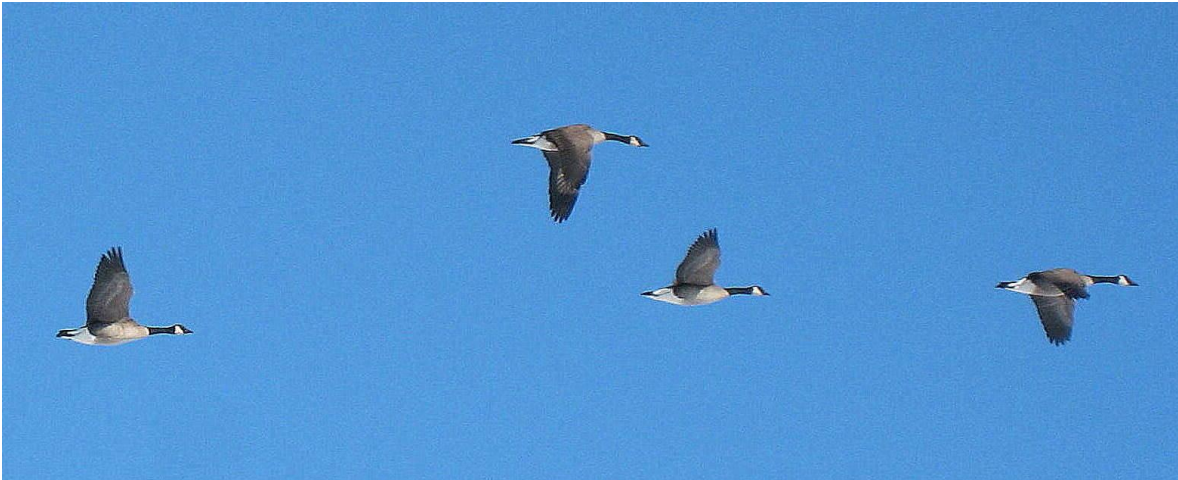


ICON UNDER FIRE: THE GIANT CANADA GEESE OF ROCHESTER,  
MINNESOTA

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## Abstract

For over 30 years the giant Canada goose was thought to be extinct, but in 1962 the species was rediscovered in Rochester, Minnesota. Ever since, the city has held a special bond with the species and specifically its local flock. As the goose population has grown, it has become, in some eyes, an intolerable nuisance and a public health threat. In response to complaints, local officials have taken steps to limit human contact and stymie the flock's growth, polarizing people supporting and opposing the measures and leaving the city at a crossroads. By analyzing the diverse actions and outcomes of communities across North America that have faced similar issues with Canada geese and acknowledging the unique cultural and economic ties between Rochester and its geese, a course of action is developed and recommended. Such a plan would balance the well being and contentment of the city's residents with the local connections to the flock, and thus necessarily retain at least some of the geese, while improving their management.

In 1962 a visiting biologist discovered that the flock of geese wintering in the heart of Rochester, Minnesota was composed of members of a giant subspecies of the Canada goose long believed extinct. Ever since that time, and even before it, the city of Rochester has held a special bond with both their local population of geese and with the subspecies as a whole. The geese have become a well known attraction for both residents and visitors and more than that, a cultural trademark.

However, following a bevy of unprecedentedly successful rehabilitation efforts in the wake of the giant Canada goose's rediscovery, coupled with the inviting environment provided by newly developed suburban landscapes, the population of Canada geese, including the giant subspecies, began to spiral out of control, both nationwide and within Rochester, in the subsequent decades. Furthermore, safe from hunters in residential settings, many geese stopped migrating altogether or were descended from captive stocks and never learned to, becoming year-round residents, and year-round problems. As they proliferated, their aggressive behavior, noisy nature, and endless trails of fecal matter, coupled with increasing fears of diseases such as avian flu, made the geese, for many communities across the country, a nuisance that could no longer be ignored. With growing frequency since the early 1990's, cities nationwide have been implementing increasingly severe measures to manage populations of resident Canada geese, ranging from hiring people to chase them off, to rounding them up for slaughter.

In Rochester though, the circumstances are different; the inextricable historical and social ties the city has to its resident geese make the issue much more complex. Both citizens and visitors to Rochester have encountered most of the same factors that make Canada geese a nuisance elsewhere, and some do call for a partial removal or at least

stricter management of the geese. Many others however are not about to let the city's symbol be eliminated or reduced without a fight. This situation has left local officials stuck in the middle and forced to advance very cautiously. Eventually, in 2006, the city government announced plans to passively encourage the dispersal of resident geese, with the intent to research more drastic practices such as round-ups. This decision galvanized people on both sides of the issue, increasing the pressure even more on city officials to pursue a balanced course of action, and what more the city will or should do remains to be seen.

This text explores the storied link between the city of Rochester and the giant Canada geese there. The origins of the present conflict in Rochester over the management of the geese are detailed. In addition, the processes and outcomes of other regions' management tactics, and their implications and results, are also outlined. A comprehensive summary of arguments both for and against the continuance of permitting giant Canada geese to live in Rochester year-round, from both the locally specific and national levels, follows. Finally, based on an analysis of the preceding information, a suggested course of action for the city of Rochester is outlined.

In January of 1962 Harold C. Hanson, a biologist from the Illinois Natural History Survey, accepted an invitation from the Minnesota Department of Conservation and the United States Fish and Wildlife Services to help them band and weigh members of the flock of Canada geese that regularly wintered in Rochester, Minnesota. After initiating the study, the weights they recorded were so unusually high that the collection of scientists assumed that their scales must be incorrectly calibrated. To their bewilderment, after testing the scales with pre-weighted bags of flour and sugar from a local grocer, the

original measurements were proven accurate. Soon afterward, Hanson realized that this could only mean that the Rochester flock was a living instance of *Branta Canadensis Maxima*, a giant subspecies of the Canada goose (*Branta Canadensis*). What made this so startling was that the *Maxima* had been concluded by many prior studies to have been extinct for at least 30 years (Hanson 1997, xix-xxi).

The origins of the giant Canada goose in Rochester predate Hanson's discovery though. The true beginning of the giant's presence in the area probably dates back to thousands of years before the European colonization of America. Hanson believes that the environment around Rochester, composed of an ideal mixture of spring-fed streams that stay open during winter and vast prairies, served as a significant wintering ground for the geese before extensive human settlement dispersed them (Hanson 1997, 97).

The species' circuitous contemporary return to the city began in 1924, when Dr. Charles Mayo, Sr., one of the founders of the Rochester based Mayo Clinic, purchased around fifteen of what were probably giant Canada geese from a North Dakota breeder. He kept them at his mansion, Mayowood, on the outskirts of town. These captives ended up decoying down nearly 600 migrating geese, which previously traveled farther south. These wintered and fed with the captive population (Blacklock 1989, 7). Then in 1936, the city installed six Canada geese at Silver Lake Park just north of the city's downtown, where the man-made Silver Lake, a Works Progress Administration project, was created from partially damming and widening the Zumbro River that same year. The intent was to establish a nesting flock in the park (Blacklock 1989, 7).

