



LE Regents review ECOLOGY

Starts on p. 12 of your review packet



Definition:

- **Ecology**- The interaction of organisms in and with their environment.

- Organism \longleftrightarrow Environment
Affects



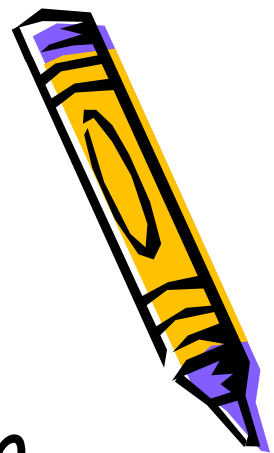
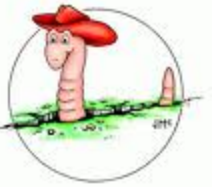
HABITAT

- Where an organism lives; includes the environment and also any nests, burrows, etc.



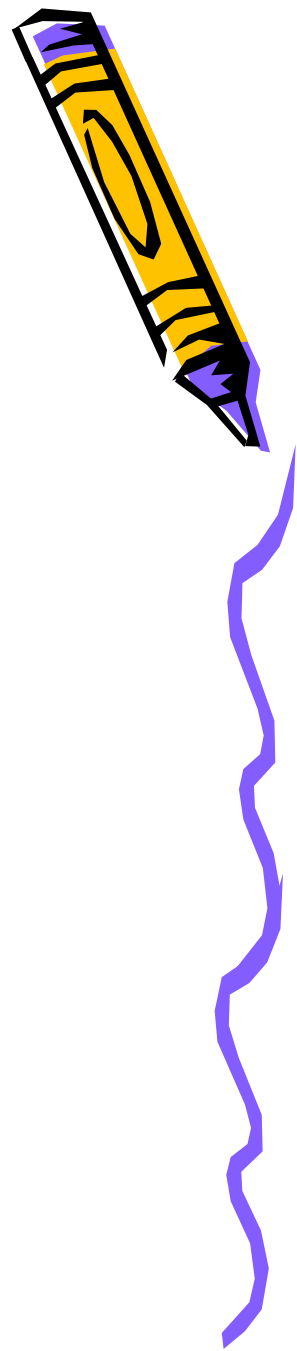
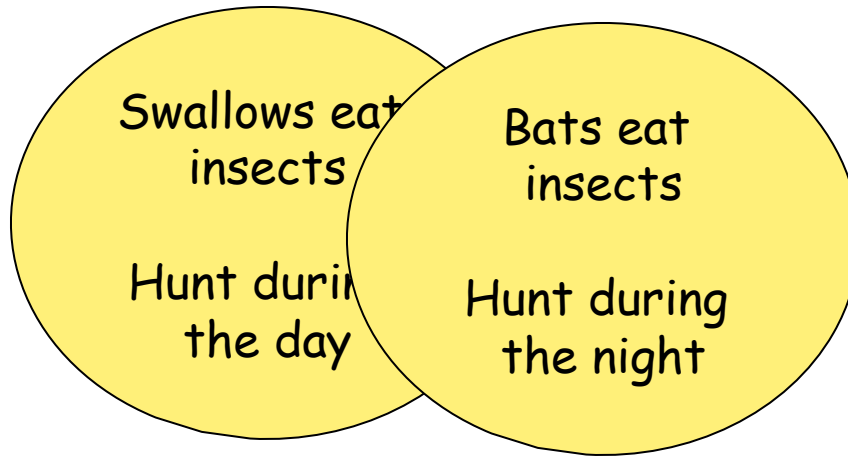
NICHE

- Is the habitat plus the role (job) in the environment:
- A worm lives in the soil, creates tunnels, helps decompose dead material
- A red-tailed hawk lives near open field.
a predator that hunts by day, keeps rodent populations under control



Two species will not occupy the same niche in the same place at the same time:

- The more the niches overlap, the greater the competition:



