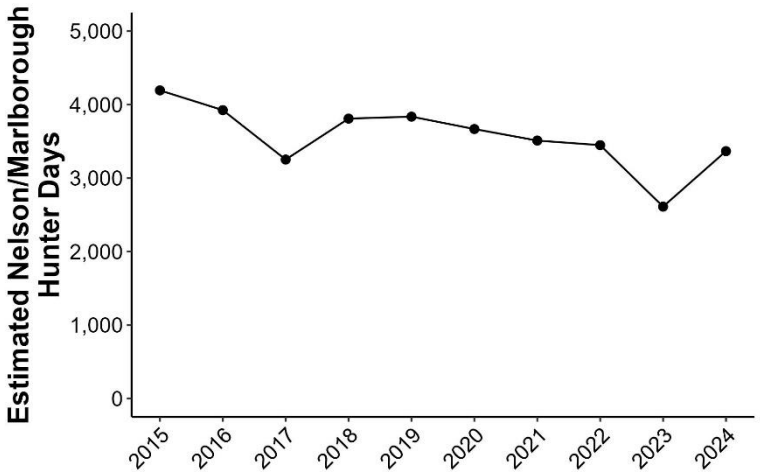

Figure 13. The number of estimated hunter days by year for the Nelson/Marlborough Region, 2015-2024.

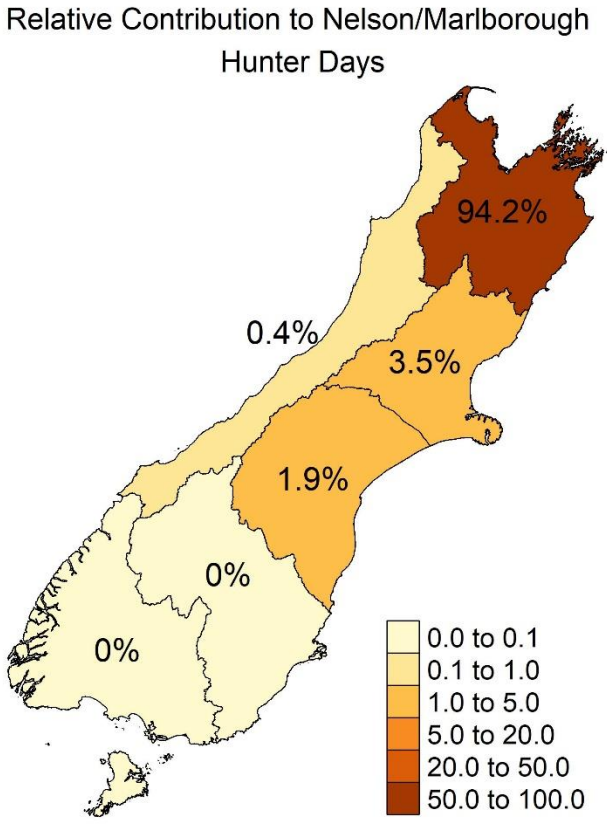

Figure 14. The percent of total days hunted in the Nelson/Marlborough region that were attributed to hunters from each region in 2024.

Opening weekend accounted for 29% of total hunter days in Nelson/Marlborough during the 2024 game bird season.

Hunters from Nelson/Marlborough accounted for 94% of estimated hunter days, followed by 4% from North Canterbury, and 2% from the Central South Island.

Hunters from Nelson/Marlborough accounted for 5% of estimated hunter days in North Canterbury, 10% in the West Coast, and less than 1% in Central South Island and Otago.

Harvest

Greylards

During the 2024 season, an estimated 5,701 greylards were harvested in the Nelson/Marlborough region.

This represents, roughly, a 26% increase from the 2023 season harvest.

The long-term average number of greylards harvested is 7,660, 34% above the 2024 harvest. The trend in greylard harvest since 2015 is largely stable.

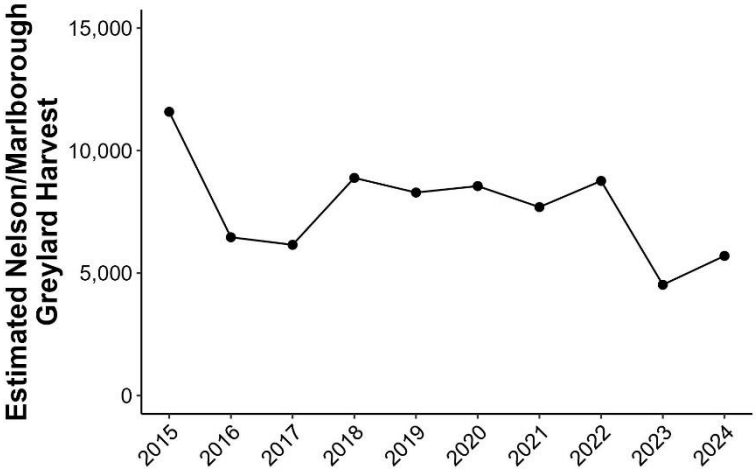

Figure 15. The number of estimated greylards harvested by year in the Nelson/Marlborough region, 2015-2024.

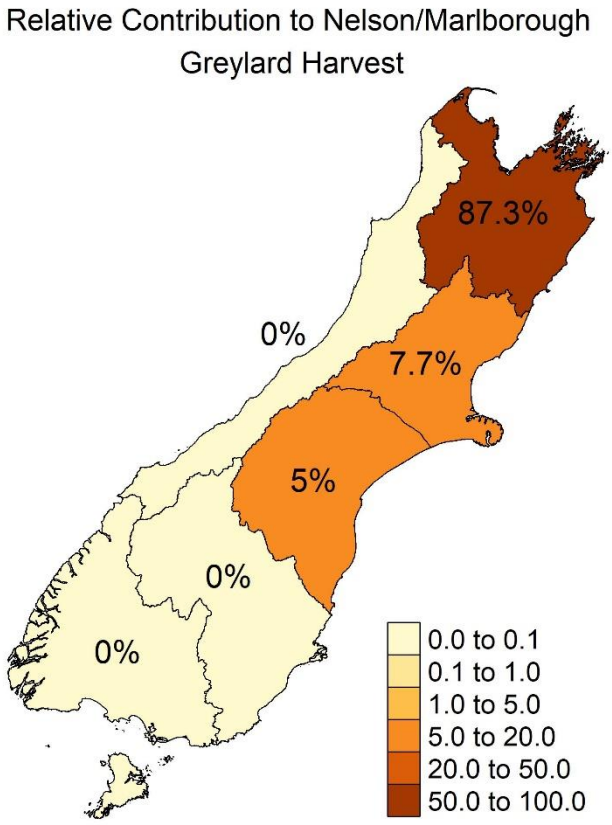

Figure 16. The percent of greylards harvested in the Nelson/Marlborough region that were attributed to hunters from each region in 2024.

Opening weekend accounted for 46% of total greylard harvest in the Nelson/Marlborough region during the 2024 game bird season.

Hunters from Nelson/Marlborough were responsible for 87% of estimated harvest in the region. An additional 8% of estimated harvest was attributed to hunters from North Canterbury, and 5% was attributed to hunters from Central South Island.

Hunters from Nelson/Marlborough were responsible for 3% of the estimated greylard harvest in North Canterbury, 8% in the West Coast, 1% in Central South Island, 2% in Otago, and less than 1% in Southland.

Harvest

Paradise Shelducks

During the 2024 season, hunters harvested an estimated 7,397 paradise shelducks in the Nelson/Marlborough region.

This represents, roughly, a 85% increase from the 2023 season harvest.

The long-term average number of paradise shelducks harvested is 6,608, 10% below the 2024 harvest. The long-term trend in paradise shelduck harvest since 2015 is stable, despite large annual variation.

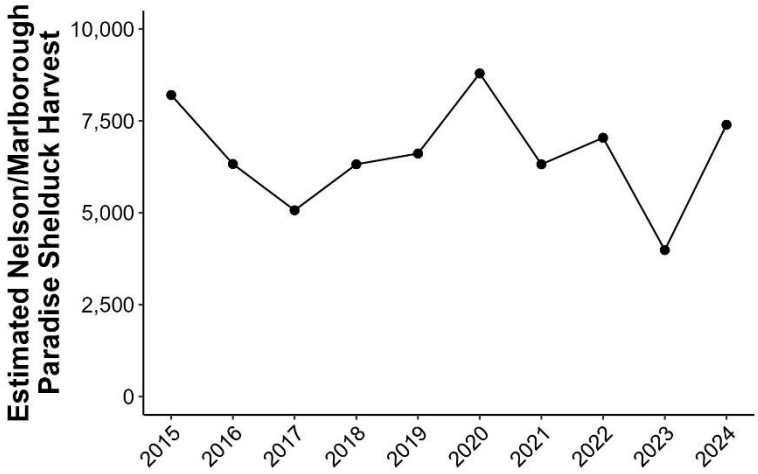

Figure 17. The number of estimated paradise shelducks harvested by year in the Nelson/Marlborough region, 2015-2024.

Opening weekend accounted for 47% of total paradise shelduck harvest in the Nelson/Marlborough region during the 2024 game bird season.

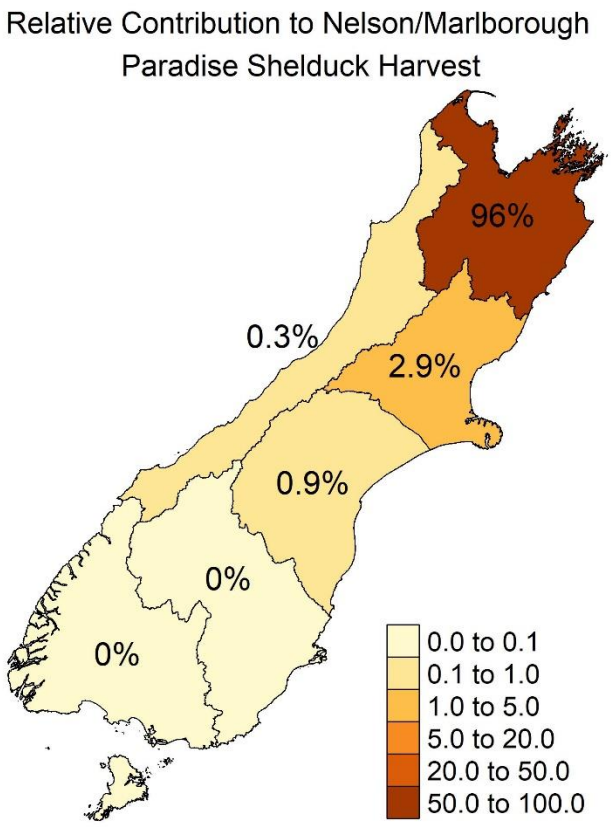

Figure 18. The percent of total paradise shelducks harvested in the Nelson/Marlborough region that were attributed to hunters from each region in 2024.

Hunters from Nelson/Marlborough were responsible for 96% of estimated harvest in the region. An additional 3% of estimated harvest was attributed to hunters from North Canterbury, and <1% to hunters from the West Coast and Central South Island.

Hunters from Nelson/Marlborough were responsible for 2% of estimated paradise shelduck harvest in North Canterbury, 10% in the West Coast, 3% in Otago, and less than 1% in Central South Island.

Harvest

Australasian Shovelers

During the 2024 season, an estimated 249 shovelers were harvested in the Nelson/Marlborough region.

This represents, roughly, a 35% increase from the 2023 season harvest.

The long-term average number of shovelers harvested is 181, 27% below the 2024 harvest. The long-term trend in shoveler harvest since 2015 is stable, despite large annual variation.

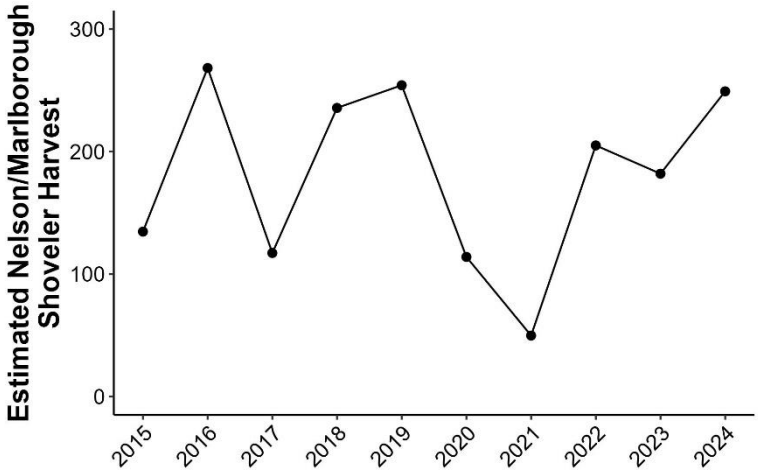

Figure 19. The number of estimated shovelers harvested by year in the Nelson/Marlborough region, 2015-2024.

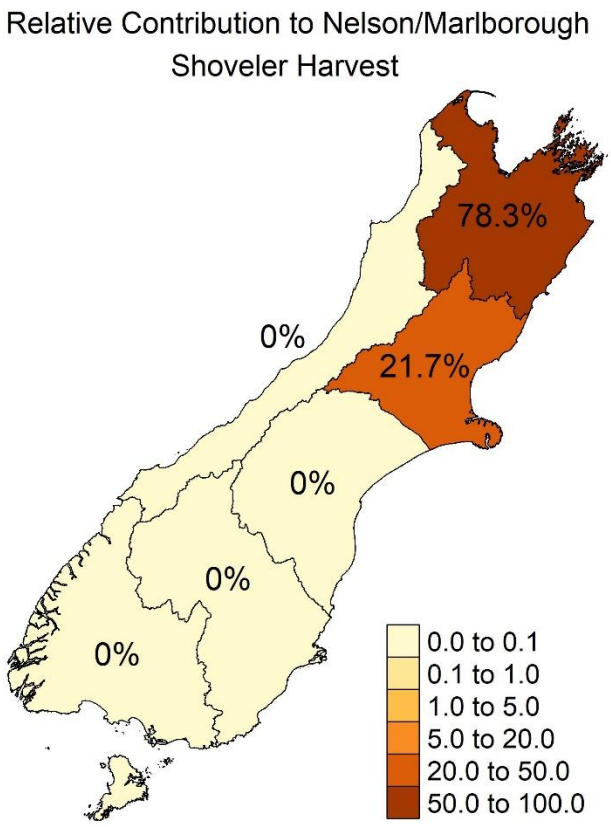

Figure 20. The percent of total shovelers harvested in the Nelson/Marlborough region that were attributed to hunters from each region in 2024.

Opening weekend accounted for 22% of total shoveler harvest in the Nelson/Marlborough region during the 2024 game bird season.

Hunters from Nelson/Marlborough were responsible for 78% of estimated shoveler harvest in the Nelson/Marlborough region, followed by hunters from North Canterbury (22%).

Hunters from Nelson/Marlborough were responsible for 3% of estimated shoveler harvest in North Canterbury and Otago, but did not report harvesting shoveler in any other region.

Harvest

Black Swans

During the 2024 season, an estimated 317 black swans were harvested in the Nelson/Marlborough region.

This represents roughly an 145% increase from the 2023 season harvest.

The long-term average number of black swans harvested is 261, roughly 20% below the 2024 harvest. There is a stable long-term trend in black swan harvest since 2015, despite large annual variation.

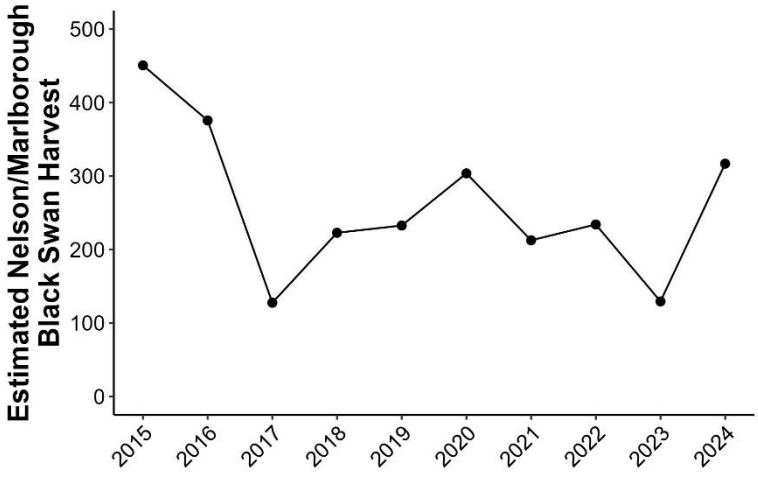

Figure 21. The number of estimated black swans harvested by year in the Nelson/Marlborough region, 2015-2024.

