

## Hydrophytic flora of Assam: II. Diversity of aquatic and wetland vascular plants of Nagaon District of Assam, India

S. Hazarika<sup>1</sup> and S. K. Borthakur

Department of Botany, Gauhati University, Guwahati 781014, Assam, India

<sup>1</sup> Corresponding author: Department of Botany, A. D. P. College, Nagaon 782002, Assam, India  
E-mail: sonjirahazarika@gmail.com

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### Abstract

The present paper records the occurrence of 174 vascular plant species belonging to 60 families, of which 42 families with 63 genera and 97 species included in the class Dicotyledons and 14 families with 50 genera and 72 species belong to the class Monocotyledons. The pteridophytic plants rerepresented by only four families with five genera and five species. Besides correct botanical names, locality of occurrence, growth forms, their flowering and fruiting period have been provided.

**Key words:** Hydrophytic, Vascular, Nagaon district.

### INTRODUCTION

Wetlands are transitional area between dry terrestrial and permanent aquatic ecosystems. There are a number of definitions of wetlands. However, a globally accepted definition of wetlands was recommended in the Ramsar Convention in Iran on February 2, 1971, which stated that “wetlands are areas of marsh, fen, peat-land, or water, whether natural or artificial, permanent or temporary, with water that is static or flowing, fresh or brackish or salt, including areas of marine water, the depth of which at wetlands generally support divers aquatic vegetation also called hydrophytes that support plants that have adapted to living in or on aquatic environments low tide does not exceed six meters.”

Cook (1996) interpreted the vascular aquatic plants covering all the Pteridophytina (ferns and fern allies) and Spermatophytina (seed bearing plants) whose photosynthetically active parts are permanently or, at least, for several months in each year partly or wholly remain submerged in water or which float on the surface of water.

Studies on aquatic and wetland vascular plants of India were documented by Agharker (1923), Biswas & Calder (1937), Subramanyam (1962), Mirashi (1954), Vyas (1964), Cook (1996) and some others. Except the general work of Kanjilal *et al* (1934 – 1940), Rao & Verma (1970, 1971, 1972, 1976), Hajra & Jain (1996), and Jain & Hajra (1978), there is no work available on hydrophytic flora of Assam. However, works on certain small areas or in some districts of Assam have been published either as part of floristic studies or as ecological and other studies (Satyanarayana 1962; Baruah & Baruah 2000; Baruah 2003; Barooah & Mahanta 2006; Sharma & Borthakur 2009; Sharma & Saikia 2010; Gogoi 2003, 2006). But,

so far, aquatic and wetland vascular plants in the District of Nagaon have not yet been studied thoroughly. Most of these works were devoted to the flora in general and not exclusively to the hydrophytes of the state in general and the Nagaon district in particular. Hence, a study was undertaken since 2010 to document the floristic diversity of wetland habitats of Nagaon District, Assam. The present communication is an outcome of the above study.

### Study area

Nagaon district is situated in between the Latitudes 25°47' N and 26°42' N and Longitudes 92°25' E and 93°19' E in the flood plains of the river Brahmaputra. The total land area of the district is 4,435.3 sq km. The climate of the area is hot and humid, influenced by Southwest monsoon during the months of April to September. There are as many as 379 small and large natural wetlands in the district covering a total area of 11,295.50 ha (Baruah *et al* 1997). The mighty Brahmaputra, flows along the northern periphery of the district. Other major tributaries meandering through the district such as Kolong, Kapili, Sonai and Jamuna drain in to the Brahmaputra. There are either oxbow lakes or compact type of wetlands, which are locally known as "Beel". These beels harbor a wide variety of aquatic flora and fauna. Besides these a considerable number of species also occur in stagnant water, ditches, rice fields and marshy places.

## MATERIALS AND METHODS

Extensive field works has been carried out since 2010 covering different wetlands of the district and collected specimens were processed following conventional herbarium techniques (Jain & Rao 1977). The identity of the voucher specimens were established by consulting relevant literature and by consulting the Herbarium of Botany Department (GUBH), Gauhati University and ASSAM. Correct nomenclature of identified plants was determined through the consultation of websites Tropicos [[www.tropicos.org](http://www.tropicos.org)] and the Plant List [[www.theplantlist.org](http://www.theplantlist.org)]. The voucher specimens have been deposited in GUBH.

### Classification

In the present work the aquatic and wetland vascular plants are classified into eight groups on the basis of their growth forms following Cook (1996) as below:

1. **Epiphytate:** Plants with roots penetrating the substrate while leaves and/or stems floating on but not arising above water surface.
2. **Helophyte:** These plants are not physiologically bound to water but tolerating longer periods of submergence.
3. **Hyperhydrate:** Plants with roots penetrating the substrate while leaves and/or stems emerging above the water surface.
4. **Plankton:** Plants occupying the zone between the bottom and the lower surface of the water i.e., free swimming below the water surface.
5. **Pleustophyte:** Plants free floating on water surface, not attached or penetrating the substrate.
6. **Rosulate:** Plants submerged, rooted in the substrate and leaves borne in a rosette.
7. **Tenagophyte:** Plants with juvenile stage submerged in or floating on water and the adult (flowering) phase terrestrial.
8. **Vittate:** Plants submerged, rooted in the substrate, leaves arrange along elongated stems.

