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# BUTTERFLY OF ASSAM UNIVERSITY CAMPUS IN SILCHAR: CAN ACADEMIC INSTITUTIONS CONTRIBUTE TO CONSERVATION OF SPECIES DIVERSITY IN NORTHEASTERN REGION OF INDIA?

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## Abstract

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Northeast India is amongst most bio-diverse ecological communities although recent developmental activities marred the environment to a great extent. Assam University campus in Silchar is situated in Barak valley of Assam, boasting a variety of habitats supporting invertebrate diversity. Heavy rainfall during monsoon increases vegetation and in turn larval food plants and overall butterfly density. Total 38 butterfly species were identified belonging to 30 genera under 5 families: Nymphalidae having the maximum species richness (58%), followed by Hesperiidae (13%), Lycaenidae (13%), Pieridae (11%) and Papilionidae (5%). This paper focuses on the problems and possible solutions towards butterfly conservation and highlights the role of academic institutions in conserving biodiversity by acting as green spaces for reducing effects of climate change, carbon sequestration and lowering of energy consumption among other benefits.

Keywords: butterfly, environment, Northeast India, conservation, academic institutions, green spaces

## INTRODUCTION

Physiographically the Northeastern region of India can be categorized into the Northeast hills (Patkai-Naga Hills and Lushai Hills), Eastern Himalayas and the Brahmaputra and Barak Valley plains encompassing the states of Arunachal Pradesh, Assam, Meghalaya, Manipur, Tripura, Mizoram, Nagaland and Sikkim. The Northeastern region of India falls under the tri-junction of three biogeographical realms i.e. the Indian, Indo-Malayan and Indo-Chinese imparting an exceptionally diverse biota with a high level of endemism (Chatterjee *et al*., 2006).

The Assam University campus in Silchar is home to a large number of fauna ranging from the microscopic zooplanktons to some endemic primate species like phayre's langur and rhesus macaque (Dutta *et al*., 1998, 2008; Mazumdar *et al*., 2011). The vegetation around the campus represents a secondary succession status. A forest cover inside the campus has been designated as eco-forest as it is relatively less disturbed and supports good biodiversity. There are about 18,000 recorded species of butterflies in the world out of which 1,501 species have been recorded from India (Kehimkar, 2008). They are important pollinators and indicate

the general environmental health of an area. Due to high sensitivity to sudden changes and disturbance in vegetation, butterfly species can be used to study particular habitats and the levels of habitat destruction (Erhardt, 1985). The present study is first of its kind aiming at providing the baseline information about the butterfly species likely to be seen in Assam University campus in Silchar during monsoon season.

## MATERIALS AND METHODS

### Study Site

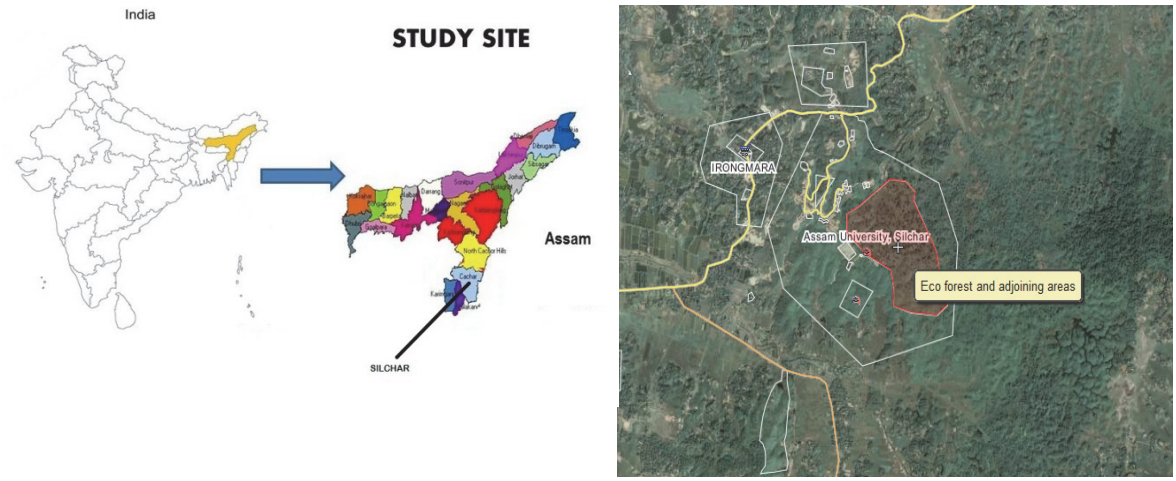
The Assam University campus (24° 41'29.5" and 92° 45' 02.7") spans over 600 acres of land nestled in the Dargakona Hills of Barak Valley, which was once a vast expanse of dense forest (Fig. 1). Four study sites were chosen for the survey that includes areas in and around Vice Chancellor's Bungalow, Boys' Hostel No. 4, *Shaktipada Setu* and the Eco-forest. Monsoon season was chosen for the survey because the period is believed to have the highest butterfly activity as a number of host plants grow in vacant areas.

