| **Black swallow-wort**<br>*Cynanchum louiseae*<br>Milkweed family | **Pale swallow-wort**<br>*Cynanchum rossicum*<br>Milkweed family | **Oriental bittersweet**<br>*Celastrus orbiculatus*<br>Staff-tree family |
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| **Stem:** single, non-branching<br>**Leaves**: simple, opposite, hairless, smooth<br>**Flowers:** June-July, purple to brown/black, 5 petals, fragrant, inner petals are hairy<br>**Fruit:** long, slender, green pods (similar to milkweed), turn dark brown when ripe<br>**Seed:** on silky filaments (like common milkweed) *pods persist through winter*<br>**Reproduction:** seed, rhizome<br>**Control:** Herbicide treatment May-Oct, cut & paint or foliar spray, an adequate surfactant must be used due to waxy cuticle on both leaves and stems | **Stem:** single, non-branching<br>**Leaves:** simple, opposite, hairless, smooth<br>**Flowers:** June-July, maroon to pale pink, 5 petals, hairless<br>**Fruit:** long, slender, green pods (similar to milkweed), turn dark brown when ripe<br>**Seed:** on silky filaments (like common milkweed) *pods persist through winter*<br>**Reproduction:** seed, rhizome<br>**Control:** Herbicide treatment May-Oct, cut & paint or foliar spray, an adequate surfactant must be used due to waxy cuticle on both leaves and stems | **Stem:** multi-branched<br>**Leaves:** alternate, glossy, finely toothed<br>**Flowers:** clusters of small greenish flowers emerge from leaf axils in May-June<br>**Fruit:** Clusters of 1-3 fruits attach at leaf axils along the stem. Green in early summer, becoming bright yellow/orange in late summer. The outer membrane splits in September and bends back, revealing a bright red, fleshy inner-fruit<br>**Seed:** 1-2 seeds contained in red fleshy fruit<br>**Reproduction:** seed, root-suckering<br>**Control:** Herbicide treatment June-Feb, cut & paint or foliar spray |

| **Japanese knotweed**<br>*Polygonum cuspidatum*<br>Buckwheat family | **Lombardy poplar**<br>*Populus nigra 'Italica'*<br>Willow family | **Japanese honeysuckle vine**<br>*Lonicera japonica*<br>Honeysuckle family |
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| **Stem:** hollow, bamboo-like stems are erect and unbranched or with a few branches toward the tip, despite size, stems are annual and die back to rhizome at end of growing season<br>**Leaves:** alternate, simple, 4-6 inches long and almost as wide, dark green<br>**Flowers:** numerous small, greenish-white flowers that are produced in late summer<br>**Fruit:** shiny black, 3-angled, and about 1/6 inch long, enclosed in a winged calyx<br>**Seed:** plant is dioecious, most plants produce only female flowers, seed production will occur if there is pollination<br>**Reproduction:** rhizomes, seed<br>**Control:** Herbicide foliar treatment May-Sept | **Trunk:** narrow, columnar<br>**Bark:** grey/green on young trees, black, thickened & furrowed on older trees<br>**Leaves:** alternate, simple, triangular shaped, serrate leaf margins, dark green<br>**Flowers:** inconspicuous red 1-2 inch flowers in spring (catkins)<br>**Fruit:** fruitless<br>**Seed:** fluffy white seed released from catkins, seed is generally thought to be infertile<br>**Reproduction:** vegetatively (root suckering)<br>**Control:** cut & paint, or drill & fill after leaf out when plant is actively growing<br>**Notes:** short-lived, usually suffers from canker disease | **Stem:** branching (opposite), when young- pale reddish brown, hairy & flexible, older stems- yellowish brown bark, shredding in long, papery strips, hollow<br>**Leaves:** opposite, simple, oval to oblong, smooth, 1.5-3 inches long, DO NOT unite at base like native honeysuckle, often stay on through winter<br>**Flowers:** white to yellow in pairs at leaf axils along stems, bloom April-June<br>**Fruit:** purple to black, glossy, smooth, Sept-Oct<br>**Seed:** contained in fruit, 2-3 oval to oblong, dark brown, about 1/4 inch across<br>**Reproduction:** root suckers, seed & runners<br>**Control:** May-June, fire (propane torch) or herbicide foliar spray<br>**Notes:** Native honeysuckle vines have red/orange berries, fused leaves at branch tips & clusters of many flowers |

