

Watershed connections

Welcome

to the fourth issue of *Watershed Connections*, a volunteer publication for the Tod Creek watershed, distributed in February, June and October each year.

The purpose of *Watershed Connections* is to connect the community and provide information that will assist watershed residents to live and work in an ecologically sustainable manner, in harmony with the watershed environment.

Watershed Connections is produced by members of the "Friends of Tod Creek Watershed" stewardship group, with articles contributed by watershed residents.

A PDF version is available for people living outside the watershed.

We invite comments and submissions from members of the community. Please contact us at 479-1956 or email wconnections@shaw.ca

This issue looks at wetlands in the Tod Creek watershed. Canada's wetlands are fast disappearing. It is estimated that up to 70% have been destroyed already, and those in our watershed are probably no exception. This has serious implications for the water supply both here and Canadawide. Experts tell us that our water is being compromised at its natural sources in the watersheds.

Watersheds are land areas that drain water into streams, rivers and lakes. Wetlands come in many shapes and sizes; they can be as large as the Fraser River Delta or as small as a depression that holds water only after a heavy rainfall. Wetlands combine features of both land and water. They are made up of water, water-saturated soils and water-tolerant plants. When it rains, much of the water falling on the ground runs over the surface until it collects in low spots. As the land becomes saturated wetlands may form. The four main types of wetlands are ponds, marshes, swamps, and bogs.

Wetlands have many functions in a water-

shed and are often called "nurseries of life." They provide clean water by filtering pollutants and acting as huge sponges that store water for gradual release downstream and into groundwater. Wetlands provide food, habitat, and shelter for many animal species and also act as natural storage areas for carbon removed from the atmosphere, an important consideration in this time of global warming.

Mainstream society is only just beginning to realize the value of wetlands. Historically, they were often considered to be wasteland that needed to be filled or drained in order to farm or build on it. Increasingly, people are resisting these notions and seeking to protect and restore wetlands and their adjoining buffer zones.

In the Tod Creek watershed, many of us are fortunate to have these natural treasures in our backyards. It is in our best interests to do whatever we can to protect such valuable ecosystems, if for no other reason than to ensure the safety and continuation of our groundwater. — EDITOR

The Great Blue Heron hunts in water or fields. Its diet includes frogs, snakes and insects. Photos: Woody Thomson





Groundwater — A Hidden Treasure

If you live in the Prospect Lake community, when you turn on the taps in your house you may be one of the 60-70% of residences which draw their water from the ground. Your entire source of usable water is groundwater.

What is groundwater?

Simply put — all water below the ground surface is groundwater.

Think of groundwater as water that fills the spaces between rocks and soil particles underground, in much the same way as water fills a sponge. Groundwater begins as precipitation and soaks into the ground where it is stored in underground geological water systems called aquifers.

It is sometimes thought that water flows through underground rivers or that it collects in underground lakes. Groundwater is not confined to only a few channels or depressions in the same way that surface water is concentrated in streams and lakes. Rather, it exists almost everywhere underground. It is found in the spaces between particles of rock and soil and in crevices and cracks in rock. The water filling these openings is usually within 100 metres of the surface. Much of the earth's fresh water is found in these spaces. At greater depths, because of the weight of overlying rock, these openings are much smaller, and therefore hold considerably smaller quantities of water.

What's an aquifer?

Although groundwater exists everywhere under the ground, some parts of the saturated zone contain more water than others. An aquifer is an underground formation of permeable rock or loose material that can produce useful quantities of water when tapped by a well. Aquifers come in all sizes. They may be



Friends of Tod Creek, Mary Haig-Brown and Art Dimock, count aquatic invertebrates to monitor water quality.

small, only a few hectares in area, or very large, underlying thousands of square kilometres of the earth's surface. They may be only a few metres thick, or they may measure hundreds of metres from top to bottom.

Groundwater — always on the move.

Permeable material contains interconnected cracks or spaces that are both numerous enough and large enough to allow water to move freely. In some permeable materials, groundwater may move several metres in a day. In other less permeable materials, groundwater moves only a few centimetres in a century!

With so much water under the surface, how do we protect it from pollution?

