



Comparison of the number and frequency of Caught birds by catches of Gil net and bubu dragon in segeri waters, Pangkep district

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Article Info

ISSN (online): 2582-7138

Impact Factor: 5.307 (SJIF)

Volume: 04

Issue: 04

July-August 2023

Received: 11-06-2023;

Accepted: 03-07-2023

Page No: 568-572

Keywords: Crab frequency Distribution

Abstract

This study aims to compare the size frequency of blue swimming crab (*P. pelagicus*) caught by crab gillnets and dragon traps in the waters of Segeri District, Pangkep Regency. This research was conducted from March to May 2023 in the Bawasalo sub-district, Segeri District, Pangkep Rgency. This study used a survey method, namely by taking samples of swimming crabs which were taken directly every 3 times a week by separating the catches of gillnets and dragon bubu which was measured from 30% of the catch per trip out of a total of 24 trips. then the length and width were measured by measuring the carapace width and carapace length, also calculating the ratio of the number of catches of gillnets and dragon bubu caught on the islands of Segeri sub-district, Pangkep regency.

Introduction

Blue swimming crab (*Portunus pelagicus*) is a marine organism that is widely found in Indonesian waters. Swimming crabs have long been in demand by people both at home and abroad. Therefore, the price is relatively expensive in the local and export markets. Until now, blue swimming crab in Indonesia is still a fishery commodity that has high economic value. Blue swimming crab (*Portunus pelagicus*) is a marine organism that is widely found in Indonesian waters. Swimming crabs have long been in demand by people both at home and abroad. Therefore, the price is relatively expensive in the local and export markets. Until now, blue swimming crab in Indonesia is still a fishery commodity that has high economic value.

Blue swimming crab (*Portunus pelagicus*) (Linn. 1758) is a marine sector commodity that has high economic value. The amount of crab production has increased very rapidly in the last decade. Based on FAO data, total blue swimming crab production in 2016 reached more than 265 thousand tons, an increase of more than 44% when compared to 2010. Of this amount, only 29 thousand tons of blue crab production was fulfilled from the cultivation sector (FAO, 2017).

Efforts made by the government in maintaining the blue swimming crab population are by limiting the size that can be caught and the conditions of its reproduction. Management for export needs in 2011 has been regulated in 2 circulars issued by the Director General of P2HP-KKP on April 27 2011 which limits the catching and management of blue swimming crab with a carapace width of less than 80 mm which is not yet on target. Based on the Regulation of the Minister of Maritime Affairs and Fisheries of the Republic of Indonesia No. 1 of 2015 concerning catching lobsters (*Panulirus SPP.*), crabs (*Scylla spp.*) and blue swimming crabs (*Portunus pelagicus Spp.*) it has been stipulated a ban on catching crabs with a carapace size width of less than 100 mm and crabs with egg laying conditions. These efforts have not been able and not enough to increase the crab population in nature.

Jafar (2011) [6] said that fluctuations in the production level of blue swimming crab (*P. pelagicus*) from 2006-2010 were one of the symptoms of changes in the size of the crab population caused by the large number of fishing efforts or advances in fishing gear technology, and if fishing continues without regulation and control, the capacity for population growth one day will still decrease, so that it will be dangerous to the preservation of the crab population.

Research Purposes

Based on the description of the problem formulation, this

study has several objectives as follows

1. To find out the comparison of the size frequency of blue swimming crab (*P. pelagicus*) caught by crab gillnets and bubu dragon in the waters of Segeri District, Pangkep Regency.

Research Methods

This research was conducted from March 2023 to May 2023 in the Bawasalo village, Segeri District, Pangkep Regency.

