

HORNBILL

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JANUARY-MARCH, 2019

**Trafficking
Wildlife**



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LAYOUT

V. Gopi Naidu

Sanchita S. Kadge

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All images used in this issue depict illegal trade of wildlife and may be disturbing. Reader discretion is advised.

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For more information on the Society and its activities, write to the Honorary Secretary, Bombay Natural History Society, Dr Sálím Ali Chowk, S.B. Singh Road, Mumbai 400 001, Maharashtra, India.
Tel.: (91-22) 2282 1811 Fax: (91-22) 2283 7615 E-mail: info@bnhs.org Website: www.bnhs.org

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Editorial

Tackling the Trade in Indian Wildlife

**Deepak Apte
Abrar Ahmed**

Sitting in our living rooms, we get more news from the distant corners of the world rather than of what is happening right next door. This is also true of issues related to wildlife trade. Discussions on poaching and illicit trade in threatened wildlife often turn into party time conversation, relegating the real issues to the backroom. With more than one out of ten species from most taxa included in the IUCN Red Data List, the underground illegal trade in wildlife is today undoubtedly a major danger to the survival of several rare and endangered wildlife species of India.

Even though wildlife conservation in India dates back more than 2,000 years, the fact that India, as one of the mega diverse countries of the world, plays an important global role in trade of wildlife was not generally known till even two or three decades ago. Although India firmly believes in strong conservation ethics as part of its cultural history, and its tradition of having one of the world's most stringent and unambiguous wildlife laws and policy to protect its wildlife, it is rather unfortunate that the illegal wildlife trade continues to flourish at local as well as international levels.

The Wildlife (Protection) Act, 1972 of India prohibits the trade, hunting, and killing of any wild animals listed in Schedules I to

IV, and Schedule VI which lists prohibited plants. Schedule V lists vermin species that include mice, rats, Common Crow and fruit bats, which are permissible to kill. Any offence under this Act is punishable with varying penalties.

The export / import of any wildlife from / to India is governed by the Export-Import (EXIM) Policy by way of the Foreign Trade Policy, implemented through the Directorate General of Foreign Trade (DGFT). The Act has lists of prohibited and restricted items. All wild animals and their derivatives are prohibited for export. The international trade in exotic species listed under CITES is enforced through the Customs Act, 1962 and the EXIM Policy at the point of entry. Domestic trade in exotic wildlife within India is, however, not restricted.

“Wildlife trade” refers to the sale and exchange of animal and plant resources which are found “wild in nature”. This kind of trade involves thousands of species ranging from live animals and plants to a vast array of wildlife products derived from them, including food products, leather goods, musical instruments, timber, curios, and medicines. Most wildlife trade is within India's national borders, but there is a large volume of international trade as well. More so, a



significant part of this trade is illegal, in violation of international and national regulations and legislations.

According to CITES (the Convention on International Trade in Endangered Species of Wild Fauna and Flora) website, the annual international trade in wildlife is estimated to be worth billions of dollars and includes hundreds of millions of plant and animal specimens. Many wildlife species in trade are not endangered, but the existence of an agreement to ensure the sustainability of the trade is important to safeguard these resources for the future. In an effort to prevent certain wildlife species from over-exploitation through international trade, CITES accords varying degrees of protection to more than 35,000 species of animals and plants, whether they are traded as live specimens or as derivatives or products. With 183 countries as parties to this convention, India was among the first few to become a signatory to CITES in 1976.

Most conservation circles in India rightly emphasize and focus on the need to save natural landscapes and ecosystems, along with carrying out ecological studies on wildlife. One major aspect that is often neglected is the alarming issue of wildlife trade that is taking a deadly toll of several lesser known species. Charismatic species like the tiger, rhino, and elephant were killed since time immemorial in the name of aristocratic trophy hunting, to be followed by poaching and collection by organized syndicates trading in ivory and rhino horns, to bones and fur. Along with these mega species, a

large range of other animal and plant species, their derivatives and products figure in the trade, such as musk, bear bile, shahtoosh, pangolins, reptiles, birds, marine species including corals, seahorses, turtles, tortoises, and freshwater turtles, insects, Red Sander and medicinal plants.

Levels of exploitation of some animal and plant species are high and the trade in them, together with other factors such as habitat loss and degradation, are capable of heavily depleting their populations and even bringing some species to the brink of extinction, or extinction itself. Uncontrolled wildlife trade can have far-reaching ecological repercussions. Once a species is eliminated, natural food chains may get affected and the delicate predator-prey relationships are adversely impacted. For example, the investigations by Humayun Abdulali on the impact of the export of frog legs from India provided conclusive evidence that frogs are important in controlling agricultural scourges and malaria, leading to the ban on export of frog legs from India which challenged an annual business generating 12 crores in India in 1981.

Wildlife crime today is an organized transnational crime with an overlap with other forms of organized crime. The world's most endangered species are also under threat from an unexpected new source – the internet. According to WWF-International, "Advances in technology and connectivity across the world, combined with rising buying power and demand for illegal wildlife products, have increased the

ease of exchange from poacher to consumer. As a result, an unregulated online market allows criminals to sell illegally obtained wildlife products across the globe. Purchasing elephant ivory, tiger cubs, and pangolin scales is as easy as 'click, pay, ship'." To tackle this new threat, a recent Coalition to End Wildlife Trafficking Online was formed to bring together companies from across the world in partnership with wildlife experts at WWF, TRAFFIC (The Wildlife Trade Monitoring Network), and IFAW (International Fund for Animal Welfare), for an industry-wide approach to reduce wildlife trafficking online by 80% by the year 2020.

BNHS, in an endeavour to highlight the alarming trade in wildlife species of India, brings out this special issue of *Hornbill*. This issue has informative articles by some of India's best known wildlife trade experts who share their lifetime experiences of investigations into various forms of wildlife trade.

We trust readers will find the articles informative, and with the information provided, support the endeavour to save India's wildlife by not buying or creating demand for wildlife products. In case you have any information on wildlife crime taking place, please contact: Addl Director, Wildlife Crime Control Bureau, 2nd Floor, Trikoot-1, Bhikaji Cama Place, New Delhi 110 066.

Website: <http://wccb.gov.in>;

Email: addldir-wccb@gov.in;

Tel: +91 (11) 2618 2484





Ashok Kumar – a dedication

“My mother fought for India’s freedom and I fight for the forests and wild animals that make India.”
– Ashok Kumar

Ashok Kumar – the father of Indian wildlife crime control – made several game-changing contributions, particularly against the illegal trade in wildlife and its derivatives, during the course of a conservation career spanning five decades. It is often said that the term ‘wildlife crime’ would not have existed in the country, but for his efforts. He was the Founder and for many years Chairman Emeritus of WTI.

While he was not a trained lawyer, he specialized in wildlife law at the policy and practice level. He was something of a serial

litigator, filing PIL after PIL to ensure that people involved with and issues related to the illegal wildlife trade were placed squarely in the spotlight. He fought and won several noteworthy cases – be it keeping the infamous poacher and wildlife trade kingpin Sansar Chand behind bars, or saving wetlands in Uttar Pradesh from a World Bank funded construction project, or procuring orders to move an irrigation colony out of Corbett National Park – and even argued some cases personally in the Delhi High Court. He understood the importance of providing for the frontlines, as that was the best way to battle wildlife crime. He fought hard for the forest guards on the ground, at state and central levels, and worked to get them the

required skills and equipment so they could do their jobs without difficulty. He advocated policies and fought legal battles to put an end to Ivory trade nationally and internationally, using the law and CITES. He lobbied with the media to ensure that correct information and awareness is spread through their medium. He guided enforcement agencies in 149 operations from within Wildlife Trust of India (WTI) to stop wildlife trade.

This special issue is a tribute to the man who spearheaded the movement against wildlife crime in India.



Banned!

India, with its diverse biodiversity, has much that falls prey to the traffic in the illegal wildlife trade. This trade spans a wide spectrum – from village subsistence-level hunting to the multimillion-dollar trade in the international market. Species affected by the trade include cage birds, sharks, tortoises and turtles, lizards, pangolins, leopards, and the charismatic tiger, rhino, and elephant. Over the years, wildlife trafficking has escalated and become much more organized. Illicit trafficking of wildlife and their derivatives is the fourth largest illegal trade globally, estimated to be next to narcotics. The Wildlife (Protection) Act, 1972, one of the most comprehensively drafted of such acts the world over, lays much emphasis on protection of wildlife and prevention of crimes. The ever-growing demand for wildlife and their products and derivatives – with the Internet emerging as a modern tool of this trade – poses a serious threat to the survival and conservation of

many rare and endangered species. Shrinkage of habitats and the trans-border demand for wildlife derivatives has contributed to the anthropogenic pressures on wildlife in India.

The following images do not make pretty pictures, much like the trade itself, which is a grim and complex reality related to numerous contentious issues, such as traditional livelihoods that need sustainable alternatives, overwhelming economic profits, and the greed or gullibility of the end user. The Indian Government and NGOs are making efforts to tackle this serious issue on a war footing. As a part of these efforts, BNHS will establish a Bird Crime Prevention Cell, targeted at helping to reduce bird trade crime through various initiatives. The mission of this cell will be to provide technical guidance and awareness to various stakeholders to reduce, refuse, and rethink about using “wildlife as a commodity” and more so to prevent crime by stopping the collection or poaching at the jungle level.













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1. Poaching of rhino for its horn is a direct threat to this magnificent creature
2. Patrolling on foot in areas such as Kaziranga NP even during flood time helps to deter poachers
3. A poacher after being apprehended shows the hidden trap used by him at the crime scene
4. A leopard strangled in a poacher's trap
5. Recent increase in demand for pangolin scales has become a major threat to this species
6. Poaching of elephant for ivory has reduced after the ban on ivory trade
7. Leopard cat for sale in Diphu, Assam
8. Leg hold traps are a major tool used in poaching big cats and deer
9. Civets, locally called "johamal" in Assam, are collected to be sold as a delicacy
10. Sale of turtles is rampant in some fish markets of northeastern states of India
11. Tail feathers of Greater Racket-tailed Drongo are used in traditional headgear by some tribes in central India
12. There is a need to create more awareness about the illegal sale and consumption of turtles sold clandestinely in some fish markets
13. Poaching and sale of deer meat around some protected areas needs more policing
14. Demand for Spotted Owlets for black magic and sorcery may lead to decline of this species in high trapping areas
15. Sale of francolins such as Painted Francolin by Pashe-pardi tribals is not uncommon in peninsular India
16. Young of primates are sold as pets and for zoos
17. Use of parakeets by roadside astrologers is illegal
18. Indian Edible-nest Swiftlet nests are harvested to make soup with aphrodisiac properties in South Asia
19. Stuffed squirrels are sold as souvenirs in some tourist hotspots of India
20. Until a few years ago, Sloth Bears were trained for street performances, a practice now completely banned in India
21. Mongoose hair is illegally used to make paintbrushes and other brushes
22. Sea horses are collected for sale in Oriental medicinal prescriptions
23. Hatha Jodi, claimed to be a rare plant derivative is actually the hemipenis of male monitor lizard
24. Yasargumba is a unique caterpillar fungus fusion, which is collected and sold as an expensive cure for impotence
25. Trapping and sale of wild birds is illegal
26. Leg joints of live frogs are broken to prevent their escape
27. Musk pod obtained by hunting musk deer is used in traditional Chinese and Oriental medicine
28. Leg trap is the most deadly trap used by animal poachers
29. Sale of frogs for food is common in Nagaland

Photo credits:

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Wildlife Trust of India / Jose Louies: 1–6, 22–24, 27, 28



Wildlife Crime: Prosecution Hurdles

KIRAN RAHALKAR



GOPINADU

Forests, our national treasure, ensure our ecological and environmental security

Wildlife crime in India happens across a wide spectrum – from local village level subsistence hunting to multi-million dollar trade in the international market. The international trade in wildlife and related trafficking is perhaps the most noticeable, due to its international nexus with other contraband trade. Wildlife trade related crime is just one piece of the puzzle, there are various other aspects like the

pet trade, poaching, hunting for subsistence, retaliatory killing, and the larger human-wildlife conflicts, as well as traditional, religious, and superstitious beliefs, which may go unnoticed and unassessed.

The herculean task to grant official protection to the wildlife of our country came to a head a year prior to the inception of Project Tiger. It was in 1972 that the Wildlife (Protection) Act (WLPA) came into force. It was and still is one of the most potent acts

ever drafted, with a clear mandate to protect the wildlife and protected areas of our country. The purpose of the Act is stated in the long title, ‘*An Act to provide for the protection of [Wild animals, birds and plants]*’ and for matters connected therewith or ancillary or incidental thereto with a view to ensuring the ecological and environmental security of the country.’

It is very clear that this Act is intended not only to protect wild animals, birds, and plants, but also to ensure the ecological and environmental security of their habitats in India. It also means that the ecological and environmental services that are provided by wildlife are quintessential to the benefit of society at large. Even prior to 1972, there were acts and rules in place that tried to regulate hunting and other wildlife crimes. But the will to prioritize the protection of wildlife countrywide received the needed impetus with the enactment of the WLPA, this being the first act that laid emphasis on protection of wildlife rather than on regulations for hunting or other purposes.

Wildlife Conservation Trust has till date conducted training for 12,000 frontline forest guards to increase their capacity in Wildlife Law Enforcement



WILDLIFE CONSERVATION TRUST

The mere act of attempting to hunt can also be termed as hunting according to this Act

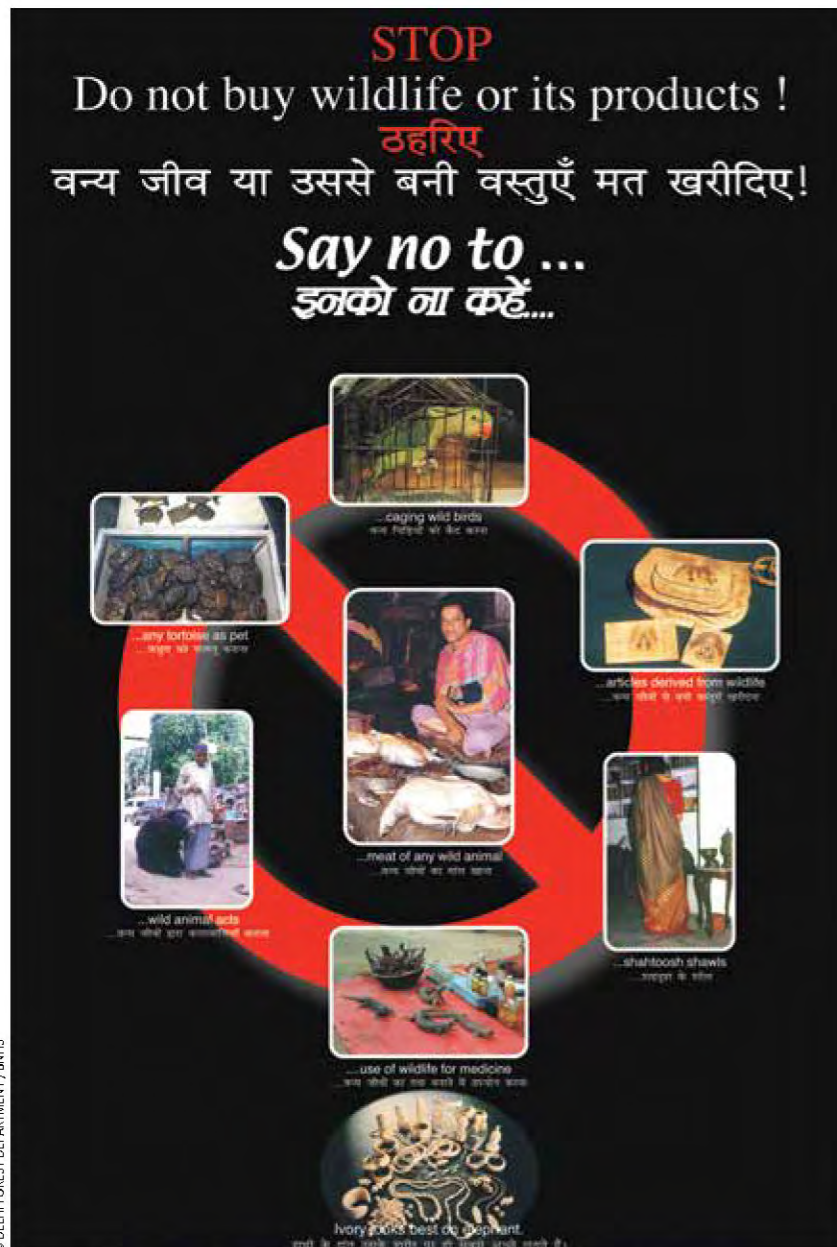
The Wildlife (Protection) Act, 1972 is one of the most comprehensively drafted acts, which lays a lot of stress on protection of wildlife and prevention of crimes in the first place. Consider the definition of hunting from section 2, sub-section 16 of the Act. Here it says that ‘every attempt to hunt is also considered at par with hunting’, so an attempt to hunt also attracts the same punishment as actual hunting. Section 57 of this act, “Presumption to be made in certain cases”, states that in such cases the burden of proof lies with the accused and not

the prosecution. But despite all this, the conviction rate in wildlife crimes is terribly low. With such dismal conviction rates, there is little fear of the law in the minds of perpetrators of wildlife crime, encouraging them to commit more such crimes.

Law is one part of the story, while enforcement is another part that needs feet on the ground to implement. There are several issues with enforcement of the law, the first and foremost being the availability of staff. Is there enough staff to efficiently control the forest area? The answer is no. The sheer size of



KIRAN RAHALKAR



Panel at Conservation Education Centre - Delhi, a joint initiative of Delhi Forest Department and BNHS highlighting various species and their derivatives in wildlife trade

the area under forest jurisdiction makes it impossible for the staff to physically patrol. This gives people an opportunity to plunder natural forest resources, be it timber, non-timber forest produce, grass, or animals.

The site of occurrence of the crime is also a critical factor in deciding the prosecution outcome of a crime. Most wildlife crimes happen in remote locations, and the remoteness of the location ensures

that detection of the crime is often delayed. This helps the accused, as most of the critical evidence which could establish their presence at the crime scene is lost. Evidence like footwear marks, tyre marks, and trace evidence like fabric fragments is lost by the time the forest department personnel arrive at the scene of the crime.

Another issue would be the likely absence of eyewitnesses at

such remote locations. Due to this, forest officials mostly rely on corroborative evidence, which may be deemed deficient in a court of law. The remoteness of the location also hampers proper processing of evidence, like the use of specific preservation techniques and freezing of perishable materials, resulting in the evidence that was painstakingly collected being rendered useless. In many cases, this is what happens to biological evidence like meat, blood, and hairs, which may lose credibility if not processed in the prescribed manner. Also, once the evidence is collected, the chain of custody is not maintained either, which may render it useless in a court of law.

Once the case reaches the court, there is an entirely different set of hurdles to encounter. All wildlife-related cases are criminal cases, and subject to delays. In case of Indian judiciary, these delays can often mean a couple of years to even start the hearing. The verdict in the case may even take decades to be pronounced, and that too in a lower court. Then there is still an option for the accused/convict to appeal in higher courts. This delay is often in favour of the accused, with witnesses turning hostile and evidence losing credibility. With such long delays, many cases even see dismissal with the key witness or the accused expiring.

The judiciary comes with its own set of challenges, as judges often tend to take a lenient view in case of wildlife crime. For them, the aggrieved party is a poor villager or tribal, rather than the wildlife that is killed. When there is lack of eyewitnesses, the benefit often goes to the accused rather than to the prosecution. At times, the applicable sections of the WLPA are not invoked, which also results in favouring the accused. Another

major hurdle is the lack of intent shown by the government appointed public prosecutors. Most of them are overburdened with the sheer load of legal proceedings; hence wildlife-related cases don't come high on their priorities. Also, the majority of them lack knowledge of the provisions of this Act, and as a result, they fail to invoke specific provisions of the Act.

Considering these facts, we can envisage the kind of difficulties faced by the forest department in the prosecution of criminals. I did a small exercise whereby I tried to analyse the results of cases booked under the WLP in district courts across Maharashtra. I reviewed 139 such cases over the last 10 years. Of these 139, only in nine cases were the accused convicted, whereas in all the other cases there were acquittals, or the case was dismissed. This is the kind of success rate that is achieved, despite the best efforts of the forest department. With such low rates of conviction, the morale of the staff also takes a beating. They often get discouraged from booking cases as they tend to see the proverbial writing on the wall.

Given the ground reality, the focus should not be on how to make the law stronger, but on proper crime investigation and watertight filing



MAHARASHTRA FOREST DEPARTMENT, MELGHAT TIGER RESERVE

We need more such instances so that people will think twice before committing crimes against wildlife

of cases. We will have to improve the capacity of the ground staff of forest departments to process the cases more efficiently. They need to be trained in the latest techniques of sample preservation, evidence collection, and maintaining the chain of custody of the evidence. The judiciary and the lawyers need to be sensitized about wildlife crimes, the circumstances under which such crimes take place, their severity, and the plight of wildlife at large. This is the make or break of wildlife crime prevention.

