

Tiger Mating in Bandhavgarh Tiger Reserve

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This is a case-study based on observations in Bandhavgarh Tiger Reserve (BTR). Records are drawn from the authors' diary accounts and photographic files.

At the beginning of 1999, two subadult tigresses of Sita's final litter were seen establishing their territory in Chakradhara Meadow. The two young tigresses were seen together only once but appeared to be using the same area at different times. This was the period in which they were gaining maturity and independence, and we often saw them in the tall grass very close to the road. They had good tolerance for vehicle noise but not for the sound of the human voice. Once the jeep engine stopped, they would react even to a whisper by slipping deep into thick grass cover.

For easy identification, we call these individuals S1 and S2, born on September 1996. For the genealogy of Sita's litters, see Ward and Nichols (1997, p. 41).

On the morning of 13th February 1999, the male tiger Charger was seen walking in Chakradhara Meadow grasses and responding to the call of another tiger from the other side of the road. Elephants were handy and some tourists followed the path of Charger and saw him mating with S2. At this time, according to Ward and Nichols (1997), S2 was about 28 months old. We heard growling and moaning of male and female while mating from about 30 metres off the jeep; when we reached the spot we saw the tigers sitting close to each other. Tourists captured the mating on video, and we viewed the footage. Twenty minutes later, we heard growling and moaning again, and another party of tourists on the elephant-back saw the tigers mating. Later on, we found that this mating did not result in progeny, probably because of Charger's advanced age.

In fact, February 1999 can be called a month of action for Charger with no result. At the other side of Chakradhara Meadow, the female *Bachchi* (daughter of Sita born in February 1994, also known locally as Mohini) was looking for a mate. We had heard her calling on the 15th and 16th Feb. During the early morning of 18th Feb, we got a report that she was mating with Charger. By the time we reached the spot, we found that this mating had been recorded by a team from Partridge Films (U.K.). Later on we also saw them mating. Tourists on the elephants, as well as from the jeeps, witnessed this mating. Again, it turned out that this mating did not produce results, for *Bachchi* was sighted right up to the end of June 1999 with no sign of pregnancy or motherhood.

At this time, however, Charger was still observed holding on to his territory, and particularly the portion of it comprising Chorbehra, Chakradhara, and Bhiri, up to Rajbehra and Gohni. On 14th March 1999, we sighted from the jeep in Rajbehra Meadow the tiger Charger mating with a tigress. On 15th March, further mating was observed from elephant-back in the morning and from a jeep in the afternoon. During this period of observation, both Charger and the female appeared to stay in the same spot. We call this female Cowkiller because she was first sighted on 22nd February 1999

on a cow kill. The mating between Cowkiller and Charger is known to have continued for another day, as witnessed by mahavats. It was also recorded by Anjali Goswami that Charger was seen again with Cowkiller on 2nd May 1999 in Rajbehra, but no mating was observed. Results of the mating were negative, however, Cowkiller (like *Bachchi*) was seen until the end of June 1999 with no signs of pregnancy or motherhood.

From the beginning of July to the end of October the park was closed for the monsoon so we have no information for this period. When the park reopened for tourism from early November 1999, *Bachchi* was sighted with swollen teats and we heard her calling cubs in early December on Chorbehra Hills. Mahavats confirmed the existence of two cubs about two months old. We are doubtful that Charger sired this litter of *Bachchi*, as his earlier matings had proved unsuccessful.

By 9th Nov. 1999 Charger was seen mating with S2 in Mirchhani (photographic evidence identifies the female as S2). At this time, Charger looked quite old and not as fit as a tiger should be. This was the first time S2 was seen in this area of the park, and it was concluded that she had come in search of a male tiger and had found only old Charger. Both Sita's offspring S1 and S2 at this time were still being sighted in overlapping territories, possibly due to the need of a male. However, S1 was often seen in Chakradhara and S2 on the hills of Khirki and Mirchhani.

During the 1999-2000 season, the subadult male cubs of *Bachchi*'s first litter known as B1, B2 was and B3 (born April 1997) were beginning to define their territory. B2 was seen in Chorbehra, Chakradhara, Jamuniya, Thauni, and occasionally in Khirki-Ghorademon, and Badhaini. B3 spent much of his time in Mirchhani, Khirki-Ghorademon, Banbehni on the hills, and he was occasionally seen in Rajbehra. There were no confirmed sightings of B1 until Feb 2000, when he appeared in Kanauli. Since then, he was seen in Rajbehra, Sehra, and the Gohni area.

Mahavats and we regularly saw S1 and B2 in Chakradhara Meadow. On the 20th Nov. 1999, B2 was seen mating with S1 opposite Gopalpur. This mating was observed by tourists from elephant-back. Later, B2 killed a sambar fawn and the meal was shared by S1. By this time, S1 was approximately 39 months old and B2 about 31 months old. Charles McDougal (1977) writes that a tigress can conceive at the age of 30 months, while H.S. Panwar has stated that the age of first conception could be as low as 27 months. McDougal, Panwar, and Sankhala all suggest that a male of 31 months is too young to sire a litter. The mating of S1 and B2, in the event, was unsuccessful.

During the same period, in Mirchhani and Khirki a tigress was often heard calling. On 7th December 1999, mating of S2 and B3 was observed by tourists and mahavats alike. During the course of this mating period, the resident tigress

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Cowkiller appeared on the scene and chased S2 off. We then observed B3 desperately sniffing, calling, and searching to find the female. Later that morning, S2 and B3 were again seen mating. Once more, the results of this mating were negative.

