

# Conditions of Hooks After Fishing Operation Used on Bottom Longlines in Çanakkale Region (Northern Aegean Sea)

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**Abstract.** This study was conducted for determining the conditions of hooks after fishing operations in May 2011 – June 2012 on the coasts of Dardanelles Strait and Gallipoli Peninsula. Twenty longline operations with three replication were carried out between 5 and 500 m sea depth. Each longline consisted of 200 hooks. 60000 m of fish line was outspread with a total of 12000 hooks and a total of 1360 individuals were sampled. In the present study; after fishing operation, conditions of hooks were recorded according to status of hook (caught or broken off) and bait (with bait, without bait or bitten). Five different conditions of hooks were identified which are caught (8,62%), broken off (8,19%), with bait (28,71%), without bait (48,02%) and bitten (6,45%).

**Keywords:** Dardanelles, bottom longline, hook, catch

## 1 Introduction

Northern Aegean Sea has a wide continental shelf, muddy and sandy bottom structure, and rich nutritious elements (Maravelias and Papaconstantinou, 2006). Compared with the Southern Aegean Sea; it has much more phytoplankton and zooplankton (Theocharis et al., 1999). Northern Aegean Sea is extremely important fishing area due to the most intensive fish migration along the coast of Turkey. Longlines are preferred because of its low fuel consumption and eco-friendly structure beside of using in fishing (Endal, 1979; Bjordal, 1988; Lokkeborg and Bjordal, 1992).

Longlines are the fishing gear commonly used in bottom fish species fishing. Better results were observed in bottom fish species fishing with longlines because of covering the large areas and slow and limited movements of bottom fish species (Alpbaz and Özer, 1996). Also, longlines can be easily removed by marking in case of any disappearance while fishing operation or later. Because of this; it gives less damage to marine ecosystems compared with fishing nets, trawlers and purse seiners.

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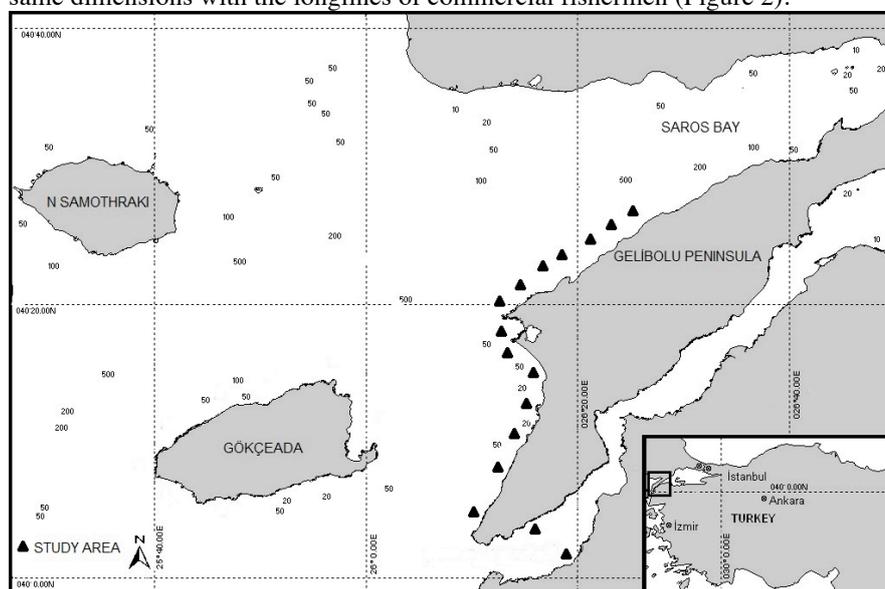
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However, it is known that longlines have the minimum level of ghost fishing in passive fishing gears. The present study aimed to identify the after fishing conditions of different sizes hooks used on bottom longlines in Northern Aegean Sea and provide resource information to fisheries management authorities.