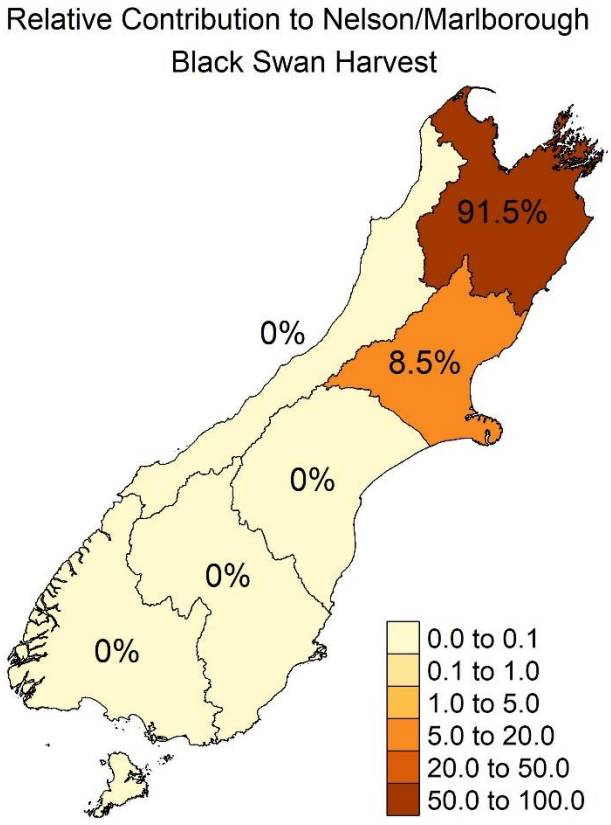

Figure 22. The percent of black swans harvested in the Nelson/Marlborough region that were attributed to hunters from each region in 2024.

Opening weekend accounted for 25% of total black swan harvest in the Nelson/Marlborough region during the 2024 game bird season.

Hunters from Nelson/Marlborough were responsible for 92% of estimated harvest in the region. An additional 8% of estimated harvest was attributed to hunters from North Canterbury.

Hunters from Nelson/Marlborough were responsible for 10% of the estimated black swan harvest in North Canterbury, and 4% in the West Coast, but did not report harvesting black swans in any other region.

Harvest

Pūkeko

During the 2024 season, an estimated 490 pūkeko were harvested in the Nelson/Marlborough region.

This represents roughly a 55% increase from the 2023 season harvest.

The long-term average number of pūkeko harvested is 623, 27% greater than the 2024 harvest. There is a stable long-term trend in pūkeko harvest since 2015, despite large annual variation.

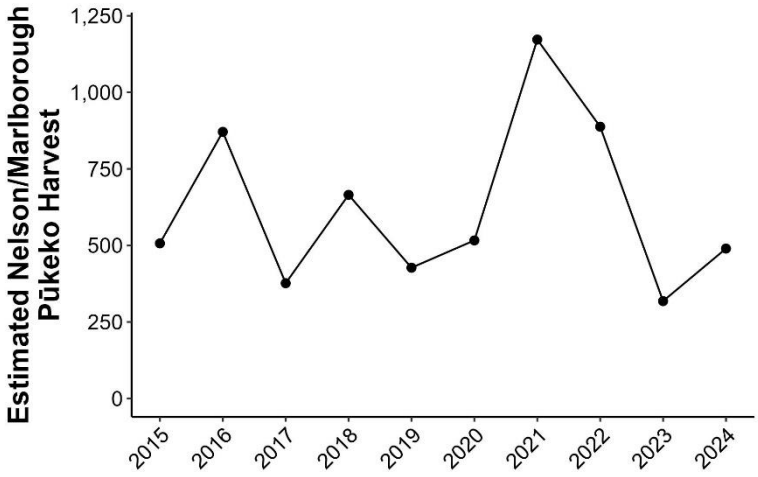

Figure 23. The number of estimated pūkeko harvested by year in the Nelson/Marlborough region, 2015-2024.

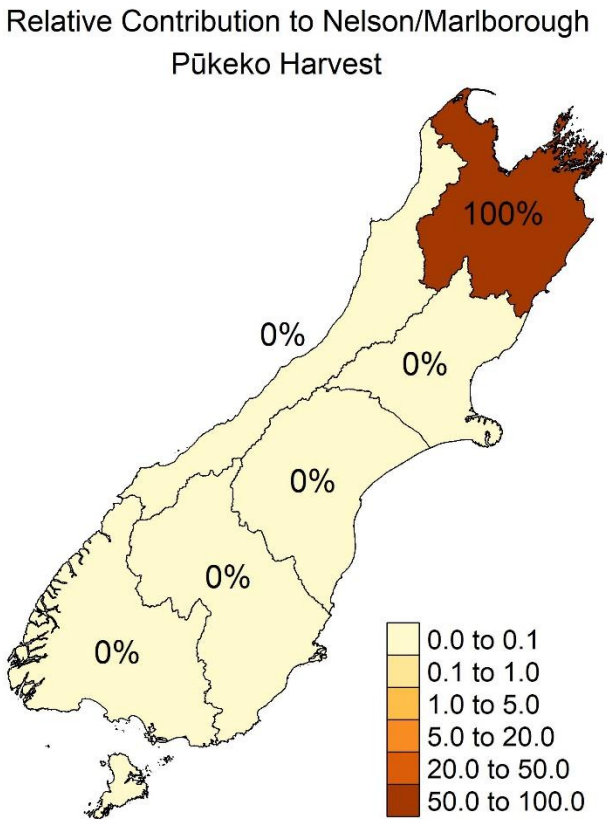

Figure 24. The percent of pūkeko harvested in the Nelson/Marlborough region that were attributed to hunters from each region in 2024.

Opening weekend accounted for 58% of total pūkeko harvest in the Nelson/Marlborough region during the 2024 game bird season.

Hunters from Nelson/Marlborough were the only hunters who reported pūkeko harvest in the Nelson/Marlborough region.

Hunters from Nelson/Marlborough were responsible for 7% of estimated pūkeko harvest in the West Coast, but did not report harvesting pūkeko in any other region.

NORTH CANTERBURY

Hunter Days

During the 2024 season, hunters spent an estimated 7,489 hunter days hunting within the North Canterbury region.

Hunt days in 2024 were very similar to the 2023 season, with a difference of less than 1%.

The long-term average is 7,610 hunter days, with a stable trend since 2015.

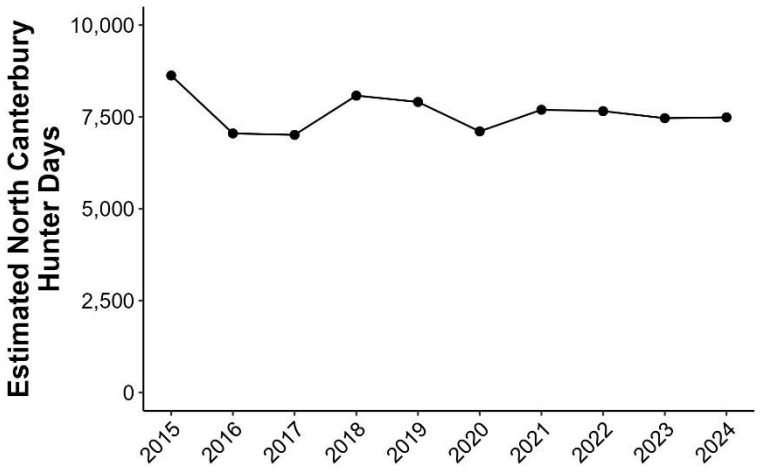

Figure 25. The number of estimated hunter days by year for the North Canterbury Region, 2015-2024.

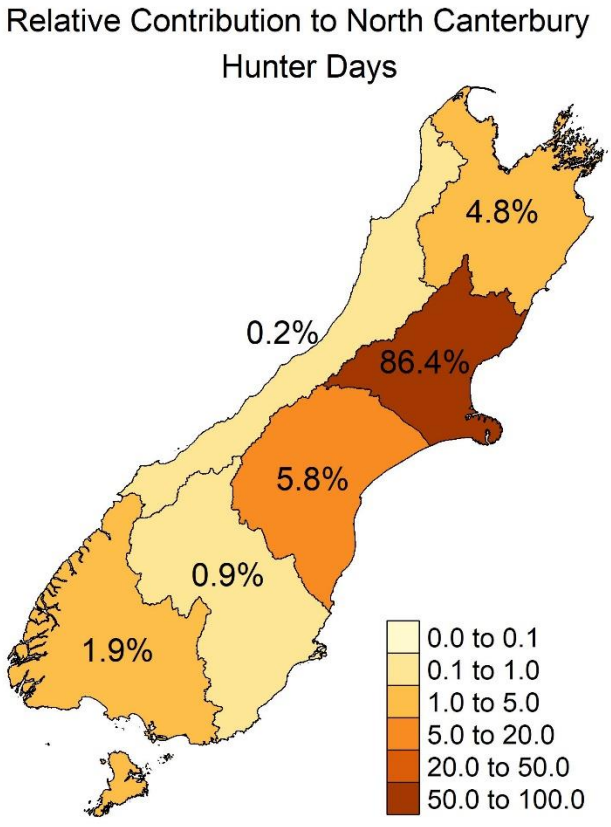

Figure 26. The percent of total days hunted in the North Canterbury region that were attributed to hunters from each region in 2024.

Opening weekend accounted for 31% of total hunter days in North Canterbury during the 2024 game bird season.

Hunters from North Canterbury accounted for 86% of estimated hunter days, followed by 6% from Central South Island, 5% from Nelson/Marlborough, 2% from Southland, and <1% from the West Coast and Otago.

Hunters from North Canterbury accounted for 4% of estimated hunter days in Nelson/Marlborough, 29% in the West Coast, 19% in Central South Island, 3% in Otago, and 2% in Southland.

Harvest

Greylards

During the 2024 season, an estimated 21,366 greylards were harvested in the North Canterbury region.

This represents, roughly, a 3% increase from the 2023 season harvest.

The long-term average number of greylards harvested is 26,229, 23% greater than the 2024 harvest. The trend in greylard harvest since 2015 is largely stable, despite annual variation.

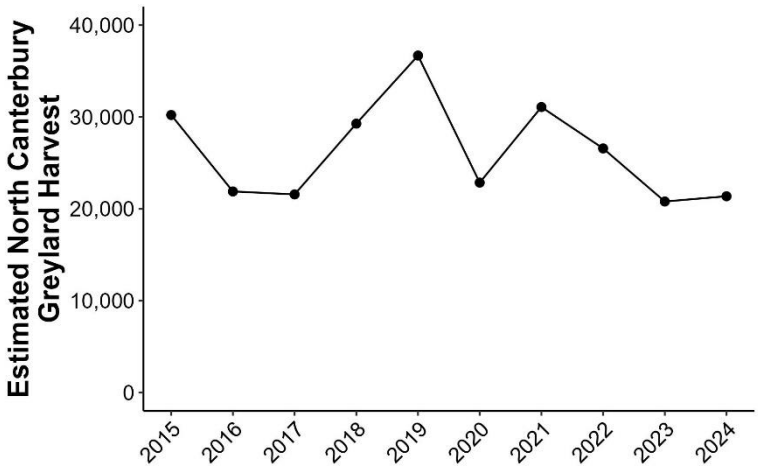

Figure 27. The number of estimated greylards harvested by year on the North Canterbury region, 2015-2024.

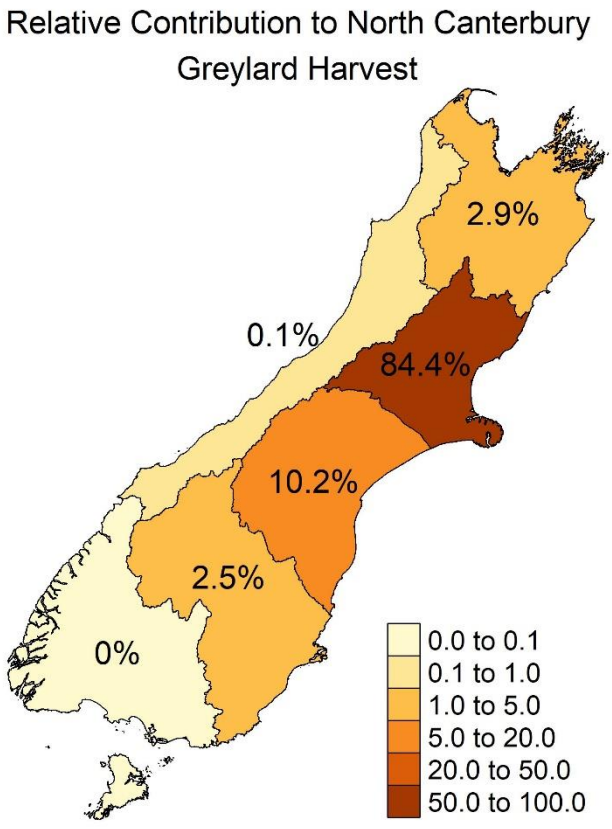

Figure 28. The percent of greylards harvested in the North Canterbury region that were attributed to hunters from each region in 2024.

Opening weekend accounted for 38% of total greylard harvest in the North Canterbury region during the 2024 game bird season.

Hunters from North Canterbury were responsible for 84% of estimated harvest in the region. An additional 10% of estimated harvest was attributed to hunters from Central South Island, followed by 3% to hunters from Nelson/Marlborough and Otago, and >1% to hunters from the West Coast.

Hunters from North Canterbury were responsible for 8% of the estimated greylard harvest in Nelson/Marlborough, 29% in the West Coast, 16% in Central South Island, 3% in Otago, and 2% in Southland.

Harvest

Paradise Shelducks

During the 2024 season, hunters harvested an estimated 13,017 paradise shelducks in the North Canterbury region.

This represents, roughly, a 50% increase from the 2023 season harvest.

The long-term average number of paradise shelducks harvested is 7,861, 40% below the 2024 harvest. There is an increasing trend in paradise shelduck harvest since 2015.

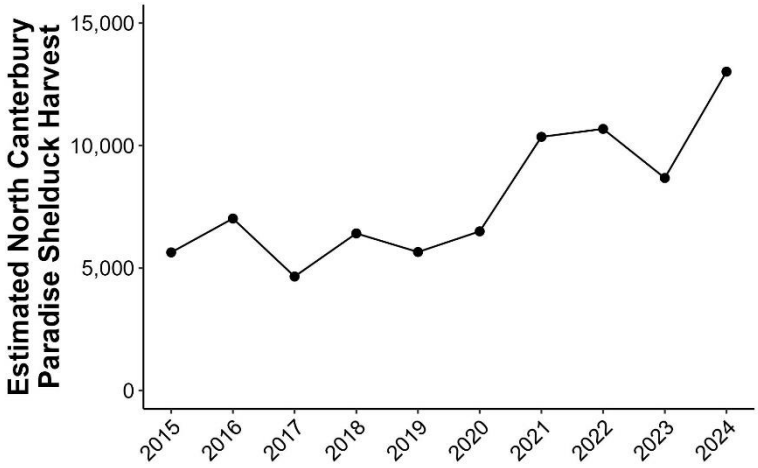

Figure 29. The number of estimated paradise shelducks harvested by year in the North Canterbury region, 2015-2024.

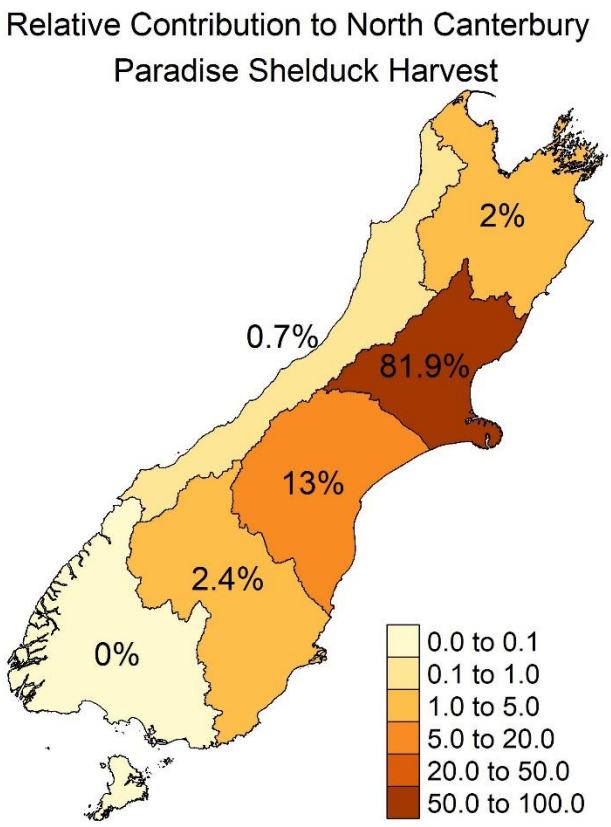

Figure 30. The percent of total paradise shelducks harvested in the North Canterbury region that were attributed to hunters from each region in 2024.

