

# Management Plan: Pacific Flyway Population of Western Canada Geese



PACIFIC FLYWAY

Adopted August 2023

Cover photograph: Western Canada goose by Keith Kohl ©.

This management plan is one of a series of cooperatively developed plans for managing various populations of migratory birds in the Pacific Flyway. Inquiries about this plan may be directed to member states of the Pacific Flyway Council or to the Pacific Flyway Representative, U.S. Fish and Wildlife Service, Division of Migratory Bird Management, 445 W Gunnison Avenue, Suite 240, Grand Junction, CO 81501. Information regarding the Pacific Flyway Council and management plans can be found on the Internet at [PacificFlyway.gov](http://PacificFlyway.gov).

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**MANAGEMENT PLAN**  
**FOR THE**  
**PACIFIC FLYWAY POPULATION OF WESTERN CANADA GEESE**

Prepared for the

Pacific Flyway Council  
U.S. Fish and Wildlife Service  
Canadian Wildlife Service  
Direccion General de Conservacion Ecologica de Recursos Naturales

by the

Western Canada Goose Subcommittee  
of the  
Pacific Flyway Study Committee

March 1983 (Rocky Mountain population)  
March 1989 (Pacific population)  
March 1992 (Rocky Mountain population)  
July 2000 (Pacific population)  
January 2001 (Rocky Mountain population)  
August, 2023

Approved by: \_\_\_\_\_  
Chairman, Pacific Flyway Council

\_\_\_\_\_  
Date

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## PREFACE

The Pacific Flyway Council is an administrative body that forges cooperation among public wildlife agencies for the purpose of protecting and conserving migratory game birds in western North America. The Council is composed of the director or an appointee from the public wildlife agency in each state, province, and territory in the western United States, Canada, and Mexico. Migratory birds use four major migratory routes (Pacific, Central, Mississippi, and Atlantic flyways) in North America. Because of the unique biological characteristics and relative number of hunters in these regions, state and federal wildlife agencies adopted the flyway structure for administering migratory bird resources within the United States. Each flyway has its own Council.

Management plans are developed by Council technical committees and include biologists from state, federal, and provincial wildlife and land-management agencies, universities, and other organizations. Management plans typically focus on populations, which are the primary unit of management, but may be specific to species or subspecies. Management plans identify issues, goals, and actions for the cooperative management of migratory birds among State and Federal agencies to protect and conserve these birds in North America. Management of some migratory birds requires coordinated action by more than one flyway. Plans identify common goals and objectives, establish priority of management actions and responsibility for them, coordinate collection and analysis of biological data, foster collaborative efforts across geo-political boundaries, document agreements on harvest strategies, and emphasize research needed to improve conservation and management. Population sustainability is the first consideration, followed by equitable recreational and subsistence harvest opportunities. Management plans generally have a 5-year planning horizon, with revisions as necessary to provide current guidance on coordinated management. Management strategies are recommendations and do not commit agencies to specific actions or schedules. Fiscal, legislative, and priority constraints influence the level and timing of management activities.

Management plans are not intended as an exhaustive compendium of information available, research needed, and management actions. Plans include summaries of historical data and information from recent surveys and research that help identify: (1) the current state of the resource (i.e., population and associated habitat), (2) desired future condition of the resource (i.e., population goals and objectives), (3) immediate management issues, and (4) management actions necessary and assignment of responsibilities to achieve the desired future condition, including harvest strategies and monitoring to evaluate population status and management progress.



# MANAGEMENT PLAN FOR THE PACIFIC FLYWAY POPULATION OF WESTERN CANADA GEESE

## INTRODUCTION

Western Canada geese (*Branta canadensis moffitti*) occur throughout the Pacific Flyway and were previously managed with guidance from two management plans: Rocky Mountain (Pacific Flyway Council 2001) and Pacific (Pacific Flyway Council 2000) populations. The basis for managing two populations originated from banding records analyzed by Krohn (1977) and subsequent management recommendations by Krohn and Bizeau (1980). Western Canada geese have increased in abundance since these publications, and this current plan combines the Rocky Mountain and Pacific populations to manage and monitor western Canada geese in the Pacific Flyway.

Western Canada goose management in the Pacific Flyway is complicated by the need to balance conflicting objectives for birds originating from different breeding areas or political jurisdictions. Comprehensive management should maintain traditional breeding distributions, ensure sustainable populations, and consider multiple benefits and costs within social and economic tolerances. These goals can be difficult to accomplish when populations are considered independently, as has been the historic approach. Furthermore, harvest management of different populations that overwinter in the same geographic area is difficult because it is not possible to distinguish local geese from migratory birds during harvest (Baldassarre 2014). Western Canada geese have gone from relative scarcity to great abundance over the past 60 years and now there are likely more Canada geese present in the Pacific Flyway than at any time in the last century. Management planning, zone closures, harvest restrictions, translocations, and reintroductions of Canada geese into breeding areas since the 1940s were successful in bolstering Canada goose abundance (U.S. Fish and Wildlife Service 2005).

## GOALS AND OBJECTIVES

The goals of this management plan are to ensure long-term conservation of the Pacific Flyway Population of western Canada geese, meet needs of consumptive and non-consumptive uses, and minimize depredation and nuisance concerns.

Objectives:

- A. Maintain a minimum population index of 200,000 western Canada geese as measured by the 3-year average of total indicated geese from breeding waterfowl surveys in northeast California, eastern Oregon, eastern Washington, central British Columbia, and portions of the Waterfowl Breeding Population and Habitat Survey strata in Alberta and Montana (i.e., strata 76, and portions of strata 26–29 and 41–42; Figure 1).
- B. Maintain historical breeding distribution to support population objective and public use.
- C. Maintain or grow public support for western Canada goose management, including maintaining a sustainable population and minimizing nuisance problems and agricultural depredation.

