



HABITAT ACQUISITION TRUST

# AMPHIBIANS

protection

& stewardship

Northern Pacific Treefrog (*Pseudacris regilla*) Photo by Mary Sanseverino

## Amphibians and Us

### What you need to know

**1. Like secret agents, amphibians lead double lives** - their name comes from the latin roots *amphi-* (two) and *bios* (life). This is because most undergo a two stage lifecycle, first in the water then on land. Vancouver Island hosts 6 native salamander, 4 native frog, and 2 introduced frog species (See pg 3 - Bullfrog and Bronze frog). As a result of several factors including habitat loss within BC, over 60 percent of frog species and 40 percent of salamander species are listed by federal and provincial agencies as being species of concern.

**2. Our local amphibians depend on wetlands.** All of our frogs and three of the six native salamanders travel from forest to wetland each spring (the others remain in the forest year round), often gathering in large numbers to breed. These amphibians have always traveled similar routes from forest to pond, long before our houses or roads were in place. However, urban sprawl has drained many of our local wetlands causing great distance between intact habitats. To add to this problem, our



Treefrogs can be green, brown or even mottled black.

extensive road networks separate existing habitats making the game of Frogger™ a frightening reality for our local amphibians.

**3. Unpolluted freshwater is key for our froggy friends.** Changes in a watershed, such as drained wetlands or contaminated run-off, can cause quick and drastic declines in amphibian populations. Freshwater bodies may look messy to us with fallen logs and algae but are actually healthy for amphibians. Pollutants like lawn herbicides & fertilizers, and degraded slopes, increase the sediment and nutrients in the water. This in turn causes major algae blooms. The decaying algae consumes oxygen in the water, leaving none for our cherished amphibians.

**4. Amphibians need trees too.** Amphibians forage in the forest for food, but loss of tree and shrubs cover changes to habitat on the ground (increased temperature and decreased moisture). It also makes amphibians more vulnerable to predators. Trees provide the important service of filtrating run-off. Trees keep our amphibians calm, cool, and protected!

## Stewardship Series

Issue 2: Spring 2015

### HAT's Amphibian Roadkill Project

Unfortunately, frogs, toads, salamanders, and newts are **not known for their road sense**, and far too many are smushed underneath car tires. Before HAT can protect these moist migrators, we need to know where they are crossing. **Thanks to your generous support**, our dedicated biologists have begun assessing the problem areas in the CRD and will propose potential mitigation measures to road authorities.

Improvements to road safety for amphibians are available. Small fences that re-direct amphibians to culverts, or "toad tunnels," can be installed by authorized professionals (see back cover for photo). For drivers, avoiding roads near wetlands on rainy spring nights can save many lives.

**Without a voice, these little frogs, toads, and salamanders need your help.** Your reports of amphibian road crossing areas and donations will help locate where many of these amphibians are being killed by cars, and protect them on their perilous migrations in our region.



# Handling amphibians

A **hands-off policy** will benefit both you and amphibians. Some may have toxic skin secretions that are transferred to your hands. In turn, they may absorb chemicals that are harmful to them from your hands through their permeable skin, such as suntan oil or insect repellent. Also, amphibians are often in danger of desiccation (drying out) and handling them increases this risk.

If it is in imminent danger, use fallen leaves or a small plastic bag over your hand to gently lift up the amphibian and carry it to safety; do not reuse the bag as it could spread disease. **Amphibians or eggs should not be moved** from ponds as it can disrupt their migration routes.

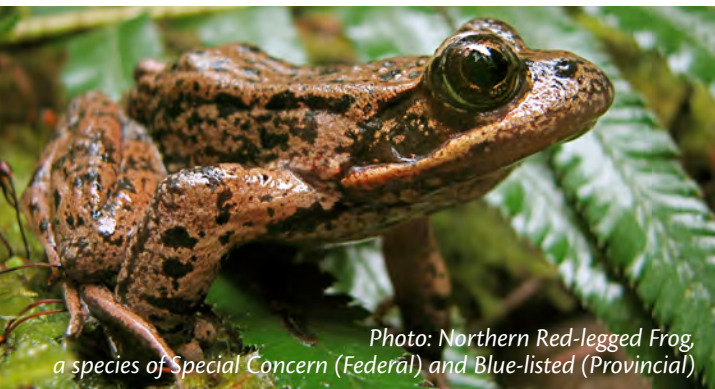


Photo: Northern Red-legged Frog, a species of Special Concern (Federal) and Blue-listed (Provincial)

# Is this okay for the frogs?

**Algae** Large algae blooms may be an indication of too much sunlight or nutrient run-off entering the pond. Some algae growth is very important for tadpoles as a food source and cover. Most amphibian tadpoles are herbivores, and become carnivorous when they approach adulthood.

