

Mutualism

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A mutualism is an interaction between two different organisms where both sides benefit. Pollination is a common mutual interaction. The plant gains gamete transfer, the animal gets pollen & nectar. Mutualism plays a key part in [ecology](#).



Pollination

- [Facultative mutualisms](#) are beneficial but not essential to survival and reproduction of either party.
- Obligate mutualisms are those that are essential to the life of one or both associates.

Facultative Mutualism

- Boran people of Africa and a honey guide bird is the best example for these mutualisms. According to rock paintings, for 20,000 years humans have collected honey in Africa. Humans were in search of bee colonies. It took an average of 8.9 hr for searching. But the bird helped them to find the colonies in 3.2 hrs. By using fire and smoke, they drive off the bees. Then they broke the nest and collected the honey. The larvae and wax left behind by them.
- The bird then easily feeds on the larvae and wax. Birds' risk of being stung by honey bees was decreased by humans as they sent the bees out of the colony. Even though the Boron and bird can survive individually this facultative mutualism was the beneficial one for them.
- Small fish like wrasse feed on small organisms and parasites on the bodies of larger fish. When they start feeding on the larger fish, that becomes cleaner and relieved from the unwanted itching of the body. And at the same time the small fish gets its food too easily.



Cleaner wrasse cleans eel's mouth

Obligate Mutualism

A mutualism between certain ants (*Pseudomyrmex*) and a small tree, the acacias is the best example. An obligatory contact occurs between different organisms

- The tree provides shelter, protein, nectar etc.
- The ant provides several forms of [protection](#).

It removes herbivorous insects, vines that might overgrow the acacia, and kills nearby competitor - the growing shoots. The tree acacia grows in a dry environment. Sometimes it is threatened by fire because of high temperature level. At this situation the activities of the ant reduces the fire damages to the tree.



Ants on an Acacia Plant

Birds visit flowers for nectar. While sitting on the flower, they are in touch with the pollen and automatically they spread the pollen when they visit to other flowers.

- [Lichen](#) is an example of obligatory mutualism between an alga and a fungus since neither can survive without the other.

Humans & Mutualism:

[Gut flora](#) which helps for the digestion in humans and [domesticated](#) animals.

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Reference Links:

- http://en.wikipedia.org/wiki/Biological_interaction#Mutualism

- [http://en.wikipedia.org/wiki/Mutualism_\(biology\)](http://en.wikipedia.org/wiki/Mutualism_(biology))
- <http://answers.yahoo.com/question/index?qid=20091015170347AAyrJmT>
- <http://www.youtube.com/watch?v=z3bWqlPLpMg>

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