Because of the ubiquitous yet mysterious nature of groundwater, it is difficult to predict the impact of human activity on the resource. In recent years, there have been several events that have heightened public awareness and concern about the importance and vulnerability of this resource. Even where we might not use it directly as a drinking water supply we

In British Columbia, over 25% of the water used is groundwater.
Groundwater is an integral part of the fresh water cycle and is relied on heavily for drinking, domestic, agricultural and industrial use. In most rural areas of Canada, groundwater is the only source of drinking water.



must still protect groundwater, since it will carry contaminants and pollutants from the land into the lakes and rivers that provide other people with a large percentage of their freshwater supply.

Unfortunately, contaminated groundwater is very difficult and expensive to clean up. The best thing to do is adopt pollution prevention and conservation practices in order to protect important groundwater supplies from becoming contaminated in the first place

One of the ways to achieve this goal is through aquifer mapping. Aquifer mapping is an important step in understanding the dynamics of the water supply. It provides information that is valuable in determining regional land use and growth planning, environmental assessment and restoration. Most importantly though, aquifer mapping provides the tools for creating public awareness, for environmental stewardship and reporting.

How can an aquifer map help the residents of this watershed?

The Friends of Tod Creek Watershed have been in discussion with the Municipality of Saanich, the CRD and the Provincial Government in an effort to create an aquifer map of the Prospect Lake community watershed. Knowing where our water comes from will give us the tools to plan and protect a resource that is essential to all of us. Knowing how our water supply flows will also dispel a myth long held in this community about the source of our water. For years it has been thought by many who live in this watershed that the excellent and abundant supply of water we use originates in the Olympic Mountains of the United States and flows underground to Vancouver Island. This assumption has been dismissed by groundwater experts in the province and has raised con-

cerns that residents who buy into this "theory" may not see the need to conserve the resource or protect the local watershed. Mapping of the aquifer will assist in identifying the true source of the water and any critical protection zones.

Safe groundwater is important for the protection of both human health and every living thing that relies on it for life. In an effort to raise awareness about this precious resource, the United Nations has declared 2003 The International Year of Freshwater. Learn how you can make a difference in your watershed. Become a water steward in your community!

— LESLIE GLOVER

LESLIE GLOVER *lives and plays in the Prospect Lake Community and enjoys all the beauty it has to offer. She is particularly fond of clean water.*

Illustration (detail):
Shayne Friesen

4 ways to protect our groundwater and wetlands

Those of us on wells are vulnerable to upstream pollution. It is our responsibility to protect the quality of water for our neighbours and ourselves. We are all affected by the activities in the entire watershed and as the saying goes, "We all live downstream."

1. Maintain wetlands and their protective buffer strips that filter out contaminants and reduce erosion.
2. Reduce the need for fertilizers and pesticides by using native plants and other vegetation resistant to pests and diseases.
3. The Waste Management Act stipulates that manure must be stored in a proper manner to prevent pollution. To avoid run off into water courses and seepage into groundwater, animal wastes like horse manure must be located away from water, under cover and on an impervious level pad. This picture of Nicola Wade's manure pile on Durrance Road is an example for owners of a few horses. A less desirable but economical alternative is to pile manure on high ground and cover it with a tarpaulin. Ultra violet resistant tarpaulins are available at marine outlets.
4. Use alternative cleaning products. Avoid toxic chemicals like disinfectant and drain cleaners. Buy products that don't contain phosphates that promote algal blooms on surface water or nitrates that can cause algal blooms in marine inlets.



Maintain wetlands and their protective buffer strips.



Store manure on an impermeable surface and under cover so that it doesn't leach into watercourses.

natural history

Another Silent Spring *Disappearing Frog Calls*

One of the characteristic sounds of a coastal spring is the din of frogs calling at night from wetlands and ponds. We have two native frogs in our watershed, and while both call, you are likely to hear only one of them. All that noise is from the tiny green or brown Pacific Tree Frog (*Hyla regilla*). Not much bigger than a walnut, its sounds are amplified by a throat pouch that stretches out similar in size and shape to a bubblegum bubble. You can easily tell the males from the females by looking at their throats. The throats of males are a discoloured brown, while the throats of females are snowy white.

Hearing our other native frog requires more effort. On a windless night in late February or March, head out to a body of fresh water near you. Stand in the water at a depth that just about breaches your gumboots, then bend over and listen. Stand there, silent and motionless, until you become part of the scenery. The rough gurgling and clicking noises you hear are our other native frog, the Red-legged Frog (*Rana aurora*). Red-legged Frogs only call underwater. But you had better go do it soon. Red-legged Frogs appear to be in trouble and are disappearing quickly.

