A hydroid (*Pachycordyle navis*)

MarLIN – Marine Life Information Network
Biology and Sensitivity Key Information Review

Nicola White

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A report from:
The Marine Life Information Network, Marine Biological Association of the United Kingdom.

**Please note.** This MarESA report is a dated version of the online review. Please refer to the website for the most up-to-date version [https://www.marlin.ac.uk/species/detail/1152](https://www.marlin.ac.uk/species/detail/1152). All terms and the MarESA methodology are outlined on the website (https://www.marlin.ac.uk)

This review can be cited as:

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**Summary**

**Description**

A simple hydroid consisting of an erect, unbranched stem, up to 5 mm in height, with a single terminal polyp (hydranth). Each upright stem rises from a creeping stolon (hydrorhiza). The stem is sheathed by a chitinous sheath, the perisarc. The perisarc is often wrinkled, especially near the base, and terminates below the hydranth. The hydranth bears 8 to 16 tentacles in 2 to 4 alternating whorls, depending on hydranth size. It is creamy white in colour, with hints of pink around the mouth of the hydranth. The reproductive bodies (gonophores) are borne on short stalks in an irregular spiral below the hydranth.

**Recorded distribution in Britain and Ireland**

Widewater lagoon, West Sussex.

**Global distribution**

Recorded from only 3 locations worldwide: Kiel Canal, Widewater lagoon in Sussex and attached to a ship’s hull in South Africa.
Grows on algae such as *Chaetomorpha*. It has only ever been recorded in the vicinity of ports and harbours.

### Depth range

- 

### Identifying features

- Stem simple and unbranched bears a single terminal hydranth.
- Hydranth with 2-4 whorls of tentacles close to mouth.
- Gonophores in the form of fixed sporosacs.
- Planulae develop within apical part of gonophore.

### Additional information

The systematic status of this species was revised by Stepanjants *et al.* (2000) who placed *Clavopsella navis* and *Clavopsella quadrangularia* in the new genus *Thieliana*. Subsequent revision by Schuchert (2004, 2007; cited in Calder, 2012) placed the species in the genus *Pachycordyle*.

### Listed by

[Images of logos for W&C, ACT, UKBAP, SPI, FOCI]

### Further information sources

Search on:

[Images of logos for Google, Google Scholar, NBN, WoRMS]
Biology review

Taxonomy

- **Phylum**: Cnidaria  
  - Sea anemones, corals, sea firs & jellyfish
- **Class**: Hydrozoa  
  - White weeds, sea firs, sea beard and siphonophores; hydroids
- **Order**: Anthoathecata
- **Family**: Bougainvilliidae
- **Genus**: Pachycordyle
- **Authority**: (Millard, 1959)
- **Recent Synonyms**: Clavopsella navis (Millard, 1959) Rhizorhagium navis (Millard, 1959)

Biology

- **Typical abundance**: Data deficient
- **Male size range**: 0.39-1.29mm
- **Male size at maturity**: Very small (<1cm)
- **Female size range**: Very small (<1cm)
- **Female size at maturity**: Very small (<1cm)
- **Growth form**: Turf
- **Growth rate**: Data deficient
- **Body flexibility**: -
- **Mobility**: -

**Characteristic feeding method**: No information, Passive suspension feeder, Predator

**Diet/food source**: Typically feeds on

**Sociability**

- **Environmental position**: Epifaunal
- **Dependency**: -
- **Supports**: -
- **Is the species harmful?**: Data deficient

Biology information

Size refers to length of hydranth.

Habitat preferences

- **Physiographic preferences**: Isolated saline water (Lagoon)
- **Biological zone preferences**: Data deficient
- **Substratum / habitat preferences**: Macroalgae
- **Tidal strength preferences**: Weak < 1 knot (<0.5 m/sec.)
- **Wave exposure preferences**: Very sheltered
- **Salinity preferences**: Reduced (18-30 psu)

https://www.marlin.ac.uk/habitats/detail/1152
Pachycordyle navis is presumed to be an introduced species since it has only ever been recorded in the vicinity of ports and harbours. It is probably transported on ships hulls. It was first recorded in the UK in 1973 in Widewater Lagoon, Shoreham, West Sussex (Eno et al., 1997). It was last recorded there (as Clavopsella navis) by Sheader (1990) in 1990 when it was relatively abundant attached to algae. It is presumed extinct in South Africa as it has only been recorded from one ship’s hull in 1959. The condition of the population in Kiel is not known.

