

**Salk**

**Title: Regeneration Trends in a Hemlock-Hardwood Forest in Northern Michigan**

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We censused woody stems three times between 1987 and 2006 in four multi-hectare plots (27 ha total) in an old-growth forest in Sylvania Wilderness Area, northern Michigan. There was a consistent disparity between the ratio of species in the overstory — where the three most common species (sugar maple, hemlock and yellow birch) had similar abundances — to the species ratios of saplings and seedlings, where >90% of all stems were sugar maple. The density of saplings and seedlings of most species decreased by >50% during the study period. If these regeneration patterns persist, they may be a major shift in forest canopy composition. While poor hemlock regeneration in old-growth forests of the upper Great Lakes region has been well-documented, we are unaware of accounts of such regeneration decline across all species of trees present at a site. The cause of these trends is uncertain; possible explanations include herbivory by deer or invasive slugs.

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