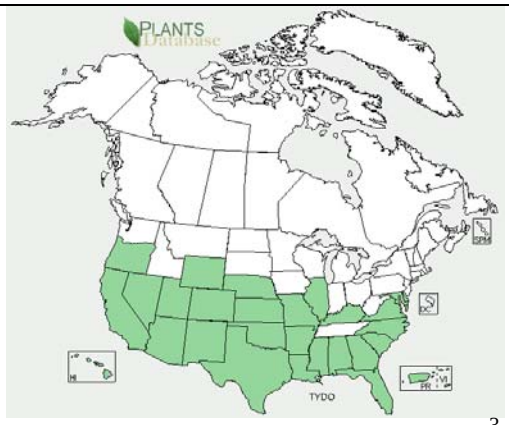
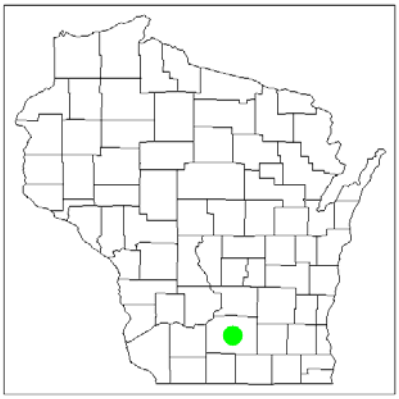
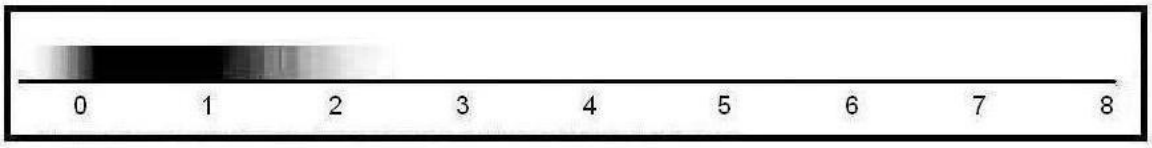
Aquatic Plant	Southern cattail
I. Current Status and Distribution	***Typha domingensis***

a. Range	**Global/Continental**	**Wisconsin**
Native Range Widespread in tropical, subtropical, and warm-temperate regions[1,2]	 *Figure 1: U.S and Canada Distribution Map*[3]	 *Figure 2: WI Distribution Map*[4]
Abundance/Range Widespread: Locally Abundant: Sparse:	 Southern United States Florida Everglades[5] Northern Illinois location is a power plant cooling pond[5]	 Undocumented Undocumented Esser Pond, Middleton, WI[4]
Range Expansion Date Introduced: Rate of Spread:	 Not applicable Can spread laterally at 3-10 m/year[6]	 First discovered Sept. 2011[(4)] Undocumented
Density Risk of Monoculture: Facilitated By:	 Can form dense monocultures[2,5] Nutrient-enriched ecosystems[2,5]; habitat modification and disturbance[2]	 Undocumented Undocumented
b. Habitat	Ponds, lakes, reservoirs, wetlands, marshes, fens, springs, rivers, streams, brackish waters, estuaries, lagoons, wet soils, mud flats, ditches, canals, storm-water retention basins, rice fields, cornfields[2]	
Tolerance	Chart of tolerances: Increasingly dark color indicates increasingly optimal range	
Depth (m)[7,8,9] 		
Preferences	Nutrient rich soils[5,10,11,12,13,14,15,16,17,18]; can tolerate high pH and moderate salinity[19,20,21,22]	

c. Regulation	
Noxious/Regulated:	*Not regulated*
Minnesota Regulations:	*Not regulated*
Michigan Regulations:	*Not regulated*
Washington Regulations:	*Not regulated*

