

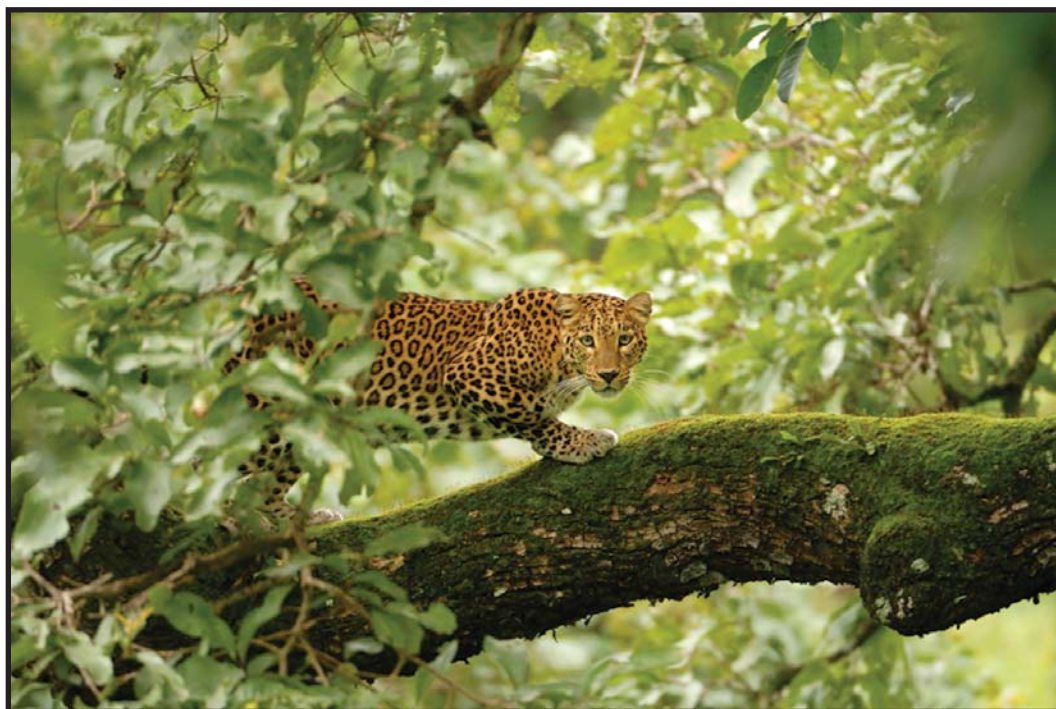
GUIDELINES FOR HUMAN-LEOPARD CONFLICT MANAGEMENT



APRIL 2011



Ministry of Environment and Forests
GOVERNMENT OF INDIA



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FOREWORD

Man-leopard conflicts have been hitting the headlines regularly in different States. I have been consulting various experts on what should be done to deal with such situations. This booklet, the first of its kind from the Ministry of Environment and Forests, is a result of the consultations with, and the suggestions from, a wide range of individuals and organizations involved in the subject, besides drawing upon reports and scientific studies available on human-leopard conflict. Knowing full well that such conflicts are locale-specific, this booklet is intended to provide a guidance framework to be adopted to deal with incidents of loss of life and livestock caused by leopards. I am sure the local communities, field forest officers, and revenue and other district administration officials will find this booklet useful in dealing with such situations.



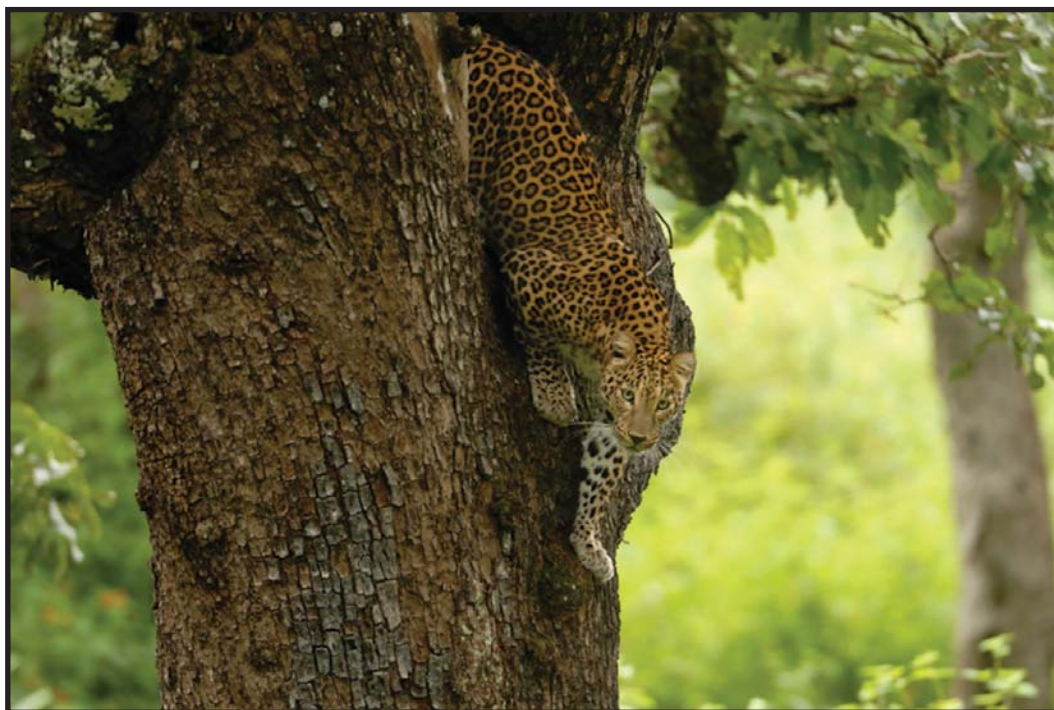
Jairam Ramesh
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INTRODUCTION

