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# Resolving Urban Canada Goose Problems In Puget Sound, Washington: A Coalition-Based Approach

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**ABSTRACT:** Recent decades have seen dramatic increases in resident populations of urban western Canada geese throughout the United States, including locations in the Puget Sound in western Washington. By 1987, populations of urban Canada geese grew to problematic levels in the greater Seattle area, and caused such extensive damage that the Seattle Metropolitan Area Waterfowl Management Committee (Seattle Metropolitan WMC) was formed. The Seattle Metropolitan WMC was comprised of 15 representatives from cities and jurisdictions in the greater area, the U.S. Department of Agriculture Wildlife Services, and the University of Washington. The Seattle Metropolitan WMC worked with state and federal wildlife agencies, advocate groups, and the public to identify their concerns, determine the extent of the problem, and formulate management options. Non-lethal management options, including relocation, were implemented in 1989. Egg-oiling was initiated in 1993. Relocation efforts were phased out after 1995, and the first substantial lethal removal was begun in 2000. Other management actions taken by the Seattle Metropolitan WMC included harassment, exclusion, repellents, habitat modifications, and public education. In 1998, escalating urban Canada goose problems in another area of Puget Sound precipitated the formation of a second committee, south of Seattle, involving Thurston County and the cities of Olympia, Lacey, and Tumwater. Using a slightly different approach than the Seattle Metropolitan WMC, management officials opted to hold a public meeting to solicit input and participation from individuals, groups, and agencies. Attendees were encouraged to serve on a steering committee which, when formed, included city and county officials, park managers, state and federal wildlife biologists, hunters, advocate groups, and citizens. Over the next 18 months, the committee identified problem areas, considered public concerns, reviewed management options, and utilized volunteers to count geese. From these efforts, a Resident Canada Goose Management Plan was developed. The plan, which was implemented in 2000, identified population and program objectives utilizing a full range of management options. The Seattle and Thurston County programs each were successful in reducing urban Canada goose problems. In Thurston County, a fully integrated approach including population reduction through lethal control was implemented in the first year. An immediate reduction in goose problems was evident, and the plan objectives were achieved within 4 years. In the Seattle area, goose damage problems were not substantially reduced until after the implementation of lethal removal in 2000. By 2003, the fourth season involving lethal removal, the number of urban geese and their associated damage had been reduced by approximately 60%. In both locations, the need for lethal removal declined during successive years of the program. Animal rights groups were vocal and took action to prevent lethal removal, but public demands for removal grew during the late 1990s as goose problems worsened. Although controversial at first, public and media support grew as facts came to light and Canada goose conflicts were reduced.

**KEY WORDS:** bird damage control, *Branta canadensis moffitti*, Canada goose, urban waterfowl, wildlife damage management

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## INTRODUCTION

### Background

Western Canada geese (*Branta canadensis moffitti*) are considered non-native to the Puget Sound area of northwestern Washington. They were first introduced in the 1960s when geese in eastern Washington were threatened by inundation of nesting habitat behind dams on the Columbia River. State wildlife officials translocated the first geese when McNary Dam was completed

(Manuwal and Ettl 1989). Further introductions of Canada geese into Puget Sound were made by the Washington Department of Fish and Wildlife (WDFW) in conjunction with flooding of the John Day pool. Although all Canada geese are managed by the United States Fish and Wildlife Service (USFWS) as "Migratory Waterfowl" under the Migratory Bird Treaty Act, they do not all migrate in the literal sense, and many remain as residents of the Puget Sound region throughout the year.

Resident Canada geese are defined as those non-migratory Canada geese that nest and reside predominantly within the contiguous United States (Rusch et al. 1995, Ankney 1996).

