

**National Mission On Himalayan Studies**

PERFORMA FOR THE HALF YEARLY PROGRESS REPORT

(Period from June, 2016 to November, 2016)

**Project Title:-** □ **Human-Wildlife Conflict Resolution Mechanism in the Indian Himalayan Region: Risk assessment, prediction and management through research and community engagement**

**Sanction No. and date:-** NMHS/LG-2016/009 and 31<sup>st</sup> March, 2016

**Institution Name:-** Wildlife Institute of India/ [www.wii.gov.in](http://www.wii.gov.in)

**Personal Details -:**

<b>Name and Address of the PI:-Dr. G. S. Rawat</b>
<b>Name and Address of the Co PI:- Dr. S. Sathyakumar</b>

**Partner Details:-** The State Forest/ Wildlife Departments have been partnered in the Project. We are intending to conduct the inception workshop with the State Forest/ Wildlife Departments in this project in December, 2016/ January, 2017. NGOs/ CBOs (Community Based Organizations) will be finalized in coordination with the State Forest/ Wildlife Departments.

<b>Sl No</b>	<b>Name/ Address</b>	<b>Work assigned to partners</b>	<b>Fund allocated to partners during the period</b>
1	Dept. of Wildlife Protection, Jammu & Kashmir	Coordination in the Project in the state/site	
2	Forest Dept. Himachal Pradesh	Coordination in the Project in the state/ site	

3	Forest Dept. Uttarakhand	Coordination in the Project in the state/ site	
4	Department of Forest, Environment and Wildlife Management, Government of Sikkim	Coordination in the Project	
5	Forest Department, West Bengal	Coordination in the Project in the state/ site	

**Project Objectives -:**

- I. To develop risk assessment tools and processes for identifying negative Human-Wildlife Interaction(HWI) in the IHR through investigations on HWI and predict potential hotspots of conflict for regular monitoring and development of site specific mitigation efforts □
- II. To understand the biological factors and ranging patterns of selected wildlife species involved in livestock/crop depredation and attacks on people in the IHR.
- III. To develop and implement adaptive management strategies in some of the identified vulnerable areas through community engagement and use of modern science and technological tools and approaches. □

**Completion in the last six months in % (According to each Deliverables)-:**

<b>Sl No</b>	<b>Quantifiable Deliverables (as per sanction letter)</b>	<b>Output/ achievements</b>	<b>Performance in terms of Monitoring indicators</b>	<b>Remarks</b>
1	Conflict intensity maps and prediction of vulnerable zones for each Forest/Wildlife Division for the 5 study States.	Data collection is in process on human conflicts with snow leopard and brown bear in Ladakh. Data has been gathered on HWI from the Forest/ Wildlife Dept. from Uttarakhand and Ladakh. Data has also	2	WII has sent letters seeking permission to work across five states but, we haven't received permission except J&K provided provisional permission for three months (Sept. to Nov. 2016)

		been gathered on livestock census from Ladakh and Uttarakhand.		
2	Density surface models for four carnivores in the selected sites of the selected study States.	Permission from the five states is awaited		
3	Abundance estimates for selected species for the study area to determine the population size in different management scenarios.	Permission from the five states is awaited		
4	Fine scale spatio-temporal data base on species specific ranging and movement pattern of individuals involved in conflict scenarios	Permission from the five states is awaited		
5	Documentation of general activity, movement patterns of the species in the conflict prone zones	Permission from the five states is awaited		
6	Species and area specific mitigation plans/ models for negative Human-Carnivore Interactions in the IHR will be prepared	Permission from the five states is awaited		

### **Summary of progress -:**

We are gathering information on status of human-wildlife conflicts across five states. First, we are gathering information from the Forest/ Wildlife Departments and as Dept. of Wildlife Protection provided us permission to conduct field-work (September to November, 2016), we are collecting data through field surveys and questionnaire surveys. Here, we are summarizing data collected from the Forest/ Wildlife Departments and current surveys on rhesus macaque in Dehradun.

