TRAFFIC Post

TRAFFIC’s newsletter on wildlife trade in India was started in September 2007 with a primary objective to create awareness about poaching and illegal wildlife trade.

Illegal wildlife trade is reportedly the fourth largest global illegal trade after narcotics, counterfeiting and human trafficking. It has evolved into an organized activity threatening the future of many wildlife species.

TRAFFIC Post was born out of the need to reach out to various stakeholders including decision makers, enforcement officials, judiciary and consumers about the extent of illegal wildlife trade in India and the damaging effect it could be having on the endangered flora and fauna.

Since its inception, TRAFFIC Post has highlighted pressing issues related to illegal wildlife trade in India and globally, flagged early trends, and illuminated wildlife policies and laws. It has also focused on the status of legal trade in various medicinal plant and timber species that need sustainable management for ensuring ecological and economic success.

TRAFFIC Post comes out three times in the year and is available both online and in print. You can subscribe to it by writing to trafficind@wwfindia.net

All issues of TRAFFIC Post can be viewed at www.trafficindia.org; www.traffic.org

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Dear Readers

With a long coastline extending for more than 8,118 km including islands, India has a vast interface with marine wildlife and marine products. With more than 150 species of sharks, 3,400 species of mollusc, 2,443 species of marine fishes, 200 species of sea cucumber and 206 species of coral, India is bestowed with a very rich marine biodiversity. To add to this there are at least four million fisherfolks who are also dependent on these marine resources for their livelihoods and for fulfilling their basic food requirements.

However, some of these resources are illegally exploited: recent seizures include more than 8,000 kg of shark fins near Mumbai, hundreds of kilogrammes of seahorses and sea cucumbers from all across the country, and huge volumes of sea fans and corals seized often hundreds of kilometres away from the coast. Incidences of large seizures of marine products far from the coast—such as seahorses near the Indo-China border in Sikkim or Mobula ray gills from Moreh (Manipur) on the Indo-Myanmar border—are strongly indicative of the involvement of organised wildlife criminals. A visit to almost any curio shop in a coastal tourist destination is enough to reveal the level of extraction of seashells and corals, many of them prohibited for sale under the Wildlife (Protection) Act, 1972. Illegal and unsustainable extraction of marine resources is a concern for biodiversity conservation and also harmful for the livelihood sustainability of millions of people who are dependent on our oceans.

Problems concerning illegal extraction of marine products occur at every level, beginning with a basic lack of awareness about marine species and the issues involved—both among the general public and enforcement agencies. Enforcement agencies entrusted with monitoring of marine products in trade are thinly stretched, while legislation concerning marine wildlife diversity is sometimes weak, poorly implemented, or there are gaps with its harmonisation with international regulations such as the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES), while enforcement staff often have limited capabilities in recognising products of marine origin.

To begin to address these shortcomings, we decided to dedicate the present issue of the TRAFFIC Post to illegal trade in marine wildlife as part of our efforts to highlight this hugely important but little discussed issue.

This Issue of the newsletter also gives an update on various programmes undertaken by TRAFFIC in recent months in India, ranging from capacity building of forest staff from Nagaland to Tamil Nadu, updating
publications under the “Don't Buy Trouble” campaign, to an advisory on the illegal owl trade.

Two highlights of our work in recent months have been the organisation of “enforcement co-ordination meetings” for relevant agencies and the continuing roll out of our Sniffer Dog Programme.

For the first of these, TRAFFIC helped bring multiple enforcement agencies together to ensure coordinated action against wildlife crime. One such meeting targeting illegal wildlife trade across the Indo-China border took place in North India, with support from Indo-Tibet Border Police (ITBP), the paramilitary organisation entrusted with peace time border security. Representatives from ITBP, the State Forest Department, scientific institutions such as the Wildlife Institute of India and other enforcement agencies came together to discuss and build strategies for combating illegal wildlife trade. A similar meeting took place in the coastal city of Mumbai and focused on illegal marine trade in coastal areas and through seaports. This meeting, in collaboration with the Mangrove Cell of Maharashtra Forest Department, was attended by representatives from the police, customs, Directorate of Revenue Intelligence, Port Authorities, Railway Police, and Wildlife Crime Control Bureau.

Our wildlife sniffer dog programme also entered a new phase with the passing out of the seventh batch of dogs and their handlers. The graduation ceremony was witnessed by Ms Yami Gautam, a renowned film actress, who expressed her keen interest in supporting TRAFFIC’s efforts to combat illegal wildlife trade in India and agreed to become brand ambassador of our Super Sniffer programme—a perfect amalgamation of her love for dogs and her concern for vanishing biodiversity across the globe. We hope that Yami’s active involvement in the programme will help to spread awareness about the dangers from wildlife crime to a wider audience.

Happy Reading!

Dr Saket Badola, IFS
Head- TRAFFIC, India Office
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Well-known Indian actress Yami Gautam was announced as the Brand Ambassador for TRAFFIC and WWF-India’s Super Sniffer programme. Yami attended the graduation ceremony of the seventh batch of 10 wildlife sniffer dog squads at the National Training Centre for Dog (NTCD), BSF Academy, Gwalior, on 16th December 2018 to pledge her support.

The new batch of 10 dogs and their handlers will now join their counterparts deployed across the country, taking the total strength of TRAFFIC’s wildlife sniffer dog squads to 66. Yami met the dog squads belonging to the Forest Departments of Telangana, Maharashtra, Uttarakhand, West Bengal, Tamil Nadu, Madhya Pradesh, Himachal Pradesh and Kempegowda International Airport, Bengaluru during the ceremony.

Illegal wildlife trade is the fourth largest organised criminal activity globally, threatening the survival of many species the world over. India, as a major biodiversity hotspot, has been the target of wildlife poachers and smugglers. Combating wildlife crime is therefore urgent and crucial to the conservation of the natural world.

TRAFFIC with support from WWF-India launched the Super Sniffer programme in India to help combat illegal wildlife trade in 2008. The initiative helps raise and train wildlife sniffer dog squads to strengthen anti-poaching and anti-trafficking measures of the Forest Departments and other enforcement agencies concerned with wildlife protection. The seventh batch of wildlife sniffer dogs began their nine-month training programme in April 2018 at the NTCD as 6–9 month old puppies, following a rigorous training schedule before their passing out parade as highly-skilled wildlife sniffer dog squads.

Yami Gautam said, "Illegal wildlife trade is increasing by the day, threatening the existence of our wildlife and the rich biodiversity of India. For me, these heroic dogs are not just ‘man’s best friends’, but also nature’s best friends! During the ceremony I have heard some heart-warming stories of their bravery and I am proud to be able to help and support their cause."

Dr Saket Badola, IFS, Head, of TRAFFIC’s India office said, "Illegal wildlife trade and trafficking is a transnational and organised criminal activity, threatening the future of our wild resources. Tigers, leopards, elephants, pangolins, birds, timber such as red sanders, orchids, turtles and tortoises and many other endangered wildlife are targeted for this illicit trade. Super Sniffers have proven to be the game changers, acting with tremendous skill and courage to protect wildlife. Yami’s support to the Super Sniffer programme will help us spread awareness about the issue of wildlife trafficking and poaching. It will also help us strengthen the work that the Super Sniffers and their handlers are doing to protect the wildlife of this country."

Dr G.S Nag, CVO, Officer Commanding, NTCD said, “This is the third batch of wildlife sniffer dogs that was trained at NTCD under TRAFFIC’s programme and we are happy to have partnered for this important cause."
Support of well-known personalities like Yami Gautam will help bring visibility and acknowledgement to the efforts of wildlife sniffer dogs in the field of wildlife protection in India.”

Super Sniffers have undertaken at least 250 wildlife seizures in India and have been trained to detect tiger bone and skin, leopard bone and skin, elephant tusk, bear bile and caterpillar fungus.

SUPER SNIFFERdigest, India's first newsletter on wildlife sniffer dogs launched: TRAFFIC has recently launched an e-newsletter on its wildlife sniffer dog squads deployed in the field across India. The newsletter titled “SUPER SNIFFERdigest”, is a bi-monthly newsletter that brings stories and updates from across India about how these dogs are helping to curb wildlife crime. The subscription to the newsletter is free, simply send an email to trafficind@wwfindia.net.

The first Issue highlights the achievements of Karim, a young wildlife sniffer dog deployed at Buxa Tiger Reserve in West Bengal and the second Issue celebrates the achievement of a retired Super Sniffer from Madhya Pradesh. You can download the newsletters at https://www.wwfindia.org/about_wwf/enablers/traffic/publications/newsletter/
Mumbai and New Delhi hosted Zoohackathon, a technology-based challenge to help find solutions to curb poaching and illegal wildlife trade in India. The Mumbai Zoohackathon, the city’s first, was organised by the U.S. Consulate, Mumbai in partnership with TRAFFIC and WWF-India on 15-16th September, at Veermata Jijamata Udyaan, Mumbai. The New Delhi Zoohackathon 2.0 was held on 22-23rd September, at the WWF-India Secretariat and was jointly organised by the U.S. Embassy, New Delhi, TRAFFIC, and WWF-India.