Opening weekend accounted for 50% of total paradise shelduck harvest in the North Canterbury region during the 2024 game bird season.

Hunters from North Canterbury were responsible for 82% of estimated harvest in the region. An additional 13% of estimated harvest was attributed to hunters from Central South Island, 2% to hunters from Nelson/Marlborough and Otago, and <1% to hunters from the West Coast.

Hunters from North Canterbury were responsible for 3% of estimated paradise shelduck harvest in Nelson/Marlborough, 32% in the West Coast, 23% in Central South Island, 4% in Otago, and 3% in Southland.

Harvest

Australasian Shovelers

During the 2024 season, an estimated 658 shovelers were harvested in the North Canterbury region.

This is very similar to the 2023 season harvest, roughly a 1% difference.

The long-term average number of shovelers harvested is 545, 17% less than the 2024 harvest. The long-term trend in shoveler harvest since 2015 is stable, despite large annual variation.

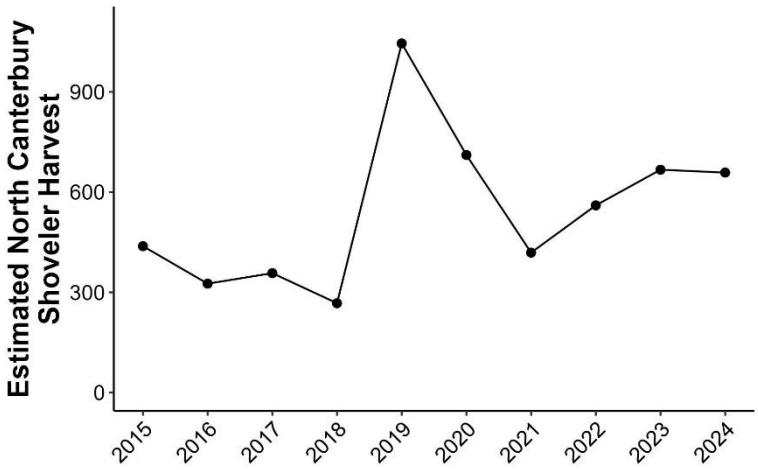

Figure 31. The number of estimated shovelers harvested by year in the North Canterbury region, 2015-2024.

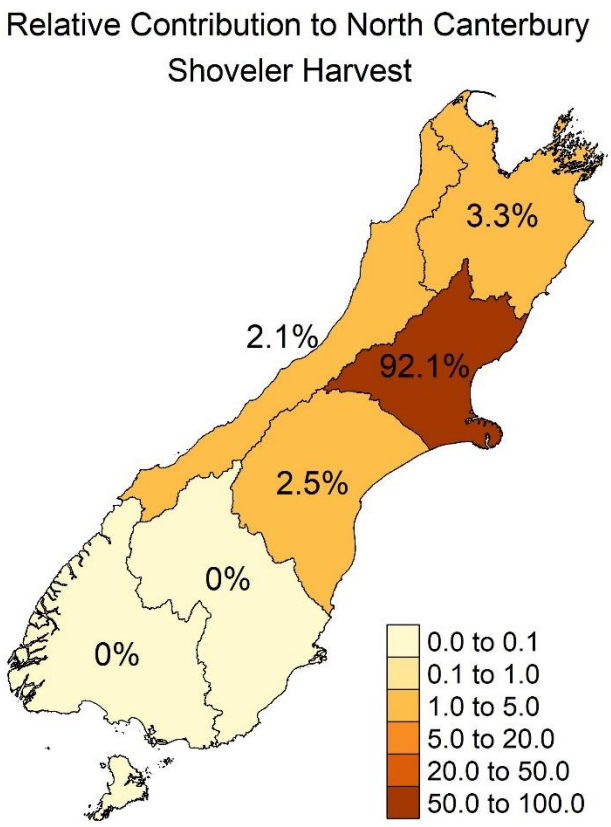

Figure 32. The percent of total shovelers harvested in the North Canterbury region that were attributed to hunters from each region in 2024.

Opening weekend accounted for 44% of total shoveler harvest in the North Canterbury region during the 2024 game bird season.

Hunters from North Canterbury were responsible for 92% of estimated harvest in the region. An additional 3% of estimated harvest was attributed to hunters from Nelson/Marlborough and Central South Island, and 2% to hunters from the West Coast.

Hunters from North Canterbury were responsible for 22% of estimated shoveler harvest in Nelson/Marlborough, 56% in the West Coast, 30% in Central South Island, 6% in Otago, and 3% in Southland.

Harvest

Black Swans

During the 2024 season, an estimated 659 black swans were harvested in the North Canterbury region.

This represents less than a 1% difference from the 2023 season harvest.

The long-term average number of black swans harvested is 738, 12% greater than the 2024 harvest. The long-term trend in black swan harvest since 2015 is largely stable, despite large annual variation.

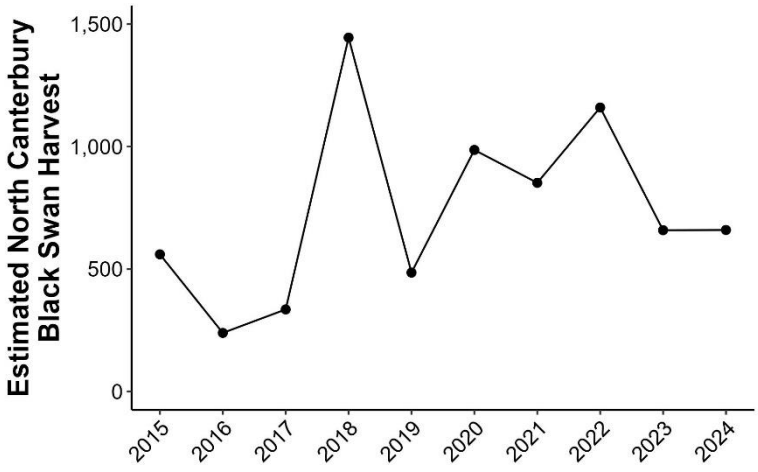

Figure 33. The number of estimated black swans harvested by year in the North Canterbury region, 2015-2024.

Opening weekend accounted for 52% of total black swan harvest in the North Canterbury region during the 2024 game bird season.

Hunters from North Canterbury were responsible for 90% of estimated harvest in the region. An additional 10% of estimated harvest was attributed to hunters from Nelson/Marlborough.

Hunters from North Canterbury were responsible for 9% of estimated black swan harvest in Nelson/Marlborough, 80% in the West Coast, 27% in Central South Island, and 6% in Otago.

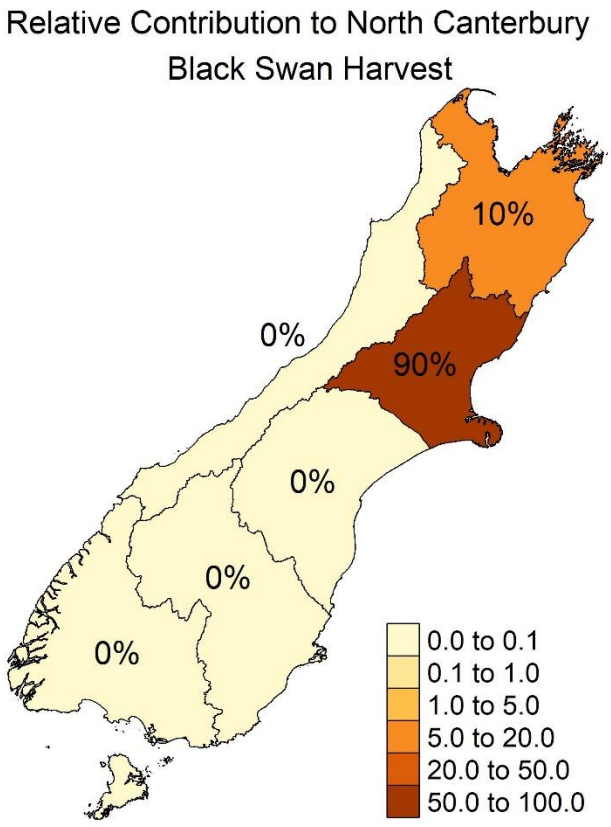

Figure 34. The percent of black swans harvested in the North Canterbury region that were attributed to hunters from each region in 2024.

Harvest

Pūkeko

During the 2024 season, an estimated 167 pūkeko were harvested in the North Canterbury region.

This represents roughly a 75% increase from the 2023 season harvest.

The long-term average number of pūkeko harvested is 139, 17% less than the 2024 harvest. The long-term trend in pūkeko harvest since 2015 is stable, despite annual variation.

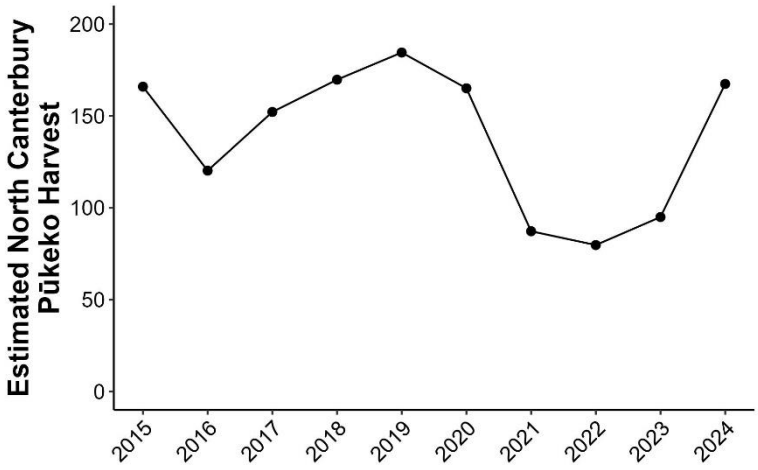

Figure 35. The number of estimated pūkeko harvested by year in the North Canterbury region, 2015-2024.

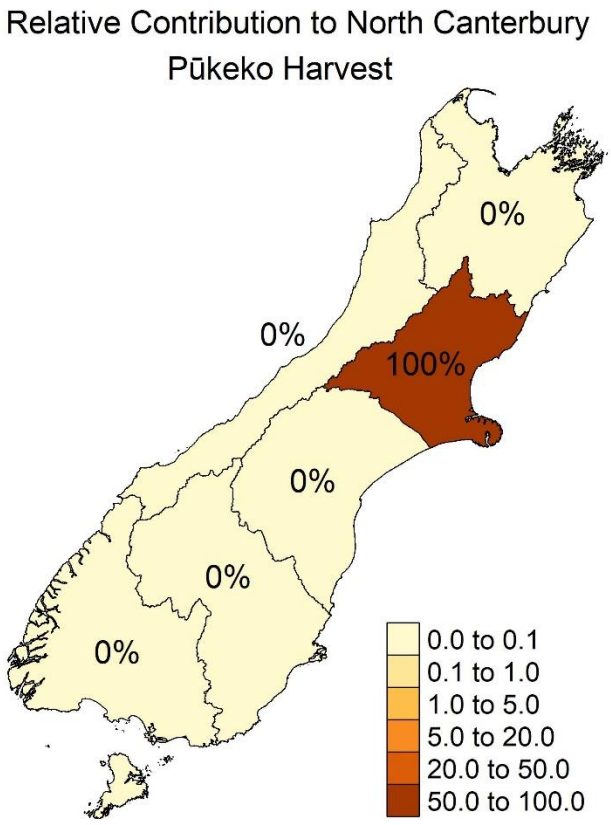

Figure 36. The percent of pūkeko harvested in the North Canterbury region that were attributed to hunters from each region in 2024.

Opening weekend accounted for 100% of total estimated pūkeko harvest in the North Canterbury region during the 2024 game bird season.

Hunters from North Canterbury were the only hunters who reported harvesting pūkeko in the North Canterbury region.

Hunters from North Canterbury were responsible for 38% of the estimated pūkeko harvest in the West Coast, but did not report harvesting pūkeko in Nelson/Marlborough or Central South Island.

WEST COAST

Hunter Days

During the 2024 season, hunters spent an estimated 1,924 hunter days hunting within the West Coast region.

Hunt days increased in 2024 by about 10% relative to the 2023 season.

The long-term average is 2,050 hunter days, with weak evidence of a slight declining trend since 2015.

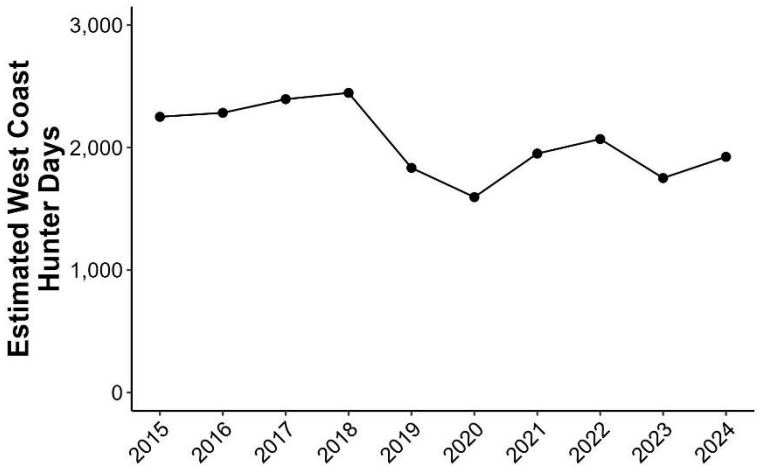

Figure 37. The number of estimated hunter days by year for the West Coast Region, 2015-2024.

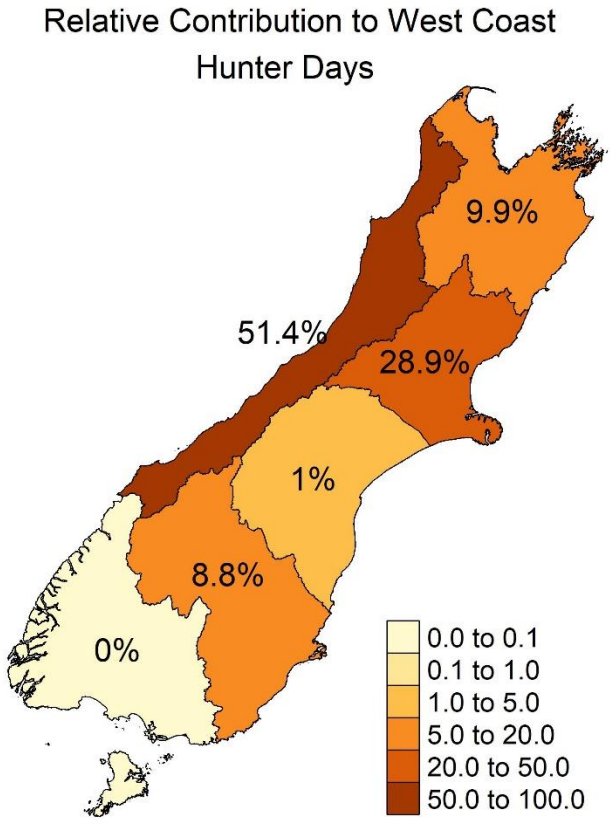

Figure 38. The percent of total days hunted in the West Coast region that were attributed to hunters from each region in 2024.

Opening weekend accounted for 41% of total hunter days in the West Coast during the 2024 game bird season.

Hunters from the West Coast accounted for 51% of estimated hunter days, followed by 29% from North Canterbury, 10% from Nelson/Marlborough, 9% from Otago, and 1% from Central South Island.

Hunters from the West Coast accounted for less than 1% of estimated hunter days for each other region.

Harvest

Greylards

During the 2024 season, an estimated 5,611 greylards were harvested in the West Coast region.

This represents, roughly, a 40% increase from the 2023 season harvest.

The long-term average number of greylards harvested is 5,869, 5% more than the 2024 harvest. There is a declining trend in greylard harvest since 2015.

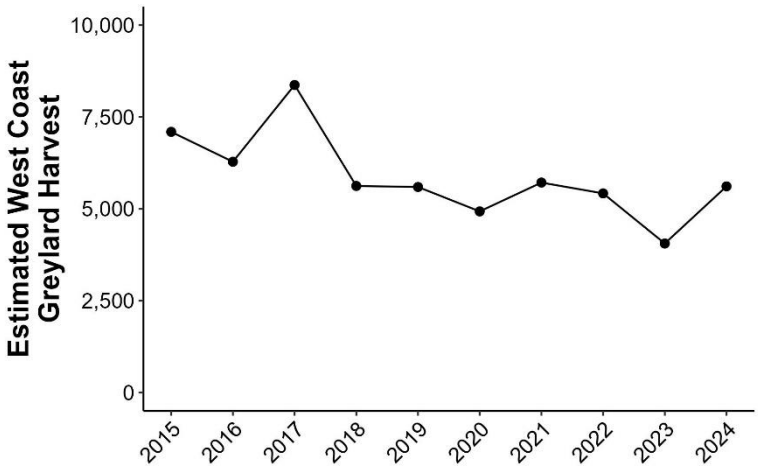

Figure 39. The number of estimated greylards harvested by year on the West Coast region, 2015-2024.

