

Nesting Habitat Use and Availability for Cavity-nesting Ducks in the Wolastoq Floodplain, NB



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Cavity-nesting ducks are dependent on suitable cavities for nesting. Nest boxes are a management strategy used to increase suitable nesting habitat, however, their use and effects on cavity-nesting duck populations are unknown in this region.

Hypotheses:

1. Nest boxes paired with specific site characteristics will be used for nesting by the target species more frequently.
2. Population viability analysis (PVA) will show increased viability in models that include nest boxes, over natural cavities only.

Data Collection:

- DU nest box steward records (1986 to 2020)
- Field visits conducted in 2019 and 2020
- Existing literature was used in identifying variables for PVA

Modeling:

I identified and analyzed site characteristics influencing nesting using logistic regression mixed effect models with year and observer as random effects.

I conducted PVAs in VORTEX 10 with sensitivity analyses to determine the impact of the nest box program on overall population trends.

Results

The logistic regression models indicated that the site characteristics under study (distance to nearest permanent water, wetland, and human activity, nearest waterbody type, landcover type, land ownership type, and nearest human activity type) did not significantly affect nest box usage.

Early results from the PVAs suggest that there are likely to be sufficient natural cavities within the region to support current population levels. A lack of regional data resulted in heavy reliance on non-local data in constructing the PVA models. Sensitivity analyses are still underway to determine how significant an effect this may have on interpreting results.

Recommendations

Future work on nest box usage in the region should include behavioural factors, box-specific characteristics, and visibility as alternate variables affecting use.

Work is needed within the region to assess local breeding and mortality rates. Additional work on brood survival and how it may vary between nest boxes and natural cavities would also provide valuable data for long-term population monitoring.

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