The Puget Sound region consists of a mosaic of well-kept lawns, golf courses, parks, and recreational fields. In addition, the Puget Sound is characterized by vast amounts of shoreline associated with numerous lakes, reservoirs, storm water detention ponds, rivers, and streams, many of which contain islands that provide safe nesting sites for geese. After their initial introduction, many people enjoyed seeing geese in areas where they were historically absent or occurred only as seasonal migrants, but as goose numbers increased, so did many of the problems associated with their presence. However, the regional population of Canada geese increased rapidly due to a lack of natural predators and hunting pressure in urban environments. Increasing populations of resident breeding geese have resulted in conflicts with human activities throughout the country (Conover and Chasko 1985), particularly concerns related to human health and safety (Ankney 1996). A 30-year winter Christmas bird count trend for Olympia, Seattle, and Tacoma showed a growth curve that started with only 36 geese in 1969 and grew to over 6,600 geese by 1999 (Figure 1). The Washington Department of Fish and Wildlife estimated that in 1998 there were 20,000 to 25,000 geese in the greater Puget Sound region.

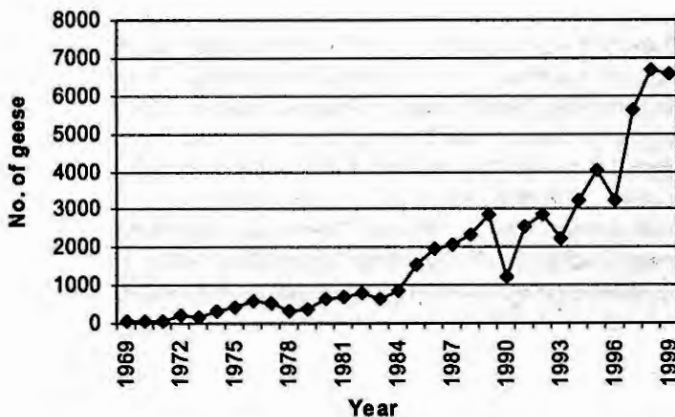


Figure 1. Thirty-year (1969 - 1999) Canada goose population trend for the cities of Olympia, Seattle, and Tacoma, based on Christmas bird count data.

Concentrations of birds, including geese, in the vicinity of airports threaten safe aircraft operations (Linnell et al. 1996, 1999; Seubert 1996). The potential for tragedy was evidenced in 1995 by the death of 24 airmen following the crash of an Air Force plane in Alaska after it ingested multiple Canada geese into 2 of its 4 engines (Gresh 1996, Ohashi et al. 1996). In the Puget Sound area between 1995 and 1999, there were 3 birdstrikes involving Canada geese. In one strike, a Cessna Citation air ambulance responding to a medical emergency landed safely after a Canada goose struck and destroyed one of its engines on final approach. Passengers and crew were uninjured, but the aircraft was

unable to respond to the medical situation, incurred over a million dollars in damage, and was out of commission for several weeks.

Canada geese congregated by the hundreds in parks, beaches, athletic fields, and other locations, and their droppings contaminated the areas. Eight public beaches and swimming areas were closed in the Puget Sound in 1998 when fecal coliform (*Escherichia coli*) counts exceeded King County and Kitsap County Health Department standards (USDA 1999; Jonathon Frodge, King County, Water and Land Resources Division, pers. commun. 2004). RNA analysis of samples taken from one of these beaches identified geese and ducks as the primary source of fecal contamination (Jamieson 1998). Lakes in south Puget Sound reported elevated coliform counts that were thought to be due to Canada geese (RRCGMS 2000). Resident Canada geese also attacked pets, children, and adults in urban areas as they aggressively defended their nests and goslings.

### History

Two regional working groups were formed, one in the greater Seattle area and one in the south Puget Sound region of Thurston County, in 1987 and 1998 respectively, to resolve goose-related problems. Each of these working groups is discussed.

