Japanese skeleton shrimp, *Caprella mutica*

**Overview**

**Short description of *Caprella mutica*, Japanese skeleton shrimp**

A large skeleton shrimp up to 49 mm in length; males are larger than females. There are fine hairs on the first two body segments, large spines on third to seventh body segments in males and orange spots on the females' brood pouch.

**Description of *Caprella mutica*, Japanese skeleton shrimp status in GB**

The Japanese skeleton shrimp has established populations in the North Sea, the west coast of Scotland, in the Irish Sea and English Channel.

**Habitat summary: *Caprella mutica*, Japanese skeleton shrimp**

Typically found on a range of natural substrata including hydroids and attached or drifting macro-algae (seaweed), and also artificial substrata such as ropes, buoys, boat hulls and floating pontoons. Often found associated with areas of human activity; marinas, harbours, aquaculture sites.

**Overview table**

<table>
<thead>
<tr>
<th>Environment:</th>
<th>Marine</th>
</tr>
</thead>
<tbody>
<tr>
<td>Species status:</td>
<td>Non-Native</td>
</tr>
<tr>
<td>Native range:</td>
<td>China, Mongolia, Hokkaido, Honshu, Kyushu, Nansei-shoto, Shikoku, North Korea, South Korea, Sakhalin, Taiwan</td>
</tr>
<tr>
<td>Functional type:</td>
<td>Detritivore</td>
</tr>
<tr>
<td>Status in England:</td>
<td>Non-Native</td>
</tr>
<tr>
<td>Status in Scotland:</td>
<td>Non-Native</td>
</tr>
<tr>
<td>Status in Wales:</td>
<td>Non-Native</td>
</tr>
<tr>
<td>Location of first record:</td>
<td>Lyne of Lorn, near Oban Scotland</td>
</tr>
<tr>
<td>Date of first record:</td>
<td>2000</td>
</tr>
</tbody>
</table>

**Invasion history: *Caprella mutica*, Japanese skeleton shrimp**

**Origin**

Native to the sub-boreal waters of North-East Asia. The Japanese skeleton shrimp was first described from Peter the Great Bay, on the Siberian coast of the Sea of Japan in 1935.

**First Record**

First recorded in the UK in 2000, from a salmon farm near Oban in Scotland. It is not known how long the Japanese skeleton shrimp had been present at the site prior to identification.

**Pathway and Method**

The method of introduction to GB is unknown but is likely to be associated with shipping and aquaculture. The Japanese skeleton shrimp commonly attaches to algae which in turn are regularly found attached to ships' hulls. It has also been recorded in ships' sea chests (the intake area for ballast water), living among colonies of hydroids. Transport within ballast water or associated with aquaculture products and equipment such as fish farm cages, nets and buoys may also occur.

**Species Status**

**GB Distribution from NBN Atlas**

**Author’s name:** Natalie Sweet

**Last updated:** January 6th, 2012

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A rapidly invading species; within 40 years the Japanese skeleton shrimp has spread throughout the Northern hemisphere and has recently been found in New Zealand. In the UK, its range has extended throughout the North Sea and Celtic Sea coasts and the English Channel in less than 14 years. Established non-native populations are now found on both coasts of North America, Western Europe and New Zealand.

Ecology & Habitat: *Caprella mutica*, Japanese skeleton shrimp

Dispersal Mechanisms
Lacking a free swimming planktonic stage the Japanese skeleton shrimp spends its entire life on the substrate surface. Consequently this species naturally has a limited dispersal potential, typically only a few kilometers per year. This characteristic is an impediment to natural global dispersal, supporting the theory that introductions are associated with human activity. On a local and regional scale, dispersal along coasts occurs on drifting algae.

Reproduction
The Japanese skeleton shrimp has a high reproductive capability. Females produce multiple broods and large brood sizes; the maximum number of hatchlings recorded per female being 82. The first brood is produced approximately 53 days after hatching at an average body length of 8.5 mm and at a water temperature of 13-14 °C.

Known Predators/Herbivores
A variety of fish and crabs prey upon the Japanese skeleton shrimp.

Resistant Stages
None known.

Habitat Occupied in GB
The Japanese skeleton shrimp has been found in high concentrations in marine Special Areas of Conservation (SACs) designated for their biogenic reefs. It tends to be found in areas of human activity on natural and artificial substrata including hydroids, macro-algae, mooring ropes and buoys, but has yet to be found in natural habitats.

Distribution: *Caprella mutica*, Japanese skeleton shrimp
Native to sub-boreal waters of North-East Asia. Now widely distributed within the Northern hemisphere and recently found in New Zealand. In GB the Japanese skeleton shrimp has been recorded from southern and south west England, the west coast of Scotland and the Western Isles.

Impacts: *Caprella mutica*, Japanese skeleton shrimp

Environmental Impact
In aquarium trials the Japanese skeleton shrimp has displayed aggressive competitive behavior, displacing native skeleton shrimps from the substrate even at low densities. While this behavior has not been observed in the wild, Japanese skeleton shrimps have been recorded living in close proximity to native shrimps under the same environmental conditions, suggesting that similar situations may arise. The wider environmental implications have yet to be confirmed, but it is possible that it will have a significant impact on benthic communities.

Health and Social Impact
None known.

Economic Impact
In the summer months, high densities of Japanese skeleton shrimp have been known to block water intakes on pumps for the feeding systems at caged fish sites and have settled on mussel lines which should have been covered with juvenile mussels. Economic costs associated with removal of fouling organisms and loss of utility may be incurred.

References & Links: *Caprella mutica*, Japanese skeleton shrimp

Identification


Biology, ecology, spread, vectors


**Management and impact**


**General**
