Biodiversity Duty:
Mollusca Survey of National Wool Museum, Dre-fach Felindre

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Introduction

From 1 October 2006, all public authorities in England and Wales have a duty to have regard to the conservation of biodiversity in exercising their functions (Section 40 of the Natural Environment and Rural Communities Act 2006). As part of the Museum's response to this legislation, biodiversity audits are being carried out at a series of its sites. In this report, a list of Mollusca species is presented from a survey of the grounds of the National Wool Museum, Dre-Fach Felindre.

Methods

The survey was carried out on the 24 September 2009. The area surveyed is shown in Figure 1.

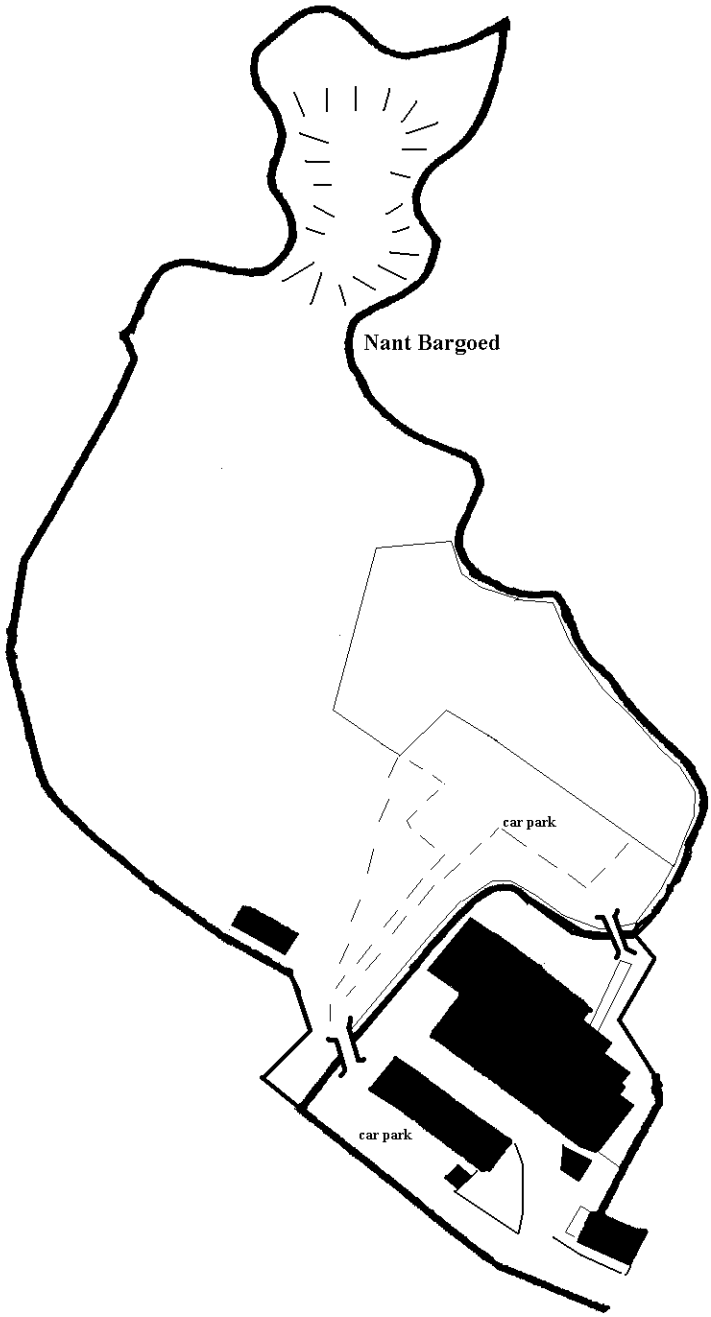

Figure 1. Boundary of area surveyed, National Wool Museum.