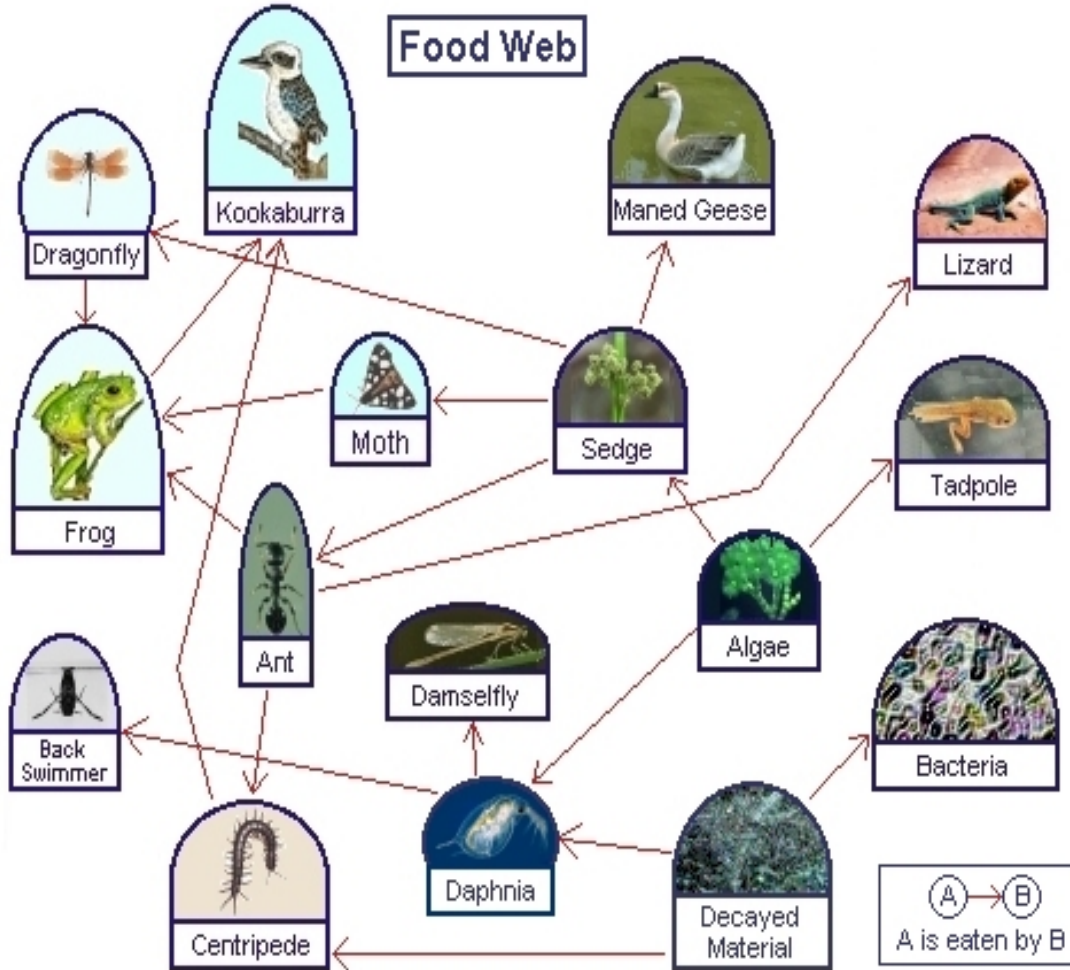


- Is a strong competitor for food, water, and space
- It may compete indirectly
- The fiercest competition is between organisms of the same species



Food Web words

Producer/Autotroph: sedge, algae

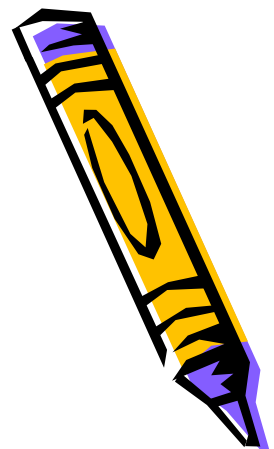


Consumers/

heterotrophs:

Herbivores-
daphnia, tadpole,
geese

Carnivores-frogs,
lizard, kookaburra



SYMBIOSIS-any close association between two species



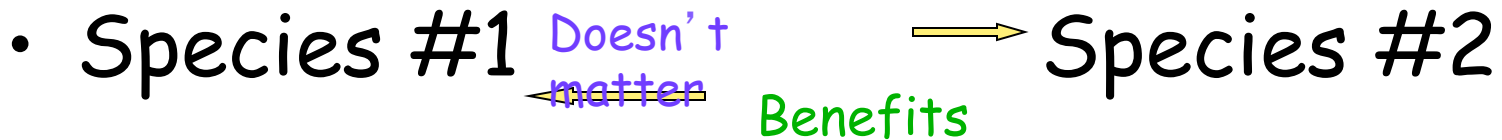
- Mutualism



- Parasitism

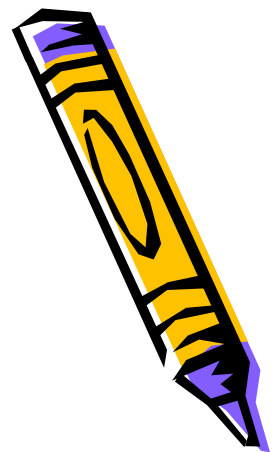


- Commensalism



ABIOTIC factors

- Are non-living factors that affect the organism living there:



BIOTIC factors-factors from living organisms



- Predation 

- Decomposition 

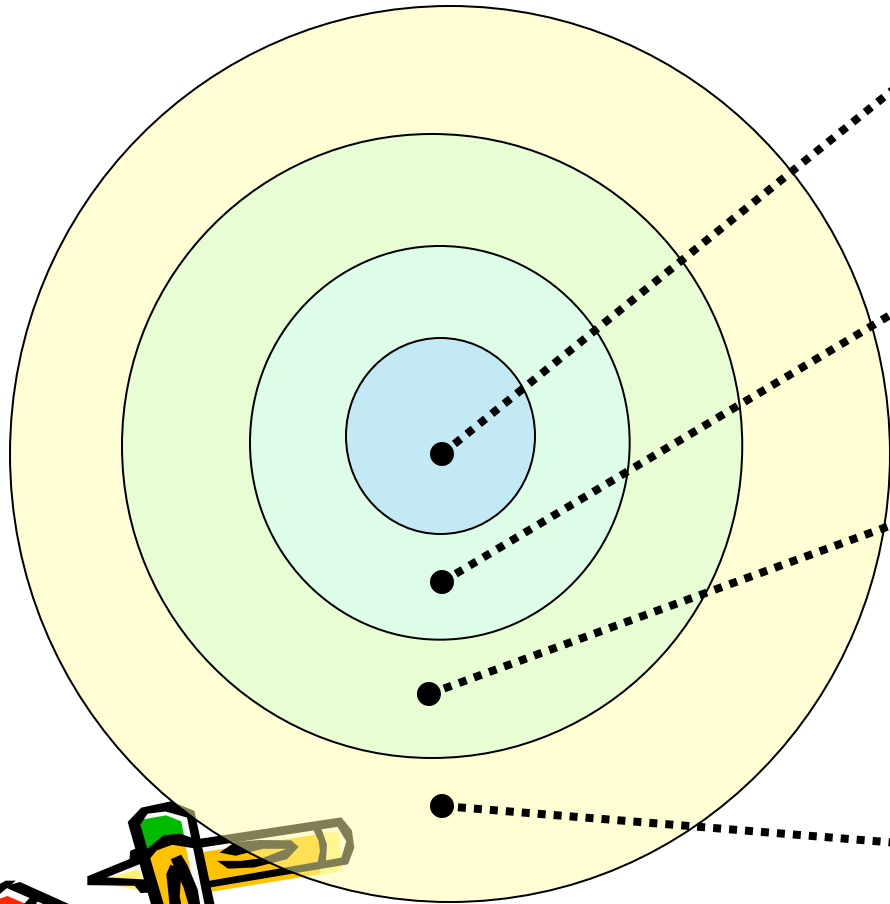
- Shade

- Beaver dams

- Disease 



Ecology is . . .

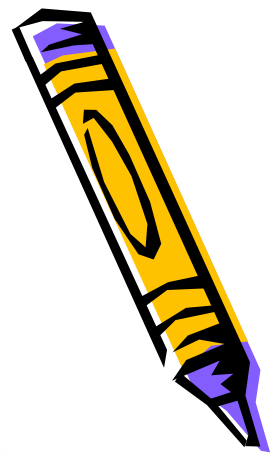
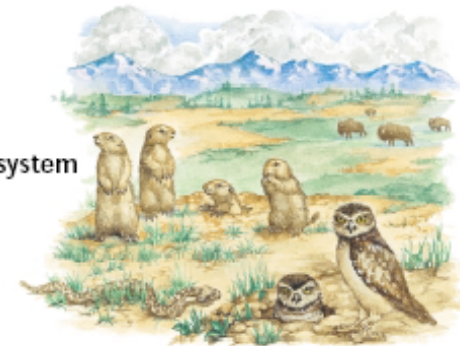


Organism

Population

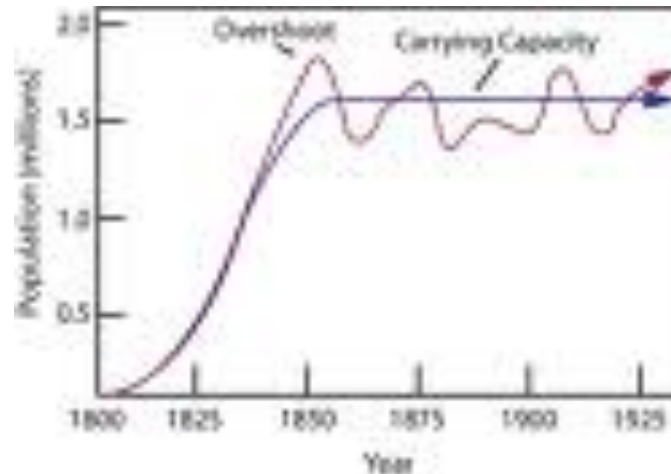
Community

Ecosystem



CARRYING CAPACITY

- The amount of organisms an ecosystem can support
 - » The amount of organisms entering (birth, immigration) will equal those leaving (death, emigration)