There is an urgent need to address this issue. Effective law enforcement is a tool for conservation, but often it is not viewed in that light. If we intend to change this, we need to tackle various aspects of wildlife crime across the spectrum.



Kiran Rahalkar

is a wildlife biologist with the Wildlife Conservation Trust, working on matters related to wildlife crime prevention and law enforcement. He completed his Masters in Wildlife Biology and Conservation, from WCS-NCBS.



NGOs such as TRAFFIC India are dedicated to highlighting the various products and forms of wildlife trade

Public Awareness on Wildlife Crime

SHUBHOBROTO GHOSH



ABRAR AHMED

Blackbuck, a Schedule I species, is poached for its meat, skin, and for trophies

If the media brouhaha over the conviction of Salman Khan in the Blackbuck poaching case is any indication of public awareness on wildlife crime, then there is certainly some level of awareness on the subject in India. To what extent this aids the preservation of wildlife in this country is a wider and more debatable question. Nonetheless, the fact that Salman Khan was handed out a sentence of five years' imprisonment for killing two

blackbuck on October 2, 1998, in Mathania village of Jodhpur and there has been widespread media coverage with accompanying public interest in this case, both in favour and against the verdict, goes to show that there is lively interest in wildlife crime in this country. Regardless of the fact that Salman Khan is a celebrity who merits widespread public attention anyway, there have been significant levels of attention showered on the merits and demerits of the judgement, as well as

the importance of saving endangered animals like the Blackbuck. The fact that Salman Khan was apprehended by members of the Bishnoi community, who have a tradition of saving wildlife on religious grounds, was also a matter of great interest to the public and media.

In general, public awareness on wildlife crime in India seems low and many reasons can be attributed to this. In a country where poverty is rife and where daily existence is a struggle for many, it is understandable if people do not have the compassion and time

to think about the plight of wildlife. Nonetheless, protection of wildlife is enshrined as a fundamental duty of Indians in the Indian Constitution under Section 51-A(g) that states: "It shall be the fundamental duty of every citizen of India to protect and improve the natural environment, including forests, lakes, rivers and wildlife, and to have compassion for all living creatures." This constitutional provision does somewhat pave the way for public awareness on the plight of and the need to conserve wildlife in India.

In India, the lion's share (no idiom intended) of public attention on wildlife crime is of course reserved for big cats, especially the tiger and the lion. The tiger as the national animal rules the roost, and in many respects, this attention is justified, given its grandeur and also its stature in the ecosystem. Besides, the tiger has also been historically associated by people as a cardinal symbol of Indian forests and an indicator of a healthy ecosystem. Many non-governmental organizations have got involved in conservation efforts to save the tiger

Chimpanzees
confiscated in
Kolkata in
January, 2014



SUBHOJYOTI KAVIJAL

L: Hoolock Gibbon is a
much in demand primate
in zoos in India and
abroad



ABRAR AHMED

R: Porcupines are
captured for their meat,
while their quills are
used in black magic



ABRAR AHMED



White Tiger – a tourist attraction in Thailand

across the world, and huge funds have been raised and are being raised to save this charismatic big cat species. However, it does seem that the plight of captive tigers and other animals has been underemphasized in the discourse on wildlife protection and I would like to touch upon this aspect of wildlife crime in this feature.

Increasingly, Indians are travelling abroad and their itineraries in foreign countries include visits to tiger breeding facilities, dolphinariums, crocodile farms, and other captive animal facilities. A report commissioned by World Animal Protection titled 'Checking out of cruelty' published in 2016, which used the research conducted by Wildlife Conservation Research Unit (WildCRU) of University of Oxford, is the first ever piece of global research into the scale of animal cruelty in wildlife tourism. The research found that three out of four wildlife tourist attractions involve some form of animal abuse or conservation concerns, and up to 550,000 wild animals are suffering in these venues. In many cases, captive animal facilities offering

circus style animal tricks or proximity to wild animals obtain their animals from the wild in violation of national and international legislation.

A potent example of this is the tiger breeding facilities in Thailand. In the wake of the scandal and closure of Thailand's Tiger Temple in June 2016, World Animal Protection, an international non-profit animal welfare organization, exposed the true scale of abuse that captive tigers were enduring at the hands of Thailand's tiger tourism industry. Launched ahead of International Tiger Day on July 29, 2016, the report 'Tiger selfies exposed: a portrait of Thailand's tiger entertainment industry' highlights the hidden cruelty and suffering in tiger entertainment venues across Thailand.

With more than one million Indian tourists visiting Thailand every year, and wildlife entertainment venues remaining a popular destination for them, the people of India are in a position to make a significant difference for tigers, by not supporting this cruel industry. The report revealed a rapidly expanding industry, with 33% more captive tigers in Thailand in the

past five years. At the time of the investigations, there were 830 tigers in captivity at entertainment venues in Thailand, compared to the 623 when World Animal Protection first researched this issue in 2010. The growing numbers of tigers indicate 'speed-breeding' of captive tigers without any conservation benefits and means that more tigers are born into suffering.

Welfare concerns witnessed by the investigators at these tourist venues were:

- Tiger cubs were separated from their mothers at two to three weeks.
- Cubs were constantly viewed and mishandled hundreds of times a day.
- Tigers were punished using pain and fear in order to stop aggressive behaviour.
- Tigers were housed in small concrete cages or barren enclosures with limited access to fresh water.
- One in ten of the tigers that were observed showed behavioural problems, such as repetitive pacing and biting their tails.

- Of the 17 tiger entertainment venues investigated in Thailand, Sriracha Tiger Zoo in Pattaya has the highest number of captive tigers and the poorest animal welfare conditions.

World Animal Protection called on the people of India to be responsible tourists, and not visit tiger entertainment venues or take tiger selfies. They urged Indians to treat their national animal with respect and compassion, whether travelling within or outside the country. There is a strong possibility that many of these tigers in Thailand were obtained from the wild in abeyance of local and international guidelines and laws, and thus the campaign is extremely important in raising public awareness on wildlife crime, especially when

tiger products sourced from captivity can trigger the demand to the extent that wild tigers are killed to satisfy this demand, which is fuelled by traditional Chinese medicine.

Another public awareness campaign on which World Animal Protection has been active recently is the endeavour to bring attention to abused elephants in captivity. Hordes of foreign tourists flock to different venues in India to ride on elephants, the Amer Fort in Jaipur being one among them. For these tourists, riding an elephant is a dream come true, the high point of a fantasy that reinforces the stereotype of India being a country of kings and mendicants, snake charmers, tigers, and elephants. Captive elephants are also used in national parks and forests where

tourists ride on them to see wildlife, and they are used for religious festivals and other displays in Kerala. Riding on captive elephants causes immense trauma and pain to these sentient and social creatures. Most people who ride on elephants do not realize that captive elephants are brutally exploited to provide humans with a few minutes worth of fun.

The persistent tourist demand for elephant rides to cater to human whims and fancies fuels the capture of these animals from the wild. Tourists have

SHUBHOBRITO GHOSH



The taming of elephants involves chaining, beatings and fear inducement

Tourists enjoying an elephant ride at Amer Fort, Jaipur



Elephants for sale in the famous annual Sonapur Mela in Bihar, 2012. Earlier investigations revealed that wild caught calves were declared as of captive origin

ABRAR AHMED



L: Cheetal are killed for their antlers, skin and meat, while their young are tamed and kept as pets by wealthy people

R: Chinkara young kept as pet despite being a protected species

the power to reduce the demand for elephant rides in India and Thailand. Several studies, including the latest report “Taken for a Ride,” published by World Animal Protection, highlight the problems with perpetuating this self-serving industry.

Elephants are protected in the Indian Wildlife (Protection) Act, 1972, under Schedule I that offers them the highest level of protection, the same as accorded to India’s national animal, the tiger. The Asian elephant is also listed under Appendix I of CITES, the Convention on International Trade in Endangered Species. India is a signatory to CITES since 1976. Unfortunately, the Indian Wildlife Protection Act has an exemption under Section 40 for transactions in live elephants and it is alleged that traders regularly take advantage of it to illicitly deal in live elephants. Captive elephants are highly in demand in the private elephant circle in India, including in Amer Fort, Kerala, and until recently in circuses.

Several studies show the extent and scale of this suffering of captive elephants in varying situations in India. There are 116 elephants at Amer Fort in Jaipur in Rajasthan that suffer chronic stress, heat, and physical abuse. Abuse is rife

among the elephants in Jaipur, who endure repeated beatings, inadequate diet, and long hours of work. The elephants have to walk down the hard surface of a road for which their feet are not suited. Rajasthan is not a natural elephant range state. Regular research, including recent studies conducted by a variety of wildlife protection and animal welfare organizations, shows that the current status of captive elephants at Jaipur is untenable. Elephants continue to arrive there to keep the stock going, with illegal transfers from Bihar to Rajasthan done with forged certificates. A recent film has outlined the extensive pain elephants undergo in Jaipur. Similar conditions prevail for elephants in Kerala, Goa, Karnataka, Assam, and other states. A petition was filed in the Supreme Court of India in 2014 to prohibit the riding and abuse of elephants in captivity. While we await the final verdict of the Supreme Court, several interim directives have paved the way for curbing elephant abuse in India.

The most notable campaign to raise awareness on wildlife crime was the persistent endeavour to stop illegal wildlife trade in Sonapur Fair in Bihar. Initiated by TRAFFIC and continued by Wildlife Trust of

India, Federation of Indian Animal Protection Organisations (FIAPO), Humane Society International and others, and led by the efforts of many brave investigators who risked life and limb to bring attention to the illegal wildlife trade in birds, elephants, and other wild animals in Sonapur, the endeavour led to the Bihar government announcing that they would abandon the age old custom of holding the ‘Chiniya Bazaar’ (Bird market) along with the display of elephants on the grounds of Sonapur from 2017 onward. As a prelude to this announcement, the government has already put up posters to raise awareness on wildlife crime that was happening by way of trading in indigenous species of birds and other wild animals on the premises of the fair. The monumental success of wildlife campaigners to raise awareness on wildlife crime at Sonapur is a good example of the power of concerted effort to tackle the organized nature of wildlife crime that is often allied to other forms of crime like human trafficking and narcotics.

There are uncharted waters to cover in wildlife crime in India, especially with regard to the burgeoning trade in exotic species. The first seizure



Research indicates that three out of four wildlife tourist attractions involve some form of animal abuse ...

of great apes in India in January 2014, when three chimpanzees were confiscated from a wildlife dealer's residence in Kolkata, rang an important alarm bell on the rising trade in non-native species in India. Subsequently, there have been two seizures of Caracal and Serval in India, one in Uttar Pradesh that involved five Caracals and a Serval in January 2017, and another that involved several Servals that were seized in Bongaon in West Bengal in March 2018. According to a news report, there is a great demand for Servals in India, with an individual garnering as much as Rs. 700,000/- in the black market. Anecdotal reports also suggest the occasional entry of animals like White Lions and great apes like Orangutan and Chimpanzee into India. There is a record of two baby Orangutans intercepted in India in June 2017, but somehow lax enforcement efforts led to these animals being handed back to the dealers who had brought them to India.

In the absence of enforceable CITES guidelines under the current Wildlife Protection Act and proper laws to regulate trade in exotic species

in the pet trade in India, it is of utmost importance to raise public awareness on the nature of wildlife crime involving exotic animals in this country. Public awareness is also required for trade in invertebrate species, non-charismatic species like monitor lizards and pangolins, the business in ornamental fish, and commerce in rare species of endangered plants that are increasingly finding their way into the wildlife trade in India.

A major concern that goes underreported and unpublicized is wildlife crime with regard to zoos. The Central Zoo Authority (CZA) was constituted in 1992 to regulate zoo management in India that has long been left free to the whims of individuals and regional governments. There are elaborate guidelines in place now for running zoos and captive animal facilities in India. The Recognition of Zoo Rules, framed by CZA and a comprehensive compendium entitled ZOOS IN INDIA – LEGISLATION, POLICY, GUIDELINES & STRATEGY: 2014 has been published to aid the proper functioning of zoos in India. There are many aspects of zoo management that merit public scrutiny and awareness, including husbandry, veterinary care, enclosure design, breeding and sourcing of wild animals. In a notable victory, after two decades of campaigning, Calcutta Snake Park in Madhyamgram in West Bengal was shut down in 2015, following persistent allegations of wildlife trade and mistreatment of animals. Major concerns abound regarding zoos obtaining animals from the wild, and in 2010, a zoo in Chandigarh got into controversy by allegedly buying falcons from traders.

Worldwide, there is rising awareness against keeping wild animals in captivity, as witnessed in the decline of SeaWorld's popularity after the release of the film 'Blackfish'

in 2013. There are also valid concerns regarding the humane treatment of surplus animals and hybrid animals in zoos. For wild animal abuse in these cases, especially with regard to culling, the matter of wildlife crime is as much an ethical one as it is a legal affair. Greater public monitoring of zoos and captive wildlife facilities will serve to ensure that wildlife crime with regard to captive animals is kept in check due to greater public awareness. The Indian Zoo Inquiry conducted by Zoocheck Canada a decade ago set an example on conducting independent zoo surveys to highlight the weaknesses of the zoo industry. Many private zoos and roadside zoos that have abused and exploited wildlife have been closed due to heightened public awareness on wildlife crime – and this trend must continue. Science and compassion must work together to raise public awareness to save the precious animal and plant diversity that share this world with us.



Shubhobroto Ghosh

has worked at the Wildlife Trust of India and TRAFFIC-India, and is currently Wildlife Projects Manager in India for World Animal Protection. He has authored the book, **DREAMING IN CALCUTTA AND CHANNEL ISLANDS (2015).**

Trading the Wild

SAMIR SINHA, IFS



ABRAR AHMED

Leopard Cat seized in Diphu, Assam. Trade in wild cats is on the increase, small cats are sold as rare varieties to cat lovers who crossbreed them with domestic varieties for more colours and patterns

On March 30, 2018, the Special Task Force (STF) of U.P. Police arrested a person outside Kanpur Central Railway Station in Uttar Pradesh (U.P.), and recovered 27 kg of *calipee* (the yellow, glutinous part of turtles that is found inside the lower shell and is considered a delicacy) from his possession. Further investigations led to the arrest of the kingpin from Ghatampur on April 2, with 103 kg of *calipee* and another arrest on April 3 in

Etawah, with 26 kg of *calipee* seized. Earlier, in January 2017, the STF had made what is till now the biggest haul of 6,400 freshwater turtles in India. Sourced from Gauriganj, Amethi, and destined for China and other Southeast Asian countries, the turtles which weighed 440 quintals were stuffed in bags.

India is home to 28 species of freshwater turtles and land tortoises. Of these, 22 species are subject to varying degrees of exploitation. Uttar



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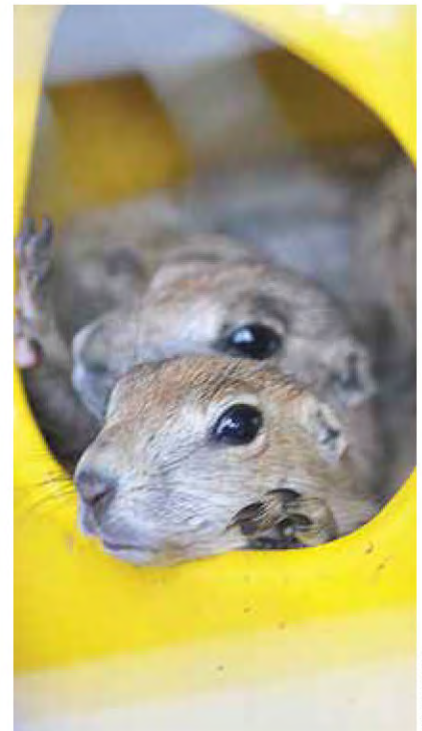
Bears in northeast India are hunted for their meat, fat, gall bladder, and skin. Their young are smuggled for bear baiting, zoos, and bear farms that collect bear-bile. Photographed in Kohima, 2013



Trade in exotic pet mammals is not regulated, smuggling of exotic species into India has increased over the years ...

Pradesh, Bihar, Madhya Pradesh, West Bengal, Odisha, and Andhra Pradesh are some of the hotspots for the exploitation of these species. The Indian Softshell Turtle *Aspideretes gangeticus*, Indian Flapshell Turtle *Lissemys punctata*, and Crowned River Turtle *Hardela thurji* are some of the major species in the turtle meat and derivatives trade. While West Bengal is identified as a major consumer of turtle meat, many of these consignments also make their way to Bangladesh.

While trade in exotic pet mammals is not regulated, smuggling into India of exotic squirrels, ferrets, Prairie dogs, marmosets, Sugar Gliders, and pocket monkeys has increased



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Giant Squirrel seized in Raipur in Chhattisgarh. These docile animals are traded as very rare exotic pets and have a short life span in captive conditions or small zoos



In a few isolated pockets of India, civets are collected and kept in captivity for musk. Civet-musk is used in traditional medicine

In January 2017, in a seizure made at Mirzapur, U.P., five Caracals and one Serval were recovered. The Caracal is a highly elusive species and to find five of them in a single seizure was nothing short of a mystery! The presence of the Serval, a small cat native to another continent – Africa – in this seizure was the ultimate twist to this story.

These examples are a reiteration of the deep roots that illegal wildlife trade has penetrated into our hinterland. Seizures are reported almost daily from all across our country – from Tokey Geckos in Assam, snake venom in West Bengal, wild birds in Odisha, Red Sanders (native to the southern Eastern Ghats) timber in Ladakh, sea cucumbers in Tamil Nadu, to venomous snakes in Maharashtra, it's a diverse platter on offer!

Recently, some online shopping portals in India were seen offering Hatha Jodi, which is claimed to be a root found in some remote regions

of Nepal and India (the name derived from its shape, like a pair of hands held in prayer), believed to be a good luck charm and also used in occult practices. Hatha Jodi was revealed to be the dried hemipenes of the monitor lizard! A seizure in Noida made in July 2017 also revealed the large scale nature of this trade.

With the arrival of the monsoon in India, the croaking of frogs reverberates across the countryside. For some, these amphibians are an easy target for meat and medicine. Many frog species, like the Indian Bullfrog *Hoplobatrachus tigerinus*, surreptitiously referred to as “jumping chicken” on some restaurant menus, are considered a delicacy! In this season, groups of people go out in the night, catching frogs. Obviously, in our own quest to satiate our tastebuds, we have turned a blind eye to the important ecological role played by these amphibians. Not too long ago, a poacher in Goa was

arrested on the basis of his own pictures of feasting on frog legs uploaded on his Facebook page!

Pangolins have earned the dubious distinction of being the most trafficked mammal species worldwide. Unfortunately, India is not lagging behind in this illegal trade. A TRAFFIC study report released in February 2018, revealed that at least 5,772 pangolins were recorded in the illegal wildlife trade in India from 2009 to 2017 – these numbers are at best a conservative estimate. Pangolin meat and scales have enjoyed a reputation in traditional Oriental medicine as a magical cure for many ailments. While these claims are yet to be backed by clinical studies, the myth continues to drive the species towards extinction. There are hardly any records of local consumption of the species in India and the trade is funneled towards Southeast Asian countries. The Moreh border in Manipur has emerged as a

Frogs are clandestinely placed on menus as 'jumping chicken'. In Goa, Nagaland, and Meghalaya, several frog species are collected for food



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hotspot for the trade in pangolins. What is even more alarming is that both the pangolin species found in India – Indian Pangolin *Manis crassicaudata* and Chinese Pangolin *Manis pentadactyla* – occur in very low densities in the wild. As such, the impact on such numbers in trade is likely to be highly deleterious for the long-term survival of the species.

In March 2018, Assam Police and forest officials detained a Tata Sumo

and seized four Gaboon Vipers *Bitis gabonica*, a Meerkat *Suricata suricatta* (family Herpestidae), three marmosets (family Callitrichidae), two African Spurred Tortoises *Centrochelys sulcata*, two albino Reticulated Pythons *Python reticulatus*, 13 Corn Snakes *Pantherophis guttatus*, 10 giant scorpions *Hadrurus arizonensis*, a Sugar Glider *Petaurus breviceps* (a small, nocturnal, gliding marsupial), and a Central Bearded Dragon (*Pogona*

vitticeps, an agamid lizard). None of these animals occur in the wild in India, and it is suspected that these natives to Africa, South America, and Thailand were smuggled into India from Thailand through Myanmar, probably were on their way to private collections of people inclined to keep exotic wildlife in their possession.

