“Bio”mes	“Out of line… bars or pies”	Extinction distinction	Mixed Bag of Fun ☺	Out with the New, In with the OLD
10	10	10	10	10
20	20	20	20	20
30	30	30	30	30
40	40	40	40	40
50	50	50	50	50

Category 1 questions follow

Question

Explain each of the terms and give an example of each:

-Ecosystem -Population -Community

-Genus -Species/Organisms

Answer

Ecosystem: All biotic and Abiotic features
Community: Group of various populations of species
Population: Group of one type of species
Species/Organisms: one single organism

Question

Why is the permafrost an integral part of the Arctic?

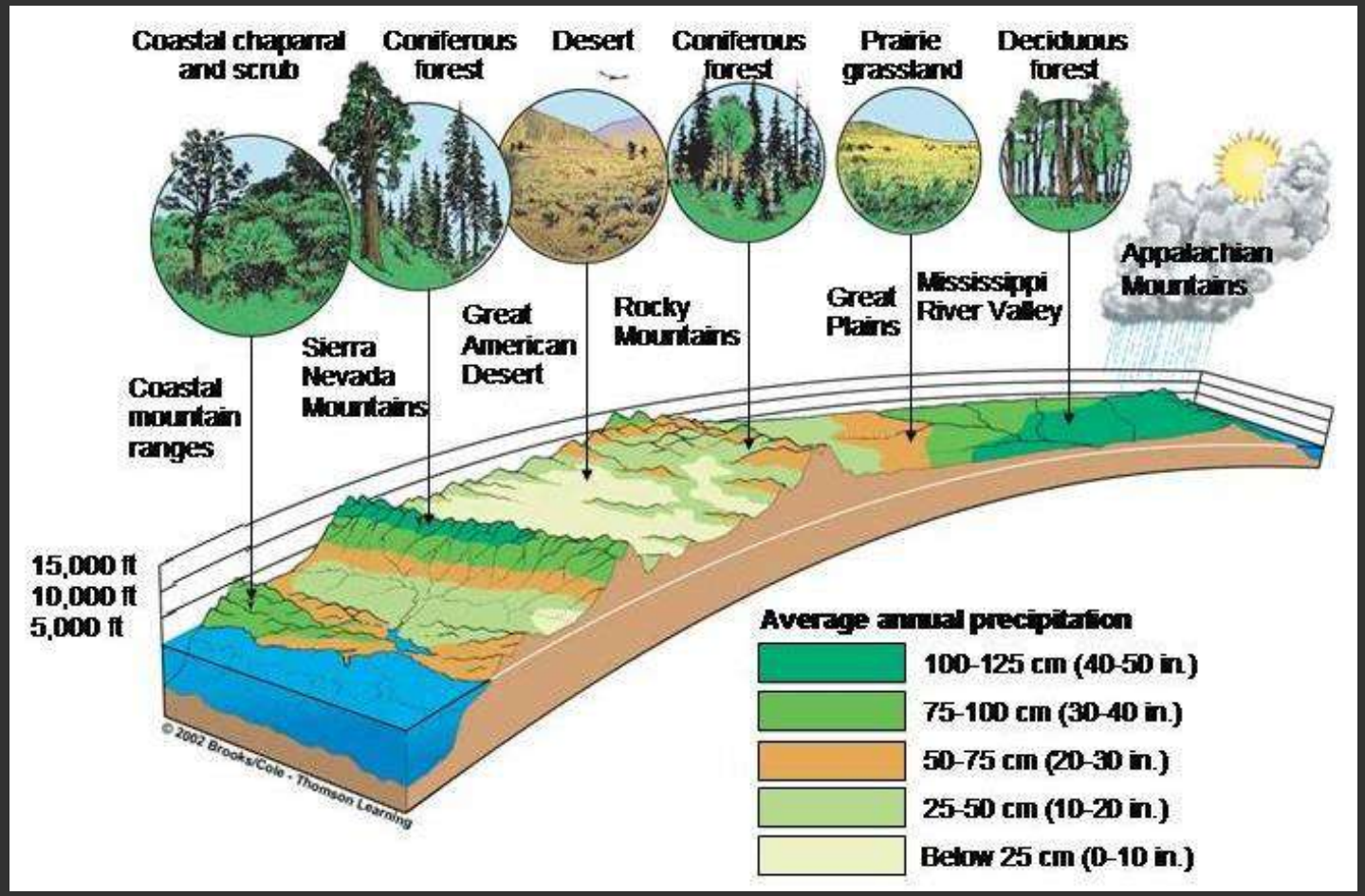
Answer

It supports the niche plants that thrive in the environment above. The melting can cause loss of soil (erosion)

Question

Describe the biomes we see heading west in the United States.

