


Unit 1: SF Bay Area Ecosystems
 TOC#2: Intro to Ecology Notes

What is Ecology?



This powerpoint was modified from:
www.worldofteaching.com

Ecology

Origin of the word...”ecology”

Greek origin

- OIKOS = household
- LOGOS = study of...
- Study of the “house/environment” in which we live.

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Ecology

Ecology is study of interactions between

- **non-living components in the environment...**
 - light
 - water
 - wind
 - nutrients in soil
 - heat
 - solar radiation
 - atmosphere, etc.

Abiotic



AND...

Ecology

- **Living organisms...**
 - Plants
 - Animals
 - microorganisms in soil, etc.

Biotic



Ecology

To study Ecology involves...

- **For non-living (abiotic)**
 - Climatology
 - Hydrology
 - Oceanography
 - Physics
 - Chemistry
 - Geology
 - soil analysis, etc.
- **For living (biotic)**
 - animal behavior
 - Taxonomy
 - Physiology
 - mathematics (population studies)
 - etc.

Ecology

ECOLOGY: Levels of Organization

-a hierarchy of organization in the environment

Grizzly bear Black bear Giant panda Red fox Abert squirrel Coral snake Sea star

KINGDOM Animalia

PHYLUM Chordata

CLASS Mammalia

ORDER Carnivora

FAMILY Ursidae

GENUS Urus

SPECIES *Urus arctor*

Ecology

Levels of organization - Terms

- Biosphere**
 - Surface of the earth, Composed of many ecosystems

Ecology

Levels of organization - Terms

- Biosphere**
 - Surface of the earth, Composed of many ecosystems
- Ecosystem**
 - Large or small as we decide
 - Backyard, Samuel P Taylor Park, Hedge along Road etc.
- Population** – one species live in one place at one time
- Community** – All populations (diff. species) that live in a particular area.
- Habitat** – physical location of community
- Organism** – simplest level of organization

Ecology


Ecology

Ecology

THEN...


Ecology is an integrated and dynamic study of the environment.

Ecology



An ecosystem is **self-sustaining** if the following requirements are met:


1. A **constant source of energy** and a living system capable of incorporating this energy into organic molecules.
2. A **cycling of materials** between organisms and their environment.



Ecology

off the mark by Mark Parisi
www.offthemark.com




■ In all environments, organisms with similar needs may **compete** with each other **for resources, including food, space, water, air, and shelter.**



Ecology

Symbiotic Relationships:

- **Symbiosis:** living together with another organism in close association
- Types of (symbiosis):

MUTUALISM	PARASITISM	COMMENSALISM
		

Ecology