In 1939 Dr. Mayo ended his artificial feeding program, thus diffusing geese that had made a routine of wintering there to seek other suitable grounds in the immediate

region. Some moved to Silver Lake, joining the small band of resident geese, where the population struggled along for a few years. It was buoyed in 1947 by the addition of twelve more large geese purchased by a prior Mayo Clinic patient who had enjoyed observing the Silver Lake geese during his stay in Rochester. This addition is attributed with attracting a larger flock to the park again, and when a power plant on the lake bank was finished the following year, which pumped heated water into the lake and prevented it from freezing, ever increasing numbers of the migrating geese began to stay for the winter. In fact, the number of giant Canada geese at Silver Lake during January inventories jumped from 250 in 1952 to 6000 by 1964 (Hanson 1997, 97-99).

After the realization that the geese in Rochester were one of a relatively small number of giants still in existence, the DNR installed heavy hunting regulations on the species statewide. This policy was intended to revitalize the numbers of geese after it was acknowledged that unmitigated hunting and habitat loss due to property development and wetland drainage were the primary factors that nearly drove the geese to extinction (Dickson 1998). On a national scale, revitalization efforts consisted of transplanting many stocks of remaining *maximas* from the Midwest to the Eastern seaboard, where they also flourished (Stevens 1996). Such measures, coupled with the existence of a wildlife refuge surrounding most of the city, established in 1926 and expanded in 1962 (Blacklock 1989, 7, 9), and the presence of no natural predators, led the population of both migrant and resident geese in Rochester to rapidly rise (Dickson 1998).

As demonstrated by the three instances of captive geese being installed at Silver Lake, many people in Rochester enjoyed the presence of the Canada geese. In the 1940's, before many geese stayed in town for the winter, it was considered an exciting event in

the city when the thousands of geese would migrate through on their way south; people all over Rochester would come outside to watch them pass overhead (Valdez 2008). So as might be expected, the residents and visitors of Rochester quickly became fond of the growing number of geese that called Silver Lake home for part or all of the year with rising intensity starting in the 1950's. Feeding the geese became a generational family pastime for locals and a favorite regular activity for the large numbers of patients visiting the Mayo Clinic (Valdez 2008). When the city held a contest in 1980 to create a flag for Rochester, the winning entry even featured the geese prominently gliding over the Rochester skyline (see Fig. 1), the design still in use to this day (Post-Bulletin 2008).



Fig. 1. The City of Rochester's Flag. Photo by author. 2010



Over the years the geese have become increasingly entrenched in the fabric of the city's culture as well. A short drive through town will reveal numerous references to the revered status of the Canada goose. The popular local college level baseball team is named the Rochester Honkers after a colloquial nickname for the vocal birds. In 2009, even after the current debate over how to manage the geese began, the Rochester Arts Council, with support from the city council and mayor, held a summer long event titled "The Goose is Loose," featuring larger-than-life painted statues of Canada Geese (see Fig. 2), designed by local artists and scattered around town (Russell 2008). Images of the goose crop up on business signs and public parking garages too, and one downtown restaurant, The Canadian Honker, bears a taxonomically flawed testament to the birds' popularity with its name.



Fig. 2. One statue from Rochester's "The Goose is Loose" program. Photo by author. 2010



One Rochester artist, Gary Blum, has been featured in local, national, and international media for his so-called “Goose Poop Art,” which consists of Blum collecting, molding, framing, and selling small sculptures out of the immeasurable reservoir of available goose droppings in the city (Post-Bulletin 1996). Even the movie critic for Rochester’s major newspaper scores his reviews on a scale of zero to four “honks” (Miksaneck 2010). And finally, after visiting Rochester, in 1987 Paul Harvey dedicated a portion of his national radio show to the city’s giant Canada geese, describing them during their winter stay at Silver Lake as “stately creatures in this one warm-water oasis” (Valdez 2009). These are but a few of the numerous contributions the Canada goose has made to Rochester’s civic landscape.



Fig. 3. A parking garage in Rochester, Minnesota. Photo by author. 2010

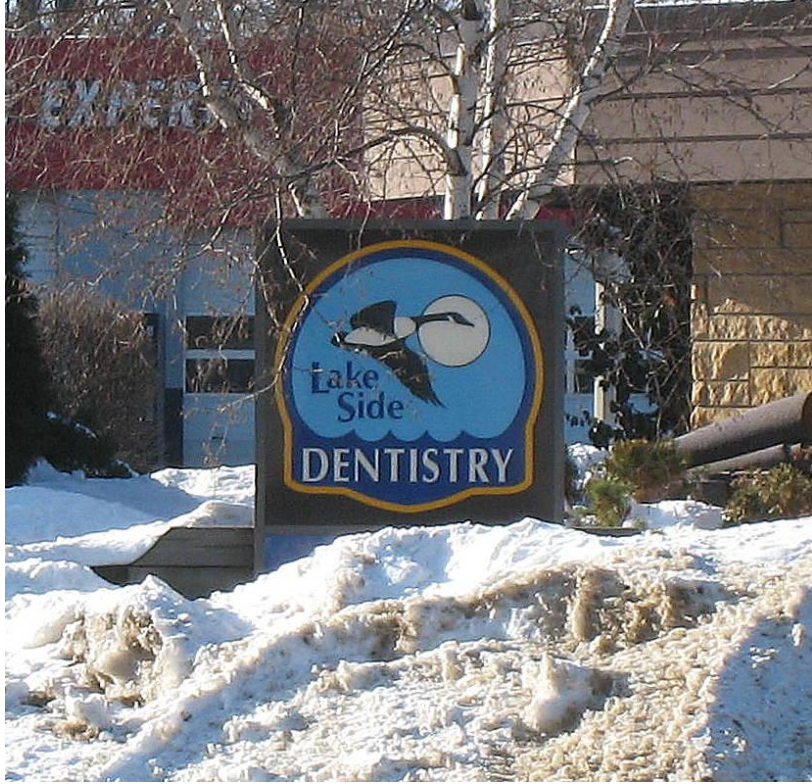


Fig. 4. A local business near Silver Lake Park in Rochester, Minnesota. Photo by author. 2010



Fig. 5. A shopping center near Silver Lake Park in Rochester, Minnesota. Photo by author. 2010

As important as the geese have become to the people of Rochester, the city itself is just as valuable to the geese. The protection granted the giant geese in the Rochester Game Refuge was vital to the subspecies' 20<sup>th</sup> century resurgence (Blacklock 1989, 10). In addition, Silver Lake serves as a major staging ground where thousands of giants rest and meet in the fall before migrating farther south, and it boasts the largest winter concentration of giant Canada geese in the world ([RochesterMN.com](http://RochesterMN.com) 2008).

For decades the geese maintained this mutually beneficial relationship with Rochester's human inhabitants, with only a few mild complaints surfacing now and again regarding geese temporarily blocking a street or littering a lawn with excrement. Even when officials in the Twin Cities, less than 100 miles away, began slaughter round-ups of their resident Canada geese in 1996, few in Rochester even took note (Blake 2009, 1), and such measures were never publicly suggested, preserving the tranquil coexistence. However, in 2006, several factors coincided that finally led some in the city to more seriously reconsider the stately treatment afforded the geese.

The first issue that came into play was the newly prevalent fear surrounding a possible avian influenza (H5N1) pandemic. As the virus swept through foreign poultry markets, some local citizens developed well founded concerns that having a very large migratory bird population living right in the middle of the city, especially a city with numerous medical patients, might not be the wisest idea. In addition to the actual harm it could do, one writer suggested it would be highly embarrassing to the city, home of the Mayo Clinic, if it were the site of a major public health outbreak ([Post-Bulletin](#) 2006), Meanwhile a few alarmists declared such an incident as inevitable (Mogan 2006) and quickly suggested euthanizing the geese as a possible solution ([Post-Bulletin](#) 2006).

