The Beginning ??

- Ernst Haeckel (German), 1866
- Ecology from oikos (Greek)
- Oikos = house or place to live
What is ecology?

• **By ecology, we mean the body of knowledge concerning the economy of nature -- the investigation of the total relations of the animal both to its organic and to its inorganic environment; including above all, its friendly and inimical relation with those animals and plants with which it comes directly or indirectly into contact -- in a word, ecology is the study of all the complex interrelationships referred to by Darwin as the conditions of the struggle for existence.** Ernst Haeckel, 1870.
So, what is ecology?

• The study of the interrelationships among living organisms and their environment.
Why study ecology?

• Determine the best policies for managing environmental support systems -- watersheds, agricultural lands, wetlands

• Apply ecological principles to:
  • solve or prevent environmental (including human) problems
  • inform economic, political, and social thought and practice
Ecology Employs the Scientific Method

- Observation
- Experiment
- Prediction
- Hypothesis or model
- Induction
- Deduction
Ecology

- Organism type
- Habitat type
- Process
- Level of organization
Organism Type

• Plant - tree, shrub, herb, grass
• Animal - mammal, reptile, fish
• Bacteria or Fungi
Habitat Type

- Terrestrial - forest, grassland, desert
- Freshwater - stream, pond, lake
- Marine - near shore, open ocean
“Process”

- Structural
- Physiological
- Dynamic
- Evolutionary
Level of Organization

- Organism
- Population
- Community
- Ecosystem
- Landscape
- Biosphere