**ENUMERATION**

The recorded plants have been enumerated in Table 1 in alphabetical order by their scientific names with families following the Plant List (<http://www.theplantlist.org>). Vernacular name(s) whenever available, reference to voucher specimens, locality of occurrence, growth forms and flowering and fruiting time of the plants are also included.

**Table 1.** Aquatic and wetland vascular plants recorded from the Nagaon district of Assam [Abbreviations used: Eph = Epihydate; Hel = Helophyte; Hyp = Hyperhydate; Pla = Plankton; Ple = Pleustophyte; Ros = Rosulate; Ten = Tenagophyte; Vit = Vittate]

Scientific name [Family]; Local name; Exsiccatae	Locality	Growth form	Flowering & Fruiting
<i>Acmella paniculata</i> (Wallich ex DC.) K.K. Jansen [Asteraceae]; <i>Suhoni-bon</i> ; <i>S. Hazarika 178</i>	Sulung	Hel	April – May
<i>Acorus calamus</i> Linnaeus [Acoraceae]; <i>Boch</i> ; <i>S. Hazarika 360</i>	Hojai	Hel/Hyp	May – December
<i>Actinoscirpus grossus</i> (Linnaeus f.) Goetgh & D.A. Simpson [Cyperaceae]; <i>Ghugol</i> ; <i>S. Hazarika 250</i>	Samaguri beel	Hyp/Ten	September – December
<i>Aeschynomene aspera</i> Linnaeus [Fabaceae]; <i>Kunhila</i> ; <i>S. Hazarika 241</i>	Batadrawa	Hel/Ten/Hyp	July – November
<i>Aeschynomene indica</i> Linnaeus [Fabaceae]; <i>Bor Kunhila</i> ; <i>S. Hazarika 195</i>	Batadrawa	Hel/Ten/Hyp	September – November
<i>Alocasia fornicata</i> (Roxburgh) Schott [Araceae]; <i>Kochu</i> ; <i>S. Hazarika 261</i>	Chaparmukh	Hel	May – December
<i>Alpinia nigra</i> (Gaertner) B.L. Burt [Zingiberaceae]; <i>Bogi-tora</i> ; <i>S. Hazarika 315</i>	Kaziranga	Hyp	June – September
<i>Alternanthera paronychioides</i> A. St. Hillaire [Amaranthaceae]; <i>S. Hazarika 29</i>	Kampur	Hel	Round the year
<i>Alternanthera philoxeroides</i> (Martius) Grisebach [Amaranthaceae]; <i>Neuthoni-sak</i> ; <i>S. Hazarika 48</i>	Uria gaon	Hyp	May – August
<i>Alternanthera sessilis</i> (Linnaeus) R. Brown ex DC. [Amaranthaceae]; <i>Matikaduri</i> ; <i>S. Hazarika 164</i>	Rupohi	Hel	Round the year
<i>Aponogeton undulatus</i> Roxburgh [Aponogetonaceae]; <i>Ghachelu</i> ; <i>S. Hazarika 169</i>	Hatichung	Ros/Eph	May – September
<i>Arundo donax</i> Linnaeus [Poaceae]; <i>Nol</i> ; <i>S. Hazarika 17</i>	Kaziranga	Hel	August – December
<i>Azolla pinnata</i> R. Brown [Salviniaceae]; <i>Xaru puni</i> ; <i>S. Hazarika 91</i>	Morikolong beel	Ple	November – February
<i>Bacopa monnieri</i> (Linnaeus) Wettstein [Plantaginaceae]; <i>Brahmi-sak</i> ; <i>S. Hazarika 361</i>	Panigaon	Hel	January – December
<i>Barringtonia acutangula</i> (Linnaeus) Gaertner [Lecythidaceae]; <i>Hijol</i> ; <i>S. Hazarika 118</i>	Amoni	Hel	June – October

