Identification Guide

Invasive Non-Native Species in the Solway



Solway Firth Partnership

What are Non-Native Species?

Invasive Non-Native Species (INNS) are those that have been transported outside of their natural range and can become a problem when they outgrow, kill or out-compete local species.

The spread of INNS can lead to financial costs for fisheries, aquaculture, commercial and leisure marine sectors. They can also damage local species and habitats which can impact on the food chain and biodiversity.

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Solway Firth Partnership

How to Use this Guide

This pocket guide will assist you to identify the marine INNS, found in ports and harbours, on seashores, on boat hulls and on fishing gear and aquaculture equipment, which are of concern in the Solway. It will enable you to become part of the crucial early warning and reporting network across the Solway. If you see a plant or animal which looks like those pictured in this guide please take a photo and record:

WHAT – *name of the species*

WHERE – *location you found it*

WHEN – *date of the record*

WHO – *name of the recorder*

Report it as soon as possible to ***info@solwayfirthpartnership.co.uk*** *or call* ***01387 702162*** *or direct via the website www.dgerc. org.uk in Dumfries and Galloway or www.cbdc.org.uk in Cumbria.*

Key

Species known to be present in the Solway

Species not currently known to be present in the Solway

It is very important to report any sightings.

Wireweed

Sargassum muticum

A type of brown seaweed originally from the Pacific Ocean. Found locally in Loch Ryan and on Rhins coast.

Key ID Features

- Long 'wires' of olive/brown weed
- Covered in what looks like small leaves and tiny round floats
- Attached to rocks by a small holdfast
- May form very long lengths like a washing line

Problems

Clogs propellers and equipment, outcompetes local species.

Habitat

Grows on hard surfaces in rock pools and in shallow water.

Pacific Oyster

Crassostrea gigas

A type of shellfish from Asia used in aquaculture in the UK. Found in several locations on the Galloway shore.

Key ID Features

- Frilly oval shell average length 10cm but can grow up to 30cm
- Shell may have dark purple patches
- Attaches to rocks/hard surfaces

Problems

Outcompetes and smothers local species, sharp shells can be dangerous.

Habitat

Grows on lower shore/coastal hard substrates and can be found in harbours and marinas.

Common Cord Grass

Spartina anglica

A salt marsh grass, a hybrid of a native species and a North American species. Found in several locations along the north and south Solway coast.

Key ID Features

- Loose clumps growing up to 1.5m tall
- Seed only grow on one side of the flower spike
- Forms large stands in intertidal mudflat areas

Problems

Outcompetes local species, reduces vital feeding areas for birds.

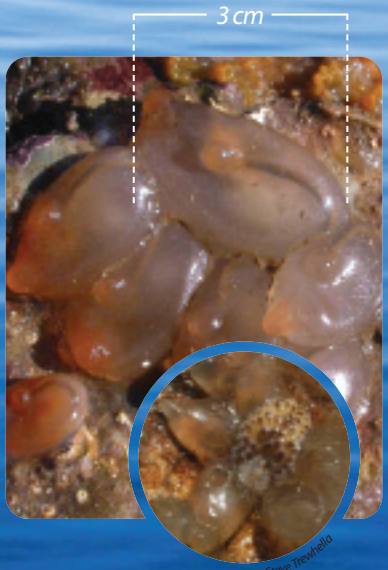
Habitat

Colonises the mudflats in estuaries and coastal areas.

Orange tipped Sea squirt

Corella eumyota

A solitary sea squirt with a bright orange tip which attaches to hard substrates. At least one record on the Galloway Coast.



Key ID Features

- 2–4 cm in length
- Orange siphon in adults although the younger animals do not have the orange tip
- Distinctive curved/U-shaped gut rather than the S-shaped gut of similar sea squirts

Problems

Can clog underwater machinery and smother local wildlife.

Habitat

Attaches to solid surfaces in harbours and marinas as well as natural surfaces.

Darwin barnacle

Elminius modestus

A small sessile barnacle which is native to Australasia. Widely distributed including various sites around the Solway.

Paul Brazier, CCW

Key ID Features

- 5-10 mm in diameter
- White in colour with only 4 outer shell plates and low conical body
- Tolerant of a wider range of salinity and turbidity than native species

Problems

Can dominate hard surfaces and displace native species and can be a nuisance as a fouling organism.

Habitat

Grows on hard surfaces such as rock and shells but also on man-made structures such as boats.

Leathery sea squirt

Styela clava

A brown solitary sea squirt attached by a small flat holdfast at the base of a narrow stalk. Originally from Korea it is now widespread around the UK coast and has been recorded in Loch Ryan.

Chris Wood, Marine Conservation Society

Key ID Features

- up to 20cm, shaped like a stout bag with 2 siphons
- Leathery appearance, rumpled/knobbly surface
- The siphons are close together with dark brown stripes on the inside

Problems

Large populations dominate and displace native species and can be a fouling pest on ship hulls and aquaculture infrastructure.

Habitat

Attaches to solid surfaces in harbours and marinas as well as natural surfaces.

Green sea fingers

Codium fragile

A spongy green seaweed from Japan, widespread around the UK shore. It has been recorded in Loch Ryan.

