The Effect of Site and Flower Color on the Genetic History of Castilleja levisecta (Golden Paintbrush), Castilleja hispida (Harsh Paintbrush), and C. levisecta x C. hispida

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Hybridization between C. levisecta and C. hispida may pose a threat to endangered C. levisecta. This study seeks to determine whether flower color can accurately predict genetic history and be used to determine which plants should be removed from field sites. DNA from tissues samples from both species and their hybrids was extracted and then amplified using PCR. Genetic history of each Castilleja plant was determined using a Beckman machine. A t-test and 2-proportion z-test were used to determined significance. Flower color does not accurately predict genetic history, so the current field protocol should be amended to include a genetic analysis. Site differences do not significantly affect hybrid genetic history. Hybrids differ significantly in genetic history from their parents.

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