AMBIENT APPRAISAL

Diversity and Distribution of Aquatic Plants in Khordha, Odisha, India

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Keywords: Aquatic plants, Marshy hydrophytes, Amphibious hydrophytes, Free-floating, Submerged Fixed floating hydrophytes.

Study Area: Khordha district, Odisha

Coordinates: 19°55'N - 20°25'N;

84°55'E - 86°05'E

Abstract

The results of the present survey revealed the occurrence of 211 species of hydrophytes including 200 angiosperms, 10 pteridophytes and one alga distributed in 134 genera and 61 families from 10 different localities in the study area. Besides, monocots were recorded with a maximum number of 110 species belonging to 85 genera and 16 families, whereas dicots contributed 90 species with 41 genera belonging to 37 families. Among the different categories of aquatic plants, marshy hydrophytes were represented with the maximum diversity with 131 species followed by 38 species of amphibious hydrophytes, 11 species of free-floating, 15 species of submerged and 9 species of fixed floating hydrophytes. Further taxonomic studies revealed that family Poaceae was the dominant one represented by 42 species followed by Cyperaceae with 34 species, Scrophulariaceae with 11 species, Asteraceae with 10 species, Hydrocharitaceae and Commelinaceae each with 6 species, Fabaceae with 5 species, Alismataceae, Nymphaeaceae, Polygonaceae and Onagraceae having 4 species each.

Introduction:

A plant that grows in aquatic habitat or must grow for at least a part of its life cycle in water is called an aquatic plant. Aquatic plants remain in a number of forms like submerged, free-floating, rooted floating, marshy and amphibious (Maliya, 2006). They not only support the growth of other organisms like fish, aquatic insects etc. but also play important role in ecological processes and help in maintaining the cleanliness of the water surface. Aquatic plants also play a vital role in tapping solar energy and in determining the primary productivity of the aquatic ecosystem.

Diversity and distribution of hydrophytic plants in India are well documented by several authors (Agharkar, 1923; Biswas & Calder, 1937; Cook, 1996; Lavania *et al.*, 1990; Hazarika & Borthakur, 2012; Sukumaran & Jeeva, 2011). Reports are also available on hydrophytic plants occurring in different parts of the state of Odisha (Haines, 1921-1925; Mooney, 1950; Pattnaik & Pattanaik, 1956; Mohanty & Choudhury, 1984; Saxena & Brahmam, 1994-96; Subhadarsini *et al.*, 2016); however, the present investigation is to highlight the detailed information on the diversity and distribution of aquatic plants in Khordha district of Odisha. The objective of the present investigation was to explore and map the aquatic plant diversity in the Khordha district of Odisha by exhaustive

survey work. Therefore, an extensive survey of hydrophytes of the area was carried out to find out a detailed account of the diversity and distribution of hydrophytes, their habitat ecology and association, which may have economic and ecological importance.

Methodology:

Study region: Khordha district of Odisha is situated in the eastern coastal plains along the axis of the Eastern Ghat mountains. The district covers an area of 2,888 km² and divided into ten C.D. Blocks namely Baliana, Balipatana, Jatni, Bhubaneswar, Tangi, Khorda sadara, Banapur, Begunia, Bolgarh and Chilika (Refer-Map).

The study was conducted during 2018-2020 involving field visits, collection of specimens, taking photographs to document the hydrophytes for their abundance and distribution. Field trips were organized in selected ten locations of the district namely Baliana, Balipatana, Jatni, Bhubaneswar, Tangi, Khorda sadara, Banapur, Begunia, Bolgarh and Chilika (Refer Map). As the flowering and fruiting seasons are different, floristic survey of water bodies and other wetlands were conducted at regular intervals to gather information on different stages of development of the aquatic specimens. Plant specimens were collected in flowering and fruiting condition as the reproductive characters are essential to ascertain the exact

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taxonomic identification of the species. The information on the distribution pattern, growth form and habitat type for all the collected specimens were recorded. The voucher specimens were identified by consulting the regional 'Flora Books' including 'The Botany of Bihar and Orissa' (Haines, 1921-1925), Supplement to the Botany of Bihar and Orissa (Mooney, 1950) and 'The Flora of Orissa' (Saxena & Brahmam, 1994-96) and other relevant literature. Plant specimens were preserved following standard procedure and deposited in the Department of Botany, Centurion University of Technology and Management, Bhubaneswar, Odisha.