We carried out the survey by walking around the grounds. As a Phase 1 habitat survey had been carried out on the site earlier in the year we were able to concentrate our searches on some of the habitats identified in this survey. The list below is a condensed version of the habitat types as identified in the Phase 1 Habitat Survey, for the comprehensive list please see the report by Tim Rich.

Broad-leaved semi-natural woodland
A narrow strip of woodland with alder, grey-leaved willow, hazel and ash along the banks of Nant Bargoed.

Scrub
Some areas of bramble scrub are developing on the sides of the tump (the mound at the north end of the site), and along the hedge margins.

Semi-improved neutral grassland
The main meadow is semi-improved neutral grassland, which seems to be reverting to a more unimproved species composition with low intensity management.

Marshy grassland
The wet areas of the overflow channel and the rushy sloping seepage zone on the west side of the meadow are damp grassland with a range of wetland species.

Amenity grassland
The gardens around the buildings and the area of meadow by the car park.

Poor semi-improved grassland
The sheep paddock has semi-improved grassland.

Standing water
The old mill sluice outlet by the footbridge is now isolated from the river. Although it is shallow, amphibians and occasionally fish are present.

Running water
The Nant Bargoed is a clear-water, fast-flowing stream through the site. The base is stones and cobbles, with algae. Trout are present. The banks are quite diverse with riparian woodland. NMW does not maintain the river.

Species-poor hedge
Occurring by the car park and surrounding the meadow on the west and south sides of the site.

Manual searches were carried out in a range of these habitats. These searches involved searching on our hands and knees through the foliage and leaf litter layer (figure 2). We used a suction sampler to help draw out any small species living in the dense grass or deep cracks of walls (figure 3). We also collected samples of leaf litter and surface soil from different areas (figure 4) which we then dried out in an oven at a low temperature, sieved (5mm and 0.5mm sieve sizes) and searched through under a bright light to find smaller litter dwelling species.

Finally, we sampled the Nant Bargoed using a long handled net. We used a method called ‘kick sampling’ whereby the net is used to catch material that is disturbed or kicked up by someone, thus allowing us to see what creatures are living in the sediment (figure 5). In addition to this we also looked at the rocks and stones on the sides of the river for any invertebrate life.

We were able to identify a large proportion of the taxa in the field, but some specimens difficult to identify were collected for later determination. Nomenclature follows Roy Anderson, 2005 - An annotated list of the non-marine mollusca of Britain and Ireland. *Journal of Conchology*, **38** (6): 607-637. Notes on the distribution on the taxa in the UK are taken from Michael Kerney, 1999 - *Atlas of the Land and Freshwater Molluscs of Britain and Ireland*. 264 pp. Harley Books.

Figure 2. Searching in foliage by tump (the mound at the north end of the site

Figure 3. Juvenile specimens that were sucked up using the suction sampler

Figure 4. Collecting a litter sample

Figure 5. Kick sampling in Nant Bargoed

Results

The species recorded are listed below.

TABLE 1. MOLLUSCA RECORDED AT DRE-FACH FELINDRE

AQUATIC

Species	Common name (if applicable)	UK distribution of taxa
Ancylus fluviatilis	River limpet	Native – common and widespread.
Galba (Galba) truncatula	Dwarf pond snail	Native – common and widespread.
Potamopyrgus antipodarum	New Zealand Mudsnail	Introduced – first noted in U. K. in 1852, now common and widespread.
Radix balthica	Common/Wandering pond snail	Native – common and widespread.

