

NAME OF SPECIES: <i>Mus musculus</i>	
Synonyms: <i>Mus domesticus</i>	
Common Name: House mouse, mouse, dancing mouse, singing mouse	
A. CURRENT STATUS AND DISTRIBUTION	
I. In Wisconsin?	1. YES <input checked="" type="checkbox"/> NO <input type="checkbox"/>
	2. <u>Abundance</u> : This species is abundant and found throughout Wisconsin, especially around human dwellings.
	3. <u>Geographic Range</u> : Worldwide human commensal and wild-living form. This species is closely associated with humans (1, 2). This species lives in houses, granaries, barns and other manmade structures (1, 2). The house mouse can also be found in cultivated fields, fence rows, woodlands, but will typically not be found far from human occupancy (1, 2).
	4. <u>Habitat Invaded</u> : Human altered habitat and areas in close proximity to humans. Disturbed Areas <input checked="" type="checkbox"/> Undisturbed Areas <input type="checkbox"/>
	5. <u>Historical Status and Rate of Spread in Wisconsin</u> : Brought to North America as a stowaway on ships during late 18 th century (2). This species quickly spread and now is found everywhere humans are found.
	6. <u>Proportion of potential range occupied</u> : This species will stay around humans year around.
	7. <u>Survival and Reproduction</u> : This species survives and reproduces well in Wisconsin.
II. Invasive in Similar Climate Zones	1. YES <input checked="" type="checkbox"/> NO <input type="checkbox"/> <u>Where (include trends)</u> : This species is found everywhere in the World (1 and 2). This species is doing well despite many efforts to eradicate them.
III. Invasive in Similar Habitat Types	1. Upland <input type="checkbox"/> Wetland <input type="checkbox"/> Dune <input type="checkbox"/> Prairie <input type="checkbox"/> Aquatic <input type="checkbox"/> Forest <input type="checkbox"/> Grassland <input type="checkbox"/> Bog <input type="checkbox"/> Fen <input type="checkbox"/> Swamp <input type="checkbox"/> Marsh <input type="checkbox"/> Lake <input type="checkbox"/> Stream <input type="checkbox"/> Other: <input checked="" type="checkbox"/> This species is closely associated with humans (1, 2). This species lives in houses, granaries, barns and other human made structures (1, 2). The House mouse can also be found in cultivated fields, fence rows, woodlands but will typically not be found far from human occupancy (1, 2).
IV. Habitat Affected	1. <u>Where does this invasive resided</u> : Edge species <input checked="" type="checkbox"/> Interior species <input type="checkbox"/>
	2. <u>Conservation significance of threatened habitats</u> : None
V. Native Habitat	1. <u>List countries and native habitat types</u> : Native to Eurasia (2), probably originating in India. This species' native range is from the Mediterranean region to China (1). Wild-living forms found in cracks in rocks and underground burrows with complex tunnels and several chambers (1).
VI. Legal Classification	1. <u>Listed by government entities?</u> No

