Appendix I: Invasive Plants

Common name	Scientific name	Biological characteristics	Response to fire	Control method	Extent on Refuge
Russian olive/autumn olive	*Elaeagnus angustifolia, E. umbellata*	Woody; perennial; nitrogen-fixing; seeds spread by birds; shade-tolerant	Mature trees tolerant	Herbicide treatment—basal bark or cut stump	Small, isolated populations. Present in Savanna Reconstruction Unit, Rothinghouse property
Shrub lespedeza	*Lespedeza bicolor*	Herbaceous/semi-woody; perennial; clonal	Fire-adapted	Herbicide treatment	Dense population present in one unit (Old Game Farm)
Sericea lespedeza	*Lespedeza cuneata*	Herbaceous forb; perennial; clonal; warm season; allelopathic*	Fire-adapted	Chemical treatment—Triclopyr (Garlon 4)	Widespread small populations, isolated individuals or small clumps
Bush honeysuckle	*Lonicera sp.*	Woody; perennial; shade-tolerant; seeds spread by birds	Intolerant	Herbicide treatment—cut stump	Primarily in oak savannas
White poplar	*Populus alba*	Woody; perennial; clonal	Fire may increase suckering	Girdling, herbicide treatment—basal bark or cut stump	Isolated in Dogleg unit in about three patches
Black locust	*Robinia pseudoacacia*	Woody; perennial; clonal	Fire increases suckering	Herbicide treatment—basal bark or cut stump	Small clumps in several plantings, one large area in Highpoint along both sides of the Refuge boundary; primarily associated with former home sites
Japanese raspberry	*Rubus parvifolius*	Woody; perennial; clonal; Shade-tolerant	Intolerant	Herbicide treatment	Only known to be in one isolated population on the Refuge; small population on roadside near Refuge
Garlic mustard	*Alliaria petiolata*	Herbaceous forb; biennial; cool season; shade-tolerant	Intolerant	Early detection/rapid response -- hand pulling, cool season burning	Present in central Iowa, but not found on Refuge
Spotted knapweed	*Centaurea maculosa*	Herbaceous forb; perennial; clonal; allelopathic	Intolerant of annual burns	Early detection/rapid response, herbicide	Present in central Iowa, but not found on Refuge
Cut-leaved teasel/Common teasel	*Dipsacus laciniatus/D. sylvestris*	Herbaceous forb; biennial/ short-lived perennial	Intolerant	Early detection/rapid response, cutting, mowing, burning	Not known to be present on Refuge
Leafy spurge	*Euphorbia esula*	Herbaceous forb; perennial; clonal	Tolerant	Early detection/rapid response, herbicide treatment	Present in central Iowa, but not found on Refuge
Purple loosestrife	*Lythrum salicaria*	Herbaceous forb; perennial; clonal	Intolerant	Early detection/rapid response, herbicides, biocontrols	Present close to Refuge
European buckthorn	*Rhamnus cathartica*	Woody; perennial; seeds spread by birds	Fire controls seedlings, top-kills mature plants	Early detection/rapid response, herbicides	Present in central Iowa, but not found on Refuge
Canada thistle	*Cirsium arvense*	Herbaceous forb; perennial; clonal; cool season	Intolerant	Repeated mowing prior to bloom, chemical treatment during bud, cool season burning	Widespread patches, but only in certain plantings
Crown vetch	*Coronilla varia*	Herbaceous forb; perennial; clonal	Intolerant	Burning, mowing, herbicide treatment	Small patches, mostly along roadsides
White & yellow sweet clovers	*Melilotus alba, M. officinalis*	Herbaceous forb; biennial; seeds may remain viable for decades	Fire intolerant, but fire stimulates seed germination	Mowing during bloom stage, hand-pulling, burning	Widespread patches
Silvergrass, plumegrass	*Miscanthus sacchariflorus*	Herbaceous grass; Perennial; clonal; warm	Tolerant	Cool season burning, herbicide treatment,	Isolated patches primarily associated with former

Common name	Scientific name	Biological characteristics	Response to fire	Control method	Extent on Refuge
		season		mowing to prevent seed production	home sites (3 locations)
Smooth brome	*Bromus inermis*	Herbaceous grass; perennial; clonal; cool season	Intolerant	Cool season burning, inter-seeding	Widespread in former pastures and in prairie plantings and remnants
Tall fescue	*Festuca arundinacea*	Herbaceous grass; perennial; clonal; cool season; allelopathic	Intolerant	Cool season burning, interseeding, herbicide treatment	Present on Refuge primarily in waterways
Bird's-foot trefoil	*Lotus corniculatus*	Herbaceous forb; perennial; clonal; cool season	Intolerant but seeds germination increases	Burning, hand-pulling, herbicide treatment	Localized in disturbed areas, primarily around Visitor Center
Alfalfa	*Medicago sativa*	Herbaceous forb; perennial; clonal; cool season	Intolerant	Burning	Scattered locations
Reed canarygrass	*Phalaris arundinacea*	Herbaceous grass; perennial; clonal; cool season	Intolerant	Burning, herbicide treatment	Widespread along Walnut creek, smaller drainages and wet areas, and isolated clumps in uplands
Kentucky bluegrass	*Poa pratensis*	Herbaceous grass; perennial; clonal; cool season	Intolerant	Cool season burning, interseeding	Widespread, especially in disturbed areas
Multiflora rose	*Rosa multiflora*	Woody; perennial; clonal	Intolerant	Burning, mowing, herbicide treatment	Scattered in some prairie and savanna remnants
Red clover	*Trifolium pratense*	Herbaceous forb; perennial; clonal; cool season	Intolerant	Cool season burning	Widespread, especially in disturbed areas
Musk thistle	*Carduus nutans*	Herbaceous forb; biennial; cool season	Intolerant	Mowing or cutting at crown level	Scattered individual plants and isolated patches
Bull thistle	*Cirsium vulgare*	Herbaceous forb; biennial	Intolerant	Mowing or cutting at crown	Scattered individual plants
Poison hemlock	*Conium maculatum*	Herbaceous forb; biennial	Intolerant	Cutting at crown, burning	Isolated patches primarily associated with former home sites
Queen Anne's lace	*Daucus carota*	Herbaceous forb; biennial	Intolerant	Hand pulling, mowing	Concentrated in disturbed areas around buildings, roads, and in grazed areas
Wild parsnip	*Pastinaca sativa*	Herbaceous forb; biennial	Intolerant	Cutting at crown level, burning	Widespread scattered plants
Curly dock	*Rumex crispus*	Herbaceous forb; biennial	Intolerant	Cool season burning	Widespread, scattered plants