

ABSTRACT BOOK AND PROGRAM

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Brazil Nut Population Structure in Three Sites in the Acre River Valley, Brazil

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In the Amazonian state of Acre, Brazil, Brazil nuts (*Bertholletia excelsa* H.B.K.) have been commercially collected for almost a century by traditional populations inhabiting the forests of the Acre River Valley. Brazil nut fruits fall to the ground in December through February when extractivists work almost exclusively in the collection and opening of these fruits to release the commercially valuable seeds or nuts. Based on income generated and labor utilized, this is the most important non-timber forest product activity in the state. Nonetheless, little is known about collection impacts on population structure. This study evaluated Brazil nut population structure in three traditional rubber tapper estates (sites) located in the municipalities of Xapuri and Brasiléia where the species occurs naturally: Filipinas, Cachoeira, and São Francisco Figueiredo. Four 9-ha plots were established in each site to examine juveniles ($10 \text{ cm} \leq \text{dbh} < 50 \text{ cm}$) and reproductive adults (individuals $\geq 50 \text{ cm dbh}$). Within each hectare of each plot, 4-25x25 m subplots were randomly established to examine recruitment of seedlings (individuals $< 1.5 \text{ m}$ in height) and saplings (1.5 m in height \leq individual $< 10 \text{ cm dbh}$). Data collected for seedlings included height, diameter at base, and location within the subplot. For the other three classes, dbh, crown position, location within the plot or subplot, and data on vine presence were collected. One hundred and ninety-nine trees $\geq 10 \text{ cm dbh}$ were encountered in the three sites, resulting in an average density of $2.01 \text{ individuals ha}^{-1}$. Adult ($\geq 50 \text{ cm dbh}$) densities were highest in Cachoeira (1.83 ha^{-1}), followed by São Francisco Figueiredo (1.42 ha^{-1}) and Filipinas (0.85 ha^{-1}). However, Cachoeira had the lowest proportion of seedlings and saplings per adult (0.666) (São Francisco Figueiredo = 2.745 and Filipinas = 5.912). Average tree (juveniles and adults) dbh was different between sites ($P \leq 0.05$) with Cachoeira having the highest average (95.5 cm) and Filipinas the smallest (70.9 cm). These preliminary data suggest differences in population dynamics between the three sites, possibly due to differences in nut collection intensities since Cachoeira has the longest Brazil nut collection history.

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