

Tiger behaviour
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Introduction

The tiger (*Panthera tigris*), being voted as the world's favorite animal (Animal planet poll), has captured the interest of people all over the world. It has already for centuries in several ancient Asian cultures been a symbol of royalty, fearlessness, wrath and anger and is often spoken of as the "king of the beasts". Its native environment is found both in the east and south Asia where it has evolved from its 2 million years ancestor, *Panthera palaeosinensis*. Despite its great popularity (which might paradoxically have contributed to its partly extinction), it has become today a highly endangered species, having less than 3500 individuals in the wild. There are several factors which play a role in the extinction of tigers, including its territorial and solitary nature which requiring large habitats, conflicting with the continuously expanding human population. The study of wild tiger behavior has become rather challenging due to the low population of tigers in the wild. They are also not so easy to track or observe, due to large territories. Captured tigers have in addition been used for animal behavior study but show various differences in behavior compared to the wild individuals. In this essay I will focus on the basic behavior of wild tigers, including territorial, hunting, social and mating behavior.

Discussion

Territorial behavior

Tigers, in contrast to lions, live most of their life alone. The range of their territory can span up to a several thousand km² making an encounter with another tiger rather infrequent. The distribution of tiger populations into territories is determined by several limiting factors, where the most crucial one is the prey abundance. However, other limiting factors



such as the sex of the tiger, tiger subspecies and climate play an important role in the alternating territorial ranges. As these limiting factors change, the tiger population density will also change according to it. Because the prey abundance makes a great impact on the tiger density, estimated densities of prey can be used to estimate the tiger densities itself. The range of the male territory, tend to overlap the territories of the females. This overlapping tendency is convenient for mating since the females and males will come more frequent in contact with each other. As a young tigress establishes her first territory, she finds an area rather close to her mother, often overlapping the two territories. As time passes, the overlapping diminishes resulting finally in a two separate territories. Males are set out earlier to find an own territory and wander further than the females. The male can not always acquire its own territory due to too strong surrounding resident males. In this case the young tiger must live as a subordinate tiger until he is strong and old enough to challenge the resident male. Male tigers tend to be more intolerant to have other males in their territory compared to the females. However these conflicts are often solved without aggression. Behavior such as rolling over and showing the belly are often carried out by the subordinate, giving a sign of defeat. In cases where aggression is also shown in the

behavior, a tigress in oestrus is often located in the territory. A male marks his territory mostly by **Rivaling tigers** spraying urine and anal gland secretion, however tree scratching and defecation has also been observed. The males mark more frequently when the female tigers are in oestrus. Scent glands are in addition found around the tail and between the toes, helping the tigers to recognize each other and to communicate. The female tigers show less territorial behavior than the males and have a more stable range of territory. Marking and scenting their territory occurs more intensively right before oestrus, but then declines during the oestrus. A tiger has usually one or more lairs within its territory. The lair is preferably located in a shaded area, such as a cave or a cavity below a fallen tree. As the tiger wants to rest it goes back to its lair, however not all tigers have a specific resting place like this.

1) **“Scent marking in free-ranging tigers, *Panthera tigris* “**

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- 2) **“Mammalian species – Panthera tigris”, page 4 “ecology”**
<http://www.science.smith.edu/departments/Biology/VHAYSEN/MSI/pdf/i0076-3519-152-01-0001.pdf>
- 3) **“Mammalian species – Panthera tigris”, page 6 “behavior”**
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- 4) **“Tigers and their prey: Predicting carnivore densities from prey abundance”**
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Mating

Mating occurs all year long and is often noisy, including male and female vocalization, paw swiping, growling, hissing sounds, groans, roars and rolling. Purring and low growling sounds are often made to indicate interest and to withdraw the mating partner. The copulation lasts for only 15-20 seconds, however the mating may occur several times a day. The male and the female stays together for up to a week performing these sexual activities before they then separate and search for a new partner.

Tigers during mating

- 5) **“Comparisons of canid and felid social systems from an evolutionary perspective”**
http://www.sciencedirect.com/science?_ob=MIimg&_imagekey=B6W9W-4JTPMWS-1-1&_cdi=6693&_user=6362836&_pii=S0003347273800880&_origin=search&_coverDate=11%2F30%2F1973&_sk=999789995&view=c&wchp=dGLbVtz-zSkWb&md5=9ab8d20f3f137cdcd73c5a6ef8c11bf1&ie=/sdarticle.pdf
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Hunting behavior