### Data Collection

The university campus in Silchar was explored over a four month monsoon period from June till September in the year 2012 to assess the diversity of butterflies. Survey and recording of the butterfly fauna were done according to Checklist Survey (Royer *et al.*, 1998). Identification was carried out using methods already standardized (Evans, 1932; Haribal, 1992; Kehimkar, 2008; Kunte, 2000). Status and global distributions were prepared following standard procedures (Kehimkar, 2008; Kunte, 2000; IUCN, 2013; IBP, 2013).

## RESULTS AND DISCUSSION

An inventory of butterfly fauna of Assam University campus in Silchar was prepared based on the findings of butterfly diversity study presented in Tab. I. Royer *et al.* (1998) recommended Checklist Surveys for initial determination of a species list for a site. In the present study, a total of 38 butterfly species belonging to 30 genera under 5 families were identified. Five families viz., Papilionidae (2 species), Pieridae (5 species), Nymphalidae (21 species), Lycaenidae (5 species) and Hesperiidae (5 species) were noted. Out of the 38 species, 24 species were recorded from the eco-forest area of the campus alone.




1: *Location of the study site including the eco-forest area in the Assam University campus in Silchar (Google Earth, 2013)*

I: *Diversity of butterfly fauna in Assam University campus in Silchar*

| Sl. No. | Common Name | Scientific Name | Global Distribution | Status |
|---|---|---|---|---|
| | | **Family: Hesperiidae** | | |
| **1.** | Chestnut Bob | *Iambrix salsala* | India, Sri Lanka, Nepal, Bangladesh, Myanmar | Common |
| **2.** | Straight Swift | *Parnara guttata* | India (Except South India), Pakistan, Nepal, Bhutan, Bangladesh, Myanmar, Sri Lanka | Common |
| **3.** | Coon | *Sancus fuligo* | India [Western Ghats (Karnataka Southwards), Northeast] | Common |
| **4.** | Common Snowflat | *Sarangesa dasahara* | Chhattisgarh, Madhya Pradesh, West Bengal, Uttaranchal to Arunachal Pradesh, Northern Nepal, Bhutan, Bangladesh, Myanmar, Sri Lanka | Not Rare |
| **5.** | Common Grass Dart | *Taractrocera maevius* | South Asia | Locally Common |

