



Dogs in this region can be seen with spiked metal collars around their neck. These collars are the dog's best protection against the leopard. Dogs form a significant part of the leopard's diet —PANKAJ SEKHSARIA



A female leopard that was photographed as part of the research project. This female was accompanied with two cubs and had come to the area to feed on a cow that had died of electrocution —VIDYA ATHREYA



The state forest department has put up a large banner warning visitors and local residents to be extremely careful while passing through the area —VIDYA ATHREYA

AKOLE TALUKA OF AHMEDNAGAR DISTRICT HAS WITNESSED MINIMAL HUMAN-WILDLIFE CONFLICTS IN FORM OF LEOPARD ATTACKS

The Junnar taluka of Pune district has witnessed repeated human-wildlife conflicts in the form of leopard attacks on humans and livestock. In sharp contrast, Akole taluka in Ahmednagar district has seen minimal of such conflict even though the leopard, cattle and humans live cheek-by-jowl. Writer, photographer and member of NGO Kalpuriksha Pankaj Sekhsaria presents a five-part series on this issue, written under the aegis of the Centre for Science and Environment (CSE) Media Fellowships.

At first glance, Ahmednagar district's Akole taluka appears to be like any another part of western Maharashtra's sugar belt. At it's centre is the town of Akole, a small bustling, disorganised town situated on the banks of the Pravara river. Extensive farmlands extend on either side of the river and the mosaic of rich greens peters out into a dominantly brown one as the lands continue into the foothills of the Sahyadris in the distance. Here the landscape turns mainly arid and dry and is dominated by scrub forest and bare open expanses.



Leopards are commonly caged in village areas and then released in a nearby forests —VIDYA ATHREYA

It is certainly not surprising, then, if a first time casual visitor will indeed see nothing out of the ordinary. For those who are more observant, however, noticing the dogs here is bound to throw up the first big question. Dogs in the landscape anywhere in India are as ubiquitous as anything can be, and the situation in Akole is not different except for one significant detail – the collars around their necks. The dogs here have thick metal collars with mean looking spikes sticking out from them. It is an unlikely reality but in the valley of river Pravara in Akole, this is the dog's best protection against an even more un-

likely predator.

The forest area here is negligible, the land is cultivated intensely and the density of human population (more than 180 people / sq. km) is extremely high. (See Box 1). And yet this is also the territory of one of the world's smartest, most adaptable and efficient large predators, the leopard (See Box 2). It is an incredible, but little known reality that these agriculture dominated landscapes of Akole taluka and other neighbouring areas might indeed have some of the highest densities of the leopard found anywhere in India.

An Akole-like situation might indeed exist in others parts of Maharashtra and for that matter, India as well, but Akole is in some ways special. It is from here that we are getting the first scientific information and assessment of large carnivore presence and behaviour in human dominated landscapes as an outcome of a 'first of its kind' field biology project undertaken anywhere. Led by Pune based wildlife biologist, Vidya Athreya, a team of wildlife biologists, social scientists and local forest department staff have spent more than two years now studying the landscape, people's perceptions and leopard movement and behaviour in an area spread over nearly 300 sq km of Akole taluka.

The initial response to the presence of leopards in such a landscape is bound to be of disbelief and even worry – Is this really true? Is it not an extremely risky situation? With so many people and their cattle, is it not a situation of guaranteed conflict? Is it desirable that such a ferocious and dangerous creature of the forest like the leopard, enter such territory and shouldn't one expect mayhem in the circumstances?

The worries and fears are undoubtedly real and justified and yet the situation is not what we first assume it will be. The reality in the taluka is that the leopard, the cattle and the humans all actually live cheek-by-jowl and yet the conflict is minimal if it is there at all. There is some tension and there is worry: goats, sheep, domestic pigs and dogs are regularly picked up by the leopard, but there has been no recorded attack on humans in Athreya's area of study in more than a decade. People are worried for their safety and for the safety of their children and yet there has never been the kind of demands for removing (or killing) the leopards or the reactions that were seen only a few years ago in neighbouring Junnar taluka that lies a little further.

