

## 2.1: What is an ecosystem?

Wolcott High School  
Ecology  
8/29/2013

## Question of the Day: Agree or disagree

1. The environment belongs to human beings.
2. It is our duty to take care of the environment.
3. The environment is in poor condition because of human beings.
4. No matter what human beings do, the environment will remain balanced.
5. Humans are the most important beings on the planet Earth.



## Today's Objectives

- You should be able to:
  - Explain the difference between ecology and environmental science
  - Define and give an example of an ecosystem
  - Give examples and non-examples for the following terms:
    - Biotic community, abiotic conditions
    - Organism
    - Species
    - Population
  - Decide whether a sample is biotic or abiotic

## What is the environment?

- The environment is a difficult term to define.
- Does it consist of only "natural" things? What does the word "natural" mean?
- Are humans, manmade products and structures part of the environment?



## Environmental Science and Ecology

- This course will cover both Ecology and Environmental Science
- Environmental scientists study the environment, but focus on environmental problems or issues, like air or water pollution.
- Ecologists study the environment and the interactions of all living things within it – not necessarily focusing on human impacts, problems or issues.



## Ecology

- Taken from the Greek word Oikos, meaning "house".
- *Ecology studies the ways in which organisms interact in and with the natural world*
- Studying every organism and every interaction between organisms would be far too complex.
  - 30 million+ species on the planet
  - Each organism interacts with others of the same species, predators, prey, competitors, parasites, hosts...
  - Each organism also must interact with the nonliving environment in many ways.

## Units of Ecology

- To make the study of ecology more manageable, we break it up into units.
- One important unit is the **ecosystem**.
- What is an ecosystem?



## Ecosystem in a Jar

- Imagine that you are going to try to build your own ecosystem in a closed glass jar.
- Draw a picture of how you would set up your jar and list the supplies that you would need.



## Ecosystem

- Definition:** An ecosystem is a system of plant, animal and microorganism communities and the non-living environment interacting as a functioning unit.
- Examples:** forest, grassland, wetland, marsh, pond, sand dune, coral reef
- What does a "functioning" unit mean?



## Ecosystem components

- Biotic community and abiotic conditions
- Biotic: living things, such as plants, animals, microbes
- Abiotic: non-living, chemical, and physical factors



## Day Two: Ecosystem Components

- Reminders:** On Tuesday, please have all materials for class (pencil or pen, notebook, three-ring binder with dividers, and planner). This will be checked.
- Homework:** Online question on Survey Monkey due WEDNESDAY.  
<http://www.surveymonkey.com/s/PBNBW7Z>
- Question of the Day:**  
An elementary school student named Dennis says, "My house is an ecosystem because it contains plants, animals, and abiotic factors, like air and water."

Do you agree with Dennis? Why or why not?



## Biotic and Abiotic

- List as many biotic and abiotic components as you can.



## Biotic and Abiotic

- List as many biotic and abiotic factors as you can.



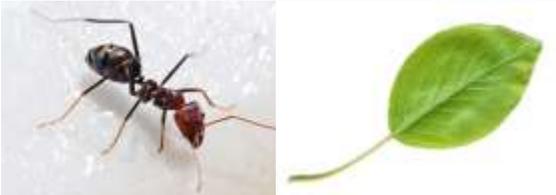
## Biotic and Abiotic

- List as many biotic and abiotic factors as you can.



## Activity: Biotic and Abiotic Samples

- For each sample, draw a sketch of the object and label it as biotic or abiotic.



## Dennis Questions

- Dennis is an imaginary 9 year old student in Wolcott, CT. Some of your homework assignments, called Dennis Questions, will require you to explain ideas from Ecology class in a way that Dennis could understand.
- This means no using advanced terminology or directly quoting lecture slides or the textbook.

## Homework

- Visit the following link and complete your first Dennis Question, due Wednesday:

<http://www.surveymonkey.com/s/PBNBW7Z>

This link is also available on the course website.