



House mice and rodents in historic buildings and museums.

House mice (*Mus domesticus*) belong to a group of mammals known as rodents and they are the largest group of mammals worldwide. Most are outdoor living creatures causing little trouble and are important food sources for a wide range of predatory mammals and birds. However, the house mouse has adapted to live in very close proximity to man and man made environments and in doing so they can cause many problems.



House mouse.

Recognition

House mice are variable in colour from grey to almost black with a slightly lighter underbelly. Their tails are about the same length as their body and head. They could be confused with wood mice (*Apodemus sylvaticus*) but the latter are chestnut brown in colour with a distinctly white underbelly. An adult house mouse would rarely weigh above 20 g and would have a combined body and head length of 70-90 mm.



Wood mouse.

Signs

In the absence of actually seeing the live animals, there are tell-tale signs of their presence. Mouse urine is very pungent and can be readily detected inside closed rooms and cupboards. Droppings can also be seen and are spindle shaped and around 3-7 mm long.



Mouse droppings in cooking utensil.



Book chewed by mice.

Evidence of, or sightings, of them are often on higher objects such as tops of cupboards, shelving, along wooden beams and joists found in cellars or attics and on electrical boxes. Gnawed materials may also be seen with discarded fragments near small holes where they are possibly nesting. Damage to food packaging and other objects must also be viewed with suspicion.



Mouse hole.



Paper chewed by mice.

Habits

House mice are agile climbers and can be found at all levels within a building. They are able to squeeze through holes more than 6 mm diameter and can easily move through buildings via cavity walls and under floorboards. They prefer warm environments and avoid damp or wet conditions. They seldom move outdoors. They will eat a wide variety of different foods and adapt readily to local conditions. They

can survive on very little, or even no water at all, gaining their requirements from food. They breed rapidly and can produce 5-10 litters per year each with 4-8 young.

Problems caused by house mice in historic buildings

In order to keep their continuously growing teeth in good condition, all rodents gnaw regularly. This leads to direct damage to any materials gnawed and could lead to valuable furniture, objects or materials being damaged. They also readily gnaw electric cables leading to costly repairs or even the possibility of fires. They will also chew up paper, soft fabrics and insulation materials to make nests. Their urine can also damage and stain surfaces.



Table leg chewed by mice



Wax bait block infested with carpet beetle larvae.

Poisonous baits deployed to control infestations and dead rodent carcasses will also provide a food source for a range of insect pests, including clothes moths, carpet beetles, blowflies and hide & leather beetles.



House mouse carcass and puparia.

Control Strategies

Because of the risk of insect pests developing in poisonous baits and carcasses, methods of control that avoid the use of poisons and retain the animal for complete removal are favoured. Traps can be used, but are not always 100% successful. If bait must be used, then it should only be in place for the duration of the treatment, regularly monitored by the pest control contractor and not left in place for long periods.

Emphasis should be placed on early detection, and so staff, particularly cleaning staff, should be trained to recognise house mouse signs and report them immediately. Areas which are left undisturbed for long periods should also be regularly inspected for signs of mouse activity.

The presence of house mice in public food catering areas can lead to complaints and investigations by local authorities and even prosecutions under Food Safety legislation. House mice are able to carry and spread many food poisoning bacteria. Managing food and food waste is also an important aspect of any control programme and denying house mice access to food stores and to waste bins will discourage them from remaining in these areas.

The reduction of potential harbourage in quiet, less visited areas and correct storage of excess items, for example office, shop and stationery products, will also help. Regular disposal of other waste products such as unwanted packaging materials, stationery items, old literature products, for example out of date literature, and used bin liners are also an essential requirement.



Overflowing dust bins and waste.



Waste and bin liners in cellar.

Other rodents

Common, or brown, rats and grey squirrels, which are also rodents, could also cause significant problems in historic buildings and museums. They are larger than house mice and so the damage they can cause can be severe and widespread. There have been particular problems in the last few years with squirrels damaging electrical wiring in attics.



Rat.

Any reports of these larger rodents being seen near buildings should be taken very seriously and be acted upon with some urgency.

Guidelines developed by Dee Lauder, EH Collections Pest Control Manager, David Pinniger, Consultant Entomologist, and Ed Allan, Ed Allan Consultancy Services.