Why tigers are not reoccupying Kuno despite excellent ameliorated and productive habitat?

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A question that quizzes the minds of senior and field officials of Wildlife Wing of Madhya Pradesh as well as those of the knowledgeable visitors to the Kuno Wildlife Sanctuary (KWS), is as to why tigers are mere occasional transients and are not establishing even as a small population to start with, given the high habitat productivity, the excellent availability of thermal and breeding shelters and the abundant prey base. A postulate that is seen to do the rounds in these minds is if the large and aggressive population of the feral cattle in the KWS is a factor to shy away the tigers. This may appeal, but only superficially if one considers the attributes of tiger ecology in the current overall context of Kuno and other nearby tiger bearing areas. Let us probe a bit deeper.

Tiger is an apex predator given to high skills and craft in hunting, immense brute strength and agility, besides enough cunning to now and then break through the best defence and security schemes of the full range of its prey, which includes elephant, gaur, wild buffalo, wild pig and of course cattle (feral or domestic). The lion in Gir, a parallel apex predator, is often able to take the *maldhari* buffalo from herds. An adult tiger alone can surely and successfully hunt these visibly aggressive feral cattle. Tigers also occasionally hunt in groups comprising mother and grown-up cubs or as a courting pair and are frequently able to thwart even the most versatile defence schemes of prey species. Of course the latter situation does not occur in KWS at present.

Further there does not seem to be a great justification in reading too much into the very visible aggressive nature of feral livestock in Kuno. This is obviously an acquired habit in the recent context of freshly evacuated village sites that were left with some domestic cattle, which multiplied and turned feral. Apparently this aggression in all probability manifests more in regard to humans, who held them captive and who such cattle may perceive as a potential threat to their recently acquired and valued freedom. They may not have a similar response to the powerful wild predators like tiger, leopard or wild dog. An easy way of finding out about this is to sample the prey-hair in leopard-scats and deduce the hunting incidence on feral cattle.

Need to worry about growing density of feral cattle congregations

Even so, there ought to be a justified concern for the feral cattle in Kuno, though for a different reason. This concern should be for the simple need of breaking up their extremely large and growing congregations tied to the evacuated villages as foci (traditional *gauthans)*. Officers of KWS are aware of this and seem also to know a plausible approach to discourage this habit, which is to fence off the individual *gauthans*. Our suggestion would be to cover not just the *gauthans* but also a 100-200 meter wide belt around them. No alternative water facilitation should be done outside the fenced area even if a currently used water hole has got included in the fenced area. This would additionally cause the feral cattle to habitually use the distant dispersed natural or facilitated watering points that the wild ungulates use. This may help promote dispersal into smaller herds and to that extent dampen the apparent aggression somewhat. In any case and importantly, such dispersal is bound to afford greater hunting success to predators. All cattle species including wild are herd forming and predators do account for collective defence strategies. If the individual herd-size (congregation level) can be optimised things should fall in a natural pattern reducing habitat pressures and favourably affecting behavioural attributes of feral cattle.

Initially a couple of *gauthans* can be so barred and innovatively learning from the results, later a more effective technique can be evolved and employed. This is as much needed for reducing congregation-size of feral cattle as it indeed for mitigating habitat damage from trampling in and around *gauthans* in evacuated village sites that exhibit excellent habitat recovery.

Issue of tiger population in Kuno

Now let us try to venture an explanation for tigers not establishing a population in Kuno despite all favourable factors. Firsthand experience from the formative years of Kanha, as further vindicated by similar observations from other major tiger PAs, suggests that it is necessary that a minimum core breeding number of adults exist to start and sustain a population. This is what sequentially happened in the successively added and ameliorated areas of Kanha in 1970s and 1980s.

Until several decades earlier Kuno had its own core population, which got decimated in the late 1980s and 1990s. Very thin density population survived scattered in the tract in PAs like Kuno, Shivpuri and other forests in the tract. Constraining pressures of poor habitat productivity and eliminative ones of illegal hunting eventually led to the disappearance of even the stragglers.

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There are no more any worthwhile breeding tiger populations in the tract (including Ranthambhore) that could annually contribute a sub-adult or two (or even past-prime adults) to find their way into Kuno. It is a fact that numbers have declined in the last 5-7 years even in Ranthambhore, which in the region is now the only PA potentially capable of such contributions through dispersal of 'breeding-surplus'. Whatever stragglers or long distance immigrants that may find their way into Kuno at present are not able to stay as they must be urged to quest for mates in a much larger tract around. In the process their getting lost to poaching cannot be ruled out. It nonetheless makes sense to anticipate that at least some individual or two make Kuno their home after a wasteful quest around. Only a close monitoring study can show. It is not unlikely that the drying up of 'breeding surplus' from Ranthambhore and the increasingly disrupted and hazardous (severe poaching threat) 'corridor' to KWS through Keladevi WLS may have snuffed out the only likely channel of trickle from this single potential natural source.

This discussion suggests the need of an urgent study to monitor the 'iimigration, emigration, duration and area of stay of individual transient tigers' in Kuno. This can best be done by well supervised wildlife guards of Kuno paying special attention to the better potential tiger habitats in the WLS. The only way for such monitoring is to lay PIPs (pug impression pads rendered in conducive soil medium on paths and tracks to elicit quality pugmarks of moving tiger and other predators) in potential habitats and based on concerted pugmark monitoring setting up a couple or a few 'camera traps'. Perhaps EMRS can help in better planning, organisation and conduct of such a study. A closer analysis implicit in the whole of above discussion but reveals the need of restocking tiger by bringing in a couple of pairs of sub-adult tiger and release them into a predetermined 'higher potential tiger habitat' in an enclosure, much the same way as what is planned to be done for lion in its higher potential habitat-pockets.

Epilogue

As an aside, the recent several poaching incidents of lion in the Gir Conservation Area has caused the Gujarat Forest Department (GFD) to sit up and investigate the causes. A committee has recently been set up to look into the causes and remedial steps. This development may well provide a reason enough to GFD to release at least a few lions for reintroduction in Kuno. With a good existing leopard population, occasional sightings of caracal, tiger sure to make re-entry and lion likely to make advent, Kuno is destined to be the only PA in the world to have the distinction of harbouring four major cat species, which it must surely have done a little over a century ago. This but reemphasizes the global conservation significance of Kuno.
