

DNA analysis and molecular forensics

As an independent research institute with substantial knowledge and experience in indigenous and exotic wildlife, the IZW provides forensic services to assist national and international governmental agencies as well as non-governmental agencies in their efforts to fight illegal activities.

Globally, illegal hunting contributes to the unsustainable exploitation of numerous wildlife species, as exemplified by rhinoceroses, tigers, pangolins and different turtle species.

Modern DNA forensics can provide molecular evidence that may help to convict criminal offenders even based on trace amounts of material and thus helps to increase the risk associated with poaching and other illegal activities such as illegal trading and collecting of protected wildlife.

Services provided by the IZW include

- Investigation of possible insurance fraud (damage by wildlife, traffic accidents by contact with wildlife species)
- Determination of the identity of the species or subspecies of confiscated animal material (fraudulent meat products, artifacts, fur etc.)
- Assistance in suspected cases of poaching or illegal trapping of animals
- Species identification of animals from which only trace material is available (e.g. hair, feces, blood droplets)
- Parentage analysis of animals for which no proper documentation is provided by the holders or owners.
- For questions or for inquiries regarding other forensic services - in particular involving non-mammal species - please contact us (preferably via email.)

Methods

Methods of choice are sequencing of mitochondrial genes or of entire mitogenomes, genotyping at microsatellite loci and search for single nucleotide polymorphisms (SNPs). We also have larger sequencers (MiSeq, NextSeq) if more sequence information is required. Once gene sequences have been retrieved from a specimen, they need to be compared with homologous sequences from known species to assign the yet unknown species of the case material. However, many exotic species are not represented in genetic databases or are represented there by only a single (and potentially erroneous) entry. In these cases the reliability of genetic databases as a tool to determine what species the unknown case material belongs to is severely compromised. Under these circumstances, the IZW reference specimen collection is often an excellent source of reliable reference material.

Contact

Prof. Dr. Jörns Fickel (member of the [Society for Wildlife Forensic Science](#))

Phone: 0049 (0) 30 5168 314

Email: fickel@izw-berlin.de