Scientific name [Family]; Local name; Exsiccatae	Locality	Growth form	Flowering & Fruiting
<i>Blyxa aubertii</i> Richard [Hydrocharitaceae]; S. Hazarika 366	Kolong	Ros	February – March
<i>Blyxa japonica</i> (Miquel) Maximovicz ex Ascherson et Gurke [Hydrocharitaceae]; S. Hazarika 159	Kolong	Vit	July – October
<i>Butomopsis latifolia</i> (D. Don) Kunth [Alismataceae]; Chamos pat; S. Hazarika 265	Jamuguri	Hyp	September – November
<i>Canna indica</i> Linnaeus [Cannaceae]; Parijat; S. Hazarika 356	Hojai	Hel	Round the year
<i>Centella asiatica</i> (Linnaeus) Urban [Apiaceae]; Bor-manimuni; S. Hazarika 74	Na-mati	Hel	Throughout the year
<i>Centipeda minima</i> (Linnaeus) A. Braun & Ascherson (Asteraceae); S. Hazarika 358	Hojai	Hel	February – June
<i>Ceratophyllum demersum</i> Linnaeus [Ceratophyllaceae]; Jal-khar; S. Hazarika 42	Jalah beel	Pla/Vit	January – June
<i>Ceratopteris thalictroides</i> (Linnaeus) Brongniart [Pteridaceae]; S. Hazarika 176	Missa	Ple/Hyp	November – February
<i>Chrysopogon zizanioides</i> (Linnaeus) Roberty [Poaceae]; Birina; S. Hazarika 148	Hatichung	Hel	August – November
<i>Cleome gynandra</i> Linnaeus [Cleomaceae]; S. Hazarika 289	Puranigudam	Hel	June – September
<i>Cleome rutidosperma</i> DC. [Cleomaceae]; S. Hazarika 288	Amoni	Hel	August – November
<i>Coix lacryma-jobi</i> Linnaeus [Poaceae]; Kauri-moni; S. Hazarika 281	Bebejia	Hel	July – September
<i>Coldenia procumbens</i> Linnaeus [Boraginaceae]; S. Hazarika 233	Mohadeusal	Hel	February – May
<i>Colocasia esculenta</i> (Linnaeus) Schott [Araceae]; Kochu; S. Hazarika 364	Chaparmukh	Hel/Eph	June – September
<i>Commelina benghalensis</i> Linnaeus [Commelinaceae]; Kona-simolu; S. Hazarika 290	Raha	Hel	July – December
<i>Commelina diffusa</i> N.L. Burman [Commelinaceae]; Kona-simolu; S. Hazarika 343	Koliabor	Hel	January – June
<i>Crataeva religiosa</i> G. Forst [Capparaceae]; Borun; S. Hazarika 120	Kaliabor	Hel	April – July
<i>Cyanotis axillaris</i> (Linnaeus) D. Don ex Sweet [Commelinaceae]; S. Hazarika 308	Pathori	Hel	July – December
<i>Cyclosorus interruptus</i> (Willdenow) H. Ito [Thelypteridaceae]; S. Hazarika 216	Morikolong beel	Ple/Hyp	November – January
<i>Cyperus compactus</i> Retzius [Cyperaceae]; S. Hazarika 238	Dighali-ati	Hel	June – November
<i>Cyperus compressus</i> Linnaeus [Cyperaceae]; Muthi-bon; S. Hazarika 137	Samaguri beel	Ten/Hel	May – December
<i>Cyperus corymbosus</i> Rottboell [Cyperaceae]; S. Hazarika 240	Dighali-atil	Ten/Hel	May – January
<i>Cyperus digitatus</i> Roxburgh [Cyperaceae]; S. Hazarika 150	Rowmari beel;	Ten/Hel	June – October

Scientific name [Family]; Local name; Exsiccatae	Locality	Growth form	Flowering & Fruiting
<i>Cyperus platystylis</i> R. Brown [Cyperaceae]; <i>S. Hazarika 243</i>	Hanhila beel	Hyp/Ple	May – December
<i>Drymaria cordata</i> (Linnaeus) Willdenow ex Schultes [Caryophyllaceae]; <i>Laijabori</i> ; <i>S. Hazarika 84</i>	Morikolong	Hel	March – September
<i>Duchesnea indica</i> (Andrews) Focke [Rosaceae]; <i>S. Hazarika 227</i>	Kaziranga	Hel	January – April
<i>Dysophylla auricularia</i> (Linnaeus) Blume [Lamiaceae]; <i>S. Hazarika 221</i>	Morikolong	Hel/Hyp	November – January
<i>Echinochloa colona</i> (Linnaeus) Link [Poaceae]; <i>S. Hazarika 248</i>	Phuloguri	Hel	July – November
<i>Echinochloa crus-galli</i> (Linnaeus) Palisot de Beauvois [Poaceae]; <i>S. Hazarika 249</i>	Phuloguri	Hel	July – November
<i>Echinochloa crus-pavonis</i> (Kunth) Schultes [Poaceae]; <i>S. Hazarika 131</i>	Dimou beel	Hyp	August – December
<i>Eclipta prostrata</i> (Linnaeus) Linnaeus [Asteraceae]; <i>Kenhraj</i> ; <i>S. Hazarika 166</i>	Deura beel	Hyp	Throughout the year
<i>Eichhornia crassipes</i> (Martius) Solms [Pontederiaceae]; <i>Meteka</i> ; <i>S. Hazarika 104</i>	Setali beel	Ple/Hyp	May – September
<i>Eleocharis acutangula</i> (Roxburgh) Schultes [Cyperaceae]; <i>Mitmiti-bon</i> ; <i>S. Hazarika 185</i>	kenduguri beel	Hyp/Ten	July – October
<i>Eleocharis congesta</i> D. Don [Cyperaceae]; <i>Mitmiti-bon</i> ; <i>S. Hazarika 246</i>	Ghanhi	Hyp/Hel	July – October
<i>Eleocharis dulcis</i> (N.L. Burman) Trinius ex Henschel [Cyperaceae]; <i>Mitmiti-bon</i> ; <i>S. Hazarika 116</i>	Upor-Pathori	Hyp/Ten	September – December
<i>Enydra fluctuans</i> DC. [Asteraceae]; <i>Helachi</i> ; <i>S. Hazarika 134</i>	Samoguri	Hel/Hyp	April – May
<i>Euryle ferox</i> Salisbury [Nymphaeaceae]; <i>Nikori</i> ; <i>S. Hazarika 287</i>	Hanhila beel	Eph	August – November
<i>Evolvulus numularius</i> (Linnaeus) Linnaeus [Convolvulaceae]; <i>S. Hazarika 230</i>	Raidongia	Hel	Round the year
<i>Ficus heterophylla</i> Linnaeus f. [Moraceae]; <i>S. Hazarika 365</i>	Koliabor	Hel	April – November
<i>Fimbristylis dichotoma</i> (Linnaeus) Vahl [Cyperaceae]; <i>S. Hazarika 163</i>	Deora beel	Hel	March – December
<i>Fimbristylis dipsacea</i> (Rottboell) C.B. Clarke [Cyperaceae]; <i>S. Hazarika 293</i>	Deora	Hel/Ten	April – August
<i>Fimbristylis littoralis</i> Gaudichaud [Cyperaceae]; <i>S. Hazarika 239</i>	Raha	Ten/Hel	June – December
<i>Fimbristylis tetragona</i> R. Brown [Cyperaceae]; <i>S. Hazarika 247</i>	Ghanhi	Ten/Hel	September – December
<i>Floscopa scandens</i> Loureiro [Commelinaceae]; <i>S. Hazarika 347</i>	Koliabor	Hel	August – December
<i>Fuirena ciliaris</i> (Linnaeus) Roxburgh [Cyperaceae]; <i>S. Hazarika 350</i>	Era-Kolong	Ten/Hel	October – January
<i>Fuirena umbellata</i> Rottboell [Cyperaceae]; <i>S. Hazarika 191</i>	Morikolong beel	Ten /Hel	October – January