Answer


Coastal chaparral and scrub
Coniferous forest
Desert
Coniferous forest
Prairie grassland
Deciduous forest
Appalachian Mountains
Coastal mountain ranges
Sierra Nevada Mountains
Great American Desert
Rocky Mountains
Great Plains
Mississippi River Valley
15,000 ft
10,000 ft
5,000 ft
Average annual precipitation
100-125 cm (40-50 in.)
75-100 cm (30-40 in.)
50-75 cm (20-30 in.)
25-50 cm (10-20 in.)
Below 25 cm (0-10 in.)
© 2002 Brooks/Cole - Thomson Learning

Question

Describe a Rainforest and Savanna in terms of (soils, rainfall, temperature and biodiversity)

Answer

Rainforest: poor nutrients in soil, acidic soil, high biodiversity, humid and high rainfall

D. Forest: seasonal weather, fertile soils, ph of 6

Question

Referring to Latitude and Longitude, where would you expect to find the least humid biomes and why?

Answer

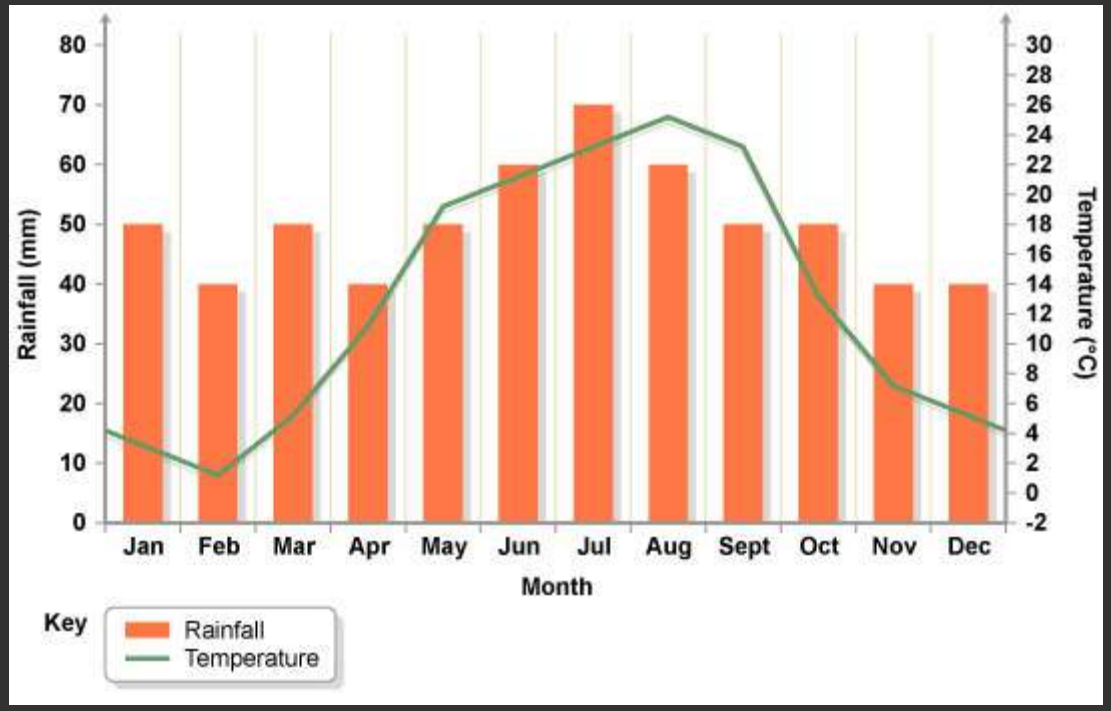
Around 30 degrees

Category 2 questions follow

Question

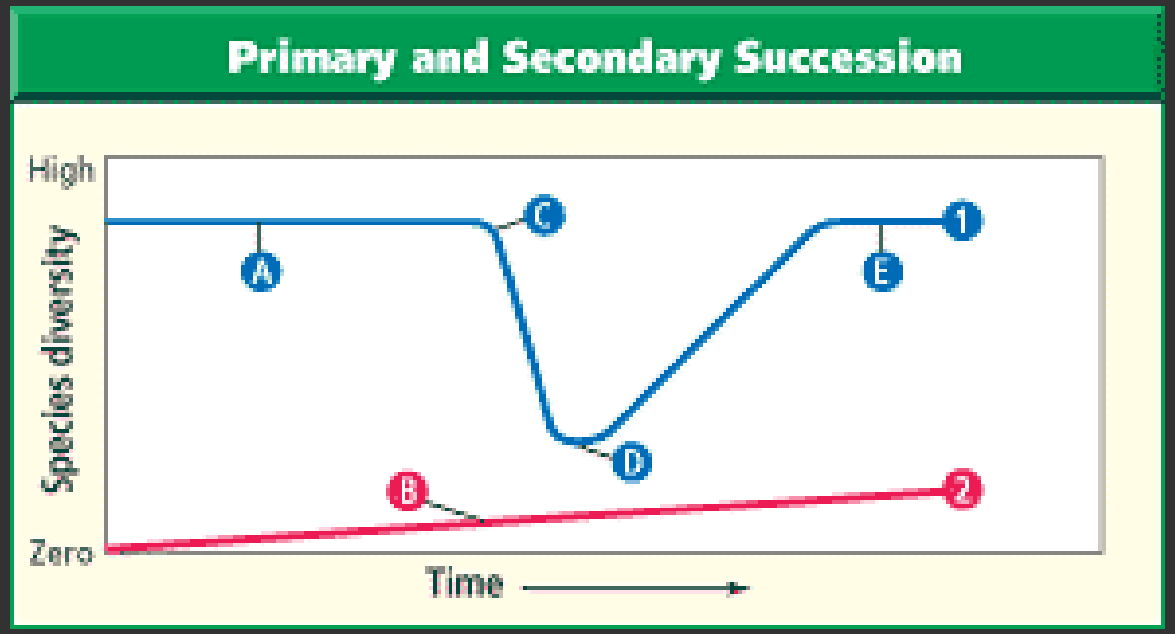
Draw and describe a climatogram for a temperate desert.

Answer


Rainfall (mm)
80
70
60
50
40
30
20
10
0
Temperature (°C)
30
28
26
24
22
20
18
16
14
12
10
8
6
4
2
0
-2
Jan
Feb
Mar
Apr
May
Jun
Jul
Aug
Sept
Oct
Nov
Dec
Month
Key
Rainfall
Temperature

Question

Which line on the graph do you feel best represents Primary Succession? Secondary Succession? Why??



