



MarLIN

Marine Information Network

Information on the species and habitats around the coasts and sea of the British Isles

Long clawed porcelain crab (*Pisidia longicornis*)

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

Dr Keith Hiscock

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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/1362>]. All terms and the MarESA methodology are outlined on the website (<https://www.marlin.ac.uk>)

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Pisidia longicornis next to barnacles.

Photographer: Judith Oakley

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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 Dr Keith Hiscock

Refereed by

This information is not
refereed.

Authority (Linnaeus, 1767)

**Other common
names** -

Synonyms

Porcellana longicornis
(Linnaeus, 1767)

Summary

🔍 Description

A small crab less than 10 mm across the carapace. It is reddish-orange in colour, frequently with patches of pearly white on the carapace or sometimes all of the carapace is white. Long claws and with only three pairs of walking legs apparent and a tiny fifth pair of appendages often concealed.

📍 Recorded distribution in Britain and Ireland

Present all around Britain and Ireland.

📍 Global distribution

Present in the north-east Atlantic from Norway to Angola, west Africa and the whole of the Mediterranean.

🏠 Habitat

Present under boulders in the intertidal and common in the circalittoral especially in bryozoan turf.

↓ Depth range

intertidal to depth unknown

Q Identifying features

- Carapace less than 10 mm across.
- Carapace suboval in shape and sparsely setose at most.
- Chelae long and cylindrical.
- Three pairs of walking legs.
- Fifth pair of pereopods very small and usually concealed.

Additional information

-none-

✓ Listed by

Further information sources

Search on:

     

Biology review

Taxonomy

Order	Decapoda	Crabs, shrimps, prawns, crayfish and lobsters
Family	Porcellanidae	
Genus	Pisidia	
Authority	(Linnaeus, 1767)	
Recent Synonyms	Porcellana longicornis (Linnaeus, 1767)	

Biology

Typical abundance	Moderate density
Male size range	<10mm
Male size at maturity	
Female size range	3mm
Female size at maturity	
Growth form	Articulate
Growth rate	Data deficient
Body flexibility	
Mobility	
Characteristic feeding method	Scavenger
Diet/food source	
Typically feeds on	
Sociability	
Environmental position	Epifaunal
Dependency	Independent.
Supports	None
Is the species harmful?	No information

Biology information

Pisidia longicornis is the most numerically abundant decapod crustacean in sublittoral areas. It occurs in densities of up to 640 /m² (Robinson & Tully, 2000a). Smaldon (1972) suggests that it "may survive to breed for a second or third season" suggesting a lifespan of up to three years.

Habitat preferences

Physiographic preferences	Open coast, Strait / sound, Sea loch / Sea lough, Ria / Voe
Biological zone preferences	Lower circalittoral, Lower eulittoral, Lower infralittoral, Mid eulittoral, Sublittoral fringe, Upper circalittoral, Upper infralittoral
Substratum / habitat preferences	Large to very large boulders, Small boulders
Tidal strength preferences	Moderately Strong 1 to 3 knots (0.5-1.5 m/sec.), Strong 3 to 6 knots (1.5-3 m/sec.), Very Strong > 6 knots (>3 m/sec.)

Wave exposure preferences	Exposed, Moderately exposed, Sheltered, Very sheltered
Salinity preferences	Full (30-40 psu)
Depth range	intertidal to depth unknown
Other preferences	
Migration Pattern	Non-migratory / resident

Habitat Information

No text entered

Life history

Adult characteristics

Reproductive type	Gonochoristic (dioecious)
Reproductive frequency	Annual episodic
Fecundity (number of eggs)	100-1,000
Generation time	Insufficient information
Age at maturity	Insufficient information
Season	March - September
Life span	2-3 years

Larval characteristics

Larval/propagule type	-
Larval/juvenile development	Planktotrophic
Duration of larval stage	1-2 months
Larval dispersal potential	Greater than 10 km
Larval settlement period	Insufficient information

Life history information

Ingle (1997) indicates that eggs are present from March to August in southern England and from February to September in the Mediterranean.