Frog declines are happening worldwide, and there are some spectacular examples of species that have disappeared in the last decade or so. The reasons are not always clear. Although disease, chemical pollutants, and ultraviolet light are all implicated, two likely culprits are alien frogs and fish. The Bullfrog, an introduced alien species, has invaded much of the east side of Vancouver Island, including our watershed. The Green Frog, also an introduced alien species, has invaded the Cowichan Valley and parts of the Fraser Valley. Bullfrogs and Green Frogs are very large frogs that eat just about everything that



Bullfrog

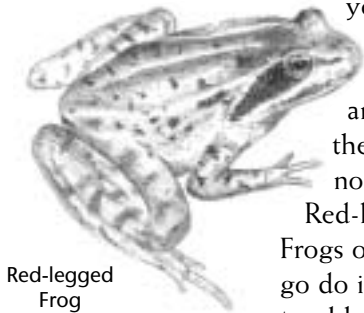
Illustrations: Natalie Borden

moves, including smaller frogs. Recent surveys of nearby Quick's Bottom indicated that Bullfrogs have nearly replaced the entire native amphibian fauna. As for their calls, both these species like warmer weather, and call and breed in summer, not spring.

Amphibians don't do very well in systems with fish in them. In a watershed like ours, historically there was a complex of wetlands and ponds, some with fish, some without. People tend to introduce fish into bodies of water where they previously haven't existed and this has resulted in the loss of amphibian habitat. Our lakes and ponds now contain a variety of non-native trout, yellow perch, bull-head catfish, carp and bass. Many backyard ponds that would be suitable for frogs, salamanders and toads have goldfish in them.

In my work with endangered species, this is a common pattern. The species in trouble is impacted by changes in its habitat, compounded by the presence of alien species that either compete with them or cause problems with disease, predation or hybridization.

— DAVID FRASER



Red-legged
Frog

You can help

DAVID FRASER lives on Goward Road and works as the Endangered Species Specialist in the Ministry of Water, Land and Air Protection and can be found, on occasion, standing knee deep in water listening for frogs.

NATALIE BORDEN is an illustrator living on Goward Road. She loves to wander outdoors with pencil or paintbrush in search of wildlife and wildflowers.

- **Do** remove non-native species from ponds.
- If you are going to build a pond for goldfish or koi on your property, consider building two: one for fish, one for amphibians.
- **Do** create or recreate wetlands that will provide good frog habitat.
- **Do** participate in Frog Watch, and in the Bullfrog Surveys (*websites follow*).
- **Don't** move alien frogs or tadpoles from one body of water to another.
- **Don't** buy Bullfrogs or Green Frogs or any frog from pet stores or nurseries. (Tell them it's illegal to sell frogs in British Columbia and inform your Conservation Office.)
- **Don't** introduce fish into bodies of water that have not had fish in them.



Pacific Tree Frog

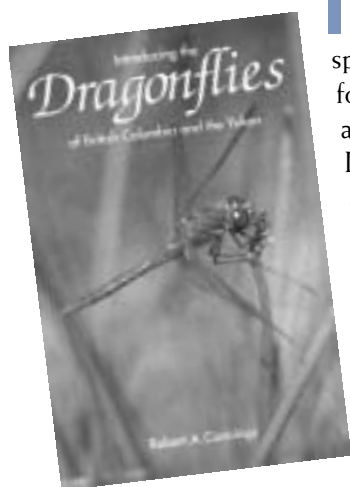
For more information

See **Purnima Price's** excellent website on her UVic bullfrog work in our area at: <http://web.uvic.ca/bullfrogs>

Frogwatch is a program where individuals can contribute data on native and non-native amphibians. Visit: <http://www.env.gov.bc.ca/wld/frogwatch/>

For an overview of the **impacts of aliens** on amphibians see: <http://www.werc.usgs.gov/hq/invasive/>

Dragonflies and Damselflies



In two hundred words, to talk about dragonflies and damselflies!? Yikes, that is not enough to let you know about the 87 species known to BC, and the 55 of them found on Vancouver Island. Or about their amazing life-cycle, how some species of the Darners will spend 4-5 years in the water as larvae before emerging out for a brief month or so as the big blue adults that you see zipping about on Prospect Lake or any of the ponds and wetlands in our area. Or that many will set up territories, just like birds do.

