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INVASIVE PLANTS MID ATLANTIC	YR OF INTRO.	ORIGIN / SITE OF DISCOVERY	Use	INVASIVE SITES	THREAT	SPREAD	CONTROL MECHANISMS	TIME	SPECIAL INSTRUCTIONS	SPECIAL PROBLEMS
AUTUMN OLIVE *Elaeagnus umbellata*	1830	Asia	Ornamental, reforestation, erosion control, wildlife habitat	altered areas, open areas	out competes natives	seeds, birds and animal dispersion	manual, cut and to stumps apply Glyph sate or triclopyr chemical		Careful to not affect other plants with application of chemicals to foliage	fixes nitrogen in roots so can grow anywhere
BAMBOO *Bambusa, Phyllostachys, Pseudosasa species* (native is *Arundinaria gigantea*)	Unk	Asia, Latin America	Ornam, privacy fence	non discriminatory	Estab monoculture / Discourages Diversity	seed via birds/ animals	manual, Glyph sate chemical on stumps	fall	herbicides in fall when sugar is carried to root; repeat in 2 wks	thick rhizome roots herbicides on leaves threatens other plants
BARBERRY - JAPANESE Berberis thunbergii	1875	Japan / GA	replacement for another barberry which was infected with black stem rust of wheat	sun and shade forests and open woodlands and wetlands	displaces natives	through seeds transmitted by small animals	mowing; mechanical removal; herbicides glyph sate and triclopyr	fall when sugar going into roots		
BITTERSWEET *Celastrus orbiculatus*	1860	Asia	Ornamental	Disturbed lands, wetlands	Prevents photosynthesis; girdles, topples trees by weight	seeds, vegetation via stolons and rhizomes	mechanical, chemical	before fruit	Replacing native bittersweet C. scandens	use of bittersweet for wreathes spreads seeds
BURNING BUSH *Euonymus alata*	1860	Asia	Orn.	forests, coastal scrublands, prairies	replaces native plantings and habitat	Seeds of "seed shadow" below plant	Mechanical and chemical; hand removal for small plants	before seeding or fall		
BUTTERFLY BUSH *Buddleja* species (100)		Asia, C America	ornamental	coastal forest, roadsides, disturbed habitats		seeds	mechanical or chemical	fall or before flowers	plant rapid ground cover to prevent reestablishment	disturbance of mechanical removal results in new plants
CHINESE SILVER GRASS *Miscanthus sinensis*	1900	Asia	Ornamental	disturbed/altered areas; open areas	our performs other native species	wind dispersed seeds and rhizomes	Mechanical by digging out roots is not possible due to extensive root system, herbasice is required	Late fall or spring	Resprouting will occur if complete root is not removed	Cutting is not advisable - will spread to undisturbed areas
CHOCOLATE VINE Akebia quintata	Unk									
DAY LILY -COMMON *Hemerocallis fulvia* *Hemerocallis fulvia*	1800's	Eng	ornamental	natural areas	meadow, flood plains, forest edges	seed /discarded roots	manual removal of entire root; contact systematic herbicides	spring / fall		Resprouting will occur if entire root is not removed

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ENGLISH IVY *Hedera helix*	1700	Eng	ground cover evergreen ornamentation	woodlands; forest edges, salt marshes	suffocate any other plant	seeds contain glycosides that cause birds to vomit and disseminate seeds	roll up in spring; removal from trees; manual removal of entire root; contact systematic herbicides triclopyr to cut stems or foliage	spring/early fall	reservoir of bacterial leaf scorch affecting elms, oaks, and maples	kills trees with added weight and blocking off sunlight for branches
EUONYMOUS-CEEEPING *Euonymus fortunei*										
FIG BUTTERCUP *Ranunculus ficaria / Lesser Celandine*	Unk	Europe	ornamental	forest floor	emerges before native spring plants; thwarts penetration	bulbs tubers	manual removal of entire root; contact systematic herbicides	very early: Feb, March	herbicides early to avoid contact with emerging natives	
GARLIC MUSTARD *Alliaria petiolata*	1868	Long Island	food and medicine	drives out natives in forest Understory	interferes w/ oviposition of rare native butterflies Pieris napi oleraceae Harris and P. virginiensis	rapid growth in late fall and early spring when native species are dormant;	manual removal incl root; cut plant to ground in spring; research underway for 5 weevils and 1 flea beetle as biological control mechs.	before seed	bag removal before seed	seeds survive 5+ yrs in soil; 0ne plant produces hundreds of seed
HOGWEED Heracleum mantagazzianum	1917	Eurasia	Ornamental	moist soils along roadsides and disturbed areas	poisonous and dangerous	seed	Difficult-only by Dept of Agriculture		do not touch; contact Dept of Agriculture for removal	Poisonous
HONEYSUCKLE - EXOTIC Lonicera bella, fragrantissima, maachii, morrowii, standishii, tatarica, xylosteum		Russia and Far East	ornamental, wildlife cover, soil erosion		carb rich and do not provide hi fat nec for migrating birds; compete for pollinators resulting in reduced seed set for native species		Mechanical and chemical; hand removal for small plants	before flower in late spring	native species hollow stems; invasive species hollow stems	

