SUMMARY

The present research work was conducted for the period from 2010 to 2013 in Allahabad district of Uttar Pradesh. The major objectives of the research were to study the status and management of wildlife biodiversity, health, offense and trafficking in Allahabad district of Uttar Pradesh.

The study methods involved multistage random sampling of the study area for collection of necessary facts, ad-libitum sampling, data collection from primary and secondary resources, body condition evaluation and examination of faecal samples for gastrointestinal parasitism in zoo and free ranging wild animals. The detailed results of the study as per objectives are discussed herewith:

I. Wildlife Biodiversity:

Allahabad district harbored unique wildlife diversity. The district had 29 species of mammals, 16 species of reptiles, 19 species of fishes and 111 species of birds.

II. Wildlife census:

The city also has 3 deer parks namely Deer Park, UCL, Chhatnag, Jhunsi, Triveni Environmental Park, Bamrauli and Cheoki Ecological Park, COD, Naini, Allahabad. However, the Social Forestry Department, Allahabad does not have any record or information about presence of Cheoki Ecological Park. The forest officials should have a periodic survey on different parts of the district to have proper knowledge about the important wildlife areas.

Triveni Environmental Park, Bamrauli had 81 black buck, 1 spotted deer, 40 rabbit and 3 ducks. There is huge variation in black buck population in Triveni Environmental Park in the census conducted in 2008 and 2011. It appears that the information on the black buck population was not collected properly in 2008. The forest authority should conduct periodical survey on the number of animals in different Deer Parks and the help of NGOs and volunteers from school and colleges may be taken to have better results.

According to the Wild Animal Census 2011 the district has 404 black bucks, 4482 Nilgai, 1436 Rhesus macaque, 1 Common langur, 79 wild pig and 95 jackal. According to Wild Animal Census 2010 Koraon area also harbor 5 vultures.

III. Major wildlife conservation areas
a. Black buck conservation

i. Community based black buck conservation:

The black buck population in Meja Tehsil is a very good example of community based conservation. The villages Chandpur Khamariya, Kehuni, Mahuli Kala and Gadariya in Meja Tehsil had good numbers of naturally available black bucks. They are distributed in isolated pockets around villages and agricultural fields. These animals have got considerable protection from the village farming community.

ii. Black Buck Conservation Project

The animals are also facing down threat of existence owing to scarcity of naturally available food and water holes, habitat loss and fragmentation, poaching etc. Looking to the need a project on black buck conservation has been initiated by Social Forestry Department, Allahabad in collaboration with Meja Urja Nigam Private Limited in the Chand Kamaria area, 10 km from the Meja Urja project site.

b. Wetlands conservation:

Allahabad districts also had good number of wetlands temporary as well as permanent. The river sores and channels of Ganga, Yamuna and Tones form very good wetlands which attract wetland birds in the area. A number of migratory and non migratory wetland birds from different species flock in the Sangam, Bhirpur and nearby areas. The wetland birds are facing down threat mainly due to water pollution, disposal of solid wastes in open areas and near water bodies and washing of cloths in wetlands. The number of migratory birds and their stay time in the city is reducing due to rise in temperature, an impact of global warming.

c. Conservation of Gangetic dolphins:

The river Ganga and Yamuna also inhabits many aquatic fauna among which one is Ganges river dolphin, our national aquatic animal, which is an apex species of the river ecosystem. River dolphins require a reasonably unpolluted environment, sufficient water to move among deep pools and an adequate food supply. These are critical components of healthy aquatic ecosystem. In Allahabad the sighting of Gangetic dolphin is occasionally reported in Saraswati ghat and Sangam area. Dolphin groups were found utilizing areas with less depth range, then that of the deep regions. Habitat destruction due to construction of Dams/ Barrages,
heavy siltation and indiscriminate extraction of water are among the major threats to the river ecosystem. Illegal commercial fishing and sand mining in important riverine biodiversity zones. High fishing and mining through boats. Illegal commercial fishing and sand mining need to be stopped. The guidelines of MoEF need to be followed for fishing and sand mining. Island farming and crematoriums in and around river Ganga and Yamuna need to be managed on priority. Intense fishing and destructive methods of fishing also needs to be supervised.

