

BREEDING BIRD RESPONSE TO A SPRUCE BARK BEETLE OUTBREAK AND SALVAGE-LOGGING IN MATURE BOREAL FORESTS ON THE KENAI PENINSULA, ALASKA

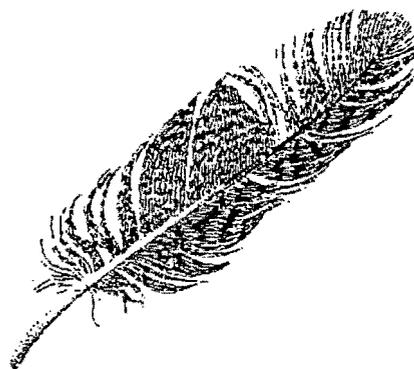
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We estimated densities of breeding forest birds to determine the consequences of a spruce bark beetle (*Dendroctonus rufipennis*) outbreak and salvage-logging occurring in mature boreal forests of the southern Kenai Peninsula, Alaska on bird abundance and community composition in relation to changes in stand structure and composition. Birds were surveyed in mixed birch (*Betula papyrifera*)/spruce (*Picea spp.*) and spruce forests during their respective breeding seasons from 1997-99. Three types of stands varying in amount of spruce mortality and a heavily infested salvage-logged stand type were examined within each forest type. Diurnal forest birds were surveyed using the variable circular-plot method, while road transects were utilized to survey nocturnal owls. Species varied dramatically in the strength and nature of the relationship between abundance and spruce mortality. Species' abundances were generally greater in stands intermediate in intensity of beetle infestation and spruce mortality. Salvage-logged stands favored species of open forest, shrub, and meadow habitats. In the mixed forest, a significant canopy remained following logging maintaining high diversity, while logged spruce stands tended to resemble clear-cuts. Townsend's Warblers (*Dendroica townsendi*), Golden-crowned Kinglets (*Regulus satrapa*), and Northern Goshawks (*Accipiter gentilis*), species preferring mature live coniferous forests for suitable nesting habitat, were among the most negatively impacted by spruce mortality and salvage-logging.

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**28 FEBRUARY - 3 MARCH 2000
SITKA, ALASKA**