

## APPENDIX B

### Oak Openings Threat Matrix

*From a thesis entitled "A Regional Management Strategy for Invasive Plants in the Oak Openings"  
by Sara N. Guiher, 2017*

## Threat Matrix

Management priority, regional threat level, and community types likely to be invaded were established for each species and used to build a threat matrix (threat levels and community types are detailed below). Threat levels are determined using the current known regional distribution and ecological threat established with the Oak Openings Invasive Plant Assessment (OOIPA, questions 10-15). Community types likely to be invaded are selected based on documentation of a species' soil, light, and moisture needs (OOIPA question 15). The matrix is a decision-support tool for land managers and should be used to guide invasive species management. A web-based version of the matrix may include a column for links to best management practices for each assessed species.

### **Threat Levels:**

**Alert:** Species is not currently known to be present in the region, but poses threat of serious ecological harm. Monitor and alert (preferably through the chosen mapping program) if found. (e.g., black swallow-wort)

**Target:** Species exists in isolated populations or low densities, are spreading rapidly, and have the potential to cause environmental degradation or ecological harm. (e.g., Japanese knotweed)

**Monitor:** Species is widespread but currently not perceived as causing serious environmental degradation or ecological harm. (e.g., wild carrot)

**Control:** Species is nearly ubiquitous and has already degraded natural systems and ecological processes. Eradication is impossible, but localized control in high quality natural areas can retain most of the diversity and ecosystem services. (e.g., glossy buckthorn)

### **Major Oak Openings Community Types:**

**Wet Prairie:** Hydric soils, seasonally inundated, dominated by sedges, tree canopy primarily composed of oak species and typically <20% cover, shrub cover low or absent, at least 10 hummocks or tussocks per acre

**Savanna/Upland Prairie:** Sandy soils, dominated by native grasses (big bluestem, little bluestem, Indiangrass) and forbs, tree canopy primarily comprised of oak species and typically 20-40% cover, shrub cover (blueberry, raspberry) averages 20%, 1-10 snags per acre

**Deciduous Forest:** Sandy soils; tree canopy primarily comprised of oak species and typically >80% cover; shrubs comprised of blueberry, witch hazel, sassafras, and young oak covering approximately 20% of unit, >10 snags per acre

**Floodplain Forest:** Poorly to moderately drained soils, within floodplain of stream or ditch, tree canopy primarily comprised of Eastern cottonwood, sycamore, and ash at >80% cover

**Flatwoods Forest:** Seasonally inundated hydric soils or muck overlaying sandy soils; tree canopy comprised primarily of pin oak and swamp white oak at >80% cover; herbaceous layer includes Canada bluejoint, cinnamon fern, royal fern, and may be patchily distributed where sunlight penetrates canopy

Species	Priority	Threat Level	Community Types				
			WP	FW	FF	OS/SB	DF
reed canarygrass	82	target	x		x		
Japanese knotweed	76	target	x	x	x		x
Morrow's honeysuckle	75	target		x	x		x
Oriental bittersweet	74	target		x	x		x
Japanese barberry	73	target		x	x		x
Callery pear	72	target	x			x	
garlic mustard	70	control		x	x		x
common buckthorn	69	control	x	x	x		x
multiflora rose	69	control					
glossy buckthorn	69	control	x	x	x		x
tree-of-Heaven	69	target					
Amur honeysuckle	69	target		x	x		x
winged burning bush	67	target		x	x		x
autumn olive	67	control		x	x	x	x
Japanese stiltgrass	65	target	x	x	x		x
spotted knapweed	64	target				x	
black swallow-wort	61	alert				x	
Japanese honeysuckle	59	target		x	x		x
Norway maple	51	target		x	x		x
wild carrot	45	monitor					
common plantain	43	monitor					
dandelion	39	monitor					