

# Wildlife News & Views

Issue 4 / April 1999

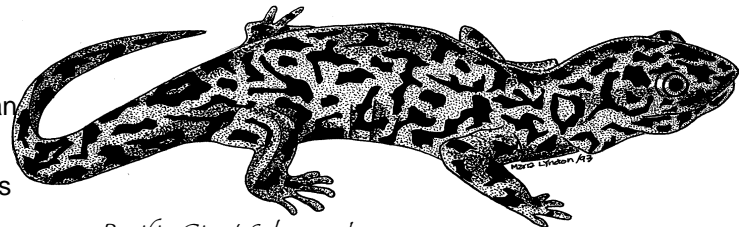
## *Culverts and Fish Passage - Restoring Access to Habitat*

by Brendan Anderson

If you've ever flown within BC on a clear day, you've probably been surprised as I have by the extent of roads criss-crossing the ground below, even in fairly remote parts of the province. Resource industries such as forestry, petroleum development or mining are often reliant on these roads to gain access to the areas important to them. Since the inception of the Forest Practices Code (FPC), regulations and practices surrounding road development have been significantly changed. But what impact do the thousands of kilometers of roads built *before* the introduction of the FPC have on fish and wildlife today?

Working under the Watershed Restoration Program (WRP) in the Peace sub-region, a project is nearing completion which is directed at answering this question, at least from a fisheries perspective. One of the aims of the WRP is to restore the habitat available to fish, where resource extraction, particularly forestry, has had a negative impact. In this project we were interested specifically in culverted road crossings. When a road crosses a stream, measures are taken to ensure the road is not washed out or eroded by the stream flow. On larger streams and rivers, bridges are most often put in place. On small to mid-size streams, culverts are often the preferred solution. Historically, these culverts were designed only to pass water (which they do very efficiently), with little thought given to the effects they have on fish passage.

Anybody whose played with a garden hose in the yard knows that water travels faster and with more energy when forced through a smaller hole. The effect of a culvert on a stream can be similar. In the past, the "efficiency" of culverts at passing water resulted in the use of culverts approximately 1/3<sup>rd</sup> the width of the stream. This "efficiency" is due to the smoothness of culverts relative to natural streambeds (which have gravel, rocks, wood, and such), creating a situation in which water travels more quickly. In a culvert which is only 1/3<sup>rd</sup> the width of



*Pacific Giant Salamander*

the stream, the water velocity in the culvert would be three times that of the stream itself. Often, this velocity is beyond what fish species, particularly juveniles, are capable of swimming against and the entire stream system upstream of the road crossing becomes inaccessible.

Other related factors can also act as barriers to fish passage. The slope of the culvert influences water velocity (with higher slopes creating higher velocity). The drop height from the culvert to the downstream pool below (referred to as "perching"), and the relative depth of that pool can create an insurmountable obstacle to fish. The length of the culvert determines the amount of time a fish will have to travel against an increased flow. Physical blockages in the culvert (from debris accumulation or beaver activity) can create barriers to fish and eventually lead to road washout.

The effects of culvert crossings do not have to be negative though. As stated, the FPC has created more rigid guidelines regarding culvert placement aimed at maintaining fish passage and minimizing the delivery of sediment/silt to the stream. Sufficiently sized culverts (where diameters more closely resembling the natural stream width), with proper placement can have virtually no effect on fish movements.

Upon identification of those culvert crossings that are limiting fish passage to stream habitat, improving or replacing the crossings and restoring access to the habitat upstream is fairly simple and cost-effective, with the benefits to a fish population being almost immediate, once access to habitat is restored. While not a large part of the WRP, the identification and remediation of these crossings is a critical aspect of the overall restoration of watersheds in B.C.

Before working on this project, I did not appreciate the potential impact of culverts on fish populations, or the potential good that could be done through their restoration. I now think a little differently and look a little more closely when looking at the labyrinths below, outside my airplane window.

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## Presentation Profile "Urban Wildlife"

by Andrea Stevens



Northwest Wildlife Preservation Society is pleased to announce the completion of our newest presentation on Urban Wildlife. Many people do not realize that urban environments comprise unique ecosystems which function like all other wild ecosystems, to clean the air, purify water, provide food, and sustain life. Urban plants and animals have adapted to an environment full of people, concrete, pollution, business and noise, where cars are a top predator.

This new presentation, full of games and activities, explores the urban habitat and the plants and animals that live in our neighbourhoods and yards. For K-3 audiences concepts such as "ecosystem" and "habitat" are defined as well as identification and behavior of the wild animals that live in cities and towns. Older students, grades 4-7, will also learn about threats to urban habitat and conservation needed to protect it. Programs for youth and adults contain steps and ideas that people can take to improve the urban environment including yards, balconies, properties, and school grounds for wildlife and for people. All programs remind audiences that the decline of species and wild spaces are a loss to everyone, and that we can make changes, even very small ones to help our planet every day. Healthy ecosystems benefit us all.