There are two related questions here that immediately come to mind – a) What explains the presence of so many leopards in Akole and b) What led to such huge conflict in neighbouring Junnar just a few years ago, while there has been none in Akole at all? While it is difficult to claim a full understanding some pointers and answers are indeed available.

(To be concluded)

Man-animal row: Study holds VITAL CLUES



A view of the agriculture dominated landscape of Akole taluka. This is also the landscape which is home to a large number of leopards, where importantly, cases leopard attacks on humans are virtually non-existent —PANKAJ SEKHSARIA

Akole taluka – An overview

A significant majority of the people in Akole are farmers while the other main traditional livelihood is pastoralism. The total area of the taluka is nearly 1,500 sq km, of which about a 1,000 sq. km is agricultural land. Census figures put the total population here at 2,71,719. Scheduled tribes form a significant chunk with their total number being 1,01,996. The area has seen a significant rise in prosperity in the last couple of decades thanks to the increased avail-

ability of water, primarily from borewells and the installation of lift irrigation schemes. Farmers here now grow a variety of crops that includes vegetables (cauliflower, tomatoes and onions that are mainly sent to Mumbai) wheat, maize, flowers and sugarcane. At the heart of the prosperity, or perhaps the most important causative factor, like it is across western Maharashtra, is the Agasti Co-operative Sugar mill located in the heart of Akole town.

The leopard

The leopard, *Panthera pardus fusca* is one of the most successful members of Indian big cat family. It is distributed throughout the subcontinent, including in the border nations of Nepal, Bhutan, Bangladesh, Pakistan, and southern China. It is also found in a range of diverse habitats that includes dry deciduous forests, desert ecosystems, tropical rain-forests, northern coniferous forests and in areas close to human habitation.

What is significant is that it is an extremely versatile and adaptable creature. This adaptability is in large measure due to the animal's rather catholic diet which even includes arthropods, amphibians, rotting carcasses, their lesser dependence on free water (obtaining it from their prey), and their smaller size. They can easily live alongside humans, even in areas, where wild prey is scarce. Historical records going back more than a century testify to this fact, though often these reports are about leopards attacking and killing humans or when the leopards were themselves killed.

The rise and fall of Pluto

Jayant Narlikar and Thanu Padmanabhan

In 1929, Clyde W Tombaugh was appointed at the Lowell Observatory, Arizona and was assigned the task of performing a systematic search for a trans-Neptunian planet.

At that time, astronomers knew of the 8 planets, the farthest one being Neptune. But the orbits of the outermost planets, especially Uranus and Neptune, did not match with the theoretical calculations. Percival Lowell was one of the early pioneers who believed that this was because of the gravitational influence of another planet 'X' located beyond Neptune. In his observatory at Arizona, Lowell searched hard during 1914-16 for this planet but did not succeed in finding it.

Tombaugh however was lucky enough to discover the planet on 18th February 1930 within around a year of his starting the search. This planet - named Pluto - was photographed every successive night and was announced on March 13, 1930, which coincided with the 75th birth anniversary of Lowell.

The story of Pluto is fascinating. Right from the beginning, it was clear that Pluto was different from other planets. For one thing, it is smaller than even the Moon! It was also realised very soon that the positional discrepancies seen earlier in the orbits of Uranus and Neptune were due to some other calculational errors and Pluto was too small to have caused them. (It was one of those cases, in which wrong logic led to an important discovery!) Later discoveries started emphasising the peculiarities of Pluto quite a bit. It has a satellite Charon, which is sufficiently massive to cause the centre of mass of Pluto-Charon system to lie outside Pluto.

This means that instead of Charon orbiting Pluto, both of them go around a point in space under the mutual gravitational influence. Pluto also shares its neighbourhood with a large number of orbiting objects -



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called Plutinos - which are classified by astronomers as Kuiper belt objects.

