

Geese Management Report for Madison Parks Division
2011
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Introduction

Concerns regarding a growing Canada Geese populations within the City of Madison date back to 2003. Vilas Park was the area of specific concern regarding impacts on park usage caused by large amounts of feces produced by the geese. Impacts were noted in a 2003 Health Department report. After this report was issued an ordinance was passed by the Madison Common Council banning the feeding of waterfowl on public property. Parks staff worked with the Friends of Lake Wingra to install natural plantings along the lagoon shorelines to discourage geese movement between land and water. Yahara Golf Course did a trial experiment with herding dogs to discourage geese.

In February 2010 Dane County Regional Airport staff expressed concerns regarding the number of geese using Warner Park, and possible safety implications for air traffic at the airport. They provided documentation that 9 (as of April 2011 the total is 11) geese from Warner Park (banded by DNR at Warner in 2007) were later found on airport lands and destroyed because they posed a safety risk. DCRA staff appeared at the April 2010 Park Commission meeting requesting permission to capture Canada geese from Warner Park in July and humanely euthanize them. Park Commission granted this request. At the May 2010 Park Commission meeting the subject of the goose removal was revisited, and the request by DCRA to capture Canada geese from Warner Park was rescinded. Park staff was directed to prepare a goose management report for Warner Park.

Scope

After internal staff discussions it was decided to expand the scope of the study beyond Warner Park to conduct a more comprehensive review of the Canada geese population throughout the Madison Park System. A separate report specifically targeting Vilas Park was prepared by a consultant working with a citizen committee as part of the Yahara Clean Partnership.

Canada Geese Biology

Canada Geese are divided into several races. Scientists recognize at least 8 distinct races. Giant Canada Geese are the largest in the group and may reach a size of 10 to 14 lbs. The Interior subspecies migrates to Hudson Bay to breed and weighs 8 to 10 lbs. The interior race migrates through Wisconsin during the spring and fall migration and does not breed here.

The Giant Canada Geese (sometimes called resident geese since they spend most of the year in Wisconsin) were once thought to be extirpated. In 1962 a remnant population was discovered in suburban Rochester, Minnesota and for the next 30 years wildlife managers worked to restore this goose to its former range throughout the Midwest, and beyond. In the 1970's Giant Canada Geese were reintroduced to the Twin Cities area, and by the mid-1980's beach closing due to high bacteria counts were attributed to large amounts of goose feces on nearby parklands. In 1985 the Twin Cities (through the Three Rivers Park District) implemented an integrated goose management strategy that included goose chasing dogs, habitat modification, limited hunting where appropriate, and goose round-ups (with the meat donated to food pantries). Currently there are approximately 20,000 to 27,000 geese in this 7 county metro region, but it was estimated the population would be over 200,000 geese today without

population management (Larry Gillette, 2010 pers. Comm.).

The restoration was very successful with the population of giant Canada geese growing at a rate of in excess of 10% annually during the 1990's. The lack of natural predators to control geese populations in urban areas is a major factor in this dramatic population increase. Gosling survival rate is often in the 90% range. Today giant Canada geese outnumber the population of the interior race. They proved to be very adaptable, and very successful living and reproducing in urban areas.

Sampling Protocol

Park staff conducted weekly drive through surveys in parks with water features starting in June. The date, time of observation, and number of geese observed was documented. Golf course staff provided observations on geese for the city courses.

In parks observations were conducted on a weekly basis following a systematic route. The core route included Vilas, Wingra Creek, Alliant Energy Center Willow Island, Olin, Brittingham, Tenney, Warner, and Cherokee Park at Burning Wood Way (BWW). Spot checks were also done at Olbrich, Acewood Pond, and James Madison after receiving reports of goose sightings at these locations later in the summer.

