

Ecology



Ecology

1. What is a biotic factors?
any living component

2. What is an abiotic factors?
any non-living component



Ecology

biotic factors

plants

animals

fungi

bacteria



Ecology

abiotic factors

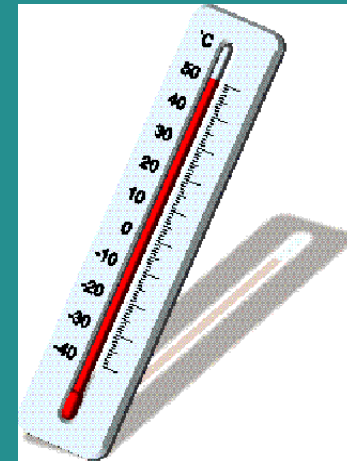
temperature

sunlight

climate

water

soil



Ecology - the study of how living things interact with one another & the environment

Ecosystem - all the living and non living things that interact in a specific area

Ecology

Different Types of Organisms



producer- organisms that produce organic compounds from inorganic compounds.

Ex- green plants

consumer- organisms that obtain nutrients from other organisms

Ex- grazing animals- horses



DECOMPOSERS BREAK DOWN MATERIALS AND RETURN NUTRIENTS TO THE SOIL.

decomposer- organisms that breakdown the remains of dead animals and plants

Ex- fungi, worms

Predator - animal that hunts and kills other animals for food

Ex: Lion, Snake, Shark



Scavenger - a carnivore that feeds on the bodies and remains of dead organisms

Ex: Vulture, Hyenas, Lobster, Crow



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Predator Prey Relationship

predator- organism that eats another organism

prey- organism which the predator eats

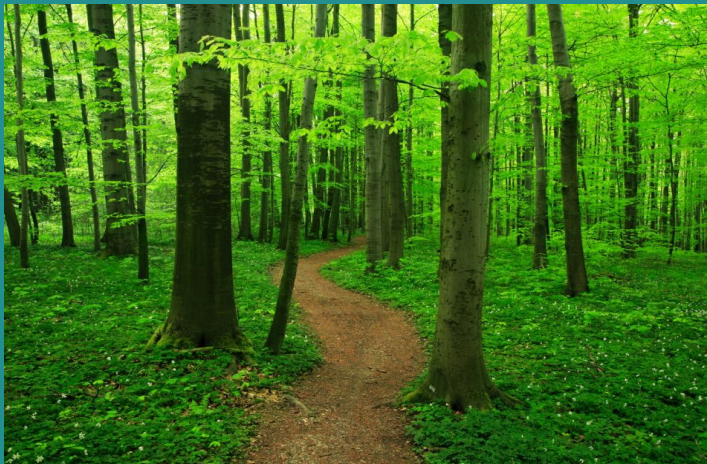


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Autotrophs vs. Heterotrophs

autotrophs- organisms make their own food

* undergo photosynthesis
producers are also autotrophs



heterotrophs- organisms that can't produce their own food

* DO NOT undergo photosynthesis
consumers are also heterotrophs

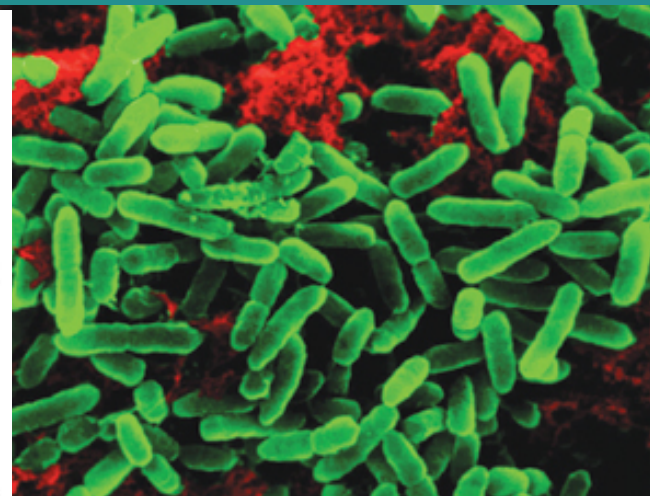


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Decomposers

decomposer- organisms that breakdown the remains of dead animals and plants

- recycle nutrients
- most are bacteria and fungi
- without decomposers there would be no life since plants would run out of nutrients



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Heterotrophs

heterotrophs- organisms that can't produce their own food

Herbivore

Omnivore



Carnivore

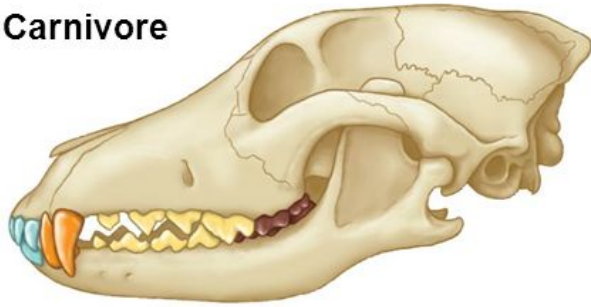


What can an organism's jaw tell us about their diet? What can an organism's teeth help give us clues to?

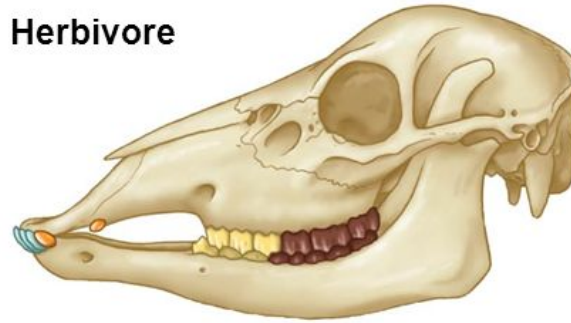


Figure 33.14

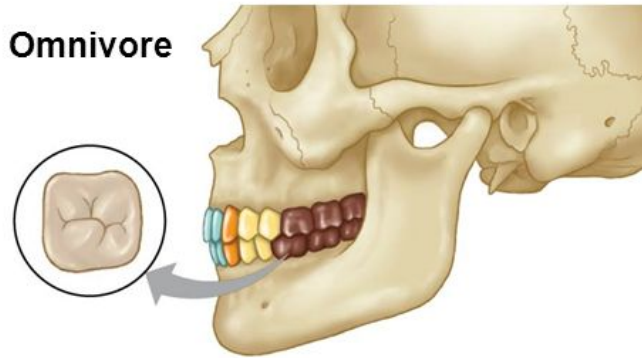
Carnivore



Herbivore



Omnivore



■ Incisors ■ Canines ■ Premolars ■ Molars

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Ecology

Why does this matter?



