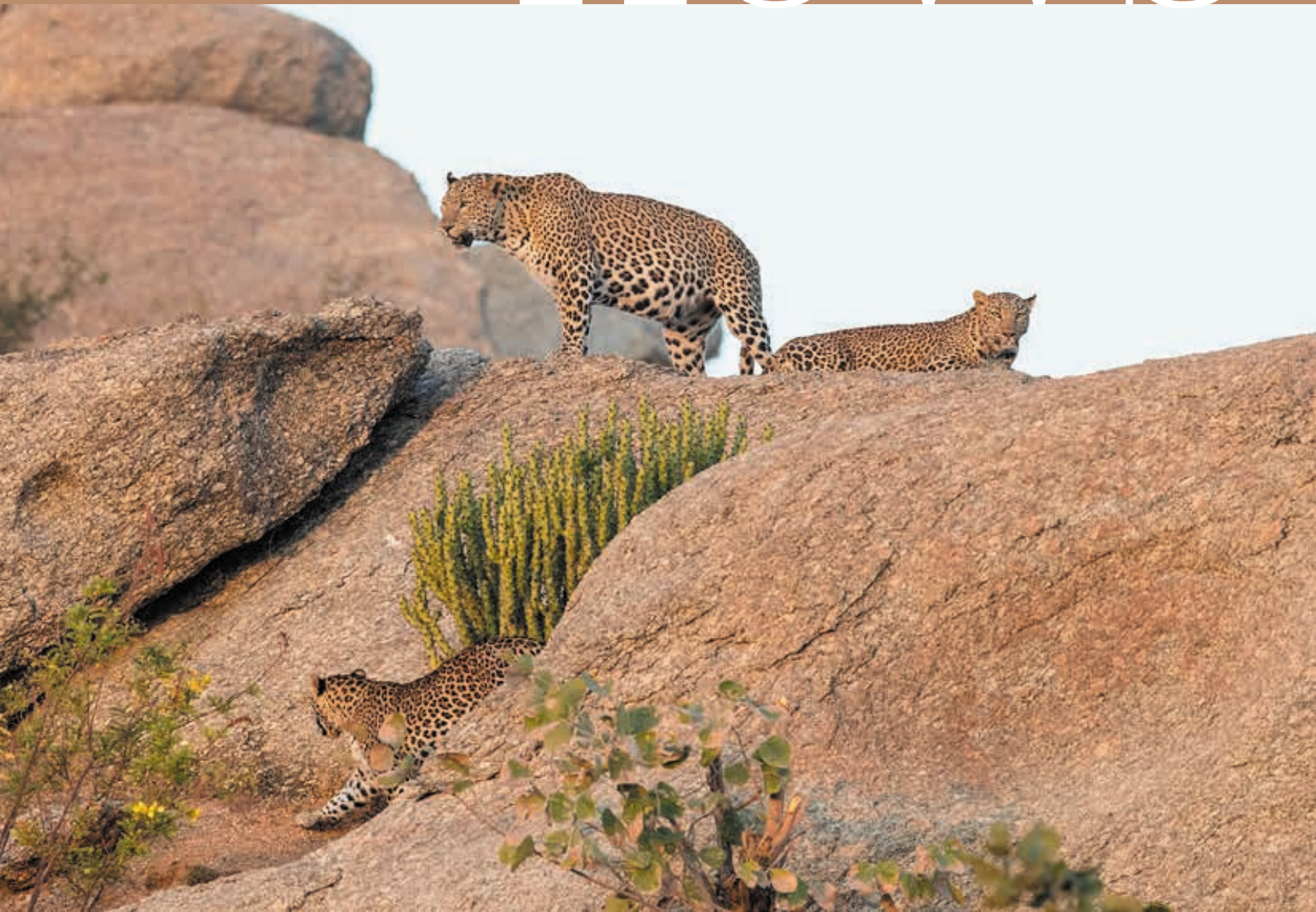


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news





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Original contributions and short notes about wild cats are welcome

Send contributions and observations to ch.breitenmoser@kora.ch.

Guidelines for authors are available at www.catsg.org/catnews

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Cover Photo: Indian male leopard meeting with two females in Rajasthan, India
Photo: Marlon du Toit

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Mating behaviour of two female leopards mating with a single male concomitantly

Although common leopard *Panthera pardus* is copiously found across India, their behavioural ecology still remains partially unknown potentially due to their secretive nature. Here, we report an observation from Jawai, Rajasthan, India, of two female leopards mating with the dominant male leopard simultaneously while tolerating each other's presence.

