

Behavioral Ecology

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Introduction to Behavioral Ecology



Behavioral ecology is the study of the [ecological](#) and [evolutionary](#) basis for [animal behavior](#), and the roles of behavior in enabling an animal to adapt to its environment. It emphasizes the evolutionary roots of the behavior, in contrast to the classical studies involving animals in laboratory settings



This behavior is responsive to the environmental forces that drive natural selection .

The environment plays a crucial role in determining which behaviors are exhibited in natural settings.

The behaviour is subject to [natural selection](#) just as with any other trait. So, animals which employ optimal behavioral strategies or adapt themselves to their surroundings will generally leave greater numbers of offspring.

Definition

It is the branch of ecology that focuses on the evolutionary causes of variation in behavior among populations and species.

Animals that leave a greater number of offspring than others of their own species are said to have greater fitness.

Behavioral defense mechanism



Chameleons

- Social display and color variation in differently adapted
- Change skin color to match their background

- Use color to communicate with other members of their species
- Moves throughout vines and limbs.
- Move very slow, wavy, and precise
- Appear to be leaves blowing in the wind
- Less likely to be spotted by a predator

All organisms are [motile](#) to some extent. Plants express different behaviours like memory and communication.

Adaptation

All behaviors can pass on to next generations as traits and behaviours inherited in much the same way that eye and hair color can.

They evolve and adapted to the ecosystem because of the forces of natural selection. So, behaviors can be adaptive, which means that they evolve functional utilities which increase reproductive success for the individuals that inherit such traits to next generations. It is the exact technical definition for fitness in the Ecology of biology, and it is a measure of reproductive success over successive generations.

Predator-prey interactions

Food Web



Food-web studies are the introductory concepts in

behavioural ecology. Prey can exhibit different kinds of behavioural adaptations to predators, such as avoid, flee or defend.

Many prey species are faced with multiple predators that differ in the degree of danger posed. To be adapted to their environment and face predatory threats, organisms must balance their energy budgets as they invest in different aspects of their life history, such as growth, feeding, mating, socializing, or modifying their habitat. Hypotheses are generally based on adaptive principals of conservation, optimization or efficiency.

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Reference Links:

- <http://www.environment.gen.tr/what-is-ecology/205-what-is-ecology.html>
- <http://en.wikipedia.org/wiki/Ecology>
- http://en.wikipedia.org/wiki/Behavioral_ecology
- <http://suomisanakirja.fi/en/ecological>

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