BIRDS AS INDICATORS OF HABITAT QUALITY IN THE FACE OF CLIMATE CHANGE

Session: In-Person

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The Olympic Experimental State Forest (OESF), located on the west coastal side of the Olympic Peninsula provides an important breeding ground for many migratory species and is the center of Washington's timber economy. Under Washington's Department of Natural Resources (DNR) monitoring, scientists have begun to work to mitigate the effects of climate change on the forest's ecology. The purpose of my research was to investigate if climate change had affected the migratory patterns of the Pacific Slope – flycatcher and the Orange-crowned Warbler which act as indicator species for one of DNR's studies. Working with DNR, I validated 58, 48 minutes long, audio surveys containing the recorded bird vocalization activity from OESF using software that turned the audio recordings into sonograms. This allowed me to identify the signatures both visually and audibly. By myself, I researched migratory abundance models to understand the current migratory patterns and habitat preferences for the two species and researched prediction models (climate, vegetation, landslide, etc.). My culmination of research shows that the migratory patterns of either species have not shifted but based on prediction models' scientists can expect their patterns to alter within the next 20 years. With the expected large-scale change, scientists must act diligently and continue their monitoring strategies on the OSEF. Additionally, my research brings up the question of the reliability of indicator species as climate change continues to threaten the resilience of ecosystems, and thus the reliability of indicator species.