

# Abundance of Prawn Species around Ayeyarwady River Sector Magway Environ, Myanmar

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**Abstract:-** Abundance of freshwater prawns along Ayeyarwady River sector in Magway Region was conducted during the study period from November 2015 to February 2016. A total of nine species of prawns belonging to one genus *Macrobrachium* of family Palaemonidae under Order Decapoda was recorded in this study. The maximum number of individuals was recorded for the species *M. inquirendae* (6032 individuals, 36%). The second highest number of individuals was *M. tenuipes* (4066 individuals, 24%) and the least number of individuals was for the species *M. lanchesteri* (113 individuals, 1%). The highest number of prawn species 6 species, 7094 individuals (42%) in Magway, 9 species, 2707 individuals (16%) in Tha-phan-seik, 9 species, 7067 individuals (42%) in Min-Bu were observed.

**Keywords:-** Abundance, *Macrobrachium*, Ayeyarwady River, Prawn.

## I. INTRODUCTION

Prawns belong to phylum Arthropoda of class crustacea under order Decapoda, Prawns, shrimps and lobsters constitute higher groups of Crustaceans. Penacids include the widespread tropical and subtropical prawns of the genera *Fenneropenacus*, *Penaeus* and *Metapenaeus*. At least 19 species from seven genera occur in the western Indian Ocean region [4]. A total of 655 freshwater species (Just over a quarter of all described carideans) are presently known. Amongst the freshwater families, the two most specious are the near exclusively freshwater. Atyidae and the palaemonidae (subfamily palecmoningae), which also have brackish water and marine representatives. Freshwater shrimps occur in a vast range of habitats, from torrential mountain streams down to sluggish, oil- gohaline waters. Freshwater stygobiont taxa are well represented, with many more taxa occasionally found in subterraneous habitats. [5] Atyidae are characterized by unique feeding chelipeds, with the complex brushes on the first and second pereopods filtering out suspended matter or sweeping up microbial films [1]

Members of the palaemonidae exhibit a wide variety in habitus, from the unspecialized habitus of Palaemonetes species through to the males of *Macrobrachium*, which have unusually enlarged second chelae, used in agonistic interactions and predation. [4]

The order- Decapoda comprises of commercially important species of prawns/ shrimps, crabs and lobsters. This order comprises of about 1100 genera with about 8321 species, but the figure has been increasing year by year. The Prawns/ shrimp include about 33 genera with about 2,500 species of which less than 300 species are of economic interest throughout the world. Among the decapods, crustaceans penacids constitute a distinct group of commercially important species. Due to their nutritional value, they support a very valuable, trade export market [4].

The present research tends to record the species richness and abundance of freshwater prawns from Magway division. Therefore, the present study is conducted with the following objectives.

- To classify the freshwater prawns from Magway environs.
- To record the species composition of prawns in the study area
- To assess the abundance of freshwater prawns in Magway environ

## II. MATERIALS AND METHODS

Ayeyarwady River sector, Magway Region was chosen as study area. Three study sites were further chosen along study area. Magway ( Lat. 20°8' 56.01" N, Long. 94° 55' 55.56" E) and Tha Phan Seik ( Lat. 20°13' 23.90" N, Long. 94°54'45.43 E) are included in Magway Township and Minbu (Lat. 20°10' 47.11" N, 94°52'12.44" E) in Minbu Township. (Fig. 1) The study period lasted from November 2015 to February 2016. Fish collection was carried out monthly from local fishermen using different fishing gears. Individual number of each species record was counted and photographic records were taken. Then, fishes were preserved in 5% formalin for further identification. Identification keys and other morphological characteristics were used according to Holthuis (1950) and Holthuis (1980).