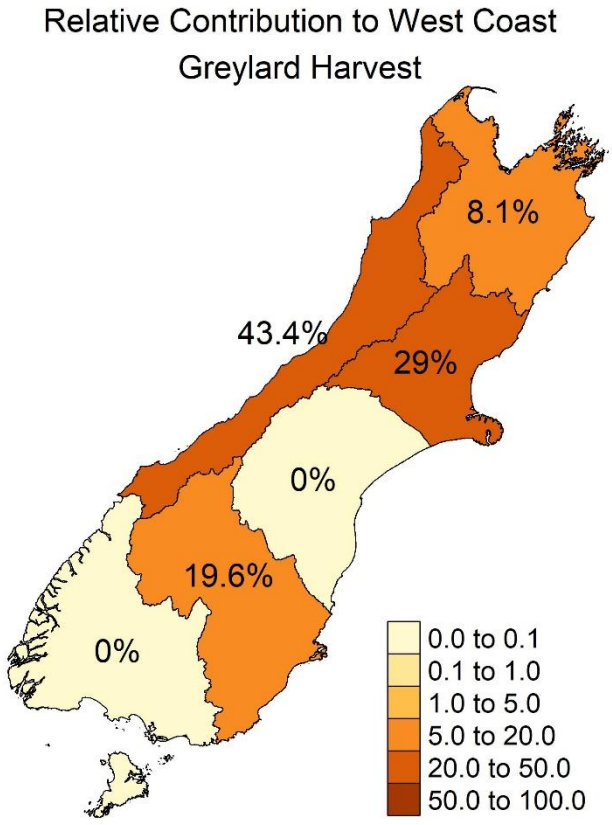

Figure 40. The percent of greylards harvested in the West Coast region that were attributed to hunters from each region in 2024.

Opening weekend accounted for 45% of total greylard harvest in the West Coast region during the 2024 game bird season.

Hunters from the West Coast were responsible for 43% of estimated harvest in the region. An additional 29% of estimated harvest was attributed to hunters from North Canterbury, followed by 20% to hunters from Otago, and 8% to hunters from Nelson/Marlborough.

Hunters from the West Coast were responsible for less than 1% of estimated greylard harvest in each other region.

Harvest

Paradise Shelducks

During the 2024 season, an estimated 5,122 paradise shelducks were harvested in the West Coast region.

This represents, roughly, a 10% increase from the 2023 season harvest.

The long-term average number of paradise shelducks harvested is 4,087, 20% less than the 2024 harvest. The long-term trend in paradise shelduck harvest since 2015 is largely stable.

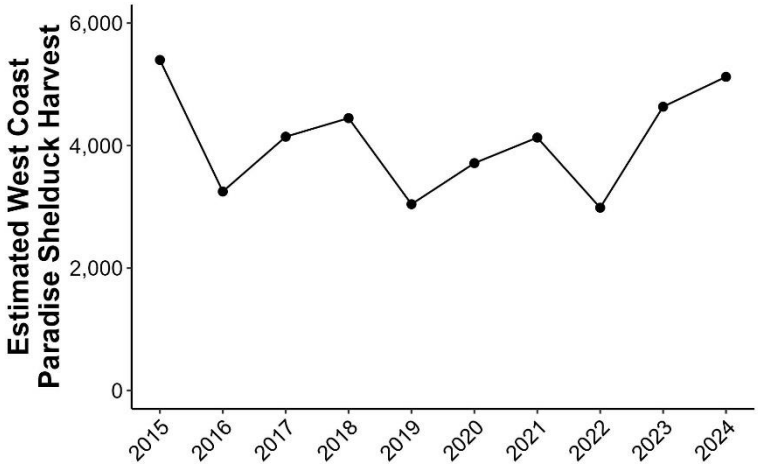

Figure 41. The number of estimated paradise shelducks harvested by year in the West Coast region, 2015-2024.

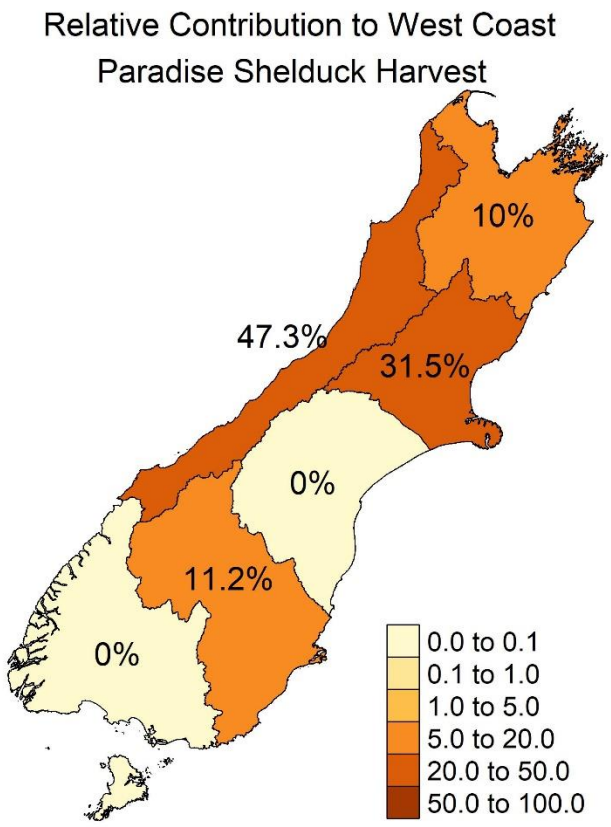

Figure 42. The percent of total paradise shelducks harvested in the West Coast region that were attributed to hunters from each region in 2024.

Opening weekend accounted for 39% of total paradise shelduck harvest in the West Coast region during the 2024 game bird season.

Hunters from the West Coast were responsible for 47% of estimated harvest in the region. An additional 32% of estimated harvest was attributed to hunters from North Canterbury, 11% to hunters from Otago, and 10% to hunters from Nelson/Marlborough.

Hunters from the West Coast are responsible for less than 1% of estimated paradise shelduck harvest in each other region.

Harvest

Australasian Shovelers

During the 2024 season, an estimated 48 shovelers were harvested in the West Coast region.

This represents nearly a 7 fold increase from the 2023 season harvest, but is very similar to the 2022 season harvest.

The long-term average number of shovelers harvested is 81, nearly twice the 2024 harvest. There is a decreasing trend in shoveler harvest since 2015.

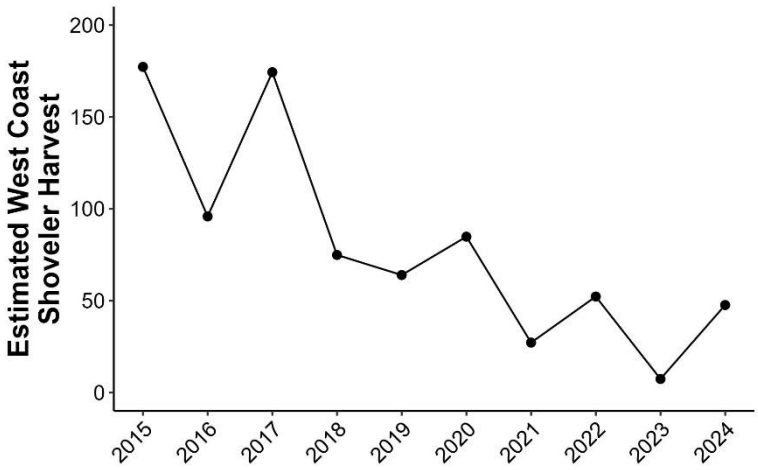

Figure 43. The number of estimated shovelers harvested by year in the West Coast region, 2015-2024.

Opening weekend accounted for 71% of total shoveler harvest in the West Coast region during the 2024 game bird season.

Hunters from the West Coast were responsible for 44% of estimated shoveler harvest in the West Coast region. An additional 56% was attributed to hunters from North Canterbury.

Hunters from the West Coast were responsible for 2% of estimated shoveler harvest in North Canterbury, and did not report harvesting shovelers in any other region.

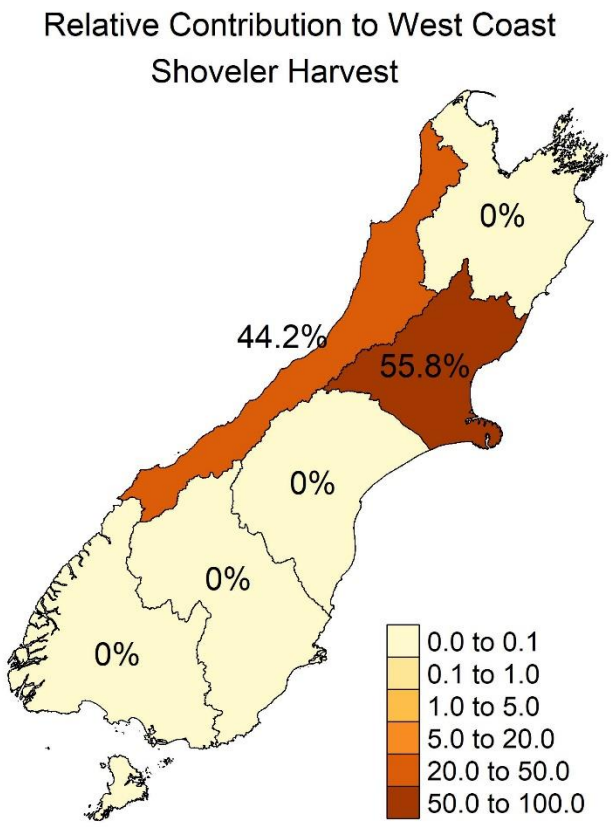

Figure 44. The percent of total shovelers harvested in the West Coast region that were attributed to hunters from each region in 2024.

Harvest

Black Swans

During the 2024 season, an estimated 337 black swans were harvested in the West Coast region.

This represents roughly a 160% increase from the 2023 season harvest.

The long-term average number of black swans harvested is 189, 44% less than the 2024 harvest. The long-term trend in black swan harvest since 2015 is largely stable, despite large annual variation.

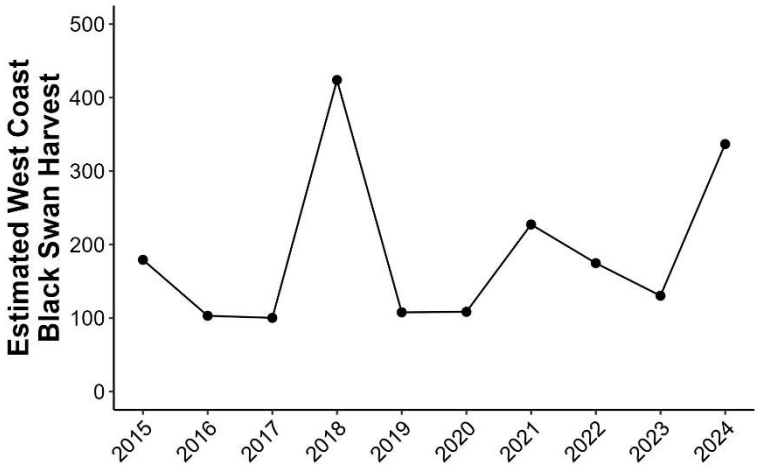

Figure 45. The number of estimated black swans harvested by year in the West Coast region, 2015-2024.

Opening weekend accounted for 13% of total black swan harvest in the West Coast region during the 2024 game bird season.

Hunters from the West Coast were responsible for 11% of estimated harvest in the region. The majority of harvest (80%) was attributed to hunters from North Canterbury. An additional 5% of estimated harvest was attributed to hunters from Otago, and 4% to hunters from North Canterbury.

Hunters from the West Coast were responsible for less than 1% of estimated black swan harvest in each other region.

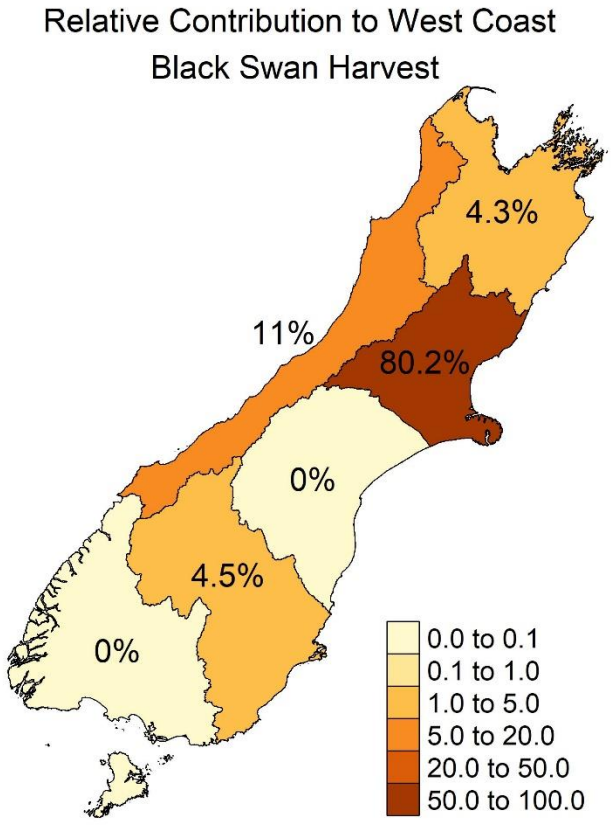

Figure 46. The percent of black swans harvested in the West Coast region that were attributed to hunters from each region in 2024.

Harvest

Pūkeko

During the 2024 season, an estimated 1,813 pūkeko were harvested in the West Coast region.

This represents roughly a 20% decrease from the 2023 season harvest.

The long-term average number of pūkeko harvested is 1,697, 6% lower than the 2024 harvest. There is weak evidence of a, increasing trend in pūkeko harvest since 2015.

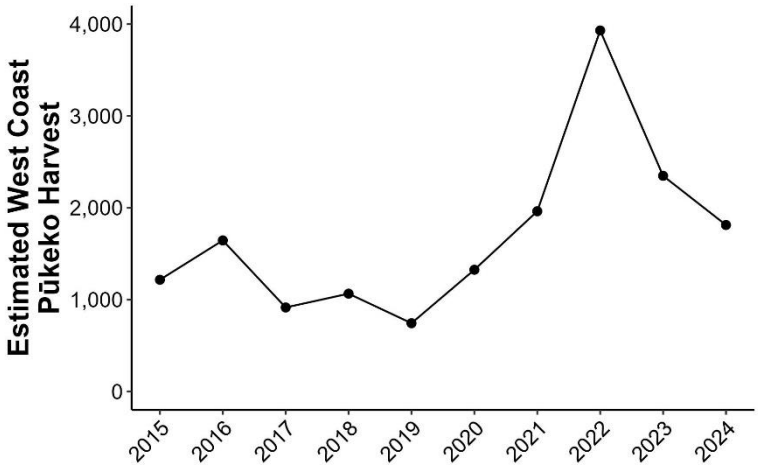

Figure 47. The number of estimated pūkeko harvested by year in the West Coast region, 2015-2024.

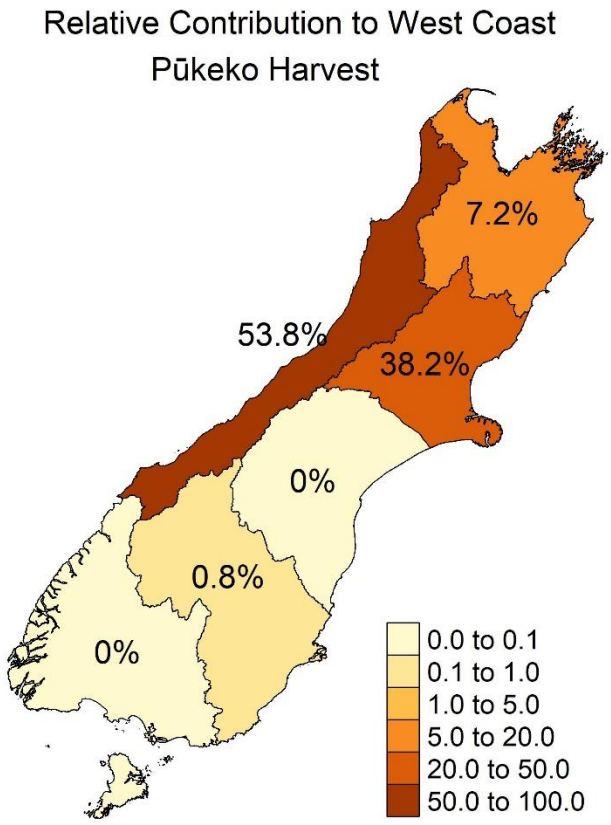

Figure 48. The percent of pūkeko harvested in the West Coast region that were attributed to hunters from each region in 2024.

