Adaptive speciation and evolutionary community assembly

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Speciation is “adaptive” when it allows a population to escape from being trapped at a fitness minimum. That such trapping can occur – and, for that matter, that populations can indeed evolutionarily converge to such traps – is a counterintuitive consequence of frequency-dependent selection. It may therefore be surprising that the conditions required for this phenomenon naturally arise under all fundamental types of ecological interactions and in a wide variety of eco-evolutionary settings. For sexually reproducing species, the adaptive escape from the fitness minimum requires, and promotes, the evolution of reproductive isolation. This presentation will review the basics of adaptive-speciation research and discuss implications for the evolutionary assembly of ecological communities.