II. Establishment Potential and Life History Traits	
a. Life History	Perennial herbaceous rhizomatous emergent plant
Fecundity	High
Reproduction	
Importance of Seeds:	Produces numerous seeds[2,23]
Vegetative:	Produces rhizomes[2]
Hybridization	Putative hybrids with *T. angustifolia* and *T. latifolia*[2,5]
Overwintering	
Winter Tolerance:	Undocumented
Phenology:	Flowers from spring to summer[5]
b. Establishment	
Climate	
Weather:	Tropical, subtropical, and warm-temperate regions; occurring to 40°N [(5)]
Wisconsin-Adapted:	Likely
Climate Change:	Warmer climates likely to increase spread and distribution
Taxonomic Similarity	
Wisconsin Natives:	High; *T. latifolia*
Other US Exotics:	High; *T. angustifolia*, *T.* x *glauca*
Competition	
Natural Predators:	Several mammals and waterbirds[2,7]
Natural Pathogens:	Several fungal pathogens[24]
Competitive Strategy:	Can tolerate deeper waters and high nutrient levels[25,26]
Known Interactions:	Outcompeting native sawgrass (*Cladium jamaicense)* in the Everglades[25,26,27,28,29]
Reproduction	
Rate of Spread:	High
Adaptive Strategies:	Ability to reproduce both clonally and though seeds
Timeframe	A single individual completely covered a 1 hectare plot within 9 years[10]
c. Dispersal	
Intentional:	Undocumented
Unintentional:	Wind/water currents[2]; fish/animals[2]; humans[2]; construction/agricultural equipment[2]; vehicles
Propagule Pressure:	High; fragments relatively easily accidentally introduced

Figure 3: Courtesy of Robin R. Buckallew, USDA-NRCS PLANTS Database[3]
Figure 4: Courtesy of Larry Allain, USDA-NRCS PLANTS Database[3]

III. Damage Potential	
a. Ecosystem Impacts	
Composition	Can outcompete and displace native species[2]
Structure	Can form dense monocultures[2,5]
Function	Can deplete water supplies through excessive evapotranspiration[2]
Allelopathic Effects	Yes[30,31,32,33,34,35,36]
Keystone Species	Undocumented
Ecosystem Engineer	Undocumented
Sustainability	Undocumented
Biodiversity	Decreases[2,37]
Biotic Effects	May outcompete other emergent vegetation[12,37,38,39]
Abiotic Effects	Undocumented
Benefits	Provides habitat and food for wildlife[2,39,40]; reduces channel erosion[2]
b. Socio-Economic Effects	
Benefits	Treatment of wastewater[2,19,21,41,42,43,44,45,46,47]; ethno-medicinal plant and food source[2,39,48,49,50]; potential biofuel crop[51,52]; animal fodder[2,53]
Caveats	Risk of release and population expansion outweighs benefits of use
Impacts of Restriction	Increase in monitoring, education, and research costs
Negatives	Can interfere with agriculture[2]; can interfere with fishing[2]; can slow water flow resulting in flooding and siltation[2,7]; decreases aesthetic value[2]; provides larval habitat for mosquitos[10,54]
Expectations	More negative effects expected in high-nutrient, disturbed ecosystems
Cost of Impacts	Undocumented
"Eradication" Cost	Undocumented
IV. Control and Prevention	
a. Detection	
Crypsis:	High; similar to *T. angustifolia*[2]
Benefits of Early Response:	Undocumented
b. Control	
Management Goal 1	Control
Tool:	Mowing; cutting; crushing[39,55,56,57,58]
Caveat:	Time and labor intensive
Cost:	Undocumented
Efficacy, Time Frame:	Mowing after cattail heads are well formed but not mature followed up by another mowing one month later when plants are 2-3 feet high will kill up to 75% of plants[39]
Tool:	Drawdowns[59,60]
Caveat:	Only feasible in certain systems; successive drawdowns necessary
Cost:	Undocumented
Efficacy, Time Frame:	May allow for the expansion of more favorable species[59,60]
Tool:	Herbicides (glyphosate, amitrole-T, amino-triazole, TCA, 2,2-DPA)[2,7]
Caveat:	Negative impacts on non-targets organisms
Cost:	Undocumented
Efficacy, Time Frame:	Short term control[2]; best applied during flowering or when leaves begin to senesce[2]

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