

Family: *Campanulaceae*

Taxon: *Lobelia inflata*

Synonym: *Dortmannia inflata* (L.) Kuntze
Lobelia michauxii Nutt.
Rapuntium inflatum (L.) Mill.

Common Name: Indian tobacco
 pukeweed
 asthma weed

Questionnaire :	current 20090513	Assessor:	Assessor	Designation:	H(HPWRA)
Status:	Assessor Approved	Data Entry Person:	Assessor	WRA Score	10.5
101	Is the species highly domesticated?		y=-3, n=0		n
102	Has the species become naturalized where grown?		y=1, n=-1		
103	Does the species have weedy races?		y=1, n=-1		
201	Species suited to tropical or subtropical climate(s) - If island is primarily wet habitat, then substitute "wet tropical" for "tropical or subtropical"		(0-low; 1-intermediate; 2-high) (See Appendix 2)		Low
202	Quality of climate match data		(0-low; 1-intermediate; 2-high) (See Appendix 2)		High
203	Broad climate suitability (environmental versatility)		y=1, n=0		y
204	Native or naturalized in regions with tropical or subtropical climates		y=1, n=0		n
205	Does the species have a history of repeated introductions outside its natural range?		y=-2, ?=-1, n=0		n
301	Naturalized beyond native range		y = 1*multiplier (see Appendix 2), n= question 205		y
302	Garden/amenity/disturbance weed		n=0, y = 1*multiplier (see Appendix 2)		y
303	Agricultural/forestry/horticultural weed		n=0, y = 2*multiplier (see Appendix 2)		
304	Environmental weed		n=0, y = 2*multiplier (see Appendix 2)		n
305	Congeneric weed		n=0, y = 1*multiplier (see Appendix 2)		y
401	Produces spines, thorns or burrs		y=1, n=0		n
402	Allelopathic		y=1, n=0		
403	Parasitic		y=1, n=0		n
404	Unpalatable to grazing animals		y=1, n=-1		y
405	Toxic to animals		y=1, n=0		y
406	Host for recognized pests and pathogens		y=1, n=0		n
407	Causes allergies or is otherwise toxic to humans		y=1, n=0		y
408	Creates a fire hazard in natural ecosystems		y=1, n=0		n
409	Is a shade tolerant plant at some stage of its life cycle		y=1, n=0		
410	Tolerates a wide range of soil conditions (or limestone conditions if not a volcanic island)		y=1, n=0		n

411	Climbing or smothering growth habit	y=1, n=0	n
412	Forms dense thickets	y=1, n=0	n
501	Aquatic	y=5, n=0	n
502	Grass	y=1, n=0	n
503	Nitrogen fixing woody plant	y=1, n=0	n
504	Geophyte (herbaceous with underground storage organs -- bulbs, corms, or tubers)	y=1, n=0	n
601	Evidence of substantial reproductive failure in native habitat	y=1, n=0	n
602	Produces viable seed	y=1, n=-1	y
603	Hybridizes naturally	y=1, n=-1	
604	Self-compatible or apomictic	y=1, n=-1	y
605	Requires specialist pollinators	y=-1, n=0	n
606	Reproduction by vegetative fragmentation	y=1, n=-1	n
607	Minimum generative time (years)	1 year = 1, 2 or 3 years = 0, 4+ years = -1	1
701	Propagules likely to be dispersed unintentionally (plants growing in heavily trafficked areas)	y=1, n=-1	
702	Propagules dispersed intentionally by people	y=1, n=-1	y
703	Propagules likely to disperse as a produce contaminant	y=1, n=-1	n
704	Propagules adapted to wind dispersal	y=1, n=-1	y
705	Propagules water dispersed	y=1, n=-1	
706	Propagules bird dispersed	y=1, n=-1	n
707	Propagules dispersed by other animals (externally)	y=1, n=-1	
708	Propagules survive passage through the gut	y=1, n=-1	y
801	Prolific seed production (>1000/m2)	y=1, n=-1	y
802	Evidence that a persistent propagule bank is formed (>1 yr)	y=1, n=-1	y
803	Well controlled by herbicides	y=-1, n=1	
804	Tolerates, or benefits from, mutilation, cultivation, or fire	y=1, n=-1	
805	Effective natural enemies present locally (e.g. introduced biocontrol agents)	y=-1, n=1	

