A hydroid (*Nemertesia ramosa*)

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

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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/1318]. All terms and the MarESA methodology are outlined on the website (https://www.marlin.ac.uk)

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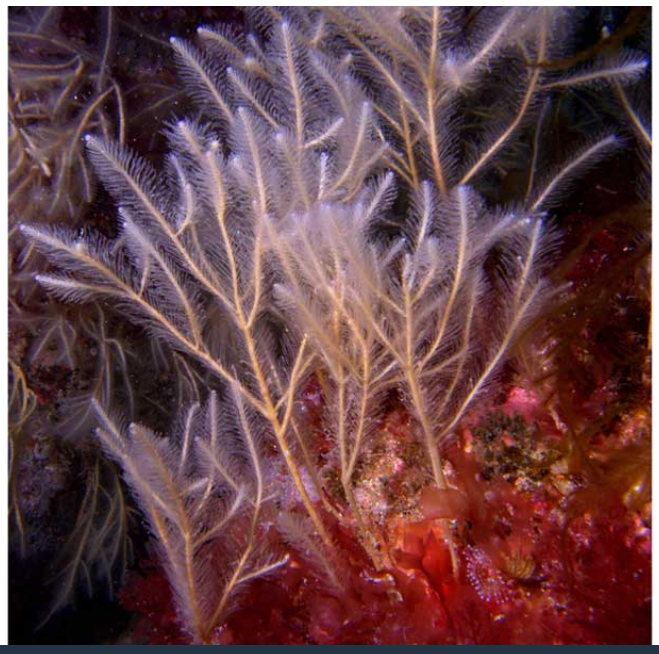

***Nemertesia ramosa* hydroid colonies at the Runnelstone, Cornwall**
Photographer: Paul Newland
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See online review for distribution map

Distribution data supplied by the Ocean Biogeographic Information System (OBIS). To interrogate UK data visit the NBN Atlas.

Researched by	Angus Jackson	**Refereed by**	Dr Rob Hughes
Authority	(Lamarck, 1816)		
Other common names	-	**Synonyms**	-

Summary

Description

Nemertesia ramosa is a colonial hydroid that lives in small aggregations. Individual colonies consist of an upright and irregularly branched stem up to about 15 cm in height. An individual may have several other colonies attached to the stem. The main stems bear whorls of fine side branches of even length and upwardly pointing, arranged in groups of 6. The hydroid is yellow/orange in colour and is usually more pigmented than the similar *Nemertesia antennina*.

Recorded distribution in Britain and Ireland

Widely distributed round all British and Irish coasts.

Global distribution

In the North Atlantic; from Iceland down to north-west Africa. In the Mediterranean; the Straight of Gibraltar, some parts of the Spanish coast, Israel and Italy. In the Indian Ocean; coasts of South Africa and Mozambique.

Habitat

The colonies of this species live in small aggregations, usually with several colonies attached to a

single 'main' stem. The colonies are typically attached to hard substrata such as bedrock, boulders, pebbles and shells. The hydroid attaches to the substratum using hydrorhizae which form a holdfast. The species lives in slight to moderately flowing water and is intolerant of wave action. *Nemertesia ramosa* has very similar habitat preferences to *Nemertesia antennina*

Depth range

10-500

Identifying features

- An orange-yellow hydroid or sea-fir that reaches 15 cm in height.
- The colony consists of an upright main stem (hydrocaulus) that branches occasionally and irregularly.
- The main stems bear fine, even length side (secondary) branches (hydrocladia) arranged in groups of six.
- Secondary branches are whorled (3-dimensional).

Additional information

No text entered

Listed by

Further information sources

Search on:

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	Leptothecata	
Family	Plumulariidae	
Genus	Nemertesia	
Authority	(Lamarck, 1816)	
Recent Synonyms	-	

Biology

Typical abundance	High density
Male size range	up to 15cm
Male size at maturity	7-10cm
Female size range	7-10cm
Female size at maturity	
Growth form	Pinnate
Growth rate	2.6 - 4.6cm/month
Body flexibility	
Mobility	
Characteristic feeding method	Non-feeding, Passive suspension feeder
Diet/food source	
Typically feeds on	seston
Sociability	
Environmental position	Epifaunal
Dependency	Independent.
Supports	Host See additional information
Is the species harmful?	No

Biology information

Very little information is directly available on *Nemertesia ramosa*. Completion of most of the fields has been done through extrapolation from the very similar species *Nemertesia antennina*.

The main stems of *Nemertesia ramosa* branch occasionally whereas those of *Nemertesia antennina* do not. The size at maturity for *Nemertesia ramosa* (a smaller species) may be less than that for *Nemertesia antennina*. Growth rates for *Nemertesia ramosa* may also be lower than those recorded for *Nemertesia antennina*. Growth rates are highest in the summer and lowest in the winter. An individual planula larva gives rise to a colony (sometimes referred to as an individual). These colonies (individuals) are gregarious. The feeding polyps of this species are too large to be withdrawn into the protective theca. *Nemertesia ramosa* is fed on by a variety of sea slugs including *Doto fragilis*, *Doto cuspidata*, *Lomanotus genei*, and by the sea spider *Endeis spinosa*.

