

Metapopulation Dynamics

Metapopulations are of special interest to conservation biology because of their potential to buffer against the loss of individual small populations: a small population could persist indefinitely if regularly bolstered by immigrants from some outside location. Metapopulation dynamics have been long appreciated by population geneticists, but only more recently are of focal interest to ecologists studying abundance dynamics. In my lecture, I will attempt to tie together population genetic and ecological dynamics and evaluate their significance for small populations and conservation. I have prepared an eclectic list of references overlaying these two areas. I have not cited the classic papers like those of Levins for abundance or Wright for genetics, but you can chase those down in the papers that are cited. Finally, I have emphasized metapopulation dynamics of single species, but there is a growing interest in the role that it may play in species richness of communities. The Holt paper lays out five hypotheses for maintenance of species diversity at a mesoscale including metapopulation dynamics. This will show up again at the end of the semester when we study community regulation. I have also cited some landscape papers.

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