	<p>2. <u>Illegal to sell?</u> YES <input type="checkbox"/> NO <input checked="" type="checkbox"/></p> <p>Notes: This species is commonly used as laboratory animals, pets and food for pets.</p>
B. ESTABLISHMENT POTENTIAL AND LIFE HISTORY TRAITS	
I. Life History	<p>1. <u>Type of Animal:</u> Mammal <input checked="" type="checkbox"/> Bird <input type="checkbox"/> Reptile <input type="checkbox"/> Amphibian <input type="checkbox"/> Fish <input type="checkbox"/></p>
	<p>2. <u>Age of Maturity or time to self sufficiency:</u> This species becomes self sufficient at 3 weeks (1, 2). Sexual maturity occurs at 5-7 weeks (1) or at about 2 months (2).</p>
	<p>3. <u>Gestation Period:</u> Gestation takes 19-21 days (1). Another estimate of gestation time is 18-20 days (2).</p>
	<p>4. <u>Mating System:</u> Polygamous <input type="checkbox"/> polyandrous <input type="checkbox"/> Monogamous <input type="checkbox"/> Polygynous <input checked="" type="checkbox"/></p> <p>Notes:</p>
	<p>5. <u>Breeding/ Breeding period:</u> Breeding occurs throughout the year (1, 2, 3). In the northern regions breeding season is during the Spring and Fall (3). House mice have between 5-10 litters a year up to 14, with 3-12 young per litter (average 5 per litter) (1). When the population of house mice gets too dense some of the females will become infertile (3)</p>
	<p>6. <u>Hybridization potential:</u> This species can hybridize with its subspecies (4). There are many different subspecies of house mice (4).</p>
II. Climate	<p>1. <u>Climate restrictions:</u> None. This species can survive harsh climatic conditions due to their close association with humans (1). Wild forms found to 62 degrees north and 54 degrees south, sea level to high altitude, deserts, and swamps (9).</p>
	<p>2. <u>Effects of potential climate change:</u> Climate change should not negatively affect this species. House mice have high reproductive capabilities and the ability to live with humans.</p>
III. Dispersal Potential	<p>1. <u>Pathways - Please check all that apply:</u></p> <p><u>Unintentional:</u> Bird <input type="checkbox"/> Animal <input type="checkbox"/> Vehicles/Human <input checked="" type="checkbox"/> Wind <input type="checkbox"/> Water <input type="checkbox"/> Other: This species spread worldwide as stowaways on boats and caravans (2).</p> <p><u>Intentional:</u> Ornamental <input type="checkbox"/> Forage/Erosion control <input type="checkbox"/> Medicine/Food: _____ Recreational <input type="checkbox"/> Other: <input checked="" type="checkbox"/> Release into the wild</p>
	<p>2. <u>Distinguishing characteristics that aid in its survival and/or inhibit its control:</u> This species has very high reproductive outputs and lives commensally with humans.</p>
IV. Ability to go Undetected	<p>1. HIGH <input type="checkbox"/> MEDIUM <input type="checkbox"/> LOW <input checked="" type="checkbox"/> This species can assume "plague proportions". In California, in 1926-27, house mice were found with a density of 205,000 individuals/hectare (3).</p>
C. DAMAGE POTENTIAL	
I. Competitive Ability	<p>1. <u>Presence of Natural Enemies:</u> This species is an important prey base. Many animals prey upon house mice. Predators include birds of prey, weasels, foxes, skunks, and cats.</p>

	<p>2. <u>Competition with native species</u>: There was not much information about the competition with native species. This species can consume huge quantities of grains, making the grains unavailable to native species (1). This species can become very dense in just a small area (3). In California, House mice numbered around 205,000/hectare in 1926 (3). High densities make it difficult for other small mammal species to coexist in the same area. This species was nominated to the World's 100 Worst Invaders list (5). One article stated that this species was involved in extirpation and extinctions of native species (5). A study done by Larry Caldwell concluded that house mice show no aggressive competition towards a species of field mouse (<i>Peromyscus polionotus</i>) (6). House mice are disadvantaged when it comes to competition because they will migrate to reduce competition (6). House mice on island situations have been known to feed on nestling birds (8).</p>
	<p>2. Rate of Spread: -changes in relative dominance over time: -change in acreage over time: HIGH(1-3 yrs) X MEDIUM (4-6 yrs) <input type="checkbox"/> LOW (7-10 yrs) <input type="checkbox"/> Notes: Dispersing feral individuals known to wander up to 2 km.</p>
II. Environmental Effects	<p>1. <u>Alteration of ecosystem/community composition?</u> YES X NO <input type="checkbox"/> Notes: This species can consume large quantities of seeds, which can affect community composition (7).</p> <p>2. <u>Alteration of ecosystem/community structure?</u> This species can consume large quantities of seeds, which can affect community structure (7).</p> <p>3. <u>Alteration of ecosystem/community functions and processes?</u> YES <input type="checkbox"/> NO X Notes: No documentation of such.</p> <p>4. <u>Exhibit Parasitism?</u> YES <input type="checkbox"/> NO X Notes:</p>
D. SOCIO-ECONOMIC EFFECTS	
I. Positive aspects of the species to the economy/society:	Notes: This species is used extensively for research, as laboratory animals, as pets, and is a predator of certain insects.
II. Potential Socio-Economic Effects of Requiring Controls: Positive: Negative:	Notes: House mice are agricultural pests, damage or destroy woodwork, furniture, upholstery, and clothing, and contribute to spread of diseases (tularemia, murine typhus, rickettsial pox, and bubonic plague) (10). Controlling them could ease their damage and disease. Pest control industry would benefit from increased business from control requirements. No known negative effects to controlling house mice populations. Many people support efforts to remove house mice (1, 3, 5).
III. Direct and indirect Socio-Economic Effects of the animal :	Notes: This animal causes damages to crops and houses. House mice consume human food (1, 2, 5). Mice will gnaw through base trim, drywall, wires and other household items (1, 3). Mice carry many diseases and defecate everywhere (1).
IV. Increased Costs to Sectors	Notes: Building, farming, and health industries and homeowners