1111

Ecology



Habitat- an area where an organism lives
Ex- spruce tree

Niche- the relationship of a particular organism to its biological area
-the specific job the organism has in its habitat



Ex- Cape May Warbler and the Bay-Breasted Warbler

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Food Chains and Webs

food chain- series of steps in which organisms transfer energy by eating or being eaten

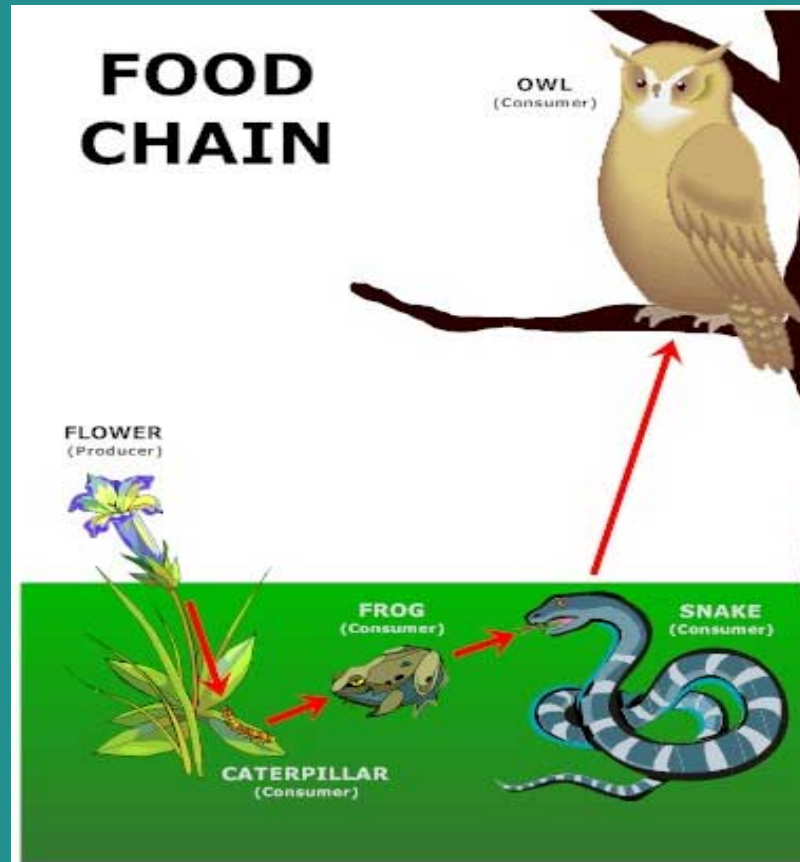
FLOW OF ENERGY

food web- links all of the food chains in an ecosystem

Ecology

food chain- series of steps in which organisms transfer energy by eating or being eaten

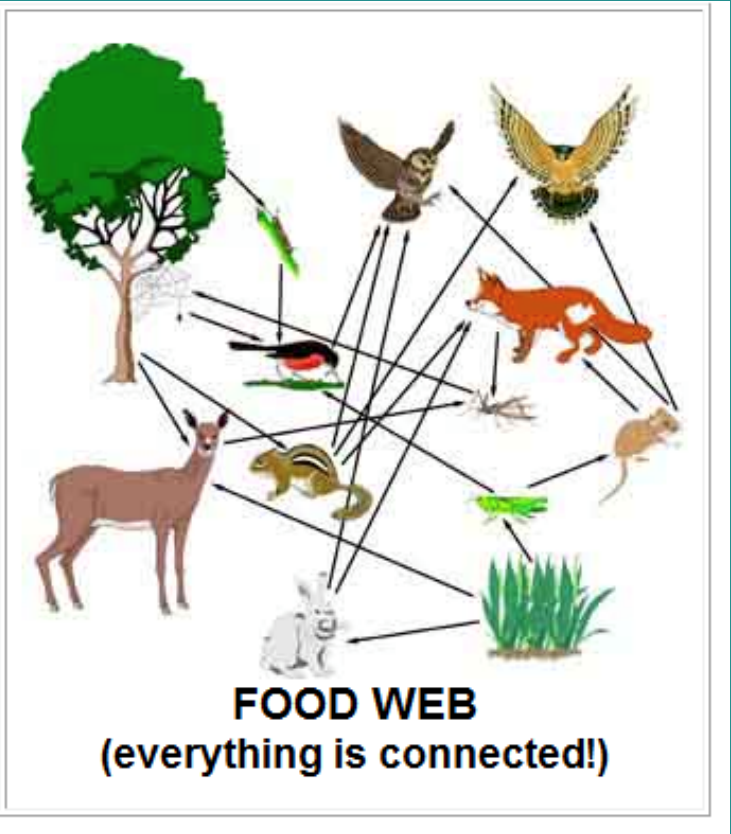
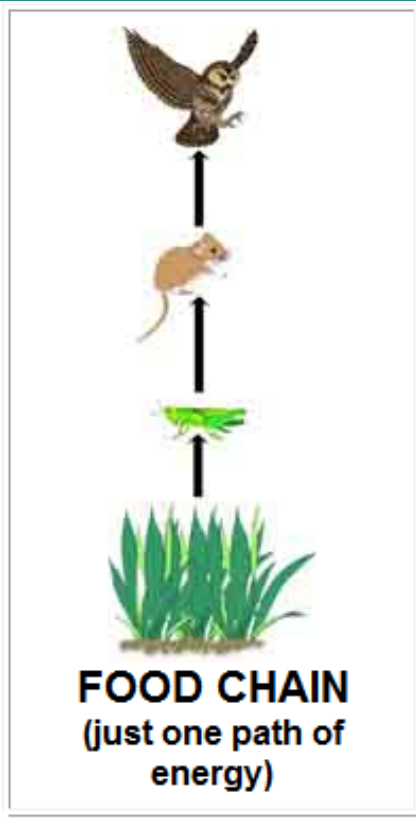
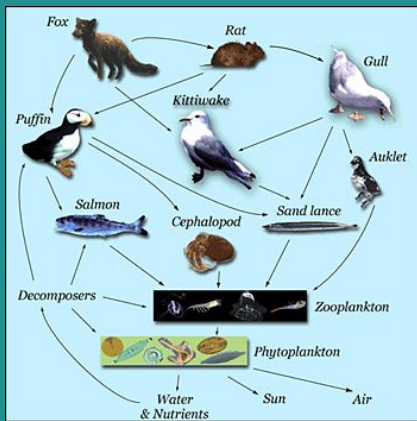
***All energy comes from the sun



0.