Designation: H(HPWRA)

WRA Score **10.5**

Supporting Data:

101	1990. Mohlenbrock, R.H.. The illustrated flora of Illinois: Flowering plants: Nightshades to Mistletoe. SIU Press, Carbondale, IL	[Is the species highly domesticated? No evidence]
102	2013. WRA Specialist. Personal Communication.	NA
103	2013. WRA Specialist. Personal Communication.	NA
201	2013. USDA ARS National Genetic Resources Program. Germplasm Resources Information Network - (GRIN). http://www.ars-grin.gov/cgi-bin/npgs/html/index.pl	[Species suited to tropical or subtropical climate(s) 0-Low] "Native - Eastern Canada: Canada - New Brunswick, Nova Scotia, Ontario [s.e.], Prince Edward Island, Quebec [s.] Northeastern U.S.A.: United States - Connecticut, Indiana, Maine, Massachusetts, Michigan, New Hampshire, New Jersey, New York, Ohio, Pennsylvania, Rhode Island, Vermont, West Virginia North-Central U.S.A.: United States - Illinois, Iowa, Kansas [e.], Minnesota, Missouri, Nebraska [e.], Wisconsin Southeastern U.S.A.: United States - Alabama, Arkansas, Delaware, Georgia, Kentucky, Maryland, Mississippi, North Carolina, South Carolina, Tennessee, Virginia"
202	2013. USDA ARS National Genetic Resources Program. Germplasm Resources Information Network - (GRIN). http://www.ars-grin.gov/cgi-bin/npgs/html/index.pl	[Quality of climate match data 2-High]
203	2013. Backyard Gardener. <i>Lobelia inflata</i> . http://www.backyardgardener.com/plantname/pda_6572.html [Accessed 17 Sep 2013]	[Broad climate suitability (environmental versatility)? Yes] "USDA Hardiness Zone: 4 to 8" [Grows in 5 hardiness zones]
204	2013. USDA ARS National Genetic Resources Program. Germplasm Resources Information Network - (GRIN). http://www.ars-grin.gov/cgi-bin/npgs/html/index.pl	[Native or naturalized in regions with tropical or subtropical climates? No] "Native - Eastern Canada: Canada - New Brunswick, Nova Scotia, Ontario [s.e.], Prince Edward Island, Quebec [s.] Northeastern U.S.A.: United States - Connecticut, Indiana, Maine, Massachusetts, Michigan, New Hampshire, New Jersey, New York, Ohio, Pennsylvania, Rhode Island, Vermont, West Virginia North-Central U.S.A.: United States - Illinois, Iowa, Kansas [e.], Minnesota, Missouri, Nebraska [e.], Wisconsin Southeastern U.S.A.: United States - Alabama, Arkansas, Delaware, Georgia, Kentucky, Maryland, Mississippi, North Carolina, South Carolina, Tennessee, Virginia"
205	2004. Mito, T./Uesugi, T.. Invasive Alien Species in Japan: The Status Quo and the New Regulation for Prevention of their Adverse Effects. <i>Global Environmental Research</i> . 8(2): 171-191.	[Does the species have a history of repeated introductions outside its natural range? Japan]
205	2009. DAISIE. Handbook of alien species in Europe Volume 3 of Invading nature. Springer Science and Business Media B.V.,	[Does the species have a history of repeated introductions outside its natural range? Europe]
205	2013. USDA ARS National Genetic Resources Program. Germplasm Resources Information Network - (GRIN). http://www.ars-grin.gov/cgi-bin/npgs/html/index.pl	[Does the species have a history of repeated introductions outside its natural range? No evidence]
301	2004. Mito, T./Uesugi, T.. Invasive Alien Species in Japan: The Status Quo and the New Regulation for Prevention of their Adverse Effects. <i>Global Environmental Research</i> . 8(2): 171-191.	[Naturalized beyond native range? Possibly Yes] "Table 1 Alien species recognized to be established in Japan or found in the Japanese wild (as of October 27, 2004)" [Includes <i>Lobelia inflata</i>]
302	1992. Baskin, J.M./Baskin, C.C.. Role of temperature and light in the germination ecology of buried seeds of weedy species of disturbed forests. I. <i>Lobelia inflata</i> . <i>Canadian Journal of Botany</i> . 70(3): 589-592.	[Garden/amenity/disturbance weed? Yes] " <i>Lobelia inflata</i> L. is a weedy species that may be abundant in disturbed forest sites."
302	2003. Webster, T.M./Cardina, J./White, A.D.. Weed seed rain, soil seedbanks, and seedling recruitment in no-tillage crop rotations. <i>Weed Science</i> . 51(4): 569-575.	[Garden/amenity/disturbance weed? Regarded as a weed] "Table 1. Weed species occurrence in fall seed rain, spring soil seedbanks, and seedling recruitment in each site-year." [Includes <i>Indiantobacco</i> - <i>Lobelia inflata</i>]
302	2004. Stepp, J.R.. The role of weeds as sources of pharmaceuticals. <i>Journal of Ethnopharmacology</i> . 92(2): 163-166.	[Garden/amenity/disturbance weed? Regarded as a weed] "Table 2 Weeds from which pharmaceuticals have been derived" [Table includes <i>Lobelia inflata</i>]
302	2007. Gargiullo, M.B.. A Guide to Native Plants of the New York City Region. New York City Department of Parks & Recreation, New York, NY	[Garden/amenity/disturbance weed? Regarded as a weed] "Open woodlands, edges, sometimes a garden weed."