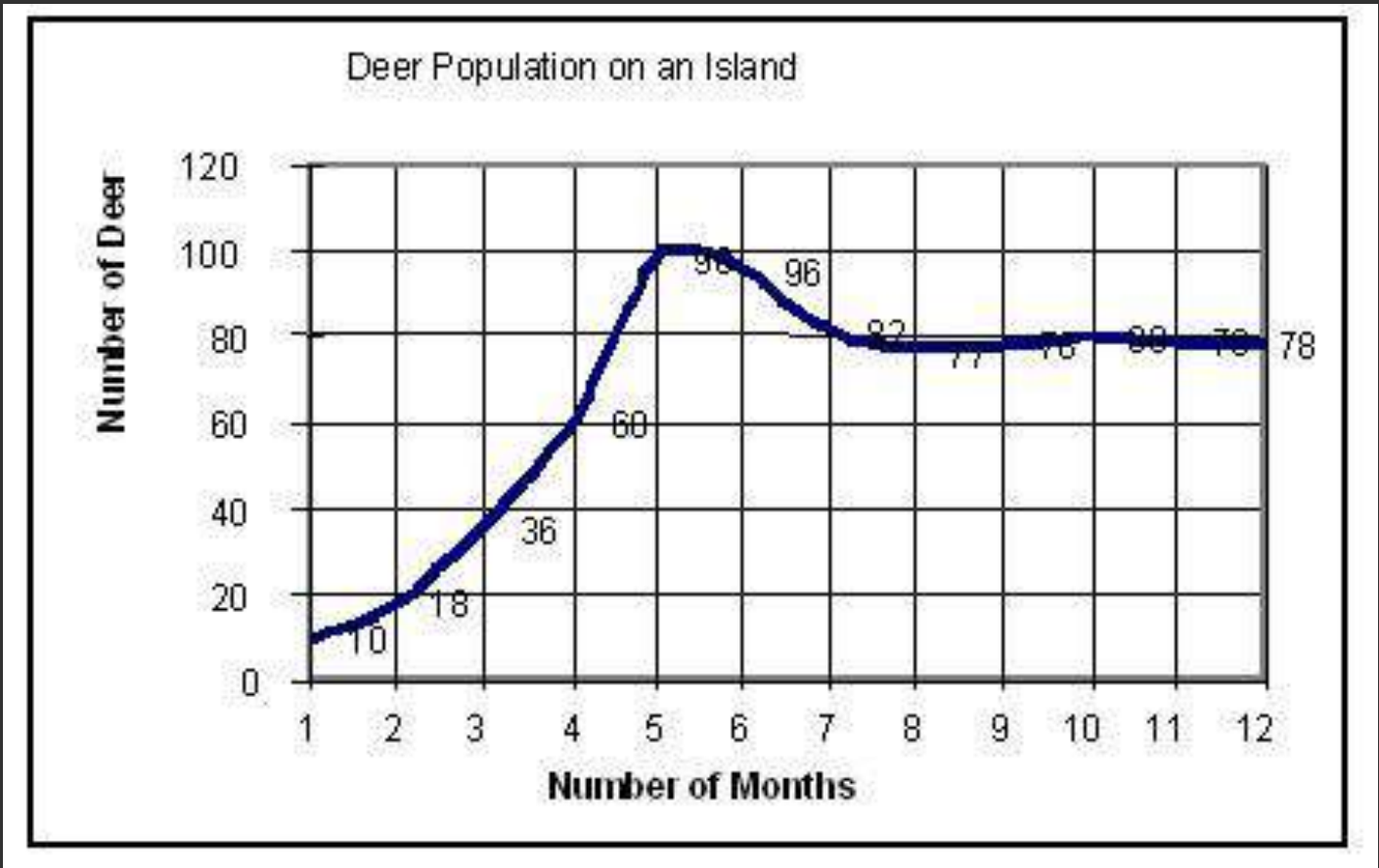
Answer

Red Line: Primary: Increase in Diversityy

Blue Line: Secondary, shows signs of decrease of diversity

Question

Define Carrying Capacity, and state what level do the deer reach their carrying capacity?



Answer

Carrying Capacity: number of individuals that can be maintained on the resources.