**Rhesus macaque (*Macacamulatta*)**(Source: Field surveys in Dehradun)  
Period:September to November, 2016)

Rhesus macaque data was collected using group survey and focal survey method in and around WII campus, Dehradun. Adult male to female ratio was 1:1.15 and adult female to infant ratio was 1:0.66. The age structure comprises of 50% adults, 20% sub-adults, 13% infant and 18% juveniles. Most of the individuals were found to be moving and foraging followed by resting and grooming. These finding are in line with the expectation that being a social animal, rhesus macaque will spend much time looking for food, followed by social grooming. However, using focal survey, resting period seemed to be longest, followed by foraging and grooming period. Details are summarised in Figure 1 and 2.

**Wild pig (*Susscorfa*)** (Source: Uttarakhand Forest Department;Period: 2000 to 2016)

Total number of injuries to human: 320; Total number of deaths: 24. An increasing trend in the number of casualties was observed. The highest number of incidents were reported in 2015, which included 55 injuries to humans and 4 deaths. Of the total 347 cases reported, 152 casualties were women and 195 were men. The highest percentage of attacks was in the age class of 31–45 years (21.33% injuries and 2.02% deaths), whereas lowest were observed in the age class of 0–5 years (1.15% injuries and 0.29% deaths). Details are summarised in Figure 3 and 4.

**Asiatic black bear (*Ursusthibetanus*)**(Source: Uttarakhand Forest Department; Period: 2000 to 2016)

Total number of injuries to human: 1182; Total number of deaths: 40. The highest number of attacks were recorded in the year 2012 (119 injuries and four deaths). A total of 633 attacks were reported on women and 591 on men. Similar to wild pig attacks, highest percentage of attacks were seen in the age class of 31–45 years (30.36% injuries

and 1.23% deaths), whereas lowest were observed in the age class of 0–5 years (0.16% injuries and no deaths). Details are summarised in Figure 5 and 6.

**Common leopard (*Pantherapardus*)**(Source: Uttarakhand Forest Department; Period: 2001 to 2016)

Total number of injuries to human: 952 Total number of deaths: 285. The highest number of attacks were recorded in the year 2010 (185injuries and 31 deaths). The highest number of attacks in the age-class of 6-15 years (185 Injuries and 129 deaths), whereas lowest were observed in the age class of >75 years (09 injuries and 04 deaths) Details are summarized in Figure 7 and 8.

**Snow leopard (*Pantheraunica*), Tibetan wolf (*Canis lupus chanco*) and Himalayan brown bear (*Ursusarcotosisabellinus*)**

Livestock depredation data was obtained from the Department of Wildlife Protection, J&K,Leh from 2010 to March, 2016. There is an increasing trend of livestock depredation by snow leopard every year.i.e from 2010 to 2016 (Figure 7). Overall, out of three large carnivores in Leh, snow leopard contribute 89% of livestock lossfollowed by Tibetan wolf (10.8%) and brown bear (0.11%). Currently, field surveys are continuing inLadakh (Leh and Kargil districts) to document the large carnivore-human conflicts in Hemis National Park, Leh and Suru and Wakha valleys, Kargil.

**Name of the PI:- Dr. G. S. Rawat**

**Signature -:**

**Date:- 23rd November, 2016**

**Supporting data files/ maps/ tables/ figures of the results to be attached**

Figure 1. Frequency of different age class observed during the study in and around WII campus, Dehradun.

