

AQUATIC AND MARSHY DICOT PLANTS OF NANDURBAR DISTRICT (MAHARASHTRA)

Tayade S.K.¹, Patil D. A.² and *Athawale N. K.¹

¹*Department of Botany, P.S.G.V.P.M's Arts, Science and Commerce College,
Shahada Dist. Nandurbar (M.S) 425 409*

²*Department of Botany, S.S.V.P.S Late Karmveer P.R. Ghogerey Science College,
Dhule Dist. Dhule (M.S) 424 005*

**Author for Correspondence*

ABSTRACT

The present paper enlists the aquatic and marshy dicot plants of Nandurbar District (Maharashtra). In all 29 species belonging to 25 genera and 15 families have been reported. Their correct nomenclature, phenology, distribution, abundance and morpho-ecological categories are provided.

Keywords: *Aquatic, Marshy Dicot Plants, Nandurbar*

INTRODUCTION

Nandurbar district is situated between 20 and 21° North latitude and 74.55 and 76.59 East longitude. Total area of the district is distributed in 6 talukas. The climate maximum temperature 48° c, minimum 10.3° c; Average rain fall is 690 mm.

The tributaries of Narmada river are Jharkal, Udai, Khai, Sambar, Katri and devganga, While the tributaries of Tapi river are Gomai, Waki, Susari, Suki, Amaravati and Mhais are flowing in the district. Prakashabarrage and Kondawal, Susri and Dara reservoirs are also contribute the aquatic flora in the district.

Toranmal hills constitute special natural features of the district. It is a tall hill with a height about 1,155m, and an area of 41.5 sq.km.

It lies at 21° 52' North latitude and 74° 34' East longitudes. There is an ancient lake with 2.70 km, in circumference and 595.360 m. in breadth.

Its depth is reported to be 40 m. There is also a smaller lake a few meters away from larger lake. The overflow from both the lakes rush in the valley known as Sitakund or Sitakhai by a cascade of about 152 m. deep and straight.

The number of aquatics which inhabit Sitakund, water of rivers, rivulets and other water bodies. The river beds river banks, barrages and reservoirs have luxuriant vegetation.

The plant species were identified by using various floras (Cook, 1958), (Singh, 2000, 2001) and (Patil, 2003).

MATERIALS AND METHODS

The field work carried out in the year 2012-2013 and 2013-2014. Visits are paid in different seasons encompassing every nook and corner of the district.

The data pertaining to botanical name, family, flowering and fruiting period and distribution were particularly noted during the study.

Herbarium specimens were prepared by using customary methods and are deposited in the Department of Botany, P.S.G.V.P. Mandal's Arts, Science and Commerce College, Shahada Dist- Nandurbar, Maharashtra.

The plant species were identified by using various floras (Cook, 1958), (Singh, 2000, 2001) and (Patil, 2003).

Research Article

Table 1: Enumeration of aquatic and marshy dicot plants

Sr.No.	Botanical Name	Family	Flowering and Fruiting period	Distribution
1	<i>Alternanthera sessilis</i> (L.) R.Br.	Amaranthaceae	Throughout year	Common in marshes near streams, rivers, ponds, wet fields.
2	<i>Ammannia baccifera</i> L.	Lythraceae	October-December	Common on wet soil, along river, or stream banks or in marshy places.
3	<i>Bacopa monnieri</i> (L.) Wettst.	Scrophulariaceae	Throughout year	Common in marshes, along stream and river banks.
4	<i>Caesulia axillaris</i> Roxb.	Asteraceae	August-January	Wastelands, along margins of ponds and ditches.
5	<i>Canscora decurrens</i> Dalz.	Gentianaceae	September-December	Common in wet and shady habitats
6	<i>Ceratophyllum demersum</i> L.	Ceratophyllaceae	October-February	Common in pools, tanks and in slow running water.
7	<i>Chrozophora prostrata</i> Dalz.	Euphorbiaceae	Almost throughout year	In moist rocky and sandy beds of nallas. also a weed in cultivated fields
8	<i>Cyathocline purpurea</i> (D. Don) O.Ktze.	Asteraceae	September-April	Along rivers, streams and in drying ditches, ponds.
9	<i>Dopatrium junceum</i> (Roxb.) Buch.	Scrophulariaceae	September-October	In marshy habitats.
10	<i>Enicostema axillare</i> (Lam)	Gentianaceae	July-December	Wet wastelands, hilly forests.
11	<i>Glinus lotoides</i> L.	Molluginaceae	October-March	On drying moist ground in ponds, ditches or muddy beds of water reservoirs.
12	<i>Hygrophila schulli</i> (Buch.-Ham) M. R. & S.M. Almeida	Acanthaceae	September-April	Common in marshes along stream, rivers, near ponds and ditches.
13	<i>Ipomoea aquatica</i> Forsk.	Convolvulaceae	Throughout year	Occasional on margins of ponds, ditches
14	<i>Justicia quinqueangularis</i> Koen.ex.Roxb.	Acanthaceae	August-December.	Common in wet places, along the river banks, in nallas, near water reservoirs.
15	<i>Limnophila indica</i> (L.) Druce.	Scrophulariaceae	August-December	Throughout in waterlogged soil or moist ground, in nallas.
16	<i>Nymphaea nouchalis</i> Burm.f.	Nymphaeaceae	August-February	In a ponds
17	<i>Nymphaea pubescens</i> Willd.	Nymphaeaceae	August-January	In a ponds

