



Date December 6, 2021

## APPROVAL OF GOOSE MANAGEMENT PLAN

WHEREAS, the City of Des Moines contains landscapes that attract Canada geese; and

WHEREAS, although Canada geese are an important member of Iowa's native wildlife community, and are protected by the Migratory Bird Treaty Act, the presence of Canada geese overlaps with human activities and can lead to conflict; and

WHEREAS, in order to reduce human-goose conflict through a proactive approach using measures, including reducing the attractiveness of certain landscapes to Canada geese and educating the public, to manage Canada geese within the Des Moines city limits, a proposed Goose Management Plan has been collaboratively developed by the Parks and Recreation Department, the Public Works Department, and Iowa Department of Natural Resources; and

WHEREAS, on November 23, 2021, by Resolution No. 21-081, the Parks and Recreation Board approved the proposed Goose Management Plan.

NOW, THEREFORE, BE IT RESOLVED by the City Council of the City of Des Moines, Iowa, that the attached Goose Management Plan is hereby accepted and approved.

(Council Communication No. 21-523 )

Moved by \_\_\_\_\_ to adopt.

Attachment: Goose Management Plan.

APPROVED AS TO FORM:

*Ann DiDonato*

Ann DiDonato

Assistant City Attorney

COUNCIL ACTION	YEAS	NAYS	PASS	ABSENT
COWNIE				
BOESEN				
GATTO				
GRAY				
MANDELBAUM				
VOSS				
WESTERGAARD				
TOTAL				

MOTION CARRIED

APPROVED

Mayor

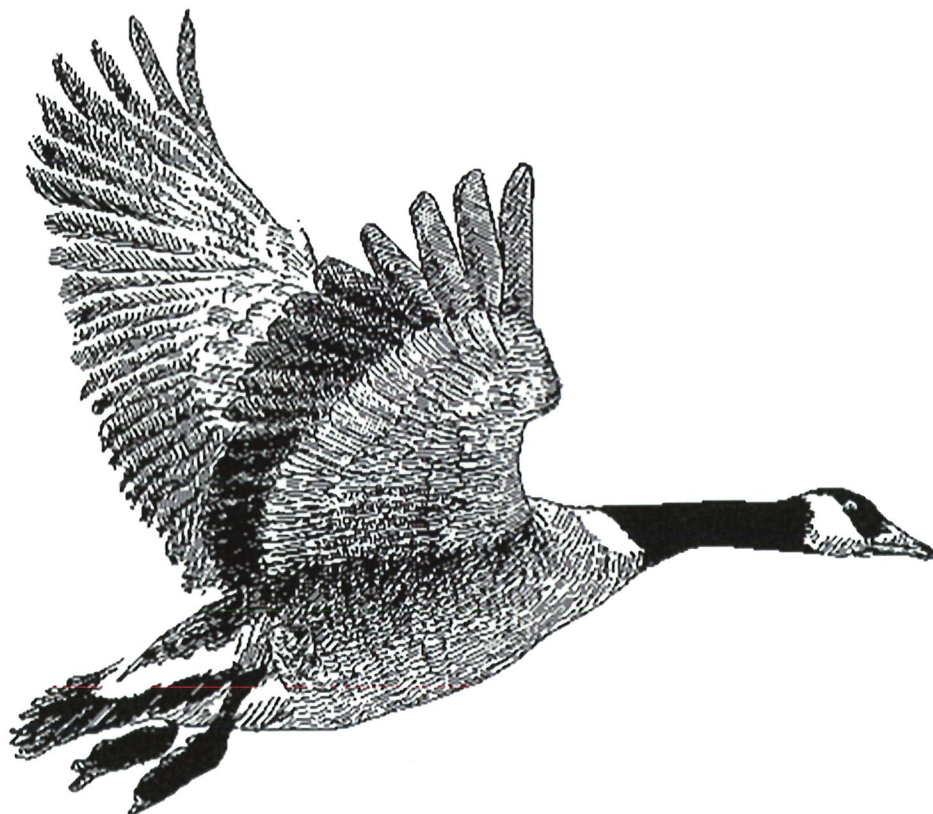
## CERTIFICATE

I, P. Kay Cmelik, City Clerk of said City hereby certify that at a meeting of the City Council of said City of Des Moines, held on the above date, among other proceedings the above was adopted.

IN WITNESS WHEREOF, I have hereunto set my hand and affixed my seal the day and year first above written.

City Clerk

# Des Moines Canada Goose Management Plan



October, 2021

**City of Des Moines**  
Parks and Recreation Department  
Public Works Department

**Iowa Department of Natural Resources**  
Wildlife Bureau

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## FORWORD

The city of Des Moines contains landscapes that attract Canada geese. Within this urban environment, the presence of Canada geese overlaps with human activities and can lead to conflict. This plan provides management recommendations for the city of Des Moines to proactively reduce human-geese conflict. These recommendations will make the city of Des Moines less attractive to Canada geese while also encouraging city staff and residents to view Canada geese as part of the natural community of Des Moines.

Canada geese are an important member of Iowa's native wildlife community. As a migratory bird, Canada geese are protected by the Migratory Bird Treaty Act. The Iowa Department of Natural Resources (DNR) cooperates with the U.S. Fish and Wildlife Service to manage Canada geese within Iowa. Due to their migratory nature, Canada geese from several different jurisdictions may be present in Iowa. Geese present during the spring and summer are geese that nest in Iowa. During the fall and winter, geese that nest in other jurisdictions arrive in Iowa and intermix with the resident geese, some of which migrate south during severe winter weather.

The city of Des Moines, the Iowa DNR, and partners seek to reduce human-geese conflict through a proactive approach using measures to manage Canada geese within the city limits. This will consist of reviewing current problems, developing solutions, and evaluating outcomes. A one-size-fits-all approach will not address this complex issue. It is not possible, nor would it be appropriate, to completely remove Canada geese from the city as they are part of the natural community. The recommendations provided in this plan will allow Des Moines to take proactive measures to reduce the attractiveness of certain landscapes in the city to Canada geese while at the same time providing education to reduce human-geese conflict.

## PURPOSE

*A plan for effective management of geese in the City of Des Moines.*

This document is a collaborative effort between the City of Des Moines Parks and Recreation Department, City of Des Moines Public Works Department, and the Iowa DNR. The goal of the plan is to provide a working tool that helps address human-geese conflict throughout the city of Des Moines. The plan will provide background information on Canada geese, their use of urban areas in Iowa, and methods for handling nuisance situations. The plan provides recommendations for the city as a whole as well as site-specific recommendations for areas that are experiencing human-geese conflict as of the spring of 2021. Furthermore, this document aims to be future reaching through education of citizens, city staff, and officials so that these methods, or others developed from them, can be implemented for the long term. By adopting methods to reduce conflict, incorporating goose-savvy strategies into planning and development, and utilizing targeted management actions, the City of Des Moines can see real success in the way that it interacts with Canada geese.

## CANADA GOOSE BIOLOGY AND NATURAL HISTORY

Several different populations and sub-populations of Canada geese can be found in Iowa during different times of the year. The focus of this plan will be temperate breeding Canada geese, the population of geese that nest in Iowa. Iowa's population of Canada geese was extirpated (locally extinct) from 1907 to 1964. The Iowa Conservation Commission, a precursor to the Iowa DNR, began an effort to restore Iowa's Canada goose population in the early 1960s. This effort was very successful and resulted in a widespread distribution of nesting geese by 1994. At a statewide scale, Iowa's Canada goose population has been relatively stable since the early 2000s and is within the population objectives determined by the Iowa DNR.

Temperate breeding Canada geese have high adult survival and reproductive rates. They typically begin nesting at three years of age. Female geese normally return to the area where they learned to fly. Nests typically have a clutch of four to seven eggs, but this can vary from one egg to more than a dozen. Embryos do not begin to develop until incubation begins. The female goose begins to incubate after all of the eggs are laid which leads to all of the goslings hatching at about the same time. Depositing all of the eggs in the nest can take longer than a week to occur and incubation time for Canada geese is approximately 28 days. Geese that do not have goslings may make a summer migration out of Iowa (i.e. molt migration), to favorable habitat as far north as Hudson Bay, Canada. Successful nesters and their offspring have



strong ties to their natal areas and typically remain near their nest sites until winter weather forces them to leave.

#### Geese Act Differently at Different Times of the Year

Goose behavior varies throughout the year to meet the needs of their life cycle and the season. Geese form large flocks during the fall and winter, which typically disperse into pairs and smaller flocks during the spring. Nesting geese seek a safe site that is relatively close to water. Once goslings hatch in mid to late spring the family is flightless until mid to late summer. During this time, geese congregate in small- to moderate-sized flocks in landscapes where short grass is adjacent to open water. These family groups gradually aggregate into the larger flocks observed during the fall and winter. During the growing season, Canada geese are primarily grazers that forage on the new growth of grasses, sedges, and forbs. During fall and winter they feed extensively on waste grains in harvested crop fields. Geese prefer foraging sites that have good visibility so predators can be easily detected. Geese have strong ties to where they learned to fly and where they have previously nested, generally returning to these areas every year.

#### Today's Urban Areas Match Goose Habitat Needs

Habitat is the foundation of wildlife populations and activity. Providing attractive habitat creates an opportunity for wildlife use. Goose use of urban areas is an excellent example of a mobile and adaptive wildlife species that has learned to utilize a novel opportunity. Prior to the 1990s goose use of urban areas was relatively uncommon. As goose populations increased and urban development increasingly incorporated waterbodies and short turf grass, geese learned to utilize these areas because they contained all of the things they needed to thrive. The first step in a holistic approach to managing geese in urban environments is the recognition that providing attractive habitat will result in goose use.

There are two common habitats that are particularly attractive to geese in urban environments: low-disturbance waterbodies and expanses of short grass. Low-disturbance waterbodies are places of safety for geese. Geese are naturally attracted to water as a safe place where they can rest. Short grass is attractive because it provides both safety, due to excellent visibility, and forage. Therefore, the combination of both water and short grass is highly attractive to geese. Incorporating landscape features or human activity to make these habitats less attractive to geese will go a long way to reduce human-geese conflict.

