

Fragmentation



Erosion, Nicaragua | Photography Juan Pablo Moreiras
Exhibition "Mesoamerican Biological Corridor: Space of Life". 2007

Fragmentation is the process of dividing a continuous habitat into discrete sections. A habitat is the environment occupied by a population and can be a forest, a creek, sand dunes or a puddle of water. The resulting fragments differ from the original habitat in that they are smaller, suffer some degree of isolation, and experience **edge effects**. The edge effects are the differences that we see, for example, at the boundaries of forests. There are changes in the composition, structure and function of a band near the edge because the microclimate (wind, temperature and humidity) is different there. These differences cause changes in species abundance and also in their ecological relationships. For example, many predators move along the edges of the forest feeding on prey that live within this narrow belt. Due to edge effects, the functional size of the resulting fragments is less than their physical size.

Fragmentation is caused by modifying the landscape; by clearing areas for open farmland or pastureland for livestock, building dams and roads or through urban development. Once the process of fragmentation begins, it triggers a series of changes in ecological processes and consequently has an impact on populations and communities of flora and fauna, and soil and water systems, which respond to the changes in fragment structure.

The main consequence of fragmentation is the isolation of populations of flora and fauna, particularly those species that have limited mobility. In general, these species are small and do not fly. Populations in isolated fragments are at increased risk of disappearance because they are of smaller size and natural disturbances such as fire, flood or volcanic eruption can eliminate them. Moreover, having fewer individuals living in greater isolation increases the occurrence of inbreeding and reduces genetic variability as a result.



Ocelot, Mexico | Photography Eccardi Fulvio
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