Perhaps one way is to let you know about one of the very many fabulous references that are out there to help you learn about these beautiful insects. In 2002 the Royal British Columbia Museum published a book by Rob Cannings, *The Dragonflies of British Columbia and the Yukon*. It looks at some of the behaviours and life histories of the dragonflies and damselflies or Odonates (meaning "toothed jaws", referring to the feeding parts of the larval stage) and tells a bit about each

species in the province. For each, there is a colour photograph, a few key characteristics to look for, and a brief description of the range and habitat. Rob also lists some other books and resources. In the tradition of museum field guides, it is a reasonable price (\$12.95) and available at the museum or at the bookstore at Goldstream Provincial Park.

Spend a sunny afternoon sitting and observing dragonflies hunt, mate, fight for territory and lay eggs. Maybe even try and gently catch a few to identify using the field guide. I bet that you, too, will become hooked on this incredible group and find yet another reason to protect our wetlands! Oh, and like the native frogs referred to in David Fraser's article, dragonflies and damselflies are also affected by alien frogs and fish.

— LEAH RAMSAY

LEAH RAMSAY is a biologist living on Goward Road. She is the program zoologist with the Conservation Data Centre dealing with species of conservation concern in British Columbia. Leah gets out dragonflying whenever she can.

Purple Martins

In the 1980s, the Purple Martin, our largest species of swallow, was in serious trouble in British Columbia. Purple Martins, which rely on woodpecker-excavated holes for nesting, were down to less than 15 pairs and the only known nesting locations were old pilings in the Esquimalt, Ladysmith and Cowichan estuary areas. The European Starling, an introduced species and also a cavity nesting bird, aggressively out-competed the Purple Martin for available nest sites. This was probably what ultimately led to Martins nesting over saltwater. Combine the now marginalized habitat with harbour clean-up activities, which removed many old pilings, and the results were a serious population decline.

It was at this time that a pair of bright-eyed university students stepped in to help with the efforts to assist Purple Martins. Eric Walters and Darren Copley augmented all recorded nest sites of Purple Martins with bird nest-boxes. This was no small feat considering these locations were all over water and on rotting pilings! With a ladder propped up in a rowboat, these two put up hundreds of nest-boxes in locations all along the east coast of Vancouver Island, north to Nanaimo.

Even after Eric moved, Darren kept on adding boxes and maintaining the colonies with the help of various volunteers, eventually recruiting my help. The Martin population is recovering (approximately 175 breeding pairs) and managing the colonies has become a huge undertaking. Although the nest-boxes were only ever intended as a bridging mechanism to rebuild the population, Purple Martins in British Columbia still rely heavily on these artificial structures. The long-term goal is to have Martins nesting in natural cavities throughout our region, over land and freshwater, just as they would have in the past.

And that is where residents of the Tod Creek watershed come in. The watershed contains numerous lakes and ponds that provide excellent foraging habitat, so why not



Photo: David Fraser



Photo: Bruce Whittington

CLAUDIA COPLEY lives with her husband Darren, on a property that is a recovering horse pasture. They are restoring it from a wasteland with zero plant-life and wildlife value to a naturesscaped haven-in-the-making using native plants, water features, and nesting sites for wildlife. Claudia and Darren are both biologists with a keen interest in natural history and a determination to be as light on the land as possible.

nesting places as well? The Habitat Acquisition Trust (HAT) was involved in a stewardship program in the area from 1998-2001. One of their projects was to organize local volunteers to build and install Purple Martin and Wood Duck nestboxes at Prospect, Maltby and Durrance Lakes, as well as Viaduct Flats and Tod Inlet. Volunteers included the 7th Tsartlip Cubs, students from Lochside, Durrance, Stelly's and Claremont Schools, and the Peninsula Pals (a group of former Girl Guides who work on community projects together). There are now 100 nest boxes for Purple Martins and 43 for Wood Ducks. These nestboxes will provide enhanced habitats for birds that have lost many nesting sites due to non-native bird species and a reduced number of wildlife trees.

