

WILDLIFE CRIME AND ITS SOCIO-ECOLOGICAL IMPACT

Abstract

Wildlife crime poses a significant hazard to endangered species. Due to these offenses, several species have become extinct. Wildlife crime is destroying biodiversity and causing the extinction of species. This illegal activity includes the illegal taking, trafficking, obtaining, and consumption of wildlife. It is frequently conducted by transnational criminal organizations. Now, however, individuals worldwide are attempting to preserve these endangered species and restore them to their natural habitats. Everyone should be aware of the events, crimes, incidents, and conservation techniques that have occurred in the region to take such measures. Keeping this in view, this chapter aims to discuss the various aspects of wildlife crimes and their impact on society.

Keywords: Wildlife Crime, Biodiversity, Habitat, Endangered Species, Conservation Techniques

Authors

Diksha Kashyap

Research Scholar
Department of Forensic Science
Guru Ghasidas Vishwavidyalaya
Bilaspur, Chhattisgarh, India.
dikshakashyap505@gmail.com

Megha Yadav

Research Scholar
Department of Forensic Science
Guru Ghasidas Vishwavidyalaya
Bilaspur, Chhattisgarh, India.
meghaforensics@gmail.com

Priyanka Gupta

Research Scholar
Department of Forensic Science
Guru Ghasidas Vishwavidyalaya
Bilaspur, Chhattisgarh, India.
priyankaguptavns0@gmail.com

Dr. Chanchal Kumar

Assistant Professor
Department of Forensic Science
Guru Ghasidas Vishwavidyalaya
Bilaspur, Chhattisgarh, India.
chanchalbios@gmail.com

Dr. Ajay Amit

Assistant Professor
Department of Forensic Science
Guru Ghasidas Vishwavidyalaya
Bilaspur, Chhattisgarh, India.
ajay2amit@gmail.com

I. INTRODUCTION

This phrase Wildlife was mainly utilized to report the variety of animals and plants that are found in their natural habitats such as forest areas, desert land, and rainforest areas [1]. It includes non-domesticated animal or plant that grows or live wild in an area far from human influence [2]. Generally, animals are identified based on body covering (hide, fleeces, quill, lamina, pod), organs (limbs, pinion, flippers, tailpiece), as well as way of motion (stroll, creep, hovering, floating) [3]. Wildlife crimes include trading, possessing, and consumption of certain conserved flora and fauna [4]. Illegal hunting, poaching, trafficking, and trade of banned wildlife are also a class of wildlife crime [5]. Wildlife crime overexploits certain species of plants or animals resulting in the disturbance of the fine balance of that particular ecosystem [6]. The reason behind the wildlife crime is mainly economical but it can be committed due to entertainment or recreational reasons too [7]. After assessing the situation, the United Nations Office on Drugs and Crime (UNDOC) included most of the wildlife crimes as a transnational organized crime (TOC) in 2003 [8]. Wildlife conservation and protection are essential for the stability of the ecosystem [9]. As the most involved animal in the ecosystem, humans have a greater responsibility to preserve the ecological equilibrium of the earth [10]. It has been a fact that the diversity of flora and fauna in any ecosystem is directly linked with the stability of that particular ecosystem [11]. Keeping this in view, this chapter aims to discuss the various aspects of wildlife crimes and their impact on society [12].

II. IMPORTANCE OF WILDLIFE

According to part 2(37) of the Wildlife Protection Act, 1972, Wildlife may incorporate a part of creatures or plant whether terrestrial either aquatic that grows as well as propagates without any human interference in any habitat [13]. The presence of wildlife has emotive as well as social significance to society as they contribute to the stability of the ecosystem [14]. Even smaller organisms such as earthworms aid immensely in agricultural productivity [15]. So before discussing wildlife crime over a few successive sections, in this section, all of us do talk about this importance in respect to wildlife in brief [16]. The function of wildlife in maintaining an ecological balance is essential [17]. The presence of wild animals has emotive and social significance for humans, as they contribute to the stability of natural processes [18]. This importance concerning flora and fauna can be categorized just as sustainable, commercial, investigative, as well as conservation of biological diversity [19]. In addition, animals provide us with sustenance, clothing, and income [20]. Without wildlife, human survival would be virtually impossible [21]. We are a part of the ecosystem that sustains wildlife, and our participation is necessary to preserve the ecological equilibrium on Earth [22]. Wild animals take part in a crucial title role inside farming development, as quadrupeds like badger, bison, and so forth aid with tillage or else paving the soil, and so on [23]. In addition, numerous microbes, as well as tiny flora and fauna, like reptilian, contribute into ground productiveness as well as give a solid basis in support of farming pursuit [24]. Microorganisms, such as earthworms, are said to be farmers' best friends, as they aid inside this decay in relation to dead matter as well as contribute humus into a topsoil [25]. That improves the grounds's richness [26]. Overall, wildlife performs important roles in our lives, including those listed below:

- 1. Ecological Importance:** Wildlife contributes to the preservation of a sustainable equilibrium concerning the living world [27]. This assassination in respect to meatatarian causes a rise with this figure concerning phytophage, and that hurts forest vegetation [28]. As a result, these herbivores leave the forest in search of sustenance on farming ground as well as demolish the agriculture. [29]. These demonstrates a certain flora and fauna assists to maintain sustainable equilibrium beside preying on one another [30]. Large predatory animals are the primary cause of ecological development [31]. As a result, once equilibrium and stability are disrupted, numerous issues arise [32].
- 2. Economic Importance:** Wild animals had been utilized for generation of income [33]. Uncultivated flora by-products such as foodstuff, medication, logwood, and fibril have lucrative utility, as do wildlife by-products like flesh, medication, skin, tusk, lac, and fabric, among others [34]. Wildlife provides us with the primary and fundamental materials necessary to launch a part of production, plant, and so forth, for our financial gain [35]. Wild animals were also as well regarded as one of the greatest contributors to the expansion and improvement of international trade and the growth of national income [36]. It also benefits farmers the most by improving tillage and other agricultural practices [37]. Therefore, wildlife is of enormous economic value to everyone [38]. Because flora and fauna were a fount in relation to revenue for many, it plays a crucial role as an economic factor in their lives [39].
- 3. Investigatory Importance:** Wildlife is a great resource to know about the past and evolution [40]. Animals like Crocodiles, tortoises, and other reptiles have been living on this earth for ages and scientific studies and analyses about their habits and anatomy are proven to be very informative in knowing the history of the earth in general and about the ecosystem in particular vegetation and trees of dense forests like of Amazon are still to be fully explored and the information hidden behind that untouched territory of earth will have immense value in understanding the evolution and changing dynamics of the ecosystems [41]. The information gathered from the wildlife may be implemented in the laboratory to develop new products with greater economic value [42]. With the advent of biotechnology, microbiology, and other applied sciences. Now, it is possible to produce wildlife products in the laboratory on a commercial scale [43].
- 4. Importance of Wildlife in Biodiversity:** An ecosystem is always dynamic and its nature depends on the various interactions among the ecosystem's various biotic and abiotic components [44]. Traditionally, in Wildlife Habitat relationship (WHR) the wildlife is conceptualized as the function of habitat [45]. Each wildlife species has its own set of key ecological functions (KEFs). For the sustainability of every natural ecosystem, it is of utmost importance that the rate of reproduction and rate of death of every living component should always synchronize. Animals in the ecosystem act as environmental engineers and affect the geomorphology of the ecosystem [46]. In any ecosystem, the wildlife species play an important role in its diversity as these wildlife species are either functional keystone or functional specialization roles in the ecosystem [47]. Most of the wildlife species work as functional keystone species whose removal may affect the balance of the ecosystem [48].

5. **Preservation Concerning Living Diversification:** Through safeguarding animals, environmental diverseness could be preserved. Certain analysts assert that a more diverse ecosystem is moreover sturdy [49].
6. **Significance inside the Farming:** The importance of flora and fauna to modern agriculture is immense [50]. The following describes the significance of biodiversity in the agricultural sector [51]:
 - The creation of a novel hybrid variety from native plants [52].
 - Utilizing wild animals to produce a superior hybrid variety of agricultural animals [53].
 - They can produce new species of vegetation and animals [54].

Wild animals contribute hugely in the agricultural production. The wild animal's role in agriculture is crucial from paving the soil to cultivation [55]. In addition, numerous microbes, as well as miniature creatures, like reptilians, contribute toward enhancement of ground productiveness as well as give a solid base for farming venture [56]. Microorganisms, such as earthworms, are considered to be farmers' best friends, as they assist towards decay of dead organisms as well as contribute humus into ground. [57]. This improves the fertility of the soil [58].

III. WILDLIFE CRIME AND ITS NATURE

The wildlife crime comprises approximately 25 percent crime worldwide. The most of the wildlife crimes are organized offences which are operated at national as well as international level. [59]. This illicit holding, trading, exploitation, possession, or killing of animals or plants in violation of national or international law constitutes a wildlife crime [60,61]. Wildlife crime refers to any act that violates laws protecting undomesticated fauna as well as vegetation [62]. This could lead to animal anguish as well as causes distress and extirpate strains [63]. Some wildlife are on the verge of extinction and somehow it is linked to other serious crimes such as gun crimes and organized crime [64]. Wildlife crime was mentioned inside part 2(c) of the Wildlife Protection Act of 1972 of India as hurting, demolishing, removal of some portion of the bodily parts in case of fauna or else disorganizing and harming rudiments or roosts of undomesticated Aves or reptilians [65]. As a consequence of these offences against wild flora and fauna, it leads to their extermination [66]. Beasts are being slaughtered en masse not only for sustenance or else garments, but for the purpose of artistic utility too. Since various conventional medications are based upon wildlife as well as related products and usually, they are very expensive which subsequently promotes wildlife crimes. [67]. This enormous gain generated by illegal trade enables offenders to develop into well-organized syndicates [68]. Due to this huge financial interest attached with wildlife crime offenders usually use this money to influence the authorities [69]. It is extremely difficult to measure the scope of wildlife crime as well as recognize the offenders because of unclarity over definition of illegal nature of the activity [70]. Current strategies majorly rely on operation demand verge concerning offence against flora and fauna (for example, hunting stats) [71]. Nevertheless, further comprehensive perspective which marks a lucrative as well as communal elements contributing to provide, as well as customer priorities inside ultimatum nations, will produce extra effective feedback [72]. To combat such composite situation, all of us require additional varying facts to comprehend that elements which motivate individuals towards committing wildlife crimes [73]. Wildlife crime

is unlikely to exist within keeping apart out of another illegal acts (such as drug trafficking), and it is necessary for recognition of this kind of convergence [74].

IV. TYPES OF WILDLIFE CRIME

There are the following types of Wildlife crimes:

- 1. Plundering:** Plundering includes an illicit trapping, capture, as well as assassination of the undomesticated fauna, which is commonly concerned with homeland utilization virtue [75]. Poaching has been in practice since ages mainly for the purpose of livelihood as well as means for subsistence and sometimes to collect peasantry [76]. Poaching, according to the legislation, is the illegal shooting, capturing, possessing fauna, marine species, as well as flora out of privatized belongings or else an area in which these acts were banned [77]. Plundering was the significant empirical hazard towards innumerable untamed creatures across the globe as well as a major patron towards deprivation of biological diversity [78]. This had occurred due to the variable grounds, including to adjust the ever-growing human population. [79]. But, in recent times with growing demand and huge economic gain attached with it, products derived from wild fauna like tusks, wool, body parts, hide, carcass, and tooth which subsequently leads to rise in wildlife crime [80,81]. Plundering includes murdering the wild creatures illegally, by utilizing the any unethical means [82]. Poaching also includes murdering a protected species, exceeding the bag limit, and killing an animal while trespassing [83]. People engage in poaching for various purposes, including food, pleasure, medicine, leather, trophies, and bones [84]. In some regions, such as China, the demand for highly valued animal products such as ivory and furs drives poaching [85]. In other locations, poaching is motivated by destitution or disregard for hunting laws [86]. The practice of removing eggs from the burrows of loggerhead turtles is an example of poaching [87]. In South Africa, 448 rhinos were slain in 2022, three fewer than in 2021 [88]. In a country like India, where a rhino is poached every 20 hours, over the past three years there have been 90 seizures of elephant tusks/ivory and 29 instances of elephant poaching [89]. The Ministry of Environment, Forest, and Climate Change (MOEFCC) shared this data with a Lok Sabha on August 8, 2022 [90]. In 2021, the greatest number of elephant tusk seizures, 42, and the highest number of elephants poaching incidents, 14, were reported across the country [91]. Meghalaya was solely responsible for seven of the fourteen poaching fatalities [92]. In 2018-2019, six elephant deaths were attributed to poaching, while in 2019-2020, nine elephant deaths were attributed to poaching [93]. In South Africa, the incidents of poaching of rhino for its horn had increased at an alarming rate in the last five years and were reported in the year 2021 [94]. It is plausible that the COVID-19 pandemic was responsible for this change [95].
- 2. Coursing:** Coursing is defined as using sight rather than scent to pursue game animals such as hares with greyhounds [96]. Coursing is the pursuit of game or other animals by dogs, primarily greyhounds and other sighthounds, who capture their quarry through speed, sight, and not scent [97]. Coursing was a prevalent hunting method utilized by nobles, landowners, and the wealthy, as well as commoners with sighthounds and lurchers [98]. Hares, foxes, various species of deer, antelope, gazelle, jackals, and wolves are hunted for sport and recreation [99]. Coyotes and jackrabbits are the most prevalent animals encountered on courses [100]. In contemporary, the contests of

coursing are arranged deals with duplet pairs of dogs who will chase only a single rabbit in a simultaneous manner. [101]. Judgements for the greyhounds were made on the basis of how they performed and their potential to apprehend the rabbit: the marks were provided on outstripping another greyhound as well as for seizing the rabbit, further also for turning off rabbit towards ninety degree, pulling (side roading it below ninety degree), in addition falling down a rabbit tripping the hare, as well as for killing it. [102]. In his report, 'Arrian on Hunting' written in 150 A.D., the Greek philosopher and historian Arrian described coursing in detail [103]. During the 16th century, the sport became extremely popular but now it is banned in countries like England, North Ireland, Scotland, the UK, and Australia [104].

- 3. Hunting:** Hunting is defined as tracking and killing wild animals or birds for amusement or subsistence [105]. Humans hunt when they seek, pursue, capture, or slaughtering of wild or captive animals as sport [106]. It may also be done for non-exploitative reasons such as removing predators which are dangerous to humans or domestic animals (for example, wolf hunting, killing of man eaters), or to eradicate insects as well as irritant creatures which destroys agricultural fields (herbivores /pest strains). In past times, elite class of society killed animal mainly typically vertebrates for entertainment which is known as "Sport" [107]. A hunter or huntsman is a participant in that killing, the game reserve was a natural area utilized in hunting, as well as a curator was a proficient predator that aid to coordinate hunts as well as govern game reserves [108].
- 4. Illegal Wildlife Trade:** Illegal wildlife trade mainly denotes to all the by-products which are obtained from flora and fauna that are not domesticated and are typically drawn out of the native surroundings or else reared in a managed environment [109]. It may include an exchange concerning alive else way deceased humans, the body like hide, skeleton, flesh, and some additional goods [110]. The main activities involved in this practice are the illicit transportation, illegal hunting, unlawful capture, or unauthorized acquisition of species that are at risk of extinction, as well as the procurement of protected wildlife (including animals or plants that are subject to specific quotas and licenses), their byproducts, or related goods [111]. Illegal wildlife trade (IWT) encompasses a wide range of species, products, geographical locations, actors, and networks. However, its generally accepted definition pertains to the unlawful exploitation and commerce of wild species, which contravenes national legislation. This includes activities that violate harvest quotas, protected species lists, regulations governing protected areas, and obligations outlined in the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) [112]. The illegal trade of wildlife, commonly referred to as IWT, poses a significant risk to the world's biodiversity. This trade not only endangers well-known and admired large mammals but also jeopardizes the survival of numerous species of plants, animals, and fungi found on land and in maritime environment worldwide [113]. The aforementioned phenomenon poses a dual threat to the existence of many species, while also reducing the diversity of activities and processes that these species carry out within their respective ecosystems. These functions and processes are crucial for maintaining stable and resilient ecological systems [114]. In addition to the aforementioned points, the illegal trade of wildlife has several negative consequences. Firstly, it causes harm to individual plants, fungi, or animals that are directly affected by such activities. Secondly, it poses a threat to the survival of various species. Thirdly, it has detrimental effects on the provision of ecosystem goods and services, thereby impacting broader human well-being. Furthermore, the illegal wildlife trade can result in harm to individual trees,

including those of significant age, although the concept of welfare is more commonly associated with fauna. Additionally, it contributes to a decrease in the likelihood of survival for Critically Endangered species, both at the local population level and on a global scale. Moreover, it leads to modifications in future forest structure and community dynamics. Lastly, the illegal wildlife trade also causes damage to relational values, such as the sense of place, bequests, or values related to existence.