Common leopards are distributed across a wide range of habitat types, including human-dominated landscapes (Athreya et al. 2014, Gubbi 2021). Common leopard is widely distributed across Africa and Asia, with known sub-species (Stein et al. 2020). They have survived outside protected areas in many parts of India since historical times (Daniel 1999) and even today occur in high density amidst human habitation (Athreya et al. 2011). The first ever scientific national census of leopards around tiger habitats in India (except the northeast) in 2014 estimat-

ed 7,910 individuals (Jhala et al. 2015), the second one over a larger area in 2018 12,852 leopards (Jhala et al. 2021). Conservation of wild felids can be achieved only by reducing the human-wildlife conflict and through proper understanding of their reproductive physiology (Holt et al. 2003). Most social and mating behavioural studies of the common leopard have been conducted in captivity, and knowledge about its reproduction is still patchy (Allwin et al. 2016). Here we report a unique behavioural observation of a dominant male mating with two females within a day.

The Jawai Landscape in the Pali district of Rajasthan is a prime example of leopards living outside protected areas. The granite hills and outcrops provide hideaway for the leopards that have been living in harmony with the humans for centuries. Over the years, an arrangement seems to have been made wherein the local herders do not interfere with the leopards moving about, and show high tolerance to livestock depredation by leopards, treating it as an offering to the local deities. The approximate 200 km² area of the Jawai landscape can be divided into four major parts: (1) the waterlogged area of the Jawai Dam, (2) granite hills/outcrops, (3) grazing lands, and (4) human habitations and agricultural area. The leopards mostly use the granite hills during the day and at night they roam the entire terrestrial landscape. The landscape is surrounded by agricultural fields and on the western side, a railway line divides it from the Sirohi-Bera landscape. Towards the south-east, Jawai is 7 km away from a large leopard habitat in the form of Kumbhalgarh Wildlife Sanctuary. There are around 12 villages that fall in the Jawai landscape and currently there

are around 32 active adult leopards observed in this area based on our personal observations by creation of an identity card for each individual using the flank rosette patterns. The SUJÁN JAWAI field team comprising of naturalists and trackers drive around the landscape on forest tracks daily, with tourists and for regular patrolling. Most of the leopard observations take place during dawn and dusk. Each member of the team records the observation onto a communal database at the camp along with information about the location, time, duration, behavioural observation and identity of the leopard. Each leopard is identified based on their rosette patterns by a team of naturalists using photographs. Apart from direct observations, the team also strategically places camera traps on game drive trails and carcass dumping grounds outside the villages that are commonly frequented by leopards. On 17 January 2018, during one of the regular morning drives, the authors spotted three leopards, two females (JF1 and JF2) and the dominant male leopard (JM1) at 07:48 h moving from the scrubland onto a granite hill. The male has been observed in the landscape since November 2015, whereas the two females since March 2017. JF1 was originally spotted as a cub, 6 km from the place of the current observation in January 2016, whereas there were no previous sighting records of JF2. JM1 and JF2 moved onto the ridge of the hill and settled down. JF1 moved up the same ridge, rolled on the rock and rubbed her hind part and tail on the male as a pre-copulatory behaviour. The male moved away from JF1, and both the leopards then settled about 20 feet from each other. After a period of 2 minutes

JF1 repeated her pre-copulatory behaviour following which JM1 mated with her for 1 min at 07:56 h. Following the mating, we observed JF2 descending towards the male after about 5 min. Female JF2 engaged in pre-copulatory behaviour like JF1, and JM1 mated with her at 08:02 h. While JM1 lied down on a boulder, with JF2 sitting next to him, JF1 was observed moving towards JF2. This led to mutual display of aggression by both females even though there was no physical contact between them. The alternate mating by JM1 with JF1 and JF2 continued for about 40 min wherein JM1 visibly mated 4 times with JF1 and 6 times with JF2 (Fig. 1 & 2).

We are not sure about the relationship between the two females, though noticed that they were quite tolerant of each other during the process despite the occasional snarling and hissing. Such behaviour has previously only been recorded in Africa on audio-visuals and noted in blogs but never published. Although the Indian leopard is found in abundance across various habitats in India, our observation highlights how little we know about the behavioural ecology of these big cats.

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Fig. 1. JM1 mating with JF2 while JF1 watches closely (Photo M. du Toit).



Fig. 2. JF1 displaying pre-copulatory behaviour in front of JM1 while JF2 sits above (Photo C. Paliwal).