

Grade 7 Science
Unit 1: Chapter 1 Interactions with Ecosystems
Text Sections 1.1, 1.2, 1.3 (Text pages 2 – 31)

Ecology: The study of animal homes (where they live and how they interact) **Eco** means home and **logy** means study.

An **Ecosystem** is a group of interacting living and nonliving things.

Ecosystems can be as small as a drop of water or as large as the planet Earth.

Example: A pond is a freshwater ecosystem. A trout in the water needs oxygen. The trout eats insects and tadpoles. Frogs and trout need oxygen. Plants in the pond need sunlight and produce oxygen. These are all interactions between living (biotic) and non-living (abiotic) things.

Biotic: Living things in an ecosystem. Examples: trout, insects, plants, worms, humans, squirrels, berries....

Abiotic: Non-Living parts of an ecosystem. Examples: Rainfall, temperature, oxygen...

Common Ecosystems of Atlantic Canada

- Oceans and Coastlines: Salty cool ecosystems. Abiotic (living) factors include smaller animals such as mussels, starfish, crabs and larger animals such as cod, seals and whales and plants such as sea weeds.
- Forests: Plants include black spruce, balsam fir and white birch. Animals include moose, black bear, and lynx.
- Freshwater Ecosystems (ponds, lakes, streams...): Animal life includes trout, salmon, beavers, ducks, geese...Plant life includes several water species such as pond lilies, grasses.
- Arctic: Very cold ecosystem which contains permafrost (always frozen) Animal life includes caribou, wolves, arctic foxes...Plant life includes low shrubs, and mosses

Abiotic parts of an ecosystem

As mentioned above abiotic parts of an ecosystem are non-living such as :

Soil	– rocky soil, sandy soil, or clay are all different and are home to different types of organisms
Temperature	– Cold climates have different living conditions than warmer climates (ex. Lizards would not survive in Newfoundland)
sunlight	- (light intensity) Amount of sunlight an ecosystem gets affects it's growing season. Ex. What is the difference between the growing season in Newfoundland and the growing season in Florida?
Wind	- Wind can change environments (ex. Hurricanes)
Water	- Ex. Different organisms live in salt water versus fresh water.

Can you think of other ways these abiotic parts can affect a living things?

Ex. Pebbles in the bottom of a river are a good hiding place for small fish.
More sunlight and warmer temperatures increase plant growth
Many animals especially reptiles require sunlight to maintain a warm body temperature

Biotic parts of an ecosystem

Individual – Population (species) – Community – Ecosystem

Individual: Single member of a species (one frog, one trout...)

Population: Group of individuals of the same species that live in one ecosystem (example: all the trout in one pond)

Species : A group of individuals of one species that can reproduce to produce offspring

Community: Interacting parts of a population

An individual of a species is a part of a population of that species. Groups of populations of different species together make a community. All of them are in the ecosystem

Habitat vs Niche

A **Habitat** is where an organism lives

A **Niche** is an organism's job...or what role it plays in its environment. It includes its habitat, how it obtains food and how it affects its environment.

Example a Moose's niche includes

Habitat	– boreal forest
Food	– Eats plants (herbivore)
Environment	- parasites live in its fur, can be food for coyotes

Types of interactions in an Environment

biotic-abiotic - ex. Polar bears need oxygen...or plants need water...

abiotic-abiotic - ex. Sunlight evaporates water...or water dissolves salt and other minerals

biotic-biotic -ex. An eagle eats a salmon

Terms from chapter 1

ecology
ecosystem
abiotic
biotic
species
population
community
habitat
niche
individual

