JURNAL PENELITIAN SAINS
Journal Home Page: http://ejurnal.mipa.unsri.ac.id/index.php/jps/index

# Udang sarap (*Caridina sp*) abundance in Tanjung Putus, Indralaya, South Sumatra

HANIFA MARISA
Biology Department, Faculty of Mathematic and Natural Science, Sriwijaya University, km 32, Indralaya, South Sumatra, Indonesia 30662

**Kata kunci:**
sarap shrimp,
snakehead fish,
vegetation,
embung outlet

**ABSTRAK:** Penelitian tentang kelimpahan udang sarap, Caridina sp, di perairan pinggir sungai Kelekar, Indralaya, telah dilakukan pada akhir Februari 2023. Tiga titik lokasi sampling dipilih, yakni 200 m di hulu jembatan tanjung Senai, 100 m arah hulu, dan persis di bawah jembatan. Sampling dilakukan dengan menggunakan saringan santan kelapa berdiameter 20 cm, dilengkapi tankai 1 m dan pengambilan diulang 10 kali di setiap titik., dimana tersaring air 15 liter. Pencatatan dilakukan terhadap rata-rata jumlah udang tertangkap, jenis tumbuhan di habitat sampling, dan kondisi umum perariran. Didapatkan hasil perhitungan jumlah rata-rata udang sarap di titik 200 m hulu jembatan, 2,6 individu/liter; dengan kondisi perairan pinggir tenang, dan habitat tumbuhannya *Salvinia sp*, *Utricularia sp*, dan *Leer sea sp*. Pada jarak 100 m dari jembatan, ditemukan jenis tumbuhan yang sama, namun tak satupun didapatkan udang sarap, kecuali didapatkan seekor anak ikan gabus yang masih merah, dengan kondisi air berarus, pertemuan antara outlet embung Unsri dengan sungai Kelekar. Pada titik lokasi bawah jembatan, tercatat 10 individu/liter udang sarap, dengan jenis vegetasi serupa, dan kondisi perairan tenang. Disimpulkan bahwa perairan pinggiran sungai, yang ditutupi vegetasi adalah habitat yang cocok untuk kehidupan udang sarap, kecuali pada kondisi arus deras pertemuan aliran, dan keberadaan predator ikan gabus.

**Keywords:**
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**ABSTRACT:** Investigations have been carried out on the abundance of sarap shrimp, *Caridina sp* in the waters along the Kelekar river, Indralaya at the end of February 2023. Three sampling locations were chosen, namely 200 m north of the Tanjung Senai bridge, 100 m north of the bridge (the mouth of the Unsri reservoir outlet) and just under the Tanjung Senai bridge . Sampling was carried out using fishing gear made from coconut milk filter with a diameter of 20 cm with a 1 m stem and each location was repeated 10 times, with filtered water volume is 15 liters. Recording was carried out on the average of prawns caught, habitat vegetation species and general water conditions. The result was that upstream, 200 m from the bridge, 2.6 individuals/liter were found with calm water conditions and vegetation of *Salvinia sp, Utricularia sp,* and *Leersea sp*. At a distance of 100 m upstream, the vegetation was the same, but no shrimp were caught, except for one the little snakehead fish was still red. The water here is the confluence of the embung outlet and the Kelekar river. The location is under the bridge, the edge of the water is calm, the vegetation is the same but 10 individuals/liter were found. It was concluded that the riverside waters are calm and overgrown with aquatic vegetation, suitable for *Caridina sp* to live except at the confluence of rivers and outlets where there is more current and there are predators such as snakehead fish.

## 1 INTRODUCTION

Tropical wetland ecosystem is one of the most important bioecozone in the world that includes various types of waters such as swamps, rivers and mangroves which are widespread in tropical regions throughout the world. The biological diversity and unique ecological role of tropical wetlands have made tropical wetland ecosystems a very important natural resource [8]. Tropical wetlands have an important ecological role in maintaining the balance of the global ecosystem. They serve as important habitats for a large number of plant and animal species unique to these ecosystems [2]. Wetlands also play a role in mitigating climate change by absorbing carbon dioxide and trapping it in their soil [5]. The significant impact of tropical wetlands also affects human life. Local communities, especially residents of

*** Corresponding Author:** email: gmdiqhan2002@yahoo.com

https://doi.org/10.56064/jps.v26i1.933
Naskah diusulkan: 18 Januari 2024; Naskah disetujui: 28 April 2024
p-ISSN: 1410-7058 e-ISSN: 2597-7059 

South Sumatra, often depend on wetlands for water and fuel. However, tropical wetlands are also vulnerable to degradation caused by human activities such as deforestation, land use changes, and water pollution. The ecological function of wetlands itself cannot of course be separated from the role of the animals and plants that live there. in that ecosystem. Especially plants located around wetlands have many roles in balancing the performance of wetland ecosystems [11]. The structure and composition of plant vegetation is influenced by several other ecosystem components that interact with each other, so that vegetation that grows naturally can be said to be the result of the interaction of various environmental factors. Vegetation structure itself is said to be an organization of individuals in space that form a stand, while forest composition is the constituent species that occupy the vegetation in a place.