The carrying capacity is



- Determined by limiting factors such as amount of light, water, space (abiotic) and

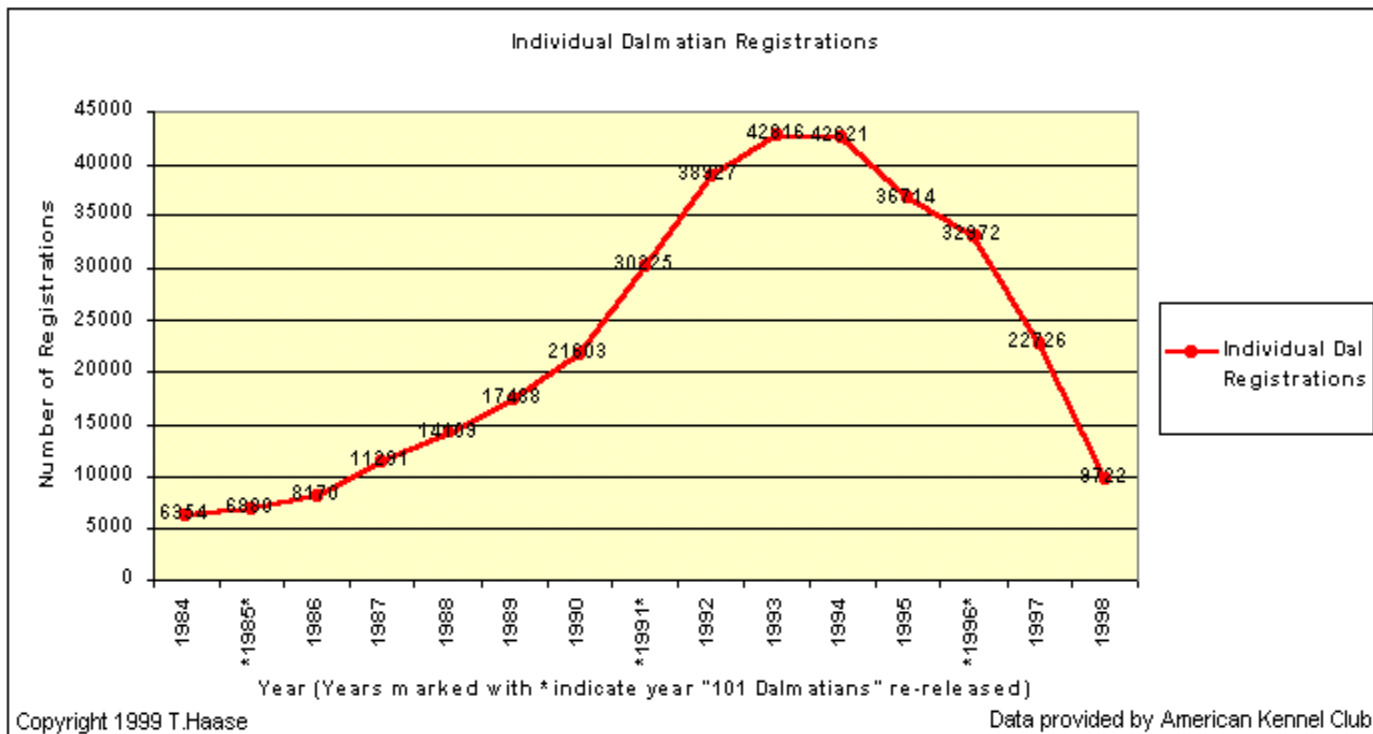
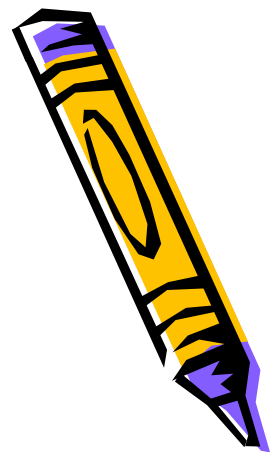
- The amount of food (biotic)
- The amount of space (abiotic)
 - So many factors can limit them, such as too dry, etc.



