

ANALYSIS OF LEGAL PROVISIONS GOVERNING FORENSICS IN WILDLIFE CRIMES

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ABSTRACT

Wildlife trade has raised serious concerns about the protection of the different floral & faunal species. Due to the lack of proper tools and certain techniques for the identification of wild species, the judiciary faces major constraints while framing charges against the suspected poachers. The emergence of wildlife forensics has been extremely helpful in solving such wildlife crime cases. Wildlife forensics has proven to be a quick and reliable method of conducting criminal investigations. Advancement in the fields like genetics, molecular biology, and evolutionary biology, has immensely contributed to the identification of different species. As a result, the role of Experts and their specialized knowledge became extremely significant in this field. The information gathered for this research has the potential to be used to raise awareness about the increasing number of wildlife crimes and the importance of wildlife forensics in curtailing the illegal wildlife trade. Further, this research topic will help in knowing about the legal provisions related to wildlife forensics.

Keywords: Wildlife Crime, Trade, Species, Forensics, Experts, Genetics.

INTRODUCTION

The Indian Justice system is based on the principle of **“Let a hundred guilty be acquitted, but not one innocent should be convicted.”** But at times this principle has been misused by the offenders to evade their conviction on the grounds of absence of direct evidence against them. In such scenarios, victims often felt injustice being done to them by the law. So, to protect the interest of such victims and to serve them justice, forensic law can be very useful in identifying the offenders by examining and investigating the crime scene with the help of forensic experts and technology.¹

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¹ Khushi Shah, ‘Forensic Law: A Developmental Study’ (*Legal Services India*)

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Factually, various statistics have confirmed that the crime rate in India is increasing rapidly. Various crimes today, ranging from theft to murder and rape, are being committed on a daily basis, and the power to take cognizance and investigate all such crimes so committed lies with the concerned law enforcement agencies or police departments. Generally, the investigation commences as soon as the First Information Report is lodged, whereafter a detailed study of the crime scene is conducted to gather any evidence in relation to the crime so committed. The collected evidence is then sent securely to a forensic laboratory to obtain some authentic medical proof for further investigation of the case. However, it is pertinent in this regard to note that such crimes are not only committed against human beings, several wildlife species, and animals are also subjected to various forms of heinous crimes. Although the crimes against animals are very different from the crimes being committed against human beings in respect of the nature, objective, and investigation of such crimes. Moreover, the process of collecting evidence is also far more complex and diminutive. But similar to the investigation being conducted in any other crime, the evidence even in case of crimes against wildlife is sent to a wildlife forensic laboratory for its examination, which is way more elaborated and sophisticated in its working than a usual forensic lab.² So, in a rich biodiversity country like India where wildlife crime is rampant, the use of forensic science in the investigation of wildlife crimes and the establishment of wildlife forensic laboratories is very much necessary to investigate the crime scene and convict the offenders.³

WHAT IS FORENSIC SCIENCE?

“Forensic science is the application of medical and scientific knowledge to law, which involves collection and analysis of medical samples and evidence to draw inferences of facts admissible in the court of law and aid in the administration of justice”. It is an instrument of medical, scientific, and legal expertise that is mostly applied by law enforcement agencies or authorities for the purpose of resolving legal issues, such as in cases of murder, rape,

² Vaishali Sharma, ‘Development of Wildlife Forensic Laboratories in India’ (*Indian Law Portal*, 27 November 2020) <<https://indianlawportal.co.in/development-of-wildlife-forensic-laboratories-in-india/>> accessed 12 June 2023

³ Saumya Parmar, ‘Importance of Forensic Science in Law – A Study’ (*Scholarticles*, 1 September 2015) <<https://scholarticles.wordpress.com/2015/09/01/sp5/>> accessed 12 June 2023

accidents, assault, injuries, sexual offences, poisoning, etc. In short, it deals with the medical components of the law.⁴

WILDLIFE FORENSICS & ITS ROLE IN COMBATING WILDLIFE TRADE

Forensics plays a very vital role in decreasing the wildlife trade and conflicts between humans and wildlife. Forensics has many branches. Wildlife Forensics is that branch of forensics where science and technology are used in a criminal investigation to identify, examine, and gather evidence when a crime happens against wildlife. It uses the same principles as that of human forensics but with certain modifications. Human forensics is only concerned with the Homo sapiens, whereas wildlife forensics is concerned with a variety of species. The primary objective of wildlife forensics is to examine and compare the evidence from crime scenes and link it to the suspects and victim animals using scientific methods. Since it is quite difficult to retrieve the entire body of the animal as only some parts and pieces are recovered which rarely have the characteristics that define that animal species, the work of wildlife forensics is even tougher than the usual forensics. After the commission of a wildlife crime, very few pieces of proof and evidence are left that have to be carefully mended together to solve the crime mystery. Thus, the forensics department has to identify the species of the animal with only limited pieces of evidence.⁵