India still does not have a CITES specific legislation. This means that the Wildlife (Protection) Act 1972 does

Despite Indian and Chinese pangolins being listed in CITES, global trade in pangolin scales is continuing in a clandestine manner. In India, scales are sold as a remedy for piles

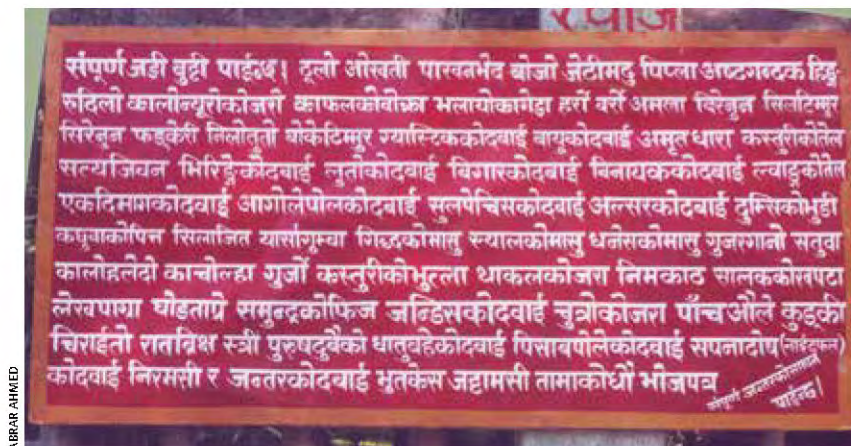
Trade in turtles is rampant in some states where turtle meat is considered a delicacy and this wildlife crime goes unseen



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A signboard near the Indo-Nepal border displays a traditional medicine hawker advertising several medicinal and wild animal products



Trade and utilization at local village level remain unknown to most of us, for instance this use of civet for street performance in a village near Patna

not extend its protective umbrella to species not found in the wild in India. It is only at customs points that the EXIM (Export-Import) Policy makes violations of CITES punishable under the provisions of the Customs Act. This loophole makes life so much easier for those who deal in such exotic species without fear of the law.

From the above examples, it is clear that the collection, trade, and utilization of wildlife products present a complex challenge. Firstly, such consumption often has deep roots in our social, religious, and cultural context. The use of traditional medicines in healthcare as a driver of wildlife trade is a case in point. Today

some 50,000–70,000 plant species are used in various forms of traditional and modern medicine globally. Extraction of many such plants from the wild may be illegal today. This itself presents an enforcement challenge.

The consumption and utilization of such wildlife was initially mostly local and for self-use. However, globalisation has proved to be the game changer and today, the sustainability of much of such use is in question. Globalisation has meant that the trade is now straddled across latitudes and longitudes. At the lower level of the trade chain, some of the weakest sections of society are engaged in this sphere of work. This often means that despite being “illegal” in the eyes of the law, such “offences” carry little or no social sanction, and as such little social pressure to abstain. This further adds several layers of complexity to the challenge before us.

The illegal trade in wild plants and animals and their parts and derivatives is big business, estimated by various law enforcement agencies to be in excess of billions of dollars annually. This is also a shadowy trade with 1) High profit margins of up to 1000%; with little chance of detection and prosecution; 2) Low chance of conviction; 3) Overall very poor deterrence. In most countries, the maximum punishment for such crimes is low and very rarely awarded.

In the early 2000s, the CITES Secretariat, in close collaboration with the UN Office on Drugs and Crime (UNODC), identified key indicators that clearly illustrated the involvement of organized crime in wildlife trafficking. Sometimes hidden in its dark alleys but most often in plain sight, the Internet offers a marketplace like no other! Many websites, chat forums and their likes offer a platform for illicit trade

in wildlife. In July 2016, the Govt of India stated in Parliament that the trade of rare animals and their body parts was going on through many popular websites. A list of 106 such websites collated by the Wildlife Crime Control Bureau (WCCB) was placed before the Rajya Sabha.

Across the globe, wildlife populations are already hit by a mix of factors including habitat loss and fragmentation, often exacerbated by impacts of climate change. We are living through what is being described as the “Sixth Extinction”, the Anthropocene, where human impact on the environment is leading to a very, very high rate of extinction of species. Illegal trade, often based on unsustainable harvesting from the wild, may not be the only or even the most important cause of decline of a species, but it can be the proverbial last straw that broke the camel’s back!

Illegal wildlife trade also presents several other significant threats.

- One of the least understood impacts of illegal wildlife trade is that it may introduce harmful, alien species that could disrupt ecosystems and affect human, animal, and plant health, causing considerable economic and environmental damage. Illegal wildlife trade can also facilitate the entry and spread of animal borne diseases.
- As the illegal trade in wildlife spirals upwards, its threats may not be limited to extinction of species and loss of habitats and ecosystems alone. The larger social costs of such illegal activity are only now beginning to be understood and acknowledged. In societies where illegal wildlife trade is rampant, it can also undermine sustainable development and poverty alleviation objectives because it

depletes the natural assets upon which rural communities depend for their livelihoods.

- Another threat posed by such trade is its potential to support insurgency and antinational activities. For many such groups, environmental crimes, wildlife crimes in particular, are an easy option to raise funds for their nefarious activities. This is also to be seen as a potential threat to national security. This aspect of illegal wildlife trade needs greater attention.

Today, illegal wildlife crime has come of age, being acknowledged globally as a form of “Transnational Crime”. The UN Office on Drugs and Crime (UNODC) describes



Sometimes hidden in its dark alleys but most often in plain sight, the Internet offers a marketplace like no other!



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The large size and beautiful coloration of Alexandrine Parakeet makes it a victim of bird trade



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The ability of parakeet chicks to learn to imitate human words and phrases makes them a highly sought after trade commodity

the illegal wildlife trade as probably best understood as a collection of specialized sub-disciplines, each accompanied by its own smuggling methods, trafficking routes, and markets. Global and national initiatives are being undertaken to combat wildlife crime.

Global Initiatives

The International Consortium on Combating Wildlife Crime (ICWC) was established in 2010 as a collaborative effort of five inter-governmental organizations to bring coordinated support to various national wildlife law enforcement agencies and to the sub-regional and regional networks against wildlife and forest crimes. The ICWC partners include the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) Secretariat, Interpol, the United Nations Office on Drugs and Crime, the World Bank, and the World Customs Organization. Together, the ICWC stands as a global acknowledgement of the threats posed by wildlife crimes.

On July 01, 2013, the US President issued an executive order on Combating Wildlife Trafficking. This acknowledged that poaching of protected species and illegal trade in wildlife and their derivatives and products represent an international crisis that continues to escalate. Poaching operations have expanded beyond small-scale opportunistic actions to coordinated slaughter commissioned by armed and organized criminal syndicates. This order acknowledged that the survival of protected wildlife species such as elephants, rhinos, great apes, tigers, sharks, tuna, and turtles has beneficial economic, social, and environmental impacts that are important to all nations. Wildlife trafficking reduces



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The Hill Myna also has the ability to mimic, making it vulnerable to wildlife trade, despite being included in Schedule I of the WIPA



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The threatened Sarus Crane is trapped and sold for meat and for keeping in zoos in some places in Uttar Pradesh and Bihar

those benefits while generating billions of dollars in illicit revenue each year, contributing to the illegal economy, fueling instability, and undermining security. Also, the prevention of trafficking of live animals helps us control the spread of emerging infectious diseases. For these reasons, it is in the national interest of the United States to combat wildlife trafficking. Amongst other steps, it also established a Presidential Task Force on Wildlife Trafficking (Task Force), to report to the President through the National Security Advisor. The Task Force was assigned to develop and implement a National Strategy for Combating Wildlife Trafficking.

Indian Initiatives

Recent years have certainly seen a growing concern and acknowledgement of the negative impacts of the illegal wildlife trade. However, responses towards mitigation of this problem can at best be called mixed. There is greater awareness among various stakeholders about the trade. Regular orientation and training programmes involving the judiciary, forest staff, police, customs, army, railway, coast guard, and paramilitary have meant that the profile of the problem is better understood and such agencies can now work better together to respond to enforcement challenges.

The establishment of the South Asia Wildlife Enforcement Network (SAWEN) is a key step in this direction. With all eight South Asian countries as its members, this Regional Wildlife Enforcement Network with headquarters in Kathmandu, Nepal is taking small but firm steps to strengthen regional cooperation in this field.

The establishment of the Wildlife Crime Control Bureau as a federal



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agency tasked with addressing wildlife crime is a significant step. Yet, such agencies are often grappling with a shortage of resources, including feet on the ground. This is even truer of the state forest departments, which have the primary mandate to curb such offences but lack the sustained investment needed to make them respond proactively and adequately to such challenges.

Despite obvious handicaps, a large number of frontline staff go out every day and put in their best effort to save our natural heritage. They may sometimes be ill-equipped, poorly paid, but deserve our highest commendations for what they do for the nation and its people. It is a war out there. But then, this is a war that must be won. We owe it to our future generations.



Capped Langurs are in great demand in international wildlife markets due to their attractive colours

Views expressed by the author are entirely personal and do not claim in any way to reflect the views of the government or the office he is associated with.



Samir Sinha, IFS

is an Additional Principal Chief Conservator of Forests with the Uttarakhand Forest Department.

Tackling Wildlife Crime

RICHARD THOMAS



LARA ZANARINI

African Elephants are poached in tens of thousands each year, to meet the demand for ivory, particularly from consumers in China

In recent years, illegal trade in wildlife and its impacts on wildlife populations has been commanding worldwide attention and is high on the international political agenda. TRAFFIC, the organization for which I work, can take some credit for helping to spread awareness on this pressing issue and bringing it under the spotlight it deserves. In 2012, TRAFFIC, alongside WWF, embarked on an ambitious “Illegal Wildlife Trade Campaign” aimed

at raising political awareness about international wildlife trafficking and its associated impacts on wildlife populations. The aim of this campaign was simple: to secure high-level political attention and the will needed to address such crime, putting this burning issue at the forefront of world leaders’ thinking and policy aims. Our ultimate goal was to secure a United Nations resolution that would help bring the issue of wildlife crime onto the international agenda.



Ivory confiscated by the Cameroon Ministry of Forests and Wildlife

It was a long, hard, and at times frustrating road, but I am happy – and proud – to say that I was part of that momentous campaign. Thanks to the efforts of many individuals and organizations, on July 30, 2015, during the 69th session of the UN General Assembly, a resolution was adopted, committing countries to step up their collective efforts to address wildlife crime and put an end to the global poaching crisis. It was an historic moment. “The world has sent an unequivocal and collective signal at the highest level that ending wildlife crime is a top priority,” said Steven Broad, Executive Director of TRAFFIC at the time. In fact, it was the first time that the UN had passed a resolution on wildlife crime, which built on the growing momentum generated through a series of major international

declarations on illegal wildlife trade, including the 2013 Paris Declaration, 2014 London Declaration, 2015 Kasane Statement, and the 2015 Brazzaville Declaration. Critically, it also recognized the broader impacts of wildlife crime, including the undermining of good governance, the rule of law, and the well-being of local communities.

Looking back now, I sense that what we had helped to achieve was remarkable, although, as we commented at the time, paper declarations were one thing, but the real hard work of turning words into action had begun. At the same time, I have to admit to feeling a slight sense of disappointment. Three years on from that historic UN resolution, the bottom line is that poaching of iconic wildlife species continues at near record levels. This is despite

many fine words and commitments by governments around the world.

Nowhere is this more evident than during presentations and deliberations at the main meetings of Parties to the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) – who are trying to change the situation. Countries identified as of real concern over their involvement in illegal ivory trade have been instructed to develop and implement National Ivory Action Plans. Failure to do so could result in penalties being imposed upon them through the legally binding Convention. World governments are undoubtedly getting tougher – at least at talking. In 2016, for the first time at a CITES meeting, corruption and how to address it was openly talked about and placed on the agenda. Recognition of the insidious evil that undermines



ANDREW WALMSLEY

Sellers along roadsides in many parts of Africa frequently offer pangolins as bushmeat. This animal was photographed in Cameroon, where pangolins are protected by legislation

Pangolins are said to be the world's most trafficked mammals, and with numbers plummeting in Asia, African species are increasingly targeted as substitutes. These pangolin scales were seized in Malaysia, en route from Africa to their final destination in Asia



ELIZABETH JOHN

efforts to address wildlife crime has reached the highest political levels. In their July 2017 meeting, leaders of the G20 issued a declaration that read:



The poaching crisis is not confined to Africa. In India, particularly in Assam, the Greater One-horned Rhino has felt the force of poachers' bullets ...

“We will intensify our fight against corruption related to illegal trade in wildlife and wildlife products. Wildlife trafficking is a threat to the planet's biodiversity, economic development, and, among others, health and security, and is facilitated by high levels of corruption, which the G20 cannot tolerate.” So commitments have been made, and governments have signed up to action, some resources have been committed, yet the crisis continues.

Poaching of African elephants – killed for their ivory tusks which are trafficked to markets in Asia – continues at around 20,000 animals per year, possibly a few less than in 2012, but still unacceptably high. Perhaps most accurately documented has been the poaching of Africa's rhinos, with South Africa bearing the brunt: at least 1,000 rhinos (more than three a day) have been poached each year since 2013, and while 2017 may

have seen a slight drop in the tally, it is nowhere near enough to make us feel comfortable. The animals' horns are hacked off and whisked away to be consumed as a health tonic in Vietnam or carved into trinkets for distribution in China.

The poaching crisis is not confined to Africa. In India, particularly in Assam, the Greater One-horned Rhino has felt the force of poachers' bullets. As for other wildlife, TRAFFIC found that an astonishing four leopards per week had been poached for their body parts for at least 10 years in the country. Tigers too, the national animal of India, have not been spared. A comprehensive TRAFFIC analysis of seizure cases in tiger range states found that parts representing a minimum of 1,755 animals were seized from 2000 to 2015, an average of more than two animals per week. Tiger skins are used for decoration, and their bones

used to make tonic wines or boiled to make glue.

The fate of pangolins clearly illustrates the impacts of the illegal trade. Anecdotal reports indicate that the populations of these scaly anteaters have plummeted across Asia, particularly in China, Vietnam, Thailand, and Indonesia. The meat and scales of the pangolin are destined for consumption as (scientifically unsupported) health tonics, and for use in medical treatments in parts of East and Southeast Asia. With falling supply, yet rising demand, traffickers are searching further afield. Many pangolins are now sourced from Africa. The species found there are different, but their fate is the same as those of Asian pangolins. Aside from the lack of availability, the shift in sourcing reveals the strengthened links between the two continents. With ever increasing numbers of Asian nationals visiting and living in

Africa, communications channels – for all forms of commerce – are well and truly open, both to those with legitimate and illicit motives. The criminal elements appear to be attracted to wildlife crime because of the relatively high-profit, low-risk opportunities it presents, while the welcome rise in living standards in many parts of Asia does have a downside in that many can now afford to buy long coveted wildlife products, some of which are sourced illegally.

The above examples are only about impacted wildlife species – humans have also borne the brunt of the illegal wildlife trade. Every year, around 100 forest rangers are killed as they carry out their duties to protect these species. A TRAFFIC study on illegal logging in Madagascar revealed how the sudden influx of hundreds of illegal loggers had led to instances of violence, and sharp rises in prostitution, alcoholism, and even

the incidence of truancy in schools among the local communities.

To counteract such impacts, some countries have raised penalties for wildlife crime, but all too often, even if deterrent punishments exist under the current legislation,



ELIZABETH JOHN



ABRAR AHMED

Rhinos are poached for their horns, which are trafficked to supply consumers in Vietnam and increasingly in China, often by circuitous routes to avoid detection. The horns (above) were seized in Malaysia

Although tiger trade is outlawed, the persistent demand for their parts, whether skin, bones, or claws, drives trafficking and poaching of this iconic national animal

Tigers and leopards are poached using leg snares known as “Kharakha”



ABRAR AHMED

they are not imposed, while those facing trial are rarely the kingpins orchestrating and largely profiting from these criminal activities. Mostly, it is low-level poachers or transport mules who are caught, and easily replaced. Furthermore, the efforts to stop poaching at source are often undermined by chronic underfunding and the equipment given to the enforcement staff, in contrast to those of poachers armed with the latest forms of communication and high-powered weapons. It is all too frequently a one-sided conflict, with rangers and the animals they protect becoming the losers. To add to this, the internet has facilitated online trade, with many transactions for illicit wildlife goods carried out anonymously, with buyer and seller never meeting, putting further strain on already overstretched enforcement agencies to detect and deter such activities.



OLA JENNERSTEN

Wildlife crime is a huge problem. Some estimates suggest that it is worth as much as billions of American dollars a year, making it the fourth largest illegal global trade after narcotics, counterfeiting, and human trafficking. It is a big illicit business that needs a big international response to counteract its hugely damaging impact on innocent people, local and national economies, and of course the wild animals and plants it directly affects.

Things may look bleak, but there are some signs of success. Despite the pressures, India has recorded a modest increase in its tiger and One-horned Rhino populations, while neighbouring Nepal has recorded little or zero poaching of its iconic wild animals for several years now.

Technology is also coming to the rescue, with ever more sophisticated techniques being applied to investigate wildlife poaching incidents. In Malawi, Zambia, and Zimbabwe, TRAFFIC has recently partnered with TRACE, the Wildlife Forensics Network, in a project supported by players of the People's Postcode Lottery to introduce and teach the techniques needed to carry out forensic examination in wildlife



Despite pressures, India has recorded a modest increase in its tiger and One-horned Rhino populations, while neighbouring Nepal has recorded little or zero poaching of its iconic wild animals for several years now ...



ABRAH AHMED

Primate babies are collected from the wild to be sold as pets or smuggled for the zoo trade

trafficking incidents. Such techniques will give valuable insights into the methods and *modus operandi* of those carrying out such crimes, providing evidence admissible in court to help bring successful convictions. Another powerful weapon increasingly being used is man's best friend, the dog. A hugely successful sniffer dog programme run by TRAFFIC and WWF-India in conjunction with the National Training Centre for Dogs has seen more than 60 specially trained dogs equipped to detect wildlife products deployed right across India, including recently for the first time ever in the Andaman

and Nicobar Islands. These dogs have helped in the apprehension of wildlife criminals, including traffickers and poachers. Sniffer dogs are in operation elsewhere, including in China, Russia, and some parts of Africa. Their contribution in helping to detect and curb wildlife crime cannot be understated. Despite all this progress, I find myself frustrated by the overall lack of progress in tackling wildlife crime worldwide. Perhaps, I am being impatient as it takes time for the wheels of government to be set in motion.

In October 2018, the UK Government hosted an international

conference, bringing governments around the world together to assess their collective actions to address illegal wildlife trade. It was an important opportunity for the international community to reaffirm its commitments to addressing such crime. At this critical London conference, many of the countries affected by wildlife crime – whether as a source, transit, or destination for such products – sent representation. However, despite the fine words and pledges to take action by high-level government delegations, there is currently little evidence of a significant impact on wildlife crime and the associated poaching of wildlife – time is rapidly running out for animals such as elephants, tigers, pangolins, and rhinos: they cannot wait much longer for words to be turned into action.



Richard Thomas

is currently the Global Communications Co-ordinator with TRAFFIC, an international non-governmental organization specializing in wildlife trade issues, with offices worldwide, including in India. He has worked in the conservation sector for almost 20 years: prior to TRAFFIC with BirdLife International, whose partner in India is BNHS.

Insights into Wildlife Trade and Bushmeat Poaching in India

SHEKHAR K. NIRAJ, IFS



ABRAR AHMED

Macaques are sold for meat in the northeast Indian states

India is the largest country of the Indian subcontinent and the Indian region is fortunate to have four of the hotspots of biological diversity in the world. India's diverse fauna includes several iconic species, such as the Tiger, Asian Elephant, Asiatic Lion, and Indian Rhinoceros. Sadly, with the alarming growth in the human population and development in the past decades, the remaining wilderness areas and wildlife species are facing serious threats, placing

several species under the threat of extinction. Although the loss and degradation of habitat are recognized as a major cause for the loss of biodiversity in India, poaching, especially when it caters to the illegal wildlife trade, has also emerged as a serious issue.

Tigers have been, and continue to be, a major target species in the wildlife trade in India. Poaching and trade in tiger stretches across Bangladesh, Bhutan, Cambodia,

China, North Korea, Indonesia, Laos, Malaysia, Myanmar, Nepal, Thailand, Vietnam, and Russia. From small-time poaching and hunting, tiger poaching and smuggling has grown into a well-organized syndicate-based international wildlife crime. During 2002–2013, 1,755 tiger-related seizures were made in 810 seizures globally, and 66 tiger seizures were recorded during 2012–2016 in India. Besides the demand that emerges mainly from China, local beliefs in India also encourage people to poach tigers. For example, in the central Indian states of Madhya Pradesh and Chhattisgarh, adult tigers are targeted for their right paw, which is used in black magic in the belief that it would help to obtain “a shower of good fortunes”.