302	2013. Hilty, J.. Wildflowers of Illinois in Savannas & Thickets - Indian Tobacco - <i>Lobelia inflata</i> . http://www.illinoiswildflowers.info/savanna/plants/indian_tobacco.htm [Accessed 17 Sep 2013]	[Garden/amenity/disturbance weed? Regarded as somewhat weedy] "Habitats include open deciduous woodlands, savannas, thickets, areas along woodland paths, powerline clearances in wooded areas, partially shaded seeps, and abandoned fields. This species prefers areas with a history of disturbance, particularly when this removes some of the overhead canopy in wooded areas. It is somewhat weedy."
303	2012. Randall, R.P.. A Global Compendium of Weeds. 2nd Edition. Department of Agriculture and Food, Western Australia	[Agricultural/forestry/horticultural weed? Unknown. Listed as an agricultural weed, but unable to confirm impacts]
304	2006. Barker, J./Randall, R./Grice, T.. Weeds of the future? Threats to Australia's grazing industries by garden plants. CRC for Australian Weed Management, Glen Osmond SA	[Environmental weed? Not in Australia] "These 800 species are recorded environmental and/or agricultural weeds overseas. These species were not considered amongst the foremost potential threats to Australia's grazing industries because they met one or several of the criteria used to refine the original species list:"
304	2012. Randall, R.P.. A Global Compendium of Weeds. 2nd Edition. Department of Agriculture and Food, Western Australia	[Environmental weed? No evidence]
305	2012. Randall, R.P.. A Global Compendium of Weeds. 2nd Edition. Department of Agriculture and Food, Western Australia	[Congeneric weed? Yes. Numerous <i>Lobelia</i> species listed as naturalized and/or weeds]
401	1990. Mohlenbrock, R.H.. The illustrated flora of Illinois: Flowering plants: Nightshades to Mistletoe. SIU Press, Carbondale, IL	[Produces spines, thorns or burrs? No] "Annual from fibrous roots, stems erect, branched, villous or hirsute, to nearly 1 m tall; basal leaves oval to obovate, obtuse at the apex, cuneate to the short-petiolate base, dentate or serrate, pubescent, to 6 cm long; upper leaves obovate to ovate, acute to obtuse at the apex, cuneate or slightly rounded at the sessile base, dentate or serrate, pubescent, to 5 cm long"
402	2013. WRA Specialist. Personal Communication.	[Allelopathic? Unknown]
403	1990. Mohlenbrock, R.H.. The illustrated flora of Illinois: Flowering plants: Nightshades to Mistletoe. SIU Press, Carbondale, IL	[Parasitic? No] "Annual from fibrous roots, stems erect, branched, villous or hirsute, to nearly 1 m tall;" [Campanulaceae]
404	2013. Hilty, J.. Wildflowers of Illinois in Savannas & Thickets - Indian Tobacco - <i>Lobelia inflata</i> . http://www.illinoiswildflowers.info/savanna/plants/indian_tobacco.htm [Accessed 17 Sep 2013]	[Unpalatable to grazing animals? Yes] "The acrid foliage is highly toxic and avoided by mammalian herbivores, including White Tailed Deer."
405	2006. Green, J.D./Witt, W.W./Martin, J.R.. Weed Management in Grass Pastures, Hayfields, and Other Farmstead Sites. Cooperative Extension Service, University of Kentucky College of Agriculture, Lexington, KY	[Toxic to animals? Yes] "Table 1. Plants found in Kentucky potentially poisonous to livestock." [<i>Lobelia inflata</i> - Moderate Risk]
405	2013. Hilty, J.. Wildflowers of Illinois in Savannas & Thickets - Indian Tobacco - <i>Lobelia inflata</i> . http://www.illinoiswildflowers.info/savanna/plants/indian_tobacco.htm [Accessed 17 Sep 2013]	[Toxic to animals? Yes] "The acrid foliage is highly toxic and avoided by mammalian herbivores, including White Tailed Deer."
406	2013. Backyard Gardener. <i>Lobelia inflata</i> . http://www.backyardgardener.com/plantname/pda_6572.html [Accessed 17 Sep 2013]	[Host for recognized pests and pathogens? No] "Pest : Slugs and Snails" [Common pests of many plant taxa]
407	2013. Hilty, J.. Wildflowers of Illinois in Savannas & Thickets - Indian Tobacco - <i>Lobelia inflata</i> . http://www.illinoiswildflowers.info/savanna/plants/indian_tobacco.htm [Accessed 17 Sep 2013]	[Causes allergies or is otherwise toxic to humans? Yes] "Notwithstanding the common name, the foliage of Indian Tobacco should be neither chewed nor smoked as it is highly acrid and toxic."
407	2013. Ladybird Johnson Wildflower Center. Native Plant Database - <i>Lobelia inflata</i> . http://www.wildflower.org/plants/result.php?id_plant=LOIN [Accessed 17 Sep 2013]	[Causes allergies or is otherwise toxic to humans? Yes] "This acrid poisonous annual is found in a variety of sites, often in poor soil. The American Indians were said to have smoked and chewed its leaves; hence the common name. Though once used as an emetic, the root should not be eaten, for if taken in quantity it can be fatal."
408	1990. Mohlenbrock, R.H.. The illustrated flora of Illinois: Flowering plants: Nightshades to Mistletoe. SIU Press, Carbondale, IL	[Creates a fire hazard in natural ecosystems? No evidence]
408	2007. McClain, W.E./Ebinger, J.E.. Fire maintained, closed canopy barren communities in western Illinois. Transactions of the Illinois State Academy of Science. 100(3-4): 209-221.	[Creates a fire hazard in natural ecosystems? No evidence]

