



Ichthyofaunal diversity of two beels of Goalpara District, Assam, India

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In Assam, floodplain wetlands are known as beels. Beels are highly productive ecosystems that contribute to the fishery resources of the state, and their socio-economic, commercial and ecological values are well established. The present study is based on a collection of fish (2005-2007) from Sidli Beel and Seksekia Beel of Goalpara District of lower Assam (90°96'-91°05'E & 25°24'-26°54'N). This is the first survey of ichthyofaunal diversity in these beels, upon which the people of neighbouring villages depend for their livelihood.

The state of Assam has the distinction of possessing a large number of floodplain wetlands (Numbers = 3513, Area = 0.101 million ha) (ARSAC 1997), which account for nearly 50% of the total floodplain wetland area (0.205 million ha) in India. In terms of potential, the beels of Assam are capable of producing 50,000 tons of fish per year (Dutta & Lahon 1987). Dey (1981, 1984) studied the hydrobiology and productivity of some commercially important beels of Kamrup district of Assam. Lahon (1983) studied the limnology and fisheries of some commercial beels of Assam. Yadav (1987) and Yadav et al. (1981, 1986, 1987) studied the various fishing methods used in beels. Das & Bordoloi (1997) recorded fish fauna in different ecological zones in the Basistha River, Kamrup District, Assam which enrich the fish fauna of Deepar beel, Guwahati. Goswami et al. (1999) studied eutrophication stresses in some wetlands of Assam. Sen (2003) has summarised the threatened and endemic fishes of northeastern India. Bordoloi & Baishya (2006) recorded a fish *Puntius ornatus* from the beels in Hajo, Kamrup District, Assam that is a new record for the Brahmaputra drainage

Description of the study area

The fish fauna of different segments of the Brahmaputra

river varies depending upon the feeding tributaries. Sidli and Seksekia beels are situated on the south bank of the river. The two beels are connected by a channel, and Sidli Beel is connected to the river via Solmari channel. Before the great earthquake of 1950 the water level in these beels was maintained year round, but now the water level lowers during the winter season in the opinion of villagers, and connection with the Brahmaputra is maintained only during the monsoon. The Seksekia Beel has two parts; the southern part is known as Bigger Seksekia and the northern as Smaller Seksekia.

Morphometry of Sidli Beel

Maximum effective length	2.0km (approx.)
Maximum effective depth	1.5m
Maximum width	37.0m
Mean depth	1.4m

Morphometry of Bigger Seksekia Beel

Maximum effective length	0.5km (approx.)
Maximum effective depth	1.5m
Maximum width	38.0m
Mean depth	1.2m

Morphometry of Smaller Seksekia Beel

Maximum effective length	0.75km (approx.)
Maximum effective depth	1.0m
Maximum width	30.0m
Mean depth	0.8m

Materials and Methods

Diversity of fish fauna was monitored from 2005-2007 in Sidli and Seksekia beels. Recording was done at fortnightly intervals. Common fishes were recorded in the landing site, and a sample collection was made for certain species for further laboratory confirmation. Landing sites were monitored at weekly intervals for a period of two years, covering pre-monsoon, monsoon and post-monsoon seasons. For identification and classifications, Talwar & Jhingran (1991) and Jayaram (1999) were followed, while nomenclature was based on Fishbase (2007). Important publications on fishes of the northeastern region of India by Sarkar & Ponniah (2000) and Sen (2003) were referred to. Specimens were preserved in 6% formaldehyde solution.

Results and Discussions

Table 1 presents a list of all the fish recorded from Sidli and Seksekia beels. Scientific name, local name and conservation status as per Freshwater Fish CAMP of India (Molur & Walker 1998) are compiled. Altogether, 59 species belonging to 40 genera, 19 families and eight orders have been recorded to date. A total of 17 riverine fishes were recorded, the rest are commonly found in lentic habitats. Fish from lotic habitats were: *Gudusia chapra*, *Salmophasia bacaila*, *Barilius bendelisis*, *Cirrhinus reba*, *Catla catla*, *Labeo calbasu*, *Labeo bata*, *Labeo gonius*, *Labeo rohita*, *Wallago attu*, *Ompok pabda*, *Ailia coila*, *Clupisoma garua*, *Clupisoma montana*, *Semileptus gongota*, *Acanthocobitis botia* and *Labeo bata*. Some of these fish find entry into the beels during floods, when Indian major carp also enter from neighboring water bodies and culture ponds. As per Molur

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Table 1. List of fishes followed by local names, distribution in northeastern states and national threat categories as per IUCN (Molur & Walker 1998)