What is “Zoohackathon”?  
Zoohackathon is a novel two-day technology-based challenge where software coders, wildlife enthusiasts, and web designers work together to find solutions to the problems related to illegal wildlife trade. The first Zoohackathon events took place in 2016 in London, Sydney, Washington D.C., San Diego, and Seattle. India’s first Zoohackathon was held at the WWF-India Secretariat in New Delhi on 7-8th October 2017.

Why is it organised?  
Illegal wildlife trade is devastating wildlife species the world over, as poachers, traffickers and highly organised criminal syndicates ruthlessly pursue profit at any cost to meet international demand. In light of this, Zoohackathon was conceptualised and organised to challenge the public to develop technology-based solutions that can help stop wildlife trafficking. It brings together young developers, designers, project managers, and subject matter experts to create applications, systems, and tools to help reduce demand for illegal wildlife products.

What happened at Zoohackathon, Mumbai?  
Mumbai’s first ever Zoohackathon emphasised the need to use innovation and technology as important tools for fighting wildlife crime in India. The competition commenced with an introduction to the “problem statements” related to wildlife crime by U.S. Department of State’s Ms Victoria Peabody. These statements included—Demystifying Laws about Wildlife Trafficking; Communication Tools for Wildlife; Wildlife Trafficking on Social Media and Identifying and Tracking Animals in Captivity. Seven competing teams from across Mumbai chose a topic of their choice and worked for two days to develop tech-based solutions that were presented before the judges by the end of the second day.

“Team Fauna” a group of four young enthusiasts won the Mumbai Zoohackathon with their concept to use virtual reality animal models to help zoos and conservation organisations better communicate the plight of endangered and trafficked wildlife species to their visitors. They also developed a new social media tool (a “bot”) which can pre-warn online shoppers about the illegalities involved with purchasing endangered animal products.

The runners up group - “Team Syndicate”- developed a machine-learning platform to scan e-commerce platforms and blogs which are used to buy and sell trafficked animals against prevailing laws. The programme developed by the team identifies such illegal transactions and then pulls out contact and other relevant information about the buyers and sellers, so that law enforcement agencies can more efficiently reach these traders and break up the trafficking ring. The
programme could also generate wildlife trafficking alerts to send to law enforcement agencies via SMS in real time whenever such transactions are identified.

Ms Jennifer Larson, Deputy Principal Officer, U.S. Consulate General Mumbai said “Events such as these provide a unique platform where new ideas can be developed to create solutions and assist administrations and enforcement agencies to combat poaching and illegal wildlife trade”.

Mr N. Vasudevan, Additional Principal Chief Conservator of Forests, Mangrove Cell, Maharashtra Forest Department added, “Illegal wildlife trade is hampering conservation efforts for various wildlife species while crippling the ecosystem where these species are known to occur. Concerted efforts are needed including a need to use tools and technologies to combat the problem, while also using such mechanisms to reach out and educate the masses”.

TRAFFIC believes that integration of technology and conservation is essential to combat the growing menace of illegal wildlife trade. Such technologies can also go a long way in educating and creating awareness among various stakeholders.

The judging panel for the event included Mr N. Vasudevan IFS, APCCF Mangrove Cell, Maharashtra Forest Department; Ms Jennifer Larson, Deputy Principal Officer, U.S. Consulate General, Mumbai; Mr Abraham Koshy, Country Manager—India, The Open Group; Dr Shubhalaxmi, Founder of Ladybird Environmental Consulting Firm, iNatureWatch Foundation; and Dr M. Maranko, Regional Deputy Director, Wildlife Crime Control Bureau, Western Region, Ministry of Environment Forests and Climate Change.

What happened at Zoohackathon 2.0, New Delhi?

Zoohackathon 2.0, New Delhi, had nine teams, including 45 participants, who worked tirelessly for two days to understand the various issues related to wildlife trafficking and then develop tech-based answers to curb poaching, track wildlife criminals, raise awareness among wildlife consumers, and help stop illegal wildlife trade. The teams were mentored by wildlife experts from TRAFFIC and the San Diego Zoo, USA, as well as IT and communications experts.

Team “Zoocchini” from IIIT-D won the challenge while the Team “Error: Error not Found” from the University of Delhi were the runners up.

Team “Zoocchini” came up with a unique web tool called “ClawNet”. This concept involves an interactive platform to demystify wildlife laws and make it easier for the general public to understand and differentiate between illegal and legal wildlife products. This tool will be helpful in generating information that will be used to map out trade routes for law enforcement agencies to use. The team used a 3D-rendered globe for mapping the routes.

Team “Error: Error not Found” presented an idea to develop a voice user interface called “Wildlife Guru” that would provide details about wildlife products, wildlife species in trade, laws, lists of organisations that can be contacted to report a crime, etc. This concept, once fully developed, can be built into Virtual Assistants available in the market today.

The teams presented their ideas/solutions in front of a panel of judges that included: Dr Gabriel Miller, Senior...
Scientist, Research and Development at San Diego Zoo Global; Dr Dipankar Ghose, Director, Species and Landscape Programme, WWF-India; Ms Julia Kennedy, Deputy Director, Clean Energy and Environment Officer, USAID; Mr J. Dinesh Kumar, Comp Programmer, U.S. Embassy; and Mr Ashish Choudhary, Senior Software Engineer, Golden Technology International Pvt. Ltd.

Mr Anoop Kumar Naik, Member Secretary, National Tiger Conservation Authority and Ms. Tilotma Varma, Additional Director, Wildlife Crime Control Bureau were present at the opening session of Zoohackathon 2.0, New Delhi on 21 September 2018 and spoke about the various aspects of wildlife crime and how it has become an organised criminal activity. They encouraged young people to participate and support initiatives such as Zoohackathon so their interest and knowledge can be tapped to find new and innovative solutions to secure the future of wildlife.

Ms. Victoria Peabody, Public Affairs Specialist, Bureau of Oceans, Environmental, and Scientific Affairs, U.S Department of State said: “The New Delhi Zoohackathon was a great success and the participants were inspiring as they created many innovative solutions to end wildlife crime.”

Dr Badola said that illegal wildlife trade is a serious issue threatening the survival of many wildlife species and he was glad to see so much support among young people to help curb this menace. “Zoohackathon is a platform that brings together intelligent minds to work together to find future solutions to the current problems of wildlife crime. We are happy to have partnered with the U.S. Embassy for this important initiative.”

What’s next for the winners of Zoohackathon in India?

The winning teams competed for the global prize, the winners of which were announced on World Cheetah Day, 4th December 2018. Team Zoocchini, from Zoohackathon New Delhi, came second with “Claw Net”—the web tool and interactive platform that identifies web searches through “code words” commonly used to refer to illegal wildlife items. Team Yamakapi, from the Zoohackathon in San Diego, California was the global winner for the Zoohackathon 2018. They developed “Conscious Consumer,” a Google Chrome browser extension that educates online shoppers about product sustainability through sensitive key terms related to conservation. The winners will be promoted through Zoohackathon events and beyond and will receive mentorship from the U.S. Department of State and its partners.

TRAFFIC strengthens wildlife law enforcement capacity for curbing poaching and illegal wildlife trade in India

AGALAND: Community based wildlife protection initiatives—the need of the hour to curb wildlife crime in Nagaland:

In order to strengthen wildlife law enforcement efforts in Nagaland and adjoining areas to curb poaching and illegal wildlife trade, TRAFFIC along with the Nagaland Forest Department and Wildlife Crime Control Bureau (WCCB) organised a two-day wildlife crime investigation and law enforcement training workshop in Dimapur, Nagaland. The workshop was held on 22-23rd June 2018 and was attended by 45 forest officials from the State Forest Department. The workshop was an important one for the region that is a rich biodiversity hotspot located in the middle of a trade route notorious for trafficking wildlife products both for local as well as international demand. Nagaland is a key location where strong wildlife
law enforcement and protection is needed owing to its shared border with Myanmar.

The training workshop was inaugurated by Shri C. M. Chang, Hon’ble Minister for Environment, Forest & Climate Change and Parliamentary Affairs, Government of Nagaland. During his discourse he stressed the need for stronger community-based initiatives to curb wildlife poaching and smuggling in Nagaland where the local communities are major stakeholders of wildlife resources. He suggested stronger awareness initiatives among the community members and advised building the capacities of the Forest Department for tackling wildlife crime.

During the programme, Hon’ble Minister, Shri Chang also launched the May 2018 edition of TRAFFIC Post.

Shri I Panger Jamir, Principal Chief Conservator of Forests and Head of Forest Force, Nagaland chaired the programme and suggested the inclusion of wildlife crime investigation and law enforcement in the regular training programmes of the Forest Department.

