

City of Fort Collins

Natural Areas Program



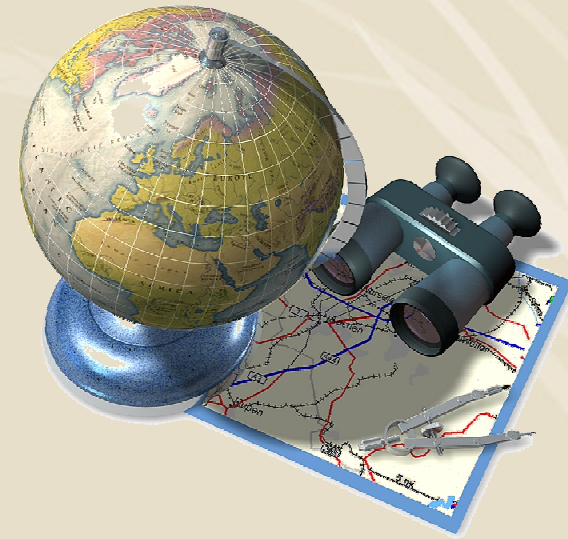
naturally yours

ECOLOGY:

The study of the interactions between organisms and their environment....

or

.... The study of almost everything!

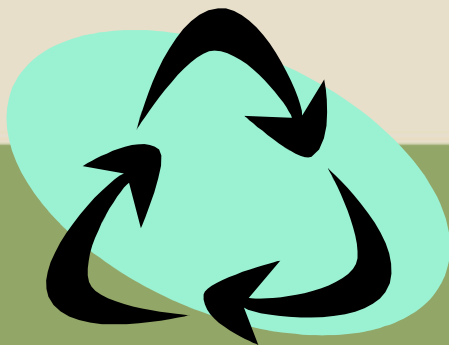


“Oikos” (Greek)

- House or place of residence



- Ecology deals with the roles of organisms in nature and how environmental conditions affect them;
- And how these organisms affect other organisms and their environment.



main implication of ecology:

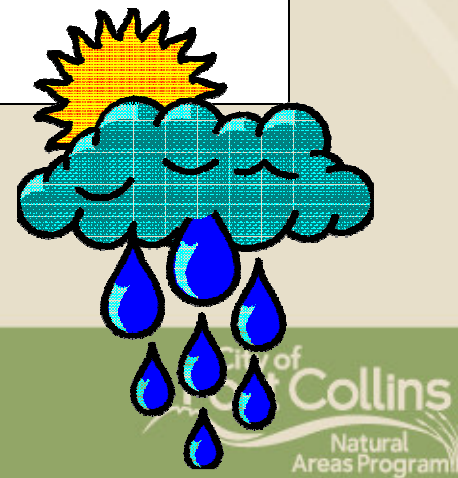
- **interconnected** -
everything is connected to something else.
everything is connected to everything else!
- **dynamic** -
populations cycle; seasons change; nature is constantly in a state of flux and ever-changing.

ECOLOGY



Ecosystem:

biotic (living) and abiotic (non-living) components of the environment.



Community:



- assemblage of different organisms sharing the same defined area or habitat (not necessarily the same species).

Population:

- interbreeding group of organisms of the same species, living in the same area.



Species:

- population of similar individuals, capable of interbreeding, but that are *reproductively isolated* from other interbreeding populations.

- *Reproductive isolation:*

- physical barriers
- behavioral barriers
- temporal barriers
- physiological barriers