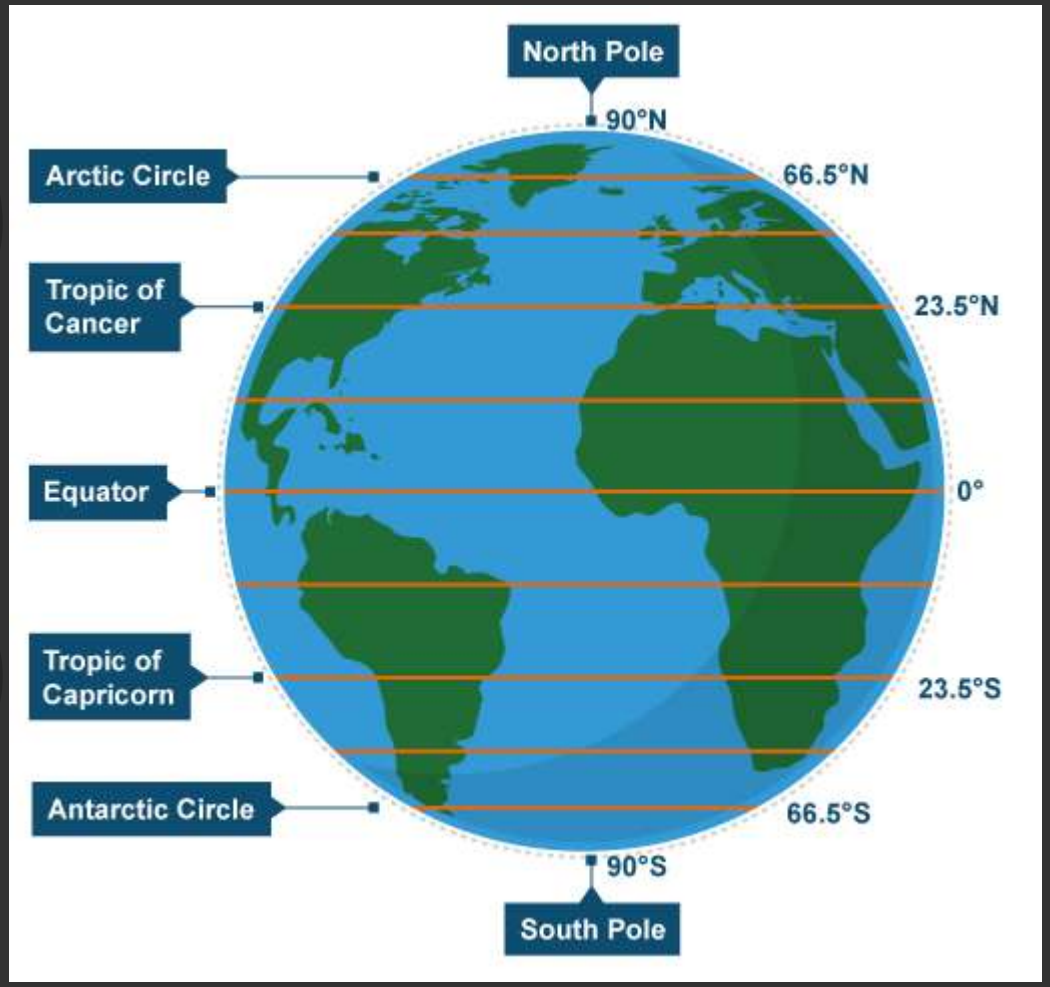
Level 76

Question

Draw the Following latitudes:
Equator, Capricorn, Antarctic, Arctic ad Cancer

Briefly Describe climate at each.

Answer



Eq: hot and humid
Cancer: Seasonal, full sun 6/21
Arctic: long cold winters, cool summer
Capricorn: very hot, sun directly over head, full sun 12/21
Ant: extremely low temps

Question

Calculate the Simpson's Index of Diversity for Sample 2

Species	Sample 1	Sample 2	Sample 3
1	10	20	100
2	10	20	1
3	10	10	1
4	10	10	1
5	10	2	1

Answer

942 / 3,782 = 0.24

Category 3 questions follow

Question

What is the major difference between a K-Species and a R-Species?

Answer

R Strategist: niche species, reproduce quickly, unstable environments

K species: thrives near carrying capacity, strong competitor, large, long life,

r Unstable environment, density independent	K Stable environment, density dependent interactions
small size of organism	large size of organism
energy used to make each individual is low	energy used to make each individual is high
many offspring are produced	few offspring are produced
early maturity	late maturity, often after a prolonged period of parental care
short life expectancy	long life expectancy
each individual reproduces only once	individuals can reproduce more than once in their lifetime
type III survivorship pattern in which most of the individuals die within a short time but a few live much longer	type I or II survivorship pattern in which most individuals live to near the maximum life span

Question

Compare Keystone Species to Indicator Species and give two examples of each.

Answer

Keystone: enriches environment, removal initiates complete change and loss of diversity

Indicator: sensitive to environmental factors, give early warning signal

Umbrella: large in number, lots of habitats, easily observed

Question

Describe the ways in which plants have evolved to survive in each of the biomes.

Answer

Rainforest: broadleaf
Coniferous Forest: Needle Shape, Wax
Desert: water retention, spikes
Grasslands: Low brush
Arctic: shallow root system

Question

Describe the Rainshadow Effect; how does it relate to evolution and environmental science?

Answer

Moist air travels up the Mt. Range, cools and condenses.

Determine biomes based on the windward and leeward sides of mountain

Question

Using the Finches studied by Darwin, explain how he used them to explain evolution; what MUST be true about their traits to actually show evolution?