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food web- links all of the food chains in an ecosystem



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Symbiotic Relationship- the interaction of two organisms

Mutualism- both species benefit from the relationship




Commensalism- one member benefits, and the other is neither harmed nor helped

Parasitism- one organism benefits, and the other is harmed



Ecology

Symbiotic Relationship- the interaction of two organisms

	organism 1, organism 2		
Mutualism-	+	+	
Commensalism-	+	0	
Parasitism-	+	-	

Under what conditions does an ecosystem tend to be self sustaining?

E.A.R.

1) there must be a constant supply of Energy (the sun is this source for all life on earth)

2) there must be living organisms that can convert the energy into organic compounds (plants--Autotrophs--photosynthesis)

3) there must be a Recycling of materials between organisms and the environment

What kinds of organisms are found at the base of a food chain?

terrestrial



Plants and algae that make their own food and are called producers.



aquatic



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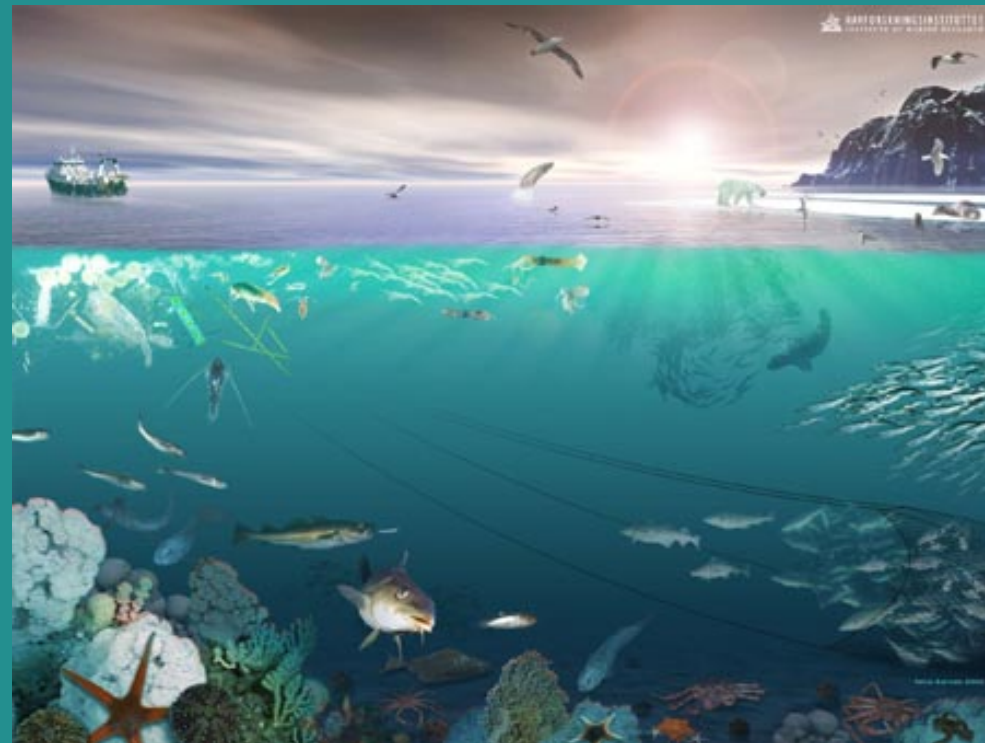
Order from smallest to largest



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What are the living parts of an ecosystem?

- population
- community
- ecosystem



Ecology

What are the living parts of an ecosystem?

ecosystem- biological environment with all biotic and abiotic components,

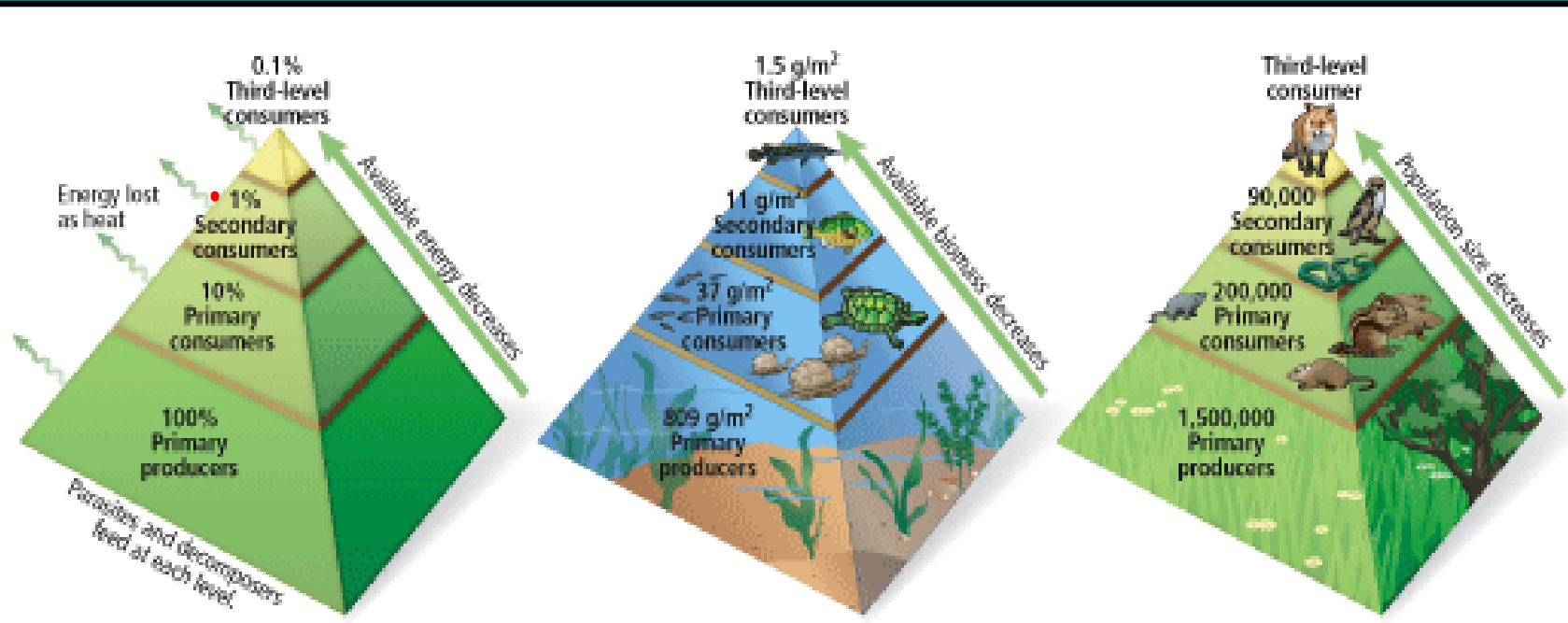
community- a group of interacting organisms in an ecosystem

population- group of one species living in a certain area



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Energy Pyramids



Pyramid of Energy

Pyramid of Biomass

Pyramid of Numbers

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tertiary consumer- eats
secondary consumer



