

Wake Lake

NATURE RESERVE

Many writers have called wetlands the kidneys of the earth because they filter and clean the water that flows through them. But, they are also the bladders of the earth by virtue of their water storage ability. For their role in transforming nutrients, wetlands are also the earth's digestive tract, and for their ability to filter toxins, they are the liver as well.

— Linda Nowlan and Bill Jeffries

Wake Lake is surrounded by multiple unique and fragile wetland types.

The most unique wetland found here in the Coastal Douglas-fir biogeoclimatic zone is called a Labrador tea - bog-laurel - peatmoss bog. The vegetation found at Wake Lake is a combination of different wetland and forest ecosystems. These unique environmental conditions create considerable biodiversity as plants normally growing in one of the other types of wetland are found growing together here.

What is a wetland?

There are many different definitions for wetlands including: bog, fen, swamp, marsh, or seasonally flooded areas, and the specific characteristics which define each of these ecosystems are complex. In general, wetlands are areas where there is significant water-saturation causing soils to have low oxygen conditions and plant communities to be dominated by water-loving vegetation. In other words, wetlands are lands that are wet either seasonally or year-round and can be considered to have a combination of terrestrial and aquatic characteristics.

Geological History of Wake Lake

The underlying geology surrounding Wake Lake is comprised of sedimentary rock from the Nanaimo Group. It was formed during the Late Cretaceous Epoch 65 to 90 million years ago in a marine basin environment. The sedimentary rocks of this group range from fine-grained mudstone to large stone conglomerates. Lying above the sedimentary rock is glacial, fluvial and marine deposits associated with the different ice age episodes ending 15,000 years ago and the rise and fall of sea level changes that coincided with the ice flows. The uppermost layers of soil accumulated since the last ice age through the weathering of bedrock and glacial deposits as well as collection of organic matter.

Wake Lake exists due to a depression formed in the landscape likely caused by a large piece of ice which broke off the toe of the glacier as it receded. As the massive ice block melted a depression formed called a kettle. Wake Lake developed as a kettle formation where water accumulated through mainly rainfall and small amounts of groundwater with poor or very slow drainage. Over time this closed wetland accumulated organic debris and evolved to a lake with a bog and other wetland ecosystems surrounding the water.

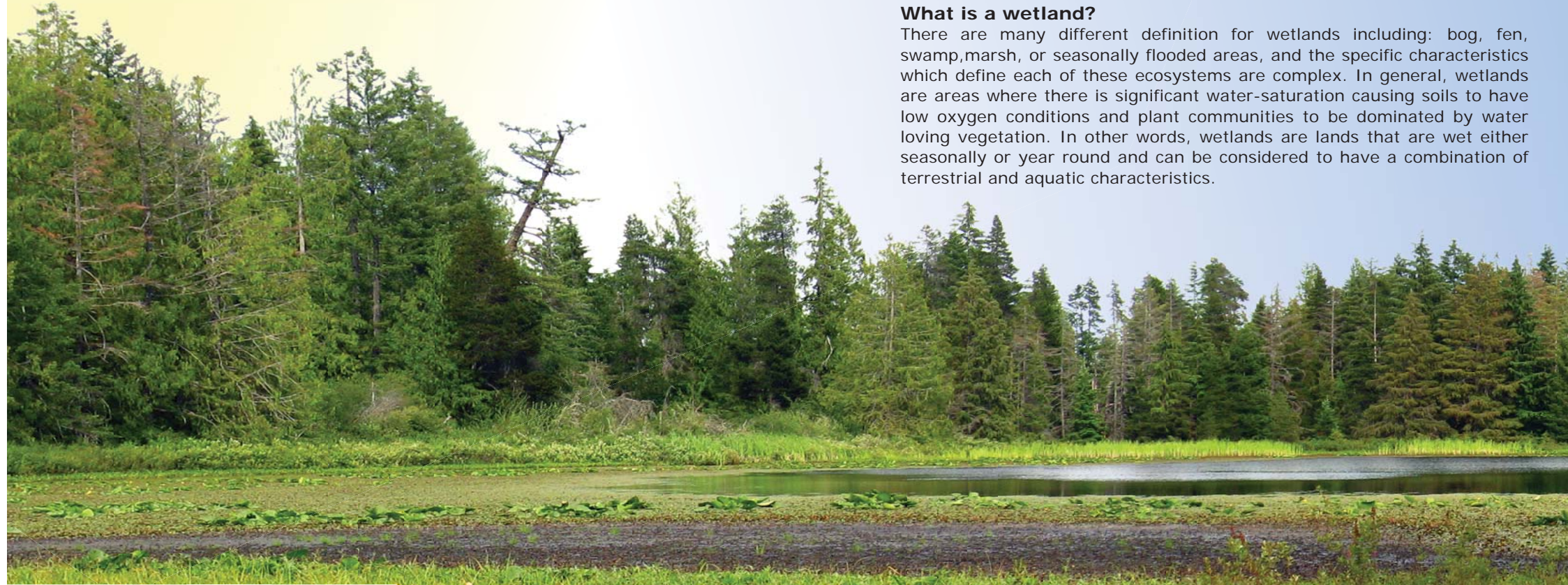
A bog is characterized by the accumulation of peat or fine organic matter on its bottom as well as the growth of sphagnum moss along its shore. Peat is an organically rich material that forms when plants die, fall into the water and are compressed over time, forming a thick layer. Bogs develop peat layers that can be up to 40 feet thick. The plants which grow on bogs are unique species, adapted to wet, acidic, and nutrient-poor soils. The edge of the bog mat is a region of new growth, often beginning with reeds, followed by shrubs and trees. Moss growth creeps over existing plants, but new vegetation grows which tolerates this low pH. Sphagnum moss is the dominant plant in bogs, but some uncommon wildflowers, and shrubs are also found in these environments. In mature bogs the pH is so low that amphibians are uncommon.