Epizoites

Ansín Agís *et al* (2001) list the following species as epibionts on *Nemertesia ramosa*: *Plumularia setacea*, *Clytia gracilis*, *Clytia hemisphaerica*, *Scalpellum scalpellum*, *Antennella secundaria*, *Aglaopheria tubulifera*, *Plumularia setacea*, *Obelia bidentata*, *Camapnularia hincksii*, *Zygophylax biarmata*, *Filellum serratum* and *Modeeria rotunda*.

Habitat preferences

Physiographic preferences	Open coast, Offshore seabed, Sea loch / Sea lough, Ria / Voe, Estuary, Enclosed coast / Embayment
Biological zone preferences	Lower circalittoral, Lower infralittoral, Upper circalittoral
Substratum / habitat preferences	Bedrock, Cobbles, Gravel / shingle, Large to very large boulders, Maerl, Pebbles, Small boulders
Tidal strength preferences	Moderately Strong 1 to 3 knots (0.5-1.5 m/sec.), Very Weak (negligible), Weak < 1 knot (<0.5 m/sec.)
Wave exposure preferences	Extremely sheltered, Sheltered, Ultra sheltered, Very sheltered
Salinity preferences	Data deficient
Depth range	10-500
Other preferences	No text entered
Migration Pattern	Non-migratory / resident

Habitat Information

The species is not tolerant of wave action. Where exposed to swell it is not usually found at less than 30 m. It may be found at shallower depths in sheltered locations. Some regeneration may occur from broken stems but this is generally found in few individuals.

Life history

Adult characteristics

Reproductive type	Vegetative
Reproductive frequency	Semelparous / monotely
Fecundity (number of eggs)	11-100
Generation time	<1 year
Age at maturity	Insufficient information
Season	Not relevant
Life span	<1 year

Larval characteristics

Larval/propagule type	-
Larval/juvenile development	Lecithotrophic
Duration of larval stage	< 1 day
Larval dispersal potential	10 -100 m

Larval settlement period	Insufficient information

Life history information

Very little information is directly available on *Nemertesia ramosa*. Completion of most of the fields has been done through extrapolation from the very similar species *Nemertesia antennina* from Hughes (1977).

- Males and females are separate but similar, differentiation being possible through the colour of the reproductive tissues, females being orange (yolk) and males white.
- Allocation of reproductive frequency is difficult. An individual colony will only reproduce once during its 4-5 month lifespan but this reproductive effort is probably spread over an extended period rather than a short episode. In *Nemertesia ramosa*, gonothecae have been observed in all months of the year with the exception of January, October, November and December (Ansín Agíl *et al*, 2001).
- Information on fecundity is sparse and has only been recorded for *Nemertesia antennina* as *mean length of reproductive areas in relation to total length. Recorded values are only an estimate.*
- The planula larvae are released from the gonothecae and drop off the end of the hydrocladium. They settle and metamorphose at between 12-24 hours. This is the only mobile stage in the life cycle of *Nemertesia antennina* and therefore very important for dispersal.
- Dispersal distance is dependent on current speed, turbulence and the height at which the larvae are released but in Torbay, the distance is thought to be between 5 and 50m.
- The dense larva reduces sinking rates by producing a mucous thread (without the thread the larvae sink at 5mm per second in still water).
- Once the larva lands on the seabed, further dispersal is limited to crawling although this probably last for no more than 1-2 hours. Crawling speeds may reach up to 5mm per minute on smooth surfaces so the planula larvae will probably not move further than 1-2 m before settlement.

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

	Intolerance	Recoverability	Sensitivity	Confidence
Substratum Loss	High	Moderate	Moderate	Low

This species is permanently fixed to the substratum so substratum loss would cause death. See information on recoverability below.

Smothering	Intermediate	Very high	Low	Low

Nemertesia ramosa is an upright hydroid with a height of up to 15 cm. The colony structure is fairly tough and flexible. Smothering with 5 cm of sediment may cover over some individuals, others may just have the lower section of the main stem covered. Hughes (1977) found that maturing hydroids that had been smothered with detritus and silt lost most of the hydrocladia and hydranths. After one month, the hydroids were seen to have recovered but although neither the growth rate nor the reproductive potential appeared to have been affected, the viability of the planulae may have been affected. Therefore, an intolerance of intermediate has been recorded.

Increase in suspended sediment	Intermediate	Immediate	Very Low	Low

Nemertesia ramosa is a passive suspension feeder, extracting seston from the water column. Increased siltation may clog up the feeding apparatus, requiring energetic expenditure to clear. Recovery from the energetic expenditure of clearing the feeding apparatus is likely to take only a few days.

Decrease in suspended sediment

Dessication	High	Moderate	Moderate	Low

The species is entirely sub-tidal and typically found below 10 m unless in very sheltered areas. Exposure to desiccating influences will probably cause death. See information on recoverability below.