These notions were reinforced by a report from the US Secretary of Health that humans could become infected through contact with the fecal matter of sick birds (Mogan 2006), of which there was an abundant supply in Rochester, and that further, some birds could just be carriers, demonstrating no symptoms of illness, but still a silent threat (Hansel 2008).

In addition to local government agencies, the Mayo Clinic also responded. After receiving a grant from the Centers for Disease Control and Prevention, Mayo began a study on the geese at Silver Lake, and on people who frequent the park, to determine if the virus might already be present in carriers there. The first few results were returned negative, but the study was scheduled to last for two years (Hansel 2008). Even so, the Emergency Preparedness Coordinator for Public Health in Olmsted County, Rochester's home county, cautioned that the geese were really no more than a nuisance at present, though a pandemic plan was being outlined just to be safe (Hansel 2006).

The second major issue leading to municipal action had been present for much longer, but, compounded with fears of avian flu, now appeared more serious. This was simply the large growth of the migratory and especially the resident goose populations that had been occurring almost uninterruptedly since the power plant opened at Silver Lake in the 1940's. Each year there were a few more geese, and proportionally, each year they and their droppings became a little bit more of a nuisance. Now though, they were transformed in the eyes of some, from slight annoyance to potential pandemic hazard.

The third and final straw came when the Pinewood Homeowner's Association, a local neighborhood group, lodged an official complaint with the city about the goose population. The group told the city that they wanted them to "eliminate, reduce, or

provide physical barriers” that would keep geese off their property, for the geese did not stay confined to Silver Lake and had become an issue they felt could no longer be overlooked (Woodard, 2008). The complaint spoke of “destruction of property” and “contamination” attributed to the “uncontrolled” goose population (City of Rochester, Minnesota 2007a). Unable to ignore such a direct grievance, and prepared to act on the problem anyway in light of the H5N1 scare, though that was acknowledged to be an extremely small actual risk, a diverse group of area officials gathered to study the matter and develop potential solutions in the fall of 2006 (City of Rochester, Minnesota 2007a).

At these two gatherings, titled “Goose Population Control Meetings,” members of four city departments, the Administration, Parks and Recreation, Rochester Public Utilities, and the Public Works department, met with representatives from the local DNR, the Olmsted County Health Department, the Pinewood Homeowner’s Association, and Quarry Hill Nature Center. These meetings were said to be a “direct response” to the Pinewood complaints (City of Rochester, Minnesota 2007a).

The DNR representatives began by going over some basic facts about the city’s geese and underlining the options available to a municipal government to control goose populations. The city officials learned that a 1918 international agreement, the Migratory Bird Treaty Act, protected migratory birds, such as the majority of Canada geese, from management except by the federal or, as of 2006, the state governments. In Rochester, the main flock of nearly 35,000 migratory geese resides for a briefer period during the fall and winter, with only about 1000 resident geese staying year round, but the resident geese are the ones that cause most of the problems. As people engage in far more outdoor recreational activities during the spring and summer months it is the geese present during

these times that lead to the most conflicts, whether it be from aggressive geese defending spring nest sites or soiled soccer fields. Conveniently then, city governments are given more freedom in managing resident geese because they do not migrate, and thus are not protected by the 1918 Act (City of Rochester, Minnesota 2007a).

During a Committee of the Whole meeting a few months later, the planning staff advised, and none of the present parties externally disagreed, that some measures must be taken to better manage Rochester's goose population. Six proposals were outlined (City of Rochester, Minnesota 2007a). These included:

- Discouraging, though not prohibiting, feeding at Silver Lake by removing corn-feed dispensers and putting up cautionary signs (see Fig. 6).
- Developing a brochure with the DNR to educate the public on goose management.
- Maintaining city plantings around storm water ponds that had been previously mowed down by adjacent property owners, which had allowed easier access for geese.
- Holding an early season hunt inside of the city's game refuge to help thin out the resident goose flock before the migrants returned in the fall.
- Creating a vegetative buffer along the shoreline of Silver Lake out of native grasses and plants.
- On a trial basis, work with the Pinewood Homeowner's Association, who volunteered, on a plan in their neighborhood only, to control the population by shaking or oiling eggs from the geese.



The city claimed from the outset that the growth of a native plant buffer at Silver Lake was primarily intended to improve water quality, by helping filter out goose and pet droppings that washed into the lake, with goose dispersal due to inhibited lake access seen as a mild incidental impact. Curiously though, it became one of the most contentious measures, as residents debated how it would affect the geese, and the appearance and usability of the park. The proposal to shake or “addle” and oil goose eggs, to disrupt egg development and prevent birth, also drew a lot of public fire, but as stated, was confined to the Pinewood neighborhood.

At the following city council meeting several Rochester residents came to voice their opposition to these plans, and a number of disgruntled letters were submitted to the city’s major newspaper. One resident, Amy King, called the prospect of addling goose eggs “barbaric” and said she wanted to let the council know some citizens were not pleased with the management plans. Another resident, Flo Sandok, stated that the geese were a point of pride and “part of the habitat and culture of the city.” Further, she said that there was no documented health problem in Rochester related to the geese and implored the council to base their decisions on facts, not “fear-mongering,” if so, they would see there was no need to kill the geese, whether via round-ups or extra hunting seasons (City of Rochester, Minnesota 2007b). Later, Sandok tied the city’s character to its treatment of the geese, warning that if “needless killing” became the course of action this would “not reflect Rochester’s reputation as a healing and caring city,” which, in a town where medical care forms the bedrock of the economy, was a relatively potent claim (Sandok 2007). Another letter, unhappy with the prospect of seeing the geese dispersed through any methods, made a more direct link to the city’s economy, noting



that some local artists make a living by painting or photographing geese and that many visitors returned to the city because of the geese (Knuth 2007).

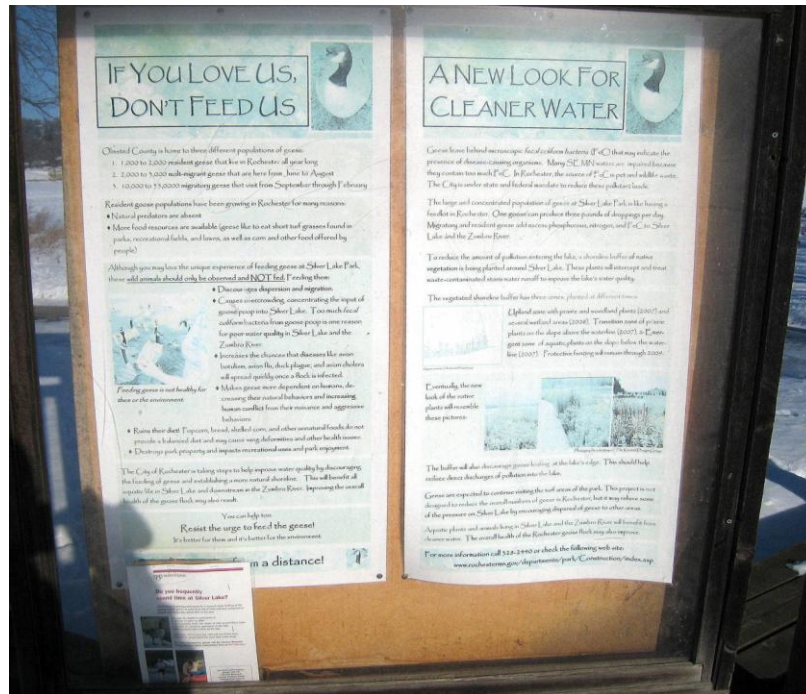


Fig. 6. Signs posted at Silver Lake Park, Rochester, MN promoting cleaner water expected from the vegetative buffer and discouraging the feeding of geese. Photo by author. 2010

