

## British Columbia's Lampreys

To most, lampreys are ugly, slimy eel-like parasites that attack salmon and other marine fishes. Despite their bad reputation, these amazingly adaptive fish have been successful for approximately 300 million years!

B.C.'s coastal waters contain three main lamprey species: the sea-run parasitic Pacific lamprey, the sea-run parasitic river lamprey and the freshwater non-parasitic western brook lamprey. A sea-run adult can reach lengths of 90 cm or more!

A lamprey's life cycle is complex and includes several major body changes as it develops from egg to full-sized adult. Phase One of the life cycle is a toothless blind juvenile that hatches from an egg a couple of weeks after spawning. The juvenile then buries itself in the mud for up to several years, feeding on microscopic organisms. Phase Two begins when the lamprey changes into a young adult and leaves its burrow, migrating to the ocean or lake to feed for at least a year. Movement between

fresh and salt water requires osmotic changes, similar to what occurs in salmon. The adult returns to the stream during the summer (Phase Three), hiding among stones over the winter without eating until it spawns in the spring. After spawning is complete, the adult dies.

### B.C.'s Two Usual Populations

B.C. contains two very unusual populations of lamprey: the Morrison Creek lamprey (found only in Morrison Creek near Courtenay and thought to be derived from the western brook lamprey) and the Cowichan Lake lamprey (found only in Mesachie and Cowichan lakes and possibly derived from the Pacific lamprey). Unlike most other freshwater lampreys that are non-parasitic, both populations produce a parasitic form which is significantly smaller than sea-run parasitic forms. These two populations allow us to examine and challenge theories on lamprey evolution.



Morrison Creek Lamprey

Photo: Jim Palmer/Morrison Creek Streamkeepers

Both the Morrison Creek lamprey (listed as Endangered) and the Cowichan Lake lamprey (listed as Threatened) are protected under the federal *Species At Risk Act*. Under SARA it is illegal to harm these animals or damage their habitat.

For more information on B.C.'s lampreys, check out the Ministry of Environment's B.C. Species and Ecosystem Explorer website at [srmapps.gov.bc.ca/apps/eswp](http://srmapps.gov.bc.ca/apps/eswp).



## West Nile Virus Information



Once West Nile virus (WNV) enters B.C., anglers and other outdoor enthusiasts should know how to protect themselves from infection. Since WNV is a mosquito-borne virus, the usual way for people to become infected is from the bite of an infected mosquito. Preventing mosquito bites will prevent infection with WNV. By the end of 2005, the virus was detected as far west as Alberta and was present in all mainland U.S. states except Washington.

### Risk Factors

Even in areas where mosquitoes do carry the virus, very few mosquitoes—much less than 1%—are infected. If bitten by an infected mosquito and infection results, 80% of people will experience no symptoms at all, 20% will develop flu-like symptoms, and fewer than 1% will get severely ill. The severe illness may include meningitis (inflammation of the lining of the brain and spinal cord) or encephalitis (inflammation of the brain). People over 50 years of age are most at risk for severe illness.

### Mosquito Season

In North America, WNV transmission is most likely to occur from mid-May until hard frost (late September-October). The chance that you will become severely ill from any one mosquito bite is extremely small. However, the risk of infection increases with the more mosquito bites you get.

### Reducing the Risk While Angling

When angling in undeveloped areas, there are some very effective things you can do to prevent mosquito bites and reduce your risk of infection.

- **Wear protective clothing.** Avoid dark-coloured clothes, because they attract mosquitoes. Full-length pants and a long-sleeved shirt are recommended.

- **Use mosquito repellent.** A recent Health Canada review considers DEET to be both safe and highly effective when used correctly. Thoroughly apply a mosquito repellent containing DEET to your uncovered skin by rubbing it in. The percentage of DEET in repellents should not exceed 30% for adults or 10% for children. DEET should not be used on children under 6 months of age. *New products containing all-natural repellents may be effective for shorter time periods than DEET products – make sure to reapply the product according to the directions.* Some common repellents that do NOT work are bug zappers, audible mosquito repellents (send out sound waves to deter mosquitoes), and Citrosa plants. In situations where you need to use both sunscreen and mosquito repellent, apply the sunscreen first.

- **Avoid peak biting times.** Consider staying indoors at dawn, dusk, and in the early evening, when most mosquito bites occur.

### Reducing the Risk at Home

Mosquitoes generally stay within 3 km of where they hatch. Homeowners can reduce the number of nearby mosquitoes by eliminating potential mosquito breeding sites around the home. It doesn't take much time, or water, for mosquitoes to grow from eggs into adults. Therefore, anything that can hold water is a possible growth site. Try to find and eliminate breeding sites on your property by emptying saucers under flower pots,

changing water in bird baths often, unclogging rain gutters, and removing used tires and other debris where rainwater may collect.

### Treatment if Infected

Although there is no specific treatment, medication or cure for WNV infection, many of the symptoms and complications of the disease can be treated. Most people who are infected with WNV recover. There is no vaccine for WNV at this time.

### Fight the Bite in 2006

Since the first diagnosis of WNV in North America in 1999, the virus has steadily moved westward across Canada and the United States. In western North America, the virus is present in all areas except the far north, Washington state and British Columbia. For more information about WNV, visit the B.C. Centre for Disease Control's website at [www.bccdc.org](http://www.bccdc.org).

There is every reason to expect the introduction of WNV to B.C. during 2006. This year, enjoy the outdoors, but 'Fight the Bite' – cover up and wear mosquito repellent!



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