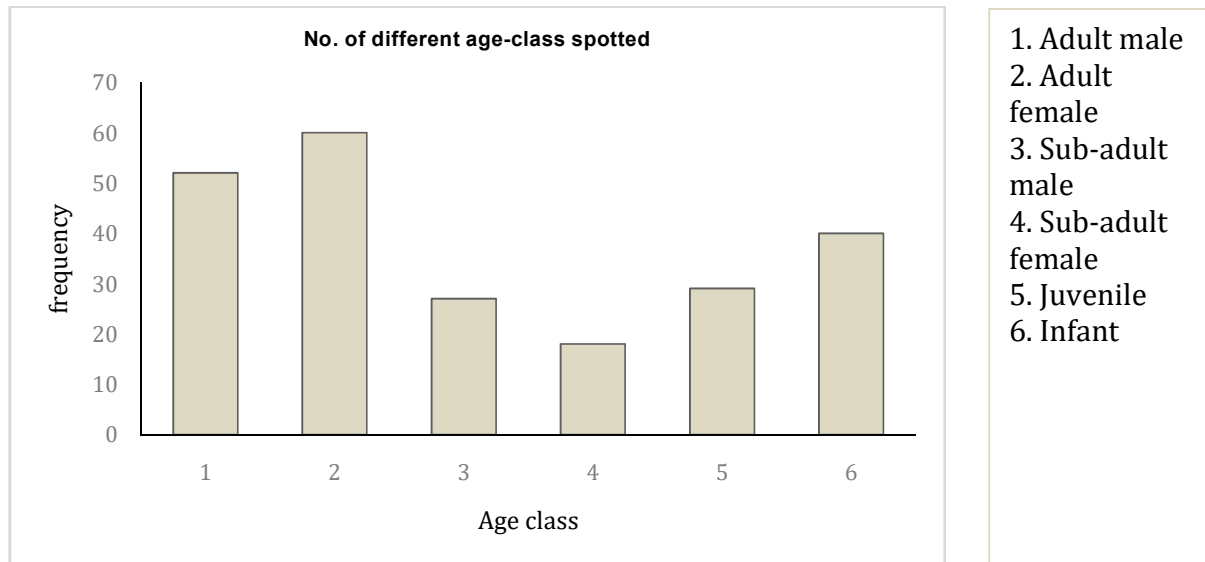
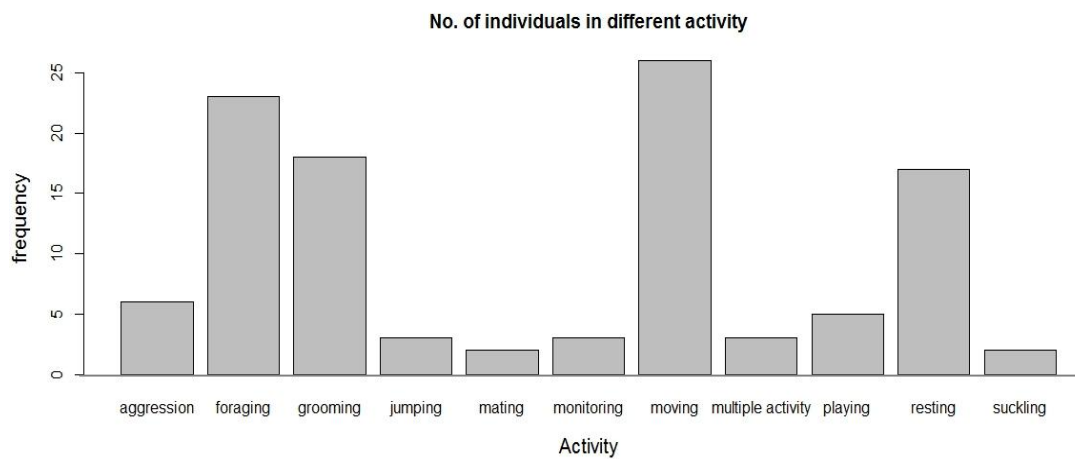


Figure 2. Frequency of individuals with various activity engaged during the study in and around WII campus, Dehradun.