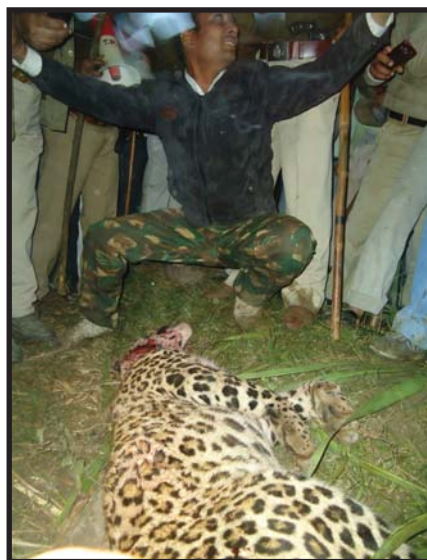
Leopards are a highly adaptable species that live in and around many human-dominated, agricultural landscapes. It is a daunting challenge to ensure the peaceful coexistence of leopards among high densities of humans of the order of 200 or more to a sq.km. Research indicates that even in such high human density areas, attacks on humans and domestic animals in most cases can be kept to very low levels. The goodwill and trust of people especially in rural areas are vital to dealing with crisis situations arising out of loss of life and livestock by leopards in rural areas. The Forest department is the first to face the heat of the public reactions and requires the goodwill and confidence of the rural community much more than any other government department.

These guidelines provide a framework not only to address the conflict after its occurrence, but also to minimize such conflicts through adoption of necessary pro-active measures.



BACKGROUND

Incidences of leopards ‘straying’ into settlements causing human casualties, and the retaliatory killing of leopards by the public have been on the rise. The efficacy of capture and translocation of leopards from conflict areas as a mitigation measure is increasingly being questioned. This has necessitated the need for having broad policy guidelines and management options to effectively deal with this gradually intensifying problem in a diversity of human-dominated landscapes across the country.



After careful consideration of the inputs received from a variety of stakeholders, the following framework guidelines are suggested for managing the human-leopard conflict situations in areas where leopards coexist among high densities of humans.

I. AWARENESS GENERATION AND INVOLVEMENT OF PEOPLE

Modern practices in wildlife conservation call for involvement of all stakeholders in the planning and implementation of conflict mitigation measures to muster greater support and cooperation from people.

The overall aim should focus on a participatory approach, ensuring support of local communities and other stakeholders for conservation and management of wildlife. Awareness programmes should target the people sharing space with leopards, in human dominated landscapes like sugarcane fields, tea gardens, fruit orchards, etc., and also the local communities living in forest dominated landscapes, especially in the hilly States of Uttarakhand, Himachal Pradesh and Jammu and Kashmir.

Sensitizing the media about the nuances of the problem of human-wildlife conflict in general and leopard depredation in particular should be an essential part of the awareness strategy. Media should contribute to diffusing the tense situation surrounding conflict with objective reporting aimed at highlighting the measures to mitigate conflict. Reporting mainly aggressive encounters with leopards can erode local people's tolerance and worsen the situation by forcing the Forest Department to unnecessarily trap the wild animal due to public pressure.

Salient Points for Awareness Campaigns

- i. Leopards often take up residence in croplands and tea-gardens.
- ii. They are not usually inclined to attack people; on the contrary, they avoid people.
- iii. Wild carnivores may attack in self-defence, and, therefore, it is advisable to avoid provoking them.
- iv. Mere sighting of a leopard in the vicinity of human habitations does not necessarily mean that the animal has strayed from a forest and needs to be captured.
- v. Arbitrary removal of leopards could lead to increased conflict. The space vacated by a captured animal will soon be occupied by another leopard.
- vi. The focus should be on long term solutions. These include better sanitation measures including proper garbage disposal in villages and towns so that feral pig and dog populations are kept under check, and do not attract wild carnivores. Providing proper toilet facilities in rural areas would go a long way in reducing incidences of accidental encounters with leopards.
- vii. Farmers should be made aware that livestock sheds should be strong, robust and leopard proof.



