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# PRELIMINARY FLORISTIC LIST OF CHOTIARI WETLAND COMPLEX, NAWAB SHAH, SINDH, PAKISTAN

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**Abstract**

The goal of this study is to provide the existing botanical inventory of the area under study. A preliminary floristic survey was conducted in the month of September, 2006 for the record of plant biodiversity of Chotiari Wetland Complex. So far 120 plant species belonging to 84 genera and 39 families were identified. Of them, 22 grasses (Poaceae family) have been identified. Besides, one pteridophyte and one gymnospermic species were also discovered. The major plant families that contributed in the formation of vegetation in the area in question were Poaceae (18.33%), Fabaceae (8.33%), Capparidaceae and Solanaceae (5% each). The floristic checklist of species is provided in this paper.

## Introduction

Chotiari wetland complex lies in the province of Sindh, on western flanks of Anchor Thar desert (white sandy desert) at about 30 - 35 km northeast of Sanghar Town. The reservoir occupies an area of about 18,000 hectares and has water storage capacity of 0.75 million acre feet (MAF) flooding an area of approximately 160 km2. The climate of this area is of tropical to subtropical type. The hottest months are May and June when average maximum daily temperature exceeds 40°C. The coolest months are December to February, when the maximum daily temperatures range from 25 to 30°C. Rainfall is sparse and erratic and is most frequent between July and August when it averages 40 mm monthly.

There is meager information on the flora of this area. Therefore, present study was launched to botanize the study area. This is first report of the seasonal flora of the study area.

## Materials and Methods

An extensive survey was carried out during September, 2006 for the collection of plant specimens from the surveyed area. The collected specimens were identified with the help of various Floras (Jafri, 1966; Nasir & Ali 1970-1989; Ali & Nasir 1989-1993; Ali & Qaiser, 1993-1995, 2000-2006; Matthew, 1981-83; Batanouny, 1981; Boulos, 1991; Shetty & Singh, 1987 & 1991; Bhandari, 1987; Qureshi, 2004). Pteridophytes and gymnosperm species were identified following the work of Nakaike & Malik (1992). The determined voucher specimens are deposited in the Department of Botany, Pir Mehr Ali Shah Arid Agriculture University, Rawalpindi. Life form classes were constructed by following the work of Raunkiaer (1934).

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## Results

A preliminary floristic survey was conducted for the plant biodiversity of Chotiari Wetland Complex in the month of September, 2006. A total of 120 plant species belonging to 84 genera and 39 families were identified. Of them, 22 grasses (Poaceae family) have been identified. Besides, one pteridophyte and one gymnospermic species were also discovered. The major plant families that contributed in the formation of vegetation of the area in question were Poaceae (18.33%) followed by Fabaceae (8.33%), Capparidaceae and Solanaceae (5% each). The checklist of species along their family and life form/habit is provided in Table 1.

There was great diversity of life forms of the prevailing flora. The most frequent life form class was phanerophyte with the maximum number of species (37.50%). It was followed by Therophytes (33.33%), Hemicryptophytes (11.67%) and Chaemophytes (10.83%) (Fig. 1). Herbal coverage was the dominant in the flora of Chotiari reservoir with the 34.17% followed by shrubs (28.33%) and grasses (18.33%) (Fig. 2).

## Discussion

Chotiari wetland complex represents a wetland ecosystem that includes moist, swampy and shallow rooted vegetation and tropical scrubby vegetation on dunal area on the periphery. The common moisture loving plant species were *Typha elephantiana, T. domingensis, Phragmites karka, Sachharum* spp., *Cyperus* spp., *Persicaria glabra* and *Ipomoea aquatica*. Some of these species are used in cottage industry for mat making. In the lakes there is a thick population of submerged vegetation with floating leaves and are important in the nutrient cycling and respiratory gases. They often provide very dense habitats, which supply food and shelter to small organisms such as fingerlings and zooplankton. This sort of study has been carried out by Parveen & Hussain (2007) and results are in agreement with them.

*Nelumbium nucifera* and *Nymphaea lotus* were found in the shallow and deep water. Local inhabitants used them as their food source. The plants floating on the water surface include species like *Salvinia molesta*.