**Fish** Goldfish - and most fish - will eat amphibian eggs and should not be placed in an amphibian pond.

**More Tadpoles** Introducing non-native species from pet stores or nurseries can be dangerous for our native amphibian populations as some are predatory or carry diseases into the environment. **Bullfrogs** are rapidly spreading, and predate on our local species. Taking frog eggs or tadpoles from the wild is illegal and an infraction of the BC Wildlife Act.



Photo: Northern Pacific Treefrog in a rose.

# Creating Backyard Habitat for amphibians



The Western Toad is now uncommon in our region due to pathogens, road mortality, and pesticides.

Amphibians need food, water, and shelter to live. Fortunately in our backyards, amphibian habitat can be made to order with moisture! Creating little moist places where amphibians can hide will go a long way. Using fallen logs and branches left on the ground, or old wooden planks or boards can create beneficial habitat under trees. Assessing the natural habitat found around your property will guide the kind of habitat features which would be suitable to create naturalized corridors through your backyard.



# Constructing a Pond

Constructing a pond is a major undertaking. Check your municipal by-laws for restrictions on this type of feature. Advice from a pond specialist is ideal. The goal of your pond (for fish, fowl, or frogs) will determine the amount of sunlight, vegetation, and water levels needed. Seasonal ponds that dry in the summer months will prevent resident bullfrogs from getting established. Here are some steps to ensure appropriate pond habitat for our local amphibians.

- Choose a site carefully, ideally within migration distance of existing breeding sites and without disturbing other natural habitats.
- Excavate or dig a depression (30 cm is plenty deep) with gently sloping edges and line it with cement or a heavy EPDM (plastic) pond liner.
- Place 10 cm of soil in the bottom, covering with sand or tiny pebbles.
- **Plant with suitable native moist-loving plants or wetland species.** These may be planted in pots and set into the soil at the bottom for ease of movement and maintenance later.
- Add a few interesting larger rocks and a small log at the bottom.
- **VERY IMPORTANT:** Plant grasses or ferns and sheltering plants around the edges to provide hiding places for amphibians and to prevent bullfrogs and other predators from invading your pond.
- Patience. Amphibians are extremely mobile and adventurous. If you build it, they will discover it naturally and eventually.
- If herons and raccoons are about, place a chicken wire screen over the pond, especially in spring and early summer, to protect eggs and tadpoles. Staple the wire to a wooden frame to prevent entanglement and injury to predators.

Photo by Kristen Miskelly of the Haliburton Biodiversity Project wetland

**Did you know?** Allowing areas of your grass lawn to grow long into a meadow creates habitat for amphibians and their invertebrate prey.



Photo: Rough-skinned Newt (*Taricha granulosa*)

## Up close with amphibians



**Western Redback Salamander** (*Plethodon vehiculum*) are fully terrestrial but need moist shelter



**Northwestern Salamander** (*Ambystoma gracile*) has poison glands behind each eye



**Long-toed Salamander** (*Ambystoma macrodactylum*) has a yellow stripe on its back



**INVASIVE: Bullfrog** (*Lithobates catesbeianus*) threatens native frogs, breeds in permanent ponds

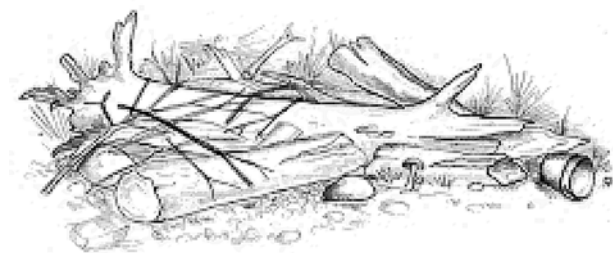
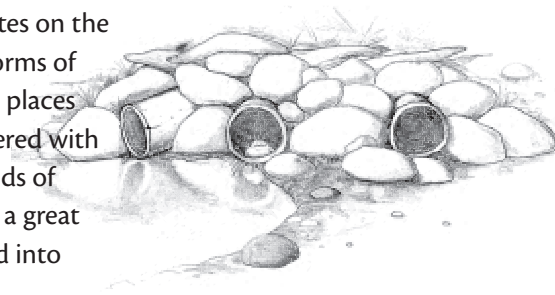


**INTRODUCED: Bronze Frog** (*Lithobates clamitans*) or Green Frog has a fold down each side

# Naturescaping for Newts

## creature cover

Litter from leaves, bark, and small branches that accumulates on the ground provides a loose, moist, organic cover for diverse forms of life including frogs and salamanders. You can create hiding places among logs of various sizes criss-crossed together and covered with leaves and small twigs. It becomes a fertile haven for all kinds of invertebrates. A broken clay garden pot overturned makes a great toad home. Even a discarded Christmas tree can be pressed into service, especially in a young, sparsely vegetated garden.