<p>Order: Osteoglossiformes Family: Notopteridae 1 <i>Notopterus notopterus</i> (Pallas,1769), Kanduli, Am, Ap, Mg, Mn, Tr (LRnt) 2 <i>Chitala chitala</i> (Hamilton, 1822), Chital, Am, Mg, Mn, Tr (EN)</p> <p>Order: Clupeiformes Family: Clupeidae 3 <i>Gudusia chapra</i> (Hamilton,1822), Karati, Am, Mg, Mn, (LRlc)</p> <p>Order: Cypriniformes Family: Cyprinidae 4 <i>Salmophasia bacaila</i>* (Hamilton,1822), Chelakani, Am, Ap, Mg, Mn, Tr(LRlc) 5 <i>Salmophasia phulo</i>* (Hamilton,1822), Chelakani, Am, Ap, Mg, Mn (NE) 6 <i>Bariilus bendelisis</i> (Hamilton,1822), Bariola, Am, Ap, Mg, NI, Mn, Mi, Tr (NE) 7 <i>Chela laubuca</i> (Hamilton,1822),Darikona , Am, Ap, Mg, Mn, Tr (LRnt) 8 <i>Esomus danricus</i> (Hamilton,1822), Dorikona, Am, Ap, Mg, NI, Mn, Tr (LRlc) 9 <i>Danio rerio</i> (Hamilton,1822), Lauputi, Am, Ap, NI, Mi, Tr (LRnt) 10 <i>Rasbora daniconius</i> (Hamilton,1822), Shalynnai, Am, Ap, Mg, Mn, Tr (NE) 11 <i>Amblypharyngodon mola</i> (Hamilton,1822), Moah, Am, Ap, Mg, Mn, Tr (NE) 12 <i>Puntius chola</i> (Hamilton,1822), Puthi, Am, Ap, Mg, Mn, Tr (VU) 13 <i>Puntius sarana</i> (Hamilton,1822), Cheniputhi, Am, Ap, Mg, Mn, Tr (VU) 14 <i>Puntius conchonius</i> (Hamilton,1822), Puthi, Am, Ap, Mg, Mn, Tr (VU) 15 <i>Puntius sophore</i> (Hamilton,1822), Puthi, Am, Ap, Mg, Mn, Mi, Tr (LRnt) 16 <i>Puntius terio</i> (Hamilton,1822), Puthi, Am, Mg, Mn, Mi, Tr (LRnt) 17 <i>P. ticto</i> (Hamilton,1822), Puthi, Am, Ap, Mg, NI, Mn, Mi, Tr (LRnt) 18 <i>Cirrhinus reba</i> (Hamilton,1822), Lachim, Am, Ap, Mg, Mn, Mi, Tr (VU) 19 <i>Catla catla</i> (Hamilton,1822), Bhakua, Am, Mn, Tr (VU) 20 <i>Labeo bata</i> (Hamilton,1822),Bata Am, Ap, Mg, Tr (LRnt) 21 <i>Labeo calbasu</i> (Hamilton,1822), Kalijajora Am, Ap, Mg, Mn, Mi, Tr (LRnt) 22 <i>Labeo gonius</i> (Hamilton,1822), Kurhi Am, Ap, Mg, Tr (LRnt) 23 <i>Labeo rohita</i> (Hamilton,1822), Rau, Am, Ap, Mg, Tr (LRnt)</p> <p>Family: Balitoridae 24 <i>Acanthocobitis botia</i> (Hamilton,1822), Botia, Am, Ap, Mg, Tr (EN)</p> <p>Family: Cobitidae 25 <i>Semileptus gongota</i> (Hamilton,1822) Ganga, Am, Ap, Mg, Tr (LRnt) 26 <i>Lepidocephalichthys guntea</i> (Hamilton,1822), Botia, Am, Ap, Mg, NI, Mn, Mi, Tr (NE) 27 <i>Lepidocephalichthys menoni</i> (Pillai & Yazdani, 1976), Botia Am (VU) 28 <i>Lepidocephalichthys goalparensis</i> (Pillai & Yazdani, 1976), Botia, Am (CR)</p> <p>Order: Siluriformes Family: Bagridae 29 <i>Batasio tengana</i> (Hamilton,1822), Batasimas, Am, Ap (NE) 30 <i>Hemibagrus menoda</i> (Hamilton,1822), Gagol, Am (NE) 31 <i>Mystus bleekeri</i> (Day,1822), Singorah, Am, Ap, Mg, NI, Mn, Tr (VU) 32 <i>Mystus cavasius</i> (Hamilton,1822), Golsa, Am, Ap, Mg, Mi, Tr (LRnt) 33 <i>Mystus tengara</i> (Hamilton,1822), Tingara, Am (NE) 34 <i>Mystus vittatus</i> (Bloch,1794), Tengra, Am, Ap, Mg, Tr (VU)</p> <p>Family: Siluridae 35 <i>Ompok bimaculatus</i> (Bloch,1794), Bami Am, Ap, Mg, NI, Mn, Tr (EN) 36 <i>O pabda</i> (Hamilton,1822), Pabho, Am, Ap, Mg, Mn, Tr (EN) 