409	2013. Backyard Gardener. <i>Lobelia inflata</i> . http://www.backyardgardener.com/plantname/pda_6572.html [Accessed 17 Sep 2013]	[Is a shade tolerant plant at some stage of its life cycle?] "Light Range: Part Shade to Full Sun"
409	2013. Plants for a Future Database. <i>Lobelia inflata</i> . http://www.pfaf.org/user/Plant.aspx?LatinName=Lobelia+inflata [Accessed 17 Sep 2013]	[Is a shade tolerant plant at some stage of its life cycle?] "It can grow in semi-shade (light woodland) or no shade."
410	2013. Hilty, J.. Wildflowers of Illinois in Savannas & Thickets - Indian Tobacco - <i>Lobelia inflata</i> . http://www.illinoiswildflowers.info/savanna/plants/indian_tobacco.htm [Accessed 17 Sep 2013]	[Tolerates a wide range of soil conditions? No. Needs loam] "The preference is partial sun, moist to dry conditions, and a soil that contains loam, clay loam, or rocky material. Poor soil is readily tolerated, although this will stunt the growth of the plants somewhat."
411	1990. Mohlenbrock, R.H.. The illustrated flora of Illinois: Flowering plants: Nightshades to Mistletoe. SIU Press, Carbondale, IL	[Climbing or smothering growth habit? No] "Annual from fibrous roots, stems erect, branched, villous or hirsute, to nearly 1 m tall;"
412	2007. Missouriplants.com. <i>Lobelia inflata</i> . http://www.missouriplants.com/Whitealt/Lobelia_inflata_page.html [Accessed 18 Sep 2013]	[Forms dense thickets? No] "Habitat - Moist ground, open woods, thickets." [Occurs in thicket vegetation, but no indication that this species forms monocultures that exclude other vegetation]
501	1990. Mohlenbrock, R.H.. The illustrated flora of Illinois: Flowering plants: Nightshades to Mistletoe. SIU Press, Carbondale, IL	[Aquatic? No] "Habitat: Woods, fields, disturbed areas."
502	2013. USDA ARS National Genetic Resources Program. Germplasm Resources Information Network - (GRIN). http://www.ars-grin.gov/cgi-bin/npgs/html/index.pl	[Grass? No] Campanulaceae
503	2013. USDA ARS National Genetic Resources Program. Germplasm Resources Information Network - (GRIN). http://www.ars-grin.gov/cgi-bin/npgs/html/index.pl	[Nitrogen fixing woody plant? No] Campanulaceae
504	1990. Mohlenbrock, R.H.. The illustrated flora of Illinois: Flowering plants: Nightshades to Mistletoe. SIU Press, Carbondale, IL	[Geophyte (herbaceous with underground storage organs -- bulbs, corms, or tubers)? No evidence] "Annual from fibrous roots, stems erect, branched, villous or hirsute, to nearly 1 m tall;"
601	2006. Clemants, S.E./Gracie, C.. Wildflowers in the Field and Forest: A Field Guide to the Northeastern United States. Oxford University Press, New York, NY	[Evidence of substantial reproductive failure in native habitat? No] "Open woods, fields, roadsides, weedy places." [Common species regarded as a weedy native]
602	1992. Baskin, J.M./Baskin, C.C.. Role of temperature and light in the germination ecology of buried seeds of weedy species of disturbed forests. I. <i>Lobelia inflata</i> . Canadian Journal of Botany. 70(3): 589-592.	[Produces viable seed? Yes] "Seeds of <i>L. inflata</i> have the potential to form long-lived seed banks, and buried seeds can germinate at any time during the growing season if exposed to light."
603	1904. Ames, O.. <i>Lobelia inflata</i> x <i>cardinalis</i> . <i>Rhodora</i> . 3(36): 296-298.	[Hybridizes naturally? Unknown] "An isolated plant of <i>Lobelia inflata</i> , L. was impregnated when the flowers were in a receptive condition with pollen of <i>Lobelia cardinalis</i> , L. The flowers were not netted nor in any way protected from insect visits as no other plant of the species was known to be within a radius of one hundred or more yards.>" [Artificial hybrids possible]
604	2000. Simons, A.M./Johnston, M.O.. Variation in Seed Traits of <i>Lobelia inflata</i> (Campanulaceae): Sources and Fitness Consequences. American Journal of Botany. 87(1): 124-132.	[Self-compatible or apomictic? Yes] "Also owing to a history of complete self-fertilization, the within-plant seed-size variance due to positional or fruit-specific traits is not clouded by genetic differences among seeds."
605	2013. Hilty, J.. Wildflowers of Illinois in Savannas & Thickets - Indian Tobacco - <i>Lobelia inflata</i> . http://www.illinoiswildflowers.info/savanna/plants/indian_tobacco.htm [Accessed 17 Sep 2013]	[Requires specialist pollinators? No] "The nectar of the flowers attracts small bees, mainly Halictid bees."
606	2002. Baskin, C.C./Baskin, J.M.. Propagation protocol for production of container <i>Lobelia inflata</i> L. plants. University of Kentucky, Lexington, Kentucky http://www.nativeplantnetwork.org [accessed 17 September 2013]	[Reproduction by vegetative fragmentation? No evidence] "Propagation Method: Seed"
607	1990. Mohlenbrock, R.H.. The illustrated flora of Illinois: Flowering plants: Nightshades to Mistletoe. SIU Press, Carbondale, IL	[Minimum generative time (years)? 1] "Annual from fibrous roots, stems erect, branched, villous or hirsute, to nearly 1 m tall"

