

# SMART BEAVER WANN

**Whether we see them as habitat builders  
or destroyers, these wetland-loving rascals  
will continue doing what they do best**

**By Karen McCol**

Photo: Manu Koggenhoff



says Tom Jung, a senior biologist with the Yukon government. “We call them ecosystem engineers because they create habitat for other species.” Like a magician, beaver can take a trickle of water running through an otherwise barren landscape and turn it into a series of stationary pools and, eventually, a wetland. “Quite easily they can make ponds in the order of four or five hectares,” says Jung. That’s two football fields.

Anyone who’s been around sitting water knows it attracts mosquitoes and myriad other buzzing things. Brian Slough, a biologist based in Whitehorse who studied the habitat requirements of beaver for his master’s thesis, says these ponds, flush with aquatic insects, attract birds and bats and create new habitat for fish and amphibians, including the western toad. “These toads also need stable ponds on streams, so the beavers provide them.”

Given the profound physical and ecological influence beavers have, it’s no surprise they are esteemed in Indigenous culture. Smart Beaver Man, or *Asiyá*, is revered and honoured in long-ago stories as a hero and

**B**eavers are a big deal. Depending on the day, the large rodent may be blamed for accelerating the impacts of climate change or praised for addressing some of its associated issues. In addition to the occasional flood or washed-out road caused by this semi-aquatic animal’s propensity for creating wetlands, there are growing concerns their landscape alterations in the Arctic may accelerate permafrost thawing. *Bad beaver!* But wait. In other regions, they can mitigate the effects of drought and are thought to bolster ecosystems against the full fury of wildfires. Go, beaver, go!

“This dichotomy between beaver as hero and beaver as pest has been a mainstay in the North American psyche for centuries,” wrote ecologist Glynnis Hood in her book *The Beaver Manifesto*.

It all comes down to beavers being damn good dam builders. These bushy-bodies are driven by an instinct to stop the sound of running water, which motivates them to pile twigs and branches in the path of slow-moving waterways, eventually plugging them and creating upstream pools. Self-serving as this effort may be, the impacts extend far and wide.

*Castor canadensis* are a keystone species, a prestigious title bestowed on few in the boreal forest’s animal kingdom. These oily furballs earned it for their huge influence on the ecosystem. “It’s hard to overemphasize how important beavers are to this landscape,”



### “IT’S NOT FOR US TO JUST GO OUT THERE AND SLAUGHTER HIM BECAUSE HE’S PLUGGING UP OUR ROADWAYS.”

Why do beavers work so hard to build dams? Slough says the flat-tailed animals have two main motivators. They want to make a pool of water deep enough to cover the entrances to their lodge, where they sleep and raise their offspring. This bars predators like wolves from intruding. (Wolves hunt beaver, while the latter forages on land; their short, webbed back feet make them less than spry.) Stable water also provides beavers easier access to their main food source—willow and aspen trees—as well as the ability to cache this forage underwater.

Like a good craftsman, beavers will often build redundancy into their systems, making a series of dams. That adds stability to the area and a backup if one breaks. Some dams are impressive. Slough notes one in Wolf Creek, not far from Whitehorse, is three metres high. These don’t get built overnight, but are a progression, likely over years, he notes. One of the world’s most famous beaver dams, found in Wood Buffalo National Park, stretches 850 m.

A dam doesn’t have to be big to have an impact; even the most urban among us have likely had a run in with beaver activity, however minor. Whitehorse residents may remember the Crestview controversy a few years back when damming caused a trail to flood. Worse yet, flooded properties or roads can be the casualties. The Alaska Highway was closed for three days in July after a dam broke near Contact Creek, in northern B.C., releasing a large amount of water that washed out the road.

On an even broader scale, these willow-munching rodents are causing graver concerns. Beavers have recently been documented making their first forays into the Arctic and scientists are looking at what this could mean for local people and the landscape. The National Oceanic and Atmospheric Administration (NOAA) used satellite imagery to confirm that beaver ponds in Alaska’s Arctic tundra doubled since 2000. (Beaver-pond mapping is also underway in the Canadian Arctic.) NOAA scientists found that as surface water increases from beaver activity, underlying permafrost is affected. Thawing permafrost can result in erosion, affect water quality, and release unwanted carbon and methane into the atmosphere.