IV. PEOPLE PERCEPTION AND AWARENESS STATUS TO WILDLIFE CONSERVATION

The respondents gave a mixed response to the question of place of existence of wildlife. Out of the one hundred and fifty respondents maximum 137 (91.33%) feel that the wildlife exists in the National Parks and Sanctuaries, 132 (88%) said that it exist in zoos, 67 (44.67%) find it in lakes and rivers, 34 (22.67%) in cities and villages, while 26 (17.33%) people said that the wildlife exist in all these places. Out of the one hundred and fifty respondents only 13 (8.67%) admits that they can identify different wildlife species, 109 (72.67%) decline to have proper knowledge on species identification, while 28 (18.67%) admitted that they can identify few wildlife species.

The awareness of the citizens to different wildlife species is reported to be quite less. A mass awareness program should be carried out in the schools and colleges. The local citizens should also be involved in these programs. The study revealed that maximum (76%) people think that the wildlife needs to be conserved for ecosystem balance, followed by ethical value (65.33%), recreational value (48%), legal provisions (35.33%) while 3.33% people replied cant say. People had a mixed response to their knowledge about the presence of deer parks in their city. Out of 150 respondents 94(62.67%) were aware of Cheoki Ecological Park, 83(55.33%) about Deer Park, Jhunsi, 27(18%) about Triveni Environmental Park whereas 58 (38.67%) were unaware of any zoo.

Out of the 150 respondents 62(41.33%) were aware that capture, sale and keeping of native wild birds is a punishable offense, 55(36.67%) showed unawareness to these provisions while 33(22%) could not say anything due to lack of proper knowledge.

61.33% of the people involve themselves in wildlife conservation by allowing nesting of birds in their houses, 56.67% give message for conservation, 32.67% keep food and water for birds,
31.33% purchase wildlife literature and pictures while 12% were not involved in any of these ways of wildlife conservation.

The respondents had a mixed reply to the wild animal causing conflicts in the city area. Out of the 150 respondents 77 (51.33%) feel monkey as the major cause of conflict, 43 (28.67%) finds rats being the cause of conflict, 27 (18%) think snakes, 14 (9.33%) find house crows and other birds while 22 (14.67%) respondents decline of presence of any conflict.

b. Questionnaire survey among rural communities

The respondents gave a mixed response to the question of place of existence of wildlife. Out of the one hundred and fifty respondents maximum 124 (82.67%) feel that the wildlife exists in the National Parks and Sanctuaries, 127 (84.67%) said that it exist in zoos, 58 (38.67%) find it in lakes and rivers, 41 (27.33%) in cities and villages, while 20 (13.33%) people said that the wildlife exist in all these places.

Out of the one hundred and fifty respondents only 19 (12.67%) admits that they can identify different wildlife species, 98 (65.33%) decline to have proper knowledge on species identification, while 33 (22%) admitted that they can identify few wildlife species. The villagers use local names of different wild animals and birds and identify them by these names only.

The study revealed a mixed perception of villagers to the significance of wildlife conservation with maximum 72% people thinking that the wildlife needs to be conserved for ethical value followed by 68% people replied for ecosystem balance, 48% due to recreational value, 40.67% due to legal provisions and 5.33% people replied cant say.

People had a mixed response to their knowledge about the presence of deer parks in the city. Out of 150 respondents 119 (79.33%) were unaware of any deer park in Allahabad, 18 (12%) were aware of deer park in Allahabad and only 13 (8.67%) were aware of black buck conservation area.

Out of the 150 respondents 48 (32%) were aware that capture, sale and keeping of native wild birds is a punishable offense, 74 (49.33%) showed unawareness to these provisions while 28 (18.67%) could not say anything due to lack of proper knowledge. The village people had even less knowledge in comparison to city peoples that capture, sale and keeping of native wild birds is a legal offense.
92.67% of the villagers allow bird nesting in their house, 65.33% keep food and water for birds, 42.67% give message for conservation while 7.33% are not involved in any of these wildlife conservation activities. The love and compassion for wildlife is in the habit of most of the villagers.

The villagers gave mixed response to the liking of inhabitation of wild animals and birds in village premises. Maximum liking was reported for birds with 94.67%, followed by monkeys 64%, black buck 30.67%, nilgai 22.67% and minimum for wild boar with 17.33%. The black bucks were present only in few villages under Meja tehsil. The liking for black buck was maximum among other mammalian species with 46 (92%) likings out of 50 villagers surveyed in Meja. The respondents like the stay of black bucks in their area and are even ready to tolerate the crop damage by this animal because of less crop destruction by them. They also consider the black bucks like god and keep good wishes for them. The nilgai is not liked by the villagers because of the heavy crop depredation by this species.

The survey revealed that 72% people feel that nilgai is causing conflict, 12% find that monkey is causing conflict, 10% finds others (black bucks, birds etc.) while 6% deny of any conflict in their area (Plate 15). Nilgai which village people in the area commonly call ‘Roj’ is the major species causing human animal conflict.