Canada geese are very adaptable and have learned to exploit many contemporary habitats that were not historically associated with Canada geese, such as urban areas, artificial open water, and human modified landscapes. Modern-day urban development incorporates small-to moderate-sized waterbodies for both stormwater management and landscape aesthetics; often these waterbodies have extensive areas of short grass immediately adjacent. The combination of open water and short grass is highly attractive to Canada geese. This can lead to conflict between people and geese resulting from fecal deposition, overgrazing, and aggressive behavior that occasionally occurs once geese become habituated to people.

## Timing Matters

**February-May:** Adult goose pairs select pond and nesting sites. These are “local” nesting geese. Nesting and 28 days of incubation occurs. Non-nesting adults move about in loose flocks.

**May-July:** Goslings hatch and families group together. Protected water sites with close food sources see increased goose numbers. Non-nesting geese may stay in the area or “molt migrate” farther north.

**July-September:** Goslings gain flight and flocks start moving larger distances to food opportunities.

**October-January:** Geese migrate into the area from farther north and migrations further south continue depending on food availability, weather, hunting pressure, and access to open water. Goose numbers in metro are at their highest. As weather improves, geese migrate back north.

## What is Habitat?

Habitat is home to wildlife: a place to sleep, a place to eat and drink, a place to escape predators, a place to stay safe in inclement weather, a place to raise young. Every species of wildlife has a distinct set of characteristics that match up with specific types and qualities of habitat. Some generalist species are more adaptable and can make use of more types of habitats. Some species have a more narrow set of requirements. For all wildlife, habitat is the utmost determining factor in whether they will use an area, not use an area, or if they will survive. Habitat is the key to whether or not a species is present.



### Hunting is the Traditional Method of Control

Hunting is the primary method for managing goose populations. The Iowa DNR sets hunting seasons within the frameworks established by the U.S. Fish and Wildlife Service and the Mississippi Flyway. Approximately 90% of Iowa's Canada goose harvest consists of temperate-breeding Canada geese, the majority of which originate in Iowa. The Iowa DNR structures Iowa's goose hunting seasons to encourage harvest of Canada geese in urban settings including increased bag limits and additional seasons in and around metro areas. Recent research found that Canada geese in the Des Moines metropolitan area are susceptible to hunting where it is allowed within city limits as well as in the surrounding areas. Further research and efforts to increase recreational harvest of geese in urban areas is currently underway.

### **METHODS FOR ADDRESSING NAGATIVE HUMAN GOOSE INTERACTIONS**

In this section we discuss a variety of techniques used to address goose use at specific sites and methods of reducing negative human-geese interactions. Any strategy to deter geese will need to incorporate multiple techniques to have the best result.

#### **Elimination of Food Handouts**

One of the most powerful attractants for wildlife is food. Feeding not only attracts geese to undesirable areas but it changes how geese perceive humans: instead of a predator to be avoided, humans are perceived as a potential source of food handouts. This activity falsely appears as beneficial for geese. However, most food items given to geese by people (e.g. bread, crackers, or popcorn) are inappropriate for their digestive system and not good for their overall health. Furthermore, concentrating birds in high densities has the potential to lead to disease concerns.

By associating people with food, geese will increasingly approach people even when unwanted. Conversely, people may approach geese during times of the year when the birds are more territorial or protective of nests or young, leading to aggressive behavior and subsequent negative interactions. Food handouts should be eliminated, and below are some recommendations for how to do so:

- Adopt ordinances banning all artificial feeding of any waterfowl.
- Strict enforcement centered on problem areas will reinforce the idea with people that feeding the geese is not allowed.
  - Coordinate an effort to enforce this with other entities in the area including Polk County Conservation and Des Moines Water Works
- Erect signage in areas where feeding has been an issue to help educate people on the rules as well as the reasons why it is not allowed.
- Incorporate this message with all education and outreach about Canada geese.





## Habitat Modifications

Wildlife will move into areas that offer the appropriate habitat. There are several common elements of modern urban landscapes that are attractive to Canada geese. Geese prefer open spaces where they can see long distances in order to detect predators. In many cases they walk from the water to adjacent open areas to graze. Large expanses of mowed grass, particularly when near water, attract geese due to the combination of forage from grazing on the grass and the ability to see long distances. Landscape architects and planners should evaluate the need for large expanses of mowed grass. Where possible, these features should be avoided, modified or utilized in a manner that minimizes the attraction to geese.

Landscapes can be designed or modified to reduce the attractiveness of the habitat that they provide. There are many ways to make habitat less attractive to Canada geese without reducing the aesthetic or designed recreational use. Common practices include: un-mowed vegetative buffers, native prairie strips or butterfly gardens, native shrub rows, landscaping design, ornament placement, and rip-rap shorelines.

Vegetative buffers adjacent to waterbodies such as strips of native prairie and wildflowers may reduce the visibility for geese and therefore reduce the attractiveness of a certain area. Areas that are currently lawns can be converted to prairie strips or butterfly gardens. Furthermore, prairie plantings can be incorporated into the designs for future waterbodies. These have the added benefit of increased ecological function such as increased water storage, pollinator habitat, and reduced mowing. Another potential vegetative solution is the use of native shrubs to form a barrier through which geese cannot easily see or walk through. This will limit the ability of geese to access an area. Other habitat features, such as large diameter rip-rap along the water's edge, can reduce the ability of geese to walk up on banks. Building on that concept, retaining walls or landscaped steps create an obstacle to geese. These ledges could be built on the shoreline or incorporated into nearby landscaping. There are a number of ways to alter the look and habitat of an area that can reduce the attractiveness of the site to geese.

Water features such as islands and aerators are very attractive to geese at different times of the year. Islands are desirable for geese as a safe nesting location and often result in multiple successful nests. This results in large numbers of goslings which will likely cause increasing numbers of geese for years to come. Aeration systems create open water during periods when waterbodies would otherwise freeze over. This allows geese to continue using a waterbody when other waterbodies are frozen, thereby increasing the site's attractiveness and value to geese all year. If possible, aeration systems should be turned off and geese hazed to allow the waterbody to freeze, even if only for a temporary period during cold weather. Below are recommendations to deter geese from using waterbodies at different times of year:

- Plant tall plant buffers (i.e. native prairie strips), shrub rows, or other native vegetation to break-up the access between manicured lawn and waterbodies as well as impede sight distance. The wider this buffer is the more effective it will be: a minimum of 20 feet is recommended.
- Large diameter rip-rap along steep banks will impede goose movement along those areas.
- Incorporating aquatic vegetation in the littoral zone (shallow areas) of any ponds will help impede the movement of birds to and from the water and is less desirable than non-vegetated waterbodies.
- Modify future pond building or stormwater retention area plans to include native prairie buffers that will discourage goose use.
- Do not incorporate islands or peninsulas into waterbodies where geese are not desired as they are highly utilized for nesting. If possible, remove any existing islands or manage the vegetation in such a way that deters nesting of geese or makes them more accessible for hazing.
- Remove any existing tub nesting structures from any waterbodies.
- Do not use aerators during the winter months as they will keep waterbodies from freezing over thereby congregating migrating birds and holding resident geese longer.
- See **Appendix A,B, and C** for examples of seeding plans, planting guidelines, and native shrub lists.





This is an example of a landscaping layout at a public area that was designed to maximize recreation while deterring geese. Note the layout of beach and swimming features, native flowering plants, rip-rap shoreline, and shrub rows.



Prime urban goose habitat. This site would require alternative goose prevention strategies annually to deter geese because the habitat would continually draw the birds into the area.





Offset thick grass plantings limit sight distances and are especially effective when paired with scare tactics.



Native plant buffers can be aesthetically appealing while deterring geese from the area.





Native prairie plants around the pond create an attractive atmosphere, deter geese, and help with water quality.



Example of rip-rap or boulders that deter geese.



A combination of shrub rows and fencing can keep geese off of paths.





Landscaping features to create steps or barriers can be effective at reducing goose presence. Geese may still graze in the mowed lawn adjacent to water, but will feel less comfortable going on the private yard.



## Exclusion Techniques

Access between a water feature and the preferred feeding sites of geese should be reduced to discourage goose use. Geese prefer to graze the fresh growth of grass and young forbs, therefore nearly all mowed areas provide feeding sites. The closer and easier it is to get from a waterbody to any lawn area, the more likely it is to be selected as a good spring and summer site for geese. Their summer molt process and strong familial ties tend to keep geese localized in preferred sites: if geese nest near an area with water, they will likely stay in the area all summer with their goslings. Reducing access to and from the water can help deter geese from choosing a site for raising their young. Additionally, if a waterbody is inaccessible then it will not be used.

While habitat alterations such as native vegetative buffers, native shrub plantings, and rip-rap are higher priority and more effective in the long term, exclusion techniques such as fencing or floating mats can be advantageous at certain sites because they can be utilized temporarily. By focusing the below techniques at specific locations and specific times of year, this method can target areas that have a history of conflict.

- Fence the waterbodies to deter nesting geese and family groups. Fencing should be at least 18 inches tall and tight enough that goslings cannot go through it (<3 inch weave).
- Temporary fencing can be used from March through May to discourage nesting and family groups.
- Electric fence can be effective at deterring geese. Electrified strands between 6 and 12 inches from the ground can be effective.
  - Vegetation under and around the fence will need to be trimmed to maintain the fence.
  - Signage to notify any potential site users of the electric fence is highly recommended.
- If traditional fencing options are not suitable for the site, anything that is in the way can be a deterrent for using the area including a simple rope line approximately 8-12 inches off of the ground.
- For small waterbodies, floating mats may be placed over the majority of the pond to not allow birds to land in the water.



Fencing along areas where geese are not desired can be an effective way to keep geese out.





While not the first choice, a simple rope barrier between 8-12 inches off the ground can have an effect on geese using an area.



Electric fence can deter geese although this will likely have to be coupled with additional methods for best results.





