Non-native animal species

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Animal groups considered today

**Anemones**
- *Haliplanella lineata*

**Polychaetes**
- *Goniadella gracilis*
- *Ficopomatus enigmaticus*

**Crustaceans**
- *Elminius modestus*
- *Balanus amphitrite*
- *Corophium sextonae*
- *Caprella mutica*
- *Eriocheir sinensis*

**Molluscs**
- *Crassostrea gigas*
- *Tiostrea chilensis*
- *Mercenaria mercenaria*
- *Petricola pholadiformis*
- *Mya arenaria*
- *Crepidula fornicata*
- *Potamopyrgus antipodarum*

**Bryozoans**
- *Tricellaria inopinata*
- *Bugula neritina*

**Ascidians**
- *Styela clava*
- *Corella eumyota*
- *Didemnum vexillum*
- *Botrylloides violaceus*
**Description:**
A small anemone, usually greenish with orange, yellow or white stripes. The tentacles are often very long with up to about 100 in number, which are fully retractable. Tentacles can be transparent or slightly coloured grey and green, sometimes flecked with crimson. It most often measures about 10 mm across the base but can be larger.

**Habitat and Ecology:**
Found in the intertidal and subtidal on hard substrata, usually in protected areas. Lives in pools attached to rocks or shells, sometimes amongst mussels. Also occurs in estuaries and is frequently found in harbours. It is able to tolerate a large range of temperatures and salinities.

**Distribution:**
Puffin Island and Abereiddy

**Originally from:**
Asia

**Vector:**
Probably ship-assisted, can also be transported on oysters.

**Invasive?**
Unknown.

**Controls?**
None used.
**Goniadella gracilis**  
**Polychaete worm**  
**Llyngyr**

**Description:**
A free-living, errant, polychaete worm (family Goniadidae). It can reach about 30 mm in length (usually smaller) and has a thin body, rounded in cross-section, with many segments and projecting parapodia. It has a conical prostomium with four small antennae at the tip and an eversible proboscis with mouthparts arranged as rows of dark chevron-like structures on either side. Preserved worms are white to pale straw coloured or yellowish, sometimes with brownish markings. Details of the parapodia and proboscis distinguish it from similar native species.

**Habitat and Ecology:**
Recorded on silty sand and sand substrata. A free living predatory polychaete

**Distribution:**
Widespread in the southern Irish Sea.

**Originally from:**
North America, Africa

**Vector:**
Probably ship assisted

**Invasive?**
Unknown.

**Controls?**
None used.
**Ficopomatus enigmaticus**

**Description:**
A polychaete worm that builds and lives in white calcareous tubes about 2 mm in diameter and up to 10 cm long. They can occur as single tubes or large reef-like aggregations that can be greater than 7 m in diameter. The tube begins white but are stained brown as they age. The worms themselves are usually 20-25 mm in length but may reach 40 mm. They have a crown of 12-20 grey, green or brown branching gill plumes which they extrude from the slightly flared tube opening to filter feed.

**Habitat and Ecology:**
Inhabits warm shallow sublittoral waters as well as brackish estuaries, docks and lagoons. This species forms reefs on different types of hard substrata, including rocks and solid surfaces such as hulls of ships and pipes.

**Distribution:**
Swansea, Abereiddy and Pickleridge Lagoon.

**Originally from:**
Unknown

**Vector:**
Probably ship assisted

**Invasive?**
Not known to be invasive.

**Map:**
[Map: NBN.org.uk](http://www.NBN.org.uk)

**Controls?**
It is removed from buoys and ships’ hulls by scraping.

**Photo:**
Judith Oakley (published on the MarLIN website)
**Elminius modestus**  Australasian barnacle  Crachen Awstralia

**Description:**

A small barnacle with only four shell plates. It is roughly 5-10 mm in diameter. The opercular aperture is large and diamond shaped. Juvenile barnacles have smooth plates with an indentation at the bottom centre of each; while older individuals have marked vertical ridges along their shell plates that give the barnacle an uneven, roughly circular margin. When young they are coloured greyish white; the adults become greyish brown and somewhat eroded.

**Habitat and Ecology:**

Found at all levels of the shore including shallow sublittoral but is more common upper to mid-shore. It affixes to a variety of substrata e.g. shells, stones and artificial structures and is more tolerant of turbidity and changes in salinity than other species of barnacle and is found from estuaries to coasts with moderate wave exposure.

**Distribution:**

Found all around the coast of Wales.