### III. RESULTS

#### A. Species Composition

A total of nine species of genus *Macrobrachium* of family Palaemonidae under order Decapoda of class Crustacea was recorded. The recorded prawn species include *Macrobrachium malcolmsonii*, *M. lanceifrons*, *M. scabriculum*, *M. latimanus*, *M. tenuipes*, *M. villosimanus*, *M. inquirendae*, *M. equidens* and *M. lanchesteri*. (Table 1)

#### B. Abundance of Prawns Species in the Study Area

A total of nine species belonging to genus *Macrobrachium* was recorded during the study period. These species are *M. malcolmsonii*, *M. lanceifrons*, *M. scabriculum*, *M. latimanus*, *M. tenuipes*, *M. villosimanus*, *M. inquirendae*, *M. equidens*, *M. lanchesteri*. The maximum number of individuals was recorded for the species *M. inquirendae* (6032 individuals, 36%). The second highest number of individuals was recorded for the species *M. tenuipes* (4066 individuals, 24%) and the least number of individuals was recorded for the species *M. lanchesteri* (113 individuals, 1%). (Table 1 and 2)(Fig 1 and 2)

Sr No	Family	Scientific name	Common name	Local name
1	Palaemonidae	<i>Macrobrachium malcolmsonii</i>	Monson river prawn	Pazun-htoke-let-ma-kar , Myit-pazun
2		<i>M. Lanceifrons</i>	Philippine river prawn	Kyauk-pazun, Pazun let-shae
3		<i>M. scabriculum</i>	Goda river prawn	Kyauk-pazun, Pazun-let shae
4		<i>M. latimanus</i>	-	Pazun-seik kyar
5		<i>M. tenuipes</i>	Spider prawn	Pazun-sutt-htoke-kalay, Pazun phyu
6		<i>M. villosimanus</i>	Dimua river prawn	Pazun-sutt-htoke-kalay, Pazun phyu
7		<i>M. inquirendae</i>	-	Pazun-seik
8		<i>M. equidens</i>	Rough river prawn	Gaung-sein, Bu-sein
9		<i>M. lanchesteri</i>	-	Pazun-seik

Table 1:- Species Composition of Freshwater Prawns from Ayeyarwady River in Magway Regions

Sr No	Species	Number of individuals	Percentage
1	<i>Macrobrachium.malcolmsonii</i>	719	4%
2	<i>M. lanceifrons</i>	894	5%
3	<i>M. scabriculum</i>	911	5%
4	<i>M. latimanus</i>	635	4%
5	<i>M. tenuipes</i>	4066	24%
6	<i>M. villosimanus</i>	2568	15%
7	<i>M. inquirendae</i>	6032	36%
8	<i>M. equidens</i>	930	6%
9	<i>M. lanchesteri</i>	113	1%
Total		16868	100%

Table 2:- Abundance of Freshwater Prawns along Ayeyarwady River Secto in Magway Region

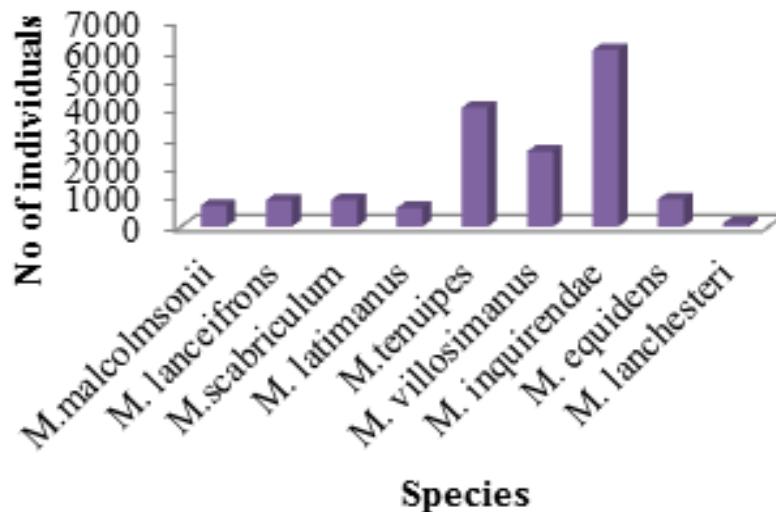


Fig 1:- Abundance of Freshwater Prawn Species along Ayeyarwady River Sector in Magway Region

