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Abstract

Using forest structural diversity to inventory habitat diversity of forest-dwelling wildlife in the West Kootenay region of British Columbia

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Forest planners in British Columbia are being asked to consider wildlife species diversity in forest development plans. Forest ecosystem inventories currently used in British Columbia are inappropriate or inadequate as tools for land management planning because they only document forest composition (Vegetation Resources Inventory) or identify plant communities (Terrestrial Ecosystem Mapping). To assist in the effort to obtain information about a site抯 potential forest-dwelling wildlife species diversity, we developed a method of using forest structure to identify and evaluate habitat quality for multiple species of vertebrates. Using aerial photos, we delineated six classes of forest structure that have been identified by other researchers as important wildlife habitats. We selected five structural attributes of forest stands—vertical structure (canopy complexity), horizontal structure (forest patchiness), coarse woody debris density, litter and duff layer depth, and tree size—to be measured in the field, and we applied the method in three study areas in southeastern British Columbia. We compared abundance of structural features between structural classes to determine whether the classes were indeed unique. Old forests were found to be more structurally complex than younger forests, and forested and riparian sites were more structurally complex than non-forested and upland sites. We then used this data to index structural diversity within a study area to allow stands to be compared. We suggest that our method can be used by biologists and land managers to guide the conservation of forest-dwelling wildlife species.

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