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Demographic Implementation of Snares: A Review on Wildlife Hunting and Poaching

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Abstract

Trapping, an ancient method employed for hunting or poaching in the wild, has witnessed minimal change in its impact on both targeted and non-targeted wildlife populations, with snares emerging as a prevalent trapping tool. Motivations for adopting snares include increased bush meat demand, rituals, and entrenched beliefs driven by their cost-effectiveness and efficiency. This study explores various snare types and examines their scientific implications for the demographic impacts on terrestrial mammals and birds. Data were procured from national and international web portals related to crime scene investigations and evidence, which aided in identifying taxonomic diversity and the frequency of occurrence of susceptible species. Our review highlights that the increasing wildlife crimes, driven by forest exploitation and encroachment, are threatening endangered species. This underscores the need for actionable management strategies and the broad dissemination of research findings. Utilizing tools like the Spatial Monitoring Tool (SMART) is crucial for effectively combating snare hunting and poaching. Although snaring impacts wildlife, some regions still have thriving populations, emphasizing the need for continuous patrolling and monitoring. To address these challenges, we recommend

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routine security patrolling, the involvement of forensic experts, and adherence to standard operating procedures with skilled personnel to enhance wildlife protection.

Keywords: Snares, Traps, Hunting, Poaching, Evidence, Crime scene, Wild animals.

Introduction

The threat of wildlife extinction progressing toward the declining numbers of endangered species highlights a massive future disaster for the world [1]. Recent decades have witnessed the tale of trading on large and small animals, a struggle for the frontline law enforcement agencies on illegal global trade. As a part of environmental crime, a unique word termed "Wildlife" in "Our Vanishing Wildlife" determines the soaring illegal traders blooming large in the emerging market embraced to get quick splashing from the global heritage [2].

The 16th century activities highlight the tenure of hunting the wild animals by King Rudradeva of Kumaon, leading to increased forest crimes associated with wildlife trade degraded and fragmented flora and fauna, leading to habitat loss [3]. The persisting conservation challenges in the 21st century have been dominated and sustained by poachers and hunters in wildlife, according to the assessments, observed a great loss in the conservation of biodiversity globally [4], including in tropical countries [5].

Human beings are adapting various strategies (traps, including nets, spring traps, cage traps, glue traps, and improvised traps) depending upon the particular animal behaviour as the oldest pursuit for hunting and poaching [6].

Trends, Practices and Materials:

Applying snares as a tool for hunting and poaching has become a common practice. It is an unsupervised, illegally implemented hard ligature material with a noose and a knot tightening around the neck, body, or leg at the moment when the animal is caught in the trap inside or in the fringes of forest areas. Materials are less expensive, lightweight, easy to carry and camouflage, and easy to set to capture enormous income on obtaining the particular animal trapped [7]. The

snaring method is the art of a hunter or a poacher, depending upon the individual offender's skills and experience [8].

Earlier capturing of wild animals was a failure due to the poor mechanism and the soft ligature materials manufactured from the natural derivatives (plant fibres and animal hairs). Animals maintained escaping by frequent breaking chewing of the snares followed by rapid death due to strangulation from the noose around the neck along with a knot of the ligature material. Modern-age snare materials are more reliable and have the capacity to last long without any destruction in different climatic seasons [9]. The material source (Automobile gear/break/clutch wire) of the snare initially starts from the circumference of the wire, the thickness of the wire, vertical drop, depending upon the height of the animal to be captured, followed by noose width, anchor height, appropriate to the grass height and proportion of un-thicketed area [10].

Place and practice of applying the snares:

A positive relationship between affinity and lethality in wildlife crime enumerates the factors such as the distance of the carcass from the scene of the crime (Stagnant or flowing water body) followed by the villages present in the fringes of the forest area with a significant role in determining the adoption of snares transferred from the use of bow and arrow by establishing the practice of using cable wires from transmigrants. [11]

Even different hunting methods have changed over decades, revealing the basic principles of hunting in the cave drawings. Hunting remains the oldest method of capturing the neck, torso, and leg of wild animals. The adaptation of trapping is read through the decades of hunting and poaching by humans on wild animals. Foot snare and neck snare are the two types of snares to trap the animals with a flexible noose, metal cable wires, and nylon wires, followed by rope snares trap to the neck, torso, or leg of the animals. [12 A]

The unfulfilled desires of the local people have escalated poaching of the tiger (*Panthera tigiris*) and leopard (*Panthera pardus*) associated with the professional poachers, provided with a clue highlighting the rise of exploitation of flora and fauna. The group of road constructing

company employees has easy access to commit illegal wildlife activities inside and in the fringes of the forest area, facilitating the resource of an individual to bridge a gaining link between urban markets to commercialize the hunted or poached wild animal [12 B].