Floating balls can be utilized to make areas inaccessible to geese. Photo courtesy of CIC Ball Company

#### **Aversive Conditioning: Scare Tactics and Hazing**

Canada geese are a prey species and should therefore be wary of predators such as humans. However, it is common in urban environments that geese become habituated to humans. Aversive conditioning, or hazing the animals through scare tactics and sensory discomfort to create an uncomfortable atmosphere for geese, will decrease goose use, human-geese interactions, and conflict. Simulating predator behavior and hunting, loud noises, and aggravating lighting can all help make a spot less friendly for geese.

Hazing activities are easy to incorporate with all other action steps and should be conducted often so there is not a time when the geese are allowed to feel comfortable. Utilize multiple techniques and note that geese will often associate the look of someone (i.e. clothes, hats, jackets, etc.) with the hazing. Use that visual connection to your advantage to make humans seem less friendly overall and scarecrows an option in the future. As long as geese are not harmed and are not nesting, then hazing is legal without any special permitting. Below are recommended hazing techniques:

- Pyrotechnics and other bird scare noise devices can be alarming to geese and mimic gunshots or other fear generating conditions (such as predatory birds).
- The use of controlled dogs is highly effective at deterring geese from an area. Hiring someone with a trained dog, incorporating dog parks in areas that geese use, or neighbors that can walk dogs in the area can be a strong goose deterrent.
  - Use of dogs can make future use of dog silhouettes or coyote decoys effective. Use of these decoys without any prior use with live canines has mixed results.
- Shining strong lasers at the geese in the evening can be used to keep birds from roosting on certain waterbodies.
- Objects that move, make noise, and reflect light will make the area less comfortable for geese.
- Combine as many forms of hazing as possible for best results.





Objects that will flash and move in the wind can help create a less comfortable area for the geese to loaf, graze, or nest.



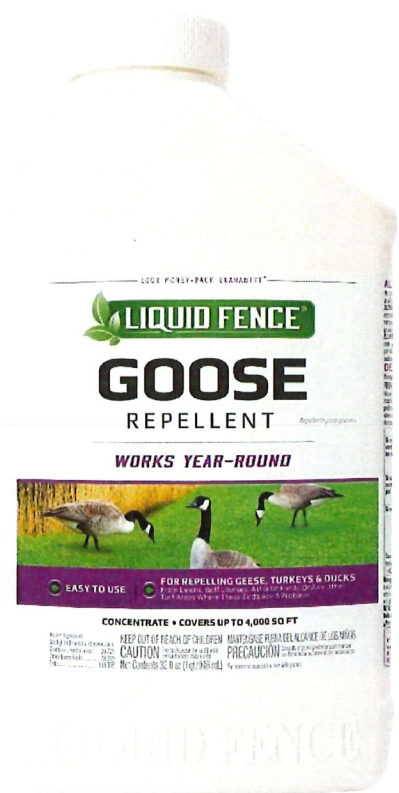
Trained dogs can be very effective at deterring geese from an area. A predator presence makes the area less comfortable for the geese.

## Repellents

Repellents applied to lawns or turf areas can make the grass less palatable to the geese. Goose repellents use a grape extract, methyl anthranilate, that, while not harmful, does irritate certain receptors and mucous membranes in the geese. The reduction in the food source may encourage the geese to utilize alternative feeding sites. All labels on repellent should be followed and re-application after any weather event or long sun exposure will be needed to maintain effectiveness. This is a short term solution that can be costly, but it can be useful in certain circumstances especially when combined with other efforts.

- Target problem areas where additional techniques will be implemented.
- This may be an appropriate technique to incorporate with new seedings, new tall plant buffers, or new waterbodies.
- There are a number of commercial products available for purchase.
  - Select a repellent with methyl anthranilate in the active ingredients.
- Reapplication and staff time can make this technique costly for the short term results.

An example of a product that could be used to make turf areas unpalatable to geese.  
(The Iowa DNR does not endorse this product)





## Hunting Opportunities

Regulated hunting is the primary management action to control goose populations at statewide and regional scales. The use of hunting in urban environments is constrained by safety and legal requirements. But, there may be opportunities to incorporate hunting and these opportunities should be utilized. Hunting in areas with human-geese conflict is very beneficial because it directly reduces the survival of the individuals causing conflict and it is the most extreme form of hazing, thereby resulting in the largest change in behavior. Valuable from that aspect, hunting can also enhance any other hazing techniques used to make areas seem less appealing to geese.

Canada geese are a valuable wildlife resource that is highly sought after by Iowa's and the nation's waterfowl hunting community. Currently there is a zone with increased bag limits and season dates that encompasses Des Moines, the surrounding cities, and the landscape outside of city limits. Studies show geese from the Des Moines metropolitan area are harvested at rates similar to the statewide harvest rate. This indicates that urban geese are susceptible to hunter harvest and that hunting can be a meaningful management tool for managing urban goose populations. Geese from urban environments are harvested by hunters and hunting plays an important role in the population dynamics of Canada geese. Below are recommendations for incorporating hunting into areas where feasible:

- Retain ordinances that allow for hunting agricultural areas within city limits where hunting can be conducted safely.
- Consider allowing special hunts in places where goose numbers build up during the hunting seasons that may be excluded by current ordinances prohibiting hunting.
- As long as all state and federal hunting regulations are followed, creative hunting techniques can be implemented to focus harvest on urban birds. This will act as an extreme form of hazing and can be very successful at deterring birds from specific locations. Also, this can target specific nuisance birds.
- Advocate hunting with other entities and municipalities in the area to have a wider impact on local goose populations.



## Education and Outreach

An important aspect to all wildlife management and particularly for reduction of negative human-wildlife interactions is education and outreach. This will reinforce ordinances that ban feeding and allow hunting in certain municipal areas. Educating internal staff and monitoring interactions between the public and geese will help inform decisions. Additionally, an appreciation for this conservation success story and natural resource can be increased with greater knowledge about the natural history, ecology, and habits of Canada geese. Armed with more information, the citizens and city can do their part to help deter negative interactions while allowing geese to still exist in a natural way.



- Utilize all methods of media including social media, newspaper articles, websites, and radio shows to increase awareness of goose mitigation strategies, goose ecology, and projects related to geese.
- Work with partners to advocate for the messages within this plan to aid in outreach and education.
- Educate private landowners, realty companies, landscapers, and business owners on goose behavior, methods for reducing goose use, and habitat management.
- Signage along areas that are utilizing habitat modifications or exclusion can help educate the public on changes to the area and why they are beneficial.
- Involve citizens in nest monitoring or brood counts as a form of citizen science to help quantify goose numbers and success of techniques used.
- Track wildlife complaints, specifically goose complaints, to better track where problems occur, what type of problems occur, when problems occur, and how many problems are occurring. This will be a tool that is very important for how situations are addressed and quantifying the effect of any mitigation efforts.
- Track techniques used and success/failure at sites to help form best management practices.



Programming and educational outreach is important to reduce food handouts, decrease negative interactions, and to increase appreciation for Canada geese.

#### **Permitted Actions: Nest Manipulation and Euthanasia**

Actions requiring hands-on work with the geese are strictly regulated by the U.S. Fish and Wildlife Service. These actions include nest manipulations such as egg oiling or nest removal, goose round-up and euthanasia, or goose translocations. The DNR maintains a permit with the U.S. Fish and Wildlife Service to perform up to a specified number of these actions which are guided by the Iowa DNR Canada Goose Management Plan.

In cases where proactive and preventative measures have been implemented and significant human-geese conflict or threats to human health and safety persist, municipalities may request the Iowa DNR permit lethal activities to reduce local goose populations. The requesting entity is required to inform stakeholders and accept public comment. Permitted actions include nest manipulation and lethal removal. Nest manipulation causes the nest to be unsuccessful thereby no goslings are produced. Adult geese are likely to disperse from the area after the nesting season. Lethal removal involves the capture and euthanasia of adult geese and translocation of goslings. Adult geese are brought to a locker and processed to be donated to a local food bank. These options can be effective in situations where there is an overabundance of geese at a local scale during the spring and summer.



These techniques are implemented with the assistance of the Iowa DNR or a certified Nuisance Wildlife Control Operator (NWCO) that coordinates with the local Iowa DNR staff. Below are considerations for implementing lethal control actions:

- Explore the option of City of Des Moines Parks and Recreation or Animal Control staff becoming licensed with the Iowa DNR as a Nuisance Wildlife Control Operator.
- Nest manipulations should be focused on areas of high rates of goose nesting or specific areas where immediate action is needed.
- Nest removal is recommended over egg oiling operations.
  - Best practice for removal of eggs from a nest would be after 14 days of incubation. This would limit the amount of re-nesting attempts and would increase the likelihood of a molt migration by the hen.
- The city must specifically request a lethal goose round-up from the Iowa DNR by the end of April the year it would occur.
- A public meeting must be held by the city prior to any lethal measures to allow the public to be aware and comment about the intended actions.
- All adult birds to be euthanized must be taken to a locker, processed, and donated to a food pantry. Costs of processing will be the city's responsibility.
- Translocation events will only be used for moving juvenile birds to a new area during an adult goose culling event. Translocation of adult birds is not successful and will not be permitted by the Iowa DNR.



Canada goose on a rooftop nest in Urbandale, IA. This goose was marked and tracked as part of a nest manipulation study.



## RECOMMENDATIONS

The City of Des Moines has many landscapes that are attractive to Canada geese. There are opportunities to reduce the relative attractiveness of these landscapes to Canada geese. We encourage city staff and residents to understand that geese are part of the natural community and learn how they can reduce human-geese conflict. While certain steps can be taken at any specific location to reduce goose use, they may redistribute geese to a new area in the city which could result in negative interactions at new sites. A comprehensive, city-wide approach integrated with site specific management actions will result in the largest reduction of human-geese conflict. Below are actions that can be implemented at a city-wide level and at specific sites that are experiencing increased Canada goose conflict.