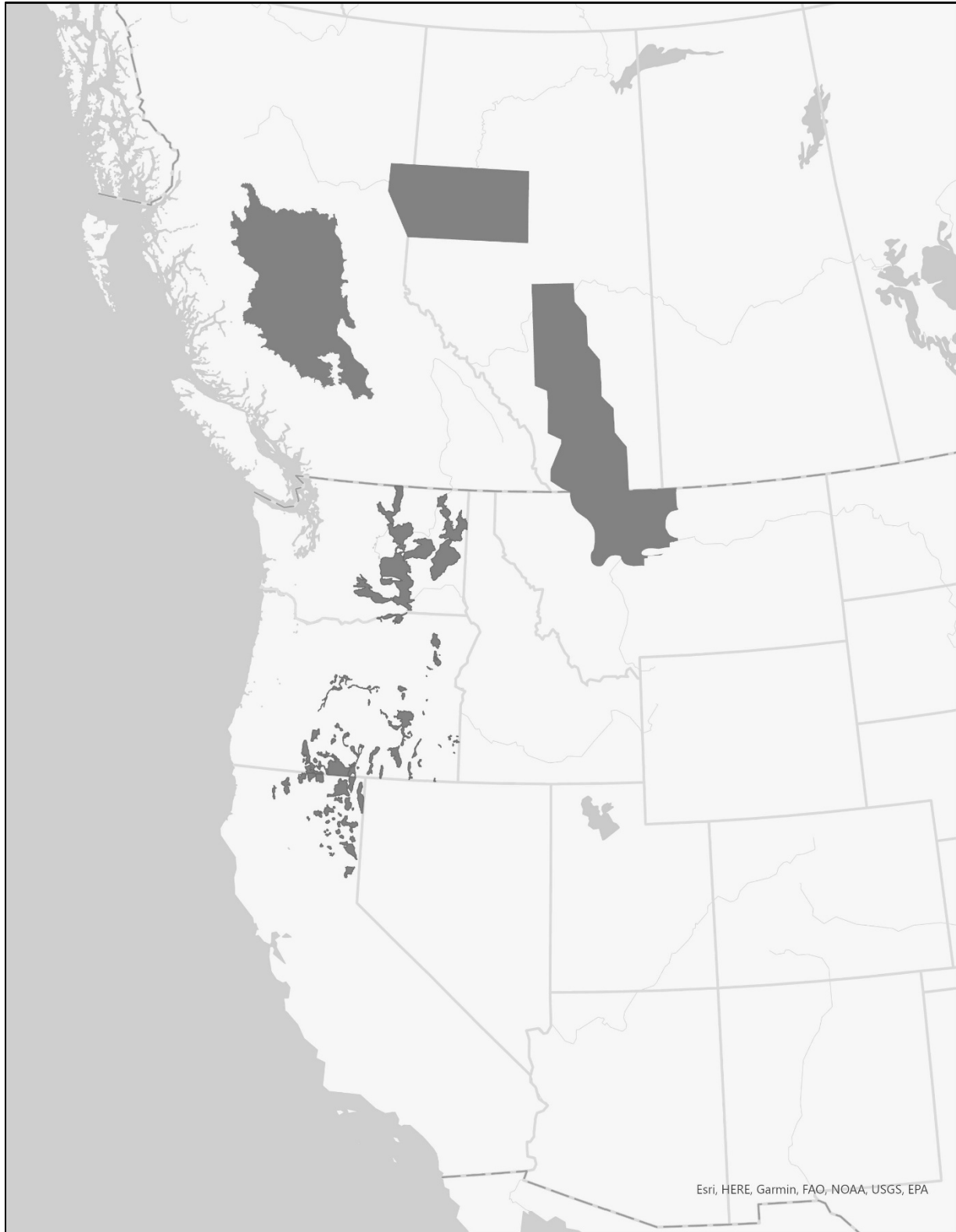


Figure 1. State, provincial, and federal waterfowl breeding population and habitat survey areas (shaded areas) that contribute to the index of abundance of the Pacific Flyway Population of western Canada geese.

## STATUS

### **Description**

Western Canada geese nesting in the Pacific Flyway were previously identified as two discrete populations (Rocky Mountain and Pacific) and separate management plans guided conservation and management actions (Pacific Flyway Council 2000; Pacific Flyway Council 2001). Over the past 60 years, western Canada geese were reintroduced into their former range and widely introduced into new areas; reintroduced birds are largely non-migratory, except during severe winters (Baldassarre 2014). Coupled with natural range expansion, there has been a large increase in the breeding population of western Canada geese throughout the Pacific Flyway. Previously distinct populations of western Canada geese have now merged, and it is difficult to justify separate population designations. This management plan combines the previously recognized Rocky Mountain and Pacific populations into a single population of western Canada geese in the Pacific Flyway.

### **Distribution and Abundance**

Western Canada geese are the most common Canada goose in western North America. Their breeding range occurs across central and southern British Columbia, central Alberta, southcentral Saskatchewan, and throughout the Pacific Flyway portion of the contiguous United States. They nest in a variety of habitats near open water, from coastal estuaries to high mountain lakes and reservoirs, as well as in urban environments. Molt migrations of nonbreeding western Canada geese likely expand their range to areas north of their historic breeding range, possibly into the Northwest Territories (Ball et al. 1981). Western Canada geese have expanded their historic breeding range significantly over the past six decades through reintroduction and introduction programs or natural pioneering. Numerous management programs, such as artificial nesting structures, were implemented to increase production. Furthermore, Canada geese have adapted to the human-altered landscape, from cultivated lawns in urban and suburban areas to rural areas with cultivated crops that provide abundant food resources (Baldassarre 2014).

During the non-breeding season, birds can be found in many of the same habitats in which they breed; however, geese breeding in northern portions of the range or at high elevations (i.e., mountainous habitats) are more likely to migrate to southern portions of the Pacific Flyway.

The population status and range of western Canada geese are not well defined in Alberta and western Canada. Some nesting geese in Alberta may winter in the Central or Pacific flyways. The Pacific Flyway Population of western Canada geese, as indexed by the Waterfowl Breeding Population and Habitat Survey (WBPHS), was relatively stable from the 1960s into the mid-1980s; however, substantial population growth occurred thereafter (Figure 2). Beginning in the 1990s some states and provinces began conducting breeding waterfowl surveys with similar methodology to the WBPHS (California 1992, Oregon 1994, British Columbia 2006, and Washington 2010). Information from these surveys is used to produce a population index for the Pacific Flyway Population of western Canada geese and assess population status relative to the objective. This index is a sum of the total indicated Canada geese from northeast California, eastern Oregon, eastern Washington, and central British Columbia surveys, in addition to the estimated total Canada geese from the WBPHS in strata 76 and portions of strata 26–29, 41, and 42 (Figure 1). Transect segments within strata 26–29, 41, and 42 were divided based on historic

band return data, local expert opinion, and geographic features to split southeastern Alberta and western Montana into east to west portions so Canada goose counts in those areas could be assigned to the Pacific Flyway population (western portions) or Highline population (eastern portions) of western Canada geese (J. L. Dooley, U.S. Fish and Wildlife Service, personal communication).

