

Pawan Kamlesh
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Mini Case Study #2
Prof. Laurence R. Simon
Harvard Summer School

PAWAN KAMLESH

Tiger Reserve was designated as the World Heritage Site by UNESCO in 1985. In 1989, it was declared Sundarbans Biosphere Reserve. In 2001, It was included in Global Network of Biosphere Reserve. The site has been inscribed on the UNESCO World Heritage List under Criteria (ix) and (x) (UNESCO, 2012)

As a highly productive ecosystem, Sundarban National Park and forests attracts thousands of tourists from all over the world. A land of 102 tiny islands, with innumerable tributaries of the sacred Ganges River, Sundarban National Park is an unique experience for any tourist.

Unlike other wildlife parks, where roads, four wheel buses and guides provide a memorable wildlife experience, visitors at Sundarban experience river deltas and tributaries as their roads and boats as their four wheel buses. Through a watch tower, lucky visitors may get opportunity to observe the Royal Bengal Tiger in an untamed wild environment.

Consequently, due to climate change and human –tiger relations, Sundarban National Park is in a deep crisis. Frequent cyclones and erratic monsoon rain are damaging the forest and fauna killing tigers but it is the poachers that are the biggest threat to the tigers. In my paper, I will discuss about the poachers, threats the poachers are causing and the policies and technologies government of India is implementing to tackle this crisis.

Challenge

Due to climate change, poaching and Human-Tiger Conflicts, the Sundarban National Park faces several challenges. In the past decade, with rising sea levels, islands and mangrove forests are disappearing, causing a domino effect, destroying the quality of soil and crops. There is also a great risk of Sundarban National Park submerging under the sea. Because of this, the populations of few surviving tigers are at great crisis. It is estimated, if nothing is done, we may lose the rest of the tigers in few years. Statistics clearly warn us that we are losing one tiger every week.

Tiger Killing in the Sundarbans

Poachers take tiger skin, bones and body parts and illegally sell it to smugglers. Poachers hide among the locals at Sundarbans who enter the forest everyday for their livelihoods including to fish and collect honey. Tiger body parts are used in traditional Chinese medicine in south-east and east Asia. Tiger, elephant and rhino body parts fetch very high prices in international illegal market. Many research studies have been carried out on the trade in tiger parts and the use of tiger parts in traditional Asian medicines (Nowell 2000; Ellis 2005).

In the Sundarbans, tigers are killed by different groups of people with different motivations. Inside the forest, tigers are killed by poachers and shikaris (hunters).

Poachers

Poachers are people from the local community whose main business is tiger poaching to supply tiger parts to the commercial trade. They kill tigers by poisoning the tiger's prey. Poachers use carbofuran pesticide to poison tigers. They go to the tiger reserve disguised as fishermen and set traps on the tiger's trail (MacMillan; Saif 2016).

Shikaris (Hunters)

Shikaris are local hunters who possess licensed guns for deer hunting and self defense.

Sometimes, they kill tigers for opportunistic killing. The reasons for opportunistic killing of tigers are pleasure, safety, and money (by selling tiger parts) (MacMillan ;Saif 2016)

Trade of Tiger Parts

Commercial trade to tiger skin and parts for east Asia has always been a lucrative business. This commercial demand for skin and body parts acts as a major motivation for tiger killing.

Government of Bangladesh and India needs a immediate action plan to stop illegal international trade.

Solutions:

Royal Bengal Tiger is India's national animal, and finally India is taking right measures to tackle this enormous crisis. Thanks to the help of an innovative technology and monitoring system, the tigers in the Sundarbans Tiger Reserve will be safer and healthier in coming decade. The Government of India has announced a new National Wildlife Action Plan for year 2017-2031. Last year in October, this plan was created to strengthen conservation measures. Use of technology including e-surveillance through drones and modalities to involve people living around national parks & sanctuaries in conservation efforts will be key to this 14 year plan. This global wildlife program (GWP) initiated in 2015, is a World Bank led partnership of 19 countries to promote the conservation and sustainable development by combating trafficking in wildlife. The plan has a roadmap to deal with poaching and illegal trade of animals and animal parts in wildlife areas (National Wildlife Action Plan, India 2017).



The Government of India has ensured that 12 tiger reserves in India will be included in 14 year conservation plan. Within this bold and cutting edge plan, Indian ministry of home affairs and ministry of defense will monitor the tigers at Sundarbans using the help of drones. Eleven other tiger reserves in India will get drone technology to tackle poaching and other conservation efforts. The “E-Bird technology for tiger conservation, Development and integration of unmanned aerial vehicles” project will be jointly implemented by National Tiger Conservation

Authority and Wildlife Institute of India (National Wildlife Action Plan India, 2017).