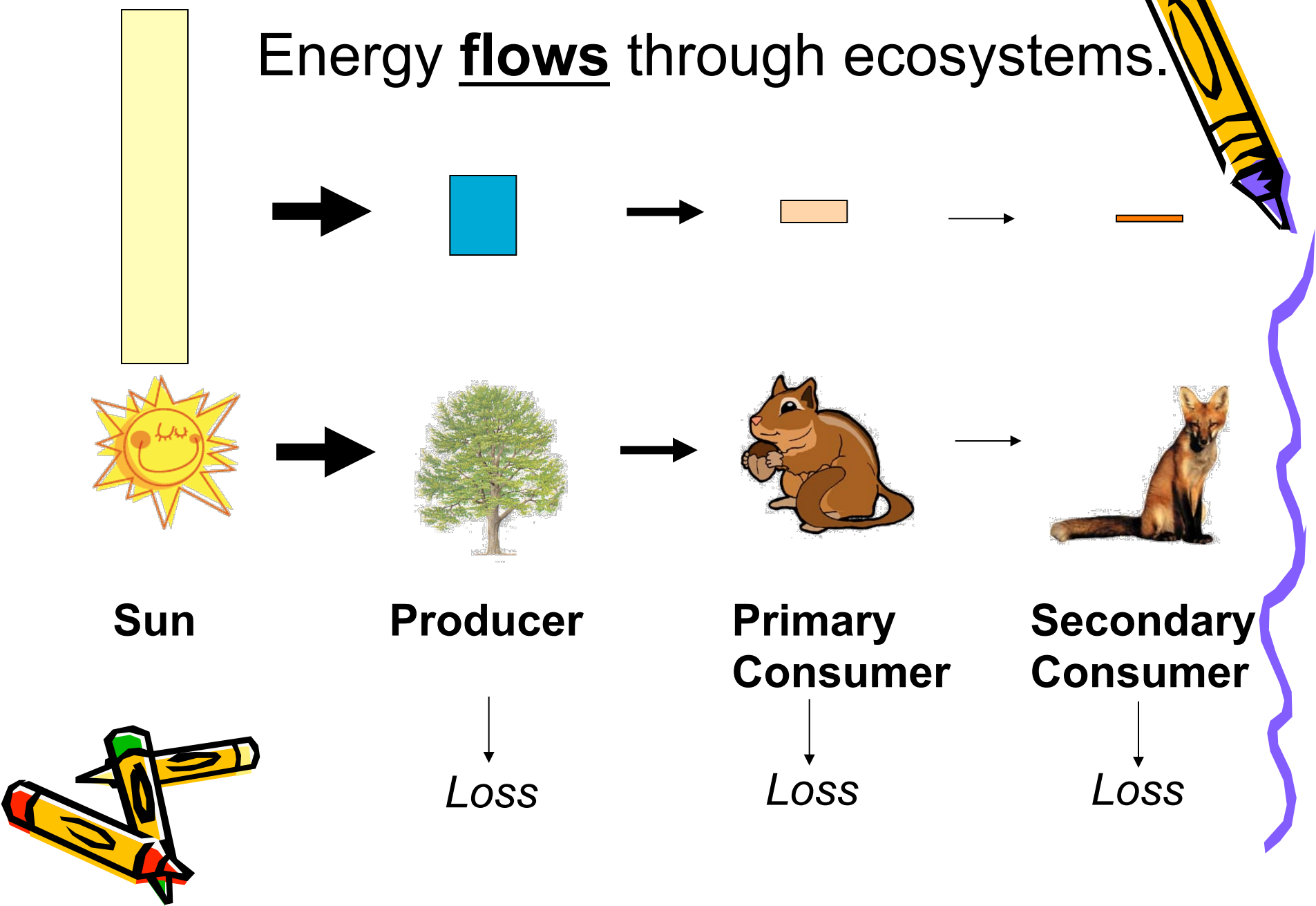
d,



Overpopulation will cause a dramatic decrease in population numbers



Energy flows through ecosystems.



The loss of energy at each trophic level results in an energy pyramid.

Only 10% of the energy is passed from one level to the next.