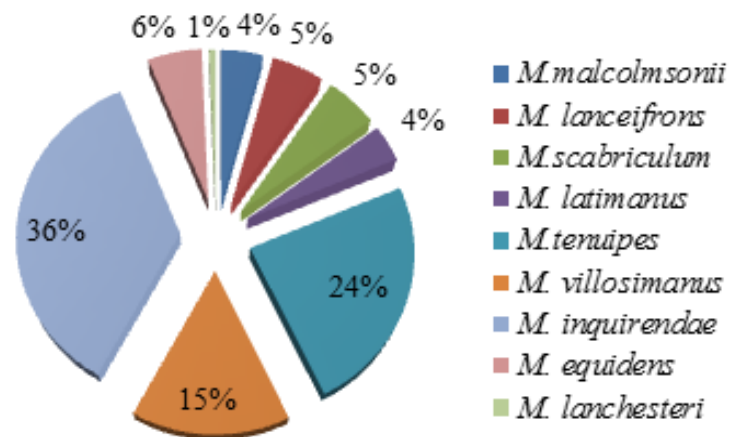


Fig 2:- Abundance of Freshwater Prawns by Percent along Ayeyarwady River Sector in Magway Region

**C. Abundance of Prawn Species among Study Sites**

The highest individuals of prawn species 7094 individuals in Magway, 2707 individuals in Tha-phan-seik and 97067 individuals in Min-Bu were observed. Table (3)

➤ **Magway**

A total of six species belonging to genus *Macrobrachium* was recorded during the study period. The maximum number of individuals was recorded for the species *M. inquirendae* (3424 individuals, 48%). The second highest number of individuals was *M. tenuipes* (2293 individuals, 32%) and the least number of individuals was for the species *M. lanchesteri* (30 individuals, 0.4 %). (Table 3, Fig 3)

➤ **Tha-Phan Seik**

A total of nine species belonging to genus *Macrobrachium* was recorded during the study period. The maximum number of individuals was recorded for the species *M. inquirendae* (955 individuals, 35%). The second highest number of individuals was *M. villosimanus* (509 individuals, 19%) and the least number of individuals

was for the species *M. lanchesteri* (38 individuals, 1%). (Table 3, Fig 3)

➤ **Minbu**

A total of nine species belonging to genus *Macrobrachium* was recorded during the study period the maximum number of individuals was recorded for the species *M. inquirendae* (1653 individuals, 23%). The second highest number of individuals was *M. tenuipes* (1331 individuals, 19%) and the least number of individuals was for the species *M. lanchesteri* (45 individuals, 1%). (Table 3, Fig 3)

Species	Magway	Tha phan Seik	Minbu	Total
<i>Macrobrachium malcolmsonii</i>	184	196	339	719
<i>M. Lanceifrons</i>	–	110	784	894
<i>M.scabriculum</i>	–	143	768	911
<i>M. latimanus</i>	–	117	518	635
<i>M.tenuipes</i>	2293	442	1331	4066
<i>M.villosimanus</i>	816	509	1243	2568
<i>M. inquirendae</i>	3424	955	1653	6032
<i>M. equidens</i>	347	197	386	930
<i>M. lanchesteri</i>	30	38	45	113
Total	7094	2707	7067	16868

