



Contents lists available at ScienceDirect

Acta Ecologica Sinica

journal homepage: www.elsevier.com/locate/chnaes

Floristic inventory and ecological characterization the village Sherpao, District Charsadda, Khyber Pakhtunkhwa- Pakistan

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ARTICLE INFO

Article history:

Received 28 September 2017

Received in revised form 20 December 2017

Accepted 27 December 2017

Available online xxxx

Keywords:

Floristic inventory
Ecological characteristics
District Charsadda

ABSTRACT

Floristic inventory of village Sherpao, District Charsadda comprised of total 104 plant species belonging to 46 families and 95 genera. The leading families included Fabaceae, Asteraceae, Poaceae and contributed by 8 species one (7.69%). The most pre-dominant life form was therophytes having 35 species (33.65%). Most dominant habit of flora were herbs having 77 species (74%) followed by trees contributed by 18 species (17.30%) and shrubs having 9 species (8.65%). Leaf size spectra of the flora showed that the most dominant leaf size class were microphyll having 38 species (36.53%) followed by nanophyll contributed by 32 species (30.76%), mesophyll represented 22 species (21.15%) and leptophyll contributed by 12 species (11.53%). Based on habitat 77 species (74%) were xerophytic in nature followed by 14 species (13.46%) in wet condition and 13 species (12.5%) were present in both conditions. In 104 plant species 85 were non spiny and 19 were spiny. Plant growth and distribution are having strong correlation with environment. Therefore, it is important to understand the environmental aspects that affect plant growth and distribution.

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1. Introduction

1.1. Location of area

Charsadda is a very important district of the Khyber Pakhtunkhwa province of Pakistan. Pashtu's make up majority of the population of the district. Charsadda district is situated in the East of Khyber Pakhtunkhwa, bounded to district Mardan in North, with East in Nowshera, Peshawar district in South and Mohmand agency (FATA) to the West. Charsadda is situated on Latitude of 34.15°N and Longitude of 71.73°E. Present study was carried out in Union council Sherpao which is a Village of Tehsil Tangi (Fig. 1). This union council is now divided into sub union councils Sherpao, located in the north of Charsadda district.

1.2. Climatology and soil of area

The areas are mostly rural therefore temperatures are varying from place to place. In summer the temperature is too hot and in winter the temperature is usually too cold. Hottest month is June with a temperature of about 44 °C and the coldest month is January with a temperature

of about 05 °C–10 °C. The temperature here averages 22.5 °C. In the studied area, there is a sufficient amount of rainfall that occur throughout the year. The average annual rainfall is 460 mm. The driest months is June, with 11 mm of rainfall and the most precipitation falls in the month of August, with an average of 82 mm. The difference between the driest month and the wettest month is 71 mm. Soil of studied area having different types of soil texture therefore vegetation also is of different type. Some of the studied area has sandy soil and some area has loamy soil.

1.3. Flora of the area

Flora, all plant species in any specific geographic region, distribution, interaction of plant species and particular ecosystem. Floristic diversity is a reflection of environmental condition, physiognomy and biotic influences. Floristic Inventory of floras by plant taxonomists is a general practice throughout the world to have collected more information about plants. A flora is a complete checklist of plant species growing in any geographic area [1]. Through this practice, important data is recorded which could be used for future studies. Since the world is tremendously changeable, hence a huge range of floras are available ranging from concise or Field Floras to Research Floras [2]

Flora of village Sherpao District Charsadda comprised a lot of green flora. There are different types of vegetation found in district Charsadda

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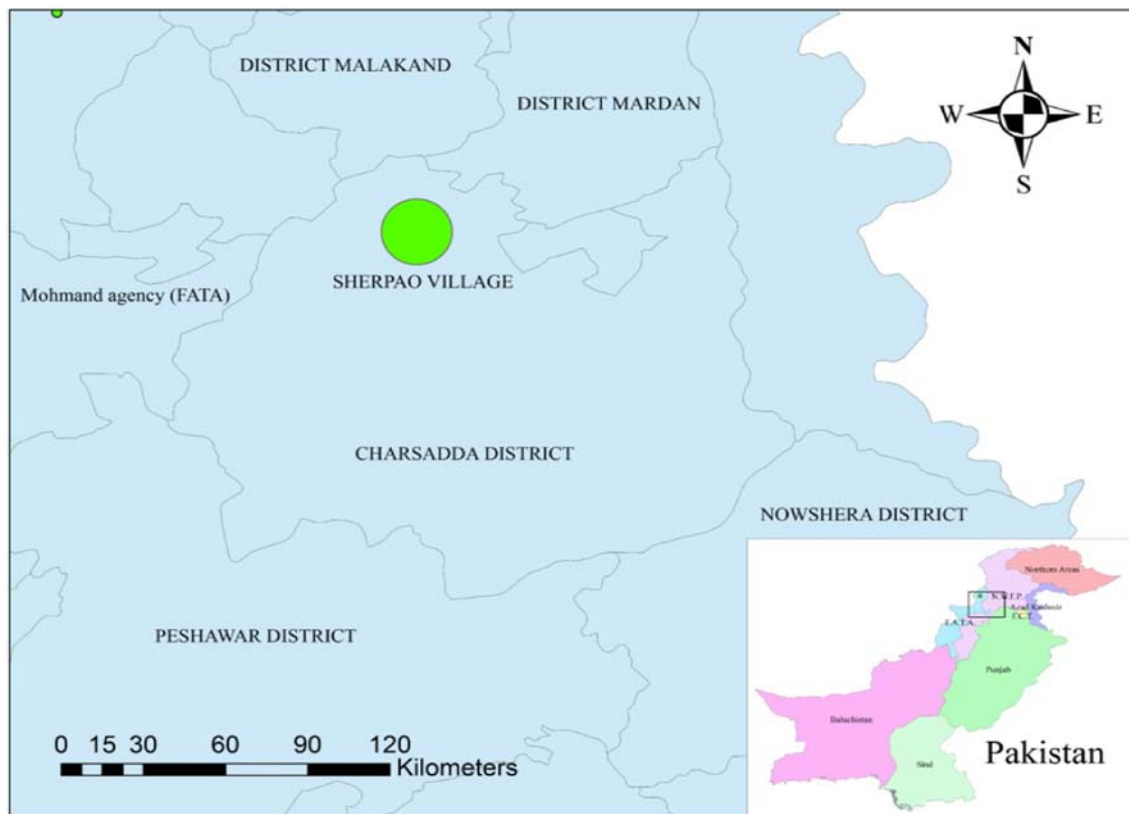