Scientific name [Family]; Local name; Exsiccatae	Locality	Growth form	Flowering & Fruiting
<i>Grangea maderaspatana</i> (Linnaeus) Poiret [Asteraceae]; <i>Bali-babori</i> ; <i>S. Hazarika 127</i>	Dimou beel	Hel	May – November
<i>Hedychium coronarium</i> J. Koenig [Zingiberaceae]; <i>S. Hazarika 371</i>	Sikoni	Hel	June – November
<i>Heliotropium indicum</i> Linnaeus [Boraginaceae]; <i>Hati-suria</i> ; <i>S. Hazarika 297</i>	Morikolong	Hel	April – August
<i>Houttuynia cordata</i> Thunberg [Saururaceae]; <i>Masandari</i> ; <i>S. Hazarika 363</i>	Amolapatty	Hel	April – August
<i>Hydrilla verticillata</i> (Linnaeus f.) Royle [Hydrocharitaceae]; <i>S. Hazarika 138, 179</i>	Sulung, Jalah beel	Vit	September – December
<i>Hydrocera triflora</i> (Linnaeus) Wight & Arnott [Balsaminaceae]; <i>S. Hazarika 190</i>	Raha	Hyp	June – August
<i>Hydrocotyle sibthorpioides</i> Lamarck [Araliaceae]; <i>Xaru-manimuni</i> ; <i>S. Hazarika 89</i>	Senchua	Hel	April – May
<i>Hydrolea zeylanica</i> (Linnaeus) Vahl [Hydroleaceae]; <i>S. Hazarika 206</i>	Jajori	Hel	November – March
<i>Hygrophila erecta</i> (Burman f.) Hochreutiner [Acanthaceae]; <i>S. Hazarika 280</i>	Jakhalabandha	Hyp	July – November
<i>Hygrophila phlomoides</i> Nees [Acanthaceae]; <i>S. Hazarika 335</i>	Bebejia	Hel	October – December
<i>Hygrophila polysperma</i> (Roxburgh) Anderson [Acanthaceae]; <i>S. Hazarika 330</i>	Hatichung	Vit	November – May
<i>Hygrophila salicifolia</i> (Vahl) Nees [Acanthaceae]; <i>S. Hazarika 349</i>	Digholi beel	Hel	October – January
<i>Hygroryza aristata</i> (Retzius) Nees ex Wight & Arnott [Poaceae]; <i>S. Hazarika 196</i>	Dighali ati	Ple	October – December
<i>Ipomoea aquatica</i> Forsskal [Convolvulaceae]; <i>Kolmou</i> ; <i>S. Hazarika 200</i>	Ghanhi	Eph/Hyp/ Ten	October – April
<i>Ipomoea carnea</i> Jacquin ssp. <i>fistulosa</i> (Martius ex Choisy) Austin [Convolvulaceae]; <i>Goch-Kolmou</i> ; <i>S. Hazarika 199</i>	Bebejia	Hyp	September – January
<i>Isachne globosa</i> (Thunberg) O. Kuntze [Poaceae]; <i>S. Hazarika 41</i>	Putu Kolong	Hel/Eph	July – December
<i>Lasia spinosa</i> (Linnaeus) Thwaites [Araceae]; <i>Jeng-Kochu</i> ; <i>S. Hazarika 361</i>	Hojai	Hel/Eph	December – February
<i>Lemna perpusilla</i> Torrey [Araceae]; <i>Xoru-puni</i> ; <i>S. Hazarika 359</i>	Nabhanga beel	Ple	August – October
<i>Limnophila aromatica</i> (Lamarck) Merrill [Plantaginaceae]; <i>S. Hazarika 328</i>	Hatichung	Hyp/Ten	July – December
<i>Limnophila chinensis</i> (Osbeck) Merrill [Plantaginaceae]; <i>S. Hazarika 322</i>	Chakalaghat	Hel	November – January
<i>Limnophila heterophylla</i> (Roxburgh) Benth [Plantaginaceae]; <i>S. Hazarika 184, 189</i>	Amoni Koliabor	Vit	September – January
<i>Limnophila indica</i> (Linnaeus) Druce [Plantaginaceae]; <i>S. Hazarika 323</i>	Hatichung	Vit/Hyp	July – December
<i>Limnophila repens</i> (Benth) Benth [Plantaginaceae]; <i>S. Hazarika 321</i>	Chakalaghat	Hel	November – February