Opening weekend accounted for 18% of total pūkeko harvest in the West Coast region during the 2024 game bird season.

Hunters from the West Coast were responsible for 54% of estimated harvest in the region. An additional 38% of estimated harvest was attributed to hunters from North Canterbury, 7% to hunters from Nelson/Marlborough, and <1 % to hunters from Otago.

Hunters from the West Coast did not report harvesting pūkeko in any other region.

CENTRAL SOUTH ISLAND

Hunter Days

During the 2024 season, hunters spent an estimated 8,195 hunter days hunting within the Central South Island region.

Hunt days decreased in 2024 by about 2% relative to the 2023 season.

The long-term average is 8,352 hunter days, with a stable trend since 2015.

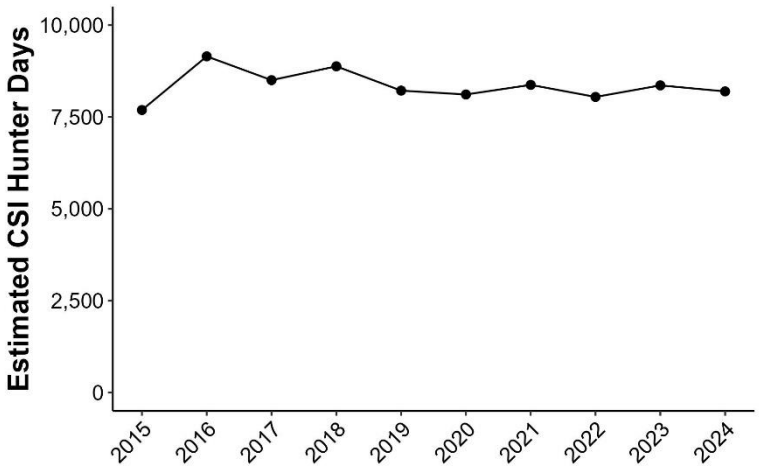

Figure 49. The number of estimated hunter days by year for the Central South Island Region, 2015-2024.

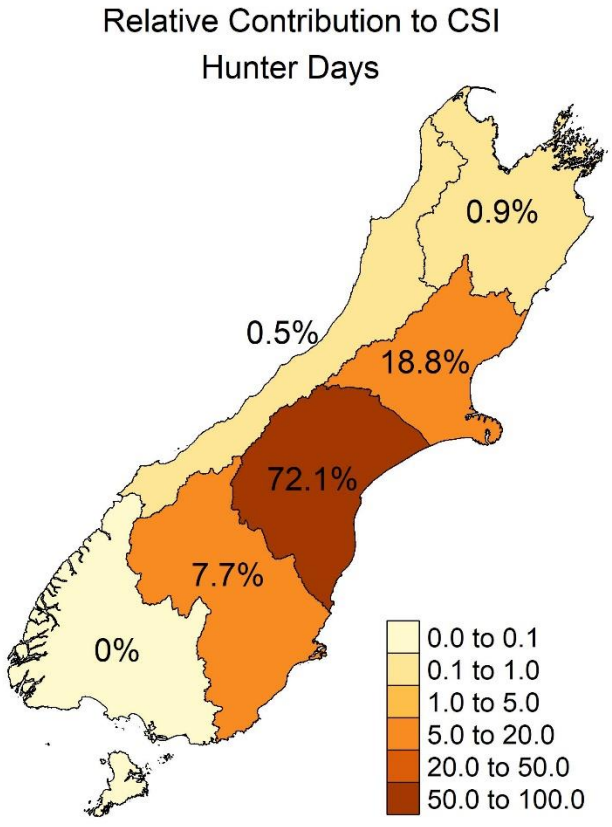

Figure 50. The percent of total days hunted in the Central South Island region that were attributed to hunters from each region in 2024.

Opening weekend accounted for 50% of total hunter days in Central South Island during the 2024 game bird season.

Hunters from Central South Island accounted for 72% of estimated hunter days, followed by 19% from North Canterbury, 8% from Otago, and <1% from Nelson/Marlborough and the West Coast.

Hunters from Central South Island accounted for 2% of estimated hunter days in Nelson/Marlborough, 6% in North Canterbury, 2% in Otago, 1% in Southland and the West Coast.

Harvest

Greylards

During the 2024 season, an estimated 44,088 greylards were harvested in the Central South Island region.

This represents, roughly, a 7% decrease from the 2023 season harvest.

The long-term average number of greylards harvested is 51,229, 16% more than the 2024 harvest. The trend in greylard harvest since 2015 is largely stable.

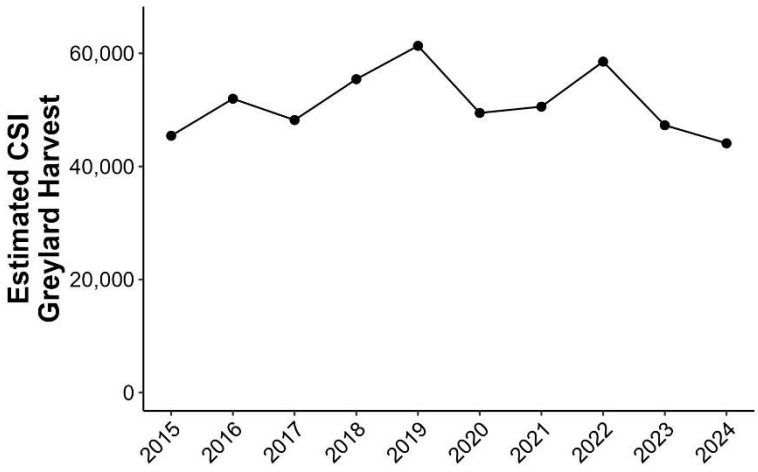

Figure 51. The number of estimated greylards harvested by year on the Central South Island region, 2015-2024.

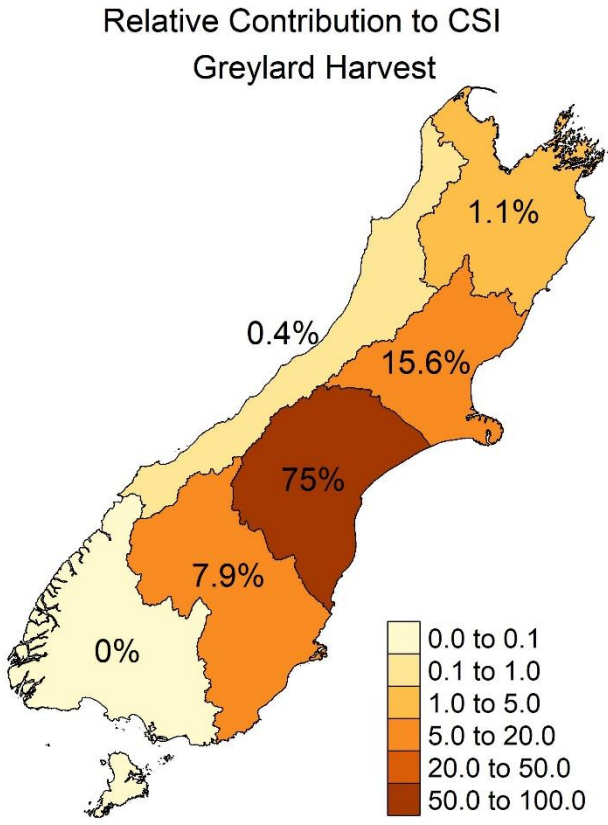

Figure 52. The percent of greylards harvested in the Central South Island region that were attributed to hunters from each region in 2024.

Opening weekend accounted for 58% of total greylard harvest in the Central South Island region during the 2024 game bird season.

Hunters from Central South Island were responsible for 75% of estimated harvest in the region. An additional 16% of estimated harvest was attributed to hunters from North Canterbury, followed by 8% to hunters from Otago, 1% to hunters from Nelson/ Marlborough, and <1% to hunters from the West Coast.

Hunters from Central South Island were responsible for 10% of estimated greylard harvest in North Canterbury, 5% in Nelson/Marlborough, and 3% in Otago and Southland.

Harvest

Paradise Shelducks

During the 2024 season, an estimated 14,992 paradise shelducks were harvested in the Central South Island region.

This represents, roughly, a 15% increase from the 2023 season harvest.

The long-term average number of paradise shelducks harvested is 11,983, 20% less than the 2024 harvest. There is an increasing trend in paradise shelduck harvest since 2015.

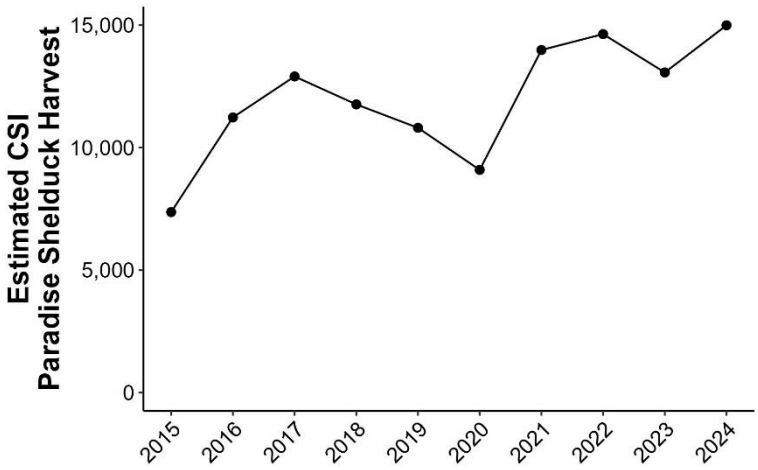

Figure 53. The number of estimated paradise shelducks harvested by year in the Central South Island region, 2015-2024.

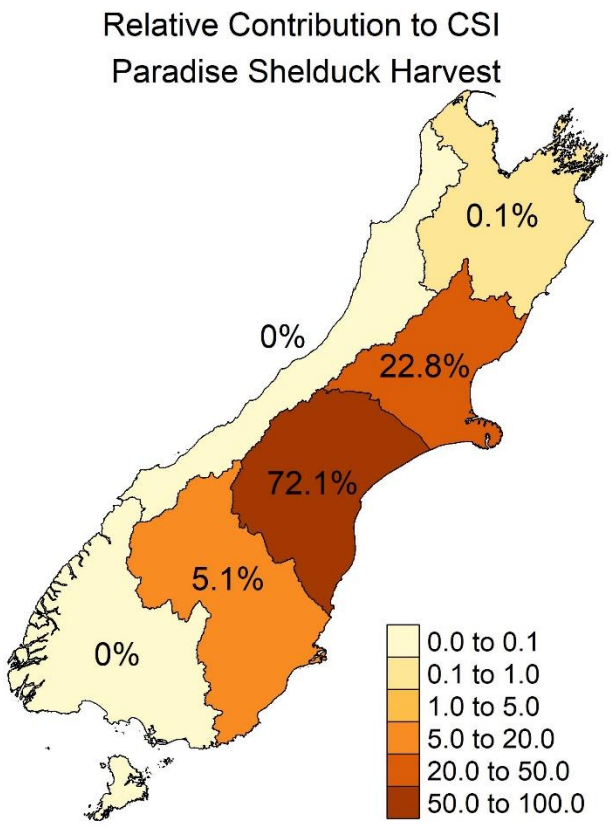

Figure 54. The percent of total paradise shelducks harvested in the Central South Island region that were attributed to hunters from each region in 2024.

Opening weekend accounted for 57% of total paradise shelduck harvest in the Central South Island region during the 2024 game bird season.

Hunters from Central South Island were responsible for 72% of estimated harvest in the region. An additional 23% of estimated harvest was attributed to hunters from North Canterbury, 5% to hunters from Otago, and <1% to hunters from Nelson/Marlborough.

Hunters from Central South Island were responsible for 13% of estimated paradise shelduck harvest in North Canterbury, and less than 1% in every other region.

Harvest

Australasian Shovelers

During the 2024 season, an estimated 525 shovelers were harvested in the Central South Island region.

This represents, roughly, a 28% increase from the 2023 season harvest.

The long-term average number of shovelers harvested is 407, 23% less than the 2024 harvest. The long-term trend in shoveler harvest since 2015 is stable, despite large annual variation.

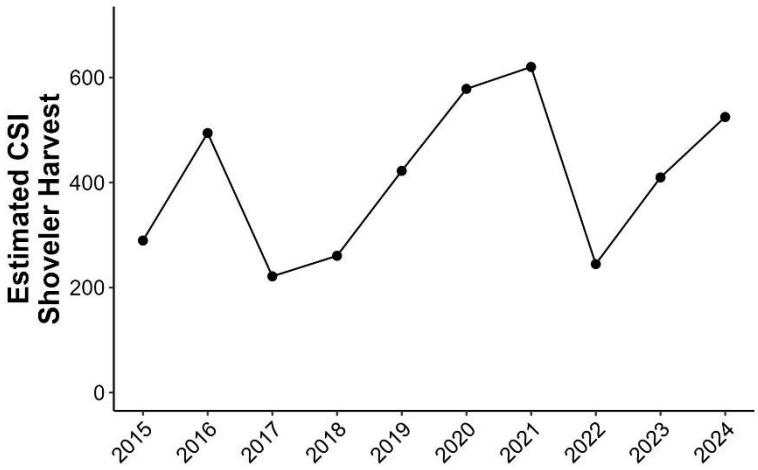

Figure 55. The number of estimated shovelers harvested by year in the Central South Island region, 2015-2024.

Opening weekend accounted for 26% of total shoveler harvest in the Central South Island region during the 2024 game bird season.

Hunters from Central South Island were responsible for 70% of estimated harvest in the region. An additional 30% of estimated harvest was attributed to hunters from North Canterbury.

Hunters from Central South Island were responsible for 3% of estimated shoveler harvest in North Canterbury, 4% in Southland, and less than 1% in each other region.

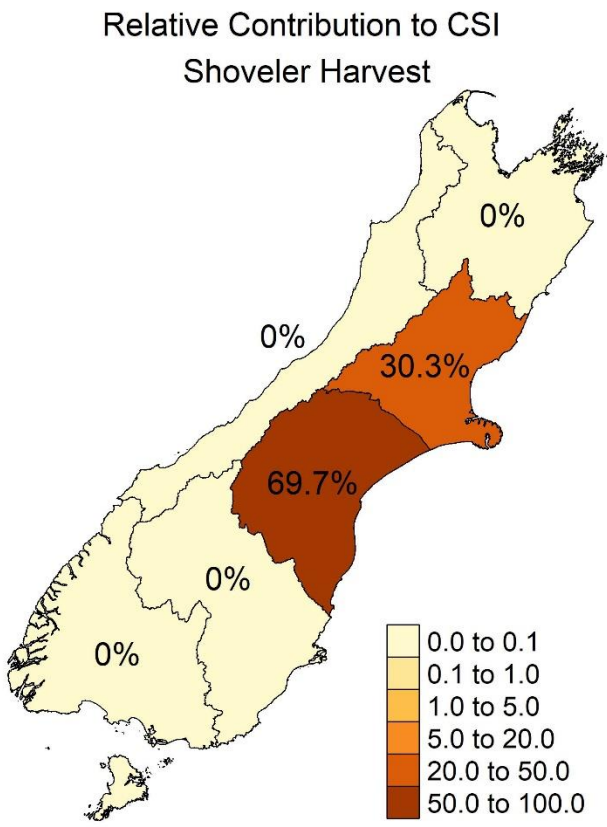

Figure 56. The percent of total shovelers harvested in the Central South Island region that were attributed to hunters from each region in 2024.

Harvest

Black Swans

During the 2024 season, an estimated 1,165 black swans were harvested in the Central South Island region.

This represents roughly a 128% increase from the 2023 season harvest.

The long-term average number of black swans harvested is 669, 43% less than the 2024 harvest. The long-term trend in black swan harvest since 2015 is largely stable, though the 2024 harvest deviates from the previous trend.