Leopard, Clouded Leopard, and Snow Leopard are also poached for their bones and genitals as a substitute for tiger parts, as the demand for tiger parts has been increasing and there are not enough tigers to meet this illegal market demand. Other than the big cats, poaching and illegal trade in Asian Elephant and Indian Rhino is well known, and to a lesser extent, that of Himalayan Black Bear and Himalayan Brown Bear. Poaching and wildlife trafficking not only threaten these relatively well-known species, but also several lesser known fauna such as pangolins, monitor lizards, geckos, turtles, tortoises, lorises, birds, sharks, and sea cucumbers, and these species have become a matter of serious conservation concern for the last decade or so.

In recent years, mammals appear to be at a greater risk of extinction, followed by birds. More than 450 of the approximately 1,300 Indian bird species are documented in the illegal international and domestic bird trade. Of the 75 mammal species, 56 bird species, 10 aquatic animals, and 24 amphibian and snake species



ABRAR AHMED

Trade in turtle for meat is rampant in West Bengal, Assam, and Tripura. Turtles collected from Uttar Pradesh, Bihar, and Andhra Pradesh are secretly sent along with fish to local markets in turtle eating states

that are protected under Schedule 1 of the Indian Wildlife (Protection) Act (WLPA), 1972, 20 species are Critically Endangered, 25 are Endangered, 44 are Vulnerable, and 27 are Near Threatened, according to the IUCN Red List. The United States Office on Drugs and Crime (UNODC) published the World Wildlife Crime Report 2016 in an effort to document the illegal trade around major hubs in the world. The UNODC report provides analysis of over 164,000 seizures related to wildlife crime from 120 countries. India has a much larger number of seizures than Nepal, Bangladesh, and Bhutan. The majority of the seizures were of mammals and reptiles, and their body parts and derivatives.

Hunting pressure appears to vary geographically among India's four biodiversity hotspots, being intense in the remote Indo-Myanmar and Eastern Himalayan biodiversity hotspots complex of Northeast India, followed by the Western Ghats, Western Himalaya, and Nicobar Islands. Although limited research effort has focused on rigorously



Hunting is a major challenge facing wildlife in tropical regions; studies have concluded that 114 mammal species, particularly large mammals, are highly susceptible to hunting in India ...



Green Avadavat is a silent victim of bird trade, making it now a listed threatened endemic bird in India



Bird lime made from latex collected from Ficus trees is smeared onto the branches of fruit laden trees, in especially Arunachal Pradesh and Nagaland, to trap birds



Hunter showing the knife and trap used for poaching a tiger

quantifying hunting pressure in India, the limited information suggests strong hunting pressure on wildlife populations. A trade research in Arunachal Pradesh (a state with expansive and considerable forest cover) concluded that 20 of the 33 mammals hunted for subsistence and illegal trade are Endangered, Vulnerable, or Near Threatened, according to the IUCN Red List. In another study in the Ziro Valley, Arunachal Pradesh, it was concluded that out of the 85 households surveyed, about 54.11% reported hunting for subsistence, 25% for commercial trade, 10% for medicinal use, and about 4.7% for pleasure. Most hunted species belonged to the protected lists of WLPA, 1972. The average age of hunters varied from 8 years (who hunted birds mainly for consumption) to 55 years (who hunted mainly for trade and subsistence). Most hunting (47%) was conducted by people in the age group of 30 to 40 years. The study also indicated a seasonal pattern in hunting practices, winter and summer being the seasons preferred.

The Internet has emerged as a formidable medium for transactions of illegally hunted wildlife specimens. In 2015–17, Traffic India solved four illegal trade cases and succeeded in getting 11 offenders apprehended for online wildlife crimes. Two cases were related to Red Sand Boa (one in Nagercoil, Tamil Nadu and the other in Mumbai) and the two other cases related to tiger claws (one in Madurai and the other in Chennai). Handling wildlife cybercrime requires specialized protocols and training, which investigators are still not very familiar with. In most cases, wildlife offenders use code words such as “double engine” for a Red Sand Boa, “shirt” or “sattai” (Tamil) for tiger skin, and “four wheeler” for tortoises. Approximately 80% of all



Overharvesting is one of the major threats to tropical vertebrates worldwide. The reduction of a species that is targeted for bushmeat is a direct challenge and has immediate effect on the species ...

seizures involved mammals and their derivatives in India and South Asia. Skins, meat, wool and furs, mostly of tigers, leopard, Tibetan Antelope, and deer species constituted 56% of mammal product seizures. Seizures of ivory constituted 8% of the total seizures of mammal products. Seized items included antlers, bones, hair, skins, shawls, brushes, and ivory. Meat (25%) and skin (21%) were seized in largest number, whereas bones, hairs, and blood soaked parts were also considerable. Deer antlers, bear bile, claws, canines, shahtoosh shawls, and elephant ivory occurred frequently in the seizures in India and South Asia.

Other than the demand for wildlife for their products and derivatives,



ABRAR AHMED

The neck-hackles of Grey Junglefowl used in the fishing industry as fish-fly are smuggled to international markets through postal or courier services



ABRAR AHMED

The Rose-ringed Parakeet is undoubtedly one of India's most exploited species for the pet bird trade

such as tusks horns and skin, or for the pet trade, there is also a demand for their flesh. Our understanding of bushmeat hunting in India remains skewed, and there is a serious dearth of studies on this aspect. The few available studies point towards over-exploitation of several wildlife species, a situation that also prevails in several other parts of the world. Among the big cats, in 2009, a case of tiger meat seizure was recorded,

and more recently in 2015 and 2016, four seizures of tiger meat were recorded. From 2012 to 2016, 650 leopards were poached and instances of leopard meat eating were noticed for the first time in India. Every year in India, hundreds of pangolins, lizards, and tortoises are poached, an estimated 700,000 birds are illegally trapped, and approximately 70,000 metric tonnes of sharks are caught, yet the levels of exploitation of these



ABRAR AHMED

Snake charmers display Red Sand Boa during a street performance



SHEKHAR K. NIRAJ

A tribal trapper in southern India selling Grey Francolin for food



ABRAR AHMED

In the states of Gujarat and Rajasthan, collection of Spiny-tailed Lizard to extract “medicinal oil” was rampant in the past, but recent research shows a decline in this trade



ABRAR AHMED

Hanuman Langurs caught young are trained for use as “policing monkey” to chase problematic primate species such as Rhesus Macaques. Permission from the concerned State Chief Wildlife Warden is required to own or use this species



Leopard skin seized in Uttar Pradesh



Chital skins seized in Maharashtra



Chital meat seized in Tamil Nadu

species are rarely reported. Market surveys in Tuensang, the easternmost and largest district of Nagaland, bordering Myanmar, showed an estimated 13,000 birds and 3,500 mammals being brought annually to Tuensang market for trade and self-consumption. Such large-scale exploitation, along with minimal information about their population status, poaching, and smuggling trends could compromise the

conservation management of species affected by illegal trade.

The bushmeat trade has led to a sharp decline of some species, particularly smaller mammals and reptiles whose population sizes remain unassessed. Rich in biodiversity and designated as one of the global biodiversity hotspots, the Northeast harbours a large number of mammals, reptiles, amphibians, and birds, several of

them recorded in illegal trade and traditional hunting practices. Indian Muntjac, Asian Palm Civet, Wild Boar, and junglefowl have emerged as the most preferred species for consumption in household surveys conducted in Nagaland. Poachers invariably hunt with countrymade firearms or air guns, which are generally unlicensed. During the United Kingdom-Japan war, modern guns and bullets were left behind by



There is a growing demand in Indian pet trade for exotic-looking colourful squirrels, such as the Red-bellied Squirrel found in north-east India

troops and picked up by the Nagas in Nagaland state. Traditional bow-and-arrow and spears made way for the guns, which became the weapon of choice of the hunters. Traps are also used in nearly all villages of the Northeast, and catapults are used sometimes by adult hunters for bird or squirrel hunting. Birds have also been affected, and several studies

indicate population decline in nearly all bird species in the Northeast, except a few restricted species such as the tragopans and hornbills like the Great Pied, Rufousnecked, White-throated Brown, and Wreathed.

As for bushmeat hunting in other corners of India, in Tamil Nadu, TRAFFIC found that Narikuravar tribals still hunt many



ABRAR AHMED

Peacock crest feathers obtained by killing for religious belief



ABRAR AHMED



ABRAR AHMED

Despite being listed under Schedule I of WLPA and Appendix I of CITES, rhino and elephant are ruthlessly poached for their horn and ivory even in protected areas of India



Domestic trade in shed Peacock tail feathers is not banned within India, although export of feathers or handicrafts is prohibited ...

small and lesser known wildlife species, using countrymade guns, and traps made of rope, wire, and mesh to trap smaller mammals, birds, and reptiles. During a recent survey of nearly 900 Narikuravar in 100 settlements in Tamil Nadu and Puduchery (Pondicherry), it was found that most of the mammals and birds hunted were legally protected species. Trapping and hunting were largely for food and money, but they are on the increase to meet local and international trade demand.

Out of the 1,300 species of birds found in India, more than 450 species are trapped and traded for pet, food, sport, merit-release, black magic and sorcery. The open sale of birds is still rampant in cities such as Patna, in Bihar



ABRAR AHMED

Several tribes such as Pati in eastern India, Nath saperas in northern India, and Irulas in southern India earn a livelihood by catching snakes and displaying them on the roadside



ABRAR AHMED

Bushmeat hunting was sustainable in the past, but it could now be among the most immediate threats to the survival of many species. Recent studies indicate that hunting by indigenous people is no longer sustainable in many regions, especially in tropical countries where humans have lived and hunted for thousands of years. In the past, cultural factors had a major influence on hunting practices. Traditional hunting customs in a community or society with regard to which species to hunt, when to hunt, and who could hunt, have now been lost. Though, the reduction of a species that is targeted for bushmeat is a direct challenge and has immediate effect on the species,

there are also some indirect cascading effects of bushmeat hunting. In most cases, the hunted animal is a frugivore that disperses tree and shrub seeds. In mammals, there is negative impact of hunting on ungulates. For birds, the significant negative effect of hunting largely impacts medium-sized birds, but overharvesting of any species through hunting will ultimately result in overall population decline.



Shekhar K. Niraj, IFS

is Additional Principal Chief Conservator of Forests and Director, Advanced Institute for Wildlife Conservation, Vandalur, Chennai.

Encounters on the Ivory Trail

VIVEK MENON



Asian Elephant in Kaziranga National Park

Ivory chiefly refers to the teeth of elephants, and elephants are endangered species. For centuries, humans have coveted elephant ivory and the demand has led to their slaughter, smuggling, and an inexorable march towards the decline/extinction of elephant populations. For India, the 1990s was probably the darkest period for elephants in terms of threats from the ivory trade. It started perhaps in the late 1980s with

Veerappan in the Nilgiris and the forests of Sathyamangalam in Tamil Nadu, running a lucrative trade in sandalwood and ivory in these southern forests. Today, poaching is under greater control, compared to those days, but the threat of habitat fragmentation and resultant human-elephant conflict has become a bane for elephants.

Now, a rewind to the 1990s, when I spent more than a decade mostly roaming undercover, tracking,

documenting, and exposing the nefarious illegal trade in ivory in India and the Far East. I have often been asked to recount my most memorable or dangerous experiences while working as an undercover agent to unravel the elephant ivory trade, and here I recount four of them.

The first was the week I spent in a coracle (small, rounded, lightweight boat) in the forests of southern India, documenting the elephants shot by Veerappan. I was accompanied only by a local elephant biologist and a boatman. We wore a *lungi* and a *banian* and I spoke Tamil

to appear to be from the area. All we carried with us was rice, oil, and *dal* for food; fish was a supplement that was always available courtesy our boatman Kaliappan. We counted 35 dead elephants in little over a week, but the nauseating feeling of seeing so much death was masked by the adrenalin rush of working in Veerappan terrain. We would shift locales every night, yet news of our movements seemed to reach the locals before we did. We never did bump into the big man, but Baby Veerappan, a slightly smaller figure in legends and shorter on charisma,

was always around the corner. That was an interesting find by my team, the fact that many of the elephants poached allegedly by Veerappan were not the bandit's victims, but of others like Baby Veerappan who operated under his long penumbra. In the end, we had managed to document poaching in an area where the forest department itself had not been able to get in for over a decade.

The second memory from India was in northern Karnataka. Dusk was falling as Ashok Kumar and I laid a trap for ivory traders in a small forest hamlet. The "deal" had



JOSE LOUIJES

Blood Ivory. A fresh tusk from a poached elephant in southern India



ABRAR AHMED

Stools made from elephant feet. Display of such wildlife items is not only a shameful act but highly illegal, and should not be considered a symbol of power or wealth



ABRAR AHMED

Ivory idols are illegal to sell, buy or display. Fake products made from camel bone are sold as ivory products in many tourist hotspots across India



Seized ivory is routinely destroyed to prevent recycling by any means.
Huge numbers of tusks were disposed of at this event in Sri Lanka

been developed over two months of negotiations. I was the middleman, and Ashok the Dubai *seth* who was coming to look at the goods. Cut to the scene inside the forest. I had checked out the three ivory tusks in the hut where the delivery was to be made. Ashok, a range officer, and an Assistant Superintendent of Police were in the jeep. The signal for reinforcements had been made and I walked out with the three traders and the goods to the jeep for the cash payment and the transfer of the ivory. There was no sign of reinforcements, and we did not have any 'cash' in the briefcase, only a stack of newspaper cuttings! Three, and then four, tense minutes ticked by, and suddenly we heard jeeps. All was well ... or so I thought! The first jeep roared into the setting and an overzealous filmmaker jumped out and started filming the operation – the film team had actually been

told to come well after enforcement had done their job! I had to act fast. Before anyone could react, I caught hold of the lead poacher by his collar and punched him in the face. "What the hell is happening?" I bellowed, pretending to be as surprised by the turn of events as him. I had won a few moments with my acting. By the time he could react, four other jeeps had surrounded us. All of us were 'arrested' on the spot. I kept fuming for a long while and the tension only broke when I was being 'handcuffed' by the forest staff. "Sorry, Sir!" the forester whispered as he led me away, "So sorry, Sir!"

The third memory is from my experience in Japan. I had broken through the defences of the third biggest ivory dealer in Japan and was staying in his house. Below the bedroom where I slept, and the bare *tatami* mat-laid living room in which we had congee and fish roe

for breakfast, was a garage full of nine tonnes of ivory! Most of it was African, but some was Asian. *Togata* [Asian ivory], he said, was better ivory and over the next few weeks he taught me how to grade ivory from savannah elephants and forest elephants of Africa and those from Asia. None of this was scientific, but in the eyes of the trader it was enough to distinguish qualities of ivory suitable for *bankos* (name stamp/seal). Grade A could cost three times the price of Grade D or E. Over the years I won his friendship, and eventually instead of reporting him to enforcement, I experienced the wonderful instance of converting him to conservation. "I have blood on my hands," he told me, "and this trade will die with me." The fact that he did not have any sons but only a daughter may have helped – in hierarchy-ridden Japan, there was no male heir to inherit his business. But I was content in having converted one

man away from his occupation of lucre and greed.

The fact that the Japanese and the Chinese use ivory does not mean they are all smugglers or poachers. Almost none of them poach, and most do not even know it is illegal. I would like to end with an experience in Tokyo when I was giving a lecture on ivory (after my undercover era was over). An old man in the front row was visibly moved to tears. “Please visit me tomorrow at my home”, he invited me after the talk, an unusual thing for a Japanese stranger to do. Even more unusual, when I did visit him, he took me around his home and into his bedroom. Next to the mat he had a small altar for his ancestors, just like a normal Japanese prayer room. He was offering water and incense to the departed souls. Next to that was a small piece of ivory, which looked like a broken off tusk. It was split into two and in between nestled the metallic gleam of a bullet. “The tusk split when I was carving it,” he said,



**I knew then
that the
story of ivory
coming from
graveyards of
naturally dead
elephants was
all wrong!**



WILDLIFE TRUST OF INDIA

Delhi police team with a seized ivory statue

“and this bullet came out. I knew then that the story of ivory coming from graveyards of naturally dead elephants was all wrong! But I have carved ivory all my life.” The old man was well into his 70s, and nothing he could do could undo the decades of ivory carving he had done. “But I worship the soul of the elephant too!” he said. I responded by giving him a Ganesha statuette that I was carrying in my pocket. He put the little image next to those of his ancestors. A few years later when I paid him a visit again, he was offering incense to both Ganesha and the tusk.

The ivory trade has long-held cultural and traditional moorings. But it deals with the lives of two, perhaps three, species of elephants, and in no way can I think that it is justifiable for ecological, economic, or philosophical reasons. I have been offered a small glimpse into the world of illegal elephant killing and trade and have played a small part in helping to stop that coming out of India. I have also played a part in policy making by helping the Indian government argue the case strongly

at CITES for over 25 years, to ensure that the illegal ivory trade does not threaten the future of India’s elephants.



Vivek Menon

is a wildlife conservationist, environmental commentator, author, and photographer. He is the Founder, Executive Director, and CEO of the Wildlife Trust of India as well as Senior Advisor to the International Fund for Animal Welfare. He is the Chairperson of the IUCN SSC Asian Elephant Specialist Group and a member of the Species Survival Commission of the IUCN.

Live Bird Trade in India

ABRAR AHMED



The Hill Myna is a favourite trade species worldwide since it has the ability to mimic the human voice

The illegal trade in wildlife is a serious and growing problem.

Various governmental and non-governmental agencies have estimated that it may be in excess of billions of American dollars annually. The actual figure may never be known, as much of the trade occurs underground, in less developed parts of the world. In fact, it could be significantly higher, making illicit trafficking of wildlife and their derivatives the fourth largest illegal

trade globally, estimated next to narcotics.

Among all the species in the illegal wildlife trade across India, the trade in birds is perhaps one of the most extensive in terms of species diversity and volume. A study conducted by the Royal Society for the Protection of Birds (RSPB) between 1971 and 1974 at Heathrow Airport, London, revealed that India alone exported several million birds of nearly 275 species every year.

According to BirdLife International, nearly half of all bird species worldwide are used extensively by people for one purpose or another. The actual number of species used is probably higher, as species hunted for food are difficult to document. Two kinds of use dominate: 3,649 species (87.4% of utilized species) are used as pets and 1,398 species (33.5% of utilized species) are trapped or hunted for food, the rest being utilized for sport, traditional medicine and other incidental uses.

Further, according to the data held in the BirdLife's World Bird Database (2012), nearly all over the world (in at least 212 countries) bird species are threatened by over-exploitation. Unsustainable exploitation is most prevalent in Asia. This region has eight out of the 10 countries with the highest numbers of globally threatened birds, which are subject to exploitation for trade. India stands third with 36 threatened species of the total number of globally threatened birds affected by over-exploitation. One third (3,337) species of living birds have been recorded as being in demand for the international pet trade. Of these, 266 species are currently considered globally threatened (amounting to 8% of internationally traded species) with unsustainable exploitation implicated as a threat for more than half of these threatened species.

The data held in BirdLife World Bird database has found that 408 globally threatened bird species are affected by over-exploitation from

human use, primarily through hunting for food and trapping for the cage-bird trade. Commercial exploitation of birds for trade worldwide is not limited to commonly found birds. The major globally threatened birds affected by over-exploitation include large and conspicuous cranes, storks, parrots, pheasants, pigeons, waterfowl, and birds of prey.

In 1990–91, the Government of India banned export and domestic trade in all native wild birds in India through the amendment to the Wildlife (Protection) Act, 1972 (WLPA). India is home to approximately 1,300 species of birds, and not less than 453 of them have been recorded in the domestic and international trade, according to TRAFFIC India studies on the Indian bird trade since October 1992, which I undertook. During the studies, I recorded not less than 23 species listed in the IUCN Red List of Threatened Birds, and

19 species listed as Near Threatened in the trade.

More than three decades after the ban, the practice of wild-caught bird-keeping seems to have gone more or less underground. The primary factors fuelling the demand for commercial exploitation of birds in India are: the pet business, birds for the table, aviculture, zoos, bird release rituals for religious reasons, black magic and sorcery, medicinal use, sports (bird fights and falconry), taxidermy, for circuses and street performances, and use of body parts including feathers

The top ten traded native birds include Rose-ringed Parakeet *Psittacula krameri*, Alexandrine Parakeet *P. eupatria*, Plum-headed Parakeet *P. cyanocephala*, Tricoloured Munia *Lonchura malacca*, Scaly-breasted Munia *L. punctulata*, Indian Silverbill *Euodice malabarica*, Red Avadavat *Amandava amandava*, Grey



ABRAH AHMED

Species that are not caught for food or pet trade are sold for merit-release by religious people who pay to set such birds free without realizing that many birds like these Little Green Bee-eaters may not survive due to the stress of capture, confinement and starvation



Peregrine Falcons are caught and smuggled to Gulf countries in betel leaf consignments. Their eyelids are stitched in a process of acclimatization and to avoid injury to the flight feathers in freshly caught birds

Francolin *Francolinus pondicerianus*, Baya Weaver *Ploceus philippinus*, and Rock Pigeon *Columba livia*. A large number of waterbirds, including ducks and waders, as well as owls, galliforms, buntings, softbills (i.e., birds that eat soft pulpy food, such as bulbuls and mynas), and raptors are also caught and sold for various purposes.