37 <i>Wallago attu</i> (Bloch & Schneider,1794), Borali, Am, Ap, Mg, Tr (LRnt)</p> <p>Family: Schilbeidae 38 <i>Ailia coilia</i> (Hamilton,1822), Duikata, Am, Ap, Mg, Tr (VU) 39 <i>Neotropius atherinoides</i> (Bloch,1794), Bordaia, Am, Ap, Mg, NI, Mn, Mi, Tr (EN) 40 <i>Clupisoma garua</i> (Hamilton,1822), Naria, Am, Ap, Mg, Mn, Mi, Tr (VU) 41 <i>Clupisoma montana</i> (Hora,1937), Nagra-bocha Am, Tr (NE) 42 <i>Eutropiichthys vacha</i> (Hamilton,1822), Bacha, Am, Ap, Mg, NI, Mn, Mi, Tr (EN)</p> <p>Family: Claridae 43 <i>Clarias batrachus</i> (Linnaeus,1754), Magur, Am, Ap, Mg, NI, Mn, Mi, Tr (VU) 44 <i>Heteropneustes fossilis</i> (Bloch,1794), Singhi, Am, Ap, Mg, NI, Mn, Mi, Tr (VU)</p> <p>Order: Beloniformes Family: Belontiidae 45 <i>Xenentodon cancila</i> (Hamilton,1822), Kokila, Am, Ap, Mg, NI, Mn, Mi, Tr (LRnt)</p>	<p>Order: Synbranchiformes Family: Synbranchidae 46 <i>Monopterusuchia</i> (Hamilton,1822) Kuchia, Am, Ap, Mg, NI, Mn, Tr (LRnt)</p> <p>Family: Mastacembelidae 47 <i>Mastacembelus armatus</i> (Lacepede,1800), Ghutum, Am, Ap, Mg, NI, Mn, Mi, Tr (NE)</p> <p>Order: Perciformes Family: Chandidae 48. <i>Chanda nama</i> (Hamilton,1822), Chanda, Am, Ap, Mg, Mn, Tr (NE) 49 <i>Parambassis ranga</i> (Hamilton,1822), Ranga, Am, Ap, Mg, Mn, Mi, Tr (NE)</p> <p>Family: Nandidae 50 <i>Badis badis</i> (Hamilton,1822), Bharirtala, Am, Ap, Mg, NI, Mn, Mi, Tr (NE) 51 <i>Nandus nandus</i> (Hamilton,1822), Bhada, Am, Ap, Mg, Mn, Tr (LRnt)</p> <p>Family: Gobiidae 52 <i>Glossogobius giuris</i> (Hamilton,1822), Balia, Am, Ap, Mg, Mn, Mi, Tr (LRnt)</p> <p>Family: Anabantidae 53 <i>Anabas testudineus</i> (Bloch,1792), Koi, Am, Ap, Mg, Mn, Tr (VU)</p> <p>Family: Belontiidae 54 <i>Colisa fasciatus</i> (Bloch & Schneider,1801), Kholisa, Am, Ap, Mg, Mn, Tr (LRnt) 55 <i>C lalia</i>(Hamilton,1822) Kholisa, Am, NI, Mn, (NE)</p> <p>Family: Channidae 56 <i>Channa marulius</i> (Hamilton,1822), Sal, Am, Ap, Mg, Tr (LRnt) 57 <i>Channa punctatus</i> (Bloch,1793), Goroi, Am, Ap, Mg, NI, Mn, Tr (LRnt) 58 <i>Channa striatus</i> (Bloch,1793), Shol, Am, Ap, Mg, NI, Mn, Tr (LRlc)</p> <p>Order: Tetraodontiformes Family: Tetraodontidae 59 <i>Tetraodon cutcutia</i> (Hamilton,1822), Gangatope, Am, Ap, Mg, Mn, Tr (LRnt)</p>
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Am - Assam; Ap - Arunachal Pradesh; Mg - Meghalaya; NI - Nagaland; Mn - Manipur; Mi - Mizoram; Tr - Tripura; NE - Not Evaluated; LRnt - Lower Risk near threatened; LRlc - Lower Risk least concern; VU - Vulnerable; EN - Endangered; CR - Critically endangered.

& Walker (1998), 13 species are Vulnerable, 5 Endangered and 1 Critically Endangered nationally. Eleven species are not evaluated in the CAMP workshop (Molur & Walker 1998) have been recorded. Fishing goes on throughout the year in these beels. In the surrounding area paddy fields are present. Runoff water from these fields finds entry into these beels.

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