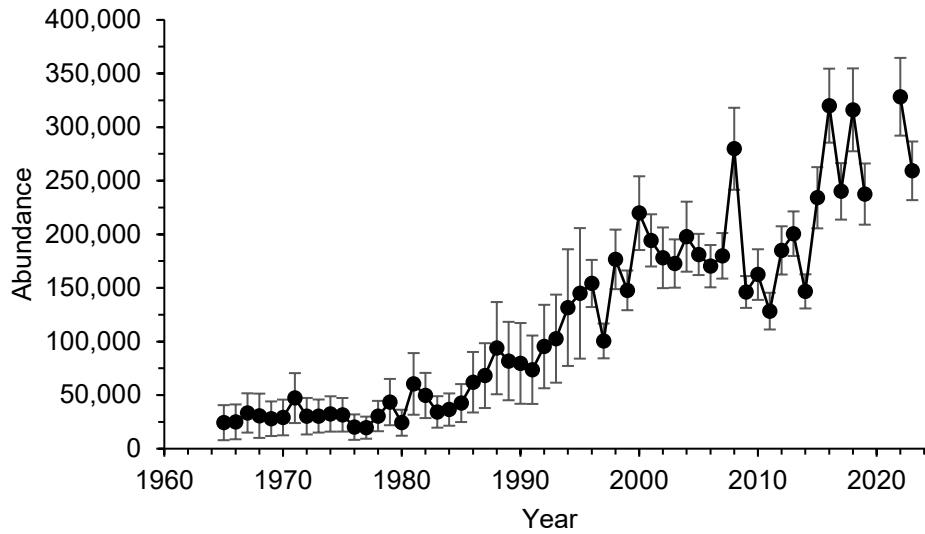


Figure 2. Total abundance of Canada geese from the federal Waterfowl Breeding Population and Habitat survey in strata 76 and those portions of strata 26–29, 41, and 42 designated as affiliated with the Pacific Flyway Population of western Canada geese, 1965–2023. Error bars are plus or minus one standard error. Surveys were not conducted in 2020 and 2021.

A minimum population index of 200,000 western Canada geese was established as the management objective based on average annual abundance during the 1990s. This metric represents a population size that was greater than preceding decades but prior to a period of significant population growth when agricultural depredation and nuisance issues became prevalent. However, data from state and provincial surveys was lacking for some or all years in the 1990s. During the 2010s, state and provincial surveys accounted for ~69% of total abundance. Therefore, to derive a minimum population size objective for the 1990s, the WBPBS average annual abundance during 1990s was expanded by the average proportion of the population indexed by state and provincial surveys during the 2010s. The minimum population size objective  $\hat{N}_{Min}$  was calculated as

$$\hat{N}_{Min} = \overline{WBPBS}_{1990s} \times \left( \left( \overline{States \& BC}_{2010s} \div \overline{WBPBS}_{2010s} \right) + 1 \right)$$

Where  $\overline{WBPBS}_{1990s}$  is the mean annual abundance from the WBPBS (strata 76 and portions of strata 26–29, 41, and 42) during 1990–1999 (120,655),  $\overline{States \& BC}_{2010s}$  is the mean annual abundance from northeast California, eastern Oregon, eastern Washington, and central British Columbia surveys during 2010–2019 (150,435), and  $\overline{WBPBS}_{2010s}$  is the mean annual abundance

from the WBPHS (strata 76 and portions of strata 26–29, 41, and 42) during 2010–2019 (217,075).

The resulting  $\hat{N}_{Min}$  (204,271) was rounded to the nearest ten thousand to establish a minimum population objective of 200,000. A complete population index has only been available since 2010 when the survey in Washington became operational. The population index, 3-year average index, and management objective are shown in Figure 3.

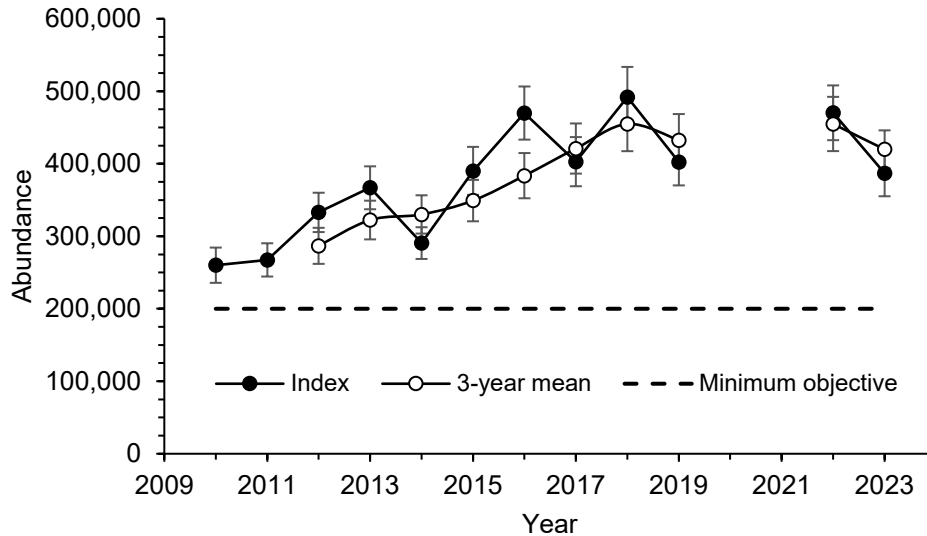


Figure 3. Annual population abundance index of the Pacific Flyway Population of western Canada geese, the most recent 3-year average management index, and the minimum population objective, 2010–2023. Error bars are plus or minus one standard error. Surveys were not conducted in 2020 and 2021.

## Public Uses

### *Harvest*

Pacific Flyway Canada goose harvest steadily increased until the early 2000s but has remained relatively stable over the last 20 years (Appendix A). Harvest estimates from states where multiple populations of Canada and cackling geese (*Branta hutchinsii*) mix are less precise than from states where western Canada geese are the predominant wintering population. Consequently, mixing of Canada and cackling geese influences bag limits in states with multiple goose species. Methods to separate Canada and cackling goose harvests have been developed, and separate harvest estimates are now produced annually (J. L. Dooley, U.S. Fish and Wildlife Service, personal communication).

