



MANAGING BEAVERS AT THE URBAN AND RURAL INTERFACE IN THE CITY OF ST. ALBERT

A case study on the application of beaver beneficial management practices

The City of St. Albert includes both urban and rural areas, with beavers making their home in both landscapes, along the Sturgeon River, Carrot Creek, and sometimes even in artificial lakes and stormwater facilities. Beavers can provide many benefits to residents such as flood, drought and wildfire risk reduction, and increased recreational opportunities as their wetlands become home to many different birds, fish, amphibians and mammals. However, where beavers and humans intersect, there can be some challenges such a cutting of prized trees, flooding of trails, roads, crops and even buildings, and tunneling under public pathways and parks.

Beavers – nature’s best dam engineers

Beavers are a common feature in the Sturgeon River watershed and serve a vitally important role in the preservation of healthy aquatic ecosystems and water supplies. Beavers are considered a “keystone species” because their activities create and maintain habitats that benefit a wide range of other organisms. They create habitat for many aquatic plants, animals, birds and invertebrates through the construction of dams and the resulting pool of water behind the dam. The pooled water can assist with recharging groundwater supplies, and lower summer water temperatures for fish species. Beavers help with regeneration in tree stands by removing larger trees and allowing for light penetration to young undergrowth. When beavers are removed from the landscape, it can cause negative changes to habitats on both land and water.



PHOTO COURTESY TONY LEPRIEUR

Beavers provide ecosystem services for people

Beavers’ engineering skills don’t just benefit wildlife—they also support human communities. Research shows that beaver activity delivers valuable ecosystem services, which are becoming increasingly important as we face more frequent and severe weather events under a changing climate.

By building dams, beavers slow the flow of water and boost both groundwater and surface water storage. These processes contribute to a range of benefits, including:

- Reduced drought risk
- Sustained streamflow during late summer and early fall
- Lower wildfire risk
- Reduced flood risk
- Improved water quality
- Enhanced recreation opportunities such as wildlife viewing and fishing

Beaver Biology and Behaviour

Beavers are semi-aquatic mammals, which means they are comfortable in water and on land. They have webbed feet and a large, flat tail used for swimming, balance on land, and tail slapping the water when they sense danger. Their tail contains fat that can be used as a reserve over the winter months. Beavers have large, iron-infused, front teeth that never stop growing; they must chew to keep their teeth sharp and short. Their fur is insulating and completely waterproof, and their nostrils and ears have valves that can close to prevent water coming in.

Beavers are entirely vegetarian, feeding on the leaves, bark and roots of aquatic and terrestrial plants. They form monogamous partnerships with their mates and produce a litter of 1-6 babies, known as “kits”, every year. The kits can swim as soon as they are born and reach maturity at age 2, at which point they will leave their family and lodge to find their own territory.

Why Do Beavers Build Dams?

Beavers build dams to create deep ponded water needed for safety from predators and to prevent the water from freezing around their underwater winter food caches. Beavers are attracted to the sound of running water and are compelled to build a dam to stop the flow, which is why they often build dams at outfall pipes and culverts.

Once the water is deep enough, at least 1 m, they will construct a lodge to live in. The lodge has underwater entrances to protect from predators and to allow for access to their underwater food cache when the pond freezes on the surface.



CHILDREN'S BRIDGE, ST. ALBERT

Sharing Space with Beavers

Where beavers and humans intersect, there can be some challenges such as cutting of prized trees, flooding of trails, roads, crops and even buildings, and tunneling under public pathways and parks. These challenges can lead to upset residents and costly repairs for the City.

The good news is there are many cost-effective coexistence solutions that allow us to mitigate the challenges while allowing beavers to remain on the landscape, providing ecosystem services. These tools include: exclusion fencing around large trees, exclusion fencing around culverts and outfalls, and pond levellers (drainage pipes installed through dams). As a last resort, other tools that can be considered include relocation, and lethal removal. However, since beavers serve such a beneficial role in our environment, the preference is to learn how to work with the beaver's activities.

Please admire from afar! As with any wildlife, it is recommended that the public remain a safe distance from beavers.