II. TEAMWORK IN TACKLING CONFLICT

Efforts should be made to involve all departments, wings and agencies of the government to use a well coordinated mitigation approach which is scientific, field-tested and practical, and *inter-alia*, capable of dealing with emergencies related to attacks by leopards.

In this regard, it is vital to involve the Police and Revenue Departments as they are crucial for maintaining law and order in the face of extreme public reactions. Proper training of police and local administrative staff, and constitution of a Primary Response (PR) Team, along with awareness campaigns are essential ingredients of a successful conflict mitigation strategy.

PRIMARY RESPONSE TEAM

These teams may comprise of paid or volunteer members from the local communities, who are trained to respond immediately to a conflict situation. Their primary aim should be to control the crowd and secure the area until the next level of help arrives. In the hills, where the terrain is difficult, and where houses are scattered in a forest landscape, an Emergency Response (ER) team may take time to reach the conflict site. The establishment of a Primary Response (PR) team is important to ensure crowd control before the ER team reaches the spot.



III. ESTABLISHMENT OF EMERGENCY RESPONSE MECHANISM

- ❖ Immediate response is crucial to manage all conflict situations. A trained Emergency Response (ER) team consisting of an officer not below the rank of Assistant Conservator of Forests, one qualified veterinarian, and a minimum of five trained support staff may be formed in the identified conflict area.
- ❖ Each Forest Division should have a well trained operational ER team.
- ❖ Each ER team should be equipped with chemical capture equipment, drugs, appropriate cages, etc. and should wear specially designed uniforms so that they are easily identifiable during the operation. They should also have specially designed baffle boards for protection.
- ❖ The protocol for Emergency Response should be periodically rehearsed and reviewed to incorporate corrective measures to make it more efficient.
- ❖ Establishing such well advertised ER teams that respond effectively and quickly to conflict situations will help diffuse the usual public outrage and retaliation that invariably follows such conflicts. It will also harness the goodwill of local communities. In the long term, the efficient working of the ER teams will prevent escalation and spread of conflict. It will also prevent the situation from going out of control with people taking the law in their own hands.

The Maharashtra Case Study

In response to frequent attacks on humans by leopards, the Forest Department dealt with the issue by:

- Training field staff to handle emergencies of man-leopard conflict, which led to better understanding and management of the issue.
- Micro-chipping captured leopards to understand their movements after translocation, and to monitor the efficacy of translocation.
- Initiating research on leopards living in human-dominated landscapes, to understand the dynamics of human-leopard conflict.
- Improving design of trap cages.
- Creating awareness to avoid as much as possible, unnecessarily capturing the animal.
- Encouraging interaction with media and researchers to create awareness of the complex nature of the issue.

All these experiences were outlined in a management manual that was published in 2007 by Maharashtra Forest Department.