Purple Martins do not return from their annual winter vacation until May. In the meantime, there are many other species that will gratefully inhabit any birdhouse you install. Other species of swallow, Chestnut-backed Chickadees, wrens, and even red squirrels may move in. Unwelcome guests include the European Starling, the English House Sparrow, the Eastern Grey Squirrel, and even two species of rats. These last five intruders must be actively discouraged because none are native to our region, and all are having an impact on our native wildlife.

One solution is to block the entrance holes of the nestboxes until the end of April.

For those familiar with Purple Martins in the east, forget much of what you know, because our Martins have slightly different preferences! Western Purple Martins do not use the huge multifamily "martin homes;" instead they prefer "single family dwellings" that are grouped to create a colony. So far they are also only nesting over saltwater, so if you are already a colony monitor, it may be many years before Purple Martins find your nestboxes. — CLAUDIA COPLEY



If you are interested in installing nestboxes, particularly if you have waterfront property, then please contact me at the HAT office (995-2428) regarding construction dimensions.

This information is also available online at <http://wlapwww.gov.bc.ca/wld/documents/pmartin.pdf>.

where we live **Trevlac Pond**

The name Trevlac is a conceit: roughly 3-lobed as a cloverleaf. *Trevé*: French for clover, *lac*: lake. Trevlac, also Calvert spelled backwards.

For millennia the waters of a small lake supported the annual cycle of plant growth and decay. Each year, the plant debris settled to the bottom, adding an infinitesimal layer to the previous accumulations. Gradually the lake grew shallower, the plant growth increased, until it was more swamp

than lake and, later still, a seasonal bog that could be drained to firm ground in the summer. Thus by about 1914, it was an ideal place to which a dairy farmer could drive his cattle for summer forage. And so for decades, the ancient lakebed and the small farm complex built on its "shore" became the centre of

The small lake was reborn and a waterfowl enthusiast's young dream realized, as mallards, Canada geese, hooded mergansers and wood duck nested on his pond.



Giff Calvert at Trevlac Pond.
Photo supplied.

The numbers of bird species seen, resident and migratory, has grown progressively from 79 in 1972 to 160 in 2000.

Giff and Sheila Calvert's three daughters inherited Giff's interest in nature and conservation. Nairn and Sheila continue to live on the adjoining property and keep an eye on Trevlac Park. They pull out any broom that tries to grow there.

Giff died in 1997. He was 85.

a farm that originally encompassed 81 hectares on Prospect Lake Road. As the land was logged and cattle scoured the summer meadow and surrounding hills for food, the rich diversity of flora and fauna of the old lakebed diminished.

About a decade later, but a continent away, a young teenager was spending many of his out-of-school hours in the countryside around Wakefield, Yorkshire, already enthralled by what was to be a lifelong passion — birds and their habitat. The marshy settling ponds of the city sewage works introduced him to the rich variety of species associated with water. One day he would have a pond of his own!

Half a lifetime later, Giff Calvert and wife Sheila moved to Victoria determined to find that pond. Four years of search, and still no pond, but in late 1971, the Railton property on Prospect Lake Road with old farmhouse and 13 hectares became available. The cattle were long gone, though horses continued to eat down the vegetation, but the meadow still flooded in the winter. A pond and swamp in waiting! Several summers and a small dam later, after careful excavation in the 6.7 metres of peat soil to create deep cool channels, an island, and three peninsulas, providing maximum shoreline for nest sites, Trevlac Pond was complete and registered in the gazetteer of Canadian waterways. The small lake was reborn and a waterfowl enthusiast's young dream realized, as mallards, Canada geese, hooded mergansers and wood duck found and nested on his pond. Mink, muskrat and otter began to use the pond. The tree frog population exploded (so, unfortunately, later, did the bullfrogs). As the years went by, we watched for beaver — and last year we saw signs of one: alders incised and additions to the dam — but it left the pond — perhaps to cross to Maltby Lake — and was hit by a speeding car, joining the long list of many other unfortunate creatures on this road.

In the 30 years of Trevlac's existence the vegetation in and around the pond has regrown, some plants establishing very quickly, others taking decades to appear. The numbers of bird species seen, resident and migratory, has grown progressively from 79 in 1972



Like father — like daughter!