**Originally from:**

Oceania

**Vector:**

Accidentally transported, probably on ships hulls or in ballast water

**Invasive?**

Invasive. Now widespread around Wales, has displaced native barnacles in some habitats but in others such as estuaries has colonised new areas.

**Invasive?**

Ships' hulls and buoys are scraped to remove barnacles.

**Map:**

Map: NBN.org.uk

**Photo:**

Photo: CCW
Description:

*Balanus amphitrite* is a medium sized barnacle, up to 15 mm in diameter. It has a tapering opercular aperture. It’s colour is whitish with purple or brown vertical stripes. The surface of the test plates are ribbed.

Habitat and Ecology:

Intertidal, particularly in reduced salinity environments.

Distribution:

Hook Quay, Pembroke River, Milford Haven

Originally from:

Oceania

Vector:

Accidentally transported, probably on ships hulls or in ballast water

Invasive?

It is a fouling organism.

Invasive?

None used.
**Corophium sextonae**

**Mud shrimp**

**Berdysyn y llaid**

**Habitat and Ecology:**
Constructs tubes of mud on algae and animals, especially the holdfasts of *Laminaria*, hydroids and sponges, from the lower intertidal to depths of about 50 metres.

**Distribution:**
Pembrokeshire.

**Originally from:**
Oceania

**Vector:**
Unknown

**Invasive?**
It has apparently negligible effects, although Spooner (1951) considered that its increase in abundance in the Plymouth area was linked to a decrease in abundance of the native *Corophium bonnelli*.}

**Description:**
A free living crustacean (shrimp) about 5 mm long that builds tubes of mud on algae, ranging from shallow water up to 50 m deep. Urosome segments fused; without a lateral ridge. Uropods inserted laterally. Head has an acute triangular rostrum, lateral lobes prominent.

**Controls?**
None used.
**Caprella mutica**

**Description:**
Caprellids, also known as skeleton shrimps, have slender bodies and are cylindrical in shape. They have bulbous heads and antenna 1 is usually longer than 2. They have a reduced number of appendages. They tend to be slow-moving. *Caprella mutica* is a large caprellid amphipod; males can be up to 3.5 cm long and females 1.5 cm. They are orange to red in colour and the brood pouch of the female is covered with dark red spots.

**Habitat and Ecology:**
Shallow subtidal. Found on a range of natural substrata e.g. hydroids and algae and artificial substrata including buoys, mooring ropes, boat hulls and floating pontoons. It is often found in association with *Sargassum muticum*.

**Distribution:**
Milford Haven marina. Anglesey.

**Originally from:**
North east Asia

**Vector:**
Most likely shipping (hull fouling and ballast water) and aquaculture

**Invasive?**
Unknown

**Controls?**
None known.

**Amphipod**

**Deudroed**
**Eriocheir sinensis**  
Chinese mitten crab  
Cranck menigog

**Habitat and Ecology:**
Juveniles occur in lower estuaries and marine habitats. As they develop, young crabs migrate upstream, into brackish and freshwater systems. Adults usually live in burrows in muddy riverbanks. In the autumn, the crabs migrate up to 1500 km down rivers to the sea to reproduce. Adult mitten crabs can also travel over land for long distances.

**Distribution:**
Found in the River Dee and Conwy Estuary.

**Originally from:**
Asia.

**Vector:**
Accidentally transported, probably on ships or in ballast water.

**Invasive?**
This species has recently spread into Wales via the Dee Estuary. It is known to cause damage to flood banks and feeds on fish eggs (amongst other things). Has the potential to outcompete the native white-clawed crayfish. May cause siltation of gravel runs used for spawning by salmon and trout.

**Controls?**
Having now arrived in Great Britain, Chinese mitten crab can be expected to spread through natural dispersal. Intervention may be possible to prevent new populations becoming established in uninfested rivers. In some parts of the world the species is caught using traps.

**Description:**
A large crab with a maximum carapace (body) length of 56 mm. The carapace is quite square in outline, narrowing towards the front and has four teeth on each side. It is olive green in colour with paler legs, which are twice the length of the body. The most obvious distinguishing feature of the Chinese mitten crab is the dense mat of hair on the claws. The leading edges of the legs are also very hairy.