607	2003. Simons, A.M./Johnston, M.O.. Suboptimal timing of reproduction in <i>Lobelia inflata</i> may be a conservative bet-hedging strategy. <i>Journal of Evolutionary Biology</i> . 16(2): 233–243.	[Minimum generative time (years)? 1+] " <i>L. inflata</i> rarely flowers in its first season (pers. obs.); it may act as a 'biennial' or winter annual and bolt only after overwintering as a rosette, or it may act as a monocarpic perennial."
701	2006. Clemants, S.E./Gracie, C.. <i>Wildflowers in the Field and Forest: A Field Guide to the Northeastern United States</i> . Oxford University Press, New York, NY	[Propagules likely to be dispersed unintentionally (plants growing in heavily trafficked areas)? Possibly, or adapted to roadside disturbance] "Open woods, fields, roadsides, weedy places."
702	2013. Plants for a Future Database. <i>Lobelia inflata</i> . http://www.pfaf.org/user/Plant.aspx?LatinName=Lobelia+inflata [Accessed 17 Sep 2013]	[Propagules dispersed intentionally by people? Yes] "This species is occasionally cultivated commercially as a medicinal plant"
703	2013. WRA Specialist. Personal Communication.	[Propagules likely to disperse as a produce contaminant? No] No evidence found of seed dispersal in this manner
704	2004. Landenberger, R.E./McGraw, J.B.. Seed-bank characteristics in mixed-mesophytic forest clearcuts and edges: Does "edge effect" extend to the seed bank?. <i>Canadian Journal of Botany</i> . 82(7): 992-1000.	[Propagules adapted to wind dispersal? Yes] "Wind-dispersed species included <i>Erechtites hieraciifolia</i> , <i>Eupatorium rugosum</i> , and <i>Lobelia inflata</i> ;" ... "The most common species in edges were <i>Eupatorium rugosum</i> , <i>Erechtites hieraciifolia</i> , and <i>Lobelia inflata</i> in the wind group"
705	2000. Simons, A.M./Johnston, M.O.. Variation in Seed Traits of <i>Lobelia inflata</i> (Campanulaceae): Sources and Fitness Consequences. <i>American Journal of Botany</i> . 87(1): 124-132.	[Propagules water dispersed? Possibly] "Individuals are exclusively self-fertilizing and produce thousands of tiny (-2.3 X 10 ⁻⁵ g) seeds, which have no specialized dispersal mechanism, late in the season." [Seeds are small enough that they may be moved by water, although there are no specific adaptations for water dispersal]
706	2013. Hilty, J.. <i>Wildflowers of Illinois in Savannas & Thickets - Indian Tobacco - Lobelia inflata</i> . http://www.illinoiswildflowers.info/savanna/plants/indian_tobacco.htm [Accessed 17 Sep 2013]	[Propagules bird dispersed? No] "After the corolla withers away, a globose seed capsule develops that is about 1/3" across. This capsule is completely enclosed by the persistent green calyx. There are several conspicuous ribs along the sides of this calyx. The seed capsule is divided into 2 cells and contains numerous tiny seeds; these seeds are small enough to be blown about by the wind." ... "The tiny seeds appear to be of little interest to birds."
707	2000. Simons, A.M./Johnston, M.O.. Variation in Seed Traits of <i>Lobelia inflata</i> (Campanulaceae): Sources and Fitness Consequences. <i>American Journal of Botany</i> . 87(1): 124-132.	[Propagules dispersed by other animals (externally)? Possibly] "Individuals are exclusively self-fertilizing and produce thousands of tiny (-2.3 X 10 ⁻⁵ g) seeds, which have no specialized dispersal mechanism, late in the season." [Seeds are small enough that they may adhere to mud or fur & feathers, although they lack any specific means of external attachment]