In spite of these pleas, the city ensued with its intended plans, though never resorting yet to round-ups or any type of killing outside of hunting. While some have dramatically dubbed these actions the “War on Geese” (Post-Bulletin 2010), officials have stressed from the beginning that the goal is not to eliminate the geese but to slow their growth, disperse their unhealthy concentration at Silver Lake, and mitigate health or property concerns caused by the geese. To date, it is too early to determine whether the city’s measures have had a lasting impact, but the counts of both resident and wintering geese had dropped significantly at Silver Lake by 2008 (Pieters 2008). This trend continued into January of 2010, when the number of geese wintering in the city had dropped to around 8500 from around 20,000 just five years prior (Valdez 2010). At

present, the small counts could still be attributed to natural annual fluctuations, as it would take about five years of consistent lower counts to indicate a sustained trend (Pieters 2008). The fate of the geese has not yet been settled though. Upon first implementing these actions, officials spoke also of round-ups as one potential solution, if needed in the future, and as Don Nelson, an area DNR wildlife manager, said “We’re just kind of dipping our toe in the water on this... We’re considering some other additional measures down the road” (Post-Bulletin 2007b). So for now, the city and the geese remain in limbo, waiting to see how effective the city’s previous efforts will be.

In the meantime, it is worthwhile to examine how other cities across North America have dealt with having an overabundance of resident Canada geese. For, as mentioned before, Rochester is far from alone in facing such a conflict. Since the species’ revival in the mid twentieth century, combined with the welcome lawn spaces that came with the advent of suburban sprawl, the number of resident geese in residential and commercial areas across the continent has grown exponentially (Stewart 1992). At first, most people were fond of the geese, viewing them as a passive and handsome piece of nature preserved in the increasingly sanitized landscapes of Post-War America, and Canada to a lesser extent. The problem was, the geese were a little too unsanitary, and, with ever greater frequency since the late 1980’s and early 1990’s, the populations of geese started to pass the tipping points of many peoples’ tolerance (Stewart 1992).

The most commonly cited complaint is undoubtedly the excessive amount of fecal matter deposited by the geese, which can be up to two pounds a day per goose, or as often as once every twelve minutes, according to various sources (Blake 2009, 1, Hoff 2009). Aside from being a severe annoyance, it can do great damage to lawns or golf courses,

costing thousands of dollars, and, regardless of avian flu, can still pose a health threat to pets and humans that unwittingly come into contact with it. Contracting Giardia parasites from the droppings is one common risk (Post-Bulletin 2000). In various locations, the issue has forced beaches, carpeted with excrement, to close, and soccer games to be cancelled for fear of traces making contact with a ball or other equipment, which might then come in to contact with human hands where it could be ingested (City of Eden Prairie 2008, 10). In addition, as in the case of Rochester, there are concerns that geese in abundance could be contaminating the quality of many regional and national water sources. As geese often frequent water sources and their shorelines, their droppings regularly get washed into the water, which has led to intolerably high fecal coliform counts, a federally standardized measure of the fecal content of water (Weiss 2002).



Fig. 7. Goose droppings cover a sidewalk in Silver Lake Park, Rochester, MN. Photo by author. 2010

Another major complaint of the geese is with their eating habits. Many of them have been known to strip golf courses clean of turf grass, ravage public and private lawns and parks, eat out of gardens, and do costly damage to farmers' crop yields (Stewart

1992). As a result, some in more unappreciative quarters have dubbed the Canada geese with a new moniker: “rats with wings” (Star-Tribune 2009).

Concerns with the social behavior of the geese have also cropped up in many places. Some consider the birds’ loud frequent honks to be little less than abrasive noise pollution. As well, though quite docile normally, when nesting during the spring months adult geese grow extremely aggressive and defensive toward humans and pets that approach too closely, leading to intimidation or small number of injuries (Hanson 1997, 170, Stevens 1996). Others are concerned with just how tame the geese have become, leading them to confidently walk across roads and hold up traffic (see Fig. 8), which could possibly even halt emergency vehicles or cause accidents, say some (Snyder 2000).



Fig. 8. A car inches through a parking lot, its path obstructed by Canada geese, in Silver Lake Park, Rochester, Minnesota. Photo by author. 2010

A related fear that has gained increasing legitimacy as of late involves danger to air travel. The number of air craft to goose collision incidents has risen almost fivefold during the last twenty years (Sniffen 2009), and most planes engines cannot handle the



impact of a 12 pound bird like the Canada goose (Caruso and Dobnik 2009). This was vividly highlighted in January of 2009, when US Airways Flight 1549 struck a flock of Canada geese during take-off from LaGuardia Airport. This killed the engines and forced the plane to make an emergency landing in the Hudson River, in the now infamous “Miracle on the Hudson” incident (Caruso and Dobnik 2009). All of these issues have created a great economic burden on people who attempt to clean up after or protect themselves or their property from such geese.

In light of this bevy of motivators and related public and private protests, a great number of cities and citizens have mobilized to regulate the undesired growth and actions of Canada geese in their communities. A partial listing of locales pondering or applying management practices against nuisance Canada geese includes communities in Connecticut, Massachusetts, New Jersey, New York, Washington, Minnesota, Michigan, British Columbia, California, and Arkansas, among many other places (Stewart 1992, Bradsher 1996, Rosenbloom 2009). In fact, by 1993, 103 urban areas in 37 states had reported problems with Canada geese (Forbes 1993, 2). In many places, ranging from the Twin Cities to upstate New York, this has meant instituting round-ups to keep their numbers in check, after which the meat from the geese is usually donated to local food shelters. In the Twin Cities metro, after the goose population began to grow out of control in the early 1990’s, local government agencies relocated geese and goslings to other states that would take them such as Oklahoma, Kansas, Kentucky, and Mississippi. After a while though, nearing their own saturation thresholds, no other states would accept the geese, which led the region to begin their round-up program (City of Eden Prairie 2008).

Today, approximately 3000 geese and goslings are terminated annually in the Twin Cities metro. This has brought the resident population from a peak of roughly 25,000 in 1994 down to 17,000 or so now. While still large, John Moriarty, a natural resource manager for Ramsey County Parks, believes without a round-up program the population would be ten times its current level today (Blake 2009, 1).

A very large and diverse quantity of more humane management methods have been attempted as well, with varying degrees of success. One of the most commonly used is the herding of geese with trained Border Collies. This gets geese to leave the immediate problem area, but often just forces them into another conflict zone. In fact with even the most effective of dispersal methods, this is an inherent flaw. Other such dispersal tactics include, but are certainly not limited to, bubblegum flavored spray, the taste of which the geese detest, statues of owls or eagles, flashing lights or lasers, pyrotechnics, goose distress calls, remote controlled motor boats, waving flags or shiny banners, or simply hiring people to chase them (Stewart 1992, Holevinski, Curtis, and Malecki, 2007, 257).