III. Awareness lacks reported by forest department:

The hoax new about the presence or appearance of wild buffalo and swamp deer are the incidences occurred due to lack of proper knowledge among the village community. The forest officials should be alert in these situations because if these animals are not recorded in these sites how they can be seen in such areas.

Installing hoardings for wildlife species prevalent in an area and messages of wildlife conservation. The school children in cities and villages should be trained in schools by teachers and in special camps of forest department. The local citizens should be discouraged from keeping native birds as pet. They should be informed at large scale through the media that capture, sale and keeping of native birds is a legal offense. The forest frontline field staff needs to be scientifically trained in the identification of different species of wild animals.

STATUS OF WILDLIFE HEALTH AND ENVIRONMENTAL HAZARDS:
Wildlife health is defined as a condition of the environment that allows species to prosper within a complicated ecosystem (habitat) where sustainable biodiversity is the monitor of success. A detailed study on wildlife health status in Allahabad was carried out. The findings are given hereunder:

I. Wildlife necropsy records:

Necropsy records of forest department:

Overall deaths

A total of 33 deaths of wild animals were recorded by the Forest Department, Allahabad between the period from 2009 to 2013. Out of this maximum 18 (54.54%) deaths were recorded in peafowl followed by hyaena 4 (12.12%) and minimum 2 (6.06%) deaths each in nilgai 2 (6.06%), wolf 2 (6.06%), python 2 (6.06%) and monkey 2 (6.06%). Out of 33 maximum 11 (33.33%) deaths were due to accident followed by 10 (30.30%) due to disease, 7 (21.21%) were due to poaching, 4 (12.12%) were natural and only 1 (3.03%) death was reported due to unknown cause.

Animal deaths noticed by researcher:

Death of small Indian civet cat due to bronchopneumonia associated with cold stress, death of common mongoose due to traumatic shock associated with road accident, death of Indian cobra snake due to traumatic shock associated with road accident, death of two jungle mynas due to capture myopathy owing to strangulation in kite thread and death of pariah kite due to septicemia resulted from dislocation of elbow joint and haemorrhages owing to kite injury were reported by the author. Death and injury of birds due to kite thread is quite common. Now a days very sharp kite threads coated with lead are imported from China. These appear lethal to the birds. The local people should use country made kite threads which are not coated with lead and are safe for birds.

II. Wild animal rescue, disease diagnosis, treatment and rehabilitation

Wild animal rescue by the forest department:

Rescue of a python, two cubs of wolf (*Canis lupus pelipus*) out of which one died later and a gharial stuck in the fishing net which also died later are documented by the forest department. The forest department should have a rescue team team consisting of forest officers
and supporting staff, veterinarians and volunteers from NGOs. The team will support in cases of wild animal rescue and conflicts. This measure will prevent any causality of wild animals.

**Wildlife diseases and disorders reported and managed by the researcher**

A female Golden jackal (*Canis aureus*) aged around 3-4 years was chased by the stray dogs and entered to the open counseling shed in AAIDU university premises. It was chased away by the guards and the animal escaped from the counseling area and ran away and hided itself to an electrical system. It suffered an electric shock while trying to escape from the electric cables.

A three stripped palm squirrel was hurt by a speedy motorcycle in front of the road passing through the main entrance gate of Forest Nursery of School of Forestry and Environment, SHIATS, Allahabad. On close examination the animal showed bleeding from right ear and oral cavity besides injury in the right forelimb. The giddy and staggering gait was observed and the squirrel was unable to walk properly. The squirrel responded well to the treatment and was released successfully on fourth day.

A young pariah kite bird was found sitting in the boundary wall of boys hostel of SHIATS campus in dull and inactive condition for more than 10 hours. The bird was noticed by the students of School of Forestry and Environment and brought to the school for necessary treatment. The oral mucosa was dry and breast bone was prominent. The bird also appeared dehydrated. Temperature of the bird was $109.5^0$F. The eyes were reddish in colour. The case was diagnosed as septicemia and heat stroke. The bird was provided scientific wildlife health management and after ten days of capture the bird was released successfully. It was again an example of team work when the life of a bird was saved due to good team work of students and faculty members of SHIATS.