Islands are represented by xerophytic plants because of their topographical features. They are all of desertic nature with the sandy soil makeup. The dominant and frequent species like *Euphorbia caducifolia, Calligonum polygonoides, Aerva javanica, Salvadora oleoides, Indigofera* spp., *Aristida* spp., *Tribulus longipetalus* and *Limeum indicum* were forming common vegetation on them. There is no previous report available on the vegetation of islands of this area.

No endemic species has been found from the study area; however, *Lufa echinata* was recorded for the first time from this area. This species is regarded as a rare one that was recorded from Chitral, Swat and Tharparkar. However, it is abundantly found in this wetland on small islands.

## Conclusion

Chotiari reservoir is a unique landscape that contains water bodies and the desert ecosystem simultaneously. This merger of different ecosystem within the same area presents a wealth of flora and fauna. Although present study tried to record flora of different habitats yet it was a glimpse of the area. It is believed that there is ample opportunity that many plant species were left unrecorded hence need long-term comprehensive study to document both terrestrial and aquatic flora.

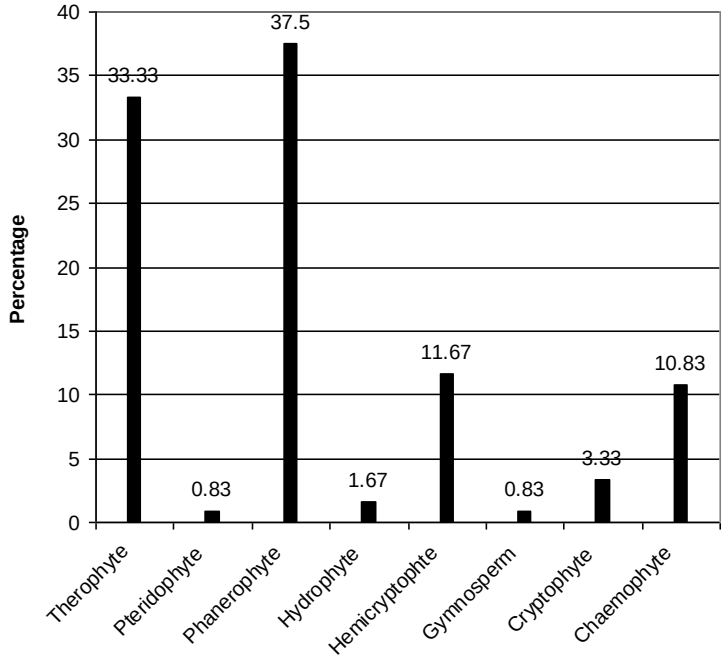


Fig. 1. Life form classes of the flora of Chotiari Wetland Complex.

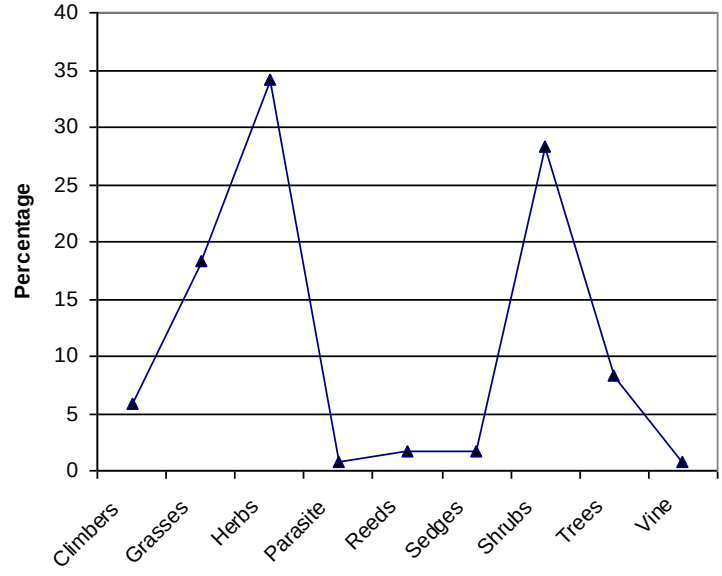


Fig. 2. Habits of plants of Chotiari Wetland Complex.

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