Summer Population Counts of Giant Canada Geese (June-August)

Yahara Golf Course, Lower Wingra Creek/Lake Monona, Warner, and Vilas were found to hold giant Canada geese populations in of more than 100 birds during June-July survey period. In late June into mid July the adult birds molt (and the goslings can't fly) so the birds tend to be found in a relatively small core area. On June 24 golf course personnel counted approximately 115 geese present at Yahara Golf Course. During the molt period geese populations averaged 118 at Vilas, 100 Lower Wingra Creek, and 120 at Warner Park

1) City of Madison Golf Course Counts—All courses were surveyed by golf staff. Only Yahara Golf Course was found to have a significant number of resident geese (approximately 115 total adults, juveniles).

2) Lower Wingra Creek/Lake Monona—It appears that this population originates in the Rimrock Rd. wetlands across from the Alliant Energy Center nesting in the cattail marsh. Staff observed geese (more than 50) with small goslings on the Center grounds until the Brat Fest Event on Willow Island was held over Memorial Day Weekend. Geese were then counted on Wingra Creek/Goodman from that point in time until after the birds completed molting. This group of geese were found to move as far upstream as Fish Hatchery Rd. following Wingra Creek. They also were observed at Olin Park, and Lake Monona. On August 24 & 26 146 geese were observed at Olin centered around the playground, pavilion, and on the grassy slope down to the beach. Geese were observed defecating in the safety surface around the playground equipment.

3) Warner—The population peaked at 143 birds (91 juveniles, 52 adults) on June 8. It is important to note that park staff oiled eggs (under DNR, FWS permits) in April treating 96 eggs. By June 17 the population diminished to 120 birds, which may be attributed to the unsuccessful geese leaving the area after their nests failed due to oiling (this is called a molt migration). The population dramatically declined to approximately 30 birds in the park after the Rhythm and

Boom fireworks event. In a few weeks the population returned with 98 geese counted on August 9, and by August 24 -136 geese were noted.

4) Vilas—An average of 118 birds were counted between June 21 and July 22. On July 22 park staff noted that the geese had completed the molt and were again flight capable. Numbers of geese observed declined as the birds apparently flew to other locations during August. Counts increased again in September coinciding with fall migration. The peak population was a mixed flock of geese (several races) of 444 birds on September 21.

5) Acewood Pond---A small population of approximately 20 geese were observed during the summer. Staff implemented a revised mowing pattern to establish a buffer of unmowed turf. In 2011 staff will install native prairie plants in this zone as part of our Managed Meadow Program.

6) Cherokee Park (along Burning Wood Way)---Observed a population of 40-50 geese during the summer molt in the park along the shores of Lake Cherokee. The geese were using an area of the park where unauthorized mowing (by adjacent resident(s) ? removed a shoreline vegetation buffer strip. Staff restored the shoreline buffer of unmowed turf grass that provides the function of protecting water quality. Native plants were installed in this area in 2010. Tall vegetation can help discourage geese movement into mowed turf areas in some situations.

The common denominator in all these sites is a close proximity to habitat suitable for nesting. All nests that were observed were in wetlands (chiefly cattails or reed canary grass). Therefore these sites hold birds for a greater period of time throughout the year.

The geese populations in areas not near nesting habitat is much more sporadic. Resident Giant Canada Geese use these areas during spring and fall migration, and during later summer when the birds complete their molt.

Olbrich, Tenney, Brittingham, and James Madison fit into this category of use. Significant numbers of geese were not observed at Olbrich until August 26 when 109 were counted. Tenney observations spiked after Rhythm and Booms with a peak count of 146 geese on July 20. Did they swim in from Warner or University Bay? Brittingham numbers increased from 3 in June/July to 40-50 in August. It is uncertain where these new arrivals came from, but could be part of the Lower Wingra/Lake Monona population. Staff received sporadic reports of geese at James Madison from the public during July, and August.

Geese Flight Observations near Dane County Regional Airport

Casual observations were gathered while park staff went about their normal field work duties, and do not represent a systematic survey.

In late July a park staffer noted a flock of Canada geese flying west over the air space of the airport grounds north of the terminal building. The flock of approximately 20 Canada geese were followed by motor vehicle to the west and observed landing at Warner Park.