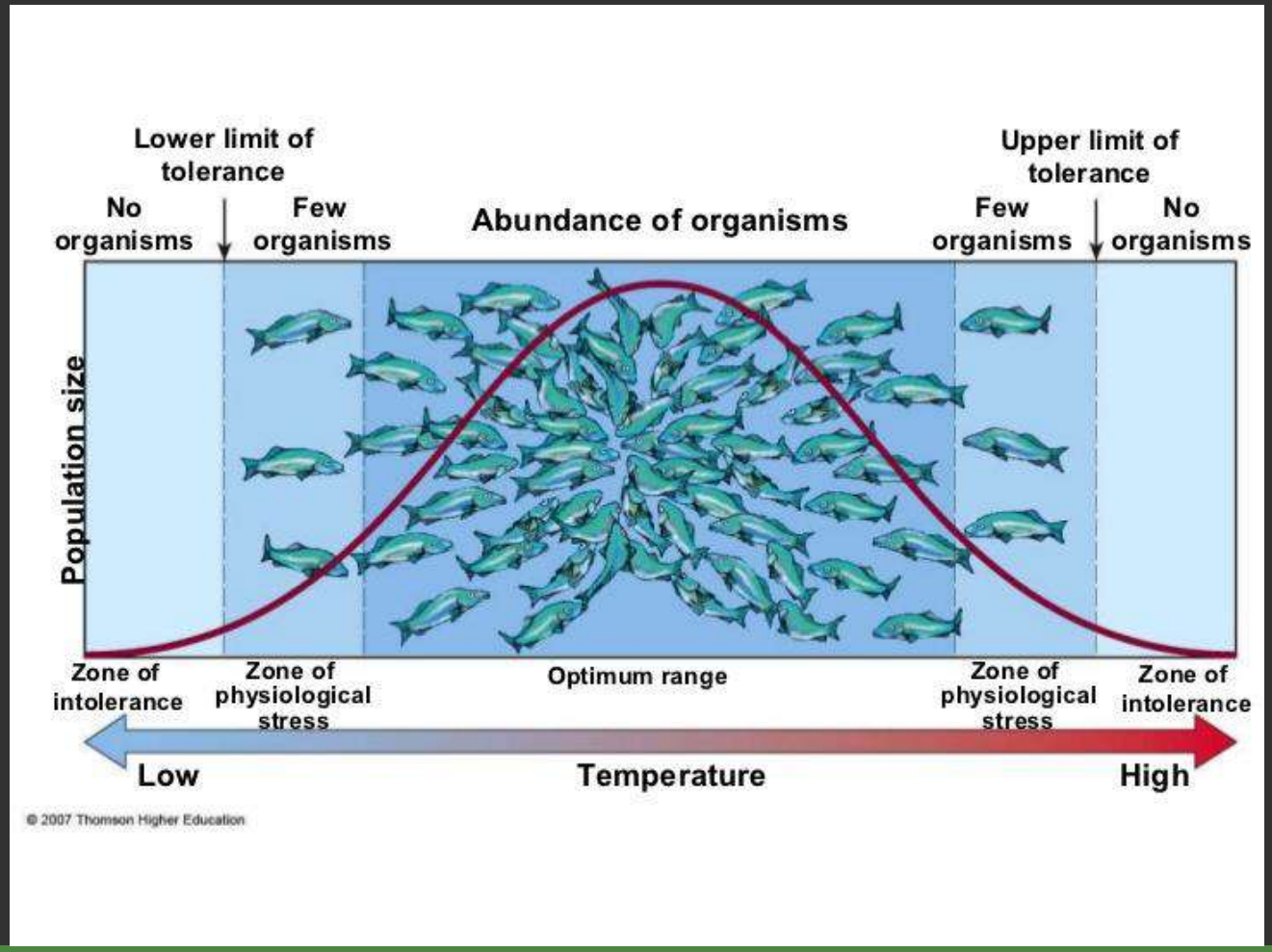
Answer

Traits changed due to food available. The trait has to to give them an advantage and be heritable.

Category 4 questions follow

Question

Describe the relationship of temperature to population size of the graph below.