### *Wildlife Viewing*

Canada geese are among the most well-recognized species of wildlife in North America (Baldassarre 2014). They are an integral component of non-consumptive activities, and many

viewing opportunities exist on state wildlife management areas and national wildlife refuges. Their wide distribution and use of urban and suburban habitats provides abundant and up-close wildlife viewing opportunities; however, a primary management challenge is how to control abundance of geese in areas where conflicts with humans occur.

## **Management**

Declining goose populations in the 1950s prompted more restrictive hunting regulations. The first special regulations were adopted in 1955 and Council established a Midwinter Waterfowl Survey index goal of 50,000 birds. At the same time, many national wildlife refuges and state wildlife management areas began to manage for Canada geese: nesting structures and islands were constructed, pastures were managed for grazing, and geese were introduced into unoccupied habitat (Sanders and Dooley 2014). Harvest regulations were liberalized over time in response to increasing populations in the 1980s and 1990s (Appendix B).

As western Canada geese increased in abundance, management efforts have focused on developing appropriate harvest regulations, addressing agricultural depredation and urban nuisance complaints, and maintaining habitat. Current monitoring programs have supported liberalized general seasons and special early September goose seasons in all states. These birds have high survival rates and increasing harvest may be necessary to decrease abundance (Sanders and Dooley 2014).

Council has prioritized expanding recreational hunting to address depredation and nuisance issues in agricultural and urban areas, as identified in the Pacific Flyway Depredation Policy and the Northwest Oregon/Southwest Washington Canada Goose Depredation Plan (Pacific Flyway Council 1998). However, urban Canada geese generally are invulnerable to harvest where hunting is not permitted.

To address the inability to harvest geese in urban settings, some cities contract with USDA-Wildlife Services to conduct annual roundups. Additionally, the U.S Fish and Wildlife Service issues Migratory Bird Depredation permits to landowners and local governments to destroy resident Canada geese, their eggs, or nests to resolve human health and safety issues, protect personal property, or allow resolution of other injury to people or property. Several thousand geese are annually relocated to areas where harvest is possible or euthanized, and hundreds of nests have been destroyed to address nuisance and depredation complaints throughout the Pacific Flyway (Figure 4). Migratory Bird Depredation permit applications issued by the U.S. Fish and Wildlife Service for resident Canada geese should be annually reviewed and updated based on local needs and Flyway policies that address nuisance issues. Management actions should attempt to alleviate depredation on both agricultural and non-agricultural lands.

Landowners, homeowner's associations, public land managers, or local governments in the lower 48 states or the District of Columbia may also register at the Resident Canada Goose Nest and Egg Registration Site (<https://epermits.fws.gov/eRCGR/geSI.aspx>) for federal authorization to destroy resident Canada goose nests and eggs on property under their jurisdiction. Hundreds of registrants are annually authorized throughout the Pacific Flyway (Figure 5). The need for local goose management plans may be necessary to target urban birds. In the case of shared populations, states will coordinate permit issuances and management actions.

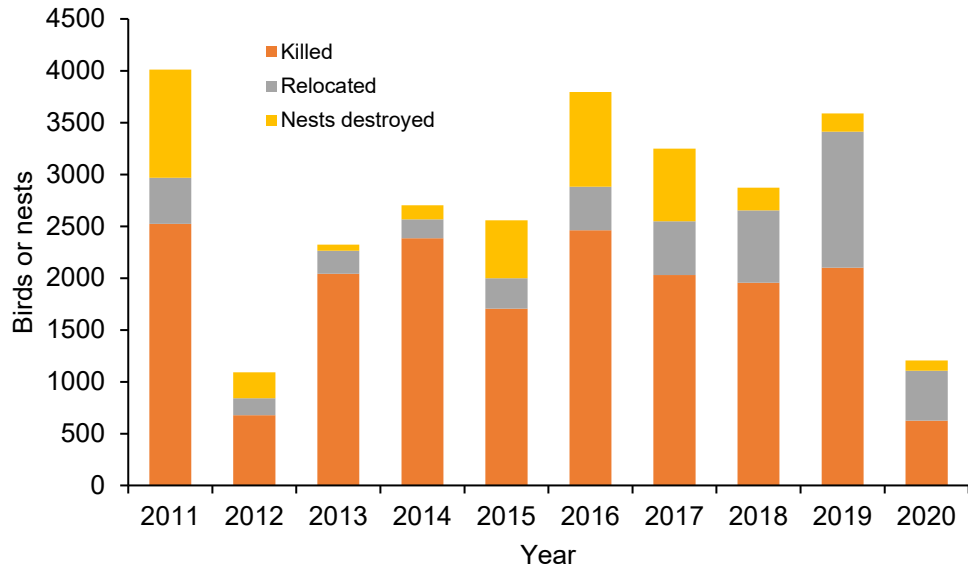


Figure 4. Minimum number of adult Canada geese killed or relocated and number of nests destroyed in the U.S. portion of the Pacific Flyway under authorization of Federal Migratory Bird Depredation Permits issued by the U.S. Fish and Wildlife Service, 2011–2020.