The Indian illegal bird trade continues

The bird trade in India is multifaceted and encompasses many dimensions and scales. In most cases, the current trade supplies markets within the country. Although wild birds are mainly sold and used locally or transported for sale in urban centres, a small percentage is still sent illegally across national borders to markets in neighbouring countries, from where they are exported to

other countries. Studies show that significant numbers of certain bird species, including Hill Myna *Gracula religiosa* and Green Avadavat *Amandava formosa*, are ultimately destined for foreign markets.

Government of India has implemented various measures to control trapping and trade in birds, both within the country and internationally. Despite increasing awareness and the rising conservation movement in India, the trade, trapping, and utilization of birds is still rampant in several Indian states, sometimes openly or under the garb of exotic (foreign/non-native) species, since there is no prohibition on the sale, breeding, and trade of exotic domesticated birds within India. To further regulate the trade in permitted, non-native exotic birds, the Government is trying to implement CITES (Convention on International



Despite increasing awareness and the rising conservation movement in India, the trade, trapping, and utilization of birds is still rampant in several states, sometimes openly or under the garb of exotic species ...

Trade in Endangered Species of Wild Fauna and Flora) by including CITES-listed birds in the WLP. The implementation of CITES could have a significant impact on both domestic and international bird trade controls, and affect wild bird trade volume, patterns, and stakeholders.

From time to time, native and exotic (foreign) bird species are smuggled in and out across the porous Indian borders. As there is no restriction on the sale and rearing of exotic birds within the country, most bird traders in India now sell locally bred or smuggled exotic species. Surveys across Indian bird markets reveal that more than 125 such birds, including species listed in CITES, mainly parrots and finches, are 'legally' traded and kept in aviculture collections in India.

The continuing and unsustainable exploitation of wildlife for commercial gain, along with local consumption and shrinking habitats,

are proving detrimental for several species. For instance, the illegal trade in waterbirds for meat continues undocumented and secretly in various places in India, involving large numbers of rare birds.

Indian illegal bird trade problems that need urgent attention

Ironically, most of the seized birds in consignments die at the rescue centre. IUCN guidelines state that rescued birds should be released in the country of origin and in the appropriate distribution area after proper health screening, or they could serve as founder populations for conservation breeding programmes. In the absence of such facilities in India, most seized birds perish undocumented, either in inexperienced hands or during court trials or from improper care. Hence, there is a need to have centralized rescue centres for seized birds in different parts of the

country, to ensure their recovery and facilitation in terms of upkeep and measures required for their release and rehabilitation. Zoos in the concerned states could take up this exercise, especially for threatened species, provided they have the basic knowledge, infrastructure, and funds for this.

A serious issue that goes unnoticed is the occurrence of several threatened birds in the trade. The illegal trade in threatened species needs to be treated as a much more serious offence. Ironically, several threatened Indian birds are in Schedule IV of the Wildlife Protection Act, for which there is less punishment, while several common species are in Schedule I which provide absolute protection. Urgent steps should be taken to upgrade all threatened Indian species (as per the IUCN list) to Schedule I to provide highest protection and maximum punishment for poachers and traders.

ABRAR AHMED



The Alexandrine Parakeet is a much sought after species in the bird trade in India. High level of exploitation has made this a Near Threatened species



ABRAR AHMED

The weekly Chiriya haat (market) on Sunday in Kolkata's Galiff Street is India's biggest market for domesticated exotic birds



ABRAR AHMED

Rose-ringed Parakeet is commonly sold as a pet in India

Overall, there is a need for more policing and intelligence gathering to curb the illegal bird trade, especially in rare and endemic species.

There is great need to create more awareness about the trade in threatened birds, with more identification material and training workshops involving multiple enforcement agencies and

grassroots-level villagers where the actual collection takes place. Scientific documentation of trapping skills, methods, aviculture practices related to acclimatization, feeding, transport, and associated folklore and utilization, is also required.

The issue of "legalizing" the exotic bird trade has been a subject

of debate, but keeping domesticated exotics, this being legal can actually help by providing substitutes for wild caught birds, and can provide alternative livelihood options.

Last but not least, a bird crime prevention cell with a nodal office in SAARC countries to monitor and share sensitive information would be



Hornbill species such as the Oriental Pied are collected from nesting holes for sale to zoos and private collections, and for extracting oil for medicinal use



Tricoloured Munia are dyed in various colours to make them appear to be exotic finches, to escape the attention of enforcement authorities. Dyeing in several colours also increases the sales

a worthwhile initiative by government agencies and NGOs.

Ban on the Indian bird trade – a socio-economic perspective

Many tribes and rural communities in India, such as the Bahelias and Mirshikaris, still depend heavily on wildlife resources, especially birds, for subsistence and income generation. Many such households derive a significant part of their income from the sale of wild birds and ancillary skills, such as cage making. Traditionally, every region in the country has its own history of bird keeping or utilization, which differs from place to place, in terms of species preference or the tribe or community that trades in a particular group of birds. During my bird trade surveys, I documented the various tribes and communities involved in the bird trade in India. My studies focused on the impacts of regulations controlling the trade in native wild birds as well as locally bred exotic birds, and the economic contribution of the trade to the livelihoods of key stakeholders.

Public opinion must rise in support of bird conservation, but

at the same time, the plight of the communities and tribes traditionally dependent on the bird trade should not be ignored. The bird trapper in India remains much despised and scorned by conservationists, animal rights activists, and law enforcement officials. Yet, bird trappers and keepers have vast traditional knowledge on birds and bird care, which could put a wildlife biologist to shame, and which could be put to good use.

In fact, concerns have already been raised that law enforcement and the resulting changes in the bird trade are negatively impacting the livelihoods of the trapping and trading communities, especially the rural poor. Objections have also been raised from time to time in response to the 'illegal' lifting of locally bred exotic birds from bird traders, citing cruelty to birds, by city-based "animal lovers". This do-gooding results in trappers and traders having no



House Sparrow males are sold for traditional medicine for making aphrodisiacs, while the females are retailed for bird release



Tribes such as the Bahelias and Mirshikaris are totally dependent on bird trade for their livelihood

Grey Francolin is one of the most exploited bird species, regularly captured and sold for meat throughout India by several tribes

recourse but to return to their wild bird trapping occupation. Traditional trappers have questioned why those involved in the trade of farmed native fish like rohu and catla and domestic livestock are not considered criminals, unlike those dealing in birds. While rich bird dealers can fight prolonged court cases and carry on their business in connivance with corrupt elements in the enforcement agencies, a small-scale, uneducated bird trapper who ekes out a living day by day, does not have the wherewithal to fight expensive court cases, and so he continues his trade on a small scale surreptitiously.

Some have argued that not only do such controls yield no economic benefits, they have little impact on the conservation status of the species concerned. Although the attention surrounding the need to secure basic benefits for people living close to wildlife has been expanding since the early 1990s, far less research attention has been given to the impacts on their livelihoods. In the course of my ongoing study, I focused on the impacts of bird trade controls on local livelihood also. My study shows that the impacts of the bird trade ban are likely to be more significant on trappers than on traders, since trappers tend to be more dependent



on income from wild birds, whereas for traders, the bird trade is only one element of their diverse livelihood strategy. For some of the poorest tribes, especially in rural areas, the bird trade is one of the very few opportunities for them to generate cash, which, even in small amounts, can make a critical difference to their livelihood security.

Despite the dependence of many Indian tribal communities on birds, few attempts have been made to investigate the impact of the ban on the trade in birds on their livelihoods. There needs to be a logical and practical conservation perspective rather than a sentimental approach

to addressing the subject of bird trade.

BNHS Bird Crime Prevention Cell

BNHS is planning to establish a cell targeted at helping to reduce bird trade crime through the following initiatives:

- To minimize and curtail the demand for wild native birds, especially at the grassroots level, by promoting alternative livelihood options for communities dependent on birds for their livelihood.
- To document the tribes and communities associated with illegal bird trapping and trade, and to study their socio-economic status,

their knowledge about birds, and to document birds and the cultures of these communities across India.

- To study the impact of bird utilization on wild bird populations.
- To assist CITES authorities and various other wildlife enforcement agencies to understand the trade in native and exotic CITES-listed species in India.

BNHS proposes to start a Bird Crime Prevention Cell to prevent the trade in birds by broadly working on the following lines:

- Study bird trade trends and provide regular feedback to concerned agencies, NGOs, and experts.
- Publish a field identification guide comprising 200 bird species (native and non-native) in trade and aviculture, which will serve as an important tool to help check bird trade. Currently, there is no such field guide, which is a major handicap for enforcement staff.
- Hold meetings, interviews, with key stakeholders of bird trade, along with providing training in alternative livelihoods.
- Capacity building through training of enforcement agencies such as Customs, Sashastra Seema Bal (Armed Border Force), Indo-Tibetan Border Police, and Border Security Force, highlighting the

trade status of rare species, based on data gathered through surveys and market visits.

- Capacity building for the Forest Department and the above mentioned enforcement agencies.



The government needs to look into schemes that could wean away people who wish to leave their traditional occupations and opt for other legitimate means of livelihood ...

- Interfacing with State and Central Government, and supporting policy changes, as may be appropriate.
- Encouraging international cooperation, as in some cases the key markets for wild birds lie outside the country's borders, (largely Nepal, Bangladesh, and Pakistan) to curb markets for illegal bird trade.

My recent visits to some traditional communities attached to bird trade lead me to emphasize the need for their rehabilitation into acceptable trades, and the government needs to look into schemes that could wean away people who wish to leave their traditional occupations and opt for other legitimate means of livelihood.



Abrar Ahmed's

mission is to develop and promote sustainable alternative livelihood options for tribes and communities involved in the trapping and trade of birds, and to strengthen law enforcement at the grassroots level.

A REQUEST TO BNHS MEMBERS AND NATURE LOVERS

BNHS seeks support from members and nature lovers for our mission to curtail the demand for wild-caught birds, and eventually, to stop the trade of all wild birds in India. We are working towards a future when all birds of India can live in the wild without the fear of capture, and without suffering the appalling conditions of the bird trade and a bleak existence in cages.

Along with this, we need to channelize the talent and wisdom of traditional bird trapping and trade communities into the service of nature conservation, such as keepers in zoos, as bird guides in sanctuaries, bird trappers for bird migration studies, and work related to captive breeding centres.

BNHS set a splendid example when Mirshikaris from Bihar, including the legendary Ali Husain, and the Kuruvikarans of Tamil Nadu were inducted into the BNHS Bird Migration Project, to which they have contributed their traditional bird trapping skills. Thus the provision of a respectable and economically viable livelihood has been ensured for several former trappers.

Looking beyond – Thinking ahead

FAHMEEDA HANFEE



Finless sharks on a landing site

In the early 1990s, I chose to work on freshwater turtles for my MPhil, unlike my peers who were more into birds and large mammals, since to me aquatic species appeared more elusive and fascinating. It was then that I learnt about the exploitation and trade of freshwater turtles and other animals and plants. The subject was quite intriguing, making me wonder if there were ways to continue working on the trade and exploitation of wildlife in the country.

In my quest, I came across TRAFFIC India, a group working particularly on trade issues, which finally gave me a platform.

I joined TRAFFIC India in 1995. The investigations and trade studies resulted in some of the great seizures of that time, including ivory and corals, and pioneering case studies on the shark trade, whale shark fishery, and shahtoosh trade in India.

It was during this time, through WWF's "Endangered Seas

Campaign”, that I came to know about the global efforts to address chronic overfishing and destructive fishing practices. The emphasis was on some key species which were in critical need of better management, such as tuna, swordfish, marlin, and sharks. Hence, a global study was undertaken by TRAFFIC International to raise awareness about overfishing of sharks, to which my work contributed significantly. “Trade in Sharks and Shark Products in India” became the seventh wildlife trade monitoring publication of TRAFFIC India, and the first to deal with marine species, taking a close look at the trade and conservation situation in India.

Saga of sharks in India

From sitting down face to face with government officials and environmental NGOs all along the coastal states of India, it became clear very quickly that there is a major disconnect between the concerned departments, and a big gap in knowledge and awareness about sharks. I encountered officials who believed there were no sharks in Indian waters, and fisherfolk who believed that there were plenty. Initially, it was a great struggle to communicate the shark situation and global decline, to these people and to make them realize the seriousness of the problem.

The terrestrial approach in general of the forest department, wildlife conservationists, and the Wildlife (Protection) Act all the more marginalised the issue, and to top it all, fishery was always an economic activity and has been considered under the food production category of Ministry of Agriculture.

Considering a country having a coastline of over 8,000 km, more than 3,000 fishing villages spread over nine maritime states and two

union territories, a marine fisherfolk population of approximately 4,000,000, and endangered marine species like dugongs, dolphins, sharks, turtles, molluscs, and corals, remarks like “There are no sharks in the sea” and “We don’t know what is there down under” were startling, and a valid cause for concern.

As goes one of my favourite quotes ... “The ultimate challenge lies in detecting the loss of biodiversity in coastal and marine systems. The last fallen mahogany would lie perceptibly on the landscape, and the last black rhino would be obvious in its loneliness, but a marine species may disappear beneath the waves unobserved and the sea would seem to roll on the same as always.”

— G. Carleton Ray in *Biodiversity*, National Academy Press, 1988

Sharks always contributed to the marine fish trade, in fact, elasmobranch fishing was quite popular in India in the 1950s. Initially they were not a preferred species, but a bycatch of tuna longline fishery. The normal practice at that time was to throw harvested sharks back into the sea after removing the fins. Later, in the 1960s, specialized fishery for sharks came into the picture, with a significant increase in catches, and shark fishery became an important



Global trends in the shark trade are complex, and we need a lot more data from governments on shark fishing and trading nations to effectively track trends in shark product use ...

commercial enterprise on both the eastern and western waters of the Indian coastline.

The growing trade in shark products like fins, cartilage, liver oil, and skin played a significant role in increased shark harvests all along the Indian coast. Shark meat gained popularity in the domestic market and there was a huge international market for it too. Fins were the prime produce and were exported mainly to



FAHMEEDA HANFEE

Shark meat being salt cured



Chopped shark fins



Shark fins being sun dried for further processing

the countries known for their taste for shark fin soup.

Much of the hunting and trade remained unregulated and little was known on the status of nearly 50 species of sharks found in the Indian seas.

The increasing demand for shark products made India a major harvesting destination. Between the early 1970s and late 1980s, the situation became alarming when it was learnt that there had been a high level of bumper catches in India, with very high yields, and there was a realization that elasmobranch fishing had become an important commercial enterprise in India.

Our interviews with shark fishers revealed that there was a steady decrease in the body length of sharks caught over the years, which was a clear indication that over-exploitation was leaving a telling effect. Our work also revealed that:

- There is a direct relationship between stock size and recruitment, since sharks grow slowly, mature late, and have small numbers of young, resulting in very low population replacement.
- Since there were no studies on the over-exploitation of sharks and its impact on the species, it was wise to learn from the example of neighbouring Pakistan

elasmobranch fishery, which collapsed in 1983 (as reported by R. Bonfil in his 1994 FAO publication, *Overview of World Elasmobranch Fisheries*), and take it as a pointer to future catch reductions in Indian elasmobranchs.

- The most important finding was that the laws pertaining to the fishing of threatened species, were silent on the issue as the objective of the fisheries sector was to promote production and export generating employment, ensuring welfare of the fisheries communities, and sustainability. There were no clear restrictions/regulations on shark fishery. The study recommended the need for an effective management plan for fisheries in the country.

Encounter with a Whale Shark

Veraval 1997, a sultry morning in this small coastal town of Gujarat during a preliminary survey on shark trade, and something unique lying on the shore caught my eye. I walked closer to have a look and realized that I was witnessing the most magnificent species of the sea. A beautiful pattern of white dots and stripes on the skin made it look all the more elegant.

This was the biggest fish in the world, a filter feeder. I went around to look at its massive mouth, typically built to allow nutrient rich water to flow in carrying food, mostly zooplankton. I noticed a big hook, rather a harpoon, stuck in its bleeding mouth!

The next minute, I found myself surrounded by fishermen, spent time with them trying to understand the plight of whale sharks, and later accompanied them on their hunt, which was a unique and very risky method using barrels. After a long haul of hunting the shark, we landed at Beyt Dwarka, where many more

sharks were lying in water and were being cut while afloat.

Whale Shark fishing came as a boon to the fishermen of Gujarat in the late 1980s. The fish became a source of income at a time when other fish catches off the Saurashtra coast were declining. It was also the time when fish exports to Europe declined, and several other countries including the Philippines, Taiwan, Maldives, and USA, banned their own whale shark fishery, presumably to sustain and conserve stocks. Hence, the overseas demand for supplies from India had grown and exporters soon realised that it was a lucrative business. Fishermen were lured by the sizeable income arising from whale shark fishery, and started targeting Whale Sharks. In one of my interactions with the community, it was revealed that they considered whale shark fishery a bonus.

Till then, the commercial harvesting of Whale Shark in India had been practically non-existent. Till 1990, only small harpoon fishing was reported, and this was primarily for local extraction of fish liver oil for waterproofing boats. In 1991, the demand for the fins arose and a year later, the species was being hunted for almost all its bodyparts.

Amidst writing the report, I got to know through my field sources that fishing for the 2001 season had commenced a bit early. On September 15, 2000, the fisherfolk caught 40 Whale Sharks, and some villages had stopped all other fishing activities to get fully into Whale Shark fishing.

The points to ponder at that time were that a growing demand, expansion of more fishing areas, and evidence of local depletion in some of the range states, clearly indicated that the continuation and growth of international trade in Whale Shark could pose a threat to the species.



Today, Whale Shark is in the IUCN Endangered list which means in the past three generations it has suffered a population decline of more than 50% ...

With some countries imposing bans on this trade (US, Maldives, Taiwan, Philippines, Honduras), India was likely to experience increasing pressure on its Whale Shark populations to meet the market demand. The message was conveyed to the relevant authorities, and thus came the landmark decision for the Whale Shark and some species of sharks:

- Four species of sharks, two species of rays, one species of guitar fish, and three species of sawfish were declared protected under Schedule I of the WLPA, 1972, by the Ministry of Environment and Forests vide Order No.1-2/2001 WL1 (Exploitation and trade of these species have been banned and declared as punishable offences.)
- In August 2013, the MoEF (Wildlife Division) approved a policy advisory on shark finning (vide F. No.4-36/2013WL, August 21, 2013), (prohibiting the removal of shark fins on board a vessel in the sea, and advocating landing of the whole shark).

As they say, every end is the beginning of something else. Banning

the shark trade is not the end, there is so much more to be understood:

- Is India a breeding ground for whale sharks?
- Do whale sharks exhibit a movement pattern?
- Does listing under WLPA and other policies help in conserving sharks?

(The Species listed in WLPA does not represent a true shark species hunted for fins and meat, and the policy advisory advocating the landing of the whole shark only suggests consumption of whole shark, it does not further conservation efforts)

- There are guidelines to be followed and India has to firm up the National Plan of Action for sharks.
- The immense traditional wisdom possessed by the local communities specially the Veraval and Thootoor fisherfolk needs to be accessed, evaluated, and combined with scientific knowledge to succeed in management approaches.
- Only a multidisciplinary approach can enhance shark conservation.



Fahmeeda Hanfee

is a conservation consultant. She has a keen interest in wildlife trade and shark management issues in India. She is passionate about working closely with communities involved in wildlife trade and fisheries.

Tangled Weaves – The Mystery of Shahtoosh

FAHMEEDA HANFEE



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The Tibetan Antelope is endemic to the Tibetan Plateau, but a few are found across the border in Ladakh, India

The shahtoosh trade was banned globally in 1975 under the Convention on International Trade in Endangered Species (CITES) to which India is a signatory. The ban on the production of shahtoosh shawls, in the early 2000s, was a significant nature conservation intervention for India, following pressure from the international conservation community and the Indian Government.

While the ban was intended to protect the rare Tibetan Antelope or Chiru, it resulted in the loss of traditional occupations, making a significant impact on the livelihoods of the communities involved. Let us take a closer look at the state of affairs after a time span of almost 15 years.

Life is a loom, weaving illusion

Shahtoosh (from Persian, translating to King of Wools), is

the costliest, warmest, lightest, and softest fabric on earth that gets woven into a shawl exclusively by the skilled weavers of Kashmir. Known for its fineness, the entire shawl can pass through a finger ring, thus the popular epithet ‘ring shawl’.