General factors of hunting areas are connected with the accessibility to the roads and water bodies leading to the walking path appropriate area for committing wildlife crime [13].

Rectifying the demographic assessment of the affected areas, which caused the descending and extinguishing of fauna, revealed the impact of distributed wire snare on hunting bush meat and poaching. Bush meat hunters and poachers were found to be an anthropogenically threat to the environmental resource inside the protected areas, resulting in large carnivores chosen for trophy hunting [14].

Targeted, untargeted wild animals and Forest Law:

Snaring was not the traditional option for capturing or killing big mammals. The friendly relationship between the power grid workers and the local villagers compensated with the bush meat from receiving the wires for constructing snares. Water bodies, followed by the feeding corridors, were chosen to capture the wild animals. Occasionally, snaring has an effect on elephants (*Elephus maximus*) and buffalos (*Babulus bubalis*) with a substantial impact [15]. The increased population of humans has an impact on elephants due to encroachment of the forest land. Elephants (*Elephus maximus*) are attracted to the water bodies and prone agricultural areas within the forest perimeter, followed by the human-protected areas. The impact of snaring among elephants (*Elephus maximus*) and buffalos (*Babulus bubalis*) has caused severe causalities in areas prone to human and wildlife conflicts [16]. The increased prevalence of snaring and the scavenging of carcases make them more vulnerable to poaching through unintentional capture [17]. Across the globe, many legal systems have recognised the traditional rights to hunt wild animals.

Even though there are various tribal communities residing in the forest, the Judicial interpretation of article 51 A (g) of the forest rights reflects on the duties of tribal communities in preserving and protecting wildlife under consonance with the fundamental duties

followed by section 3 (1), excluding the traditional rights of trapping, hunting and extraction of any species of wildlife animal body parts, reflected in the correlative duties of the tribal communities scheduled under the traditional forest dwellers Act, 2006 to preserve wildlife in India [18].

Leopards (*Panthera pardus*) are facing a significant risk from snares, with sloth bears (*Melursus ursinus*) and striped hyenas (*Hyaena hyaena*) also under observation. The evaluation reveals an increased threat from snares in areas with higher human population density within the district. The mortality rate of leopards due to snaring is markedly higher compared to other causes of death. In southern districts of Karnataka State, such as Mysore, Chikkamagaluru, Udupi, Ramanagara, Dakshina Kannada, and Tumkur, snaring is recorded as a particularly prevalent method of hunting. Monsoon season witnessed high snaring incidents as farmers protected crops from wild herbivorous animals. Unfortunately, leopards (*Panthera pardus*) were being victimized within the natural habitat of 1 km [19].

Snares are implemented and never checked, which results in an opportunity for a mammal to suffer fatal consequences. Usually, the animals caught in the snares survive for days or a week approximately and die due to injury caused by infections on the created wound by the snare, followed by dehydration due to starvation. Wildlife conservation is threatened due to the various anthropogenic impacts. Based on the information from the International Union Conservation (IUCN), leopards (*Panthera pardus*) are vulnerable to snare-related fatalities. Wire snaring is popular since the material is inexpensive, effective, and easy to obtain and set by concealing. Snare has an impact directly on the mortality rate of endangered species [20] & [21].

Types of Snares:

Hunters commonly employ various methods and techniques, along with specific instruments and equipment. These methods typically include using firearms both actively and passively, as well as employing materials [22]. The Save Valley Conservancy has revealed the abundance of 84,396 metal cables used as snares from the fencing areas of the forest in Kenya [23]. The older snares, which

had experienced wire corrosion and reduced tension, captured fewer animals compared to the new snares, which exhibited a higher capacity for capturing animals [24].