Photo: The Food and Environment Research Agency (Fera)
**Crassostrea gigas** Portuguese oyster Wystrysen Portiwsal

**Description:**

The shell is elongate and can grow up to 18 cm long. Whitish yellow or bluish grey in colour and often has deep purple patches. The left valve is cupped with 6 to 7 bold ribs making the shell margin rough. The right valve is flat and has ribs corresponding to the troughs of the left valve. Inside the shell in white; the adductor scar is usually purple.

**Habitat and Ecology:**

It is found on the lower shore and sublittorally to a depth of up to 80 m. The shell may be free living or attached to hard substrata.

**Distribution:**

Has been farmed on around 300 sites throughout England, Scotland, Wales and Northern Ireland.

**Originally from:**

Asia

**Vector:**

Commercially valuable shellfish species.

**Invasive?**

Although not previously thought to be invasive this species has started forming razor sharp reefs in northern Europe overgrowing native species.

**Controls?**

None known.

Map: NBN.org.uk

Photo: Paul Brazier, CCW
Tiostra chilensis  New Zealand flat oyster  Wystrysen Seland Newydd

**Habitat and Ecology:**

Found from lower shore to 60m. Attaches to the hard substratum and often results in stacks of shells together. Form dense aggregations due to having a brief pelagic stage.

**Distribution:**

Only Menai Strait, north Wales.

**Originally from:**

Australia

**Vector:**

Intentional relocation for aquaculture and possible transfer with other shellfish

**Invasive?**

Not known to be invasive. The first successful release was in 1970 in the Menai Strait in north Wales. It appears to have spread only very slowly (1-2km in 25 years) since its release and is still confined to north Wales. No adverse impact is known and it is a commercially important edible species.

**Controls?**

None used.

**Description:**

Shell made of two valves, one lightly convex or flat and one cupped. *Tiostra chilensis* and *Tiostra lutaria* are conspecific; *Tiostra chilensis* has been adopted for both species. Similar to the native oyster, but typically has a raised edge of the lower valve, rising above the edge of upper valve.

Photo: Paul Brazier, CCW
**Mercenaria mercenaria**  
**Hard shelled clam**  
**Cragen fawr y forwyn**

**Description:**
It has a thick, roughly triangular shaped shell that can grow up to 12 cm in length. Light brown to grey with a violet border. The concentric bands on the shell are obvious and are closely spaced around the margins but spaced more widely around the umbo. These can be worn away in older shells. The inner shell surface is shiny with a purplish-blue tinge around the muscle scars. There are three conspicuous teeth on each valve and a crenulate shell edge.

**Habitat and Ecology:**
It prefers sandy habitats to depths of 15 m, but is also found on the lower shore buried in muddy sediment and the shallow sublittoral in bays and estuaries.

**Distribution:**
Menai Strait, Pembrokeshire.

**Originally from:**
North America.

**Vector:**
Commercially valuable shellfish species.

**Invasive?**
Not known to be invasive.

**Controls?**
The species is not controlled although the population has been severely depleted by the fishery.
**Petricola pholadiformis**  American piddock  Pidog America

**Habitat and Ecology:**

*Petricola pholadiformis* bores into hard clay, solid mud, chalk and limestone from midtide to low water. Although it has been dredged from a depth of 8 m, its occurrence in deeper water is unknown.

**Distribution:**

Isolated records from north Wales, incl Dee estuary and Gower.

**Originally from:**

North America.

**Vector:**

An associated unintentional introduction with the American oyster

**Invasive?**

Unknown.

**Controls?**

None used.

Description:

A slightly gaping bivalve with a thin, fragile shell with both valves being similar in shape and size. It is oval and elongate with a maximum length of about 6.4 cm. The surface of the shell has numerous concentric lines crossed by over 40 radiating ribs, some bearing spines. The shell is off-white in colour. The ligament which opens the shell is external and prominent. Native piddocks have additional calcified pates across the hinge area (protplax)

Photo: National Museum Wales

Map: NBN.org.uk
**Mya arenaria**  
**Sand gaper clam**  
**Cragen blacen**

### Description:

A large robust bivalve. The shell is white or grey with a chalky texture and irregular concentric lines; the valves are dissimilar, fragile and easily broken. It is oval and slightly elongate. It can grow up to 10 cm long. The clam is rounded at the anterior end and somewhat pointed at the posterior. The hinge is not visible from the outside.

### Distribution:

Found on all British coasts.

### Habitat and Ecology:

It lives buried as much as 50 cm deep in mud and sand, extending only its long siphon to the water (up to 40 cm). It can be found in the intertidal and in estuaries mainly in shallow water but has been discovered living below 190 m. It has a great ability to adapt and tolerates low salinities and pollution.