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.

A Physical Pressures

	Intolerance	Recoverability	Sensitivity	Confidence
Substratum Loss	Intermediate	High	Low	Moderate
<i>Pisidia longicornis</i> occurs on a variety of substrata especially in the subtidal. Although at least some individuals will be destroyed by the removal of substratum, displaced individuals are likely to find alternative homes. The crabs are mobile and have a planktonic larva so that recolonization/recovery is likely to be fairly rapid.				
Smothering	Low	High	Low	Moderate
<i>Pisidia longicornis</i> , being mobile, may escape from smothering events but siltation may remove suitable habitats by clogging underboulders and undergrowth. The crabs are mobile and have a planktonic larva so that recolonization/recovery is likely to be fairly rapid.				
Increase in suspended sediment	Tolerant	Not relevant	Not sensitive	Moderate
<i>Pisidia longicornis</i> most likely feeds as a scavenger and active carnivore so that increase in levels of suspended sediment are unlikely to affect it. However, settlement of suspended silt is addressed in 'Smothering'.				
Decrease in suspended sediment	Tolerant	Not relevant	Not sensitive	Moderate
<i>Pisidia longicornis</i> most likely feeds as a scavenger and active carnivore so that decrease in levels of suspended sediment are unlikely to affect it.				
Desiccation	High	High	Moderate	Moderate
<i>Pisidia longicornis</i> lives in habitats that are protected from desiccation and would most likely, because of its mobility, be able to escape desiccation situations such as boulder turning. However, if exposure to air occurs, desiccation effects are likely to be severe. The crabs are mobile and have a planktonic larva so that recolonization/recovery is likely to be fairly rapid.				
Increase in emergence regime	Low	Very high	Very Low	Moderate
<i>Pisidia longicornis</i> lives in shaded damp habitats on the mid to lower shore. If emergence regime changes so that crabs are exposed for longer to dry conditions, the vertical extent of habitat suitable for the crab is likely to be reduced although individual crabs will survive by moving further downshore. The crabs are mobile and have a planktonic larva so that recolonization/recovery is likely to be fairly rapid.				
Decrease in emergence regime	Tolerant*	Not relevant	Not sensitive*	High
<i>Pisidia longicornis</i> is a species that lives in damp places and fully submerged habitats so that decrease in emergence will favour the species.				
Increase in water flow rate	Low	High	Low	Moderate
<i>Pisidia longicornis</i> lives in habitats where water flow rate may be from very strong to weak. However, as a cryptic species protected by bryozoan turf, kelp holdfasts etc in the sublittoral,				

it is unlikely to be affected by 'wash out' which might however occur from under boulders. The crabs are mobile and have a planktonic larva so that recolonization/recovery is likely to be fairly rapid.

Decrease in water flow rate Intermediate High Low Moderate

The communities in which *Pisidia longicornis* live are particularly well developed in areas subject to strong tidal flow or strong wave action. In the absence of strong wave action, decrease in water flow rate will lead to siltation of habitats and reduction of the bryozoan turf that *Pisidia longicornis* favours. A decline in abundance would therefore be expected. The crabs are mobile and have a planktonic larva so that recolonization/recovery is likely to be fairly rapid.

Increase in temperature Tolerant Not relevant Not sensitive Moderate

Pisidia longicornis occurs in a wide range of temperature regimes from Norway to Angola and it is not therefore expected that crabs would be adversely affected by increase in temperature at the level of the benchmark.

Decrease in temperature Intermediate High Low High

Long-clawed porcelain crabs were adversely affected by the 1962-63 winter in Britain. Crisp (1964) records that many hundreds were found dead on the strandline at Oxwich, south Wales. In other locations, they were not found on the shore (although could have migrated offshore). Overall, it seems that some mortality is likely and an intolerance of Intermediate is suggested. The crabs are mobile and have a planktonic larva so that recolonization/recovery is likely to be fairly rapid.

Increase in turbidity Low High Low Moderate

Pisidia longicornis is a scavenger and is only likely to be adversely affected by increased turbidity through visual impairment. The crabs are mobile and have a planktonic larva so that recolonization/recovery is likely to be fairly rapid.