According to an article, the high level of snaring involved mammals such as impala (*Aepyceros melampus.*), spotted hyena (*Crocuta Crocuta*), waterbuck followed by lions (*Panthera leo*), young elephants (*Loxo donta*), and buffalo (*Bubalus bubalis*) [25]. The Daon snare, a highly destructive type of snare that combines multiple snares into a single rope, was designed to constrict the necks and legs of herbivorous animals, including the large mammals known as fush. In contrast, the chhitka snare was more advanced; it involved using baits at the snaring site along with high-intensity metal wires and nylon ropes. A crime script on hunters reveals the gathering of intelligence, preparation, selection of the perfect location for hunting, and modus operandi of snare poaching, revealing the relevant stages of crime commission according to the stages as follows: [26].

1) Preparation of hunter prior to hunting: Gathering intelligence for the places to hunt followed by required essential supplies.

2) Entering tactics and building a camp after entering into the protected area of the reserve forest/sanctuary.

3) Laying the snares, checking the snares, marking the dates for the prolonged duration to return.

4) Employing specific techniques and methods to effectively extricate the trapped animal from the protected area.

5) Selling, Trading, and consuming the wildlife caught, depending on the quantity or the size according to the particular hunter.

Measurement of snare material:

Thicker steel cables measuring between 5 to 8 mm are used to capture carnivores, depending on the bird or animal to be captured. Nylon ropes are used specifically to capture the ungulates, except carnivores, to avoid chewing the material into pieces. The snare noose diameter represents the animal or the bird to be captured. Birds and porcupines (*Histrix Indica*) are captured within the noose, measuring

between 13 to 18 cm, followed by the 25 to 30 cm for large carnivores and angulates. Wild boar (*Sus Scrofa*) is a very common animal targeted across agricultural fields [27]. Snares are typically placed at higher elevations (>1,200 meters above sea level) for montane species like the Sumatran serow, whereas boars are commonly targeted in agricultural regions, often to mitigate crop raiding [28]. Snare-setting poachers frequently target tigers (*Panthera Tigris*), bears (*Ursidae*), and sambar (*Rusa unicolor*) in undisturbed forest areas, according to the animal's heightened vulnerability to hunting and human (*Primate*) disturbances. Spring traps are adopted leaving the sapling to 7 – 10 cm for snaring large carnivores and angulates, followed by the smaller animals. Foot snares are used in animal trials inside the forest. A small hole is dug and covered with the saplings and small sticks encircled by the snare measuring 2 – 4 mtrs in a 90-degree angle from the snare [29].

Method of snaring:

Snares are implemented according to the season, favoring the snaring dynamics. The greatest challenges come from within the society; tigers and some animals love water, which is an efficient way of ridding of heat and biting insects. The location of the snare was significant to the snaring intensity on the basis of the range between the residing humans and the forest areas, leading to the influence of the conclusion [30].

Snares implemented for pangolins *(Manis crassicaudata)* were observed in a 1 km radius around 20 Km, and local community support leads the location of hunting [31].

The fence snare provides protection from the wildlife grazing into the commercial agriculture lands by the animals caught in the snare will suffer open wounds and broken leg when they animal escapes after being caught in the snares. Consumption of bush meat has a passive impact of indirect income to the hunters. Foot snare are used by the poachers recognized under organized crime. Small animals are hunted with the help of fence and neck snare for home consumption. Sustained illegal logging and hunting is committed by the long time residents with the desirable accomplishments from the natural sources. The intensity of the snare hunting relies on the legal

companies linked with the logging directly [32]. A part of Tibet's smooth, gentle terrain reveals information on Dzaekha, an ancient road trap that was used to hunt antelopes and other mammals. Snaring is a practice created by the material such as yak hairs with a slipknot suspended from a stone fixed to a long stone known as horn prongs, which are overwhelming in the protected areas [33]. Snares applied near the water bodies are called wai tahei or wai taheke followed by the snares applied on the trees are called as rakau tahei, rakau taeke or taumatua in New Zealand [34].

