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ARTICLE

Timber and trails: Low-intensity selective logging and elephant trails shape seedling dynamics in an Afrotropical forest

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Abstract
Very low-intensity selective logging can be a compromise between strict conservation and income-generating land use in tropical forests. Investigating how selective logging influences the understory environment and seedling dynamics as the forest regenerates offers insights into whether logging alters forest dynamics, influencing the composition and structure of future forests. We explored how very low-intensity logging (<2 trees ha⁻¹) influences understory factors and seedling dynamics across a logging chronosequence (unlogged forest vs. actively logged forest and forest logged 4 and 14 years prior). To do this, we assessed (1) how canopy openness, prevalence of vegetation damage, and elephant trails differ in logged forests at different recovery stages compared to unlogged forest; (2) how these understory factors influence seedling dynamics; (3) how seedling dynamics differ across the logging chronosequence; and (4) how logging impacts liana vs. tree seedlings across the chronosequence. We observed greater canopy openness and vegetation damage in logged forests up to 4 years after logging and higher elephant trail prevalence 14 years after logging compared to unlogged forests. Seedling survival was lower in plots with higher canopy openness, more vegetation damage, and on elephant trails, while growth and recruitment were not affected by these variables. Actively logged forests initially had lower seedling survival and recruitment, but higher growth rates compared to unlogged forests. However, 14 years after logging, seedling dynamics were mostly similar to unlogged forests. Liana seedlings had a slight growth advantage over tree seedlings in all logged forests compared to unlogged forests. Results from our study suggest that very low-intensity selective logging causes temporary shifts in

