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RESEARCH ARTICLE

DIVERSITY OF SMART WEED OF KOLONG RIVER, NAGAON DISTRICT, ASSAM, INDIA- A PRILIMINARY SURVEY

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ABSTRACT

The smart weeds or Knot weeds are one of the major aquatic and marshy land inhabitants belonging to the Family Polygonaceae are primarily found in damp and marshy places. The present study reveals the fact of occurrence of several (14 Nos.) such species along the course of river Kolong which is a major river of the district Nagaon, Assam, India. Though the Knot weeds are considered as weed, yet a number of economic utilization are also found as revealed from the study. Some of the weeds are rare and endangered due to the loss of habitats and extensive use (eg. *Polygonum microcephalum*).

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INTRODUCTION

The Nagaon district lies in the Middle Assam region, with a latitude of 25^0 47′N-$26^0$42′ N and longitude of $92^0$25′ E- $93^0$18′ E. The Nagaon district is blessed with several hills and hillocks and a number of rivers. The river Kolong, one of the major river of the district originates at Jakhalabandha, kolongmukg from mighty Brahmaputra river. Flowing through the distance the river Kolong makes a journey of 150 Km, before meeting Brahmaputra river once again. Throughout the course Kolong harbors a good number of aquatic and semi aquatic plants. During the period of 1960-1972, several major flood occurred in the district causing a serious threat to the district. A high level committee of the state and central government decided to block the mouth of the river. Since the time of blockage of the river mouth, Kolong become degraded and stagnant in major parts of the year. However, during the monsoon period rain fed water fills the river bed, as the river become flowing in nature. As a result, there is a major hydrological change and the upstream course of the river become degraded as almost dead. Human encroachment and other anthropogenic activities make the situation more grave. Inspite of all these threats, the river Kolong still harbors a good number of plants. The Smart weeds or Knot weeds, one of such marshy land inhabitants are found frequently along the river course.

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Several of them are often used by the local inhabitants as medicine or other purposes. Hence with a view to document these, the present study was undertaken. Although there are some sporadic floristic study of the area have been done by several workers like Khan et al., 2012; Bora and Goswami, 2015; khan and Hazarika, 2012), but no comprehensive work on floristic work of Kolong river have been made except about few particular aquatic plants. The specific works in this regard are almost nil though one or two such works have been done (Medhi, 2012). Again smart weeds or knotweeds belongs to the family Polygonaceae are found abundantly in some patches along the river concerned with diversified habitat and species. Several of them are used as food, medicine, ornamental or other purposes. Hence with a view to document such plant species belonging to 3 (three genera) namely *Polygonum, Persicaria* and *Rumex*, the present study has been made.

MATERIALS AND METHODS

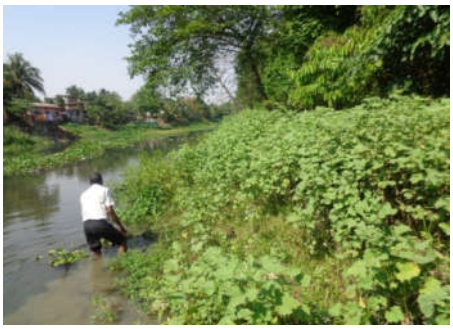
Season wise field survey and collection of specimen were carried out from five different study sites from December, 2015 to November, 2016. For the convenience of study and keeping in view of the monsoon infested climate of the area, following typical study sites and seasons were selected. The GPS data of the survey sites were also taken during the study. The photograph of the study sites are given in the photo plate 2 and 3.

Table 1. Seasonal data of different study sites

Sl No	Study site	GPS data	Pre Monsoon		Monsoon		Post Monsoon	
			Temp^{r}	Rainfall average	Temp^{r}	Rainfallaverage	Temp^{r}	Rainfallaverage
1	Jakhalabandha	26^{0}30′ 45.5″ N 92058′27.5″ E	30^{0}C	135mm	35^{0} c	388mm	20^{0}C	89 mm
2	Kaliabor	266^{0}35′24.5″ N 92^{0}56′34.2″ E	30^{0}C	135mm	35^{0}C	388mm	20^{0}C	89mm
3	Samaguri	26^{0}25′ 37.5″ N 92^{0}53″ 37.5″ E	30^{0}C	135mm	35.1^{0}C	388mm	20^{0}C	89mm
4	Nagaon	26^{0}20′9.4″ N 92^{0}40′ 2.8″E	30^{0}C	135mm	35.3^{0}C	388mm	20^{0}C	89mm
5	Raha	26^{0}13′22.8″ N 92^{0} 32′ 31″ E	30^{0}C	135 mm	35^{0}C	388mm	20^{0}C	89mm

Table 2. List of Knot weeds found in different seasons from different study sites ('+' species present, ' - ' species absent)