### Originally from:

North America.

### Vector:

It may have been deliberately introduced for food or bait, or larvae may have been transported accidentally in the bilges of ships.

### Invasive?

Unknown.

### Controls?

None used.

Map: NBN.org.uk
**Crepidula fornicata**  
**American slipper limpet**  
**Ewin mair**

**Habitat and Ecology:**  
Adults live on a variety of surfaces in a wide range of environmental conditions. It reaches its highest densities in sheltered muddy areas, often attaching to the shells of dead and living hard-shelled invertebrates. Larvae are pelagic and are found in the water column; they can move by themselves but are mostly carried by water movement. Adults are able to attach to mobile species and ‘hitch’ a lift to new areas.

**Distribution:**  
Pembrokeshire.

**Originally from:**  
Pacific coast of North America

**Vector:**  
Introduced in association with imported oysters and clams. This species may also be transported on ships' hulls and in ballast water in the pelagic larval phase.

**Invasive?**  
In south Wales since at least the 1960’s, was recently introduced into north Wales via mussel lays, but an eradication programme appears to have removed the species. This species threatens oysters and mussel beds by overgrowing them.

**Controls?**  
Reducing the movement of infected bivalve stocks and managing ballast water and removal of ship fouling may help reduce the rate of spread. Mechanically removing slipper limpets from the seabed is possible, but costly and extremely destructive. These methods are unlikely to be successful in the long-term.

**Description:**  
The shell is oval shaped and can be up to 5 cm in length. The large shell opening has a shelf, extending half its length. It’s shell is smooth and white, cream, yellow or pinkish in colour with stripes or spots of red or brown. It is commonly found in curved chains or stacks made up of several individuals.
**Potamopyrgus antipodarum**  Jenkin’s spire shell  Malwen Jenkins

**Description:**
A gastropod (snail) with right-handed coiling and an elongated shell with 7 to 8 whorls. The mean size is around 5 mm with maximum size roughly 12 mm. The operculum is thin and the aperture is oval. Shell colours vary from grey and dark brown to light brown.

**Habitat and Ecology:**
A nocturnal grazer, feeding on detritus, algae, sediments and diatoms. This snail tolerates siltation, flourishes in disturbed waters, and profits from high nutrient flows. It is found amongst macrophytes and prefers the littoral zone; it tolerates high flow conditions where it can burrow into the sediment.

**Distribution:**
Found all around Wales.

**Originally from:**
Australia and New Zealand

**Vector:**
In drinking water barrels in ships.

**Invasive?**
Not known to be invasive.

**Controls?**
None used.
**Tricellaria inopinata**

**Description:**

A robust opportunistic bryozoan, capable of tolerating a wide variety of temperatures and salinities, as well as high organic content. Settles on a wide range of artificial and natural substrata.

**Habitat and Ecology:**

Marine benthic intertidal and subtidal, preferably in marinas, harbours and brackish water bodies on hard substrata. Wide temperature and salinity tolerance and tolerant to polluted and turbid waters. It grows on a variety of artificial hard substrata: vessels' hulls, buoys, ropes and epiphytic on macrophytes *Sargassum muticum, Undaria pinnatifida* and *Codium fragile*, mussels, sponges, ascidians and other bryozoans.

**Distribution:**

South England

**Originally from:**

Asia, North America.

**Vector:**

Probably ship-assisted.

**Invasive?**

Possibly invasive.

**Controls?**

None known.

Photo: Judith Oakley (published on the MarLIN website)
**Description:**

*Bugula neritina* forms upright, flexible bushy colonies, branching dichotomously, to about 10 cm high and is purplish-brown in colour. Zooids white, with the outer corner pointed. *B. neritina* differs from other species in this genus in that it possesses no avicularia, opercula or spines. The lophophore (crown of tentacles used for feeding) measures an average of 0.76 mm in diameter and bears 23 tentacles.

**Habitat and Ecology:**

*Bugula neritina* colonies are typically found in harbours and embayments, intertidal to 5 m, attached to any available hard substrata. Larvae colonise a variety of artificial substrata including hulls, docks and immersed ropes. Studies have shown *B. neritina* larvae prefer to attach to rougher surfaces and to organic material. For example, in nature they frequently affix themselves to algae and to established bryozoan colonies. *B. neritina* is found in euhaline and polyhaline regions (water salinity around 30-18‰).