The drone will act as a “protecting eye in sky” looking for poachers and tigers. Without disturbing the wildlife, drones can easily scope out and locate the intruders, making it easier for rangers to track them down before any tiger is killed. This will lead to a faster action plan for park rangers to take action and precisely locate the whereabouts of poachers and act in “shoot to kill” or arrest them.

How effective are drones? In 2014, drones dramatically decreased poaching in a Kenyan wildlife reserve by 96 percent. This is an incredible feat and our last hope towards sustainable conservation. The drones will also give information relating to Cyclones from Bay of Bengal, forest fires, monitor species population, prevent deforestation and other biodiversity related issues. The drones act as deterrents for possible wildlife crimes in Sundarbans. The sheer size of Sundarbans National Park deters well equipped park rangers and their staffs to cover and patrol the entire tiger reserve. But with drones, rangers have quick and easy access to a bird’s eye view of their patrolling area. Drones can provide geo-tagged photos and videos more accurate and qualitative than what could be collected on foot over a limited time frame by the rangers and wild-life biologist. Another advantage of drones is that as mentioned earlier, Sundarbans National Park is composed of numerous deltas, swamps and tributaries making the vast area dangerous and challenging terrains easier to access. The drones will have thermal night cameras to take the pictures & mapping the area at night. Drones are also light weight and easy to transport with low cost operation.

The new system will digitize and analyze the entry and exit information of the people visiting the park. Hybrid cloud will ensure data backup in real time and will make sure the rangers are

always connected with the park via multiple devices “ named digital field devices”. Information from the game rangers & security guards will be collected and analyzed. At the end, the technology will enable the authorities to find and stop poachers before they kill. The new system integrates a set of technologies- Wi-Fi, thermal cameras, biometrics, closed circuit TV and sensor to create a security network across the entire tiger reserve. A high value point to point router network will be built and tested to create a security net which will cover the entire parameters of the reserve. A fence line will be electrified with sensors and cameras. All this will be linked to a high security management control room which will be manned round the clock. The cost of a drone will be Indian Rupee 3-5 Lakh (\$ 3-5 thousand) (Chowdhary, 2017).



Recommendations

Based on the findings of this research, I recommend conservation recommendations as follows:

- a. Since Professional poachers are responsible for most tiger killings, the government must ban ‘ carbofuran’ poison leading to lower tiger killing activity,
- b. Social awareness must be implemented regarding the importance of tigers in sundarbans

and evils of international poaching trade for medicinal use.

- c. Government must create a alternative livelihood option and incentives for the poachers and hunters.
- d. When apprehended by rangers and authorities, poachers and hunters must be punished severely under the jurisdiction of law.
- e. Since Sundarbans are unregulated, individual entering the reserve should show their ID (eg. Addhar Card) and vehicle registration plates.
- f. East and Southeast Asian countries must create a awareness campaign in their respective countries about the evils of poaching, decrease population of endangered species (eg. Rhino, Elephant, Tiger, Turtle, Shark).

Conclusion

New technologies like drones with proper government policies can ensure safety and security of tigers at the Sundarbans Tiger Reserve. These technologies should be used to protect Indian elephants, rhinos, lions and many other endangered species. The key element is to find best practices on the management of wild life habitat and minimizing poaching issues. I think these initiatives are godsend to protect our natural habitat and eco-system. We as humanity can't lose even one tiger or one elephant or one rhino or any endangered species because losing one equals to too many. Their protection is our future.



Bibliography

1. “Sundarbans National Parks” United Nations World Heritage Convention, 2018
Retrieved from
<http://whc.unesco.org/en/list/452>
2. John, Julia. “E-Eye of the Tiger: Complex Surveillance System Extends Watch Over
3. India’s Wildlife Sanctuaries”. Mongabay Wildtech : Technology for Conservation
“National Wildlife Action Plan 2017-2031” India Environmental Portal.org, July 2018.
Ministry of Environment, India.
Retrieved from
www.indiaenvironmentportal.org.in/content/424760/draft-national-wildlife-action-plan-2017-2031/
4. MacMilan, Douglas and Saif Samia. “Poaching, Trade and Consumption of Tiger Parts in the Bangladesh Sundarbans”. University of Kent, U.K. The Geography of Environmental Crime. G.R. Potter 2016
5. Chowdhary, Sudhir. “How Technology is Creating a Safe Haven for Wildlife”. Financial Express, New Delhi, India. August, 2017
6. Aziz M.A., Simon T., Barlow A., Goodrich J., Shamsuddoha M., Groombridge J.J.,
“Investigating Patterns of Tiger and Prey Poaching in the Sundharbans: Implications for Improved Management”. Global Ecology and Conservation. Elsevier B.V. 2017
7. Nowell, K. “Far From a Cure: The Tiger Trade Revisted”. Cambridge: TRAFFIC 2000
8. Ellis, R. “Tiger Bones and Rhino Horns”. Washington: Island Press. 2005

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