Secondary Consumer

10

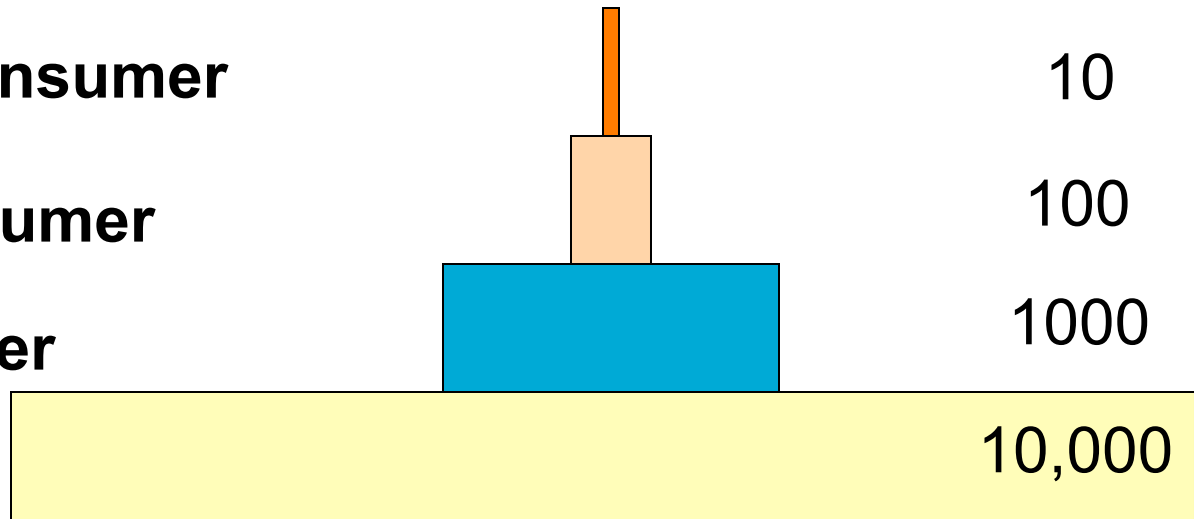
Primary Consumer

100

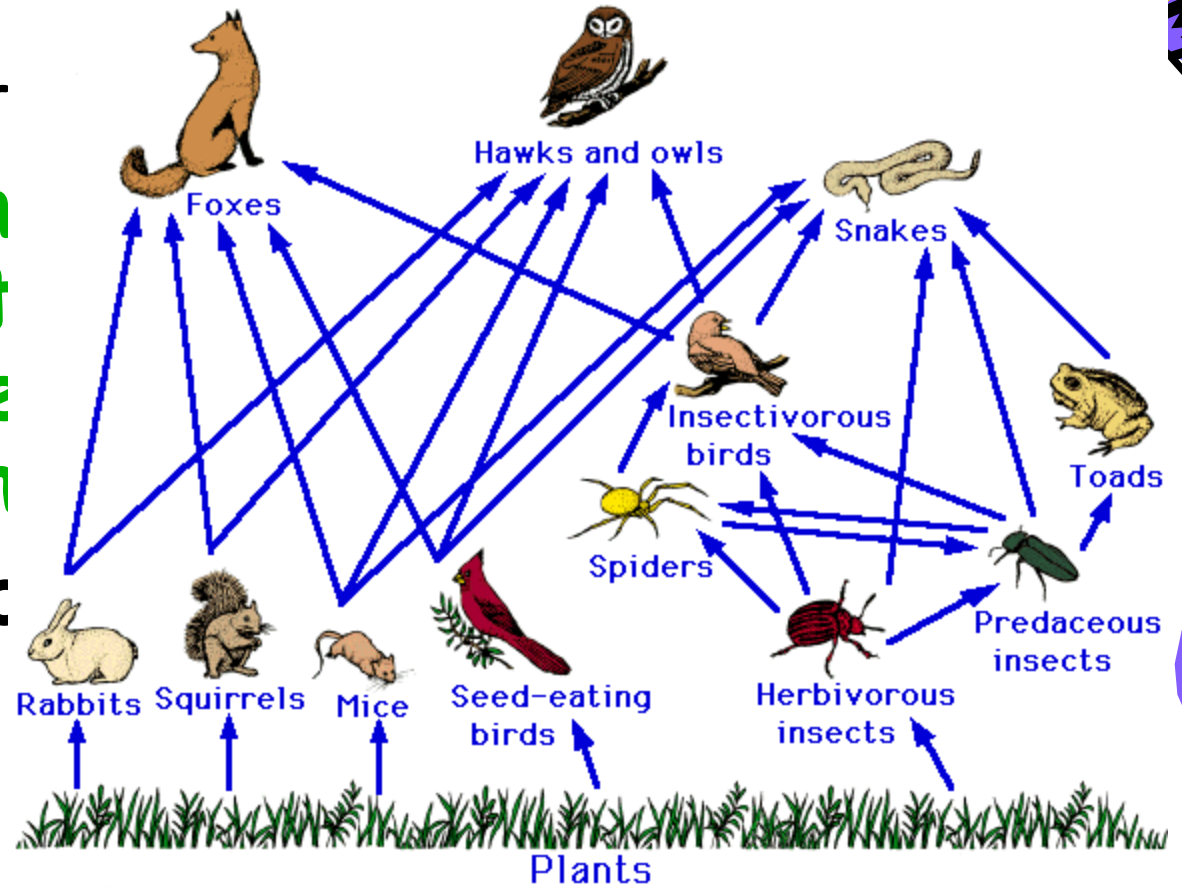
Producer

