

2021 to 2023 Manitoba Spring Conservation Canada Goose Harvest Report

**Wildlife Branch, Manitoba Economic Development, Investment, Trade and Natural Resources
Canadian Wildlife Service, Environment and Climate Change Canada**

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Background

Temperate-breeding, or giant Canada geese (*Branta canadensis maxima*) in southern Manitoba are declared overabundant under the federal Migratory Birds Regulation, allowing for licenced hunting seasons outside of the season framework outlined in the Migratory Birds Convention Act. The giant Canada goose population in southern Manitoba has grown substantially since 1990, with the breeding population estimated at 234,600 individuals in 2019, the highest recorded since 1955. In 2020 Environment and Climate Change Canada amended the Migratory Bird Regulation to declare the temperate breeding population of Canada geese in southern Manitoba (Game Bird Hunting Zones 3 & 4) as overabundant. This declaration enabled Manitoba to implement a new spring conservation Canada goose hunting season under the provincial Wildlife Act.

The intent of the special conservation season is to increase the annual adult harvest rate to $\geq 15\%$ to meet management plan objectives and slow the growth rate of the breeding population in southern Manitoba (Mississippi Flyway Council 2017). These geese cause significant agricultural and private property damage in southern Manitoba and pose significant risks to human safety, both through risk of aircraft and vehicular collisions. Hunting is considered the most efficient means to reduce the population size of an overabundant waterfowl population.

Conservation Canada goose season dates were initially set at March 1 – 31, with a daily bag limit of 8 Canada geese, and a possession limit of 24 Canada geese. To participate in these seasons, hunters require the previous year's federal Canada Migratory Game Bird Hunting Permit and Wildlife Habitat Conservation Stamp, and a no charge provincial Spring Conservation Goose Licence.

In 2022 The federal Migratory Birds Regulation and the provincial Wildlife Act were amended to allow a longer conservation Canada goose season based on migration data collected between 2017-2020 that suggested 53% of temperate-breeding Canada geese arrive in southern Manitoba by April 10, while only 14% of subarctic-breeding Canada geese (*B. c. interior*) and 12% of Cackling geese (*Branta hutchinsii*) have arrived (Canadian Wildlife Service Waterfowl Committee 2022). Extending the conservation Canada goose season to April 10 allows for potential increases in harvest and hunter effort, while still limiting harvest of other Canada goose subspecies.

Harvest Survey Details

Conservation Canada goose harvest surveys were mailed to individuals that held a provincial Spring Conservation Goose licence during the 2021 and 2022 conservation Canada goose season to estimate harvest and hunter effort. Questionnaires following a similar format were made available to licence holders on Manitoba's electronic licencing system in 2023. The province of Manitoba issued a high of 1090 Spring Conservation Goose licences during the 2021 conservation Canada goose season

(prior to April 1) and a low of 258 licences in 2023 (prior to April 11) (Table 1). The response rate averaged 36.8% across years. Licence holder participation was highest in 2021 at 65.3%, and lowest in 2023 at 24.0% (Table 2). The success rate for active hunters (having harvested at least one Canada goose) was similar across all hunting seasons.

Table 1: Manitoba 2021 to 2023 Spring Conservation Goose licence and conservation Canada goose harvest survey details.

Year	Total Licences Issued	Licence Holders Surveyed*	Total Responses	Response Rate
2021	1090	1029	378	36.7%
2022	336	316	103	32.6%
2023	258	243	100	41.2%

*Actual licence holders that received a questionnaire, accounting for undeliverable mailouts in 2021 and 2022, and hunters without or undeliverable email addresses in the elicencing system in 2023.

Table 2: Manitoba 2021 to 2023 conservation Canada goose season participation.

Year	Hunting Participation Rate	Estimated Number of Active Hunters	Success Rate for Active Hunters*	Estimated Number of Successful Hunters
2021	65.3%	712	67.2%	479
2022	41.8%	140	55.8%	78
2023	24.0%	62	66.7%	41

*Success = harvested at least one Canada goose throughout season.

Harvest

It is estimated that a high of 3018 Canada geese were harvested during the 2021 conservation Canada goose season by licenced hunters, with a low of 194 Canada geese in 2023 (Table 3). Harvest of Canada geese per active hunter ranged from 2.53 to 4.24 Canada geese across all seasons, while successful hunters harvested between 4.54 and 6.31 Canada geese per season. Total seasonal harvest was estimated as mean reported seasonal harvest per active hunter multiplied by estimated number of hunters, with estimates and error calculated using the survey package in R Statistical Software.