## logs & rocks for ribbits

The beauty of a rock or log, from an amphibian's point of view, is that it is rarely disturbed. A pile of rocks or logs near the edge of a pond offers amphibians insect-hunting grounds as well as safety from predators and shelter from the sun.

## plants for pond dwellers

Water depth (or soil moisture) and sunlight are important considerations when naturescaping for amphibians. For moist areas and pond edges, the following native plant species recommended by Kristen Miskelly of Saanich Native Plants would be suitable for amphibian habitat:

### shady pond

- 1 slough sedge *Carex obnupta*
- 2 skunk cabbage *Lysichiton americanus*
- Pacific water-parsley *Oenanthe sarmentosa*
- lady fern *Athyrium filix-femina*

### sunny pond

- inflated sedge *Carex exsiccata*
- tufted hairgrass *Deschampsia cespitosa*
- common spike-rush *Eleocharis palustris*
- 5 mountain sneezeweed *Helenium autumnale*
- small-flowered forget-me-not *Myosotis laxa*
- rocky Mountain pond-lily *Nuphar polysepala*
- 3 water smartweed *Persicaria amphibia*
- straight-beaked buttercup *Ranunculus orthorhynchus*
- 4 common cattail *Typha latifolia*



# AMPHIBIANS

## Connecting habitats: how you can help

Amphibians must journey between wetland and forest, but they are poorly adapted to traveling across the urban landscape. They vulnerable to cars, dessication from lack of moisture, and predators who find them in the open.

Therefore, connecting healthy, safe habitats across a landscape is critical to their survival. HAT biologists are considering the following important features for amphibians in the CRD:

- Quality of forest and wetland habitats
- Distance between breeding ponds
- Nature of intervening habitat (backyards)
- Major barriers to movement (roads)

Our roads, homes, and developments fragment remaining habitat. To mitigate this, we can encourage our friends and neighbours who live near wetlands to create corridors of amphibian friendly habitat by installing native shrub hedgerows, letting grasses grow long, and planting lush gardens full of native vegetation.

Aside from naturescaping, there are some actions everyone can take to help protect amphibians:

- Do not use chemical pesticides or fertilizers
- Ensure no leaks from oil tanks or vehicles
- Educate others about protecting amphibians
- Report amphibian crossings to HAT!

If you would like to receive information about volunteering with HAT including amphibian road surveys, email [volunteers@hat.bc.ca](mailto:volunteers@hat.bc.ca) or call 250-995-2428. Training sessions and data sheets provided.

Amphibian tunnel in the Netherlands

### Stewardship Series #2

**Support our amphibians with HAT!** Habitat Acquisition Trust is Victoria's local land trust, helping our community understand and care for wildlife and their habitat. Become an **Amphibian Ally** - **Your donation and membership with HAT will protect habitat for amphibians and other wildlife in Victoria.**

**For amphibian ID guides:** Use search engine to find Ministry of Environment BC Frogwatch website

**Photo Credits:** KO - Kristiina Ovaska, KM - Kristen Miskelly, MS - Mary Sanseverino, RL - Robin Loznak, RLe - Reigh LaBlanc from [flic.kr/p/gf59FZ](https://www.flic.kr/p/gf59FZ), tunnel photo courtesy of Jelger Herder RAVON/DigitalNature.org. Other photos from HAT.

**Information Credits:** Native Plants in the Coastal Garden by April Pettinger and Brenda Costanzo, Naturescape BC, A Guide to Amphibians by BC FrogWatch, BC Ministry of Environment, and Saltspring Island Conservancy

**Acknowledgements:** A special thanks to Kristiina Ovaska, Purnima Govindarajulu, Kristen Miskelly and Robbie Newton for their assistance.