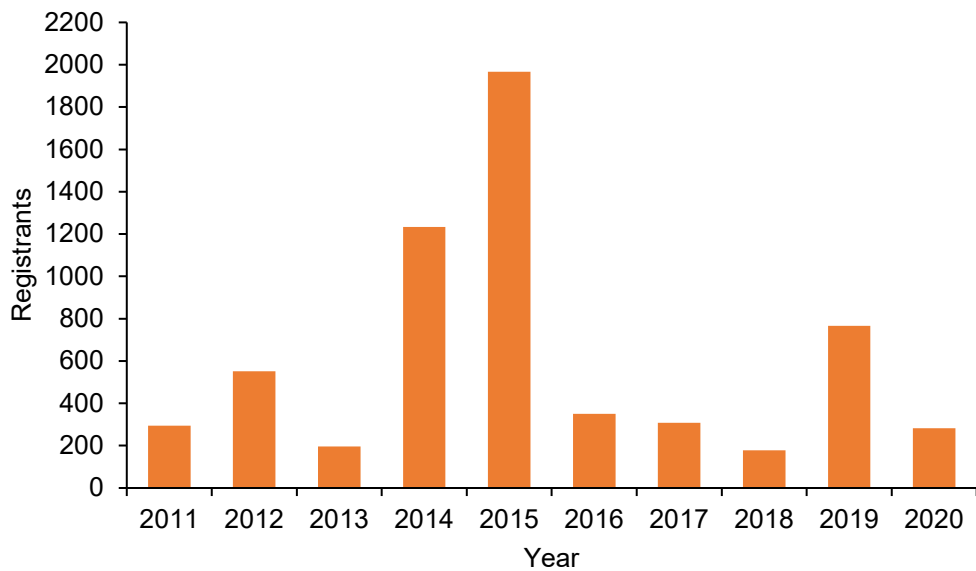


Figure 5. Number of registrants to the Resident Canada Goose Nest and Egg Registration Site, 2011–2020. Data for split Flyway states is not separated by Flyway.



## HARVEST STRATEGY

Western Canada geese in the Pacific Flyway have remained abundant in light of liberal harvest regulations over the past 20 years. The harvest strategy is intended to provide hunting opportunities commensurate with population status. Some Pacific Flyway states may select more conservative regulations to protect other goose populations or population segments of management interest.

- A. Maintain a population of at least 200,000 geese as measured by the 3-year average population index of total indicated birds.
- B. When the 3-year average population index is above the population goal, liberal frameworks should be implemented unless status of other Canada or cackling goose populations require consideration. Liberal frameworks are defined as:
  - 1. Maximum regular season framework
    - a. Season Length: 107 days
    - b. Framework dates: Saturday nearest September 24–February 15
    - c. Bag limit: 5 Canada geese
  - 2. Inclusion of a September Canada goose season framework
    - a. Season length: 15 days; any days selected will count towards maximum 107-day season length
    - b. Framework dates: September 1–20
    - c. Bag limit: 5 Canada geese
- C. When the 3-year average population index is below the population objective, consideration should be given to the following:
  - 1. Modify framework ending date to January 31
  - 2. Decrease bag limit
  - 3. Decrease season length

## MANAGEMENT ISSUES

### **Population Management and Assessment**

Reliable population and distribution data are needed to improve management. Breeding population surveys are only conducted in California, Oregon, Washington, British Columbia, and Alberta (Figure 1). There is also uncertainty on the proportion of breeding birds in Alberta that contribute to the Pacific Flyway wintering population. Lastly, there are no range wide banding programs to assess harvest and survival rates, and movements.

### **Harvest Assessment**

Federal Harvest Information Program (HIP) surveys have lacked the necessary refinement to reliably measure species composition of the harvest. Overall harvest of western Canada geese in the Pacific Flyway is difficult to assess and use of historical harvest data alone for management decisions is not possible. Methods to separate Canada and cackling goose harvests have been developed, and harvest estimates for both species are now produced annually. There is potential for these methods to estimate historical species composition of the harvest.

### **Conflict Management**

#### *Agricultural Depredation*

Depredation of agricultural crops by western Canada geese occurs throughout their range and is a significant management concern in many areas of the Flyway. The U.S. Department of Agriculture is responsible for assisting landowners to address depredations or nuisance complaints, but funding in recent years has been minimal or nonexistent. More aggressive management actions including issuing kill permits, egg destruction, and translocation programs have been implemented with varying amounts of success. These actions need to follow Council policies and management plans addressing depredation issues.

#### *Nuisance Complaints*

Nuisance problems are generally related to goose droppings and landscaping in parks, golf courses, and school yards where geese graze and roost. Additionally, geese can be aggressive towards humans, especially during the breeding season, and geese grazing on or near airports can cause a significant aircraft strike risk.

## RECOMMENDED MANAGEMENT STRATEGIES

The following management actions are recommendations to guide cooperative efforts to meet stated objectives of this plan. Degree and timing of their implementation by various wildlife agencies will be influenced by personnel, fiscal, and legislative constraints beyond the scope of this plan. Whenever possible, management actions in this plan should be integrated with those in management plans for other Pacific Flyway goose populations, local and regional land use plans, and habitat conservation programs. Management actions should be accompanied by monitoring efforts to examine their effectiveness to meet population and habitat objectives in an adaptive management approach.

### A. Population Management and Assessment

1. Conduct annual waterfowl breeding surveys (WBPHS and state/provincial specific surveys). This survey is the primary index to guide management for the Pacific Flyway Population of western Canada geese.

Responsibilities: USFWS, CWS, CDFW, ODFW, WDFW

Priority: 1

Schedule: Ongoing

2. Evaluate banding needs for a range wide banding program to assess harvest and survival probabilities of western Canada geese.

Responsibilities: All states, CWS, USFWS

Priority: 2

Schedule: by 2024

3. Evaluate efficacy of annual waterfowl breeding surveys to monitor abundance of the Pacific Flyway Population of western Canada geese.

Responsibilities: All states and provinces, CWS, USFWS

Priority: 3

Schedule: Ongoing

4. Assess value and feasibility of a marking program in Alberta to refine the contribution of birds contributing to the Pacific Flyway Population of western Canada geese.

Responsibilities: CWS, USFWS, PFC

Priority: 3

Schedule: by 2024

## **B. Harvest Assessment**

1. Continue HIP, Parts Collection Survey, and Canadian National Harvest Survey to provide estimates of magnitude and distribution of harvest.

Responsibilities: CWS, USFWS

Participating: All states

Priority: 1

Schedule: Ongoing

2. Continue to investigate options to better determine the contribution of western Canada geese to the total harvest of Canada geese in the Pacific Flyway.

Responsibilities: USFWS, CWS, ODFW, WDFW

Priority: 3

Schedule: Ongoing

## **C. Conflict Management**

1. Continue to investigate and implement strategies to reduce Canada goose crop depredation.

Responsibilities: All states and provinces, CWS, USDA, USFWS

Priority: 1

Schedule: Ongoing

2. Continue to investigate and implement strategies to reduce nuisance concerns.

Responsibilities: All states and provinces, CWS, USDA, USFWS

Priority: 1

Schedule: Ongoing

## ANNUAL REVIEW

The subcommittee shall meet at least once annually or as needed to review progress toward achieving goals and objectives of this plan and recommend actions and revisions. The subcommittee shall report to the Pacific Flyway Council, through the Pacific Flyway Study Committee, on accomplishments and shortcomings of management efforts, and shall share its findings with parties responsible for or interested in the Pacific Flyway Population of western Canada geese. The subcommittee shall coordinate management activities with those for other Canada and cackling geese.