Nairn Hollott standing beside an Environmental Stewardship sign. An Environmental Stewardship Agreement is a flexible voluntary agreement between people who live in the Tod Creek watershed and Habitat Acquisition Trust (HAT). Nairn made a commitment to continue her environmentally responsible care of the land and aquatic ecosystems. HAT's commitment is to provide information and support with respect to species identification and environmentally sound practices. For more information please phone HAT at 995-2428.

to 160 in 2000. Fifty-four species nest in the pond environs. The value of clean-water wetlands for birds, animals and plants, and thus to humans, is inestimable.

Today Trevlac Pond is a Saanich park. At the headwaters of one of the drainages into Prospect Lake, it contributes to the health of our watershed, protects the wildlife that uses its waters and is a rich source of study, delight and quietude for us all.

One man's dream, ours forever.

— NAIRN HOLLOTT

The Winter Stream

A long time ago a little stream used to meander through our field starting when the rains came in the fall and continuing until May or June when it disappeared for the summer. It left a barely noticeable depression through the grass, under the apple tree and into the blackberries that bordered Killarney Creek. All summer we would trek through the field and up the hill to the vegetable garden, trundling wheelbarrows, wagons and other necessities of a growing family. I would smile as I crossed the depression and think of its significance later in the year.

A road went in across from us and four lots were developed. One lot had a wetland on it which was a nuisance to the owner. He hired a contractor to fill it in. "It's just an old swamp; no good to anyone," said the contractor.

Our little stream changed. It ran furiously after a heavy rain and dried up in between storms. The wheelbarrow hung up in the depression, and I had to lay a board to get across. The depression turned into a gully, and we needed a bridge to get wheels across it.

Huge holes developed in the clay of the field, and it was no longer safe to have animals in to keep the grass down. The apple tree began to lean over as water made tunnels around its roots. After 50 years of standing, it lay over onto its side, but still bore wonderful King apples.

It was time for action. We made a series of rock dams to slow the water. They made no difference. The water continued to tunnel under them. We made a much more elaborate (and expensive) arrangement with bigger dams and rubber liners to form three ponds connected by waterfalls. We installed a pump at the bottom to recirculate water through the ponds when there is no natural flow. People marvel at the lovely water feature. I grumble about the added chores in the garden. The apple tree continues to reach skyward from its recumbent position and bear the best apples we have. Wildlife, including frogs, love the ponds, and we get pleasure from them. But I still remember our long-gone little winter stream.

— MARY HAIG-BROWN



Photo: Mary Haig-Brown

MARY HAIG-BROWN is a long time resident and a member of the Friends of Tod Creek Watershed.

Demystifying Saanich bylaws

Wetlands

What is a wetland? You may recall in my last article that almost everything that holds water in Saanich is considered a watercourse and protected under the **Watercourse Bylaw** (Bylaw No. 7501). Swamps and marshes, two of the most common types of wetlands found in Saanich, are included in the bylaw definition of watercourses. Polluting them is therefore prohibited. Take note that pollution includes deposit of fill under the bylaw.

Many of the wetlands within your watershed may be designated under the Prospect Lake/Tod Creek Development Permit Area (DPA) in which case a permit would be needed for any proposed changes near the wetland.

Fisheries, wildlife and water resources, all of which can be found in wetlands, are protected under a number of federal and provincial Acts, including the Fisheries Act, the Water Act, the Waste Management Act and the Wildlife Act. The federal Department of Fisheries and Oceans and the provincial Ministry of Water, Land and Air Protection (MWLAP) are responsible for administration of these Acts. It is best to check with these agencies before building or working in or around wetlands, or any watercourses. In their Best Management Practices, MWLAP recommends a 30-metre buffer around wetlands in the Sensitive Ecosystem Inventory (see the Saanich Environmentally Significant Areas Atlas).

If you have any questions about the bylaws that protect your watershed or stewardship opportunities, please call me at 475-5494 ext. 3556. — ADRIANE POLLARD

ADRIANE POLLARD is the Manager of Environmental Services in the Saanich Planning Department. She is an ecologist and a member of the Planning Institute of British Columbia.