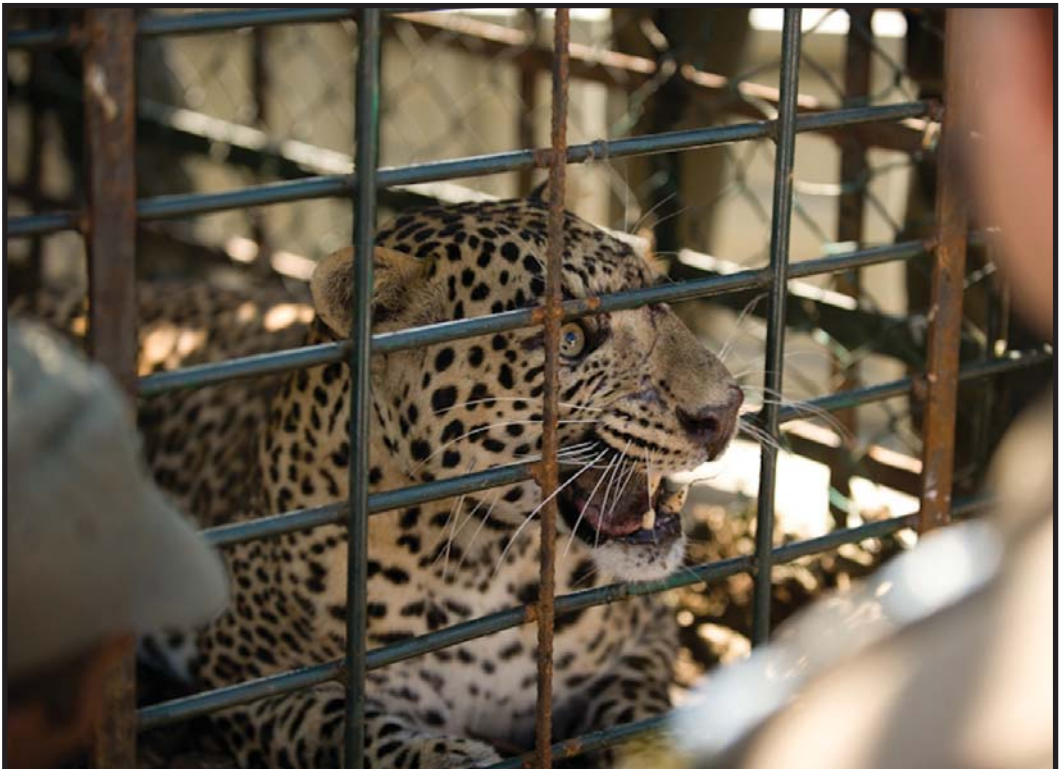
III A. MANAGEMENT OF CROWD

- ❖ Crowd management is crucial to any successful animal rescue operation. The ER team, more often than not, is obstructed and hindered in its activities by furious mobs, making it difficult to discharge its responsibilities.
- ❖ Support and cooperation of the police and civil administration should be ensured in advance to facilitate effective crowd control and to discourage formation of crowds.
- ❖ The area should be cordoned off with barricades, and the public alerted through a public address system. Regular updates should be made available to the administration and local public.
- ❖ There should be an ambulance kept ready to take care of any medical emergencies

A case study from Jammu and Kashmir

In recent years, conflict with black bear and leopards has reached serious proportions in Jammu and Kashmir. In response, the State Wildlife Protection Department proposed the following measures in 2010:

- Setting up of a Central Conflict Mitigation Command Centre with 24/7 helpline facility to receive phone calls from local people in the event of a conflict emergency.
- Feeding the details of the incident into a central database for quick future response.
- Centrally based monitoring and analysis of conflict patterns from information received in the helpline.
- Creation of community level Primary Response Teams consisting of paid or volunteer members from amongst the local communities, trained in the management of crowds in an emergency situation, till the arrival of the forest staff.





III B. MANAGEMENT OF THE ANIMAL

- ❖ The objective should be to give the animal enough space and opportunity to return to its habitat, and situation-specific rescue measures should be followed. The best method of dealing with a wild cat, in the absence of attacks on humans, is not to intervene.

Following steps are prescribed to deal with different situations.

Unconfined or Open Area:

- i. Open situations could mean a barren land, grassland, street, thicket, crop field with standing crop or woodland, with the leopard being either up on a tree or on the ground.
- ii. If the animal is in an open area surrounded by people, all attempts should be made to keep the crowd and local people from approaching near the animal, and the animal should be allowed to escape under the cover of darkness.
- iii. Drug immobilization should be avoided in situations where the animal is in the open, even if the target presents itself in an appropriate position, since a darted animal in the open can retaliate injuring people.
- iv. To trap the animal, a suitably designed light-weight trap that minimizes injury to the animal, should be used. The caution outlined in Annexure-I should be followed while designing trap cages.

Semi-confined:

- i. If the animal is confined in a dry well or trench, a ladder let down into the well will allow the animal to escape in the night.
- ii. Here too, the public must be kept away from the site, and the rescue team should monitor the situation until the animal escapes.



Animal Confined in a Closed Area:

- i. If the animal is confined in a closed area, for example in a house, garage, under a culvert, or caught in a snare, etc., the surrounding entrance and exits should be made secure to ensure no injury to the public.
- ii. If the area is adjoining a forested area, the animal should be allowed to escape in the night, but if it is in a high human density area it should be tranquilized.

III C. CAPTURE AND HANDLING OF THE TRAPPED ANIMAL

Captured leopards should not be put on display after capture. Such unintended forced close contact with humans may alter the behaviour of captured animals with highly adverse consequences following their release. Ideally, such leopards should be kept in covered cages (Annexure-I). Only healthy fit individuals should be returned to the wild.

Following advice may be followed scrupulously while handling captured or trapped wild animals.

- i. All captured animals, irrespective of the method used to capture (chemical/trapping), should be chemically restrained for evaluation of its condition for prognosis and suitability for release.
- ii. While confined, the animal can be micro-chipped, scanned (if already micro-chipped), treated, and various morphometric parameters recorded.
- iii. If the animal is to be released back in the wild in a few days, it should be housed in a suitable transit facility with minimum exposure to humans.
- iv. If the animal is to be placed in captivity, the life time care facility to house the animal should meet the standards prescribed by the Central Zoo Authority.
- v. If an animal kept in captivity is intended to be released, thorough investigation of

its fitness, and evaluation of its response to humans should be conducted before releasing it into the wild.