The training programme covered various important aspects of wildlife crime investigation and law enforcement and the sessions were led by experts from various wildlife specialist organisations conducted through discussions and field exercises. The training workshop ended with a vote of thanks from Shri Satya Prakash Tripathi, Chief Wildlife Warden, Nagaland.

Tamil Nadu: Specialised wildlife forensics training organised for the Tamil Nadu Forest Department: TRAFFIC and Advance Institute of Wildlife Conservation (AIWC), Vandalur, Chennai organised a special training programme for officials of the Tamil Nadu Forest Department on 26-28th September 2018 to introduce the use of forensic science for effective prosecution in wildlife cases. The training was organised at the premises of AIWC and was attended by 54 officials.

Use of forensic science for wildlife crime scene investigation and prosecution is considered a significant tool for combatting wildlife crime. Established on the same principles as human forensics, wildlife forensics can be used to identify a variety of wildlife species, especially as the evidence is usually in the form of animal parts or derivatives and rarely a whole animal. Moreover, sometimes the characteristics of the derivative may not represent those of the animal, making it difficult to document and use it as evidence in a case. Further to this, if improper methods are used for collection and preservation of the samples, the forensic results may be inconsistent or even incorrect. Therefore, adequate training for collection and preservation of samples for forensic use by wildlife law enforcement officials in crime scene investigation is required.

The three-day training covered various aspects of forensic science including the essentials of wildlife forensics; molecular DNA and its use in wildlife crime investigation; species identification and differentiation based on various forensic samples; veterinary pathology in investigating wildlife crime; and wildlife sample collection procedures.

Dr Shekhar Kumar Niraj, Director—AIWC who led the training programme said, “India’s proximity to demand countries and long porous borders makes it precariously vulnerable to wildlife crime and illegal wildlife trade.” He listed the various species in trade and emphasised the need for better enforcement and for efforts to curb both domestic and international demand.

Dr Merwyn Fernandes, Coordinator—TRAFFIC’s India Office spoke of the need to develop and strengthen skills of the Forest Department in relation to wildlife forensics. He said that effective crime scene investigation is crucial to building prosecution and successful conviction of the perpetrators.

The training also provided an opportunity for enforcement and wildlife experts to discuss future developments, including the use of aroma sensors; enhancing legal knowledge; laboratory accreditation; developing e-tutorials about wildlife forensics; and conducting refresher courses on a regular basis to update the knowledge and skills of wildlife officials.
Enforcement agencies in India are increasingly recognising that addressing wildlife crime cannot be undertaken in isolation. On 11th July 2018, TRAFFIC helped bring together representatives of various wildlife law enforcement agencies—Indo Tibet Border Police (ITBP), Uttarakhand Forest Department and Wildlife Crime Control Bureau (WCCB)—to discuss issues relating to wildlife crime in border areas. The meeting was also attended by scientists from the Wildlife Institute of India (WII) and hosted by ITBP at their Northern Frontier Head Quarter, Seema Dwar, Dehradun.

“Inter-agency co-operation and collaboration is crucial to eradicating wildlife crime,” was the unambiguous message of the meeting, which was attended by nearly 40 officials mainly from ITBP and Uttarakhand Forest Department posted in the border regions of Uttarakhand and Himachal Pradesh.

Ms Aparna Kumar, IPS, Deputy Inspector General, ITBP, shared her extensive experience of dealing with wildlife crime in border regions and reiterated that ITBP staff managing border areas can play a significant role in curbing trans-boundary wildlife smuggling.

Dr Dhananjai Mohan, Additional Principal Chief Conservator of Forests, Uttarakhand, highlighted the ongoing illegal wildlife trade at the porous borders of the state with the Tibetan Autonomous Region and Nepal. He also gave an overview of how enforcement agencies have been working with the local communities in different landscapes to gather intelligence to prevent wildlife crime in those regions.

Mr Vivek Kishore, IPS, Joint Director, WCCB, highlighted cases from Kaziranga National Park and Valmiki Tiger Reserve where joint operations and collaboration among agencies had led to successful seizures and wildlife crime prevention and detection.

Dr Rajiv Bhartari, Principal Chief Conservator of Forests and Chief Wildlife Warden, Uttarakhand suggested that as the Forest Department has limited resources for patrolling high altitude areas of the Himalayas, especially during harsh weather, the ITBP with its permanent presence in the area could help support the Forest Department in fulfilling its anti-poaching and anti-trafficking goals.

Participants unanimously agreed on the need for sensitisation and capacity building programmes for ITBP officials at grassroot levels who are posted in critical wildlife areas and transit points for wildlife smuggling. The participants also agreed to taking forward initiatives related to joint patrolling by the ITBP and Forest Department.
IFS Officers learn about the role of NGOs in the field of wildlife conservation

In July and September 2018, WWF-India and TRAFFIC hosted two batches of over 60 Indian Forest Service (IFS) Officers undergoing their Mid-Career Training Programme (MCTP) from Indira Gandhi National Forest Academy (IGNFA) in order to help strengthen synergies between enforcement agencies and non-governmental organisations (NGOs) working for conservation and protection of wildlife.

The IFS officers, belonging to various state / central government cadres and in the ranks of the Chief Conservor of Forests and Conservator of Forests, visited the WWF-India Secretariat and learnt more about the structure and programmes of WWF-India and TRAFFIC. Many of the participants attending the session also headed organisations outside of the forest department and were in various Ministries of the Government of India and State Governments.

The session with WWF-India and TRAFFIC was organised as part of the MCTP, aimed at introducing participants to the work of leading conservation NGOs in the country.

Mr Ravi Singh, Secretary General and CEO, WWF-India; Dr Sejal Worah, Programme Director, WWF-India and Dr Saket Badola IFS, Head of TRAFFIC's India office all spoke about WWF-India's and TRAFFIC's pioneering programmes in India.

Question and answer sessions clearly indicated a raised level of interest and understanding among the participants about the crucial and catalytic role played by NGOs to support government initiatives for accomplishing bigger goals.

TRAFFIC's new 'Don't Buy Trouble' leaflet includes a checklist for wildlife consumers

Generating awareness about issues related to poaching and illegal wildlife trade in India has been an important component of TRAFFIC’s work in the country. In 2008, TRAFFIC launched the Don’t Buy Trouble campaign, targeted at tourists and the general public who may knowingly or unknowingly become a party to illegal wildlife trade. The campaign not only highlighted the impacts on various wildlife species but also warned consumers against buying illegal wildlife products.

The Don’t Buy Trouble campaign has been successful in reaching out to the masses in India and has been TRAFFIC’s longest running campaign in the country. One important campaign tool is a leaflet educating wildlife consumers about making the right choices. The latest version of the leaflet, in English and Hindi, can be obtained free of cost by writing to TRAFFIC’s India office at trafficind@wwfindia.net. It can also be downloaded at https://www.wwfindia.org/about_wwf/enablers/traffic/publications/posters/
Air Vistara educates its passengers about illegal wildlife trade

In June 2018, Air Vistara began supporting initiatives to educate their passengers about illegal wildlife trade in India. In Issues 6 and 7 of their inflight magazine—Vistara—a two page beautifully designed and informative spread on conservation of Snow Leopard *Panthera uncia* and Indian Rhinoceros *Rhinoceros unicornis* respectively featured in partnership with TRAFFIC. With nearly 1 million individuals having travelled on an Air Vistara flight between June and July 2018, the printed infographics were a strong outreach tool.

In recent years, there has been a surge in illegal trade of wildlife and their derived products with many smugglers misusing the complex international aviation system to evade customs and other enforcement agencies. While some wildlife products are smuggled out of the country overland through porous borders, much is believed to be transported by airlines either as cargo or with passengers.

There is also lack of awareness among some passengers about the legality or otherwise of wildlife trade. Many
tourists arriving in India may knowingly or unknowingly buy wildlife products that are illegally for sale or purchase. The support and co-operation with the aviation industry is therefore a critical factor in curbing illegal wildlife trade.

Haldwani Zoo celebrates Wildlife Week and children learn about curbing wildlife crime

On 6th October 2018, TRAFFIC’s India Office in association with Haldwani Zoo organised an awareness programme for nearly 200 students and forest staff at the premises of the zoo. The students were from 11 schools in and around Haldwani in Uttarakhand.

The full day programme included nature trails, pledges to protect and conserve nature, a slogan writing competition on the theme of curbing wildlife crime, movie screenings and quizzes. Educational material from TRAFFIC was shared with participants.

Participants included 11 students from the National Association for the Blind, Haldwani. They gave a singing performance on stage and spoke about the importance of wildlife and its conservation. TRAFFIC awarded them special prizes.

Raj Shekhar Singh from TRAFFIC’s India office said, “Participants found the nature trail the most exciting part of the celebration. The students learnt about various species of trees, plants, birds and butterflies along the trail and were guided by naturalists from the region.”