Decrease in turbidity Tolerant Not relevant Not sensitive Moderate

Pisidia longicornis is a scavenger and is unlikely to be adversely affected by decreased turbidity.

Increase in wave exposure Intermediate High Low Moderate

Pisidia longicornis lives in locations where it could be displaced by strong water movement. The crabs are mobile and have a planktonic larva so that recolonization/recovery is likely to be fairly rapid.

Decrease in wave exposure Intermediate High Low Moderate

Pisidia longicornis lives under boulders, in kelps holdfasts and amongst bryozoan turfs especially. A decrease in wave exposure may allow silt to settle thus removing suitable habitats by clogging under boulders and undergrowth. The crabs are mobile and have a planktonic larva so that recolonization/recovery is likely to be fairly rapid.

Noise Tolerant Not relevant Not sensitive Moderate

Pisidia longicornis is unlikely to react to noise as it has no appropriate organs. It will most likely react to vibrations resulting from noise but is probably tolerant at the benchmark level.

Visual Presence Low Immediate Not sensitive Moderate

Crabs scuttle away when boulders are overturned - most likely as a response to increased light levels but also, since they have eyes, visual presence. The crabs are mobile so that recolonization/recovery is likely to be very rapid.

Abrasion & physical disturbance **High** **High** **Moderate** **Moderate**

The crabs are easily crushed by abrasion by mobile cobbles and larger substrata or by mooring chains. The crabs are mobile and have a planktonic larva so that recolonization/recovery is likely to be fairly rapid.

Displacement **Low** **Very high** **Very Low** **High**

Displacement is unlikely to adversely affect *Pisidia longicornis* unless it is trapped in a new unsuitable location. The species can move to a suitable area.

Chemical Pressures

Synthetic compound contamination **Intolerance** **Recoverability** **Sensitivity** **Confidence**
Intermediate **High** **Low** **Very low**

No information has been found specifically on *Pisidia longicornis* but crustaceans in general are fairly tolerant. Bryan & Gibbs (1991) report that crabs appear to be relatively resistant to TBT although some deformity of regenerated limbs has been observed. In the early 1960's in Washington, experimental application of a broad range of pesticides was tested for use on shrimp-infested oyster grounds identified carbaryl (1-naphthol n-methyl carbamate; sold under the trade name Sevin) to be an effective method to control burrowing shrimp (Feldman *et al.*, 2000). Carbaryl, a non-persistent organocarbamate pesticide that is extremely toxic to arthropods, was applied at 9kg/ha to remove shrimps from oyster grounds. In view of the equivocal results from different studies and with different chemicals, an intolerance of intermediate is suggested with a very low confidence. The crabs are mobile and have a planktonic larva so that recolonization/recovery is likely to be fairly rapid.

Heavy metal contamination **Intermediate** **High** **Low** **Low**

No information has been found specifically on *Pisidia longicornis* but crustaceans in general are fairly tolerant. Crompton (1997) reports that the concentrations above which mortality of crustaceans can occur is 0.01-0.1mg/l for mercury, copper and cadmium, 0.1-1mg/l for zinc, arsenic and nickel and 1-10mg/l for lead and chromium. Crustaceans are generally regarded as being more intolerant of cadmium than other groups (McLusky, 1986). The crabs are mobile and have a planktonic larva so that recolonization/recovery is likely to be fairly rapid.

Hydrocarbon contamination **Intermediate** **High** **Low** **Low**

No information has been found specifically on *Pisidia longicornis* but crustaceans in general are fairly tolerant. The crabs are mobile and have a planktonic larva so that recolonization/recovery is likely to be fairly rapid.

Radionuclide contamination **Tolerant** **Not relevant** **Not sensitive** **High**

No information has been found for radionuclides adversely affecting crustaceans.

Changes in nutrient levels **Tolerant** **Not relevant** **Not sensitive** **Moderate**

No information has been found for nutrients adversely affecting crustaceans.