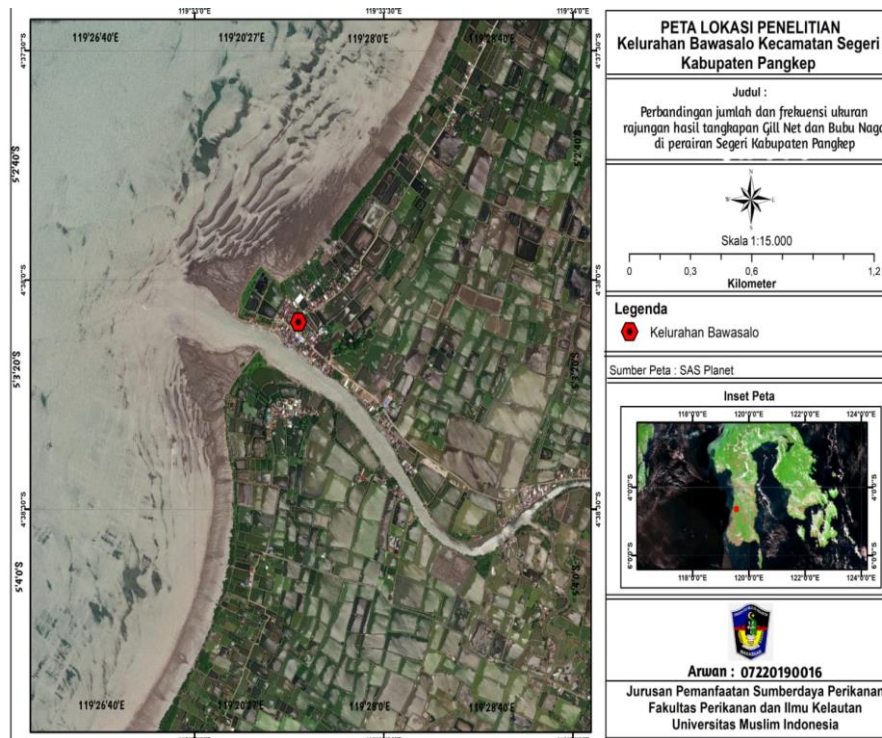


Fig 1: Map of research locations in Segeri Waters, Pangkep Regency

Sampling Method

This study used a survey method, namely by taking samples of swimming crabs which were taken directly every 3 times a week by separating gillnet catches and dragon bubu which was measured from 30% of the catch per trip out of a total of 24 trips. Then the length and width were measured by measuring the carapace width and carapace length, also calculating the ratio of the number of catches of gillnets and dragon bubu caught on the islands of Segeri sub-district, Pangkep regency.

Data Analysis

To find out the comparison of the number and size frequency of crabs caught by gillnets and bubu dragon in Segeri waters, Pangkep district a comparative analysis of the size of the caught crabs was carried out, using a frequency distribution approach, so that the size distribution of the crabs caught was known. Saripuddin and Ihsan (2016) state that the steps in preparing the frequency distribution include:

- A. Sort the data from smallest to largest
- B. Determine the range (R) or range of the data, by means of the largest data minus the smallest data (range).
- C. Determine the number of classes (k) namely $k = 1 + 3.3 \log n$, where k is the number of classes and n is the number of data.
- D. determine the length of the class, namely the range (R)

divided by the number of classes (k)

- E. determine the lower bound of the first class
- F. Determine the class frequency by calculating the number of sizes included in the class interval according to the amount of data.

Results and Discussion

To find out the comparison of the number and size frequency of crabs caught by gillnets and bubu dragon in Segeri waters, Pangkep district a comparative analysis of the size of the caught crabs was carried out, using a frequency distribution approach, so that the size distribution of the crabs caught was known.

1. Bubu naga

The frequency distribution of the width of the crab caught using dragon traps in Bawasalo waters, ranging from size 7.1-7.7 with 25 individuals, 7.8-8.4 with 106 individuals, 8.5-9.1 with 135 individuals, 9.2-9.8 with 198 individuals, 9.9-10.5 with 169 individuals, 10.6-11.2 with 116 individuals, 11.3-11.9 with 65 individuals 12-12.6 as many as 26 individuals, 12.7-13.3 as many as 4 individuals and 13.4-14 as many as 2 individuals. So it can be concluded that the crabs caught using dragon traps in Bawasalo waters were dominantly caught at size 9.2-9.8 with a total of 198 individuals.

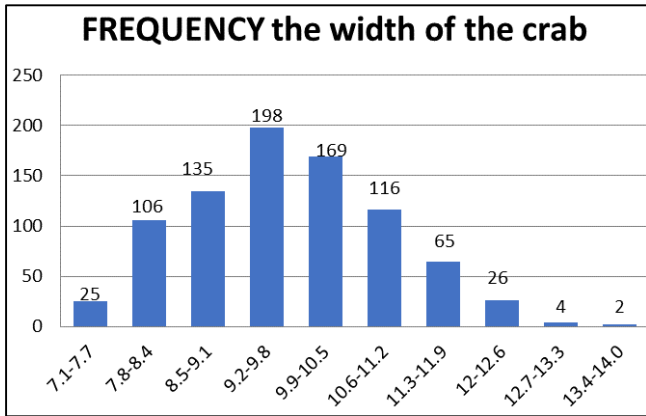


Fig 2: Frequency distribution of crab widths caught by bubu dragon in Bawasalo waters, sub-district. Segeri district. Pangkep

Based on the 2015 KP Ministerial Regulation regarding the size of crabs that are suitable for catching, namely 10 > cm. Based on the catches of crabs using the trap of dragon traps, it can be seen that the crabs that were caught were still not suitable for catching, namely 359 individuals (42%) while those that were suitable for catching were 487 individuals (58%) out of the 846 total fish caught by dragon traps.

