



WILDLIFE CRIME TECH CHALLENGE

ISSUE 1: TRANSIT ROUTES

Detect transit routes

Illegal products need to be transported, usually internationally, in order to connect supply with the greatest source of demand. Wildlife traffickers have a number of strategies for moving illegal products undetected around the world. They use complex transportation routes that frequently change to take advantage of the most porous borders and gaps in enforcement. They bundle together illegal and legal cargo on transport vessels and falsify documents so that illegal wildlife can enter legitimate supply chains. They exploit internet retailers, which are difficult to regulate, and also make use of code words and chat rooms and even the Deep Web. Further, they benefit from the sheer volume of freight being moved globally, which makes detecting illegal goods a challenge. Combined, these strategies make it difficult for law enforcement to monitor, detect, and predict the transit routes through which wildlife is trafficked.

We are seeking innovative solutions to three problem areas

The Challenge is specifically calling for tools, processes, and technologies relating to:

- The detection and monitoring of existing transit routes
- The prediction of future transit routes
- The ability to combat wildlife trafficking over the internet

Current state of the issue: transit routes for illegal wildlife

The problem of detecting wildlife trafficking routes is complicated by the sheer diversity of illegally trafficked species and products and the number of source countries, routes, and markets.

A recent report on the sophistication of the transit routes used to transport elephant ivory between Tanzania and China offers an example of the complexity involved.¹ At each stage of the journey traffickers have several options. Ivory is transported to container ports in secret compartments on buses or trucks, or aboard seaborne dhows. At the port, which could be Dar es Salaam, Mombasa, or Zanzibar, it may be hidden underground or stored in private residences or warehouses while it is aggregated into large amounts for shipment. Upon leaving the country, ivory may be concealed in nearly any type of cargo. In a recent case, authorities found tusks hidden in a container of sunflower seeds.²

Finally, ivory might pass through several transshipment points, including the United Arab Emirates and Malaysia, and be offloaded anywhere from Vietnam, to the Philippines, to Hong Kong, before being forwarded to distributors in the main consumer markets like China and Thailand. These distributors often reach end consumers via online social networking outlets.³ The map below from the CITES Elephant Trade Information System (ETIS) represents all known ivory flows in 2012 and 2013. Each arrow represents a smuggling route where seizures took place, and dots represent seizures for which the routes could not be determined.⁴



Figure 1 – Mapping the illegal elephant ivory trade (Source: CITES ETIS via TRAFFIC)

In the example of the Tanzania-China ivory trade, the final sale to the consumer is often made over the internet. This is emblematic of a growing problem: wildlife trafficking via the internet has surged since the mid-2000s. This aspect of the trade represents a comparatively new threat and one that requires different responses in terms of monitoring and interdiction. The internet allows those involved in online criminal activities to interact under cover, hide their true identities, and carry out their online transactions relatively unseen. The trend has connected many more consumers to illegal wildlife traders and stoked demand for wildlife parts. Despite crackdowns, illegal products are still traded openly on major websites. Further, unlike shipping ports, websites can be quickly and easily shut down and reopened under different URLs. Of particular note and concern is the rise in online sales through social media forums. They allow a vendor to anonymously develop a relationship with a potential buyer, and when ready, direct them to a sales listing on a known e-commerce site that uses a false product name.⁵

Current efforts to detect, monitor, and predict wildlife trafficking routes

While practices vary significantly among wildlife species, country, and transit route, there are several general dimensions to the monitoring, detection, and prediction of trafficking routes for illegal wildlife.

- Monitoring of poaching or source locations and how the product feeds into the supply chain
- Gathering of local intelligence at source and market locations and from the transport sector
- Interception and interdiction of shipments
- Tracking of shipments to map trade routes
- Controlled deliveries of illegal shipments to identify and arrest intermediate conduits and end users
- Analysis of seized shipments to inform future monitoring and interdiction plans
- Aggregation of evidence and trend analysis to predict and model future trafficking routes

Too often, the interdiction of illegal wildlife relies on random scans of cargo, typically at critical control points such as ports and airports. Untargeted searches are inefficient, especially given shipping volumes, equipment costs, and manpower constraints at these control points. Further, extensive inspections can slow the movement of legal goods. New technology-based approaches are sorely needed.