In early December 2010 while performing field work at Cherokee Marsh Conservation Park just north of the Cherokee Golf Course staff noticed numerous flocks of Canada geese (several hundred in approximately 30 minutes) flying to the northeast. The geese appeared to be coming from the direction of Lake Mendota and were travelling across the flight zone of the airports north and northwest runway approaches. On that same date at approximately 4pm staff parked near the Cherokee trash transfer station do paperwork. In a period of 10 minutes two

flocks of Canada geese (approximately 20 in each group) were observed flying northeast towards the VFW on CTH "CV" across the north runway approach. The first flock appeared to be on an intersecting path with a approaching plane coming in from the north, but the geese veered to the north as they approached within a mile of the plane. The planes flashing strobe lights may have alerted the geese and caused them to veer away from the approaching aircraft. The second flock of geese followed the same flight direction (but did not veer off) and crossed through the air space that the plane travelled through 10 minutes earlier.

These observations suggest that waterfowl movements around and over the airport grounds are a legitimate concern.

Geese Impacts on Native Vegetation

In fall 2009 park staff worked with volunteers to plant a bushel of wild rice seed in the Upper Yahara River in a area we refer to as "boathouse bay". The seeds germinated in 2010 and plants emerged with leaves growing two feet above the water level. Nearby we installed floating nest platforms for terns. The platforms were used as loafing structures by the giant Canada geese, and in a short time all the leaves of the wild rice were stripped away leaving only the stem. This effectively killed the wild rice plants. The nest platforms were removed and the geese left the area.

Approximately 7 years ago park staff performed a spring season burn on Warner Island at the request of the fire department to reduce the risk of a fire starting in the dry vegetation during the 4th of July fireworks celebration. At that time staff did not notice a large geese population at Warner Park. At that time the west edge of the island (closest to the railroad) contained a healthy sedge meadow community dominated by *Carex stricta* (Tussock Sedge). This plant community is growing on a floating mat of peat similar to the sedge meadows along the Yahara River in Cherokee Marsh (both areas float due to the water level management practices on Lake Mendota).

While oiling eggs on the Warner Island in 2010 park staff noticed the absence of the sedge meadow community present 7 years ago. Staff also observed geese preferentially grazing on other sedge species (versus reed canary grass) on the island. Geese are primarily grazers and it's probable that as their population increased over this time period the grazing pressure on sedge meadow increased to the point of causing plant mortality. Today there is a shallow quaky mud flat where the sedge meadow formerly existed. It appears to be held together by the remnant root system of the former sedge meadow. The sedge meadow was not lost to erosive break off during a flood event i.e. it did not float away. Today there is low plant diversity on the Warner Island with cattail and reed canary grass being the dominant cover. Historically the landscape transitioned from wet prairie to sedge meadow to shallow emergent marsh. The lagoons were created when Warner Park was developed.

In the June 2008 flood event a 40 foot chunk of diverse sedge meadow broke away from the shoreline and lodged on a mudflat in the Yahara River in Cherokee Marsh. It was quickly used as a Canada geese loafing island in the Yahara River. In less than two years grazing and trampling by geese reduced the plant diversity to two species---marsh fern and cattail.

Geese Behavior Observations and Human Interactions

In the course of collecting population data park staff observed geese behavior and interactions with humans:

- Witnessed on several occasions that large numbers of geese blocked biker access through the paved path along Wingra Creek from Goodman Field to Fish Hatchery Rd. crossing. The geese showed no fear of people traveling on bikes. In one case staff witnessed a bike/goose collision that injured the leg of that bird. It was later observed that a member of this flock with a very pronounced injured leg which made walking difficult for that bird.
- Received reports from park users (while staff was collecting field data) who observed similar conflicts on paved paths at Warner Park. In one case causing the biker to turn around and reverse direction rather than try to move through the flock of geese occupying the bike path near the shelter.
- Observed that some geese moved toward staff as they were walking instead of moving away. This may be an indication that park visitors are feeding geese.
- Observed park visitors at Vilas feeding ducks, and gulls on several occasions. Staff informed these individuals of the ordinance banning feeding. There appears to be a need for increased signage to inform the public, and take other measures through public outreach to explain the rationale behind this ordinance.
- Observed large amounts of goose feces (droppings in every square foot) in areas where the birds congregated around the shelters at Vilas, and Warner. At Olin Park there were feces concentrations on the slope above the beach, on the soccer field, and in the playground safety surface.
- Observed geese moving through the tall grass (2-3 ft.) and near shrub thickets along Wingra Creek (between Park St. & Fish Hatchery Rd.) to reach the mowed grass along the bike path. This conflicts with some literature accounts that purport that tall vegetation and shrubs will deter goose movements. Geese were also observed loafing under trees and in close proximity to shrub thickets at Vilas and Tenney parks.
- Noted that intensive grazing and trampling by Canada geese at Warner caused significant shoreline erosion near the Forster Dr. soccer field. Vegetation was closely cropped and a raw earth cut bank was present. Geese used this site as an entry/exit point because there is a gradual grade slope from land to water which makes it easier for them to travel between those two habitat types. Copious amounts of goose feces were observed.

Fall Populations Counts of Giant Canada Geese (September-October)

During the fall migrating geese can be drawn into park areas used by resident geese (those reproducing locally) as they are effectively live decoys. At this time of year geese will use any significant lawn area for grazing and are not limited to sites near water. There is significant movement between the urban areas and the surrounding rural areas where geese can be seen feeding on waste corn or soybeans in farm fields.

- On September 21, park staff counted 700+ geese at Warner, and 444 geese at Vilas. Observed 50 geese at Tenney, 65 at Brittingham, 85 at Olin, 0 at Olbrich, and 47 at Acewood Pond. Total 1391 geese.
- On October 1, park staff visited 13 park sites, 1 school site, and 2 retention basin. Geese were found at 10 out of 12 park sites with a total of 500 counted. At Shabazz School 30 geese were on a field adjacent to where youth were playing soccer, and West Towne Retention Basin/Soccer Field held 140 geese. Grand total 670 geese.
- On October 6 worked in cooperation with Madison Audubon Society to conduct a volunteer geese count between the hours of noon-2pm. Volunteers surveyed 16 locations throughout the city and counted over 1605 geese at 11 sites.

- Golf Course Population Estimates ----Odana (500), Odana (200), Monona (80), Glenway (50).

These counts indicate the goose population within a given geographical area can fluctuate greatly day to day, and even hour to hour. Geese will use any site with green grass including school yards—we had observations from Blackhawk, and Shabazz schools. Glenway Golf Course (with no water surfaces) was used by migrating geese in the fall. The West Town Retention Basin is heavily used during fall migration with counts exceeding 350 birds.

Public Input Gathering

- Held a neighborhood meeting (July 20, 2010) at Warner to get views and observations on geese in the park. Park staff and UW Wildlife Ecology Professor Scott Craven gave a brief informational presentation. This was followed by more than 1 hour of time provided for questions and feedback. The majority of those that spoke were affiliated with Wild Warner and the No Lethal Control face book group. They favored a non-lethal method of geese population management, and requested that such measures be tried for 5-7 years. There were also individuals who spoke to the case of there being too many geese in the park. One person had concerns about the large amount of goose feces and requested the population be reduced.
- Put out an e-mail inquiry to the Bay Creek and Monona Bay neighborhood associations to gather their observations and perceptions of geese at Brittingham Park. Received over 20 responses with views split roughly 50:50 between those stating that geese were causing conflict in the park, and those not seeing a conflict.
- Held a neighborhood meeting on September 14 at Brittingham Park with the Bay Creek and Monona Bay neighborhood associations. The consensus among attendees was that geese were causing conflict with park users---aggression, feces on play fields, bike paths. They expressed an interest in reducing the number of geese in the park. They also made staff aware of individuals in nearby residences who were feeding the geese. The group offered to reach out to those people to explain that feeding geese was not good for geese or the environment.
- Worked with Tenney-Lapham Neighborhood Association to put out an e-mail inquiry regarding citizen input regarding goose issues in Tenney Park. Received 5 comments: 3 stated there were too many geese in the park and they were creating conflict—soccer fields covered with feces, feces on beach; 1 stated that geese were not an issue of concern in the park; and 1 appeared to be neutral on the issue.
- Held a listening session at a joint meeting (October 6, 2010) with the Vilas/Dudgeon-Monroe neighborhood associations. Majority of those in attendance expressed concerns regarding the number of geese at Vilas and the negative impacts. Concerns centered on safety and sanitation of soccer fields, beach closures, and safety for runners on the roadway in the park (one individual noted that as a volunteer she noticed runners participating in Madison Marathon skipped Vilas water station due to concerns over slippery pavement caused by goose feces).
- Held a listening session (October 19, 2010) at Yahara Golf Course to gather input from the golf community. Approximately 10 citizens participated (with only 2 identified as golfers).

