

Identification of Fish Catches on Purse Seine Fishing Gear Landed at the Bulu Beach Port UPT, Tuban Regency

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Abstract

Activities occurring at the fishing port are part of the port's function. The output of this process is the identification of the catch, including its types. The purpose of this study was to determine the types of fish caught using purse seine fishing gear landed at the Bulu Beach Port Technical Implementation Unit (UPT) in Tuban Regency. Data collection in this study was collected through the observation method, namely by directly observing the fish surveillance process at the Bulu Beach Port UPT, which was intended to obtain research data. The catch landed by the Purse Seine ship was obtained 8 types of fish. namely the average type of tuna has a length of 30 cm and a weight of 330 grams, mackerel average length of 15.3 cm and a weight of 38 grams, squid average length of 15.3 cm and a weight of 48 grams, mackerel average length of 35 cm and a weight of 457 grams, Tembang average length of 25 cm and a weight of 55 grams. The average length of green scad fish is 27 cm and a weight of 83 grams, the average length of black pomfret is 15 cm and a weight of 38 grams, the length of parang-parang fish is 10 cm and a weight of 25 grams.

Keywords: Types of Fish Catch, Purse Seine, fish size, upt bulu, Identification of Fish

The Bulu Coastal Fishing Port (UPT) is an area consisting of land and surrounding waters with certain boundaries, used as a place for fishing vessels to anchor and load and unload fish. Furthermore, the fishing port is equipped with shipping safety facilities and other fishery support activities, such as product processing, product marketing, and fostering the quality of hygienic fishery products. This port is one of the main facilities in the capture fisheries industry, playing a vital role in ensuring the smooth operation of fishing businesses at sea. (Afsohinas *et al.*, 2021)

In the fishing port area, activities are needed to facilitate activities such as capture fisheries operations, starting from catching activities to marketing the catch. Capture fisheries activities are aimed at utilizing fish resources that have high economic value using technology, both conventional (simple) and more complete or complex. The utilization of fish resources in general in Indonesia is currently not optimal and still has opportunities for development. Input results from the port are obtained from the performance of interrelated fishing ports. Facilities owned by the port are evidence of

input. With the availability of a number of fishing ports, operational activities are related to the ability to utilize the facilities available within them. Management can be optimal if it can utilize facilities and operational activities, so that they can then undergo a process in operations with the aim of producing good output. (Fazri *et al.*, 2021)

The waters north of Java are among those where the level of small pelagic fish resource utilization is thought to have exceeded sustainable potential. The dominant small pelagic fish resources in the waters north of Java include scad (*Decapterus* spp.), scad (*Sardinella fimbriata*), mackerel (*Rastrelliger* spp.), scad (*Selaroides leptolepis*), black pomfret (*Formio niger*), and Spanish mackerel (*Scomberomerus* spp.). One of the waters where the level of small pelagic fish resource utilization exceeds sustainable potential is the Java Sea. (Khatami *et al.*, 2019)

Purse seine is a fishing gear for schooling pelagic fish. In general, purse seine fishing gear is a fishing gear consisting of a main part in the form of a net, which is used to catch large and small pelagic fish. The use of this fishing gear is to quickly encircle a school of fish, then immediately pull the rope so that the net that was originally square becomes a bag. Schooling fish that can generally be caught using a purse seine are pelagic fish (Surface Fish) (Prasetyo et al., 2023).

The implementation of the fishing port function is the output of existing activities occurring at the port. Generally, the results obtained from this process will provide outputs, such as catch identification activities, including catch types (Prasetyo *et al.*, 2023).

Therefore, the landing of catches at the port must be recorded, especially those using purse seine fishing gear. To ensure optimal recording, dedicated field personnel are needed to record the fish resources landed at each fishing port's Technical Implementation Unit (UPT). Based on the existing problem, the author is interested in taking the title: Identification of Fish Catches Using Purse Seine Fishing Gear Landed at the Pantai Bulu Port Technical Implementation Unit (UPT) in Tuban Regency.

The purpose of this study is to identify the types of fish caught using purse seine fishing gear, recorded and landed at the Pantai Bulu Port Technical Implementation Unit (UPT) in Tuban Regency.

2. METHOD

The tools and materials used in this study included a notebook, pen, ruler or measuring tape, camera, and weighing equipment.