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## 2 METHODOLOGY

Direct sampling to the field method has been done for this investigation, where the data analyzed simply to gain mean number of target animals object. No treatments in this study, just descriptive ecology on three different sampling location. Sampling was carried out at the end of February 2023. Three sampling locations were chosen, namely 200 meters north of the Tanjung Senai bridge, 100 m north of the bridge (the mouth of the Unsri embung outlet) and just under the Tanjung Senai bridge. Sampling was carried out using fishing gear made from satan filters with a diameter of 20 cm with a 1 meter rod and each location was repeated 10 times, with a filtered water volume of 15 liters.


Figure 1. Research location map. (1. 200 m from the bridge, 2. 100 m from the bridge, outlet Unsri pond, and 3. Under the bridge)

## 3 RESULTS AND DISCUSSION

Based on the results of research carried out on the Kelekar River, the following results were obtained

Table 1. Vegetation species and mean number of *Caridina sp*. catched

| Sampling location | Vegetation | Number of individu per liter |
|---|---|---|
| 200 m upward bridge | *Salvinia sp, Utricularia sp, Leersea sp* | 0.26 |
| 100 m upward bridge | *Salvinia sp, Utricularia sp, Leersea sp* | 0.0 |
| Under the bridge | *Salvinia sp, Utricularia sp, Leersea sp* | 10.0 |

Documentation on sarap shrimp, be showed below


Figure 2. *Caridina sp*. commonly length and colour.

Sampling was taken at a location located 200 meters from the bridge, marked by the presence of vegetation *Salvinia sp*., *Utricularia sp*. and *Leersia sp*., populations of *Caridina sp*. which was found to be around 0.26 individuals per liter of water. Shrimp can be found in large numbers in river ecosystems, especially in leaf pile habitats. According to [4] species *Caridina sp*. can be found in large numbers on river banks, especially in areas submerged by aquatic plants, with a substrate composition consisting mainly of coarse sand. The water conditions at the sampling point located 200 meters from the bridge characterize a calm water environment with a slow flowing river. Calm water tends to be a suitable habitat for *Caridina sp* shrimp. This can be explained by the morphological structure of the body of freshwater shrimp, which includes long and slender walking legs (periopods). According to [12], freshwater shrimp have a long and slender walking leg structure (periopod), so they are very suitable for living in rivers where the flow speed is slow. After making observations at a distance of 100 meters from the bridge, it was found that the type of vegetation at that point was identical to the vegetation at a distance of 200 meters from the bridge. However, there was no presence of *Caridina sp* shrimp. at the location of the sampling point. It is suspected that the cause of the absence of *Caridina sp*. at this point it can be connected to the presence of predators from *Caridina sp*. at the location, namely small snakehead fish and red in color. According to [10], snakehead fish are carnivorous fish that like food such as aquatic invertebrates, frogs, fish, reptiles, shrimp and aquatic insects. Snakehead fish, as one of the predators of *Caridina sp*. shrimp, had an impact on the number of shrimp observed, which decreased at the observation point 100 meters from the bridge. According to [6], the natural habitat of snakehead fish includes river estuaries, lakes, swamps, and even includes waters with relatively low oxygen levels. As natural predators, snakehead fish have a preference for areas with a high density of aquatic plants. This characteristic shows that snakehead fish is an organism with high tolerance to various environmental conditions.

Apart from predators, other factors that cause the absence of *Caridina sp*. at the location point it is thought to be due to changes in the speed of water flow, because the location point is the meeting place of the embung outlet and the kelekar river. Freshwater shrimp, including shrimp Genus *Caridina sp*. are more likely to live in river environments with slow water flow or even relatively calm rivers. According to [12], rivers with moderate to fast flow can present challenges for *Caridina sp*., especially those with long rostrums, in maintaining their position in the river. The last observation point is located under the bridge and the vegetation at this location is identical to the vegetation at the previous observation point. The results of ten samplings showed that the population of *Caridina sp*. at the point of reaching 1.0 individuals per liter of water, the highest number compared to previous sampling points. Factors influencing the number of *Caridina sp*. location can be divided into two factors, namely natural factors and human factors. According to [7], natural factors, especially habitat suitability, play a major role in determining the ability of shrimp to grow, reproduce, spawn, and ultimately recruit into the population. Abundance of *Caridina sp*. in the upstream part of the river is influenced by water quality parameters in the river environment. According to [3], environmental characteristics that play a role in influencing abundance and distribution include pH, dissolved oxygen levels, conductivity, total dissolved solids levels, water temperature, transparency, water flow speed, and the presence of aquatic plants. Research was carried out at the upstream of the river. The reason for choosing the upstream river as the research area is because the water quality is generally considered to be more optimal compared to the downstream and middle parts of the river. It is known that river water quality has a significant impact on the abundance and distribution of *Caridina sp*. According to [1], the chemical, physical and bio-

logical characteristics of water in the upstream part of the river tend to show better water quality compared to the middle and downstream parts of the river.

## 4 CONCLUSION

Found 2.6 ind/l and 10 ind/l prawns at 1st sampling point and 3th sampling point, where there are no hard water current. Found no prawn at water current body with predator existency. It was concluded that the riverside waters are calm and overgrown with aquatic vegetation, suitable for *Caridina sp*. to live except at the confluence of rivers and outlets where there is more current and there are predators such as snakehead fish. As the investigation aimed to explain the abundance of shrimps at three different sampling location, it is no further analyzed on usage of shrimps after study.

## ACKNOWLEDGMENT

I thank pak Hambali, native citizen to Sejangko, Ogan Ilir and live in Indralaya, because of his helpt for the local name of the object shrimp.

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