Table 3:- Abundance of Prawn Species among Study Sites

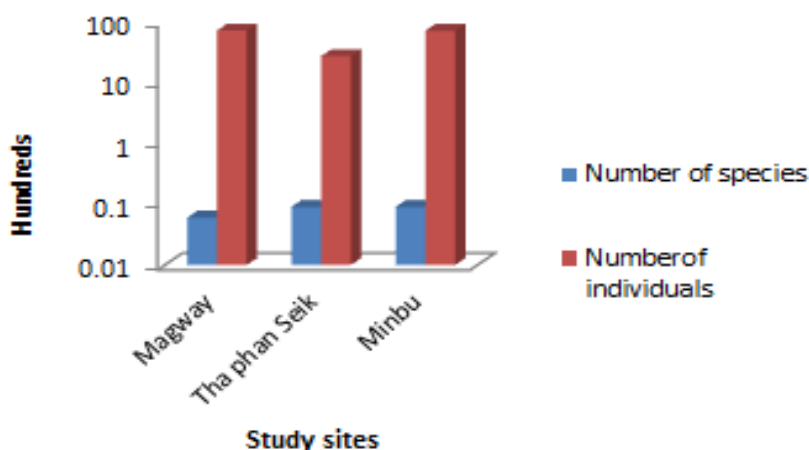


Fig 3:- Abundance of Freshwater Prawns among Study Sites

**IV. DISCUSSION**

Occurrence, monthly abundance and diversity of prawn species were conducted in three different study sites along Ayeyarwady River sector, Magway Region. Ayeyarwady river is one of the most important rivers in Myanmar and its various environmental conditions support good natural habitat for prawns. Magway, Tha Phan Seik and Minbu were designated as study sites along Ayeyarwady River sector, Magway Region.during the study period November 2015 to February 2016.

In the present study, a total of nine species of genus *Macrobrachium* of family Palaemonidae under order Decapoda of class Crustacea was recorded. The recorded prawn species include *Macrobrachium malcolmsonii*, *M. lanceifrons*, *M.scabriculum*, *M. latimanus*, *M.tenuipes*, *M. villosimanus*, *M. inquirendae*, *M. equidens* and *M. lanchesteri*.

A taxonomic study of some prawns and shrimps has been made on Kan Thar Zay, Mingalar Zay, Myo Ma Zay Gyi , Nya Nya Zay and Yan Kinn Zay of Magway Area.

The collection of specimens were made during the studied period from December, 2003 to February, 2004. A total number of 11 species belonging to two genera, two families and one order were recorded. [7]

This may be due to the fact that the present study focused on prawn species which are the inhabitants of the Ayeyarwady river sector, Magway Region and not from the species exported from other regions of Myanmar.

The maximum number of individuals was recorded for the species *M. inquirendae* (6032 individuals, 36%). The second highest number of individuals was *M.tenuipes* (4066 individuals, 24%) and the least number of individuals was for the species *M.lanchesteri* (113 individuals, 1%).

In the present study, nine species belonging to genus *Macrobrachium* could be recorded. It may be assumed that the member of genus *Macrobrachium* is abundant in natural environment .

*Macrobrachium* Bates, 1868 is represented by species inhabiting tropical and subtropical aquatic environments around the world [3]

A total of 14 species under three genera namely, *Macrobrachium*, *Palaemon* (*Exopalaemon*) and *Leptocarpus* was recorded. [6]. She studied the morphological character of some freshwater Prawns from Magway Division. Abundance of prawn species have not been observed in Magway Region. The present research is the first attempt to fulfill partially the needs of ecological study.

Among the three study sites, the highest number of individuals and percent (7094 individuals and 42%) was recorded in Magway.

## V. CONCLUSION

Abundance of freshwater prawn was conducted along Ayeyarwady Sector, Magway Region during the study period from November 2015 to February 2016. Three study sites such as Magway, Tha-Phan-Seik and Minbu were chosen along Ayeyarwady River sector, Magway Region

A total of nine species, belonging to one order, one family and one genus was recorded. Among the three study sites, the highest number of individuals and percent (7094 individuals and 42%) was recorded in Magway. Only taxonomic study of prawn species were observed in the study area. This study is the first attempt to find out the abundance of the freshwater prawns and the findings would be very useful for the further researchers and local people to have awareness of conservation of the prawn species for the sustainable aquatic ecosystem.

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