

(Figure 1). This self-compatible forest pest is pollinated by birds and bees. It grows best in cool temperatures and occasional frosts, up to -2°C . Man has distributed this species as an ornamental and for its edible fruit to many regions, including India.

There are multiple mechanisms by which invasive species suppress the growth of the native flora. The direct competition of this weed is evident from the rapid dense growth above the shola trees. But in order to get a full picture regarding how this weed influences shola tree growth, multiple mechanisms need to be studied⁶.

This forest pest invariably infects all forest trees in the study area. Dense curtains of the vine extend to the ground from canopy branches, sometimes causing the branches to break and also the toppling of trees during storms. Where the canopy has been opened, dense mats of vines also mantle the understory trees and shrubs and inhibit regeneration of the native trees. This study has revealed

that the most dominant tree species of this area (*Syzygium calophyllifolium* Walp.) is heavily infected, with the occasional death of trees.

Even though a number of exotic weeds such as *Chromolaena odorata*, *Cytisus scoparius*, *Lantana camara*, *Hyptis suaveolens*, *Celosia argentea* and *Leontitis nepetiifolia*⁷ have been reported in the core and buffer zones of national parks in India, there has been no report on the invasion of *P. mollissima*.

Biological invasions are recognized as a leading threat to global biodiversity. Invasion is considered as the second most important threat to biodiversity after habitat destruction. Invasive plants are a major threat to natural ecosystems; they are difficult to control or eradicate, and require large amounts of effort and resources⁸. In order to eradicate this pest from NBR, appropriate action is needed from NGOs working in the area. It is the need of the hour to protect the last remnants of shola forests from the clutches of this bio-pesticide.

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Conservation of White-bellied Heron *Ardea insignis* (Hume, 1878) habitat in Namdapha National Park, Arunachal Pradesh, India

White-bellied Heron (*Ardea insignis*) is a critically endangered bird species with a current estimated population size of around 50–249 mature individuals globally¹. It is described as ‘solitary, wild and wary’ tropical bird species preferring habitats such as the river banks with gravel and sand surrounded by subtropical forest. Apart from this, the species is also known to breed and roost in Chir pine forest¹. The global distribution of the species is restricted to the foothills of eastern Himalayas in India, northeastern Bangladesh, Burma and Bhutan. In India it is distributed in West Bengal, Assam, Arunachal Pradesh and Nagaland². Namdapha National Park (NNP), Arunachal Pradesh might act as a breeding ground of the species although specific documentation has not been done. It was also recorded in regions of Dholong River and the upper reaches of the Panchnoi River (Pachin River) and Dafla hills in Arunachal Pradesh². The White-bellied Heron was kept under the endangered category

and later on shifted to critically endangered in 2007 by IUCN, as the species was rarer than it was thought to be. Habitat destruction, hunting and pollution are some of the threats reported globally as the reasons for its rapid population decline².

The NNP ($27^{\circ}23'30''-27^{\circ}39'40''\text{N}$, $96^{\circ}15'2''-96^{\circ}58'33''\text{E}$; 200–4571 m amsl) comprising of 1985 sq. km area is situated in the eastern Himalayan region of Arunachal Pradesh³. NNP is a home to many threatened, endangered and critically endangered floral and faunal species, including *A. insignis*. The bird was sighted twice in NNP during our visit (September–October 2011) on the banks of river Noa–Dehing ($27^{\circ}31'44.6''\text{N}$, $96^{\circ}23'24.7''\text{E}$) at Naharbadi (Figure 1). It was sighted on a river bank with sand and gravel surrounded by tropical forests at an altitude of 360 m amsl, which is usually described as the perfect habitat for this bird to survive. During both encounters, the bird flew away at the slightest disturbance, disappearing into the

nearby forest thickets, which were bushy and impenetrable. A local forest guard informed us that he used to observe a small flock of about 3–4 individuals near the lakes of FirmBase during winters. This was not the first time that it was recorded in Namdapha. However, there have also been other reports of this bird in Namdapha around Deban and FirmBase^{2,3}.

The river bank in Namdapha where *A. insignis* was sighted lies adjacent to a



Figure 1. A White-bellied Heron in flight.

village inhabited by the Chakma tribes. Herds of cattle were seen grazing on this river bank and some people were seen fishing in the area. Such disturbances add pressure on this critically endangered bird in Namdapha. Hunting of this bird is not recorded in this area. But if that happens, it would definitely affect the species to a large extent.

Protection and conservation of the species is now important due to declining global populations. Therefore, the Forest Department has to conduct additional awareness programmes every year. A campaign to conserve the critically endangered *A. insignis* has to be started

involving local people by educating them about the importance of the bird species and how it can promote ecotourism as well. Also, care should be taken by the Forest Department in preventing grazing and fishing in the areas where the Heron is sighted in NNP.

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Research-friendly doctoral registration

Prior to the guidelines issued by the University Grants Commission (UGC), New Delhi in 2009, each university followed its independent set of rules and regulations to register a research scholar after evaluation and approval by the Research Degree Committee (RDC). The candidate is also required to qualify subject-related courses besides learning research methodology and laboratory work, followed by a presentation. Some universities even had provision for one-year MPhil degree programme – a prerequisite of doctoral research. During the MPhil programme, a candidate reviews the literature, and submits a dissertation.

However, according to the UGC norms, a candidate now requires to qualify an entrance exam to be conducted by the universities, pass theory papers, submit a synopsis and thereafter undergo an evaluation by RDC to get an approval for enrolment. For most efficient of the

universities, the process can take a year. The next step would require completion of the thesis, which may take three years and an unspecified time for evaluation and award of the Ph D degree.

Though UGC's present scheme has enabled elimination of less competent candidates, a considerable reduction in doctoral registrations has been observed across India. This can be seen as a major reason for bright students not opting for a career in research. Also, uncertainty prevails about getting a lucrative job after a doctoral degree. The present guidelines may also discourage working professionals from pursuing their research interests on a part-time basis. The new rules demand qualifying in a written entrance and pass theory papers, which becomes impossible without support from their parent organizations.

The current change also fails to provide assurance about quality intake. The

paper-setters will be the ones who supervise and evaluate doctoral work, and not the specialists. To assure quality output from research scholars, participation in seminars, undertaking specialized courses, teaching and supervision, and publications must be made mandatory.

I believe, there is a need to introduce one pan-India evaluation system to replace multiple examinations like GATE, SLET, NET, and entrance exams for MPhil, Ph D, universities' internal research fellowship examination and other fellowships, both to save time and judge the competence of a candidate. The present NET examination pattern can be modified to address the problem.

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