Findings:

In the present study, 211 species were recorded belonging to 134 genera of 61 families from different locations of Khordha district, Odisha. Out of these 90 species were dicots belonging to 41 genera and 37 families, whereas monocots contributed 110 species with 85 genera belonging to 16 families (Table-1 & 2). Also, 10 species are identified as Pteridophytes belonging to 7 genera and 7 families. Of the total observed species, 139 species were recorded as marshy hydrophytes, 37 species as amphibious hydrophytes, 11 species as free-floating, 9 species as fixed floating and 15 species as submerged hydrophytes (Fig.-1) The angiosperms family Poaceae is considered as the dominant one in the study area representing with 42 species followed by Cyperaceae (34 species), Scrophulariaceae (11 species), Asteraceae (10 species), Hydrocharitaceae and Commelinaceae each one is having 6 species, Fabaceae (5 species), Alismataceae, Nymphaeaceae, Polygonaceae and Onagraceae having 4 species each (Fig.-3). The abundance and richness of the species in these areas were found to be varied with the change in seasons. Out of 211 species, the maximum number of plant species (124 species) were observed and specimens were collected during July to September and 71 species during the summer season (April to June), while most of the marshy species grew during the summer season in a low depth swamp area. Three insectivorous plants such as *Utricularia stellaris*, *U. aurea* and *Drosera burmanii* were also recorded from the area. It is interesting to note that over 50 hydrophytic plant species were found to be used by the native herbal healers of the region to treat different human ailments (Table-1).

Table-1: : Lists of aquatic plants occurring in Khordha of Odisha

#	Scientific Name	Family	Habitat	Disease cure
1.	<i>Adenostemma lavenia</i>	Asteraceae	Amphibious	-
2.	<i>Aeschynomene aspera</i>	Fabaceae	Amphibious	Leucoderm
3.	<i>Aeschynomene indica</i>	Fabaceae	Amphibious	-
4.	<i>Alisma plantago-aquatica</i>	Alismataceae	Amphibious	-
5.	<i>Ammannia multiflora</i>	Lythraceae	Marshy	-
6.	<i>Alternanthera philoxeroides</i>	Amaranthaceae	Amphibious	-
7.	<i>Alternanthera sessilis</i>	Amaranthaceae	Marsy	Galactorrhoea Nightblindness
8.	<i>Ammannia baccifera</i>	Lythraceae	Marshy	Ringworm
9.	<i>Ampelopteris prolifera</i>	Thelypteridaceae	Amphibious	Headache
10.	<i>Anagallis arvensis</i>	Primulaceae	Amphibious	-