- Held a listening session at Goodman on April 20, 2011 to gather citizen input on geese management in Madison Parks. A total of 22 people attended with 15 choosing to speak to this issue. Testimony was equally split between those favoring geese management without lethal measures and those wanting to reduce geese numbers using all management tools including lethal measures.

Water Quality and Public Health Issues

Excessive populations of geese have affected water quality around beaches and wetlands in the United States (noted in EIS for Resident Canada Goose Management prepared by U.S.F.W.S.). Intense grazing by Canada geese can remove shoreline vegetation resulting in eroding sediments into adjacent waterways. Canada geese have also been documented to be sources of nutrients and pathogens in water. Sewage plants have documented increased coli form bacteria counts in their finishing ponds when large numbers of Canada geese are present. Coli form bacteria lower dissolved oxygen in the water which can kill aquatic organisms. Bacteria levels decline rapidly when geese are removed from the area.

Canada geese can also increase the nutrient levels of nitrogen and phosphorus in waterways which can stimulate algal blooms. When the alga dies it decomposes depleting oxygen levels necessary for aquatic vertebrates and invertebrates to survive. In the past 3 years significant fish kills have occurred in the Warner Lagoons.

The Illinois EPA determined that one Canada goose can produce ½ lb of phosphorus to a water body each year. If you have 100 resident geese on a water body would be equivalent to dumping 5 100-pound bags of fertilizer with a "10" phosphorus rating into the water every year.

Blue-green algae thrive on highly eutrophic water conditions caused by abundant nutrients. It has been documented in the Madison lakes and caused human and animal illness. The water in the Warner Park Lagoon should be tested in 2011 for the presence of this alga because of the toxin's it can produce. This is a concern for humans that use the park along with the animals that have access to the water at the off leash dog walking area in Warner Park.

In 2003, the Madison Health Department in cooperation with Wisconsin State Laboratory of Hygiene, and U.S. Geological Survey intensively surveyed several Madison beaches. On Labor Day weekend 2003 seven of 42 samples tested positive for E. coli 0157:H7. This highly virulent pathogen causes severe illness with high mortality rates in young children, elderly, and those with compromised immune systems. Geese and gull feces were tested from the nearby environment, and this toxigenic E. Coli 0157:H7 was found in 50% of the samples. Public health officials have concluded that resident urban waterfowl can present a threat to public health. (personal communication-Jon Standridge).

In 2010 the beaches at Olin (41 days) and Vilas (43 days) were closed due to high E. coli counts attributed to waterfowl.

Geese have been linked to beach closures due to high bacteria counts in other Wisconsin communities. The Lake Sinissippi Lake District initiated a water quality monitoring program in 2005 (due to beach closings with high E. Coli levels at Neider Park Beach) in conjunction with the Dodge County Public Health Unit, and Wisconsin Bureau of Environmental Health. This monitoring found a direct link between runoff laden with geese feces into shore land waters and high E. Coli levels. Neider Park Beach was listed as a Section 303(d) impaired water in 2006 by the DNR due to high E. Coli levels. A geese population reduction program was implemented

and in 2009 with 360 geese removed from the area by a humane round-up in June. The geese were processed at an approved facility and the meat donated to a local food pantry. After these control measures E. Coli levels in the water dropped dramatically at Neider Park Beach, and the area is now eligible to be removed from the Section 303(d) list. (Personal communication-Greg Farnham).