Indicator Species:
indicates the health of the
ecosystem



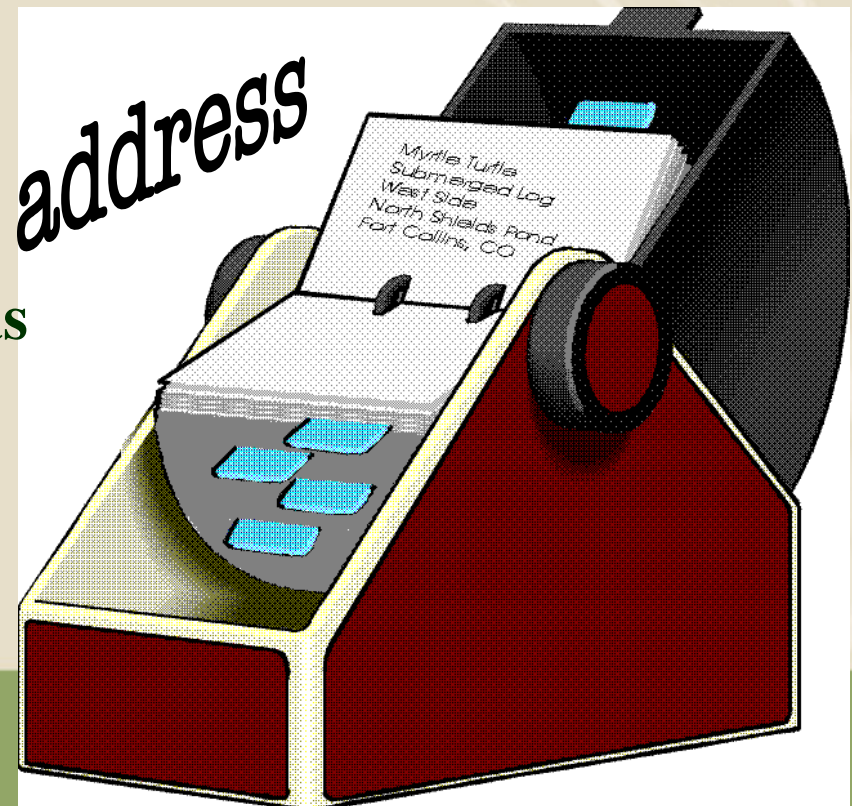
Keystone Species: removal
causes decline, extirpation or
extinction of other species



Habitat:

The physical area in which a particular species is found that has specific components (food, water, shelter).

Plants provide habitat to animals.



Niche:



The role of an organism within its community. This includes the resources it uses, its period of activity, and its effects on other members of the community.