11.	<i>Aponogeton natans</i>	Aponogetonaceae	Submerged	Hair fall
12.	<i>Arundo donax</i>	Poaceae	Marshy	-
13.	<i>Azolla microphylla</i>	Azollaceae	Free floating	-
14.	<i>Azolla pinnata</i>	Azollaceae	Free floating	Lactation in cattle
15.	<i>Bacopa monnieri</i>	Scrophulariaceae	Marshy	Epilepsy, Stammering
16.	<i>Bergia ammannioides</i>	Elatinaceae	Marshy	Fungal infect.
17.	<i>Bergia capensis</i>	Elatinaceae	Amphibious	-
18.	<i>Blyxa echinosperma</i>	Hydrocharitaceae	Submerged	Ear ache
19.	<i>Brachiaria distachya</i>	Poaceae	Marshy	-
20.	<i>Brachiaria milliformis</i>	Poaceae	Marshy	-
21.	<i>Brachiaria mutica</i>	Poaceae	Marshy	Diarrhoea, worm infect.
22.	<i>Bulbostylis densa</i>	Cyperaceae	Marshy	-
23.	<i>Caesulia axillaris</i>	Asteraceae	Marshy	Cut wounds
24.	<i>Canscora diffusa</i>	Gentianaceae	Marshy/Wetland	-
25.	<i>Centipeda minima</i>	Asteraceae	Moist places	-
26.	<i>Centella asiatica</i>	Apiaceae	Marshy	Stomach disorder, Hair grow
27.	<i>Ceratophyllum demersum</i>	Ceratophyllaceae	Submerged	Glycosuria
28.	<i>Ceratopteris thalictroides</i>	Parkeriaceae	Marshy	Skin diseases
29.	<i>Chara vulgaris</i>	Characeae	Submerged	-
30.	<i>Chloris barbata</i>	Poaceae	Marshy	-
31.	<i>Coix lacryma-jobi</i>	Poaceae	Marshy	Jaundice
32.	<i>Coldenia procumbens</i>	Boraginaceae	Marshy/Wetland	-
33.	<i>Colocasia esculenta</i>	Araceae	Amphibious	-
34.	<i>Commelina benghalensis</i>	Comelinaceae	Marshy	-
35.	<i>Commelina erecta</i>	Comelinaceae	Marshy	-
36.	<i>Commelina paludosa</i>	Comelinaceae	Marshy	-
37.	<i>Crinum difixum</i>	Amaryllidaceae	Amphibious	Earache, Dysuria
38.	<i>Cyanotis cristata</i>	Comelinaceae	Marshy	-
39.	<i>Cyperus articulatus</i>	Cyperaceae	Marshy	-
40.	<i>Cyperus brevifolius</i>	Cyperaceae	Marshy	-
41.	<i>Cyperus difformis</i>	Cyperaceae	Marshy	-
42.	<i>Cyperus distans</i>	Cyperaceae	Marshy	-
43.	<i>Cyperus flabelliformis</i>	Cyperaceae	Marshy	-
44.	<i>Cyperus halpan</i>	Cyperaceae	Marshy	-
45.	<i>Cyperus haspan Juncoides</i>	Cyperaceae	Marshy	-
46.	<i>Cyperus imbricatus</i>	Cyperaceae	Marshy	-
47.	<i>Cyperus iria</i>	Cyperaceae	Marshy	-
48.	<i>Cyperus kyllingia</i>	Cyperaceae	Marshy	-
49.	<i>Cyperus paniceus</i>	Cyperaceae	Marshy	-
50.	<i>Cyperus pilosus</i>	Cyperaceae	Marshy	-
51.	<i>Cyperus polystachyos</i>	Cyperaceae	Marshy	-
52.	<i>Cyperus puncticulatus</i>	Cyperaceae	Marshy	-
53.	<i>Cyperus pygmaeus</i>	Cyperaceae	Muddy swamps	-
54.	<i>Cyperus rotundus tuberosus</i>	Cyperaceae	Marshy	Diarrhoea, Irregular mens.
55.	<i>Cyperus triceps</i>	Cyperaceae	Marshy	-
56.	<i>Cyrtococcum trigonum</i>	Poaceae	Marshy	-
57.	<i>Dentella repens</i>	Rubiaceae	Marshy	-
58.	<i>Dopatrium junceum</i>	Scrophulariaceae	Marshy	-
59.	<i>Drosera burmannii</i>	Droseraceae	Marshy	-
60.	<i>Echinochloa colona</i>	Poaceae	Marshy	-
61.	<i>Echinochloa crusgalli</i>	Poaceae	Marshy	-
62.	<i>Echinochloa stagnina</i>	Poaceae	Amphibious	Diabetes
63.	<i>Eclipta prostrata</i>	Asteraceae	Marshy	Premature graying of hair
64.	<i>Eichhornia crassipes</i>	Pontederiaceae	Free floating	-
65.	<i>Eleocharis dulcis</i>	Cyperaceae	Marshy	-
66.	<i>Elytrophorus spicatus</i>	Poaceae	Amphibious	-
67.	<i>Emilia sonchifolia</i>	Asteraceae	Marshy	-
68.	<i>Enydra fluctuans</i>	Asteraceae	Amphibious	Hair fall
69.	<i>Eragrostis ciliaris</i>	Poaceae	Marshy	Diarrhoea, dysentery
70.	<i>Eragrostis japonica</i>	Poaceae	Marshy	Headache
71.	<i>Eragrostis pilosa</i>	Poaceae	Marshy	-
72.	<i>Eragrostis uniloides</i>	Poaceae	Marshy	-
73.	<i>Eriocaulon quinqueangulare</i>	Eriocaulaceae	Amphibious	Jaundice
74.	<i>Eriochloa procera</i>	Poaceae	Swamps	-
75.	<i>Euryale ferox</i>	Nymphaeaceae	Fixed floating	-
76.	<i>Fimbristylis aestivalis</i>	Cyperaceae	Marshy	-
77.	<i>Fimbristylis argentea</i>	Cyperaceae	Marshy	-
78.	<i>Fimbristylis dichotoma</i>	Cyperaceae	Marshy	-
79.	<i>Fimbristylis miliacea</i>	Cyperaceae	Marshy	-
80.	<i>Fimbristylis ovata</i>	Cyperaceae	Moist-wet places	-
81.	<i>Fimbristylis schoenoides</i>	Cyperaceae	Amphibious	-

