Habitat Season, and Vocal Behaviour of Nocturnal Birds in a Neotropical Dry Forest

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ABSTRACT: Earth is currently experiencing an alarming rate of global species extinction caused by several factors, most notably habitat loss. One habitat type that has faced considerable loss is Neotropical dry forest. These forests are threatened by multiple anthropogenic influences, including cattle ranching and climate change. To better understand the impacts of these threats on tropical dry forests, we can characterize the relationship between the behaviour of the species they contain and the condition of the habitat itself. Overall there has been a bias towards studying diurnal species, partly because visual detection is easier in the daytime. Therefore, nocturnal species are often overlooked. Bioacoustic approaches provide an effective way to study vocalizations of animals, especially for nocturnal animals that are difficult to detect under the cover of darkness. The goal of our investigation is to assess if the vocal behaviour of nocturnal birds in dry forest habitat is affected by seasonal variations and forest complexity using bioacoustic methods. Our study site, Sector Santa Rosa of the Guanacaste Conservation Area, is a mosaic of regenerating dry forest sites. Recordings were collected there using autonomous recording units during both dry and wet seasons. We annotated recordings from 20 dry forest sites, and identified species that vocalize between dusk and dawn at each site and for each season. Our preliminary findings suggest there is variation in the number of species that make nocturnal

vocalizations, including some which are considered diurnal. Future research should focus on the reasons why these diurnal species are vocalizing at night. Our research will further our understanding of the vocal behaviour of nocturnal birds in tropical dry forest sites, one of Earth’s most endangered ecosystems.

KEYWORDS: Bioacoustics, Tropical ecology, Dry forest, Nocturnal species, Avian research