**Illustration Credits:** All illustrations in this guide are courtesy of Naturescape BC



Northern Pacific Treefrogs

✂️  **Yes! I want to be an Amphibian Ally** - to protect nature including our local amphibians. Here is my donation for HAT

Please find enclosed my donation in the amount of \$ \_\_\_\_\_

Please direct my donation towards:

- Where Most Needed
- Amphibian Project
- Youth Education
- Other:

Name(s): \_\_\_\_\_

Address: \_\_\_\_\_

City: \_\_\_\_\_

Postal Code: \_\_\_\_\_

Phone: \_\_\_\_\_

Email: \_\_\_\_\_

#### PAY BY CREDIT CARD:

# \_\_\_\_\_

Exp Date: \_\_\_\_ / \_\_\_\_ VISA MC AMEX  
(mm / yy)

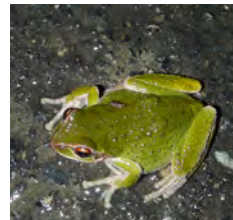
Signature \_\_\_\_\_

- Yes! I would like to added as a HAT member (free with donation of \$30 or more)
- Keep my donation anonymous

Charitable # 889626545RR0001. All donations over \$20 are tax-receiptable. Make cheques payable to Habitat Acquisition Trust or HAT.



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*"Just wanted to thank you for the amazing trip [to Galiano] yesterday!! HAT is such an incredible organization, with amazing people and I am so happy I had the chance to be a part of another event. I am looking forward to the next project!"*

- Rachel McGuinness, HAT Volunteer

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## HAT Spring Chat Newsletter 2015

Wow, what a busy spring! From amphibian road surveys to volunteer restoration events to bat house installations, here at HAT we have been going non-stop and accomplished a lot already in 2015. It was all possible thanks to your generous donations.

**A big thanks for your support of habitat conservation!**

### Wildlife Stewardship

In the first 3 months of 2015, HAT biologists Dr. Kristiina Ovaska and Christian Engelstoft (RPBio) have surveyed over a dozen amphibian road crossing locations in our region. Kneeling carefully onto the busy roads of Victoria on a wet March night, biologist Kristiina Ovaska and volunteers counted 7 different species on the road, with a staggering **594 dead and 44 live amphibians found in one night's survey**. The majority were Northern Pacific Treefrogs found along a section of West Saanich Road near Wallace Road crossing bordering a wetland.



Dr. Ovaska is concerned, **"This is just one road. Imagine the numbers of amphibians that are being killed across the region. We are alarmed about the high observed mortality rates."**

Biologists are working on the first set of mitigation suggestions for these road crossings (see Stewardship Series for more info), but more surveys are needed to protect our amphibians. Your donations and reports will go a long way to creating safe crossings for our moist migrators.

In addition to amphibians, our new Stewardship Coordinator Jill Robinson and wildlife biologist Tania Tripp brought several volunteers out to survey for the elusive **Western Screech Owl**. With only two previous confirmed records in the region in last 5 years, the crew were not hopeful they would see or hear any screech owl calls. To their surprise, they located 5 new occurrences of the owl from their calls, and even spotted a breeding pair nesting in an old fir tree! Wonderful news for this

endangered little owl. But there is more to be done over the summer and into the fall. **With your support**, we hope to continue monitoring on private land, speaking to landowner about how to protect the critical tree cavity habitat desperately needed by the owl, and installing owl boxes where nesting habitat is not present.

### Good Neighbours - Urban Forests

Just as the owls finish their nesting, we are launching the Urban Forest Good Neighbours Project. This summer we focus in the urban parts Victoria, including the City and Saanich. Stewardship Coordinator Jill is meeting with landowners to talk about naturoscaping and habitat stewardship and the importance of tree cover and how to care for existing trees on your property.

### Land Protection & Restoration

Over the last 4 months, we have hosted 5 restoration events on HAT protected land, including a special trip to Trincomali Nature Sanctuary on Galiano Island, where 26 volunteers planted 151 native trees and shrubs. Thanks to the generous donations from you as well as food donations from local businesses like Evedar's Bistro, Red Barn Market, and Moka House, we could provide these events with coffee and snacks to over 106 volunteers! We would like to host another 6 events this year, but we will need the continued support from local businesses and habitat supporters like you.

### Upcoming Events:

**May 2** – Celebrate Wildflower Day by at Havenwood Park 11-2, including walk & talk with Andy MacKinnon!

**May 3** – HAT Annual Native Plant Garden Tour, 10 gardens 10-4, learn how to transform your garden to native plants!

**May 7** – Restoration in Metchosin on HAT protected land 9:30-2, Invasive removal with coffee and snacks.

**June** – HAT Member Lunch & Social, 12-2pm, date TBD.

**For more event info, visit [hat.bc.ca](http://hat.bc.ca) or call 250-995-2428.**

**Attn Habitat Heroes!** If you would like to sponsor a restoration event, a stop on the Garden Tour, or the Urban Forest Project, contact Paige: [paige@hat.bc.ca](mailto:paige@hat.bc.ca) or 250-995-2428.