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Evolution of moult-migration: a large-scale phylogenetic approach

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Each year, birds need to moult, replacing old and used feathers for new ones. This behaviour is of high importance because feathers are essential for flight, insulation and attracting mates. Most species replace their feathers on their breeding grounds in late summer and then start their migration to the wintering grounds in Central and South America. However, at the end of the summer, some regions in Western America such as the Okanagan Valley are extremely dry and lack important resources necessary to grow high-quality new feathers. Possibly as a result, some bird species will migrate to the southeastern US/northwestern Mexico to moult before finishing migration to the wintering grounds: a strategy termed moult-migration. The origin of moult-migration is unclear, hence I will try to identify the ecological and life history characteristics that have driven the evolution of that strategy. To do so, I will test for evolutionary associations between moulting strategies and potential drivers of this pattern (e.g. migration distance, aridity of the breeding grounds, feeding behaviours) across all species of song birds in North America, taking into account phylogenetic relationships among species.