

CONSERVATION STRATEGIES

Importance of Genetic Biodiversity:

- Individuals within a species often have very little variation within their DNA, as all members of the **same species share DNA**. However, different versions of genes, **alleles**, allow for **different characteristics** between organisms of the same species.
- Species with **greater biodiversity** are **less likely to become extinct** because they can adapt to sudden changes in the environment as some individuals will have a certain allele that aids survival, for example innate immunity.

Factors Affecting Genetic Biodiversity:

- **Mutation**, creating a new allele, increasing genetic biodiversity.
- **Interbreeding between populations** from different regions, so a variety of alleles are distributed between the populations, called gene flow, increasing genetic biodiversity.
- **Selective breeding** means a minority is picked for desired characteristics, meaning a higher proportion of organisms within a species share the same allele, reducing genetic biodiversity.
- **Captive breeding programmes** where there is a small gene pool reducing genetic diversity.
- **Cloning/asexual reproduction**, where a new organism is genetically identical to its parent means there is no variation in genes across generations, reducing genetic biodiversity.
- **Natural selection**, where only organisms with characteristics beneficial to survival survive to reproduce and pass of their genes, meaning that a higher proportion of organisms within a species, reducing genetic biodiversity.
- **Genetic bottleneck**, where a few individuals in a population survive a sudden change or event, and this leaves the species with a small gene pool, reducing genetic biodiversity.
- **Founder effect**, where a small number of individuals start a new colony geographically isolated from the other, with the gene pool for this population being very small, and the subsequent generations having a high chance of having a previously uncommon allele.
- **Genetic Drift**, due to the randomisation of alleles being passed from parents to offspring, the frequency of occurrence will vary, sometimes causing a gene to disappear completely.

Write a sentence, which describes the conservation strategies, used to help reduce genetic loss in NZ Species

1. Translocation

2. Traps

3. Fenced Sanctuaries

4. Predator Control

5. Riparian Corridors

6. Genome sequencing (Kakapo)
