

Invasive Non-Native Species

Invasive Non-Native Species (INNS) is a species that has been intentionally or unintentionally introduced to a new environment through human activity and has established itself beyond its original introduction site. INNS are characterised by their ability to spread rapidly and can cause significant ecological damage; they can outcompete, predate on, or introduce disease to native plants and animals, often leading to biodiversity loss. We are driven to map the distribution of slipper limpets and possibly prevent or reduce the impact by our rapid response to this early detection. We are in a unique situation.

About Slipper Limpets

Scientific name: *Crepidula fornicata*

It was accidentally introduced to the UK from North America in the 19th century and is now widespread in the south. They have not been seen in Scotland until a sighting was recorded in the inner Moray Firth by NatureScot in 2024. NatureScot reached out to MOC to investigate, which they did, led by Terrie Sawyer, by engaging volunteers in intertidal surveys and found many inhabiting the shorelines along by Fortrose harbour (Black Isle). Since the first volunteer survey in October 2024, MOC has established a proactive network of volunteers and already completed several slipper limpet surveys to establish an initial presence map. Going forward, mapping the distribution will be coordinated on a larger scale. Absence as well as presence will be noted. The current sightings have been in the following MPA's: Moray Firth SAC & SPA, Cromarty Firth SSI, Ramsar sites. See Fig.1.

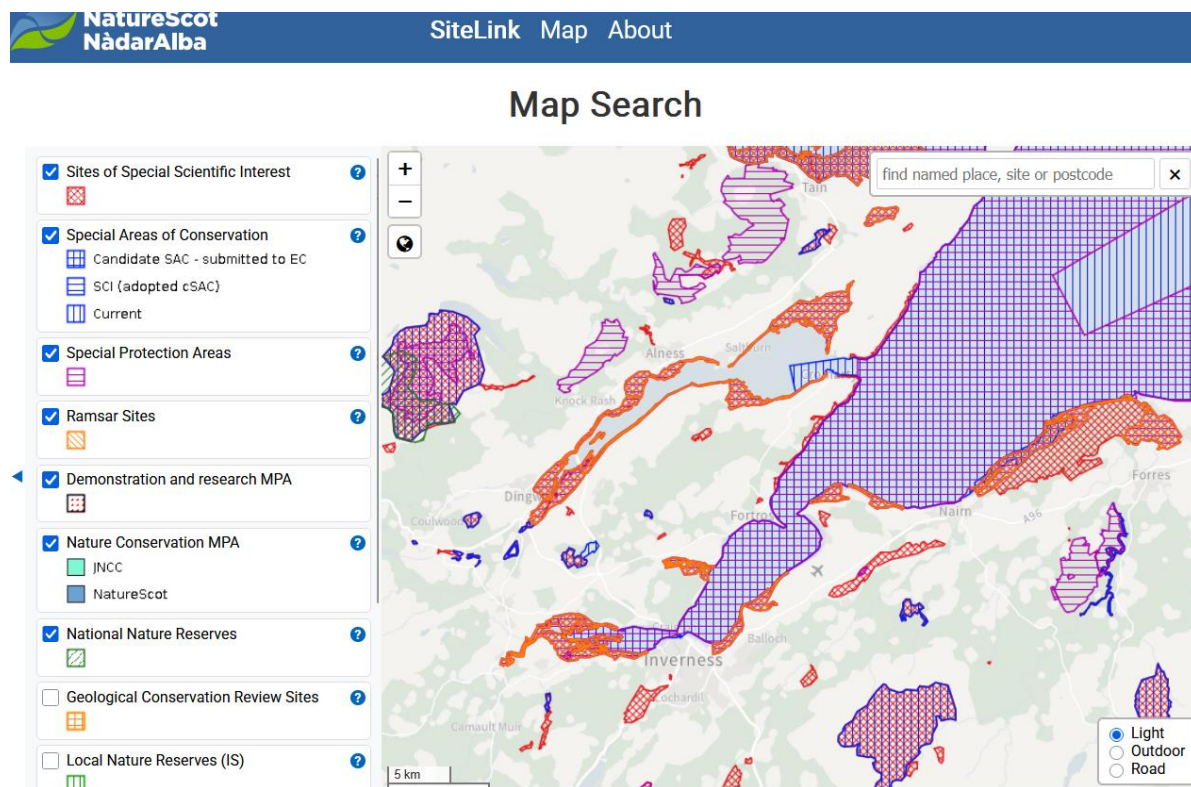


Figure 1. Marine Protected Area designations of the project areas (Cromarty and inner Moray Firth)

The slipper limpet is a filter-feeding marine snail with a smooth, asymmetrical shell, commonly found forming stacks of multiple individuals. It is a protandrous hermaphrodite, meaning individuals begin life as males and later change sex to females. In a stack, the older and larger individuals at the base are female, while the smaller, younger individuals above are male. The larvae are planktonic and capable of limited movement and are largely dispersed by water currents. Settlement may occur either in isolation or on top of existing stacks, and because the planktonic larval stage is prolonged, larvae may settle even after adult populations have been removed. Adults inhabit the seabed at the low water mark up to around 60m and attach to a wide range of hard surfaces, including the shells of both living and dead invertebrates such as scallops, crabs, whelks, and mussels.

Crepidula fornicata competes with other filter-feeding invertebrates for food and space and can significantly alter benthic habitats. It has the capacity to smother native species and change sediment structure, often overtaking areas previously dominated by bivalves. The species is regarded as a pest in commercial shellfish industries, including scallop, mussel, and oyster fisheries, where it can reduce shellfish growth rates through direct attachment and by smothering caused by the accumulation of faeces and pseudofaeces.

Identification



The slipper limpets have this distinctive white ledge on the inside where it gets its name ‘slipper’ and they are often attached to a stone in stacks as seen in photo right (stack of three individuals)



They can also attach to other shells (left). The under side of a living slipper limpet (right) is showing the antennae of the snail and how it sucks on to its substrate.



The yellow are the reproductive eggs before they are released by the female (left). Photo right illustrates 5 shells on one stone with algae growing on them making them more camouflaged.

Additional reading:



- <https://www.nonnativespecies.org/non-native-species/information-portal/view/1028>
- https://invasivespeciesni.co.uk/wp-content/uploads/2021/09/Good_Practice_Management_-_Slipper_limpet.pdf