

Appendix 2: Questions for Future Research

Questions for future research on climate change and species interactions by Angert et al. (2013) as a guideline also to the scientific community focusing on Sonoran Desert species, interactions, and communities:

1. How will range shifts of individual species be affected by differences in the degree to which other community members shift with them? Can we predict which communities will maintain integrity versus show idiosyncratic responses by individual species?
2. To what extent do specific biotic interactions (e.g., competition, parasitism) accelerate versus decelerate rates of range shift under climate change? How will climate change affect trophic interactions, particularly the relative importance of top-down and bottom-up forcing?
3. What are the consequences of integrated versus disintegrated community shifts for various metrics of community stability? Will new communities that are formed as species shift their ranges be more or less resilient than the “ancestral” communities?
4. What are the relative roles of plasticity and genetic adaptation in response to novel abiotic and biotic challenges? How does the capacity for rapid evolutionary response vary across life histories and habitats?
5. As some organisms adapt to changing climate, how will the phenotypic changes affect their biotic interactions and role in ecological functions? How will differences in evolutionary potential among interacting species affect community (dis)assembly and ecosystem function?