A Proposal for Co-Existing with Beavers and Coyotes in Minneapolis

Submitted to the Minneapolis Park & Recreation Board
by a coalition of local wildlife conservation and environmental groups

Fur Free Minneapolis
Friends of Minneapolis Wildlife
Animal Rights Coalition
Friends of Roberts Bird Sanctuary
Friends of Lake Hiawatha

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We call on the Minneapolis Park & Recreation Board to:

1) Pass a new resolution that amends the contract with USDA Wildlife Services to require best practice wildlife-friendly management methods with non-lethal capture or lethal methods used only as a last resort for diseased/dangerous animals.

2) Develop and implement a comprehensive wildlife-friendly management strategy that includes education and outreach, native plantings, wetland protection, flow-diversion devices and non-lethal capture methods only as a last resort.

3) Recognize the importance of species such as beavers and coyotes to ecological function and environmental sustainability in Minneapolis, and the benefits these species provide, such as building climate resilience, protecting water quality and improving habitat.

4) Involve constituents in a transparent process to develop and implement effective, humane and non-lethal strategies to protect and co-exist with beavers, coyotes and other wildlife in Minneapolis.

5) Educate Minneapolis residents and park users about the importance and value of wildlife in our City to environmental health and quality of life.

6) Engage community members in the Sumner Field Park neighborhood to work with local wildlife conservation experts and environmental groups to improve the park while resolving challenges related to the beaver.

7) Commit to protecting and enhancing wildlife habitat throughout Minneapolis as part of a science-based comprehensive approach that protects and enhances ecological function throughout the Park system.
Summary

As keystone species, beavers and coyotes are valuable residents whose existence and habitat deserve protection in Minneapolis, for the benefit of humans as well as wildlife and our environment.

**Beavers and coyotes benefit humans and our environment.**

By creating dynamic, highly functional habitats, beavers provide several important benefits, such as building climate resilience, protecting water quality, and improving habitat. Coyotes also play an important ecological role by helping to maintain healthy ecosystems and species diversity, and regulating the number of other animals such as geese, raccoons, foxes and deer.

**Beavers and coyotes cause few (if any) problems in Minneapolis.**

In Minneapolis, a few examples of tree damage by beavers have been observed, while no problems with flooding have been documented. Along the Mississippi River, beavers focus mostly on small and medium sized willows, cottonwoods, ash, and other species along the shoreline, with no associated flooding. Proven methods are available to prevent damage to established or planted trees if beavers enter river-adjacent upland areas.

Coyotes are a natural part of our ecosystem, and rarely (if ever) threaten humans or protected (leashed) pets. Minnesota has never seen a documented case of a coyote attack on a human. Although reports of coyote sightings in Minneapolis neighborhoods are common, coyotes avoid people and domestic animals, and reports of aggressive coyotes are extremely rare and limited to parents defending their kits in dens in the Mississippi gorge.

**Best practices do not include trapping or removing beavers and coyotes.**

Removal of beavers or coyotes is considered a last resort, after first attempting other methods. Trapping or killing these animals is ineffective because in most cases other beavers or coyotes will replace the animals removed. Various non-lethal actions can successfully prevent and mitigate beaver damage in urban areas, including protecting trees, planting alternative vegetation, and controlling water levels. To prevent coyote encounters and challenges, people can follow simple suggestions from the Minnesota Department of Natural Resources.

**Other urban areas have worked to restore and support beaver populations.**

Recognizing that beavers improve the health of ecosystems, people have successfully restored habitat and reintroduced beavers in many U.S. locations, including Martinez, California (in the Oakland/Berkeley metropolitan area) and Beaverton, Oregon (near Portland). Numerous targeted intentional beaver restoration projects have improved aquifers and streams and improved habitat, even bringing back ecosystems that humans had ruined.

