

OPERATION EYE OF THE TIGER - INDIA

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To help save the tiger, **OPERATION EYE OF THE TIGER - INDIA, (OETI)**, a Dehra Dun based Non-Government Organization, was launched in April 1996. Mr. A.S.Negi of the Indian Forest Service and a former field director of the renowned Corbett Tiger Reserve, Dr. R.Sukumar, Centre for Ecological Sciences, Indian Institute of Science, Bangalore and Dr. A.J.T.Johnsingh, Wildlife Institute of India, Dehra Dun are its founder trustees. The field work in Corbett Tiger Reserve is being implemented by Shri N.S. Negi and Shri P.D.Sharma, retired Range Forest Officers, who have immense experience in the Reserve. We have posted eight local assistants around the Reserve as informers. They help us in gathering information on illegal activities related to wildlife conservation. They also help us to get data on the status of tiger, leopard, elephant and wild ungulates in the area of our operation. Operation Eye of the Tiger - India is a people's project and the major objectives of the programme are:

1. to help improve the morale of the guards in prime tiger habitats
2. to help enhance protection to tiger, its prey species and habitat
3. to help carry out ecodevelopment and conservation education
4. to help promote research on tiger, its habitat and allied species

At present, the focus of work is Corbett Tiger Reserve which is about 1400 km², and forms part of the Rajaji-Corbett Tiger Conservation Unit (TCU). This is one of the three Level I TCUs with alluvial grasslands and subtropical moist deciduous forests and one of the eleven Level I units in the Indian subcontinent (Dinerstein *et al.* 1997). The total area of this TCU is around 7500 km².

Corbett Tiger Reserve has a National Park area of 520 km², a Sanctuary area (Sonanadi Wildlife Sanctuary) of 300 km² and the rest is managed as buffer zone. There are 20 villages within the Reserve and 78 colonies (*deras*) of 500 pastoral *gujjars* who graze about 1500 livestock, largely buffaloes, within the Reserve. [TIC editors' note: the *gujjars* are a nomadic tribe who rear livestock.] Within a range of 5 km from the Reserve boundary there are 184 villages. These villages have a human population of about 100,000. A large number of these people depend on the Reserve for their firewood, fodder and small timber needs. About 5,000 scrub cattle from these villages graze in the Reserve. Cattle grazing can potentially lead to two problems: one is the transmission of diseases to wild ungulates and the other, the poisoning of cattle carcasses killed by leopard and tiger, to poison the cats when they come back to feed.

In addition, Corbett Tiger Reserve is hardly 250 km from Dudhwa Tiger Reserve, on the Nepal border, which has the notorious distinction of tiger poaching for bones. At any time poachers can target Corbett Tiger Reserve. All of these facts imply that in order to secure a long-term future for the tiger, the following need to be done.

1. The dependency of the people living around the Reserve on the tiger habitat needs to be reduced.
2. Their support for conservation has to be won.
3. The number of unproductive cattle has to be reduced, and
4. The guards should be motivated to be vigilant against poachers.

The programmes of Operation Eye of the Tiger-India address the above four objectives through the following schemes. The programmes at Corbett Tiger Reserve were carried out in two phases. From April 1996 to October 1998 conservation work was done getting small assistance from various government agencies. From November 1998 to May 2000, conservation work was carried out with the assistance of SAVE THE TIGER FUND. This report summarizes the activities for the period April 1996 to May 2000.

PROGRAMMES FOR THE VILLAGERS

1. So far 958 of the families in the northern boundary villages of the Reserve have been given assistance to get cooking gas, 238 families were given one time assistance of Rs. 1,000 each, and 720 families Rs. 500 each for gas connection. Our studies in the northern boundary have shown that each family on an average, uses 3,000-4,000 kg firewood annually. Use of cooking gas may reduce use of firewood and the number of people going into the forest for firewood collection. We hope that prompted by the 'spirit of competition and acquisition' other families all along the northern boundary would eventually get cooking gas connections.

So far eighty solar lanterns have been distributed to the villagers along the northern boundary of the Reserve who do not have electricity. The cost of each lantern was Rs. 2,300. Each family paid Rs. 1,300 and the rest was paid by OETI. We have also helped the villagers to get 28 solar lights with batteries free of cost from the Government.

