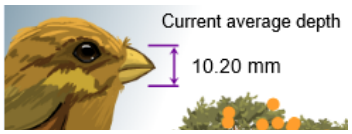
Vocabulary: Rainfall and Bird Beaks

Vocabulary



- Adaptation – a trait that is beneficial to an organism.
- Beak depth – the distance from the top to the bottom of a beak, as shown at right.
- Directional selection – a process of natural selection in which phenotypes at one extreme are favored over other phenotypes.
    - For example, directional selection is occurring if the finches with the largest beaks are surviving and reproducing at higher rates than finches with average-sized or small beaks.
- Drought – a period of much lower than normal rainfall.
    - During periods of drought on the Galápagos Islands, very few seeds are produced.
- Evolution – change in the inherited traits of a population of organisms that occurs over many generations.
    - *Misconception alert:* Evolution refers to changes in populations of organisms over time, but does not imply *how* these changes have taken place. Natural selection is considered by most biologists to be the primary mechanism of evolution.
- Natural selection – the process by which favorable inherited traits become more common over time.
    - Natural selection is the primary mechanism of biological evolution.
    - Natural selection assumes the following: (1) More organisms are born than can survive and reproduce. (2) Organisms compete for limited resources and survival. (3) There are variations between organisms, and these variations can be inherited. (4) Some variations make an organism more likely to survive and reproduce. Over time, favorable variations will spread throughout a population, while unfavorable variations become less frequent.
- Range – the difference between the greatest and least value in a data set.
    - For example, if the greatest beak depth is 13.0 mm and the least beak depth is 9.0 mm, the range in beak depths is 4.0 mm. (13.0 mm – 9.0 mm = 4.0 mm)
- Stabilizing selection – a process of natural selection in which intermediate phenotypes are favored over phenotypes at the extremes.
    - For example, stabilizing selection is occurring if the finches with average-sized beaks are surviving and reproducing at higher rates than finches with very large or very small beaks.