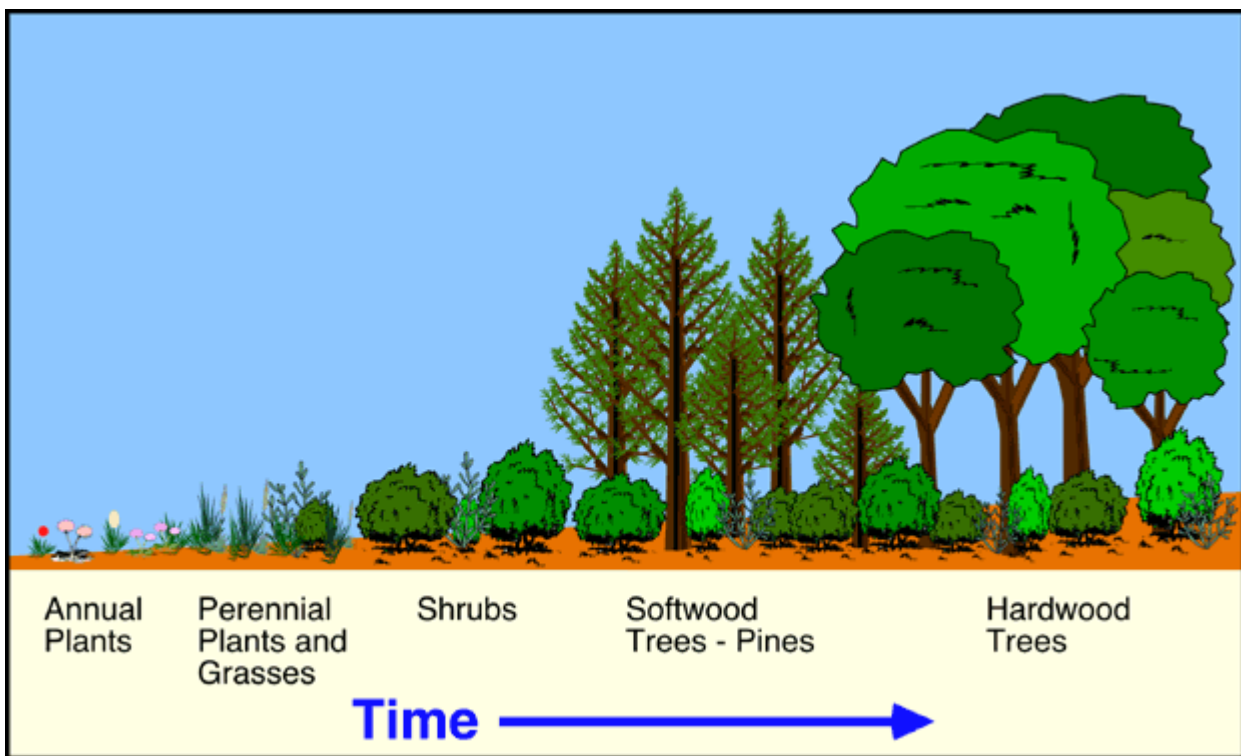
1000

10,000



BIODIVERSITY- GOOD

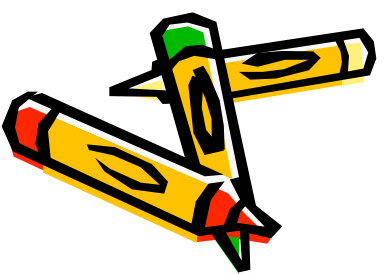
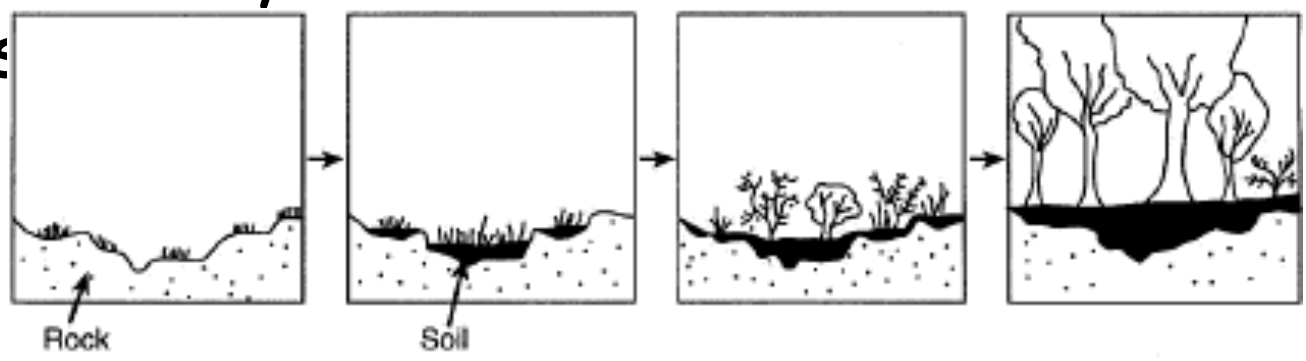




