NAME OF SPECIES: Parus major	
Synonyms:	
Common Name: Great tit	
A. CURRENT STATUS AND DISTRIBUTION	
I. In Wisconsin?	1. YES X NO ☐
	2. Abundance: There have been a few sighting in Wisconsin.
	3. Geographic Range: One was observed in Racine County in December, 2001(4). There have been a few sightings in 4 counties in southeastern Wisconsin.
	4. Habitat Invaded: Found in forests, parks, hedgerows, gardens, and orchards (1, 2, 3). Disturbed Areas X Undisturbed Areas ☐
	5. Historical Status and Rate of Spread in Wisconsin: One theory of how these birds got into Wisconsin was from a major importer of birds who released them in the Chicago, IL area (6).
	6. Proportion of potential range occupied: These birds do not migrate (1).
	7. Survival and Reproduction: There is not much known about this bird's survival and reproduction in Wisconsin.
II. Invasive in Similar Climate Zones	1. YES X NO ☐ Where (include trends): This species was released in Chicago, IL and is probably increasing it range (6).
III. Invasive in Similar Habitat Types	1. Upland ☐ Wetland ☐ Dune ☐ Prairie ☐ Aquatic ☐ Forest X Grassland ☐ Bog ☐ Fen ☐ Swamp ☐ Marsh ☐ Lake ☐ Stream ☐ Other: Suburban areas
IV. Habitat Affected	1. Where does this invasive resided: Edge species X Interior species
	2. Conservation significance of threatened habitats: This bird does not live in any threatened habitats.
V. Native Habitat	1. List countries and native habitat types: This bird is common and widespread t throughout most of Eurasia, from Great Britain to Japan and northern Africa (3). They live in forests, hedgerows, towns, gardens, mangroves (1, 2, 3). There are between 37-52 million breeding pairs in Europe (2). They are still increasing in Europe (7).
VI. Legal Classification	1. Listed by government entities? No
	2. Illegal to sell? YES ☐ NO ☐ Notes: They were possibly released by a major importer in the Chicago, IL area (6).
B. ESTABLISHMENT POTENTIAL AND LIFE HISTORY TRAITS	
I. Life History	1. Type of Animal: Mammal ☐ Bird X Reptile ☐ Amphibian ☐ Fish ☐
	2. Age of Maturity or time to self-sufficiency: The young fledge between 16-22 days after birth and become self-sufficient a week or two after fledging (2).

	3. Gestation Period: The female incubates eggs for 13-14 days (2).
	4. Mating System: Polygamous ☐ Polyandrous ☐ Monogamous X Notes: Male and female great tits build their nests together. The male will feed the female while she incubates the eggs (2). The female is very aggressive and will chase away other females (8).
	5. Breeding/ Breeding period: The peak breeding period is late April-early May. The clutch size ranges from 5-11 eggs. Occasionally there may be two broods in a season (2).
	6. Hybridization potential: Hybridization is known to occur in *Paridae,* but hybridization has not occurred between great tits and other tits in their native range (9).
II. Climate	1. Climate restrictions: Birds in northern Europe mountains move to lower elevations in winter, probably due to food availability (1).
	2. Effects of potential climate change: Climate change will give the great tit an advantage. The great tit is flexible with the timing of egg-laying and they correlate it with the hatch of caterpillars. If caterpillars start to hatch earlier due to climate change the great tit will be able to adapt ,while others birds that do not have flexible timing of their egg laying may have difficulty adjusting (5).
III. Dispersal Potential	1. Pathways - Please check all that apply: Unintentional: Bird ☐ Animal ☐ Vehicles/Human ☐ Wind ☐ Water ☐ Other: Intentional: Ornamental ☐ Forage/Erosion control ☐ Medicine/Food: Recreational ☐ Other: X Released into the wild. Imported for pet trade.
	2. Distinguishing characteristics that aid in its survival and/or inhibit its control: This bird is flexible when it comes to egg-laying, and this is a potential advantage in regards to climate change (5). This is also one of the largest birds of Family *Paridae*.
IV. Ability to go Undetected	1. HIGH ☐ MEDIUM ☐ LOW ☐ Not much information on this topic. This bird is audible during the breeding season, and it can be distinguished from other birds.
C. DAMAGE POTENTIAL	
I. Competitive Ability	1. Presence of Natural Enemies: Birds of prey can be predators of great tits. Raccoons, snakes, and weasels can eat their eggs.
	2. Competition with native species: In native areas, great tits display aggression and may attack other nests to capture chicks (3). There is little known about great tits competing with Wisconsin's native birds, but they do compete with blue tits in Europe. The great tit is a better interference competitor than the blue tit (10). They are more successful than blue tits where nest sites are limited (10).
	2. Rate of Spread: -changes in relative dominance over time: -change in acreage over time: HIGH(1-3 yrs) ☐ MEDIUM (4-6 yrs) ☐ LOW (7-10 yrs) ☐