Life history

Adult characteristics

- Reproductive type: Gonochoristic (dioecious)
- Reproductive frequency
- Fecundity (number of eggs): 2-10
- Generation time: Insufficient information
- Age at maturity: Insufficient information
- Season: Insufficient information
- Life span: Insufficient information

Larval characteristics

- Larval/propagule type: -
- Larval/juvenile development
- Duration of larval stage: No information
- Larval dispersal potential: No information
- Larval settlement period

Life history information

Female gonophores contain about 8 eggs, which develop directly into planulae. There is no free-living medusoid stage.
Sensitivity review

This MarLIN sensitivity assessment has been superseded by the MarESA approach to sensitivity assessment. MarLIN assessments used an approach that has now been modified to reflect the most recent conservation imperatives and terminology and are due to be updated by 2016/17.

Physical Pressures

<table>
<thead>
<tr>
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<th>Intolerance</th>
<th>Recoverability</th>
<th>Sensitivity</th>
<th>Confidence</th>
</tr>
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<tbody>
<tr>
<td>Substratum Loss</td>
<td>High</td>
<td>None</td>
<td>Very High</td>
<td>Very low</td>
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</tbody>
</table>

*Pachycordyle navis* lives attached to algae, so would be removed with the algae upon substratum loss. There would be no recovery of the population because only two extant populations of *Pachycordyle navis* are known: Widewater lagoon, Sussex and Kiel Canal, Germany.

Smothering

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<th>Low</th>
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The species would be affected by smothering if the algae on which it lives is completely covered in the sediment. If the algae protrudes sufficiently above the sediment the hydroid may escape the effects of smothering.

Increase in suspended sediment

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<tr>
<th></th>
<th>Intermediate</th>
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</table>

*Pachycordyle navis* is likely to have some tolerance to siltation as it inhabits lagoons where siltation frequently occurs. The algae on which the species lives will also lift the hydroid above the accumulation of silt. However, the heath of the host algae may be adversely affected by siltation.

Decrease in suspended sediment

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<thead>
<tr>
<th></th>
<th>Intermediate</th>
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<th>Very High</th>
<th>Very low</th>
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Dessication

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<tr>
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<th>None</th>
<th>Very High</th>
<th>Very low</th>
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</table>

The species is vulnerable to desiccation because it is soft bodied and has no protection from the drying effects of sun and wind. Some of the population may be sheltered from desiccation if they are present on the underside of the algal frond. However, if the whole population is destroyed recoverability would be non-existent because only two populations of *Thieliana navis* occur worldwide.

Increase in emergence regime

<table>
<thead>
<tr>
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Decrease in emergence regime

Increase in water flow rate  
**Tolerant**  **Not relevant**  **Not sensitive**  **Very low**

The species would probably not be affected by a change in water flow because it is permanently attached to the algae and may be able to withstand high water flow rates because they have been transported long distances on ships hulls.

Decrease in water flow rate

Increase in temperature  
**Not relevant**  **Very low**

The temperature resistance of the *Pachycordyle navis* is not known.

Decrease in temperature

Increase in turbidity  
**Low**  **Moderate**  **Low**  **Very low**

The species is unlikely to be affected by a change in turbidity as it is not dependant on light availability and it would not interfere with its feeding. However, the host algae may be adversely affected by a reduction in light availability.

Decrease in turbidity

Increase in wave exposure  
**Tolerant**  **Not relevant**  **Not sensitive**  **Very low**

A change in wave exposure is unlikely to occur in a lagoon unless one of the lagoon boundaries is breached. The species would probably not be affected by an increase in wave exposure because it does not present a large surface area to wave action. However, it’s host algae may be intolerant of wave exposure and may be washed away.