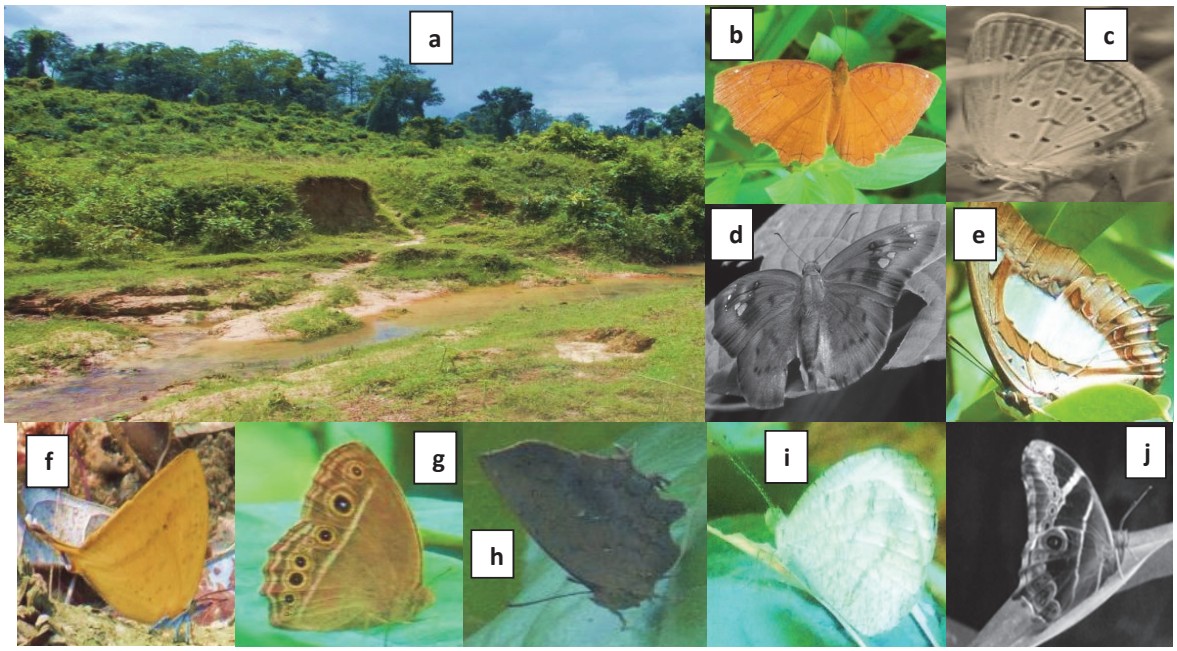
| Sl. No. | Common Name | Scientific Name | Global Distribution | Status |
|---|---|---|---|---|
| | | **Family: Papilionidae** | | |
| **6.** | Common Mormon | *Princeps polytes* | Oriental region | Common |
| **7.** | Common Bluebottle | *Graphium sarpedon* | Oriental and Australian regions | Common |
| | | **Family: Pieridae** | | |
| **8.** | Common Emigrant | *Catopsilia pomona* | South Asia, Southeast Asia and Australia | Common |
| **9.** | Mottled Emigrant | *Catopsilia pyranthe* | Tropical Africa, South Asia, Southeast Asia and Australia | Common |
| **10.** | Common Grass Yellow | *Eurema hecabe* | Tropical & Sub-tropical Africa, Asia and Australia | Common |
| **11.** | Pale Wanderer | *Pareronia avatar* | Sikkim, Northeast India, Nepal, Bhutan, Myanmar | Rare |
| **12.** | Psyche | *Leptosia nina* | Oriental region | Common |
| | | **Family: Lycaenidae** | | |
| **13.** | Common Pierrot | *Castalius rosimon* | India (except Northwest), Pakistan, Nepal, Bhutan, Bangladesh, Myanmar, Sri Lanka | Not Rare |
| **14.** | Yamfly | *Loxura atymnus* | India (Uttaranchal to Arunachal Pradesh, Peninsular India up-to Maharashtra, North Bihar and Madhya Pradesh), Nepal, Bhutan, Myanmar | Common |
| **15.** | Lesser Grass Blue | *Zizina otis* | South Asia | Common |
| **16.** | Western Centaur Oakblue | *Arhopala pseudocentaurus* | India (South India upto Gujarat, Uttaranchal to Arunachal Pradesh, Northeast, West Bengal), Nepal, Bhutan, Myanmar, Sri Lanka | Uncommon |
| **17.** | Common Acacia Blue | *Surendra quercetorum* | India (South India Up-to Gujarat, Uttaranchal to Arunachal Pradesh, Northeast, Jharkhand), Nepal, Bhutan, Myanmar, Sri Lanka, Bangladesh | Locally Common |
| | | **Family: Nymphalidae** | | |
| **18.** | Peacock Pansy | *Junonia almanac* | Indian sub-continent | Common |
| **19.** | Grey Pansy | *Junonia atlites* | South Asia (except drier areas) | Locally Common |
| **20.** | Lemon Pansy | *Junonia lemonias* | South Asia | Common |
| **21.** | Yellow Pansy | *Junonia hierta* | South Asia | Common |
