A survey on biodiversity of J. M. Patel College Campus, Bhandara, Maharashtra

Rao, P. S.; Yadav, A. M. and Shah, R. C.

Received: March 13, 2017 | Accepted: August 28, 2017 | Online: December 31, 2017

Abstract

The present study deals with the identification and documentation of flora of J. M. Patel College campus, Bhandara. The college campus sprawling over 21,481 sq. m. and consists of some old trees along with shrubs, herbs, palms, climbers and few exotic flora. Most of the trees are naturally grown and some of the trees, shrubs and palms are planted obviously to control pollution and for the beautification of the campus. Incidentally some part of the campus is covered with rich wild herbal flora which includes medicinal plants. In view of recent demand on medicinal plants, the entire bio rich campus was scanned to collect the biodiversity data. Interestingly more than 150 plant species of trees, shrubs and some wild herbs along with some fauna were identified using relevant scientific literature and subsequently the data was evaluated in the present paper.

Key words: Flora | Fauna | Tree | Shrub | Herb | Palm | Exotic species

Introduction

Biological Science has attempted to classify living organisms and categorized the variability in nature for over a century. This has led to an understanding of its organization into communication about the plants and animals. This information has helped in utilizing the earth’s biological wealth for the benefit of humanity and has been integral to the process of development. However, this has also produced the modern consumerist society, which adversely affects the diversity of biological resources upon earth on which it is based. The diversity of life on earth is so great that if we use it sustainably we can go on developing new products from biodiversity for many generations. This can only happen if we manage biodiversity as a precious resource and prevent the extinction of species.

Among the bio rich nations, India is listed in the top ten countries for its great variety of plants and animals. But recent studies showed about 25% of the species will undergo extinction rapidly due to human population
growth, short term economic development, industrialization, urbanization (deforestation) and changes in land use pattern. Most religious and secular creeds believe that all forms of life have the right to exist on earth. Man is only a small part of the earth’s great family of species. Plants and animals have an equal right to live and exist on our planet therefore man has no right to destroy plants and animals. Unfortunately, man is only the contributor to the rapid global destruction of biodiversity.

Biodiversity provides a variety of environmental services from its species that are essential at the global, regional and local level. The production of oxygen, reduction of carbon dioxide, maintaining the water cycle and controlling soil, water and air pollution are some important services of plants. Therefore, preservation of biological resources is essential for the wellbeing and the long term survival of mankind. Therefore, there is a lot of demand for database of plants and animals all over the world especially from biodiversity rich countries as there are a number of economically and medicinally important plants available, which are untapped till now. In view of this, we selected J. M. Patel College campus as an experimental area for studying the flora and fauna of campus.

**Methodology**

The flora in the campus is critically surveyed in different localities of the campus during late rainy season. Identification of flora was done with the help of literature available in college library. Digital photographs were taken for some of the flora.

**Observation and discussion**

The eco-friendly college campus is associated with rich flora of trees, shrubs, herbs, palms and climbers and some interesting fauna. The biotic survey of the campus was carried out in different localities of the campus. There are many socio-economical valuable plants grown in the campus. Most of the trees are naturally grown and some of the trees, shrubs and palms are planted obviously to control pollution and for the beautification of the campus.

Recently a row of Royal palms was planted near the main entrance gate of the campus, which gives royal look, so added one more feather to the cap of our college. Incidentally some part of the campus is covered with rich wild herbal flora which includes medicinal plants. Obviously this dense green flora is associated with some local fauna mostly beautiful and colourful butterflies, beetles, bees, ants and caterpillars. Some varieties of migrating birds like cranes are landing in the campus in late rainy season and gives extra beautification to the campus. On the other hand, varieties of birds like wood pecker, owls, sparrows, pigeons, parrots etc. are regularly visiting for searching food. In view of recent demand on biodiversity conservation, the entire bio rich campus was scanned to collect information of some flora and fauna in the form of data. Interestingly more than 150 plant species of trees, shrubs, wild herbs (P. S. Rao, 2013) and some birds, small animals and insects were identified using relevant scientific literature and subsequently the data of some specific plants were evaluated in the present project.
Enumeration:

<table>
<thead>
<tr>
<th>S. No.</th>
<th>Scientific name</th>
<th>Common name</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Alternanthera sessilis L.</td>
<td>Gudrisag</td>
</tr>
<tr>
<td>2.</td>
<td>Andrographis paniculata</td>
<td>Kalmegh</td>
</tr>
<tr>
<td>3.</td>
<td>Antigonon leptopus</td>
<td>Red Queen’s wreath</td>
</tr>
<tr>
<td>4.</td>
<td>Blumea lacera L.</td>
<td>Jangli muffi</td>
</tr>
<tr>
<td>5.</td>
<td>Boerhaavia diffusa</td>
<td>Sant</td>
</tr>
<tr>
<td>6.</td>
<td>Cleome viscosa L.</td>
<td>Hulhul</td>
</tr>
<tr>
<td>7.</td>
<td>Commelina diffusa</td>
<td>Cana</td>
</tr>
<tr>
<td>8.</td>
<td>Corchorus olitorius</td>
<td>Koshta</td>
</tr>
<tr>
<td>9.</td>
<td>Euphorbia hirta</td>
<td>Goverdan</td>
</tr>
<tr>
<td>10.</td>
<td>Gomphrena celosiodes</td>
<td>Soft Khakiweed</td>
</tr>
<tr>
<td>11.</td>
<td>Indigofera rubromarginata</td>
<td>Nil (Neel)</td>
</tr>
<tr>
<td>12.</td>
<td>Oxalis corniculata L.</td>
<td>Khattibuti</td>
</tr>
<tr>
<td>13.</td>
<td>Phyllanthus niruri L.</td>
<td>Bhuiavli</td>
</tr>
<tr>
<td>14.</td>
<td>Tridax procumbens</td>
<td>Kamarmodi</td>
</tr>
<tr>
<td>15.</td>
<td>Vernonia cinerea</td>
<td>Sahdevi</td>
</tr>
</tbody>
</table>

Table 1: Some weed species of campus (Herbs)

<table>
<thead>
<tr>
<th>S. No.</th>
<th>Scientific name</th>
<th>Common name</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Azadirachta indica L.</td>
<td>Neem Tree</td>
</tr>
<tr>
<td>2.</td>
<td>Ceiba pentandra</td>
<td>Silk cotton</td>
</tr>
<tr>
<td>3.</td>
<td>Dalbergia latifolia</td>
<td>Indian Rose wood</td>
</tr>
<tr>
<td>4.</td>
<td>Ficus religiosa</td>
<td>Pipal</td>
</tr>
<tr>
<td>5.</td>
<td>Gmelina arborea Roxb.</td>
<td>Shivyan</td>
</tr>
<tr>
<td>6.</td>
<td>Kigelia pinnata</td>
<td>Jar Phanas</td>
</tr>
<tr>
<td>7.</td>
<td>Mimusops elingi</td>
<td>Bakul</td>
</tr>
<tr>
<td>8.</td>
<td>Mangifera indica L.</td>
<td>Mango (Aam)</td>
</tr>
<tr>
<td>9.</td>
<td>Murraya paniculata</td>
<td>Kamini</td>
</tr>
<tr>
<td>10.</td>
<td>Euphoria cotynifolia</td>
<td>Caribbean copper plant</td>
</tr>
<tr>
<td>11.</td>
<td>Parkia biglandulosa</td>
<td>Tennis ball tree</td>
</tr>
<tr>
<td>12.</td>
<td>Roystonia regia</td>
<td>Royal palm</td>
</tr>
<tr>
<td>13.</td>
<td>Tamirindus indica</td>
<td>Tamarind tree</td>
</tr>
<tr>
<td>14.</td>
<td>Tenospora sinensis</td>
<td>Gulvel</td>
</tr>
<tr>
<td>15.</td>
<td>Vitex negundo</td>
<td>Samhalu</td>
</tr>
</tbody>
</table>