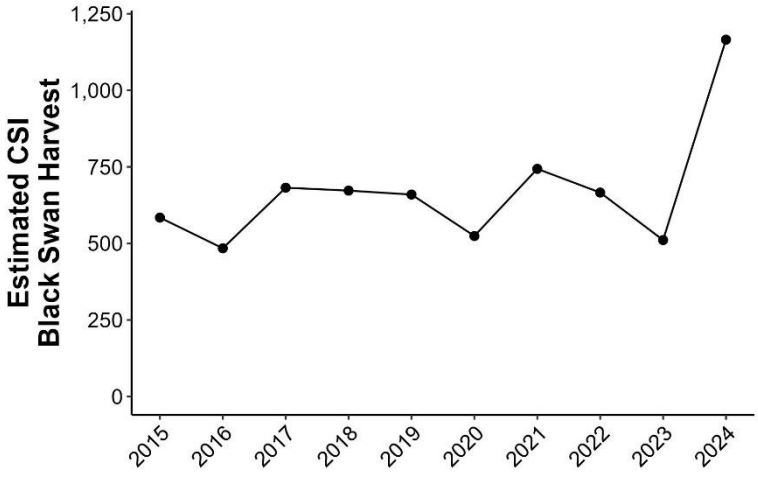

Figure 57. The number of estimated black swans harvested by year in the Central South Island region, 2015-2024.

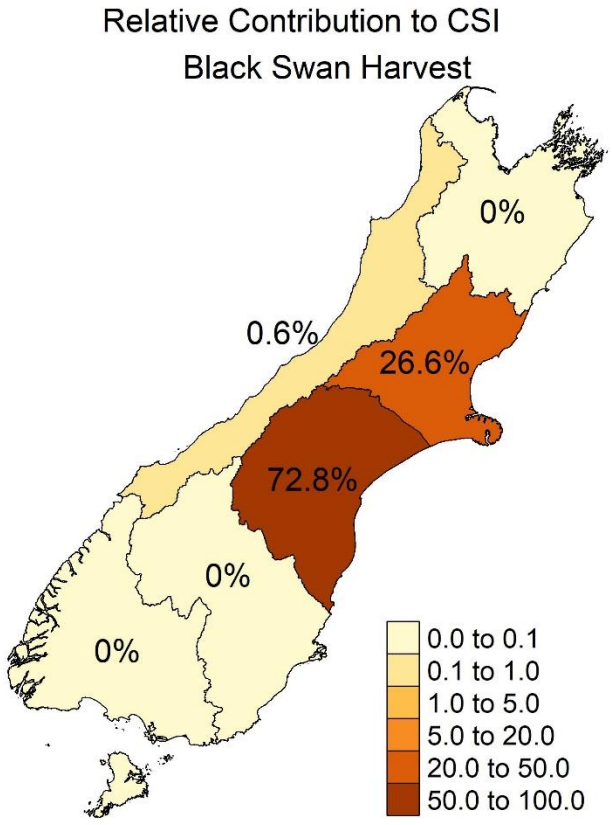

Figure 58. The percent of black swans harvested in the Central South Island region that were attributed to hunters from each region in 2024.

Opening weekend accounted for 37% of total black swan harvest in the Central South Island region during the 2024 game bird season.

Hunters from Central South Island were responsible for 73% of estimated harvest in the region. An additional 27% of estimated harvest was attributed to hunters from North Canterbury, and <1% to hunters from the West Coast.

Hunters from Central South Island did not report harvesting black swans in any other region.

Harvest

Pūkeko

During the 2024 season, there was no reported pūkeko harvest in the Central South Island region.

During the 2023 season, there was an estimated harvest of 123 pūkeko. The long-term average number of pūkeko harvested is 134.

There is stable long-term trend in pūkeko harvest since 2015, despite large annual variation.

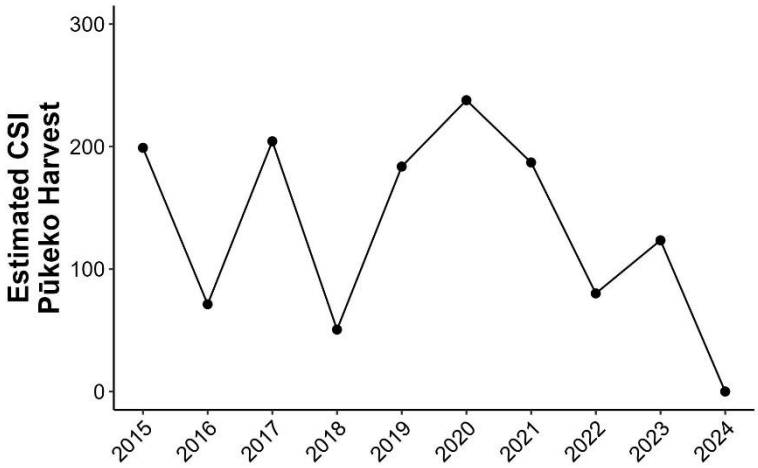

Figure 59. The number of estimated pūkeko harvested by year in the Central South Island region, 2015-2024.

During the 2023 season, opening weekend accounted for 74% of total pūkeko harvest in the Central South Island region.

Hunters from Central South Island did not report harvesting pūkeko in any other region.

OTAGO

Hunter Days

During the 2024 season, hunters spent an estimated 10,198 hunter days hunting within the Otago region.

Hunt days decreased in 2024 by about 4% relative to the 2023 season.

The long-term average is 11,186 hunter days, with a slight declining trend since 2015.

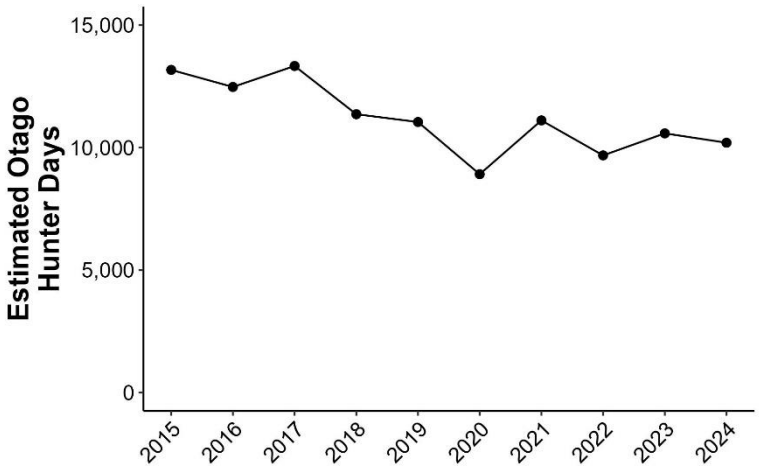

Figure 60. The number of estimated hunter days by year for the Otago Region, 2015-2024.

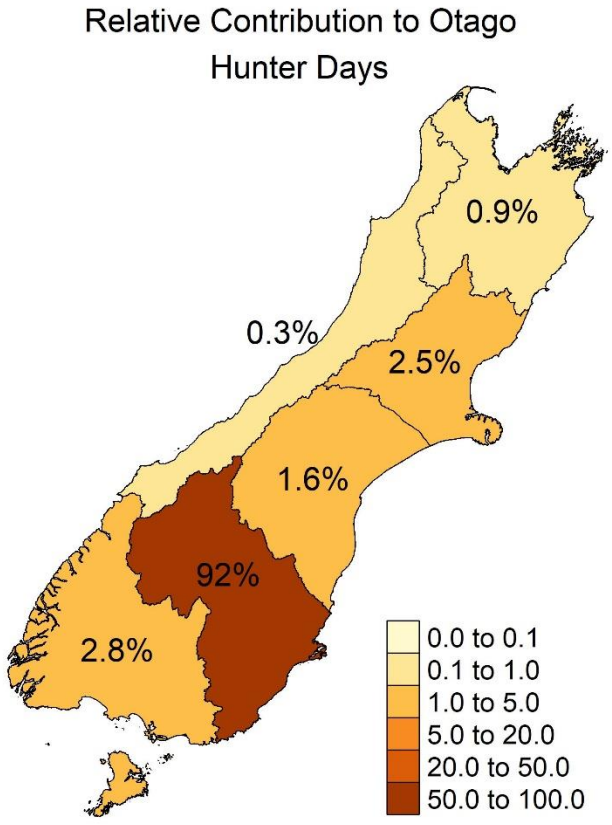

Figure 61. The percent of total days hunted in the Otago region that were attributed to hunters from each region in 2024.

Opening weekend accounted for 47% of total hunter days in Otago during the 2024 game bird season.

Hunters from Otago accounted for 92% of estimated hunter days, followed by 3% from North Canterbury and Southland, 2% from Central South Island, and <1% from Nelson/Marlborough and the West Coast.

Hunters from Otago accounted for 11% of estimated hunter days in Southland, 9% in the West Coast, 8% in Central South Island and <1% in North Canterbury.

Harvest

Greylards

During the 2024 season, an estimated 37,405 greylards were harvested in the Otago region.

This represents, roughly, a 10% decrease from the 2023 season harvest.

The long-term average number of greylards harvested is 48,444, 30% more than the 2024 harvest. Since the 2015 season, there has been a slight declining trend in greylard harvest.

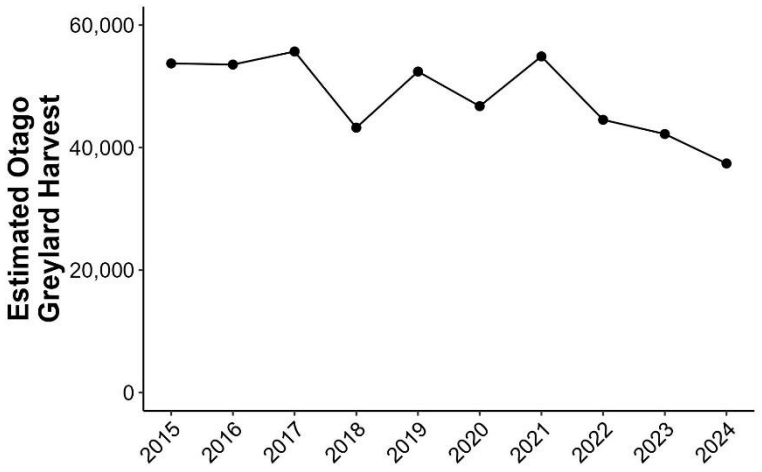

Figure 62. The number of estimated greylards harvested by year on the Otago region, 2015-2024.

Opening weekend accounted for 61% of total greylard harvest in the Otago region during the 2024 game bird season.

Hunters from Otago were responsible for 90% of estimated harvest in the region. An additional 3% of estimated harvest was attributed to hunters from Central South Island and North Canterbury, followed by 2% to hunters from Nelson/Marlborough and Southland, and <1% to hunters from the West Coast.

Hunters from Otago were responsible for 20% of estimated greylard harvest in the West Coast, 8% in Central South Island, 12% in Southland, and 3% in North Canterbury.

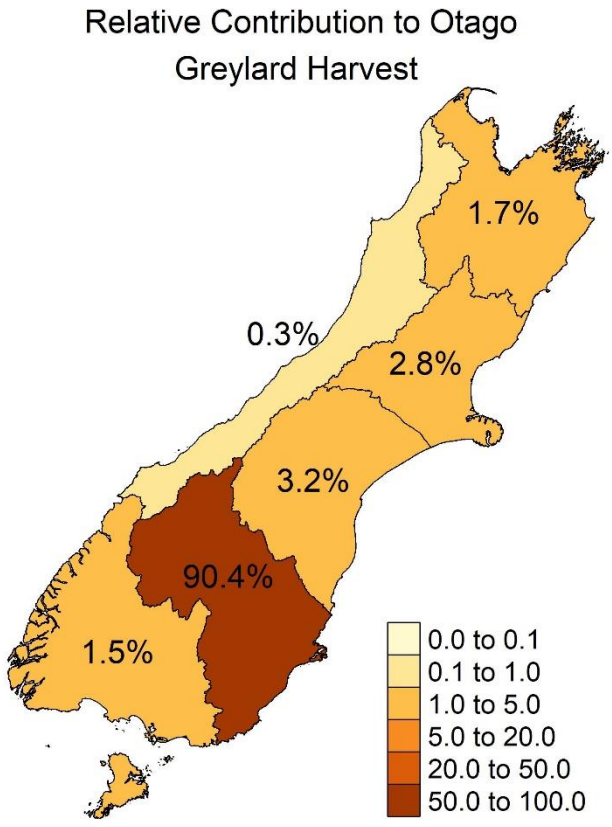

Figure 63. The percent of greylards harvested in the Otago region that were attributed to hunters from each region in 2024.

Harvest

Paradise Shelducks

During the 2024 season, an estimated 11,560 paradise shelducks were harvested in the Otago region.

This represents, roughly, an 15% decrease from the 2023 season harvest.

The long-term average number of paradise shelducks harvested is 12,720, 10% more than the 2024 harvest. The long-term trend in paradise shelduck harvest since 2015 is largely stable.

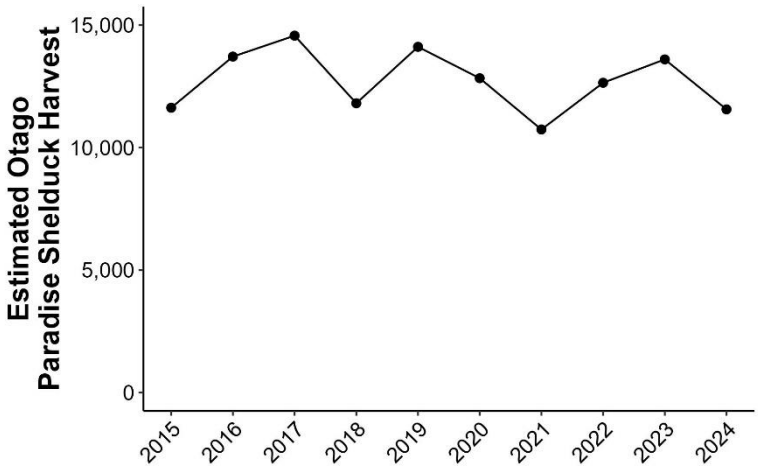

Figure 64. The number of estimated paradise shelducks harvested by year in the Otago region, 2015-2024.

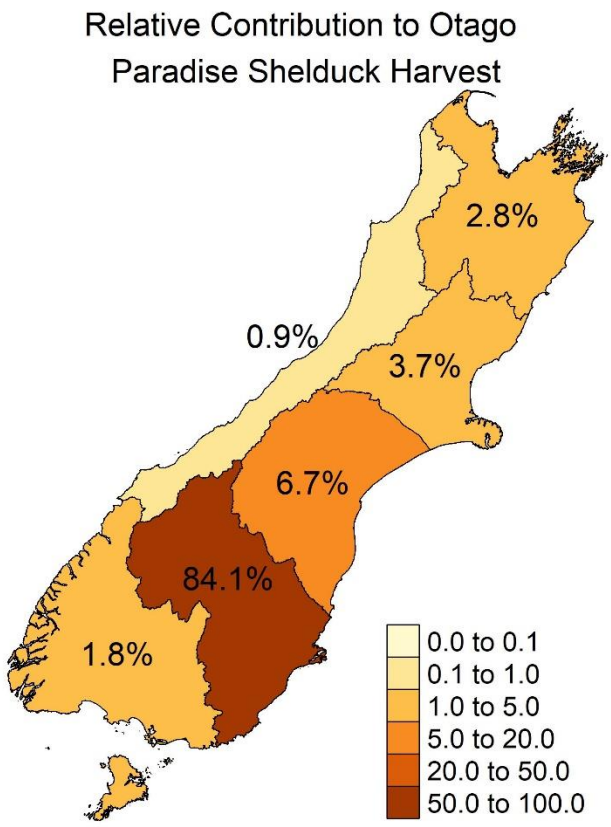

Figure 65. The percent of total paradise shelducks harvested in the Otago region that were attributed to hunters from each region in 2024.

Opening weekend accounted for 54% of total paradise shelduck harvest in the Otago region during the 2024 game bird season.

Hunters from Otago were responsible for 84% of estimated harvest in the region. An additional 7% of estimated harvest was attributed to hunters from Central South Island, 4% to hunters from North Canterbury, 3% to hunters from Nelson Marlborough, 2% to hunters from Southland, and <1% to hunters from the West Coast.

Hunters from Otago were responsible for 20% of paradise shelduck harvest in Southland, 11% in the West Coast, 5% in Central South Island, and 2% in North Canterbury.

Harvest

Australasian Shovelers

During the 2024 season, an estimated 478 shovelers were harvested in the Otago region.

This represents, roughly, a 30% increase from the 2023 season harvest.

The long-term average number of shovelers harvested is 1,171, more than double the 2024 harvest. There is no evident long-term trend in shoveler harvest, despite large annual variation.