Increase in salinity **Intermediate** **High** **Low** **Moderate**

Long-clawed porcelain crabs are apparently not recorded in low salinity conditions but do occur in the lower reaches of estuaries suggesting that they require full or variable salinity. Mortality may therefore occur in events where salinity falls significantly. The crabs are mobile and have a planktonic larva so that recolonization/recovery is likely to be fairly rapid.

Decrease in salinity **High** **High** **Moderate** **Moderate**

Importance review

Policy/legislation

- no data -

★ Status

National (GB)
importance -

Global red list
(IUCN) category -

Non-native

Native -

Origin -

Date Arrived

Not relevant

Importance information

Psidia longicornis is considered to be the most abundant decapod crustacean on sublittoral rocky surfaces. However, it is small and, as a scavenger, is not greatly important in functioning of a community.

Bibliography

- Bryan, G.W. & Gibbs, P.E., 1991. Impact of low concentrations of tributyltin (TBT) on marine organisms: a review. In: *Metal ecotoxicology: concepts and applications* (ed. M.C. Newman & A.W. McIntosh), pp. 323-361. Boston: Lewis Publishers Inc.
- Crisp, D.J. (ed.), 1964. The effects of the severe winter of 1962-63 on marine life in Britain. *Journal of Animal Ecology*, **33**, 165-210.
- Crompton, T.R., 1997. *Toxicants in the aqueous ecosystem*. New York: John Wiley & Sons.
- Crothers, J. & Crothers, M., 1988. *A key to the crabs and crab-like animals of British inshore waters*. Somerset, England: Field Studies Council. [AIDGAP guide, no. 155.]
- Feldman, K.L., Armstrong, D.A., Dumbauld, B.R., DeWitt, T.H. & Doty, D.C., 2000. Oysters, crabs, and burrowing shrimp: review of an environmental conflict over aquatic resources and pesticide use in Washington State's (USA) coastal estuaries. *Estuaries*, **23**, 141-176.
- Howson, C.M. & Picton, B.E., 1997. *The species directory of the marine fauna and flora of the British Isles and surrounding seas*. Belfast: Ulster Museum. [Ulster Museum publication, no. 276.]
- Ingle, R., 1997. Crayfishes, lobsters and crabs of Europe. An illustrated guide to common and traded species. London: Chapman and Hall.
- Lindley, J.A., 1987. Continuous plankton records: the geographical distribution and seasonal cycles of decapod crustacean larvae and pelagic post-larvae in the north-eastern Atlantic Ocean and the North Sea. *Journal of the Marine Biological Association of the United Kingdom*, **67**, 145-167.
- McLusky, D.S., Bryant, V. & Campbell, R., 1986. The effects of temperature and salinity on the toxicity of heavy metals to marine and estuarine invertebrates. *Oceanography and Marine Biology: an Annual Review*, **24**, 481-520.
- Robinson, M. & Tully, O., 2000. Dynamics of a subtidal population of the porcellanid crab *Pisidia longicornis* (Decapoda: Crustacea). *Journal of the Marine Biological Association of the United Kingdom*, **80**, 75-83.
- Robinson, M. & Tully, O., 2000. Seasonal variation in community structure and recruitment of benthic decapods in a sub-tidal cobble habitat. *Marine Ecology Progress Series*, **206**, 181-191.
- Smaldon, G., 1972. Population structure and breeding biology of *Pisidia longicornis* and *Porcellana platycheles*. *Marine Biology*, **17**, 171-179.