Summary of goose management initiatives in 2010 in Madison Parks

- In April the Madison Parks Division applied for a permit (DNR, Federal) to oil eggs at Warner Park. Park staff located and treated 96 eggs in the 20 nests that were found on the large wetland island in the lagoon. In June when staff did the first count at Warner they noted 91 out of the 143 geese counted were goslings. Assuming that all the geese observed at that time came from the park it would mean that egg oiling reduced reproduction by 51%.
- Increased the shoreline buffer (by moving out mow edge) a Warner near the Forster soccer field, and planted with native wetland plants. Protected plantings on 3 sides with 2' silt fence, but leaving the shoreline edge open. Knee high vegetation along shoreline did not deter geese and severe browsing to the point of elimination was noted with some of the native plants that were installed. Installed a small hedge row of brush along this edge to deter grazing by geese.
- Installed native plants along 1800 linear feet of shoreline at Warner Park in fall 2010 to expand the width of a vegetative buffer to discourage goose movement between water and land. Plantings were surrounded with plastic construction fencing to protect them from geese grazing.
- Increased the shoreline buffer by 25-30 feet at Acewood Pond by reducing mowing. A crew from Operation Fresh Start will install native plants in this area in next spring (2011) as part of our "managed meadows" program. This action was taken after staff received reports of 20 geese being observed on the basketball court in July.
- Restored the shoreline buffer along Lake Cherokee at Burning Wood Way which had been illegally cut by an unknown party. Planted native wildflowers and grasses in a portion of this area.

Summary of Geese Management Tools

1. Eliminate or reduce waterfowl feeding by people. The City of Madison has an ordinance in place but we need to increase awareness through education, signage, and enforcement.
2. Habitat Alterations
 - Establish vegetation barriers—Tall vegetation along waterways may discourage geese movement between water and land.
 - Install shoreline rock barriers—Can discourage movement between water and land.
 - Install brush barricades at shoreline---Can discourage movement between water and land.

While these techniques can be useful they may not be appropriate in some public use areas e.g. near shelters. Habitat modification is most effective with low population levels. Vegetation barriers need to be wide (30-50 ft.) to be most effective.

3. Hazing or Scaring Techniques

- Noise making devices
- Distress calls
- Visual scaring devices e.g. Mylar tape, Strobe lights, balloons
- Chasing with dogs

Pro: Non-lethal

Con: Birds can habituate to noise makers, distress calls, visual scaring devices. Cost of owning or renting dog chasing option. Dispersing geese with dogs may simply disperse the problem to another park area since we have an abundance of shore land areas within the city. Dogs can't be used during the nesting season (April) through the summer molt (June-July).

4. Chemical repellents applied to grass

- Pro: Non-lethal
- Con: Expensive, and frequent application needed after rainfalls

5. Oiling eggs to reduce reproduction

- Pro: Non-lethal, volunteers could help.
- Con: Difficulty in finding all the nests, nests may be on property not owned by Madison Parks, difficult to reduce adult geese population they have a life span of up to 20 yrs.

6. Humane removal for food pantry utilization.

- Pro: Removes adult breeding population to quickly reduce numbers in a targeted area, euthanized geese can be donated to local food pantries
- Con: Needs to be used with other non-lethal techniques to formulate a successful integrated population management plan, may be opposed by some citizens

Geesepeace Approach at Rockford, Ill. Park District

Geesepeace is an organization that promotes an integrated geese management philosophy that does not include lethal control measures e.g. round-ups to food pantry operations. Rockford Parks adopted this management model 10 years ago to reduce geese conflicts along the Rock River that runs through their city. The major strategies implemented included harassing geese with city owned border collies, and oiling eggs in nests. The annual cost of the program is \$35,000. The estimated population of resident Canada geese was 1200-1500 birds when geese management started. Today they estimate a resident Canada geese population of 200-400 birds.