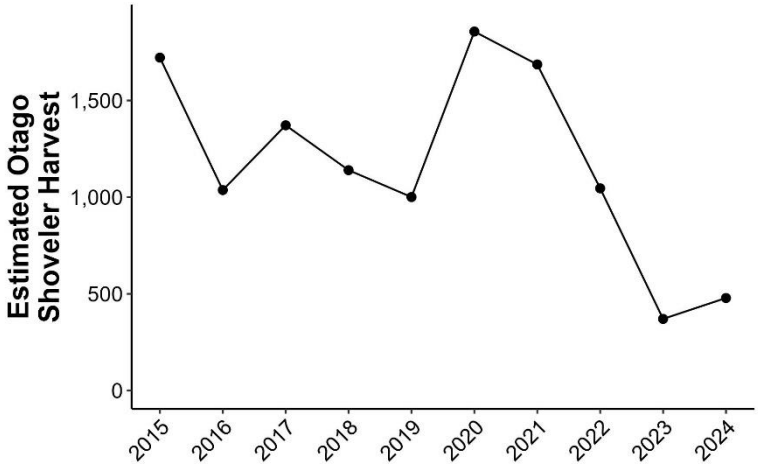

Figure 66. The number of estimated shovelers harvested by year in the Otago region, 2015-2024.

Opening weekend accounted for 69% of total shoveler harvest in the Otago region during the 2024 game bird season.

Hunters from Otago were responsible for 83% of estimated harvest in the region. An additional 9% of estimated harvest was attributed to hunters from Southland, 6% to hunters from North Canterbury, and 3% to hunters from Nelson/Marlborough.

Hunters from Otago were responsible for 4% of estimated shoveler harvest in Southland, but did not report harvesting shoveler in any other region.

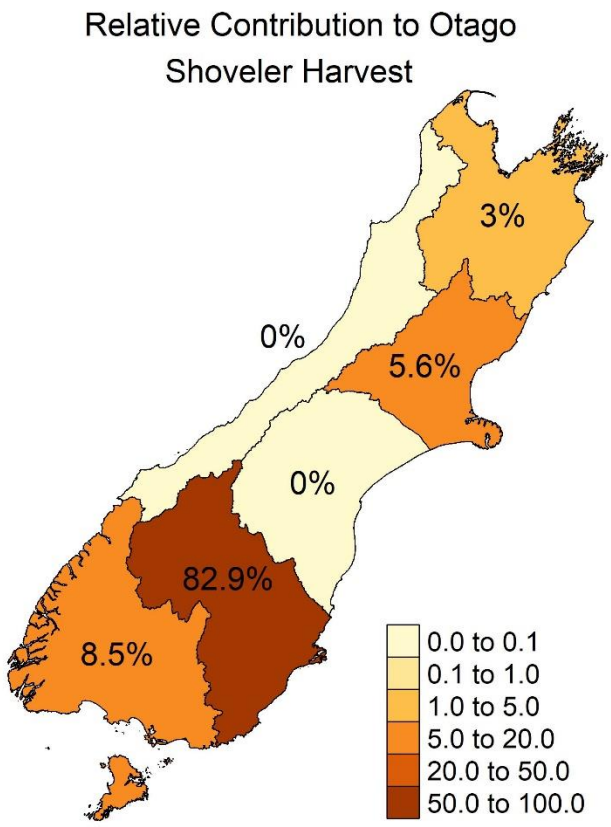

Figure 67. The percent of total shovelers harvested in the Otago region that were attributed to hunters from each region in 2024.

Harvest

Black Swans

During the 2024 season, an estimated 1,818 black swans were harvested in the Otago region.

This represents nearly a 250% increase from the 2023 season harvest.

The long-term average number of black swans harvested is 855, about half the 2024 harvest. The long-term trend in black swan harvest since 2015 is largely stable, despite large annual variation.

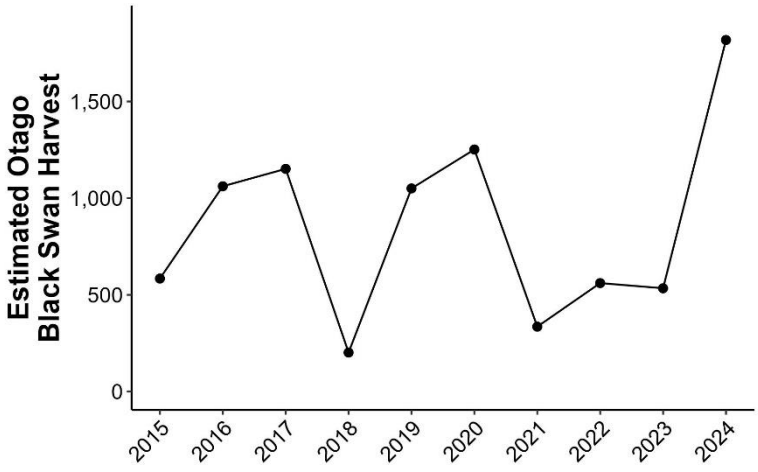

Figure 68. The number of estimated black swans harvested by year in the Otago region, 2015-2024.

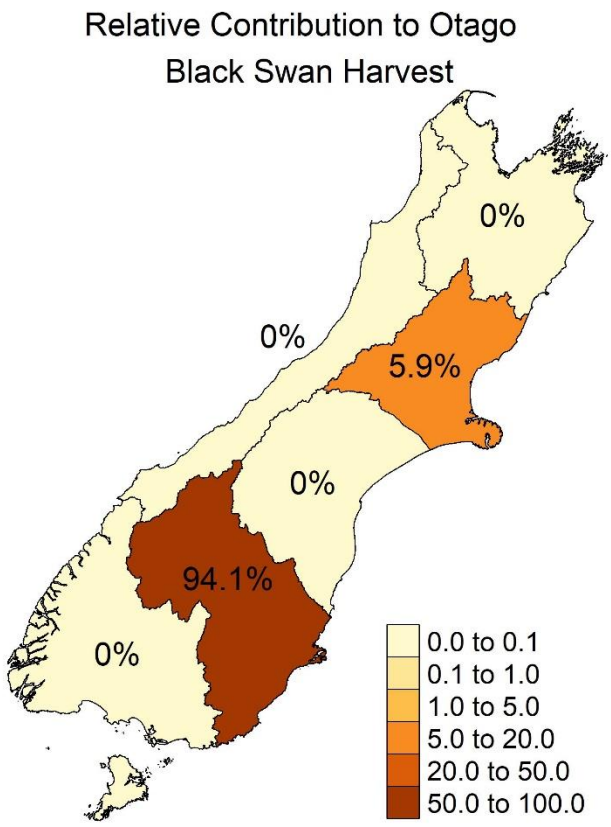

Figure 69. The percent of black swans harvested in the Otago region that were attributed to hunters from each region in 2024.

Opening weekend accounted for 13% of total black swan harvest in the Otago region during the 2024 game bird season.

Hunters from Otago were responsible for 94% of estimated harvest in the region. An additional 6% of estimated harvest was attributed to hunters from North Canterbury.

Hunters from Otago were responsible for 4.5% of estimated black swan harvest in the West Coast, but did not report harvesting black swans in any other region.

SOUTHLAND

Hunter Days

During the 2024 season, hunters spent an estimated 18,321 hunter days hunting within the Southland region.

Hunt days decreased in 2024 by about 15% relative to the 2023 season.

The long-term average is 21,752 hunter days, with a stable trend since 2015.

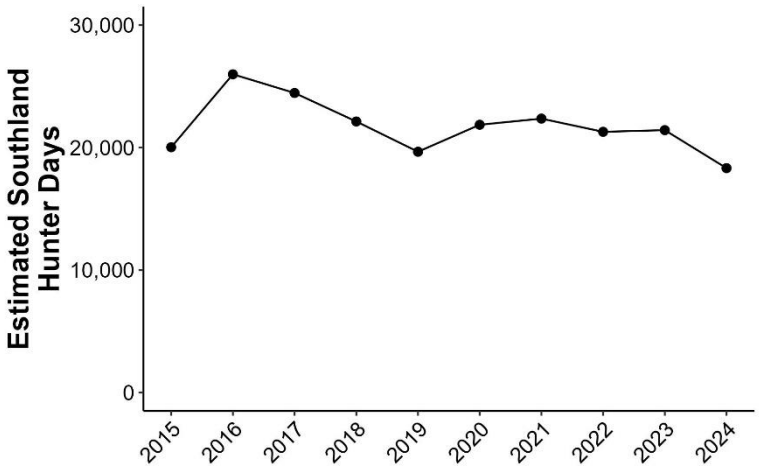

Figure 70. The number of estimated hunter days by year for the Southland Region, 2015-2024.

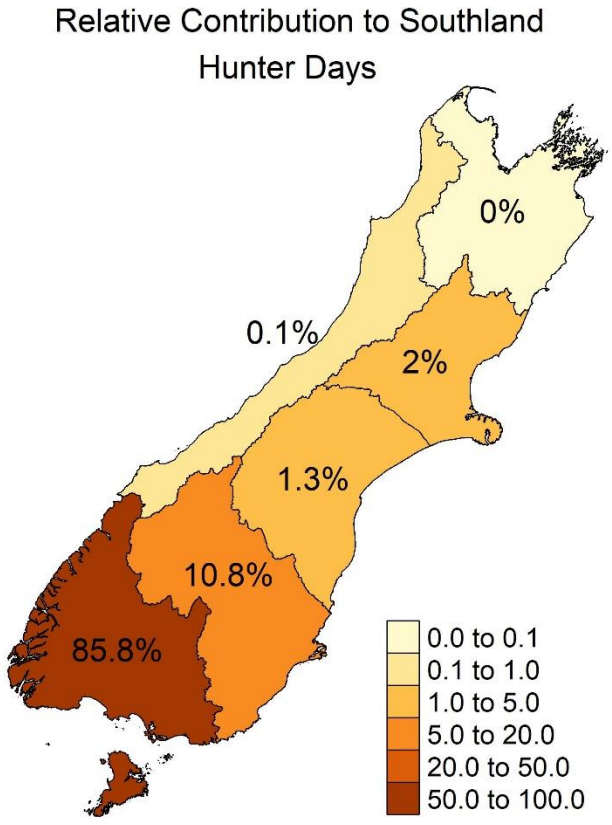

Figure 71. The percent of total days hunted in the Southland region that were attributed to hunters from each region in 2024.

Opening weekend accounted for 52% of total hunter days in Southland during the 2024 game bird season.

Hunters from Southland accounted for 86% of estimated hunter days, followed by 11% from Otago, 2% from North Canterbury, 1% from Central South Island, and <1% from the West Coast.

Hunters from Southland accounted for less than 2% of estimated hunter days in North Canterbury, and 3% in Otago.

Harvest

Greylards

During the 2024 season, an estimated 86,368 greylards were harvested in the Southland region.

This represents, roughly, a 20% decrease from the 2023 season harvest.

The long-term average number of greylards harvested is 109,112, 26% more than the 2024 harvest. The trend in greylard harvest since 2015 is largely stable.

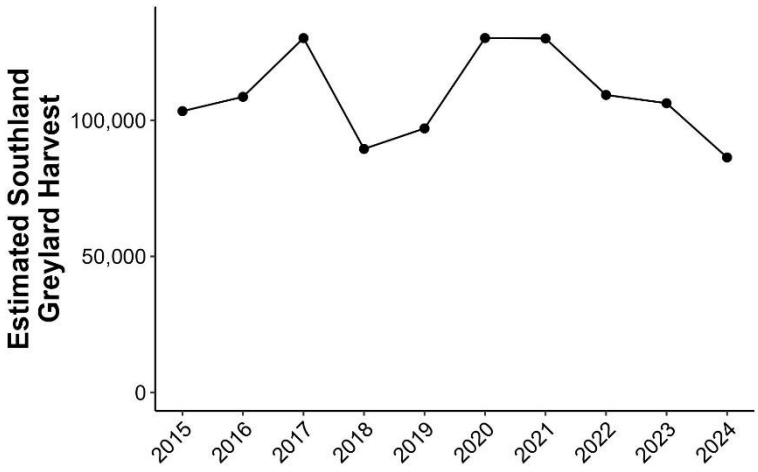

Figure 72. The number of estimated greylards harvested by year on the Southland region, 2015-2024.

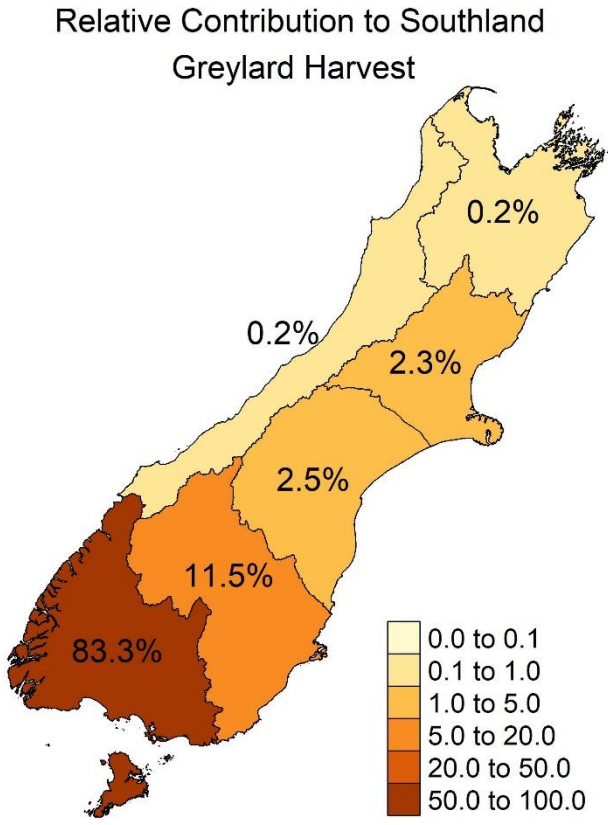

Figure 73. The percent of greylards harvested in the Southland region that were attributed to hunters from each region in 2024.

Opening weekend accounted for 67% of total greylard harvest in the Southland region during the 2024 game bird season.

Hunters from Southland were responsible for 83% of estimated harvest in the region. An additional 12% of estimated harvest was attributed to hunters from Otago, followed by 3% to hunters from Central South Island, 2% to hunters from North Canterbury, and <1% to hunters from the Nelson/Marlborough and the West Coast.

Hunters from Southland were responsible for 2% of estimated greylard harvest in Otago, but did not report harvesting greylards in any other region.

Harvest

Paradise Shelducks

During the 2024 season, an estimated 5,390 paradise shelducks were harvested in the Southland region.

This represents, roughly, a 55% decrease from the 2023 season harvest.

The long-term average number of paradise shelducks harvested is 8,997, 67% more than the 2024 harvest. Prior to this season, there was an increasing trend in paradise shelduck harvest.

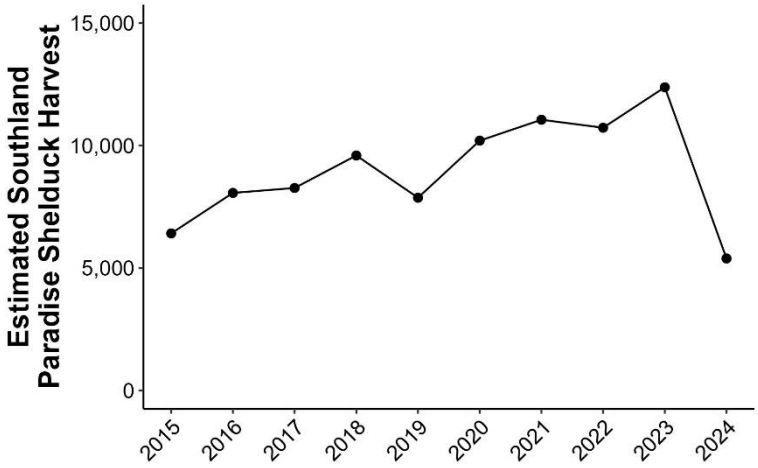

Figure 74. The number of estimated paradise shelducks harvested by year in the Southland region, 2015-2024.

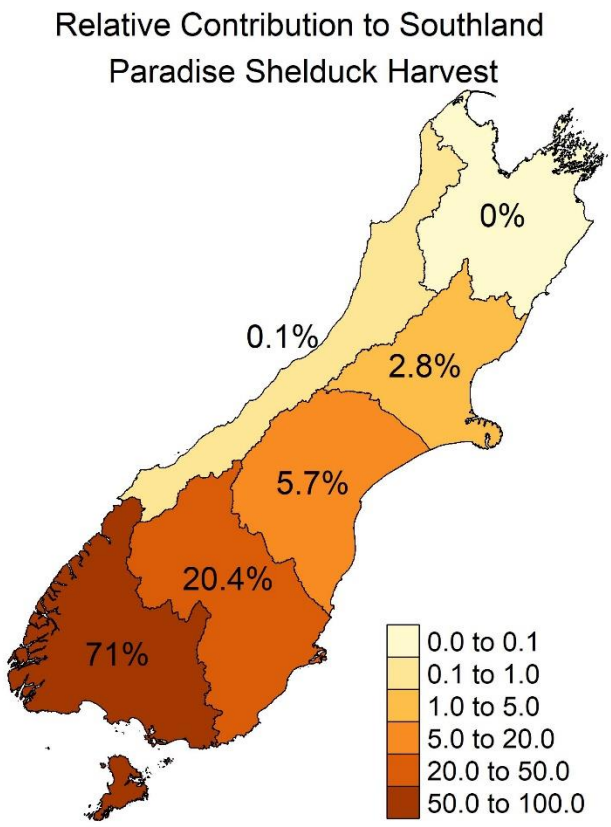

Figure 75. The percent of total paradise shelducks harvested in the Southland region that were attributed to hunters from each region in 2024.