### City-Wide

1. Eliminate waterfowl feeding. Initiate an educational campaign to inform the public on the problems with feeding waterfowl. Establish signs in areas where feeding is likely to occur. Enforce “no feeding”.
2. Incorporate potential goose use into landscape planning. Design landscapes that are less attractive to geese and incorporate elements that will reduce goose use.
  - a. Work with development companies, landscape design, and realty companies to establish best practices for goose-conscious designs.
3. Modify existing landscapes to make them less attractive and less accessible to Canada geese.
4. Establish a goose hazing program where geese are less comfortable within the city limits of Des Moines. Target specific problem areas as they are recognized.
  - a. Have a city staff person become registered as an NWCO to increase staff training and allow for more immediate response for actions in the future; or, contract with an already existing NWCO operating a private business in the area.
5. Keep detailed records of any complaints coming into the city regarding Canada geese. Be sure to include the date, the topic of the complaint (e.g. aggressive birds, fecal deposition, noise, large concentrations, presence, etc.), and location.
6. Track amount of time spent dealing with Canada goose complaints and what activities are conducted. Include time spent for any work contracted to outside businesses to carry out goose work.





## Glendale Cemetery

The 200-acre cemetery on the north side of University Avenue and Waveland Golf Course, has a two-acre stormwater retention pond feature on the south portion of the property. The cemetery has many miles of roads and pathways winding through rolling topography, mowed grass, and trees in a park-like setting. This atmosphere lends itself to many park users in addition to those gathered for funeral services or mourning. The pond feature, which is plainly visible from University Avenue, has several benches and is designed as a site for rest and reflection, fitting the ambience of the cemetery. Routine feeding has taught Canada geese and other waterfowl to congregate on the pond. Subsequent use of the surrounding manicured lawns by geese in the spring and summer leads to large areas covered in fecal deposition and creates an unpleasant atmosphere for people using the cemetery for funeral services.

1. Eliminate waterfowl feeding.
  - a. Enforce the feeding ban ordinance at the cemetery.
  - b. Erect signs in places where feeding occurs making it clear to not feed the birds.
  - c. Conduct this with additional outreach across the city to eliminate feeding of geese on a larger scale.
  - d. Educate the park users on other ways to observe birds or actions to benefit the species.
  - e. Educate the park users on the negative implications of food hand-outs such as malnutrition and disease.
2. Modify the pond landscape by creating a barrier (vegetation or fence) to limit goose access.
  - a. Utilize future pond renovations to address habitat around the pond.
  - b. Employ creative landscaping and plant buffers to create trails through plantings that include benches for rest and reflection.
  - c. If rip-rap is used in any bank stabilization make sure to use rock sizes greater than 18 inches so it is not easy for geese to walk over.
3. Haze waterfowl using the area via dogs and/or pyrotechnics during times of low visitation.
  - a. Utilize park staff or contract with an NWCO to conduct hazing activities at any time geese are present.

### Measures of success at Glendale Cemetery:

- Reduction in complaints coming in about geese at the cemetery.
- Reduction in visible amounts of fecal deposition.
- Reduction in goose use at the site.
- No observations of people feeding waterfowl.



**A nature enthusiast feeding and photographing geese at Glendale Cemetery just off the shore of the pond.**



### James W Cownie Soccer Park

This property of over 300 acres includes a 68-acre sports complex with 12 irrigated soccer fields, Case Lake which is a small oxbow, and wetland and timber that is adjacent to the Des Moines River. The front end of the property is completely fenced off with cyclone fencing. Geese make use of the large grass fields, largely during the fall and winter months when sports events are not occurring. This results in large fecal depositions present during the spring of the year. While not of major concern at this site, steps should be made to ensure that additional goose use is not occurring during other times of the year.

1. Include 'No Feeding Geese' in the park rules signs to make park users aware of the feeding ban.
  - a. While it does not seem to be a problem, this is a step to make sure it doesn't become a problem.
2. Use hazing via dogs, pyrotechnics and scarecrows to reduce goose use during the off-season.
  - a. Utilize city staff or a contract with an NWCO to carry out harassment. The fencing and open areas lends itself well to utilizing dogs as a form of hazing.
  - b. Pyrotechnics will mimic gunshots during the winter months and will act as a deterrent for geese.
  - c. Use of lasers at twilight could help with geese that are feeding on the turf later into the evening.
  - d. Combine multiple and creative forms of harassment to have the desired effects.
3. Consider lethal removal or a special hunt during the hunting seasons.
  - a. After the sport seasons have ended and no one is using the facility, this site is large enough that a hunt could safely take place on the property. The hunt could be of traditional format with the use of decoys and layout blinds or could be more creatively implemented depending on timing, weather, and special rules adopted by the city.
  - b. Special approval by the city would be required to allow any sort of hunt to occur within city limits outside of the areas where hunting is typically allowed.
  - c. This would be a very strong deterrent to migrating bird groups.
  - d. All state and federal waterfowl regulations and bag limits would have to be followed.

Measures of success at the James W Cownie Soccer Park:

- Reduction of complaints from this site.
- Limited goose use during the fall and winter.
- Reduction in the amount of fecal deposits in the spring.



Potential site at James W Cownie Soccer Park to place signage encouraging park users not to feed geese or other information about goose management.



### James W Cownie Baseball Park

Across the street and up the hill from the Soccer Complex, the James W. Cownie Baseball Park is nestled on the corner of Hartford Avenue and SE 22<sup>nd</sup> Street. Features of this park include eight irrigated turf fields, concession stands, and large parking lots. All of the fields are completely fenced in. The fields stay very busy throughout the spring, summer, and fall with hosting numerous baseball tournaments and Des Moines Parks and Recreation Programs. When the sport seasons wind down activity greatly decreases which allows for large flocks of geese to utilize the turf fields in the late fall and winter months. The fecal depositions left from feeding activities is a source of conflict and requires large amounts of staff time to clean.

1. Use hazing via dogs, pyrotechnics and scarecrows to reduce goose use during the off-season.
  - a. Utilize city staff or a contract with an NWCO to carry out harassment. The fencing and open areas lends itself well to utilizing dogs as a form of hazing.
  - b. Pyrotechnics will mimic gunshots during the winter months and will act as a deterrent for geese.
  - c. Use of lasers at twilight could help with geese that are feeding on the turf later into the evening.
  - d. Combine multiple and creative forms of harassment to have the desired effects.

Measures of success at the James W. Cownie Baseball Park:

- Reduction of complaints from this site.
- Limited goose use during the fall and winter.
- Reduction in amount of fecal deposits in the spring.
- Reduction in staff or contracted time to clean fecal deposits in the spring.



**Fecal deposit accumulation during spring cleanup from geese utilizing the ball fields during the winter.**



## **Des Moines River Levee Trail System**

Neal Smith Trail, John Pat Dorian Trail, and other paved trails along the Des Moines River experience increased goose usage during the winter months when human activity along those areas is reduced. Flocks of geese use the short mowed grass for forage and the sunny slopes for thermal benefits in cold weather. Evidence of supplemental feeding occurring at certain locations on the trails increases goose densities at those sites. As geese stay in the location, fecal deposits can accumulate on the trails leading to unsightly conditions and unpleasant user experiences for pedestrians or bikers still utilizing the trails.

Additionally, portions of the trail system immediately adjacent to the river will be attractive to geese at all times of year as they move to and from the water for feeding, loafing, nesting, and brood rearing. These areas will be difficult to deter geese from while maintaining a safe trail system for park users. In places, fencing or vegetation buffers will help, but some goose usage is to be expected in these areas.

1. Eliminate waterfowl feeding.
  - a. Enforce the feeding ban ordinance along the trail system.
  - b. Erect signs in places where feeding occurs making it clear to not feed the birds.
  - c. Conduct additional outreach across the city to eliminate feeding of geese on a larger scale.
  - d. Educate the park users on other ways to observe birds or actions to benefit the species.
  - e. Educate the park users on the negative implications of food hand-outs such as malnutrition and disease.
2. Where allowable, utilize fencing or vegetation buffers to limit the appeal of the area to geese.
  - a. Cutting off sight distances and movement routes from the water to the loafing and feeding sites makes the area less comfortable for geese.
  - b. Fencing can be creatively utilized to remain low maintenance and can be temporary to prevent buildups of geese during times of the year when there are fewer users on the trail and less or no mowing occurring.
  - c. In areas where plantings of taller native vegetation or shrub buffers is allowable, this will decrease the attractiveness of the area to geese.
3. Use hazing via dogs, pyrotechnics and scarecrows to reduce goose use during the off-season.
  - a. Utilize city staff or a contract with an NWCO to carry out harassment.
  - b. Notify users of potential goose hazing activity.
  - c. Target the high goose use areas first but follow-up along all areas of the trail system.
  - d. Pyrotechnics will mimic gunshots during the winter months and will act as a deterrent for geese.
  - e. Use of lasers at twilight could help with geese that are feeding on the turf later in the evening or attempting to roost on nearby waterbodies.
  - f. Combine multiple and creative forms of harassment to have the desired effects.



### **Southeast Connector Trail (along East Martin Luther King Parkway)**

The 12 acre pond on the south side of M.L.K. Jr. Parkway can attract a number of geese at certain times of the year. The vegetation on the north side of the pond by the Southeast Connector Trail is mowed all the way from the trail to the water's edge. This south facing slope can be an attractive place for groups of migrating birds to loaf in the winter causing buildups of fecal deposition on the trail. Additionally, the manicured landscape around edges of the pond will lend itself to attracting nesting and subsequent brood rearing geese. This will increase issues with fecal deposition in the future.

1. Establish a barrier around the pond utilizing either native prairie plantings or fencing.
  - a. Native prairie plantings would include grass and forb species that would also be attractive for trail users as well as providing additional ecological benefits (bank stabilization, water quality, pollinator attraction, etc.).
  - b. Fencing options should be at least 18 inches tall with gaps small enough that goslings could not fit through.

Measures of success along the Trail System:

- Decrease in number of complaints from trail users and neighbors.
- Decrease in number of geese utilizing the area.
- Decrease in staff time involved with hazing and cleanup efforts.
- Reduced amount of fecal deposits.