708	2001. Campbell, J.E./Gibson, D.J.. The effect of seeds of exotic species transported via horse dung on vegetation along trail corridors. <i>Plant Ecology</i> . 157: 23-35.	[Propagules survive passage through the gut? Yes] "A large number of germinable seeds representing a whole variety of native and exotic species are present in horse dung. Nevertheless, <i>Kummerowia striata</i> was the only exotic of seven species that was identified both in the dung samples and found growing on the horse trails. The other six species, <i>Callitriche terrestris</i> , <i>Dichanthelium dichotomum</i> , <i>Juncus tenuis</i> , <i>Leersia virginica</i> , <i>Lobelia intraya</i> , and <i>Verbena urticifolia</i> were not found in trails free from horse travel at TTSF. These species may have entered the trail system via horse dung."
708	2004. Myers, J.A./Vellend, M./Gardescu, S., & Marks, P. L.. Seed dispersal by white-tailed deer: implications for long-distance dispersal, invasion, and migration of plants in eastern North America. <i>Oecologia</i> . 139(1): 35-44.	[Propagules survive passage through the gut? No] "Table 2 Species germinating from white tailed deer feces collected at two sites, showing totals, maximum germinations per pellet group, and frequency" [Includes one seed of <i>Lobelia inflata</i> . In frequent, but possible to be animal dispersed]
801	2000. Simons, A.M./Johnston, M.O.. Variation in Seed Traits of <i>Lobelia inflata</i> (Campanulaceae): Sources and Fitness Consequences. <i>American Journal of Botany</i> . 87(1): 124-132.	[Prolific seed production (>1000/m ²)? Yes] "Individuals are exclusively self-fertilizing and produce thousands of tiny (-2.3 X 10 ⁻⁵ g) seeds, which have no specialized dispersal mechanism, late in the season."
802	1992. Baskin, J.M./Baskin, C.C.. Role of temperature and light in the germination ecology of buried seeds of weedy species of disturbed forests. I. <i>Lobelia inflata</i> . <i>Canadian Journal of Botany</i> . 70(3): 589-592.	[Evidence that a persistent propagule bank is formed (>1 yr)? Yes] "Seeds of <i>L. inflata</i> have the potential to form long-lived seed banks, and buried seeds can germinate at any time during the growing season if exposed to light."
802	1998. Leck, M.A./Leck, C.F.. A Ten-Year Seed Bank Study of Old Field Succession in Central New Jersey. <i>Journal of the Torrey Botanical Society</i> . 125(1): 11-32.	[Evidence that a persistent propagule bank is formed (>1 yr)? Yes] "Some (e.g., <i>Aster pilosus</i> , <i>Conyza canadensis</i> , and <i>Setaria faberi</i>) peaked during the first five years, while others (e.g., <i>Andropogon virginicus</i> , <i>Euthamia graminifolia</i> , and <i>Lobelia inflata</i>) peaked in later years." ... "Moreover, while some species that gained prominence in the vegetation (e.g., <i>Fragaria virginica</i> and <i>Lonicera japonica</i>) were not documented in the seed bank; others (e.g., <i>Conyza canadensis</i> , <i>Lobelia inflata</i> , <i>Panicum dichotomiflorum</i> , and <i>Veronica peregrina</i>) were clearly important seed bank species, but did not persist over time in the vegetation" [See Fig. 2. <i>Lobelia inflata</i> documented in seed bank at every year of study duration: 1984-1994]