Opening weekend accounted for 73% of total paradise shelduck harvest in the Southland region during the 2024 game bird season.

Hunters from Southland were responsible for 71% of estimated harvest in the region. An additional 20% of estimated harvest was attributed to hunters from Otago, 6 % to hunters from Central South Island, 3% to hunters from North Canterbury, and <1% to hunters from the West Coast.

Hunters from Southland were responsible for 2% of estimated paradise shelduck harvest in Otago, but did not report harvesting paradise shelduck in any other region.

Harvest

Australasian Shovelers

During the 2024 season, an estimated 431 shovelers were harvested in the Southland region.

This represents, roughly, a 10% increase from the 2023 season harvest.

The long-term average number of shovelers harvested is 961, more than twice the 2024 harvest. The long-term trend in shoveler harvest since 2015 is stable, despite large annual variation.

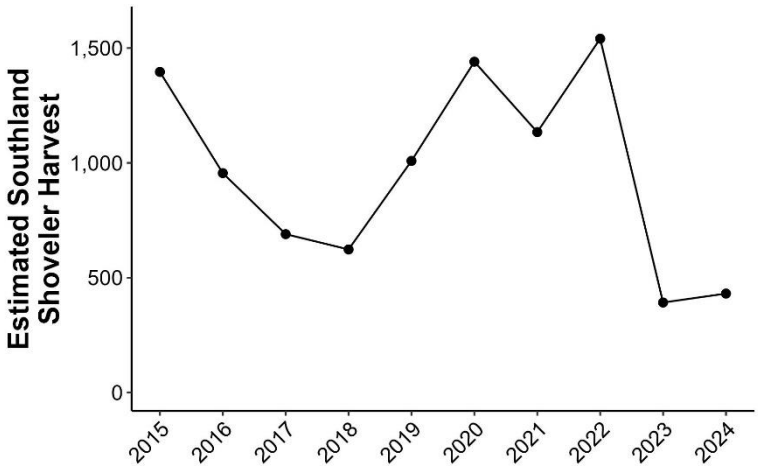

Figure 76. The number of estimated shovelers harvested by year in the Southland region, 2015-2024.

Opening weekend accounted for 66% of total shoveler harvest in the Southland region during the 2024 game bird season.

Hunters from Southland were responsible for 90% of estimated harvest in the region. An additional 4% of estimated harvest was attributed to hunters from Central South Island and Otago, and e% to hunters from North Canterbury.

Hunters from Southland were responsible for 9% of the estimated shoveler harvest in Otago, but did not report harvesting shoveler in any other region.

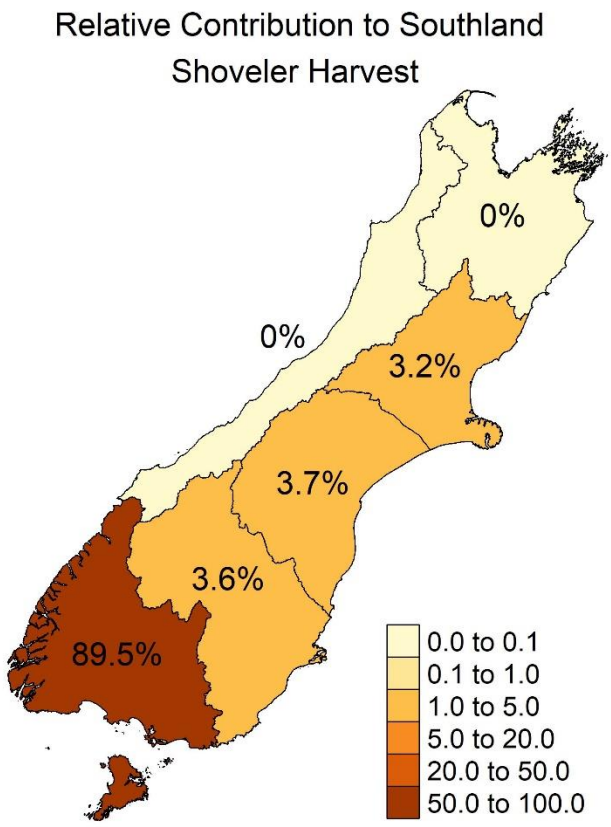

Figure 77. The percent of total shovelers harvested in the Southland region that were attributed to hunters from each region in 2024.

Harvest

Black Swans

During the 2024 season, an estimated 1,119 black swans were harvested in the Southland region.

This represents nearly an 225% increase from the 2023 season harvest.

The long-term average number of black swans harvested is 665, roughly half the 2024 harvest. There is an increasing trend in black swan harvest since 2015.

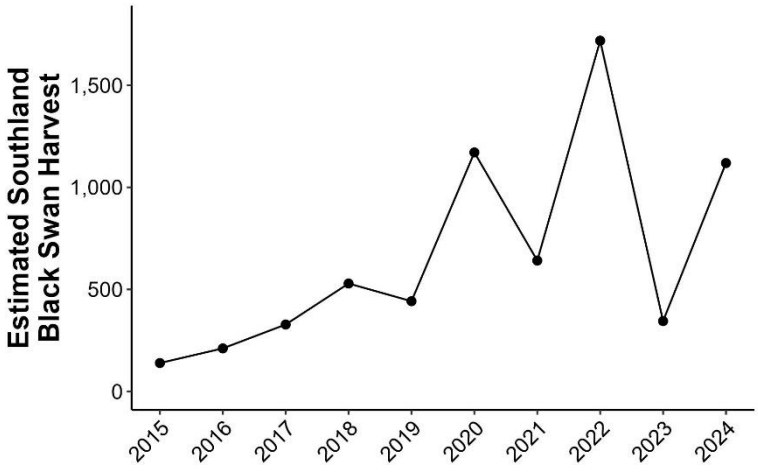

Figure 78. The number of estimated black swans harvested by year in the Southland region, 2015-2024.

Opening weekend accounted for 14% of total black swan harvest in the Southland region during the 2024 game bird season.

Hunters from Southland were the only hunters who reported harvesting black swans in the Southland region.

Hunters from Southland did not report harvesting black swans in any other region.

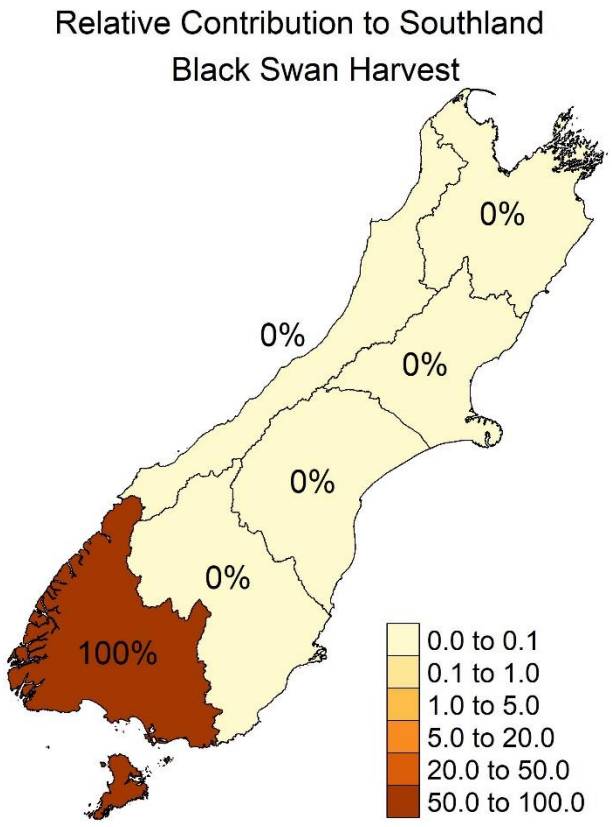

Figure 79. The percent of black swans harvested in the Southland region that were attributed to hunters from each region in 2024.

Data Analysis Methods

Estimating Hunter Days

Methods for estimating hunter days followed those described by Stoffels and Unwin (2024) in the 2021/22 National Angler Survey.

The total number of game bird licence holders was gathered from the Fish & Game national licence holder database. Both adult and junior whole season licence holders were included in the total number of hunters. Child licences and day licence holders were not included, as neither group is contacted as a part of the national harvest survey.

The hunter days of region i ($i \in \{1,2,\ldots,6\}$) during period j ($j \in \{1, 2,\ldots,7\}$) by a hunter holding a licence associated with region p ($p \in \{Nelson/Marlborough, North\ Canterbury,\ldots,Southland\}$) (there are m = 6 regions for this analysis) E_{ijp} was:

$$E_{ijp} = N_{jp} \times \bar{D}_{ijp}$$

where N_{jp} denotes the number of active licences in region p (licence of purchase) during period j (in this case, because >90% of all game bird licences are purchased prior to the start of season, N_{jp} was the total licences purchased in region p during that year);

and $\bar{D}_{ijp}$ denotes the mean number of days per respondent spent hunting in region i during period j, for region (of licence purchase) p:

$$\bar{D}_{ijp} = \left(\frac{1}{n_{jp}}\right)\sum_{i=1}^{n_{jp}} D_{ijpl}$$

Where

n_{jp} is the number of hunters surveyed for period j within region p; and

D_{ijpl} is the number of days spent hunting in region i during period j, by respondent l from region p.

Because regions experience hunting activity from hunters from multiple licence purchase regions, there will be numerous estimates of $Eijp$ (one for each licence-holder region, p). The total hunter days of region i within period j is obtained via a summation across regions of licence-holders:

$$\hat{E}_{ij} = \sum_{p=1}^{m} E_{ijp}$$

Estimating Species Harvest

The number of birds harvested of species k in region i ($i \in \{1,2,\ldots,6\}$) during period j ($j \in \{1, 2,\ldots,6\}$) by a hunter holding a licence associated with region p ($p \in \{Nelson/Marlborough, North Canterbury,\ldots,Southland\}$) (there are m = 6 regions for this analysis) E_{ijp} was:

$$E_{kijp} = N_{jp} \times \bar{D}_{kijp} \times P_{ijp}$$

where N_{jp} denotes the number of active licences in region p (licence of purchase) during period j (in this case, because >90% of all game bird licences are purchased prior to the start of season N_{jp} was the total licences purchased in region p during that year year);

$\bar{D}_{ijp}$ denotes the mean number of birds harvested per hunter who reported actively hunting in region i, during period j, for region (of licence purchase) p:

$$\bar{D}_{kijp} = \left(\frac{1}{a_{ijp}}\right)\sum_{i=1}^{n_{jp}} D_{kijpl}$$

Where

a_{ijp} is the number of hunters surveyed for period j within region p who actively hunted in region i; and

D_{kijpl} is the number of birds of species k harvested in region i during period j, by respondent l from region p;

and P_{kijp} denotes the participation rate of species k, in region i, during period j, by hunters from region p:

$$P_{kijp} = \frac{a_{ijp}}{n_{jp}}$$

Where

n_{jp} is the number of hunters surveyed for period j within region p.

Because regions experience hunting activity from hunters from multiple licence purchase regions, there will be numerous estimates of $Ekijp$ (one for each licence-holder region, p). The total birds of species k harvested in region i within period j is obtained via a summation across regions of licence-holders:

$$\hat{E}_{kij} = \sum_{p=1}^{m} E_{kijp}$$

Estimating Error

To provide the most consistent estimate of error in harvest estimates and hunter days, this report utilised bootstrapping to produce all estimates (Efron & Tibshirani 1986). For each survey region p (p ∈ {1,2,...,6}), we selected random hunter surveys from period j ($j \in \{1, 2,...,7\}$) with replacement equal to the number of total hunter surveys completed for region p period j. An estimate of hunter days and harvest were calculated from the bootstrapped sample as described above. This process was repeated for a total $B = 10{,}000$ iterations.

Estimates of hunter days and harvest were derived from bootstrapped samples as:

$$Z_i = \frac{\sum \hat{E}_{ij}}{B}$$

in which $\hat{E}_{ij}$ represents the estimate at the indicated level of summation (i.e. within a hunt region or across the South Island).

The 95% confidence interval is produced from the distribution of estimates from the bootstrapped samples, and presented in Appendix II.

Literature Cited

Efron, B, R. Tibshirani. 1986. Bootstrap methods for standard errors, confidence intervals, and other measures of statistical accuracy. Statistical Science, 1:54-77.

Stoffels, R, M. Unwin. 2024. Angler usage of New Zealand lake and river fisheries: Results from the 2021/22 National Angler Survey. National Institute of Water & Atmospheric Research Ltd. Pp. 142.

Appendix II

Supplementary Tables

Region	Metric	Estimate	Lower CI	Upper CI
South Island	Hunter Days	49,493	47,082	52,002
	Greylard Harvest	200,539	186,199	214,929
	Paradise Shelduck Harvest	57,478	51,504	63,759
	Shoveler Harvest	2,390	1,790	3,052
	Black Swan Harvest	5,416	3,011	9,078
	Pukeko Harvest	2,470	1,314	4,022
Nelson/ Marlborough	Hunter Days	3,366	2,796	3,975
	Greylard Harvest	5,701	4,432	7,050
	Paradise Shelduck Harvest	7,397	5,867	9,027
	Shoveler Harvest	249	0	600
	Black Swan Harvest	317	115	564
	Pukeko Harvest	490	90	1,009
North Canterbury	Hunter Days	7,489	6,588	8,459
	Greylard Harvest	21,366	17,109	26,276
	Paradise Shelduck Harvest	13,017	10,308	15,962
	Shoveler Harvest	658	409	933
	Black Swan Harvest	659	397	950
	Pukeko Harvest	167	34	353
West Coast	Hunter Days	1,924	1,554	2,345
	Greylard Harvest	5,611	3,691	8,185
	Paradise Shelduck Harvest	5,122	3,613	6,915
	Shoveler Harvest	48	11	96
	Black Swan Harvest	337	44	764
	Pukeko Harvest	1,813	784	3,280
Central South Island	Hunter Days	8,195	7,377	9,070
	Greylard Harvest	44,088	37,605	51,065
	Paradise Shelduck Harvest	14,992	11,607	18,599
	Shoveler Harvest	525	289	795
	Black Swan Harvest	1,165	654	1,785
	Pukeko Harvest	-	-	-
Otago	Hunter Days	10,198	9,019	11,450
	Greylard Harvest	37,405	31,348	44,155
	Paradise Shelduck Harvest	11,560	8,613	14,946
	Shoveler Harvest	478	236	789
	Black Swan Harvest	1,818	227	4,764
Southland	Hunter Days	18,321	16,515	20,244
	Greylard Harvest	86,368	76,009	97,168
	Paradise Shelduck Harvest	5,390	3,464	7,632
	Shoveler Harvest	431	153	771
	Black Swan Harvest	1,119	225	2,648

Opening Weekend Harvest per Hunter

Hunt Region	Species	Mean Harvest	Standard Error
Nelson/Marlborough	Greylards	4.12	0.54
	Paradise Sheldducks	6.04	0.83
	Shovelers	0.05	0.05
	Black Swans	0.12	0.06
	Pukekos	0.50	0.30
North Canterbury	Greylards	5.23	0.61
	Paradise Sheldducks	4.10	0.58
	Shovelers	0.19	0.05
	Black Swans	0.25	0.08
	Pukekos	0.01	0.01
West Coast	Greylards	4.72	0.57
	Paradise Sheldducks	3.53	0.54
	Shovelers	0.04	0.03
	Black Swans	0.08	0.03
	Pukekos	0.52	0.29
Central South Island	Greylards	10.30	0.77
	Paradise Sheldducks	3.42	0.49
	Shovelers	0.06	0.02
	Black Swans	0.19	0.06
	Pukekos	-	-
Otago	Greylards	7.10	0.51
	Paradise Sheldducks	2.03	0.27
	Shovelers	0.11	0.03
	Black Swans	0.07	0.03
Southland	Greylards	9.89	0.60
	Paradise Sheldducks	0.77	0.16
	Shovelers	0.05	0.02
	Black Swans	0.02	0.01

Table 2. The mean harvest on opening weekend per hunter that reported hunting within each region for each species, based on raw harvest survey data.