Decrease in wave exposure

Noise  
**Not relevant**  **Very low**

Insufficient information

Visual Presence  
**Not relevant**  **Very low**

Insufficient information

Abrasion & physical disturbance  
**High**  **Low**  **High**  **Very low**

The species and its host algae are flexible so will 'give' under abrasion. However, they occur on top of the sediment and would probably be removed, along with surface substratum by a passing scallop dredge (or equivalent force). The impact is likely to be equivalent to substratum loss. Therefore, an intolerance of high has been recorded.
Hydroids are generally regarded as opportunistic species with good recruitment, the ability to reproduce asexually or sexually, colonize space rapidly and with good powers of recovery from damage (see Boero, 1984; Gili & Hughes, 1995). Hydroids can form highly resistant resting stages and recover or spread by fragmentation (Gili & Hughes 1995). Therefore, hydroids are likely to recover rapidly from physical disturbance from resting stages or pieces of hydrorhizae on the remaining substratum, or fragments. However, *Pachycordyle navis* releases planulae from its gonothecae that probably have limited dispersal capability (see Sommer, 1992; Gili & Hughes, 1995). It is an introduced species thought to have been transported by shipping, either on the hull or in the ballast water (Reise et al., 1999) but has a very limited distribution, which suggests either a limited recruitment capability and/or a narrow range of environmental preferences. Although it was recorded in the Widewater lagoon in 1973, its has not been recorded from any other sites in the UK since. It seems unlikely that it can recruit from other areas, or extremely slowly, save by the chance anthropogenic introductions, e.g. via shipping. If the population was completely destroyed by physical disturbance then recovery is unlikely. Nevertheless, the population may recover from resting stages or fragments. Therefore, a recoverability of low has been recorded.

**Displacement**

*Pachycordyle navis* is permanently attached to algae and would be unable to re-attach itself if removed. If the whole population is destroyed recoverability would be very low because only two populations of *Pachycordyle navis* occur worldwide.

### Chemical Pressures

<table>
<thead>
<tr>
<th>Chemical Pressure</th>
<th>Intolerance</th>
<th>Recoverability</th>
<th>Sensitivity</th>
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</tr>
</thead>
<tbody>
<tr>
<td>Synthetic compound contamination</td>
<td>Not relevant</td>
<td>Not relevant</td>
<td></td>
<td>Very low</td>
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<tr>
<td>Insufficient information</td>
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<tr>
<td>Heavy metal contamination</td>
<td>Not relevant</td>
<td>Not relevant</td>
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<td>Not relevant</td>
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<tr>
<td>Insufficient information</td>
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<tr>
<td>Hydrocarbon contamination</td>
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<td>Not relevant</td>
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<td>Not relevant</td>
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<td>Insufficient information</td>
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<tr>
<td>Radionuclide contamination</td>
<td>Not relevant</td>
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<td>Not relevant</td>
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<tr>
<td>Insufficient information</td>
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<tr>
<td>Changes in nutrient levels</td>
<td>Not relevant</td>
<td>Not relevant</td>
<td></td>
<td>Not relevant</td>
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<tr>
<td>Insufficient information</td>
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A hydroid (Pachycordyle navis) - Marine Life Information Network

Evidence suggests that the species is tolerant of fully saline conditions because it can survive on ships' hulls. The species must be tolerant of reduced salinity because it occurs in lagoons but the tolerance of the species to very reduced salinities is not known.

Decrease in salinity

Changes in oxygenation

- Insufficient information

Biological Pressures

<table>
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</table>

- Introduction of microbial pathogens/parasites
  - Insufficient information

- Introduction of non-native species
  - Insufficient information

- Extraction of this species
  - Insufficient information

- Extraction of other species
  - Insufficient information

Additional information
Importance review

Policy/legislation

- Wildlife & Countryside Act Schedule 5, section 9
- UK Biodiversity Action Plan Priority ✔
- Species of principal importance (England) ✔
- Features of Conservation Importance (England & Wales) ✔

Status

- National (GB) importance Not rare/scarce
- Global red list (IUCN) category -

Non-native

- Native -
- Origin - Date Arrived 1973

Importance information

-none-
Bibliography


Datasets