The Subcommittee shall be comprised of one representative from each federal and state agency having management responsibility for this population. It shall be the responsibility of those members to assure that the goal, objectives, and management strategies of this plan are integrated and coordinated with those plans and activities of the various wildlife and land management agencies and local planning systems within their agency's purview. The Subcommittee may invite ex officio participation by individuals, groups, and agencies whose expertise, counsel or managerial capacity is required for the coordination and implementation of management programs.

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## **APPENDICES**

APPENDIX A. Combined Canada and cackling goose harvest estimates in the Pacific Flyway, 1965–2020, and Canada goose harvest estimates, 2021.

Year	State											Total
	AZ	CA	CO	ID	MT	NM	NV	OR	UT	WA	WY	
1965 <sup>a</sup>	2,973	49,685	0	15,006	4,716	0	5,171	21,153	6,523	16,551	638	122,416
1966	2,085	72,415	556	19,008	4,415	0	6,232	29,251	12,693	38,473	1,048	186,176
1967	1,900	78,756	315	15,327	3,341	0	6,274	29,613	5,908	23,241	1,077	165,752
1968	2,970	72,935	119	11,091	3,326	0	3,844	27,249	7,716	28,972	2,916	161,138
1969	1,810	72,613	272	16,102	5,084	0	2,785	35,065	14,809	43,751	1,283	193,574
1970	1,777	95,112	487	13,661	3,883	0	4,283	48,095	10,242	44,247	1,787	223,574
1971	5,304	74,008	0	13,684	5,617	0	5,058	32,848	6,642	35,554	980	179,695
1972	4,101	148,888	272	14,803	4,283	0	4,361	32,599	8,775	30,801	852	249,735
1973	1,688	69,701	865	10,416	7,902	0	10,074	29,261	12,073	38,742	657	181,379
1974	1,406	72,166	614	15,737	5,759	0	6,223	36,562	17,262	32,116	568	188,413
1975	1,708	62,002	160	17,398	6,574	348	4,685	39,737	13,159	34,532	1,091	181,394
1976	864	58,444	1,018	13,806	7,354	0	3,309	33,605	12,810	40,332	627	172,169
1977	1,271	42,610	0	23,786	7,095	0	3,687	43,880	25,102	35,816	1,962	185,209
1978	2,124	46,530	1,268	37,409	7,829	0	5,863	65,141	25,915	59,626	1,189	252,894
1979	2,890	31,373	976	23,622	6,821	0	3,400	32,254	20,913	63,685	1,462	187,396
1980	2,559	26,950	1,312	26,958	10,391	0	3,085	47,887	17,198	50,585	1,000	187,925
1981	2,478	52,089	1,313	21,429	6,939	0	6,322	37,652	24,019	41,559	1,203	195,003
1982	6,792	46,418	2,164	36,667	9,408	195	7,181	33,188	23,518	38,183	2,853	206,567
1983	3,444	56,384	2,355	37,400	9,671	392	8,371	35,970	34,651	39,002	2,537	230,178
1984	2,266	38,004	1,331	35,776	10,186	624	6,664	25,870	17,332	58,276	3,097	199,428
1985	4,210	40,313	2,944	30,421	6,019	791	8,244	31,115	33,694	41,285	1,825	200,861
1986	5,061	21,999	2,190	28,560	8,333	495	6,181	24,269	19,623	27,958	2,442	147,111
1987	7,314	31,348	3,094	25,672	10,627	805	3,984	29,483	17,049	30,714	2,652	162,742
1988	7,160	26,471	3,021	26,500	6,433	698	6,804	32,609	12,017	38,830	2,687	163,230
1989	4,377	24,489	3,692	30,470	7,811	682	3,651	28,104	10,875	33,554	1,499	149,204
1990	4,414	27,163	5,842	36,735	7,518	824	6,191	34,809	17,359	42,092	1,924	184,871
1991	4,738	19,474	4,252	39,546	8,197	1,605	3,608	28,151	15,769	45,579	4,032	174,951
1992	2,987	28,647	8,270	31,558	10,126	1,462	10,003	43,474	12,597	48,500	1,367	198,990
1993	1,183	21,066	4,887	45,446	12,316	2,163	8,418	63,400	14,908	48,952	1,846	224,585
1994	3,778	28,467	3,542	61,006	15,314	1,346	12,893	46,923	19,895	62,683	3,025	258,870
1995	4,044	21,480	8,374	49,303	23,175	2,525	4,133	37,009	19,783	68,636	1,896	240,358



APPENDIX A. Continued.