**Buildup of migrating Canada geese during the winter along the levees for the Des Moines River and subsequent accumulation of feces on the John Pat Dorian Trail. Geese are utilizing the open grassy areas adjacent to open water for forage and loafing.**



## Gray's Station Stormwater Wetland

A new method of stormwater retention and filtration was recently constructed between Martin Luther King Jr Parkway and the Raccoon River. This system is designed to slow down stormwater runoff allowing sediment to settle as well as increasing uptake of excess nutrients in the water by the associated plant community. Once fully established, the vegetation complex around the wetland should be unattractive to nesting geese. This is a meaningful step by Des Moines of building required infrastructure but doing so in a goose savvy method. However, as the vegetation is being established, grazing geese are inhibiting the growth of beneficial forbs, sedges, and grasses. Allowing the native vegetation to establish to a height that it is no longer palatable or appealing to geese will see further reductions in goose use in the future.

1. Exclusion around new seedings and plug plantings.
  - a. Focus the effort on plantings by fencing off specific areas where high plant diversity is desired. As vegetation becomes established in one area then focus on the next area.
    - i. Especially focus effort in any areas utilizing plugs as these are expensive and the perfect age and size for geese to graze on.
  - b. Utilize tightly woven fencing at least 24 inches tall.
  - c. Incorporate flagging or mylar tape to add a visual and moving component to the fencing structure. This will add a hazing component to the effort.
2. Utilize repellents on new seedings and plugs.
  - a. The short term nature of repellents may be just long enough to allow new plants to grow to a stage where less goose damage will occur.
3. Consider seedings over planting plugs.
  - a. While plugs can quickly add a component of mature and more attractive plants to a planting, they are expensive, require additional care, and are very appealing to herbivores.
  - b. Seedings can take longer to establish but any associated weedy component will be less appealing to geese as a food source and can protect the young, desirable plants as they become established.
4. Limit any areas that are mowed in the area so there is not an area nearby that attracts geese.
5. Use hazing via dogs, pyrotechnics and scarecrows to reduce goose use during the spring and summer.
  - a. Utilize city staff or a contract with an NWCO to carry out harassment.
  - b. Target the high goose use areas first but follow-up along all areas of the trail system.
  - c. Pyrotechnics will mimic gunshots during the winter months and will act as a deterrent for geese.
  - d. Use of lasers at twilight could help with geese that are feeding on the seeding and nearby mowed areas or attempting to roost on the wetland.
  - e. Combine multiple and creative forms of harassment to have the desired effects.

### Measures for success at the Gray's Station Stormwater Wetland:

- Seedings are successful and allowed to mature.
- Goose usage at the area is minimal.



### Three Lakes Estates

The three waterbodies at this location act as stormwater retention ponds for Easter Lake. Walking paths from the subdivision surrounding these ponds follow the creek and junction with the Mark C. Ackelson Trail that goes around Easter Lake. Dredging work on these ponds was completed from 2018-2020 to remove sediment and increase silt load capabilities. As a part of this renovation, native seedings are being established along the edges of the ponds. The use of native seedings in this area is directly related to the presence of geese and is a first step at reducing goose use of the area. Currently, geese use this area for nesting and brood rearing. The islands in the largest pond are an optimal nesting location. With ease of access from the water to the adjacent yards, geese have a natural place to forage and raise their young. Fecal deposition on the paths and in yards is of concern.

1. Eliminate waterfowl feeding.
  - a. Enforce a feeding ban ordinance along the trail system or at a neighborhood scale for Three Lakes Estates.
  - b. Erect signs in places where feeding occurs making it clear to not feed the birds.
  - c. Conduct this with additional outreach across the city to eliminate feeding of geese on a larger scale.
  - d. Educate the neighborhood on other ways to observe birds or actions to benefit the species.
  - e. Educate the neighborhood on the negative implications of food hand-outs such as malnutrition and disease.
2. Establish a barrier between the trail and the water utilizing either native prairie plantings or fencing.
  - a. Native prairie plantings would include grass and forb species that would also be attractive for trail users as well as providing additional ecological benefits (bank stabilization, water quality, pollinator attraction, etc...)
  - b. Fencing options should be at least 18 inches tall with gaps small enough that goslings could not fit through.
3. Islands are a natural attractor for nesting geese. By eliminating the islands or managing the vegetation on the islands to be less attractive to geese it will help deter them from selecting that site.
  - a. The best option would be to remove the islands. As renovations were recently completed this may not be an option in the near future.
  - b. Removing all shrub and woody growth on the islands and converting them to a grass mix would allow for easier manipulation of vegetation.
    - i. Burn the vegetation off of the islands annually prior to March 1<sup>st</sup>. Be sure all of the previous year's duff is burned or removed leaving no above ground nesting material.
4. Educate adjacent property owners on ways to deter geese from their yards.
  - a. Fencing, hazing, presence of dogs, removal of food sources, and repellents are options homeowners can use with no need for a federal permit.
  - b. This allows homeowners to choose whether or not they want to deter geese from their own properties in conjunction with any actions the city takes.

Measures for success at Three Lakes Estates:

- No food handouts occurring.
- Decrease in number of complaints from trail users and neighbors.
- Decrease in number of nesting geese utilizing the area.



## AH Blank Golf Course

Blank Golf Course houses five ponds over its 110-acre area. All grass surrounding the ponds is mowed right up to the edge of the waterbodies. Immediately adjacent to the golf course is the Blank Park Zoo to the north, McCombs Middle School to the south, and Fort Des Moines Park to the east. A.H. Blank Golf Course is located 1.5 miles southeast of the Des Moines International Airport. Concentrations of nesting birds can lead to high numbers of brood rearing geese in late spring and summer on the course. This lends itself to issues with aggressive adult geese, fecal depositions, and significant damage to the turf and greens. Additionally, spillover of nesting birds into Blank Park Zoo has caused issues with some of their nesting waterfowl at their pond in the past. A final concern at this site is the proximity to the airport and the potential for bird strikes with airport traffic.

1. Ensure that feeding is not occurring at the golf course.
  - a. Make it clear via golf course rules and clear signage not to feed the geese.
2. Modify vegetation around ponds to reduce goose use.
  - a. Leaving a buffer of taller vegetation around any waterbodies will make the area less appealing to geese.
3. Use hazing via dogs, pyrotechnics and scarecrows to reduce goose use during the off-season.
  - a. Utilize city staff or a contract with an NWCO to carry out harassment.
  - b. Target the high goose use areas first but follow-up along all areas of the trail system.
  - c. Pyrotechnics will mimic gunshots during the winter months and will act as a deterrent for geese.
  - d. Use of lasers at twilight could help with geese that are feeding on the turf later in the evening or attempting to roost on nearby waterbodies.
  - e. Combine multiple and creative forms of harassment to have the desired effects.
  - f. Communicate with Des Moines International Airport for hazing of large groups of birds to ensure safety for the airport.
4. Reduce goose numbers for the spring and summer months through nest manipulations.
  - a. Have a city staff person become registered as an NWCO or contract with an NWCO to carry out nest removals.
  - b. Allow birds to incubate for 14 days prior to nest removal to decrease risk of re-nesting and increase the chance for those adult birds to leave the area through the summer.
  - c. These operations will decrease fecal deposits and damage to the course while also alleviating a human safety issue with proximity to the airport.
  - d. These operations require working with the DNR for federal permitting requirements.
5. Lethally remove geese during the legal hunting seasons.
  - a. The city should consider special allowance for discharge of a firearm at the golf course utilizing the existing season structures for goose hunting in Iowa.
  - b. This could be organized like a traditional goose hunt with blinds and decoys; however, it may be more effective to utilize the course manager or other personnel specifically to lethally remove a few birds.
  - c. Lethal removal will increase the efficacy of hazing and other forms of deterrents.
  - d. Lethal removal in this form, following state and federal hunting regulations, does not require a special permit.

### Measures for success at A.H. Blank Golf Course:

- Decrease in number of nesting and brood rearing groups of geese.
- Decrease in number of complaints from course users.
- Decrease in bird strikes at the Des Moines International Airport.



## Riverview Park

Recently completed in spring of 2021, this new park exhibits walking trails, play areas, and an open amphitheater with surrounding lawn. This park is connected to the Neal Smith and McHenry Park Trails. It is situated between the Des Moines River and Riverview Lake. While few complaints have come up regarding geese at this site previously, it exhibits exemplary habitat to attract nesting geese and pairs were observed in Riverview Lake in the spring of 2021. If nesting occurs, then aggressive behavior towards park visitors and fecal deposition on trails and grass areas will be an issue.



1. Do not allow waterfowl feeding to occur and draw in additional birds to the area. The attractiveness of this park to many different user groups, including families, may lead to feeding geese that are present. This needs to not happen.
  - a. Enforce the feeding ban ordinance at the park.
  - b. Erect signs in places where feeding is likely to occur and at the entrance of the park making it clear to not feed the birds.
  - c. Conduct this with additional outreach across the city to eliminate feeding of geese on a larger scale.
  - d. Educate the park users on other ways to observe birds or actions to benefit the species.
  - e. Educate the park users on the negative implications of food hand-outs such as malnutrition and disease.
2. Establish barriers between the waterbodies and public use areas.
  - a. Utilize the construction phase of the project to establish native plant buffers between the water and the park.
  - b. If thick vegetative borders are not feasible consider a permanent fencing option. Fencing should be at least 18 inches high and tight enough to not allow a gosling to get through (<3 inch weave). This will help deter family groups of geese from using the area.
3. Use hazing via dogs, pyrotechnics and scarecrows to reduce goose use during the off-season to prevent buildups of feeding flocks during the fall and winter.
  - a. Utilize city staff or a contract with an NWCO to carry out harassment. The fencing and open areas lends itself well to utilizing dogs as a form of hazing.
  - b. Pyrotechnics will mimic gunshots during the winter months and will act as a deterrent for geese.
  - c. Use of lasers at twilight could help with geese that are feeding on the turf later into the evening.
  - d. Combine multiple and creative forms of harassment to have the desired effects.

