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THE NEED FOR RESEARCH ON MARINE WORMS (ANNELIDA: POLYCHAETA) IN THAILAND, INCLUDING APPLIED ASPECTS

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Introduction

Taxonomic studies on the polychaetes of Thailand can be summarized with reference to the following papers: Eibye-Jacobsen 1997; Hylleberg and Nateewathana 1988, 1991a, 1991b, 1991c; Hylleberg *et al.* 1986; Licher and Westheide 1997; Meyer and Westheide 1997; Nateewathana 1988, 1992; Nateewathana and Hylleberg 1986, 1991a, 1991b; Phasuk 1992; Westheide 1990, 1992. Presently, little polychaete research is conducted by Thai scientists, though there are several reasons stated below for the need to promote and support work on the polychaete fauna of Thailand.

The abundant and useful polychaetes

The polychaete worms are among the most numerous and diversified marine invertebrates. They have a world-wide distribution, living on the bottom or dug into the sediment, from the intertidal zone to the greatest depths, and in the pelagic system of all oceans.

The role of polychaetes in marine ecosystems is relatively well documented. Polychaetes serve as the main food source for many commercial fish species and are an especially important factor in the evaluation of fishing grounds (Uschakov 1965). Nevertheless, polychaetes have been poorly studied in most areas, particularly in tropical waters (Fauchald 1976).

Some polychaete species are useful as bioindicators of polluted areas. Many species of *Capitella* are known for their tolerance to anoxic conditions associated with high organic enrichment (Pocklington *et al.* 1994). Monitoring of the biodiversity in general and of selected species, such as *Capitella*, in particular may give the relevant authorities early warnings so action can be taken. It is no secret that pollution of coastal areas is difficult to avoid in the wake of rapidly developing industrial communities in Thailand and often there is much discussion about the impact of a given pollution. However, the problems are difficult to solve without solid scientific evidence which includes knowledge of the polychaete fauna and how worms react to pollution.

The use of polychaetes as bait or feed for commercially cultured shrimp and fish is a common practice in many countries. Certain polychaete species have high value as bait in the angling sport and leisure-industry, *e.g.*, *Nereis virens* (Gambi *et al.* 1994; Olive 1994, 1999). The value of various common species of polychaetes being used as food items for the culture of crustaceans and juvenile fish was also reported by Gambi *et al.* (1994).

More significantly, it has proven particularly beneficial to supply specific species of polychaetes as food for shrimp broodstock because they can provide certain polyunsaturated fatty acids (Lytle *et al.* 1990) or important minerals (Croz *et al.* 1988), which are essential for egg maturation in cultured prawns. This is especially important in Thailand, where the economic viability of shrimp culture is being seriously considered.

A preliminary study in Thailand by Hylleberg *et al.* (1986) indicated that appropriate polychaete species for crustaceans in aquaculture could be obtained locally, at least in the Phuket area. During the last few years, worms have been collected for commercial purposes, especially from sandy