| **Kudzu**<br>*Pueraria montana*<br>Legume family | **Lyme grass**<br>*Leymus arenarius*<br>Grass family | **Phragmites/ Common reed**<br>*Phragmites australis*<br>Grass family |
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| **Stem:** yellow-green, with dense, erect yellow hairs and matted silver hairs, older vines are woody<br>**Leaves:** alternate, compound with 3 broad leaflets up to 4 inches across, hairy when young<br>**Flowers:** reddish purple, grow on 6 inch upright spikes that emerge from leaf axils, bloom Aug-Sept<br>**Fruit:** brown, hairy, flattened, seed pods<br>**Seed:** pods each contain three to ten hard seeds<br>**Reproduction:** rhizomes, runners, seed, vines that root at nodes to form new plants<br>**Control:** Early season repeated cuttings through end of growing season, cutting does not typically kill roots and should only be used to control the spread of kudzu. Herbicide foliar or cut stump treatment at end of growing season (late summer/early fall). | **Stem:** Blue-glaucous, hairless or nearly so at the summit<br>**Leaves:** evergreen leaf is blue-green, 12 inches long and 1/2 inch wide<br>**Flowers:** dense spikelets that are blue-green May-July and turn beige later in the year (Sept-Oct)<br>**Fruit:** brown, attached to the palea (one of the bract-like organs of a grass spikelet)<br>**Seed:** Arranged in a spike; 15-25 mm thick<br>**Reproduction:** rhizomes, seed<br>**Control:** Foliar treatment or bloody glove<br>**Notes:** Conspicuously blue in color and hairless almost to top; stand out from native dune grass which is green and finely hairy under the spike. | **Stem:** upright, rigid, hollow, leaf sheaths tight to stem<br>**Leaves:** aligned on one side of stem, flat, smooth leaf blades, typically blue-green<br>**Flowers:** Dense branched clusters on bearded axis at the end of each stem; becoming open and feathery at maturity, produced July-Sept<br>**Fruit:** fruit is a tiny grain, hidden within tiny bracts and grouped into small clusters that are closely arranged on a large, wide, open-branched plume (or seed head), that changes texture from soft or watery to hard and drops from the plant<br>**Seeds:** have white hairs almost as long as seed<br>**Reproduction:** rhizome, seed<br>**Control:** Herbicide bloody glove or foliar treatment Aug-Sept<br>**Notes:** Stalks of invasive phragmites plants are rigid, rough, dull, tan in color, and hollow inside |

| **Reed canary grass**<br>*Phalaris arundinacea*<br>Grass family | **Baby's Breath**<br>*Gypsophila paniculata*<br>Carnation family | **Garlic mustard**<br>*Alliaria petiolata*<br>Mustard family |
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| **Stem:** erect, rounded, hairless stem with gradually tapering leaf blades<br>**Leaves:** flat, hairless, rough texture on both sides, 3.5-10 inches long and .25 to .75 inches wide, highly transparent ligule (membrane where blade and sheath meet)<br>**Flowers:** single flowers occur in dense clusters May-June, green to purple eventually fading to beige<br>**Fruit:** plume contracts and becomes light tan in color in the fruiting stage, fruit forms inside of plume<br>**Seed:** shiny brown, readily germinate after maturation (no dormancy period)<br>**Reproduction:** seed, rhizomes<br>**Control:** herbicide foliar treatment May-August and/or cut & paint June-August | **Stem:** coarse, multi-branched, silvery<br>**Leaves:** narrow, opposite leaves, with a prominent mid-vein, grow 1 to 4 in long<br>**Flowers:** Plants typically flower the third year; flowers in June, small (1/4 in across) white or pink flowers form on diffusely branched clusters<br>**Fruit:** form mid-July, contain 1-5 black seeds<br>**Seed:** small, black, contained in fruits<br>**Reproduction:** primarily by seed<br>**Control:** Can be effectively controlled by manual removal. To ensure that the plant does not re-sprout, the root needs to be severed below the caudex, the point where the root becomes the stem. | **Stem:** smooth (though sometimes sparse with hairs), a single plant usually produces only one stem but may produce as many as ten<br>**Leaves:** (biennial herb)alternate, triangular to heart shaped leaves, coarsely toothed, give off strong garlic odor when crushed, first year plants appear as rosettes close to the ground, second year, stalk emerges from basal rosette<br>**Flowers:** button-like clusters of small white flowers, 4 petals on each flower<br>**Fruit:** slender green pods produced in May, become shiny black when mature<br>**Seed:** contained in pods, single plant can produce thousands of seeds<br>**Reproduction:** seed, can remain viable in the soil for 5 or more years<br>**Control:** pull in spring before seeds pop |