2. To date we have conducted 19 medical camps along the northern boundary which is remote and does not have much medical facility. People were treated for various ailments including tuberculosis which is widely prevalent in the Himalaya. One thousand nine hundred and one (2081) patients have so far benefited from this programme. Each camp is run for two days by three trained medical doctors including a lady doctor. Free medicines are given and patients suffering from prolonged diseases like tuberculosis are given assistance for continued treatment. While conducting these medical camps, a banner is on display which says that this care comes to the people because they live in and near the tiger habitat and they should become the custodians of the tiger, its prey species and habitat. So far 16 tuberculosis patients have been treated free of cost and they have been declared medically fit by the doctor on completion of the prescribed course. It is possible to run the medical programme in close collaboration with Corbett Foundation, another NGO working around Corbett Tiger Reserve.

3. So far three bulls (Jersey-Sindhi-Holstein cross) and thirty five-35 cross-bred Jersey cows have been given to people who are capable of maintaining them. The hope behind this programme is that cross-bred cows would gradually spread in the population which will reduce the number of less productive scrub cattle grazing in the Reserve. In order to get maximum amount of milk the cross-bred cows have to be stall fed. The programme also removes up to five scrub cattle from the owner to whom a cross-bred cow is given. So far 80 cattle have been taken away from the villages. These scrub cattle were taken to "Cow Homes" maintained by Hindu Religious Endowments far from the Reserve. Rs. 501 is paid to the "Cow Homes" for the maintenance of each scrub cattle. Now this programme has a set back as the "Cow Homes" are not willing to take any more cattle. We are exploring the possibility of solving this problem. Two of the Jersey cows have died - one during the pregnancy and the other due to sudden fever. The remaining cows and the bulls are in good health and are being provided with veterinary care by Operation Eye of the Tiger - India as and when required.

Foot and mouth disease, which spread in Mandal valley in April 1997, in the northern buffer of the Reserve, was combated with the help of the local Veterinary Officers and their staff. Preventive measures were taken to check the spread of this disease by inoculating all other cattle, about 1000, in the villages where the disease broke out. Necessary medicines were supplied by Operation Eye of the Tiger - India to the veterinary staff free of cost when the medicines were found to be in short supply.

4. A Community Welfare Centre was set up in the surrounding area of Corbett Tiger Reserve for training village women in sewing and knitting. Thirty - five village women are receiving training in sewing in the centre. This training will enable them to make additional earnings. The duration of the training course is six months. The first batch of 35 trainees will complete the course on January 15, 2001. Four sewing machines and furniture etc. have been provided in the above centre. A lady instructor has been provided to impart the training.
5. To create awareness in the young generation "Bagh Mitra" (Tiger Friend) clubs have been set up in six Intermediate Schools, two High Schools and two Junior High Schools situated in the surrounding area of the Tiger Reserve. Two hundred and thirty students have so far been enrolled as members of the club. Necessary literature, school bags and stationery etc. have been provided to the student numbers.

Now Operation Eye of the Tiger - India is respected so much in the northern boundary villagers, that a villager has donated us 0.2 acres of his land in Kanda *nallah* village near the road. We plan to build a two room house on this land, one room to be used as a training centre for women in sewing and the other as the place for our staff to stay.

ASSISTANCE TO THE STAFF

So far, we have taken up two programmes to boost the morale of the wildlife staff and motivate them in conservation. One is the offer of financial assistance to the family members of staff who have died on duty and the other is the offer of scholarships to the meritorious children of staff who have secured more than 60% in their school final exams.