According to a study conducted in 2016, there was a notable increase in the trafficking of tigers, with a recorded figure of 50 individuals. This figure is the largest number of tiger trades observed during the preceding decade [116]. Over the course of the years 2018, 2019, and 2020, a significant number of instances, over two thousand, were officially recorded in India pertaining to the unlawful slaughter or trafficking of wildlife. These cases led to the apprehension of almost four thousand individuals who were implicated in illicit trading activities [117]. The recorded number of cases and the individuals apprehended throughout the years 2018, 2019, and 2020 were as follows: 648 cases with 1099 arrests, 805 cases with 1506 arrests, and 601 cases with 1231 arrests, respectively [118]. In July 2020, a number of exotic species like the red kangaroo (*Macropus rufus*), Aldabra tortoise (*Aldabrachelys gigantea*), blue macaws (*Anodorhynchus hyacinthinus*), and capuchin monkey (*Cebus capucinus*) were confiscated from Lailapur, Assam [119].

Other wildlife crimes include the acts of oppression in case of badgers, aves, as well as fruitbats, stealing as well as collecting eggs, the gathering and trafficking of the preserved strains as well as fauna by-products, the failure to register wild creatures that necessitate a permit, the capturing of safeguarded flora, the utilization of toxins or combustible materials in order to hurt or else assassinate wild fauna, cases reported of torture, killing by greyhounds, insertion of interfering breeds, assassination, possessing, destroying, along with demolition of vulnerable strains, as well as the cutting, seizing, uprooting, or destroying of vulnerable flora. [120].

Table 1: Illegal Wildlife Trade of Animals

Name of Animals	Illegal Wildlife Trade Product	Use	IUCN Conservation Status
Elephant	Ivory Tusk	Amulets, jewels, sculptures, inscriptions, clavier keyboard and checkerboard pairs	Endangered
Tigers	Skin, bones, Claw, fur, teeth	Decorative and Ornamental items, Medication, syrups, jewels and Coats..	Endangered
Rhino	Horn	traditional medicine and have an artistic value	Vulnerable
Pangolin	Scales, meat, blood	They are used for spiritual protection. Scales are used in indigenous medication as well as jewellery and flesh is consumed for delicacy.	Endangered

Hornbill	Horn	Have medicinal and artistic value	Vulnerable
Crocodile	Skin, teeth, claw	Skin to make cosmetics	Critically Endangered
Snake	Skin, venom	Skin is used to make different items like boots, bags, belts, etc. Venom is used to make medicine.	Vulnerable
Bear	Bile Juice	Used as medicinal to cure cancer, colds, etc.	Threatened with Extinction
Tortoise	Shell	To make ornaments and guitars.	Vulnerable
Antelopes	Horns and skin	Horns have high medicinal value and skin is used to make box calf and suede.	Vulnerable to Near Threatened
Ostrich	Fur and eggshell	Egg shells have medicinal value and can also be used as a tool and fur is used for decoration, brushing, and making dusters.	Least Concern
Leopard	Head, fur, skin, bone, claw, teeth	The skin is used for making boots, coats, blanket	Endangered
Birds	Live animals or their meat	To make them pets or eat them	Critically Endangered
Peacock	Plucked feathers and meat	Have artistic and spiritual value.	Endangered
Wild Boar	Meat	Consumption	Least Concern

Table 2: No. of Cases of Wildlife Crimes in India

S. No	Type of Wildlife Crime	Number of Cases (2021-2023)
1.	Poaching	722
2.	Hunting	863
3.	Coursing	756
4.	Illegal Wildlife Trading	1203
5.	Oppression of Aves and Fruitbats	489
6.	Stealing and Gathering of Eggs	183
7.	Gathering and trafficking of vulnerable strains of flora and fauna by-products	370
8.	False authorization of wild fauna which needs a permit	150
9.	Capturing endangered flora	195
10.	Utilization of toxins, snarewires, and combustible materials for killing and hurting wild fauna	561

11.	Torture and violence on Wild animals	720
12.	Killing by Greyhounds	120
13.	Insertion of interferring strains	157
14.	Demoliting the habitation of Wild fauna	750

IV. LAWS RELATED TO WILDLIFE

1. International Law Related to Wildlife Crime

- **Migrant Aves Agreement (1916):** The Migrant Aves Agreement, initially signed between the United States and Canada, the latter being a former province of the United Kingdom, has undergone multiple amendments during its existence. The primary objective of this pact is to save migratory avian species that are deemed to be at risk of facing extinction. The primary objective of this treaty is to safeguard animals that pose no threat or provide benefits to human beings. The treaty also outlines the implementation of restricted hunting periods, prohibiting the hunting of insectivores, unless they pose a risk to crops. In such cases, a permission may be granted to allow hunting activities.
- **Migrant Aves and Sports Animal Agreement (1936):** The signing of this convention aimed to safeguard avian species that engage in migratory behavior, establishing a framework for cooperation between the United States and Mexico. The act of hunting is strictly prohibited within the designated territory. In the United States, legislation was passed to establish a code that delineates the consequences for non-compliance with this pact. In the year 1972, the pact incorporated numerous additional avian species, such as eagles, hawks, and owls.
- **Antarctic Ocean Agreement (1959):** The 1959 Third Antarctic Treaty Consultative Meeting had support from a total of twelve states. The transportation of avian, botanical, and mammalian species indigenous to Antarctica is strictly prohibited for importation or exportation into or out of the United States or Canada.
- **Ecological Conservation Agreement (1973):** The Environmental Protection Treaty was signed in 1973 between the United States and the Russian Federation with the aim of safeguarding the Arctic and Subarctic habitats. The issue of air quality and water pollution was also a matter of concern. The user's text does not provide any information to rewrite in an academic manner. A legislative proposal has been put up with the aim of delisting the Pacific walrus from the endangered species roster, a move that is anticipated to have implications for the treaty.
- **Indo-European Company (IEC) (1992):** While there are other international organizations dedicated to protecting animal rights on a global scale, it is worth noting that the Indo-European Company (IEC) has been the sole entity to engage in discussions pertaining to wildlife habitats. It was established in the year 1992, the organization endeavour to uphold biodiversity through the preservation of 200

uncommon and unique habitat types that support the existence of untamed flora and wildlife. Nevertheless, these rights are limited to European nations.