| **22.** | Chocolate Pansy | *Junonia iphita* | South Asia (except drier areas) | Common |
| **23.** | Common Bushbrown | *Mycalesis perseus* | India, Pakistan, Nepal, Bhutan, Myanmar, Bangladesh and Sri Lanka | Common |
| **24.** | Dark Brand Bushbrown | *Mycalesis mineus* | India, Pakistan, Nepal, Bhutan, Myanmar, Bangladesh and Sri Lanka | Common |
| **25.** | Common Fourring | *Ypthima hubenri* | India, Pakistan, Nepal, Bhutan, Myanmar, Bangladesh and Sri Lanka | Common |
| **26.** | Eastern Fivering | *Ypthima similis* | India, Nepal, Bhutan, Myanmar, Bangladesh | Common |
| **27.** | Angled Castor | *Ariadne ariadne* | India (except arid North and Northwest), Nepal, Bhutan, Myanmar, Bangladesh and Sri Lanka | Uncommon |
| **28.** | Common Jester | *Symbrenthia hippoclus* | India, Nepal, Bhutan, Myanmar, Bangladesh | Common |
| **29.** | Bamboo Treebrown | *Lethe europa* | India, Nepal, Bhutan, Myanmar | Common |
| **30.** | Common Nawab | *Polyura athamus* | India, Pakistan, Nepal, Bhutan, Myanmar, Bangladesh | Locally Common |
| **31.** | Common Palmfly | *Elymnias hypermnestra* | India, Pakistan, Nepal, Bhutan, Myanmar, Bangladesh and Sri Lanka | Common |
| **32.** | Common Lascar | *Pantoporia hordinia* | India, Nepal, Bhutan, Myanmar, Bangladesh and Sri Lanka | Common |
| **33.** | Common Yeoman | *Cirrochroa tyche* | India, Nepal, Bhutan, Myanmar, Bangladesh | Common |
| **34.** | Grey Count | *Tanaecia lepidealepidea* | India, Nepal, Bhutan, Myanmar, Bangladesh | Rarer in South India than in North |
| **35.** | Common Earl | *Tanaecia julli* | India (Uttaranchal to Arunachal Pradesh), Nepal, Bhutan, Myanmar, Bangladesh | Common |
| **36.** | Plain Tiger | *Danaus genutia* | India Pakistan, Nepal, Bhutan, Myanmar, Bangladesh and Sri Lanka | Common |
| **37.** | Common Sailor | *Neptis hylas* | India, Pakistan, Nepal, Bhutan, Bangladesh and Sri Lanka | Common |
| **38.** | Double Branded Crow | *Euploea sylvester* | India (Maharashtra onwards), Nepal, Bhutan, Myanmar, Bangladesh and Sri Lanka | Locally Common |