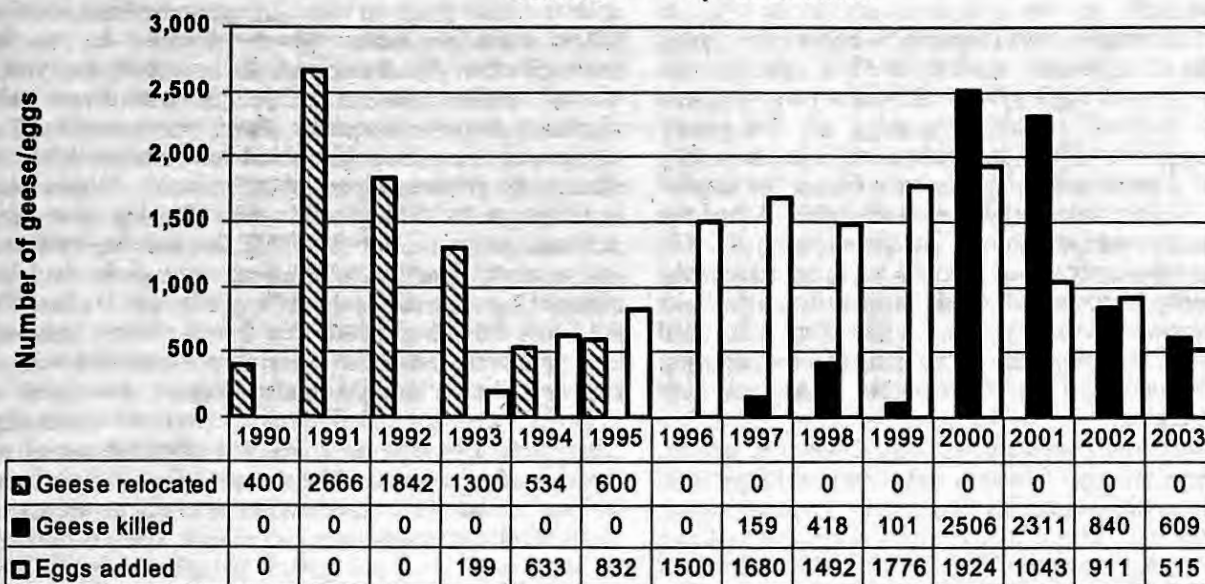
### Seattle Metropolitan Waterfowl Management Committee

In 1987, the growing population of resident Canada geese and the problems they were causing, in and around Seattle prompted the formation of the Seattle Metropolitan Waterfowl Management Committee (Seattle Metropolitan WMC). The Seattle Metropolitan WMC was comprised of 15 representatives from cities in the greater Seattle metropolitan area, King County, the University of Washington, and the U.S. Department of Agriculture's Wildlife Services program (WS). The committee also solicited involvement and input from the U.S. Fish and Wildlife Service (USFWS), the Washington Department of Fish and Wildlife (WDFW), and local and national advocacy groups. In 1987, the Seattle Metropolitan WMC commissioned the University of Washington to estimate the regional goose population and provide recommendations for resolving the problems. D. Manuwal, in a 1990 letter to P. Frandsen and the Seattle Metropolitan WMC, recommended that substantial reductions of goose numbers (90% in 1990, and 80 - 90% in 1991) would be needed to suppress the growing population, and that reproductive recruitment should be reduced.

Upon completion of the University of Washington study in 1988, the Seattle Metropolitan WMC sought assistance from WS and provided funding to remove geese from the area. Between 1989 and 1994, WS captured and transported 7,342 geese to relocation sites in eastern Washington and northern Idaho. The relocations were effective in reducing the number of complaints and the amount of damage reported in the Seattle area. However, it became evident that sometimes relocations resulted in new goose problems elsewhere. In addition, wildlife managers had concerns that relocating geese



**SWMC Canada Goose Management Summary (1990 - 2003)**  
**Seattle Metropolitan Area**



**Figure 2. Number of Canada geese relocated, eggs added, and geese lethally removed for the Seattle Waterfowl Management Committee, 1990 - 2003.**

could result in the spread of waterfowl diseases into populations of migrating geese. Consequently, relocations were discontinued after 1995.

As part of the integrated approach, an egg-oiling program was started in 1993 and by 1998 WS added 6,336 eggs (Figure 2). This management aspect was undoubtedly beneficial to suppressing population growth, and egg oiling continues as an important component of the current management program. However, egg oiling did not suppress the already overabundant population of geese using parks and other areas. It was also evident by the appearance of goslings each spring that some nesting was still occurring on private property and locations where WS did not have access. In March 2002, a toll-free hotline was established for residents living within the jurisdictions of the Seattle Metropolitan WMC to report Canada geese nesting on their property. An informational packet on how to deter and disperse geese was provided to landowners who called, and a WS biologist would oil eggs on their property at no charge. Few people called, and to increase participation by landowners, in 2003 the City of Seattle mailed a notice to all waterfront owners within the city limits informing them of the service.