Besides above the treatment of pariah kite for paraplegia and wing injury, rescue of an orphaned jungle babbler, rescue and rehabilitation of a blue rock pigeon attacked by stray cat making it one eye blind and rescue of a tree pie strangulated in kite thread were few successful operation carried out by the researcher. The procedures adopted in these rescues will be a useful data for future rescue and rehabilitation operations.
Apart from the above a case of ruffled feather appearance in pariah kite and hard indurated abscess in elephant were also observed. Such observations provide a baseline database for further research and management in the field of wildlife health.

**III. Evaluations on the management of deer parks in Allahabad:**

Allahabad city had three deer parks namely Cheoki Ecological Park, COD, Naini, Triveni Environmental Park, Bamrauli and Deer Park, UCL, Chattanag, Jhunsi. All these deer parks were visited and information regarding the animal species present, treatment, management etc. were asked. All the desired information was not provided by the park managements.

**Body Condition Evaluation (BCE) of wild animals in different deer parks of Allahabad**

The animals kept in Deer Park, UCL Chattnag, Jhunsi were observed in better body condition with 40% spotted deer in good body condition, 33.33% spotted deer in average body condition and 26.67% spotted deer in poor body condition. The body condition evaluation of spotted deer at Cheoki Ecological Park revealed 36.36% spotted deer in good body condition followed by 40% animals in average body condition and 23.63% in poor body condition. The black bucks at Triveni Environmental Park showed comparatively lower body condition with 30% animals in good body condition, 33.75% animals in average body condition and 36.25% animals in poor body condition.

**Surveillance on gastrointestinal parasitism in wild animals of Deer Parks**

The screening of faecal samples of zoo ungulates in different Deer Parks of Allahabad was performed. The faecal samples were collected in zip lock polythene bags and sent to CADRAD, IVRI for examination. Out of the 25 faecal samples of spotted deer collected at Cheoki Ecological Park 4 (16%) were positive for gastrointestinal parasites. The screening of faecal samples of black bucks showed that out of the 15 faecal samples of black buck, 4 (26.67%) were found positive for GI parasites.

Maximum prevalence of parasitic infection was reported in Black bucks (26.67%) at Triveni Environmental Park, Bamrauli followed by spotted deer (16%) of Cheoki Ecological Park. No GI parasites were reported in the spotted deer and peafowl of the Deer Park, UCL Chhatnag,
Jhunsi. Low incidence of parasitic infection indicates good heath of spotted deer and black bucks.

**Body Condition Evaluation (BCE) of free ranging wild herbivores in different locations of Allahabad**

The body condition evaluation of 120 black buck revealed that 55% black bucks were in good body condition followed by 30% in average and 15% in poor body condition. The body condition of 176 nilgai from different location of Allahabad were evaluated which showed comparatively lower body conditions with 52.27% animals in good body condition, 26.140% in average body condition and 21.59% in poor body condition (Plate 16, 21, 23 and 25).

**Overall body condition of wild ungulates in Allahabad**

The body condition of 447 wild ungulates was evaluated on point scale which revealed 209 (46.76%) animals in good body condition, 136 (30.42%) animals in average body condition and 102 (22.82%) animals in poor body condition.

The study revealed that the animals living in free ranging areas are in better body condition in comparison to those living in deer parks of Allahabad.

**V. Human Wildlife Conflict (HWC):**

**Human monkey conflict in Allahabad:**

The number of monkeys in different places in Allahabad is rising. The population of these species is more then the carrying capacity of the area. This is creating rising conflict between monkeys and human beings residing in these areas. The incidences of biting, snatching of food from school children, and thieving of edible items from houses are becoming common. The production of vegetables except lemon and jackfruit has become difficult due to monkey menace. The monkeys have been rising as a problem in Allahabad during last two decades. The local peoples agitated with monkey menace sometimes also demonstrate protest March and traffic jam.

A data from forest department shows a total of 26 cases reported between the period from 2008 to 2012 and 77 monkeys were involved in them. In all these cases the monkeys were scared away. On the other hand 10 such cases were reported where 14 problematic monkeys were captured and released.
The Social Forestry Department, Allahabad had a plan to manage the monkey menace. The monkeys are planned to be rehabilitated in the Tandon Van Parishar, Basarhara Uparhar Forest Block, Shankargarh, Bara Tehsil. Tandan Van Parisher is approximately 50 km from Allahabad city. The area is under Shivrajpur Reserve Forest where a variety of tree species like Eucalyptus, Jamun, Kanji, Arjun, Jangal Jalebi, Shisham etc. are present.