My tryst with the shahtoosh trade started when I joined TRAFFIC and appraised myself of the various wildlife trade practices taking place. Shahtoosh was a curious case for me as it was surrounded with many mysteries and myths. In this pursuit, I visited Ladakh and Nepal to probe into the mysteries behind the source and routes of this trade and to collect evidence from my interactions with numerous people to understand the connection.

Toosh is described in historical literature as animal fleece, which Kashmiri weavers and traders interpret as the fleece on the underbelly of the mountain goat or the Pashmina Goat (from the Persian word *pashm*, meaning any kind of wool). Though Pashmina goats were the main producers, similar fleece was also obtained from mountain

sheep, Bharal and Ibex. Whereas “asli toosh” (meaning genuine fleece) always meant the underfur of Chiru, there exists another school of thought which believes that toosh always came from wild sources, whereas pashmina was sourced from domesticated goats.

Interestingly, the Changpas (a semi-nomadic Tibetan community of the Changthang region of Ladakh) claimed that their dogs also grow the same fleece in winter! Toosh also refers to the fleece developed by all high altitude animals as a natural protection against the harsh cold climate, whether the Ibex, Yak, goats, or even Bactrian Camel.

Historically, shahtoosh weaving was occasional and dependent on the availability of toosh. Pashmina was the main raw material for production at that time because the quantity of shahtoosh wool was small. Therefore, shahtoosh shawls were rare and produced only for aristocrats and royalty by elite weavers.

It is also said that there was subsistence hunting for Chiru meat in



The ban on shahtoosh resulted in the loss of traditional occupations and impacted the livelihoods of the communities involved significantly ...

the Tibetan highlands by the natives. The horns were used for traditional Chinese medicine, and the wool was used to line clothes for warmth.



Pashmina goats:
Changthang

FAHMEEDA HANTEE



A lady wearing
Shahtoosh shawl
in Delhi winter

In an interview with a butcher in Leh market, it was revealed that earlier, people used the dried stomach (probably the rumen or abomasum part) as carrybags in which to collect shahtoosh. The quantity was so small that it was easy to carry it in such a way. One antelope would yield only 100 to 200 gm of toosh if hunted down. The story of local people painstakingly collecting the underwool that the animals shed in summer, and left tangled in bushes and shrubs, was probably a lie propagated to exoticize and promote the shahtoosh trade.

Prior to the 1970s, the TAR (Tibet Autonomous Region) was difficult to access, and for a long time, this area was inhabited only by nomads and a few local Tibetans. The nomads and the farmers of TAR brought about the destruction of green pastures. There was also extraction of mineral resources including gold. The Chinese authorities started gold mining in the area in the early 1980s, keeping the mines under strict control. This

was when they discovered herds of Tibetan Antelope in the area and started mass hunting, which was an easier way to earn money than digging for gold. Also, unlike the local herdsmen, the miners had advanced guns and jeeps.

Hence, we can say that the demand for shahtoosh fuelled a deadly triangle of lucrative illegal trade, beginning with poaching in Tibet, smuggling via Nepal to India, and ending up in the fashion industry of the west. The demand for shahtoosh shot up in the 1980s, with prices skyrocketing.

Wildlife trade without borders

During interactions with the inhabitants of Indo-Tibetan border villages and Nepal-Tibet villages, it was understood that the age-old barter system continues in the area. There were camps opposite the Changthang Indian border areas where exchange of all kinds of goods took place. While the Changthang border trade involved fancy Chinese items like crockery, toys, and pashmina, the Indo-Nepal-Tibet border traded more wildlife articles in addition to rice cookers, and cosmetics among others. Mainly, the barter was between shahtoosh and any other wildlife article – you name it, be it tiger bones or Yarcha gumbo (the famous caterpillar fungi), all for traditional Chinese medicine.



Ibex horns are very common in all households in Ladakh;
the ibex is extensively hunted for its meat



FAHMEEDA HANFEE

Kids enthusiastically showing all kinds of hides during author's interactions with them, Nepal

There were many points of entry into Nepal from Tibet. While most routes were difficult to access, the most preferred route was Lhasa-Kathmandu, the only road link between the two cities. After crossing the Kodari border, there was the small, dingy town of Khasa, where traders from Kathmandu and Lhasa met to fix up deals. It appeared that shahtoosh was a hot selling item with links and entry points in various parts of Nepal. There was an indication of shawl weaving carried out in Nepal by Kashmiri families who shift there for some duration every year. Although reports were not confirmed, there were clearly artisans weaving shawls and buying cashmere and yak wool from suppliers in Mongolia. Some of the traders also spoke about 'Bhootla', which was probably the underfur of Yak. Since the source

had been a mystery, it was valid for me to further investigate Yak wool.

To my surprise, it came out that Yak wool had characteristics similar to luxurious cashmere (pashmina goat) wool. While the shaggy outer layer of Yak was used in tent making, the underfur or down of the animal was said to be very fine, less than 20 microns in diameter. It was claimed that the fibre was finer than cashmere, and more shiny, softer, lighter, and warmer than merino wool. The end products ranged from black to dark brown, and the more highly prized and rarer golden and white.

Over the years, many efforts have been made to tackle the livelihood issues of locals, and to spread awareness about the shahtoosh trade. These efforts have more or less failed, since the sources of shahtoosh are still considered obscure, and the

traders and weavers mysteriously do not take interest in the supply of the source material, which also indicates that they deliberately want to keep it under their control.

Considering the ambiguity of the trade and its sources, and as the historical literature suggests that the pashmina shawl industry was always much larger, and shahtoosh was very rare, it is best for the affected weaving community to go back to pashmina, and look for improvisations and diversification within this legal trade.

As the awareness campaign took a few years to take off, the shahtoosh trade went undercover. There were reports of shahtoosh shawls being traded illegally. As suitable alternatives were not provided to the communities, they continued with the trade covertly. Still, conservation action has helped to regain the population of the threatened species in question, the Tibetan Antelope.



Fahmeeda Hanfee

is a conservation consultant. She has a keen interest in wildlife trade and shark management issues in India. She is passionate about working closely with communities involved in wildlife trade and fisheries.

From Mannar to Haridwar: The Journey of Marine Curios

SAJAN JOHN



The overt trade in marine curios in Kanyakumari

When I was entrusted with the responsibility of assessing the extent of threatened and protected flora and fauna of marine origin in trade in India almost a decade back, little did I know that this experience would change the way I look at coastal tourist destinations for the rest of my life! Also, I was to be based at Kanyakumari, and was quite overwhelmed at the prospect of staying at one of the most renowned tourist sites of India.

The Marine Curio Trade

I made my first official visit to the southernmost part of the Indian mainland along with my fellow researcher B.M. Praveen Kumar. Our aim was to understand the dynamics involved in the trade. Apart from being a hub of rich touristic culture and heritage, Kanyakumari can also be designated as the largest marine curio market (trade of marine creatures as souvenir is termed as marine curio trade) in the country. From cockles

to cowries, conches to corals, and sea horse to sea star, anything and everything under the sea is available in the markets of Kanyakumari and at the processing centres of Tuticorin and Rameswaram. Rameswaram is the largest collection point and processing centre for sea shells in India.

Large decorative single seashells and corals along with various sculpts made out of seashell, in the form of idols (gods and goddesses), curtains, bangles, and hairpins are sold in the market. Seashells used exclusively during worship are also available. The tourist-pilgrim circuit of Kanyakumari to Rameswaram hosts several other places of religious importance like Tirunelveli, Tiruchendur, Tuticorin, Madurai, Uttirakosamangai, Ramanathapuram, and Devipattinam, along with places of wildlife importance like Koonthankulam Bird Sanctuary and Gulf of Mannar Marine National Park, so it attracts a lot of tourists throughout the year from across the country. This tourist influx is the driver for the local community to continue the curio trade and boost their livelihood. There is no doubt that significant revenue from the trade goes to the coastal rural community, but at the same time, it is harming the marine ecosystem and facilitating species decimation and habitat loss. Among the species that are traded, many are protected under the various Schedules of the Indian Wildlife (Protection) Act, 1972 [WLP].

For the pilgrims and tourists reaching Kanyakumari, a visit to the marine curio market will generate much fascination towards marine life. But for a nature lover, a mere visit to this place is a sad realization that illegal wildlife trade in marine curios is being carried out brazenly in the busy streets of some locations in the country. Unlike other wildlife trade that

happens undercover, here everything is in the open. Some large-scale seashell traders have good knowledge of the species that they deal in – as good as any field biologist and sometimes even better! So what is driving them to an activity which comes with the threat of heavy monetary penalties and imprisonment? When interviewed, traders admitted that the profit involved in this sector is much more alluring.

Collection and Processing Centre: Gulf of Mannar

The Gulf of Mannar (GoM) is one of the richest coastal regions in Asia and known to harbour over 3,500 species of flora and fauna. Rameswaram Island, bordering GoM, is a major collection point for seashells

search for these species. Tuticorin is also an important seashell processing hub along this southernmost tourist corridor.

Protected seashells such as Helmet Shell *Cassis cornuta*, *Tudicla spirillus*, *Fasciolaria trapezium*, Spider Conches *Lambis crocata* and *Lambis chiragra*, and Top Shell *Trochus niloticus* are mainly collected from the Gulf of Mannar. Sea horses are also collected from this region. Shells like Pineapple Shell *Cypraea cassis rufa*, Green Snail *Turbo marmoratus*, Chambered Nautilus *Nautilus pompilius*, and Giant Clams *Tridacna* spp. are collected from the reefs around Andaman & Nicobar Islands. *Lambis truncata* and other cowries are procured from Lakshadweep. Corals mainly originate from GoM.

SAJAN JOHN



Customer awareness is important to reduce wildlife trade

and corals. Traders source their consignments even from Andaman and Nicobar and Lakshadweep Islands. While most of the shells come as bycatch in the mechanised fishing sector, certain shells are specifically targeted. Fisherfolk of Thoothukudi (formerly Tuticorin) district, traditionally known for their diving skills due to pearl oyster fishing, use their skills to dive and

Besides local collection, seashells are even imported from Tanzania and the Philippines to sell in India. A 2006 study by Kathryn Tanner [(Seashell trade of Tanzania: A value chain analysis. *Contour Journal*, Royal Geographical Society, pp. 51–61) states that India ranked first among seashell importers from Tanzania during the early 2000s. Out of the total early exports from Tanzania,

75% of seashells were exported to India, followed by Pakistan (10%). A few anecdotal reports also state similar facts.

Comprehensive evidence for these statements comes from the market itself. Queen Conch *Strombus gigas*, which is listed under CITES Appendix II (not a native Indian species) is available in Kanyakumari. Busycon Whelk *Sinistrofulgur sinistrum*, which are naturally sinistral (left handed spiral; all other shells are dextral or right handed spiral), and common to the southeast coast of North America, were also widely available as “rare” sinistral chanks (sold as Valampuri Shankh). South African Turban Shell *Turbo sarmaticus*, native to the South African coast and famous for its thick inner nacre of Mother of Pearl, was also readily available in Kanyakumari and Rameswaram.

The market and its customer base: Kanyakumari and Rameswaram

For any healthy business (in this case rather unhealthy for the marine ecosystem!) to thrive, customers are an imperative factor. Kanyakumari and Rameswaram, being major round-the-year pilgrimage and tourist destinations, provide the clientele.

This is one of the major reasons for the thriving growth of the marine curio trade.

Domestic tourists dominate the customer list, buying all types of curios from inexpensive cowries to costly chanks (conches) and corals. Fascinated by the bizarre beauty of seashells and corals, they take to the hobby of collecting this invaluable exquisiteness of the seas. Pilgrims dominate the customer group, followed by recreational tourists. The Sacred Shankh *Turbinella pyrum*, exclusively used in Hindu rituals, is the most favoured shell for the pilgrims. It is available with vendors in all sizes ranging from 8–20 cm. *Turbinella pyrum* is not a protected species. The expensive and rare sinistral Sacred Shankh or Valampuri Shankh is also occasionally available. As it is exorbitantly priced, only rich devotees can afford to purchase and earn its ‘rich blessings’. For other pilgrims, fake Valampuri Shankh *Sinistrofulgur sinistrum* is also available.

Most of the marine curio shops in Kanyakumari are makeshift stalls whose number fluctuates with the tourist season. The peak season is during April-May (summer vacation for schools, when most recreational



The marine curio trade brings employment opportunities and profit to the local people, but at the same time, it inflicts serious ecological damage to the marine ecosystem ...

tourists arrive) and December-January (halt here when Sabarimala pilgrims *en route* to Rameswaram). During these times, around 100–150 vendors can be spotted any day. During the lean period, there is a drastic decline in the number of vendors. International tourists are reluctant to buy these shells and coral artifacts owing to strict regulations in shipping of biological products.

Should we really worry about this marine curio trade?

Our nationwide survey on the trade in threatened and protected species of flora and fauna of marine origin led us to investigate many markets of tourist interest across the country. Coastal pilgrim/tourist destinations like Somnath, Puri, Puducherry, Fort Cochin, Kovalam in Kerala and



SAJAN JOHN

Anything and everything under the sea is available in the markets for trade

No	Scientific name	Common name	IWPA Schedule
1	<i>Cypraeassis rufa</i>	Pineapple Shell/Bullmouth Helmet	I
2	<i>Cassis cornuta</i>	Helmet Shell	I
3	<i>Conus milneedwardsi</i>	Glory of India	I
4	<i>Tudicla spirillus</i>	Garlic Shell	I
5	<i>Tridacna maxima</i>	Giant Clam	I
6	<i>Hippopus hippopus</i>	Horse's hoof Clam	I
7	<i>Tridacna squamosa</i>	Fluted Giant Clam	I
8	<i>Charonia tritonis</i>	Trumpet Shell	I
9	<i>Nautilus pompilius</i>	Chambered Nautilus/Pearly Nautilus	I
10	<i>Lambis truncata</i>	Spider Conch	IV
11	<i>Lambis chiragra arthritica</i>	Spider Conch	IV
12	<i>Lambis chiragra</i>	Spider Conch	IV
13	<i>Lambis crocata</i>	Spider Conch	IV
14	<i>Lambis scorpius</i>	Spider Conch	IV
15	<i>Lambis millepeda</i>	Spider Conch	IV
16	<i>Cypraea mappa</i>	Map Cowrie	IV
17	<i>Cypraea talpa</i>	Mole Cowrie	IV
18	<i>Placenta placenta</i>	Windowpane Oyster	IV
19	<i>Turbo marmoratus</i>	Green Snail/Turban Shell	IV
20	<i>Cypraea limacina</i>	Limacina Cowrie	IV
21	<i>Harpulina arausiaca</i>	Gold banded Volute	IV
22	<i>Fasciolaria trapezium/Pleuroploca trapezium</i>	Horse Conch	IV
23	<i>Strombus plicatus sibbaldi</i>	Pigeon Conch	IV
24	<i>Trochus niloticus</i>	Top Shell	IV

various beaches of Goa are major markets for marine curios. Seashells from Kanyakumari/Rameswaram reach pilgrim centres as far off as Haridwar, Rishikesh, and Vaishno Devi, and also find a place in many resorts and hotels that rely solely on wildlife and nature tourism. Even street vendors in the national capital can be seen trading one or two, if not many of these protected seashells.

The marine curio trade brings employment opportunities and profit to the local people, but at the same time, it inflicts serious ecological damage to the marine ecosystem (especially to the reef ecosystem). Trade in seashells (other than species listed in WLPAs) which originates as a bycatch of fishing activity is acceptable to some extent, but the exclusive collection of shells and corals by diving and other mechanical means causes serious

damage to the reefs. Such collections target the species which have high market demand, and can cause over-exploitation, bringing down their numbers to a drastic level from which recovery is difficult. Molluscs without any planktonic larval stage in their life cycle are likely to be most affected by this over-exploitation, as the chance of their dispersal is low.

During shell collection, divers often damage the habitat, by stepping on reef flats and leaving the undersides of shells exposed to the sun, or breaking corals unintentionally or deliberately in search of shells. This is similar to the handpicking of shells during low tide, when rocks and corals are overturned in search of seashells. This activity exposes other creatures dwelling beneath these rocks and corals to burning sunlight and can cause desiccation and death. How far the impact of

intensive harvesting of molluscs affects the balance of reef life is not yet fully understood. However, there will be an aftermath of this indiscriminate over-exploitation of reefs. Over-exploitation of target species can cause proliferation of other undesired species which adversely affect the fishery sector (e.g., jellyfish outbreaks).

Seashells have been important to Indian culture since the Indus valley civilization or Harappan culture, which used seashell artifacts along with bone and ivory. However, the situation has changed with human population growth and its impacts, and the populations of these creatures have dwindled to the point of endangerment to their existence. Strengthening of enforcement and public awareness will help to curb the illegal trade. It is high time to act against this exploitation before it is too late.



Sajjan John

is a marine biologist with the Wildlife Trust of India. He currently heads the Marine Conservation Projects, which include Whale Shark in Gujarat, Kerala and Lakshadweep; Coral Reef Recovery in Gujarat; and Mangroves in north Kerala.

Forensic Science in Wildlife Law Enforcement: Role of Wildlife Institute of India

SANDEEP KUMAR GUPTA



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Tigers are still one of the most affected species that are threatened by the demand for their skin, claws, bones, tooth and body parts and for trophies. In many cultures, tiger canines and claws are worn as talismans to ward off evil spirits



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Tiger claw



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Tiger canines



A necklace made of tiger teeth sold in a souvenir shop in Nagaland in 2010. Fake tiger derivatives are also sold in several shops

Wildlife crime and trade have emerged as severe threats for biodiversity conservation. Illegal exploitation of wildlife and its derivatives for trade is now an organized transnational crime that threatens several wild species across the globe. It has become the fourth largest category of crime for illegal revenue generation after

narcotics, illegal arms supply, and human trafficking. Over the years, several wildlife trade “hotspots” have been identified. Some of these are China’s international borders, trade hubs in East and Southern Africa and Southeast Asia, the eastern borders of the European Union, a few places in Mexico, parts of the Caribbean, Indonesia, New Guinea,

and the Solomon Islands. India has four internationally recognized biodiversity hotspots – Western Ghats, Eastern Himalaya, Indo-Burma, and Sundaland (represented by the Nicobar Islands). Poaching of animal species for illegal trade has been a prime challenge for law enforcement agencies. As trade in more than 1,800 species of wild animals, plants, and their derivatives is prohibited under the Indian Wildlife (Protection) Act, 1972 (WLPA), it is essential to develop expertise to identify animal and plant parts and products derived from protected species of flora and fauna.

Being a biodiversity-rich country, also holding the world's largest population of free ranging Bengal tigers, India is a hotspot for wildlife poaching. The target species range from colourful insects to magnificent large mammals, including the tiger and elephant. India's native wildlife is exploited for products derived from them, which include tiger and leopard claws, bones, skins, and whiskers, elephant tusks, rhino horn, bear bile, deer antlers, musk pods, mongoose hair, snake skin, turtle shells, a wide variety of medicinal plants, timber, cage birds such as parakeets, mynas, and munias, and insects like butterflies, moths, and beetles. Interpol's record on the trade of tiger and its derivatives over

“The term ‘forensic’ refers to the use of science or technology in the investigation and establishment of facts or evidence in a court of law.”

“It is essential that forensic applications be used to the fullest extent possible to combat illegal trade in wildlife, as is emphasized in a number of CITES Resolutions and Decisions. In tackling illegal trade in wildlife, investigative questions may relate to both the identification of perpetrators involved, and the identification of the wildlife specimens found. The former is the subject of traditional forensic analyses, such as human DNA profiling or ballistics, while the latter is the subject of wildlife forensics. Although these categorizations are not entirely fixed within the forensic community, they are generally considered as the best rule of thumb. In the case of CITES implementation and enforcement, the investigative questions to address in relation to the identification of animals and plants, or their parts and derivatives, can generally be categorized into five groups, concerning:

1. the species involved;
2. the geographic origin of a specimen;
3. the wild or captive/cultivated source of a specimen;
4. the individual origin of a specimen;
5. the age of a specimen.

Within these five categories of investigative questions, there are a wide range of specific enforcement needs, some of which can be addressed using generic wildlife forensic methods, others that require a much more specialist approach.”

– www.cites.org

ABRAR AHMED



Hatha Jodi



Monitor lizards are killed for their meat, fat, and more so for their hemipenes, known as Hatha Jodi in trade, which are believed to bring prosperity, wealth, and luck to their owners

Wildlife trade is not restricted to mega species but several lesser known species including insects and butterflies also figure in the trade

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Handicrafts made from turtle carapace. Many people unaware of the legal status of such items often buy and display them in their homes or offices

a period of 10 years indicates that poaching of 1,069 to 1,220 tigers has taken place and 481 tiger derivatives were seized from various countries having tiger populations.

Shawls woven from the wool of Tibetan Antelope or Chiru *Pantholops bodgsonii* is another high demand product in the international market. The Indian Wildlife (Protection) Act, 1972 is one of the most stringent acts in the world, and invites harsh punishment for possession of products derived from Indian wildlife. Therefore, correct identification of the species from remnants or derivatives of the species is an important task in Indian wildlife forensics.

