
CROAKS AND TRILLS

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From the Editor

Do you need additional data sheets?

Data sheets can be printed directly from the Alberta Conservation Association website: www.ab-conservation.com

To locate the data sheets on the ACA website, click on the following links: “*Dollars at work*” followed by “*Biodiversity and Species at Risk*” followed by “*Current Projects*” followed by “*Alberta Volunteer Amphibian Monitoring Program*”, and finally “*data sheets*”. To print the data sheets you will need to download Acrobat Reader from the Internet. Acrobat Reader is free and simple to download. Follow the steps on the following website: www.adobe.com

--- Kris Kendell

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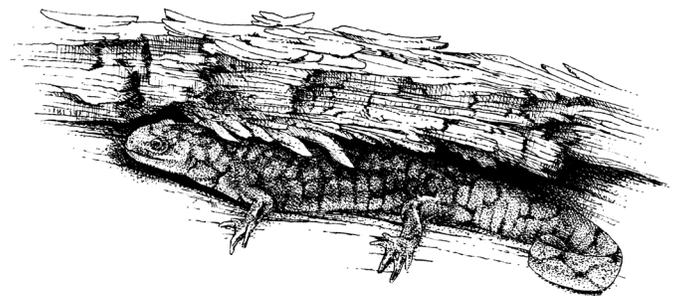
Attracting amphibians to your backyard

By Myrna Pearman

Who among us isn't delighted to be serenaded on a warm spring evening by croaking frogs or trilling toads? What child isn't excited to be able to poke around a wetland, dipping for tadpoles or chasing frogs through tall wet grass? What gardener isn't impressed when they see a slithering salamander?

Unfortunately, our cities are expanding ever outward, gobbling up the potholes and woodlands that once provided habitat for amphibians and other creatures. Replacing these rich ecosystems are asphalt, concrete and monocultures of lush but chemically dependent and ecologically barren lawns. It should come as no surprise that our encounters with amphibians are therefore becoming increasingly infrequent.

The good news is that, despite widespread loss of habitat, there are things we—whether urban or country dwellers—can do in our own yards and gardens to attract and encourage these species. Unlike birds, which can often be enticed simply by setting out a bird feeder or a birdbath, attracting amphibians requires a more wholistic approach. Amphibians will appear and stay only if we provide them with adequate habitat—space within which they can find food, water and shelter.



A piece of bark provides a cool, dark and damp shelter for a tiger salamander. Drawing from: NatureScape Alberta.

(Con't on page 2)

Attracting amphibians *(con't from page 1)*

Space—amphibians require a variety of habitat types that when linked together complete their life cycles and act as conduits to movement. They require healthy environments that provide water, adequate cover, foraging habitat and other required resources for survival. If you live in a new, denuded subdivision that is located between busy freeways, you aren't likely to attract too many amphibians, no matter what you do in your yard. However, if you live in an older city neighbourhood that is well treed or is near a ravine, woodlot or other natural area, you should have no problem enticing them to take up residence.



An ideal amphibian-friendly water garden is ecologically balanced and is surrounded by sufficient protective cover.

Photo from: NatureScape Alberta.

Because amphibians have thin, permeable skin, they are particularly susceptible to lawn and garden fertilizers and pesticides (including fungicides and herbicides). Avoiding the use of pesticides will make your yard and garden a healthier place for both you and your amphibian neighbours. Cats and dogs will also kill amphibians, so amphibians will thrive only in pet-free yards.

Food—adult amphibians eat a variety of invertebrates, including garden pests such as slugs, grasshoppers and caterpillars, so a healthy population of amphibians provides us with an important environmental service by helping to keep the populations of these pests in check.

Water—water is a crucial to attracting amphibians because all Alberta species lay their eggs in water and the tadpole/larvae stages are aquatic. In the absence of water or moisture, amphibians quickly perish due to dehydration or desiccation. The best way to provide

water in an urban yard is to install a water garden. Most nurseries now stock a wide assortment of water garden supplies and have knowledgeable staff that can assist with the logistics of installation.

The ideal amphibian-friendly water garden is one that is ecologically balanced and is surrounded by sufficient protective cover. An ecologically balanced pond is large and deep enough so that it can support an aquatic food web where the pond's water, minerals, gases, animals and plants all interact in dynamic equilibrium. It should also have a shallow area where the sun's rays can quickly warm the water and beach areas that allows amphibians to enter and exit the water freely.

