Amensalism Encyclopedia Article

Amensalism

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Amensalism

Amensalism refers to a relationship between two species in which one of the partners is inhibited, while the other is not affected in any significant way. Usually, the inhibited species is damaged by a chemical released by the other one into their shared environment.

One natural example of amensalism involves the growth of vegetation in the vicinity of breeding colonies of certain kinds of waterbirds. Beneath dense colonies of such species as cormorants and herons, the trees in which their nests are built, and most of the associated understorey vegetation, may be killed by the toxic excrement of the birds. The birds may eventually suffer a detriment from the loss of their nesting trees, but they receive no benefit (or harm) from the damage caused to the understorey plants.

Another natural example involves the black walnut (*Juglans cinerea*, a tree of forests of southeastern North America. Black walnut exudes a chemical known as juglone from its roots and foliage, which builds-up in its local environment. The juglone is quite toxic to most other species of plants, which therefore cannot grow beneath the canopy of a mature black walnut. The black walnut may receive a benefit in terms of their competitive relationship with larger plants, but there is no significant benefit from the damage caused to smaller plants of low abundance, such as mosses, ferns, and other low-growing vegetation.

Humans also have amensal relationships with numerous other species. In almost all such cases, the other species suffer a detriment as a result of one or more human activities. For example, air pollution caused by automobiles, electricity generating s tations, or metal smelters often causes severe damage to lichens and plants in the affected area, whereas humans receive no direct benefit from this relationship. Another example is birds, mammals, and other wildlife that suffer habitat loss when forests are clear-cut to provide wood for industrial purposes. Although humans derive economic benefits from harvesting the timber, there are no particular benefits to people from the damage caused to habitat.