

Project Update: January 2019

Conserving Indian Spotted Eagle: A small effort through awareness program

The Indian spotted eagle (*Aquila hastata* Lesson 1831) was only recently separated from the European lesser spotted eagle (Väli 2006). It is partly as a result of its new distinction as a species, one of the least known of all raptors. Due to its small population and declining trends this eagle is now listed as a Vulnerable in IUCN red list internationally as well as nationally. So we conducted a conservation programme for the Indian spotted eagle mainly in the breeding area i.e. Lumbini, Koshi and Dhanusa district.

What we found is that Indian Spotted Eagle prefers to breed and hunt near the farmland area. Our study showed higher percentage of prey items were frogs (55.93%) followed by rodents (25.42%), birds (16.85%) and lizards (1.70%). The diet composition too showed higher preferences were amphibians and rodents inferring that they prefer to hunt in farmlands. We therefore conducted the social survey of the pesticides used near to the nesting area of Indian spotted eagle and measure their potential impact on them. Structured questionnaire survey with key informants mainly farmers and agricultural retailers (40 questionnaire in each study area - 120 questionnaire) revealed the average amount of use of chemical pesticides was higher compared i.e. 500 gm/ha than the quantity proposed by PPD (2014), the authorised governmental organisation of Nepal working for pesticides.

About 75% of farmers didn't have a proper knowledge on use of pesticides. Besides these, what we found that the most used pesticides (65%) were of red label one (red-



most fatal, blue - more fatal, yellow-fatal and green - safer to use). Thus we made a conservation program mainly focusing to farmers.



Dheeraj Chaudhary conducting questionnaire survey with local people of Koshi

One-day training programmes on sustainable organic farming, harmful effects of pesticides and procedures for their safer and controlled use were given to the farmers across the eagles' breeding territories. A total of eight training programmes were organised in three study sites where 40 farmers on an average were targeted in a single training. The most individuals were present in the Koshi region (162 participants). In total including all three different sites, 357 individual farmers were provided with training. The training was given by Sandip Timilsina, a Technical officer of Nepal Agricultural Research Council (<http://www.rarslume.gov.np/index.php/2016-03-25-07-17-46/staff-rars-lume>). During the training he also repeated the statement "pesticides are toxic and toxic is not a medicine". The training included various topics such as history of the pesticides, types of pesticides, impact of pesticides on human beings and in biodiversity, different alternatives to counteract the pests, importance of Indian spotted eagle and other raptors, its ecological services to people and practising organic farming (Table 1: Schedule of the training programmes).

Table1: Programme schedule of the training.

| S.No. | Program Title | Content | Speaker | Time |
|-------|--|--|-------------------|----------|
| 1 | Introduction of Pest and Chemical Pesticides | History of pesticides in world and in Nepal, Types of pest | Researcher | 10:11 am |
| 2 | Classification and Description of Pesticides | Chemical, biological, botanical etc. | Pesticides Expert | 11-12 pm |
| | Lunch Break | | | 12-1 pm |
| 3 | Impact of excessive use of Chemical pesticides | Impacts on crops, soil, animals, environment | Pesticides Expert | 1-2pm |

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| | | and human beings (health hazards), precautions and different instruments used for reducing hazards | | |
| 4 | Alternatives use of chemical pesticides | Traps, different biological controller, botanical pesticides (using available local plants that cause no side effect) and their benefits over chemical | Pesticides Expert | 2-2:30 pm |
| 5 | ISEA and other residents raptors as a biological controller | Ecology, their position in food chain and their role in ecosystem and their free services to people, information related to the devouring of pest (from insect, rodents and other small mammals), impacts of chemical pesticides over raptors species | Researcher | 2:30-3:30 pm |
| 6 | Practice of organic farming | Minimizing use of chemical pesticides, encouraging bio-pesticides, organic farming and creating sound environment | Pesticides Expert | 3:30-4:30pm |
| 7 | Queries session plus bio-pesticides and traps distribution to the group and certificate to participants | | Pesticides Expert, Researcher | 5:00 pm |

