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Aquatic Macrophytes Of Laokhowa Wildlife Sanctuary, Assam, India.

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ABSTRACT

The wetlands serve as the transitional habitats between aquatic and terrestrial ecosystems. Wetlands play a significant role in maintaining the diversity of life on earth. These wetlands thus offer suitable habitats for aquatic life forms. The wetlands not only play a major role in recharging the water regime but also act as shock absorber for the resuming flood and erosion. The wetlands of north eastern region of India is unique in terms of diversity of aquatic macrophytes. Laokhowa Wildlife sanctuary located in central Assam of Nagaon district harbours diverse form of aquatic macrophytes. Laokhowa Wildlife Sanctuary is intersected by a large number of water bodies locally known as Beel, duba, nala etc and thus created many submerged and swampy saturated areas throughout the sanctuary. During the rainy season almost all become full of water and the water decreases slowly as winter begins. These wetlands are habitats and are food source for many herbivores as well serves as the breeding grounds for various avifauna, fish fauna and other aquatic lives. Moreover these wetlands act as source of livelihood and bioresource for human population. Therefore, it is necessary for their better understanding and its proper management. A detail study of macrophytic diversity of the wetlands of Laokhowa Wildlife Sanctuary was conducted and recorded along with seasonal variation. Altogether 373 plants belonging to 258 genera and 93 families were recorded from the study site.

INTRODUCTION:

There are many internationally accepted definitions on wetlands of which International Union for Conservation of Nature and Natural Resources (IUCN) and International Biosphere Programme (IBP) are important and accepted more in Indian situation. With slight modification of IUCN definition, Assam Remote Sensing Application Center defined wetlands "All the submerged or water saturated lands, natural or manmade, inland or coastal, permanent or temporary, static or dynamic, vegetated or non-vegetated, which necessarily have a land-water interface". As such the *beel*, *jalah*, *doba*, *doloni*, *pitoni*, etc. in Assam could easily be put in wetland category, which are found in abundance in entire Brahmaputra and Cachar plains.

Wetlands are potentially rich in aquatic resources, which play a significant role in maintaining biodiversity. They offer habitats suitable for support growth of a variety of aquatic life forms. In the recent past, biotic pressures on these ecosystems have increased tremendously and it has been realized that many species of both plant and animals would be lost prior to their understanding in modern times. A systematic effort to study the flora of these fragile ecosystems and its proper assessment is, therefore, necessary for their better understanding and its proper management for the welfare of mankind. The documentation and proper assessment of aquatic biodiversity is dependent on respective areas and their habitat. It is more fruitful to conserve biodiversity in smaller areas, as it will provide the necessary information for formulating policies and programs for its effective management and conservation.

Macrophytes are an important component of an aquatic ecosystem and play a major role in primary productivity of the aquatic ecosystem. Wetlands are not only important life-support system for the flora and fauna alone but also act as sources of livelihood and bioresource to supplement their day-to-day life for human populations surrounding them. Literatures relating to aquatic and wetland flora have been carried out by several workers in various parts of the country (Biswas & Calder, 1937; Mirashi, 1954; Sen & Chatterjee, 1959; Maheswari, 1960; Subramanyam, 1962; Vyas 1964; Singh& Tomar 1982; Srivastava et al., 1987; Samant et al., 1988 and others). Although a considerable amount of on general floristics of Assam has been done by several workers (Kanjilal 1934-40; Rao&Rabha 1966), there are only a few contributions on aquatic and wetland flora of Assam as a whole (Pathak, Biswas & Boissya 1987; Baruah and Baruah 2000).

STYDY AREA AND LOCATION:

Laokhowa Wildlife Sanctuary is situated in the Nagaon district of Assam, India between the latitudes $26^0 30^/$N to $26^0 32^/$ N and longitude $92^0 40^/$ E to $92^0 47^/$ E in the flood plains of the river Brahmaputra. Laokhowa Wildlife Sanctuary (LWS) covers a geographical area of 70.1 sq. Km. About 20 per cent of the Sanctuary is occupied by aquatic or

swampy areas. The swampy and aquatic areas are located throughout the sanctuary.

MATERIALS AND METHODS:

The study area was explored thoroughly and detailed observation on the vegetation and flora was made. Macrophytes were collected and preserved according to the conventional herbarium techniques (Jain and Rao, 1976). Collected materials were identified with the help of standard literatures and confirmed in the Herbarium of Botanical Survey of India, Eastern circle, Shillong (Assam). The cause of degradation of the phytodiversity and their conservation strategies are also worked out.

RESULTS AND DISCUSSION:

The flora of the study area is mixed type with both aquatic and terrestrial macrophytes. Majority of the plants are aquatic herbs intermixed with terrestrial herbs shrubs and climbers in the study areas. Altogether, 373 species belonging to 258 genera and 93 families were collected. The aquatic macrophytes of Laokhowa Wildlife Sanctuary can be classified in to seven categories following Kaushik (1969, 1995) and Baruah and Baruah (2000) on the basis of their location in the water body. The macrophytes are categorizes as follows.

AQUATIC MACROPHYTES:

(1) **Free floating hydrophytes**: - The common plants of this category include Eichhornia crassipes, Pistia stratiotes, Lemna perpusilla, Trapa natans, Azolla pinata, Salvinia natans, Utricularia aurea, etc.
(2) **Free submerged hydrophytes**: - The common plants of this category include Ceratophyllum demersum.
(3) A**nchored submerged hydrophytes**: - The plants which are submerged but attached to the ground are under this category, which includes plants like Vallisneria spiralis, Hydrilla verticillata, Ottelia alismoides, Limnoplila indica, Potamogeton crispus etc.
(4) **Floating anchored hydrophytes**: - The rooting specimen which are floating by their upper parts constitute this category which includes plants like Nymphaea nauchali, Nymphoides hydrophyllum, Nelumbo nucifera, Ipomoea aquatica etc.
(5) **Emergent amphibious hydrophytes**: - The common plants of this category includes Monocharia hastata, Panicum paludosum, Leersia hexandra, Typha elephantine, Polygonum posumbu, Ipomoea aquatica, Jussiaea repens, Marsilia quadrifolia etc.
(6) **Wetland or swampy hydrophytes**: - The plants growing in marshy or wetlands areas and dominated by Cyperus brevifolius, C. digtatus, C. imbricatus, C. distans, C. iria, C. rotundus, C. kyllingia, Aeschynomene indica, Alpinia nigra, Alternanthera sessilis, Frimbristylis dichotoma, Phragmites karka, Polygonum hydropiper, Polygonum barbatum, Polygonum viscosum, Carex spiculata, Saccharum spontaneum, Cynodon dactylon, Arundo donax, Xanthium indicum, etc.
(7) **Woody species**: -Barringtonia acutangula, Lagerstroemia reginae etc.

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