Wildlife Forensics is a rapidly evolving field and recent advancements in this science have helped in developing better analytical tools for investigation. To take one example, Schreger lines are a major identifying feature of ivory. These lines can be observed in a cross-section of ivory. Identifying processed ivory and ivory objects becomes more challenging due to

the obliteration of Schreger lines. However, DNA marker technology has successfully contributed towards solving this issue. This technology has helped to strengthen wildlife enforcement and management of threatened species and biodiversity conservation in general. In 2005, I dealt with a pioneer case for the successful analysis of DNA from ivory idols in Centre for Cellular and Molecular Biology, Hyderabad, my previous organization.

Despite very strict wildlife protection laws in India, the poaching

rate of tigers *Panthera tigris* and leopards *Panthera pardus* for their body parts (which are used in traditional Chinese medicine and to make ornaments) is increasing in several parts of the country. The application of mitochondrial cytochrome-b gene-based species identification has helped in identification of forensic samples in wildlife offences. There are 10 different haplotypes of tigers in India, based on control region and coding regions of mtDNA, which can be used to trace the maternal lineage. In one case, the author and

S.K. GUPTA



Neckties made from snake skin fetch high prices in international markets

his colleagues were successful in providing scientific evidence that a seized claw was from the missing progeny of a particular tiger family in a zoological park.

About Wildlife Institute of India

Wildlife Institute of India (WII), an autonomous institute under the Ministry of Environment, Forest and Climate Change, Government of India, carries out research on various aspects of wildlife, such as Biodiversity, Endangered Species, Wildlife Policy, Wildlife Forensics, Wildlife Management, Spatial Modelling, Eco-Development, Habitat Ecology, and Climate Change. WII also plays an important role in providing technical support to state and central government departments of India on various wildlife related matters. One such support is its 'wildlife forensic report' to aid in the enforcement of the WLPA.

Role of Wildlife Forensic and Conservation Genetics Cell

The Wildlife Forensic and Conservation Genetics Cell (WFCGC) of WII undertakes research in the field of wildlife forensics, as well as issues related to

conservation genetics. The WFCGC receives reports on wildlife crime cases from across India, dealing with about 200 crime cases per year at present. Over a period of 30 years, it has received more than 3,500 cases. The majority of questions from enforcement agencies relate to the identification or confirmation of the species for due prosecution under the WLPA.

RECENT CASE STUDIES OF WFCGC Use of online portals for selling wildlife parts: a serious challenge

Belief in superstitions, with a strong, sometimes blind belief in astrology, is rampant in India. From ancient times, many animal species and their body parts have been used to cater to a broad range of mythical beliefs. These include the use of animal parts in religious rituals or black magic or occult practices. Continuous ruthless hunting and trapping of species from the wild to meet this and other purposes is causing serious threats to their populations. Many of these species have now been identified and listed under international and national protection and prohibition laws. Despite such protection, trafficking of



S.K. GUPTA

DNA marker technology has successfully contributed towards identifying processed ivory

their parts and derivatives continues. Traders use sophisticated techniques to hide shipments of prohibited material by misdeclarations and use of code words. They even resort to selling imitations.

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Unprotected by the Indian Wildlife Protection Act, scorpions of various species are boiled and sold as medicinal oil for various ailments

ABRAR AHMED



A live Green Vine Snake among the goods of a medicinal oil vendor advertising oil made from various herbs and snake fat



**Correct
identification
of the species
from remnants
or derivatives of
the species is an
important task
in Indian wildlife
forensics ...**

An article was published in the prominent Hindi newspaper *Amar Ujala* on April 19, 2017, regarding propagation of such an agenda. The

article described the divine use of a sacred plant root called 'Hatha Jodi' (see page 24) (read Abrar Ahmed's article: *Hornbill* (Jul-Sep. 2017): pp. 40–45). Several YouTube videos which are easily available on the internet describe the magical effects of 'Hatha Jodi'. Along with this, astrologers advise that one should possess this 'sacred plant root' to solve all one's problems. Because the so-called astrologers propagate the sale of Hatha Jodi, their followers try to obtain this so-called 'sacred plant root' from any available source; they place it in their home temple with a devout heart and worship it as if it were god's gift. However, if the same person were to come to know that the Hatha Jodi that they worship is actually the penis of a lizard, they would surely throw it out of their house. Unfortunately, by that time, they would already have committed a punishable offence under WLPA, for which the minimum imprisonment is three years. In this entire process, a person whose intention was never to

commit a crime is transformed into a criminal, induced by these quacks. It would be appropriate to caution potential buyers here that they themselves would be responsible for the consequences of violating the WLPA.

Recently we exposed, through scientific analysis, a hidden online trade in the hemipenes of monitor lizards *Varanus* spp. in the local markets as well as on an international scale. It was sold on common and widely reputed online portals, as well as in the local market, in a secret manner by masking its origin and declaring it as a plant root named 'Hatha Jodi' or 'Hatha Jodi' (Hindi: Hatha = arm, Jodi = a pair). 'Hatha Jodi' was claimed to be the root of *Martynia annua* which is also known as 'baghnakhi' or tiger claw, and which resembles a pair of human hands held in prayer.

The Wildlife Forensic and Conservation Genetics Cell (WFCGC) of WII, Dehradun, studied seven samples of Hatha Jodi from

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Wildlife crime can be in any form, for instance the Indian fashion industry still uses poached egret feathers which are protected by law

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Identifying fake and real musk pods is a challenge for enforcement agencies since a lot of trade these days is in fake wildlife items

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The musk pod collected by killing Musk Deer for traditional Chinese medicine and perfume industry has taken a toll on several Musk Deer populations in the Himalayan region

four leading online sellers for forensic research. The approximate price on the online portal was between Rs 400 and Rs 2,500 per piece. We examined these samples for their biological origin. The external features were compared with a reference description of the hemipenes of monitor lizards. They were further examined using DNA analysis. The morphological as well as DNA analysis confirmed that the products being sold on easily reachable global online marketing sites as 'Hatha Jodi', which were claimed to be plant roots, were actually the intromittent organ (hemipenes) of the Monitor Lizard or Goh *Varanus bengalensis*.

Based on records from over 3,500 cases studied by WFCGC, it was observed that illegal traders often pass off fake wildlife parts to make huge amounts of money. However, a recent study represented a contrary and interesting situation, where a wildlife part was sold as a herbal product at a surprisingly low price. The outcome of this recently published study has been an alarm call for wildlife conservationists and law enforcement agencies exposing large-scale killing of *Varanus* spp. in its habitat. In other cases, WFCGC has received skin, and raw and cooked meat of suspected monitor lizards. It is possible that, due to the masked biological origin, the online portal's administrator may not be aware that their publicity and marketing was being used for illicit trade. And before following the instructions of any 'spiritual worker' or 'astrologer' to buy such a product, people need to be aware of the facts, so that they are not trapped into committing an illegal act.

Science-based approach in routine wildlife management

In one case, a complete tusk of Asian elephant was found by the



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Mongia tribals also sell oil for curing joint pain derived by boiling Spiny-tailed Lizard. These reptiles are first captured, their spine bones fractured and boiled while they are still alive

forest department in a forest area in Uttarakhand. Later, the carcass of a male elephant with a missing tusk was found in the same area. In such a situation, it becomes essential to know whether the cause of death of the animal was unnatural (suspected poaching). Small pieces of the ivory from the carcass and from the earlier stored tusk were forwarded to WII to check if the lone tusk belonged to the male elephant carcass. Microsatellites are the best available markers for individual matching (and also for identifying parents, offspring, and close relatives in captive and wild populations), and we were successful in confirming the common identity/source of both tusks by analysing the ivory DNA using microsatellite loci.

Apart from active research in the field of wildlife forensics, WII also provides technical advice and training to scientists of neighbouring countries for the establishment of Wildlife Forensics support in these countries. Through a Gazette Notification of the Ministry of Home Affairs, Government of India, and by exercising the powers conferred

by clause (g), sub-section (4), Section 293 of the Code of Criminal Procedure, 1973 (2 of 1974), the Central Government has designated the Scientists of the WFCGC of WII as 'Government Scientific Experts' for legal purposes.



Sandeep Kumar Gupta

is a recognized wildlife forensic expert, currently associated with the Wildlife Institute of India, Dehradun, as Scientist E. His team works in the field of conservation genetics and forensics.

Tackling Wildlife Crime: TRAFFIC's Multi-pronged Strategy in India

DILPREET BEASLEY CHHABRA



COURTESY: TRAFFIC

TRAFFIC has launched various initiatives to help combat wildlife crime in India. For instance, TRAFFIC India's wildlife sniffer dog training programme has helped in several wildlife cases involving poaching, seizures and nabbing culprits

Tempted to buy that beautifully embroidered shahtoosh shawl or those intricately carved ivory bangles? Are vibrant and brightly coloured parakeets luring you to bring them home? Has your desperation for good luck or good health pushed you towards black magic and sorcery involving wildlife? Stop! Think twice. All wildlife on sale is not legal – you could be violating the law and putting the future of many wildlife species in danger.

Poaching and illegal trade in Indian wildlife ranges from charismatic species, such as the tiger, leopard, snow leopard, elephant, and rhino, to a number of lesser known wildlife species, such as pangolin, monitor lizard, turtles and tortoises, and many more. Today, wildlife crime has grown into an organized criminal activity with high profits and low risk of detection and this has taken a significant toll on some species of wildlife. According to various reports,

organized wildlife crime has grown substantially in recent years and ranks as the fourth largest global crime.

So why do people buy these products or keep wildlife species? The most widely accepted reason is that most of the consumers are oblivious of the illegality of the trade and the conservation implications of their choice. However, it would be naïve to believe that every consumer who indulges in wildlife trade is unaware of relevant wildlife policies and laws, and the related conservation issues. Many consumers are driven by selfish motives, due to various reasons, to indulge in the possession or consumption of wildlife and its derivatives. Wildlife traders may also falsely propagate myths about the miraculous benefits of consuming wildlife derivatives.

The consumption and demand patterns for wildlife products are intertwined with consumer behaviour, which makes it difficult to fully understand the ever-changing nature of wildlife crime. Therefore, organizations such as TRAFFIC are always working towards novel means and strategies to reach out to wildlife consumers. Studying consumer behaviour change, outreach and awareness campaigns, and initiatives to curb wildlife poaching and illegal wildlife trade is a priority for TRAFFIC in India. TRAFFIC strongly believes that if the demand for wildlife products reduce, so will the corollary poaching and illegal trade in wildlife.

TRAFFIC established itself in India with a mission to curb illegal wildlife trade, and also to ensure that the legal trade is at sustainable levels. TRAFFIC, a wildlife trade monitoring network, operating as a programme division of WWF-India in the country, launched various initiatives to bridge gaps in wildlife law enforcement,



Smuggling of tortoises from India to international wildlife markets such as Chatuchak in Bangkok is a problem that needs international support to combat



Studying consumer behaviour change, outreach and awareness campaigns, and initiatives to curb wildlife poaching and illegal wildlife trade is a priority for TRAFFIC in India ...

conducted specialized training to enhance the knowledge and skills of enforcement officials, initiated the wildlife sniffer dog programme, and conducted wildlife trade research to flag early trends and expose illegal wildlife trade. To complement and support these initiatives, TRAFFIC also launched various outreach and awareness campaigns to sensitize the masses about wildlife poaching, illegal wildlife trade, and conservation impacts. TRAFFIC has come a long way in the last decade, and is established as a specialist organization providing solutions to mitigate wildlife crime in India.

Some programmes of TRAFFIC in India

In 2007, TRAFFIC launched one of its most successful and longest-running campaign in India titled “Don’t Buy Trouble”, targeting illegal trade in marine products, ivory, shahtoosh shawls, reptile skin



Creative and informative posters are a primary tool in TRAFFIC's effort to raise awareness about poaching and illegal wildlife trade in India, aiming to bring a behaviour change amongst wildlife consumers

products, pangolin, rhino horn, and freshwater turtles. Through this initiative, a strong message was sent out to the consumers about illegal wildlife trade, warning them against indulging in this illicit activity. The message clearly conveyed that it is not just the poacher or illegal wildlife trader who is liable for punishment under India's wildlife laws, but also the consumer of protected wildlife species and their products. Since then, the content of the campaign has been revised and launched through various mediums such as hoardings at airports, railway stations, metro stations, highways, and schools and other educational institutions, tourist offices, and nature interpretation centres at various tiger reserves and wildlife sanctuaries. The response to

this has been overwhelming, with more agencies coming forward to partner and support the cause.

Many other important initiatives were launched by TRAFFIC towards raising awareness on an array of wildlife species such as Asian big cats – Tiger, Leopard, Clouded Leopard, and Snow Leopard – and lesser known wildlife species such as turtles, tortoises, pangolin, owls, and mongooses.

TRAFFIC launched a comprehensive newsletter on wildlife trade, titled TRAFFIC Post, in 2007, probably India's only dedicated newsletter on trafficking today. The newsletter has been an important platform for the organization to highlight the early trends of poaching and wildlife



Creative and informative posters are a primary tool in TRAFFIC's effort to raise awareness about illegal wildlife trade in India ...



BECAUSE OUR NATIONAL ANIMAL DESERVES ITS NATION'S SUPPORT

WANTED ALIVE!
HELP SAVE OUR BIG CATS

Tigers are protected under the Wildlife Protection Act, 1972. Hunting of or trade in them or their body parts is a criminal offence with severe penalties and up to 7 years in jail.

Photo credit: Shashikumar / TRAFFIC Centre
Caption: Shashikumar
Design: Creative Design Pvt. Ltd.
Published with support from TRAFFIC-UK.

Tiger, the guardian spirit of the jungle and the national animal of India, is facing the gravest threat to its survival today from illegal trade in its body parts. Tigers are hunted for their skins, bones and other body parts that are smuggled to East and Southeast Asia for use in traditional medicines, as trophies, in clothing and as decorative items.

To know more and how you can help, log on to <http://www.trafficindia.org> or trafficindia@traffic.org.
TRAFFIC India, 99/91, 10th Floor, 170-B, Laxmi Nagar, New Delhi - 110 002, India
Tel: +91 11 4321 4789, 4321 4321; Fax: +91 11 4321 4789
Email: india@traffic.org, www.traffic.org

TRAFFIC
the wildlife trade monitoring network

is a joint programme of
WWF IUCN

TRAFFIC carries out research and provides analysis, support and encouragement to efforts aimed to ensure that wildlife trade is not a threat to the conservation of nature in India. TRAFFIC operates as a programme division of WWF India.

COURTESY: TRAFFIC

TRAFFIC India posters at various public places such as airports help create awareness among consumers to end the demand for contraband wildlife derivatives

trade in many species. It is being published successfully for a decade, highlighting important aspects of wildlife poaching, illegal wildlife trade trends, sustainable wildlife trade, related laws and policies, international news on wildlife trade, CITES updates, and more. TRAFFIC posters on birds, turtles, and tortoises have been particularly useful to enforcement agencies in identifying wildlife species in trade and for taking necessary enforcement actions. These posters are also being used as educational tools in schools, colleges, and enforcement training programmes.

TRAFFIC's *Don't Buy Trouble*, a 5 minute film presentation providing an overview of illegal wildlife trade in India, has won many accolades, and its latest film on wildlife sniffer dogs

is helping to disseminate awareness of the important role of these animals in curbing illegal wildlife trade. Recently, TRAFFIC launched a dedicated e-newsletter on its wildlife sniffer dog programme in India titled SUPER SNIFFER digest, bringing to the forefront the contribution of these dogs in combating wildlife crime in India.

TRAFFIC from time to time has also reached out to local communities who play a crucial role in curbing wildlife crime around forest areas.



Dilpreet Beasley Chhabra

is currently working with TRAFFIC as Senior Manager (Communications), in the India office. She has been with TRAFFIC for over a decade now spearheading various communication and outreach initiatives for the organization.

Keeping Wildlife Wild

DILPREET BEASLEY CHHABRA



ABRAR AHMED

Ranking high on the cute scale, Loris has been in high demand in illegal pet trade worldwide

Parakeets, munias, snakes, turtles, tortoises, lizards, geckos, macaques, and seahorses – these words may conjure up thoughts of jungles, clear blue skies or endless seas—places where such animals naturally belong. But this may not be the fate of all wildlife, especially those that end up as illegal pets. So why keep them as pets? After all wild animals belong in the wild.

Illegal pet trade in protected wildlife species has grown over the

years and threatens the future of many species. With the globalized market economy encouraging people to indulge in expensive hobbies and consumerism, the burgeoning pet market has become symbolic of a new way of life and social status for some. Most native animals in Indian markets are sourced from the wild. They are caught in forests by poachers, to be smuggled to markets as part of the illegal pet trade. Nets, snares, and traps are commonly used

L: Red Sand Boas are traded in illegal pet trade markets mainly due to the superstitious beliefs attached to them

R: Indian Star Tortoise is reported to be the most trafficked tortoise worldwide. Found in India, these are collected from the wild for illegal pet trade markets in India and other countries



in poaching, and the targets often include young wild animals and birds so they can be easily transported, using various forms of concealment to avoid detection by authorities.

Stuffed into suitcases, containers, and cages, or as recently documented, even in plastic bottles, these animals are often bound and gagged, and even sedated. Many do not survive the journey and even if rescued, very few are fit to return to the wild. In the case of birds, poachers often clip their wings to make them unable to fly. This is seen in market places, where such helpless birds are perched on a stick and openly offered for sale by hawkers. For every bird that reaches the marketplace, several die en route.

Which animals would you find in the illegal pet trade in India?

Numerous species of animals are captured from the wild for sale in the illegal pet trade markets. Some of the Indian species most commonly traded illegally are:

- Birds such as parakeets, munias, hill mynahs, bulbuls, hawks, quails, and leafbirds
- Reptiles such as Tokay Gecko, Red Sand Boa, Indian Star Tortoise, Spotted Pond Turtle, Indian Roof Turtle, and Indian Tent Turtle

- Mammals such as langurs and Rhesus Macaque

What does the law say about this trade?

For most of India's native wild species of animals, trade is prohibited under the Wildlife (Protection) Act, 1972 for the purpose of keeping it as a pet. Any form of exploitation – poaching or trade – is prohibited under this Act and punishable by fines or imprisonment or both, depending on the nature of the offence and the species concerned.

There are restrictions on the import of wild animal species from other countries. India, as a signatory to the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES), regulates the import and export of wild animals. Only animal species permitted under CITES for trade can be brought into the country for pet trade – provided they have the statutory clearances and documentation. In the absence of such permissions, trade in these species is considered illegal.

Is illegal pet trade in native wildlife species a conservation threat?

Yes, illegal pet trade is a serious threat to species conservation as it takes a heavy toll on many

wildlife species, especially birds. Furthermore, indiscriminate hunting and capturing of species can lead to a skewed gender ratio, further restricting successful reproduction of some species in the wild.

Many traders also claim falsely that their animals are sourced from captive breeding facilities, while they are actually sourced from the wild.



Possession of a protected wild animal or trade in them is prohibited under India's Wildlife (Protection) Act, 1972 and can lead to imprisonment, fine, or both ...



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Red Avadavat males are highly preferred as cage birds especially in northern India where buyers may keep four to five dozen in a cage



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Of the 12 native species of parakeets, eight are regularly found being illegally traded in India



ABRAR AHMED

Of late, Giant Squirrel has been found in the illegal pet trade in India though it is a protected wildlife species under WLPA 1972

This is also a serious issue since wild animals often carry zoonotic diseases which could be potentially transmitted to humans and other animals.

Is illegal pet trade in non-native wildlife species also a threat to conservation?

Yes, illegal pet trade in non-native or “exotic” wildlife species can have damaging effects on conservation efforts in other countries. India is a growing consumer of non-native pet species of birds such as cockatoos, conures and other parrots, and macaws; mammals including chimpanzees, marmosets, sugar gliders, and wallabies; and reptiles such as pythons, bearded dragons, and green iguanas.

While many non-native species are bred in captivity for the pet trade, some are also sourced from the wild. The animals that come into the country are often transported under poor conditions, leading to high mortality in transit. Where animals are captured from the wild, the capture process for mammals could include the killing of a parent (usually the mother) in order to take the young. Capture of more females than males or vice versa could skew gender ratios, further threatening some species. Over-harvesting and loss of animals from the wild can have disastrous impacts on ecosystems, while release of non-native species can cause equally serious ecological consequences. Although many pet species do not survive in non-native habitats, those that do may prey on native plants and animals, or compete with them for resources, putting them under severe pressure.