One study, which tested dispersal or “hazing” methods on Canada geese in two sites near Buffalo and Rochester, New York, respectively, found that the majority of these harassment techniques have a minimal long-term impact, though some, especially the use of Border Collies, were very effective in the short-term (Holevinski, Curtis, and Malecki, 2007, 257). Although they are much more socially acceptable than lethal means, hazing tactics can be quite expensive, especially as repetitive application is virtually always necessary. Despite this often poor cost-effectiveness, hazing methods continue to be popular. For them to truly work as a sole means of management though, concurrent

and continual hazing at all local conflict sites would need to be employed, which is a near impossibility due to simple logistics and property access issues in most places (Holevinski, Curtis, and Malecki 2007, 258, 262-3). As such, the study recommended that non-lethal dispersal techniques should be used in combination with lethal options, which could be limited to hunting, as opposed to round-ups, if the environment and circumstances permitted (Holevinski, Curtis, and Malecki 2007, 257).

Other methods include some of those implemented in Rochester, such as growing vegetative buffers, allowing or extending hunting seasons, oiling or shaking eggs, and discouraging direct feeding of the geese. Various contraception medications and sterilization techniques are also in testing stages, but have yet to see widespread use. As such, the most effective and efficient method at this point in time appears to be round-ups. In other locations some protests have sprung up in response to such processes, spawning well organized advocacy groups, such as the Coalition to Prevent the Destruction of Canada Geese or Love Canada Geese (Coalition to Prevent the Destruction of Canada Geese 2000, Rosenbloom 2009), but in general resistance has been mild. In Eden Prairie, Minnesota, for instance, a suburb of the Twin Cities, government representatives have stated there was practically no opposition since they began round-ups in the mid 1990's until they finally received their first complaint in 2007 (Shaffer 2007).

When comparing the goose situation in Rochester to Eden Prairie and other conflict sites around the continent though, one must remember that the Canada goose carries neither the same historical significance, nor the same cultural meaning, in such places as it does in Rochester. Though actually quite close in relative distance, the spatial



isolation of Rochester is removed enough that it has developed its own regional traditions and ties to the geese, and so, not surprisingly, the public perception of and response to the problem has been very unique. Accordingly, implementation of any management measures, let alone consideration of a round-up, has proven more difficult for the local governmental agencies. Before recommending a course of action then, it would only be appropriate to thoroughly summarize all of the factors at work both in favor of and against the presence of the geese in Rochester.

### **Game Hunting**

One major piece of the goose issue which has only been discussed briefly so far, and yet has significant economic and cultural value to the city of Rochester, is the goose hunting industry. Due to the large number of geese that stop in Rochester for at least briefly during their fall migration, nearly 40,000 at the November peak, the goose hunting near Rochester is considered world class ([MyOutdoorTV.com](http://MyOutdoorTV.com) 2006). The geese mainly stay near Silver Lake, but many fly out of the designated game refuge to feed on harvested cornfields several times a day, where huntsmen await. For many regional residents, the fall hunt is an annual custom, but hunters from all over visit as well, helping give Minnesota the highest annual goose harvest of any state (Dickson 1998). Many game seekers hire local guides who earn a living in part by hosting and counseling on such hunts (Smith 2009a, 2).

As such, hunting plays a rather complicated role, in that, while it is a lethal management tactic it also represents one reason why it is important to ensure a sustainable population of Canada geese is maintained in the region. For, some geese are needed to continue the tradition and monetary worth tied to the local hunt. While a few

do protest hunting as a means of control, or at least the extension of an early hunting season within the city refuge intended to target resident geese, in general hunting is seen as highly preferable and more humane than a round-up. Additionally, as previously detailed, the livelihood and recreation of many area citizens depends on the hunt, and most residents recognize its value, even if they do not participate (Thoms 2003). The goose hunt has even brought the city some national acclaim; it was cited as one of the major reasons Rochester was named by Outdoor Life Magazine as the ninth best city in the country for hunters and anglers to live in (Smith 2009b).

In recent years, the regional DNR has increasingly come to rely on hunting as a means of keeping Rochester's population of geese in check. At present the Canada goose hunting season occurs in three stages around Rochester. The first, mentioned previously, was introduced as part of the City Council's initiatives to control the resident goose numbers as it runs in September before the migrants from Canada begin to arrive. The second and primary season runs through October and November, when most migrants are passing through. A late season goose hunt, during the last two weeks of December after the departure of most non-wintering migrants, has also been added in recent years. This targets resident geese as well, but would necessarily affect some of those migrants who winter in Rochester too. However, contradicting any skeptics who believe the city and the DNR are confirmed enemies of the geese, the DNR is committed to maintaining such a stable population of geese as that mentioned above, they just do not want it to spiral out of control. Tim Bremicker, a DNR regional wildlife manager even stated that, "our first obligation is to the geese" (Weiss 2007).

Though primarily intended as a safe-haven for the large number of wintering geese in the city, as opposed to the contentious resident population, the DNR also maintains plots of corn for the geese on a game refuge northeast of Rochester (Pieters 2007). In addition to giving all of the geese a safe place to eat in winter, and keeping them from migrating further south, this also helps protect crops of area farmers from being grazed by the geese (Pieters 2007). This should come as no surprise, as, following Harold Hanson's rediscovery of the giant birds, the U.S. Fish and Wildlife Service, the Canadian Wildlife Service, and the DNR all agreed to combine their resources to help protect the geese. They were primarily concerned with the flock of giant Canadas that breed in the Interlake region of Manitoba, between Lake Winnipeg, Lake Manitoba, and Lake Winnipegosis, and migrate south to stay in Rochester for the winter (see Fig. 9). The agreement stated that the DNR would ensure there was access to open water at Silver Lake and food (Abrahamson 2009, Hanson 1997, 83).

### **Flight Hazard**

Possibly the most dangerous physical threat Canada geese currently pose, as a hazard to airplane flights, is almost a non-issue for Rochester at present as the geese do not frequent the area around Rochester's commuter airport. By design there is little standing water or food near the airport, several miles south of town, and as such, it is not very attractive for the geese. This precludes the main problem that occurs when runways are too close in proximity to the flight paths of the large birds (Scott, 2009). No recorded collision has yet occurred with a flight at the Rochester International Airport, but representatives have stated they continually keep an eye out for them (Scott, 2009).