### Wild pig (*Sus scrofa*) attacks on human in Uttarakhand

Figure 3. Wild pig attacks on human from 2000 to January, 2016 (Source: Uttarakhand Forest Department)

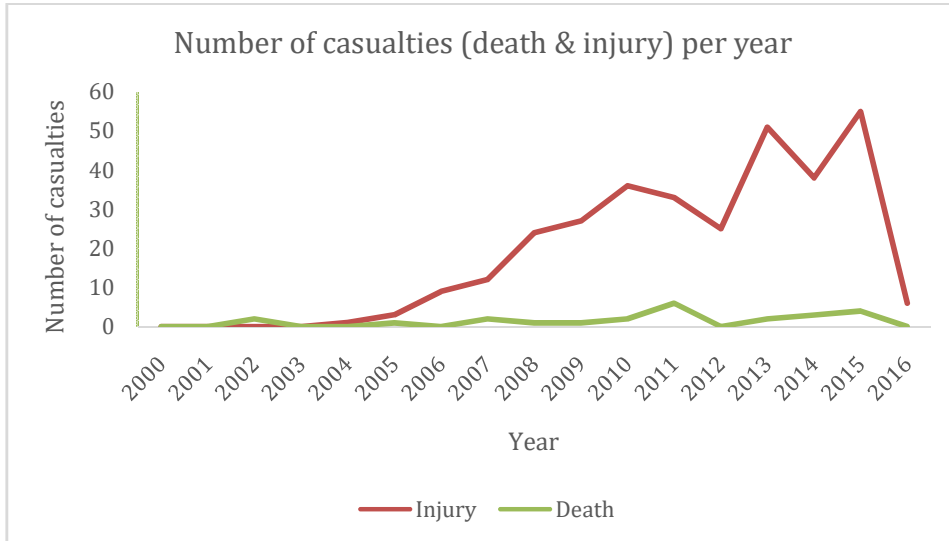
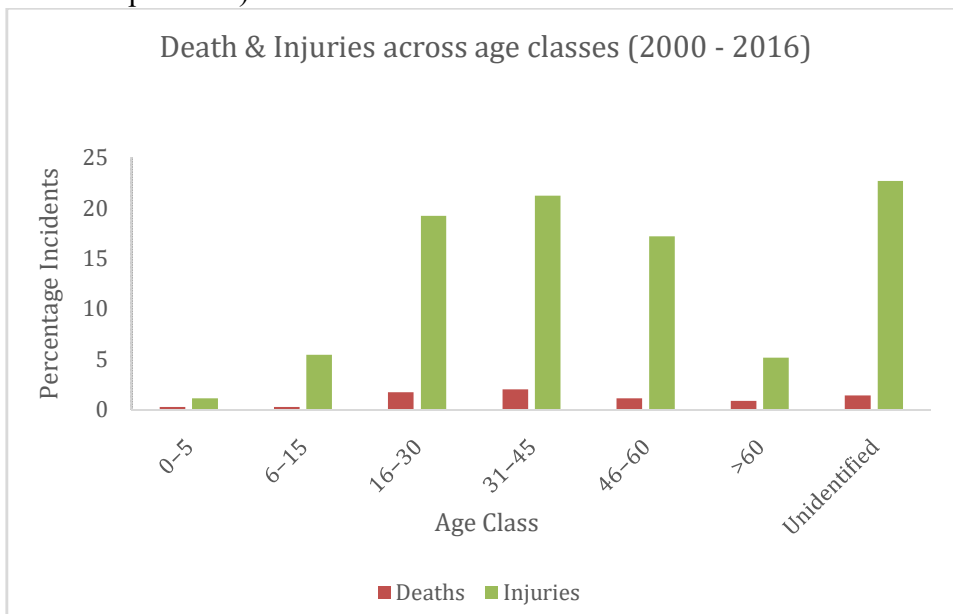


Figure 4. Wild pig attack on humans as per the age class group (Source: Uttarakhand Forest Department)





### Asiatic Black Bear (*Ursusthibetanus*) attack on human in Uttarakhand

Figure 5. Asiatic black bear attacks on human from 2000 to January, 2016 (Source: Uttarakhand Forest Department)