- **Polar Bear Treaty (1974):** The convention aimed at safeguarding the polar bear population was signed by multiple governments, namely the United States, Canada, Denmark, Norway, and the Soviet Union. The agreement mandated that all participating nations must impose limitations on the hunting, killing, and capturing of polar bears, while also ensuring the preservation of the ecological balance within their feeding habitats and migration pathways.
- **African Elephant Conservation Act (1989):** The elephant population saw a decline in 1989 due to the concurrent rise in illegal ivory production. The primary objective of signing this pact was to safeguard against the illicit activities of exploiting and poaching African elephants for the purpose of acquiring their valuable ivory. Several African nations have already enacted conservation measures; nonetheless, it is imperative that more countries adhere to these measures in order to prevent further reduction in the African elephant population.
- **CITES (1973):** The establishment of the Convention on International Trade in Endangered Species (CITES) aims to mitigate the exploitation of endangered flora and fauna. The pact was signed by roughly 80 countries in March 1973, and its membership grew to include 146 countries by 1999.

2. Indian Laws Related to Wildlife Crime

- **Sec.428 IPC, 1860 :** Individuals who engage in the act of committing a misdemeanour by causing the death, poisoning, mutilation, or rendering an animal worthless, particularly if the animal holds a value of ten rupees or higher, shall be subject to punitive measures. These measures may include imprisonment for a period of up to two years, imposition of a monetary penalty, or a combination of both.
- **Sec. 429, IPC 1860:** Individuals who engage in acts of mischief involving the killing, poisoning, maiming, or rendering useless of elephants, camels, horses, mules, buffaloes, bulls, cows, oxen, or any other animal valued at fifty rupees or more, irrespective of its monetary worth, shall be subject to punitive measures. These measures may include imprisonment for a period of up to five years, imposition of a monetary fine, or a combination of both penalties.
- **Article 48A:** As per the provisions of the Indian Constitution, the State bears the obligation of ensuring the protection and advancement of the environment, alongside the conservation of animals and forests. Article 48 A was incorporated into the Constitution under the 42nd Amendment which was done in the year 1976.
- **Article 51A:** The Indian Constitution mandates specific fundamental duties for the citizens of India. One objective entails the safeguarding and enhancement of the natural environment, encompassing woods, lakes, rivers, and wildlife, while also fostering empathy towards sentient beings.

- **Wildlife Protection Act, 1972:** The Government of India implemented the Wildlife Protection Act of 1972 on September 9th, 1972, with the primary objective of safeguarding the nation's wild animals, birds, and plants, while also ensuring the ecological and environmental security of India. The Indian Wildlife Protection Act additionally delineates regulations pertaining to hunting limitations in order to ensure the preservation of animal species. The legislation effectively enforces a ban on the hunting, poaching, and trading of species that are at risk of extinction, while also implementing punitive measures for anyone engaging in these activities. The legislation also prioritizes the conservation of natural areas and the mitigation of wildlife exploitation. The Wild Life (Protection) Act of 1972 establishes a comprehensive legislative structure aimed at safeguarding diverse kinds of wild animals and plants, as well as effectively managing their ecosystems. Additionally, it encompasses the regulation and control of the commerce involving wild animals, plants, and products derived from them. The classification system comprises six schedules, seven chapters, and 66 sections, which serve to categorize various types of flora and fauna, including protected plants, highly protected animals, and pest species. The provided schedules delineate the requisite degree of safeguarding and surveillance necessary for diverse flora and fauna species. The Lok Sabha has just proposed the Wildlife Protection Amendment Bill for the fiscal year 2021-2022. The primary objective of this proposed amendment is to broaden the scope of safeguarded species and harmonize the rules with the CITES (Convention on International Trade in Endangered Species of Wild Fauna and Flora) in order to enhance conservation efforts in India. The legislation in question encompasses provisions aimed at safeguarding the nation's indigenous fauna, avian population, and botanical diversity, with the overarching objective of ensuring the integrity and stability of the environment and its ecological systems. The legislation had its most recent amendment in 2006. In the year 2013, an Amendment bill was presented in the Rajya Sabha and subsequently referred to a Standing Committee. However, it was later withdrawn in 2015.

V. REASON BEHIND WILDLIFE CRIMES

1. **Insufficient Legislation Exists To Effectively Combat Wildlife Crime:** Insufficiently stringent legislation fails to effectively dissuade individuals engaged in unlawful trading and poaching, hence enabling them to evade legal consequences for their activities. The penalties imposed for these offenses are disproportionately low when considering the gravity of the crimes being perpetrated. In the context of India, the prescribed penalties for the aforementioned offense encompass a monetary range spanning from around ten thousand to twenty-five thousand rupees, along with a custodial sentence ranging from seven to ten years. Nevertheless, a significant proportion of those engaged in poaching activities are acquitted as a result of the ineffectiveness of the prosecution process. The occurrence of a three-year conviction for a poacher was considered to be uncommon. The conviction rate in India for cases reported during the preceding three and a half years is at a mere 10%, hence raising concerns. The prevalence of poaching has witnessed a concerning surge in recent years, with a notable aspect contributing to this issue being the presence of loopholes in current wildlife protection rules. The permissive nature and susceptibilities of regulatory systems have facilitated the ability of poachers to exploit and

evade enforcement mechanisms, notwithstanding the existence of legislation designed to safeguard endangered species and uphold biodiversity conservation efforts [121].

