

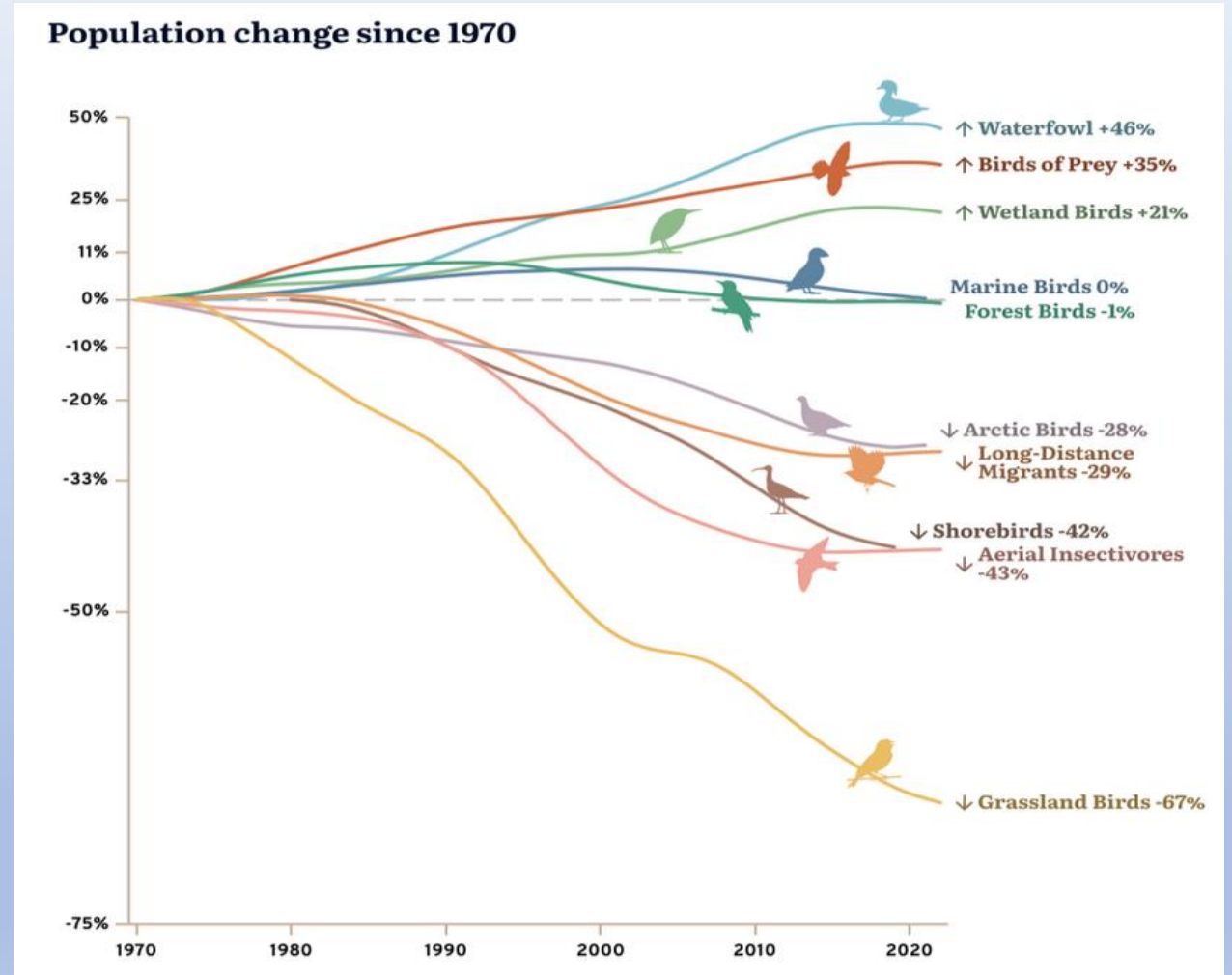
Upper Columbia Swallow Habitat Enhancement Project (2021-2026)



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Birds are in Trouble and They Matter!

- 2.9 billion birds gone in Canada and U.S. since 1970 (Rosenberg et al., 2019)
- 49% of bird species worldwide have decreasing populations (Birdlife International's State of the World's Birds report, 2022).
- Birds provide ecosystem services - pollinators, seed dispersers, pest control, scavengers, indicators of enviro health.
- Bird watching - linked with benefits to psychological well-being and a sense of connectedness to nature.
- Aerial insectivores facing steep population declines in Canada. BANS 93-98% pop decline; BARS = 76% declines.
- Alarming trends call for immediate action.



