Reference SON: *2015-ER-7 Federally listed bat species response to invasive vegetation control in forest stands*

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Impact of Habitat Management on Bats

Research Need

Bat species are an important part of a biological community, and their conservation is, therefore, a stewardship responsibility on USACE lands. Recently, bats have received increased attention from managers due to massive population declines resulting from the spread of White Nose Syndrome (WNS). These declines are ongoing and WNS is continuing to spread across the country resulting in the listing of once common species. Currently, USACE managers do not have sufficient information to determine how habitat restoration and management actions will affect bats, making project planning difficult. To address this information deficit and aid decision making, models that can predict the impact of habitat management and restoration actions on bats are needed.

Project Purpose & Objectives

The objective of this project is to develop a habitat model framework that can simulate the impact of restoration and management projects on bats. Model development will begin with a literature review to determine relevant model parameters. Draft models of habitat use by bats will then be constructed using an agent based petri-network model framework. Acoustic monitoring studies conducted throughout the country will be leveraged to parameterize and validate draft models. Finally, a user friendly implementation for models will be developed.

Value of Research and Development (Payoff)

Models which can simulate the effects of habitat restoration and management on bats will provide USACE planners with critical information. This will allow tailoring of habitat restoration and management actions to reduce potentially negative impacts and achieve maximum benefits for bat species on USACE lands.

Products

Technical Reports (TRs)

Saltus, C.L. and Britzke, E.R. (2022). Literature Review: Macrohabitat metrics to identify presence of Chiroptera on the

landscape in the United States. (ERDC/EL SR-22-8), Technical Report. U.S. Army Engineer Research and Development Center, Vicksburg, Mississippi.