1. To date we have given financial assistance to seven families who have lost their men while on duty in and around the Reserve. Each family was given an assistance of Rs. 5,000. One elephant mahout in Dhikala who has an exemplary service record, and who was bedridden for six months, was also given an assistance of Rs. 5,000 to pay his debt. With the savings we have made (from the 15% administrative charges we are levying to the project) we have extended this programme to other parts of India. The families of a Range Forest Officer who was kidnapped and killed by insurgents in Assam, a Range Forest officer who was killed by an elephant in Assam, two wildlife guards who were killed by land-mines planted by timber smugglers in Bihar and a guard and a driver who were killed while on duty in Tamil Nadu were given this assistance. Each family was given Rs. 7,500. These types of assistance spread the message among the wildlife staff that there are organizations to care for them and one can expect them to be much more loyal to the cause of conservation henceforth. Shri Ramsthanu Moorthy, Forest Ranger of Kalakad - Mundanthurai Tiger Reserve in Tamil Nadu and his team were awarded Rs. 5,000 for catching sambar poachers.
2. Meritorious children of wildlife staff of Corbett Tiger Reserve, studying in classes IX and above are given scholarships at the following rates:

Class IX to X	Rs.150 each per month,
Class XI to XII	Rs. 250 each per month,
Graduation	Rs. 300 each per month

3.

Nineteen children in total studying in following classes benefit from the programme, which is very much welcomed by the staff.

Class IX to X	09 (nine)
Class XI to XII	06 (six)
Graduation	04 (four) (BA, B.Sc., B.Com. -3), (B.Tech - 1)
Total	19 (nineteen)

4.

5. We have also carried out other small-scale assistance to the wildlife staff of Corbett Tiger Reserve. An assistance of Rs. 500/- was given to a guard whose

clothing and trunk were destroyed by a wild elephant. A guard whose leg got fractured in an accident was given Rs. 1,000/- for treatment. Medical Relief for Rs. 1,500/= was paid to Shri Khushi Ram, D.L. worker of Rajaji National Park. Rs. 1,000/= was also paid to Shri Jaipal Singh, Forester of Rajaji National Park. Field kit including 14 winter jackets, 26 pullovers and 100 wind shutters costing Rs. 73,843/- were purchased and issued to the staff who brave winter to perform their duties. The motor boat at Sonanadi Wildlife Sanctuary, which is now part of the Reserve, was repaired and put to service at a cost of Rs. 10,500/-.

So as to maintain a good relationship with the Reserve officials we make all these assistance to the staff only through the Reserve Director.

ASSISTANCE TO CORBETT (WILDLIFE) TRAINING CENTRE

We have provided 10 binoculars, at the cost of Rs. 37,200/-, to the Centre based at Kalagarh at the southern western end of the Reserve. This training centre is used by the wildlife staff of Uttar Pradesh (now the new state of Uttaranchal) and by the various training centres at Dehra Dun including Wildlife Institute of India.

ASSISTANCE TO FOREST DEPARTMENT TO CURB POACHING

Although we have enough evidence to prove that poaching is the major reason for the paucity of wild ungulates outside protected areas (for example our assistants had a reliable information of a jeep possibly belonging to a tourism resort carrying a sambar which in all probability was poached), we are not able to do much to help curb this illegal activity. Our report for the period April 1996 to October 1999 highlights some of our achievements.

In August 1999 we distributed hundreds of pamphlets in the villages in and around Corbett Tiger Reserve informing people that an award of Rs. 70,000 and Rs. 6,000 will be given to a village community if it helps the Forest Department to arrest a tiger or wild ungulate poacher, respectively. So far no village community has come up to claim the award. Later we informed all the wildlife staff in the Tiger Conservation Unit (TCU), including the staff of the protected areas, that an award of Rs. 30,000/- and Rs. 4,000/- will be given to the forest staff if they arrest a tiger and ungulate poacher respectively. This has elicited some enthusiasm among the staff. We have received a list of poaching cases detected by the forest staff during the year 1999-2000. The cases relate mainly to the poaching of ungulates. In all 26 poaching cases (22 in Rajaji National Park and 4 in other areas) have been detected. We are in the process of giving suitable rewards to the staff who have detected these cases.

SURVEY OF TIGER AND LARGE UNGULATE ABUNDANCE OUTSIDE THE TWO PROTECTED AREAS

One useful achievement of our programme, in collaboration with the Uttar Pradesh Forest Department staff, is the information we have gathered on the status of tiger, leopard,

sambar, chital, nilgai, barking deer, goral and elephant outside the two protected areas in the TCU. We did not aspire to estimate the number but recorded presence and absence of tiger and leopard based on pug marks and abundance of ungulates and elephants based on pellets and dung. We have also quantified the disturbance factors - cattle, cattle camps and people.