Wildlife Week is celebrated every year from 2–8th October in India to draw attention to wildlife conservation and highlight the threats to many species. The theme for 2018 was “Big cats—Predators under Threat.”
1. Gaps in knowledge threatening precious coral populations: TRAFFIC's latest study “Seeing Red”
Gaps in knowledge threatening precious coral populations: TRAFFIC's latest study “Seeing Red”

A new TRAFFIC study released in September 2018 has shed light on the trade in precious corals in East Asia, revealing that inconsistent trade data and questionable harvesting practices could threaten vulnerable species.

Precious corals have been harvested and traded internationally since as early as pre-dynastic Egypt, valued for their beauty by diverse cultures around the world. Seeing Red: Precious coral trade in East Asia focuses on the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES)-listed Corallidae family, which comprises over 40 species and three genera of precious deep-sea corals. The new study examines CITES and customs data to present an overview of the changing trade in CITES-listed precious corals in the Coralliidae family, and potential consumption trends that could threaten the species if not addressed.

Corals in the Coralliidae family are distributed throughout the world’s tropical, subtropical and temperate oceans, but in only two areas—the Mediterranean Sea and the northern Pacific Ocean—are they commercially exploited. Between 2011 and 2015, roughly 80,000 individual pieces and 210 tonnes of CITES-listed raw Corallium corals were imported globally. Between 2011 and 2015 Aka Coral C. japonicum, distributed throughout Japan, the northern Philippines, Indonesia, and Japan and valued for its intense red colour and characteristic translucent finish, was the dominant species in trade.

While various conservation and management measures have been introduced in different countries/territories as well as protection of four Corallium species as CITES Appendix III-listed species from 2008, there remains concern over the conservation status of the species. Pressure from persistent demand and a slow rate of renewal makes them vulnerable to over-exploitation, and illegal fishing and trade has been reported.

Market surveys conducted in Japan, mainland China, Taiwan, and Hong Kong SAR revealed that although differences in species and product preferences exist, tourists from mainland China seem consistently to play an important role as consumers of precious coral products across the board.

“As knowledge of the populations and conservation status of Corallium corals is limited, there is an urgent need for research in range and harvesting countries and territories to gain a better understanding of these issues,” said Hiromi Shiraishi, TRAFFIC’s Programme Officer.

TRAFFIC presents a series of recommendations, covering sustainable management, regional co-operation, data collection, and effective implementation of CITES, to help stakeholders work across supply chains towards a fully transparent and sustainable trade in these precious resources.

Download a copy of the report at https://www.traffic.org/site/assets/files/11127/seeing-red-vfinal-1.pdf
CITES Update

1. “Life below water: for people and planet” announced as the theme of UN World Wildlife Day 2019

2. India gearing up for the 18th CoP to CITES
“Life below water: for people and planet” announced as the theme of UN World Wildlife Day 2019

For the first time ever, the next World Wildlife Day is bound to make a splash as it focuses on marine species. This was announced by the Secretariat of CITES and the United Nations Development Programme (UNDP), working closely together to facilitate the global celebration of next year’s United Nations World Wildlife Day (3rd March).

World Wildlife Day 2019 will give a chance to highlight the crucial importance and value of marine wildlife to our everyday lives, to celebrate successful initiatives to conserve and sustainably manage these species and to scale up support for such initiatives.

Abdoulaye Mar Dieye, UN Assistant Secretary General and Director of UNDP’s Bureau for Policy and Programme notes, “Oceans regulate our climate, produce half the oxygen we breathe, provide nourishment for 3+ billion people, and absorb 30% of carbon dioxide released into the atmosphere and fully 90% of the heat from climate change. To ensure that oceans and marine species are preserved and protected, nature-based solutions that bring together public, private and civil society partners need to be replicated and scaled-up.”

David Morgan, Officer-in-Charge of the CITES Secretariat, said: “All whales and dolphins, all marine turtles, all seahorses, many coral species, and more and more shark species have been put under the protection by CITES—the world’s wildlife trade regulator. For marine species, CITES is at the interface between sustainable use and international trade for fisheries, working to ensure that trade in marine species listed under the Convention is legal, sustainable and traceable.”

World Wildlife Day 2019 will be marked by a series of events and media activities around the world, including a high-level event at UN Headquarters in New York on (Friday) 1st March.

Read more at https://cites.org/eng/news/focusing-on-marine-species-for-the-first-time-the-next-world-wildlife-day-is-bound-to-make-a-splash_16112018

India gearing up for the 18th CoP to CITES

In October 2018, the CITES Management Authority of India under the Ministry of Environment, Forest and Climate Change (MoEFCC) convened a meeting of various CITES Committee members to discuss proposals regarding the CITES Appendix listings of Indian Star Tortoise Geochelone elegans, Tokay Gecko Gekko gecko and Dalbergia spp. to be tabled ahead of the 18th meeting of the Conference of the Parties (CoP18) to CITES. CoP18 will be held in Colombo, Sri Lanka, from 23rd May–3rd June 2019. At each CoP, CITES Parties discuss and vote on proposals to amend the Appendices. Two-thirds of the parties must vote in favour of a proposal for it to be accepted.
TRAFFIC Alert

1. 1,190 kg Sea Cucumber seized in Tamil Nadu

2. 8,000 kg of shark fins bound for China seized in Mumbai and Veraval

3. Man held for trying to sell corals in city market in Tamil Nadu
In July 2018, Marine Police of the Coastal Security Group seized a huge haul of 1,190 kg of processed Sea Cucumber *Holothuria* spp., after intercepting a boat at sea between Vedhalai and Maraiyarpattinam near Mandapam, Tamil Nadu, and detained two people on suspicion of smuggling contraband to Sri Lanka. Acting on specific information received from headquarters in Chennai, three Marine Police teams seized the cargo, packed in 26 polythene-layered gunny bags.

TRAFFIC adds.....

Sea cucumbers belong to a group of marine animals called echinoderms that are mainly found on the sea floor worldwide and have a leathery skin and an elongated body. Sea cucumbers are estimated to comprise more than 90 percent of the mass of all creatures living at a depth of 26,000 feet or more, making them the dominant organism in some ocean trenches.

Sea cucumbers are often referred to as the oceans' vacuum cleaners, cleaning the seabed by swallowing large quantities of sediment, filtering out the organic matter, and leaving clean sand in their wake. Despite the important ecological role played by them, sea cucumbers are harvested in large numbers for human consumption.

There are nearly 1,250 known sea cucumber species worldwide and reports have suggested that globally at least 38% of sea cucumber fisheries are overfished.

Nearly 200 known species of sea cucumbers are found in Indian waters, about 75 of them are present in shallow waters. Almost 20 of the sea cucumber species found in Indian waters have commercial importance, including White Teatfish *Holothuria fuscogilva*; Black Teatfish *H. nobilis*; Brown Sandfish *H. spinifera*; and Prickly Redfish *Thelenota ananas*.

In India, sea cucumbers are protected under Schedule I of the Wildlife (Protection) Act, 1972, making extraction, trade or any other forms of utilisation of the species a punishable offence.

However, these marine animals continue to be smuggled in large numbers to China and many Southeast Asian countries where they are boiled, dried or smoked to prepare a delicacy known as *bêche-de-mer*. Apart from their demand as a delicacy, sea cucumbers are also used in traditional Chinese medicine and have featured in products such as “Holothurian wine” or soap. The Andaman and Nicobar Islands have the richest diversity of sea cucumbers.
1,190 kg Sea Cucumber seized in Tamil Nadu

Sea cucumbers are reported to be primarily collected from the Gulf of Mannar and are smuggled from the Ramanathapuram-Tuticorin coast in Tamil Nadu to countries including China, Japan and Malaysia.

Sources:
http://www.fao.org/docrep/017/i1918e/i1918e.pdf
http://aquafind.com/articles/Sea_Cucumber.php
https://www.nationalgeographic.com/animals/invertebrates/group/sea-cucumbers/

8,000 kg of shark fins bound for China seized in Mumbai and Veraval

On 1st September 2018, the Directorate of Revenue Intelligence (DRI) seized 8,000 kg of shark fins from Mumbai and Gujarat destined for export to China and Hong Kong. According to a DRI statement, the fins were meant for illicit export by misdeclaring them as dried ray skins, dried marine products and fish maw. In total, 3,000 kg of shark fins were seized from a godown at Sewri in Mumbai and 5,000 kg from Veraval in Gujarat. Four people were arrested.

TRAFFIC adds…..

International demand for shark fins and other shark products has been the main driver of shark fisheries operating out of India. Sharks are sought for their meat, leather, liver oil, cartilage and fins: several species are threatened.

More than 70 species of sharks have been sighted in Indian waters and over 20 are...
Sources:
In July 2018, sea fans and corals were seized from a man in Nagapattinam city market in Tamil Nadu by the police with the help of the forest cell of the Criminal Investigation Department. According to police officials, following a tip-off, they arrested a man trying to sell corals and sea fan (Gorgonians), which are protected under Indian law.

TRAFFIC adds.....

Globally, there are between 800 to 1,000 known species of corals and possibly many more in unexplored deep water territories. At least, 206 species are known from the Indian coral reef with a large number found in the waters of the Andaman and Nicobar Islands.