	Notes: There is not much information on how fast they spread. They can, however, have 5-11eggs and up to 2 broods a year (2). With this high reproductive rate they could spread easily. This bird is very numerous in Europe, and it is considered one of the most common birds in many areas. This bird has the potential to spread.
II. Environmental Effects	1. Alteration of ecosystem/community composition? YES ☐ NO X Notes:
	2. Alteration of ecosystem/community structure? YES ☐ NO X Notes:
	3. Alteration of ecosystem/community functions and processes? YES ☐ NO X Notes:
	4. Exhibit Parasitism? YES ☐ NO X Notes:
D. SOCIO-ECONOMIC EFFECTS	
I. Positive Aspects of the Species to the Economy/Society:	Notes: Because great tits feed heavily on catepillars and beetles, some of which can be agricultural pests, these bird can help reduce insecticide useage in orchards (11). Great tits take readily to artificial nesting structures (11).
II. Potential Socio-Economic Effects of Requiring Controls: Positive: Negative:	Notes: Most likely will incur limited public sympathy for the birds if controls are required.
III. Direct and Indirect Socio-Economic Effects of the Animal :	Notes: These birds could affect insect and catepillar populations in US and hurt businesses which rely on certain insects and/or catepillars great tits feed upon.
IV. Increased Costs to Sectors Caused by the Animal:	Notes: There has be no report on costs due to the introduction of the great tit.
V. Effects on Human Health:	Notes: No documentation found regarding this.
VI. Potential Socio-Economic Effects of Restricting Use:	There is no information on this topic.
E. CONTROL AND PREVENTION	
I. Costs of Prevention (please be as specific as possible):	Notes: There were no methods of controlling great tits at the population level. Scare tactics can be used to keep them out of an area. Any attempt to eliminate great tits would have to be species specific and would require actually finding nest and removing the individuals or eliminating nest sites - cavities. Great tits feed near the ground, so capturing with live-traps placed on the ground might be successful. No studies dealing with eradicating these birds was found.
II. Responsiveness to Prevention Efforts:	Notes: Undocumented.
III. Effective Control Tactics:	Mechanical X Biological ☐ Chemical ☐ Times and uses: Since great tits do not migrate, use control

	methods in the winter after many other bird species have migrated. Shooting, live-trapping, nest destruction, cavity elimination are control tactics.
IV. Minimum Effort:	Notes: Live-trapping, eliminate nest cavities.
V. Costs of Control:	Notes: Minimal unless one considers hiring people to conduct control methods.
VI. Cost of Prevention or Control vs. Cost of Allowing Invasion to Occur:	Notes: The effects of great tits in the US are uncertain at this time, but in Europe these birds are very common and prolific. This leads one to believe that they could become a problem in the Untied States if their population continues to increase.
VII. Non-Target Effects of Control:	Notes: Eliminating nest sites and cavities would impact other cavity-nesting birds.
VIII. Efficacy of Monitoring:	Notes: Point-transect surveys could be done to search for this species, in addition to BBS and CBC.
IX. Legal and Landowner Issues:	Notes: Owners of orchards may want to have this bird around to help control insects (11).

F. REFERENCES :

Number	Reference
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2	http://www.bbc.co.uk/nature/wildfacts/factfiles/249.shtml
3	http://www.oiseaux.net/oiseaux/passeriformes/great.tit.html
4	http://www.uwgb.edu/birds/wso/wsohotline01.htm
5	http://evolution.berkeley.edu/evolibrary/news/060701_warming
6	S. J. Dinsmore, S. J. and W. R. Silcock. 2004. The Changing Seasons: Expansions. North American Birds 58:324-330. Online.
7	http://www.bto.org/birdtrends2006/wcrgreti.htm
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10	Minot, Edward O. and C. M. Perrins. Nest Predation and Delayed Cost of Reproduction in the Great Tit. The Journal of Animal Ecology Vol. 55 No 1 p 331.
11	http://www.plosone.org/article/fetchArticle.action?articleURI=info%3Adoi%2F10.1371%2Fjournal.pone.0000202

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