In 2006, the International Astronomical Union came up with a set of well defined conditions, which an object must satisfy in order to qualify as a planet. Based on this, Pluto was declared a 'dwarf planet' rather than a planet. It now shares this downgraded status with a few more objects like Ceres, Eris and Makemake. It is expected that the International Astronomical Union will periodically add to the list of dwarf planets over the coming years.

It is worth noting, in this regard, that an Indian amateur astronomer Vyankatesh Bapuji Ketkar had conjectured (in an article published in the journal of the French Astronomical Society in 1911) that a 9th planet exists beyond Neptune with a period of 242 years - very close to Pluto's period of 247.7 years.

All directors liable for bogus loans: HC

Irrespective of whether they stood to gain from the loan, entire board of directors of all banks will be held responsible

Anshika Misra. MUMBAI

In a significant ruling, the Bombay High Court last week held that the board of directors of a bank has collective responsibility for disbursement of any bogus loans, even if all of the directors did not benefit from the fraud.

The HC rejected the anticipatory bail application of four ex-directors of Chalisgaon Peoples Co-operative Bank, Jalgaon, in a case involving issuance of bogus loans amounting to a whopping Rs28 crores. The HC held that prima facie, the evidence suggested involvement of the former directors as they had not opposed the bogus loans issued in contravention to banking regulations.

The four applicants had argued that neither they nor their relatives were beneficiaries of the bogus loans. However, Justice SS Shinde held that the applicants were signatories to the various



resolutions passed from time to time during the period in which they were directors.

"It cannot be forgotten that thousands of depositors have deposited more than Rs37 crore in the said bank and the total loan on the date of filing the complaint to be recovered from the borrowers was to the extent of around Rs28 crores," the judge held.

The HC ruling could impact cases like the Satyam Computer scam in

which ex-directors too could face criminal prosecution for dereliction of duty and failing to verify transactions.

In the present case, auditors had repeatedly objected to the bogus loans but no director filed a criminal case. "Nobody made any attempt to verify whether the borrowers were eligible, whether the proper procedure was followed, whether the sufficient securities were obtained and whether such huge loans were likely to be recovered," the HC noted in the February 10 judgment.

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The offence was registered in October 2008 by the special auditor against several office bearers of the co-operative bank including directors, who were part of the Board during the period the bogus loans were disbursed. As per the police, the bank's chairman, directors and other officials had connived in the unlawful disbursement of loans to relatives of some directors. The loans were given in the name of fictitious enterprises and never repaid.

Corporator shot at, saved by door

Two men, who approached Bharti Dhongade's house for a job, tried to fire at her

Manish K Pathak. MUMBAI

Two unidentified persons tried to shoot at Congress corporator Bharti Dhongade, but ended up firing at the door of her Vile Parle (East) home instead, on Friday night. Dhongade and her sister, who had minor injuries on their hands, were saved because the door was partially open, and shielded them from the bullets.

According to the Vile Parle police the two men, aged between 20 and 25, allegedly approached Dhongade, corporator of Ward 62, for a job before shooting at her. They said they had been sent by one 'Sharif Bhai'. "We are preparing sketches of the attackers from the description given by Dhongade, and have registered a case of attempt to murder. Investigations are on," said Maruti Naik, senior police inspector with the Vile Parle police.

Dhongade said: "Around 11pm, two men in their twenties rang the doorbell at my Old Ashok Kunj home. My sister opened the door, while I was standing behind her, and asked the

reason for their visit. The boys said they had been sent by one 'Sharif Bhai' for jobs. I told them to contact me in my Andheri (west) office. I gave them the phone number after which one of them pulled out a country-made revolver and shot at us. The door was only partially open, so we were not hit. When I opened the door again, the duo had disappeared."

Dhongade has registered a case against Salim Baig, an old political rival, with the Vile Parle police. Baig, who was summoned to the police station, told DNA that he had nothing to do with the attack. "Police should carry out a complete investigation in the case," he added.



Bharti Dhongade and her sister, who sustained minor injuries.