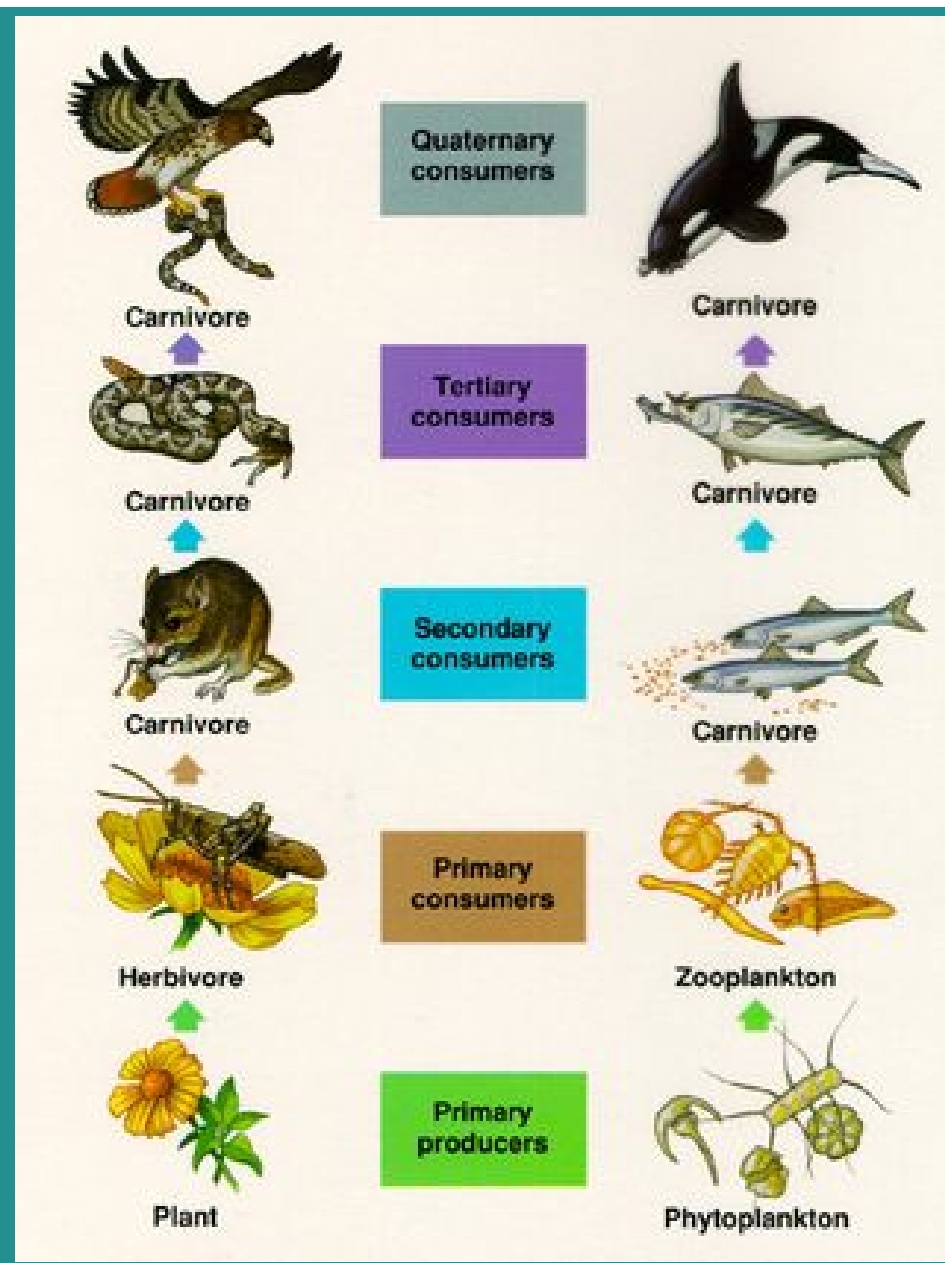
secondary consumer-
eats primary consumer



primary consumer-
eats plants



primary producer-
autotroph



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Trophic Level-
position of an
organism in a food
chain

Energy Pyramid-
graphic
representation of
the trophic levels

Energy Pyramid



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Energy Pyramid

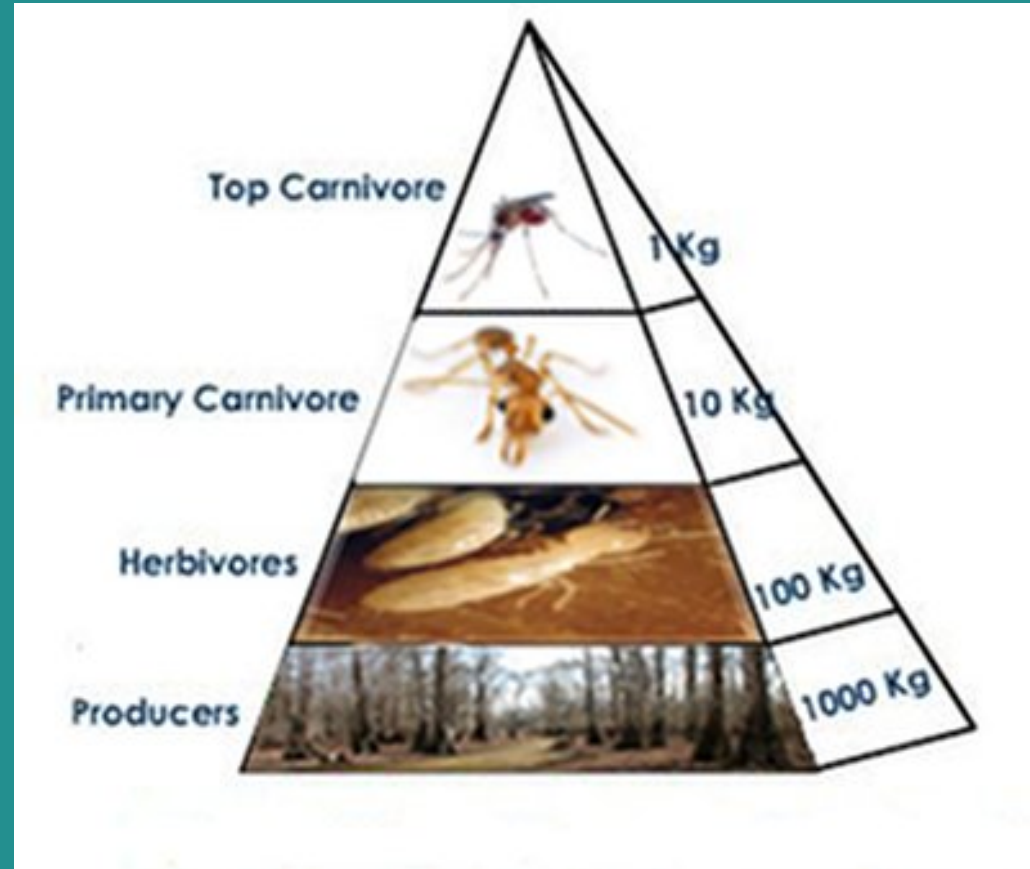
*Only 10% of energy is transferred from one trophic level to the next