Table 3: Manitoba 2021 to 2023 conservation Canada goose season harvest.

Year	Mean Seasonal Harvest per Active Hunter			Mean Seasonal Harvest per Successful Hunter*			Harvest Reported in Survey	Estimated Total Seasonal Harvest		
	x	SE	95% CI	x	SE	95% CI	n	Total	SE	95% CI
2021	4.24	0.37	3.51 - 4.96	6.31	0.50	5.32 - 7.29	1047	3018	264	2501 - 3535
2022	2.53	0.66	1.23 - 3.84	4.54	1.07	2.44 - 6.64	109	355	93	173 - 537
2023	3.13	0.77	1.62 - 4.63	4.69	1.02	2.69 - 6.69	75	194	48	100 - 287

*Success = harvested at least one Canada goose throughout season.

Effort

It is estimated that conservation Canada goose hunters spent a high of 1963 days afield in 2021, and a low of 121 days in 2023 (Table 4). Active hunters reported hunting between 1.86 and 2.76 days per season, while successful hunters spent more time hunting, ranging between 2.06 and 2.83 days afield. Total days hunted was estimated as mean reported days hunted per active hunter multiplied by estimated number of hunters, with estimates and error calculated using the survey package in R Statistical Software.

Table 4: Manitoba 2021 to 2023 conservation Canada goose season hunter effort.

Year	Mean Days Hunted by Active Hunters			Mean Days Hunted by Successful Hunters*			Days Hunted Reported in Survey	Estimated Total Days Hunted		
	<i>x</i>	<i>SE</i>	95% CI	<i>x</i>	<i>SE</i>	95% CI	<i>n</i>	Total	<i>SE</i>	95% CI
2021	2.76	0.12	2.53 - 2.99	2.83	0.15	2.54 - 3.12	681	1963	83	1801 - 2126
2022	1.86	0.18	1.51 - 2.21	2.13	0.30	1.54 - 2.71	80	260	25	211 - 310
2023	1.96	0.13	1.69 - 2.22	2.06	0.18	1.72 - 2.41	47	121	8	105 - 138

*Success = harvested at least one Canada goose throughout season.

High levels harvest and effort were observed on weekends and holidays, and at the end of each season (Table 5, Figures 1 - 3).

Table 5: Manitoba 2021 to 2023 conservation Canada goose season hunter harvest and effort during weekends, holidays, and last 5 days of season.

Year	Last 5 days of Season		Weekends and Holidays*	
	Proportion of Harvest	Proportion of Effort	Proportion of Harvest	Proportion of Effort
2021	0.34	0.32	0.47	0.47
2022	0.67	0.55	0.28	0.33
2023	0.62	0.63	0.67	0.77

*Good Friday and Easter Monday holidays were on April 8 and 10, 2023.