### Measures for success at Riverview Park:

- Only a small number of complaints fielded.
- Number of geese remains at a low level throughout the year.
- Staff or contract time spent on hazing and cleanup is kept low.



## RECORDS AND SURVEYS

In order to properly determine success for any of the defined situations or other situations that arise, some level of data needs to be collected from each event. This could come in many forms, but simple records such as staff time devoted to goose hazing or fecal depositions cleanup is a good place to start. While there may not be an easy way to accurately count distinct numbers of geese, these other methods will provide trend data through the years giving valuable insights into localized goose abundance or areas of conflict. The higher quality the information collected the more precise these trends will be, allowing for clear measures of success and help identifying areas of potential conflict before or as they are occurring. This in and of itself would be a huge success since presently all of the work done with urban geese in Iowa is reactive to long occurring conflicts. Documentation and photographs can be very effective at capturing successful techniques.

Work with partners and the public to capture accurate information concerning geese to help make informed decisions on goose management. Partners could include the Iowa DNR, Polk County Conservation, Ducks Unlimited, Humane Society, and private citizens among others.

1. Track complaints that come into the city regarding Canada geese.
  - a. Include date, location, conflict event (i.e. aggressive goose attack, buildup of feces on trails, large winter flocks in yards, etc.), and any other pertinent information.
  - b. Utilize reporting systems that are already operating to report issues to the city.
2. Measure staff time and methods used in response to complaints.
  - a. Track staff hours for specific duties regarding Canada geese such as erecting fencing, cleaning fecal depositions, or hazing activities.
  - b. Recording what methods were used in specific locations along with measures of success like amount of fecal deposition and number of complaints will help track efficacy of certain approaches.
3. Work with the DNR to establish and carry out survey methodology for specific times of the year.
  - a. This will provide some year-to-year comparisons of goose numbers in specific spots.
  - b. Focusing on one season such as the brood rearing time of year in June or migrating flocks in January will help focus in on groups of geese associated with conflict.
4. Engage the public with citizen science projects that could help capture information on goose activity or goose numbers.
5. Coordinate survey efforts with other cities and partners in the metropolitan area to get a better sense for the entire landscape. Geese will and do move between the cities.



Iowa DNR staff banding and researching geese in West Des Moines, Iowa. Information gained from surveys can be valuable for determining how to address nuisance goose issues and where to focus efforts.



## FUTURE CONSIDERATIONS

While the recommendations above lists specific sites and actions that can be used to address negative human-geese interactions, a more holistic approach is important to consider to avoid increased conflicts in the future and throughout the metro area. A holistic approach will also reduce the likelihood of simply shifting the conflict to new locations. To have an impact at a city-wide scale it is important to consider why geese are using areas within the city. Given Des Moines' location within the native breeding range of Canada geese and the migration route for a large portion of North America's population of geese, there will continue to be a goose presence in Des Moines as long as the species exists. Therefore, if meaningful steps are going to be taken going forward then they should be coordinated with all entities involved including developers, planners, landscape designers, homeowner's associations, businesses, realty companies, and the public and replicated by all municipalities in the metropolitan area.

Habitat is the foundation of wildlife populations and behaviors. Canada geese rely on the availability of open water and will select feeding areas that are easy to access from that water. Long sight distances are selected for their safety and because geese prefer to walk from water to the feeding area, especially in the spring and summer. Sites like these can be found throughout the Des Moines metropolitan area at golf courses, neighborhoods, assisted living centers, businesses campuses, malls, and parks. Every year new stormwater retention basins are installed with construction projects, new developments, and urban growth that fit this habitat profile perfectly. Changing the thinking and implementation around construction of these waterbodies will address the root cause of why the geese are attracted to these areas.

Changing what these waterbodies look like will have the most meaningful long term impact whether through education, administrative processes, ordinances, or other measures. Incorporating a barrier around water features when they are installed will decrease the attractiveness for geese. This could be accomplished through the use of native plant buffers, shrub plantings, large rip rap, or fencing. Utilizing stormwater retention designs that allow the water level to fluctuate could decrease the availability of open water. Functioning creative design could focus on waterbodies that serve the purpose of capturing water runoff or aesthetic park features while incorporating goose-obstructive landscaping. Educating all of those involved and altering the planning and development of the metropolitan area will be a large undertaking but will have significant impacts on goose use of the area in the future.

Additionally, supplemental feeding is an extremely strong attractant to wildlife and replaces the fear of humans with positive reinforcement of a food handout. Supplemental feeding activities will concentrate geese at higher densities than natural, will keep them in areas longer than their natural migration process normally would, will habituate them to people, and tend to be a source of malnutrition for geese. While feeding geese can be an enjoyable activity for some, it creates a false impression of wildlife as a pet or a zoo animal instead of a wild animal. Efforts should be made to shift this activity through education and outreach as well as through ordinances.

Canada geese are a public trust resource meaning they do not belong to any particular individuals, corporations, or locations. Furthermore, they are naturally inclined to move long distances through the course of their lifespan including to neighboring cities, states, and countries. As such, this is an example of a resource that should be discussed and managed at a scale larger than just one city. By working together with partnering agencies and cities in the area, reductions in human-geese conflict will occur at a grander scale, education will be more widespread, and future actions will be more successful.

The city is encouraged to reach out to neighboring municipalities and partners to form collaborative action plans to help address any negative issues at a more meaningful scale. Utilizing the basic approaches outlined in this plan and applying creative means of deploying the tactics can address the majority of human-geese conflict situations. By sharing these strategies with surrounding municipalities, the cities could work together to address negative goose issues. This strategy has been successfully implemented with other wildlife related conflicts in the Des Moines metropolitan area and the state through coordinated efforts and task forces.

As a public trust resource, Canada geese are also available to the public everywhere along their migration paths including as a recreational opportunity for regulated hunting. Geese that have been captured and marked in Des Moines have been documented everywhere from the northern Canadian territory of Nunavut to Oklahoma. Cooperation



between states and countries to manage geese along their migration routes results in safe and effective harvest of this desirable waterfowl species. Hunting continues to be a meaningful management strategy for populations of Canada geese, demonstrably so in the Des Moines metropolitan area. Hunting is a valuable recreation opportunity that should be included in goose management wherever possible.

Canada geese are a cherished natural resource in the State of Iowa and across North America. They represent a major conservation success story involving many partnering agencies and organizations. Whether it's the iconic sound of their honk, sighting them amongst groups of other waterfowl, the opportunity to utilize their meat, the symbolism of changing seasons, or the natural miracle of a hatching nest, Canada geese are enjoyed across their range and are a remarkable animal to witness. Canada geese will continue to be a part of life in Iowa and, through this plan, negative interactions can be reduced while increasing appreciation for this remarkable natural resource.



## ACKNOWLEDGEMENTS

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## GLOSSARY OF TERMS

- Aversive conditioning** - Utilizing negative stimuli to train wildlife to avoid specific areas or situations. This concept relies on the animals' natural instinct to regard humans as a threat and to avoid close human contact.
- Brood rearing** - Raising the young from that year. With geese this involves protecting them, leading them to food sources, and keeping them in a safe roosting spot overnight. Brood rearing takes place from hatch until the birds are able to fly.
- Food Handouts** - Any food not originating directly from the natural source. This may include things like bird seed, bread, popcorn, grapes, or anything placed by people to attract wildlife.
- Habitat** - The ecosystem and vegetative requirements for a species to live and thrive in a certain place. This includes food, shelter, cover from weather, and nesting specifics.
- Molt Migration** - An additional goose movement to a more secluded location, typically farther north, to go through the summer molt process.
- Migration** - A movement of animals from one location to another, often attributed to changing seasons, weather, daylight hours, or food availability.
- Permitted actions** - Any attempt at goose management that includes physically handling the birds, lethal management, or working with nests and eggs. These actions require a federal permit issued through the United States Fish and Wildlife Service.
- Summer Molt** - Canada geese 'shed' and regrow their flight feathers in a short span of time leaving adult birds with a significantly reduced ability to fly in the early summer months. This typically coincides with brood rearing.
- Waterfowl** - The group of species of birds that are strongly associated with and require bodies of water. This biological family of birds is called Anatidae. Iowa Code 481a.21a defines the Anatidae family as swans, geese, brants, and ducks.





United States Department of Agriculture

## Iowa Native Prairie Planting Guide



# Native Prairie establishing & managing native plantings



This guide provides directions for establishing and managing native prairie plantings, including post-planting weed control, prescribed burning, mowing and haying.

### First Year (Mow Often)

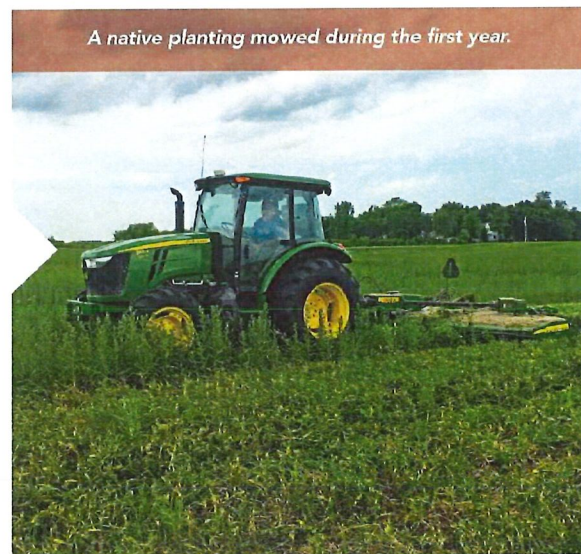
Prairie grasses and wildflowers grow slowly. Weeds grow much faster in the first couple of years. In the first year, prairie plants work to establish their root systems and therefore grow very little on the surface. In fact, some forbs take several years to appear. You may see some of the quick establishers in the first year, such as Black-eyed Susan, partridge pea and sideoats grama. Have patience and give it time.