Caused by the Animal:	spend lots of money and labor on dealing with damages and diseases attributed to house mice.
V. Effects on human health:	Notes: This species may carry a virus that can cause breast cancer in women, as well as many other diseases (1).
VI. Potential socio-economic effects of restricting use:	Positive: By restricting this species, one could potentially decrease associated diseases and restrict a major pest. Negative: No known negative effects to restricting use of this animal.
E. CONTROL AND PREVENTION	
I. Costs of Prevention (please be as specific as possible):	Notes: This species is impossible to eliminate worldwide. Control efforts should be exerted in places where house mice are causing the most harm.
II. Responsiveness to prevention efforts:	Notes: This species is controlled by poisoning, fumigation, trapping, repellants, and other methods (5). These control techniques are effective, but mice will repopulate the area if every mouse around the area is not killed. Mice are very prolific. For example one mouse can have 15 - 50 or more young/year.
III. Effective Control tactics:	Mechanical X Biological <input type="checkbox"/> Chemical X Times and uses: Continual
IV. Minimum Effort:	Notes: Trapping and fumigation require the least effort.
V. Costs of Control:	Notes: In areas where this animal is a major pest it would not cost much, but control tactics would have to be used until all mice are gone, and that is not that feasible. It is difficult to eradicate all mice, even in a small area.
VI. Cost of prevention or control vs. Cost of allowing invasion to occur:	Notes: This species is very hard to control, but can be controlled on a small scale by individuals, if control efforts are used constantly. Little can be done to control the worldwide population.
VII. Non-Target Effects of Control:	Notes: Control tactics could impact native mice and other small animals that are present. Secondary poisonings could occur.
VIII. Efficacy of monitoring:	Notes: n/a
IX. Legal and landowner issues:	Notes: None

F. REFERENCES :

Number	Reference
1	Ballenger, L. 1999. "Mus musculus" (On-line), Animal Diversity Web. Accessed July 30, 2007 at http://animaldiversity.ummz.umich.edu/site/accounts/information/Mus_musculus.html .
2	http://www.discoverlife.org/nh/tx/Vertebrata/Mammalia/Muridae/Mus/musculus/#Description
3	Jackson, H.H.T. 1961. Mammals of Wisconsin. Madison, WI: Univ. of WI Press.
4	http://www.enature.com/fieldguides/detail.asp?recnum=MA0080
5	http://www.informatics.jax.org/silver/chapters/2-3.shtml
6	http://www.issg.org/database/species/ecology.asp?si=97&fr=1&sts
7	http://links.jstor.org/sici?sici=0022-2372(196402)45%3A1%3C12%3AAIIOCIN%3E2.0.CO%3B2-H

8	http://www.fs.fed.us/rm/sd/smallmammals.pdf
9	http://www.livescience.com/animals/070706_mouse_thugs.html
10	Bronson, F.H. 1979. The reproductive ecology of the house mouse. <i>Quart. Rev. Biol.</i> 54:265-99
11	Nowak, R.M. 1999. <i>Walker's mammals of the world</i> . Baltimore: Johns Hopkins Univ. Press.

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