SCIENCE

All organisms live in clusters, but such fractured local populations, or demes, nonetheless maintain connectivity with one another by some amount of gene flow between them. Most such metapopulations occur naturally, like clusters of amphibians in vernal ponds or baboon troops spread across the African veldt. Others have been created as human activities fragment natural landscapes, as in stands of trees separated by roads. As landscape change has accelerated, understanding how these metapopulations function—and specifically how they adapt—has become crucial to ecology and to our very understanding of evolution itself.

With *Adaptation in Metapopulations*, Michael J. Wade explores a key component of this new understanding of evolution: interaction. Synthesizing decades of work in the lab and in the field in a book both empirically grounded and underpinned by a strong conceptual framework, Wade looks at the role of interaction across scales from gene selection to selection at the level of individuals, kin, and groups. In so doing, he integrates molecular and organismal biology to reveal the true complexities of evolutionary dynamics from genes to metapopulations.

"*Adaptation in Metapopulations* is a multifaceted, deeply considered discussion of the current state of our understanding of how evolution proceeds within and among connected populations, including metapopulations and other kinds of groups. It is also a book on whether and how natural selection may act at multiple group levels, rather than solely at the level of selection among individuals. In that sense it evaluates our understanding of the conditions under which group selection could occur. Conceived and written in a unique way, it is simultaneously a synthesis of work on some major scientific questions, a summary of the history of that work, and a personal memoir on Wade's intellectual trajectory as he probed those questions, all from a scientist who has spent a major part of his career near the center of these discussions, experiments, and controversies."

—John N. Thompson, author of *Relentless Evolution*

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