**Wildlife conflicts provide opportunities for education and habitat restoration.**

Global pandemics are an expression of our fragmented ecology. During this COVID-19 outbreak, and given the certainty of future pandemics, the Park Board’s role in re-establishing a healthy and connected ecosystem is more important than ever. MPRB is responsible for the stewardship of our parklands, including natural spaces. Enhancing and expanding natural areas, protecting wildlife habitat, and ensuring a suitable and pleasant environment for recreational activities is vital to the ecological health and sustainability of our Park system.
Co-Existing with Beavers in the Urban Environment

Every ecosystem has certain species that are essential to the survival of other wildlife and the ecosystem itself. Beavers are such a keystone species, which means their presence is so integral to the ecosystem that their removal diminishes ecological function and leads to a loss of habitat for other species that depend on that habitat.

Beavers Benefit Humans and our Environment

Beavers can serve as “ecological indicators” whose presence reflects the health of an ecosystem. Seeing beavers in Minneapolis is a good sign that brings the promise of enhanced ecological health in our city. By creating dynamic, highly functional habitats, beavers help our environment in several ways, including building climate resilience, protecting water quality, and improving habitat.

Building Climate Resilience

Climate change is causing greater variability in weather extremes, diminished snowpack, more extreme fire seasons, and warmer and less abundant water with resulting drought. Beavers and their dams positively increase climate resilience by improving the land’s ecological resilience to unanticipated changes.

The Fourth Annual Climate Assessment report, published in 2018 by the U.S. Global Change Research Program, highlighted the importance of beavers in increasing climate resilience: “A significant amount of adaptation has occurred on public lands, including actions that reduce climate-related risks to water resources such as … supporting viable American beaver populations to facilitate retention of cool water in forested aquatic systems.”

The report also noted that studies have found significant benefits from climate change adaptation actions involving natural systems, such as the restoration of beavers to certain areas, where beaver dams improve fish habitat and improve water supply during summer months.

Protecting Water Quality

Beaver dams contribute to higher water tables, less erosion, and cleaner water. Beaver dams trap sediment and slow down water, helping to filter out sediment and store cool water to be released downstream. This cleaner and cooler water is essential for fish and other aquatic species to thrive.

Improving Habitat

By slowing water and trapping sediment, beaver dams also restore habitat by improving wetland areas and keeping willow stands healthy. The resulting habitat supports insects, fish, waterfowl and songbirds. Almost half of all endangered and threatened species in North America rely on wetlands to survive, and an estimated 85 percent of all North American wild animal species depend on wetlands.

A long-term (12-year) study in Scotland monitored a beaver restoration project, focusing on changes in vegetation. Researchers found that the cumulative number of species recorded increased on average by 148%.
Best Management Practices

In general, beavers can potentially cause damage in urban areas by gnawing on trees or flooding trees or property through dam building. In Minneapolis, a few examples of tree damage have been documented, while no problems with flooding have been documented.

Numerous preventative and non-lethal methods are used successfully to manage beaver habitat in urban environments and to prevent and mitigate potential damage caused by beavers, including protecting trees, planting alternative vegetation, and controlling water levels.

Protecting Trees
To discourage beavers from damaging trees, wrap the trunks in 2” x 4” 14 gauge galvanized welded wire fencing. The fencing should stand 4 feet high and extend at least 1 foot from the tree trunk on all sides to allow for growth. The bottom of the fencing must lie flush with the ground. To enclose larger areas, standard fencing of any kind can be used.

Another method to protect trees is painting their base with an abrasive mixture of coarse sand (30–70 ml) and exterior latex paint (20 ounces of sand to one gallon of paint).

Planting Alternative Vegetation
Beavers prefer trees such as aspen, willow and cottonwood, along with cattails, water lilies and sedges. Strategic planting of willows mixed with other preferred species can provide a continuous source of plants preferred by beavers so they don’t use or damage other species. By allowing the vegetation to be cut by beavers and then regrow, the root system below ground will develop extensively, stabilizing the soil and the shore, which prevents erosion.

Another approach is to limit the types of trees and vegetation that beavers find most desirable and plant less desirable species instead, such as native evergreens like common juniper that beaver avoid. Or plant other shrubs that regrow readily after some beaver damage, such as red osier dogwood, or pussy or prairie willow.