Today, organized wildlife crime has become a huge problem across the globe as it endangers the existence of many species. Poachers or hunters adopt brutal methods like poisoning, snaring, shooting, etc., to supply parts like the skin of a tiger, ivory tusks of elephants, or any other such parts, to the international wildlife trade market for earning money. Due to this, many wildlife species are endangered and are on the verge of going extinct. Thus, wildlife forensics is essential in order to curtail illegal wildlife trade by identifying the criminal activities and offenders who are responsible for it.⁶

Forensic application, be it of any kind, is based on the case which has been dealt with and the environment within which those methods are deployed. The most important thing here is to establish a connection between the victim animal, the crime scene, and the

⁴ Khushi Shah, 'Forensic Law: A Developmental Study' (*Legal Services India*)

<<http://www.legalserviceindia.com/legal/article-1251-forensic-law-a-developmental-study.html>>accessed 13 June 2023

⁵ Samyukta Chemudupati, 'Forensics in Wildlife Crime Investigation' (*Wildlife Conservation Trust*, 12 June 2019)<<https://www.wildlifeconservationtrust.org/forensics-in-wildlife-crime-investigation/>>accessed 20 June 2023

⁶ *Ibid*

suspects. Therefore, forensics often functions as an intelligence tool that may provide some identity, technical information, or a link to the possible suspects. It can also identify the species of animal and various other relevant information related to the crime by using the science of DNA. Apart from this, it is also about taking people's expertise at the wildlife crime sites and collecting the best evidence.⁷

LEGAL PROVISIONS RELATED TO WILDLIFE FORENSICS

When it comes to wildlife forensics, the primary question which arises here is whether it is Wildlife Protection Act 1972 or the Indian Evidence Act 1973 which deals with the forensics related to wildlife. To answer, the Wildlife Protection Act 1972 is a special law that is enacted specifically to offer legal protection to various species of flora and fauna. The term "*Special Law refers to legislation that has been made specially to handle certain situations or a particular subject.*"⁸

According to the Latin maxim "*Generalis Specialibus non-Derogant*", which is a cardinal principle of interpretation, **special law is given superiority over general law**. Now in the context of Wildlife Forensics, Evidence plays a very crucial role since forensics is all about evidence. However, the Wildlife Protection Act is silent about it, and when a Special Act is silent regarding any provision then the provisions of general law shall prevail.⁹ Therefore, the provisions of the Indian Evidence Act 1973 shall prevail in the context of wildlife forensics.

WHAT IS AN EVIDENCE?

As per the Indian Evidence Act 1973, "*Evidence includes both oral and written testimony*".¹⁰ In generic terms, it refers to those instruments by which appropriate and authentic facts are presented before a court of law based on which a judgment is passed. By collecting evidence and samples from the crime scene, forensic science aims to establish a concrete connection between the suspects and the crime so committed. The testimony or evidence gathered with

⁷'Fighting Wildlife Crime with New Age Forensics' (WCS-India, 20 August 2019) <<https://programs.wcs.org/india-beta/Newsroom/Blog/ID/12998/Fighting-Wildlife-Crime-with-New-Age-Forensics>>accessed 14 June 2023

⁸ The Indian Penal Code 1860, s41

⁹ Mirza Iqbal Hussain v State of Uttar Pradesh, [1983] SC 60

¹⁰ The Indian Evidence Act 1973, s3

the help of forensic science is very authentic and reliable, which is why it is highly preferred by investigating agencies and courts to reach a conclusion.¹¹

ADMISSIBILITY OF FORENSIC EVIDENCE IN THE COURTS

Sections 45 to 51 under the Indian Evidence Act 1872 talk about the relevancy of the opinions given by experts. As per the provisions of this Act, a witness is the one who testifies the facts or circumstances about which he is directly aware. However, the Act does not clearly define the term 'Expert', but in simple terms, an expert is a person who possesses certain specialized knowledge and skills in a particular field of interest. There can be various kinds of experts in forensics such as ballistic experts, medical experts, fingerprint analysts, etc.¹²