Scientific name [Family]; Local name; Exsiccatae	Locality	Growth form	Flowering & Fruiting
<i>Limnophila sessiliflora</i> (Vahl) Blume [Plantaginaceae]; <i>S. Hazarika 204</i>	Jajori	Vit/Hyp	September – February
<i>Lindernia anagalis</i> (N.L. Burman) Pennell [Linderniaceae]; <i>S. Hazarika 160</i>	Deura beel	Hel	September – January
<i>Lindernia antipoda</i> (Linnaeus) Alston [Linderniaceae]; <i>S. Hazarika 375</i>	Dimou beel	Hel	November – March
<i>Lindernia crustacea</i> (Linnaeus) F. von Mueller [Linderniaceae]; <i>S. Hazarika 370</i>	Dimou beel	Hel	September – January
<i>Lindernia rotundifolia</i> (Linnaeus) Alston [Linderniaceae]; <i>S. Hazarika 325</i>	Dighali beel	Hel	August – November
<i>Lindernia ruellioides</i> (Colsmann) Pennell [Linderniaceae]; <i>S. Hazarika 373</i>	Dimou beel	Hel	October – February
<i>Lipocarpa chinensis</i> (Osbeck) J. Kern [Cyperaceae]; <i>S. Hazarika 201</i>	Juria beel	Ten/Hel	August – January
<i>Lippia javanica</i> (Burman f.) Sprengel [Verbenaceae]; <i>Pahusikoti; S. Hazarika 226</i>	Kaziranga	Hel	January – September
<i>Litsea salicifolia</i> (Roxburgh ex Wallich) Hooker f. [Lauraceae]; <i>Digh-loti; S. Hazarika 364</i>	Kaziranga	Hel/Hyp	February – June
<i>Ludwigia adscendens</i> (Linnaeus) H. Hara [Onagraceae]; <i>pani-khutora; S. Hazarika 121</i>	Kolong	Ple	March – December
<i>Ludwigia octovalvis</i> (Jacquin) Raven [Onagraceae]; <i>S. Hazarika 298</i>	Dighali beel	Hel	Throughout the year
<i>Ludwigia perennis</i> Linnaeus [Onagraceae]; <i>S. Hazarika 158</i>	Deura beel	Hel	August – December
<i>Ludwigia peruviana</i> (Linnaeus) Hara [Onagraceae]; <i>S. Hazarika 186</i>	Chapormukh	Hel/hyp/pl e	Throughout the year
<i>Marsilea minuta</i> Linnaeus [Marsileaceae]; <i>Pani tengechi; S. Hazarika 117</i>	Rupahi	Ten	November – January
<i>Mazus pumilus</i> (Burman f.) Steenis [Phrymaceae]; <i>S. Hazarika 374</i>	Dhing	Hel	Round the year
<i>Melastoma malabathricum</i> Linnaeus [Melastomataceae]; <i>Phutuka; S. Hazarika 285</i>	Kaziranga	Hel	April – October
<i>Melochia corchorifolia</i> Linnaeus [Malvaceae]; <i>Soka-mora; S. Hazarika 262, 193</i>	Chapormukh	Hyp	June – September
<i>Monochoria hastata</i> (Linnaeus) Solms [Pontederiaceae]; <i>Bor-meteka; S. Hazarika 111</i>	Gorajan beel	Ple/Hyp	May – August
<i>Monochoria vaginalis</i> (N.L. Burman) C. Presl ex Kunth [Pontederiaceae]; <i>Xoru-meteka; S. Hazarika 237</i>	Dighali beel	Hyp	May – November
<i>Murdannia nudiflora</i> (Linnaeus) Brenan [Commelinaceae]; <i>S. Hazarika 260</i>	Dighali-ati	Hel	June – January
<i>Murdannia spirata</i> (Linnaeus) G. Bruckner [Commelinaceae]; <i>S. Hazarika 376</i>	Dimou	Hel	July – December
<i>Myriophyllum indicum</i> Willdenow [Haloragaceae]; <i>S. Hazarika 105</i>	Samoguri beel,	Vit/Hyp	July – October
<i>Myriophyllum tuberculatum</i> Roxburgh [Haloragaceae]; <i>S. Hazarika 152</i>	Morikolong beel	Vit/Hyp	Round the year

