The effect of weather variables on migratory timing in avian populations

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Migration in birds is the seasonal movement between wintering and breeding grounds. Timing of bird migration has evolved to allow for optimal resource availability, lower risk of predation and respond to changes in weather patterns. But with the majority of scientists agreeing that man-made climate change is rapidly occurring, a critical question is whether birds are able to change their migration timing in response to climate change. The timing of migration is often in response to external stimuli that allow for optimal survivability in migration, and reproductive maximization upon arrival to breeding grounds. For this study Citizen Science data is analyzed to see which weather variables will alter the timing of migration in Vaux's Swifts. The weather variables in question are precipitation, Temperature, wind speed/direction and gust speed, before first migration date and peak migration dates at each location. The Citizen Science data is from Vaux's Happening and the analysis has been restricted to spring migration. The goal is to develop a methodology to analyze the vast stores of unused Citizen Science data.