Tigers hunt mostly medium to large sized animals and it takes place alone and mostly in the night when the ungulates are active. As the tiger moves through the territory seeking after a prey, it is highly dependent on hearing and sight rather than olfaction. The hunting technique used usually includes an ambush attack which surprises the prey, knocking it off balance. Tigers kill their victims by powerful bites through the nape or throat, pressuring the prey down toward the ground. This is a very efficient technique with large ungulates

which may try to defend themselves with horns, antlers and horns. It is important that the tiger comes close to its prey before it attacks or breaks its cover. This is due to the tiger's low stamina. Despite its high speed reaching up to 50-69 kilometers it cannot run for very far continuously. Tigers begin to eat their prey as soon as they have dragged the victim to a suitable place. They eat usually continuously for around one hour before they have a rest. After the rest, which may last until several hours, the tiger will pursue its meal. The duration of continuous eating usually don't exceed more than one hour. In average, only one out of twenty hunts are successful. Tigers hunt mostly alone, but young siblings may occasionally stay together after they leave their mother and hunt together. After some time their individual hunting skills gradually develop and they may after some time hunt alone. It is the mothers task to teach the cubs hunting before she lets them go, the male however has little or no role in raising or teaching the cubs. Individual tigers are capable of recognizing each other and they may be willing to share the prey they have killed with other tigers. This can be either related tigers, females who have had the male's cubs or simply just tigers with a familiar scent. The eating behavior of tigers differs from that of other types of cats such as lions. The males do not eat the kill before the female and cubs if they are present, but waits until they finish their meal and then starts to eat. With lions the behavior is totally opposite where the male eats first, filling his stomach and then leaves the leftovers to the female and her cubs.

8) **Mammalian species – Panthera tigris, page 5 “behavior”**

<http://www.science.smith.edu/departments/Biology/VHAYSEN/msi/pdf/i0076-3519-152-01-0001.pdf>

9) <http://en.wikipedia.org/wiki/Tiger>

Social interaction

Several types of social interaction between tigers have been observed, despite their solitary lifestyle. The social interaction is especially frequent between the cubs of a female's litter which both play and develop together.

Visual communication: Tigers can communicate with other tigers and animals by several gestures and movements. Typical examples, just like the domesticated cats, are the arching of the back and showing claws, being a “back-off” sign. Other movements such as having ears and tail straight up are signs of curiosity and alertness. The tail can also be used for communication by performing twitching, hanging or side to side movement. Tigers have in addition several facial expressions. One of these expressions is the so-called “defense threat”, where the pupils are dilated, the ears are flattened and the canines exposed. This expression may also given during an attack.

Vocal communication: Tiger do not only communicate by physical interaction but have also vocal communication. Several vocalizations performed by the tiger have been observed: Pooking (“sambar-call”), grunting meowing, woofing, moaning, roaring, growling, snarling, hissing and coughing roars. Moaning is used several times by the mother to pursue the young to follow her direction and to try new things. It is also performed by the males and has a function to relax the females during courtship. Snarling is presented when the tigers feel threatened and is often performed by the mother to keep animals and even other

male tigers from her cubs. Roaring can be carried out due to a specialized structure of the hyoid apparatus and is often repeated three- four times. It gives a massive sound that may travel up to 3 km and is usually given when the tiger has killed a large animal or during the mating season. Coughing roars are generally only given during an attack. There has been no evidence that learning plays an important role in developing vocalization, it seems rather to be greatly genetically determined.



Scent communication: Scenting as already discussed, is used frequently for territorial marking, both by males and females. During scent sniffing tigers may perform the so-called “Flehmen” expression, having the tongue hanging over the incisors, wrinkling the nose and exposing the upper canine. This may occur after sniffing a urine or scent marks made by themselves or by another tiger. It may also be displayed after sniffing an oestrus tigress or a cub’s urine.

10) “Mammalian species – Panthera tigris”, page 6 “behavior”

<http://www.science.smith.edu/departments/Biology/VHAYSEN/msi/pdf/i0076-3519-152-01-0001.pdf>

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Other behavior

Tigers possess both good jumping and climbing abilities, however tigers usually do not climb trees. Unlike other members of the Felidae family, the tiger enjoys swimming and can swim for several kilometers. Tigers also show an unusual understanding of human behavior, some being even able to distinguish an armed man from a helpless victim.

Conclusion

Tigers are territorial animals, performing several rituals to mark their territory; Scratching, defecation, anal gland secretion and urination. Males are more territorial than the females; requiring also larger habitats than the females. The tigers are meat eaters, hunting mainly medium to large sized ungulates. They are very successful hunters and hunt usually alone during the night. The combination of a powerful bite, high body strength and remarkable swiftness makes them capable of killing also relatively large animals. They are found on top of the food chain having no predators (excluding the humans), however some records have been made of tigers being killed by crocodiles and black bears. Mating occurs all year long and is performed with a partner up to a week, several times a day. It is generally noisily and includes several mating rituals. Social interaction among tigers includes both visual, vocal and scent communication. Several facial expressions, vocalizations and movements play important roles in the communication. The tiger behavior is still not fully understood and needs to be investigated further. However due to its endangered status it may be currently more appropriate to spend more time and money on its conservation. In this way we could gain answers to questions that may be crucial and necessary for their survival as a species.

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