

Of mice and men

Tracing the global invasion history of the common house mouse (*Mus musculus*)

Level: Master

Start: Any time

Project duration: 4-6 months

Location: This desktop study can be done from home

Project form: Literature research, database construction and analysis, GIS

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The common house mouse (*Mus musculus*) is generally considered to be an indigenous species in most of its distribution area. Yet this cosmopolitan rodent is in fact – together with its cousins black rat (*Rattus rattus*) and brown rat (*Rattus norvegicus*) – one of the most successful invasive species globally. The species most likely spread from its probable area of origin North India to the Mediterranean and from there to the rest of Europe, Asia and parts of Africa and subsequently to the Americas, Australia and a large number of Islands in Oceania. Compared to black and brown rat, the house mouse seems to have less adverse effects on human societies and biodiversity. Like the brown rat house mice are often kept as pets or as model species in scientific research. Yet the species also has proven negative effects on bird, reptile and invertebrate species around the world, especially on islands, and can cause damage to agricultural crops and stored food.

In an earlier study we examined the global spread of three invasive rat species, viz., black rat (*Rattus rattus*), brown rat (*Rattus norvegicus*) and Pacific rat (*Rattus exulans*), during the Holocene as a result of human agency. The distribution history of the house mouse seems to compare very well with those of the black and brown rat. There are, however, also differences which may be relevant to get a grip on the invasion histories of commensal species like rats and mice. The aim of the internship is to reconstruct the global distribution history of the house mouse based on a review of the phylogenetics/phylogeography of the species but also on the basis of palaeontological, archaeozoological and historical-ecological data. These data are to be gathered from literature and other sources and stored in a database to be constructed and subsequently analysed geographically by means of GIS and compared to the invasion histories of brown and black rat.