All reef-building corals Scleractinians, Black corals Antipatharians, Organ Pipe Coral Tubipora musica, Fire corals Millipora spp. and Sea Fans (Gorgonians) are protected under Schedule I of the Wildlife (Protection) Act, 1972. Under this, any form of extraction, exploitation or trade of these species is prohibited. All reef building corals, Black corals, Organ Pipe Coral and Fire corals are listed in Appendix II of CITES (Convention on International Trade in Endangered Species of Wild Fauna and Flora).

Despite legal protection, reports indicate that the trade in many coral species continues in India. Hard corals are exploited for their use in construction, production of lime and for other industrial purposes, while soft corals are sold as curios and for making ornaments and other decorative items. Besides the clandestine market for corals in India and other countries, many protected species are also sold openly at many tourist beaches across India and at many religious destinations in North India.

Coral exploitation and trade can prove challenging to curtail because corals are often collected from offshore areas that may not be regularly patrolled by enforcement agencies. When raw coral enters the market, it is difficult and sometimes impossible to identify particular species. Once the coral is dried and processed, identification becomes even more difficult. They are often combined with other goods or marine products (especially shells) in official customs statistics. Mixed consignments of shells and corals might be labeled as “shell” on trade permits and documents.

Presently, there is no concrete information concerning the level of coral trade in India and much research is needed to understand the latest trends and trade routes. TRAFFIC strongly recommends further research into the illegal collection and trade in various marine species including corals. Coral reefs protect our shorelines from damage and erosion and act as breeding grounds and shelter for many marine organisms, making them a marine biodiversity hotspot. Corals reefs make habitats for several other marine species for their spawning and nursery activities in their life cycles.

Sources:
http://www.nio.org/index?option=com_nomenu/task/show/tid/85/sid/92/id/195
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21 Trade in Corals by Fahmeeda Hanfee;
http://www.fao.org/docrep/X5627E/x5627e0r.htm
In Focus

Getting to grips with trade in protected marine species in India

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Getting to grips with trade in protected marine species in India

Seafood exports from India were totalled at 10,85,378 metric tonnes (MT) between April 2017–January 2018, registering a growth of 13.68% against the previous year, with frozen prawns and frozen fish (11.65% growth) contributing the most. Frozen shrimp being the top export item with a share of 42.05% in terms of quantity (456,404 MT). The USA (187,873 MT), Southeast Asia (127,525 MT) and the European Union (62,164 MT) continued to be the three major importers while imports by Japan (28,064 MT) registered a substantial increase (mpeda.gov.in/MPEDA/admin/files/PressRelease/mpeda-exportsApr-Jan-English.pdf). The increase in seafood exports means enhanced marine trade activity at all entrepots in the trade chain.

India’s coastline of 8,118 km along with an Exclusive Economic Zone of over two million km² and a continental shelf area of 468,000 km² sustains diverse habitats supporting a wide variety of marine species. The country stands fifth in global capture fisheries production (3.5 MT) with a growth of 2.9% in the annual export of fisheries products from 2015–2016 (FAO 2018). In 2017, 788 marine fish species (618 species on the west coast of India and 592 species on the east coast) were identified in the landings along the Indian coast. This sector supports nearly 3.79 million fisherfolk and meets the nutritional requirements of a significant portion of the country’s population (FRAD CMFRI 2018).

Harvest and trade in legally protected marine species in India

Marine biodiversity is directly impacted by factors such as overexploitation, pollution and habitat destruction, and indirectly by climate change and related perturbations of ocean biogeochemistry (Worm et al., 2006; Ramirez et al., 2017). Additionally, there is also considerable impact through illegal trade and wildlife crime, which is especially targeted at certain marine species. All these issues are vital for understanding better ways of managing and conserving particular marine species which are cryptic and occur at low density.

There are a few critical issues in the fisheries sector which would need collective action by various enforcement and management agencies for conserving threatened marine species many of which are enlisted in the Wildlife (Protection) Act, 1972 (henceforth WPA, 1972) including eight species of marine elasmobranchs (sharks and rays), two species of freshwater elasmobranchs, Giant Grouper Epinephelus lanceolatus, all species of seahorses and sea cucumbers, twenty four species of shells (gastropods), three species of crustaceans, all species of corals including pipe coral, sea fan and sponges. Also a number of marine mammals, otters, crocodiles, sea snakes and marine turtles.

Apart from this, India is also signatory to a number of international conventions and regulatory bodies including the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES), the Convention on Migratory Species and the Indian Ocean Tuna Commission (IOTC) obligating it to have structures in place to implement decisions taken by these management bodies to regulate trade. However, despite legal protection under the WPA,1972 and international conventions, many of these species continue to be harvested either through targeted harvests or opportunistically in other unselective fisheries such as...
trawl fisheries. Illegal trade in marine species and their parts very often has strong international drivers and is often part of larger trans-boundary criminal networks with demand originating in a country distant from the source country.

The mode of exploitation of these marine species and their products are as follows:

**a. Targeted exploitation:** Fuelled by their demand in national and international market, some of the species are specifically targeted for extraction by fisherfolks. Some of the most targeted species include:

a. Whale Shark *Rhincodon typus* for meat (Sathiyaselvam *et al.*, 2016), from Andhra Pradesh, Gujarat and Maharashtra.

b. Almost all species of sea cucumber are illegally harvested from Indian waters mainly to fulfil international demand of food and belief-based systems of healthcare in Southeast Asian countries. From 2014-2018 at least 33.8 MT of sea cucumber were seized in India (*pers comm.* 10 December 2018).

c. Corals are another group which are specially targeted for use in jewellery and in aquariums, especially *Tubipora* sp, as well as their calciferous content used as supplementary material in limestone.

Due to diminishing economic returns from fisheries, local communities have also started to exploit other marine resources such as molluscs to supplement income for sustenance. The exploitation of these species such as Window Pane Oyster *Placuna placenta* which is now driven by the shale, oil and gas industries (Sukhdhare *et al.*, 2013); apart from curio trade which is more pervasive and is seen across tourist and sacred religious destinations across India, including sites which are in central and northern parts of India (John *et al.*, 2013); and marine ornamental fish trade which includes seahorses. The main reason behind this targeted exploitation is believed to be poor enforcement of existing laws such as WPA, 1972 due to lack of knowledge about marine protected species among enforcement agencies with officials unable to differentiate between permissible and non-permissible trade of marine species. Thus, in many places along coastal India marine protected species are traded both in open and in clandestine markets.

**b. Opportunistic exploitation:** This refers to exploitation of wildlife resources during the process of extraction of targeted species, and generally the value of the opportunistically harvested species is higher than the target species (Branch *et al.*, 2013).

These species are generally encountered incidentally in non-selective fisheries, for e.g. seahorses captured in trawl fisheries in India. Trawl fisheries in the country have become increasingly reliant on bycatch that over the years has become commercially valuable. This also includes low-value traditionally discarded bycatch (trash fish now used to make chicken and pet feed, aquaculture feed etc) (Lobo *et al.*, 2010). Rare, high value bycatch can be a major economic subsidy to buffer fishermen against the vagaries of their harvest. Unlike targeted exploitation it is notoriously difficult to monitor the opportunistic harvest of protected species simply because they generally constitute a tiny proportion of the total catch and often fly under the radar of enforcement agencies to
find their way into black markets. Sometimes they are stopped, such as the seizure of 56 kg of dried seahorses at Nathu-La Pass in Sikkim in 2018. (https://www.telegraphindia.com/states/west-bengal/seahorses-seized-at-nathu-la-2-detained/cid/1673397).

In India, accidentally captured protected marine species such as sea turtles and cetaceans are highly visible and fishers tend not to land them but generally to discard them at sea. Also, knowledge about the illegality of landing these larger charismatic species seems to be better known.

c. Gaps in policies: There are several Indian marine species listed as threatened on the IUCN Red List that do not feature in the WPA, 1972.

The IUCN global threat status of the 155 Chondrichthyan species recorded from Indian waters are as follows; 3% Critically Endangered (CR), 5% Endangered (EN), 26% Vulnerable (VU), 21% Near Threatened (NT), 8% Least Concern, 27% Data Deficient and 10% Not Evaluated. However, only 10 of these species are protected by Indian law.

In 2001, ten species of elasmobranchs were listed in the Schedules of the WPA, 1972. All of these were included under Schedule I (Part 2A), which affords them the highest level of protection (comparable to terrestrial species of the same status) and prohibits the hunting, trade and any other form of exploitation of these species. Any violation can result in a prison sentence of at least 3 years, which can extend up to seven years and a fine of at least INR 10,000, and up to INR 25,000 (USD150–370).

The occurrence of three of these listed species (*Glyphis glyphis*, *Himantura fluviatilis* and *Carcharhinus hemiodon*) in Indian waters is yet to be validated and as a result they do not feature in the country’s total species count. The rest of the species not listed in the Schedules of WPA, 1972 fall under the management of the fisheries department, and comes under the purview of the Ministry of Agriculture.