This research was conducted at the Bulu Beach Port Technical Implementation Unit (UPT) in Tuban Regency from April 2 to May 2, 2025.

Data collection was conducted through direct fieldwork, involving recording data on fish catches landed at the Bulu Beach Port Technical Implementation Unit in Tuban Regency. This data was used to obtain research data. This was done by Iku *et al.* (2023); Nuzapril *et al.* (2024). Data collection was conducted by sampling fish when purse seine

vessels landed their catch. Data collected included fish length, weight, and identification of fish species caught by the purse seine.

Sampling of fish species was carried out to measure the average length and average body weight of the fish. Measuring the average length of fish is a series of activities that have been carried out to obtain the size of an object from the length of the fish that has been measured using a ruler and meter. Standard length measurement is the length of the fish measured from the front tip of the snout to the last tip of the backbone. The measurement used is a standard length measurement with units of cm. Weight measurement is a unit used in the process of observing or weighing the weight of an object. Weight measurement in this study uses units of grams. (Nuzapril *et al.*, 2024)

3. RESULTS AND DISCUSSION

The results of this study show that the measurement of the average length and weight of fish was carried out on each fish sample obtained from the catch using purse seine net equipment, the results of which were landed at the Bulu Beach Port UPT, Tuban Regency, as shown in Table 1.

Table 1. Results of Measurement of Length and Weight of Fish Caught

No	Types of fish	Average	
		Fish length (cm)	Fish weight (grams)
1	Tongkol	30	330
2	Kembung	15,3	38
3	Cumi	15,3	48
4	Tenggiri	35	457
5	Tembang	25	55
6	Selar	27	83
7	Bawal	15	38
8	Parang-Parang	10	25

Source: Research Data Processing (2025)

It is known that the results obtained have an average length of the fish body and the weight of the tuna from the research sample using the purse seine net fishing gear, namely 30 cm and the weight of the fish is 330 grams. Furthermore, the average length and weight of the mackerel from the research sample are 15.3 cm and the weight of the fish is 38 grams. Based on the research results of Mardiah *et al.*, (2020). The types of fish produced by the purse seine fishing gear which show that in the fishing ground area the

dominant type of mackerel (*Rastrelliger kanagartha*) Amri et al., (2018); Atmaja et al., (2011). The availability of mackerel (*Rastrelliger kanagartha*) is relatively more than other types of fish because it is an indication that in the waters that are fishing ground areas. (Ispahdianto *et al.*, 2016).

The length and weight of squid fish from the research sample averaged 15.3 cm and 48 grams of fish weight. The average length and weight of mackerel fish from the research sample were 35 cm and 457 grams of fish weight. The average length and weight of Tembang fish from the research sample were 25 cm and 55 grams of fish weight. According to Wujdi et al., (2012) the average length and weight of the fish were 17.5 cm with a weight of 64.25 grams. There were differences in the average length and weight of the fish that were not much different from the results of this independent project. The average length of the selar fish was 27 cm and a weight of 83 grams. The average length and weight of pomfret were 15 cm and a weight of 38 grams. The average length and weight of parang-parang fish from the research sample showed an average length of 10 cm and a weight of 25 grams. Meanwhile, from the data, the following graphic results were obtained for fish types:

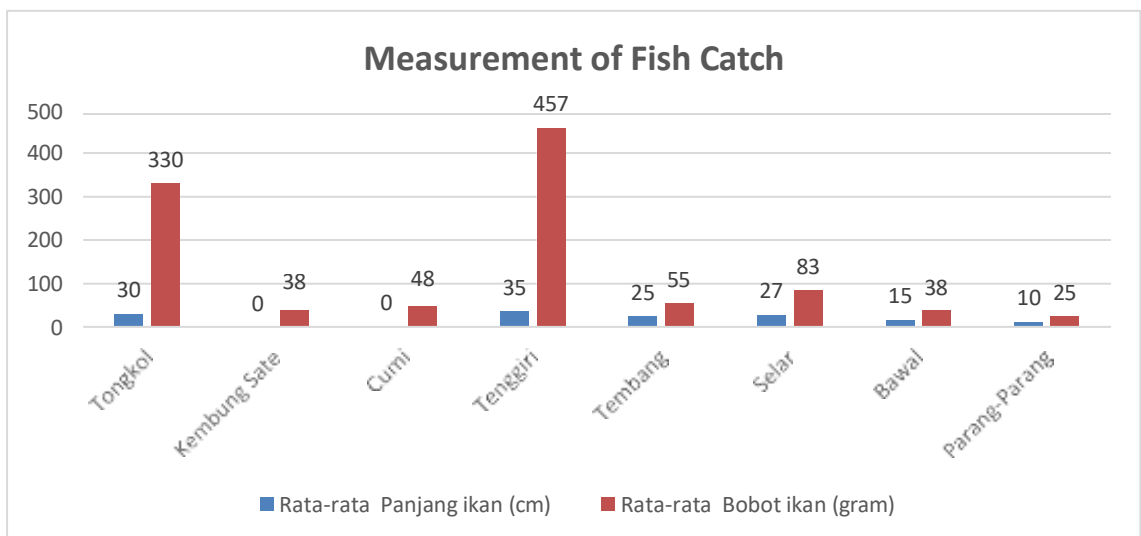




Figure 1. Diagram of Average Length Measurement and Specific Weight of Fish
 Source: Research Data Processing (2025)

Identification of the species caught using purse seine nets that have been landed at the Bulu PPP UPT, Tuban Regency. More details can be seen in table 2 below.

Table 2. Types of Fish Caught by Purse Seine Fishing Gear

No	Scientific Name	Local Name	Documentation
1	<i>Euthynnus affinis</i>	Tongkol	
2	<i>Rastrelliger kanagurta</i>	Kembung	

3 *Loligo spp*

Cumi-
cumi



4 *Scomberomorus
guttatus*

Tenggiri



5 *Sardinella Fimbriata* Tembang



6 *Atule mate*

Selar
Hijau



- 7 *Parastrometeus niger* Bawal
Hitam



- 8 *Chirocentrus dorab* Parang-
parang



The Tuna (*Euthynnus affinis*) is characterized by its elongated, torpedo-like body shape, medium-sized with a maximum length of around 80-100 cm, usually around 50-60 cm. Its body is scaleless except in the corselet area located behind the head and along the lateral line. The head is elongated and the mouth is slightly tapered at the bottom. The body color on the back is dark blue and shiny, with a pattern from the middle of the dorsal fin that is slightly slanted and complex that runs from front to back. The sides of the body and the belly are silvery white with dark spots between the pectoral and pelvic fins which are sometimes not always present. There are two dorsal fins that are seen separated by a narrow gap, the first dorsal fin is hard and the second dorsal fin is followed by a small additional fin. The thick skin is gray and the flesh is dark red. Tuna (*Euthynnus affinis*) is a pelagic fish that lives in the upper layers of ocean waters with high swimming speed. (White *et al.*, 2018).

Mackerel (*Rastrelliger kanagurta*) Its body is slender, thin, elongated, measuring approximately 15-45 cm in length. The back has a dark blue-green and bluish color, while the ventral side is more whitish like silver. There is a second dorsal fin behind it, and two dorsal fins separated by a narrow gap, and about five small fins and a pair of small tailbones on the caudal peduncle. Its scales are small and evenly distributed, covering its entire body. Its head is slightly pointed, slender, and snouted. Male mackerel have special characteristics, namely black spots that approach the

pectoral fins and one spot, so that it can be distinguished from female mackerel. This pelagic fish often forms groups or clusters in coastal waters to offshore and its main food needs are phytoplankton and zooplankton. (Kharisma ,2021).

Squid (*Loligo spp*) have long, slender bodies, fins at the posterior end of the mantle, like long leaves on the sides of their bodies. There are 8 arms (hands) and two complete tentacles as suckers for their prey. They have a very thin, transparent internal shell, which is located on the back of the body which functions as a support and is soft. Squid (*Loligo spp*) are soft animals from the Cephalopoda class, which are able to move quickly and sometimes emit light in certain waters. Their habits live in shallow sea waters to a certain depth, and are also found in coastal areas and continental shelves. Another distinctive feature is their unique head that surrounds their legs. (Irfan ,2021).