Scientific name [Family]; Local name; Exsiccatae	Locality	Growth form	Flowering & Fruiting
<i>Najas indica</i> (Willdenow) Chmisso [Hydrocharitaceae]; <i>S. Hazarika 207</i>	Rowmari beel	Vit	August – October
<i>Najas minor</i> Allioni [Hydrocharitaceae]; <i>S. Hazarika 123</i>	Samaguri beel	Vit	July – November
<i>Neechamandra alternifolia</i> (Roxburgh ex R. Wight) Thwaites [Hydrocharitaceae]; <i>S. Hazarika 93</i>	Jamunamukh	Vit	January – June
<i>Nelumbo nucifera</i> Gaertner [Nelumbonaceae]; <i>Podum</i> ; <i>S. Hazarika 192</i>	Dighali ati	Hyp	May – September
<i>Nymphaea nouchali</i> N.L. Burman f. [Nymphaeaceae]; <i>Bhet</i> ; <i>S. Hazarika 187, 171, 170</i>	Raha, Samoguri	Eph	June – November
<i>Nymphaea pubescence</i> Willdenow [Nymphaeaceae]; <i>Bhet, Moku</i> ; <i>S. Hazarika 173</i>	Haribhanga	Eph	June – November
<i>Nymphaea rubra</i> Roxburgh ex Andrews [Nymphaeaceae]; <i>Ronga bhet</i> ; <i>S. Hazarika 122</i>	Dighali ati	Eph	Almost round the year
<i>Nymphoides hydrophylla</i> (Loureiro) O. Kuntze [Menyanthaceae]; <i>S. Hazarika 153</i>	Jalah beel	Eph	March – November
<i>Nymphoides indica</i> (Linnaeus) O. Kuntze [Menyanthaceae]; <i>S. Hazarika 177</i>	Noltoli	Eph	July – December
<i>Oenanthe javanica</i> (Blume) DC. [Apiaceae]; <i>Pani- Dhan</i> ; <i>S. Hazarika 165</i>	Rangolu	Hyp/Hel	May – September
<i>Oldenlandia corymbosa</i> Linnaeus [Rubiaceae]; <i>S. Hazarika 205</i>	Jajori	Hel	July – November
<i>Oldenlandia diffusa</i> (Willdenow) Roxburgh [Rubiaceae]; <i>S. Hazarika 284</i>	Kuthori	Hel	June – September
<i>Ottelia alismoides</i> (Linnaeus) Persoon [Hydrocharitaceae]; <i>Pani-kol</i> ; <i>S. Hazarika 138, 179</i>	Sulung	Ros/Eph	June – December
<i>Oxalis corniculata</i> Linnaeus [Oxalidaceae]; <i>Xoru- tengchi</i> ; <i>S. Hazarika 89</i>	Sulung	Hel	Round the year
<i>Paspalidium geminatum</i> (Forsskal) Stapf [Poaceae]; <i>S. Hazarika 82</i>	Jungal bolohu	Eph	August – December
<i>Paspalum conjugatum</i> P.J. Bergius [Poaceae]; <i>S. Hazarika 183</i>	Missa	Hel	June – October
<i>Persicaria barbata</i> (Linnaeus) H. Hara [Polygonaceae]; <i>S. Hazarika 155, 162</i>	Deura beel, Sulung	Hel	September – March
<i>Persicaria chinensis</i> (Linnaeus) H. Gross [Polygonaceae]; <i>Madhu-suleng</i> ; <i>S. Hazarika 340</i>	Kuthori	Hel	September – March
<i>Persicaria glabra</i> (Willdenow) M. Gomez de la Maza [Polygonaceae]; <i>S. Hazarika 142</i>	Jamuguri	Hel	March – October
<i>Persicaria hydropiper</i> (Linnaeus) Delarbre [Polygonaceae]; <i>Bihlongoni</i> ; <i>S. Hazarika 135, 181</i>	Sulung	Hel	Round the year
<i>Persicaria orientalis</i> (Linnaeus) Spach [Polygonaceae]; <i>S. Hazarika 256</i>	Dighali-ati	Hyp	May – September
<i>Persicaria stagnina</i> (Buchanan-Hamilton ex Meisner) Qaiser [Polygonaceae]; <i>S. Hazarika 198</i>	Raha	Hel	September – March
<i>Phragmites karka</i> (Retzius) Trinius ex Steudel [Poaceae]; <i>Khagori</i> ; <i>S. Hazarika 15</i>	Kaziranga	Hyp	September – December