Key ID Features

- Grows to around 25cm
- Felt like texture to the fronds
- Fronds are cylindrical, spongy and end in a Y shape
- Form dense clumps
- Confirmation of identification requires a specialist

Problems

Compete with native species for space, forming dense clumps, potential nuisance to fisheries and aquaculture.

Habitat

Occurs in rock pools and attaches to exposed rocks on the lower shore.

Chris Wood, Marine Conservation Society

Niall Moore

Trumpet Tubeworm

Fipomactus enigmaticus

A reef building tubeworm, believed to be native to Australia and regions of the Indian Ocean. It is an aggressive species that dominates habitats, significantly altering water conditions and physical environments resulting in changes to native communities.

Liz Hewitt

Key ID Features

- Thin, white calcareous tubes that turn yellowish-brown with age
- Up to 8cm in length and 0.1-0.2cm in diameter
- Thousands of individuals grow together forming huge reefs

Problems

Can form extensive reefs causing fouling to boat hulls, equipment and blockages to pipes.

Habitat

Found in shallow, sheltered coastal sites such as harbours and marinas.

Chinese mitten crab

Eriocheir sinensis

A brown crab which lives in freshwater – muddy riverbanks, but breeds in seawater. Originally from SE Asia.

Key ID Features

- Dense fur on claws like mittens
- Hexagonal body up to 8cm wide
- Legs very long and hairy

Problems

Cause damage to riverbanks by burrowing; feed on a wide range of native insects and fish eggs competing with native species.

Habitat

Found in rivers and estuaries.

Carpet sea squirt

Didemnum vexillum

A fast growing extensive sheet or mat forming sea squirt thought to be of Asian origin.

Harry Goudge CCW

Key ID Features

- Firm smooth texture, not slimy
- Variable in colour - white, cream or orange/brown
- Can form long, pendulous outgrowths
- Veined or marbled appearance
- Attachs to boat hulls and other hard subrates

Problems

Fast growing, smothering underwater structures and native plants and animals.

Habitat

Grows in shallow water in marinas and harbours.

Slipper limpet

Crepidula fornicata

Smooth-shelled sea snail found in characteristic chains or ladders of up to 15 individuals. Originally from the USA it was transported to the UK with oysters.

GBNNSS

Key ID Features

- A 'toe-nail' shaped shell, up to 5cm long
- Often forms stacks with the oldest shell at the bottom
- White or cream coloured with orange or pink blotches

Problems

Outcompetes local species, major pest of oyster and mussel beds.

Habitat

Attaches to solid surfaces in sediment, low intertidal or shallow coastal water.

Killer shrimp

Dikerogammerus villosus

An aggressive freshwater shrimp found in brackish water. Originally from Eastern Europe and although present in the UK has not been found in Scotland yet.

Environment Agency

Key ID Features

- Larger than native shrimps, growing up to 3cm
- Tail with distinctive cones
- Tolerant of brackish and poor quality water
- Can survive up to 5 days out of water in damp conditions

Problems

Kills and outcompetes native species changing the ecology of the habitat.

Habitat

Found in still or flowing brackish water amongst hard surfaces or vegetation.

Zebra mussel

Dreissena polymorpha

A freshwater mussel that can tolerate brackish water.

Paul Beckwith, BWW

GBNNS

Key ID Features

- Shell up to 3cm
- Distinctive D-shaped shell
- Light and dark bands of colour
- Attaches by sticky threads, usually in groups, to anything solid underwater

Problems

Can clog pipework and equipment, smothers and outgrows native species.

Habitat

Found in slow moving, brackish water such as in docks attached to hard substrates like stone, wood and pipes.

Japanese skeleton shrimp

Caprella mutica

An aggressive skeleton shrimp originally from NE Asia, which is rapidly invading and has established populations in the North Sea, West coast of Scotland and Irish Sea. It was first recorded in the UK near Oban in 2000 and is found at several sites in the Clyde.

Key ID Features

- Up to 49mm in length, males larger than females
- Fine hairs on the first two body segments
- Large spines on 3rd to 7th body segments in males
- Orange spots on female's brood pouch

Problems

Can clog equipment and nets, outcompetes native species

Habitat

Found in harbours and marinas amongst fouling growth on boat hulls, ropes and nets.

Biosecurity in the Solway

Some invasive species and/or eggs are known to survive for long periods out of water. Marine INNS can hitchhike on equipment, footwear, clothing and boats. When you move to a new site on the coast or elsewhere in the country the species can be released and may become established and alter the ecosystem. You can help to prevent the spread of marine hitchhikers by following a simple three step process every time you leave any water.

Check your equipment and clothing for living organisms. Pay particular attention to areas that are damp or hard to inspect.

Clean and Wash all equipment, footwear and clothes thoroughly. If you do come across any organisms, leave them at the place on the coast you found them.

Dry all equipment and clothing as some species can live for many days in moist conditions.

Further Information

The Wildlife and Countryside Act in England and Wales and the Wildlife and Natural Environment Act (Scotland) 2011 make it an offence to knowingly release or transport a non-native species.

This guide is based on the Biosecurity Plan for the Solway which can be downloaded from ***www.solwayfirthpartnership.co.uk***

Further information about each of these species and the most up to date distribution maps for each can be found at ***www.nonnativespecies.org*** *the website of the GB non-native species secretariat.*

marinescotland

Environment Agency

You can also use your Smartphone to report your sightings:

Solway Firth Partnership