Population genetics

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Population

- Summation of all the organisms of the same group or species that live in a particular geographical area.

Important characteristics

- **Gene fund**-set of all genes in reproduction gametes
- **Polymorphous of population-** heterogeneity of individual organism
- **Density of population** - number of individuals at the same time and in the same place
- **Effective size of population-** number of reproductive individuals
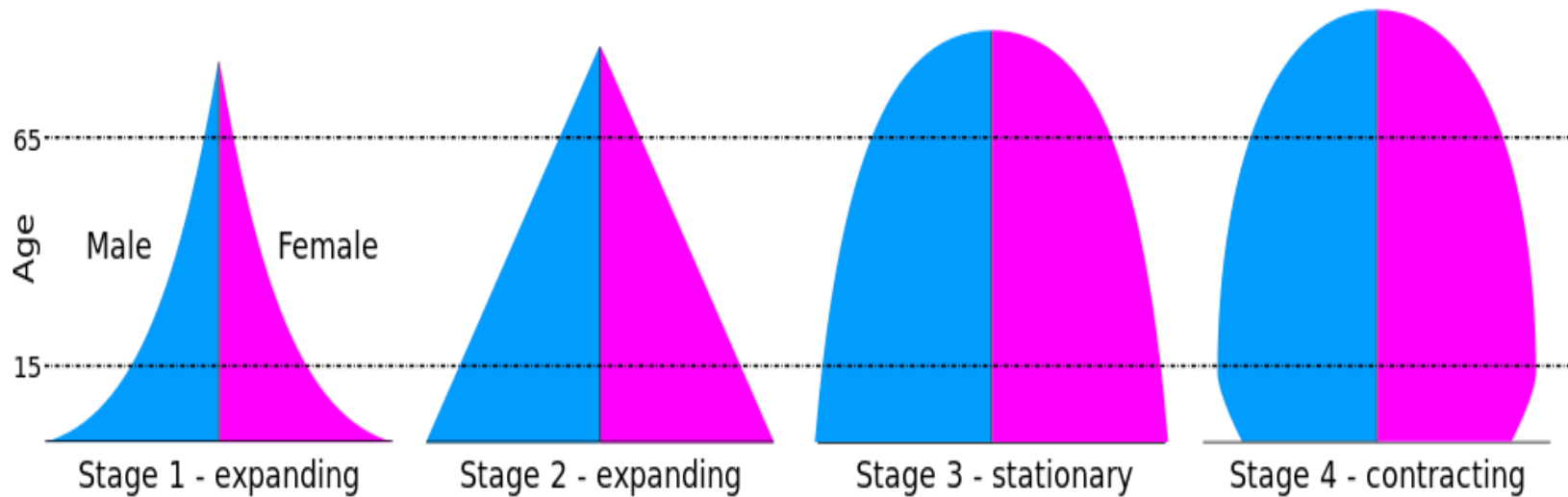
Structure of population- population size

- Number of individual organisms in a population:
  - Overpopulation
  - Small population size

Population pyramid

- Also called the age pyramid or the age picture diagram
- A graphical illustration that shows the distribution of various age groups in a population
- Population pyramids are often viewed as a way to graphically depict the age and sex distribution of population

Types of population

https://en.wikipedia.org/wiki/Population_pyramid.

Population-genetic models of evolution

- Usually define evolution as any change in a populaton´s genetic composition over time

- Four factors that bring change:
  - Natural selection
  - Mutation
  - Random genetic drift
  - Migration into or out of the population

Selection

- Two types
  - Natural-selection of the best individuals

  - Artificial
    - Negative-eliminate unwanted genotypes
    - Positive- bring favourable genotypes

Random (genetic) drift

- Change in the frequence of a gene variant (allele) in population due to random sampling of organism.

- The alleles in the offspring are a sample of those in parents, and change has a role in determining whether the given individual survives and reproduces

Migration

- Two types:
  - Into the population-genes migrate into
  - Out of population-genes migrate out

- End result- disturbance balance gene and genotype in population

References

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