POPULATION DYNAMICS

∞ Population: a group of organisms of one species defined in a space and time.

∞ Habitat: a place where a population lives and carries out it's activities.

∞ Population Size: depends on four factors:
  ∞ Natality: rate of birth
  ∞ Mortality: rate of death
  ∞ Immigration: individuals enter the population.
  ∞ Emigration: individuals leave the population.

∞ Growth Curves or Growth Patterns. Two main types:
  ∞ J-Curve- typical of closed populations (only N and M affect population)

  ∞ S-Curve- typical of open populations (all 4 factors affect).

∞ Control of population size: Factors which control Natality, Mortality, Immigration, and Emigration are called Limiting Factors. These may include water, space, food, pollution, effect of other populations.

∞ Also a limiting factor is Biotic Potential- the maximum number of offspring that a species could produce, if resources were unlimited. Four factors regulate the biotic potential:
  ∞ Birth potential: the maximum number of offspring per birth.
  ∞ Capacity for Survival: the number of offspring that reach reproductive age.
  ∞ Procreation: the number of times that a species reproduces each year.
  ∞ Length of Reproductive life: the age of sexual maturity and the number of years the individual can reproduce.

∞ Density-independent Factors: affects members of the population regardless of its size. Examples are fire and flood.

∞ Density-dependent Factors: affect the population because of it's density. Examples are food supply, water, sunlight, disease, and space.

∞ The sum of all limiting factors ➜ Environmental Resistance

∞ Carrying Capacity: the stable level, or the maximum number of a species that can be supported indefinitely by an ecosystem. It is determined by the availability of resources. In mature ecosystems, populations will remain stable over the long term.