Throughout the history of the Seattle Metropolitan WMC, the member cities implemented a variety of methods to reduce the number of geese using parks and beaches. These included educational signage, harassment techniques (e.g., use of dogs), repellents, landscape design changes, and barriers (e.g., temporary fences). Educational signs encouraging the public not to feed waterfowl and the altering of landscape designs were two ways for park managers to reduce the attractiveness of the area to geese. Harassment techniques, repellents, and

temporary barriers were effective in displacing geese from parks for as long as these measures were actively employed. However, most of these techniques only provided a temporary fix and did little to effectively solve the goose problem on a county-wide or regional basis—they simply pushed the problem onto the neighboring properties (Castelli and Sleggs 2000). From 1995 to 1998, WDFW recorded a 240% increase in goose-related complaints, and between 1989 -1998 residents in the Puget Sound area reported to WS \$4.9 million in goose-caused damages (USDA 1999). In King County alone, the number of goose complaints received by WS increased from 59 incidents totaling \$13,576 in 1993, to 139 incidents totaling \$757,604 in 1998 (USDA 1999).

Between 1997 and 1999, the WS program lethally removed 577 Canada geese from miscellaneous trouble spots in the Puget Sound area, but this did little to alleviate the problems within the Seattle metropolitan area. In 1999, the Seattle Metropolitan WMC determined that the only option left to curb the increasing goose population was to incorporate an expanded lethal removal program. The committee requested that WS conduct removals by rounding up geese during the summer molt period when they were flightless. In compliance with the National Environmental Policy Act, WS conducted an Environmental Assessment (EA) to determine if any aspect of the goose management program would have an adverse environmental impact. Agencies and the public were invited to participate and provide comments. It was determined the program would have no significant impacts on the environment, and in 1999 a Finding of No Significant Impact was issued. In 2000, the USFWS issued WS a depredation permit to remove 3,500 resident

Canada geese from the 12 counties in the Puget Sound area and granted further authority to remove additional geese from the vicinity of airports.

Animal rights groups took issue, and in an effort to prevent lethal removal, the Humane Society of the United States, the Progressive Animal Welfare Society, the Northwest Animal Rights Network, and a private citizen filed in Federal Court requesting a Temporary Restraining Order (TRO) and Permanent Injunction (PI). The Court granted a TRO while considering the request for a PI. Within days, the Court denied the PI, and the legal challenge was withdrawn. In the summer of 2000, the first roundups of resident Canada geese began at parks within Seattle Metropolitan WMC jurisdiction. Since its implementation, lethal removal has been a vital component of the integrated goose management program, and it has augmented the effectiveness of ongoing non-lethal techniques.

Following the unsuccessful court challenge, animal rights groups attempted to stop lethal control of geese in other ways, including media campaigns, demonstrations, physical attempts to disrupt roundups, and even violence against WS employees working on the projects. Protests usually involved a core group of 8 - 12 activists. On two occasions, WS specialists performing their official duties were run off the highway by a protestor, and in one instance, a WS Specialist sustained minor injuries after the same protestor slammed into his vehicle at an intersection. Despite urging from law enforcement officers and WS personnel, prosecutors did not file charges. Because of the disruptive nature of the protests and the threat of violence, WS requested law enforcement officers from the Washington State Highway Patrol and the King County Sheriff's Department to accompany WS personnel during roundups in Seattle. This provided a heightened level of protection and facilitated quick response from local law enforcement agencies when problems were encountered, and effectively reduced interference from protestors.

When the Seattle Metropolitan WMC first opted to conduct lethal removal of Canada geese, the general attitude in the media tended to be one of provocative sensationalism, ignoring many of the non-lethal measures that had already been implemented. It was apparent that many in the media were largely uninformed about the goose management program, and efforts were dedicated to educating them about the problem and the substantial efforts that had already been taken to resolve it. As a result, there was a general shift in attitude, and over time the media, in general, became more supportive of the approach being taken. Interviews with citizens and reports about public beaches and other areas that had become unusable due to goose droppings were also instrumental in bringing both sides of the issue to light.