Year	State											Total
	AZ	CA	CO	ID	MT	NM	NV	OR	UT	WA	WY	
1996	4,404	25,330	7,709	65,379	21,092	2,002	5,761	39,213	26,768	69,873	2,499	270,029
1997	1,339	23,586	7,800	43,828	17,979	1,334	7,610	49,206	21,240	66,473	2,076	242,471
1998	2,128	23,178	6,957	61,840	22,125	4,595	9,978	59,048	23,314	62,953	669	276,784
1999 <sup>b</sup>	5,357	17,633	6,995	97,866	12,517	1,057	9,736	75,451	22,120	81,163	2,903	332,798
2000	1,419	24,289	9,725	89,100	46,225	4,597	6,055	67,748	23,265	75,355	3,187	350,965
2001	3,723	30,666	5,149	64,595	27,505	1,493	5,948	46,269	17,810	56,526	1,514	261,198
2002	2,059	31,403	4,117	44,255	19,308	2,133	6,293	58,083	20,653	50,085	529	238,917
2003	1,950	41,946	5,403	83,749	28,336	3,416	8,180	53,526	29,218	69,008	1,192	325,923
2004	1,200	44,492	3,994	62,327	16,581	4,238	5,235	67,610	20,940	72,147	2,181	300,946
2005	1,360	49,182	6,777	73,738	18,049	2,333	6,414	61,600	30,394	68,195	1,163	319,206
2006	2,462	41,381	4,941	77,678	24,062	787	5,902	65,327	20,319	71,581	1,737	316,175
2007	1,869	50,484	4,269	40,754	29,099	4,183	5,108	83,193	19,670	55,717	1,123	295,469
2008	2,900	49,252	3,472	64,107	22,615	1,979	5,130	93,419	23,629	54,601	4,971	326,075
2009	4,485	53,865	17,025	57,053	18,024	2,822	5,831	54,537	20,008	65,506	4,082	303,236
2010	668	68,666	18,550	30,031	20,926	3,585	5,859	39,057	36,218	41,446	3,943	268,949
2011	3,662	51,870	14,742	50,423	18,477	5,944	4,478	56,005	17,728	62,093	911	286,331
2012	1,400	47,877	10,756	72,557	25,420	5,919	5,276	48,401	23,296	61,491	824	303,217
2013	2,087	44,071	8,391	62,595	13,663	3,874	6,177	48,653	17,618	48,301	1,792	257,221
2014	2,143	52,735	9,856	69,031	21,098	3,202	4,343	42,441	26,239	49,458	4,782	285,330
2015	2,309	40,431	11,287	41,611	25,670	0	4,425	45,756	20,913	57,089	3,304	258,053
2016	1,823	41,280	6,135	71,015	17,027	0	4,159	40,448	23,421	53,253	618	259,179
2017	1,624	52,876	8,852	66,012	19,513	897	4,636	46,220	24,178	46,804	545	272,157
2018	816	83,139	7,213	42,049	14,768	1,857	2,475	52,223	15,165	47,832	1,176	296,098
2019	2,365	59,936	4,628	69,814	17,362	3,613	6,625	41,229	15,403	43,282	3,545	267,804
2020	784	54,616	3,597	49,692	33,055	579	2,339	49,179	24,472	45,801	2,159	266,272
2021 <sup>c</sup>	687	30,406	1,244	46,523	29,650	805	5,588	19,404	21,482	32,153	1,116	189,057

<sup>a</sup> Estimates from 1965 to 1998 from the USFWS Mail Questionnaire Survey.

<sup>b</sup> Estimates from 1999 to 2021 from the USFWS Harvest Information Program.

<sup>c</sup> Beginning with 2021, methods were implemented to separate Canada and cackling geese in the USFWS Parts Collection Survey allowing separate Harvest Information Program estimates for each species.

APPENDIX B. Federal frameworks for Canada goose seasons in the Pacific Flyway, 1970–2022.

Year	Coastal states				Interior states									Species restrictions			
	Days	Goose daily bag and (/) possession limits			Days	Goose daily bag and (/) possession limits											
		CA	OR	WA		ID	AZ	CO	MT	NM	NV	UT	WY				
1970	93	6/6		3/6	93	3/6						6/6					Geese <sup>a</sup>
1971	93	6/6		3/6	93	3/6						6/6					Geese <sup>a</sup>
1972	93	6/6		3/6	93	3/6						6/6					Geese <sup>a</sup>
1973	93	6/6		3/6	93	3/6						6/6					Geese <sup>a</sup>
1974	93	6/6		3/6	93	3/6						6/6					Geese <sup>a</sup>
1975	93	6/6		3/6	93	3/6						6/6					Geese <sup>b</sup>
1976	93	6/6		3/6	93	3/6						6/6					Geese <sup>b</sup>
1977	93	6/6		3/6	93	3/6						6/6					Geese <sup>b</sup>
1978	93	6/6		3/6	93	3/6						6/6					Geese <sup>b</sup>
1979	93	6/6		3/6	93	3/6						6/6					Geese <sup>c</sup>
1980	93	6/6		3/6	93	3/6						6/6					Geese <sup>c</sup>
1981	93	6/6		3/6	93	3/6						6/6					Geese <sup>c</sup>
1982	93	6/6		3/6	93	3/6						6/6					Geese <sup>c</sup>
1983	93	6/6		3/6	93	3/6						6/6					Geese <sup>d</sup>
1984	93	6/6		3/6	93	3/6						6/6					Geese <sup>d</sup>
1985	93	6/6		3/6	93	3/6						6/6					Geese <sup>d</sup>
1986	93	6/6		3/6	93	3/6						6/6					Geese <sup>d</sup>
1987	93	6/6		3/6	93	3/6						6/6					Geese <sup>d</sup>
1988	93	6/6		3/6	93	3/6						6/6					Geese <sup>d</sup>
1989	93	6/6		3/6	93	3/6						6/6					Geese <sup>d</sup>
1990	93	6/6		3/6	93							6/6					Geese <sup>d</sup>
1991	93	6/6		3/6	93							6/6					Geese <sup>d</sup>
1992	93	6/6		3/6	93							6/6					Geese <sup>d</sup>
1993	100	3/6		4/8	100							3/6					Geese <sup>e</sup>
1994	100	3/6		4/8	100							3/6					Geese <sup>e</sup>
1995	100	3/6		4/8	100							3/6					Geese <sup>d</sup>
1996	100			4/8	100							4/8					Dark geese <sup>f</sup>
1997	100			4/8	100							4/8					Dark geese <sup>f</sup>
1998	100			4/8	100							4/8					Dark geese <sup>f</sup>

APPENDIX B. Continued.

Year	Coastal states			Interior states										Species restrictions			
	Days	Goose daily bag and (/) possession limits			Days	Goose daily bag and (/) possession limits											
		CA	OR	WA		ID	AZ	CO	MT	NM	NV	UT	WY				
1999	100		4/8		100						4/8						Dark geese <sup>f</sup>
2000	100		4/8		100						4/8						Dark geese <sup>f</sup>
2001	100		4/8		100						4/8						Dark geese <sup>f</sup>
2002	100		4/8		100						4/8						Dark geese <sup>f</sup>
2003	100		4/8		100						4/8						Dark geese <sup>f</sup>
2004	100		4/8		107						4/8						Dark geese <sup>f</sup>
2005	100		4/8		107						4/8						Dark geese <sup>f</sup>
2006	100		4/8		107						4/8						Dark geese <sup>f</sup>
2007	100		4/8		107						4/8						Dark geese <sup>f</sup>
2008	100		4/8		107						4/8						Dark geese <sup>f</sup>
2009	100		4/8		107						4/8						Dark geese <sup>f</sup>
2010	100		4/8		107						4/8						Dark geese <sup>f</sup>
2011	100		4/8		107						4/8						Dark geese <sup>f</sup>
2012	100		4/8		107						4/8						Dark geese <sup>f</sup>
2013	100		4/12		107						4/12						Dark geese <sup>f</sup>
2014	107		4/12		107						4/12						Dark geese <sup>f</sup>
2015	107		4/12		107						4/12						Dark geese <sup>f</sup>
2016	107		4/12		107						4/12						Dark geese <sup>f</sup>
2017	107		4/12		107						4/12						Dark geese <sup>f</sup>
2018	107		4/12		107						4/12						Dark geese <sup>f</sup>
2019	107		4/12		107						4/12						Dark geese <sup>f</sup>
2020	107		4/12		107						4/12						Canada, cackling, brant <sup>g</sup>
2021	107		4/12		107						5/15						Canada, cackling, brant <sup>g</sup>
2022	107		4/12		107						5/15						Canada, cackling, brant <sup>g</sup>

