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Report on the Awareness Workshops “Perceptions of Wildlife Conservation of Today’s Youth in West Bengal, India, with a Focus on Monitor Lizards”

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Abstract - Several awareness workshops were jointly organized by the Environment, Agriculture and Education Society (EAES) along with the International Union for Conservation of Nature and Natural Resources (IUCN) Species Survival Commission’s (SSC) Monitor Lizard Specialist Group (MLSG) in five districts of West Bengal, India from 29 July to 2 August 2019. The main objective of the workshops was to create widespread awareness among the local youth regarding the conservation, utilization and illegal trade of wildlife, with a special focus on monitor lizards in India. In total, more than 1,000 students aged 12 to 24 participated in the workshops.

Background to the Awareness Workshops

The traditional hunting practices and self-sufficiency of a community with food play an important role in the coexistence of man and wildlife (Ormsby & Bhagwat, 2010; Bhattacharya & Koch, 2018). Since ancient times, local communities and ethnic groups across the world have largely depended on wildlife for diverse utilization purposes such as consumption, cultural ritualistic practices and traditional medicine (Chakravorty *et al.*, 2011; Bhupathy *et al.*, 2013; Kendie *et al.*, 2018). Likewise, the use of monitor lizards in India dates back centuries (Das, 1989), if not millennia. There are various traditional uses of monitor lizards' parts in southern India (Das, 1989; Auffenberg, 1989, 1994), some of which include the consumption of monitor eggs as a delicacy and various uses of monitor meat. Oil obtained from the fat bodies of monitors is used for eye treatment. Additionally, ancient country doctors, or "hakims" as they were commonly called, used parts of monitors (*e.g.*, *Varanus griseus*) as a source of medicine.

Today, in many parts of the Indian subcontinent, monitor lizard meat is widely consumed and the body parts find applications in diverse traditional and medicinal purposes (Chakravorty *et al.*, 2011; Choudhury & Choudhury, 2019). With the effects of modernization, commercialized food sources and medicines have become more available and accessible to mankind than ever before (Pelto & Pelto, 1983; Mina *et al.*, 2007). However, in spite of these conditions, illegal use of wildlife in several parts of India still persists (Chakravorty *et al.*, 2011; Bhupathy *et al.*, 2013; Bhattacharya & Koch, 2018). Thus, it is important to address and identify the social values and needs of a community to deal with such situations (Madden & McQuinn, 2014).

Four species of monitor lizard are native to India, *i.e.*, *Varanus bengalensis*, *V. salvator*, *V. flavescens* and *V. griseus*, and all are protected and listed under Schedule I, Part II of The Wildlife (Protection) Act of India, 1972, Government of India (Das, 1989; Koch *et al.*, 2013). According to the International Union for Conservation of Nature and Natural Resources' (IUCN) Red List, the current conservation status of *V. bengalensis*, *V. salvator* and *V. flavescens* is considered to be of "Least Concern". While the former two species were assessed in 2009, the latter was assessed in 1996. The conservation status of *V. griseus* is pending, and reassessments of the former three species are currently being conducted. Moreover, according to the Convention on International Trade in Endangered Species of Wild Flora and Fauna (CITES),

V. bengalensis, *V. flavescens* and *V. griseus* are listed in Appendix I (thus, prohibiting all commercial trade), whereas *V. salvator* is listed in Appendix II. In West Bengal, three species of monitor lizards occur: *V. bengalensis*, *V. salvator*, and *V. flavescens* (Chatterjee & Bhattacharyya, 2015).