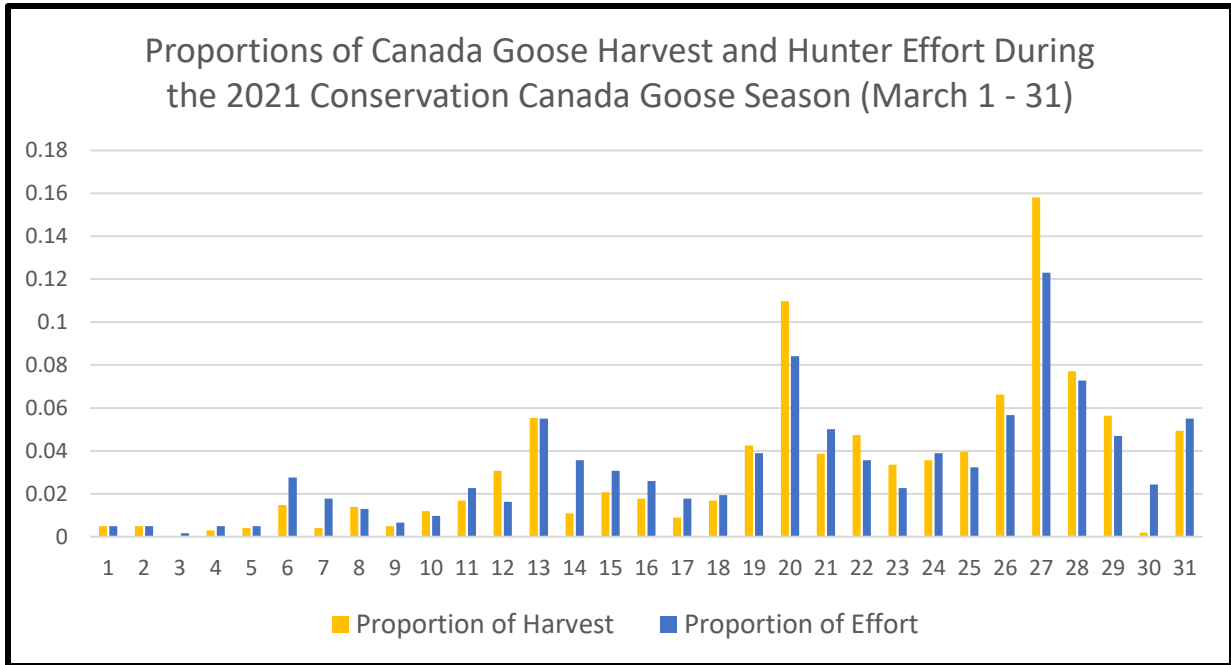


Figure 1: Proportions of harvest and effort during 2023 conservation Canada goose season.

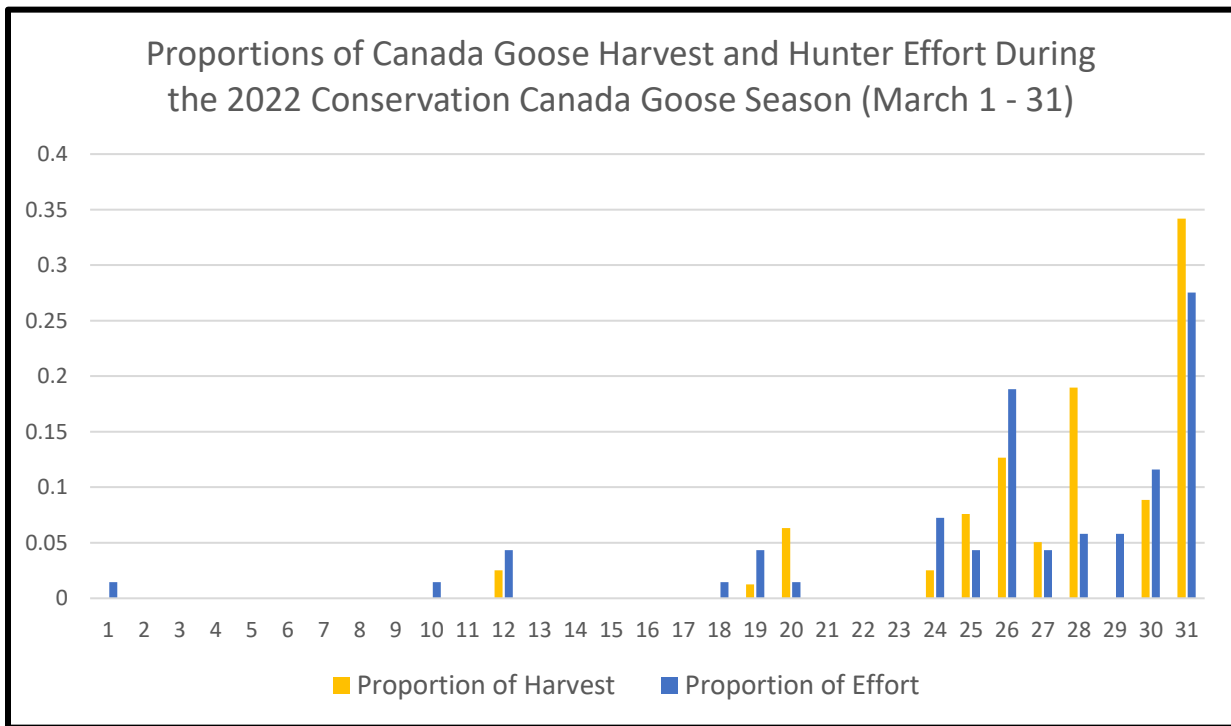


Figure 2: Proportions of harvest and effort during 2022 conservation Canada goose season.

