

Snag Density after Different Timber Harvests in Pine-hardwood Forests

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Abstract: Standing dead trees (snags) are an important component of forest ecosystems, providing foraging and roosting substrate for a variety of wild-life species. We examined the effects of four timber harvest treatments on residual snag density and compared these to densities found in unmanaged natural forests (controls) during the second, fourth, and sixth year after timber harvest in mixed pine-hardwood forests of Arkansas. Timber harvest methods were: clearcut with residual tree retention and snag creation, shelterwood, single-tree selection, and group selection. Density of large snags (>24.9 cm dbh) was least in shelterwood cuts and density of small snags (10.0–24.9 cm dbh) mirrored residual basal area, with controls and group selection harvests having the greatest number of snags. Density of smaller snags in clearcuts was generally greater than other treatments due to snag creation via injecting herbicides into standing trees. However, density dropped off sharply by the sixth year after harvest in clearcuts, suggesting injected snags were short-lived. In the absence of snag creation, residual density of snags mirrors residual BA of live trees, i.e., stands with more trees have more snags. Importance of small snags to wildlife should not be overlooked, and creating additional snags during harvests such as seedtree and shelterwood is warranted.

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