



PHYLOGEOGRAPHIC ANALYSIS OF GENETIC STRUCTURE PRESENT IN PURPLE SANDPIPERS

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The Purple Sandpiper (*Calidris maritima*) is a small shorebird that breeds in the Arctic and winters along northern coastlines. It has a wide geographic distribution, ranging from Nunavut, east to Greenland, Iceland, and Norway in the summer, and wintering farther south along eastern North America and western Europe. Due to difficulty in recapturing banded birds, migration routes between breeding grounds and wintering grounds are poorly understood. Populations appear to be declining, and future conservation efforts for this



species will benefit from a thorough understanding of their migration patterns. This study looks at two genes from mitochondrial DNA, a double-stranded, circular genome found in mitochondria eukaryotic cells, to identify underlying genetic differences between breeding populations of Purple Sandpipers. Samples were taken from wintering sites along the coast of Maine, and museum samples from breeding sites in northern and southern Nunavut were donated by the Canadian Museum of Nature. Results indicate some genetic structure present within the samples tested, though variation between haplotypes is not specific to either breeding location. These results lay the groundwork for further analyses using both mitochondrial loci and microsatellite markers – short sequences of DNA that are repeated many times.

Nathalie LeBlanc graduated from Riverview High School in Riverview, New Brunswick in 2008. She is currently completing an Honours thesis in her 5th year in Biology at Acadia. Bachelor of Science with double major in Biology and Computer Science. She will also be graduating with a Cooperative Education certificate for completing three 4 month work placements in fields related to her major. Two placements were in Queen's University under Dr. Lillicrap (via the Stem Cell Network Coop Award), and one was at Acadia University under Dr. Hillier. Nathalie received an Acadia Entrance Scholarship to Acadia. She is a member of Toastmasters International, serving as Sergeant at Arms club officer. Following graduation, Nathalie plans to complete a Master's degree at Acadia continuing the research she began this year.

