Insights into natural cavity use by Chimney Swifts in a working forest in Kespukwitk

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Nearly all currently known roost or nest sites of the Chimney Swift (CHSW; *Chaetura pelagica*; Endangered in Nova Scotia) are in human-made structures. The 2023 federal recovery strategy for CHSW identifies no natural habitat as critical habitat because characteristics that could provide suitable natural habitat are not sufficiently documented. In 2023, we observed CHSWs using a woodpecker-excavated cavity 6.6m up in a 23m live white pine in SWNS. The tree was near two other large pines in a mature upland conifer stand that was partially harvested in 2010. Using Autonomous Recording Units (ARUs) and BirdNet to analyze recordings, we documented a shared evening peak of vocal activity at the natural cavity and at two monitored nests in human-built structures within forested landscapes in SWNS. Such peaks were much lower to non-existent in ARU recordings at 20 other forest sites within 1.3 km of the natural cavity. Thus, evening peaks in calling appeared to signify proximity to a nest or roost. The birds used the natural cavity again in 2024 despite the tree top breaking over winter. In 2024, we used ARUs to monitor CHSW vocal activity at this natural cavity, the two nests in human-built structures, and 30 other forest sites $\leq$30 km. Using GIS, we examined whether vocal activity was related to habitat features (e.g., tall trees, stand type, proximity to wetlands and lakes, topography) that might help locate additional natural cavity trees. We also examined seasonal trends in vocal activity at the natural cavity site from May-Sept 2024.

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