There is also a plan to ban on feeding by local peoples and start a monkey rehabilitation help centre in Minto Park, Allahabad. The peoples with religious sentiments to monkeys will be encouraged to help them by donating cash money for their food.

b. Human nilgai conflict in Allahabad

**Questionnaire survey in nilgai affected areas:**

Out of the 108 respondents 99(91.67%) faces crop depredation by nilgai while 9(8.33%) also faces human attacks besides crop depredation (Plate 15). The respondents find that the nilgai herd size vary from 2-10 in 44.44% cases, 10-20 in 36.11% cases, 20-30 in 11.11% cases, 30-40 in 5.55% cases and 40 and above in 2.785 cases (Plate 15). Out of the 108 respondents 90 (83.33%) admit that nilgai raids on all the crops while 93 (86.11%) also feel that the liking is more for leguminous crops such as pigeon pea. The farmers in the area cultivate the crops of paddy, wheat, gram, masoor, linseed etc. Farmers almost stopped growing pigeon pea (arahar) owing to severe damage of this crop by nilgai. All the respondents also agree that the nilgai also feed on naturally grown fodder besides depredation on agriculture crops. Maximum farmers (41.67%) feel that 30 – 40% crops is damaged by nilgai, 30.55% find it between 50-60%, 22.22% reported the crop loss of 10-20% while 5.56% finds the crop loss upto 70-80%.

The black bucks in the villages under Meja Tehsil prefer to feed upon linseed crops besides naturally grown fodder. About 40-50% of the linseed crops are destroyed by crop raiding animals, mostly by black bucks. However, as per villagers the crop destruction by black bucks is not a cause of much concern. Black bucks feeds mostly on the natural fodder available in the surroundings (Plate 15).

**Management strategy:** About 77.78% people use guarding to control the nilgai menace, 36.11% scare the animal, 33% burn fire at night, 16.67% cultivate crops less liked by nilgai and 27.78% erect human effigy. The villagers showed reluctance to kill problematic nilgai using
valid government permit. Out of the one hundred and eight respondents only six (5.56%) agrees that the problematic nilgai should be killed using valid government permits while 102 (94.44%) farmers think this measure is not suitable. Out of 108 respondants maximum (44.44%) feel that shifting of problematic herd to forest could be a better solution, followed by 36.11% people who think that creation of nilgai sanctuary in the area, 11.11% people think adopting nilgai population control measures while 8.33% people think fencing the crop fields is the solution to manage nilgai conflict.

The survey showed that the human nilgai conflict is rising in the area. The farmers are facing serious crop losses due to the nilgai menace. The probable measures to manage the menace could be ex gratia compensation for crop losses, translocation of problematic herds, castration of alpha males, use of non invasive methods such as erecting human effigy, scare them away, burning crackers, guarding, fencing etc. Biofencing of plant species like Jatropha, Ipomea, cactus, Lantena camera, teak etc. could be used for live fencing as these plant species are disliked by the nilgai.

**STATUS OF WILDLIFE OFFENSE, TRADE AND TRAFFICKING:**

**Status of poaching and illegal trade:**

The year wise details of wildlife trade and offense cases between the period from 26.06.2004 to 11.01.2013 shows the involvement of 4353 wild animals in offense cases. Illegal transit of 3605 (60 Bora) live turtle by truck, smuggling of 222 tortoises in Brahmaputra mail and illegal transportation of 424 tortoises were the main seizures. Besides this the killing of peafowl, nilgai, wolf, python, hyaena, palm civet, porcupine, wild pig, jungle cat and monkeys were also reported (Table 33). It is evident from the data that illegal transportation and trade of turtles and tortoises is a big problem. Meanwhile killing of wild animals particularly peafowl is also a matter of concern.

The data on year wise number of wildlife poaching/ illegal trade cases in Allahabad Circle, Allahabad Forest Division showed maximum 5 cases during 2007-08 followed by 4 cases in 2008-09, 2 cases in 2010-11 and 1 case each in 2008-09 and 2011-12 (till 31.07.2011) (Table 34).
Questionnaire survey among the wildlife traders

The maximum 102 (68%) people were involved in wildlife trade had this profession being their ancestral business followed by 27 (18%) traders who perform it as part time business started with their own generation and only 21 (14%) people who started this business in the current generation and dependent on this for their livelihood.

Out of 150 traders 47(31.33%) were involved in sale of wildlife articles and products (Peacock feather articles, musk pod, siyalsinghi, claws, owl bones, medicines etc.), 38 (25.33%) were Snake charmers, 32 (21.33%) were involved in pet bird trade, 21 (14%) in medicinal reptile trade (alive and products) and 12 (8%) in future prediction by birds.

