

ELK ISLAND NATIONAL PARK

ABOUT THE PARK:

Located less than an hour away from Edmonton, Elk Island National Park of Canada protects the wilderness of the aspen parkland, one of the most endangered habitats in Canada. This beautiful oasis is home to herds of free roaming plains bison, wood bison, moose, deer, and elk. Also boasting over 250 species of birds, the park is a bird watcher's paradise.



HOW TO BOOK A VISIT:

To book a visit, call 780-992-2965 or email elk.island@pc.gc.ca.

THE PROGRAM:

Experience first-hand the diversity of organisms within Elk Island National Park. Introduction to aquatic ecology begins with a slide show and is followed by dip-netting on the Living Waters Boardwalk. Students look at the diversity of living organisms in the pond ecosystem. Equipment provided. Offered spring and fall.

CURRICULUM CONNECTIONS:

Grade 8 Science

Unit E: Freshwater and Saltwater Systems (Social and Environmental Emphasis)



Parks Canada Parcs Canada



AQUATIC ECOLOGY: THE FRESHWATER MARSH

BIOTIC FACTOR - ANIMALS

Sample three different areas of Astotin Lake to determine where the particular animal species are found.

Place a check mark ✓ in the box for **each one** you find.
Tally the check marks at the end.



Species	Near Water Surface (end of new boardwalk, deepest water)	#	Sandy Bottom (new boardwalk, closer to shore)	#	Muddy Bottom (wooden boardwalk area)	#
Water boatmen						
Snail						
Leech						
Caddisfly larva						
Freshwater shrimp						
Water mite						
Backswimmer						
Water strider						
Water tiger (larva)						
Predacious diving beetle						
Whirligig beetle						
Damselfly nymph						
Dragonfly nymph						
Minnow						
Mayfly nymphs						



ABIOTIC FACTORS

Temperature

At the temperature and pH station, take the **3** temperature measurements, and then answer the questions below.

- a) Air temperature _____
- b) Surface water temperature _____ (1 cm deep)
- c) Submergent water temperature _____ (elbow deep)



Which was **cooler**, the air temperature or the surface water temperature? **Why?**

Identify where in a lake you would expect to find the **most** oxygen. **Explain your choice.**

pH

Take the 2 pH readings, **circle** whether it is an acid or base, and **explain** your reasoning.

- a) Lake water pH _____ acid base
- b) Tap water pH _____ acid base

Other

Identify **3 other abiotic factors** that may have an effect on the aquatic ecosystem you are investigating and explain how they could affect the ecosystem.



BIOTIC FACTOR - PLANTS

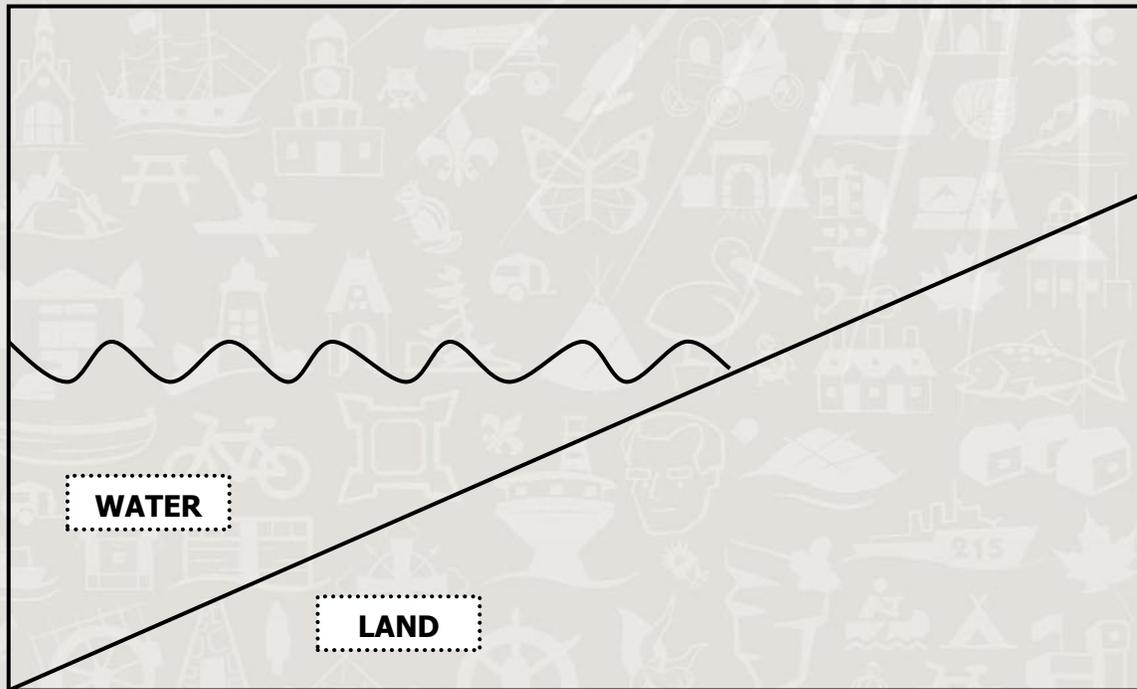
Observe the shoreline and upper slopes next to Astotin Lake. Do you notice the change in plant species?

Over time, **succession**, or a change in the biological communities, (here the different species of plants) can occur due to abiotic and biotic factors.

Below is a cross-sectional diagram (a side view diagram) from the forest to the water. Place the following letters in the appropriate location on your diagram below.



- | | | | |
|----------|---------------|----------|-------------------|
| A | Aspen tree | D | Duckweed |
| B | Water milfoil | E | Willows |
| C | Cattails | F | White spruce tree |



Use the following words to **label** the three types of aquatic vegetation on your diagram.

EMERGENT vegetation

SUBMERGENT vegetation

FLOATING vegetation



