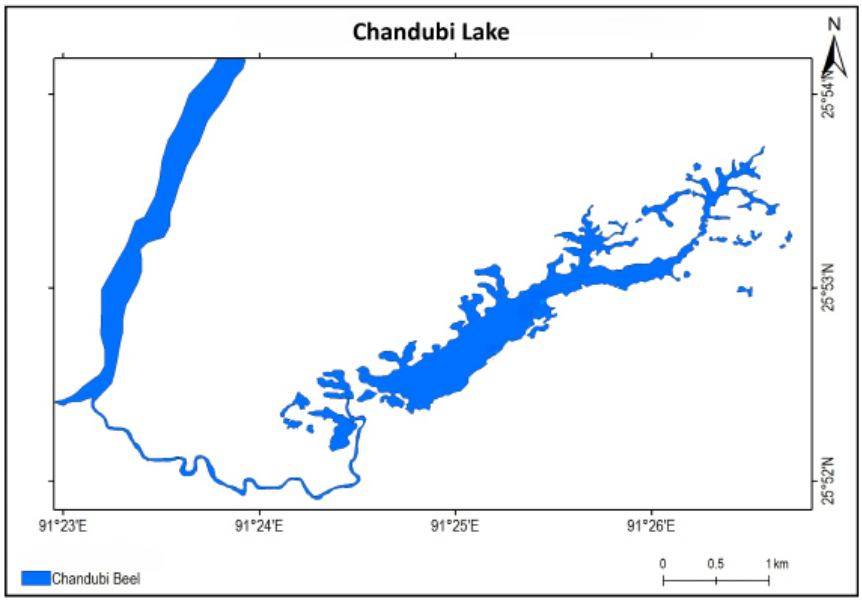
Documentation of macrophytes from limnetic zone of Chandubi Lake, Assam, India

Wetlands are recognized for their biodiversity and play an important role in terms of the economic, social, ecological wellbeing of the region (Abujam et al. 2014). Aquatic macrophytes are key components of aquatic and wetland ecosystems, through providing ecosystem goods and services. Macrophytes as primary producers, provide food to macroinvertebrates, fish, and birds, and organic carbon for bacteria, a substrate for periphyton, and a shelter for numerous invertebrates, fish, amphibians, and reptiles (Timms & Moss 1984; Dvořák 1996). Submerged macrophytes have major effects on productivity and biogeochemical cycles in freshwater because they occupy key interfaces in stream and lake ecosystems (Carpenter & Lodge 1986). The limnetic zone is generally classified as the open water area of the lake or pond (Holz 2022). Limnetic macrophytes have high removal potential organic contaminants from

Limnetic zone macrophytes from Chandubi Lake: a—*Salvinia cucullate* | b—*Nelumbo nucifera* | c—*Najas minor* | d—*Marsilea quadrifolia* | e—*Nymphaea pubescens* | f—*Hydrilla verticillate* | g—*Trapa natans* | h—*Cladophora* sp. © Aminur Rahman.



Chandubi Lake linked with Kulsi River (on left).

aquatic environments (Steward 1970; Wooten & Dodd 1976). During our study, the limnetic zone was considered beyond 80 m from the lake shore line. The macrophytes were documented from Chandubi Lake (25.8815 N, 91.4235 E) located in Kamrup District under Rajapara Beat Office of

Table 1. Macrophytes from limnetic zone of Chandubi lake.

	Species	Family	Habitat
1.	*Nymphaea pubescens*	Nymphaeaceae	Floating emergent
2.	*Nymphaea alba*	Nymphaeaceae	Floating emergent
3.	*Hydrilla verticillata*	Hydrocharilaceaee	Submerged
4.	*Trapa natans*	Lythraceae	Floating
5.	*Najas minor*	Hydrocharilaceaee	Submerged
6.	*Nelumbo nucifera*	Nymphaeaceae	Floating
7.	*Utricularia vulgaris*	Lentibulariaceae	Submerged
8.	*Saggitaria guayanensis*	Sagittariaceae	Submerged
9.	*Marsilea quadrifolia*	Marsileaceae	Submerged
10.	*Salvinia cucullata*	Salviniaceae	Floating
11.	*Cladophora* sp.	Cladophoraceae	Submerged

Assam Forest Department (Western Division-Loharghat Range) in the region of Assam-Meghalaya border.

The Chandubi Lake presents a great diversity of limnetic zone macrophytes within the lake. In our study, 11 species of limnetic macrophytes have been reported belonging to eight families,. of which three species belong to Nymphaeaceae family, two species belong to Hydrocharilaceaee and one species each belongs to Lythraceae, Lentibulariaceae, Sagittariaceae, Marsileaceae, Salviniaceae, and Cladophoraceae families. These limnetic macrophytes were reported beyond 80 m from the shore line where the average Secchi disk transparency of water is 113.42 ± 4.128 cm and have an average turbidity of 5.22 ± 0.331 NTU. The macrophytes from the limnetic zone determine the physicochemical parameters and are breeding grounds for fishes, especially for demersal egg fishes like *Chitala chitala*, *Botia* sp., etc.

These macrophytes play vital roles in supporting biodiversity, maintaining ecological balance, and sustaining the aquatic ecosystem.

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