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JAPANESE CLOVER *Lespedeza cuneata*	1846	Japan / GA	by Govt for Roadside Stabilization, soil Improvement, wildlife	non discriminatory	devt of immense seed banks and out competes natives	seed	mowing x 3 consecutive yrs; herbicides	early to mid summer for herbicides	cut plants as low as possible	mechanical impossible bec of extensive root system
KNAPWEED *Centaurea biebersteinii*		Europe/Asia ship ballast soil and alfalfa		barrens, fields, forest, meadows	captures moisture and nutrients	rapid spread through seed	Repeated applications of herbicides		Use certified weed free hay; forms deep taproot difficult to remove; keep livestock away; clean shoes when leave area	research on biological control by insect
KNOTWEED JAPANESE *Polygonum cuspidatum*	1800'S	Asia	erosion control, screening, ornamental	neglected areas; waterways	once established, out competes natives	ryzomes & seed: discarded cuttings, fill dirt, wind, water	Mechanical ; Glyph sate and triclopyr herbicides to stems or foliage	Early in season; repeated until all roots gone	removal of ALL roots and runners.	can survive floods and rapidly colonize shore land
KUDZU *Pueraia montana*	1876	Asia	forage crop plant at Philadelphia Centennial Exposition	recommended to farmers to reduce soil erosion by Civilian Conservation Corps	girdles trees and uproots trees through added weight	/rhizomes & rooting with new nodes; pollination by giant resin bee	cutting and mowing; herbicides	anytime	grows 1 foot per day, 60 feet per season	
MARSH DEWFLOWER *Murdannia keisak*	1935	E Asia	UNKNOWN	wet areas	overtakes natives	seeds by wildlife	Hand removal; early Glyph sate	Late season for chemical treatment		thick mats choke out native flora
MILE A MINUTE *Polygonum perfoliatum*	1890 but not invasive	India, Asia	Ornamental	open and disturbed areas,	limits photosynthesis	birds and ants; water		before fruit	1930's in York Co, PA as part of root stock of Rhododendron	do not manual remove when in fruit - spread seeds

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MULTIFLORA ROSA *Rosa multiflora*	1866	Asia	rootstock for ornamental roses; living fences to control livestock; highway crash barriers; cover for habitat	pastures, open areas; fields, prairies, some wetlands	overtakes natives	seeds and vegetative via tips of ached branches	frequent, repeated mowing; Repeated chemical herbicide treatments	any time; in fall when sugar going down the stem	produces one millions seeds per year; seeds last 20 years.	
PERIWINKLE *Vinca minor*		Europe	Ornamental	any areas available	displaces all flora with mat	vegetative/runners	manual/ mowing; glyph sate after	spring	aggressive	V. major (Europe) and Catharanthus roseus (madagascar) also invasive
ORNAMENTAL PORCELAIN BERRY *Ampelopsis brevipeduncculata*		Asia Russia	bedding and landscape	moist soils along roadsides and disturbed areas	easy germination of seed	tendrils	chemical and manual methods	before fruiting	hand prune in fall to prevent budding	
PRIVET *Ligustrum obtusifolium, sinense, vulgare, japaniocum*	1700's	Europe, Asia	hedges	forests, floodplains, fields	Out compete native vegetation	seeds carried by animals birds	mechanical; spray leaves with glyph sate; paint stumps			
PURPLE LOOSTRIFE *Lythrum salicaria*	1900's	Eurasia	ornamental and medicine	natural & disturbed wetlands	reduces biodiversity and wildlife	1 ft/yr by underground stems and seeds by wind and water	manual before seeds set; older plants req. spot treatment with glyph sate (RODEO) for wet areas.	before seeding	USDA beetles will eat some natives but cause minimal damage rel to Loostrife.	still sold as ornamental; one plant produces 3 mill seeds/yr
REED -COMMON Phragmites australis	1800's	Europe	ornamental	wet sites	dominates natural reed	seed and extensive root system. Fragments of roots	Cutting, burning, chemical herbicides; Biological control being studied		Must remove fragments of live roots	eradication is time consuming, difficult, expensive once established
REED - GIANT *Arundo donax*	Unk	India	Erosion control; ornamental	wide variety of conditions, including high salinity	dominates natural plantings	water and extensive rhizome system	mowing; chemical application after flowering;	after flowers	must manually remove fragments of live roots	impressive; hard to discourage landowners