- vi. If the animal has been kept for more than a month in captivity, it should not be released back into the wild.
- vii. If the animal is injured beyond recovery or permanently disabled, euthanasia is recommended as the best option. Even if the exceptional decision for euthanasia has been arrived at, the animal must be chemically restrained.
- viii. NSAIDs (Non-Steroid Anti Inflammatory Drugs) should never be used for treatment of the animal as these are contraindicated in felids. Long acting antibiotics should be used for sustained therapeutic effects even after release.

III D. RELEASE OR TRANSLOCATION OF CAPTURED LEOPARDS

The decision to capture an animal should be the last option. It is very important that human intervention is restricted to the minimum to avoid future conflict. If the captured leopard is to be released, it should be in the immediate vicinity of capture, i.e., within animal's home range.

Leopards are highly adaptable animals, and exhibit amazing homing instincts¹. A translocated leopard trying to navigate to its home territory through a dense human landscape may lead to increased incidences of conflicts rather than reducing the same. **Therefore, it is best to avoid translocation.**

No animal captured after a deliberate attack on a human should be released into the wild.



¹ In Africa, a translocated leopard traversed back a distance of 400 km to return to its home territory.



III E. TRANSPORTATION OF CAPTURED ANIMAL

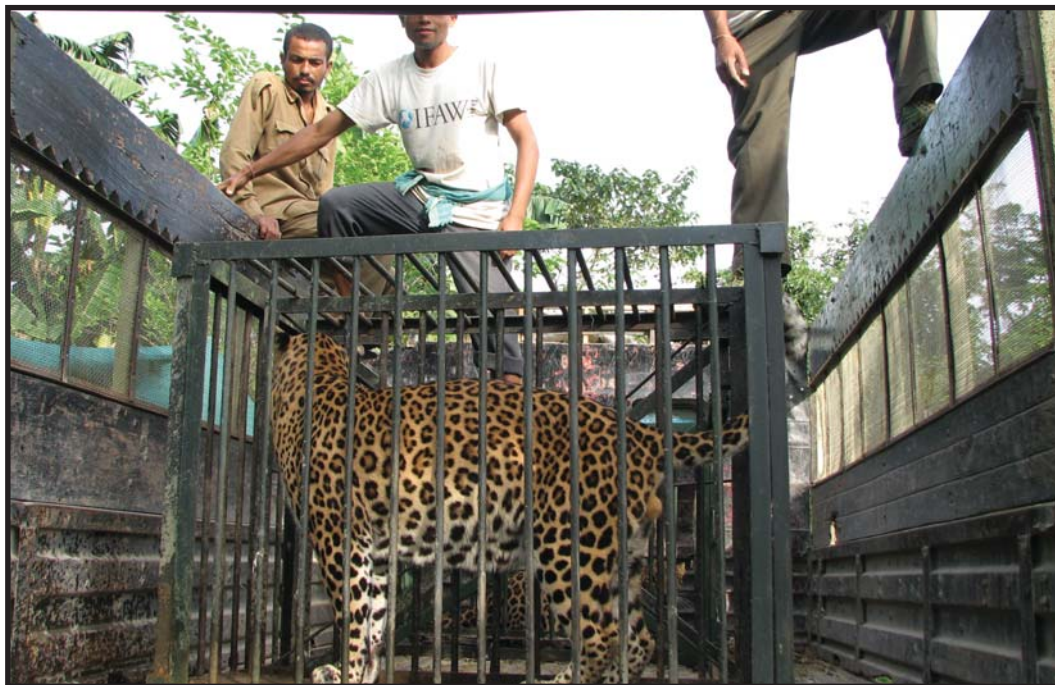
Captured animals often get injured or stressed during transportation. Stress could be detrimental to the health of the animal, which coupled with excessive exposure to humans may adversely alter its behaviour towards humans after release.

The animal once captured should be kept and transported in a stress free environment, insulated from the public. It is important that humans are not allowed to come close to the caged animal, and that the cage is also completely covered with tarpaulin or other appropriate material.

Tranquilized/captured animals must be transported in the trap itself (if suitable) or in a separate transportation cage. Care should be taken to avoid crowded places, and the animal's health condition frequently checked during transit.

III F. MONITORING OF TRANSLOCATED LEOPARDS

The success of translocation or release of leopard has to be measured and evaluated against appropriate post-release monitoring protocols. Translocation very often leads to the transfer of conflict to another unaffected site. Individual identity of all the released animals should be monitored by marking them with microchips and ear tags or colour coded collars before release. Radio collars should be put on a sub-set of released animals to monitor post-release movements and survival. Scientists and experts must be involved in such radio-tracking programmes.