803	1983. Klingman,, D.L./Bovey, R.W. /Knake, E.L./Lange, A.H./Meade, J.A./Skroach, W.A./Stewart, R.E./Wyse, D.L.. USDA Weed Control Compendium. AD-BU-2281. Extension Service, U.S. Department of Agriculture, Washington, DC	[Well controlled by herbicides? Possibly] "Table 1 (continued). Susceptibility of common weeds to control by phenoxy and some other systemic herbicides" [Indiantobacco (<i>Lobelia inflata</i>) - 2,4-D = F (Fair) From 60 to 85 percent of the weed population is killed by a single treatment, or two or three treatments per year maintain 85 to 94 percent suppression of top growth.]
804	2013. WRA Specialist. Personal Communication.	[Tolerates, or benefits from, mutilation, cultivation, or fire? Unknown]
805	2013. WRA Specialist. Personal Communication.	[Effective natural enemies present locally (e.g. introduced biocontrol agents)? Unknown]

Summary of Risk Traits

High Risk / Undesirable Traits

- Broad climate suitability (5 hardiness zones)
- Naturalized in Japan
- Generally regarded as a weed or weedy within native range
- Related Lobelia species have become invasive
- Toxic to animals and people
- Self-compatible
- Able to reach maturity in one year (annual)
- Seeds dispersed by wind, internally by animals and intentionally by people
- Forms a persistent seed bank

Low Risk Traits

- Unarmed (no spines, thorns or burrs)
- Medicinal value
- Not known to spread vegetatively