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Tree and Shrub Species at Lower Atbara River Basin, Northeastern Sudan

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Introduction

Sudan can be divided into six agro-ecological zones, whose major plant communities have been described by Harrison and Jackson (1958) and Wickens (1991). Sahni, (1968) demonstrated that the principal vegetation divisions of the Sudan are desert, semi-desert and low rainfall woodland savanna. Within these, there are areas of montane vegetation and of riverain vegetation.

This study covers the Lower Atbara River, which refers to the area between Goz Ragab, on longitude 35° 30' East and latitude 16° 5' North, and the village of Al Magran at the junction of the River Atbara and the Main Nile, just south of Atbara town. It is situated in Nahr El Neel State and covers an area of approximately 21250 sq kilometers. The name Lower Atbara is used to cover the triangle of Al Magran in the North-west, Ba aluk in the South-east and Khor El Makabrab representing the southern limit of the area (Abdel-Ati, 1984). (Fig.1)



General view from the study area

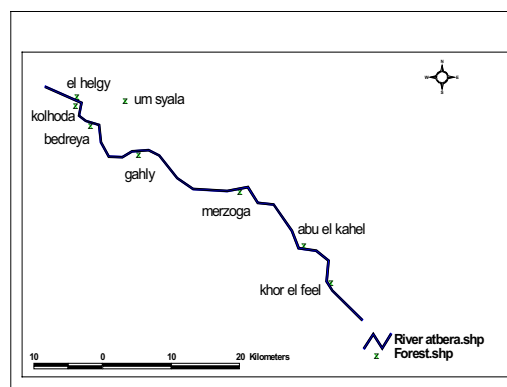


Fig.1: Map of the studied Forests

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Objectives

The broad objective of this study is to document tree and shrub species of Lower Atbara River Basin, eastern Sudan, and the northward areas, as no previous study was devoted to this particular area, and to contribute to updating of the flora of the Sudan. Moreover, the study attempts to develop a list of tree and shrub species in the flora of the study area with the scientific, common and Bushareen names.

Methodology

The tree and shrub species specimens were collected fresh from the field during (2008-2009) through five field trips that covered all seasons, from downstream Coast of Lower Atbara River. Botanical characters taken to confirm identification were summarized in a table that filled in for each tree or shrub species.

The observations were focused on the habitat and distribution, size, bark (color and texture), crown, branching and general form during the collection trips.

In the herbarium of the Medicinal and Aromatic Plant Institute, National Center for Research–Khartoum, species identification is confirmed through examination of the various parts of specimens collected, using hand-lens.

For further confirmation, collected specimens were compared with already identified herbarium specimens from Forestry Research Center Herbarium-Soba; Khartoum. Consequently, tree and shrub species of the study area were fully identified and classified.

Four-five photos were taken for each tree and shrub species using digital camera (Cannon, 04 megapixels). The main characteristics of woody plants photographed included the whole tree or shrub, bark, leaves, twigs, flowers and/or fruits.

Results and discussions

In the present study, nineteen well identified tree and shrub species belonging to ten families are recorded and documented, Seventeen of which are dicots while two are monocots. The biggest family is *Fabaceae* (*Leguminosae*). However, the others are; *Arecaceae* (*Palmae*), *Capparaceae* (*Capparidaceae*), *Asclepiadaceae*, *Balanitaceae* (*Zygophyllaceae*), *Meliaceae*, *Moraceae*, *Myrtaceae*, *Rhamnaceae* and *Tamaricaceae* (Table.1). A list of tree and shrub species of the study area with their scientific, common and Bushareen names has been developed. (Table 2)

The present study included a new record for the area; *Prosopis chilensis* which is introduced by Forestry Department and now it is naturalized (Plate 1).

*Bushareen: One of the tribe groups of the study area

Table1: Number of genera and species by identified families in the study area

Family	Number of genera	Number of species
<i>Arecaceae (palmae)</i>	2	2
<i>Asclepiadaceae (Apocynaceae)</i>	1	1
<i>Balanitaceae (Zygophyllaceae)</i>	1	1
<i>Capparaceae (Capparidaceae)</i>	2	2
<i>Fabaceae (Leguminosae)</i>	3	8
<i>Meliaceae</i>	1	1
<i>Moraceae</i>	1	1
<i>Myrtaceae</i>	1	1
<i>Rhamnacea</i>	1	1
<i>Tamaricaceae</i>	1	1

Table 2: List of tree and shrub species in the flora of the study area

Scientific name	Common name in Sudan	Bushareen name
<i>Acacia ehrenbergiana</i> Hayne	Salam	Dallow
<i>Acacia nilotica</i> (L.) Willd. ex Delile	Sunt	Garad
<i>Acacia oerfota</i> (Forssk.) Schweinf.	Loat	Kamob
<i>Acacia seyal</i> var. <i>seyal</i> (L.) Del.	Talih	Safar Ahmar
<i>Acacia tortilis</i> subsp. <i>raddiana</i> (Savi.) Brenan	Sayyal	Syal
<i>Acacia tortilis</i> subsp. <i>spirocarpa</i> Hochst ex A. Rich.	Samor	Samor
<i>Azadirachta indica</i> A. Juss.	Neem	Neem
<i>Balanites aegyptiaca</i> (L.) Del.	Heglig	Shishoot
<i>Capparis decidua</i> (Forssk.) Edgew.	Tandub	Saroob
<i>Calotropis procera</i> (Ait.) Ait. F.	Ushar	Baras
<i>Eucalyptus camaldulensis</i> Dehn.	Ban	Kaffoor
<i>Faidherbia albida</i> (Del.) A. Chev.	Haraz	Haraz
<i>Ficus sycomorus</i> L.	Jumeiz	Jumeiz
<i>Hyphaene thebaica</i> (L.) Mart.	Dom	Dom
<i>Maerua crassifolia</i> Forssk.	Sarih	Sarih
<i>Prosopis chilensis</i> (Molina) Stuntz	Mesquite	Biscit
<i>Phoenix dactylifera</i> L.	Nakheel	Tamr
<i>Tamarix nilotica</i> (Ehrenb.)Bunge.	Tarfa	Amaba
<i>Ziziphus spina-christi</i> (L.) Desf.	Sider	Nabak

Source: Forest National Corporation, El Damer (2008).



a) Whole tree



b) Bark



c) Twig bearing leaves & flowers

Plate (1) *Prosopis chilensis* (Molina) Stuntz

Conclusions and Recommendations

The present study had achieved many results; however, the following conclusion can be drawn:

The study documented and updated the tree and shrub species of the study area.

The survey has shown that, there are 19 tree species belonging to 14 genera and 10 families.

The study included a new record for the area; *Prosopis chilensis* which is introduced by Forestry Department and now it is naturalized.

Some of the scientific names for both species and families are updated, and synonyms are mentioned.

The present study recommends that:

Conservation of the present study area as it contains important tree and shrub species.

One species is not mentioned in the flora of Sudan when describing the area which supports the need for survey and updating of the flora of the Sudan.

Preservation of the rare and important tree species in the area especially *Hyphaene thebaica* and its re-cultivation.

References

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