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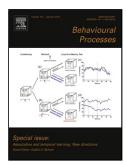
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DYNAMICS OF SOCIAL BEHAVIOUR AT PARTURITION IN A GREGARIOUS UNGULATE

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Highlights

Pregnancy and births in sheep affect social interactions of mothers and non-mothers

Births increase the distance between sheep, especially between mothers

Mothers occupy peripheral positions within the flock, mainly after births

Births hampered individual communication, especially between mothers

Results support selection for maternal imprint and against nursing alien

offspring

Group living is the behavioural response that results when individuals assess the costs vs benefits of sociality,

and these trade-offs vary across an animal's life. Here we quantitatively assess how periparturient condition

(mother/non-mother) and births affect the dynamics of social interactions of a gregarious ungulate, and how such

can help to explain evolutionary hypotheses of the mother-offspring bond. To achieve this we used data of the

individual movement of a group of Scottish blackface sheep (Ovis aries) marked with GPS collars and properties

of mathematical graphs (networks). Euclidean pair-wise distance between sheep were threshold at different

percentiles to determine network links, and these thresholds have a profound effect on the connectivity of the

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