The City's Approach to Beavers

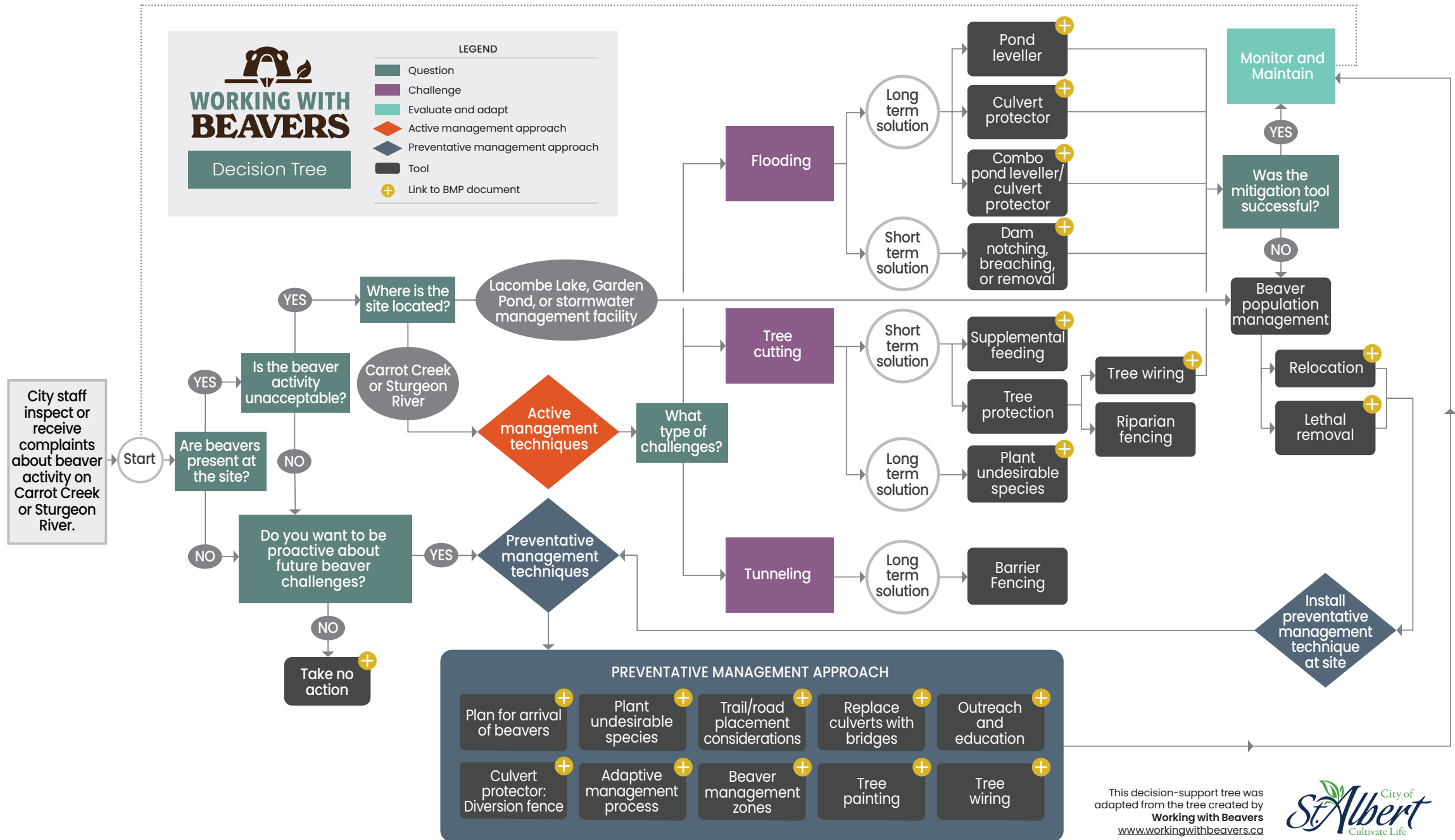
Specific protocols are required to address potential human-wildlife conflicts within the City. With the input of St. Albert residents and the City's Environmental Advisory Committee, The City developed *Beaver Management Guidelines* in 2006 as part of their *Integrated Pest Management Plan* (revised 2025). The guidelines outline the City's approach to dealing with beavers, using both preventative and active management techniques. The guidelines align with the City's *Environmental Sustainability Policy* (2019) and *Climate Adaptation Plan* (2022) and ensure that beavers are treated in a respectful and consistent manner, balancing the various needs to protect the beaver and their habitat, the overall environment, City infrastructure, native trees and shrubs, people and property.

Outlined in the City's *Beaver Management Guidelines* is a list of unacceptable beaver activities, some of these include:

- Cutting of large city-managed trees or trees with special value
- Tunnelling under walking trails or riverbanks
- Flooding of buildings or agricultural lands
- Activity in high-use public areas that may put the public or beaver at risk.

To address these challenges, The City has incorporated a decision tree (next page) and the *Alberta Beaver Beneficial Management Practices* (2024) into their *Beaver Management Guidelines*.

Beaver Management Guidelines – Decision Tree



This decision-support tree was adapted from the tree created by Working with Beavers www.workingwithbeavers.ca



Why use Beaver BMPs?

Beaver activity can pose challenges to municipal infrastructure, but removing or relocating beavers is a short-term solution which often results in new beavers moving in and repeated costs. Beaver beneficial management practices offer a proactive, evidence-based, cost-effective approach to managing these challenges while retaining the ecological benefits that beavers provide. Adopting these BMPs helps municipalities:

- Reduce recurring maintenance by minimizing culvert and outfall blockages, dam removal efforts, and emergency repairs
- Prevent flooding and infrastructure damage, including damage to roads, trails, and crops
- Advance biodiversity and climate adaptation goals by maintaining natural hydrology and riparian ecosystems

Using beaver BMPs allows municipalities to shift from reactive management to sustainable, long-term coexistence—protecting the public, infrastructure, and the environment.

“The City of St. Albert recognizes the importance of beavers on the landscape as providers of flood and drought mitigation, healthy aquatic habitat, water cleaning and cooling, and groundwater recharge. The beneficial management practices provide us with many options for keeping beavers on the landscape to provide those valuable services, while ensuring flooding issues and infrastructure damage is avoided.”

Melissa Logan, P.Biol., AP,
City of St. Albert/Mistahi Sâkahikan
Government/Indigenous Relations and Environment

For detailed information on coexistence tools and more, view the Alberta Beaver Beneficial Management Practices (2024) at www.workingwithbeavers.ca.

The Working with Beavers project aims to enhance coexistence with beavers for watershed health and the ecosystem services they provide. Contact us to see how we can help you achieve similar results in your municipality.

Learn more about Living with Beavers in St. Alberta by watching this information session hosted by the City of St. Albert.