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### *Skunks - Friend and Foe*

by Leah Darling, Urban Wildlife Management & Education

Masked bandits, bushy tailed rodents, cheeky winged creatures. These are all animals we find in the city. Most people, even when confronted by one of these so-called "pests", see behind the nuisance they cause and into the wondrous diversity of our "urban environment". One animal though, not considered quite so "wondrous", is the skunk. But these unmistakable black and white striped creatures will always live around us. Our responsibility is to make sure they stay "around" and not "in" our living spaces.

I personally think nothing is more precious than a baby skunk, however, I respect their instinctive capabilities, and know to keep my distance. Skunks, which are members of the weasel family, have an amazing defence mechanism and even when young can spray their potent secretions accurately and repeatedly from up to 20 feet away. This usually only happens as a defence when a skunk feels that its or its babies lives are being threatened.

Being poor climbers and good diggers, skunks den at ground level under logs, buildings, or decks. You know a skunk is too close for comfort when one is living under *your* house, deck, or garage. However, and even though it may make you feel uncomfortable, it is generally a positive thing to have skunks wandering around your backyard. Skunks are considered a benefit to gardeners because they eat insects, slugs, and snails. They will also eat fruit, eggs, mice and other small animals. This omnivorous quality helps keep the rodent population in check.

Similar to mosquito-eating bats, it is estimated that 70% of a skunk's diet consists of insects that can be harmful to humans. But like other urban animals, skunks will take advantage of *any* available food or shelter a home owner inadvertently supplies. And since skunks den sites are usually under things, home owners should make sure there are no areas around their homes that might be taken advantage of. Do you have a lot of underbrush? Are there holes in your foundation? Are there wildlife corridors that could allow animals to forage through your backyard without stopping to make a home? Answers to questions like these will help you keep skunks at a comfortable distance.

Food for a skunk could consist of a few nibbles of cat or dog food lying around outside, bird seed that has fallen to the ground, overflowing fruit bearing trees and of course all the bugs and grubs that live in dirt. So again, home owners need to thoroughly inspect their house to see what it may be providing for these opportunistic creatures.

Most of us love living in Beautiful British Columbia because of the nature, but I assure you, having an unwanted and smelly visitor in your home could quickly spoil anyone's appreciation for the wild.

**For more information on ways of protecting yourself and your home from furry intruders, call Urban Wildlife Management & Education at 604-947-2140. We offer preventative consulting and services to help you detect potential problems at your house. If you already have an active skunk or other wildlife problem, we are happy to refer you to our new Humane Wildlife Management Program at PCO Services, 604-434-6641. Remember April - June is baby season for skunks, if you suspect little ones, call a professional.**

# Co-Existence

by Dee Walmsley, Wildlife Whispers



Humans and wild animals require habitat for breeding, feeding, raising their young and just plain living. Can the two co-exist? What happens to the woodland creatures when the bulldozers and chainsaws invade their territories?

Imagine, entering their world. What might you find? A new-born fawn lies sleeping in the tall grass. His spotted coat and silence are nature's camouflage. The doe is grazing away from her baby secure in the knowledge that he is safe from harm. He has no scent and will remain silently hidden until her return.

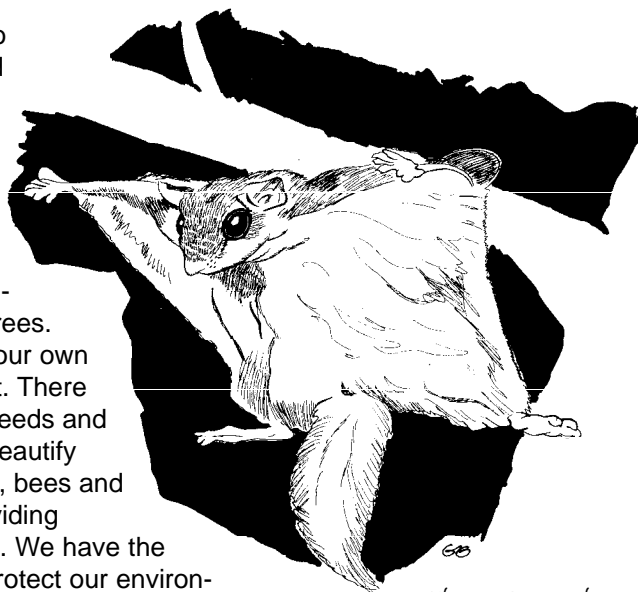
Raccoon kits snuggled together in the hollow of a tree enjoy an afternoon nap. Mother who has just finished their feeding is also sleeping. Tonight she will have to travel many miles before joining her kits at dawn back in the safety of the tree den. The night will be long. The food source is dwindling. Too much competition for too little space. She has more than one den within her territory and will share these sites come winter with other resident raccoons. They will not hibernate but go into a form of suspended animation during cold snaps, living off the fat they have gained through fall feedings.

The flying squirrels sit quietly in their tree den. Since they are nocturnal critters who hunt in the dark, most humans are unaware of their existence. The squirrels also serve as prey for owls and other creatures of the night. If you put your ear to the right tree you just might hear the churring as the tiny inhabitants stir in their sleep. The Douglas squirrels have mated and made their nest in their favourite fir trees. They share the fir cones and cedar buds, fungi, nuts, berries and lichen with their cousins the Eastern Grays and Northern Flying while chasing the saucy Stellers jays away from their food caches.