Butterfly diversity study revealed that Assam University campus in Silchar has good butterfly fauna ranging from the Lesser Grass Blue with a wingspan of 19–26 mm (Kehimkar, 2008) to large conspicuous butterfly Common Mormon. Some very common butterflies recorded included Grey Pansy, Lesser Grass Blue and Common Emigrant. Low anthropogenic pressure in the eco-forest resulted in higher diversity of butterfly fauna.

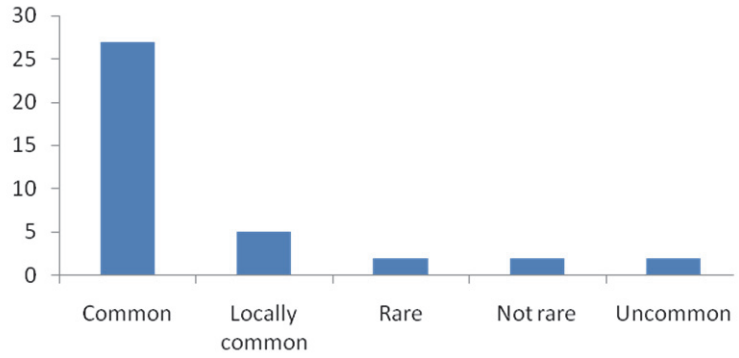
In the present study we recorded 19 species for the study area which were not recorded in an earlier study carried out by Changmai and Choudhury (2011). These include 3 species belonging to Hesperiidae family namely *Parnara guttata, Sarangesa dasahara* and *Taractrocera maevius*; 2 species from Pieridae family viz. *Pareronia avatar* and *Leptosia nina*; 4 species from Lycaenidae family namely *Loxura atymnus, Zizina otis, Arhopala pseudocentaurus, and Surendra quercetorum*; and 9 species from Nymphalidae family viz. *Mycalesis perseus, Mycalesis mineus, Ypthima hubenri, Ariadne ariadne, Symbrenthia hippoclus, Lethe europa, Polyura athamas, Cirrochroa tyche* and *Euploea sylvester* (Fig. 2).

Furthermore, according to their ecological status the butterfly species were categorized into Common, Locally Common, Rare, Not Rare and Uncommon species (Fig. 3). A number of species were classified as rare, not rare or uncommon. Some locally common species were also recorded from the study sites. This clearly shows the importance of biodiversity conservation in the study site or else these rare species can become locally extinct if the present trend of biodiversity destruction continues.

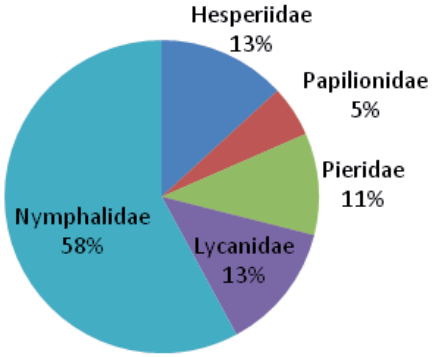
During the whole study season, extremely high species richness was noted for the butterfly belonging to the family Nymphalidae which represented 58% of the total butterfly species recorded in this study. Nymphalidae family was




2: *Butterfly fauna from the degrading secondary succession habitat in the Assam University campus in Silchar, India: a. – a trek along the eco-forest in the study area; b. – Ariadne ariadne; c. – Zizina otis; d. – Sarangesa dasahara; e. – Polyura athamus; f. – Loxura atymnus; g. – Mycalesis mineus; h. – Arhopala pseudocentaurus; i. – Leptosia nina; j. – Lethe europa*




3: *Categorization of the butterflies species in Assam University campus in Silchar according to their ecological status*




4: *Family-wise distribution of butterfly species in the Assam University campus in Silchar*

followed by Hesperidae and Lycanidae families with 13% each, whereas the family Pieridae was represented by 11% of butterfly species. The least butterfly species richness was observed in the case of Papilionidae family which accounted for only 5% of the butterflies recorded (Fig. 4).

Moreover, conservation efforts concerning Lepidopterans have rarely been taken up in the present study area due to remoteness of the place. Thus preliminary studies hold much importance as it helps in gathering basic information on the study site, preparing baseline data and aids in formulating sound conservation strategies. Presently the forests of entire Northeast India including Assam is under continuous threat of large scale forest clearing for various developmental works such as laying new roads, land reclamation by illegal settlers, shifting cultivation in the hilly areas, among others.

Observations indicated that the butterfly fauna of the campus are facing acute anthropogenic pressure. All the studied sites were highly degraded excepting the eco-forest. Rampant collection of fuel wood and bamboo by the local communities living nearby the university campus was evident throughout the study period. Over-grazing by livestock reared by rural people living nearby the campus was observed even within the eco-forest area throughout the study period which increased the disturbance and most of the new plant growth during monsoon season was consumed by the livestock. With ample rain, an increase in vegetation and host plants in the monsoon season was noted, which resulted in notable butterfly diversity and we recorded 38 species of butterfly in this preliminary study. Thus, it shows that monsoon season plays an important role in the life cycle of butterfly species. Hence it may be suggested that proper fencing of eco-forest may be a solution to protect the habitat against over-grazing and excessive fuel wood collection. Moreover, small camps may be organized in nearby villages to create awareness among local populace regarding the importance of biodiversity and its conservation.

