

Genetic Drift

Biology

Random change in allele frequency, and when it dominates selection.

Random fluctuation in allele frequencies between generations due to chance sampling, independent of any fitness advantage.

STRONGEST IN
small populations

DIRECTION
random

- Effects are inversely proportional to population size.
- Can fix or eliminate alleles regardless of fitness.
- Founder effect: a new population from a few individuals.
- Bottleneck: a population crash reduces variation.
- Reduces genetic diversity over time.
- In very small populations it can override selection.

LOOK FOR IT

Cheetahs show very low genetic diversity, consistent with a severe historical bottleneck.

Neutral theory holds that most molecular variation is selectively neutral and governed by drift, not selection.