Wetlands and West Nile Virus



After terrorism, war and SARS, the media is turning its attention to West Nile Virus (WNV). Although the risk of catching WNV is minimal and the possibility of becoming seriously ill from it is highly unlikely (the flu, pollution, or motor vehicle deaths are far greater risks), fear can cause us to take actions that we may later regret. Many people are concerned that wetlands are breeding grounds for WNV-carrying mosquitoes. I searched the Internet for information relating to wetlands and WNV. Here are some interesting facts culled from the U.S. Army Corps, various governments and departments of health:

- A healthy wetland is a balanced ecosystem containing predatory fish, birds, frogs and insects that help control the mosquito population. King County states, "Seventy percent of Lake Washington wetlands and 99 percent of Duwamish River wetlands have been destroyed by human activities. We will not eliminate mosquitoes by draining wetlands. We could actually increase the mosquito population if their natural predators are destroyed by draining wetlands. Many mosquito species need only a small puddle or water-filled depression to breed."
- The mosquitoes found in wetlands tend not to be the ones that carry WNV. The disease is carried by *Culex* mosquitoes. *Culex* mosquitoes can successfully breed in very small amounts of standing water such as that found in ditches, clogged gutters, and receptacles around buildings.
- Research from North Dakota found that there are considerably more mosquitoes in degraded wetlands than in healthy wetlands. If wetlands are drained, they will still be a collection area for rainfall and flooding but will not have the mosquito predators of the former wetland. By draining or degrading wetlands we are creating ideal breeding sites for *Culex* mosquitoes.
- Wetland restoration projects have even resulted in a reduction in mosquitoes.
- The question of whether to spray pesticides in order to control mosquitoes is frequently discussed. Experience has shown that a single solution like spraying does little to solve the long-term problem. In fact, it creates new problems and can have serious impacts on human health. Pesticides are often non-specific, killing mosquitoes but also killing the beneficial creatures that prey on mosquitoes. There is also the problem of mosquitoes developing a resistance over time to pesticides.

"The terrible modern temptation is to change everything but ourselves — to seek any technological fix rather than a change of heart".

MARGARET VISSER.

In conclusion, we should take precautions to avoid mosquito bites and reduce the number of mosquito breeding sites around our homes. It would be unwise to rush into actions we may later regret. Wetlands have a vital role in water quality and interfering with them could have serious consequences. — SHELAGH LEVEY

SHELAGH AND JOHN LEVEY *have a small wetland on their property and enjoy watching the frogs, birds and dragonflies associated with it. The Levey family spent five years in East Africa where West Nile Virus originated.*

community report

A free book for residents in the Development Permit Area.

Do you have property within the Prospect Lake/Tod Creek Development Permit Area? As part of a stewardship and education strategy for the watershed, Saanich will give you a free copy of *On the Living Edge*. This book is packed full of information and resources for people living near water. To get your free copy, please call Carolyn MacDonald, Environmental Education Officer, Municipality of Saanich, 475-5494 local 3477 or macdonac@gov.saanich.bc.ca

Good Neighbours Tod Creek Open House

On March 9th, Habitat Acquisition Trust and the Friends of Tod Creek Watershed sponsored a day of fun and informative presentations, displays and workshops. The opportunity to build and take home bird nestboxes was very popular, especially with the children.



I made this bird house with a hamrond's and my grama helped me at making it.
Alexis Delvecchio

Snapshot

Tod Flats A valuable wildlife habitat

It is one of life's little ironies that sometimes human activity inadvertently creates precious wildlife habitat. Tod Creek Flats is one of those places. Originally a hospital garden for the Sisters of Saint Ann, and now a late season potato field, the flats have become a seasonal lake and an ideal stop over for Trumpeter Swans.



meet your neighbours

Mary-Wynne
Ashford

One of the perks of being editor of *Watershed Connections* is having the opportunity to phone total strangers in the Tod Creek watershed and request an interview with them. So it was with Mary-Wynne Ashford, MD. I had read articles about her and was intrigued to know more. I caught Mary-Wynne as she returned from a speaking tour in Australia. As Co-President of International Physicians for the Prevention of Nuclear War, she has travelled worldwide to lecture on the issues of peace and violence from a medical point of view. She has met with world leaders, and worked with musicians and actors devoted to the crusade for nuclear disarmament. In Australia she lectured on the medical problems associated with the bombing in Iraq.