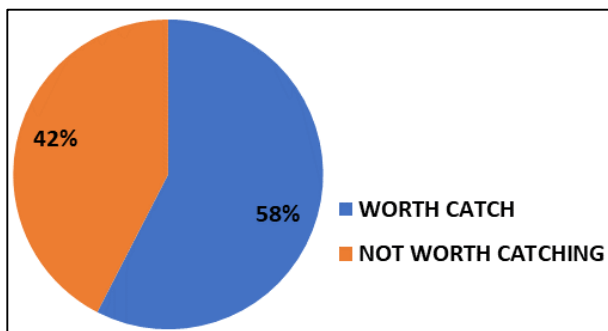


Fig 3: Crab is not feasible and worth catching

2. Gill Net

The frequency distribution of the width of the crab caught using gillnets in Bawasalo waters, ranging from size 7.2-8.0, 15 individuals, 8.1-8.9, 61 individuals, 9.0-9.8, 149 individuals, 9.9-10.7, 193 individuals, 10.8-11.6, 187 individuals, 11.7-12.5, 135 individuals, 12.6-13.4 59 individuals, 13.5-14.3 as many as 30 individuals 14.4-15.2 as many as 4 individuals, and 15.3-16.1 as many as 1 individual.

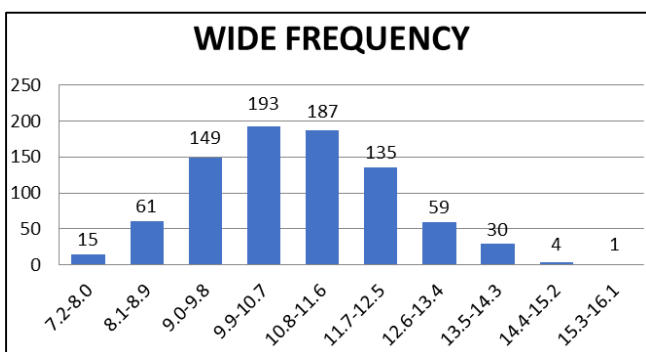


Fig 4: Frequency distribution of the width of the crab caught by Gill Net in Bawasalo waters, sub-district. Segeri district. Pangkep

Based on the 2015 KP Ministerial Regulation regarding the size of crabs that are suitable for catching, namely 10 > cm. Based on the catches of crabs using the Gill Net fishing gear, it can be seen that the crabs that were caught were still not suitable for catching, namely 240 individuals (29%) while those that were suitable for catching were 594 individuals (71%) of the 834 total caught by Gill Net.

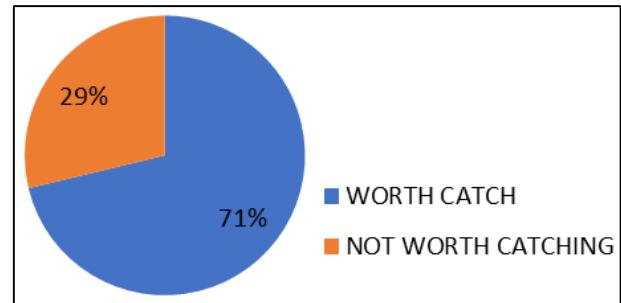


Fig 5: Crab is feasible and not worth catching

Weight distribution

1. Bubu Naga

Weight distribution of crab caught using dragon traps in Bawasalo waters, starting from 11.7-28.4 weighing 36 fish, 28.5-45.2 totaling 291 fish, 45.3-62 totaling 227 fish, 62.1-78.8 totaling 157 fish, 78.9-95.6 totaling 88 fish, 95.7-112.4 totaling 36 fish, 112.5 -129.2 as many as 7 individuals, 129.3-146 as many as 1 individual, 146.1-162.8 as many as 1 individual, 162.9-179.6 as many as 1 individual, 179.7-196.4 as many as 1 individual. So it can be concluded that the crabs caught using dragon traps in Bawasalo waters were dominantly caught at a weight of 28.5-45.2, namely as many as 291 individuals.

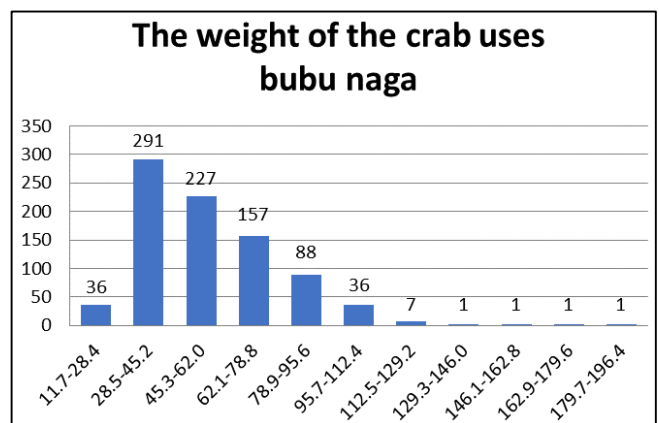


Fig 6: Frequency distribution of crab weight caught by bubu dragon in Bawasalo waters, sub-district. Segeri district. Pangkep