III G. AVOIDABLE “RESCUE” OF LEOPARDS

A cub without its mother usually does not need “rescue” as the mother leaves the cubs when she goes hunting. Equally, cubs released without its mother have poor survival probabilities. If cubs are found alone, a watch must be kept for their mother without disturbing them. Cubs are not to be “released”, but only require “reuniting” with their mother. Reuniting should be attempted immediately in the night in the same area, from where they were picked up. A suitable camera trap placed overnight near the ‘reunion site’ would facilitate the confirmation of the reunion.

Cubs that are hand-reared in captivity have a negligible possibility of future release back to the wild. Lifetime care is the only suitable option for such cubs, since their release in the wild even after a long term rehabilitation process may only worsen the already existing conflict situation.

IV. HELPING RURAL PEOPLE BETTER PROTECT THEIR LIVESTOCK – A CONFIDENCE BUILDING MEASURE

- ❖ Subsidy should be provided for simple but sturdy and leopard-proof livestock sheds.
- ❖ Vaccination camps for livestock could also be organized in collaboration with the Animal Husbandry Department.
- ❖ Possibility of initiating state sponsored insurance schemes for livestock also needs to be explored.



IV A. EXPEDITIOUS AND EFFECTIVE DELIVERY OF *EX-GRATIA*

Immediate response to loss of life, livestock, and property caused by leopards will help calm people. This will prevent violent reactions towards the problem animal in particular and wildlife in general.

Payment of *ex-gratia* should be made fast and hassle free. The possibility of initiating self financed insurance schemes should be explored.

- i. In case of **attack on humans**, it is recommended that senior level officers immediately visit the site. A vehicle should be provided to take the victim to the nearest medical facility. **The *ex-gratia* payment should be made immediately.**
- ii. In case of **attacks on livestock**, *ex-gratia* amount should be provided within a week. The complaint should be made at the Gram Panchayat office, and the Forest Guard should visit the site immediately. The protocol should be verified by Forest Guard and Gram Sevak. Extra travel and phone allowance should be provided to the Forest Guard to enable him to effectively discharge this responsibility without delay. Veterinary certificate and photographic evidence should not be made compulsory requirements for disbursement of *ex-gratia* amount. The amount should be dispatched through a bank demand draft.
- iii. The use of an 'sms' based updating system to inform the victim or his relatives about the status of his/her claim, and also to receive complaints should be explored.
- iv. It is extremely important that the animal is allowed to feed off the livestock it has killed. After inspection by the forest Guard and the Gram Sevak, the carcass should be taken to a nearby secluded area, the same evening. If a leopard is deprived of its kill, it will make more kills, inflicting more losses on the farmers. Also, it is possible that after being deprived of its kills repeatedly, the animal may become desperate, increasing the intensity of conflict. This aspect also needs to be explained to the villagers.

- v. Bi-yearly meetings should be held where local MLA, panchayat heads, revenue, veterinary, health and forest department officials should discuss the problem of human-wildlife conflict, and how effectively it is being managed. Such meetings could also review the existing practice and options of mitigation with a view to making these more effective and people friendly. The above exercise should involve trained wildlife biologists and other experts.

V. COLLECTION OF INFORMATION ON LEOPARD CONFLICT

- ❖ Management of a species should be based on systematic long term data. Information on conflict incidences should be collected systematically in an appropriate format to aid decision-making.
- ❖ Long term research, focused on estimating the population and abundance of leopards in high conflict areas, should be taken up on priority.
- ❖ Identification of conflict prone areas, with data on conflict intensity, nature of conflict, and trends, must be collected for better preparation and pre-emption.

VI. DEALING WITH MAN-EATER LEOPARDS

Attacks by man-eating leopards are deliberate with an intention to kill, and usually result in death, e.g., child being lifted from the precincts of the house, and attacks on people sleeping inside the house. In such cases, every attempt must be made to identify the correct animal, and trap the animal as per the guidance outlined. Immediately after the first attack by a man-eating leopard, orders from the Chief Wildlife Wardens should be obtained to eliminate the problem animal with the help of shooters. Trap cages should be installed to capture the man-eater. This is especially crucial when such attacks occur in highly populated landscapes. **Animals trapped after deliberate attacks on humans should never be released back into the wild.** Humanely euthanizing such animals should be the preferred option.

VII. PROTOCOL TO BE FOLLOWED IN CASE OF LEOPARD ATTACKS

In case leopard attacks are reported against human beings or cattle, the protocols suggested in Appendix-1 and Appendix-2 respectively may be followed.

