Topic Area: Spatial Ecology and Evolution

Question
You have been invited to submit a draft manuscript for TREE on the ecology and evolution of species interactions in space.

1. **Ecological interactions in space.** Summarize the history of scientific thought regarding how space can influence the nature of ecological interactions among species. Identify your candidates for the most general and satisfying theories of species interactions that include explicit consideration of space. For each, summarize the theory, noting important tests, proponents, and systems to which it seems particularly applicable; contrast the properties and predictions of each with those of the most prominent alternative theories that lack consideration of space. Evaluate the proposition that satisfying theoretical models must include consideration of space because all species interactions occur in space.

2. **Evolution in space.** Beginning with at least Sewall Wright and Ronald Fisher there has been debate about the extent to which space influences evolution. Summarize the shifting balance model of Sewall Wright, highlighting how it does and does not differ from competing evolutionary models that lack such explicit consideration of space. Evaluate the current sense of the scientific community regarding the shifting balance model. Identify two or three other prominent evolutionary models that highlight space as an important feature. Summarize each theory, noting important tests, proponents, and application. For each, contrast its properties and predictions with those of the most prominent alternative theories that lack consideration of space. Evaluate the proposition that satisfying theoretical models must include consideration of space because all evolutionary processes occur in space.

3. **Evolution of species interactions in space.** Identify and describe the most general contemporary models regarding the evolution of species interactions; include at least one each that does and does not include explicit consideration of space. State and
defend a position regarding the need for consideration of space in understanding the evolution of species interactions.