Through the years, the Seattle Metropolitan WMC solicited and received input from agencies, advocate groups, and individuals. This input was used to formulate management actions and monitor public perceptions and program effectiveness. Management actions from 1989 to 1999 were only partially effective, merely moving geese around and slowing the growth of goose populations. There was no substantial reduction in the

problem until after the capture and lethal removal program began in earnest in 2000, with the removal of 2,506 urban Canada geese (Figure 2). The beneficial effects of that program were almost immediately obvious. There were no further beach closures due to fecal contamination by waterfowl, the number and risk of aircraft strikes was reduced, concerns from public agencies about water quality issues were minimized, and complaints from the public about fecal contamination and damage to private property were reduced. Goose-related conflicts were reduced with each ensuing year of the removal program, and by 2003 the number of Canada geese using Seattle metropolitan area parks had been reduced by approximately 60%. Although flocks of 30 - 80 geese still congregated in a few locations, the overall numbers were small compared to pre-control levels. As numbers were brought under control, the local and regional need for lethal removal declined accordingly. Control actions also improved the effectiveness of non-lethal methods, because the amount of unoccupied goose habitat had been increased and birds could be more easily deterred or dispersed.

#### *Thurston County Waterfowl Management Committee*

By the mid-1990s, goose-related problems in Thurston County were also on the rise. In October of 1998, the City of Lacey Parks Department hosted a public forum to discuss the growing problems associated with resident Canada geese in Thurston County. Although Thurston County had fewer geese than the Seattle metropolitan area, the growth rate of the goose population had been substantially higher at 21%, as opposed to 14.5% in Seattle (Ettl 1993). The number of geese in the survey index had grown from 167 in 1985 to 2,634 in 1999, an increase of 1,577% (RRCGMSC 2000). Over 90 people attended the public forum, representing 42 federal, state, and local agencies, non-profit organizations, individuals, and businesses.

Subsequent to the public meeting, a Regional Canada Goose Management Steering Committee (Thurston WMC) was formed. Membership was open to anyone who wanted to actively participate. Seventeen representatives opted to serve on the committee, including federal, state, and local agencies, homeowners associations, conservation groups, and private citizens.

The Thurston WMC met monthly for 18 months, with a typical attendance of 10 - 12 members. The Thurston WMC agreed that resident Canada geese posed a major problem that was regional in scope and must be addressed on a regional basis. The committee identified four major goals: 1) define the geographic management area, 2) substantiate the number of resident Canada geese, 3) determine critical problem areas, and 4) develop a management plan with a population goal.

The Thurston WMC established ground rules to govern the conduct of the meetings and the members. A consistent meeting date was established to augment active participation and accelerate the development of a management plan. To ensure consistency in answering questions from the media and the public, Thurston WMC members were asked to select an official spokesperson and refrain from making individual public comments.



Minutes from the previous meeting and an agenda for the upcoming meeting were mailed to members prior to each meeting, and records were reviewed and adopted to ensure accuracy. A time slot at each meeting was allocated for public input. The news media was invited and attended several meetings. Lastly, all Thurston WMC decisions were to be reached by consensus.

The Thurston WMC discussed and evaluated methods that had been used in other locations to manage resident Canada geese, including steps taken by the Seattle Metropolitan WMC. The Thurston WMC agreed that management options should include habitat modification, harassment techniques, repellents, expanded hunting opportunities, egg-oiling, lethal control, and public education. A majority of Thurston WMC members agreed that the most effective results would be obtained by integrating multiple methods of control, applied consistently over the largest area possible. The Committee determined that the management area should encompass Thurston County. To determine the number of resident Canada geese, the Thurston WMC coordinated two area-wide surveys in 1999. These surveys were conducted during June and August, when migrant Canada geese are generally not present in the area. The population was estimated in excess of 1,900 birds, and trend analysis indicated that without regulation it would increase to about 6,000 by the year 2005 (Figure 3).