		(Marshy, some times floating)					
82. <i>Fuirena umbellata</i>	Cyperaceae	Amphibious	-	154. <i>Panicum psilopodium</i>	Poaceae	Marshy	-
83. <i>Glinus lotoides</i>	Molluginaceae	Marshy	-	155. <i>Paspalidium flavidum</i>	Poaceae	Marshy	Skin itching
84. <i>Glinus oppositifolius</i>	Molluginaceae	Marshy	-	156. <i>Paspalidium geminatum</i>	Poaceae	Marshy	-
85. <i>Gnaphalium polycaulon</i>	Asteraceae	Marshy	-	157. <i>Paspalum distichum</i> L.	Poaceae	Marshy	-
86. <i>Hackelochloa granularis</i>	Poaceae	Marshy	-	158. <i>Paspalum scrobiculatum</i>	Poaceae	Marshy	Diabetes
87. <i>Hedyotis diffusa</i>	Rubiaceae	Marshy	-	159. <i>Pentapetes phoenicea</i>	Sterculiaceae	Marshy	-
88. <i>Heliotropium strigosum</i>	Boraginaceae	Marshy	-	160. <i>Phyla nodiflora</i>	Verbenaceae	Marshy	-
89. <i>Hemarthria compressa</i>	Poaceae	Marshy	-	161. <i>Phyllanthus urinaria</i>	Euphorbiaceae	Marshy	-
90. <i>Hemionitis arifolia</i>	Hemionitidaceae	Moist locality	-	162. <i>Pilea microphylla</i>	Urticaceae	Marshy	-
91. <i>Hydrilla verticillata</i>	Hydrocharitaceae	Submerged	Wound	163. <i>Pistia stratiotes</i>	Araceae	Free floating	Diabetes
92. <i>Hydrocera triflora</i>	Balsaminaceae	Amphibious	-	164. <i>Polygonum barbatum</i>	Polygonaceae	Amphibious	Stomach poison
93. <i>Hydrocotyle sibthorpioides</i>	Apiaceae	Marshy	-	165. <i>Polygonum glabrum</i>	Polygonaceae	Amphibious	-
94. <i>Hydrolea zeylanica</i>	Hydroleaceae	Amphibious	Skin injury	166. <i>Polygonum hydropiper</i>	Polygonaceae	Amphibious	-
95. <i>Hygrophila polysperma</i>	Acanthaceae	Submerged	-	167. <i>Polygonum plebeium</i>	Polygonaceae	Amphibious	-
96. <i>Hygrophila schulli</i>	Acanthaceae	Amphibious	-	168. <i>Polygonum pulchrum</i>	Polygonaceae	Marshy	-
97. <i>Hygoryza aristata</i>	Poaceae	Free floating	Urinary infec.	169. <i>Portulaca quadrifolia</i>	Portulacaceae	Marshy	-
98. <i>Hymenachne acutigluma</i>	Poaceae	Amphibious	-	170. <i>Potamogeton nodosus</i>	Potamogetonaceae	Submerged	Toothache
99. <i>Ipomoea aquatica</i>	Convolvulaceae	Fixed floating	-	171. <i>Potamogeton pusillus</i>	Potamogetonaceae	Submerged	-
100. <i>Ipomoea carnea</i>	Convolvulaceae	Marshy	-	172. <i>Pteris cretica</i>	Pteridaceae	Marshy	-
101. <i>Isachne miliacea</i>	Poaceae	Marshy	-	173. <i>Ranunculus scleratus</i>	Ranunculaceae	Amphibious	Eczema, Bronchiti
102. <i>Ischaemum indicum</i>	Poaceae	Marshy	-	174. <i>Rikiliella squarrosa</i>	Cyperaceae	Marshy	-
103. <i>Ischaemum rugosum</i>	Poaceae	Wet lands	-	175. <i>Rotala indica</i>	Lythraceae	Marshy	-
104. <i>Isleima prostratum</i>	Poaceae	Marshy	-	176. <i>Saccharum spontaneum</i>	Poaceae	Marshy	Dysentery
105. <i>Kyllinga brevifolia</i>	Cyperaceae	Marshy	-	177. <i>Sacciolepis indica</i>	Poaceae	Marshy	-
106. <i>Kyllinga nemolaris</i>	Cyperaceae	Marshy	-	178. <i>Sacciolepis interrupta</i>	Poaceae	Marshy	-
107. <i>Kyllinga triceps</i>	Cyperaceae	Marshy	-	179. <i>Sacciolepis mysuroides</i>	Poaceae	Marshy	-
108. <i>Leersia hexandra</i>	Poaceae	Amphibious	-	180. <i>Sagittaria guayanensis</i>	Alismataceae	Amphibious	-