The following are key management tips for the first year:

- » Scout your field during the establishment period for weed growth and pressure. Weeds can double their height in a week.
- » Expect to mow weeds **2 to 3 times** from June through July. The actual mowing frequency will depend on rainfall, weed density, height, and weed species present.
- » Mowing before weeds get "**Knee High**" is a good rule of thumb. Allow as much light as possible to the seedlings.
- » Mow weeds down to approximately 6-8 inches. The first mowing after seeding, if done timely, can be mowed at 3-4 inches.
- » Do not spray any broadleaf chemicals on establishing stands. Not only will broadleaf chemicals kill forbs, but they can also kill or damage seedling grasses.
- » Dormant/early plantings will require mowing early in the season, and an additional mowing trip may be needed.
- » Typically, don't mow after Aug. 1.
- » Evaluate stand in early fall.



*A native planting mowed during the first year.*







## Second Year (Early Bloomers)

- » Plan to mow once (6-8"), then evaluate the native planting to see if additional mowing will be needed.
- » Spot mowing may be needed in areas where weed pressure is still prevalent. *Giant Ragweed* can be very persistent. Musk thistles may still be prevalent, but will be out-competed by the prairie long-term.
- » Do not use herbicides for spot spraying until Year 3 of the native planting.
- » Maretail (a winter annual shown at right) will often show up in the second year. It looks worse than it is, but its growth pattern still allows light through the canopy. Maretail will naturally decline as the prairie establishes.
- » Mow Canada thistle patches at bud stage (late June to early July). The prairie will often out-compete thistles with timely mowing.
- » By mid-July, an inspection of a new establishment should indicate a diverse mixture of natives, though the seeding will still have a weedy appearance. Forbs will start to bloom.
- » A prairie stand is "established" when there is an average of 1 plant/ft<sup>2</sup>. This may take until Year 3.

Maretail grows in a second year native planting.



## Third Year & Beyond

- » Evaluate your native planting annually from the third year on.
- » Spot treat perennial weeds or invasives (i.e. Canada thistle, introduced grasses) as needed.
- » Mowing and haying (July 15-Aug. 31) are great tools for reducing the tall grass component and will invigorate forbs. (Follow program guidelines.)
- » **Prescribed Burning** is a useful tool that is part of the tall grass prairie ecosystem. Burning helps control unwanted trees, remove duff, and stimulate native grasses and forbs. *Refer to the Prescribed Burn Schedule on the next page for influence of fire on the plant community.*
  - Consider burning every 3-5 years to promote a healthy prairie. Additional burning may be warranted for certain conditions.
  - Delaying the first prairie burn until after the third growing season can help with forb establishment.
  - Burning can stimulate sometimes unwanted invasives, like sweet clover.
  - When conducting burns on acres enrolled in conservation programs, refer to program policy.
  - Utilize the Prescribed Burning Iowa Job Sheet when completing prescribed burn plans.

Prescribed burning on a southern Iowa native planting.





# Natural Resources Conservation Service

## Affect of Burn Timing on Plant Community



Positive



Neutral



Negative

### Prescribed Burn Schedule

Dates	Forbs	Warm Season Grasses	Introduced Cool Season Grasses	Trees
11/15-4/1				
*4/1-4/15				
4/15-5/15				
7/15- 8/31				

\*These dates vary, but it's a time when the introduced grasses are actively growing and fire will set them back. The forbs are just starting, so the fire will have minimal impact.

## Other Considerations

- » In the establishment phase, limit competition from weeds to prevent a stand failure. Too many of the wrong kinds of weeds in your native plantings may block the sunlight and smother out establishing natives.
- » It is okay to have some non-noxious weeds in your native planting. Annual weeds provide many benefits for wildlife, including habitat for insects, food for growing chicks, protection from predators and weather, and an overall food source for managing wildlife.
- » Do not mow after weeds are 4-6 feet high. At that point you are better off **not** to mow. Doing so will put a mat of material on the new emerging seedlings. It may look better to the neighbors, but it will have a negative impact to the seeding.
- » Spot mowing on established stands is preferred over chemical use for weed control. Using chemicals to spot treat noxious weeds will also kill native forbs. Wait until Year 3 to use herbicides for spot spraying, after the prairie is established.
- » Mowing CRP acres is allowed until the stand is considered established. Once the stand is considered established, visit your USDA-Farm Service Agency office before conducting any weed control activities, such as mowing or spraying.
- » Prescribed burns need to be planned and executed in a careful and strategic manner using a prescribed burn plan. A burn plan is a site specific technical guide that details:
  - firebreak locations (critical component),
  - an ignition plan,
  - equipment needed,
  - personnel needed,
  - potential fire escape areas,
  - potential damage risks (i.e. wood fence posts, plastic culverts or intakes)
  - May 15 to Aug. 1 is the primary nesting season. Conservation Reserve Program (CRP) rules do not allow prescribed burning or managed haying during this time period.
- » Eastern red cedar trees can be controlled with prescribed fire. *Green foliage must be totally burned to kill it.*
- » Varying the disturbance and the timing can be beneficial overall to the prairie and plant community.





## Canada Thistle Control

### Before seeding

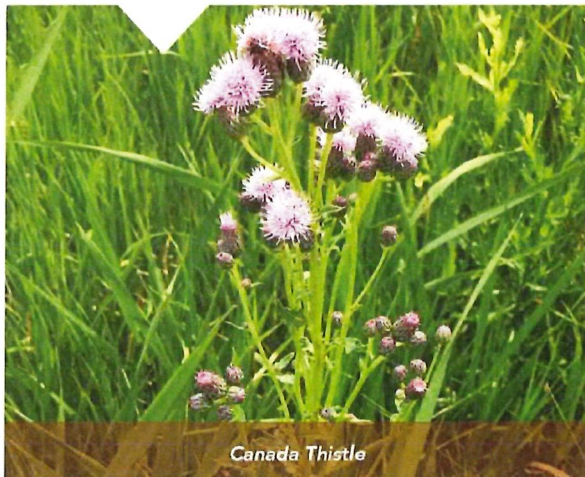
- » Use 3 quarts of glyphosate when active ingredient is 41%.
- » Glyphosate will have no residual affect to a new seeding.
- » Follow label for specific rates, spray adjuvants, etc.

### After seeding

- Option 1 - Mowing: Mow at bud stage (late June to early July) for greatest affect. Timely mowing will often be enough to give the prairie the edge to out compete.
- Option 2 - Spraying: Rely on mowing in the first 3 growing seasons, if possible.
  - \* (Best) - In the third growing season, mow the patches where the prairie is struggling to out-compete it at bud stage (late June – early July). Then, come back in the fall and spot spray with aminopyralid (i.e. Milestone) on those areas.

### Aminopyralid (i.e. Milestone) Details

- » Long residual (2+ years). The residual makes it more effective because the rhizomes of Canada thistles are not all active at the same time, making it difficult to kill.
- » It is more selective than most broadleaf herbicides; some forbs are not susceptible to it, especially if they are well established.
- » Follow label for specific rates, spray adjuvants, etc.



Canada Thistle

## Introduced Grass Control

It is much easier to kill introduced grasses before you seed a native mix than eradicating them after the seeding is planted.

### Option 1 – Prescribed Burn

- » Complete in May to setback the actively growing introduced cool season grasses.
  - **Benefits:** Warm season native grasses will thrive, while the introduced grasses will be stunted.
  - **Negatives:** Native forb population can also be reduced, since they are cool season. Provides only a short-term benefit.

### Option 2 – Kurtz Method

- » Mow an established native stand (after 3 growing seasons) in mid-October. *Established forbs mowed at this point will not grow back that fall. Native warm season grasses are dormant.*
- » Spray glyphosate at the perennial rate (2 quarts when active ingredient is 41%).
  - **Benefits:** Very effective at killing introduced grasses such as smooth brome grass, bluegrass, orchard, etc. *This method is not effective at killing reed canary grass, which would need time to get fresh regrowth.*
  - **Negatives:** There is a risk of killing some native forbs and native cool season grasses.

### Option 3 – Prescribed Burn/Grass Herbicide

- » Complete a dormant or early spring prescribed burn.
- » When the cool season grasses green back up (4"-5" of height), spray a grass-only herbicide (i.e. Clethodim) to stunt/kill the introduced grasses.
  - **Benefits:** Much better at stunting/killing the introduced grasses than a fire burn alone.
  - **Negatives:** Risk of stunting/killing the cool season native grasses (Canada Wild rye, June grass, etc.)