TERRESTRIAL

Species	Common name (if applicable)	UK distribution of taxa
Aegopinella nitidula	Smooth glass snail	Native – common and widespread.
Arion (Kobeltia) distinctus	Common garden slug	Probably native – under recorded yet likely to occur throughout most of the British Isles.
Arion (Kobeltia) hortensis	Southern garden slug	Native – common and widespread.
Arion (Mesarion) subfuscus	Dusky slug	Probably native – common and widespread, though rare in East Anglia.
Cepaea (Cepaea) nemoralis nemoralis	Grove/Brown-lipped snail	Native – common and widespread.
Cochlicopa cf. *lubrica*	Slippery moss snail	Native – common and widespread.
Cochlicopa cf. *lubricella*	Snail – no common name	Native – common and widespread.
Cornu aspersum	Common/Garden snail	Introduced – early in Romano-British period. Broadly distributed although less so in northern parts of Britain.
Deroceras (Deroceras) reticulatum	Field/Milky slug	Probably native – common and widespread.
Discus (Gonyodiscus) rotundatus rotundatus	Rounded/Radiated snail	Native – common and widespread.
Euconulus (Euconulus) cf. *fulvus*	Tawny glass snail	Native – common and widespread.
Lauria cylindracea	Common chrysalis snail	Native – common and widespread.
Nesovitrea hammonis	Rayed glass snail	Native – common and widespread.
Oxychilus cellarius	Cellar snail	Native – common and widespread.
Oxychlius draparnaudi	Draparnaud's glass snail	Introduced – in Roman/post-Roman period. Common in southern and central Britain, not in Scotland or N Ireland.
Oxychilus navarricus helveticus	Glossy/Swiss glass snail	Probably introduced – common in southern and central Britain although distribution is patchy in parts.
Punctum pygmaeum	Dwarf snail	Native – common and widespread.
Succinea putris	Large amber snail	Native – common and widespread (though not so in Scotland). Species is showing some signs of decline due to habitat destruction.

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Tandonia budapestensis	Budapest slug	Probably introduced – first recognized in Britain in 1921, but possibly before. Common and widespread, range spreading slowly north.
Trochulus (Trochulus) hispidus	Hairy snail	Native – common and widespread.
Trochulus (Trochulus) striolatus	Strawberry snail	Native – common and widespread, continuing to extend its range north.
Vertigo (Vertigo) pygmaea	Common whorl snail	Native – fairly common though less so in the north. Under recorded due to its minute size.
Vitrea contracta	Milky crystal snail	Native – common and widespread.

Discussion

A total of 39 species of molluscs were recorded (4 aquatic and 35 terrestrial). This is a good number and is higher than we expected considering the small scale of the site. This number perhaps reflects the undisturbed nature of the site, and the fact that it has a less acidic environment. All of the molluscs species found are common and none of them are listed as threatened or protected. Particular fiinds of note were two of the aquatic species *Ancylus fluviatilis* (River limpet) and *Potamopyrgus antipodarum* (New Zealand mud snail).

Ancylus fluviatilis is a species of very small, freshwater, air-breathing limpet. The limpet lives in quick-flowing water by adhering to stones on which it grazes; it can live in rivers, streams or even small mountain trickles. It is an interesting find as, although it is common and widespread, its local distribution appears to be affected by pollution. It requires clean water, free from suspended matter, and avoids thick, muddy substrates and stones covered with mud or algae. Its presence therefore indicates that the streams water quality is good.

Figure 6. River limpet – *Ancylus fluviatilis*

The second species of note is *Potamopyrgus antipodarum* (New Zealand Mudsnail). This is a known invasive species; native to New Zealand it has spread to Australia, North America and Europe over the last two centuries. It lives in a wide range of aquatic ecosystems, from brackish to freshwater, including rivers, reservoirs, lakes, ditches and estuaries and is commonly found in or by disturbed habitats. It is now one of the most common freshwater gastropods in Britain and is still extending its range in parts of northern England, Wales and Scotland.

Figure 7. New Zealand Mudsnail – *Potamopyrgus antipodarum*

The impact of the NZ Mudsnail on British environments is currently unknown and further research is certainly required before a realistic assessment can be made, overall the risk associated with it appears moderate. It has already entered, established and spread in the UK's freshwater and brackish water habitats and is likely to continue expanding. Recreational activities are thought to be the main cause of spread to new areas. Ecologically it may negatively change the structure of food webs, effecting organisms at all levels but in the UK there is no evidence that this is a problem. At present there is no evidence to suggest that this species is significantly adversely affecting either the native fauna or ecosystems.