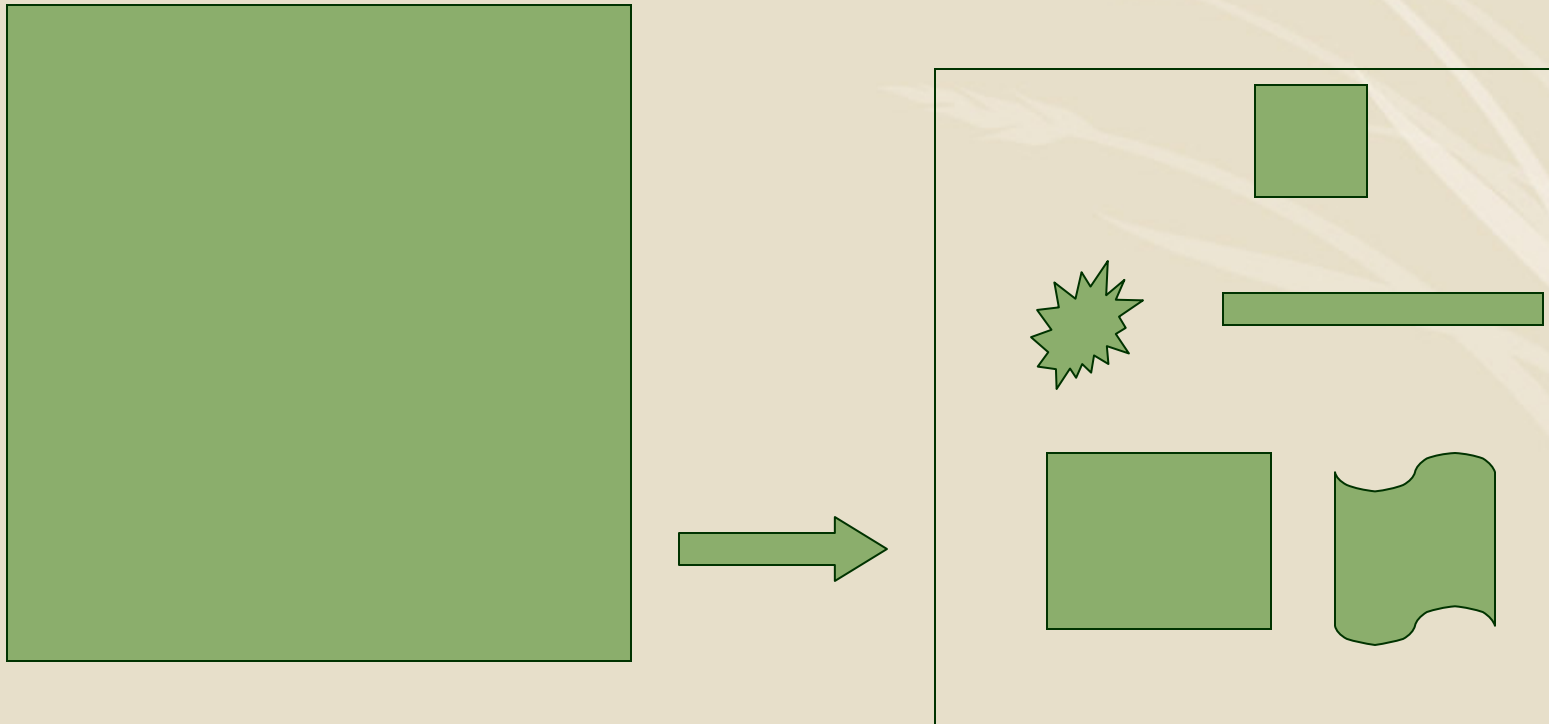
“Nature abhors a vacuum.”

Ecotone:

area of transition between two different habitat types.



Edges and Ecotones



What are some ecological processes?