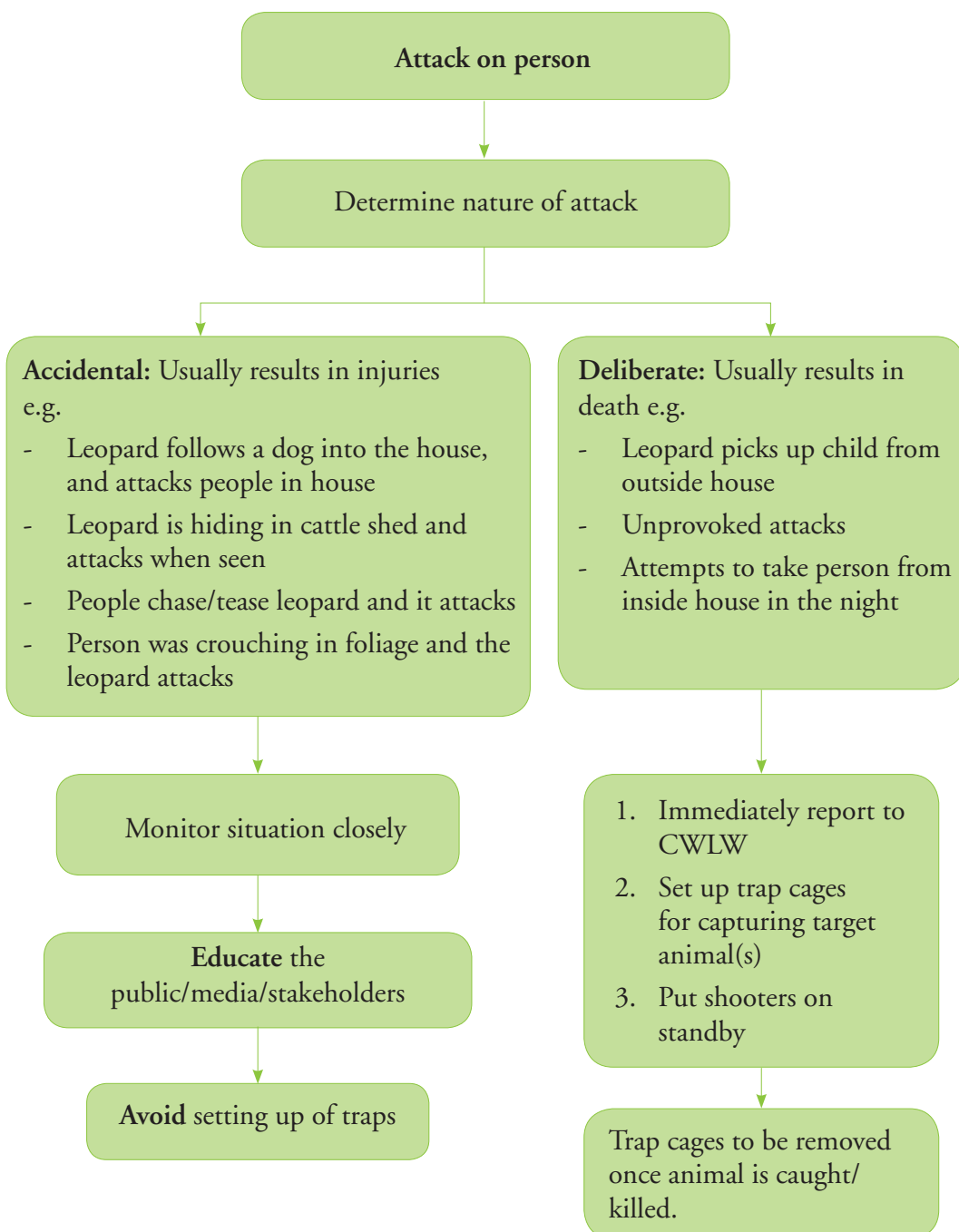
ANNEXURE-I

CARE AND CAUTION IN DESIGNING TRAP CAGES

1. Trap cages should be completely enclosed (new designs use fiberglass) with holes for ventilation.
2. Iron rods should not be used (thick chain link is preferable) anywhere in the trap cage as leopards struggle to escape by pulling at the bars which results in canines being broken.
3. Old rusty, iron cages should be discarded, and not used to house leopards.
4. There should be a gap of 1.5 inches between the cage floor and the lower edge of the trap door to prevent tails getting slammed.
5. Trap cages should be well ventilated.
6. Trap cages should be at least 6 feet in length with the trap door activation system being at the opposite end of the trap door. The height of cage should be around 4-4.5 feet and width ~ 3.5 feet. Cages made of fiber glass (currently being used in Maharashtra) are lightweight and can be carried by 4 people. Collapsible cages should also be designed and physically tested in the field to assess their effectiveness.
7. **Some Do's and Dont's for holding leopards in trap cages:**
 - (a) Trap cages should not be used for long term captivity (no more than one week). Separate temporary transit facility should be created for long term captivity.
 - (b) Only one animal can be held at a time in a trap cage.
 - (c) Water should be made available at least two times a day – either through a pipe which can be inserted in a hole at the side of the trap cage or by placing a steel bowl of water inside.
 - (d) Trap cage should not have any artificial padding (no rubber etc) as leopards have a tendency to rip off and eat it while struggling to escape. These synthetic materials could get lodged in the stomach of leopards and result in their death.