In India, wild bores (*Sus Scrofa*), rabbits, and other mammals are hunted by using wire snares. Unfortunately, it has become the biggest threat, effectively targeting or capturing the nontargeted species [35]. A semi-nomadic group from North India, Atheria, a community that dominates the wildlife trapping and hunting animals from south Asia [36], the uncontrolled habits and hunger of the wild boar (*Sus scrofa*) are common for prey for the applied snare trap fixed in the agricultural field [37].

People involved in snaring:

Subsistence hunters:

Seasonal hunters rely on hunting as a means of subsistence, often referred to as subsistence hunters. Primarily, these individuals depend on agriculture but turn to wildlife hunting as an additional source during poor crop yields, employing sophisticated snaring techniques using basic tools within protected areas.

Professional hunters

Hunters are experienced in hunting wild animals and skilled in using sophisticated tools and equipment in order to serve their livelihood. They exhibit knowledge of the hunting techniques followed by the locations. They are excellent trackers for navigating the forest area. The inside professional hunters reside in a closer vicinity to the protected areas to set the snares when compared with the outside professionals who travel inside the protected areas. The temporary tactics entering the protected area during the night were observed in the professionals from outside when compared with the inside

professionals who adopted geographic tactics through the streams and topography during the day.

Farmers applied snares to protect from Invading of yielded agricultural fields by the wild boar; a legal application of the snare traps exclusively for the "Vermin" (*Wild boar(Sus scrofa)*) for a period of one year from January 2013 was announced by the Karnataka state forest department [38].

Gender, age, and experience of the hunters:

Snaring was primarily practiced by married men who were specifically engaged in the activity, although both married and unmarried men participated. Women, while excluded from snaring, took part in hunting small understory birds, phalangers, and bandicoots. They were adept at setting up foot snares to trap these animals [39]. The hunter's age and experience is supported by the physical health and ability to hunt [40]. The adventure of hunting starts at the age of 11 and lasts up to 60. Productive hunters fall between the age of 14 to 72 years, with those between 20 and 35 being particularly effective. However, the most successful hunters in terms of bringing home a higher percentage of their catches are those aged 50 to 60, due to their greater experience [41]. Hot and dry seasons decline the level of prey and vegetation, leading animals to wander and favours the poachers to apply snares around the water bodies and the places with prey and vegetation. The wildlife offenders on snare poaching carry required and relevant material firearms into the protected areas exhibiting their demands since the penalties implemented by the court of law have less impact to realize the commitment of wildlife crime [42]. Different types of snares were used to poach herbivorous animals. Doon snares, which use several snare loops to capture big mammals, together with the practice of planting snares near prey-preferred bait plants, indicate that poachers have altered terrain approaches and techniques based on local knowledge of the behavior of the target species to enhance their chances of success. [43]. A camera trap study reveals the snare activity and baits set for the kill of animals in Sunderban reserved forest, India [44].

Nylon ropes are used for the purpose of binding the goods on the transportation and making snares. Comparable circumstances were

seen in other nations, like Kenya's Tsavo West National Park, when honey gatherers were discovered to be laying snares while camping in the jungle [45].

Protecting the animals from snares:

Under the proposed provision of the Indian Wildlife Protection Act 1972, it is prohibited for any individual to manufacture, sell, purchase, possess, transport, or utilize any animal traps, except for educational or scientific purposes, which require permission from the Chief Wildlife Warden. The article 51 A (g) under section 3(1) excludes traditional rights of trapping, hunting, and extraction of the wildlife animal body parts, reflected in the correlative duties of the scheduled tribal communities and Traditional Forest Dwellers Act, 2006, to preserve wildlife in India [46].

Prevention and scientific approaches to combat wildlife crime:

The managerial with the scientific approach is important to combat the habitual or amateur wildlife hunters or poachers. The strategies associated with artificial intelligence are important to law enforcement agencies dealing especially with forest crimes, deter the hunters from arresting and confiscating during patrolling hours [47]. In order to make interventions more sustainable, it is important to prioritize sustainable practices, particularly when using data from the Spatial Monitoring and Reporting Tool (SMART) to address concerns related to unlawful snare hunting. [48]. A sack full of snares revealed that poachers avoid carrying the bulk of wires required for poaching or hunting due to the consequences with law enforcement agencies [49].

