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What is Ecosystem

An ecosystem is a large community of living organisms (plants, animals and microbes) in a particular area. Ecosystems are of any size, but usually they are in particular places.



A lake could be considered an ecosystem.

Habitat and Niches

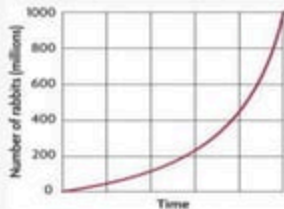
- Every organism has a habitat and a niche.
- A habitat is all aspects of the area in which an organism lives.
- An ecological niche includes all of the factors that a species needs to survive, stay healthy, and reproduce.

Population & Growth Pattern

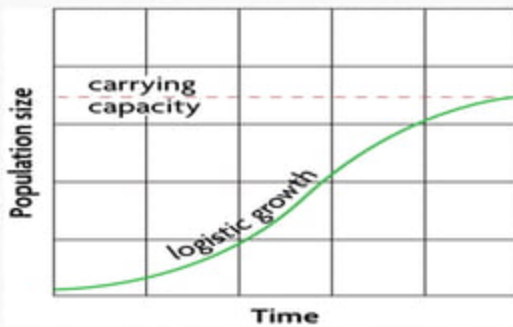
- Populations grow in predictable patterns.
- The size of a population is always changing.
- Four factors affect the size of a population.
 - immigration
 - births
 - emigration
 - deaths

Population growth is based on available resources.

- Exponential growth is a rapid population increase due to an abundance of resources.



- Logistic growth is due to a population facing limited resources.



Carrying Capacity

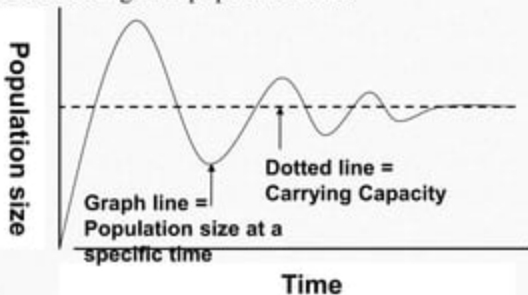
- Carrying capacity is the maximum number of individuals of a species that an ecosystem can support.

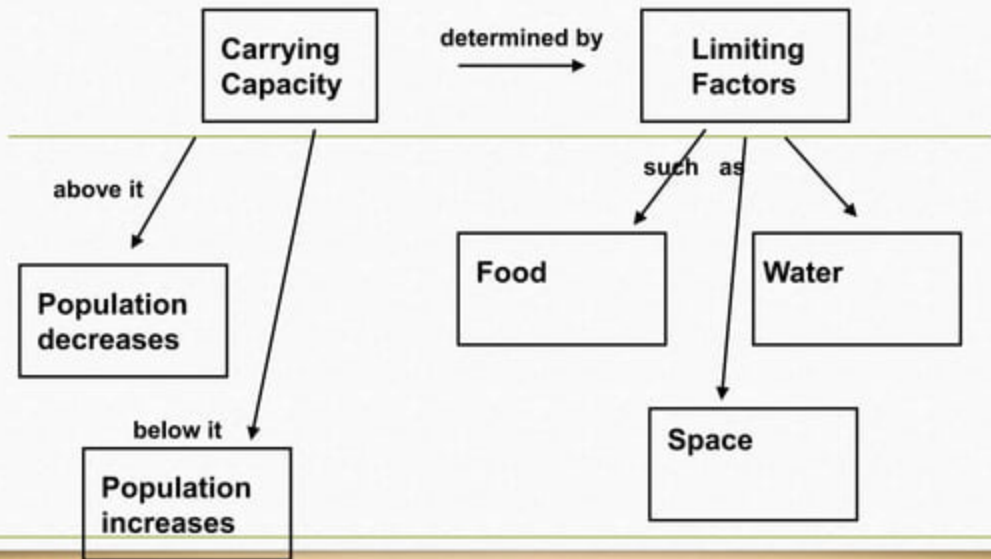
(Or)

- Carrying capacity = maximum number of organisms that can live somewhere, based on the Food , water and free Space.

Carrying capacity graph

- We can read a carrying capacity graph to predict changes in population size
 - Below carrying capacity = increase
 - Above carrying capacity = decrease
 - Over time, population stabilizes at carrying capacity





Limiting Factors

- A limiting factor is an environmental factor that causes a population to stop growing.
- A limiting factor is an abiotic or biotic factor that restricts the number of individuals in a population.

Abiotic Factor

- The physical components of an ecosystem.
- Any nonliving part of the environment.

Biotic Factor

- The biological influences on organisms.
- Any living part of the environment with which an organism may interact.

Abiotic Factors that influence carrying capacity

- Temperature
- Precipitation
- Soil composition
- pH
- Humidity
- Salinity
- Amount of sunlight
- Availability of nitrogen

Biotic Factors that influence carrying capacity

- All biological aspects of an ecosystem fall into this category.
- Vegetation composition often determines what species will be attracted to a given area due to food availability.
- Scientists note that competition, predator-prey relations, mutualism, and host-pathogen interactions are critical to consider when assessing carrying capacity.

References

- Famutimi John Taiwo¹ and Oni Oluwasola Feyisara² , Understanding the Concept of Carrying Capacity and its Relevance to Urban and Regional Planning, Journal of Environmental Studies, April 2017 Vol.:3, Issue:1
- www.sustainablemeasures.com
- [en.wikipedia.org > wiki > Ecosystem](http://en.wikipedia.org/wiki/Ecosystem)

Thank You