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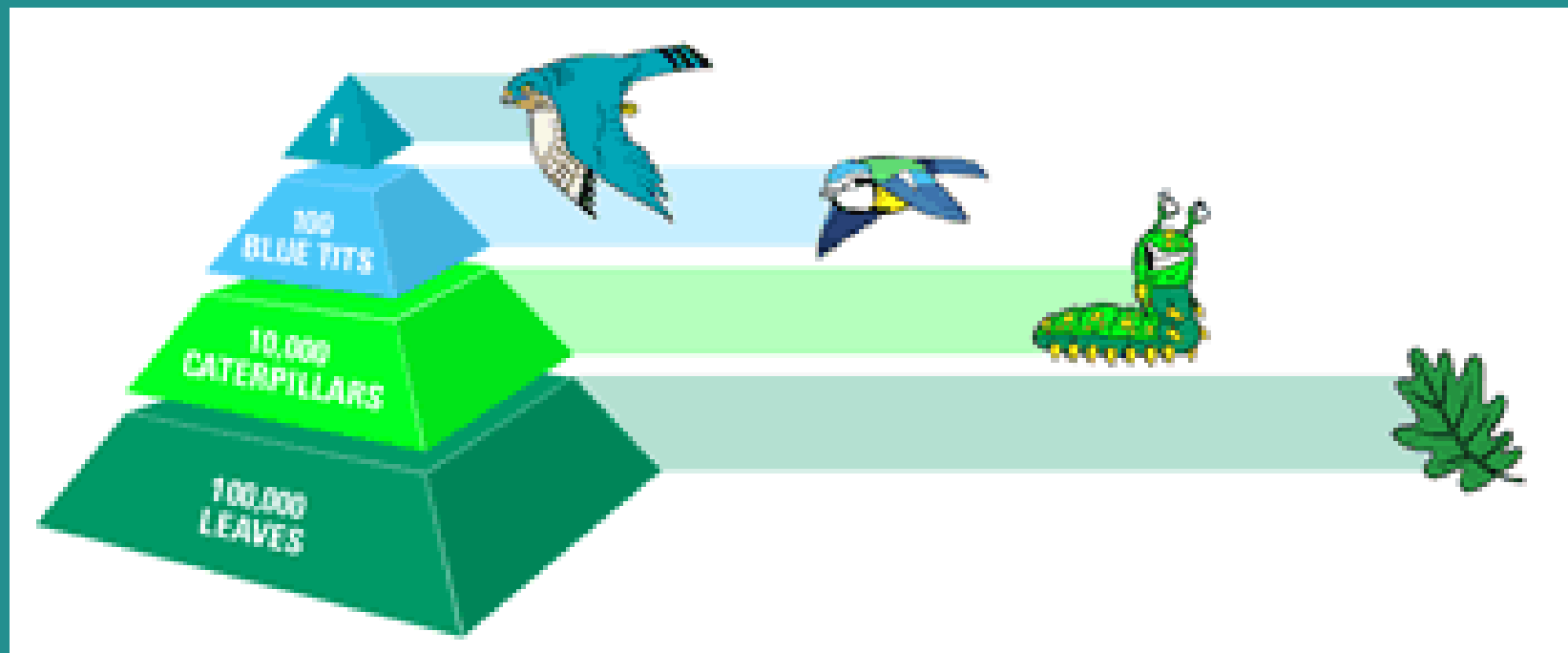
Pyramid of Biomass