# APPENDIX B - IOWA DNR FORESTRY PAMPHLET

## IOWA DNR FORESTRY

## [GUIDE TO NATIVE TREES AND SHRUBS OF SW AND SOUTHERN IOWA]

Species	Ultimate Size	Growth Rate	Woodland Suitability (Soils)								Items to Note
			1	2	3	4	5	7	8	8W	
Bur Oak	Large	Slow	x	x	x	x	x	x	x	x	Bur Oak Blight
Chinkapin Oak	Large	Slow			x	x	x	x	x		Good for dry sites
White Oak	Large	Slow			x	x	x	x	x		Purple/red fall color, favored for wildlife food
Swamp White Oak	Large	Moderate	x	x	x	x					Do not use on alkaline soils, fast acorn production
Red oak	Large	Moderate			x	x	x	x			Use on good, well-drained soils, prone to oak wilt disease
Black oak	Large	Moderate			x	x	x	x			
Pin Oak	Large	Moderate	x	x	x						Do not plant on alkaline soils
Shingle Oak	Medium	Slow-Moderate			x	x	x	x			Prefers more acidic sites
Shagbark Hickory	Large	Slow			x	x	x	x	x		Interesting bark, beautiful gold fall color
Shellbark Hickory	Large	Slow	x		x	x					Hickory for creek side areas
Bitternut Hickory	Large	Slow	x		x	x	x				Gold fall color, smaller nut
Black Walnut	Large	Mod-Fast			x	x					Do not plant where wet or clayey
Hackberry	Large	Moderate	x		x	x	x				Sensitive to herbicide drift
American elm (Princeton and Valley Forge)	Large	Moderate-Fast	x		x	x	x	x	x	x	Fast growth, good form
Red Elm	Large	Moderate			x	x	x				Dutch Elm Disease
American Basswood	Large	Moderate	x		x	x	x				Japanese Beetles
Kentucky Coffee Tree	Large	Moderate-Fast	x		x	x	x				Poisonous to Livestock
Honey Locust	Moderate-Large	Moderate-Fast	x	x	x	x	x	x	x	x	Get thorn-less variety
Ohio Buckeye	Large	Moderate	x		x	x					
Black Cherry	Moderate	Fast	x		x	x	x				Poisonous to Livestock
Serviceberry	Small	moderate	x		x	x	x				Plant in sheltered, well drained sites
Downy Hawthorn	Small	Moderate	x		x	x	x	x	x	x	Excellent flowers
Ironwood	Small	Slow to moderate	x		x	x	x				Good alternative to birch
Eastern Redbud	Small	Fast	x		x	x	x		x		Purple spring flowers
Silver Maple	Large	Fast	x	x	x	x				x	Fast tree for wet sites
Cottonwood	Large	Fast	x	x	x	x	x	x	x	x	Fast tree for most sites
Black Willow	Small-Medium	Fast	x	x						x	Excellent in low wet areas and along waterways
American Sycamore	Large	Fast	x	x	x	x				x	Anthraxnose on wet years
Red Mulberry	Small-Medium	Moderate-Fast	x		x	x					
Wild Plum	Small	Fast	x		x	x	x	x	x		Excellent for wildlife
Eastern Red Cedar	Medium	Moderate	x		x	x	x	x	x		Do not plant on wet sites
Rough leafed or Gray Dogwoods	Large Shrub	Fast	x		x	x	x	x	x	x	Purple Fall color
Silky Dogwood	Large Shrub	Fast	x	x	x	x					
Buttonbush	Large Shrub	Fast	x	x	x	x				x	Globe shaped flower
Elderberry	Med. Shrub	Fast	x	x	x	x				x	Edible Fruit, white flower
False Indigo Bush	Med. Shrub	Fast	x		x	x					Purple-spike like flower



<b>Choke Cherry</b>	Small-Med	Fast	x	x	x	x	x	Red Fall color, edible fruit
<b>Hazelnut</b>	Small-Med	Fast	x	x	x	x	x	Orange fall color – edible fruit
<b>Smooth sumac</b>	Med-large	Fast	x	x	x	x	x	Forms colonies – red fall color
<b>Fragrant Sumac</b>	Small	Fast	x	x	x	x	x	Orange fall color
<b>Eastern Wahoo</b>	Med-Large	Moderate	x	x	x	x		Red Fall Color, pink seed capsules
<b>Gooseberry</b>	Small	Fast	x	x	x	x	x	Orange fall color
<b>Coralberry</b>	Small	Fast	x	x	x	x	x	Pink berry clusters into winter
<b>Nannyberry</b>	Small-Med	Fast	x	x	x	x	x	Edible fruit, red fall color
<b>Ninebark</b>	Small-Med	Fast	x	x	x	x	x	Red Fall Color
<b>Bladdernut</b>	Small-Medium	Fast	x	x	x			Prefers to be in the shade – forms colonies
<b>Shrubby St. John's Wort</b>	Small	Fast	x	x	x	x	x	Prefers open, prairie habitat

Woodland Suitability (Soils)	Coordinating Iowa Soil Types
1 (Moderately Wet)	Adair, Ackmore, Arisipe, Armstrong, Blake, Blencoe, Bucknell, Cantrill, Coppock, Ely, Galland, Grundy, Kniffin, Lamoni, Lawson, Lineville, Macksburg, Malvern, Mystic, Nevin, Pershing, Seymour
2 (Wet)	Afton, Albaton, Belinda, Bremmer, Carlow, Clarinda, Clearfield, Colo, Granby, Haig, Minden, Sperry, Vesser, Wabash, Winterset, Zook
3 (Well Drained Moist Loamy)	Caleb, Douds, Downs, Exira, Gara, Kennebec, Knox, Judson, Ladoga, Lindley, Marshall, Monona, Napier, Nira, Nodaway, Olmitz, Shelby, Wiota
4 (Well Drained Clayey)	Keswick, Mayberry, Sharpsburg, Weller
5 (Well Drained Dry Loamy)	Dickenson, Keg, Klum
7 (Deep Sandy)	Dickman, Sarpy
8 (Calcareous)	Castana, Grable, Ida, Hamburg, Haynie, Steinauer
8W (Wet Calcareous)	Calco, McPaul, Modale, Onawa, Percival

**TO CREATE A SOIL MAP FOR YOUR PROPERTY:** <https://websoilsurvey.sc.egov.usda.gov/App/HomePage.htm>

**ADDITIONAL INFORMATION:**

*Planting and maintaining trees:* Tree Owner's Manual: [http://www.fs.usda.gov/Internet/FSE\\_DOCUMENTS/stelprdb5368392.pdf](http://www.fs.usda.gov/Internet/FSE_DOCUMENTS/stelprdb5368392.pdf)

*Sources for native tree stock:*

- Great Plains Nursery – (Weston, NE)
- Iowa Native Trees and Shrubs Nursery (Woodward, Iowa)
- Kelley Tree Farm – (Clarence, IA)
- Forrest Keeling Nursery (Elsberry, MO)
- Iowa State Forest Nursery (Ames, IA) – bare root only
- Missouri State Forest Nursery (bare root seedlings)
- Prairie Moon Nursery – (Winona, MN) – hard to find native shrubs and some trees

*Additional Nurseries:*

- Nodaway Valley Tree Farm
- Tremel Nursery - Earling
- Schumacher's Nursery and Berry Farm



# APPENDIX C - DMACC LAKE SEEDING PLAN



IA - CPA - 4 REV.  
February-98  
(File Code 180-12-12)

## Seeding Plan

Name DMACC Lake Date 4/8/2013  
Prepared by Jennifer Welch Tract No. \_\_\_\_\_  
Type of Seeding: Critical Area Field Area (acres): 1.000 Field No. \_\_\_\_\_  
Contract No. \_\_\_\_\_

### Seeding Mix Summary

			PLS		
Grasses	Scientific Name	Common Name	Lbs/Acre	PLS Lbs	Estimated Cost
1	<i>Bouteloua curtipendula</i>	Sideoats Grama	2.40	2.40	\$54.72
2	<i>Carex vulpinoidea</i>	Fox Sedge	0.15	0.15	\$19.05
3	<i>Elymus canadensis</i>	Canada Wildrye	2.30	2.30	\$43.70
4	<i>Elymus virginicus</i>	Virginia Wildrye	2.30	2.30	\$43.70
5	<i>Schizachyrium scoparium</i>	Little Bluestem	2.00	2.00	\$64.00
6	<i>Sporobolus heterolepis</i>	Prairie Dropseed	0.45	0.45	\$42.75
7	<i>Bouteloua gracilis</i>	Blue Grama	0.40	0.40	\$22.80
SUBTOTAL GRASSES			10.00	10.00	\$290.72
			PLS		
Forbs/Legumes	Scientific Name	Common Name	Lbs/Acre	PLS Lbs	Estimated Cost
1	<i>Symphyotrichum laeve</i>	Smooth Blue Aster	0.020	0.020	\$2.54
2	<i>Asclepias incarnata</i>	Swamp Milkweed	0.080	0.080	\$7.60
3	<i>Chamaecrista fasciculata</i>	Partridge Pea	0.40	0.40	\$7.60
4	<i>Echinacea pallida</i>	Pale Coneflower	0.10	0.10	\$9.50
5	<i>Heliopsis helianthoides</i>	Ox-eye	0.22	0.22	\$7.04
6	<i>Liatris pycnostachya</i>	Prairie Blazing Star	0.050	0.050	\$9.50
7	<i>Monarda fistulosa</i>	Wild Bergamot	0.040	0.040	\$7.60
8	<i>Dalea purpurea</i>	Purple Prairie Clover	0.20	0.20	\$9.00
9	<i>Rudbeckia hirta</i>	Black-eyed Susan	0.25	0.25	\$6.50
10	<i>Silphium integrifolium</i>	Rosinweed	0.020	0.020	\$2.54
11	<i>Oligoneuron rigidum</i>	Stiff Goldenrod	0.050	0.050	\$4.50
12	<i>Verbena stricta</i>	Hoary Vervain	0.050	0.050	\$1.60
13	<i>Zizia aurea</i>	Golden Alexander's	0.060	0.060	\$5.70
14	<i>Astragalus canadensis</i>	Canadian Milkvetch	0.10	0.10	\$3.80
15	<i>Eryngium yuccifolium</i>	Rattlesnake Master	0.050	0.050	\$4.75
16	<i>Penstemon digitalis</i>	Foxglove Penstemon	0.030	0.030	\$9.48
17	<i>Ratibida pinnata</i>	Gray-headed Coneflower	0.12	0.12	\$7.56
18	<i>Tradescantia ohimensis</i>	Common Spiderwort	0.14	0.14	\$13.30
19	<i>Anemone canadensis</i>	Canadian Anemone	0.030	0.030	\$13.28
20	<i>Silphium laciniatum</i>	Compass Plant	0.030	0.030	\$2.85
21	<i>Asclepias tuberosa</i>	Butterfly Milkweed	0.030	0.030	\$18.96
22	<i>Coreopsis palmata</i>	Prairie Coreopsis	0.030	0.030	\$9.49
SUBTOTAL FORBS			2.10	2.10	\$165
TOTAL			12.10	12.10	\$455

Seeding Dates: \_\_\_\_\_

Additional Seeding Criteria: \_\_\_\_\_



## Ankeny Campus - Lake Native and Turf Seeding Areas



C:\P\H\ANED\AUTO\DO\DO\CAD Projects\Other Projects\Ankeny 2013-2013\Lake Seeding Area 09-30-13\Lake Seeding Area 09-30-13.dwg

9/30/2013