Adaptive Management of Urban Geese Populations

Management strategies need to be tailored to specific circumstances of each park area. It needs to be determined if the current population is above the threshold that requires action to be taken to mitigate the issue that the Canada geese are causing e.g. beach closures, harassment of park users, path conflicts, sanitation issues on play fields, and playgrounds. Establish a goal of what the "ideal" number of geese is appropriate for each park area to mitigate the current issue(s). Develop and implement a management strategy to reach that population goal. Monitoring will be necessary to determine progress toward the stated

population goal.

In the course of monitoring staff has determined there are 3 different types of use in parks by geese.

1. Producer Parks—Have ideal nesting habitat (emergent marsh, sedge meadow wetlands), plentiful water, and abundant lawn suitable for grazing. Warner Park and Yahara Golf Course fit this model. Geese reproduce in the park, and spend the bulk of the growing season (March-November) living in the park until the ponds freeze. Warner Park has the additional habitat attraction of a large wetland island surrounded by a lagoon. All nests located by park staff in 2010 and 2011 were located on the island at Warner Park.

2. Receiver Parks—Are located within a couple of miles of wetland nesting habitat. As the goslings increase in size they move further and further away from the nest location to forage for food. Goodman, Lower Wingra Creek corridor, and Olin Park fit this category. It appears based on this summer 2010 observations that Canada geese are “produced” in the wetlands bounded by Rimrock, John Nolen, and Beltline roads. This group initially grazes in the lawns on the Alliant Energy Center's Willow Island area, but then moves to inhabit the parks listed above. At Vilas Park all geese nests found in 2010 were located on UW-Arboretum or Edgewood College wetlands. After nesting the adults and juveniles spend the majority of their time grazing on the lawns in Vilas Park and along Wingra Creek.

3. Seasonal Use Parks—Used by geese in Spring and Fall migration periods, and during late summer after bird regain flight capability after summer molt. Olbrich would be a prime example of this type of use with zero use in June, and July. Then in August geese start to use the large mowed soccer field areas near the beach for grazing.

Geese Management Recommendations

Warner Park—Reduce the giant Canada goose population to 3 nesting pairs (approximately 24 birds). This allows the public to enjoy seeing geese but will reduce their impact on the human and natural environment.

Implement the following strategies:

1. Continue egg oiling of nests in 2011 to reduce population growth. As of May 2, 2011 26 nests were located on the Warner Island with 102 eggs oiled/removed.
2. Expand unmowed vegetation buffers between bike path and playground near Forster Dr. in 2011 to discourage goose movement from water to land.
3. Monitor native plants in vegetative buffers (installed fall 2010) along lagoons. Remove protective fencing in late June 2011.
4. Seek DNR approval to place brush in lagoon along shoreline to discourage goose movement and protect aquatic emergents.
5. Plant aquatic emergents along selected shorelines and monitor for grazing impacts by geese.
6. Install an enclosure fence in a portion of the isolated wetland north of the bike path near Forster. Monitor vegetation to determine geese grazing impacts on native plants in this shallow

emergent wetland.

7. Establish American Lotus *Watelily* plants in targeted areas of lagoons to reduce open water areas :making it difficult for them to swim around (2011)
8. Conduct a controlled burn in early on the large island in the lagoon to reduce early nesting cover for 2011 nesting season. (Fall 2010 – Late Winter 2011) Burn completed on April 12, 2011. This management practice did not discourage geese nesting activity on the island.
9. Monitor the geese population in summer of 2011 to determine effectiveness of these measures. Recommend future management actions if summer molt population (in 2011) is not reduced by 25% from 2010 summer molt population count. Future actions may include humane capture during summer molt period to reduce the population of adult geese in the park.