Shelter—as long as adequate cover is provided, amphibians will find their own shelter. A small boggy area installed adjacent to the pond is a good way to encourage amphibians to remain in the area. Although water gardens shouldn't be installed in shady areas or under overhanging branches, at least one side of the water feature should be left unmowed or, better yet, planted to shrubs, tall grasses or ferns to provide shade and protective cover. These areas can be made even more appealing if leaf litter is left to accumulate and if pieces of bark or decaying wood are laid down to provide cool, dark and damp hiding spots.

Amphibians have remarkable strategies to cope with our Alberta winters. Most Alberta frog species tend to burrow under the leaf litter or beneath fallen logs while salamanders and toads tend to retreat into underground burrows. Providing an area where the leaf litter is thick and the ground dotted with fallen logs will likely provide adequate cover for overwintering wood frogs and boreal chorus frogs. Be sure to avoid trampling the snow in these areas, as their survival is also dependent on a thick snow pack.

In an effort to hasten the colonization of their yards by amphibians, some people take eggs or tadpoles from the wild and transplant them into their water garden. Natural colonization should always be preferential over transplants, as successful natural colonization will indicate the presence of adequate amphibian dispersal corridors and proper habitat that can support all amphibian life stages, especially over wintering.

(Con't on page 3)

Attracting amphibians *(Con't from page 2)*

Furthermore, moving the eggs or tadpoles or adults of some species is illegal under Alberta's legislation. Therefore, such practices should be undertaken judiciously.

Regardless of the species, adult amphibians should not be collected and moved, as they usually remain in familiar surroundings and are likely to become disoriented and leave a new area as quickly as possible.

For more information about improving backyard biodiversity, see NatureScape Alberta: Creating and caring for wildlife habitat at home (available at most bookstores and through Federation of Alberta Naturalists [www.fanweb.ca]). ❖

Amazing amphibian and reptile facts

- Brazil (approximately 8,511,965 square km) has one of the greatest diversity of amphibians in the world, with over 700 species. In comparison, Canada has 45 species of amphibians and is approximately 9,976,140 square km.
- The southern Appalachian Mountains of western North Carolina and eastern Tennessee are the most salamander-rich areas on Earth.
- All snakes lack eyelids. Instead they have a single transparent scale, known as the brille.
- To rid itself of excess salt ingested while feeding on marine algae in the sea, the marine iguana (*Amblyrhynchus cristatus*) of the Galapagos Islands excretes concentrated salt crystals from a nasal gland by sneezing!
- Toxins found in the skin of poison dart frogs of Central and South America are not only used to deter predators, but also prevent bacteria and fungi from colonizing on the frogs permanently moist skin.
- Typically, the reproductive rate in turtles and tortoises are low, and although a few larger species of sea turtles and freshwater turtles may lay up to 150 eggs or more, many of the smaller species have a clutch size of as few as one to six eggs. ❖

Alberta Volunteer Amphibian Monitoring Program: 2004 results

In total, 58 individuals, groups and families contributed 373 amphibian observations and ten reptile observations in 2004. Records for all ten species of amphibians found in Alberta were submitted in 2004-05; in addition, two species snakes were observed (Table 1).

Table 1: 2004 results

Species	Number of observations
Boreal Chorus Frog	134
Wood Frog	150
Columbia Spotted Frog	8
Northern Leopard Frog	22
Plains Spadefoot	3
Boreal Toad	31
Canadian Toad	10
Great Plains Toad	4
Long-toed Salamander	4
Tiger Salamander	7
Red-sided Garter Snake	7
Wandering Garter Snake	3

In total, five garter snake den site records were submitted, in association with several of the garter snake observations in 2004-05.

One volunteer submitted records accumulated over an extended period, including observations made in 1998 and 2000 to 2004. In total, 117 occurrences of three species of amphibians, including boreal chorus frogs, boreal toad and wood frogs, were submitted.

All amphibian data collected and submitted by volunteers in 2004 have been entered into the Biodiversity Species Observation Database (BSOD). BSOD is a database maintained by Alberta Fish and Wildlife Division (Sustainable Resource Development) and used to store observational data on wildlife species within Alberta. ❖

Monitoring can occur throughout the summer and early fall for various age classes of amphibians. Have fun monitoring for amphibians this summer! ❖

A few tips for better amphibian and reptile photographs

By Gordon Court

Last year, the Alberta Volunteer Amphibian Monitoring Program hosted a photography contest to generate interest in photographing Alberta amphibians and reptiles species and to find some of the best representative photographs of our native amphibians and reptiles. The response to the contest was excellent and so were many of the photographs.

