

INTERNATIONAL SOCIETY OF ECOACOUSTICS



2018 ECOACOUSTICS CONGRESS

JUNE 24-28 BRISBANE, AUSTRALIA



CONGRESS PROCEEDINGS



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Automated monitoring of male rutting vocal activity in a natural population of impala (*Aepyceros melampus*) in Namibia

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Abstract

Monitoring of impala rutting activity was conducted in a population counting approximately 800 animals throughout the rut period in Namibia. Acoustic recordings were conducted using one automated recording system (SongMeter 2+) mounted on a tree near a water pool visited by animals for drinking. Recordings lasted from May 2 to May 28, 2015, during 27 nights, 20 hours per night from 14:00 p.m. to 10:00 a.m. Recording schedule was 9 min with 1 min pause, 54 min per hour, 1080 min per night. We scored the number of bouts of rutting calls, 3176 bouts in total. Bouts of rutting calls consisted of roars only (323 bouts, 10.2%), of snorts only (222 bouts, 7.0%) or could include both roars and snorts in the same bout (2631 bouts, 82.8%). We calculated the average number of bouts of rutting calls per hour per night. Before the start of active rut (May 2-12), the vocal activity ranged from 0.09 to 2.05 bouts per hour (mean 1.35 ± 0.98 bouts). During the active rut period, lasted 15 nights (May 13-27), the vocal activity ranged from 4.56 to 17.0 bouts per hour (mean 10.80 ± 4.55 bouts). At the end of the rut (May 28) the vocal activity decreased to 2.11 bouts per hour. During a night (from 14:00 p.m. to 10:00 a.m.) male rutting vocal activity varied not strongly, from 5.10 to 17.52 bouts per hour.

Maximum vocal activity was scored at 17:00, whereas a second peak of vocal activity (14.05 bouts per hour) has been observed at 05:00 in the morning. During a night, there were two periods of lowered vocal activity: at 19:00-21:00 (to 6.73 bouts per hour) and at 03:00-04:00 (to 6.86 bouts per hour). On average for all nights, male impala produced 9.75 ± 3.36 bouts of rutting calls per hour. Supported by the RSF grant 14-14-00237.