A draft management plan outlining a fully integrated approach, which allowed for lethal control to be implemented concurrent with non-lethal methods, was written and submitted for full Thurston WMC review. The plan set a population goal of 500 resident Canada geese for Thurston County. However, not all members were in agreement regarding when lethal control should be implemented or to what extent it should be applied. Unable to reach consensus, the Thurston WMC decided to allow dissenting members to submit alternate management plans. Two additional plans were submitted by individual members for consideration by the Thurston

WMC. Because the Committee had been tasked with developing and implementing a single management plan, and consensus had not been reached, a vote became necessary. To rank the plans, the Thurston WMC adopted a weighted system that allowed each member to vote for their top two choices. Through this process, the original plan received the greatest support and was designated the Majority Report. The two subsequent plans were designated Minority Reports. Implementation of all or portions of the plans were still left to the discretion of the affected jurisdictions.

Two jurisdictions did not have substantial numbers of geese in their parks and they selected non-lethal management options only; three jurisdictions implemented all measures, including lethal removal. Management efforts were implemented in 2000, and 752 geese were removed from problem locations. Overall, there was substantial citizen support for removal of geese. Animal rights groups and one individual expressed opposition but did not interfere with any removals in Thurston County. Lethal removal was conducted to a lesser extent during each consecutive year, and in 2003, 101 geese were removed and population objectives had been nearly achieved.

## DISCUSSION

Although several factors were common to both Waterfowl Management Committees, there were several noteworthy differences. The Seattle Metropolitan WMC pioneered urban goose management in Washington. For over more than a decade, they implemented a variety of management options, some more successful than others. This process of management evolution involved the practical application of a wide variety of techniques, which were either continued or dropped depending on applicability and effectiveness. The Thurston WMC was not initiated until nearly 11 years later and was able to apply the knowledge that had been gained through actions taken by the Seattle Metropolitan WMC. The public involvement process used in Thurston County was an

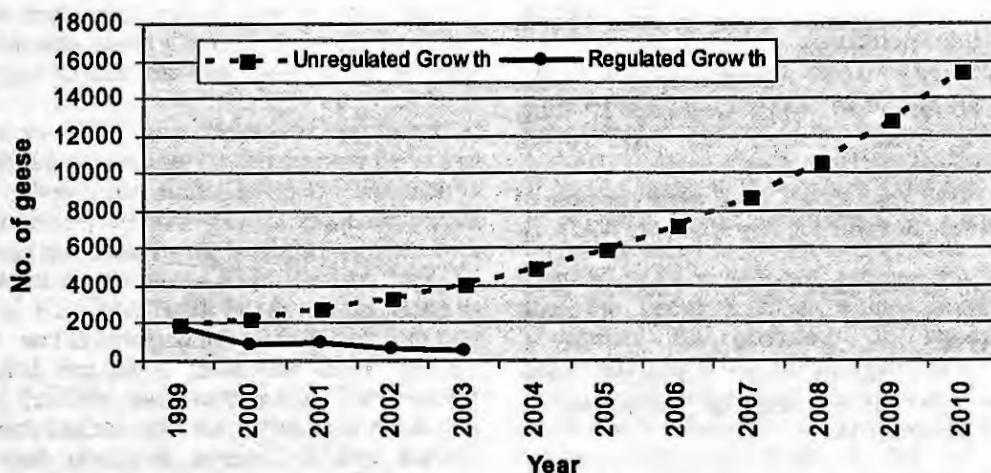


Figure 3. Projected 21% growth of resident Canada goose population in Thurston County, WA, in the absence of population control measures, and actual growth rate (1999 - 2000) after lethal removal was implemented.

important tool, as it led to the development and adoption of an effective goose management plan over a relatively short period of time. The plan was successful because it clearly defined objectives and developed a mechanism for gauging effectiveness and determining when population management goals had been achieved. This approach facilitated acceptance and support from the general public.

As a result of the efforts of both waterfowl management committees, the number of conflicts with resident Canada geese in the Puget Sound area was greatly reduced. However, the need for long-term population management still remains, in order to prevent resident Canada goose numbers from returning to problematic levels. Future efforts should continue to focus on egg-oiling but should also include the full range of effective non-lethal management tools and lethal removal, if necessary.

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