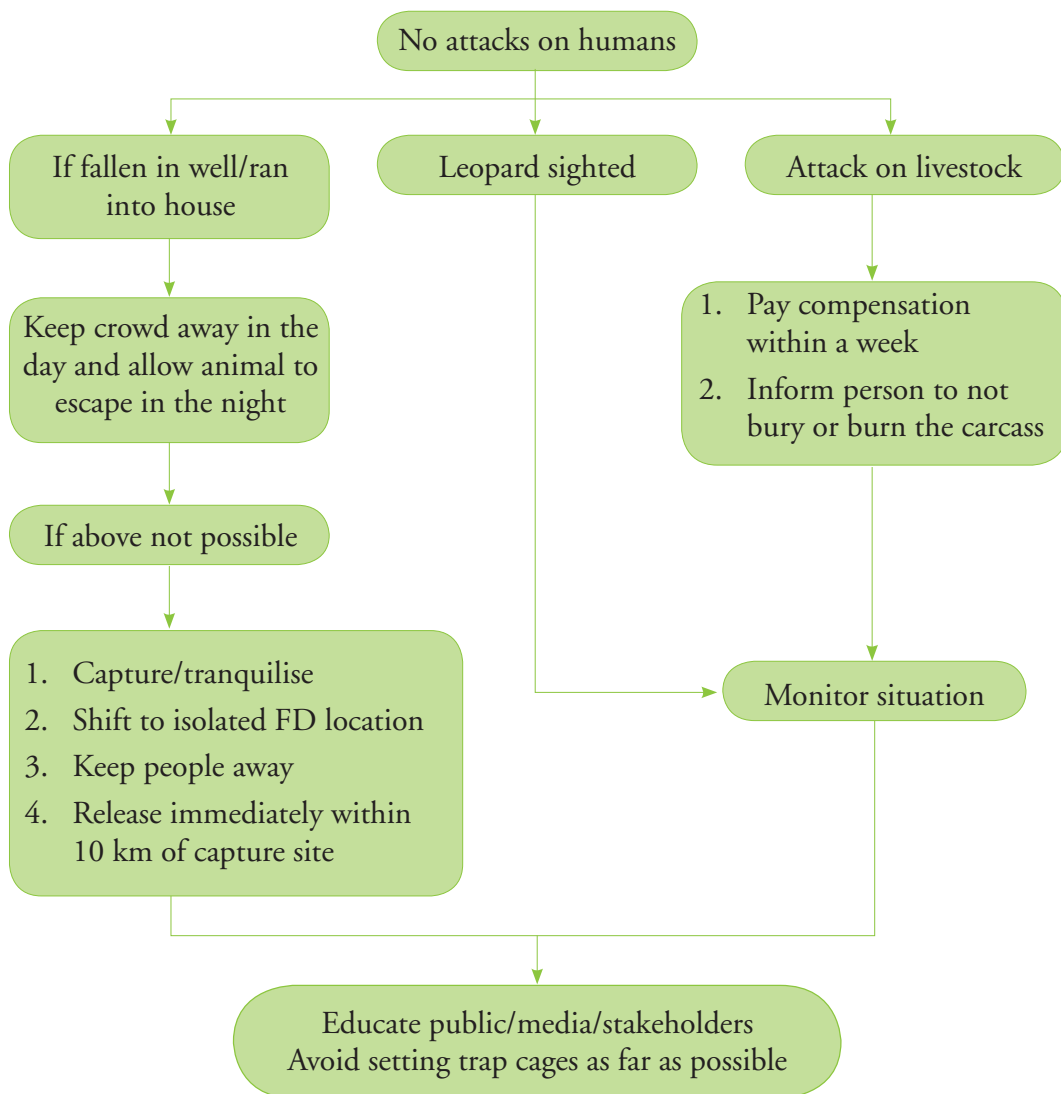
ANNEXURE-II

IN CASE OF ATTACKS ON PEOPLE



ANNEXURE-III

IN CASE OF ATTACKS ON LIVESTOCK OR SIGHTING OF A LEOPARD



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