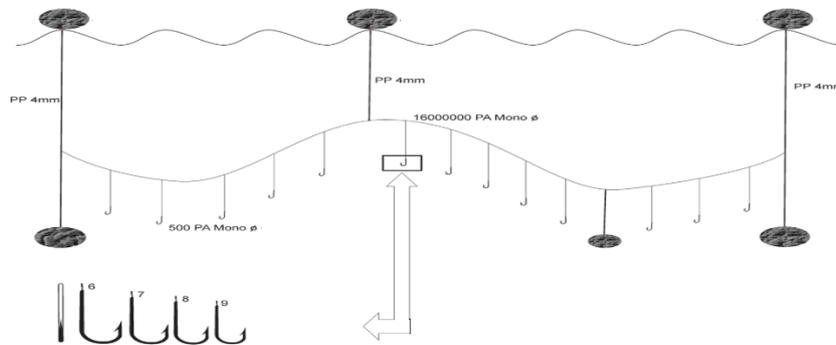
## 2 Material and Method

The present study was conducted in May 2011 – June 2012 on the coasts of Dardanelles Strait and Gallipoli Peninsula between 5 and 500 m sea depth in the commercial fishing area (Figure 1). Longlines used in trials were prepared based on same dimensions with the longlines of commercial fishermen (Figure 2).



**Fig. 1.** Study Area

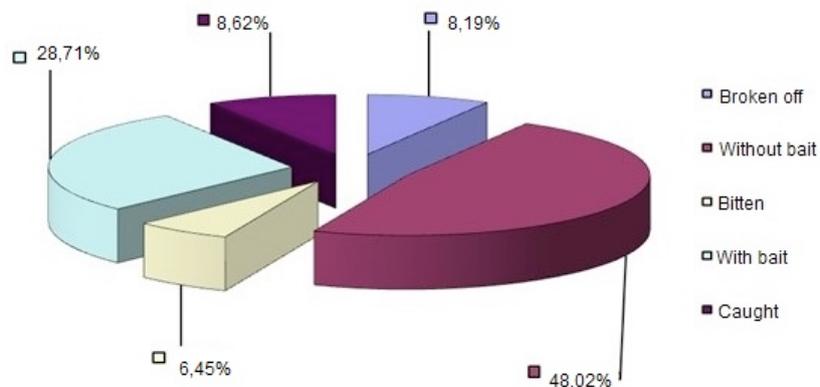
The mainline length of bottom longline is 1000 mm, diameter is 1.20 mm and made of monofilament fishing line. The snood is 1 m long and 0.80 mm in diameter. Each snood is connected the mainline with an interval of 4 meters. According the status of stream, stones were attached to mainline between every twenty or thirty snood to gain weight. VMC 9747 PS branded, number 8, 10, 12, 14 thick type, flat hooks were used in longlines. Longlines were left in the sea straight or zigzag shape. Longlines were usually left in the sea in early morning times or night times if the weather is suitable, and removed back after waiting nearly 12 hours.



**Fig. 2.** General schema of longlines used in study.

### 3 Results

In trials, 60000 m of fish line was outspread with a total of 12000 hooks and 60 longline baskets was used in total. After removing back from sea, hooks were evaluated according to condition, (caught, broken off, with bait, without bait or bitten).



**Fig. 3.** Conditions of hooks after fishing operations

After fishing operations, 76,73% of hooks were found with bait or without bait and 8,19% of hooks were broken off because of stones or bitten by big fish. 8,62% of hooks were caught fish successfully. 4,48% of this successfully caught amount were by-catch and discard species. In 6,45% of hooks which is the lowest value of records, baits on the hooks were bitten.

## 4 Discussion

Longlines should be developed to more efficiency for being alternative to other fishing gears using in the coastal fishing area because of its minimum damage level to marine ecosystem compared other fishing gears, low costs and selectivity properties can be easily set for the target species and sizes. Catching target species and sizes by changing size and shape of hooks is one of the factors which affects the selectivity (Öztekin et al., 2012). Therefore, hook selection for the target species is extremely important. In addition, specific fishing gears and methods that are less harmful to ecosystem should be supported and developed for protection of the endangered marine species protected under international conventions (Öztekin et al., 2014).

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