- 2. The Process of Transferring Illicit Trade Commodities into Lawful Marketplaces.** Wildlife items often find their way into legitimate marketplaces despite their illicit beginnings. In the past, there was a prevalent belief that wildlife products obtained through illegal trade and poaching were solely marketed within clandestine markets. However, several investigations have reached the consensus that a significant portion of animal products that are trafficked illegally are actually being marketed inside legal marketplaces. These products include items such as peacock feathers, oak, sea pearls, cuttlefish, as well as other trinkets and jewelry crafted from ivory. This phenomenon leads to an escalation in predation as a consequence of an upsurge in demand [122].
- 3. Huge Money on Offer:** Based on available records, it has been observed that wildlife materials exhibit exorbitant costs in both domestic and global markets. This prevailing circumstance serves as a catalyst for poachers, motivating them to intensify their efforts in pursuit of financial gain. The perpetuation of avarice, a prominent contributing factor to the occurrence of poaching, has consistently provided sustenance to the poaching industry. The illicit trade of wildlife is a lucrative industry with a significant economic value, reaching billions of dollars. Consequently, various entities such as criminal organizations, high-ranking government officials, and authorities responsible for wildlife regulation derive financial gains from this trade [123].
- 4. The Legal Commerce of Undocumented Species:** In contrast to prevailing national legislation, a substantial number of undocumented species continue to be lawfully traded within the worldwide market. Considerable clarity has been achieved with respect to the classification of species as endangered. Despite facing imminent extinction, certain species are subjected to extensive economic exploitation as a result of unclear documentation.[124].
- 5. The Diverse Demand and Usage:** The utilization of wildlife crime spans a wide range of applications, including but not limited to medicinal purposes and the production of carpets and rugs. The multifaceted nature of this phenomenon presents significant challenges when attempting to address it on a large basis. In the context of India, the aforementioned commodities encompass a wide range of items, namely Mongoose hair, Rhino horn, snake skins, Tiger and Leopard claws, bones, skins, and whiskers, Elephant tusks, Deer antlers, Shahtoosh shawl, Turtle shells, Musk pods, Bear bile, medicinal plants, timber, and caged avian species such as Parakeets, Mynas, Munias, and so forth. The majority of these unlawfully acquired components are intended for the global market and have a direct demand within India [125].
- 6. Unsubstantiated Religious, Aphrodisiac, and Medicinal Benefits:** Certain animal species have been targeted for religious purposes and the acquisition of materials employed in religious rituals. These materials encompass various body parts, including hooves, tails, skin, feathers, fangs, heads, fur, horns, and ivory. Certain Tibetan priests have been observed engaging in the practice of hunting rare animals as a means to satisfy their religious requirements. Various animal species, such as rhinoceroses, turtles,

orangutans, snakes, seahorses, and pangolins, are targeted due to the perception that their body parts possess medicinal properties capable of addressing a range of ailments, including cancer. As an illustration, the scales of pangolins and the blood of turtles are pulverized into a fine powder and employed for their alleged therapeutic attributes. There is a prevailing belief that buffalo horns, freshly obtained serpent blood, and the reproductive organs of tigers possess qualities that can potentially enhance aphrodisiac effects and promote virility [126].

- 7. Delicacy Food Items:** Certain wild creatures, including zebras, lions, hippos, elephants, gazelles, snakes, and giraffes, are referred to as "bush meat" and are mainly killed for their great value as a food source. The consumption of some animal species, such as apes and snakes, is regarded as a culinary delicacy in specific regions across the world. In select dining establishments around Asia, affluent patrons have the opportunity to partake in the consumption of unconventional culinary offerings derived from serpents, chelonians, scaly anteaters, chiropterans, cetaceans, and great apes [127].
- 8. Organized Criminal Networks:** Certain kinds of wildlife are targeted by criminal networks that are involved in activities such as people trafficking, money laundering, and drug cartels. The criminal network exhibits significant scale, enabling the act of slaughtering the animal inside the sub-Saharan African region and afterward exporting its various body parts to Asian destinations. Certain animals are unlawfully captured by organized criminal groups to showcase their dominance, whereas others are traded as domesticated companions. Humans are currently recognized as the sole documented natural predators of the rhinoceros species [128].

Ever Shrinking Natural Habitat Due To Human Encroachment: The continuous growth of the human population necessitates the encroachment of human settlements into areas designated for wildlife conservation. The act of killing animals is carried out in order to infra-structure development such as urban expansion, road construction, settlement, and agricultural practices. The destruction of animal habitats precipitates a state of famine, compelling animals to encroach upon agricultural land or engage in attacks on livestock, finally culminating in their extermination. Furthermore, the act of logging results in the creation of roads and pathways that penetrate the previously untouched areas of the wilderness which interfere the normal life of wild animals. Besides that, the development of infrastructure such as road provide poachers with entry points to the more remote sections of the forest and facilitates their act of crime [129].

VI. IMPACT OF WILDLIFE CRIME ON THE ECOSYSTEM

- 1. Extinction:** Certain animal species are presently regarded as extinct, but others are classified as endangered as a result of wildlife crime. Moreover, it is worth noting that the annual mortality rate of rhinoceros exceeds one thousand due to the illegal hunting of these animals for their valuable horns. Tigers are currently facing a critical endangerment status mostly as a result of illicit poaching activities. Due to the increasing scarcity of pangolins in Asia, there has been a shift in poaching activities, with pangolins from other regions now being targeted by poachers [130].

2. **The Animals Suffer:** A significant proportion of animal species necessitate ample space for movement, suspension from branches, and aerial locomotion. Whenever wild fauna were captured, their inherent rights and freedoms are infringed upon, leading to unfavourable conditions for their well-being. Confinement in cages, luggage, sacks, or crates generally hinders their ability to thrive. In the event of their survival, individuals are subjected to many challenges and difficulties inside their unfamiliar and artificial surroundings. At times, human populations establish themselves in areas that were previously inhabited by animals. This phenomenon compels animals to occupy areas characterized by restricted spatial availability, hence posing challenges to their survival [131]
3. **The amalgamation of Criminal Network Activities Contributes to the Escalation of Global Health Risks:** The underreported instances of park ranger homicides, poaching, and the subsequent illicit ivory trade have been found to be associated with further criminal activities, including money laundering, human trafficking, and corruption [132].
4. **An Imbalance in the Ecosystem:** The presence of predators and prey within an ecosystem is crucial for maintaining its overall health and balance. Keystone species, typically exemplified by apex predators, engage in predation on populations as a means to curtail their expansion and uphold the overall biodiversity. Hence, the presence of numerous wild animals plays a crucial role in upholding the equilibrium of the food chain and food web within the natural environment. Consequently, the elimination of these species would result in a disturbance to the whole ecosystem. The exponential proliferation of certain species may lead to the further depletion of animal and plant populations, perhaps resulting in the extinction of further species [133].
5. **Disruption in the Food Chain:** Wildlife crime can alter the food chain by causing the extinction of predators. This can alter how organisms transfer energy. People hunt animals that consume plants and eat animals that eat other animals in every corner of the globe [134].

