

# On the ecology of the Nereididae (Polychaeta: Annelida) in the Bay of İzmir, Aegean Sea

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**Abstract:** Distribution patterns of nereidid species were studied in the Bay of İzmir and its vicinity by sampling various habitats and by applying ecological indices. 15 species were identified, with *Platynereis dumerilii*, *Nereis zonata* and *Ceratonereis costae* being the most abundant species. Peculiar habitats such as brackish water, polluted water and the sponge community were characterized by a high dominance level of *Hediste diversicolor*, *Neanthes caudata* and *Ceratonereis costae* respectively. A cluster analysis to distinguish species and habitat associations was used.

**Kurzfassung:** In der Bucht von İzmir und deren Umgebung wurde das Verbreitungsmuster der Nereididen anhand von Aufsammlungen in verschiedenen Habitaten und durch die Anwendung verschiedener ökologischer Indexe untersucht. Es wurden 15 Arten gefunden, wovon sich *Platynereis dumerilii*, *Nereis zonata* und *Ceratonereis costae* als die häufigsten erwiesen. Für den Brackwasserbereich war eine hohe Dominanz von *Hediste diversicolor* charakteristisch, für verschmutztes Wasser *Neanthes caudata*, und für Gebiete mit zahlreichen Schwämmen *Ceratonereis costae*. Zur Unterscheidung der verschiedenen Arten- und Habitatassoziationen wurde eine Clusteranalyse durchgeführt.

**Key words:** Nereididae, Polychaeta, distribution, ecology, Aegean Sea, Turkey.

## Introduction

The family Nereididae is one of the most diverse and abundant taxa among benthic families both in marine and brackish water ecosystems. Its representatives play important roles in the energy transfer within a given ecosystem as customers of plants and small invertebrates, or as prey of many benthic animals. Their swarming heteronereis stages even transport benthic secondary energy into the water column where this energy can be used by pelagic predators. Apart from their ecological importance, they are widely used by humans as bait for fish or as the live diet of cultured animals such as fish. In Turkey, Nereididae are sold as bait, with one box of 15 specimens of *H. diversicolor* and *Perinereis cultrifera* costing 1 US\$.

There is a great deal of information about the taxonomy and ecology of this family (e.g. FAUVEL 1923, BELLAN 1964, DAY 1967, IMAJIMA 1972, NÚÑEZ et al. 1981, CAMPOY 1982, KRISTENSEN 1988), and about its population dynamics (DALES 1951, GILLET 1990, ARIAS & DRAKE 1995). As for the Turkish waters, a little has been published mainly on distribution (LA GRECA 1949, DEMIR 1952, RULLIER 1963, CASPERS 1968, ERGEN 1976, 1980, ERGEN & ÇINAR 1997, ÇINAR & ERGEN 1998), reproduction (GELDIAY & ERGEN 1970) and regeneration (ERGEN 1977). This work aims to increase our knowledge of the distribution and ecology of nereidids in the Aegean Sea.