Sale of wildlife articles and products

The sale of wildlife articles and products are mainly prevalent in Sangam area. The wildlife articles such as siyarsinghi, deer pod etc. are either sold by roadside vendors or used by the tantrikas in pooja. The sale of hand fan and groom made from peacock feathers are high during Magh, Ardhkumbh and Mahakumbh Mela. The traders involved in sale of peacock feathers claim that these articles are brought from Rajasthan and Uttar Pradesh. However, peacock feather collection may be a reason for the high incidences of peacock poaching reported in Allahabad district.

Medicinal reptile trade (alive and products): The trade of reptiles for various medicinal purposes is also a matter of concern to the wildlife enforcement agencies. The traders sell the oil, meat and even the alive animals for the treatment of various diseases, in Tantrik worship and other purposes (Plate 28).

Out of 47 persons involved in sale of wildlife articles and products 36 (76.60%) were men while 11 (23.40%) were women. Women were involved mainly in trade of musk pod and siyar singhi. Though, most of these items grossly appeared to be fake. These women claimed that they have come from Maharashtra and brought these items from there only. They were mainly selling the necklaces, ankle ring, rudraksh necklace, sindoor etc.

Reptiles in trade: Indian cobra (Naja naja), Saw scale viper, green vine snake (Ahaetulla nasuta), Giant Indian Forest scorpion (Heterometrus indus). The reptiles are used in snake
charming, traditional medicines and black magic. Few people believe that few reptile species increase wealth and hence they keep them as pet.

**Pet bird trade**

The exotic birds budgerigar, Sulpher crested cockatoo, Java sparrow (*Lonchura oryzivora*), Rosy faced lovebird (*Agapornis roseicollis*), cockatiel etc. can be traded legally but Indian bird species like Alexandrine parakeet, plum headed parakeet, slaty headed parakeet, rose ringed parakeet, spotted munia, green avadavat, house sparrow, common Bustard or Quail, spot bill duck, hill myna, Oriental turtledove and forest spotted owlet are being traded illegally.

The records of the forest department shows three incidences when bird traders were caught and booked under Wildlife (Protection) Act, 1972.

The primary responsibility for control of illegal trade and trafficking is of the forest department. The native Indian birds are traded regularly in certain areas. It needs to be monitored and checked by the forest department.

**Future prediction by birds**

The Sadhus and Tantrikas use spotted munia and parakeets for prophecy. They keep several cards written with future occurrences. The door of the cage is open, bird comes out and choose a card for customer. The common citizen should discourage such practices as they cause damage to the wildlife wealth of our country.

**Illegal rearing of wild animals:**

*Sadafal Dev Ashram* - FIR was registered on 01.05.2006 in Jhunsi police station for illegal rearing of wild animals in Sadafal Dev Ashram. Two black bucks and one spotted deer were handed over to Anand Kanan, Birla Niket, Jhunsi, Allahabad. The peafowl fled away while capturing.

**Recommendations:**

Mass awareness through television and print media: Many of the accused involved in illegal wildlife trade showed their unawareness that trade and keeping of wildlife species is an offense. There is need to advertise and caution in mass through the newspapers, television and
announcements that the wildlife trade of the species protected under Wildlife (Protection) Act, 1972 is illegal. News papers play important role in conviction of poachers and many times offenders are accused on the basis of these news. News regarding poaching of peafowl was published in Dainik Jagran on 15th December 2006. Based on this the officers and staff of forest department reached to the site and dug out the body of the bird. The necropsy examination was conducted and the carcass was buried again. A case was registered against the culprits.

Regular patrolling during day and night hours is necessary to check poaching and illegal wildlife trade. Proper implementation of wildlife enforcement laws and involvement of common public, NGOs and village youths. Village, block and tehsil level councils should be formed to check wildlife crime. Such council should also be framed in city.

III. Questionnaire survey among snake charming communities in Bara tehsil

Snake charming is a very old profession in India. Snake charming is performed only by gents and they are locally called as ‘Sapera’. A survey was performed among 150 snake charmers in Bara Tehsil of Allahabad. The main villages inhabited by the snake charmers were Jajipurwa, Bhairoghat, Kapari, Bemara, Kanchanpur and Talapar. The nearby village Patahat of Madhya Pradesh had about five families of snake charmers.

The survey showed that 27.33% persons are 1st to 5th class pass, 11.33% are 6th to 10th class pass, and 6.67% are 12th pass while none of the person is graduate. 54.67% people were illiterate.