We also distributed few sample of biological pesticides and different kinds of insect traps such as yellow traps were distributed to farmer communities (Photo 2, 3). Farmers were also taught the way of making bio-pesticides using local resources instead of using the chemical pesticides. One hour was kept as a queries session where the farmers could ask if they have any queries regarding on the agriculture. Besides these we (Sandesh Gurung, Dheeraj Chaudhary and Aditya Pal) gave the presentation on the inter-relationship between eagles, people and environment. During the presentation we provided them short information about raptors, how the Indian spotted eagle along with other raptors benefits the farmers, their roles in the ecosystem, reason behind the decline and our responsibility towards them (Table 1). So we have promised to provide some plants (native kinds of plants where raptors prefer to make nest and

roost) to these stakeholders at March 2019 (plantation is usually done in March). About 100 plants will be provided to each group of the stakeholders.



Group photos after end of the training program



Left: Sandesh Gurung providing sample of bio-pesticides and yellow traps to the farmer community people. Right: NARC technical officer Sandip Timilsina providing traps to the farmer community.

Koshi Bird Observatory, branch office of Himalayan Nature (supporting organisation of this project) does birding every week on Saturday in the periphery of Koshi Tappu Wildlife Reserve. This organisation nurtures young students and makes an attempt to create a citizen scientist. On Saturday we organised the 1-day programme for these young students. The topic of the programme was "nurturing the young birders for the conservation of raptors". During the programme, we provided them about the introduction to raptors, their important role in ecosystem, a basic technique to identify raptors found in Koshi, breeding ecology of raptors, technique of locating raptor nests and data to be taken when such nests are found. Sandesh Gurung and Dheeraj Chaudhary presented their recent work and experience with them (Photo 3, 4). We also provided posters, brochure and training certificates to the training participant.



Left: Presenting young birders about Indian Spotted Eagle project. Right: Dheeraj Chaudhary sharing his experience as an ornithologist.

Nepal is an agricultural country with about 80% people involved in it. Most of the children from their schooling ages get involved in farming due to poor economic condition. School education programme is a good approach to provide a conservation message. On the other hand, imprinting the conservation concepts on children's heart definitely has a long term effect. Making them realise the value of biodiversity could help lessen the threats to wildlife. Fifteen schools (80 individuals/school) education programmes was carried out in nearby village of nesting sites. Posters and brochures were distributed among schools, colleges, veterinaries and local conservationists. Posters were pasted at various public places near the nesting areas.



Conservation program conducted at school

The link is given above but one has to go on date of December 20th episode to listen the programme. We believe that this indirect approach will help to convey the conservation message to thousands of people. Publishing of our recent works in local and national newspaper has been done and yet one publication has to be done). One of the journalists from eastern Nepaal, Sanzeev Acharya wrote about our work in the eastern Nepal local newspaper called "Udgoshdaily" (<https://udghoshdaily.com/%E0%A4%B5%E0%A4%BF%E0%A4%9A%E0%A4%BE%E0%A4%B0/3877-2019-01-25-02-52-40>).

We had another publication on national online newspaper called "Deshsanchar" regarding on our work (link: - <https://deshsanchar.com/2019/01/20/148579/>). TV interview was also taken regarding on raptor work especially their status, challenges and conservation (<https://www.youtube.com/watch?v=CmB5-bGxLIQ>). They had put in in their YouTube channel too. The link is presented above.



Left: Radio interview program about our recent work in Sunsari F.M. Right: Indian Spotted Eagle school awareness campaign near the nesting territory of Dhanusa.



Left: Researcher explaining about the brochure to the participants. Right: Farmer training program held near the breeding area of Indian Spotted Eagle.



Left: Distributing conservation brochure and poster to the students. Right: Noting down important information by the participants (farmers).