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STILT GRASS JAPANESE Microstegium vimineum	1919	Asia	packing material for porcelain	Indiscriminate; attracted to high nitrogen moist areas	displaces wetland and forest vegetation	by surface run off, soil, feet of animals and humans	manual removal or mowing before seed production; contact and systemic herbicides more practical	before seeds		SOME Landowners THINK THAT IT IS BEAUTIFUL
SPIREA JAPANESE *Spirea japonica*	1870	Asia	Ornamental	fields, river edges, streams,	displacement	water	mowing repeatedly but chemicals required	Any/fall	flowers provide profuse seeds	
SWALLOWWORT *Cyyanchum louiseae*	Unk	Europe	unknown:	forest edges, fields, disturbed areas	prevents photosynthesis	seeds and vegetative via tips of ached branches				
THISTLE - CANADA *Cirsium avense*	1600'S			wet or dry areas	changes plant diversity	seeds within one year; also lateral roots and root fragments	cutting, mowing, controlled burning, chemicals		be sure to ID properly before destroying native rare thistle	seeds last 20 years
WINE BERRY *Rubus phoenicolasius*	1890	Asia	breeding stock for raspberry	moist habitats	crowds out natives and established extensive patches	seeds transported by birds, mammals, humans and tips of arching canes	systemic herbicide glyph sate or triclopyr	before flowering or fall		
WISTERIA EXOTIC *W. sinensis; W. floribunda*	1830	Asia	ornamental	forests, residential areas	girdle trees, smother native plants	kills trees and enables more sunlight to foster wisteria seedling growth	systemic herbicides triclopyr	before seedlings	native is *W. frutescens*	
Bradford Pear	1900	China	landscaping	everywhere	displacement	seeds by birds, esp. starling	cutting removal of entire root or girdle in spring; chemical on sprouts	any	sterile cultivar were weak; non sterile cultivar escaped	
Norway Maple		Europe Asia		everywhere	dense shade displaces natives		same	any		
Princess Tree *Paulownia tomentosa*	1830	China	Dutch East India Co. import	highly adaptive; survives construction	displacement	one tree produces 20 mill seeds	cutting / chemical herbicides	before seeding		highly aggressive

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Tree of Heaven *Ailanthus altissima*	1748	China	Gold Rush intro to Calif by PA immigrant	roadsides, disturbed areas	displacement; grows into sewers; produces chemicals that kill or prevent natives	spreads sprouts after injury or cutting; seeds	manual removal and chemicals	any	is confused with native Staghorn sumac and black walnut	must remove all roots or will proliferate more
White Mulberry	1700's	Asia	silk worm industry	roadsides, landscapes	disease transferred to native mulberry		girdle; cut and grind stump	any	Morus rubra is native	
Mimosa	1745	Asia	ornamental	roadsides landscapes	vigorous displacement	seed and veg	cut; herbicide on resprouts	any	can produce nitrogen in roots	
Paper Mulberry		Japan	ornamental fast growing shade	roadside landscapes	vigorous displacement	seed/veg	herbicide to bark	any		
Saw tooth Oak		Asia	commercial	street planting	recent displacement		glyph sate on sprouts after cut	any	Rec native oaks	