

Population genomics for wildlife conservation and management

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Abstract

Biodiversity is under threat worldwide. Over the past decade, the field of population genomics has developed across non-model organisms, and the results of this research have begun to be applied in conservation and management of wildlife species. Genomics tools can provide precise estimates of basic features of wildlife populations, such as effective population size, inbreeding, demographic history, and population structure, that are critical for conservation efforts. Moreover, population genomics studies can identify particular genetic loci and variants responsible for inbreeding depression or adaptation to changing environments, allowing for conservation efforts to estimate the capacity of populations to evolve and adapt in response to environmental change and to manage for adaptive variation. While connections from basic research to applied wildlife conservation have been slow to develop, these connections are increasingly strengthening. Here we review the primary areas in which population genomics approaches can be applied to wildlife conservation and management, highlight examples of how they have been used, and provide recommendations for building on the progress that has been made in this field.

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WildlifeGenomics_MEC_final.pdf available at <https://authorea.com/users/296746/articles/435662-population-genomics-for-wildlife-conservation-and-management>