If you listen, you will find the air is filled with the sounds of robins, sparrows, finches, juncos, and wrens, just to name a few. This multitude of our feathered friends have nested and laid their eggs as part of the rites of spring. Woodpeckers, and hummingbirds noisily guard their territories. Hawks, eagles, and owls have mended their nests in preparation for their young while keeping watch on the small rodents, their favourite meal in the surrounding underbrush.

A variety of plants, grasses, trees, stumps and fallen logs, provide food and habitat for the wildlife within its borders. This is also home to coyote, weasel, mink, skunk, possum, amphibians, reptiles, birds, insects and butterflies, who co-exist in nature. Human encroachment on these forests forces urban wildlife to co-exist with another species, man. Where do all the critters go when humans decide to take over their territory? Many take up residence in human dwellings causing problems for both species. Some animals become dependent on hand-outs which upsets the balance of nature. Many are killed or starve with the loss of their habitat.

Mankind can take steps to alleviate the suffering and upset of wildlife in many ways. We can stop clearing land in the springtime and leave a few dead trees, rock piles and fallen logs. We can establish wildlife corridors and replant wildlife trees. We can leave an area in our own backyards wild, as habitat. There are a number of plants, weeds and shrubs that will not only beautify your yard but attract birds, bees and butterflies along with providing nesting and denning sites. We have the power and the ability to protect our environment and its creatures. We can co-exist. It just takes a little planning on our part.



*Flying Squirrel*

## *Volunteer Dream Team*

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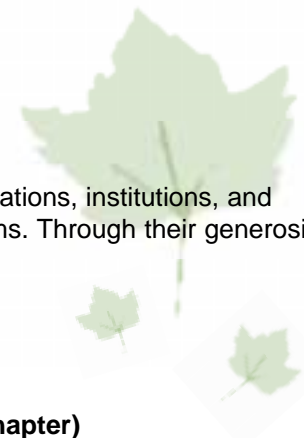
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David Patterson  
Adrian Stevens  
Miriam Stuzka  
Martin Testa

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Susan Hammond  
Connie Laroche  
Theresa Lorincz  
Linda van Barneveld

### **Urban Wildlife**

Alyssa Bell  
Glenn Brucker  
Ted & Leah Darling  
Kelly Johnson  
Barbara Meredith  
Peter Williams  
Casey Wolf



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We would like to take this opportunity to acknowledge and recognize those individuals, corporations, institutions, and government agencies that continue to demonstrate support for our Wildlife Education Programs. Through their generosity and sense of social responsibility NWPS continues to thrive and grow. Thank You.

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We would also like to thank S&K Enterprises for their efforts in our 2<sup>nd</sup> Annual *Wildlife, Habitats & You* Fundraising Campaign.

And last but not least, we would like to thank all our members for their support. Dedication and commitment throughout the ranks of our membership is a driving force for all NWPS staff. Enjoy the summer!

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## *Environmental Rapidfire* by Andrea Stevens

**April 15, 1999 was the second National Day of Action for Endangered Species in Canada.** Activists interested in the protection of Canada's biodiversity called, faxed, mailed, and emailed the Prime Minister's office. The message was clear, from both average citizens and environmental organizations alike, Canada can not enter the 21<sup>st</sup> century without some kind of legal protection for our disappearing species and spaces.

**Nuxalk youth have returned to First Nation's territory on the mid-coast of BC in an effort to stop logging.** In a traditional pit-house built by hand, two youth will continue to live on the land of their ancestors in the last unlogged watershed in Nuxalk territory. The Nuxalk have never sold, traded, or negotiated away their land. Other community members may join the pair later this season. Instead of moving people away from blockades in this area, those with a logging interest will have to move people away from their homes.

**Local citizens and environmental groups, including the Society Promoting Environmental Conservation (SPEC), continue to fight for a halt to present Skytrain Plans.** Sections of the NDP's Environmental Assessment plan were specially deleted for this project in order to fast track the building and avoid a full environmental review. At present most people involved feel that the proposed new route does not reflect the areas that truly need more skytrain access and that building it in those areas will be at the cost of transit plans in more needy areas.



Northwest Wildlife Preservation Society is a registered charity, incorporated in 1987 in British Columbia as a non-profit Society. Our MISSION is to develop and provide educational, research, and advisory services which can advance public awareness about wildlife systems in northwest North America. In doing so NWPS works to ensure that healthy wildlife systems throughout northwest North America are preserved for their own intrinsic worth and for the appreciation of all.

"*News and Views*" is intended to be a forum for discussion. Opinions of authors of articles contained herein are not necessarily the position of NWPS.

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707 - 1112 West Pender Street, Vancouver, B.C., Canada, V6E 2S1

Main Office Line: (604) 713-6686

Fundraising & Memberships: (604) 713-6687

Fax: (604) 713-6698

EMAIL: NWPS@direct.ca WEBSITE: persweb.direct.ca/nwps

*Newsletter Designed by David Patterson*