In August 2013, the Ministry of Environment, Forest and Climate Change (MOEFCC) banned the practice of “finning” sharks at sea. They had to be landed and brought ashore with their fins intact. The policy prescribes that “any possession of shark fins that are not naturally attached to the body of the shark would amount to hunting” a Schedule I species. Through the “fins attached policy” authorities hope that there will be better monitoring of shark fisheries in India. It is also hoped that this will work more in the favour of fishers, rather than the exporters and traders. There is also an export ban on all shark fins under the Foreign Trade (Development & Regulation) Act 1992 since February 2015.

When it comes to marine rays, it is interesting to note that except for the Porcupine Ray *Urogymnus asperrimus* no other rays are included in the Schedule lists of the WPA, 1972. This is despite the fact that several globally threatened ray species have been recorded in Indian waters.

However, despite these regulations there are reports indicating the persistence of illegal trade in shark fins and Mobula ray gill plates. For example, in 2018, 8.72 MT of shark fins and 86 kg of Mobula ray gill rakes were seized in Moreh, Manipur.

The export of marine species is undertaken through two harmonised system (HS) customs codes 03 and 16, which deal with live and processed forms. The processed forms are either in the fresh, dried, preserved or cold stored forms. There is no institutional mechanism and provisions to monitor CITES Appendix II listed species in trade, as specific HS codes are not yet allocated and hence quantifying the trade for the species is virtually impossible. The present mechanism adopted of generic labelling easily conceals species diversity being exported and also mislabelling within the consignments is used as a mechanism for trading endangered and protected species (Cowthorn *et al*., 2018). It relies on the exporters wilfully to declare the goods which are being shipped.

d. Inadequate capacities and knowledge: The knowledge within enforcement agencies on identification of marine species and their products and derivatives is limited. Technologies and tools too in India have not yet caught up with enhanced sophisticated tools being used for monitoring and managing fisheries such
as Electronic Recording and Reporting system (ERS) which is a mandatory requirement for high sea fishing vessels being used by the Indian Ocean Tuna Commission. Limitations in molecular characterisation for marine species are an impediment as currently mainly morphological characters are used for identification. Hence identifying value added products is limited. This is seen as a major gap for enforcing measures to curb illegal trade of marine species.

Suggestive measures

There is no monitoring mechanism for landing stock and bycatch data, thus incorrect and inconsistent ecological baselines are likely, especially for poorly studied species and groups, that may underestimate the extinction risks for species. In order to curb wildlife crime and illegal trade of marine species a better holistic approach would be required. The critical areas where immediate measures are needed include:

1. **Empowering enforcement agencies other than the Forest Department under the Wildlife Protection Act, 1972 and enhancing their capacities:** As the Forest Department presence is sparse along the coast and most of the fish landings occur at various coastal landing sites, it is necessary to empower enforcement officials other than the Police and Forest Department by using provisions under Section 5 sub section 2 of the WPA, 1972 while simultaneously enhancing capacities for identifying legally protected marine species within the Marine Police, Coast Guards and Customs and Port Officials.

For other species listed in the IUCN Red Lists that occur in Indian waters, the Biological Diversity Act 2002 can be invoked for those not protected under the WPA, 1972 especially for marine bio resources which are indiscriminately exploited for commercial gains such as shells and or ornamental species for the aquarium trade.

Enhancing capacities of law enforcement agencies by incorporating a training programme within their training institutes on legally protected marine species, legal procedures under the WPA,1972 and Biological Diversity Act 2002.

2. **Community level monitoring:** The fisheries sector has close links to local communities which should be strengthened and developed whereby local communities could be empowered to monitor and manage their own resources. Such models are rare but have worked when communities are homogenous, or they are isolated away from the external factors of the mainland.

There are already multitude challenges in local fisher communities and hence finding ways and means whereby these communities can work together is a task in itself. But this is the way forward as they are at the centre of fisheries and if illegal trade can be controlled or reduced it will be when these fishers communities unite for a larger cause of protecting and conserving marine resources on which they rely.

3. **Improved monitoring by use of advance technologies:** There is an urgent need to create platforms whereby multiple enforcement agencies can have co-ordinated action for effective implementation of various legal instruments in marine and coastal areas. Effective co-ordination and implementation of patrolling within the vast expanses of the sea will go a long way to control illegal wildlife trade for which vessel (trawler) monitoring systems (spatial and temporal) are needed around the coast.

For effectively curbing illegal marine trade there is a need to have in place forensic labs at the port terminal where marine consignments can be screened. These labs must be legally recognised and adopt the latest methods such as real time multiplex PCR that has been developed to detect nine of the twelve CITES-listed shark species in a single reaction (Cardenosa et al., 2018) and which are easy to use, reliable, scientifically sound and most importantly have a quick turn around time.

There is a need to develop and incorporate appropriate technologies (such as artificial intelligence or machine learning) so that legal trade is not hampered while illegal trade can be curbed. Such technologies can also be adapted for monitoring e-commerce platforms and social networks for clues of illegal wildlife trade.
4. **Harmonisation of national and international policies:** Despite there being few attempts to evaluate the vulnerability of marine species to overexploitation only a few marine species have been listed in various Schedules of the WPA, 1972 such as cetaceans and marine turtles. There are a number of species listed under CITES but not listed under India’s WPA, 1972 including the globally threatened Scalloped Hammerhead Shark *Sphyra lewini* and Great Hammerhead Shark *Sphyra mokarran*. A few species which are globally endangered such as Broadfin Shark *Lamnopsis temminckii*, Long-headed Eagle Ray *Aetobatus flagellum*, Mottled Eagle Ray *Aetomyaleus maculatus*, Ornate Eagle Ray *Aetomyaleus vespertilio* could be included in the Schedules of the WPA, 1972.

Conservation of marine wildlife and resources is still in its infancy and requires understanding the various intricacies that impact this trade before sound conservation policies are developed and implemented. Working with local communities to drive the conservation agenda for marine species, while taking care of their livelihood is the only way forward.

**References:**


Wild Cry

Status of marine molluscs in illegal wildlife trade in India

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The phylum Mollusca (clams, cockles, oysters, mussels, snails, slugs, nudibranchs, octopus, squids, cuttlefish etc.) is the second largest phyla in the animal kingdom next to Arthropods. Molluscs have adapted to terrestrial, marine and freshwater habitats. In fact, Mollusca represents the largest marine phylum, comprising about 23% of all the named marine organisms. The diversity of molluscs (marine and freshwater) recorded from India is 5,100 species (Venkataraman and Raghunathan, 2015), representing around seven percent of the entire world molluscan diversity. Marine molluscan diversity in India comprises 3,400 species (Rao, 1991, Venkataraman and Raghunathan, 2015).

Molluscs are soft bodied animals enclosed within a calcareous, hard external surface secreted by the animal inside and are popularly called “shells”. Although most molluscs have an external calcareous covering, slugs, nudibranchs, octopuses, squids, and cuttlefish either have internal shells or no shell at all. Due to their beautiful shapes, colours and structures, shell collection has long been a popular hobby in many parts of the world.

In India, the Wildlife (Protection) Act, 1972 (WPA, 1972) protects various wildlife species listed under Schedules I to VI of the Act. Only 24 species of marine molluscs have been included in Schedule I and IV of the WPA, some 0.7% of the total found in the country (Ramakrisna & Dey 2003 and Biju Kumar et al., 2015).

In earlier times, the commercial exploitation of selected shell species was practiced at many places in India and was supervised by the Fisheries Departments under British rule and later by the respective State Governments. The most important were (i) *Rochia nilotica* and *Turbo marmoratus* shells in the Andaman and Nicobar Islands and (ii) Indian Sacred Chanks *Turbinella pyrum* and Pearl Oysters *Pinctada fucata* in the Gulf of Mannar, Palk Bay and Gujarat coasts.

However, the scenario has now changed. Large quantities of shells are obtained as bycatch from bottom trawlers dragged along the seabed gathering whatever comes in their way. The trawl nets are operated at depths from 100–1,000 metres depending on the season. At times, each trawl boat can bring in more than 200–500 kg of shells that are sold to middlemen through auction. As the number of trawlers have grown in recent years, the landing of shells has risen from what was witnessed 30 years ago. Historically, shells (especially Pearl Oysters, Top Shells, Sacred Chanks and conches) were collected by skin diving or from bottom set gillnets. This scenario has completely changed to one enabling the collection of any shell that is of some commercial use. A recent report published by Tina Deins in the
Ornamental gastropod shell trade in India: A macroeconomic assessment
S. Shyam Salim, I. Jagadis, V. Venkatesan, M. Kavitha and K. S. Mohamed

The total estimated quantity of trade in gastropods is 11,000 tonnes (10% is contributed by imports) and the revenue around 100 crores. According to the Federation of Sea Shell Handicrafts Merchants Association (FOSSHMA), there are around 90 active sea shell handicrafts traders in India, of which 20 are very active, 30 with minimal functioning and 40 dormant units. Around 350 containers, each with a capacity of 20 t, are exported annually. The traders stock around 20,000–25,000 t annually which are sourced either locally (30%), from other parts of India (60%) or through import (10%). Among the different gastropod species procured as raw materials, 75% are small sized. Among the total of 11,000 t of finished products traded, more than 75% are exported, 24% are sold within the country and less than 1% are sold in local markets.

