**Marenzelleria neglecta**

**Taxon Family /Order/ Class/ Phylum**

<table>
<thead>
<tr>
<th>Taxon</th>
<th>Family /Order/ Class/ Phylum</th>
</tr>
</thead>
<tbody>
<tr>
<td>Marenzelleria neglecta Mesnil, 1896</td>
<td>Spionidae / Canalipalpata / Polychaeta / Annelida</td>
</tr>
</tbody>
</table>

**COMMON NAMES (English only)**

Red-gilled mud worm.

**SYNONYMS**

- Marenzelleria viridis (Sikorski & Bick, 2004)
- Marenzelleria cf. viridis
- Marenzelleria type II

**SHORT DESCRIPTION**

The red-gilled mud worms (up to 157 mm in length) occur in marine and brackish waters. They inhabit vertical mucus lined burrows (up to 40 cm in depth), feeding on sediment particles, meiobenthic and planktonic organisms.

**BIOLOGY/ECOLOGY**

**Dispersal mechanisms**

Planktonic larvae disperse with water currents. Nocturnal swimming of adult worms with gametes (most probably associated with reproduction) may also facilitate dispersal. Its successful spread is often associated with the long development of planktonic larvae.

**Reproduction**

Fecundity of animals depends on salinity, temperature, age and body size. Development of gametes starts in mid-May. The individuals reach maturity in September after about 20 weeks. Animals spawn in autumn and the pelagic larvae can be found mainly from September to November, but may also occur up to March. Larval development largely depends on water temperature and lasts about 4 to 12 weeks.

**Known predators/herbivores**

Several benthophagous fish species feed on *Marenzelleria neglecta*.

**Resistant stages (seeds, spores etc.)**

None.

**HABITAT**

**Native (EUNIS code)**

- A2: Littoral sediment
- A5: Sublittoral sediment
- X1: Estuaries
- X3: Brackish coastal lagoons – for adult forms.
- A7: Pelagic water column – for larvae. *M. neglecta* is an estuarine species which inhabits sandy and muddy sediments.

**Habitat occupied in invaded range (EUNIS code)**

- A2: Littoral sediment
- A5: Sublittoral sediment
- X1: Estuaries
- X3: Brackish coastal lagoons – for adult forms.
- A7: Pelagic water column – for larvae. Occurs on gravel, sandy and muddy bottoms from upper sublittoral (~1 m depth) up to 90 m.

**Habitat requirements**

It is highly tolerant of very low salinities (< 1 ppt) and temporal fluctuations. However, successful larval development from egg to juvenile is not possible below salinities of 5 psu, but colonization of oligohaline regions can be accomplished by larvae with more than 4 setigers or by swimming juveniles. It is tolerant to short term oxygen deficiency and may survive hydrogen sulphide exposure.
DISTRIBUTION

Native Range
This northern Hemisphere distributed species has its native range in the Atlantic coast of the North-America.

Known Introduced Range
The first record in the European mainland coast was in the Ems estuary between Germany and the Netherlands in 1983. In 1985 this species was recorded in the Baltic Sea in German Darss-Zingst Bodden, in subsequent years it expanded its area throughout nearly the entire Baltic Sea up to inner parts of the Gulf of Bothnia and Gulf of Finland. Recently it has gradually invaded nearly all north-west European intertidal and estuarine areas.

Trend
Increasing.

MAP (European distribution)

INTRODUCTION PATHWAY
The spread is mostly associated with dispersal and development of planktonic larvae, which can be transported in ballast waters of ships. Also, adult worms with gametes may get into ballast water during their nocturnal swimming.

IMPACT

Ecosystem Impact
The red-gilled mud worm competes with native benthic macrofauna for food and space. Being numerically dominant it can change the structure of a native benthic community. Burrowing activity of this worm has a high impact on fluid-exchange rates between bottom water and sediments, especially in muddy sediments. The burrow walls make good substrates for aerobic degradation of organic matter.

Health and Social Impact
None.

Economic Impact
Largely unknown. May compete for food with aquaculture organisms.

MANAGEMENT

Prevention
Unknown.
Mechanical
To remove planktonic larvae, exchange of ballast water should take place in the mid ocean. Due to presence of bottom sediments in ballast tanks, removal of adult worms is complicated.

Chemical
Chemical treatment in ship ballast tanks has been shown to be effective.

Biological
Unknown.

REFERENCES

OTHER REFERENCES

Author: Sergej Olenin
Date Last Modified: September, 2006