Sl.No.	Scientific Name	Family	Vern. Name (Assamese)	Pre monsoon	Post monsoon	Monsoon
1	*Persicaria barbata*	Polygonaceae	Bonghehu	+	+	-
2	*P.capitata*	Do	---	+	+	+
3	*P. glabra*	Do	---	+	+	+
4	*P. hydropiper*	Do	Bihlongoni	+	+	+
5	*P. orientalis*	Do	Borbehu	+	-	+
6	*P. perfoliata*	Do	Baghasur	-	+	+
7	*Polygonum chinense*	Do	-----	-	+	+
8	*p. aviculare*	Do	----	-	+	+
9	*P. lapathifolium*	Do	----	-	+	+
10	*P. microcephalum*	Do	Madhusuleng	+	+	+
11	*P. plebeium*	Do	Bonjaluk	+	+	+
12	*P. posumbu*	Do	Bhehu	+	+	+
13	*Rumex maritimus*	Do	Torboura	+	+	-
14	*R. nepalensis*	Do	Do	+	+	-



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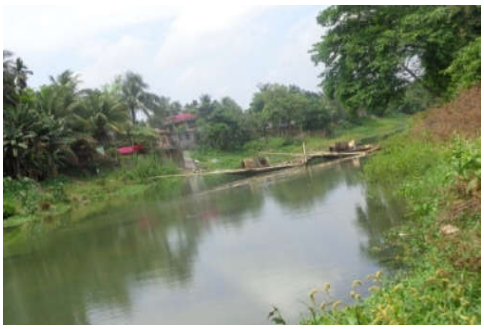
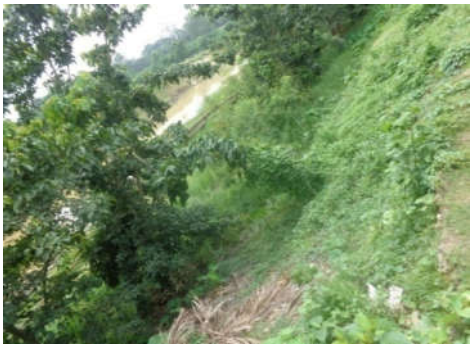


B

C



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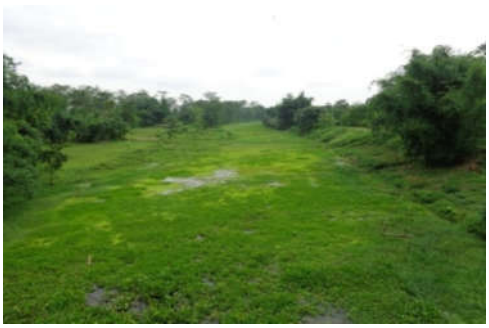

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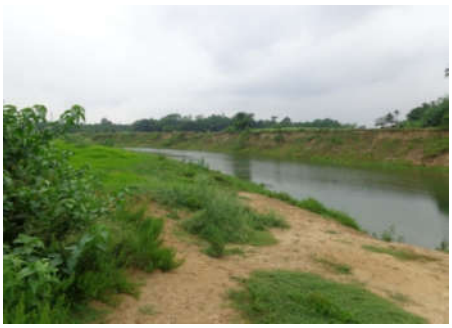
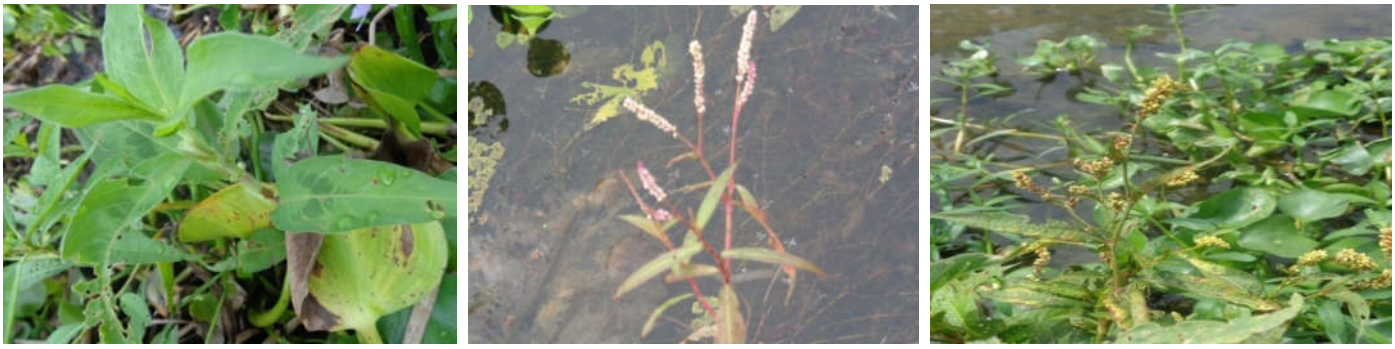