Controlling Water Levels
Beavers create dams to raise water levels so they can build their lodges in the water with an underwater entrance, where they are protected from predators. This entrance leads to dry chambers where beavers sleep, give birth, and store food for future consumption. They may also create burrows in riverbanks. If necessary, water levels in the beaver pond may be controlled by special flow devices that can prevent flooding due to beavers making dams or blocking culverts. These devices include pond leveling devices such as the Clemson Beaver Pond Leveler, Flexible Pond Leveler and Castor Master and culvert protecting devices such as the Beaver Deceiver, the Beaver Baffler and the Beaver Cone.
Outdated Management Practices Not Recommended

Some control methods can harm people, pets, non-target wildlife and the environment.

**Lethal Trapping and Removal/Shooting**

Lethal trapping and removal is inhumane and doesn’t discourage other beavers from moving into the vacated habitat. Additionally, many of the traps that are most commonly used to trap and kill beavers have the potential to kill inhumanely, and are not selective, often killing or injuring other animals in the process. Conibear traps, commonly set for beavers, often trap dogs, raccoons, turtles and even bald eagles. Children have also been injured by these traps.

Drowning the beaver in an underwater trap is inhumane because beavers can hold their breath for more than 10 minutes, forcing the animal into a slow and painful death. Snares often cause painful injuries and do not kill beavers, and can catch and injure or kill non-target species.

**Live Trapping and Relocation**

Live trapping and relocation causes severe stress to an animal and often death. Any young beavers left behind are also likely to die.

Once the habitat is vacated, new beavers may move in, so the original problem remains unresolved. Finally, if other beavers are already living in the release location, conflict will arise with the relocated beaver.

**Electric Fencing**

Beavers can become caught in electric fencing and receive repeated shocks that may be lethal. Other risks include the risk of fire when vegetation is nearby and the risk of injury to other wild animals, pets, or humans who come in contact with the fence.

**Removing Dams**

Breaching and removing a beaver dam is only a temporary solution to alleviate flooding because the beaver, or others that move into the area, will quickly rebuild the dam.
Successful Beaver Reintroduction and Restoration Projects

Beavers have been successfully reintroduced and their habitat restored in many locations, particularly in the Western United States. In areas where drought is an increasing problem, targeted intentional beaver restoration projects, such as those listed here, have helped to restore aquifers and stream ecosystems and improve habitat.

- Absaroka-Beartooth Wilderness, Montana-Wyoming border
- Urban Beaver, Martinez, California (cohabitating with beaver in an urban setting)
- Fanno Creek at Greenway Park, Beaverton, Oregon (managing urban beaver)
- Miami Wetlands Restoration Project, Oregon (helping an existing beaver population)
- Cucumber Gulch Preserve, Colorado (encouraging beaver recolonization)
- Myers Creek, Washington (habitat restoration project)
- Eastern New Mexico, private ranch (beaver reintroduction)

An Urban Beaver Success Story

In Martinez, California, situated on the Alhambra Creek in Northern California, flooding concerns arose when a pair of beavers built a dam in the creek. When the city planned to exterminate or relocate the beavers, citizens demanded that the city find a way to safely maintain the beavers in place. In this case, a Castor Master flow device was inserted in the dam and trees were wire wrapped and sand-painted. The situation was successfully resolved, and Martinez is recognized as one of the first cities in the nation to successfully promote urban beaver management.

As a result of the beavers’ presence:

- The creek that once went dry every summer now has year-round flow.
- Several new species of birds, fish and mammals have appeared.
- Several occasional species have become regulars, such as Western Pond Turtle, Belted Kingfisher, Green Heron, and Otter.
- Acknowledging the increased ecological awareness the issue had created in the community, the city established an annual Beaver Festival, which has become one of the largest wildlife events in the state.