Jung, who was among those to document the beavers’ northward pursuit, says the expansion of beavers into the Arctic is a mixed bag. “There will be winners in terms of species that do really well ... and there will be species that there will be quite a cause for concern.” Jung says fish in the Arctic, for example, evolved without the presence of beavers. “The idea of them trying to navigate a beaver dam or trying to find their way through novel will be to them—new. It’s not something they’ve known inherently for generations; it’s not built into their DNA or behaviour.” On the other hand, some fish may do better with more calm pools of water to break up the flow.

Further south, beavers’ aptitude for water conservation is more appreciated. Glynnis Hood demonstrated in her Ph.D. research the important role beavers play in mitigating the effects of a moisture deficit on the Canadian prairies; landscapes with beaver dams were less impacted during severe drought. “A world without beavers was most evidently a world without water,” she wrote in her book.

A scientific paper published in the journal *WIRES: Water* in the spring further appreciated the role of beavers, noting their floodplains help protect against erosion and vulnerability to forest fires. “They build these dams, which slow the water down. They dig canals that spread the water out, and ultimately they just give it time to sink into the earth like a big old sponge,” said Emily Fairfax, an assistant professor of environmental science and resource management at California State University Channel Islands, in an interview on CBC’s *The Current*, in September. “Whenever you have a drought or a flood or a fire, it’s a much more resilient system to that disturbance.”





**B**eavers have made a huge comeback in Northern America since they were nearly wiped out by the 300-year-long fur trade. Although their numbers in the Yukon are unknown, they are likely increasing. These adaptable animals are found almost anywhere below the treeline and are not only expanding their range to the north, but also increasing in density. Jung says part of that is due to the availability of forage. He says there's plenty of evidence showing the Yukon is getting shrubbier as the climate warms. "[A] shrubbier world means more beaver food."

A world with more of these productive rodents (and more development) means more potential for conflict. Yukon Highways, working to keep roads and infrastructure intact, tries to outsmart the beaver, but it's no easy task. "When beavers dam near our highway culverts, they increase the chance of an incident like a washout," the department wrote in an email. "To help reduce the likelihood of a washout, our highway crews install devices called 'beaver deceivers' that help to control water flow and make it more difficult for the beaver to block a culvert, while still allowing beavers to stay in the area." This particular "deceiver" is a simple metal cage installed over the culvert opening.



Another method Yukon Highways tried wasn't as effective. They installed a rake-wielding dummy at a beaver pond next to the Alaska Highway in Whitehorse, hoping it would deter the wily animal from damming. Unfortunately, it did not and crews are watching to ensure water levels don't rise to road level. When issues persist, conservation officers are sometimes called in and beavers may be hunted or trapped.

Joe-Strack says the overactivity of beavers is evidence the land misses its Indigenous caretakers. She says as original cultivators of the land, they would trap beaver and remove their dams in areas where they wanted fish to pass. In other places, beavers were left to their work. "It's important to let water flow in some areas and let water sit in others," she says. Joe-Strack says living in balance with beavers today requires careful consideration. "It's not for us to just go out there and slaughter him because he's plugging up our roadways. There just needs to be an element of respect and understanding there in the practice of the harvest and the mindfulness that beavers play a role in our environment," she says. "He's just doing what he's always intended to do, which is be busy and be industrious." **Y**



Photos: Yukon Department of Highways and Public Works

**Yukon Experienced - Precision Long Line Pilots**  
*The only company in Northwestern Canada providing a full spectrum of services from light to heavy lift Helicopters*

**HEAVY LIFT SERVICES UP TO 10,000 LBS.**

# HORIZON Helicopters Ltd.

Yukon Owned and Operated

EXPLORATION	UTILITY	NIGHT NVG
FIRE SUPPRESSION	EMS - RESCUE	EMERGENCY SERVICES RESCUE
ENVIRONMENTAL	GENERAL CHARTER	

20 ELECTRA CRESCENT, WHITEHORSE, YUKON | [INFO@HORIZONHELICOPTERS.CA](mailto:INFO@HORIZONHELICOPTERS.CA)  
**WHITEHORSE 867.633.6044 • DAWSON CITY 867.730.2817 • ATLIN 250.651.2444**

**Standard BUS**  
*safety*  
 YUKON

*Transport our Future*

## BECOME A SCHOOL BUS DRIVER

We're looking for compassionate and safety-minded people to join our team. Both regular and spare positions available in Whitehorse & Yukon communities.

**Apply Now: [standardbus.ca/careers](http://standardbus.ca/careers)**