

How Nature Works: an education tool used to teach fundamentals of ecology during the advanced technique refresher course, Assam

B.A. Daniel¹, R. Marimuthu² and Jayantha Das³

In February 2007 a series of six training workshops for wildlife teaching was organized focusing on Hoolock gibbon with the financial support of US Fish and Wildlife Service and Great Ape Conservation Fund. As a followup, after a gap of about eight months, two advanced technique refresher courses were conducted during 29-30 October at Assam Forest School, Jalukbari and from 1-2 November 2007 at Kaziranga NP, Assam. Selected participants from previous workshops were invited based on their performance after training and their reports.

The objectives of the refresher course are to recap the workshops, to explore into the ways of opportunistic utilization of TFT tool aiming at a broader target group and to get a feedback from the workshop participants and to update the information related to teaching techniques and also to boost the commitment towards the interest of biodiversity conservation.

The first workshop, held at Assam Forest School, Jalukbari was attended by 16 participants and for the inaugural Mr. H.K. Choudhury, Chairman WWT, Mr. R.C. Bhattacharjee, Principal, Assam Forest School were present. The second workshop at Kaziranga National Park was attended by 24 participants and Mr. Bura Gohain, Director, Kaziranga National Park. In both the workshops after ice breaker activity a recap of the activities of the February workshops was given using a power point incorporating photos and related chapters from the *Helping Hoolock Gibbons Hang On* and *Teachers for Tigers* manuals. The recap helped participants to bring their fond memories of the workshop they attended eight months ago.

How Nature Works: At both workshops, lessons from the first series of Habitat Ecology Learning Program (HELP) developed by Wildlife Conservation Society *How Nature Works* (HNW) were used. Some of the contents of the lessons were modified to make it relevant to regional context. HNW has seven units viz., what is ecology? climate, seasons, and habitats, the taxonomic shuffle, adept adaptations, the food web connection, energy by the numbers and the big squeeze.

Principles of ecology: In the refresher course the basics of ecology and elements needed for survival were explained and also the terminologies such as habitat, environment were introduced. For explaining the importance of basic elements of life, food, water and shelter "oh deer" game was played. Other ways to introduce these concepts as class room activity were discussed. Major habitats of India were introduced through slides.

Climate, seasons, and habitats: The first author gave a presentation explaining about the origin of earth, species formation, distribution, number of

kingdoms and species, different habitats, various threats to habitat, causes of biodiversity loss and ways to preserve them.

The why and how of taxonomy: Taxonomy is a fundamental science which is hard for children to understand. Basics of classification and a concept of species, a "Sorting out species" activity was conducted. They got different animal pictures and were asked to classify them and put in separate stacks using different criteria such as size, shape, pattern and habitat. Afterwards, each group was asked to explain how they sorted out the animals. After their presentation, the systematic way of classification followed by scientists was explained.

Linking animals to habitats: The next session was on animal adaptations to help them recognize how animals are adapted to their environment in specific ways to suit their habitats. "Design a Critter" activity was conducted. The participants were divided into different groups and each group asked to draw an imaginary animal based on critter components supplied. Each group created an imaginary animal with various adaptations and related how these adaptations are helpful to the animal. For illustrating adaptations the "Finger challenge" game was also played.

Animals are food web players: "Food Web Scramble" is an activity to explain how plants and animals are linked by what they eat. This activity helps the teacher to introduce terminology such as producers, primary consumers, secondary consumers, tertiary consumers, scavenger and detritivore. It involves numerals also.

Linking with curriculum: Linking the activities from the educators manual with the school curriculum requires guidance. A slide show to explain how Teachers for Tigers tool kit can be linked to school curriculum was very useful that generated lots of discussion. The presentation was prepared comparing the manual with the Tamil Nadu State Board school syllabus. The participants were encouraged to link the activities with Hoolock gibbon manual as well.

Energizers: As part of the programme some energizer activities were also played. Energizers are games that are used to get people moving and to give them more enthusiasm. The success of a team work is purely based on the team spirit. Conservation work requires team work and in order to make them understand this "Hawk and pigeon" game was played as well as other energizer activities.