VII. IMPACT OF WILDLIFE CRIME ON SOCIETY

1. **Social Disturbance:** The indigenous population held a firm belief in their profound connection with specific flora and fauna, resulting in their abstention from gathering or consuming plants, as well as refraining from the murder or consumption of animals. The veneration and preservation of totemic objects among tribal populations is a prevalent trait. These tribes hold the belief that these objects, representing flora or fauna, have provided assistance or protection to their ancestors belonging to the respective clans. Additionally, these totemic objects have demonstrated distinctive utility or value, leading to the reverence and non-destructive treatment by the people. Moreover, they refrain from consuming their cultivated crops or blossoms. Totems encompass a diverse array of creatures and natural entities. Totems hold a position of high reverence and are safeguarded, with a strict prohibition against their destruction. These entities are held in high esteem and subject to meticulous management. The consumption of animal and plant species as delicacies by individuals residing in neighbouring villages and forest regions can be attributed to severe poverty, financial adversity, and the necessity for sustenance. Consequently, this practice engenders feelings of resentment, anger, and aggression

within tribal communities, while also contributing to an unfavourable ecological milieu [135].

- 2. Economic Impact:** The possible ramifications of species extinction on the economy can have detrimental impacts on the local tourism industry. The decline in appeal for possible visitors in the area is coupled by an increased likelihood of a prohibition of visitors. The possible adverse consequences of a boycott on a regional economy stem from the significant financial setbacks that diverse businesses, including restaurants, hotels, rental properties, and other tourist attractions, may encounter. Several nations have the capacity to attract tourists due to their substantial populations of wild animals. The probable extinction or substantial fall in the population of certain species could pose a severe threat to the sustainability of tourism, hence potentially causing economic instability in regions that largely rely on tourist activities. The possible economic consequences of this circumstance are significant and are anticipated to result in a decrease in job prospects, particularly within the tourism industry. The aforementioned issue not only poses a potential threat to established society norms and practices, but it also exploits weaknesses within governmental systems and instances of misconduct in order to earn economic benefits. The potential threat to rural livelihoods can arise from both illegal activities related to natural flora and wildlife, as well as crimes associated with plantations. These offenses are often categorized as "green crime." The financial gains of underprivileged communities are reduced due to the involvement of poachers and larger criminal organizations in the trade of species that possess substantial value within the global community. The economic ramifications of the illegal trade of wildlife are significant on both a regional and global scale, as it impairs the capacity of legal markets to achieve monetary gains or profitability. Therefore, this situation presents a notable drawback for socioeconomically challenged regions that have limited or non-existent alternative choices [136].
- 3. Health Issues:** Wildlife crime has the potential to facilitate the transmission of zoonotic diseases. Zoonotic diseases refer to infectious diseases that can be transmitted from beasts to human beings, hence presenting a significant risk to the overall well-being of global public health. When animals are unlawfully followed, there is a possibility that they might traverse international boundaries or be traded without undergoing appropriate inspection or regulation. This phenomenon enhances the potential for the transmission of diseases among individuals. In recent times, there has been a correlation established between the act of poaching and the spread of infectious and potentially lethal diseases from animal populations to human beings, so posing a significant threat to the continued existence of the human species. In recent times, the world community has witnessed a renewed emphasis on the matter of wildlife trafficking due to the ongoing COVID-19 pandemic. The World Health Organization has identified COVID-19 as a zoonotic pandemic, similar to previous outbreaks such as SARS, Ebola, Bird Flu, and MERS, which had resulted in significant mortality rates. Moreover, the perpetration of wildlife crime can have detrimental effects on ecosystems and disrupt the natural activity patterns of animals, hence heightening the risk of disease transmission (137). The act of eliminating huge predators such as lions or tigers by poachers might result in an increase in the population of smaller predators like rodents. This increase in smaller predator populations may lead to a higher probability of interactions between these animals, humans, and their livestock. Research indicates that the breeding and utilization of wild

animals have been identified as the primary sources of numerous very detrimental viral illnesses worldwide. Over the course of the previous decade, Ebola and avian influenza have emerged as novel viral infections that are linked to trading practices and the use of wildlife items that have been infected. According to scientific assertions, the illicit trade of pangolins potentially contributes to the ongoing catastrophe, as these creatures have been found to harbour viruses related to the coronavirus [138].

- 4. Violence and Other Criminal Activities:** Finally, instances of unlawful wildlife offenses sometimes entail acts of violence, including homicide and significant physical injury. Hunters and poachers often possess rifles and other weaponry, which they employ not only for the purpose of animal hunting, but also to engage in confrontations or inflict harm upon officials responsible for safeguarding wildlife. The potential victims encompass individuals such as park rangers, police officers, and community members residing in close proximity to a particular ecosystem. Rangers often find themselves as the primary targets of such disputes due to their role in protecting animals. It has been purported that poachers have been responsible for the reported killings of around one thousand rangers throughout the span of the last ten years. The illegal trade in wildlife is often associated with broader criminal activities, including but not limited to money laundering, terrorist financing, bribery and corruption, the facilitation of underground marketplaces, and various other illicit practices. Consequently, this trade contributes to the growth and sustenance of illegal economies [139].

VIII. PREVENTIVE MEASURES

There are the following methods to prevent wildlife crimes [140].

Table 3: List of Preventive Measures against Wildlife Crime

S. No.	Traditional Methods	Modern Methods
1.	Recruitment of More Scouts and Rangers	e- Eye
2.	Making and Enacting Severe and Tough laws	GPS-tagged dummy eggs
3.	Providing Sanctuary to Animals	RhODIS (Rhino DNA Indexing System)
4.	Zoning and Demarcation of Land for Wild Animals	e- RhODIS
5.	Putting off a large number of tracking machines and Sensing devices	Alarm fences
6.	Prohibition of buying and sale of by-products of flora and fauna	Stealthy hidden cameras
7.	Educate the Public on the Dangers of Poaching	Google Earth and GPS collars
8.	Segregate Endangered Species and Foster International Cooperation	Anti-snare collars with emergency alerts

9.	Tracking of Endangered Species and Disrupting the Supply Chain	Aerial Surveillance Drones
10.	Raise Awareness and Strengthening Border Control and Customs	Embedded GPS Chips
11.	Strengthening Legislation and Law Enforcement	Hidden Cameras
12.	Support Local Communities and Enhancing Conservation Efforts	Satellites
13.	Promotion of Responsible Tourism and Mobilize Public-Private Partnerships	Artificial Intelligence

IX. ORGANIZATIONS WORKING AGAINST WILDLIFE CRIME

The following organizations are working against Wildlife Crime:

Table 4: Anti-Wildlife Crime Organizations

S. No.	Name of the Organization	Year of Establishment	Headquarter
1.	WCS (Wildlife Conservation Society)	1895	New York, USA
2.	National Wildlife Federation	1936	Reston, Virginia, USA.
3.	Defenders of Wildlife	1947	Washington, D.C
4.	IUCN (International Union of Conservation of Nature)	1948	Gland, Switzerland
5.	WWF (World Wildlife Fund for Nature)	1961	Gland, Switzerland
6.	IFAW (International Fund for Animal Welfare)	1969	Washington D.C

7.	CITES (Convention on International Trade of Endangered Species of Wild Flora and Fauna)	1975	Geneva, Switzerland
8.	TRAFFIC (Trade and Record Analysis of Flora and Fauna in Commerce)	1976	Cambridge, UK
9.	WII (Wildlife Institute of India)	1982	Dehradun, India
10.	WPSI (Wildlife Protection of Society)	1994	New Delhi, India
11.	Wildlife SOS	1995	New Delhi, India
12.	WTA (Wildlife Trafficking Alliance)	1998	Noida, India
13.	WTI (Wildlife Trust of India)	1998	Noida, India
14.	WCCB (Wildlife Crime Control Bureau)	2006	New Delhi, India
15.	Biglite Foundation	2010	Tanzania, Africa
16.	ICCWC (International Consortium on Combating Wildlife Crime)	2010	Cambridge, UK

X. CONCLUSION

Wildlife is an essential component of our natural heritage because it plays a vital role in sustaining healthy ecosystems and provides numerous benefits to humans directly or indirectly. As a component of any ecosystem, fauna provides stability and equilibrium to the natural processes. A cornerstone strain is a particular strain in an ecosystem that exerts a significantly greater influence on the surrounding species. The abundance of keystone species will aid the survival and growth of numerous other species.

The purpose of wildlife conservation aims to safeguard the existence of these species and to highlight the importance of the coexistence of all species for a more stable ecosystem because the more diverse the ecosystem more stable it will be. Initially, wildlife crime occurred locally but due to the enormous economic value associated with wildlife products now, wildlife crime has become an organized crime that operates at the global level. Wildlife crimes are a significant threat to biodiversity and to the ecosystem which ultimately leads to adverse effects on humankind. These adverse effects of wildlife crimes are not instant and due to its long-term irreversible effects, it is of utmost importance to develop policy to preserve the biodiversity. As the most advanced animal of any ecosystem, the responsibility of humans is greatest in this regard. Numerous laws and regulations have been created at both national and international levels to safeguard wildlife. However, the efficacy of these measures remains compromised in the absence of active participation from the general populace. Effective coordination at the international level is of paramount importance, since it is evident that certain countries give protection to the same animal species while others do

not provide an equivalent level of safeguarding. In order to address the issue of wildlife crime effectively, it is imperative to establish and maintain ongoing and synchronized initiatives at the national level across all relevant sectors. Additionally, fostering worldwide collaboration is of utmost importance in this endeavour.

Efforts to combat wildlife crime necessitate the implementation of several key strategies. Firstly, it is crucial to enhance awareness at various levels of society. Secondly, the establishment and enforcement of comprehensive laws and policies are imperative. Thirdly, deterring wildlife crime requires the imposition of realistic punishments and the forfeiture of illicit proceeds. Fourthly, the strengthening of enforcement and intelligence capabilities in countries involved in the sourcing, transit, and destination of wildlife products is essential. Fifthly, addressing governance challenges is a critical aspect of combating wildlife crime. Additionally, efforts should be made to eradicate or at least diminish the demand for illegal wildlife products by targeting markets. Lastly, the involvement of local communities is of utmost importance in these endeavours. Furthermore, in order to safeguard emblematic species and uphold the remarkable array of biodiversity, it is imperative to exert concerted endeavours at both the individual and societal spheres. Achieving a harmonious equilibrium between infrastructure development and wildlife preservation necessitates collective efforts at all levels. The collective endeavour and significant backing should not be seen as a mere contribution, but rather as a collective responsibility to attain this vital goal.

Ultimately, it may be necessary to recognize that the complete elimination of wildlife crime may not be attainable. There exists neither a magical remedy nor a singular perpetrator. Nevertheless, it is imperative to enhance collaborative endeavours aimed at mitigating these transgressions across several tiers. It is possible to argue against the notion that the growing human population possesses inherent survival needs. However, it is crucial to acknowledge that nature perceives the existence of even minuscule microorganisms as equally significant to our own lives.

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