109. <i>Lemna perpusilla</i>	Lemnaceae	Free floating	Body ache	181. <i>Sagittaria trifolia</i>	Alismataceae	Swamps	Skin infection
110. <i>Limnophila heterophylla</i>	Scrophulariaceae	Amphibious	Dyspepsia	182. <i>Salvinia cucullata</i>	Salviniaceae	Free floating	-
111. <i>Limnophila indica</i>	Scrophulariaceae	Amphibious	-	183. <i>Salvinia molesta</i>	Salviniaceae	Free floating	Gastrointestinal in Cattle
112. <i>Limnophila repens</i>	Scrophulariaceae	Marshy	-	184. <i>Scirpus articulatus</i>	Cyperaceae	Amphibious	Dysentery
113. <i>Limnophyton obtusifolium</i>	Alismataceae	Marshy	Dysentery	185. <i>Scirpus grossus</i>	Cyperaceae	Amphibious	Vomiting
114. <i>Lindernia anagallis</i>	Scrophulariaceae	Marshy	-	186. <i>Scirpus lateriflorus</i>	Cyperaceae	-	-
115. <i>Lindernia antipoda</i>	Scrophulariaceae	Marshy	-	187. <i>Selaginella repanda</i>	Selaginellaceae	Marshy/Damp	-
116. <i>Lindernia crustacea</i>	Scrophulariaceae	Marshy	-	188. <i>Sesbania javanica</i>	Fabaceae	Marshy	-
117. <i>Lindernia hyssopioides</i>	Linderniaceae	Marshy	-	189. <i>Sesuvium portulacastrum</i>	Aizoaceae	Marshy	-
118. <i>Lindernia parviflora</i>	Scrophulariaceae	Marshy	-	190. <i>Setaria pumila</i>	Poaceae	Marshy	-
119. <i>Lindernia rotundifolia</i>	Scrophulariaceae	Marshy	-	191. <i>Smithia sensitiva</i>	Fabaceae	Wet places	-
120. <i>Lippia javanica</i>	Verbenaceae	Marshy	Burning sens.	192. <i>Sphaeranthus indicus</i>	Asteraceae	Wet grounds	General debility
121. <i>Lobelia alsinoides</i>	Campanulaceae	Marshy	-	193. <i>Sphenoclea zeylanica</i>	Campanulaceae	Marshy	Jaundice
122. <i>Lobelia heyneana</i>	Campanulaceae	Marshy	-	194. <i>Spilanthes paniculata</i>	Asteraceae	Marshy	Scabies
123. <i>Ludwigia adscendens</i>	Onagraceae	Fixed floating	-	195. <i>Spiranthes sinensis</i>	Orchidaceae	Marshy	-
124. <i>Ludwigia octovalvis</i>	Onagraceae	Amphibious	Eczema, Leucorrhoea	196. <i>Spirodela polyrhiza</i>	Lemnaceae	Free floating	Body swelling
125. <i>Ludwigia perennis</i>	Onagraceae	Marshy	-	197. <i>Sporobolus indicus</i>	Poaceae	Wetlands	-
126. <i>Ludwigia prostrata</i>	Onagraceae	Wet places	-	198. <i>Stachytarpheta jamaicensis</i>	Verbenaceae	Marshy	-
127. <i>Mariscus compactus</i>	Cyperaceae	Marshy	-	199. <i>Synedrella nodiflora</i>	Asteraceae	Marshy	-
128. <i>Marsilea minuta</i>	Marsileaceae	Amphibious	Epilepsy, Insomnia	200. <i>Tonningia axillaris</i>	Commelinaceae	Marshy	-
129. <i>Marsilea quadrifolia</i> L.	Marsileaceae	Amphibious	-	201. <i>Trapa natans</i>	Trapaceae	Free floating	Debility, Menorrhagia
130. <i>Mazus pumilus</i>	Scrophulariaceae	Marshy	-	202. <i>Typha angustata</i>	Typhaceae	Amphibious	Jaundice
131. <i>Melastoma malabathricum</i>	Melastomaceae	Marshy/Wet pl.	-	203. <i>Typhonium trilobatum</i>	Araceae	Marshy	-
132. <i>Melinis repens</i>	Poaceae	Marshy	-	204. <i>Utricularia aurea</i>	Utriculariaceae	Submerged	-
133. <i>Melochia corchorifolia</i>	Sterculiaceae	Amphibious	-	205. <i>Utricularia stellaris</i>	Utriculariaceae	Submerged	Eczema