In Jajipurwa village a Primary School (class 1-8th) exists. There is a increasing trend of education among Sapera community. They are looking for government support for quality education to the children.

The snake charmers gave a mixed response to the occupation they adopted for their livelihood. All 150 (100%) charmers had snake charming being the main and traditional occupation. However, 106 (70.67%) snake charmers were also the small and marginal farmers, 71 (47.33%) were performing in bean party, 68 (45.33%) were laborers including agriculture laborers and 40 (26.67%) were involved in purchase and sale of mules in trade fairs.

Though the main occupation of these peoples was snake charming but they were involved in mixed type of occupations for earning their livelihoods. The labourers were working
in agriculture and any opportunistic work such as National Thermal Power Plant adjacent to the village Jajipurwa.

Out of 150 respondent maximum 58 (38.67%) had the monthly income of Rupees 1,000–2,000 followed by 35 (23.33%) with annual income of Rupees 2,000–3,000, 31 (20.67%) with annual income of 3,000–4,000, 15 (10%) with annual income of 4,000–5,000 and only 11 (7.33%) with annual income of Rupees 5,000 and above. (Table 29)

On an average a snake charmer hardly earns 100 to 150 Rupees per day. Out of the 150 snake charmers maximum 55 (36.67%) had the family size of 4-6 members, followed by 32.67% with the family size of 6-8 members, 19.33% had the family of 2-4 members, 6% had the family size of 9 members, while only 5.33% had family size of 8 and above members.

The snake charmers capture the snakes mostly from forest areas (46%) followed by agricultural field (22.67%), use rescued snakes (17.33%) and also capture them from villages (14%). The snake charmers also travel to adjoining district Rewa in Madhya Pradesh state to capture the snakes. The snake charmers use ‘Khanta’ and ‘Favda’ instruments for catching the snakes.

The number of snakes reared by a family depends upon the number of young and adult male members in the family capable to perform snake charming. The survey showed that a family of 2 members keeps 2 snakes, 2-4 member family had 2-4 snakes, 4-6 member family had 6-8 snakes, 6-8 member family had 8-10 snakes and the family with more than 8 members keep even more than 10 snakes.

The survey showed that maximum (38.67%) snake charmers say that 4-8 snakes die post capture per 100 snakes followed by 30.67% people who find the number at 2-4, 16.67% feel the snake deaths at 1-2 while 14% feel the snake deaths at 8-16.

The poison gland of snakes is removed (equal to the size of a gram seed). Fangs are broken. However, they erupt again at an interval of 20-30 days and broken again by the charmers.

Most of the snake deaths (93%) took place in poisonous snakes because of secondary infections and complications arising from removal of poison gland and breakage of fangs. The death of non poisonous snakes is quite less (only 7%) because of no or less physical assault involved.
A number of snake charmers die due to snake bites while capturing, rescuing, rearing and performing. The number of In Jajipurwa village every year 4-5 people die of snake bites. The survey showed that maximum (41.33%) respondents feel that 4-5 snake charmers die due to snake bite (per 1000 people), followed by 42% people who find the deaths at 3-4, 10.67% feel the human deaths at 2-3 while 8% feel it at the level of 5-6.

The snake charmers had a collective response to the problems faced by them. The snake charming community also faces many problems in this profession. Out of 30 respondents 21(70%) are hurt by maltreatment of officials owing to ban on snake charming, 20 (66.67%) are harassed due to taunts by public while asking for money, 19(63.33%) are worried for declining interest of their own children in snake charming while 16(53.33%) face problem due to increasing public reluctance to snake charming.

The snake charmers had a mixed response to problems faced in routine work. 74.67% snake charmers face maltreatment by officials owing to ban on snake charming, 68.67% face taunts by public while asking money, 62% find declining interest of own children in this profession while 54.67% notice problem due to increasing public reluctance to snake charming.

The media reports often quote the snake suffering that has probably resulted in increase in public reluctance to snake charming.

Out of the 150 respondents 53 (35.33%) were agree to leave the snake charming completely if alternate livelihood with good prospects is provided to them, 72 (48%) agree with the term to continue snake charming partly just to keep this ancient tradition alive and not for livelihood while remaining 25 (16.67%) does not want to change this profession.

**Snake care and management:**

The snake charmers lack the basic knowledge on snake care and management. This results in serious ailments in snakes and as a result many of them die.