## Conservation of Butterflies with Reference to Barak Valley in Assam (India)

In the Barak valley including the site of the present study there has always been a lack of well-planned and serious research works concerning Lepidopterans. The study site is a part of one of the three global biodiversity 'hotspots' of which India is a part (Karmakar *et al*., 2010). Proximity to both the Eastern Himalayas and the Indo-Burma 'hotspots' of biodiversity along with its notable forest cover makes the valley 'home' to a large variety of endemic fauna. In Western Ghats, appropriate methodology has been devised (Kunte, 2008) to evaluate conservation values of butterflies. The usefulness of long term butterfly community studies lies in the fact that it acts as a powerful tool in measuring changes in biodiversity in relation to various unwanted environmental changes such as anthropogenic pressure, grazing pressure, among others. It also aids in formulating and devising sound conservation and management strategies. Thus butterflies act as important indicators of environmental health and changes can be easily detected in a long term study. Some basic issues and region centric recommendations are given below.

### *Lack of Awareness and Nonexistence of Scientific Checklists*

The general populace of Barak valley is largely unaware of the 'ecosystem services' provided by butterflies. Effective conservation of butterflies must be achieved through public awareness and people's participation because biological resources need protection against inappropriate use and overexploitation. Thus, there is a need for awareness regarding problems faced in butterfly conservation amongst the public. Academic research involving butterflies are also lacking and there is no readily available published information or baseline data on butterflies of the region. Complete absence of inventories and checklists of butterflies from the reserve forests and sanctuaries of the region does not help the cause of their conservation.

### *Absence of Vernacular Names in Local Communities Inhabiting the Study Region*

The study region is a matrix of several communities including a number of ethnic tribes and sub-tribes with many different vernacular languages and dialects. The communities inhabiting the area include Bengalees, Deshwalis, Biharis and Manipuris apart from the dominant tribal groups such as Dimasa, Hmar, Kuki, Khasi, Reang, Mizo, Chakma and Rongmei Naga (AOP, 2013). A contemporary discourse regarding butterfly conservation and its importance is lacking amongst the inhabitants of the region. The preliminary survey revealed that there are no or very few vernacular names for butterflies in regional languages.

### *Genetic Level Losses and Forest Degradation*

In the region, once large and virgin forests have been converted into small fragments thus reducing the habitats restricting the species in small areas and reducing the benefits of ecosystem services (Groombridge, 1992). Forests of the region are highly exploited for the forest products. Moreover, *jhum* or shifting cultivation is the only adopted method by the tribal people of the region for agricultural and horticultural activities. This has been causing direct losses in gene level and consequences can be devastating (Barton & Whitlock, 1997; Hanski & Gilpin, 1997; Kareiva & Wennergren, 1995).

### *Better Conservation through Capacity Building Among Local Youths and Budding Conservationists*

For any successful management and conservation strategy the participation of local people has always been a key component. This can be achieved through mass awareness and providing livelihoods to the rural people who depend on ecosystem services on a day-to-day basis. Capacity building among youths at grassroots level can form an effective conservation group. Unemployed tribal and non-tribal youths should be employed and trained so that they can act as local conservationists and can also educate people in the vernacular languages. Specific courses should be introduced immediately in the colleges and universities regarding conservation studies of flora and fauna of the region with emphasis on Lepidopterans.

## Role of Academic Institutions in Northeast India in Biodiversity Conservation

With its lush green forests and serene wetlands, biodiversity of the region is one of the richest in the world. Many of the bio-diverse regions are designated as 'hotspots' to indicate their biological richness both in terms of flora and fauna. At present, these bio-rich areas are most threatened due to a number of anthropogenic reasons such as extremely high population pressure and over-exploitation of resources which has negatively impacted the plant diversity in particular and has undoubtedly affected both animals (both invertebrates and vertebrates) and humans (Myers, 1990; Nautiyal, 2011; Somanathan, 2007). Earlier it was assumed that the decline was strictly limited to species level but studies revealed striking losses in genetic and functional diversity (Naeem, 1999). All animals greatly depend on plants for their nutritional requirements and survival as a whole. Lately, with mass extinctions of important species, destruction of valuable ecosystems and high losses in natural vegetations, the landscape of the Earth has been altered like never before.