Wake Lake contains bog ecosystems and experiences water flow through the system which keeps the pH at a level that is still accommodating for many amphibians. The higher level nutrients found in a bog provide greater habitat increasing the biodiversity at Wake Lake. Bogs are highly unusual, important places. They are important to wildlife seeking secure cover

where they can feed, nest, rear their young and escape predators. They also provide areas for many types of unique, threatened and endangered plant and animal species.

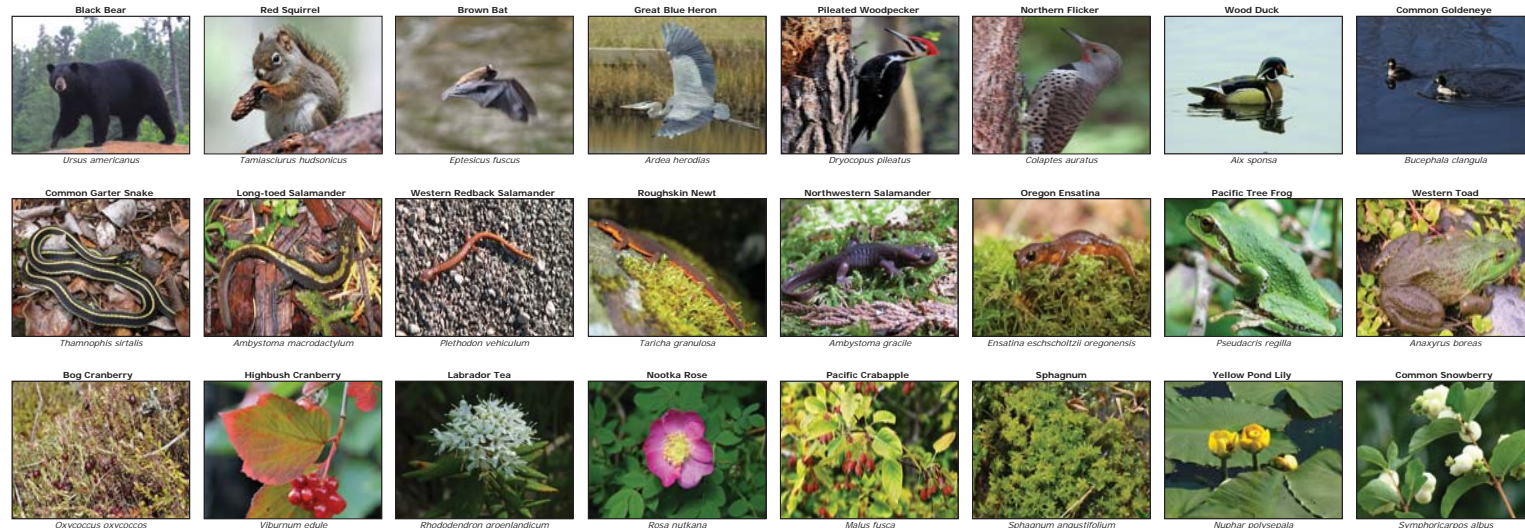


The aerial photograph of Wake Lake reveals the concentric bog formation from the lake edge out through the sphagnum mat and unique bog vegetation to open water.



Common Species at Wake Lake

background photo Elke Wind



WETLANDS ARE IMPORTANT

- ▶ Most wildlife in B.C. use wetland habitat at some point in their life cycle.
- ▶ Wetlands are relatively uncommon ecosystems throughout B.C., comprising only 6% of the province's land mass, yet they play an integral role in maintaining the health of our natural environment.
- ▶ One hectare (100 m x 100 m) of wetland habitat can store between 9 and 14 million litres of water.

FOR MORE INFO

IN CASE OF EMERGENCY
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If you have any questions, comments or concerns please feel free to contact CVRD parks

Mailing Address: CVRD Parks, 175 Ingram Street, Duncan, BC, V9L1N8
Phone: 250-746-2620
Internet & Email: www.cvrdbc.ca/parks parks@cvrd.bc.ca