Pyramid of Biomass-
shows amount of
biomass at each
trophic level



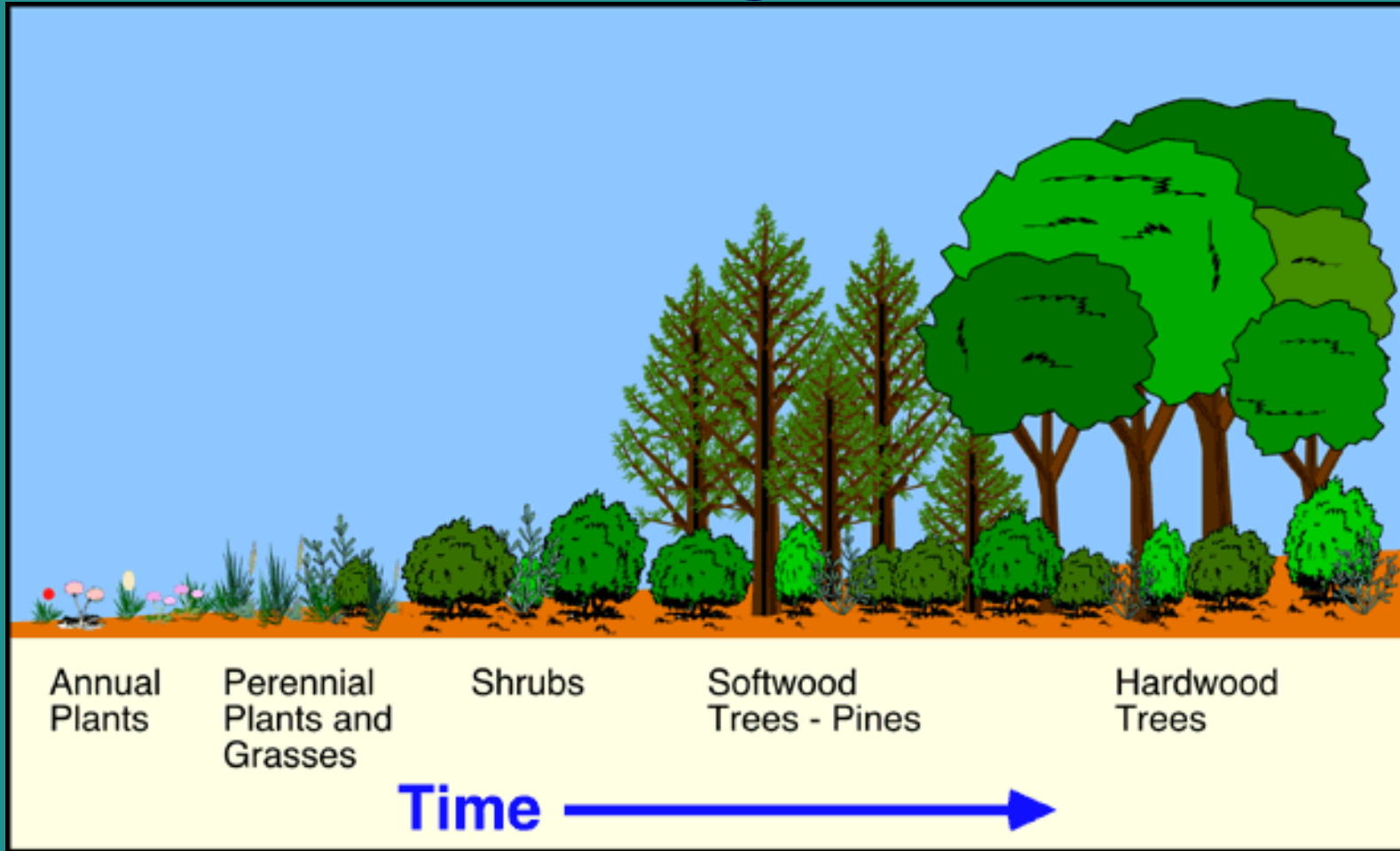
Ecology Pyramid of Numbers

Pyramid of Numbers- shows number of animals in each population at each trophic level



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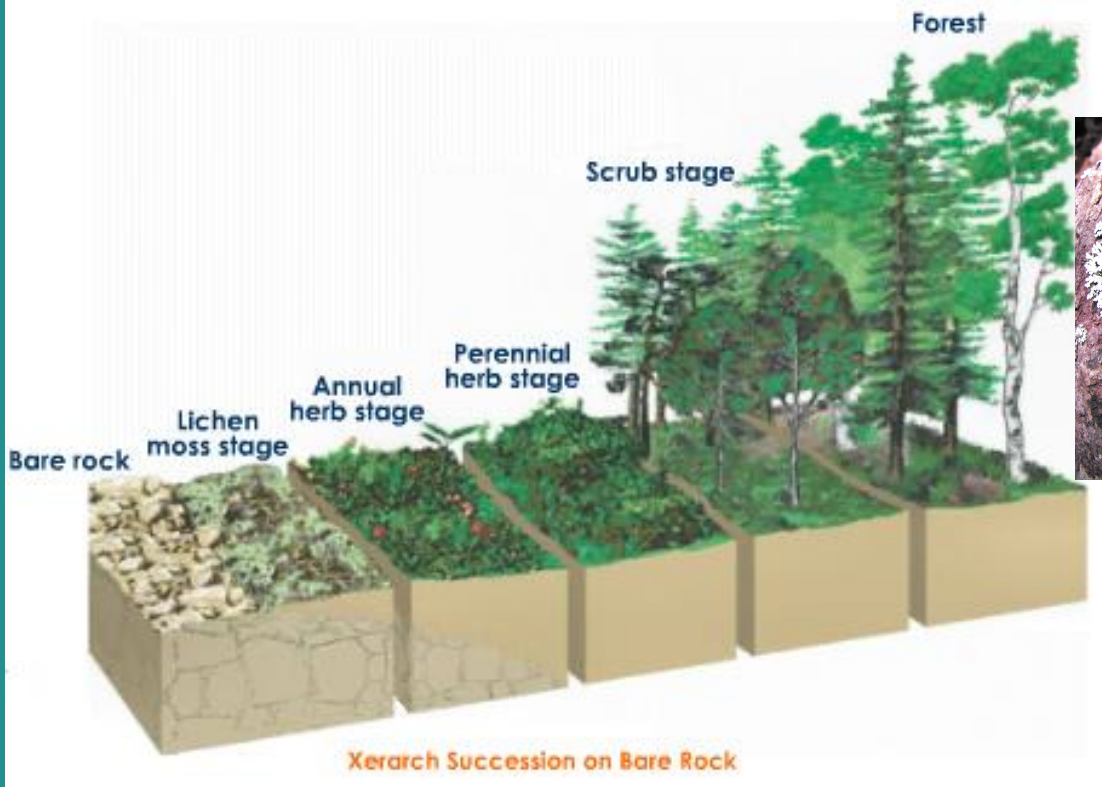
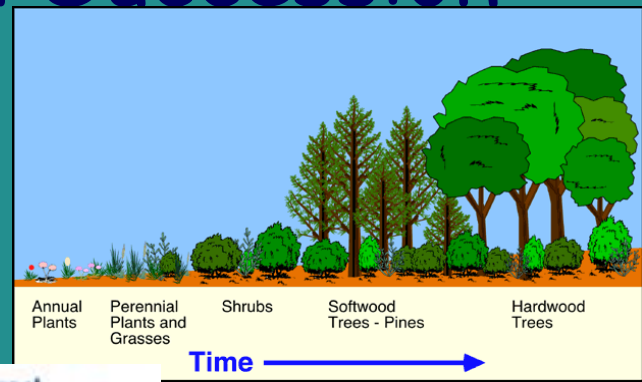
Ecological Succession