Our staff and the Forest Staff were trained to locate and identify tiger and leopard pug marks and differentiate the pellets of various wild ungulates. They walked along selected streambeds (locally known as *raus*) for 3-5 km from November 1999 to March 2000 recording the above evidences. When tiger and leopard pug marks were seen they were not traced but their length and breadth were measured and the measurements were later used to differentiate already recorded and new pug marks located on the transects.

Our staff and forest staff who worked in teams of two, searched for and counted these evidences in a width of 2-3m while going along the transect. While returning they walked along the other side of the river bed (if it was more than 10m broad) looking only for pug marks. Cattle and people seen while doing the transect were counted and the entire length of the river bed within the forest was later walked to count the number of cattle camps. Between November 1999 and March 2000, during winter months, we walked about 479km covering forest divisions of Shivalik, Narendranagar, Dehra Dun, Lansdowne, Bijnor, Kalagarh, Hardwar, Ramnagar, Haldwani, Tarai west, Tarai Central, South Pithoragarh and Tarai East (see Fig. 1 for important identification marks).

The following picture emerged as a result of these surveys. In the Rajaji-Corbett Tiger Conservation Unit, from river Yamuna in the west to Sharda in the east, tiger occurs in three isolated habitat blocks.

- One habitat block is from Yamuna to the west bank of Ganges which includes forest divisions such as Shivalik, Narendranagar, Dehra Dun (ca. 1000 km²) and Rajaji-Motichur (ca. 500 km²) part of Rajaji National Park. Our surveys along the west bank of Ganges show that due to enormous disturbances tigers do not use the west bank, although other species such as leopard, sambar and elephant use it. There could be 6-10 tigers in this habitat block.
- The second habitat block is from the east bank of river Ganges to the Kathgodam-Haldwani-Lalkuan road. This tract is about 4000 km² and includes Chilla (part of Rajaji National Park), Corbett Tiger Reserve, and forest divisions such as Lansdowne, Kalagarh, Haridwar, Bijnor, Ramnagar and Tarai west. This area may have a minimum of 50 adult tigers.
- The third block is from Kathgodam-Haldwani-Lalkuan road to Sharda river in the east. This area is about 1800 km² and includes the Haldwani, South Pithoragarh and East Tarai forest divisions. There could be 5-10 tigers in this block.

. Two disturbing results emerged:

- The first is the danger of further fragmentation of tiger habit between Chilla, part of Rajaji National Park and Corbett Tiger Reserve. These two protected areas are connected by a forest tract of about 250 km² (part of Lansdowne division) and this corridor, in some places, is as narrow as 5km. Between November 1999 and March 2000, we walked a total of 155 km in winter along the river beds which run across this forest area. The encounter rate of tiger pug mark was .02, leopard 0.56, cattle 7.35 and people 5.1. It is apparent that tiger use of this area of enormous disturbance is extremely negligible. If these disturbances persist or grow, tiger will eventually stop using this corridor area and we will end up having an isolated population of 4-6 tigers in the Chilla part (ca. 400 km²) of Rajaji National Park.
- The second is the near absence of tigers in the ca. 1000 km² forest tract west of Rajaji-Motichur part of Rajaji National Park (Shivalik, Narendranagar and Dehra Dun forest divisions). We walked 87 km here and the encounter rate for tiger pug mark was 0.011, leopard 0.28, cattle 4.69 and people 2.34. The 6-10 tigers found in Rajaji-Motichur part seems to be a dwindling population and in the absence of vigorous breeding and no opportunities for immigration of new tigers, the population west of Ganges is likely to become extinct in the course of time. It should be recorded here that there are no tigers west of river Yamuna in the state of Haryana.

Interestingly the status of tiger in the eastern part of TCU (between Kathgodam-Haldwani-Lalkuan road and river Sharda) is not as bleak as it is in Shivalik, Narendranagar and Dehra Dun forest divisions. We walked 81 km here and the encounter rate of tiger pug mark was 0.1, leopard 0.19, cattle 6.43 and people 2.14. Biotic disturbances here are as high as in Shivalik-Narendranagar-Dehra Dun divisions. Based on the enormous amount of traffic along Kathgodam-Lalkuan road, we rule out any immigration of tigers into this area from forest areas (Corbett Tiger Reserve, Ramnagar Division Tarai west and Central) west of the road. But we believe that there could still be some immigration of tigers from Nepal into the forest areas west of river Sharda. We plan to verify this by checking the Sharda river bed in Feb.-March 2001.