The newsletter Editor has asked me to provide a few points that may help individuals to improve their photographs when they get a chance to record a particularly attractive specimen on film or disk.

Below are several suggestions to consider while photographing amphibians:

- Don't be shy about getting down to the animal's level. Bring your camera and face down to the ground and shoot photos of the animal in profile, or face-on, if you want to get a funky portrait – especially if you are using a wide-angle lens.
- If you use a 'point-and-shoot' camera, don't get too close, as your photo may be out of focus. Read the specifications page in your camera manual to find out the 'minimum focusing distance - mfd' for your lens. If the front of your lens is closer to the subject than the 'mfd' – no sharp photos are possible.
- If your subject is shy and liable to 'bug out' when you get too close, don't be afraid to use the small power-zooms available on many 'point-and-shoot' cameras to bring the subject closer. Again, watch out for the minimum focusing distance for the lens at maximum zoom.
- Watch your background. It is often difficult to concentrate on what appears behind a particularly charismatic subject, but take your time when setting up a photo (if you can) to avoid distracting or unattractive features in the background. Remember that, if you are using a flash, the added light can enhance light objects in the background to provide distracting highlights.
- Maximize your depth of field. Have you ever been frustrated by an amphibian shot that is sharp on the

animal's eyes, but everything behind them (e.g. the tail of a salamander), or the immediate background, is fuzzy and out-of-focus? This occurs because your camera lens was "wide-open" (i.e. set at the largest aperture on the F-stop scale – usually F1.8 to F 4.0 on most lenses) when the photo was taken.

To avoid this, especially if the subject is well lit, adjust your camera to Manual Mode and drop your selected shutter speed (say to 1/60th or 1/125th of a second) and 'stop-down' your lens to a smaller aperture (e.g. F 22). You will find that, in the resulting photograph, much more of your subject will be in focus. If you want to use the automatic settings on your camera: 1) Aperture Preferred Mode – compose your shot, then meter off your subject and make sure you select smaller and smaller apertures (i.e. the larger F stop numbers, like F 22) until the corresponding shutter speed reaches 1/125th to 1/60th of a second; 2). Shutter Preferred Mode - select the lowest shutter speed available that you believe is adequate to still deliver a sharp hand-held shot (1/60th of a second for some people – at least 125th for a shakey type like me) – this will minimize the aperture size and maximize your depth of field.

- Use your flash. Most cameras today come with built-in flash technology. Some also allow you to select flash synch speeds and/or adjust the lens aperture when shooting with flash. Check your camera to see if it allows you to select a 'slow flash synch' – this option is ideal in that the camera will often automatically slow the shutter speed resulting in a decrease in lens aperture, delivering greater depth-of-field in the final photo. If you have full control over aperture, synch speed, and flash, try for the same thing as described in the bullet above – a small aperture (at least F 22 or smaller) to give greater depth of field.
- Invest in a camera with a macro function or, if you have interchangeable lenses (i.e. a 35 mm SLR camera), invest in a macro lens. This will open up a whole new world of opportunities to shoot small, but very charismatic and beautiful forms of life. An off-camera flash in such situations is a real help as well.

Happy photographing! ❖

Wetlands: worth protecting

By Alberta Environment

The Importance of Wetlands

Wetlands provide countless resources and services. Alberta's wetlands provide clean water, wildlife viewing opportunities and other outdoor recreation activities. Wetlands help to recharge aquifers, reduce soil erosion, store water to control impacts of floods and droughts, and help to moderate climate change.

Similar to tropical rainforests, wetlands host a rich and diverse collection of plants and animals, and provide important nursery areas and refuge for many species of insects, fish, amphibians, reptiles, birds and mammals.



Photo courtesy: Dave Fairless

What is a Wetland?

A wetland is an area of land that is saturated with water for all, or part of, the year. The water table may be at or near the surface, or the land is simply covered by shallow water. These saturated conditions control the types of plant and animal communities that live in these low-lying areas. Some common names for wetlands include sloughs, ponds, bogs, muskeg, fens and marshes. Some of these names reflect distinct types of wetlands. All wetlands support water-loving plants that are adapted for life in saturated conditions.

Wetlands and the Water Cycle

Wetlands are described as having water for all or just part of the year. This means that your slough may hold water only in the springtime, and dry up part way through the summer. As it dries, it continues to nourish the surrounding riparian and upland with

needed moisture. As we've seen in recent years, some wetlands may be dry year-round. But when the snow melts or the rain eventually falls, the water needs to flow somewhere. Natural depressions in the landscape (wetlands) will store this excess water, conserving it for later use. Through the natural water cycle, a series of small wetlands will even contribute to local precipitation. Stored water will evaporate and fall nearby as rain.