er time,
stable stage

the climax

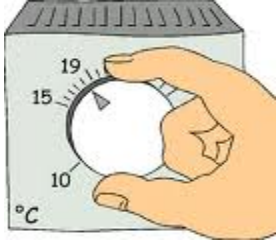
community. It will continue unless
dis



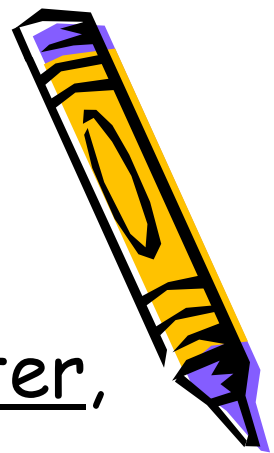
HUMAN IMPACTS

- The *cause* of some of these issues is burning fossil fuels:
 - Acid Rain
 - Global Climate change



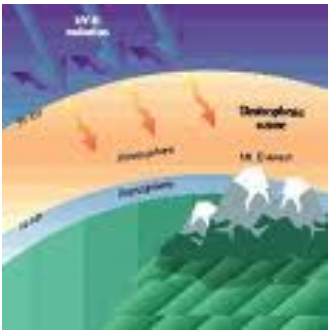


So, the *solution* is-



- To use less fossil fuels by carpooling, turning down the thermostat in the winter, etc.
- A better solution is to use alternative fuels- wind, solar, geothermal, nuclear-do not emit air pollutants
- Most electricity is produced using fossil fuels so that is NOT an “alternative” energy source





OZONE DEPLETION



- Is *caused* mostly by using CFC's in aerosols, refrigerants, packaging etc.
- The *solution* is to use the alternatives that have been developed
- Careful recycling is also a good solution



INDUSTRIALIZATION

- Was caused by consumer demand for many cars, appliances, conveniences
- It has caused air pollution from burning fossil fuels and water pollution from chemicals used in processing
- Reducing, reusing, and recycling can *alleviate* some of the impact from industrialization





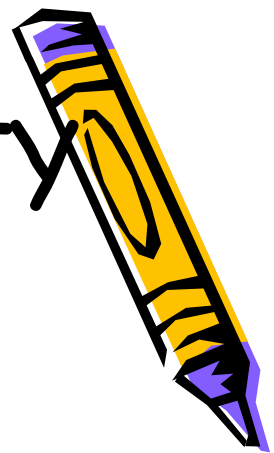
LOSS OF HABITAT



- *Results from deforestation-using wood for paper and building products*
- *And clearing land for development*
- *The negative effect is interrupted food chains, more carbon dioxide in the atmosphere, water pollution*
- *The solution can be reuse, reduce, recycle.*



LOSS OF BIODIVERSITY



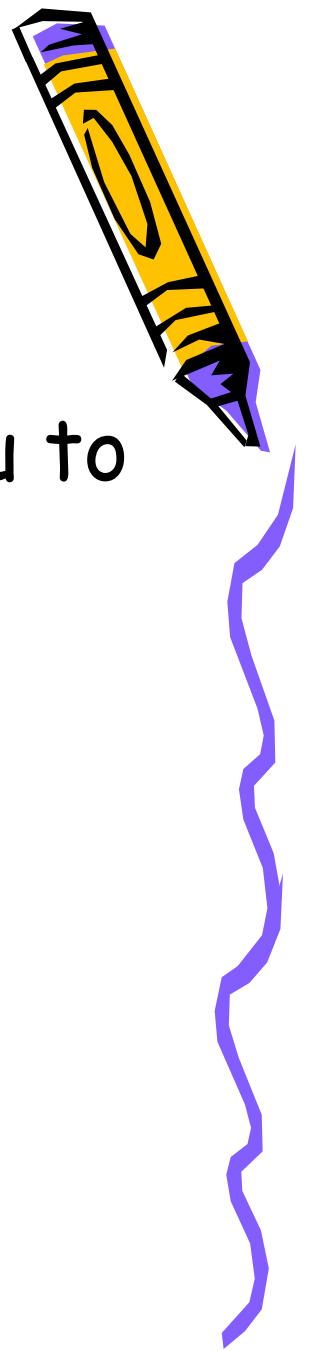
- Is *caused* by deforestation, acid rain, pesticide use, water pollution
- The *effect* is endangered species, less clean water for human use, loss of recreation
- Again, less use of fossil fuel and recycling would help *alleviate* the situation.



INTRODUCED SPECIES

- Were usually *caused* by accidental or irresponsible importation of non-native species to an area
- The *effects* are endangered species, loss of biodiversity, clogged water pipes, un-navigable waters, loss of forests.
- The *solution* is to wash off hulls of boats and canoes before taking to a new area, finding biological ways of controlling populations





- The next several pages are for you to use when you study this afternoon for the exam