<sup>a</sup> 3/6 (daily bag/possession) dark geese (Canada geese and white-fronted geese) and 1/1 Ross's goose.

<sup>b</sup> 3/6 dark geese (Canada geese and white-fronted geese), 3/6 snow geese, and 1/1 Ross's goose.

<sup>c</sup> 3/6 dark geese (Canada geese and white-fronted geese) and 3/6 light geese (snow [including blue] geese and Ross's geese).

<sup>d</sup> 3/6 dark geese (Canada geese, white-fronted geese, brant [except in coastal states], and all other goose species except light geese) and 3/6 light geese.

<sup>e</sup> 2/4 white-fronted geese.

<sup>f</sup> Similar to seasons since 1983, dark geese included Canada geese, white-fronted geese, brant (except in coastal states), and all other goose species except light geese. Additional season restrictions applied to some states.

<sup>g</sup> Cackling goose recognized as a species separate from Canada goose in 2020. In coastal states, brant were not included in the aggregate bag and possession limits with Canada geese and cackling geese. Additional season restrictions applied to some states.

APPENDIX C. Federal frameworks for Special Early (September) Canada goose seasons in the Pacific Flyway, 1989–2022. Frameworks include season length (Days) and daily bag limit (Bag). Outside dates were generally restricted to September 1–15, except that in Wyoming during 1989 and 1990 where they extended to September 22 and Oregon in 1997 where they extended to September 20. Possession limits were two times the daily bag limit before 2013 and three times the daily bag limit in 2013 and after, unless otherwise noted.

Year	Coastal states						Interior states							
	CA <sup>a</sup>		OR <sup>b</sup>		WA <sup>c</sup>		CO		ID <sup>d</sup>		UT <sup>e</sup>		WY <sup>f</sup>	
	Days	Bag	Days	Bag	Days	Bag	Days	Bag	Days	Bag	Days	Bag	Days	Bag
1989													22	2
1990			10	2	10	2					4	2	22	2
1991			10	2	10	2					4	2	30	2
1992			10	2	10	2					4	2	30	2
1993			12	3	12	3					4	2	30	2
1994			12	3	12	3							30	2
1995			15	3	15	3							30	2
1996			15	3	15	3			15	2			8	2
1997	9	2	15	3	15	3			15	2			8	2
1998	9	2	15	3	15	3			15	2			8	2
1999	9	2	15	3	15	3			15	2			8	2
2000	9	2	15	5	15	5			15	2			8	3
2001	9	2	15	5	15	5			15	2			8	3
2002	9	2	15	5	15	5	9	3	7	2			8	3
2003	9	2	15	5	15	5	9	3	7	2			8	3
2004	9	2	15	5	15	5	9	3	7	2			8	2
2005	9	2	15	5	15	5	9	3	7	2			8	2
2006	9	2	15	5	15	5	9	3	7	2			8	2
2007	9	2	15	5	15	5	9	3	7	2			8	2
2008	9	2	15	5	15	5	9	3	7	2			8	2
2009	9	2	15	5	15	5	9	3	7	2			8	2
2010	9	2	15	5	15	5	9	3	7	2			8	2
2011	9	2	15	5	15	5	9	4	7	2			8	2
2012	9	2	15	5	15	5	9	4	7	2			8	3
2013	9	2	15	5	15	5	9	4	7	2			8	3
2014	9	2	15	5	15	5	9	4	7	2			8	3
2015	9	2	15	5	15	5	9	4	15	5			8	3

APPENDIX C. Continued.

Year	Coastal states						Interior states							
	CA <sup>a</sup>		OR <sup>b</sup>		WA <sup>c</sup>		CO		ID <sup>d</sup>		UT <sup>e</sup>		WY <sup>f</sup>	
	Days	Bag	Days	Bag	Days	Bag	Days	Bag	Days	Bag	Days	Bag	Days	Bag
2016 <sup>g</sup>	15	5	15	5	15	5	15	5	15	5	15	5	15	5
2017	15	5	15	5	15	5	15	5	15	5	15	5	15	5
2018	15	5	15	5	15	5	15	5	15	5	15	5	15	5
2019	15	5	15	5	15	5	15	5	15	5	15	5	15	5
2020	15	5	15	5	15	5	15	5	15	5	15	5	15	5
2021	15	5	15	5	15	5	15	5	15	5	15	5	15	5
2022	15	5	15	5	15	5	15	5	15	5	15	5	15	5

<sup>a</sup> In California, Humboldt County Zone only, 1997–2015.

<sup>b</sup> In Oregon, excludes frameworks for NW Goose Management Zone and Lower Columbia River Zone.

<sup>c</sup> In Washington, excludes frameworks for Pacific County, SW Goose Management Zone, and Columbia River Zone.

<sup>d</sup> In Idaho, East Canada Goose Zone only, 1996–2013, except during 1996–2004 also the Nez Perce County Zone with a season length of 7 days and a daily bag limit of 4 Canada geese.

<sup>e</sup> In Utah, Cache County Zone only, 1990–1993, possession limits were per season.

<sup>f</sup> In Wyoming, 1989–2015, season was concurrent with sandhill crane seasons and possession limits were per season.

<sup>g</sup> Beginning in 2016, all Pacific Flyway states could select a 15-day season with a daily bag limit of 5 Canada geese, except in Pacific County, Washington, where the daily bag limit is 15.