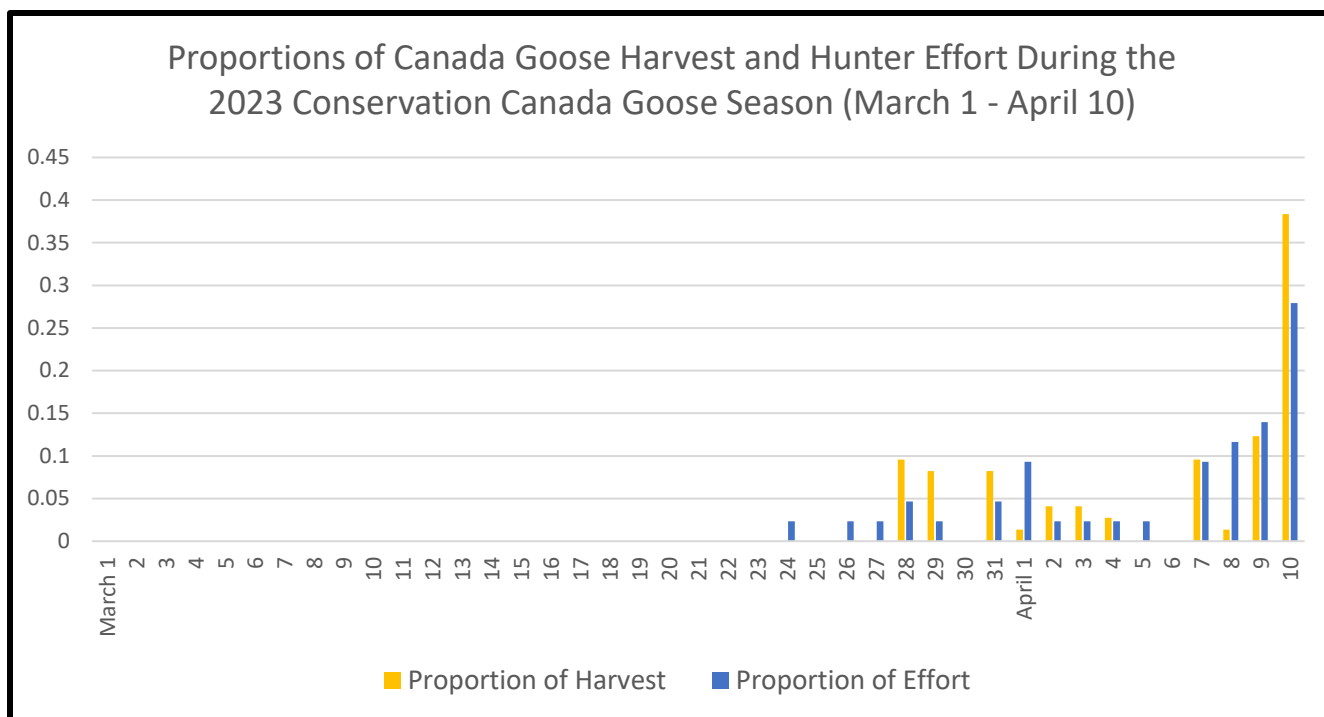


Figure 3: Proportions of harvest and effort during 2023 conservation Canada goose season.

Hunter Information

The conservation Canada goose harvest survey also revealed the following information about hunters during the 2021 to 2023 conservation Canada goose seasons:

- The majority of active hunters each season were Manitoba residents (range = 75% to 99%). The highest estimates of non-resident (Canadian) and foreign Resident participation was observed in 2023, at 8% and 17%, respectively.
- Less than 8% of hunters reported using electronic calls in each year.
- Less than 4% of hunters used the services of a guide or outfitter.
- Greater than 75% of active hunters indicated that they hunted Canada geese during the prior fall hunting season.
- Reported days using specific hunting techniques varied by year, with the use of blinds and decoys being the highest reported activity in 2021 and 2023 (at 51% and 82%, respectively), and pass shooting having the highest proportion in 2022 (46%).

Discussion

March 2021 was the first conservation Canada goose season in southern Manitoba, and there were no benchmarks for annual harvest estimate, harvest per hunter, or hunting effort. Both harvest and effort were considerably lower during the 2022 and 2023 conservation Canada goose seasons, compared to 2021, which is believed to be associated with differences in spring weather between years. Less than one third the number of licences were issued during each of the 2022 and 2023 seasons, with less than 20% of the active hunters compared to 2021 (Table 6). Lower licence subscription, number of

active hunters, and hunter effort resulted in 88% less Canada geese harvested in 2022 and 94% less in 2023, compared to 2021. The average daily maximum temperature in Winnipeg during March 2022 and 2023 was -3.1°C and -5.4°C, respectively, compared to 6.5°C in 2021 (Government of Canada, Climate Services data), which likely delayed spring migration of geese returning to their breeding territories (Figure 4). The 20-year average (2004-2023) daily maximum temperature for Winnipeg was -0.7°C. Even though the season was extended to April 10 in 2023, the average daily maximum temperature throughout the season (March 1 – April 10) was still colder than previous March-only seasons at -3.7°C.