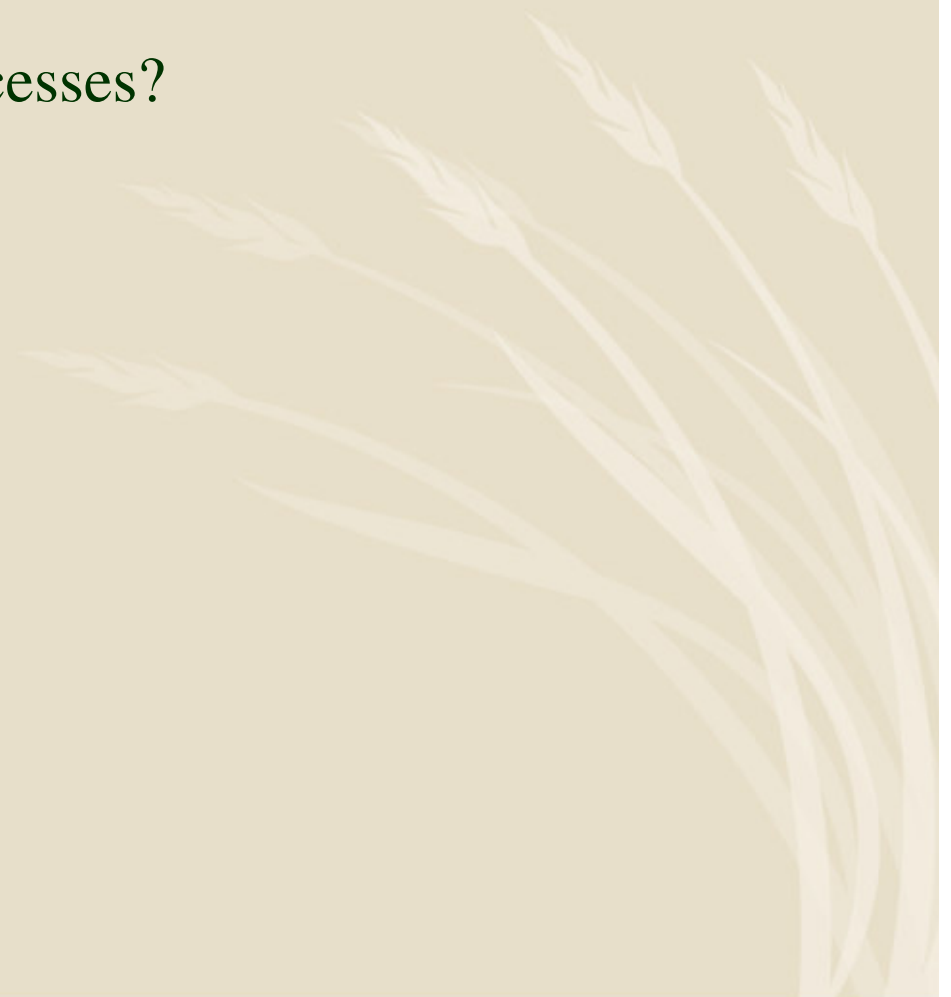
Succession

Predation

Cycles

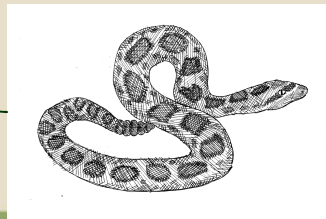
Extinction

Speciation



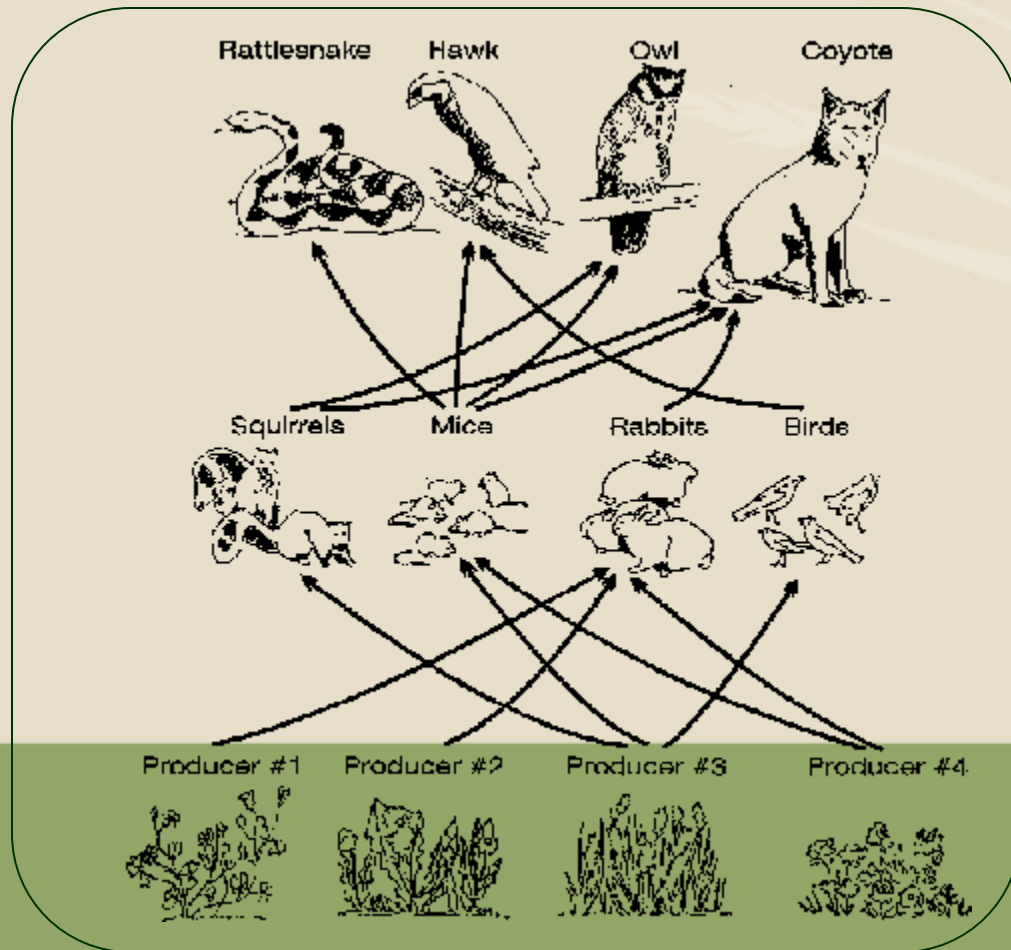
Food chain:

what eats what...



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Food web



- Plant and animal adaptations



Producers: - *Autotrophs* - Green plants take sun's energy and make food.

1° Consumers – *Heterotrophs* - Animals that eat the producers.

2° Consumers - Animals that eat 1° consumers.

3° Consumers - Animals that eat 2° consumers.

Carnivores

Herbivores

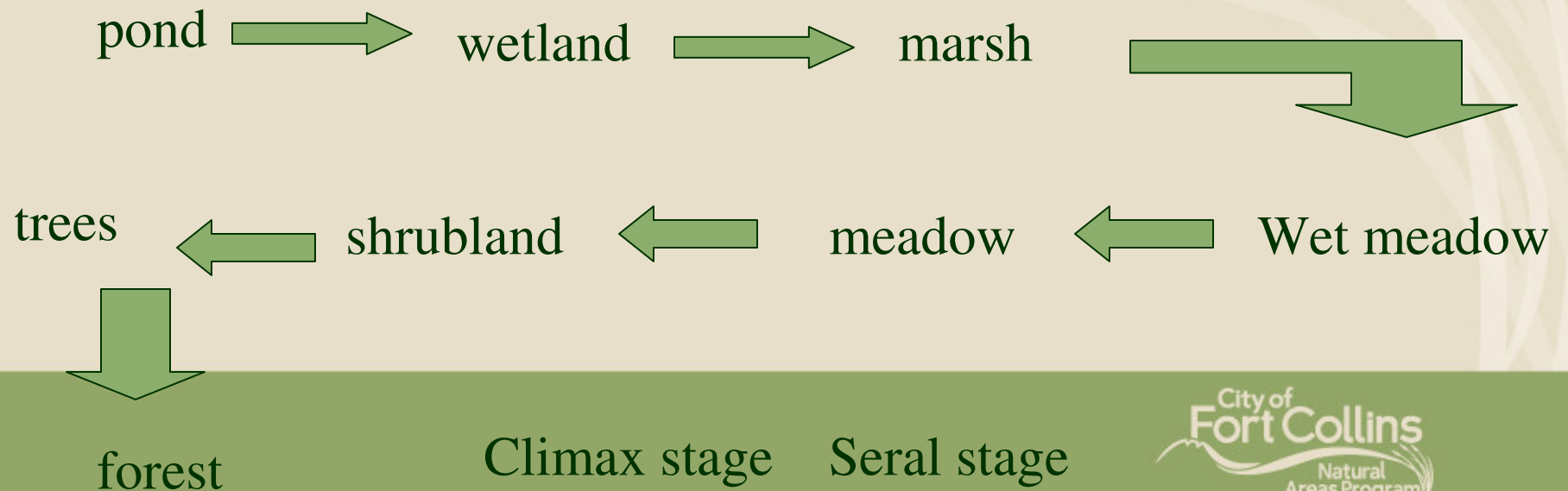
Omnivores

Insectivores



SUCCESSION

- Ecosystems undergo orderly changes in complexity, composition, and interaction.
- Example:



BIODIVERSITY

Biological Diversity:

- Genetic diversity
- Species diversity
- Ecosystem diversity

***“When we try to
pick out
anything by
itself, we find it
hitched to
everything else
in the universe.***

--John Muir



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