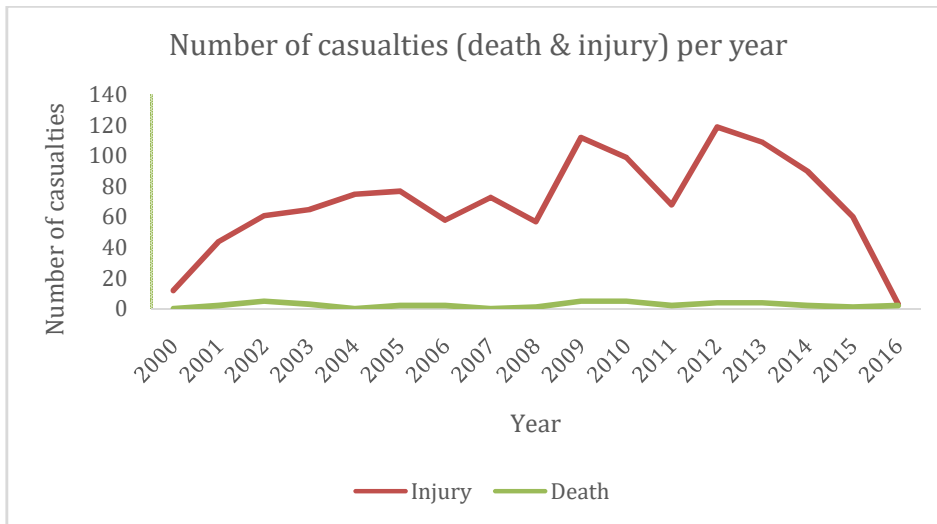
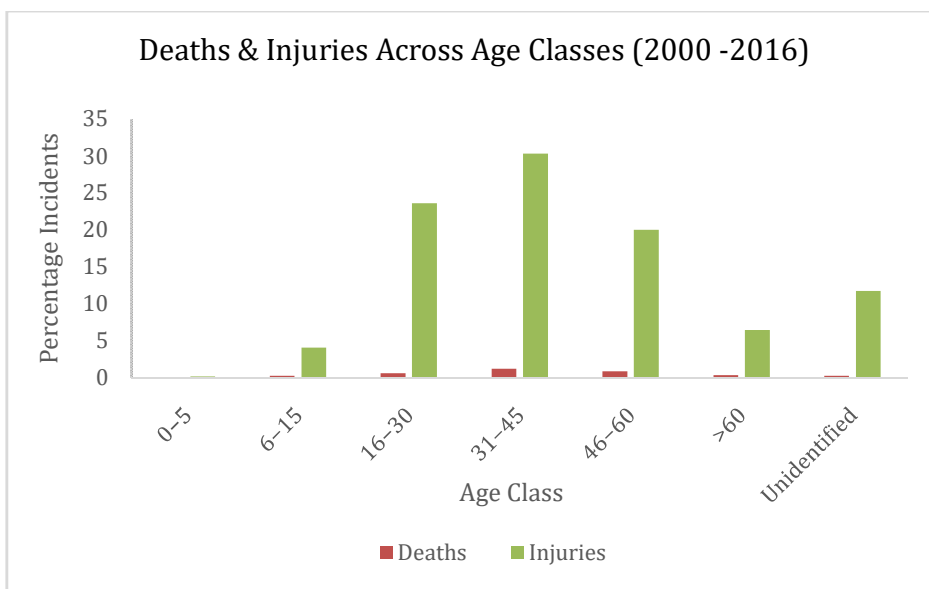


Figure 6. Asiatic black bear attack on humans as per the age class group (Source: Uttarakhand Forest Department)



### Common leopard (*Pantherapardus*) attack on human in Uttarakhand

Figure 7. Common leopard attacks on human from 2001 to January, 2016 (Source: Uttarakhand Forest Department)