Research Article

18	<i>Phyla nodiflora</i> L.	Verbenaceae	Throughout year	Along rivers, streambanks and marshy places.
19	<i>Polygonum barbatum</i> L.	Polygonaceae	September-February	Frequency in marshy habitats.
20	<i>Polygonum glabrum</i> Willd.	Polygonaceae	October-February	Common in marshy places, along river banks, nallas etc.
21	<i>Polygonum plebeium</i> R.Br.	Polygonaceae	October-January	Occasional in wet places, along river banks, rivulets.
22	<i>Rotala serpyllifolia</i> (Roth.) Bremek	Lythraceae	October-January	In wet rocky beds of nallas and in flowing streams.
23	<i>Rumex dentatus</i> L.	Polygonaceae	November-February	In marshes along river banks and wet fields
24	<i>Sesbania bispinosa</i> (Jacq.) Wight	Fabaceae	August-December	Common in swampy places
25	<i>Sopubia delphinifolia</i> (L.) G. Don.	Scrophulariaceae	September-February	Common along river banks, wet grasslands.
26	<i>Sphaeranthus senegalensis</i> DC	Asteraceae	October-April	Drying moist ground in ponds, ditches, along river banks etc.
27	<i>Tamarix diocia</i> Roxb.	Tamaricaceae	October-ecembe	In sandy river beds
28	<i>Tamarix ericoides</i> Rottl.	Tamaricaceae	November-February	In sandy soils along river beds or nallas
29	<i>Vernonia anagallis-aquatica</i> L.	Scrophulariaceae	November-May	Common in river beds

RESULTS AND DISCUSSION

Discussion

Aquatic vegetation has profound influence on the nutrient budget of the aquatic and marshy ecosystems and their hydrological balance. In Maharashtra 279 species, 4 subspecies and 12 varieties of hydrophytic angiosperms are recorded (Karthikeyan, 1982). In Jalgaon district of Maharashtra state 91 species of Angiosperm hydrophytes are recorded belonging to 68 genera of 26 families (Kshirsagar and Patil, 1998). Similarly, Nandurbar district has good aquatic vegetation. In all 29 species of dicot hydrophytes are recorded belonging to 25 genera and 15 families. Scrophulariaceae is the dominant family having five species followed by Polygonaceae with four species in the district. Roadside pools and ditches harbour typical vegetation during the short wet season. They are filled up with water during monsoon. Their margin provides a favorable ground for the growth of some species. When the pools are flooded by the end of September, the number of species increases, reaching the climax. These plants are *Alternanthera sessilis*, *Ammannia baccifera*, *Caesulia axillaris*, *Justicia quinqueangularis*, *Dopatrium junceum* and *Sesbania bispinosa*. Wetland hydrophytes are dominant with about 24 species. *Limnophila indica* inhabit water of rivers, rivulets and other water bodies and gregarious.

The hydrophytes observed from the area are categorised into the following morpho-ecological groups on the basis of their contact with soil, water and air:

Free Floating Hydrophytes:

These are plants those are in contact with water and air only, *Ipomoea aquatica* is in this category.

Suspended Hydrophytes:

These are rootless, submerged hydrophytes that are in contact with water only, *Ceratophyllum demersum* comes in this category.

Research Article

Attached Submerged Hydrophytes:

These are entirely or at least to the most part, in contact with soil and water only. The following are some plants belonging to this category are *Limnophila indica*, *Nymphaeanouchalis*, *Nymphaea pubescens*.

Wetland Hydrophytes:

These are rooted in the soil that is usually saturated with water, at least in the early part of their life. The following are some plants belonging to this category.

Alternanthera sessilis, *Ammannia baccifera*, *Bacopa monnieri*, *Caesulia axillaris*, *Canscora decurrens*, *Chrozophora prostrata*, *Cyathocline purpurea*, *Dopatrium junceum*, *Enicostema axillare*, *Glinus lotoides*, *Hygrophila schulli*, *Justicia quinqueangularis*, *Phyllanthus nodiflorus*, *Polygonum barbatum*, *Polygonum glabrum*, *Polygonum plebeium*, *Rotala serpyllifolia*, *Rumex dentatus*, *Sesbania bispinosa*, *Sopubia delphinifolia*, *Sphaeranthus senegalensis*, *Tamarix dioica*, *Tamarix ericoides*, *Vernonia anagallis-aquatica*.

REFERENCES

- Cooke T (1958).** *The Flora of the Presidency of Bombay* (B.S.I. (Repr.Ed.), Calcutta, India) **I- III.**
- Karthikeyan S, Anand Kumar and Sharma BD (1982).** *Aquatic Angiosperms of Maharashtra. Journal of Economic and Taxonomic Botany* **3** 423-445.
- Kshirsagar SR and Patil DA (1998).** *Aquatic and Marshy Angiospermic Plants of Jalgaon District (Maharashtra). BRIS Journal of Advances in Science and Technology* **1(I)** 56-62.
- Patil DA (2003).** *Flora of Dhule and Nandurbar Districts* (Bishen Singh Mahendra Pal Singh, Deharadun, India).
- Singh NP and Karthikeyan S (2001).** *Flora of Maharashtra State: Dicotyledon Vol II* (Botanical Survey of India, Calcutta, India).
- Singh NP and S Karthikeyan (2000).** *Flora of Maharashtra State: Dicotyledon Vol I.* (Botanical Survey of India, Calcutta, India).