2. Gill Net

Weight distribution of crab caught using gillnets in Bawasalo waters, starting from weight 10.2-36.1 totaling 31 crabs, 36.2-62.1 totaling 262 individuals, 62.2-88.1 totaling 240 individuals, 88.2-114.1 totaling 167 individuals, 114.2-140.1 totaling 82 individuals, 140.2-166.1 totaling 23 individuals, 166.2-192.1 17 individuals, 192.1-218.1 9 individuals, 218.2-244.1 1 individual, 244.1-270.1 1 individual and 270.2-296.1 1 individual. So it can be concluded that the crabs caught using Gillnets in Bawasalo waters were dominantly caught at a weight of 36.2-62.1, namely 262 individuals.

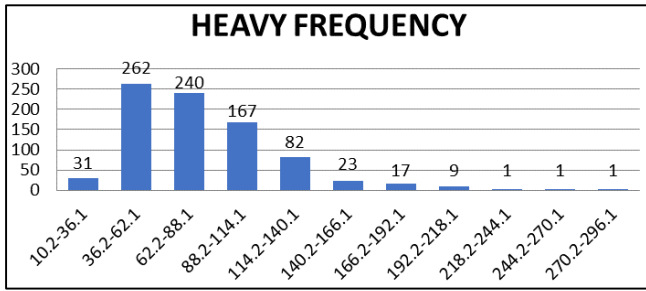


Fig 7: Weight frequency distribution of blue swimming crab caught by Gill Net in Bawasalo waters, sub-district. Segeri district. Pangkep

The Caught Crab

1. Bubu Naga

The number of crabs caught using Dragon Bubus was 846 with 502 males (59%) and 344 females (41%), so it can be concluded that the males caught using Dragon Bubus in Bawasalo waters were more dominant.

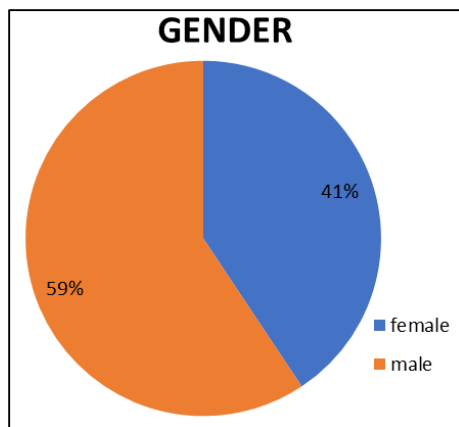


Fig 8: Gender of blue swimming crab caught by Bubus Naga in Bawasalo waters

2. Gill Net

The number of crabs caught using gill nets was 834 with 472 males (57%) and 362 females (43%), so it can be concluded that males caught using gill nets in Bawasalo waters were more dominant.

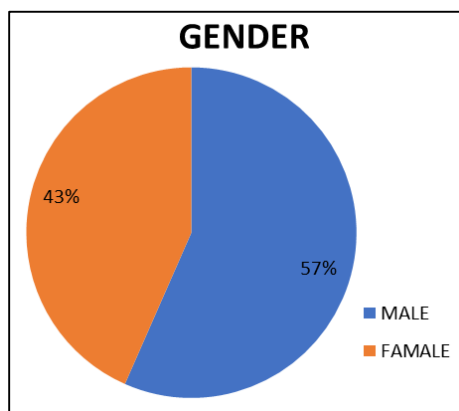


Fig 9: Gender of blue swimming crab caught by Gill Net in Bawasalo waters, sub-district. Segeri district. Pangkep

Conclusion

1. The frequency distribution of the width of the crabs caught using dragon traps in Bawasalo waters, ranging

from size 7.1-14 (cm), which is a total of 846 individuals, and weight ranging from 10.2-299.3 in weight, and it can be concluded that the dominant crabs caught using dragon traps in Bawasalo waters were dominantly caught at sizes 9.2-9.8 with a total of 198 individuals, while the dominant weight at weight 28.5-45.2 was 291 individuals.

2. The frequency distribution of the width of the crabs caught using dragon traps in Bawasalo waters, ranging from size 7.2-16.1 (cm), that is, a total of 834 crabs, and weight ranging from 10.2-296.1 in weight, and it can be concluded that the dominant crabs caught using dragon traps in Bawasalo waters were dominantly caught at sizes 9.9-10.7 with a total of 193 individuals, while the dominant weight was 36.2-62.1 as many as 262 tails.

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