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Organising programmes & understanding problems:

The 'Problem Hat' is an activity that helps to collect points with regard to a particular issue. Most of the participants in both the venue had organized education programmes. They encountered certain specific problems while organizing it. To understand the problem that they are facing Problem Hat activity was conducted. Participants were asked to write down problems encountered while organizing environment education programmes and to drop it on the paper hat. All listed problems were kept for further analysis next day. The two major problems were i. getting support from the institutes to conduct programmes and ii. ways to approach common public who are below poverty.

Presentation by the participants: The second day session started with participant's presentation. Each had 10 minutes to share their experience in teaching after the February training. It was noted that methods they learned were utilized in all ways and occasions. One-day programmes incorporating activities from the manuals were also conducted.

At Kaziranga National Park the second day programme started early at 6 am with elephant ride inside Kaziranga National Park. While observing different habitat types they saw Rhinoceros, swamp deer, sambar, Hog deer, tall elephant grasses, insects etc. This was followed by presentations by the participants.

Drama: Developing a drama is a skill. However, as a team, it is always easy to build up drama ideas. Drama is a powerful tool to reach audience and it has no bar on age, language, and sex. After a brief introduction about drama the participants were divided in to two groups. ZOO's drama kit was distributed to all the participants. Tips to develop drama were read out for the group to work on a theme. As a group they listed out about 10 issues which can be used as drama however, human animal conflict was selected. A total of four dramas were developed and performed. Incorporating a variety of characters such as village community, farmers, children, house wife, forest officials, business communities, press media, educators and wood cutter they performed the drama and learned how to develop a drama around a theme. This helped them to gain confidence to work on drama for various conservation issues.

The Big squeeze: "Threats to wildlife" activity from the HELP manual was tried. The objective of the activity is to make the participants recognise how and why humans threaten the survival of wildlife. The participants were divided into five groups. And each group was provided with three cards with some note written on it related to a particular threat. The threats were: Hunting, pet trade, pollution, Habitat destruction and over population. Then each group was asked to figure out which human impact is the cause for that threat. The group had to discuss on the negative impact of the cause on wildlife. For example for the habitat destruction the following thought questions were

asked; 1. Do people intend to destroy habitat? 2. What do they need to build? 3. How does the destruction of habitats cause species to become endangered? 4. What could be done to keep people from cleaning more and more land?

To understand historical changes in a community and their subsequent effects on wildlife, an outdoor activity named "Explore your Community" was tried. The participants were taken to a high area (building terrace) and they were asked to draw a map highlighting both human-made structures and natural things.

Planning an education programme: Planning an education programme with the available resource materials and limitations was considered by the participants as one of the hurdles. A mock exercise on programme design was conducted. Participants were divided into three groups and each group was asked to design a detailed education programme for half a day, one day, three days. The group after designing presented it for further discussion.

SWOT analysis: This is a strategic planning tool used to evaluate the Strengths, Weaknesses, Opportunities, and Threats involved in any project. It involves specifying the objective of the any programme or project and identifying the internal and external factors that are favourable and unfavourable towards achieving that objective. We used this analysis to know the group's strength, weakness, opportunity and threats while organizing an education programmes. This also helped to find out some solutions for their first day "Problem Hat" activity.

Evaluation: An evaluation about the two day programme was done using "Pass the ball" activity. Details about Zoo Outreach Organisation's education materials and South Asian Network of International Zoo Educators (SANIZE) were given in detail.

At the end a simple valedictory was arranged at Jalukbari and Mr. H.K. Choudhury, R.C. Bhattacharjee and Mr. handed the certificates to the participants. At KNP Mr. Rabindra Sharma, Wildlife Research Officer, Kaziranga National Park gave away the certificates to the participants. Dr. Jayantadas, the point person of the course thanked all the participants for attending and the hosts for providing logistics. After the valedictory, participants were asked to stick a piece of paper on their backs and they were asked to write something they liked, admired or appreciated about that person on the paper on his/her back. When they all finished they were asked to take their paper with them as a reminder. The entire event was conducted by Zoo Outreach Organisation in collaboration with Wildlife Conservation Society and coordinated by Wildlife Areas Development and Welfare Trust (WWT), Guwahati and Centre for Environmental Education, Northeast in association with the Assam Forest Department.

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H.K. Chowdhury inaugurating the course at Assam Forest School, Jalukbari



Sorting out Species activity from the HELP manual



Participants presentation...here they explain how they used ZOO education materials with students



Human Animal Conflict drama by the Participants

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