**Distribution:**

Anglesey, Milford Haven and off the coast of Pembrokeshire.

**Originally from:**

Unknown.

**Vector:**

Possibly spread on the hulls of pleasure craft and ships

**Invasive?**

Yes. A fouling organism.

**Controls?**

None known.
**Habitat and Ecology:**

*Styela clava* is found on hard surfaces and occurs abundantly in sheltered warm water docks and harbours in shallow water.

**Distribution:**

North and south Wales.

**Originally from:**

Asia

**Vector:**

Accidentally transported, probably on ships hulls

**Invasive?**

Largely unknown, although it is a fouling pest on ships hulls and oyster beds.

**Controls?**

Localised control can be achieved by exposure, varying the salinity or temperature.

**Description:**

A solitary sea squirt with a long body, narrowing to a thin, tough stalk. It can reach 12 cm long; the stalk can be a 1/3 of the total length. The surface is usually leathery with creases and bulges. The siphons at the top end are close together.

*Styela clava* Leathery sea squirt

Photo: Judith Oakley (published on the MarLIN website)
Corella eumyota

Description:
A solitary, greyish, semi-translucent sea squirt that usually forms aggregations. It has a rounded or oval body. This sea squirt grows to between 2 and 4 cm long. It has two prominent siphons: an oral siphon at top, and an atrial siphon located 1/3 of the way down the side of the body.

Habitat and Ecology:
Found in shallow, subtidal waters attached to hard substrata such as boulders, ship hulls, pilings, ropes and other submerged structures. It prefers calm, protected waters.

Distribution:
Locally known from marinas of southern England, Wales and Ireland

Originally from:
South America, Africa, Asia.

Vector:
Possibly spread on the hulls of pleasure craft

Invasive?
Not invasive.

Chwistrell fôr

Map: marlin.ac.uk

None known.

Photo: Judith Oakley (published on the MarLIN website)

Map: marlin.ac.uk
**Didemnum vexillum**  
*Colonial sea squirt*  
*Chwistrell fôr trefedigol*

**Description:**

*Didemnum vexillum* is a light yellow or orangey coloured sea squirt which often looks like wax dripping over a structure such as a rope. It has a spongy or leathery texture. Its surface have darkish leaf-like veins with pores.

**Habitat and Ecology:**

Generally found on artificial structures such as pontoons, mooring lines and vessel hulls. It can reproduce asexually by budding; hence fragments can break off, get carried in the current and grow into new colonies. Overgrows many other plants and animals.

**Distribution:**

Holyhead marina, Anglesey

**Originally from:**

Asia

**Vector:**

Possibly spread from Ireland on the hulls of pleasure craft

**Invasive?**

A highly invasive sea squirt that has recently been found in North Wales. It is known to overgrow native species very rapidly.

**Controls?**

None known.
**Botrylloides violaceus**  Chain sea squirt  Chwistrell fôr

**Description:**

*Botrylloides violaceus* is a colonial sea squirt that forms flat sheets affixed to the substrate. The colonies can be different colours: dark brown, brick red, orange, purple and yellow, individual colonies are always one colour. The individual zooids are arranged in a variety of ways, roughly oval groups or meandering, occasionally branching, double rows or chains. They are contained in a firm, transparent matrix.

**Habitat and Ecology:**

It grows on a range of surfaces in shallow water: harbours, boat hulls, buoys, ropes, the undersides of rocks, and seaweeds. It often overgrows mussels, barnacles, encrusting bryozoans and solitary sea squirts.

**Distribution:**

Milford Haven.

**Originally from:**

Asia

**Vector:**

Possibly spread on the hulls of pleasure craft and ships

**Invasive?**

Fairly high abundance where found in Neyland marina, Milford Haven.

**Controls?**

None known.

Photo: Judith Oakley (published on the MarLIN website)

Map: marlin.ac.uk
**Botrylloides diegensis**  
**Sea squirt**  
**Chwistrell fôr**

**Habitat and Ecology:**
Found growing in similar conditions as *B. violaceus*, on a range of surfaces in shallow water: harbours, boat hulls, buoys, ropes, the undersides of rocks, and seaweeds. It often overgrows mussels, barnacles, encrusting bryozoans and solitary sea squirts.

**Distribution:**
Burry Port and probably Milford Haven

**Originally from:**
Japan and China

**Vector:**
Possibly spread on the hulls of pleasure craft.

**Invasive?**
Unknown

**Controls?**
None known.