

Simulating Dispersal Kernels with Diffusion and Nonhomogeneous Convection

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Abstract

A sessile organism's seed dispersal pattern, a spatial probability function known as the distribution kernel, is the most important tool for modelling its spread around the environment. Many current models for distribution kernels assume spatially homogeneous convective forces, and most are applicable only under very special environmental circumstances. We will develop a flexible model which will incorporate measurable environmental data and biological characteristics of the target species to simulate these dispersal kernels in environments where homogeneous convection need not be assumed and where other issues such as Long Distance Dispersal (LDD) may be addressed.