Sumner Field Park: A Potential Urban Beaver Success Story in Minneapolis

The Northside community needs and deserves access to Nature and has historically been cut off from the Mississippi River and other natural spaces. Nature is one key to the well-being of a community, and the lack of natural spaces in the area is problematic.
A beaver in Sumner Field Park (and other urban settings) can be viewed as an asset and is a special opportunity for people in the community to see a beaver in real life.

Sumner Field Park has been denuded recently of any viable vegetation and food sources for wildlife, which might explain why the beaver is going after the larger trees.

Trapping or killing this beaver is not an effective or viable solution. It is likely that trapping this beaver could result in another beaver coming to the site to fill the niche abandoned by the previous beaver, a common outcome from beaver trapping and/or relocation.

Sumner Field Park appears to be almost entirely devoid of vegetation beyond turf and a few ornamental plants and trees. Summertime recreation there must be very hot and there would be no shade for visitors. The space is highly urbanized and doesn’t feel welcoming.
A workable and effective solution would address the lack of Nature at the site and provide habitat for the beaver, which would benefit both humans and wildlife. Going forward, these actions will be important:

1. Remove trash from the ponds.
2. Wrap the base of curated trees with 14 gauge galvanized wire fencing, plant more trees in the area and allow vegetation to grow up around the pond.
3. Plant fresh willow cuttings along the shoreline. Also plant wetland plants, such as sedges, rushes, and flowering wetland species along the edge of the water.
4. Implement a changed mowing regime: reduce mowing to allow habitat to re-establish itself in areas around the site. Supplement reduced mowing with native seeding.
5. Install signage about beaver habitat and the importance of keystone species in a healthy ecology.

These actions would demonstrate successful and healthy adaptation by the Park Board in response to the current coronavirus pandemic by increasing green space, connectivity and habitat. During this outbreak, and given the certainty of future pandemics, the Park Board’s role in re-establishing a healthy and connected ecosystem is more important than ever. MPRB is responsible for the stewardship of our parklands, including natural spaces. Enhancing and expanding natural areas throughout Minneapolis, protecting wildlife habitat, and ensuring a suitable and pleasant environment for recreational activities is vital to ecological health and sustainability of our Park system.

References


5. Minnesota Department of Natural Resources, Living with Wildlife, Beavers. [https://www.dnr.state.mn.us/livingwith_wildlife/beaver/index.html](https://www.dnr.state.mn.us/livingwith_wildlife/beaver/index.html)


Photo Credits

Page 4: Tree wrapped with protective wire, Minnesota Department of Natural Resources
Page 5: Snapping Turtle caught in conibear trap, Alice Willems
Page 5: Beaver caught in foot trap, Fleming Outdoors
Page 6: Releasing beaver into wild during restoration project, The Beaver Believers, Sarah Koenigsberg
Page 7: The beaver at Sumner Field Park, Matt Johnson
Page 7: The barrenness at Sumner Field Park, Matt Johnson
Co-Existing with Coyotes in the Urban Environment

As with the presence of apex predators in any ecosystem, the presence of a keystone species such as coyotes living and thriving in an urban area is a positive sign of the health and biodiversity of the environment.

Coyotes Benefit Humans and Our Environment

Coyotes are Minnesota's most abundant wild predator and play an important ecological role by helping to maintain healthy ecosystems and species diversity. As the top carnivore in some areas, coyotes help regulate the number of other animals such as geese, raccoon, fox and deer. Studies in California urban areas showed that coyotes also reduced feral cats in some habitat fragments, which resulted in an increase in nesting success for songbirds.

Dispelling Common Coyote Myths

1. Urban coyotes do not feast on pets and garbage; they typically stick to a natural diet.

Many people incorrectly believe that urban coyotes primarily eat garbage and pets. Coyotes are opportunistic omnivores and will eat fruits and vegetables along with animal prey. A study by Urban Coyote Research Program in Cook County, Illinois, analyzed over 1,400 scats and found that “the most common food items were small rodents (42%), fruit (23%), deer (22%), and rabbit (18%).” Only about 2 percent of the scats had human garbage and just 1.3 percent showed evidence of cats.