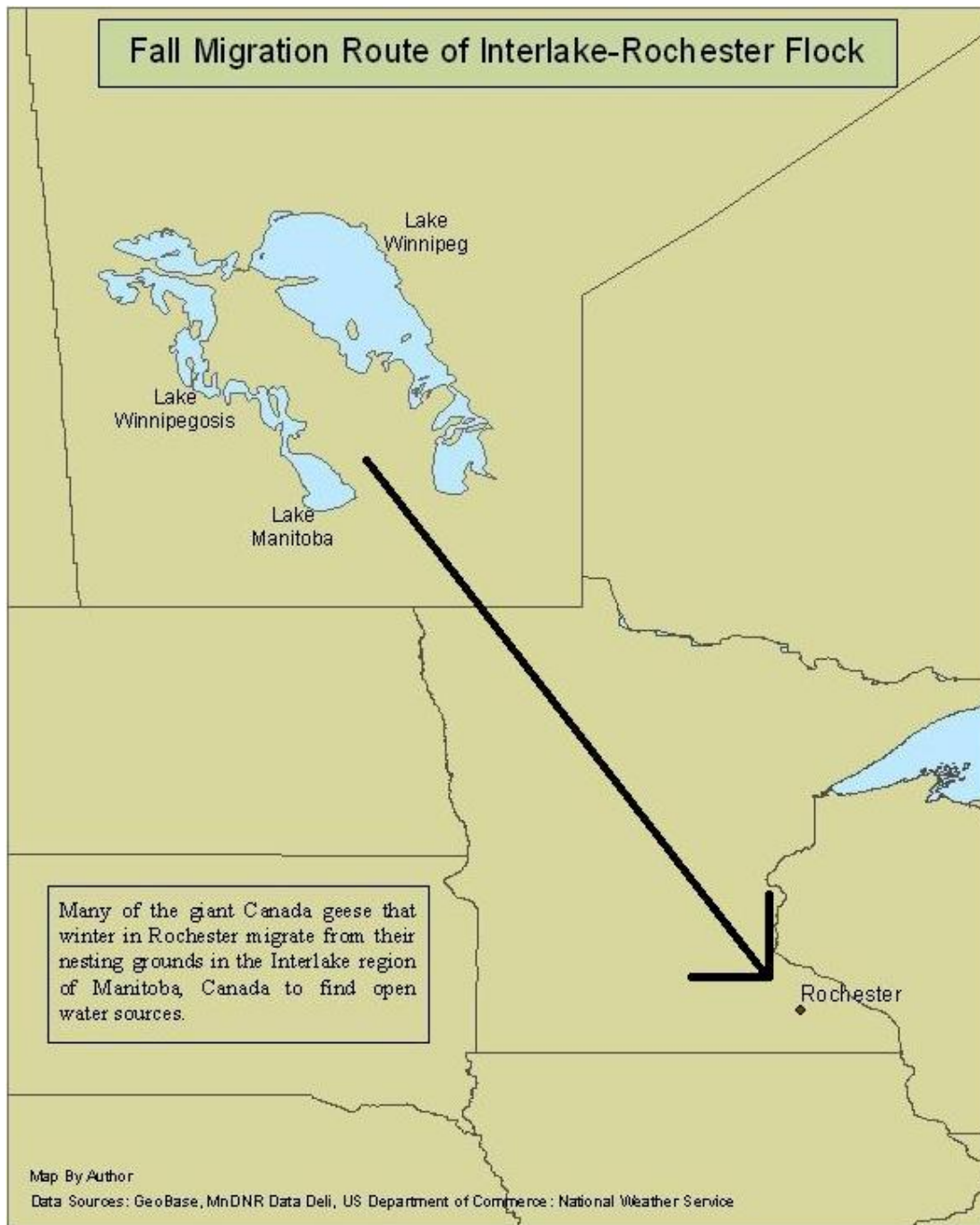


Fig. 9. Migration of Interlake-Rochester flock of giant Canada geese (Hanson 1997, 225). Map by author.

### **Health Concerns**

The predominant health concern regarding the geese in Rochester is the possibility that traces of their widespread droppings, after making contact with humans or pets, could accidentally be ingested. This could result in a variety of illnesses, but most

notably Giardiasis, which causes diarrhea. As one citizen put it, “Silver Lake is disgusting... no child or dog should be there because of the goose poop” (Northcutt 2007). Few humans actually become infected, but the possibility that they could inhibits a great deal of activity, as many area parklands, and specifically Silver Lake Park, are covered with droppings.

The trump card here would be if avian flu were ever detected in the city or region’s goose population. Under such circumstances it is likely that great precautions, possibly in the form of a large-scale round-up slaughter, or at least quarantine, depending on the severity, would be both required and widely supported. The flock at Silver Lake has been tested recently though and a plan of action has been developed, and for now the possibility of such a pandemic in the city appears quite small.

Aside from posing a health risk to humans and their pets, catering to urban geese might be bad for the health of the geese too. First of all, the dense concentration of giant Canada geese in places like Rochester is unnatural. To accommodate the smaller quarters of a safer, easier life in the city, geese live in far closer proximity to one another than they would in a more natural environment (Stewart 1992). And although there is some evidence to suggest that the geese will self-regulate their population, by yielding varying nesting success rates to compensate if a flock size is either larger or smaller than normal (Hanson 1997, 172), recent trends seem to indicate that, unchecked by other forces, their population would continue to expand until humane methods are no longer an adequate means of management. Such concentration also increases the ability for any sort of sickness to spread quickly through a resident flock, causing devastating damage that could then be passed along to visiting migrants and carried elsewhere (Forbes 1993, 3). In

addition, a condition called “Angel Wing,” where the wing of a bird grows improperly rendering it incapable of flight, afflicts many urban Canada geese and is believed to be the result of being fed too much protein and sugars in bread provided by humans (City of Rochester, Minnesota 2010). For all of these reasons the city tried to discourage the density of the geese at Silver Lake by removing corn feeders and posting signs admonishing human feeding of the geese.

On the other hand, besides being a boon to the culture and economy of the city, some argue that the geese could actually be good for the health of people too. A few area doctors actually suggest that their patients visit and feed the city’s geese as a type of therapy (Valdez 2008).

### **Water Quality**

The details of this topic have already been covered, but to recapitulate, as a result of the high number of geese in Rochester residing near bodies of water, in 2002 nearly all of the area’s waterways were deemed “contaminated” with unhealthy concentrations of fecal matter (Weiss 2002). This makes up another aspect of the health concerns regarding the geese. In response, the city built a buffer on the shore of Silver Lake, made up of native vegetation, to filter the excrement that was previously washed from land into the water during rainstorms.

### **Economics**

In Rochester there are many of the same complaints about the geese present as everywhere else, but seemingly each one is counterbalanced by a similar positive element. Take the economy for instance, for almost every golf course and commercial strip that has to hire people to clean up after the geese (Hoff 2009), causing economic

stress, there is a business that profits because a visitor from the rural outlying region or a former clinic patient comes into the city to watch or feed the geese.

While impossible to quantify such a figure, it is apparent that many in Rochester do profit from the presence of the geese. A Rochester-based commerce and tourism website even names Silver Lake as one of the city's most popular attractions and states that "the thing that truly differentiates the park from all the rest are the giant Canada geese that reside here year round" ([RochesterMN.com](http://RochesterMN.com) 2008). As already outlined, a number of artists and hunting guides also make part of their living directly from the geese and many more people indirectly reap the benefits from those who visit Rochester to see the geese. Aaron Richard, the owner of a paddleboat and bike rental business at Silver Lake acknowledges that he must sweep up goose droppings daily, but says that the geese are "really good for our business" and that 50% of his customers are visitors to the city (Grossfield 2008).

In contrast, there is also no doubt that the geese cause a great deal of grief and fiscal strain for many home and business owners and the city government. Through their voracious appetites and their messy digestive habits, the geese have ruined gardens, golf courses, park space, sidewalks, and business parks. It often requires constant maintenance to clean up after them, and the DNR must spend a great deal to feed the geese and keep them from feeding on the commercial crops of area farmers.