The patrolling team discovers the snares installed in the forest, but the hunter always has a choice to target the species to be hunted or captured by positioning the snare, and choosing the habitat of the particular animal. Methods for investigating the commitment of crime by the hunters and poachers were observed, revealing a crime triangle, a helpful tool in differentiating the civilians and habitual offenders and determining the involvement of family members and religious leaders associated with illegal hunters.

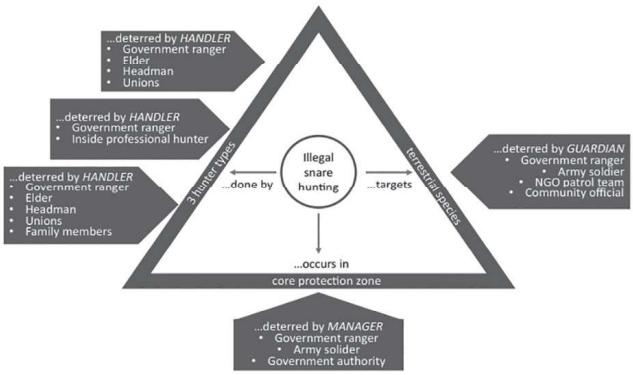

Fig. 02. Illustrates the expert-derived crime triangle depicting illegal snare hunting across three Vietnamese protected areas, incorporating three variations of hunters' knots.[50]

The crime triangle is helpful in differentiating the civilians and habitual offenders and determining the involvement of family members and religious leaders associated with illegal hunters [50].

The Anna Mite Mountains in Vietnam unveiled a solution to illegal snare hunting through the utilization of Spatial Monitoring and Reporting Tool (SMART) data, facilitated by conservation criminology. This approach, coupled with the crime triangle characteristics depicted in Figure 02, proves instrumental in addressing conservation challenges [51].

Plantation areas are prone to adopting Chinese methods of hunting, targeting wild boar (Sus scrofa) using 50 to 150 wire net traps, a circular snare known as Lapun Babi 1-2 diameter. Malay farmers consumed deer species caught in the snares implemented in the rubber plantations. Commercial hunters strategically choose locations near rural roads to capture and transport wild boars to consumers through vendors. Snares are employed for hunting either by habitual offenders or commercial hunters, often incentivized by farmers [52]. The indiscriminate snares are accomplished as evidence to ascertain the decline of terrestrial mammals and birds across South Asian forests [53], followed by the sustained hunting in tropical forests accompanied by industrial exploitation [54].

Factors affecting the animal in a kill or restrain:

The increasing level of poaching and hunting using snares is declining for mammals, especially in developing countries [55].

In the practice of preserving and hiding the snares inside the forest, poachers do not carry any materials related to poaching while entering the forest, which provides an inadequate chance of being proven with evidence when caught by the enforcement agencies. Cable snare and snare traps are observed in common all over the tiger reserves [56]. The prevalent cable designs utilized in constructing snares include 1x19, 7x7, 7x19, and 1x7, with 1x19 composed of 19 wires and 7x7 comprising 49 wires. Even though there are inadequate literature on killing cables, specifically, trappers believe stiffer cable has more capability of lethal potential when compared with other types of cables. The cables having killing potential are observed in the neck-snared animals when compared with the leg snared animals. The amount of force mounted in action thin cables has higher constriction capability followed by killing aspects. Further, snares have locks with killing potential depending upon the diameter of the cable length.

Mechanism of death:

The inclination towards engaging in unlawful forest activities has surged, leading poachers to focus on terrestrial animals. The rural population has embraced illicit practices by employing cost-effective devices to ensnare wildlife. The encroachment into protected areas extends to both terrestrial and aquatic zones as part of the global conservation strategy [57].

The data documented on a camera trap revealed a three-legged northern Sumatra (amputed leg) tiger (*Panthera tigris*) was captured on camera trap witnessing the poachers activity exclusively using jaw traps and snares, followed by another incident disarticulated skeletal remains of an elephant (*Elephas maximas*) was trapped in a cable snare trap applied by poachers [58]. Instantaneous tightening of the noose around the leg of the animal suffers torture followed by shock, blood loss, and dehydration [59]. Although tailored for specific species, snares often result in significant by-catch, frequently ensnaring non-target animals [60]. Snare entrapment has not spared

even large carnivores and dholes vulnerable to snare entrapment. The physical condition of the trapped wild animal in the snare varies besides the potential physical trauma. A tiger that appeared in the captured on-camera trap shows the failure to escape from the snare creates psychological trauma, as shown in fig no.1 [61].

The Elephant (*Loxo donta Africana*), the Snare and the log, Mnt. Elgon's cave elephants (*Loxo donta Africana*) reveal the domination of the deployed snares around the borders of Mt.Elgon National Park, targeting the buffalo followed by bushbuck *(Tragelaphus scriptus),* duiker (*Sylvicapra.*) and waterbuck (*Kobus ellipsiprymnus*)[62].

Methods adopted by hunters/poachers cause destructive life to the animals

The trend of hunters and poachers adopting snares in capturing animals and birds has been successful in India and International countries [63].

Cable wire or metal wires are efficient and reliable materials used in capturing animals. Not all the animals are caught in the cable; some of the animals escape with the snare material in the neck or with severe injury, causing a missing foot, broken leg, and casualty leading to the fatal end in the forest. Pregnant animals are also caught in the neck snare, leading to death. Most likely females are vulnerable to the snares when compared with male animals [64].

The real population densities and reproductive rates could surpass the estimations. Even under the most optimistic calculations, snare hunting is found to overexploit the most prevalent prey species. Population maintenance occurs through the influx of individuals from areas not subjected to hunting. Areas within a 30-kilometer radius that are potentially unhunted are likely the closest ones, as these animals can disperse over such distances due to their small home ranges, allowing them to repopulate continuously hunted areas. If immigration or increased reproductive rates were common, the hunted population would have a relatively high number of young animals. However, hunters typically capture a few young animals through net and snare hunting. [65]. The snare traps used by the farmers are intentional to avoid the wild boar (*Sus Scrofa*) invading

the crops in the agricultural fields, followed by the poachers having a similar modus operandi. Unfortunately, the impact of these snares has dominated over the other untargeted wild animals, intentionally or unintentionally.

Components of snare [66]

As a primary material, wire is emphasized by snare in the construction of modern snares. Plant and animal fibres are the sources of primitive material used for manufacturing a snare. The primary aim is to encircle the neck, torso, or limbs of an animal. The description of each material is important to understand the differences in individual strand construction. The trapping community is very familiar with the cable of single-stranded materials.

The following are different types of snares:

1. **Wire:** Compressed and elongated produced by a continual span of metal in larger diameter metal rods.

2. **Strand:** Multiple wires are bonded around an axis, fibre, or wire center. The types are as follows:

    2.1. **Single-stranded construction:** Known as stranded wire. Familiarity with the trappers in measuring 1x19 and 1x7 measurements. A strand is formed with one wire wrapped around the axis, ranging from 1 to 6 single layers.

    2.2. **Two-layer strands:** 2 separate layers are bound spirally in the opposite direction around the axis, fibre or center wire, observed in 1x19 stranded wire and followed by a wire rope of 7x19 strands. Two layers are constructed with 1-6-12 in one direction.

    2.3. **Multi-strand construction:** Known as wire, rope, or cable and familiar to trappers, it is available in 7x7 and 7x19 configurations. The wires in its construction are twisted in both clockwise and counter-clockwise directions. In the lang lay design, a single-strand and single-layer construction is utilized. A regular alternate lay involves spiral binding in both directions in 7x7, 1x19, and 7x19 configurations.

Snare Locks: The function of the snare lock is to form and sustain a loop, prevent it from closing further once the animal is captured, and enable the release of non-targeted animals. The snare lock serves the purpose of creating and maintaining a loop, preventing the loop from closing after capturing the intended animal and allowing for the release of non-targeted animals. Snare locks are used in particular circumstances. Numerous snare locks are commercially available in the open market, as shown in the figure. 4.

Fig.4 Numerous locks available in open market [66].

The following are the types of snare locks:

- **Relaxing snare lock:** Allows the constriction pressure on the animal captured, depending on the animal struggling to pull away.
- **Positive snare lock:** After capturing an animal, the choice is presented to either alleviate the constriction pressure or increase the force applied as the cable is tightened.
- **Power-assisted snare lock:** Continues to apply closing force even without tightening the cable, especially after the animal stops pulling, accomplished through external features or mechanical devices.

The design of some locks of specific cable depends on implementing or applying areas with different configurations for different performance. The break away devices are in cooperated with the snare component allowing the loop to break open when a specified force is applied by the particular animal to escape.

Characteristics of Snares

• **Loop stops:**

A device featuring a designated point connected to the snare cable, designed to control the closure or opening of the loop, selectively determining the circumference and influencing the effectiveness and lethality of the snare.

Two types of loop stops as follows:

a. Minimum, also known as deer, stop in a loop smaller than the diameter.

b. Maximum loop stop prevents the opening beyond the particular point.

• **Swivels:**

A device in cooperated and is primarily intended with the efficiency of a snare to prevent the breakage on twisting, turning or rolling of an animal when captured in the cable or snare wire. Two types of swivels as follows:

a) **End swivel –** A designed device attached to the tree, stake, or any anchoring point allowing the animal to rotate and twist on being captured in the applied snare, figure 5.

Fig.5. Showing End Swivel [66].

b) **In-Line Swivel:** This device, placed between the anchoring point and the open snare loop, allows the captured animal to rotate, roll, or twist within the snare. See Figure 6.

Fig. 6. Showing In line Swivel [66].

Different sizes of snare material:

Snare cables are manufactured using stainless steel material. There are different types of strands with multiple assembled wires. A single strand is composed of a single-stranded metal wire, as shown in Figure 7. These types of wires are most familiar to trappers and have the capacity to capture mammals.

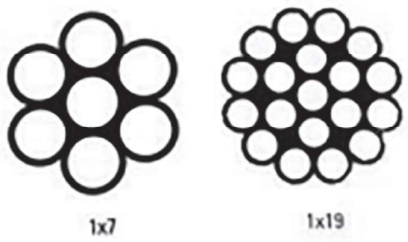

Fig 7. Single Stranded metal wire, 1x7 and 1x 19 [66].

- A wire rope has a composition of multiple strands, which are familiar to trappers in Figure 8, measuring 7x7 and 7x19.

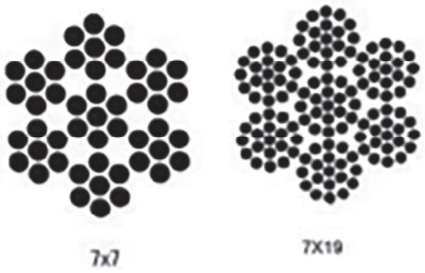

Fig 8. Single Stranded metal wire, 1x7 and 7x 19 [66].

- A stranded wire comprises individual strands of 7x7 wire rope in a 1x7 configuration, bound in a combination of 1 to 6-layer design, as illustrated in Figure 9.

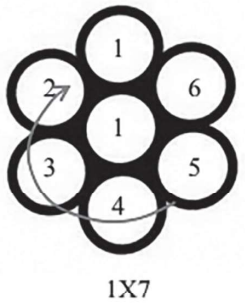

Fig 9. Single Strands metal wire, 7x7 and 1x7 [66].

- Two stranded wire strands consist of 7 strands of 7x19 wire rope, manufactured along with a '1-6-12 of two layers' design as shown in figure 10. (Annexure - 01)

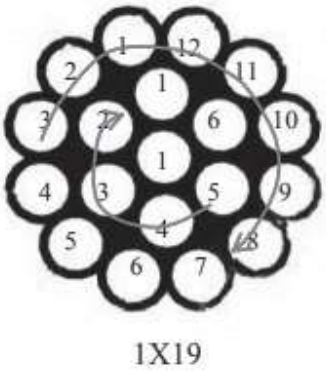

Fig 10. Single Strands metal wire of 1x19 [66].

Discussion

The rapid urbanization habit encroachments are leading to poaching and hunting activities. Snares are mixed in the forest as monodominant in areas where animal movements are unrestricted. Snare hunters are always in groups of at least two in number. The tiger (*Panthera tigris*), leopard (*Panthera pardus*), and sloth bear (*Melursus ursinus*) are listed under Schedule I of the Indian Wildlife (Protection) Act, 1972 (WLPA). This classification signifies the utmost level of protection granted to these wild animals in the nation.

Human-animal conflicts occur when there is a declining level of prey in a particular area inside the forest, where snares are observed in various places [67]. Countless wild animals, especially sloth bears (*Melursus ursinus*) and leopards (*Panthera pardus*), were killed or wounded, severely followed by the least-surviving wild animals, witnessed, and 113 leopards (*Panthera pardus*) were snared between January 2009 and December 2020. Wire snare incidents occur in the months of monsoon and post-monsoon, and farmers set around the farms as a primary asset to protect the crops, leading to the 21 leopards (*Panthera pardus*) causalities. An increased number of leopards (*Panthera pardus*) were strangled during the monsoon season [68]. The official implementation of the order brought trouble to the state, resulting in the loss of two tigers (*Panthera tigris*), sloth bears (*Melursus ursinus*), and three leopards (*Panthera pardus*), followed by

the casualties of a tigress cub (*Panthera tigris*) forelimbs caught in the snare leading to death at Ponnampete range and Srimangala range of Kodagu district, Karnataka state, in the month of January. The snare and traps have a great impact on the killing of animals, and in particular, bush meat is in demand even today. Using a snare device doesn't destroy the skin of the animal caught in the snare and has huge profit without any damage to the skin of the hunted animal. The threat has been taken seriously, and scientific steps by the Forest Department to catch the perpetrator by implanting and adopting scientific methods. Habitat losses are a major cause threatening non-targeted wild animals; casualties followed by death are increasing. Private land owners inculcating the practice of removing the snares applied in a particular month can reduce the risk of vanishing endangered species. Subsequent hunting and poaching wildlife followed by the consumption has provoked the spread of infectious disease among the human communities at the fringes of the forest area, followed by the young cubs being killed in the untargeted snares applied in the private agricultural fields [69]. The resources providing access to the infrastructure developments in the urban areas is leading towards the declining number of flora followed by encroachment of the forest land. Illegal hunting and poaching have provided an opportunity for potential economical changes between rural and urban society through the roads constructed inside the forest [70]. The clandestine activities of relentless poachers have resulted in various outcomes that favour illegal trade. Additionally, the extensive reduction in canopy cover, along with the diminishing level of protection in designated areas, is driving species perilously close to the verge of extinction. Translating research into conservation actions faces a challenge: understanding how hunters' preferences in studies align with their actual behavior. A nuanced understanding of individual hunters' decision-making helps prevent unintended consequences from conservation efforts [71].

Conclusions

The escalation of wildlife crimes, driven by activities such as forest exploitation, deforestation, and encroachment, poses a significant threat to endangered species inhabiting forested regions. To effectively counter this trend, research in this domain should yield

actionable management strategies and be widely disseminated. A thorough understanding of the decision-making mechanisms behind hunting and its repercussions on wildlife off-take is imperative for forecasting future hunting impacts. Tackling the challenges posed by snare hunting and poaching can be facilitated through the utilization of tools such as the Spatial Monitoring Tool (SMART). Recognizing the intrinsic survival instincts of wildlife underscores the necessity for proactive measures to mitigate the indiscriminate effects of harmful traps, thereby fostering awareness regarding the significance of all forms of life on our planet. Vigilant patrolling and monitoring are pivotal for bolstering conservation endeavors and upholding the dignity of wildlife. Despite the discernible impact of snaring activities on ecosystems, a comprehensive review indicates the persistence of thriving wildlife populations in specific geographical regions.

Conflict of Interest and Disclosure

The authors declare that there is no conflict of interest in regards to the publication of the article.

Author's contributions

We have significantly contributed to data collection, observation, manuscript preparation, and final version approval. Sujayaraj. S has carried out data collection and contributed to the manuscript's writing followed by Dr. C. F. Moolimaney has observed, examined and approved on the basis of analysis and proof reading of the manuscript, prior approving the final submission of the manuscript.

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