Ecology

Ecological Succession

Ecological Succession-
changes in the structure of
an ecological community



Xerarch Succession on Bare Rock

Ecology

Ecological Succession

Primary Succession- occurs in lifeless areas, where soil cannot sustain life

Ex- as result of a lava flow

PRIMARY SUCCESSION
for the temperate
deciduous forest

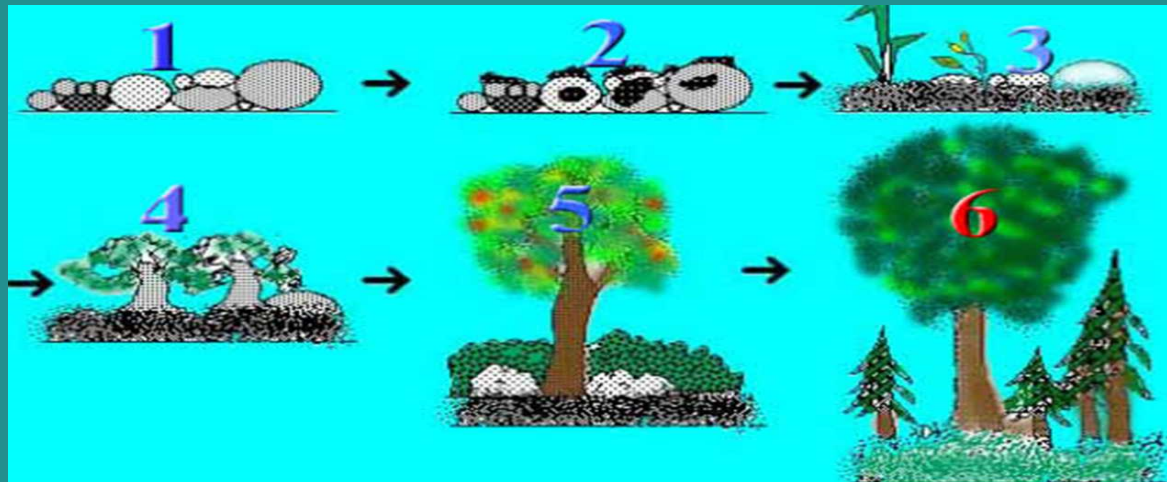


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Ecological Succession

Primary Succession- occurs in lifeless areas, where soil cannot sustain life

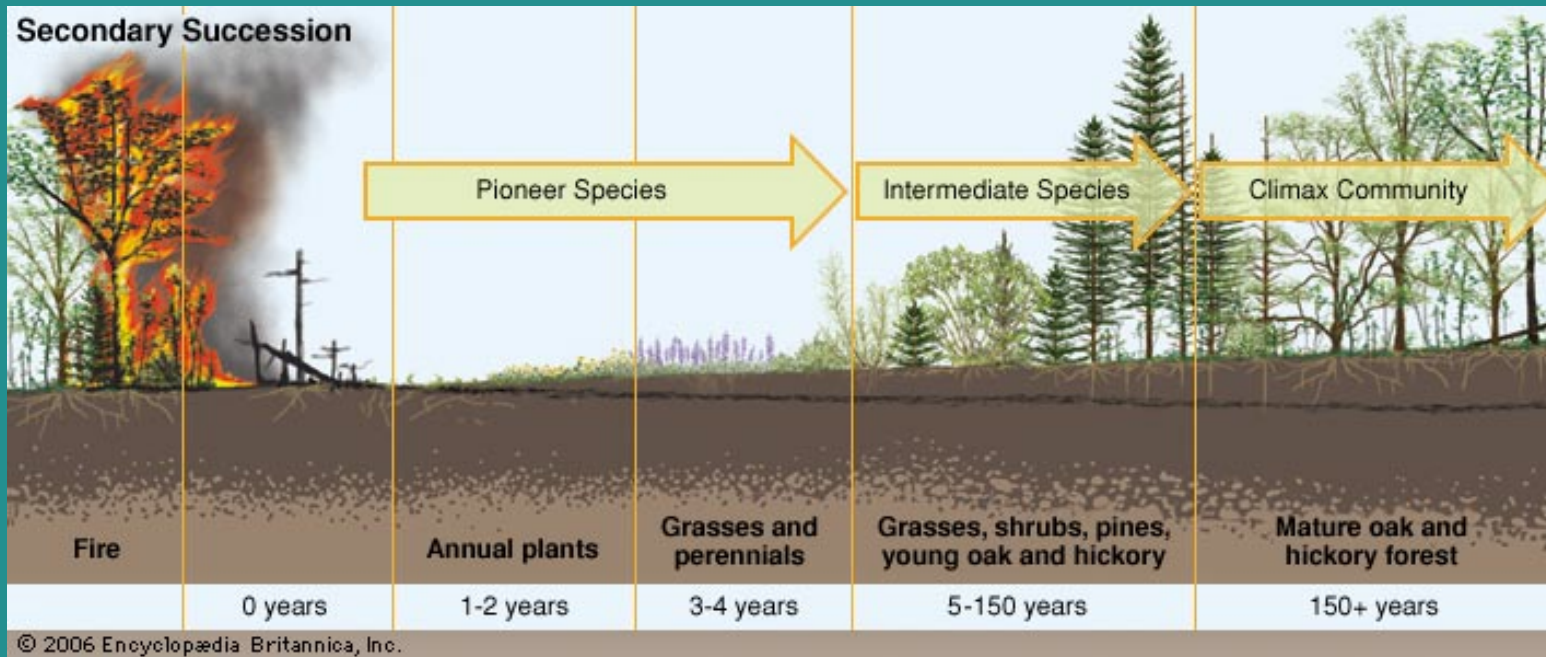
Ex- as result of a lava flow



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Ecological Succession

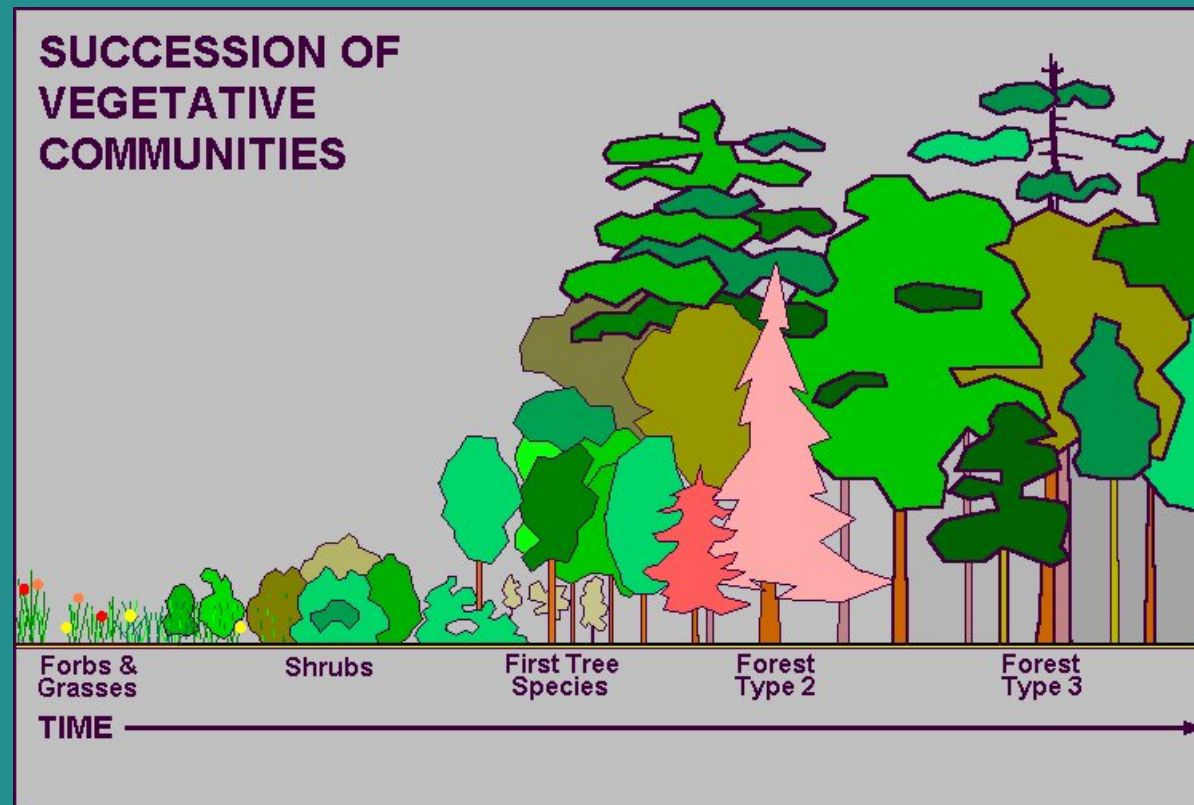
