
INVERTEBRATES

The acoustic landscape and cicada call patterns in Danum Valley**Abstract**

Cicadas are a dominant feature of the acoustic environment in the tropics and are known to have species-specific calls making them useful subjects for investigating acoustic niches. Cicadas in Sabah, Borneo however, have been relatively poorly studied. This study described the daily acoustic landscape of Danum Valley by measuring sound pressure levels, humidity and temperature along a transect, together with recording the dominant calling animals. The presence/absence of eight 'sound species' of cicadas was scored to investigate potential partitioning in their acoustic behaviour. The acoustic landscape was shown to have a daily cyclical pattern, clearly dominated by cicadas. Cicada calls were found to be partitioned amongst other animal groups as well as between cicada sound species. This partitioning was found to occur temporally and by call frequency and call pattern. Observations also found spatial location influenced partitioning. Avoidance of interspecific competition seems to be the most likely driver for species occupying different acoustic niches.

Emma Ligtermoet, Charles Darwin University, Australia

Stefanie Weigl, Ludwig Maximilian University, Germany

Ana Filipa Palmeirim, University of Lisbon, Portugal

2009

Blood suckers in our midst: Leech (Haemadipsidae) abundance on forest trails and off-trails in the Danum Valley Conservation Area, Sabah, Malaysia**Abstract**

Danum Valley Conservation Area (DVCA) is exceptionally rich in both flora and fauna. Forming part of this richness, DVCA has two species of terrestrial leeches, the tiger leech (*Haemadipsa picta*) and the brown leech (*Haemadipsa zeylanica*). Our study looked at the composition and abundance of leeches in trails and off-trails in three sites in the forest. We tested the hypothesis that leech abundance would be greater in the trails than off-trails mainly because more animals use trails for foraging. The results showed no significant differences between species composition and abundance of leeches overall. However leeches were more abundant in one trail system when we tested for differences between sites. We also found no significant correlation between the abundance of leeches in relation to temperature and humidity.

Legi Sam, University of Papua New Guinea, Papua New Guinea

Dwi Susanto, Bogor Agricultural University, Indonesia

2009

Diversity and interaction of dragonflies in Danum Valley Field Centre**Abstract**

This study investigated diversity and interaction of dragonflies around the Danum Valley Field Centre. Six days samplings were conducted (18th-23rd October 2009) in different locations which included two ponds (114 m², 28.98 m²) and a wet-grass area (486.3 m²). Twenty two species were recorded in three study sites. Different types of interaction within two particular species of dragonflies were observed during different times of the day. Apart from gathering information on diversity and interaction, data collection on behaviour is also included in this study.

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2009

A positive relationship between ant biodiversity and predatory function across a disturbance gradient in a SE Asian rain forest

Abstract

Human modification of pristine habitats almost always leads to the local extinction of a subset of the species present. This means that the ecosystem processes carried out by the remaining species may change. It is well documented that particular species of ants carry out important ecosystem processes. However, while much work has been carried out to investigate the link between biodiversity and ecosystem functioning in other taxa, this has received relatively little attention for ant communities. Here we investigate the impacts of anthropogenic disturbance on ant-mediated predation, using bait removal rates as a surrogate measure. We found that although ant species richness, diversity, biomass and rates of bait removal did not change systematically across the disturbance gradient, the rate of bait removal was related to both ant species richness and biomass. Sites with a higher species richness and biomass of ants experienced a faster rate of bait removal. If these results are applicable at larger spatial scales for a wider range of prey items, then loss of ant species could lead to changes in the way that ecosystems function.

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et al. (class exercise)

2009

The recruitment time of ant species in forested and edge habitats at Danum Valley

Abstract

Ants recruit nestmates to a food source through the use of chemical trails. This study aimed to determine the differences in recruitment times for ant species in two different habitats. A four day study was carried out on the recruitment times and abundances of ants in edge and forested habitats. The abundance of each ant species was recorded every minute over a 30 minute period. Recruitment time is defined as the time difference between the first arriving ant and the arrival time of the second ant of the same species. The abundance in forest ant species was negatively correlated with recruitment time. The same significant relationship was found with edge ant species. However, no significant difference in species diversity, species richness or abundance was found between the two habitat types. Qualitative observations of competitive interactions were also recorded and examined.

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2009