Background

• Sampling of bird communities by traditional methods in the tropics is limited by availability of experts.
• High species richness and low singing rates of birds in the tropics may lead to misidentification or loss of detections during the field sampling.
• There is a need to sample the tropic communities throughout the whole year.
• New bioacoustic approaches based on soundscape recordings offer some solutions for such limitations and provide opportunities for more extensive spatial and temporal sampling.

Methods

• primary montane forest on Mt. Cameroon
• 2200 m a.s.l., beginning of dry season
• 16 points, 3 repeats = 48 samples
• 15 minutes at each point, within 50 meters
• point counts and simultaneous samples obtained by recording units
• recording: SongMeter (Wildlife Acoustics) with two omnidirectional microphones
• post hoc “blind” listening of recordings by expert (OS)
• species checklists, abundance estimation
• birds detected above 50 m in the field were excluded from analyses

Objectives

• to evaluate reliability of new developed soundscape recording units, with a special regard to tropical rainforest
• to assess the consistency of results on species richness, densities and community composition obtained from point counts and post-hoc listening of recordings

Conclusions

• Most of the individuals detected by point counts vocalized (Table) and were therefore potentially detectable during the listening of SongMeter recordings.
• Post hoc listening of SongMeter recordings is comfortable and relatively easy. This method provide similar estimates of bird species richness and densities for both sampling sites and the whole study area.
• Listening of recordings rather underestimate densities of most abundant species.
• The method is less efficient for non-breeding species vocalizing only by short warning calls (e.g. Cyanomitra oritis, Turdus pelios) or species with silent songs (e.g. Cossypha isabelae). However, it is even more efficient for detection of some species, especially those with high-pitched songs (e.g. Urolais epichlora, Linurgus olivaceus).
• SongMeters are autonomous units that could be easily programmed to record automatically throughout the year.
• Methods of automatic detections of species and species richness from acoustic recordings are gradually developed.

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