
MOVING BEYOND NICHE MODELS: HABITAT SUITABILITY FOR NESTING WHITE-HEADED WOODPECKERS

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Ecological niche models of habitat suitability are attractive due to their conceptual interpretation and use of presence-only data. Niche models have potential to exploit a variety of presence-only data sources, such as museum records, limited effort surveys, ancillary field observations, and citizen science programs. Limitations of niche models, however, substantially reduce their utility in management situations, in particular, the inability to independently evaluate habitat covariates for their relative influence. Generalized linear models, i.e., logistic regression, provide this ability, but require both presence and absence data. We present an approach that overcomes the limitation of niche models while retaining the use of presence-only data. The generation of pseudo-absences, derived from areas of low suitability as determined by the niche model, allow use of logistic regression to produce robust models of habitat suitability. The approach also has the added benefit of reducing contamination (false absences) among absence data that occurs with simple random sample approaches. We discuss the pseudo-absence approach in an example of modeling habitat suitability for nesting white-headed woodpeckers (*Picoides albolarvatus*).