

# Trees influence epiphyte and invertebrate communities

January 5 2012, Dr. Mike Fay

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Tropical trees covered with epiphytes

Studies in temperate regions have demonstrated that genetic differences between individual trees affect the ecological communities and ecosystem processes associated with them. Now scientists at Manchester University and Kew have examined the extent to which this phenomenon occurs between genetic variants of a single tree species in a diverse complex ecosystem such as a tropical forest.

The team assessed the influence of within-species [genetic variation](#) in the tree *Brosimum alicastrum* (Moraceae) on the epiphytic and invertebrate communities associated with individual trees in a Neotropical rainforest. They found a significant relationship between the genetic distance between trees and the specific communities of the epiphytic plants growing on them, the invertebrates living in the leaf litter around their bases, and the invertebrates living on their trunks. The

more genetically similar trees were, the more similar were the epiphyte and invertebrate communities living on and under them.

These observations have profound implications for whole ecosystem conservation management, since maintaining sufficient genetic diversity at the primary producer level will enhance [species diversity](#) of other [plants and animals](#) in the same habitat.

Originally published in [Kew Scientist](#), issue 39.

**More information:** Zytynska, S. R., et al. (2011). Genetic variation in a tropical tree species influences the associated epiphytic plant and invertebrate communities in a complex forest ecosystem. *Philosophical Transactions of the Royal Society B* 366:1329-1336

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