A series of awareness workshops entitled "Perceptions of Wildlife Conservation of Today's Youth in West Bengal, India, with a Focus on Monitor Lizards" were jointly organized by the Environment, Agriculture, and Education Society (EAES) along with the IUCN Species Survival Commission's (SSC) Monitor Lizard Specialist Group (MLSG) in five districts of West Bengal, eastern India. The main aim of the workshops was to address the key challenges responsible for the exploitation of monitor lizards in India to the younger generations and to raise awareness among them to influence, motivate and improve their knowledge of these particular reptile species. The primary objectives of the workshops were to:

- (a) gain an understanding of the perceptions of younger generations regarding the rapid encroachment and fragmentation of forests and wetlands in India
- (b) gain an understanding of their attitudes about the presence, interactions, and conflicts related to monitor lizards found in their areas
- (c) understand and document their perceptions of the extent of traditional and cultural utilization of monitor lizards and their derivatives
- (d) gain insights into the perceptions about the illegal trade of monitor products such as "hatha jodi" (*i.e.*, hemipenes) (D'Cruze *et al.*, 2018; Sharma *et al.*, 2019)
- (e) provide a clear picture about the ecological role of monitor lizards and why they need to be conserved
- (f) explain the importance of marshlands, wetlands, and forest fringes for the preservation of biodiversity
- (g) spread awareness about the Wildlife (Protection) Act of India, 1972, and discuss the protection status and penalties related to all four species of monitor lizards found in India
- (h) encourage and motivate the youth to be responsible and stand against the exploitation of monitor lizards along with other wildlife in their area

Threats to Monitor Lizards in India

Habitat loss and fragmentation are considered to be the greatest threats to wildlife across the world (Eigenbrod *et al.*, 2008; Sodhi *et al.*, 2010). In different parts of India, there is a rapid loss of wetlands for agricultural land conversions, direct deforestation and hydrological alterations, among others (Foote *et al.*, 1996). There is also a constant degradation of mangrove forests along the eastern coast of India, which also includes the Sundarbans, a UNESCO world heritage site in West Bengal and common habitat for *V. salvator* (Chatterjee & Bhattacharyya, 2015; Chaudhuri *et al.*, 2015).

Apart from the various aspects of their utilization by humans, monitor lizards are often considered to be pests and are known to cause conflicts with poultry farmers



Fig. 1. A boy with his monitor lizard kills; four specimens of *V. flavescens* during a hunting festival on the outskirts of West Bengal. Photographed by **Tanmoy Ghosh**.

(Choudhury & Choudhury, 2019). In addition, illegal hunting festivals are celebrated in different parts of West Bengal throughout the year (Fig. 1). These traditional hunting activities pose a severe threat to local populations of monitor lizards and other wildlife and might be responsible for their decline in several parts of the state (Bhattacharya, pers. obs.). These hunting festivals, commonly known as “shikarutsab” in Bengali (“shikar” refers to hunting and “utsab” means festival), are cultural traditions that are passed on from one generation to the next. Young children also participate in these festivals. Although all four monitor lizard species are protected in India (see above), these hunting traditions still persist in the outskirts of West Bengal and among other areas, due to the lack of awareness campaigns among the local communities and more relaxed law enforcement.

Methodology and Schedule of the Workshops

The workshops were conducted in five districts of West Bengal, namely Hooghly, Bankura, Purulia, Birbhum, and Howrah from 29 July to 2 August 2019 (Fig. 2). We aimed for one school and one college in each district except for Birbhum, where we conducted the workshop at one college. Participating school students were from sixth through twelfth grades (roughly 12 to 18 years of age) and college students were from Bachelor’s and Master’s degree programs (roughly 18 to 24 years-old). The duration of the workshops was one and a half hours, and each workshop was divided into five thematic parts. During the first part of the workshop, questionnaires with 20 multiple-choice questions were distributed to the students. The questions were related to the general perceptions of the audience about biodiversity, wildlife, habitat destruction, filling in wetlands and marshlands, and general ideas about monitor lizards—their presence, interactions, conflicts, utilization related to traditional or cultural practices, and their illegal exploitation for the international trade (see above). After a stipulated time interval of 10 to 15 minutes the questionnaires were collected, so as to obtain unbiased perspectives of the participants prior to the lecture. The next part of the workshop included a Power Point presentation of approximately 40 minutes given by the first author, which addressed the following topics:

- (a) general description of biodiversity and wildlife conservation
- (b) importance of wetlands and threats by destruction



Fig. 2. The brochure of the awareness workshops.