134. <i>Mnesithea laevis</i>	Poaceae	Marshy	-	206. <i>Vallisneria natans</i>	Hydrocharitaceae	Submerged	-
135. <i>Monochoria hastata</i>	Pontederiaceae	Amphibious	-	207. <i>Vetiveria zizanioides</i>	Poaceae	Damp/Swampy place	Menorrhagia, Dysuria
136. <i>Monochoria vaginalis</i>	Pontederiaceae	Amphibious	Asthma, Toothache	208. <i>Vigna adenantha</i>	Fabaceae	Marshy	-
137. <i>Murdannia vaginata</i>	Commelinaceae	Marshy	-	209. <i>Wahlenbergia marginata</i>	Campanulaceae	Marshy	-
138. <i>Myriophyllum tetrandrum</i>	Haloragaceae	Submerged	-	210. <i>Wolfia globosa</i>	Lemnaceae	Free Floating	-
139. <i>Najas graminea</i>	Hydrocharitaceae	Submerged	Dysentery	211. <i>Xyris indica</i>	Xyridaceae	Marshy	-
140. <i>Nechamandra alternifolia</i>	Hydrocharitaceae	Submerged	-				
141. <i>Nelumbo nucifera</i>	Nymphaeaceae	Fixed floating	-				
142. <i>Neptunia oleracea</i>	Mimosaceae	Floating	Earache				
143. <i>Nicotiana plumbaginifolia</i>	Solanaceae	Marshy	Piles				
144. <i>Nymphaea nouchali</i>	Nymphaeaceae	Fixed Floating	-				
145. <i>Nymphaea pubescens</i>	Nymphaeaceae	Fixed floating	-				
146. <i>Nymphoides hydrophylla</i>	Menyanthaceae	Fixed floating	-				
147. <i>Nymphoides indica</i>	Menyanthaceae	Fixed floating	Ulcers on scalp				
148. <i>Oplismenus burmanii</i>	Poaceae	Marshy	-				
149. <i>Oplismenus compositus</i>	Poaceae	Marshy	-				
150. <i>Oryza rufipogon</i>	Poaceae	Marshy	Stomachache				
151. <i>Ottelia alismoides</i>	Hydrocharitaceae	Submerged	Diarrhoea				
152. <i>Oxalis corniculata</i>	Oxalidaceae	Marshy	Diarrhoea, Warts				
153. <i>Panicum paludosum</i>	Poaceae	Marshy	-

Figure -2: Habitat-wise distribution of aquatic plants in Khordha district of Odisha.

Table 2: Distribution of aquatic plants in Khordha, Odisha

Taxon	Angiosperms		Pteridophyte	Algae	Total
	Dicot	Monocot			
Family	37	16	7	1	61
Genera	41	85	7	1	134
Species	90	110	10	1	211

Figure-2: Family-wise distribution aquatic plants in Khordha district of Odisha

Conclusion:

The present study reveals the diversity and occurrence of 211 aquatic plant species in Khordha district of Odisha indicating the hydrophytic floral richness of the study area. The data on aquatic flora of the district will be of immense help for future taxonomic as well as environmental management related studies especially in the study sites with high anthropogenic disturbances and having maximum water pollution on account of urbanization and massive industrial activities. The study also indicates the need for taking up regional or district-wise studies for a better understanding of the distribution of hydrophytes and to develop location-specific conservation strategies using this baseline data to protect the valuable and yet poorly studied economically important plant species. It is suggested that the native hydrophytic plants with therapeutic claims need to be further investigated in view of their bioactive components so that the drug values can be put to use in modern and synthetic medicines.

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