Mackerel (*Scomberomorus guttatus*) Its body is long like a cigar and slightly flat, almost like a torpedo, on the sides of its body it has a back color that tends to be bluish black to silver. There is a wide mouth located at the tip of the snout, its teeth are small, on average the teeth of the lower jaw are larger. The first dorsal fin has 16–19 hard black spines, and there are 8–9 additional finlets behind the dorsal fin and anal fin. The caudal fin is forked inward. Its body is almost scaleless except on the lateral line (corselet). It has several rows of small, irregular black spots. Long on the sides of the body, usually there are 3–4 rows. Its body is between 45–55 cm long, and can reach up to one meter or more. Its habits are in coastal waters to offshore, in small groups and often prey on small fish and squid. (Abdusysyahid ,2024)

The Tembang fish (*Sardinella Fimbriata*) is long and rather thin (flat), slender, its body length is approximately 10-20 cm, with a maximum body length of approximately 23 cm. It has a bluish green to blue-green upper body color, while the underside is silvery white. Its scales are silvery. Its fins are pale, can be translucent to pale greenish. The dorsal fin is located slightly forward from the middle of its body, its weak rays are approximately 18. Its pectoral fins have approximately 15 weak rays. The lower part of the fish's body has spiny scales. The color of the head and upper body is bluish green, the lower part is more silvery white. Its eyes are covered with lids and it has a terminal-sized mouth with jaws of the same length with complete teeth. Its habit of living in large groups, plankton is its main food. (Tapilatu & Kusuma ,2022).

Green Selar Fish (*Atule mate*) Its body profile is oval and long, slightly thin, with its back and belly almost equally convex. The average maximum body length is about 30 cm. It has a body color on the upper part of yellowish green to bright olive green, on the lower part it is silvery white. Along the upper side of its body there are faint stripes numbering 9-10, the edge of the gill cover (operculum) is a clear black spot. The last dorsal fin and the last anal fin have rays that are twice as long as the second finger from the back, and are somewhat separated although still connected by

a membrane. At the base of the tail there are sharp scales. The tail fin is bright yellow. The eyelids are well developed, covering the entire eye except for a small vertical slit in the center of the pupil. There are several distinctive rays found on the dorsal and anal fins, the stomach to the base of the tail extends. Its habit of living at a depth of approximately 50-80 meters. Crustaceans, zooplankton and small fish are its main food. (Rahayu ,2023).

Black Pomfret (*Parastrometeus niger*) Has a deep and wide body, convex back and stomach, flat body shape (compressed), total body length of approximately 15.6 cm to reach 30 cm, the maximum is also 75 cm, the body on the upper part is silvery gray to bluish brown, on the lower part the color is blackish gray or silver. Small dark gray scales cover the entire body. The jaws and teeth form a cone, the dorsal fin consists of short spines (\pm 4-5 spines) which are also not visible in adult fish. The second dorsal fin and the anal fin are rounded wide and have a profile almost identical to the anterior lobe. The length of the pelvic fin is \pm 10 cm and the color is yellow with a black tip on one side of the dark edge; the pectoral fin is yellow, the tail fin is gray with a black tip. The tail is curved and has a habit of living in coral reefs and western Indo-Pacific waters. (Tukan ,2022)

Parang-parang fish (*Chirocentrus dorab*) Has a long, slender, and very flat body shape (strongly compressed) in the middle and lower parts of silvery to shiny and the upper part tends to be dark bluish green, has smooth and cycloid scales, without thick scales (scutes) and a sharp stomach, The dorsal fin is located further back, right in front of the anal fin \pm 32; dorsal fin rays are around 17. The body is longer and the pectoral fin is short, only \pm 11-13%; The head and caudal peduncle have \pm 6 fingers found on the pelvic fins located in the middle and forked, has large and sharp jaws and fangs as a ferocious predatory fish, on the top of the dorsal fin there are black spots The maximum length is \pm 120-140 cm. Its living habits are in tropical coastal waters. (Safithri *et al.*, 2019).

4. CONCLUSION

There are types of fish caught using purse seine fishing gear landed at the Bulu Beach Port UPT, Tuban Regency, 8 types of fish were obtained, namely the type of tuna fish with an average length of 30 cm and a weight of 330 grams, mackerel with a length of 15.3 cm and an average weight of 38 grams, squid with a length of 15.3 cm and an average weight of 48 grams, mackerel with an average length of 35 cm and a weight of 457 grams, Tembang with an average length of 25 cm and a weight of 55 grams. Green scad is 27 cm long and an average weight of 83 grams, black pomfret with a length of 15 cm and a weight of 38 grams, parang-parang with an average length of 10 cm and an average weight of 25 grams.

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