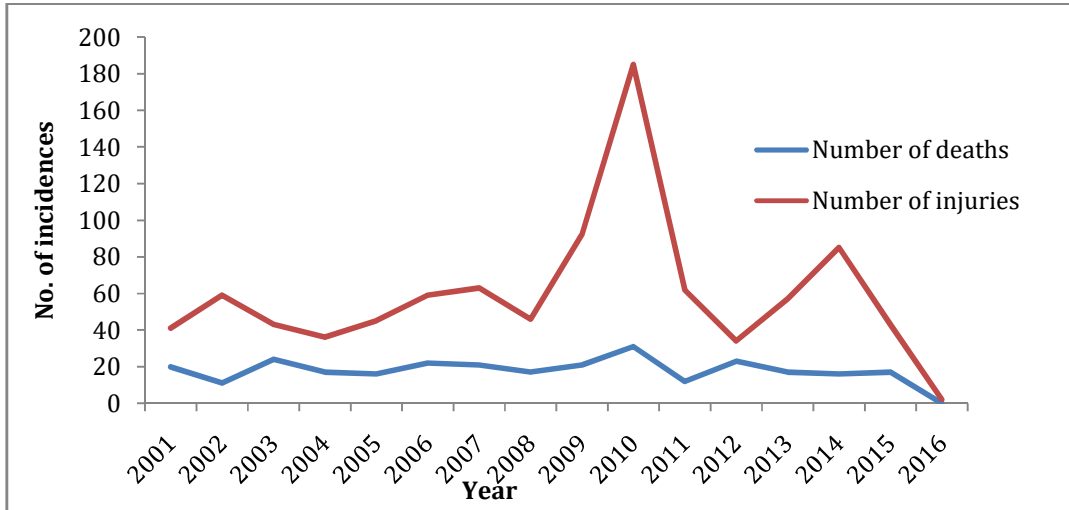
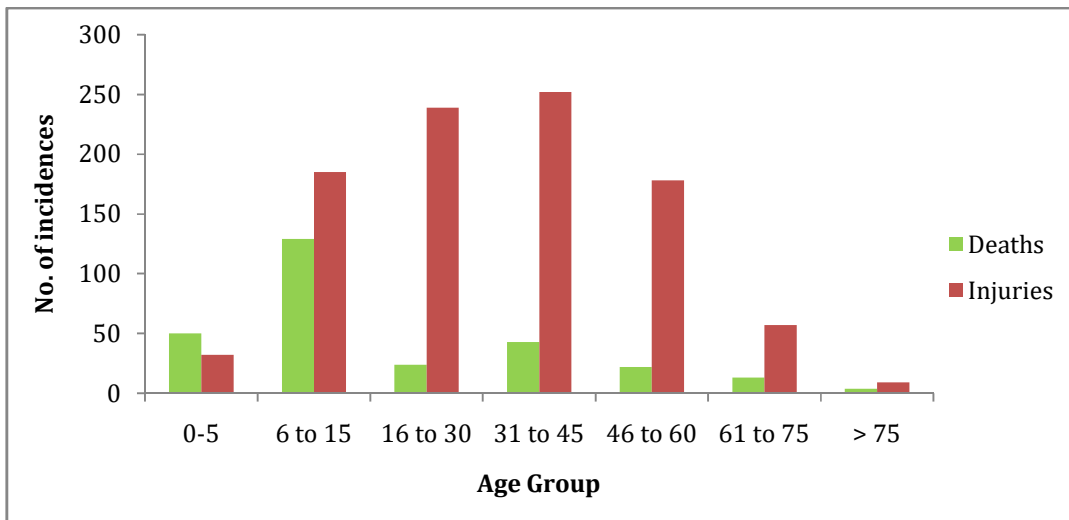


Figure 8. Common leopard attack on humans as per the age class group (Source: Uttarakhand Forest Department)



**Snow leopard (*Panthera uncia*), Tibetan wolf (*Canis lupus chanco*) and Himalayan brown bear (*Ursus arctos ussuricus*)**

Figure 9. Livestock depredation by large carnivores in Leh, 2010 to March, 2016  
(Source: Department of Wildlife Protection, J&K)