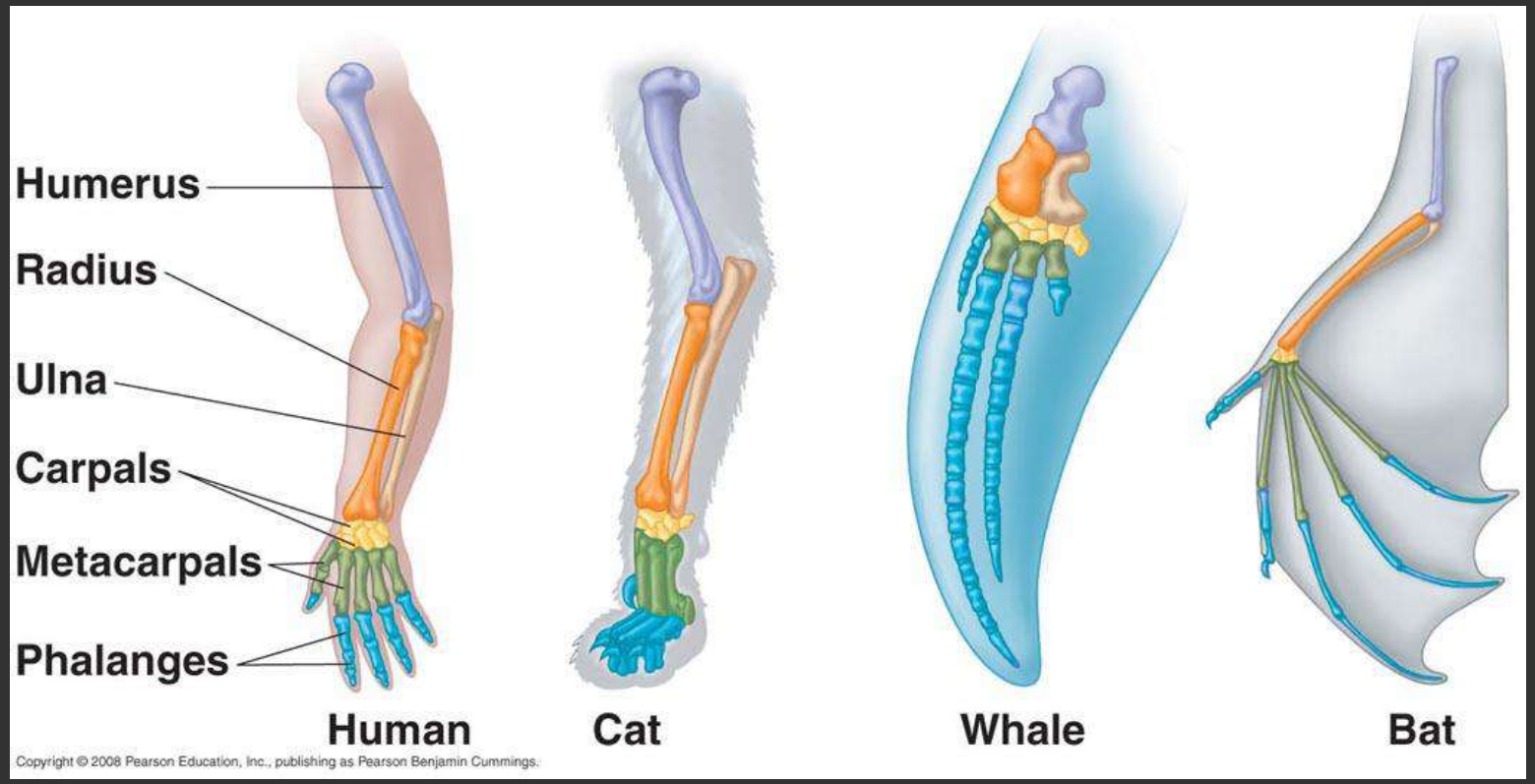


Answer

As the temperature decreases the fish go into a zone of stress then intolerance, same is true for extreme warmer temperatures.

Question

Describe the Figure below and how it best relates to evolution and natural selection



Answer

Homologous structures showing that they have a common ancestor showing they had to evolve through natural selection to best meet the needs and changes of their environments.

Question

Describe the Density Dependent and Independent factors that effect environmental resistance and logistical growth

Answer

DD: Disease

ID: Natural Disasters

Question

What are the species interactions of the figures below?

A

B

C

Answer

A: Interspecific
B: Intraspecific
C: Mutualistic

Question

Think of the two Current Events discussed this week; how do each relate to Environmental Science?

Answer

Endangered Bees: Keystone Species, huge impact on all ecosystems

Approval of Oil Pipeline: more convenient cost for buyers, but potential threat to groundwater!

Category 5 questions follow

Question

Why are invasive species an issue for the ecosystems? Give two examples.

Answer

They use the resources of other species, take over the area, reproduce rapidly

Question

Describe how Tragedy of the Commons can be related to Succession.

Answer

Succession is started by a disaster such as deforestation.

Question

Describe the NPP for the biomes and what changes them.