Scientific name [Family]; Local name; Exsiccatae	Locality	Growth form	Flowering & Fruiting
<i>Phyla nodiflora</i> (Linnaeus) Greene [Verbenaceae]; <i>S. Hazarika 231</i>	Raidangia	Hel	April – August
<i>Phyllanthus reticulatus</i> Poiret [Phyllanthaceae]; <i>Pani-jetuka; S. Hazarika 319</i>	Maj-gaon	Hel/Hyp	March – September
<i>Pistia stratiotes</i> Linnaeus [Araceae]; <i>Bor-puni</i> ; <i>S. Hazarika 257</i>	Raha	Ple	June – October
<i>Polygonum plebeium</i> R. Brown [Polygonaceae]; <i>S. Hazarika 274</i>	Dimou beel	Hel	November – May
<i>Polygonum viscosum</i> Buchanan-Hamilton ex D. Don [Polygonaceae]; <i>S. Hazarika 245</i>	Ghanhi	Hyp	June – September
<i>Portulaca oleracea</i> Linnaeus [Portulacaceae]; <i>Malbhog-sak; S. Hazarika 88</i>	Gorajan	Hel	Round the year
<i>Potamogeton crispus</i> Linnaeus [Potamogetonaceae]; <i>S. Hazarika 211, 355</i>	Warigeding beel, Kolong	Vit	December – March
<i>Potamogeton nodosus</i> Poiret [Potamogetonaceae]; <i>S. Hazarika 145</i>	Hanhila beel	Eph/Vit	Almost round the year
<i>Potamogeton octandrus</i> Poiret [Potamogetonaceae]; <i>S. Hazarika 272</i>	Kolong	Eph/Vit	Almost round the year
<i>Pseudoraphis brunoniana</i> (Griffith) Pilger [Poaceae]; <i>S. Hazarika 146</i>	Jajori	Eph/Hyp	May – September
<i>Pseudoraphis minuta</i> (Mez) Pilger [Poaceae]; <i>S. Hazarika 182</i>	Amoni	Eph/Hyp	June – October
<i>Pycreus flavidus</i> (Retzius) T. Koyama [Cyperaceae]; <i>S. Hazarika 136</i>	Samaguri beel	Hel	May – September
<i>Ranunculus cantoniensis</i> DC. [Ranunculaceae]; <i>S. Hazarika 294</i>	Morikolong beel	Hel	March – July
<i>Ranunculus sceleratus</i> Linnaeus [Ranunculaceae]; <i>Panidhania; S. Hazarika 219</i>	Kolong	Ten/Eph	March – June
<i>Rorippa indica</i> (Linnaeus) Hiern [Brassicaceae]; <i>Bon-sarioh; S. Hazarika 130</i>	Dimow beel	Hel	March – July
<i>Rosa clinophylla</i> Redout & Thory [Rosaceae]; <i>Bon-golap; S. Hazarika 229</i>	Kaziranga	Hel	February – August
<i>Rotala rotundifolia</i> (Buchanan-Hamilton ex Roxburgh) Koehne [Lythraceae]; <i>S. Hazarika 126</i>	Dimou	Hyp	November – April
<i>Rumex dentatus</i> Linnaeus [Polygonaceae]; <i>S. Hazarika 357</i>	Hojai	Hel	January – April
<i>Rumex maritimus</i> Linnaeus [Polygonaceae]; <i>Laborua; S. Hazarika 214</i>	Kolong	Hel/Hyp	December – April
<i>Saccharum spontaneum</i> Linnaeus [Poaceae]; <i>Kanhua; S. Hazarika 13</i>	Kolong	Hel	September – December
<i>Sacciolepis interrupta</i> (Willdenow) Stapf [Poaceae]; <i>S. Hazarika 197</i>	Raha	Hyp/Ple	September – December
<i>Sagittaria guayanensis</i> Kunth subsp. <i>lappula</i> (D. Don) Bogin [Alismataceae]; <i>S. Hazarika 180</i>	Sulung	Eph	July – September
<i>Sagittaria sagittifolia</i> Linnaeus [Alismataceae]; <i>Jathiponia; S. Hazarika 213</i>	kolong	Hyp	July – September
<i>Salvinia adnata</i> Desvaux [Salviniaceae]; <i>Bor puni; S. Hazarika 139</i>	Morikolong beel	Ple	November – February

Scientific name [Family]; Local name; Exsiccatae	Locality	Growth form	Flowering & Fruiting
<i>Schoenoplectiella articulata</i> (Linnaeus) K. Lye [Cyperaceae]; <i>S. Hazarika 339</i>	Samaguri beel	Hel	December – March
<i>Schoenoplectiella juncooides</i> (Roxburgh) K. Lye [Cyperaceae]; <i>S. Hazarika 267</i>	Dimow beel	Hyp/Ten	August – December
<i>Schoenoplectiella lateriflora</i> (J. F. Gmelin) K. Lye [Cyperaceae]; <i>S. Hazarika 312</i>	Tuloshi beel	Ten	September – December
<i>Schumannianthus dichotomus</i> (Roxburgh) Gagnepain [Marantaceae]; <i>Patidoi; S. Hazarika 314</i>	Kaziranga	Hel	May – September
<i>Scorparia dulcis</i> Linnaeus [Plantaginaceae]; <i>S. Hazarika 362</i>	Raha	Hel	Round the year
<i>Sesbania bispinosa</i> (Jacquin) W.F. Wight [Fabaceae]; <i>Khori – goch; S. Hazarika 194</i>	Shantijan beel	Hel	September – December
<i>Setaria pumila</i> (Poiret) Roemer et Schultes [Poaceae]; <i>S. Hazarika 252</i>	Dighali ati	Hyp	August – November
<i>Sphenoclea zeylanica</i> Gaertner [Sphenocleaceae]; <i>S. Hazarika 236</i>	Bogoriguri	Hel/Hyp	August – December
<i>Spirodela polyrrhiza</i> (Linnaeus) Schleiden [Araceae]; <i>Puni; S. Hazarika 63</i>	Morikolong beel	Ple	June – October
<i>Stellaria media</i> (Linnaeus) Villars [Caryophyllaceae]; <i>Morolia; S. Hazarika 220</i>	Mahlur	Hel	November – March
<i>Torenia vagans</i> Roxburgh [Linderniaceae]; <i>S. Hazarika 133</i>	Samoguri beel	Hel	August – November
<i>Trapa natans</i> var. <i>bispinosa</i> (Roxburgh) Makino [Trapaceae]; <i>Singori; S. Hazarika 188</i>	Hanhila beel	Eph	July – December
<i>Trapa incisa</i> Siebold & Zuccarini [Trapaceae]; <i>Kaziranga, S. Hazarika 242</i>	Kaziranga	Eph	July – January
<i>Typha domingensis</i> Persoon [Typhaceae]; <i>S. Hazarika 278</i>	Thekeraguri	Hyp	March – June
<i>Utricularia aurea</i> Loureiro [Lentibulariaceae]; <i>S. Hazarika 144</i>	Samoguri beel	Pla	October – February
<i>Utricularia gibba</i> subsp. <i>exoleta</i> (R. Brown) Taylor [Lentibulariaceae]; <i>S. Hazarika 168</i>	Noltali	Pla	April – July
<i>Vallisneria spiralis</i> Linnaeus [Hydrocharitaceae]; <i>S. Hazarika 354</i>	Kolong	Ros	July – September
<i>Veronica anagalis-aquatica</i> Linnaeus [Plantaginaceae]; <i>S. Hazarika 353</i>	Kolong	Vit	January – April
<i>Xanthium strumarium</i> Linnaeus [Asteraceae]; <i>Agora; S. Hazarika 215</i>	Morikolong beel	Hel	July – January

