WHAT IS ECOLOGY?

The word "Ecology" is derived from:
"*oikos*" meaning house or home,
"*logy*" meaning 'the study of'.
Ecology thus roughly translates to "The study of where we live."

The term "*oecology*" was coined by Ernst Haeckel in the mid 1860s to describe the study of the struggle of existence as described in Darwin's *On the Origin of the Species*. Thus origins ecology and evolution are historically linked.

Haeckel defined ecology as "The total relations of the animal to both its organic and inorganic environment."

ECOLOGY DEFINITION FOR THIS CLASS

We will use the definition of ecology currently endorsed by the Institute for Ecosystems Studies (IES). That being:

"Ecology is the scientific study of the processes influencing the distribution and abundance of organisms, the interactions among organisms, and the interactions between organisms and the transformation and flux of energy and matter."

This combines three common older definitions:

1. Ernst Haeckel's (circa 1860) The total relations of the animal to both its organic and inorganic environment.
2. Andrewartha and Birch's (circa 1960) The scientific study of the distribution and abundance of organisms.
3. Eugene Odum's (circa 1960) The study of ecosystems.

SCALES OF ORGANIZATIONS & ECOLOGY

Hierarchical approach to the study of Biology
1. Molecules –
2. Cells –
3. Tissues –
4. Organisms – Ecology
5. Populations – Ecology ←
6. Communities – Ecology ←
7. Ecosystems – Ecology ←
8. Biospheres ←

APPROACHES TO STUDYING ECOLOGY
1. **theoretical**
   a) mathematical
   b) computer model/simulation
2. **field experiment**
   a) manipulation by researcher
   b) natural experiment
3. **lab experiment**
4. **meta-analysis**
5. **review papers**