



Migrate, Hibernate, Spawn!



Canada geese

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IN COLLABORATION WITH
JUNIPER ENGLISH

Juniper is a science communicator and lifelong naturalist living in Victoria BC, the traditional territory of the lək'wəḡən peoples; the Songhees, Esquimalt and WSÁNEĆ whose historical relationships with the land continue to this day.

Fall's the time for wildlife on the move

The leaves are beginning to turn colour and drop. School is back in session. Nights are getting cooler. Across the province, people are harvesting their gardens, chopping wood, and digging out their winter coats. It's time to prepare for winter. BC's wildlife are busy too – it's time to migrate, hibernate, or spawn!

Time to fly!

Before their migration was better understood, some people thought that hummingbirds caught rides on the backs of geese for their trip down south. Hummingbirds just seemed too small to make it alone! The truth is, the two types of birds have very different migration styles, so it would never work! Hummingbirds fly alone. With their small, light bodies, they need to refuel often to maintain their energy. Unlike the tiny hummingbirds, big Canada geese store fat for their trip, travel in groups, and make fewer stops. They've adopted the energy-efficient "V" flight formation. It takes more energy to fly at the front of the "V" so birds take turns leading the flock.



Rufus hummingbird

The second problem with the hummingbird/goose myth is that hummingbirds are well on their way to Mexico by the time geese are just taking their “practice flights” for migration. Across most of the province, hummingbird feeders should be taken down by mid August to encourage their departure. If they stay too late in the season, hummingbirds could succumb to freezing. The exception is Southern Vancouver Island and the Lower Mainland where Anna’s hummingbirds stay year-round.

Not all birds migrate North-South. Some, like fish-eating Great Blue herons migrate to the coast or to other bodies of open water when their local lakes and wetlands begin to freeze over.

Many birds migrate at night following the stars (like sailors) along migratory pathways. Some of our birds migrate all the way down to South America. I love sitting back on mosquito-less, moonlit September and October nights with binoculars in hand to spot flocks passing in the night sky. If you’re in a quiet spot, listen. Can you hear them calling to each other as they fly overhead? You might even see bats migrating to their winter colonies further south. Their fluttering flight distinguishes them from birds.

Time for bed!

Mammals

Hibernation is a way to conserve energy over the winter when food is scarce. Mammals such as ground squirrels, marmots, bats and bears will seek shelter and sloooow down. In this state of decreased activity, body temperature drops, breathing slows, and so does heart-rate. They will live off the reserves of fat they built up over the summer and reemerge with young in the spring.



Garter snakes leaving a hibernaculum

Sleep, eat, rest, repeat!

Yellow-bellied marmots spend about eight months of every year hibernating through the winter in their underground burrows. They sleep through the chilly days and nights, living off the fat stores they built up the previous summer.

During the other four months of the year, they feed hungrily on grasses and flowers to double their body fat stores.

However, these rest-loving rodents will also frequently nap between meals. If days get too hot, they may head to their burrow for a deep summer sleep known as aestivation!



Reptiles and Amphibians

Reptiles and amphibians don’t make their own body heat. They’re known as *ectotherms* or “cold-blooded”. Their winter period of dormancy is called **brumation**. As with hibernation, brumating animals slow body activities until warm weather returns. Garter snakes spend this time in shelters called *hibernacula*, often cozied up in large numbers. Painted turtles bury themselves in the muddy bottoms of ponds. Some amphibians like salamanders burrow underground to avoid the frost. Incredibly, wood frogs can freeze solid and thaw again with no ill affects!

Insects

Some butterfly species migrate south in the fall. Other insects overwinter in a dormant state called **diapause** in which their growth and activities are temporarily suspended. Some, like Ladybird beetles spend the winter as adults. Others as larvae in the soil, or in the case of the silkworm family (Saturniidae), as pupae in silk cocoons.

Aestivation

Some animals will also take extended snoozes during the summer when the weather is too hot and dry, and food is scarce. This summer inactivity is called **aestivation**. Animals who aestivate include a number of rodents, insects, snails, salamanders, and frogs.



Time to spawn!

Fall is also the time for Pacific salmon to migrate to their spawning grounds. Salmon that have been living and maturing out at sea are drawn back up-river to the place of their birth to reproduce.

The journey is a major undertaking. In preparation for their freshwater spawning journeys, salmon undergo dramatic changes to their bodies. They stop eating. Their muscles change to make them better for jumping, rather than distance swimming. Their silver colouration darkens. Some species, such as the Sockeye, become rich shades of red and green. The males of numerous species develop large humps on their backs and curved, toothy jaws. Truly an amazing sight!

Large numbers of these fantastic fish will battle their way upstream, leaping up waterfalls, scaling fish ladders to get past dams and other human-made obstructions, avoiding hungry bears and other predators. Salmon may travel more than 3,000 km inland to reach their destination, often traveling 50 km per day!



For those salmon who reach their destination, the journey ends after they spawn. Once their fertilized eggs have been deposited in beds of gravel, the adult fish die. But nothing goes to waste – the bodies of these salmon go on to feed a huge array of wildlife. Bears, wolves, eagles, otters, and many others use this feast to fatten up for the winter ahead. Even the trees of the surrounding forests benefit as the remains decompose and nutrients are released into the soil.

Don't forget the Kokanee!

Watch for the Kokanee spawning in BC's Interior from late September to early October. Kokanee are Sockeye salmon descendants who became land-locked as the massive, glacial-produced waterways which once connected to the Pacific, drained and evaporated into separate interior lakes. No longer able to travel to the sea, these salmon mature in large lakes before returning to spawn in gravel creek beds and along lake shorelines. Like the ocean-going Sockeye, they become vibrant red in colour at this time and travel in numbers to their destination. They too share a wealth of nutrition when they complete their cycle.



Female and male Kokanee

Salmon struggles

Leaping up a waterfall and avoiding predators is difficult enough, but today's salmon need to contend with so much more. Streams are lost to development, rivers are blocked by dams, fish farms spread disease and parasites to passing wild fish. Logging-caused erosion clouds the water with silt, while fertilizer runoff from farming causes toxic algae blooms. These are just some of the reasons, coupled with climate change, that salmon populations have declined critically in recent times.

Yet, Pacific salmon are resilient by nature. They've been facing challenges for millennia. It is up to us to advocate for changes that benefit salmon and the ecosystems that depend on them and the fantastic fall phenomena of the salmon run.

Education and action resources

- **Pacific Salmon Foundation – psf.ca**
The PSF's Community Salmon Program is a grantmaking program that supports volunteer and community-driven organizations that undertake salmon conservation and restoration projects in BC.
- **The Adams River Salmon Society – salmonsociety.com**
Promoting the conservation of wild salmon and the cultural resources of Tsútswecw Provincial Park through education and interpretation, including field trips and outreach programs.
- **The Pacific Streamkeeper Federation – pskf.ca**
A non-profit society helping streamkeepers take action through support, education, and building partnerships.