Upper Columbia Swallow Habitat Enhancement Project (2021-2026)

Major goals:

- a) Identify important breeding locations.
- b) Provide volunteer opportunities.
- c) Enhance Barn and Bank Swallow habitat.
- d) Outreach and awareness, include Indigenous knowledge on swallows.
- e) Assist with providing unprecedented information on the timing and locations of Bank Swallow movements using Motus.



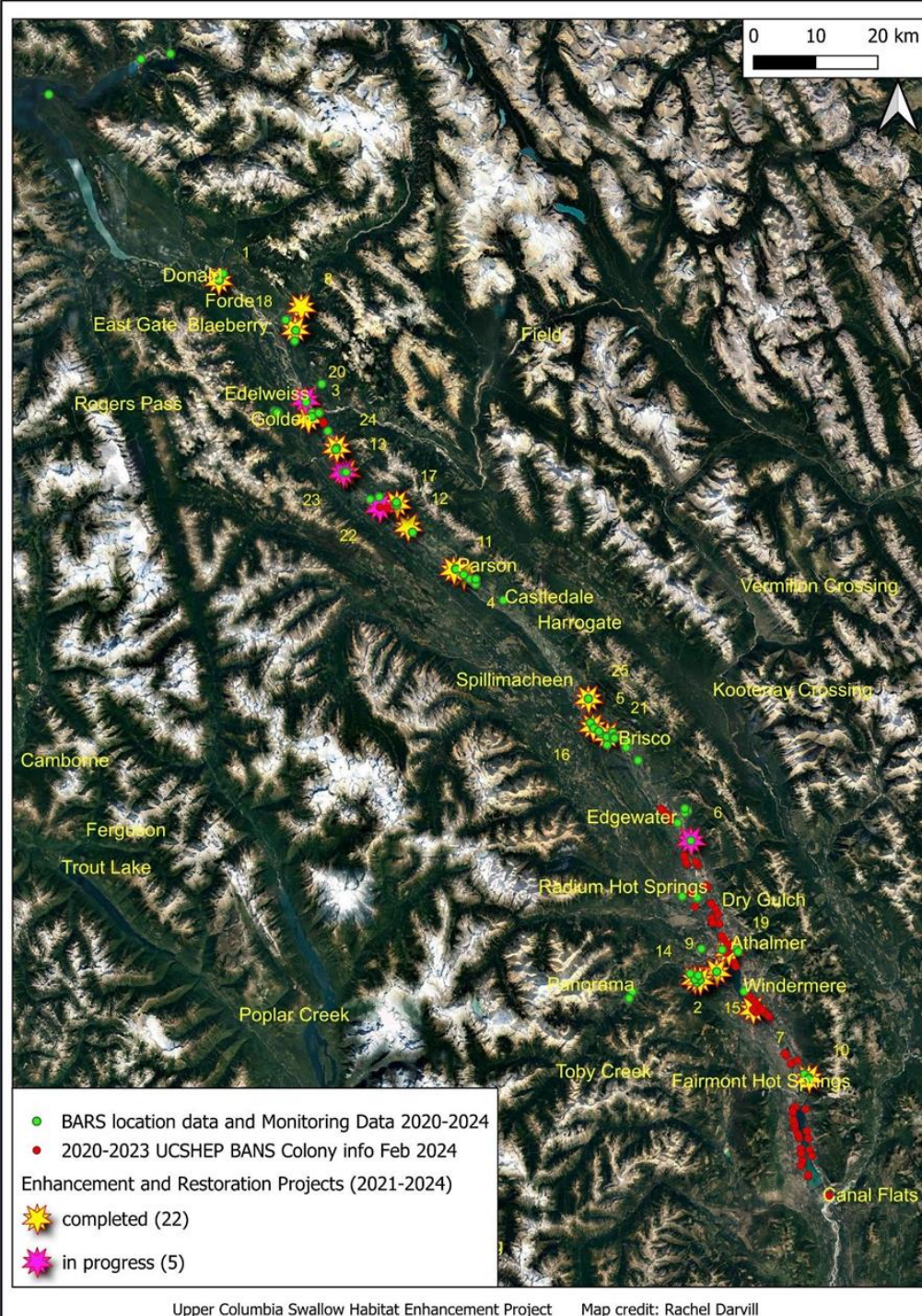
Location of Nest Sites and Enhancement Projects

Enhancements:

- 102 nest cups installed (ANS and pre-existing structures)
- Vegetation removal at 1 BANS colony
- Restoration work at Wind Lk PP with BC Parks and with TNTBC in Edgewater.
- 7 BARS artificial nest structures created
- BANS habitat creation at Birchlands Creek (20km S of Golden).
- Parson Air B&B – innovative structure providing bat and swallow habitat.
- 154 volunteers



Barn Swallows - Nests on 127 structures at 64 locations.
Bank Swallows - 128 colonies



Athalmer Bank Swallow habitat enhancement project

**Sensitive
Nesting Area**

Please do not disturb or enter
All pets should be on leash

This area had been enhanced to conserve and expand Bank Swallow breeding habitat, a threatened species.