The city's management efforts have proven pricey as well, with the vegetative buffer alone costing \$550,000, and naturally those costs would eventually fall to the city's taxpayers (Valdez 2008). Yet, resorting to a round-up could ultimately be just as expensive, as it is not a permanent solution and annually costs many cities tens of



thousands of dollars (City of Eden Prairie 2008). So do the geese pay for themselves? While it is not possible to ascertain their true net worth, an educated guess would say probably not, but many would argue whatever small financial deficit they may have accrued is made up for in added cultural capital.

### **Recreation**

As with the economy, in terms of recreation it seems the geese provide about the same amount of opportunities as they take away from the city. Beginning with the positives, and as covered numerous times already, the geese attract many people to Silver Lake Park who enjoy feeding or watching the geese, often while engaging in other activities like biking or jogging. Visiting the geese is often cited as a pleasing pastime for those searching for a way to enjoy nature in Rochester (Johnson 2006). In addition, game hunting is another major activity in the area that would not be possible without the large numbers of geese present, and the abundant resident geese afford one more opportunity for such sport with the new early hunting season.

Though it hasn't closed any beaches or parks like in some areas, the geese do their share to discourage the use of Rochester's public and private spaces as well. Parents are wary of letting their children or pets run through areas around Silver Lake, or use ball fields or lawns around town that have been soiled with droppings. The same problem can damage golf courses, inhibiting play. Those strolling through the park must avoid nesting sites for risk of being physically or verbally harassed by protective parent geese in spring or must pick their way through a minefield of excrement. There are some indications though that such hazards have diminished to an extent near Silver Lake after the construction of the vegetative buffer (Pearson 2009).

## **Reputation**

This has been touched on before, but various residents have attempted to tie the reputation of Rochester to its handling of the goose population. On one side is the argument that, as a city known for health care, it would be almost hypocritical for Rochester's government to willingly engage in taking the lives of the city's resident geese (Sandok 2007). On the other side is the belief that it would be just as hypocritical, and probably more damaging to the city's reputation and in turn economy, if any significant health problems occurred due to the geese that could have been suppressed by unutilized tactics like round-ups (Post-Bulletin 2006). Both sides have fairly valid claims.

Apart from medical considerations, Rochester also has a long tenured reputation for its high quality of life. One citizen believes that this status is also linked to the goose management, applauding efforts to clean up the park via the vegetative buffer and stating as a result, "I can understand why the forthcoming September issue of National Geographic lists Rochester as one of the best 50 best places to live and work" (Crellin 2007). Of course the pro-geese camp would likely argue the geese are part of what makes it such a great place to live though, making it difficult to reach any solid conclusion.

## **Ethical Concerns**

One question that must be asked when trying to understand this whole tangled issue, is who was ultimately responsible for the resurgence of the geese. The answer of course is humans, sometimes intentionally, sometimes unwittingly. In Rochester it is pretty easy to see the intentional efforts to bring the geese in, starting with those captives installed at Silver Lake decades ago through the governmental efforts to keep them coming back and proliferating by guaranteeing their access to food and water. It worked

well, both because humans enjoyed watching them and because giant Canada geese are exceedingly docile and tame towards humans, even more so than the other subspecies of Canada geese, and could thus adapt to urban life easily (Hanson 1997, 191, 194-5). The unintentional influence came via the office parks, golf courses, strip malls, and large-lawn style homes that were built, complete with storm water ponds, in Rochester and across America with increasing frequency beginning in the 1950's. This provided the geese with their pick of ideal habitats, as geese look for open grazing space so they can see predators approaching, and close proximity to water sources (Hanson 1997, 103). This allowed the geese to spread away from Silver Lake and cause problems in many more areas for many more home and business owners.

With the blame and origin for the goose problems established, most everyone agrees that it is our responsibility to fix the issue, but people sharply diverge over how to do so. The primary argument against violent measures, such as hunting and addling, but especially round-ups, is that, as it is humans' fault that the geese have become a nuisance in the first place, humans owe it to the geese to control the birds' growth peacefully. Such sentiments were expressed in a variety of letters over the years to the local newspaper.

One resident, deriding the extension of the hunting season, said that the geese were "blameless" and must be defended, and also raised the previously illustrated point that killing geese in a city reputed for health care would be inappropriate (Sandok 2007). Another resident noted, much as Harold Hanson guessed, that the geese were probably in Rochester before people ever came, and thus should have the right to remain there unmolested (Lane 2007). A third Rochester resident scolded those in favor of the lethal reduction of geese, saying they were "valuing efficiency over life" which was shameful

after the people of Rochester had appreciated the beauty of the geese for years (Knuth 2007). Even one writer who vehemently advocated for the removal of the geese said that it should be done “by whatever humane way we can” (Northcutt 2007). An online petition, signed by over 600 people, was also produced, that even protested the vegetative buffer as unethical because it ignored the 50-60 crippled geese near Silver Lake that could not fly away and would thus have restricted access to food on shore (Post-Bulletin 2007a). Finally, Greg Sellnow, a local columnist who frequently writes about the geese, serving as an even-tempered bellwether of public opinion on the issue, said he was unsure whether addling or extra hunting were acceptable solutions. He was sure though that, “as long as humans have domain over the earth, it’s our job to be good stewards of the creatures beneath us in the evolutionary food chain” (Sellnow 2007a). While none of these claims are irrefutable, all are worthy of contemplation.

### **Culture and Tradition**

Though it has been thoroughly documented, mention must be made once more of the integral role the Canada goose plays in the culture of Rochester. Hardly a day can be passed in the town without being reminded of the significance of the birds, whether through an experience with the actual geese or some secondary representation. Many residents and visitors feel attached to the flock and have made it a tradition to feed or visit the geese, even if they must come from miles away. In addition, the historic roots of the giant Canada goose should not be forgotten either, for it was there that the subspecies was rediscovered and possibly saved from extinction.

Consideration should also be given to how unique and valuable the city’s bond with the geese is, in light of their greater cultural standing. Rochester is often reputed as

being a great place to live in, but having few distinctive cultural attractions. As Sellnow points out, in response to a St. Paul travel writer who belittled Rochester as a gateway to Lanesboro (a scenic nearby town less than 1/100<sup>th</sup> the size of Rochester), in a place devoid of any substantial tourist attractions, the geese help set the city apart as a destination and give it character (Sellnow 2006a, Sellnow 2006b).

### **Choosing a Plan**

When considering management tactics, one key question asked is not “What is the physical carrying capacity of this environment for the geese and has it been exceeded?” but “How many geese are our citizens willing to put up with?” For at present the threshold is not a biological but a social one. Neither Eden Prairie nor Rochester, nor virtually any other community has seen overpopulation to the point where the environment simply cannot sustain anymore geese, but instead the negative externalities the geese bring with them become too much for their human landlords to bear (City of Eden Prairie 2008, 12, City of Rochester 2007a). With the marked exceptions of a pandemic threat or airplane hazards, most of these externalities fall into a nuisance category. As such, since concerns over a viral outbreak or flight collisions are not major worries in Rochester at the moment, there is considerable latitude in the amount of geese people can or will tolerate. The problem arises when trying to calculate such a figure on a city-wide scale. Even after carefully weighing each of the above variables there is still no overarching formula; even a seemingly tangible factor like economics is too shrouded in indirect flows to accurately compute. There is simply too much subjectivity involved and the answer is different for almost every citizen.

