

Gene Pool Encyclopedia Article

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Gene Pool

The genetic material that is contained within a population of sexually reproducing organisms is known as the gene pool. For a gene pool to exist, the genetic material must be interchangeable in some way between individuals. Therefore it is specific to outbreeding populations. A gene pool is of no fixed size. Small gene pools may die out quickly, whereas large ones are more stable.

A genetically isolated population, or "deme," depends upon its gene pool for its evolutionary future. Within the population there is gene flow, a movement of the genes within the deme as a result of breeding. The overall gene frequency remains the same within the deme. This constancy is known as the genetic equilibrium.

Within a small population it is possible by chance for genes or alleles to be lost from the gene pool because the individual carrying them fails to reproduce. This natural variation in gene frequency within the gene pool is known as genetic drift. If adjacent populations were to meet, a small amount of breeding could possibly take place which would alter the composition of the gene pool. If the two populations were to start to freely interbreed, then they would become one enlarged gene pool.