

10.3 Theory of Natural Selection

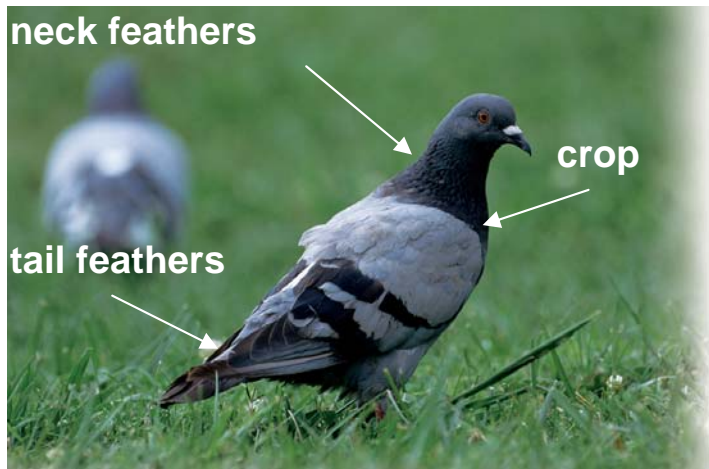
KEY CONCEPT

Darwin proposed natural selection as a mechanism for evolution.



10.3 Theory of Natural Selection

- ▶ **Several key insights led to Darwin's idea for natural selection.**
 - Darwin noticed a lot of variation in domesticated plants and animals.
 - Artificial selection is the process by which humans select traits through breeding.



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- Natural selection is a mechanism by which individuals that have inherited beneficial adaptations produce more offspring on average than do other individuals.
- Heritability is the ability of a trait to be passed down.
- There is a struggle for survival due to overpopulation and limited resources.
- Darwin proposed that adaptations arose over many generations.

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- ▶ **Natural selection explains how evolution can occur.**
 - There are four main principles to the theory of natural selection.
 - variation
 - overproduction
 - adaptation
 - descent with modification

- **DESCENT with MODIFICATION** is a measure of survival ability and ability to produce more offspring.



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▶ Natural selection acts on existing variation.

- Natural selection can act only on traits that already exist.
- Structures take on new functions in addition to their original function.