Presently, India has numerous institutions of higher education and universities with scientific temper which are deeply involved in biodiversity studies involving a great number of enthusiastic scientists and technicians working in inventory, research, and monitoring. Consequently with greater accumulation of data, today our knowledge on the distribution and richness of the country's biological resources is comparatively very encouraging. Generally, academic institutions in India have large land holdings as an establishment which ranges from 20–250 hectares. The academic institutions can effectively conserve biodiversity in their region of location thereby managing valuable diversity (Nautiyal, 2010, 2011).

The role that Indian higher education institutions can play in conserving plant biodiversity has been demonstrated recently (Nautiyal, 2010). The case study in the Institute for Social and Economic Change (ISEC) campus situated on just 16 hectares of land in Bangalore, demonstrated the effective conservation of nearly about 400 species of plants along with their promising regenerating capabilities. In particular, it was noted that the ISEC campus has been acting as a natural laboratory for an economically important species *Santalum album*. This species in wild is vulnerable to extinction due to high exploitation in local and international markets for its oils and medicinal properties. It is advisable therefore to utilize the space in academic institutions to conserve, preserve and increase the green cover.

This model of conservation can be emulated in different institutes and universities of Northeast India. This can greatly aid in the conservation of rare and endangered flora and fauna. With greater land availability due to less population as compared to the rest of the country, academic institutions in Northeast India have an added advantage of having large campuses and vast part of which is already green and biodiversity rich. Tab. II shows a list of some universities in Northeast India and the total land area of their campus. It is seen that most of these institutes on an average basis have a land area of more than 250 acres where some part can be used for biodiversity conservation. In this regard the study site of Assam University campus in Silchar is fortunate to have a large land holding of 600 acres. Incorporating of *in situ* and *ex situ* conservation methodologies and prioritizing few economically important species in the academic institutions is suggested, too (Nautiyal, 2011). In collaboration with forest departments academic institutions can conduct academic research in various fields such as domesticating useful plants, documentation of Traditional Ecological Knowledge (TEK) and germination experiments of valuable medicinal and aromatic plants. This approach at a later stage could also incorporate tribal communities and their increased financial gains and an improved economy. An academic institution's main objective should also include motivating and inspiring youths who can play an active role in the conservation of biodiversity. It is important to aware youths about the various consequences of not conserving biodiversity. Youth advocacy in sustainability and

II: *List of Universities in Northeast India with their Land Holdings*

| Name of University | Total Land Holding (in acres) |
|---|---|
| Arunachal University, Arunachal Pradesh | 306.60 |
| Assam Agricultural University, Assam | 29.825 |
| Assam University, Silchar, Assam | 600 |
| The College of Veterinary Sciences & Animal Husbandry, Mizoram | 168.61 |
| Dibrugarh University, Assam | 507.50 |
| Gauhati University, Assam | 538.56 |
| Indian Institute of Technology, Guwahati, Assam | 700 |
| Manipur University, Manipur | 287 |
| Mizoram University, Mizoram | 978.19 |
| National Institute of Technology, Silchar, Assam | 540 |
| North Eastern Hill University, Meghalaya | 1225 |
| North Eastern Regional Institute of Science and Technology, Arunachal Pradesh | 500 |
| Sikkim Manipal University, Sikkim | 313 |
| Tezpur University, Assam | 262 |
| Tripura University, Tripura | 254 |

reduction in carbon footprints through biodiversity is a major step towards better conservation and management of valuable plant biodiversity. Development and capacity building of youths in academic institutions via training them in seed germination techniques and developing low cost farmer-friendly technologies have already been advocated (Nautiyal, 2011).