Mary-Wynne and her husband Russell Davidson, a retired medical doctor, enjoy living on Prospect Lake. They bought the property and cottage in 1982 and built a permanent residence in 1995. Mary-Wynne enjoys observing the wildlife and watching mist on the lake. She hopes the lake will eventually be restored to a suitable habitat for the occasional loons that still visit. Her vision for the future is to retain the country roads and have



more walking trails. She feels that the lake is too small and fragile to support power boats and would like to see them "grandfathered."

Mary-Wynne is currently a Palliative Care Physician with the Victoria Hospice and an Adjunct Professor at the University of Victoria in the School of Child and Youth Care. She was born in Indian Head, Saskatchewan, and was influenced by the philosophy of her bush-pilot father who stressed that "taking off into the unknown is very exciting."

Initially a high school science teacher, Mary-Wynne decided to study medicine at the age of 38 when she had three school-age children. She intends to retire from medicine in August of this year and will then write a book titled *101 Solutions to War and Violence*. This will be part of Guy Dauncey's series on 101 Solutions. The first book, *Storm Warning*, *101 Solutions to Global Warming* by Guy Dauncey, has already been published.

— SHELAGH LEVEY

Preserving our trails Observatory Hill

An often forgotten gem in the Tod Creek watershed is Little Saanich Mountain, commonly known as the Observatory Hill, home of the Dominion Astrophysical Observatory. Little Saanich Mountain is located 11 kilometres from Victoria on West Saanich Road. It is 230 metres high and offers wonderful views of Victoria and surrounding areas. I have been exploring and enjoying this mountain for some 35 years. That is why when I heard that a large acreage was to be developed close to my residence on Wray Avenue and West Saanich Road I saw the opportunity to legalize a trail we had used as kids.

The Dominion Astrophysical Observatory went into operation on May 6, 1918, and became home to the Herzberg Institute of Astrophysics. Ever since then, residents and researchers have been able to wander among the wild flowers, Garry Oaks and Douglas-firs located on Observatory Hill. Now thanks to the efforts of John Levey, Mary Haig-Brown and the Municipality of Saanich, a trail network including Observatory Hill has been identified and will hopefully be preserved for the public to enjoy. — RICK APPLEBY

RICK APPLEBY has
lived in the Tod Creek
watershed all his life.

A Hawk and Rabbit Game

Dear Watershed Kids,

If you like to play outside with your friends, here is a game you can try. It is like "hide and seek" but helps us to understand how animals behave. Hawks and cougars are predators. Predators eat meat (other animals). Animals like small birds and rabbits are prey. They get eaten by the predators. This is called the food chain and it is the way that nature works.

- 1) Choose an area with trees and shrubs.
- 2) Everyone gathers on the highest spot in the area.
- 3) One person is a hawk (predator) and everyone else is a rabbit (prey).
- 4) Blindfold the hawk who then counts to ten while the rabbits run to find a hiding place near a tree or bush. The rabbits must be able to see the hawk.
- 5) After counting to ten the hawk removes the blindfold. The hawk can turn around but must not leave the highest spot.
- 6) The hawk calls out the names of any rabbits that he or she can see and they go and sit quietly by the hawk. It will spoil the game if the captured rabbits help the hawk.
- 7) When all the rabbits are found, or the hawk gives up, the game can be played again with a different hawk.

Hint: Prey will be more successful if they remain silent and still, because predators listen for sounds, and look for movements.

What else helps the prey to remain hidden?

Please be careful when you move through the bush. It takes a long time, and a lot of effort for plants to grow, and we don't want to harm them.

Your watershed friend, *Shelagh*.

Adapted from Project Wild, Canadian Wildlife Federation.

An Invitation to Join the Friends of Tod Creek Watershed

The Friends of Tod Creek Watershed are a group of people who live in the area and come together for companionship and to engage in activities that benefit the watershed. Their mission statement is to protect and enhance the integrity and biodiversity of the watershed. Action groups are currently working on: well water safety, mapping, trail building, water quality monitoring, riparian planting and restoration. Everyone is welcome to join the group. Meetings are held on the first Wednesday of each month, September to June at Prospect Lake Community Hall, 5358 Sparton Road at 7:30 pm. For information, please phone 479-8801 or 479-5647.



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Opinions expressed in *Watershed Connections* should not be construed as being the consensus of the Friends of Tod Creek Watershed. Each article is the responsibility of the author.



Illustrations: Natalie Borden