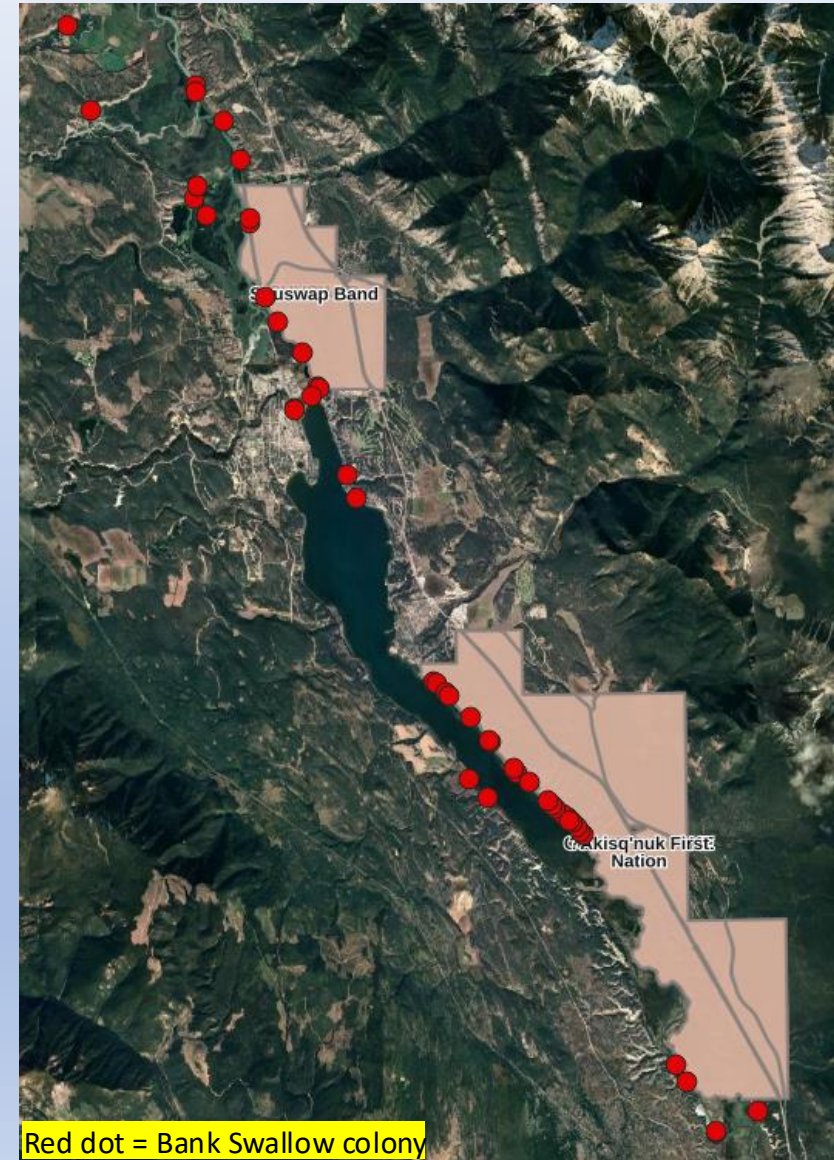


Moberly Marsh Bank Swallow habitat creation project



Combining Science and Indigenous Knowledge to Protect Habitat for Swallows

- Shuswap community member monitored Bank Swallow colonies on their land.
- Motus station and colony used for banding colony on Shuswap land.
- Led a field trip for kids in ʔakisq̓nuk summer camp.
- Working to collaborate more to protect colony habitat.
- Ktunaxa and Secwépemc elders interviewed by community members to understand their stories regarding swallows – printed on signage in place at various habitat enhancements throughout the study area.



Habitat Enhancement for At-risk Swallows

Atholmer Neighbourhood Bank Swallow Enhancement Project

Bank Swallows are facing one of the fastest population declines for a species in Canada with an estimated 93-98% population loss in Canada over a 40 year period. The steep forebore of Lake Wenatchee provides critical breeding habitat for Bank Swallows. This includes the Atholmer area where a breeding colony was discovered in 2021 on an artificial pile of soil. To conserve and expand the Bank Swallow habitat in Atholmer, the District of Invermere worked with Wildlight to preserve the existing colony and expand the amount of available breeding habitat by enhancing the dirt pile to be more suitable for breeding. These swallows build their nests in steep, holey soils - seen as holes or burrow entrances in a bank.

