Title: From field to marketplace: the use of wildlife DNA forensics to track and prosecute the illegal wildlife trade

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Abstract:

The illegal wildlife trade is having a devastating effect on the status of many endangered species, including some of our most charismatic large animals and plants. Tackling the trade has become an area of global concern and concerted international efforts are underway to address the issue, involving support for alternative livelihoods in source countries, law enforcement and demand reduction for wildlife products in end-user countries. Law enforcement is a complex issue, requiring investigations at many different scales, from local bushmeat poachers through to international organized criminals. As with any other crime, investigators are using forensic science to detect and prosecute offenders.

The use of molecular genetic analysis to identify human evidence has revolutionised forensic science and is now an established tool in law enforcement. The analysis and identification of wildlife DNA is used to address questions of species identity, captive breeding and geographic origin, as well as individualization across multiple species[1,2]. The resulting evidence is used to provide intelligence concerning trade routes as well as prosecute individuals involved in wildlife trafficking.

This presentation will introduce the field of wildlife DNA forensics, explain the key scientific questions involved, from phylogenetics to familial relatedness, and the approcahes being used to tackle them. It will explain how forensic science capacity is being developed for wildlife law enforcement in Africa and Southeast Asia, and how these new laboratories are contributing to wildlife law enforcement and its role in biodiversity conservation.

1. Ogden R, Dawnay N, McEwing R. (2010) Wildlife DNA forensics-bridging the gap between conservation genetics and law enforcement. *Endangered Species Research*, 9:179-95.
2. Ogden R & Linacre A (2015) Wildlife forensic science: A review of genetic geographic origin assignment. Forensic Science International: Genetics, 18:152-9.