Lower Wingra Creek—Reduce the geese population from 120+ to 3 nesting pairs (24 birds).
Management options:

1. Work with owner(s) of Rimrock Rd. wetland to implement egg oiling. Dane County did egg oiling (2003-6) on a portion of this site in past. They also used pyrotechnics, and chase dogs. Abandoned most of those practices due to perceived ineffectiveness in reducing geese numbers (personal communication-John Dunn, Dane County Facilities Management). Currently Dane County conducts some light hazing activities with dogs and vehicles.
2. Encourage the Alliant Energy Center to develop wider vegetation buffers around Willow Island ponds. They are reluctance to implement this change due to concern with public acceptance of tall vegetation by the users of Willow Island.
3. Encourage Dane County to use of volunteer chase dogs on Alliant Energy Center lands early in season before the geese start nesting. They hired contracted dogs in the past but stopped due to perceived ineffectiveness, and cost issues.
4. Haze the geese using City of Madison owned dogs (or volunteer dogs) on Madison parklands in the before nesting (March), and after molt is complete (August-November). i.e. Goodman, Olin, etc.
5. Monitor goose population to determine effectiveness of measures implemented.
6. Future management actions may include humane harvest of adult geese. Implement in 2011 if the goal is for an immediate reduction of adult geese impacting Olin Park and Beach.

Vilas Park—The Madison / Dane County Health Department hired a private consultant (Dan Hirschert, Wildlife Biologist) in 2010 to work with stakeholders to develop a integrated waterfowl management plan for Vilas Park. A Small Lakes Protection grant was secured from the DNR to fund the development of this plan. The report has been completed and is available for review.

Park staff observations in 2010:

- A kayak water survey (3 hours of search effort) of the Lake Wingra / Gardner Marsh found 12 active goose nests in April. All the nests were on UW Arboretum or Edgewood College wetlands.
- The summer resident population of giant Canada geese was 130+ during June and July.

- Cooperation and coordination from UW Arboretum, and Edgewood will be necessary to institute an egg oiling program.

Seasonal Use Parks---(Olbrich, Tenney, Brittingham, James Madison) Geese use this areas sporadically, but sometimes in very high numbers for relatively short periods of time. This presents a challenge to manage these populations.

1. Investigate the possibility of using volunteers with dogs (on leash) to discourage goose activity in selected park areas.
2. Investigate the cost of Madison Parks acquiring a trained chase dog to work in these parks areas. This could be integrated with the current park ranger program in general parks since they routinely travel to parks throughout the city as part of their duties.
3. Based on 2010 observations it may be that geese population reduction efforts at Alliant Energy Center, and Warner may benefit Brittingham and Tenney. There may be geese population shifts from the “producer” parks late in the summer.

Emerging Geese Population Centers---e.g. Acewood Pond, Cherokee Park (Burning Wood Way) are

examples. Recommendations:

1. Continue efforts to maintain and increase shoreline vegetative buffers and plant with native plants. (2011)
2. Institute an egg oiling program for Cherokee Marsh to address the large number of nests (6) found on the Island in Cherokee Lake in 2010. Permit secured and egg oiling implemented in 2011.

Golf Courses—Currently geese are mainly present during the spring and fall migrations, have not caused significant conflicts with the golfing community.

1. Continue using coyote effigies to discourage geese from using golf courses.
2. Continue occasional use of volunteer dog to chase geese.
3. Continue to monitor geese populations throughout the season.

Final Recommendations

Canada geese management requires an adaptive management strategy to be successful. An integrated approach will require the use of all management tools (including a humane capture to food pantries program) to reduce the adult geese population significantly in a reasonable time frame. Adult Canada geese can live up to 20 years in the wild. In the short term the City of Madison should move forward implementing strategies outlined in this report and the Vilas Park Integrated Waterfowl Management Plan. On a parallel track the City of Madison should convene a regional discussion with neighboring municipalities regarding Canada Geese management. There is a need for a coordinated response to reduce the numbers of adult Canada geese in the Madison Metro Area. Currently there are over 70 communities in Wisconsin implementing geese management plans.

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