In the case of wildlife crimes, wildlife forensic experts essentially focus on the use of scientific techniques to investigate and connect the shreds of evidence to the crime. They analyze and compare the biological samples gathered from the crime scene and apply forensic procedures to it to identify the nature and cause of the crime, which may be hunting, illegal smuggling, cruelty, or any other such crime, before being called to the court to provide their testimony as an "expert witness".¹³

EXPERT OPINION

The role of evidence is very crucial in a court proceeding irrespective of whether it is a civil or a criminal matter, and therefore in the collection of relevant evidence, the opinion of the experts has a key role to play. Usually, a witness is the person who is called before the court by way of summon to narrate the facts and circumstances of the case but as per the Indian Evidence Act 1982, an expert is also deemed to be a witness even if he is unaware of the actual facts of the matter concerned. There can be various types of expert witnesses who are specialized in different specific areas, such as medical experts, accounting and securities experts, vocational experts, etc., but among all these, forensic experts are the ones who provide the most valuable opinions than the rest, especially in

¹¹ Uzma Naaz, 'Forensic Evidence Relevancy and Admissibility under the Indian Evidence Act' (*Edu Law*, 04 November 2022) <<https://portal.theedulaw.com/SingleArticle?title=forensic-evidence-relevancy-and-admissibility-under-the-indian-evidence-act>> accessed 16 June 2023

¹² Snehil Sharma, 'Role of Forensic Evidence in the Criminal Justice System' (*Legal Bites*, 14 May 2023) <<https://www.legalbites.in/forensic-law/role-of-forensic-evidence-in-the-criminal-justice-system-932832>> accessed 17 June 2023

¹³ Oluwatomi Ajayi, 'Wildlife Forensics' (*Learn Forensics*, 06 December 2022) <<https://www.learnforensic.com/blog-details/Wildlife-Forensics/37>> accessed 17 June 2023

criminal matters, which is why most law enforcement agencies necessarily employ a forensic expert to be the expert witness whenever it is required by the court of law.¹⁴

SECTION 45 OF THE INDIAN EVIDENCE ACT

According to this section, *“When the Court has to form an opinion upon a point of foreign law or of science, or art, or as to the identity of handwriting, or finger impressions, the opinions upon that point of persons specially skilled in such foreign law, science or art, or in questions as to the identity of handwriting, or finger impressions, are relevant facts.”*¹⁵ Under the Indian Evidence Act, there is no proper definition of the term ‘relevant fact’, but **sections 5 to 55** of the said Act provide for certain ways which describe the relevancy of one fact with another. In short, Section 45 states that the testimony given by an expert as evidence is admissible in the court. Although courts generally consider the testimony of the experts given its suitability and authenticity, however, if such testimony is found to be unsustainable in any manner, the courts may not necessarily rely upon it to reach a conclusion.¹⁶

SECTION 46 OF THE INDIAN EVIDENCE ACT

Section 46 talks about the relevancy of Expert Opinion. It states that *“the facts, not otherwise relevant, are relevant if they are inconsistent with the opinions of the expert, when such opinions are relevant it means that the facts which are not relevant will be relevant if the opinion of an expert is supported by them.”*¹⁷

USE OF FORENSIC SCIENCE IN WILDLIFE CRIME INVESTIGATION

Ballistics – Forensic Science is a very wide field, including various subfields. Ballistics is one such sub-branch of Forensics that focuses on the examination of firearms. It is mainly used to study angular movement, motion, projectile, and dynamics concerning bullets, missiles, gunpowder, and bombs. Ballistics plays a major role in a criminal investigation as it helps in identifying the shreds of evidence relating to powder burns, shell casings, and other

¹⁴ D. Priyanka, ‘Expert Opinion and Its Relevancy Under Indian Evidence Act, 1872’ (*Legal Services India*) <<https://www.legalservicesindia.com/legal/article-7011-expert-opinion-and-it-s-relevancy-under-indian-evidence-act-1872.html>> accessed 18 June 2023

¹⁵ The Indian Evidence Act 1982, s 45

¹⁶ Aditya Roy, ‘Relevancy and Admissibility under Indian Evidence Act’ (*Legal Services India*) <<https://www.legalservicesindia.com/article/1859/Relevancy-and-Admissibility-under-Indian-Evidence-Act.html>> accessed 18 June 2023