Datasets

- Bristol Regional Environmental Records Centre, 2017. BRERC species records recorded over 15 years ago. Occurrence dataset: <https://doi.org/10.15468/h1In5p> accessed via GBIF.org on 2018-09-25.
- Centre for Environmental Data and Recording, 2018. Ulster Museum Marine Surveys of Northern Ireland Coastal Waters. Occurrence dataset <https://www.nmni.com/CEDaR/CEDaR-Centre-for-Environmental-Data-and-Recording.aspx> accessed via NBNAtlas.org on 2018-09-25.
- Cofnod – North Wales Environmental Information Service, 2018. Miscellaneous records held on the Cofnod database. Occurrence dataset: <https://doi.org/10.15468/hcgqsi> accessed via GBIF.org on 2018-09-25.
- Environmental Records Information Centre North East, 2018. ERIC NE Combined dataset to 2017. Occurrence dataset: <http://www.ericnortheast.org.uk/home.html> accessed via NBNAtlas.org on 2018-09-38
- Fenwick, 2018. Aphotomarine. Occurrence dataset <http://www.aphotomarine.com/index.html> Accessed via NBNAtlas.org on 2018-10-01
- Fife Nature Records Centre, 2018. St Andrews BioBlitz 2014. Occurrence dataset: <https://doi.org/10.15468/erweal> accessed via GBIF.org on 2018-09-27.
- Fife Nature Records Centre, 2018. St Andrews BioBlitz 2015. Occurrence dataset: <https://doi.org/10.15468/xtrbvj> accessed via GBIF.org on 2018-09-27.
- Fife Nature Records Centre, 2018. St Andrews BioBlitz 2016. Occurrence dataset: <https://doi.org/10.15468/146yiz> accessed via GBIF.org on 2018-09-27.
- Isle of Wight Local Records Centre, 2017. IOW Natural History & Archaeological Society Marine Invertebrate Records 1853-2011. Occurrence dataset: <https://doi.org/10.15468/d9amhg> accessed via GBIF.org on 2018-09-27.
- Kent Wildlife Trust, 2018. Biological survey of the intertidal chalk reefs between Folkestone Warren and Kingsdown, Kent 2009-2011. Occurrence dataset: <https://www.kentwildlifetrust.org.uk/> accessed via NBNAtlas.org on 2018-10-01.
- Kent Wildlife Trust, 2018. Kent Wildlife Trust Shoresearch Intertidal Survey 2004 onwards. Occurrence dataset: <https://www.kentwildlifetrust.org.uk/> accessed via NBNAtlas.org on 2018-10-01.
- Manx Biological Recording Partnership, 2017. Isle of Man wildlife records from 01/01/2000 to 13/02/2017. Occurrence dataset: <https://doi.org/10.15468/mopwow> accessed via GBIF.org on 2018-10-01.
- Manx Biological Recording Partnership, 2018. Isle of Man historical wildlife records 1990 to 1994. Occurrence dataset: <https://doi.org/10.15468/aru16v> accessed via GBIF.org on 2018-10-01.

- Manx Biological Recording Partnership, 2018. Isle of Man historical wildlife records 1990 to 1994. Occurrence dataset: <https://doi.org/10.15468/aru16v> accessed via GBIF.org on 2018-10-01.
- National Trust, 2017. National Trust Species Records. Occurrence dataset: <https://doi.org/10.15468/opc6g1> accessed via GBIF.org on 2018-10-01.
- NBN (National Biodiversity Network) Atlas. Available from: <https://www.nbnatlas.org>.
- OBIS (Ocean Biogeographic Information System), 2019. Global map of species distribution using gridded data. Available from: Ocean Biogeographic Information System. www.iobis.org. Accessed: 2019-03-21
- Outer Hebrides Biological Recording, 2018. Invertebrates (except insects), Outer Hebrides. Occurrence dataset: <https://doi.org/10.15468/hpavud> accessed via GBIF.org on 2018-10-01.
- South East Wales Biodiversity Records Centre, 2018. SEWBReC Myriapods, Isopods, and allied species (South East Wales). Occurrence dataset: <https://doi.org/10.15468/rvxsqs> accessed via GBIF.org on 2018-10-02.
- South East Wales Biodiversity Records Centre, 2018. Dr Mary Gillham Archive Project. Occurrence dataset: <http://www.sewbrec.org.uk/> accessed via NBNAtlas.org on 2018-10-02
- Yorkshire Wildlife Trust, 2018. Yorkshire Wildlife Trust Shoresearch. Occurrence dataset: <https://doi.org/10.15468/1nw3ch> accessed via GBIF.org on 2018-10-02.