2. Urban coyotes sighted during the day are not necessarily ill or aggressive.

Urban residents who see coyotes “in broad daylight” often assume that the coyote has grown overly bold or is ill in some way. Actually, it is perfectly normal for a coyote to be out during the day, their natural time for hunting. Coyotes are naturally afraid of humans and have lowered their risk of encountering humans by being mostly active at night while hunting in an urban territory. But coyotes may still need to travel between locations or find more food for their young during daylight hours.

3. Coyotes do not need large territories to thrive.

Studies have shown that coyotes much prefer forested areas and large parks where they can steer clear of humans, and they try to avoid residential areas. But when their preferred areas are not available, coyotes still figure out how to make do with small patches of huntable land woven together as their territory.
Best Management Practices

Coyotes can and do live near people without conflict, because most coyotes avoid people and domestic animals. Minnesota has never seen a documented case of a coyote attack on a human. Coyotes that people consider nuisances typically are habituated through feeding by people, either intentionally or unintentionally. Once coyotes associate human buildings or yards with food, they might increase daytime activities and be seen more easily.

According to the Urban Coyote Initiative, the most effective way to limit or reduce the number of urban coyotes is to allow existing coyotes to work out their own territories, naturally stabilizing the coyote population. There will never be more coyotes in an ecosystem than that ecosystem can support, so a city can never become overpopulated with coyotes.

Indirect Management Strategies: Education and Human Behavior Modification

According to the Urban Coyote Research Project, based in Cook County, Illinois: “Management programs for urban coyotes should begin with public education and untangling facts from myths. People should become aware of coyote signs and understand the differences between true threats and coexistence. It is important to stress that our relationship with coyotes is directly affected by our behavior — coyotes react to us, and we can foster mutual respect or a lack of respect through cues we send to coyotes.

“Some people are enamored with coyotes. They like seeing them near their yards and attempt to entice them by baiting them, or they want to try to ‘tame’ them. Intentional feeding, such as this, should be prohibited. ...People should be discouraged from inadvertent feeding where coyotes are present. This includes leaving pet food outside at night and maintaining large bird feeders that attract multiple species of wildlife.”

Guidance from the Minnesota DNR

The Minnesota Department of Natural Resources (DNR) provides these simple suggestions to prevent coyote encounters and challenges:

- Secure all garbage containers, wildlife feeders, and other food sources to prevent access.
- Confine small dogs and cats in kennels, or supervise them when outside.
- As recommended by a veterinarian, vaccinate all pets for rabies, distemper, parvo, and other diseases.
- Consider installing coyote-proof fencing.
- Harass (by chasing, shouting, etc.) any coyotes that do not immediately run from people to re-instill a fear of humans in coyotes. However, do not create conflicts that might not otherwise occur by injuring or cornering a coyote that simply wants to escape. If a coyote is not causing conflict, you should not initiate hazing efforts.

The Minnesota DNR also advises that people:

- Do not feed coyotes.
- Do not leave pet food outside.
- Do not allow cats and small dogs outside unattended.
Outdated Management Practices Not Recommended
Some control methods are ineffective and can harm people, pets, and non-target wildlife.

Lethal Trapping and Removal/Shooting
Coyote killing programs are inhumane, ineffective, and don’t reduce coyote populations. The most common devices used to capture coyotes are leg-hold traps, conibear traps and neck snares. All can cause severe injuries, pain, and suffering. Leg-hold and conibear traps are not only cruel and inhumane for coyotes, but can also kill or injure other wildlife, pets, or children.

Relocation
Relocation is rarely effective for coyotes. One study in the Midwest found that no relocated coyotes remained at their release site despite being located in favorable coyote habitat. Usually they were gone within 48 hours, and each of them traveled in the general direction of their origin. No coyotes made successful returns, and most were killed by cars or hunters as they left the release site.

References

Photo Credits
Page 10: Coyote in daylight, Karen Voght
Page 12: Coyote in leg trap, Coalition to Abolish the Fur Trade
Page 12: Dog in conibear trap, Predator Defense