चीलको संख्या घट्नुको कारण र यसको संरक्षणका चुनौतीहरू

१) वासस्थानको विनाश

- अभियन्त्रित वन फडानी, गैँड लगाउने रुखको काटनी

२) विषादीयुक्त आहाराको सेवन

- खेतबारीमा अत्याधिक रूपमा प्रयोग हुने रसायनिक मल र फिटनासक औषधिले यसको आहारा (मुसा, न्यानगा, सर्प आदि) विषाक्त हुँदा चीलको स्वास्थ्यमा प्रतिकूल असर पर्छ र कतिपय अवस्थामा मृत्यु भै हुन्छ

३) अवैध गतिविधि

- चीलको गैँड मत्काउने, गैँडबाट बच्चा निकाल्ने

४) बदलाको भावना

- घरको होस कुखुरा खाइदिने भएता पनि कुखुरा

५) मानव अतिक्रमणले प्रजनन क्रियाकलापमा आउने विघ्न बढाउनु



लघु महाचील संरक्षणमा किसानको भूमिका

- अभियन्त्रीत वनजङ्गल फडानी रोक्ने यस महाचीलको वासस्थान जोगाउने
- अत्याधिक रसायनिक मल तथा औषधीको प्रयोग नगरी घरेलु जडीबुटीबाट बनेको औषधी तथा प्राकृतिक मलको प्रयोग गर्ने
- अवैध चोरी शिकारी नियन्त्रण गरी संरक्षणमा सहयोग गर्ने
- चील सम्बन्धी सकारात्मक जनचेतना फैलाउने

चील संरक्षणका लागि जैविक कृषि प्रोत्साहन कार्यक्रम



छोटो परिचय

लघु महाचील (Indian Spotted Eagle) विश्वमै एक दुर्लभ पक्षी प्रजाति हो । यसको सङ्ख्या घट्दै गइरहेको कारण विश्व प्रकृतिक संरक्षण संघले लोपोन्मुख प्रजातिको सूचीमा अति संवेदनशील भनी सूचीकृत गरेको छ । यो महाचील दक्षिण एशियामा मात्र पाइने पक्षी हो । यसको फैलावट बंगलादेश, कम्बोडिया, म्यानमार, भारत, पाकिस्तान र नेपालमा रहेको छ । यसको सङ्ख्या न्यूनतम तीस र अधिकतम सत्तरी रहेको अनुमान छ ।

लघु महाचीलको महत्त्व > कृषकको साथी

लघु महाचील एक शिकारी पक्षी हो । यसले मुसा, छेपारो, सर्प र अन्य चराहरू खाने गर्दछ । यसरी कृषकको बाली खाइदिने मुसा र अन्य चराहरू खाएर कृषकको अन्नबाली जोगाउन मद्दत गर्दछ ।



साथै, मुसा खाएर यसको संख्या नियन्त्रण गर्ने भएकोले मुसाबाट मानिसमा रोग सार्ने सम्भावना पनि कम हुन्छ । यस्तै, सर्प खाइदिनाले सर्पको संख्या अनियन्त्रित रूपमा बढ्न पाउँदैन, फलस्वरूप मानिसलाई सर्पले डस्ने घटनामा पनि कमी ल्याउँदछ । अतः पारिस्थितिकीय प्रणालीमा निकै महत्त्वपूर्ण भूमिका निर्वाह गर्ने यस महाचीलको उपस्थितिलाई स्वस्थ पर्यावरणको सूचक मानिन्छ ।



प्रजनन अवधि

मानव वस्तीको वरपरका अग्ला रुखहरूमा गैँड बनाउन रुचाउने यस महाचीलले दैनिक आहाराका लागि खेतबारी तथा सिमसार क्षेत्र वरिपरि विचरण गर्दछ । प्रायः मध्य वैशाख गैँड बनाउन सुरु गर्ने यस महाचीलले मात्रदेखि असोजसम्ममा बच्चा हुर्काइ सक्दछ ।



Photo 8: Brochures used on Conservation Program of Indian Spotted Eagle



Conservation posters of Indian Spotted Eagle with a slogan "Sustainable Farming for Eagle Conservation" in Devnagari Script (Nepali language).

Short description about the poster

- The background photo is of farmland where the Indian spotted eagle prefers to hunt.
- The nest consists of parent with a prey items (rodent) about to feed their eaglet giving message to farmers that they are friend of farmers but not a foe.
- The big hand symbolise the hands of farmers and the small hands symbolize the upcoming generation where they must work together to conserve the eagle. Besides this hands photo also symbolise the transference of the wisdom about the eagle benefits to their offspring.

Before distributing posters we also described each and every meaning of the photos in the poster to the farmers, students and other local people.