Secondary Succession- occurs in smaller areas where a community has been removed- disturbances that do not eliminate all nutrients and life



Ecology

Ecological Succession

Secondary Succession- occurs in smaller areas where a community has been removed- disturbances that do not eliminate all nutrients and life

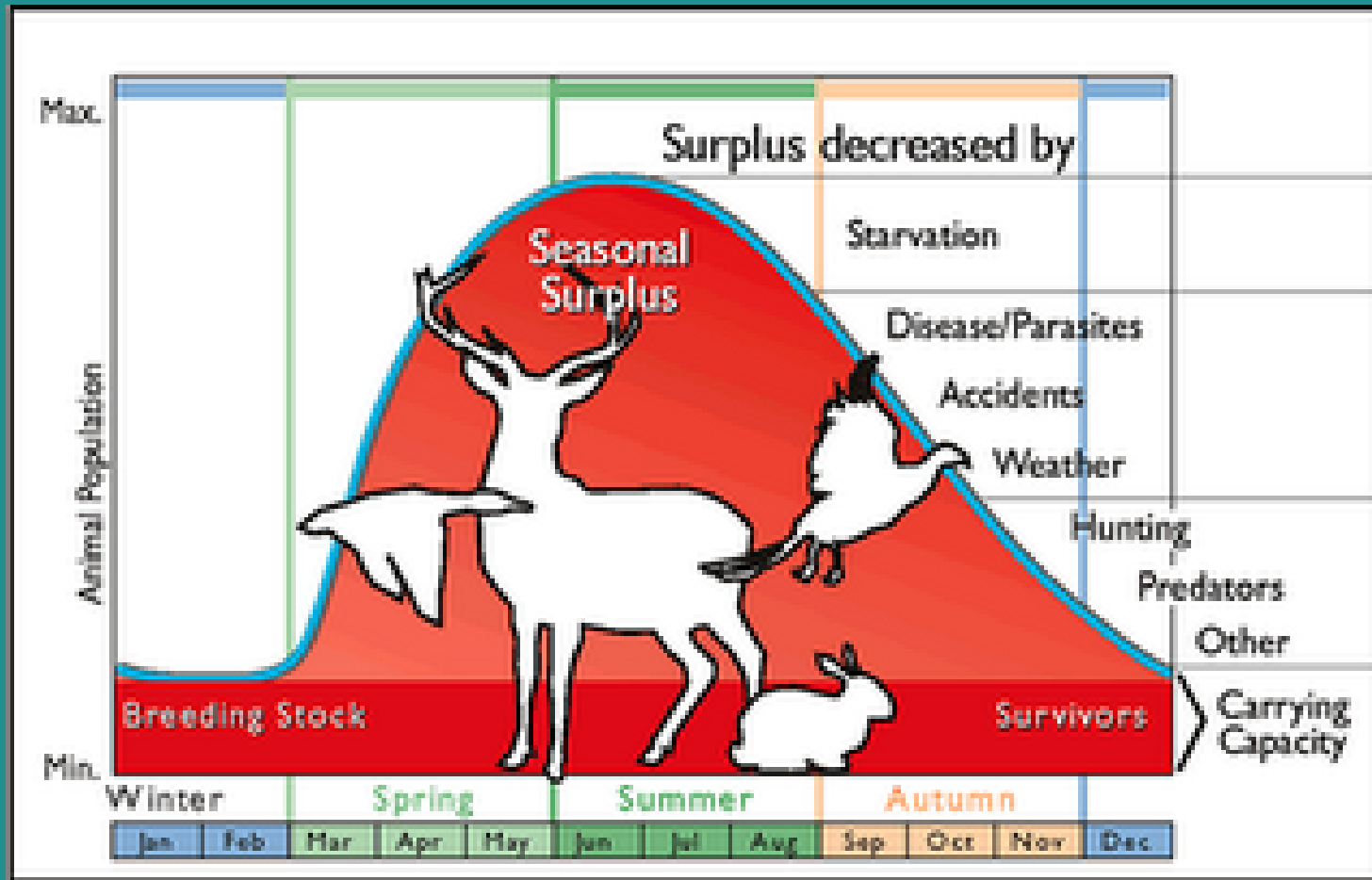


Pioneer Organisms- First organisms to begin growing after traumatic occurrence ex. moss & lichens



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Carrying Capacity- maximum number of organisms that an area can sustain



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Limiting Factors-
a component that is in short supply and limits an organism's ability to live

