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AN ACCOUNT OF WETLAND FLORA OF DEVAGAD ISLAND, OFF KARWAR, KARNATAKA

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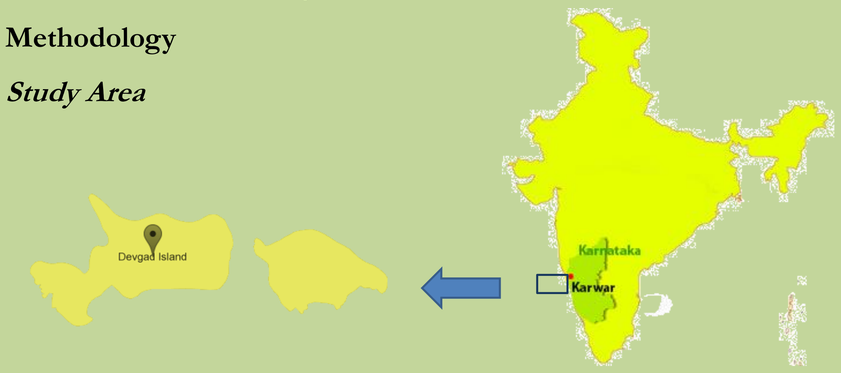
Introduction

The maritime state of Karnataka is situated between 11° 31' and 18° 45' N and 74° 12‘ and 78° 40' E along the south-western peninsular India. The state consists of three coastal districts, namely Uttara Kannda, Udupi and Dakshina Kannada. There are eight islands off Karwar, the district head quarter of Uttara Kannada District. These tropical islands are confined between 14^0 45’ N to 14^0 55’ N and 74^0 00’ to 74^0 07’ 30” E. The vicinities of these islands are key areas where commercial fishing is concentrated and these islands also act as refuges for many commercial and ecologically important flora and fauna. Devagad Island, regionally known as Devagadagudda Island, is one of the important Oyster rock Islands, with light house in it. This island is a reserve forest which covers 2.5 sq. km. with 41m elevation above MSL. The climate is wet monsoon type, with average total rainfall of around 3000mm/yr and temperature range between 20 ^{0}C to 38 ^{0}C. Though this island is important from the ecological and economic point of view, no detailed study is conducted to know the floral and faunal diversity of this island. Hence a study was conducted to assess the floral diversity of the island with special emphasis on the wetland floral diversity.

Methodology

Study Area



Sampling period: Post-monsoon survey was conducted to the island for 6 months from Aug 2015 to Jan 2016 and monsoon sampling was done during Aug 2016 to assess the diversity of wetland flora associated with the island.

Sampling method: The island was roughly divided into 4 parts based on its topography and elevation. Each part was sampled using five randomly laid quadrants. From each quadrant sample species of trees, shrubs and herbs were collected and identified. A total of 2 (10 x 10 m) quadrants for trees, 2 quadrant (2.5 x 2.5 m) for shrubs and 1 quadrant (1 x 1m) for herbs were laid. Quadrant data were used for identifying the abundance of major floral species of the area.

Results

During the survey, 35 floral varieties were observed in the island, of which 23 forms the major share of the vegetative cover. Devagad Island has a small rock pool near the north western side of the island, which harbours the single mangrove species in the island. *Avicennia officinalis,* commonly known as the Indian Mangrove, coming under the Family Avicenniaceae, is the only mangrove representative of the Island. It was observed that along with the mangrove, seven mangrove associates were observed in the island. The list of mangrove and its associates are given in the Table 1. Most of these plants are observed to have medicinal properties. The details of the medicinal properties of the plant are given in Table 2.


Avicennia officinalis


Derris trifoliata


Volkameria inermis


Cyperus malaccensis


Cayratia trifolia


Calotropis gigantean


Thespesia populnea


Crotalaria sagittalis

Table 1. List of mangrove and its associates in Devagad Island.

Sl. No	Common Name	Scientific Name	Family	Order	Category
1	Rattle Pod	*Crotalaria sagittalis*	Fabaceae	Fabales	Mangrove Associate
2	Poison Wine	*Derris trifoliata*	Fabaceae	Fabales	Mangrove Associate
3	Portia Plant	*Thespesia populnea*	Malvaceae	Malvales	Mangrove Associate
4	Crown Flower	*Calotropis gigantea*	Apocynaceae	Gentianales	Mangrove Associate
5	Flat Edges	*Cyperus malaccensis*	Cyperaceae	Poales	Mangrove Associate
6	Bush-Grapes	*Cayratia trifolia*	Vitaceae	Vitales	Mangrove Associate
7	Glory-Bower	*Volkameria inermis*	Lamiaceae	Lamiales	Mangrove Associate
8	Indian Mangrove	*Avicennia officinalis*	Avicenniaceae	Lamiales	True Mangrove

The important species recorded among the major flora of the island is *Ensete superbum* , the Cliff banana, which is an endemic and ‘Conservation Concern’ species. The cliff banana is abundant in Devagad Island (43nos/100sq m).

Table 2. Medicinal properties of major plant varieties in Devagad Island

Sl No.	Scientific Name	Medicinal use
1.	***Derris trifoliata***	**The root of the herb is used in local medicine in India as a stimulant, anti-spasmodic and counter-irritant.**
2.	***Thespesia populnea***	**The leaves extract has anti-inflammatory property. The young fruit secretes is used to treat ringworm and other skin diseases (South India).**
3.	***Calotropis gigantea***	**Different parts of the plant is used alone or with other plants for curing Asthma, Eczema, Leprosy, Skin diseases, healing of wounds and ulcers.**
4.	***Cayratia trifolia***	**The plant is reported to be used in the treatment of *Diabetes mellitus* and healing ulcers. The plant extract is reported to have anti-cancer property.**
5.	***Volkameria inermis***	**The plant extract has anti-inflammatory, analgesic, anti-pyretic, neural and smooth muscle effects, anti-microbial, anti-diabetic, anti-oxidant, anti-parasitic, insecticidal, anti-allergic, anti-cancer and many other pharmacological effects.**
6.	***Avicennia officinalis***	**Leaves extract of the plant has anti-bacterial, cytotoxic and analgesic activities**
7.	***Ensete superbum***	**The powdered seeds of the fruits are used in the treatment of kidney stones**

Conclusion

The study has thrown light into the major wetland floral resources of Devagad Island . The vegetation in the island is similar to those of Western Ghats, since there is hardly 5 km from the Western Ghats to the island. The study confirms the presence of Cliff Banana *(Ensete superbum)* a ‘Conservation Concern’ species in Karnataka and the rich relative abundance of the species is an exciting information for the scientific community.

Acknowledgement

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