This issue is very polarizing. As Sellnow put it after the dramatic first volleys were fired from each camp, following the commencement of the city's management plan, "middle ground is becoming endangered territory these days" (Sellnow 2007b). People are rigidly tied to icons, the geese in this case, and in public planning situations such as these the majority are willing to sacrifice most other considerations if their icon can be salvaged (Gobster 2001, 48). By working closely with all stakeholders and identifying their key goals, usually a compromise can be made. The key is finding the commonalities (Gobster 2001, 48).

While at first glance it might seem that there is no way to reconcile the desires of the opposing parties in this case: those who want to keep the geese vs. those who want to get rid of them, hopefully this paper has demonstrated the issue is far less black-and-white than that. Viewpoints span the spectrum and many want much more specific things like getting the geese off their lawn or having clean recreational spaces. That is crucial; very few people inherently dislike the geese, but rather the side effects that come with them. If those side effects can be controlled, and the population of geese can be regulated enough that they can be kept at manageable levels, most people will come away happy.

For now then, the city is actually on a pretty good track towards harmonizing everyone's interests. They have managed to balance the legitimate concerns of those disturbed by the formerly growing goose population, with those who have strong bonds to the flock and its significance in local culture, without resorting to more ethically challenging tactics. If, in time, it proves these measures are not enough, the city should still avoid instituting round-ups if at all possible, barring a pandemic. If, in the event of an outbreak, a choice had to be made between protecting the lives of humans and those of

the geese, few, if any, would disagree with a round-up. Still, the very presence of the geese is tied to one of Rochester's first sons, Dr. Charles Mayo, and in a city often alleged as lacking significant cultural character, the giant Canada goose stands out as one of its iconic touchstones. To fall back on a method of control that involves the systematic destruction of the city's symbol could truly be irreparably damaging to the city's reputation, and in turn, its economy and traditions.

Harassment methods like Border Collies are one option, but would probably only be feasible for an individual business or homeowner, as simultaneous hazing of geese at all problem sites would be almost impossible. Extending hunting seasons or increasing bag limits is another alternative, but that can only go so far. Some have suggested adding a spring hunt while geese are migrating through back north, but such an option would, as it seems, just be targeting migratory geese and not the problem resident ones.

One proposed passive control tactic dealt with decreasing the energy production or rerouting the flow of warm water downstream at the Silver Lake power plant. This would cause the lake to freeze over, eliminating the so-called goose "hot tub" in place there (Sellnow 2003), and leaving the geese without their primary source of open water. Not only was this determined to be too expensive (City of Rochester, Minnesota 2007a), but in 2010, supposedly for the first time since the construction of the power plant, Silver Lake froze over for a brief time due to a combination of bitterly cold weather and decreased power demand. Yet, the geese did not leave, simply flying a few hundred yards downstream to where some open water remained below the dam (Valdez 2010). As Hanson has pointed out, cold temperatures are rarely an impetus for the hearty giant



geese to leave their traditional winter grounds, so as long as some source of open water exists, they will likely stay (Hanson 1997, 91).



Fig. 10. A frozen Silver Lake is visible in the foreground, while the power plant dominates the far bank and Canada geese fly by overhead. Photo by author. 2010

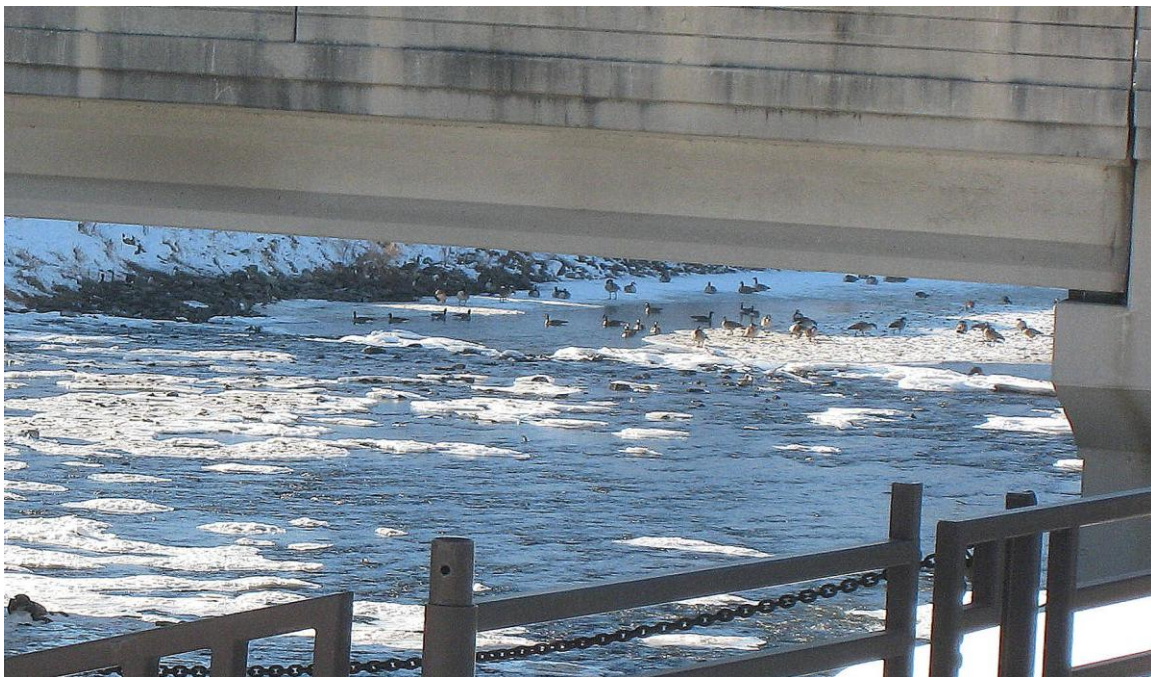


Fig. 11. Unable to use the frozen lake, the geese flew over the dam bounding its west side and down to the open river below. Photo by author. 2010

If poor results mean that the addling or oiling of eggs, or experimental sterilization, needs to be employed consistently on a wide scale, it would still be highly preferable to the species' slaughter. One advocacy group, Friends of the Ducks and Geese, actually recommends addling as an acceptable means of control while condemning round-ups (Bradsher 1996). Although such methods are not fool-proof, permanent, or cheap, evidence has shown round-ups are not either, and it must be remembered that the city and the DNR are not trying to eradicate the geese, but simply wish to control their numbers. Thus, even if a round-up was instituted, the resilient geese would likely still be around for some time to come.

In the management of Rochester's geese, significant political, economic, social, health, and cultural considerations are at stake, and thus any policy should be constructed with the utmost care and consideration. Whatever solution Rochester comes up with should be made with the joint consultation of its citizens, the DNR, and all sectors of the city government. If individual neighborhoods, such as Pinewood, desire to get permission to experiment with more severe actions on their own properties, that is up to them, but when planning for public spaces such as Silver Lake, all affected stakeholders should be involved in the decision making process. Those in control must continue to monitor the effects of their actions on the geese, and thus can adjust their methods accordingly if they prove too strong, or not strong enough. Though it may appear that the interests of those in favor of and opposed to the geese might be irreconcilable, Rochester is proving, and shall hopefully continue to prove, that there is a middle ground.

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