REGENERATION IN FELLING GAPS DURING THE FIRST TWO YEARS AFTER LOGGING IN ACRE STATE, WEST AMAZON

Marcus V.N. d'Oliveira, M.D. Swaine and David F.R.P. Burslem

EMBRAPA CPAF-ACRE, Rio Branco, Brazil. CEP 69900-180. Caixa postal 392
Br 364 caixa postal 392, cep 69901-180, Rio Branco Acre Tel.: 068 2243933 Fax:068 2244035
Email: mvno@cpafac.embrapa.br

The felling gaps possessed an average size of 340 m^2 and an average canopy openness of 17 %. Seedling mortality in the undisturbed forest was 4.6 % yr^{-1}, and 59.6 yr $\%^{-1}$ and 100 yr^{-1} % in the crown and trunk zones respectively during the two years after logging. Recruitment of new seedlings onto plots in the undisturbed forest understorey averaged 462 plants $ha^{-1}yr^{-1}$, at the second census two years after gap creation, and in the crown zones of the gaps recruitment of seedlings averaged 1350 $ha^{-1}yr^{-1}$, and in the trunk zones 1392 $ha^{-1}yr^{-1}$. The entire seedling community in the trunk zones after logging was composed of new recruits. There was a tendency for growth rate to increase from the natural forest (0.21 cm yr^{-1}) to the crown zone (0.40 cm yr^{-1}). Before gap creation, the species richness and diversity and seedling density in the plots at PC Peixoto were similar. After gap creation there was a sharp decrease in species richness and diversity in the gap zones, but there was a tendency for the differences between gap and undisturbed forest to decline from the first to the second year after gap creation. The regeneration of commercial species was not affected by gap creation apart from an increase in mean growth rates.