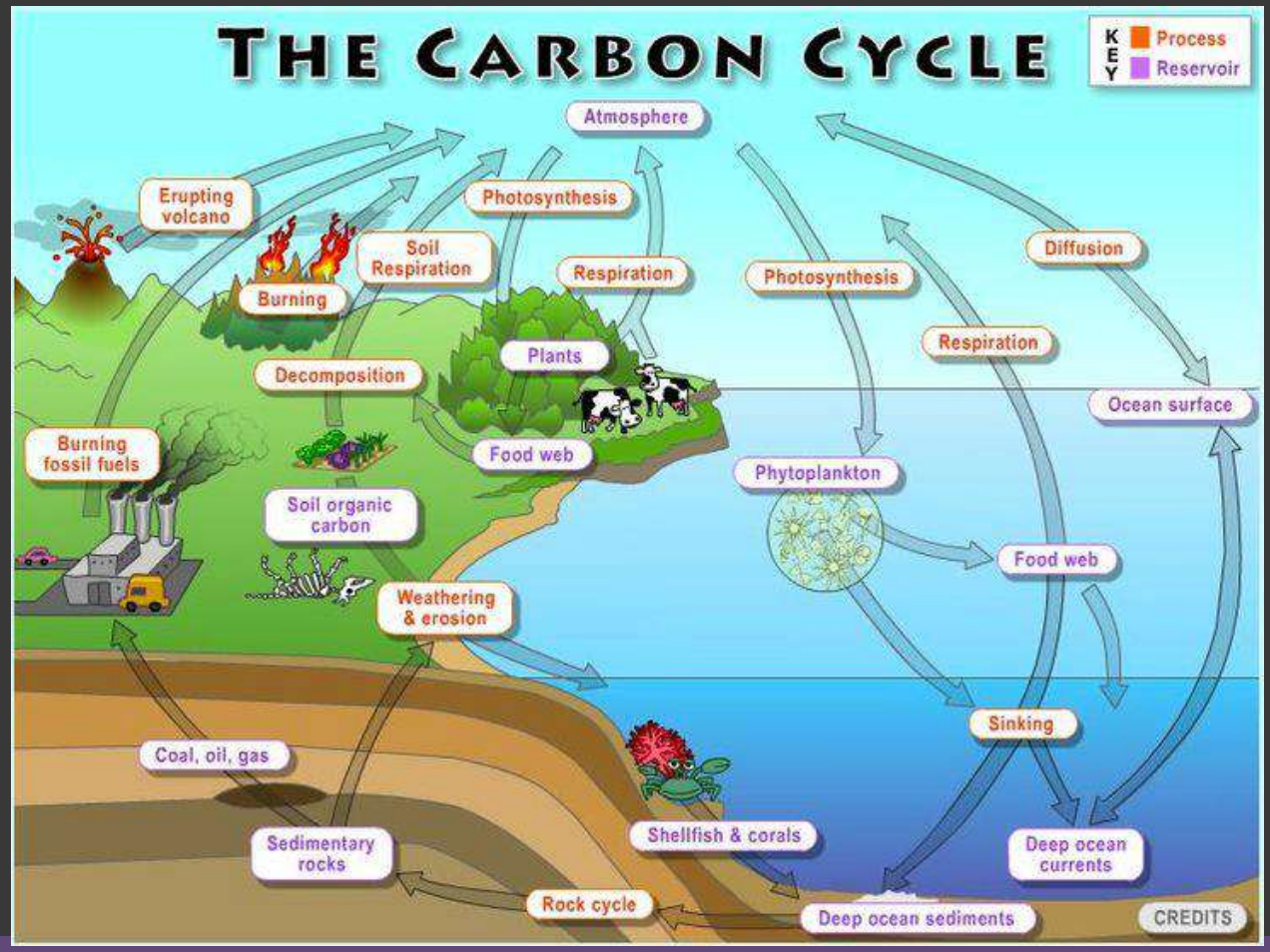
Answer

Rainforest: High
Temp. Forest: High to mid
Conif. Forest: Mid
Savanna: Mid to Low
Tundra: Low
Deserts: Below Low

Factors: Temperature, Daylight, Precipitation

Question

Referring back to the Carbon Cycle, how does climate, and evolution factor into it?



Answer

Decomposition of animals if they do not survive evolution puts the nutrients back into the soil.

Deforestation, burning, weather patterns on the coast can lead to succession in ecosystems.

Question

Create a simple plan to test the effects of climate on biodiversity in a given biome.

Answer

-Open Ended-