- (c) a brief description of monitor lizards, their geographical distribution and importance in the ecosystems, as well as their protection status in India
- (d) local and commercial (international) use of monitor lizards and their derivatives
- (e) the illegal trade of wildlife with a special focus on the commercialization of trade in “hatha jodi” in India
- (f) brief introduction of the IUCN Red List and The Wildlife (Protection) Act of India, 1972
- (g) brief description of the IUCN SSC Monitor Lizard Specialist Group (MLSG) and their mission
- (h) conclusion of the presentation by addressing the plight of Indian monitor lizards, if the unsustainable utilization and the illegal trade of the species continues

The third part of the workshops was an interactive session with the students, addressing their questions and comments on the questionnaire and presentation. The fourth part was to distribute a follow-up questionnaire to the students in order to compare and determine if their perceptions towards wildlife conservation and monitor lizards might have changed from the workshops. The fifth part included the distribution of participatory certificates to motivate the students to participate in the workshops and fill up the questionnaires.

Outcomes of the Workshops

More than 1,000 students participated in the workshops from the five districts of West Bengal (Figs. 3–6). Apart from spreading awareness among the youth regarding the conservation of monitor lizards, the workshops were designed to collect baseline data about the social perceptions of the young generation towards monitor lizards found in their region. We aimed to obtain unbiased data from the participants; hence, two different questionnaires were distributed—one prior to the workshop and one at the end to gain an idea about the influence and effectiveness of the workshops on the youth.

While the detailed statistical analysis of the questionnaires will be published elsewhere, as one main outcome of the workshops, it turned out that the majority of the young participants were unaware of the Wildlife (Protection) Act of India and the protection status of monitor lizards in their country. This broad unawareness among the Indian population may explain the wide exploitation and utilization aspects of the species. The responses of the participants were mostly positive after the workshops and we were approached with several interesting questions regarding the traditional and cultural utilization practices and misconceptions related to monitor lizards in different communities across each district. It is noteworthy to mention that traditional beliefs of the utilization of monitor lizards are not equal across all the communities, but gradually differ from



Fig. 3. A glimpse during the workshop at Bamnia Vivekananda Vidyapeeth High School after the distribution of the first questionnaire.



Fig. 4. Distribution of feedback forms to the participants of Sonamukhi College by the team members of EAES after the interactive session.

one district to another based on their ancient roots. For example, in Birbhum District oil obtained from the fat of monitors is used for the treatment of joint pains, whereas in Purulia District their claws and meat are used for traditional medicinal purposes.

Conclusions of the Workshops

It is a well-known fact that the utilization of monitor lizard parts has ancient roots in South Asia (Das, 1989; Auffenberg, 1989, 1994). Hence, besides focusing only on the strict law enforcement and compensation to poultry farmers for losses by monitor lizards, it is equally important to identify and address the psychological attitudes and needs of a community that are responsible for these social conflicts (Madden & McQuinn, 2014).

Thus, it is essential to focus on the complexity of the social, psychological, and systematic root causes (Madden & McQuinn, 2014) that have driven the utilization of monitor lizards in India up until today. Moreover, in most cases, the extent of exploitation is unknown and commonly unreported. This situation can significantly affect the population dynamics of monitor lizards and might also result in local extirpations of these species.

Younger generations play a significant role in shaping future society and the environment. Hence, it is crucial to educate and thereby motivate and influence them with logical reasoning and ethical responsibility on the current situation and consequently change their mindsets to bring about positive differences in their communities. Therefore, to improve the current situation, it is highly recommended to conduct similar workshops throughout local village communities across different parts of India especially for the younger generation along with other groups of audiences (*i.e.*, varied age groups and



Fig. 5. The first author during the presentation session at Gangadharpur High School of Howrah District.



Fig. 6. All participants after the completion of a successful workshop at Bamnia Vivekananda Vidyapeeth High School.

occupations). Additionally, field studies should also be conducted to evaluate the impact of domestic use on Indian monitor lizard populations.

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