F

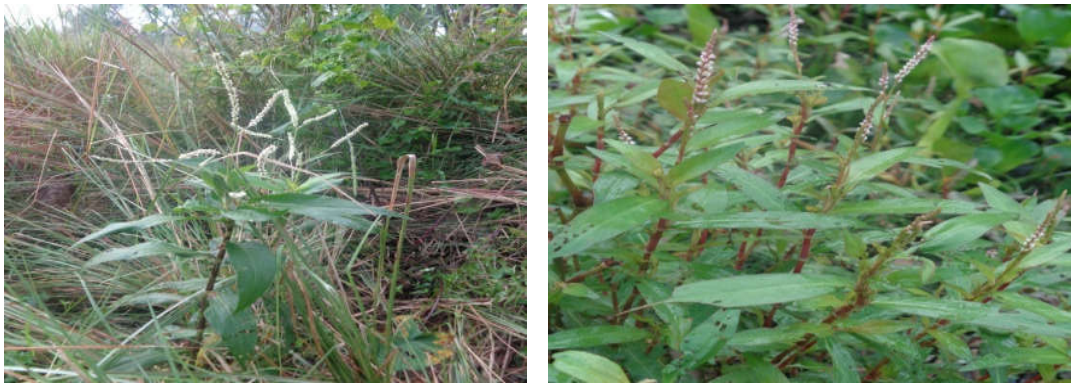
Photo plate : 1 View of Different Study sites
A. View at Nagaon B. View of the river at Bebejia
C. View Sensua, Nagaon D. River at Mulankata
E. View at Samaguri F. View at Manipurtup, Raha

A B C



D E F

Photo Plate 2. Habitats of some observed species
A. *Polygonum pleibium* , B. *Polygonum microcephalum*, C. *Persicaria barbata*
D. *Polygonum lapathifolium*, E . *Persicaria chinense*, F . *Persicaria hydropiper*



C D

E F

Photo plate : 3 Habitats of some observed species
C. *Persicaria glabra* D. *Persicaria hydropiper*
E. *Polygpnum lapathifolium* F. *Persicaria capitata*

The seasons so selected are

- Pre monsoon season (February to May)
- Monsoon season (June- September) and
- Post monsoon season (October – January)

The collected specimens were preserved and dried to prepare herbarium as per standard method (Rao and Verma, 1976). The herbarium specimen were identified with the available literature (Hazarika and Borthakur, 2012; Biswas and Calder, 1936; Chowdhury, 2005; Arber, 1920; Kanjilal et.al. , 1934-1940) and internet data (www.apps. kew.org; www. flk.edu) consultation with the herbaria of Gauhati University and Botanical Survey of India, Shillong. The seasonal data of different study sites are given in the Table 1 and the list of Knot weeds found in the study sites are enumerated in the Table 2.

RESULTS AND DISCUSSION

All the seasons under the study having distinct variations in temperature, humidity, rainfall etc. The pre-monsoon season is marked with dry & hot climate with scanty rainfall. The monsoon season is characterized by heavy to very heavy rainfall with high humidity (90- 95%) and high temperature (30- 37^0C). Likewise post monsoon season is marked by moist and dew condition, weather remain dry with almost nil rainfall (Table 1). The temperature also remain low (10^0-30^0C) (R.A.R.S, Shillongoni, Nagaon, Assam). From the present study it was found that different types of seasonal variation are observed in upstream and down course of the Kolong river. In the upstream course particularly in the river mouth area it remains dry due to unavailability of water in pre-monsoon and post-monsoon season. This causes the loss of natural riparian vegetation which is normally found in perennial rivers. However, there are few ditches and marshes where some aquatic vegetation is observed. But during monsoon and early post monsoon periods (June – October), the river receives rain water and remains partly filled up. This results in the formation of temporary seasonal vegetation In the upstream course; but towards down- stream course the river receives water from several tributaries and remain partly filled up throughout the year. As a result a permanent aquatic to weed vegetation is seen in the entire course. Therefore, a typical riparian vegetation is seen in this part of the river.

Conclusion

The increase in pressure on the vegetation leads to the reduction and extinction of some of the important plants which play a significant role on the socioeconomic texture of the society.

Inspite of great anthropogenic threats that poses a notable impact on the natural vegetation as well as habitats of the river there are still some patches like Koliabor, Raha etc. where a good number of floristic diversity is seen. Several species like *Polygonum microcephalum,* (food) *Polygonum pleibeum,* (ornamental) *Persicaria chinense,* (fish poison) *Rumex nepalensis,*(food) etc. are found to be used for various human needs.

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