A GIS Tool for Applying Habitat Suitability Models to Inform Management (Poster)

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Habitat suitability models are used to guide habitat management for species of conservation concern. Models quantify relationships between known species locations and environmental attributes, which are used to identify and map areas most likely to support species of concern. Managers can then restrict human activities with negative impacts on habitat suitability in these areas. Application of habitat suitability models, however, typically requires technical expertise not available to most land managers. We developed a prototype

GIS tool that facilitates application of habitat suitability models to guide management of habitat for woodpecker species of conservation concern. The tool operates within an ArcGIS environment, which is readily available to most managers, and will be capable of generating habitat suitability maps for several species of concern (i.e., Black-backed Woodpecker [*Picoides arcticus*], Three-toed Woodpecker [*P. dorsalis*], Lewis's Woodpecker [*Melanerpes lewis*], and White-headed Woodpeckers [*P. albolvartus*]). The tool also automates much of the model application process, reducing requisite technical expertise, and making habitat suitability models widely available. The tool will be accompanied by a manual describing implementation and interpretation of resulting habitat suitability maps. The tool will be especially helpful for informing management of post-disturbance forests (i.e. after wildfire and beetle infestations) to identify suitable habitat for disturbance specialists (e.g., Black-backed, Three-toed, and Lewis's Woodpeckers). Identification of suitable habitat is necessary to effectively develop management plans that incorporate the needs of habitat specialists in post-disturbance landscapes. Our prototype is currently being tested by U.S. Forest Service biologists.