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Diversity of termites from the upper Madeira River region, Brazil

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The Santo Antônio and Jirau hydroelectrics plants (HP) were recently built in the Madeira River region, in Porto Velho, Rondônia, Brazil. This region is unique, since the alignment of Amazonas-Madeira- Mamoré Rivers divides the Neotropical region into two areas of endemism for a diversity of taxa. This work aimed to monitor termites for three years in areas near the Jirau HP and two years in areas near the Santo Antônio HP, as well as conduct a community level study and analyze the spatial distributions of termites from the areas influenced by Jirau HP. Twelve modules were marked, seven on the left bank of the river and five on the right bank. Each module had 3 or 4 km transects and perpendicular parcels every 1 km. The sampling was conducted in subparcels of 5x2 m inside each main parcel. During 20 expeditions, 1121 subparcels were investigated and a total of 7875 termite samples were collected and identified to 169 species. For the community study, 20 subparcels were randomized in the six modules of the Jirau HP, with five subparcels marked in relation to distance from the river margin (P1-50m, P2-1km, P3-2km, and P4-3km). The termite species composition was not related to side of the river bank. The beta diversity analysis with termite species composition clustered for modules with the same soil type, suggesting that some termite species may be distributed accordingly to this variable. Parcels closest to the river were the most peculiar, both in terms of termite species composition and abundance patterns, with some species restricted to the P1 and others absent there. This study incorporates a greater sampling effort than ever employed by other published studies to date for a medium scale area, and registered one of the highest local termite diversity in some of the sampled modules.