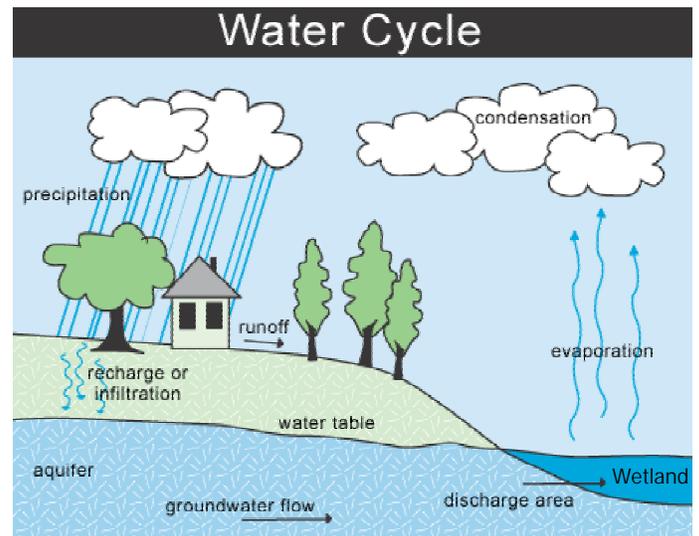


Diagram courtesy: Ground Water Foundation

Wetlands and Water Quality

In addition to flood control, wetland plants help to stabilize shorelines and reduce erosion through the binding effects of their roots. Sedges, cattails and other wetland vegetation, as well as plants in the upland, help reduce topsoil erosion and improve soil moisture by protecting the soil from wind and by trapping snowfall. By trapping loose soil before it reaches the wetland, the water in the wetland remains free of sediment.

Wetlands serve as filtering basins, trapping eroding soils before they flow into rivers and lakes. Wetland plants and processes can help to neutralize fertilizer and pesticide run-off before these chemicals can contaminate groundwater, lakes and rivers.

Protecting Wetlands

Alberta's wetlands are under considerable pressure from land-use development. Despite the wide range of values and services that wetlands provide, we still tend to take them for granted.

(Con't on page 6)

Wetlands (con't. from page 5)

Alberta has lost approximately 64% of its slough/marsh wetlands. While it is human nature to think that the destruction of “just one small wetland” is insignificant, the situation becomes critical when everyone has the same thought. If this way of thinking persists, our wetlands will be lost forever. And that's neither good for the frogs nor for us!

Both wildlife species and humans depend on wetlands. The consequences of wetland loss and alteration can be overwhelming. So, next time you are thinking about draining a wetland, think again. Think about the wildlife that depends on wetlands. Think about the benefits to society and the losses we—and the environment—will suffer if the wetland is changed or destroyed. If you still insist on making a change to your wetland, call Alberta Environment and apply for an approval. Even a small slough on your own property cannot be drained, in-filled or altered in any way, unless you have received an approval from Alberta Environment. Your local County or Municipality cannot issue such approvals.

For more information about wetlands and what you can do to help conserve wetlands, read *Focus On Wetlands*, at: <http://www3.gov.ab.ca/env/resedu/edu/focuson/wetlands.pdf> ❖

Educational resources



Teaching About Wetlands?

Grade 5 Teachers and others interested in learning and teaching about wetlands! Alberta Environment and Ducks Unlimited Canada have recently updated the Wetlands: Webbed Feet Not Required poster kit. The updated teacher's guide provides more background information and contains a number of new activities, including a role-play on developing a wetland. Look forward to the same vibrant posters, but with additional support material, including a DVD (or video) about wetlands in the Calgary area. Order your free kit today from Alberta Environment's Education and Information Centre in Edmonton at (780) 427-2700 (toll-free by first dialing 310-0000). ❖

Website of interest

The Global Amphibian Assessment (GAA) a comprehensive website that presents results of population assessments, including IUCN Red List threat category, range maps, ecology information, and other data for every amphibian species. <http://globalamphibians.org/index.html> ❖

CROAKS AND TRILLS is the official information newsletter of the Alberta Volunteer Amphibian Monitoring Program, a program delivered jointly by the Alberta Conservation Association and Alberta Sustainable Resource Development.

For more information on:

- the Alberta Volunteer Amphibian Monitoring Program
- amphibians and reptiles of Alberta
- how to submit monitoring data or other amphibian and reptile observations

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Alberta