¹⁷ The Indian Evidence Act 1982, s 46

related materials. In short, it helps in exploring all the areas that are associated with the usage of firearms and detecting the residue they leave as evidence.¹⁸**Opinion of a ballistic expert:** A ballistic or firearms expert can easily form an opinion regarding a situation where a gun has been used as a murder weapon, by determining the distance just by looking at the wound and the type of gun used.¹⁹

Section 293 of the Criminal Procedure Code 1973: It deals with the reports of certain Government scientific experts in a court of law. As per this section, if the court is satisfied then it may direct the scientific experts to submit their generated reports for examination which may further be used as evidence. The court may even summon such experts to clear any kind of queries related to the case.²⁰

DNA-Analysis – Deoxyribonucleic Acid, commonly known as DNA is contemplated as the most valuable investigative tool in forensics, as it can easily detect what is happening or what has happened in a person's body. In the present legal system, no statute contains any provisions relating to DNA, even after having such crucial relevance in criminal investigations, like, rape, murder, etc. In wildlife crime investigation, DNA helps in identifying the species that have been killed and is also used to generate the profile of an animal or individual by using the samples of body tissues found from the confiscated items. In a nutshell, Forensic DNA acts as a powerful tool for the criminal justice system for convicting the guilty.²¹

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Case Study – GIR National Park, 2007

Gir National Park case study is one of the popular cases of Wildlife Forensics. In 2007, a report was published stating that around 10 Asiatic lions of the Gir National Park were brutally killed by some poachers. After a period of 18 months, a local court of Junagarh found 30 people of the Baheliya tribe to be guilty of this offence, following which they were

¹⁸ Didiwamukoya, 'Forensic Science and its Role in Wildlife Crime Investigations' (*Wildlife Law Africa*, 11 September 2019) <<https://wildlifelawafrica.com/2019/09/11/role-of-forensic-in-wildlife-crime-investigations/>> accessed 19 June 2023

¹⁹ D. Priyanka, 'Expert Opinion and Its Relevancy Under Indian Evidence Act, 1872' (*Legal Services India*) <<https://www.legalserviceindia.com/legal/article-7011-expert-opinion-and-it-s-relevancy-under-indian-evidence-act-1872.html>> accessed 18 June 2023

²⁰ Supreme Court Ballistic Report Section 293 CrPC' (*Live Law*) <<https://www.livelaw.in/top-stories/supreme-court-ballistic-report-section-293-crpc-assistant-director-ashok-kumar-chandel-vs-state-of-up-2022-livelaw-sc-915-213373&cd=13&hl=en&ct=clnk&gl=in>> accessed 19 June 2023

²¹ Didiwamukoya, 'Forensic Science and its Role in Wildlife Crime Investigations' (*Wildlife Law Africa*, 11 September 2019) <<https://wildlifelawafrica.com/2019/09/11/role-of-forensic-in-wildlife-crime-investigations/>> accessed 19 June 2023

awarded imprisonment for 3 months. In the history of wildlife crime, two things took place in this case that never happened before, *firstly* the use of forensics to solve the case and *secondly* the speedy conviction of the offenders.²²

On the orders of the then Gujarat Chief Minister, Sh. Narendra Modi, IGP Keshav Kumar was handed the charge of the investigation. According to him, it was a blind case without any seizure or eyewitnesses, and thus, Forensics was the only option left to solve this case. He was provided with a seven-member team along with a mobile forensic lab. The most essential thing was to link the evidence gathered from the crime scene to the perpetrators. Every single shred of evidence found was very carefully collected and sealed. While collecting so, it was found that the poachers were not alone and were living with their families in the forest. “Wildlife Protection Society of India,” an NGO which specializes in anti-poaching operations also helped in the investigation by providing necessary information about the *modus operandi* i.e., a particular method used by the tribe in committing the offence. A search operation was conducted where police arrested a total of 45 Bahelias including women and children. However, despite knowing that they were guilty, there was no direct evidence that was linking them to the crime because no lion parts were recovered from them. In such a situation, forensics came into play as a hope of last resort. The team finally recovered the dead bodies of the lions, from the ditches close to the camping areas in Baheliya. But there was one thing common in all the bodies the bones and claws were missing. All the accused were sent for forensic examination, which finally established that the nails and equipment of the accused were containing traces of flesh, blood, and hair of those lions. Therefore, with the help of the flesh samples collected, the forensic test discovered the species and the distinct DNA print of the particular animal by which a clear link between the evidence and poachers was established.²³