One example of a technology tool currently in use to monitor the illegal wildlife trade is the Elephant Trade Information System (ETIS), which is managed by TRAFFIC on behalf of CITES. ETIS records and analyzes information on elephant ivory seizures and shipment and transshipment destinations. Current ETIS analyses confirm that East Africa is the biggest source region for shipping illegal ivory, with Kenya and Tanzania playing the largest role as ports of export. Based on ETIS data, containerized shipping through African seaports accounts for nearly two-thirds of large-scale ivory seizures by number and three-quarters by weight since 2009. ETIS also reveals that two-thirds of large ivory seizures made between 2009 and 2013 occurred in Asia, which suggests that enforcement at Asian ports were more effective than those at African ones. However, since 2014, seizures in African ports have increased, which suggests that action has been taken in response to this problem.

To date, efforts to combat the online trafficking of wildlife have largely focused on securing the cooperation of large online retailers. On January 1st, 2009, E-bay, one of the world's largest online retailers, instituted a worldwide ban on the sale of elephant ivory pieces, with some very minor exceptions depending on local laws.⁶ The ban seemed to be more effective in some countries and less so in others.

Following E-Bay's example, dozens of Chinese internet companies have made public commitments to prevent the sale of endangered species on their sites in recent years and imposed policies to filter these out. However, preventing the online sale of wildlife and wildlife parts remains a challenge as traffickers do find ways to circumvent the controls imposed by the industry. This suggests that despite strong and well-intentioned efforts, better tools are needed to effectively monitor and control the online illegal wildlife trade.

The way forward

The Challenge Team anticipates successful solutions focusing on a variety of areas. Solutions could potentially include technologies from the following, non-exhaustive, list:

- Tools that allow real-time remote monitoring of known sources of illegal wildlife
- Large-scale technology solutions that would enable effective identification of poaching incidents for multiple species, which could include geospatial or on-the-ground monitoring systems that predict where wildlife is entering the supply chain
- Affordable yet accurate tools that facilitate more comprehensive inspections at critical control points (i.e. portable rather than drive-through scanners) and improve the capacity to identify organic matter, thereby improving interdictions
- Improvements in the detection of online transactions of illegal wildlife products through deep learning technologies and big data analytics that rely on pattern recognition
- “Bot” technologies that can convincingly masquerade as buyers of illegal products through social media and the Deep Web and provide law enforcement with the ability to identify traffickers on a regular basis

These suggestions are simply designed to spur ideas, and the Challenge encourages applicants with technologies that solve problems not explicitly listed above.

Useful links

- CITES Monitoring Illegal Killing of Elephants Central African Pilot: Technical Report No. 3 accessible at http://www.cites.org/eng/prog/mike/pilot/tech_rep3.shtml
- CITES Sixty-fifth meeting of the Standing Committee, July 2014, documents accessible at <http://www.cites.org/eng/com/sc/65/index.php>
- BBC News: Frontline teams ‘unaware’ of wildlife smuggler tactics accessible at <http://www.bbc.com/news/science-environment-31162726>
- Google drones launch in Africa accessible at <http://www.fastcompany.com/3003766/google-drones-launch-africa>
- Human traffickers caught on hidden internet accessible at <http://www.scientificamerican.com/article/human-traffickers-caught-on-hidden-internet/>
- PLOS ONE: Dissecting the Illegal Ivory Trade: An Analysis of Ivory Seizures Data accessible at <http://journals.plos.org/plosone/article?id=10.1371/journal.pone.0076539>
- TRAFFIC: Moving Targets: Tracking Online Sales of Illegal Wildlife Products in China accessible at <http://www.traffic.org/storage/China-monitoring-report.pdf>
- TRAFFIC: South Africa’s Illicit Abalone Trade accessible at <http://www.traffic.org/storage/W-TRAPS-Abalone-report.pdf>
- University of Washington Center for Conservation Biology: Tracking Poached Ivory accessible at <http://conservationbiology.uw.edu/research-programs/tracking-poached-ivory/>

¹ Environmental Investigation Agency (EIA), 2014, “Vanishing Point; Criminality, Corruption and the Devastation of Tanzania’s Elephants.”

² Environmental Investigation Agency (EIA), 2014, “Vanishing Point; Criminality, Corruption and the Devastation of Tanzania’s Elephants.”

³ International Fund for Animal Welfare (IFAW), 2014, “Wanted-Dead or Alive, Exposing Online Wildlife Trade.”

⁴ TRAFFIC Report, 2014, “Illegal Trade in Ivory and Rhino Horn: An Assessment to Improve Law Enforcement Under the Wildlife Traps Project,” Tom Milliken.

⁵ International Fund for Animal Welfare (IFAW), 2014, “Wanted-Dead or Alive, Exposing Online Wildlife Trade.”

⁶ International Fund for Animal Welfare (IFAW), 2014, “Wanted-Dead or Alive, Exposing Online Wildlife Trade.”