Fig. 1. General map of the Study area Sherpao, District Charsadda, Khyber Pakhtunkhwa-Pakistan.

including trees, herbs and shrubs. Among the trees different species are present belonging to different families and genera. In the studied area *Dilbergia sissoo*, *Morus alba*, *Morus lavigata*, *Morus nigra*, *Acacia nilotica*, *Acacia modesta*, *Eucalyptus lanceolata*, *Melia azedarich*, *Ailanthus altissima*, *Populus ciliata*, *Ficus carica*, *Ficus elastica*, *Citrus medica*, *Ziziphus jujuba*, *Pronus domestica*, *Bombax cieba* are used for fuel and furniture purpose. The current work was therefore significant to information the floristic and its ecological characteristics as a preliminary step towards finding possibility of its development and exploration for the betterment of the local people.

1.4. Material and methods

In order to record the floral diversity of village Sherpao, District Charsadda, KPK-Pakistan. A survey was carried out for the collection of the plant specimens and to explore the floristic structure of Village Sherpao, District Charsadda. The floristic inventory was conducted from June-2016 to June-2017. The tools during research work were map of the area, note book, pencil, plant presser, old newspaper, polythene bags, knife, compass and digital camera.

1.5. Floristic inventory and ecological characteristics

The plant species divided into different categorized into herb's shrubs and trees using available literature [3,12]. The Study of both wild and cultivated plants species were collected from various sites of the village which were included in Sherpao. After collection they were preserved in proper and precise way. These specimens were pasted on herbarium sheets using size of $46 \times 16 \text{ cm}^2$. They were kept in herbarium and then identified with the help of flora of Pakistan. Leaf classes are checked according to Raunkiaer's diagram. The leaf classes are of four types. First on have 25 sq. mm in size which is lowest and every class to next class are greater than the previous class nine times. After

identification a complete list was made alphabetically and deposited in Herbarium, Department of Botany Bacha Khan University Charsadda.

2. Result and discussion

2.1. Floristic composition and its ecological characteristics

The floristic diversity of an area, total of the species within its borders, weather, wild or cultivated plant species, which is a reflection of vegetation and plant resources. Plant resources are affected by over grazing, agriculture, anthropogenic interaction and natural disasters [20].

Biological assessment like floral composition, diversity of species and the analysis of structural are necessary for the management of forest, helpful in exploring ecology of forest and for understanding the functions of the ecosystem [12]. The major goal of the study was carried out the accessible flora of the studied area. A total of 104 plant species belonging to 46 families and 95 genera were collected from the research area (Table 1). The leading families were Fabaceae, Asteraceae and Poaceae contributed by 8 species each (7.69%) followed by Solanaceae contributed 7 species (6.73%) while Euphorbiaceae and Lamiaceae contributed by 5 species each (4.80%) and Polygonaceae contributed by 4 species (3.84%). Amaranthaceae, Amaryllidaceae, Boraginaceae, Malvaceae, Moraceae, Myrtaceae and Rutaceae contribute by 3 species each (2.88%) followed by Apiaceae, Cannabaceae, Caryophyllaceae, Nyctaginaceae, Plantaginaceae, Mimosaceae and Ranunculaceae contributed 2 species each (1.92%) and rest of 24 families contributed 1 species each (0.96%) (Fig. 2). Total of 19 species were spiny and 85 were non spiny. Dominant habit form of flora were herbs having 77 species (74%) followed by trees contributed 18 species (17.30%) and shrubs having 9 species (8.65%). Present findings show that the most species were present in Dry condition having 77 species (74%) followed by wet having 14 species (13.46%) and 13 species (12.5%) were present in both condition. Khan et al. [4] reported 91 plant species which showed that Asteraceae,

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