Mar. Fish. Infor. Serv., T & E Ser., No. 231, 2017

Illegal trade of protected species of marine molluscs

Shell dealers are well aware of the domestic and international demand for shells. Most of the protected and prized shells are brought directly to the shell dealers by fisherfolk. At the landing centres, middlemen or shell dealers also keep an eye on the bycatch of large quantities of shells at particular seasons.

The collected shells are heaped in open areas at processing centres and allowed to rot. The process of cleaning and polishing shells varies from species to species. While some shells are cleaned with mild acids and polished with oil, some varieties are treated in pans containing hot sand.

The protected species may not be openly displayed in shell souvenir shops (curio shops) or shell processing units but in clandestine markets. Demand for the protected shells is high. Species like Top Shell and Turban Shell are prized for their lustre, used to make buttons and other artefacts while Window Pane Oysters Placuna placenta are used to manufacture lamps, articles for display, hair clips and other accessories. The larger shells like the Triton Charonia tritonis, Pineapple Shell Cassis conuta and the Helmet Shell Cypraecassis rufa are sold as souvenirs. The meat of Horse Conch Pleuroloca trapezium is traditionally consumed by local fishermen and the processed dried flakes are even sold in local markets in the districts of Tuticorin and Ramanathapuram.

While Trochus and Turbo shells are protected, overexploitation of Pearl Oysters and destruction of their “paars” habitats have led to a significant decline in the natural environment. Like the Sacred Chank, they are not included in the...
Schedules of the Wildlife (Protection) Act, 1972 (WPA, 1972), while demand has increased many fold in the states of West Bengal and Odisha leading to increased fishing pressures. Another protected species, the Window Pane Oyster is commercially exploited in tonnes from Tamil Nadu and Andhra Pradesh and collecting it is an important livelihood activity for certain fishing communities.

Out of the 24 species of marine molluscs included in Schedule I and Schedule IV of the WPA, 1972, 22 species are recorded from the Andaman and Nicobar Islands and 21 species from the Lakshadweep Islands.

In addition to being a major source, India is also a major importer of shells, in particular from the Maldives, Philippines, Sri Lanka, Mexico, China, Tanzania and other East African countries (John et al., 2012). A study by John et al. (2012) points out that more than 90% of marine protected species (including marine shells) are available at curio shops in Kanyakumari compared to other major destinations like Rameswaram and Mahabalipuram. Besides the tremendous demand in the international market for these shells, Indian dealers import many shells for the local market. The best example is the African Conch Busycicon contrarium, which is imported and sold as “Valampuri Sangu” or “Dakshinavarti Sankh” (basically the rare sinistral—shells with a left hand rotation) as an alternative to the Indian Sacred Chank whose shells are dextral—right hand rotation. However, the outer whorl can be cut neatly by shell craftsmen to look like sinistral shells and sold to pilgrim tourists for an exorbitant price. According to interviews with shell traders dealing with marine protected curios, 65% of all identified protected molluscs and corals in the curio markets of Tamil Nadu were collected from Rameswaram (Gulf of Mannar and Palk Bay), followed by Andaman Islands (17%), Lakshadweep Islands (10%) and Kerala (3%) (John et al. 2012).

One of the biggest seizures of protected molluscs, 80 tonnes of Window Pane Oysters Placuna placenta, took place on 2nd July 2017 from a seashell company in Navi Mumbai, Maharashtra. Further investigation revealed that the shells had been harvested for use in furniture, lampshades, cutlery and jewellery pieces. Also, powdered shells are apparently smuggled by sea to oil rigs in countries of West Asia and Argentina although their use there is not known.

Similarly, in 2011, smugglers were caught red-handed carrying 8 King Shells, 5 pieces of Pineapple Shells, 140 pieces of Nautilus Pomilius, 100 small pieces of clam shell, 28 medium sized paired clam shells, 5 large clam shell pieces and 922 kg of Schedule IV Species—Trochus, 220 kg of Panja Shells, and 120 kg of Turbo Shells. The total weight seized was 1,262 kg. All these species are protected under the Wildlife (Protection) Act, 1972. The major collection and supply areas are in southern Tamil Nadu and they are exported via sea or by air through Chennai, Kochi or Thiruvananthapuram under different trade and/or scientific names. The domestic trade hubs are located close to where the shells originate.
International trade

International trade in wild fauna and flora is regulated through the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) to which India has been a signatory since 1976. However, only three species of marine molluscs from India—Bear’s Paw/Horse’s Hoof Hippopus hippopus, Elongate Giant Clam Tridacna maxima and Fluted Giant Clam Tridacna squamosa are listed under CITES. CITES aims to protect and conserve species and avoid their decline due to overexploitation, such as the Queen Conch Strombus gigas from the Caribbean. From an India perspective, there is a lack of important information on the status of Indian protected species of shells such as landing data, their life history and habitats.

Gaps in wildlife law enforcement: Identification issues

A major hurdle for enforcement efforts to curb illegal trade of protected marine shells is their identification. A classic example is confusion between Spider Conch Shells Lambis lambis (a non-protected species) and Giant Truncate Spider Conch Shells Lambis truncata (a protected species). Similarly, there are three closely related species in the Window Pane Oyster group that can be identified only by their cardinal teeth (a locking mechanism for both shell valves)—a relatively straightforward task for a taxonomist, but forest department officials generally struggle. Often, shells of the wrong species are seized. Hence there is clearly a need for identification tools and special training in shell identification for officials including Forest, Fisheries, Coast Guard, Navy, Marine Police and other stakeholders like the Anti-Poaching Watchers (APW) and Panchayat Leaders or Leaders of Fishermen Federations.

Conclusion

Protection of molluscs in the long run may pave the way for restoration of the natural balance, especially in ecologically sensitive, biologically rich, fragile areas such as coral reef ecosystems. Conservation efforts by various state environment departments and marine research institutions can play a major role in curbing activities involving shell collection and processing to a large extent. One example is that of the Gulf of Mannar Marine Biosphere Trust (GoMBRT), where a specially designed vehicle operated by the Environment Department, Government of Tamil Nadu and funded by United Nations Development Programme (UNDP) has helped in organising sensitisation programmes like mini-exhibits, village level street plays, posters, flashcards on protected marine species under the WPA, 1972. The Anti-Poaching Watchers (APW), members of the fishing community from villages in the vicinity of the Gulf of Mannar Biosphere Reserve, also play a crucial role in helping curb marine wildlife crime and therefore their support and commitment is crucial. The presence of the Wildlife Crime Control Bureau (WCCB), a nodal agency for curbing wildlife crime in India under the Government of India, at Ramanathapuram can further strengthen the institutional mechanisms and inter-departmental joint patrolling activities.

A major threat to marine mollusc species is that the bottom trawling lands large quantities every day. Shells caught as bycatch are nowadays allowed to rot in the landing centres or on beaches. Some mechanism to avoid protected species from being caught as bycatch needs to be formulated. Habitats of protected species need to be identified and zones demarcated as a conservation measure. Additionally, special capacity building for fishing communities and enforcement officials needs to be conducted on a regular basis as without them conservation efforts are likely to be futile. An additional complication is that scientific names are continuously being updated by taxonomists based on new findings yet the WPA, 1972 still contains the old names/synonyms for many species, creating confusion for enforcement agencies. Nomenclature for a number of relevant species are provided in the table on the next page.