Toxicology – With the help of forensic toxicology procedures, forensic scientists can determine the type and dosage of the poison used while examining animal parts that are believed to have been poisoned. Such details could effectively assist investigators in the search and collection of specific evidence which may be relevant to the crime like empty poison containers, clothes contaminated with poison traces, etc. In case when the perpetrators are still not identified, forensic experts might collect “*serological evidence*” from any object

²²Mohair Srivastava, ‘Science in the Wild’ (*India Today*, 17 November 2008) <<https://www.indiatoday.in/22-magazine/states/story/20081117-science-in-the-wild-738174-2008-11-06>> accessed 20 June 2023

²³*Ibid*

that may be found at the place of crime, as it could potentially give some corroborative evidence or clues to the officers for the purpose of identifying the culprits.²⁴

Cyber Forensics – In this age of digitalization, technology has enhanced our lifestyle and made it easier by offering new forms of exchanging information, transacting business, internet banking, and many others. But, apart from these positive changes, there is a negative side to technology as well. There are various crimes that are taking place through online mode. Cybercrime is a term that is specifically coined to group all such offences. It is among those crimes which are expanding at a faster rate day by day.²⁵

It not only affects the individuals but the wildlife species too. With such modern technologies, social media, and online sales, the illegal trafficking and smuggling of wildlife species are increasing rapidly, thereby making it extremely difficult to expose and capture the perpetrators. Therefore, cyber forensics is needed to tackle this issue. “Cyber-Forensics” is the science of gathering, examining, analyzing, reporting, and presenting electronic evidence relating to computers, like evidence found in deleted files or on the hard drive, that can be easily transcribed into physical documents and presented in the court.²⁶

Section 45A of the Indian Evidence Act 1872: This Section allows the opinion of an examiner of electronic evidence. It states that “*When in a proceeding, the court has to form an opinion on any matter relating to any information transmitted or stored in any computer resource or any other electronic or digital form, the opinion of the Examiner of Electronic Evidence referred to in section 79A of the Information Technology Act, 2000 is a relevant fact.*”²⁷ Further, as per the **explanation** attached to this section, “*an Examiner of Electronic Evidence shall be an expert.*”²⁸

Certificate 65B: A 65B Certificate is a certificate that must be submitted in Court in order to produce Electronic or Digital Evidence in different cases. It is known as Certificate 65B because it is mentioned under section 65B of the Indian Evidence Act 1872. According to this section, electronic records will also be considered as documents. It provides that if the

²⁴ Samyukta Chemudupati, ‘Forensics in Wildlife Crime Investigation’ (*Wildlife Conservation Trust*, 12 June 2019) <<https://www.wildlifeconservationtrust.org/forensics-in-wildlife-crime-investigation/>> accessed 20 June 2023

²⁵ ‘Cybercrime’ (*West Yorkshire Police*) <<https://www.westyorkshire.police.uk/advice/online-crime-safety/online-safety/cybercrime>> accessed 21 June 2023

²⁶ Surbhi Bhadoriya, ‘Forensic Investigation in Wildlife Crimes’ (*Forensic Yard*, 23 June 2022) <<https://forensicyard.com/forensic-investigation-in-wildlife-crimes/>> accessed 21 June 2023

²⁷ The Indian Evidence Act 1982, s 45A

²⁸ The Indian Evidence Act 1982, s 45A Explanation

conditions mentioned in sub-section (2) are fulfilled, then an electronic record will be converted into a document, and will be admissible in the court. Hence, the computer from which such record was generated, need not have to be produced in the court.²⁹

Furthermore, it states that if a computer produces any information (e.g., camera recording) and that information is then processed and stored in a computer output (e.g., pen drive), by the person who is legally authorized to use that computer, then such electronic record will be considered as documentary evidence.³⁰

SUGGESTIVE MEASURES AND WAY FORWARD

In my opinion, the following measures can be considered to effectively counter wildlife crimes:

Firstly, there is a need to set up more wildlife forensic laboratories in the country to counter the crimes against wildlife as they can provide concrete and authentic evidence against the accused, which will help in getting speedy justice.

Secondly, there is a clear need for law enforcement agencies and authorities to be more knowledgeable about the application of wildlife forensic science in the collection of criminal evidence against the offenders of wildlife crimes.



²⁹‘65B Certificate under the Evidence Act for presenting Electronic Evidence in Court in India’ (*Lawgic*, 22 January 2023)<<https://lawgic.info/65b-certificate-under-the-evidence-act-for-presenting-electronic-evidence-in-court-in-india/>>accessed 21 June 2023

³⁰ *Ibid*