Internationally, academic institutions are also trying to achieve a green campus thereby promoting biodiversity upkeep. University of Ilorin in Nigeria has already started efforts to attain a better control via regulated use of land, controlled wildfires, planting boundary trees, construction of botanical/ zoological gardens, parks, plantations, among others, thus increasing much needed green space which not only conserves invaluable eco-diversity but also reduces energy usage and erosion (Oloyede, 2010). As a result the air quality in the University of Ilorin campus has improved significantly and thus promising a healthy future ensuring the amalgamation of environmental, social, human and economic goals. Environmental Health Research Foundation, a nonprofit research foundation specializing in health and environmental science in its recent research elucidated the benefits of 'Green Space', such as erosion run-off prevention, water and air purification, temperature lowering and cost savings, oxygen generation and carbon sequestration (Heinze, 2011). In our case, the campuses of academic institutions in Northeast India can act as 'green space' thereby lowering the harmful effects of pollution in the ecosystem. In this context, a current study in Bangalore city measured the effect of increased urban air pollution upon humans (Ravi and Krishnaraj, 2012). The results revealed that very high percentages of people are suffering from diseases related to air pollution. Around 54% people have been suffering from air pollution induced cough, 25% from dust allergy, 7% asthma cases and about 1.5% from various respiratory infections (Ravi and Krishnaraj, 2012). Therefore a good and preserved 'green space' in due course can purify air and act as a filter by trapping each year more than 12 million tons of polluting matter (Grass Facts, 2010) and protect humans from serious health effects, including asthma, cardiovascular diseases and other respiratory illnesses, as well as environmental damage (EPA, 2013).

These steps can undoubtedly ensure greater sustainability for plant conservation and can act as a rich habitat for butterfly species. Butterfly inventory and research like the present study can be further developed and all the host plant species of butterflies should be documented. This will allow conservation and regeneration of host plants of butterflies. Recent studies have elaborated the evolutionary relationship of butterflies and plants and showed a positive correlation between host plant diversity and butterfly diversification and a congruent association between the phylogenies of plants and butterflies (Ferrer, 2013). Many caterpillars are exclusive feeders on native plants and the removal of such plants can mean extinction of a particular butterfly species in a certain time-period. In a recent report, Poweshiek skipperling population has shrunk to its lowest in Canada and is almost on the verge of extinction (CBC, 2013).). According to a global study conducted by the Zoological Society of London it has been startlingly reveled that butterflies are more endangered than tigers and lions as they have maximum chances of extinction in near future (Earthnews, 2013). Furthermore, they added that insects have been pushed out of lands at which they once flourished as a result of human development of agricultural lands, cities and pollution caused by cars and factories. So it is high time for institutions with vast lands to adopt a positive approach as they could play a very significant role in conserving biodiversity via

designating certain parts of their area for planting trees and shrubs which will also increase the aesthetic value of their campus. It is high time for us to act so that much loss can be compensated and efforts can be initiated for restoring the precious balance of the Earth and greatly reduce the effects of current climate changes which are threatening the very basics of human existence.

## CONCLUSION

The Assam University campus is Silchar has a large area designated as eco-forest. The area is a rich repository of plants and animals. During the monsoon season with ample rain vegetation markedly increases and the surge in host plants of butterflies have been found to result in notable butterfly diversity. In the present preliminary study we recorded 38 species of butterfly from the study site and the diversity has been noted to be the highest in the eco-forest area of the university campus. However, the problem lies in managing the eco-forest as local people frequently raid the forested area for forest resources. This creates an unwanted disturbance in the forest. Initiatives have to be taken to protect and maintain the biodiversity which is already present. The tree barren grassy hillocks can be taken up for plantation of different plant species both of economic, aesthetic and cultural importance. Assam University campus in Silchar can become a model institution in Northeast India by framing proper management committees which can mediate conservation of biodiversity and eco-restoration in the campus as well as adjoining areas and can also suggest ways to overcome livelihood issues among local communities. Experienced people from local area need to be trained and hired for protection of flora and fauna fostering a sense of hope among the financially deprived populace.

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