

Secrets of the night: Investigation of behaviour patterns of Madoqua kirkii

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The nocturnal behaviour of Kirk's dik-dik has hardly been studied to date. Initial studies describe nocturnal activity^[1,2], but further details of the behaviour are unknown. To get a more detailed picture, we analysed the nocturnal behaviour of 13 adult individuals in different group constellations at Hannover Adventure Zoo between 5 p.m. and 7 a.m. The first comparative results are presented below.



Figure 2: A female Kirk's dik-dik

Figure 1: Night-time image of three female Kirk's dik-diks showing the behaviours standing, standing eating and lying head up.

in REM sleep position, which is characterised by head resting and relaxed neck^[3].

Methods

The Kirk's dik-diks were filmed using infrared cameras from December 2023 to March 2024 (see example in Fig. 1 and 2). The video footage was analysed using the openprogram BORIS. The behaviour 'lying head down' is evaluated as the source characteristic position of REM-sleep (shown in Figure 2), which has already been proven^[3] and used in other ungulates studies^[4,5]. This study compared 13 adult individuals in five separate groups, group composition is shown in Fig. 3.





Activity budget group comparison

Activity budget



Figure 3: Overview of the nocturnal activity budget of the different groups for two nights. The gender ratio is shown on the left. Total includes the activity budget of all individuals.

Time [h]

Figure 4: Activity patterns of all 13 individuals for two nights. Blue: standing activities; Dark green: lying activities; Light green: REM sleep position; Grey: locomotion

> Lying: 56.15 % ± 3.01 % REM sleep position: 3.7 % ± 0.3 % Standing: 27.27 % ± 2.12 % Locomotion: 9.51 % ± 0.89 %

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 \mathbf{C}

 \mathbf{b}

The lying behaviour predominates during nocturnal behaviour (Figs. 3, 4). \checkmark Kirk's dik-diks spend around 3.7 % of their time in the REM sleep position (Fig. 3). \checkmark

Summary



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