Table 2: Some Shrub and Tree species of campus

<table>
<thead>
<tr>
<th>S. No.</th>
<th>Scientific name</th>
<th>Common name</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Achatina</td>
<td>Land Snail</td>
</tr>
<tr>
<td>2.</td>
<td>Acridoidea</td>
<td>Grass hopper</td>
</tr>
<tr>
<td>3.</td>
<td>Apis</td>
<td>Honey bee</td>
</tr>
<tr>
<td>4.</td>
<td>Chilopoda</td>
<td>Centipede</td>
</tr>
<tr>
<td>5.</td>
<td>Coleoptera</td>
<td>Beetle</td>
</tr>
<tr>
<td>6.</td>
<td>Diplopoidea</td>
<td>Millipede</td>
</tr>
<tr>
<td>7.</td>
<td>Gruidae</td>
<td>Crane</td>
</tr>
<tr>
<td>8.</td>
<td>Herpestidae</td>
<td>Mongoose</td>
</tr>
<tr>
<td>9.</td>
<td>Passeridae</td>
<td>Sparrow</td>
</tr>
<tr>
<td>10.</td>
<td>Picidae</td>
<td>Wood pecker</td>
</tr>
<tr>
<td>11.</td>
<td>Psittaciformes</td>
<td>Parrot</td>
</tr>
<tr>
<td>12.</td>
<td>Rana</td>
<td>Frog</td>
</tr>
<tr>
<td>13.</td>
<td>Rhopalocera</td>
<td>Butter fly</td>
</tr>
<tr>
<td>14.</td>
<td>Sciuridae</td>
<td>Squirrel</td>
</tr>
<tr>
<td>15.</td>
<td>Strigiformes</td>
<td>Owl</td>
</tr>
</tbody>
</table>

Table 3: Some Fauna of Campus
College management is regularly taking traditional care (sprinkler and drip irrigation) for the conservation of campus flora and fauna. On the other hand, advanced equipment is using for trimming of trees and grass lawns, which gives extra beautification and healthy atmosphere to the campus.

Campus flora consists of 110 trees, 40 shrubs, 62 palms, 11 climbers and continuous belt of small herbs belongs to various families of angiosperms, gymnosperms and pteridophytes. Water tanks were constructed for keeping aquatic fauna and flora. Most of the trees are old and tall with thick, green canopy which is suitable for the growth of the lower group plants like lichens, bryophytes and different types of mushrooms on the bark of the trees in late rainy season.

The scanning of the flora revealed that, it includes different varieties of species and some exotic species. There are 31 tree species, 17 shrub species, 7 climber species, 9 palm species, 8 aquatic species and approximately 70 herbal species among these 50 species were weeds. Common man thinks that these weeds are useless, but these weeds have a great medicinal value. Presently vigorous research work on medicinal value of weeds is going on globally.

The collected flora and fauna data was enumerated in alphabetical sequence, with scientific and local name (Genus only identified for fauna). The works of Ugamuge (1986), Auti et al. (2004), Bondya & Sharma (2005), Neerja Shrivastava and Shuchita Jain (2006), Phukan (2006), Zingare (2012) and Rao P.S. (2013) were referred for taxonomic identification.
Conclusion

Biodiversity provides a variety of environmental services from its species, which are essential at the global, regional and local levels. On the other hand, the mega diversity nations have developed the technology by exploitation of species leading to destruction of biodiversity; India is capable of doing so. Man has no right to do so. We only share this planet with millions of other species that also have a right to survive on Earth. It is morally wrong to allow man’s actions to lead to the extinction of species. The world now acknowledges that the loss of biodiversity contributes to global warming.

Every educational institute right from primary school to P.G. colleges maintained and preserve biodata of staff and students of all the years. Likewise, we should include the list of flora and fauna found in institute campus and upload in the college website.

It has become obvious that the conservation of biological resource is essential for the wellbeing and the long term survival of mankind.

Acknowledgments

We have immense pleasure in expressing our deep sense of gratitude and gratefulness to our Principal Dr. Vikas Dhomne for encouraging and providing library facilities in our college for completing this project work.

Present work has been undertaken as an innovative project especially by the NSS Unit of our college. We are thankful to our NSS students for their help in field work. We wish to express our special thanks to Prof. Rahul W. Ukey for helping in photography.

References