Conservation success stories in many parts of the world provide insights into how species can be protected at the local level. A mechanism to study the breeding biology and life cycle of protected marine species is urgently needed to prepare conservation plans and implement region-specific activities. Research institutions should encourage and fund projects related to status and recovery programmes for marine species to keep a check on wild populations and pressure on them due to their exploitation.
<table>
<thead>
<tr>
<th>Accepted Scientific Name</th>
<th>Old name (as in WPA, 1972)</th>
<th>Common Name</th>
<th>WPA (Schedule)</th>
<th>CITES (Appendix)</th>
<th>Distribution</th>
<th>Size</th>
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</thead>
<tbody>
<tr>
<td>Rochianilotica</td>
<td>Trochus niloticus</td>
<td>Commercial Trochus/Top shell</td>
<td>IV</td>
<td>Andaman &amp; Nicobar</td>
<td>Standard Height: 76—133 mm Standard Width: 96—122mm</td>
<td></td>
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<tr>
<td>Turbo marmoratus</td>
<td>Turbo marmoratus</td>
<td>Great Green Turban</td>
<td>IV</td>
<td>Andaman &amp; Nicobar</td>
<td>Standard Height: 165—185 mm Standard Width: 165—212mm</td>
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<tr>
<td>Leporicyprea anappa</td>
<td>Cypraea mappa</td>
<td>Map Cowrie</td>
<td>IV</td>
<td>Andaman &amp; Nicobar, Pondicherry, Gujarat, Tamil Nadu, Lakshadweep</td>
<td>Standard Length: 40—46mm; Standard Width: 33—36mm; Standard height: 29—32mm</td>
<td></td>
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<tr>
<td>Staphylaea limacina</td>
<td>Cypraea limacina</td>
<td>Limacina Cowrie</td>
<td>IV</td>
<td>Lakshadweep, Andaman &amp; Nicobar, Tamil Nadu</td>
<td>Standard Length: 14—24mm; Standard Width: 11—15 mm; Standard Height: 9—13mm</td>
<td></td>
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<tr>
<td>Talpariatalpa</td>
<td>Cypraea talpa</td>
<td>Mole Cowrie</td>
<td>IV</td>
<td>Andaman &amp; Nicobar, Pondicherry, Gujarat, Lakshadweep, Tamil Nadu</td>
<td>Standard Length: 50—70mm; Standard Width: 25—40mm; Standard Height: 22—34 mm</td>
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<tr>
<td>Dolomenaplicata sibbaldi</td>
<td>Strombus plicatus sibbaldi</td>
<td>Sibbald’s Conch/Pigeon Conch</td>
<td>IV</td>
<td>Andaman &amp; Nicobar, Lakshadweep East and West coast of India</td>
<td>Shell length: 29.5—38.3mm; Shell width: 6.35—11.7 mm</td>
<td></td>
</tr>
<tr>
<td>Harpago arthriticus</td>
<td>Lambis chiragra arthritica</td>
<td>Arthiritic Spider Conch</td>
<td>IV</td>
<td>Tamil Nadu, Pondicherry, Andaman &amp; Nicobar and Lakshadweep</td>
<td>Shell Length 112—121mm; Shell Width: 65—69mm</td>
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</tr>
<tr>
<td>Harpago chiragra</td>
<td>Lambis chiragra</td>
<td>Chiragra Spider Conch</td>
<td>IV</td>
<td>Tamil Nadu, Pondicherry, Andaman &amp; Nicobar and Lakshadweep</td>
<td>Shell Length 171—242mm; Shell Width: 104—170mm</td>
<td></td>
</tr>
<tr>
<td>Lambis crocata</td>
<td>Lambis crocata</td>
<td>Orange Spider Conch</td>
<td>IV</td>
<td>Lakshadweep, Tamil Nadu and Andaman &amp; Nicobar</td>
<td>Shell Length: 75—107mm; Shell Width: 35—42mm</td>
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<tr>
<td>Lambis indomaris</td>
<td>Lambis scorpius</td>
<td>Scorpion Conch</td>
<td>IV</td>
<td>Tamil Nadu, Andaman &amp; Nicobar and Lakshadweep</td>
<td>Shell Length: 112—119mm; Shell Width: 48—54mm</td>
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<tr>
<td>Lambis millepeda</td>
<td>Lambis millepeda</td>
<td>Milleped Spider Conch</td>
<td>IV</td>
<td>Andaman &amp; Nicobar</td>
<td>Shell Length: 104—112 mm; Shell Width: 62—74 mm</td>
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<tr>
<td>Lambis truncata</td>
<td>Lambis truncata</td>
<td>Truncate Spider Conch</td>
<td>IV</td>
<td>Lakshadweep, Tamil Nadu and Andaman &amp; Nicobar</td>
<td>Shell Length: 162—209mm; Shell Width: 75—127mm</td>
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</tr>
<tr>
<td>Accepted Scientific Name</td>
<td>Old name (as in WPA, 1972)</td>
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<tr>
<td><em>Charonia tritonis</em></td>
<td><em>Charonia tritonis</em></td>
<td>Trumpet Triton</td>
<td>I</td>
<td></td>
<td>Lakshadweep, Andaman &amp; Nicobar and Tamil Nadu</td>
<td>390—420mm</td>
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<td><em>Cassis cornuta</em></td>
<td><em>Cassis cornuta</em></td>
<td>Horned Helmet</td>
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<td></td>
<td>Lakshadweep, Andaman &amp; Nicobar and East and west coasts of India</td>
<td>Shell length: 272—293 mm; Shell width: 112—125mm; Shell Height: 76—90mm</td>
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<tr>
<td><em>Cypraeacassis rufa</em></td>
<td><em>Cypraeacassis rufa</em></td>
<td>Bull mouth helmet</td>
<td>I</td>
<td></td>
<td>Lakshadweep, Andaman &amp; Nicobar and Tamil Nadu</td>
<td>Shell Length: 85—120mm; Shell Width: 60—80mm; Shell Height: 55—66mm</td>
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<tr>
<td><em>Pleuroloca trapezium</em></td>
<td><em>Fasciolaria trapezium</em></td>
<td>Trapezium Conch</td>
<td>IV</td>
<td></td>
<td>Andaman &amp; Nicobar, Pondicherry, Gujarat, Lakshadweep, East and West coasts of India</td>
<td>Shell length: 144—160mm; Shell width: 74—109mm;</td>
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<tr>
<td><em>Tudicla spirillus</em></td>
<td><em>Tudicla spirillus</em></td>
<td>Spiral Tudicla</td>
<td>I</td>
<td></td>
<td>Lakshadweep, Tamil Nadu</td>
<td>Shell Length: 57—70mm; Shell Width: 35—44mm</td>
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<tr>
<td><em>Harpulina arausiaca</em></td>
<td><em>Harpulina arausiaca</em></td>
<td>Vexillate volute/Gold Banded Volute</td>
<td>IV</td>
<td></td>
<td>Pondicherry, Lakshadweep, South East Coast of India</td>
<td>Shell length: 65—76mm; Shell width: 48—53mm</td>
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<tr>
<td><em>Conus milneedwardsi</em></td>
<td><em>Conus milneedwardsi</em></td>
<td>Glory of India</td>
<td>I</td>
<td></td>
<td>Lakshadweep, Kerala, East Coast, West Coast, Andaman &amp; Nicobar and Tamil Nadu</td>
<td>Shell length: 103—145mm; Shell width: 33—43mm</td>
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<tr>
<td><em>Placuna placenta</em></td>
<td><em>Placenta placenta</em></td>
<td>Window Pane Oyster</td>
<td>IV</td>
<td></td>
<td>Lakshadweep, East and West coast of India and Andaman and Nicobar islands.</td>
<td>Shell Length: 46—48mm; Shell Width: 43—46mm</td>
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<tr>
<td><em>Tridacna maxima</em></td>
<td><em>Tridacna maxima</em></td>
<td>Elongate Giant Clam</td>
<td>I</td>
<td>II</td>
<td>Lakshadweep, Tamil Nadu and Andaman and Nicobar islands.</td>
<td>Shell Length: 110—130mm; Shell Width: 85—95mm</td>
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<tr>
<td><em>Tridacna squamosa</em></td>
<td><em>Tridacna squamosa</em></td>
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<td>I</td>
<td>II</td>
<td>Lakshadweep, Tamil Nadu and Andaman and Nicobar islands.</td>
<td>Shell Length: 120—135mm; Shell Width: 85—110mm</td>
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<tr>
<td><em>Hippopos hippopus</em></td>
<td><em>Hippopos hippopus</em></td>
<td>Bear’s paw/ Horse’s Hoof</td>
<td>I</td>
<td>II</td>
<td>Andaman and Nicobar islands.</td>
<td>Shell Length: 135—148mm; Shell Width: 89—118mm</td>
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<tr>
<td><em>Nautilus pompilius</em></td>
<td><em>Nautilus pompilius</em></td>
<td>Chambered Nautilus</td>
<td>I</td>
<td></td>
<td>Lakshadweep, Andaman and Nicobar Islands and east and west coast of India.</td>
<td>Standard Length: 175—200mm</td>
</tr>
</tbody>
</table>
20K sharks slayed for fin soup fad, 4 held

CAUGHT IN A SOUP

Shark fin soup is considered an aphrodisiac for men, but forcomponent.

7.7K

Alleged trade worth of a huge

20K

Shark fins to be eaten worth.

(Multimedia content)

The demand for shark fin soup has reached such alarming heights that the Chinese and Vietnamese fish traders have started publicising their shark fin products. The trade has also fuelled the demand for shark fin soup in other Asian markets.

20K

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Smugglers take mobile app route to carry illicit animal parts trade

New Delhi: Poachers and smugglers have found a new way to hoodwink investigators and carry out the illegal trade of animal parts via mobile apps. With the advent of mobile technology, there is a huge demand for ivory, horns and other products of endangered species such as rhinos, elephants, and other animals.

DNA, Delhi; 29/9/18

Mumbai Vritant, Mumbai; 18/9/18

Shell game: Traffickers in US cater to Asia’s taste for turtles

Financial Express, Chandigarh; 4/9/2018