Please respect this sensitive nesting area, do not disturb or enter beyond the fence and please keep your dogs on leash.

Upper Columbia Swallow Habitat Enhancement Project

Populations of avian aerial insectivores (birds that catch and eat insects on the wing) have been declining for decades. Swallow species provide an immense amount of natural pest control. Through the Upper Columbia Swallow Habitat Enhancement Project (UCSHEP), over 110 Bank Swallow colonies and 75 Barn Swallow nest sites were located in the region. Similar to Bank Swallows, Barn Swallows have had an overall population decline of 76% in Canada in a 40 year period.

UCSHEP implemented conservation actions from 2021-2026 to help halt and reverse these trends. As a critical component of recovery efforts, the UCSHEP erected several large Barn Swallow nesting structures and installed wooden nest cues to enhance previously standing structures making them more attractive as breeding habitat. Additional enhancement and restoration efforts have occurred for Bank Swallows. To learn more about their large and small-scale movements, tracking Bank Swallows occurred using the Motus Wildlife Tracking Network from 2022-2023.

Territorial Acknowledgement

This enhancement area is located on the traditional and unceded territory of the Secwépemc (Shuswap Band) and Ktunaxa, the ancestral peoples who have lived here since time immemorial.

Barn and Bank Swallows

Barn and Bank Swallows have always represented the coming of insects (spring) for the Shuswap people. Because they are sooty (birds) that migrate south for the winter, their songs are a welcome of spring, an end to winter. They are known for reducing the Qweenimeel (mosquito) population along with other Pepp?ese (insects). Barn swallows are very skilled at making C70?eten (nests) using mud pellets to build up the walls. The large open area and the abundance of mosquitoes make our wetlands a perfect habitat for swallows.

Nyathanana (Barn/Climb/Bank Swallows)

The Ktunaxa people have been in this area since Natmuq̓n fulfilled his prophecy and placed the Ktunaxa people in this area to be the keepers of the land. At that time there was some disturbance caused by a huge water monster known as Yawu?nik who killed many of the animals. It was decided that Yawu?nik had to be destroyed. A war party was formed. Yawu?nik pled wu-u ʔaq̓mnik ʔakimnik (Kootenay) and Māyapaq̓ (Columbia) River System. When Yawu?nik was killed, and butchered and distributed among the animals, Yawu?nik's ribs were scattered throughout the region that now form the Hoodoos seen throughout the region.

When the prophecy was fulfilled, the spirit animals ascended above and are now the guiding spirits of the Ktunaxa. In all the excitement, Natmuq̓n rose to his feet and stood upright hitting his head on the ceiling of the sky. He knocked himself dead. His feet went northward and is today known as Ya-Hki, in the Yellowhead Pass vicinity. Natmuq̓n's head is near Yellowstone Park in the State of Montana. His body forms the Rocky Mountains. <http://www.ktunaxa.org/who-we-are/creation-story/>

The Ktunaxa knew two types of swallows that came into our area every year; the Barn Swallow and the Cliff Swallow. The Ktunaxa found that the swallow either builds nests or burrows in cliffs depending on where you are on the land. In ʔamakʔis Ktunaxa young Ktunaxa boys would know when the swallow was expected to return in ʔamakʔis Ktunaxa. The boys would tie a thin snare of thread attached to a button to a feather, wet the thread and throw the feather up into the air as a parachute that would attract the swallow. The swallow would be attracted to the feather because that is what they use to build their nests. The swallow would become snared in the wet thread and button. It was a catch and release game. It was not only fun, but a skill that demonstrated awareness of habitat and physics.

The Ktunaxa also know that if you follow a swallow, it will lead you to water and it was also said that if a swallow builds their nest on your house, the house would not burn from fire that year.

Other Wetland Wildlife:

| | |
|---------------------------|----------------|
| -Great Blue Heron ʔelip?7 | -Trout Pisal |
| -Bald Eagle Spokwevs | -ʔik ʔic si |
| -Badger ʔitilq̓ | -Deer ʔis ʔ |
| -Beaver ʔiq̓ʔuʔi | -Bear ʔiwleqs |
| -Muskrat ʔikilq̓w?7 | -Coyote ʔiklep |
| -Kingfisher ʔis ʔas | -Oxer ʔelq̓s |

Red dot = Bank Swallow colony

Recommendations for Next Steps

- Continue to develop and grow collaborations with Shuswap and ʔakisq̓nuk communities for swallow conservation.
- Effectives monitoring at all enhancement sites.

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Thank you to the generous contributions of volunteers and landowners, and the following organizations/governments:

