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# Trapping mortality in free range rhesus monkeys in Shivalik Hills of Western Himalayas in Northern India

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## Abstract

The aim of the present study was to find the incidences of the trapping mortality in free range rhesus macaques in Shivalik hills of western Himalayas of Northern India. During this investigation a total of 2642 rhesus monkeys were captured by trapping cages, out of which 12 rhesus monkeys were found trapped in different traps. Of the twelve rhesus monkeys 4 monkeys were rescued from the trapped site while others 8 monkeys were found with lacerated injuries with wire traps. Out of twelve monkeys 7 (58.33 %) were males while 5 (41.66 %) were females. 4 (33.33%) monkeys were trapped in body gripper traps while 6 (50 % ) in hand snare traps while 2 (16.66 %) were trapped in feet traps. There were mortality of 4 ( 33.33%) monkeys while 8 (66.66 %) were recovered well and set free at their respective site of rescue or capture. Out of 12 rhesus monkeys 3 (25 %) were commensal while 5 (41.66 % ) were semicommensal while 4 (33.33%) others were noncommensal. The maximum of the trapping 50% (6) were in the winter season followed by rainy (33.33%) (4) and summer (3) (25 %) seasons.

## Keywords

Trapping, Rhesus Monkey, Snare Traps, Free Range

## 1. Introduction

The human-monkey conflict in India is increasing day by day with the increasing in population of commensals monkeys which is causing a tough competition for food and space between monkeys and human being in urban as well as rural areas (Imam and Ahmad, 2013). In India more than 86 % of the rhesus monkey population has migrated to human habitation which has lead a severe conflict between humans and monkeys by attacking or biting humans beings and also by damaging the farmers crop (Rao, 2003). Because of low mortality and religious concern of the people of India with rhesus monkey is one of the reason for their population explosion (Ekwal and Ahmad, 2013). The various programmes to control the population explosion of rhesus monkeys are being run by the state but the immediate remedy to solve this problem is not possible. With increase in population of rhesus monkeys the monkey menance also increasing day by day and causing the conflict between these animals and human beings mainly farmers. The monkeys are damaging the crops of farmers and also involved in cases of human bites also (Imam *et al.,* 2002; Wolfe, 2002; Rao, 2003). Trapping kills millions of targeted as well as non targeted species through out the world. There are various types of traps used legally as well illegally by the scientist and farmers across the world. Snare traps are wire nooses used mainly to capture small mammals like rabbits and squirrels are used in different trapping designs to tightened the animal's body mainly, leg or foot snare used by various workers to capture wild animals (Novak, 1979, 1981; Berchielli and Tullar, 1980; Englund, 1982; Skinner and Todd, 1990) neck (neck snare traps) and around the body (body gripper snare traps).

Snares are easily available, cheap, easy to transport to site of trap, easy to handle and make trap of it. This type of snare traps illegally used by farmers and used to capture various wild animals. The snare trap acts as multiple trap, as neck – snare trap used to capture canids (Bjorge and Gunson 1989; Nellis, 1968). Noonan (2002) and foot snares (Goodrich *et al.,* 2001; Logan *et al.,* 1999; Bjorge and Gunson, 1989; Onderka *et al.,* 1990 ); and body gripper snare trap (McKinstry and Anderson, 1998). Neck snares and foot hold snares are scientifically proved as inhumane and not being used in scientific trapping also (Sala *et al.,* 1993; Lovari *et al.,* 1994; Lucherini and Lovari 1996). The present study investigations showed incidences of trapping in free range rhesus macaques and trapping mortality in north western Himalayas in Northern India.

## 2. Study Site

The Shivalik hills area of Himachal Pradesh includes, Kangra, Hamirpur, Una, Bilaspur, and other lower parts of Solan, Sirmour and Mandi districts. The altitude of Shivalik Hills ranges from 350 meters to 1500 meters and it's latitude varies from 30°22'40" North to 33°12'40" North and longitudes 75°45' 55" East to 79°04' 20" East. The annual rain in this area varies from 1500 nm to 1800 and this zone mainly used for cultivation of maize, wheat, potato, mango and orange fruits etc. The present study was carried out on free range rhesus monkeys trapped in wire traps used by farmers at various locations in Shivalik Hills of Himachal Pradesh. The study was carried out over a one year of period since April 2012 to March 2013 during the programme of the sterilization of rhesus monkeys. The rhesus monkeys were trapped at various locations in Shivalik hills in the kangra valley in Himachal Pradesh in India.

## 3. Methods

In the present study we rescued some monkeys from their respective site of trapping and also came across with some cases of snare traps when the monkeys were captured in population control programme of rhesus monkeys in the state. Rhesus monkeys were trapped mainly in leg/foot snare trap, body gripper snare trap (Fig. 3) and hand snare trap. The monkeys who were entrapped on high trees (Fig 1.) were darted with projectile gun with a dart of 3ml capacity. The main anaesthesia used was xylazine @ 2mg/kgbwt and ketamine @ 8 mg/kgbwt. The trapped monkeys were rescued (Fig .2) from the traps of wire by rescue team of monkey sterilization centre Gopalpur and after rescue the injured monkeys ( Fig .4) were brought to the monkey sterilization centre Gopalpur. The animals were treated for their injuries using standard protocol of surgical management of wounds. Some monkeys were succumbed to injuries while the survived monkeys were set released at their rescued or captured site.

***Fig 1.*** *Monkey entrapped in foot snare trap.*

***Fig 2.*** *Removal of foot snare trap.*

***Fig 3.*** *Monkey entrapped in a body gripper snare trap.*

***Fig 4.*** *Abdominal injuries in body gripper snare trap.*

## 4. Results

In the present study there were found 12 rhesus monkeys entrapped in different snare traps. Out of twelve monkeys 7 (58.33 %) were males while 5 (41.66 %) were females. 4 (33.33%) monkeys were trapped in body gripper traps while 6 (50 % ) were in hand snare traps while 2 (16.66 %) monkeys were trapped in feet traps. There were mortality of 4 ( 33.33%) monkeys while 8 (66.66 %) were recovered from injuries. Out of 12 rhesus monkeys 3 (25 %) were

commensal while 5 (41.66 % ) were semi-commensal while 4 (33.33%) others were non-commensal.

Four monkeys entrapped in body gripper traps in which two monkeys were with deep laceration in the abdominal areas while one monkey was with intestinal evisceration. Three monkeys with body gripper traps and one monkey with feet trap could not be survived and died, while all monkeys who were trapped in hand traps were survived. This shows that there were mortality of 75 % of entrapped rhesus monkey because of body gripper trap injuries while there were 50 % mortality of rhesus monkeys who were trapped in feet snare traps and there were survivality of 100% rhesus monkeys in hand snare traps.

## 5. Discussion

The death of trapped wild animals is frequently mainly from sustainability of the injuries from traps leads to traumatic shock, dehyderation and extreme environmental conditions and poor physiological condition of the trapped animals may lead to mortality (Perrin, 1975; Gurnell, 1982). There are various intrinsic (physiological conditions of animals, thresholds of stress) and extrinsic factors( Environmental temperature etc) which accounts for the mortality of the trapped wild animals in free range.

The various scientist have studied regarding mortality pattern of the non human primates and considered various causative factors responsible for the mortality of non human primate mortality e.g. various diseases (Walsh *et al.,* 2005; Kuhl *et al.,* 2008; Williams *et al.,* 2008), body injuries (Van Schaik and Janson, 2000; Cheney *et al.,* 2006; Williams *et al.,* 2008); and predation (Karpanty and Wright, 2007; Teelen, 2008; Irwin *et al.,* 2009). In our knowledge there is no record of trapping incidences and mortality among the free range rhesus monkey.

In the present study we investigated the mortality of rhesus monkeys based on the injuries inflicted to monkeys from various traps. The monkeys were entrapped in a snare trap which was being used on the trees and made of a loop of wire and it's one end was fixed to a portion of trees. As the monkeys tries to climb from one tree to another they got entrapped in it. They may be caught from any body part i.e. foot, neck and hand by this trap. The mortality was found higher in body gripper traps as compared to feet traps. The body gripper snare trap lead to highest mortality as in body gripper snare traps the monkeys were trying hard to set them free theirselves but the trap was continuously going tightened and severely causing damage to skin as well as internal organs. While in hand and feet snare traps there were mortality of only one monkey while rest of seven could survived. This survival rate from hand and feet snare traps were because even continous pressure of snares in hands and feet could cause only deep lacerations in rhesus monkeys but this reduced the chances of mortality. Out of 12 rhesus monkeys 7 were male while 5 were females this shows that the more aggression and activity of male rhesus macaques caused more exposure of male rhesus monkeys as compared to female rhesus monkeys. The maximum trapping was seen in the month of winter (50%) as rhesus monkey are more active in winter for their feed as in winter there is less availability of feeds to all non human primate in Western Himalayas. In search of feeds they move long distances and got exposed to various accidental mortalities including electrocution and trapping etc.

The wild animals trapping is completely prohibited in India under wild life protection act 1972 and further amendment under section 9A (1) no person shall manufacture, sell, purchase, keep, transport or use any animal trap except with prior permission in writing of the Chief Wild Life Warden given for educational and scientific purposes. Rhesus macaques are kept in schedule III of WPA (1972) and its killing/hunting is punishable. The illegal trapping of rhesus monkeys need to be curbed and there are various laws under wild life protection to check this illegal trapping.

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