Data from the 2021 questionnaires previously influenced the 2023 season extension to April 10, since it revealed a preference for hunting towards the end of the season (March 31) as more geese arrive, and hunting on weekend days. The ten-day extension into April provides an additional two weekends of opportunity to hunters in Manitoba, and access to higher goose numbers. Desired harvest levels were not achieved in 2023 due to unseasonable weather, however the ten-day extension did account for 74% of the reported harvest and 81% of reported effort, a trend which should continue in future years.

Border restrictions associated with the Covid-19 pandemic prohibited participation by foreign residents in 2021 and restricted their numbers in 2022. Furthermore, delayed goose migration in both 2022 and 2023 provided low opportunity for hunters willing to travel to Manitoba during those seasons. An open border and extended season dates moving forward should increase foreign resident hunting effort and harvest contribution.

Table 6: Manitoba 2021 to 2023 conservation Canada goose season comparison.

Year	2021	2022	2023
Total Licences Issued	1090	336	258
Estimated Number of Active Hunters	712	140	62
Success Rate for Active Hunters	67.2%	55.8%	66.7%
Mean Days Hunted by Active Hunters	2.76	1.86	1.96
Estimated Total Days Hunted	1963	260	121
Mean Seasonal Harvest per Active Hunter	4.24	2.53	3.13
Seasonal Harvest Estimate	3018	355	194

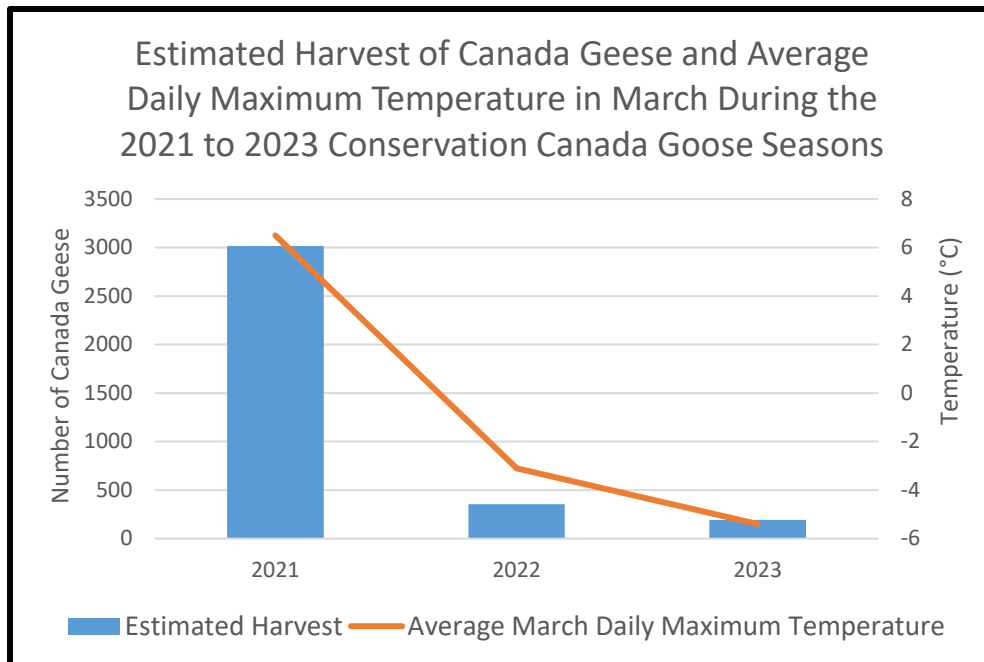


Figure 4: Proportions of harvest and effort during 2023 conservation Canada goose season.

References

Canadian Wildlife Service Waterfowl Committee. 2022. *Proposals to Amend the Canadian Migratory Birds Regulations. Consultation document. Hunting Seasons 2022-2023 and 2023-2024.* CWS Migratory Birds Regulatory Report Number 56. Environment and Climate Change Canada, Ottawa.

Mississippi Flyway Council. 2017. *A Management Plan for Mississippi Flyway Canada Geese.* Prepared by the Mississippi Flyway Council Technical Section Canada Goose Committee. D. Luukkonen and J. Leafloor, editors.