## DISCUSSION

The present study revealed the occurrence of 169 species covering 113 genera and 56 families of Angiosperms and five species under five genera and four families of Pteridophyta in the wetlands of Nagaon district of Assam. Of the angiosperms 97 species under 63 genera and 42 families are dicotyledonous and the remaining 72 species under 50 genera and 14 families are monocotyledonous (Table 2). Of the 60 families, the dominant families in order of species richness are Cyperaceae (20 species), Poaceae (16 species), Polygonaceae (10 species), Plantaginaceae (09 species), Hydrocharitaceae (08 Species) Asteraceae (06 species), Linderniaceae (06 Species), Araceae (06 Species) and Commelinaceae (06 species). Poaceae is found to be predominant taxon on the basis of their total number of genera (13 genera) followed by Cyperaceae (08 genera), Araceae

**Table 2.** List of number of Families, Genera and Species of Hydrophytic flora of Nagaon District of Assam

Sl. No.	Family	Genus	Species	Sl. No.	Family	Genus	Species
<b>Pteridophytes</b>				27	Nelumbonaceae	1	1
1	Marsileaceae	1	1	28	Nymphaeaceae	2	4
2	Pteridaceae	1	1	29	Onagraceae	1	4
3	Salviniaceae	2	2	30	Oxalidaceae	1	1
4	Thelypteridaceae	1	1	31	Phyllanthaceae	1	1
<b>Dicotyledons</b>				32	Phrymaceae	1	1
1	Acanthaceae	3	4	33	Plantaginaceae	4	9
2	Amaranthaceae	1	3	34	Polygonaceae	3	10
3	Apiaceae	2	2	35	Portulacaceae	1	1
4	Araliaceae	1	1	36	Ranunculaceae	1	2
5	Asteraceae	6	6	37	Rosaceae	2	2
6	Balsaminaceae	1	1	38	Rubiaceae	1	2
7	Boraginaceae	2	2	39	Saururaceae	1	1
8	Brassicaceae	1	1	40	Sphenocleaceae	1	1
9	Capparaceae	1	1	41	Trapaceae	1	2
10	Caryophyllaceae	2	2	42	Verbenaceae	2	2
11	Ceratophyllaceae	1	1	<b>Monocotyledons</b>			
12	Cleomaceae	1	2	1	Acoraceae	1	1
13	Convolvulaceae	2	3	2	Alismataceae	3	3
14	Fabaceae	2	3	3	Aponogetonaceae	1	1
15	Haloragaceae	1	2	4	Araceae	6	6
16	Hydroleaceae	1	1	5	Cannaceae	1	1
17	Lamiaceae	1	1	6	Commelinaceae	4	6
18	Lauraceae	1	1	7	Cyperaceae	8	20
19	Lecythidaceae	1	1	8	Hydrocharitaceae	6	8
20	Lentibulariaceae	1	2	9	Marantaceae	1	1
21	Linderniaceae	2	6	10	Poaceae	13	16
22	Lythraceae	1	1	11	Pontederiaceae	2	3
23	Malvaceae	1	1	12	Potamogetonaceae	1	3
24	Melastromataceae	1	1	13	Typhaceae	1	1
25	Menyanthaceae	1	2	14	Zingiberaceae	2	2
26	Moraceae	1	1				
<b>Total: Family: 60; Genus: 118; Species: 174</b>							

**Table 3.** Numerical distribution of species belonging to different growth-forms

Growth form	Number
Epihydate	20
Helophyte	95
Hyperhydate	43
Plankton	3
Pleustophyte	13
Rosulate	4
Tenagophyte	19
Vittate	16

(06 genera), Asteraceae (06 genera) and Hydrocharitaceae (06 genera). The numerical analysis of the total recorded species those belong to different growth forms are shown as in Table - 3. The species those show more than one growth forms are placed in more than one category. From the present investigation, it is found that the category halophyte represent as dominant growth form of aquatic and wetland vascular plants of Nagaon district, Assam followed by hyperhydrite and epiphyte. While the lowest number of species belong to the category plankton and rosulate respectively.

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