**Diet for snakes:** The snake charmers offer rats, frogs, eggs, lizard, squirrel, birds, meat, starch of boiled rice, raw milk and solution of pearl millet flour to the snakes. Though, the starch of boiled rice, raw milk and solution of pearl millet flour could be harmful to the snakes, as they does not form the part of snakes natural diet.
Disposal of snake carcasses: After capturing the snakes are released back within a period of one to one and half month. Many times snakes die in the villages. Sometimes the charmers hide these deaths to protect from punishment by the society. Such snake charmers are sometimes also expelled from the society. The death of each snake should be reported to the nearby Veterinary Medical Officer and the Forest Department. The scientific post mortem examination should be carried out to know the cause of death of snake.

Common ailments of snakes: Most of the diseases and disorders occur owing to faulty removal of poisonous gland and breakage of fangs. Some of the common conditions reported were paralysis of hood, inflammation of hood, maggot wound in oral cavity involving nostrils, eyes and hood, paralysis on the back and other organs. Other conditions were wounds, cough and cold and fractures. However, the snake charmers hardly take their snakes to veterinarians for treatment. They use their traditional methods of treatment as a result most of the sick snakes die.

The medicinal beliefs such as the necklace made from the bones of Domuha saanp (sand boa) is used to treat goiter, the necklace made from dried poison gland of cobra snake is used to treat swelling of tonsils in neck (tonsillitis), poison of black coloured snakes is also used in ‘Surma’ of eye and the ‘Jaharmohra’ pasted at the site of snake bite can treat snake poisoning are yet to be examined and verified.

India passed the Wildlife Protection Act in 1972. The law originally aimed at preventing the export of snake skins, introducing a seven-year prison term for owning or selling of the creatures. Beginning in the late 1990s, however, animal-rights groups convinced the government to enforce the law with regard to snake charmers as well. As a result, the charmers were forced to move their performances to less-travelled areas such as small villages, or else to pay hefty bribes when caught by police officers. The trade is hardly a profitable one anymore, and many practitioners must supplement their income by begging, scavenging, or working as day labourers. Snake charming is one of the old professions in India. The rise in population of snake charmers has led to increase in the number of snakes captured and engaged in snake charming. Many charmers had great respect for snakes and this profession on the other hand many of them wants to leave this profession if an alternate source of livelihood is provided to them. The snake welfare as well as welfare of snake charmers should be taken in account while framing any sustainable management strategy.
CONCLUSION

1. Allahabad district harbored unique wildlife diversity. The district had 29 species of mammals, 16 species of reptiles, 19 species of fishes and 111 species of birds.
2. The major wildlife conservation areas are black buck conservation, wetlands conservation and conservation of Gangetic dolphins.
3. The awareness of the citizens to different wildlife species is reported to be quite less. A mass awareness program should be carried out in the schools and colleges. The local citizens should also be involved in these programs.
4. **Status of wildlife health:**
   i. A total of 33 deaths of wild animals were recorded by the Forest Department, Allahabad between the periods from 2009 to 2013. Out of this maximum 18 (54.54%) deaths were recorded in peafowl followed by hyaena 4 (12.12%) and minimum 2 (6.06%) deaths each in nilgai 2(6.06%), wolf 2(6.06%), python 2(6.06%) and monkey 2(6.06%). Out of 33 maximum 11 (33.33%) deaths were due to accident followed by 10 (30.30%) due to disease, 7(21.21%) were due to poaching, 4 (12.12%) were natural and only 1(3.03%) death was reported due to unknown cause. The researcher also noticed the deaths of wild animals including death of small Indian civet cat due to bronchopneumonia associated with cold stress, common mongoose due to traumatic shock associated with road accident, Indian cobra died due to traumatic shock associated with road accident, two jungle mynas died due to capture myopathy owing to strangulation in kite thread and death of pariah kite due to septicemia resulted from dislocation of elbow joint and haemorrhages owing to kite injury were reported by the author.
   ii. Rescue of a python, two cubs of wolf (*Canis lupus pelipus*) out of which one died later and a gharial stuck in the fishing net which also died later are documented by the forest department. Besides that the rescue carried by researcher included a female Golden jackal (*Canis aureus*) rescued for electrocution, rescue of three stripped palm squirrel hurt by speedy motorcycle, case of septicemia and heat stroke in pariah kite, treatment of pariah kite for paraplegia and wing injury, rescue of an orphaned jungle babbler, rescue and rehabilitation of a blue rock pigeon attacked by stray cat making it one eye blind and rescue of a tree pie strangulated in kite thread.
   iii. The examination of fecal samples revealed maximum prevalence of parasitic infection in black bucks (26.67%) at Triveni Environmental Park, Bamrauli followed by spotted deer (16%) of Cheoki Ecological