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NORTH AMERICA’S VANISHING BATS: METHODS FOR UNDERSTANDING POPULATION RESPONSES IN A CHANGING LANDSCAPE

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Millions of bats in eastern North America have died from the disease white-nose syndrome (WNS) following the accidental introduction of a non-native fungal pathogen in 2006. The disease continues to spread geographically each year, and continues to kill bats at an alarming rate, making WNS the greatest threat to bat populations in North America. However, bat populations across North America are thought to have been in decline long before the arrival of WNS, as the unique ecology and life history of bats make them vulnerable to a suite of human disturbances. These unique life history and ecological characteristics also make bat populations exceedingly difficult to study. This seminar will describe my research focused on understanding changing bat populations in both the eastern and western United States. In the east, efforts to look for evidence of adaptation to the fungal pathogen responsible for WNS have yielded insights on the relative roles of immune function and metabolism. In the west, efforts to understand vulnerability to WNS, climate change, and habitat loss focus on the use of new technologies to gain an understanding of bat populations in ways ecologists have long considered impossible.