S2 was again seen in mating, this time with B2, on the Fort Hill Road on 1st March 2000. The next day, though observation was difficult due to the terrain, mating growls were heard at regular intervals during both the morning and afternoon rounds. Subsequently, the same male B2 was seen on 26th March 2000 in Khirki in the presence of S1. The female followed the male on the Fort Hill and mating growls were heard at regular intervals.

Abramov (1962) states that the gestation period of the tiger is approximately 95-107 days: see also Schaller (1967). On 3rd June 2000, S2 was observed at Banbehi with a very heavy belly and swollen teats. She was seen again a few days later by a French photographer, who observed that her teats were swollen and had been suckled. She was observed coming out of a particular place on the Khirki road and going in at the same spot. On 9th June she was seen on Rampur Hill near a small nallah about three feet wide. At this time, B3 was in the area, and the two tigers were seen greeting each other. However, when B3 left, S2 did not follow. She jumped into the nallah and disappeared. Until the end of June, sightings and pugmarks placed S2 in very close proximity to this nallah. She appeared to leave the area seldom, if ever, and it was thought she might have young cubs. Many of these observations were made by Iain Green, a regular visitor to BTR.

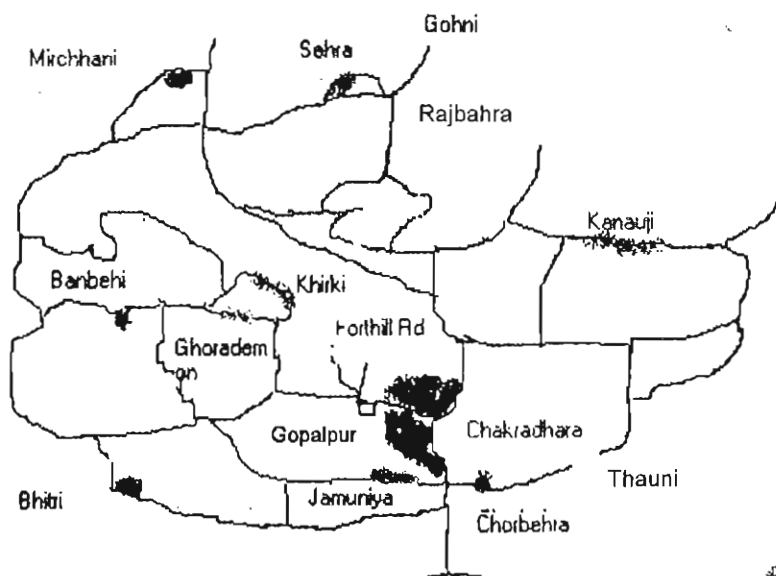
In November 2000, when the park reopened after the monsoon, the mahavats saw the tigress S1 with small cubs in the Chakradhara Meadow. On 5th December 2000, tourists saw this same tigress from elephant-back with cubs

that were approximately 5 months old. The tigress was identified from photographs as S1. From these sighting records, we would surmise that either B2 or B3 sired the litters of S1 and S2. We can conclude this in all probability because the mating between Charger and Tala Range females could not produce any positive results. In addition, during the 1999-2000 season, no other male tiger apart from the siblings B1, B2, and B3 was seen in the tourist area to mount any challenge to an old and failing Charger, who by then would have been about 15-16 years of age (having established himself around Chakradhara in 1990). We would also add that in early May 2000 an unknown female, who arrived to mate only with B1, was observed and photographed in the tourist zone. This female was never seen before or after the few days of mating.

We conclude, therefore, that a male tiger of 3 years (plus or minus) is capable of siring a litter. McDougal (1977), citing previous records, states that male tigers do not become sexually mature until the age of 3 1/2 to 4 years: see also Prater (1971), who asserts that "sexual maturity is attained at 3 years of age by the tigress and at 4 by the tiger." We would conclude, however, that in BTR during the season 1999-2000 a tiger 3 years old (and perhaps a bit younger) had matured sexually and successfully sired a litter. It is our own conjecture that the presence of two maturing females in their territory may have caused precociousness in the sub-adult males; this would tally with McDougal's statement that captive tigers in zoo environments can mature at the age of 3 years. However, to our knowledge the BTR data comprise the first record of known male tigers in the wild maturing sexually at the age of approximately 3 years.

It is clear from the sighting records of the mahavats, guides, and visiting tourists - as well as from our own sighting data - that in the area under observation, no male tiger other than Charger, B1, B2 and B3 was ever seen or heard. In addition,

Bandhavgarh Tiger Reserve - Location Map of Tiger mating



South



Geneology of Sita and Charger

Bachchi	Second litter died	S1, S2 & S3
Born Feb. 94	Reason unknown	Born Sep. 96
Alive & Well		S3 disappeared
		S1 & S2 well & breeding

Bachchi & Unknown Male

First litter born	Second litter
April 97, three male	Born Oct. 99 two female
Cubs B1, B2 & B3	Cubs B4 & B5
All alive & well	B5 poached 30 May01

under the closely monitored situation obtaining in Bandhavgarh tourist zone the possibility of an outsider male coming in unnoticed is virtually nil. Furthermore, the subsequent death of Charger on 29 September 2000 in a weak and emaciated condition indicates that no other dominant male capable of snuffing out Charger ever entered this zone. The sub - adult male B2 took over his territory.

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