There is an opportunity to strengthen the status of tiger in the forest tract between Kathgodam-Lalkuan road and Sharda. This can be easily achieved by establishing a protected area (Nandaury Valley National Park) in Haldwani Forest Division. Nandaury is a small beautiful river that flows from the Outer Himalaya through Haldwani Forest Division. Fortunately in the catchment area of this river there are no villages and only temporary cattle camps exist. These cattle camps should be removed, and a 100 km² National Park covering the catchment area of Nandaury river should be established and poaching of wild ungulates should be brought under control. It is possible to implement these recommendations, which can significantly improve the survival prospects of the tiger in this area.

The status of tiger in Rajaji - Corbett Tiger Conservation Unit can be summarised as follows.

- Given the magnitude of growing biotic disturbances, the survival prospects of tiger in the forest areas west of Ganges are bleak. The problems can be mitigated only when this area is freed of disturbances by successful gujjar relocation, control of *bhabar* grass collection and poaching. We do not see any sign of these things happening in the near future.
- Tigers do not use the west bank of Ganges which means tigers do not move across Ganges between Chilla and Motichur part of Rajaji National Park. Here again the situation can be improved if the Chilla-Motichur corridor is created and all the *gujjars* from the proposed National Park are settled outside. This again may not happen at all.
- If the present level of biotic disturbances in the Rajaji-Corbett corridor area continue or increase, then there is every chance of tigers stop using the corridor area. This will result in an isolated, small population (4-6) between Ganges and the corridor area.
- The population and the habitat between the Rajaji-Corbett corridor and Kathgodam-Haldwani-Lalkuan road is the most viable unit in the entire state of Uttar Pradesh (now Uttaranchal). There could be a minimum of 50 adult tigers here. This unit needs to be saved, protected and nurtured at all costs.
- Survival prospects of tiger in the forest tract between Kathgodam-Haldwani-Lalkuan road and river Sharda can be improved significantly if the Nandaaur Valley National Park can be created and poaching is brought under control. Both are feasible. In this regard tiger movement across Sharda, between Nepal and India needs to be monitored.

With assistance from SAVE THE TIGER FUND, OPERATION EYE OF THE TIGER-INDIA hopes to continue its endeavor to monitor and save the tiger in Rajaji-Corbett Tiger Conservation Unit. This will be done by the following

1. Continue to assist the Forest Department to curb poaching throughout this TCU.
2. Lobby with Government of India and Government of Uttaranchal to try and resettle the *gujjars* and some forest villages so as to reduce the biotic pressures in this TCU.
3. Lobby with Government of India and Government of Uttaranchal to try and create the Chilla-Motichur corridor. According to Johnsingh et al. (1990), this corridor is much more important to tigers than to elephants.
4. Work very closely with the Forest staff of Lansdowne division so that efforts could be made to reduce the biotic and poaching pressures in the corridor between Chilla and Corbett Tiger Reserve. This may enable tigers to use this area much more.

5. Continue our ongoing work with the villagers and forest staff in and around Corbett Tiger Reserve so that the status of tiger, prey species and habitat will not decline any further in this area of vital conservation importance.
6. Work with the Government of India and the Government of Uttaranchal to create the Nandaur Valley National Park so that the conservation status of tiger in the forest tract between Kathgodam-Lalkuan road and river Sharda can further be strengthened.
7. Monitor Sharda river bank and river-bed from February to April 2000 to verify whether there are any movement of tigers between Nepal and India.

REFERENCES

Dinerstein, E., Wilkramnayake, E., Robinson, J., Karanth, U., Rabinowitz, A., Olson, D., Mathew, T., Hedao, P., Connor, M., Hemley, G. and Bolze, D. (1997). A framework for identifying high priority areas and actions for the conservation of tigers in the wild. World Wildlife Fund, USA.