Although non-native species are not protected under India’s Wildlife (Protection) Act, 1972, their trade is regulated through India’s EXIM policy and the Customs Act 1962, and further regulated through CITES. To circumvent this, unscrupulous traders



Despite being recently listed in Appendix I of CITES, the Grey Parrot has a huge demand worldwide

may lure consumers into buying wildlife species by forging documents. Frequently, Indian species are dyed or tinted to pass them off as non-native species, so that the trader may escape local laws.

How is illegal pet trade a health hazard?

Many animals, whether caught in the wild or bred in captivity, can pose a significant threat by spreading of



Alexandrine Parakeet is a favoured pet in India, despite being listed as a Near Threatened species by IUCN

communicable diseases if the quarantine period is not conducted properly or is inadequate. For example, 80–90% of all macaques are infected with Herpes B virus, which is shed particularly during periods of stress and could be fatal to humans. The H5N1 strain of avian influenza (bird flu) has been a cause of global concern not just for birds but also for humans. Other risks include psittacosis, primarily transmitted by inhalation of contaminated faecal dust, which can be spread on contaminated clothing between people, as well as from birds to humans.

What should you do?

Do not buy, keep, or gift an endangered and/or protected wildlife species as this could have a detrimental impact on its conservation in the wild. Moreover, you are breaking the law and inviting penalties. Remember, ignorance of the law is no excuse.

Educate yourself and others about the menace of wildlife crime. You can also report to the nearest forest department, Wildlife Crime Control Bureau office, or police station.

The future of wildlife species in the illegal pet trade is in your hands. If the buying stops, the demand that fuels the illegal supply will be curbed.



Domestic trade in domesticated exotic species such as Sugar Glider within India is not banned

Acknowledgements

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Dilpreet Beasley Chhabra

is currently working with TRAFFIC as Senior Manager (Communications), in the India office. She has been with TRAFFIC for over a decade now spearheading various communication and outreach initiatives for the organization.

Forensics in Wildlife Crime Investigation

C. SAMYUKTA



WORLD SKILLS, UK. CC BY 2.0

Forensic scientists now play a crucial role in wildlife crime investigation

Wildlife crime is the great equalizer of the 21st century – it has threatened biodiversity, economies, lives and livelihoods, in equal measure in both developing and developed nations of the world. It has changed facets and scale in a manner befitting a rapidly digitized world that has witnessed the blurring of personal and materialistic boundaries. Wildlife crime has reached far beyond feeding the nutritional and ritualistic needs of

communities living near forest areas, and has assumed the role of feeding the gargantuan greed and decadent lifestyles of consumers across the remotest parts of the globe.

It is then little wonder that wildlife crime has now been pegged as the fourth largest organized crime in the world. It has been revealed to have impermeable supply chain management systems that can put many a multinational business to shame. Several studies report that the

proceeds from wildlife crime finance other organized crimes like arms dealing, creating one of the most detrimental vicious cycles.

The jury is out

While wildlife crime grows exponentially, enforcement agencies around the world are left breathless trying to wage a war against it. Effective investigation of wildlife crime continues to pose an insurmountable hurdle for all nations of the world. Judges and lawyers dealing with wildlife cases continue to grapple with shallow understanding of wildlife crime, the evidences against it, and the laws applicable to it.

Customers sitting in far off destinations like Russia, China, and Japan have little regard for how their demand for exotic plants and animals, and their parts, be it to treat

the body, the senses, or a misplaced sense of prosperity, is destroying natural heritage and threatening the national security of nations that serve as source and transit routes for international wildlife trade. The individuals, communities, and mafia involved in procurement and trade in wildlife have little fear of any possible legal ramifications, which have become a mere urban legend. The few criminals that do get caught and prosecuted are, at best, let off with a heavy slap on the wrist. The majority of them are so low down in the chain that it has no effect on the burgeoning trade.

Several nations have implemented stricter laws, put in place entire trade bans, and signed treaties with neighbouring nations as well as international organizations such as Interpol in an effort to combat

the demon of wildlife crime. The corporate world has, in recent years, emerged as an ally with many a pledge of time, intellect, and money to this battle. These collective efforts have, thus far, only succeeded in bringing to flickering light the fact that wildlife crime is a serious threat and that traditional crime fighting tools are crippled against it.

There does, however, exist a light at the end of this seemingly bleak tunnel. Scientists working in forensics laboratories are donning their white coats, purple gloves, and using state-of-the-art tools to join the global fight against wildlife crime.

Beyond the CSI effect

Forensics, originating from the Latin word *forensis* that means “in open court”, encompasses numerous disciplines — art, commerce,

Products made from protected wildlife, such as these nautilus shell ornaments, are illegally traded across physical and online markets



Investigators are often handicapped by the inability to accurately identify the species of origin for the wildlife articles they seize from criminals



SOURCE: CREATIVE COMMONS



PRASENJEET NAVGIRE

Forensic scientists have developed tools to analyse a variety of wild animal parts



C. SAMYUKTA

Forensic analysis is highly dependent on the quality of evidence collected



C. SAMYUKTA

Animal parts can provide a host of information when forensically analysed

psychology, and science – that can be used to investigate a criminal matter. Forensic science governs any and all sciences that can be applied to such investigations to examine evidences, create linkages, and to reveal yet unknown information.

Forensic science has in recent history helped nab many blue and white collar criminals through the creative application of scientific principles and development of new scientific methodologies. Today, forensic scientists are putting their expertise to use in the investigation of wildlife crime – be it hunting or poaching, illegal transportation, or trade, and illicit use or consumption of protected wildlife and their derivatives.

Forensic scientists around the world are guided by a golden rule, namely Locard's Exchange Principle, which holds that 'every contact leaves a trace'. In other words, the perpetrator of a crime will bring a sign or trace of himself into the crime scene and leave with something from it, and such traces can be used as evidence. Items of evidence collected by authorized officers from wildlife crime scenes and contraband intercepted by agencies such as Customs are entrusted to the hands

of forensic scientists to scrutinise them for traces of human activity and protected animal parts. Such detailed analysis has the potential to provide a large body of proof "beyond reasonable doubt" that courts across the world rely on to arrive at decisions on criminal matters.

Unfortunately, owing to the inaccurate depiction and dramatization of forensic scientists by cinema and media (commonly referred to as the CSI Effect), they are expected to be part-scientists and part-magicians. They are expected to conduct post mortems which, contrary to popular belief, they are neither trained nor qualified to perform. They are expected to provide reports in unrealistic timelines and help find clues that are not visible to the naked eye, sometimes even to the trained investigative eye. While the latter may still be possible with specific kinds of evidences, forensic scientists can largely work only within the purview of the law. They can only provide answers to questions that investigative agencies pose, and in countries such as India where it is not the norm for a forensic scientist to visit the crime scene, their work is limited by the quality of evidence collected by investigators.

Truth is in the details

Enforcement agencies can effectively implement wildlife law only when they are able to identify wildlife and their derivatives down to the species level. In addition, the reliable identification of wildlife criminals is of paramount importance but poses a constant challenge, given the complex nature of wildlife crime itself. So far, evidence on these matters has been largely garnered through wildlife expert testimony and eyewitness testimony, respectively. Both of these have failed to be admitted as sufficient proof by courts on several occasions. As a result, enforcement agencies now increasingly turn to forensic scientists to provide reliable proof for the identification of wildlife contraband and wildlife criminals.

Unless already ascertained by a trained wildlife investigator, forensic scientists may be required to begin their examination by looking for tell-tale signs to confirm whether a particular wildlife article is genuine or fake – a problem frequently encountered in illegal wildlife trade. The unique pattern of crossing lines in genuine elephant ivory (known as the Schreger Pattern), the characteristic shape of a leopard's canines, or the characteristic contouring patterns of tiger stripes are

common examples of morphological evidence that aid forensic scientists in this decision making. If these do not lead them anywhere, or the evidences are not in a form that allows such identification, forensic scientists have at their disposal a whole other arsenal of tools.

Forensic DNA typing allows scientists to exploit unique genetic sequences in DNA to identify which wild animal or plant species a particular product came from, or to link small amounts of biological evidences such as sweat, hair, or saliva to the individual criminal that left them at the crime scene. Forensic trichology enables scientists to examine the unique structures of animal hair at microscopic level to identify which species a confiscated skin or fur belongs to. This is critical when DNA evidence in such wildlife artefacts cannot be harnessed due to the effects of chemical processing. Traces of physical evidence such

as glass, fibres, paint, etc. left by criminals at crime scenes are also exploited by forensic scientists to link suspects to the scene and the crime in question.

When parts of an animal that is suspected to have been poisoned are subjected to forensic toxicological techniques, scientists are able to identify the nature and quantity of the poison administered. Such information enables officers to specifically look for and retrieve further evidences such as poison bottles and poison-stained clothes from suspects. When articles from butcher shops and restaurants suspected of selling wild animal meat are sent to forensic scientists, techniques of forensic serology help them identify the species being processed and/or served. When culprits are yet unknown, forensic scientists can extract serological evidence from items such as cigarette butts and clothing left at crime scenes. This



Forensic scientists can today retrieve fingerprints from eggshells, ivory, and feathers ...

provides corroborative leads required by investigators to sift through large groups of people to identify possible suspects. Similarly, forensic analysis of impression evidences such as footwear impressions and tyre tread



C. SAMYUKTA

Forensic analysis can help establish or rule out human involvement in suspected cases of animal death



ABRAH AHMED

Carapaces from poached turtles can be linked to suspects and their tools using forensic DNA analysis

marks can be used by scientists to generate investigative leads that help narrow down searches for suspects.

Forensic fingerprint analysis when applied to wildlife crime scenes allows scientists to prove that a suspect handled the gun, the knife, the trap, the vehicle, or any object suspected to have been used in the commission of the offence in question. Forensic scientists can today retrieve fingerprints even from egg shells, ivory and feathers; enabling investigators to directly link criminals to these wild animal parts. In cases of hunting, forensic ballistic analysis of firearms and gunshot residue recovered from the person of the suspect, as well as of the bullets recovered from the dead animal,



Forensic science at work for wildlife crime investigation is not always a cake walk ...

allows scientists to link the suspect to the crime scene and to prove his criminal activity. Even older forensic techniques, such as handwriting and document analysis, are finding a place in wildlife crime investigation, especially given the large volume of falsified import-export documents that allow illegal international trade of wildlife to carry on unabated.

The methods employed for trading wildlife products have undergone a sea change. Lately, social media and smartphones have aided uncontrolled access to wildlife products, and consequently, have catalysed the prolific growth of illegal wildlife trade. In this scenario, the astute use of Cyber Forensics enables forensic scientists to provide enforcement agencies with dependable digital evidence against wildlife criminals, even when they operate remotely.

When all other investigative processes lead to a dead end, enforcement agencies have been known to request forensic labs to run forensic psychological tests, such as narco analysis and brain mapping, on wildlife criminals. While these tests are still largely open to question and can only be administered if consent is given by the suspect, they do have the potential to help elicit hitherto 'hidden' information about the crime. In a handful of cases, investigators have also cleverly employed forensic accounting tools to uncover 'black money' trails typically associated with illegal wildlife trade and used such evidence to book wildlife criminals under serious offences of money laundering and corruption.

Absence of evidence is not evidence of absence

It is believed that evidence never lies. The forensic scientist of today has many a technique tucked up his lab coat sleeve to make evidences from wildlife crimes 'talk'. However,



SOURCED: CREATIVE COMMONS



SOURCED: CREATIVE COMMONS

Forensic scientists can use clues left at or near a crime scene, like tyre marks (above) and footwear prints (below), to narrow down suspects



Fingerprint databases are invaluable for the examination of fingerprint evidence as they aid positive identification of suspects

forensic science at work for wildlife crime investigation is not always a cake walk.

Evidences such as DNA, footwear impressions and tyre tread marks are often rendered unreliable due to the effect of the elements, or the constant disturbances typically seen in outdoor crime scenes. Investigators are frequently under-equipped for the proper collection of evidences. Consequently, evidences that are sent to forensic labs tend to be too far compromised to allow analysis. Furthermore, methodologies being employed for forensic analysis of wildlife evidence have not yet undergone the same rigorous levels of standardization as their counterparts in human evidence analysis.

Most nations do not yet have the legal sanction to create databases for human-related personal information, such as DNA and fingerprints, which are required to statistically validate findings from forensics analyses. The few databases that exist in nations such as India can be used to enforce cases of cross-border wildlife trade, but coordination between nations is lacking on this front. This hinders

the seamless linking of criminals to the truly worldwide web of wildlife crime. On the bright side, with open source wildlife DNA databases, such as those put together by scientists at the International Barcode for Life Project (iBOL), the reliability of DNA sequencing of wildlife evidence has increased considerably. However, exhaustive databases for other wildlife articles such as hair, fur, bones, feathers, etc. are scarce.

The famous journalist Joseph Pulitzer once said, "There is not a crime, there is not a dodge, there is not a trick, there is not a swindle, there is not a vice which does not live by secrecy." The role of today's forensic scientist is increasingly important in the efforts being made around the world to uncover the secrets of wildlife crime and its perpetrators. Thus, forensic laboratories must be recognized as important stakeholders, and governments must invest human and financial resources in the development of dedicated, high throughput wildlife forensic laboratories. Judges, lawyers, and enforcement officers must be trained on the pertinent role and use of

forensic wildlife evidence. Intergovernmental agencies such as SAWEN (South Asia Wildlife Enforcement Network) should be tasked with coordinating the seamless sharing of forensic intelligence and databases between neighbouring nations targeted by the same nexus of wildlife criminals. Financial institutions and specialized units such as the state-level Anti-Corruption Bureaus must be roped in on investigations on a regular basis to bolster scientific evidence of wildlife crime with financial evidence. On their part, forensic scientists must dedicate time for research, development, and standardization of robust tools for rapid and real-time identification of wildlife contraband when it is intercepted by enforcement agencies.

In conclusion, the time has come to truly harness the power of forensics in our common intention and efforts to kill wildlife crime in its tracks. Failing to do so would only serve as undeniable proof of our inability to put our efforts against wildlife crime on a war footing.



C. Samyukta

is a post-graduate in Forensic Science. She is currently putting her decade-long experience in training to use against wildlife crime with the Wildlife Conservation Trust, India.

Endnote on Wildlife Crime

JOSE LOUIES



WILDLIFE TRUST OF INDIA

Armed soldier guarding a seized consignment of African ivory at Colombo, Sri Lanka

Today, sitting in a wildlife corridor area between Bandhavgarh and Sanjay Dubri Tiger Reserves, discussing wildlife crime with frontline staff and following up developments in the case of Salman Khan almost 20 years after the incident, the buck finally stopped with a conviction. The Hon. Court pronounced Salman Khan guilty and acquitted him subsequently.

Wildlife crime has undergone an evolutionary process in the past few

decades. The prohibition of hunting under the Wildlife (Protection) Act, 1972 (WLP Act) was a brave and far reaching decision which converted shikar, a much enjoyed sport, into a criminal offence. Though the Act was promulgated in 1972, it took a few more years to be implemented in its true sense across the country.

India has a long and rich history of hunting, with our maharajas and other rulers religiously undertaking shikar trips into the forests to kill 'dangerous'

animals, such as tigers, leopards, and elephants, to save villagers from the attacks of these animals. Elephants were captured as they were one of the best forms of attack and defence for kings and emperors during war. Large cat skins were trophies that decorated the walls of palaces. They were also used by gurus to sit on and preach. Europeans, especially the British, were happy to have their officers going for regular hunting trips. During each trip they bagged wildlife, some of which went to the dining tables, and the rest into the expert hands of the Mysore taxidermists who turned skins into marvellous trophies with near life perfection and expressions. The first half of the 20th century was not only the years of struggle for independence of the people of the country, but a struggle for survival for wildlife. However, the British were not only hunters. There were naturalists like Jim Corbett and Kenneth Anderson who were not just game hunters, but excellent naturalists who observed and wrote about wildlife and their behaviour, connecting the common man with the secret lives of the beasts of our jungles.

The green revolution in the 1960s was again bad news for



WILDLIFE TRUST OF INDIA

Suspects with leopard skins in Uttarakhand

wildlife in many parts of India, as a country struggling to feed its hungry population cut down vast forests to convert the land to farming, and wherever wild animals such as wild boar, elephants, bears, and tigers were a threat to farmers, they were shot to guard crops and farmlands.

Finally, hunting came to an end legally in 1972, and in the following years, hunting of wildlife became a serious offence, with punishments going stringent while the Act was

amended to ensure that loopholes were plugged. Even today, the process is ongoing and fine tweaks are applied to ensure that the WLP (1972) remains one of the strongest wildlife conservation acts in the world.

But the Act alone has never been enough to stop hunters, traffickers, and traders, as the profits in wildlife crime have been getting higher and higher. India, as a source country for tiger skin, bones, ivory, musk pod, and bear bile, and live animals such as tortoises and turtles, and hill mynas, started witnessing established trade gangs across country. Sansar Chand's name was notoriously associated with wildlife crime in the 1990s and 2000s across the country, as he virtually controlled the tiger products market, where hunting communities like the Bawarias and Pardhis hunted down whole generations of animals and sold them to this wildlife crime kingpin. Sansar Chand continued his undisputed rule until he was finally sentenced to jail in 2005, where he died in captivity on March 19, 2014. At the southern end, Veerappan finally got gunned down on October 18, 2004



WILDLIFE TRUST OF INDIA

Fake and real: Fake tiger and leopard skin and a pair of elephant tusks



Fatal faith: Male monitor lizard's sexual organ is removed and sold as Hatha Jodi



Postmortem examination of a poached Indian Rhino at Kaziranga National Park

by the Special Task Force, and left all of the country to imagine how many elephants he had hunted down.

Wildlife crime in India has evolved a lot from the days of Veerappan and Sansar Chand. The new age wildlife criminals are tech savy – they use smart phones, and internet to facilitate trade. India is now one of the major destinations for wildlife goods, where the import of exotic animals is as rampant as the demand. More profit is made from trade in endangered fishes, reptiles, and small mammals.

The challenge in wildlife crime management today is more complicated than in the past. The trade has metamorphosed into a highly organized and technical business, where traditional hunters have been replaced by new age wildlife criminals, techno-savvy youngsters who know the letter of the law, and use smart phones and the internet to facilitate trade.

The trade in live animals for the illegal pet industry has reached new heights and the species that are traded even cover deadly venomous snakes

and scorpions. Recently, a vehicle was stopped by the police at the Meghalaya-Assam border for a routine check-up, which resulted in busting a racket in smuggling exotic wildlife. The most shocking find was the presence of Gabon Pit Viper (and scorpions) in the consignment. This viper is one of



India is now one of the major destinations for wildlife goods, where the import of exotic animals is as rampant as the demand ...



It's ironical that the elephant is both venerated as a god and poached by man for ivory

the deadliest venomous snakes in the world, and it was surprising to learn that in India too, it is in demand as a pet. Considering the fact that only a few such traffickers get caught, it is highly possible that a number of such venomous snakes and scorpions are

in the possession of pet owners and breeders across India. The biggest shock came later, when we spoke to an insider in the pet industry: “Snakes, scorpions, and lizards are the latest trend among youngsters as they are easy to maintain, do not need a lot of care and the space requirements are less. Also, they can show off that they live a dangerous life by keeping such deadly pets. We come across specific demands for vipers and even black mamba by these buyers, and they are ready to pay any amount for these exclusive exotics. When there is a demand, you will always find a supplier who will find a way to reach the goods to you.”

The market now functions on social networking sites, where buyers, sellers, and middlemen meet to fix deals. It is very easy here and anonymity can be maintained with a fake profile. We sat for weeks analysing the social network links of known suspects. It was shocking to see how easy it is nowadays to trade in wildlife products. All the major players are well informed about the provisions of the laws and the loopholes. The real problem is that there are established networks, and there is no way we can monitor them, as many of them operate strictly on social networking sites, email, and instant messenger services.

Then there are other live animals which are finding buyers in the international markets, and many of them are not protected under Indian laws. A regular fish exporter told us that they export many endemic fishes to the international market without any problem, as the species are not listed in CITES or in WLP, so there are no legal issues in exporting them. However, many of these species are

Deer skins are a by-product of local bush meat trade in many forest areas



WILDLIFE TRUST OF INDIA

Up in flames: Recovered animal skins are officially burnt to prevent illegal sale or use



WILDLIFE TRUST OF INDIA

listed as Endangered in the IUCN Red List.

Our Wildlife Protection Act is one of the finest legislations in the world. The punishments are harsh, and the burden of proof rests on the accused. But the implementation of the Act is the weak point. Frontline Forest Department staff are usually not well versed in the provisions of the Act, and in general, their documentation of cases is not strong enough to ensure conviction. Often, the cases fail because of the poor quality of documentation, evidence collection, and procedural errors. To ensure that our frontline forest staff are well trained to detect, document, and present cases in court to ensure conviction, is the need of the hour.



Jose Louies

is Chief of Wildlife Crime Control Division, Wildlife Trust of India. He has 12 years experience in Wildlife Crime Control and Capacity Building training of enforcement officials across India.

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