

# INVERTEBRATE DISCARDS FROM TRAWLERS IN THERMAIKOS GULF (AEGEAN SEA, GREECE)

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## Abstract

The present study aims at giving the first results of the composition of invertebrate fauna discarded by trawls in Thermaikos Gulf, north Aegean Sea. Sampling followed conditions of commercial fishery and resulted in collecting 64 discarded invertebrate species. The most abundant of them was the crab *Liocarcinus depurator*, while crustaceans were prominent in all samples.

**Keywords :** Aegean Sea, Trawl Surveys.

## Introduction

The study of discards of trawl fisheries is of great interest since they consist almost a quarter (27%) of the global catch [1]. The present study is the first to focus on the invertebrates that are discarded by trawls in the Thermaikos Gulf, north Aegean Sea, during a fishing season. The aim is to present preliminary results on the composition of the discarded invertebrate fauna.

## Methods and Material

Sampling took place in Thermaikos Gulf between October 2005 and April 2006, which is the period of allowed trawl activity in the Gulf. A total of 21 hauls, corresponding to 21 stations, took place in real conditions of commercial fishery. The duration of each haul ranged from 2 to 6 hours and their depth varied from 32 to 96 m. The average speed of the trawlers was 3.3 knots. The mesh size of the net was 40 mm in the cod-end. The average volume of each catch was 0.226 m<sup>3</sup> and samples of 0.08 m<sup>3</sup> were collected at random. Specimens were transferred to the laboratory, identified to species level and preserved in formalin solution.

## Results

The total number of collected invertebrates was 3,789, classified to 64 species. Table 1 shows the species whose frequency in the samples exceeds 50%. The most widely represented class was Malacostraca, which constituted 87% of the total abundance of the taxa. The species with presence in every station were the anthozoan *Alcyonium palmatum*, the cephalopod *Sepia elegans* and the crustaceans *Parapenaeus longirostris*, *Liocarcinus depurator*, *Medorippe lanata*, *Goneplax rhomboides* and *Squilla mantis*. In terms of abundance, it is obvious that the crab *L. depurator* was the most abundant species in all surveys, making up 47.16% of the invertebrate discards, followed by *P. longirostris* and *S. mantis* (Figure 1). In general, the results show that the composition of discarded invertebrates in the Thermaikos Gulf is similar to that of other Mediterranean regions, like Spain or the Ligurian Sea [2, 3].

Tab. 1. List of the most frequent invertebrates (F>0.5) discarded by trawls in Thermaikos Gulf (F=frequency, mL=mean length, sd=standard deviation, A=abundance, %=percentage)

Scientific name	class	F	mL±sd	A	%
1 <i>Alcyonium palmatum</i> (Pallas, 1766)	Anthozoa	1.00	51.83±17.30	111	2.93
2 <i>Callinectes parasitica</i> (Couch, 1838)	Anthozoa	0.52	15.15±7.45	69	1.82
3 <i>Pennatula rubra</i> (Ellis, 1761)	Anthozoa	0.95	133.99±22.46	69	1.82
4 <i>Melicerus kerathurus</i> (Forsk., 1775)	Malacostraca	1.00	115.41±15.67	26	0.74
5 <i>Parapenaeus longirostris</i> (Lucas, 1846)	Malacostraca	1.00	116.92±15.08	651	17.18
6 <i>Liocarcinus depurator</i> (Linnaeus, 1758)	Malacostraca	1.00	30.72±4.95	1787	47.16
7 <i>Medorippe lanata</i> (Linnaeus, 1767)	Malacostraca	1.00	21.05±4.46	97	2.56
8 <i>Goneplax rhomboides</i> (Linnaeus, 1758)	Malacostraca	1.00	15.45±2.44	107	2.82
9 <i>Squilla mantis</i>	Malacostraca	1.00	103.18±19.39	662	17.47
10 <i>Sepia elegans</i> (Blainville, 1827)	Cephalopoda	0.86	41.29±8.52	86	2.27
11 <i>Galeodea echinophora</i> (Linnaeus, 1758)	Gastropoda	0.95	64.76±3.59	15	0.40
12 <i>Atrina pectinata</i> (Linnaeus, 1767)	Bivalvia	0.81	290.64±76.26	23	0.61
15 <i>Acanthocardia echinata</i> (Linnaeus, 1758)	Bivalvia	0.67	53.15±9.56	14	0.37
16 <i>Parastichopus regalis</i> (Cuvier, 1817)	Holothuroidea	0.67	200.2±41.4	35	0.92
17 <i>Astropecten irregularis pentacanthus</i> (Delle Chiaje, 1827)	Asteroidea	0.52	86.93±32.19	35	0.92

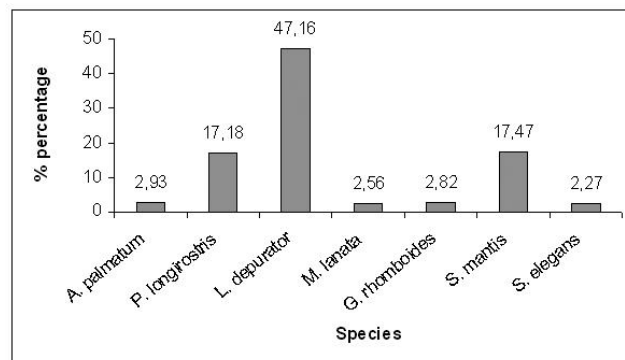


Fig. 1. Prevalence of the most frequent discarded invertebrates in the total of samples.

## References

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