Increase in emergence regime	High	Moderate	Moderate	Low

The species is entirely sub-tidal and typically found below 10m unless in very sheltered areas. Emergence for an hour will probably cause death. See information on recoverability below.

Decrease in emergence regime

Increase in water flow rate	Intermediate	High	Low	Low

The species lives in very weak to moderate water flows. Increases above this may provide more food but may also prevent the individual hydranths of the colony from remaining extended and feeding therefore, an intolerance of intermediate has been recorded.

Decrease in water flow rate

Increase in temperature	Not relevant

Insufficient information

Decrease in temperature

Increase in turbidity Tolerant Not relevant Not sensitive Low

The species probably has very limited facility for visual perception. It occurs down to depths of 500 m so attenuation of light is probably of little importance.

Decrease in turbidity

Increase in wave exposure High Moderate Moderate Low

The species is intolerant of high wave exposure and so is only found in sheltered areas. Increases in wave exposure above the preferred limits is likely to cause death, either through physical damage or prevention of feeding. See information on recoverability below.

Decrease in wave exposure

Noise Tolerant Not relevant Not sensitive High

The species is likely to have limited facility for detecting noise.

Visual Presence Tolerant Not relevant Not sensitive High

The species probably has very limited facility for visual perception. It occurs down to depths of 500 m. Visual disturbance is probably of little importance.

Abrasion & physical disturbance Intermediate High Low Low

Although the species is quite flexible and robust, abrasion may cause displacement, physical damage to the colonies or death. For example, erect epifauna have been reported to be particularly vulnerable to damage by fishing gear. For example, Magorrian & Service (1998) reported that trawling for queen scallops resulted in removal of emergent epifauna and damage to horse mussel beds in Strangford Lough. They suggested that the emergent epifauna were more intolerant than the horse mussels themselves and reflected early signs of damage (Service & Magorrian, 1997; Magorrian & Service, 1998; Service 1998). Veale *et al.*, 2000 reported that the abundance, biomass and production of epifaunal assemblages decreased with increasing fishing effort. Therefore, a passing scallop dredge is likely to damage or remove a proportion of the population and an intolerance of intermediate has been recorded. Hydroids can regenerate from fragments, form resting stages and have considerable powers of repair (see Gili & Hughes, 1995). In a study of the long term effects of scallop dredging in the Irish Sea, Bradshaw *et al.* (2002) noted that the tough stemmed hydroids *Nemertesia* spp. increased in abundance, presumably because of their powers of regeneration, good local recruitment and ability to colonize newly exposed substratum quickly. Therefore, recoverability has been reported as high.

Displacement High Moderate Moderate Low

The colonies of this species are permanently attached either to the substratum or to other colonies. On displacement individual colonies would be unable to re-attach and therefore an intolerance of high has been recorded. See information on recoverability below.

Chemical Pressures

	Intolerance	Recoverability	Sensitivity	Confidence
Synthetic compound contamination				Not relevant

Insufficient information

Heavy metal contamination Not relevant

Insufficient information

Hydrocarbon contamination Not relevant

Insufficient information

Radionuclide contamination Not relevant

Insufficient information

Changes in nutrient levels Not relevant

Insufficient information

Increase in salinity Not relevant

Insufficient information

Decrease in salinity

Changes in oxygenation Not relevant

Cole *et al.* (1999) suggest possible adverse effects on marine species below 4 mg/l and probable adverse effects below 2mg/l. However, there is no information about *Nemertesia ramosa* tolerance to changes in oxygenation.

Biological Pressures

	Intolerance	Recoverability	Sensitivity	Confidence
Introduction of microbial pathogens/parasites				Not relevant

Insufficient information

Introduction of non-native species				Not relevant

Insufficient information

Extraction of this species	Not relevant	Not relevant	Not relevant	Low

It is highly unlikely that the species would be extracted for any reason.

Extraction of other species	Tolerant	Not relevant	Not sensitive	Low

Nemertesia ramosa has no known obligate relationships.

Additional information

Recoverability

Detailed information on reproduction in this species is not known although fecundity is not particularly high. The larvae of *Nemertesia ramosa* are passive drifters, quite dense and have limited dispersal potential, dependent on water flow rates near the seabed. In a study of the long term effects of scallop dredging in the Irish Sea, Bradshaw *et al.* (2002) noted that *Nemertesia* spp. increased in abundance, presumably because of their powers of regeneration, good local recruitment and ability to colonize newly exposed substratum quickly. In *Nemertesia antennina*, reproduction occurs regularly, there being three generations per year. The presence of adults stimulate larval settlement therefore if any adults remain, reproduction is likely to result in local recruitment.

Importance review

Policy/legislation

- no data -

Status

National (GB) importance	-	**Global red list (IUCN) category**	-

Non-native

Native	-		
Origin	-	**Date Arrived**	-

Importance information

In Torbay, *Nemertesia antennina*, a similar species, has been recorded as hosting more than 150 epizoic species, most of which are not present on other local substrata.

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