

Table S1. Species occurrences based on greenhouse study of soil from the donor site (T₋₁) and from field surveys of the recipient site prior to soil transfer (T₀), the growing season following transfer (T₁), third growing season after transfer (T₃), and fifth growing season after transfer (T₅). Native indicates if the species is considered native (1) or non-native (0) (USDA, NRCS 2021). Values represent number of plots (mean number of individuals per plot ± SE). Donor plot N = 21; other surveys plot N = 16 each. Asterisk (*) indicates top-5 ranking species in each survey based on relative importance value (relative frequency + relative density; modified from Curtis and McIntosh [1951]).

Family	Species	Native	T ₋₁	T ₀	T ₁	T ₃	T ₅
Apiaceae	<i>Daucus carota</i> L.	0	21 (4.0 ± 1.5)*	4 (22.0 ± 9.8)	2 (2.0 ± 0.0)	3 (4.0 ± 2.4)	1 (3.0 ± 0.0)
Apiaceae	<i>Osmorhiza claytonii</i> (Michx.) C.B. Clarke	1				2 (1.0 ± 0.0)	
Asclepiadaceae	<i>Asclepias syriaca</i> L.	1		3 (6.0 ± 1.6)		1 (1.0 ± 0.0)	1 (2.0 ± 0.0)
Asteraceae	<i>Ambrosia artemisiifolia</i> L.	0		3 (10.3 ± 7.2)	2 (13.0 ± 7.8)	10 (23.1 ± 12.1)*	9 (10.9 ± 2.9)*
Asteraceae	<i>Ambrosia trifida</i> L.	1	5 (1.8 ± 0.5)	1 (1.0 ± 0.0)	7 (9.1 ± 1.1)*		5 (1.2 ± 0.2)
Asteraceae	<i>Arctium minus</i> Bernh.	0		1 (1.0 ± 0.0)		5 (3.8 ± 1.2)	1 (4.0 ± 0.0)
Asteraceae	<i>Cirsium arvense</i> (L.) Scop.	0	6 (5.7 ± 2.7)	18 (6.6 ± 1.4)*	8 (9.4 ± 3.9)*	14 (6.1 ± 0.7)*	15 (9.4 ± 1.5)*
Asteraceae	<i>Conyza canadensis</i> (L.) Cronquist	1				1 (2.0 ± 0.0)	1 (6.0 ± 0.0)
Asteraceae	<i>Echinacea purpurea</i> (L.) Moench	1				4 (3.5 ± 1.3)	
Asteraceae	<i>Erigeron annuus</i> (L.) Pers.	1				1 (1.0 ± 0.0)	
Asteraceae	<i>Erigeron strigosus</i> Muhl. ex Willd.	1					1 (1.0 ± 0.0)
Asteraceae	<i>Eupatorium serotinum</i> Michx.	1					1 (10.0 ± 0.0)

Family	Species	Native	T ₋₁	T ₀	T ₁	T ₃	T ₅
Asteraceae	<i>Helianthus grosseserratus</i> M. Martens	1		4 (7.3 ± 1.2)		4 (3.5 ± 1.9)	2 (1.0 ± 0.0)
Asteraceae	<i>Heliopsis helianthoides</i> (L.) Sweet	1		6 (4.7 ± 0.9)			
Asteraceae	<i>Lactuca serriola</i> L.	0	1 (1.0 ± 0.0)	1 (1.0 ± 0.0)			
Asteraceae	<i>Leucanthemum vulgare</i> Lam.	0	7 (6.7 ± 1.7)*				
Asteraceae	<i>Packera glabella</i> (Poir.) C. Jeffrey	1	1 (1.0 ± 0.0)				
Asteraceae	<i>Ratibida pinnata</i> (Vent.) Barnhart	1			5 (3.4 ± 1.3)	1 (1.0 ± 0.0)	3 (2.7 ± 1.0)
Asteraceae	<i>Rudbeckia hirta</i> L.	1	6 (9.7 ± 4.7)				1 (1.0 ± 0.0)
Asteraceae	<i>Silphium integrifolium</i> Michx.	1					2 (22 ± 7.8)
Asteraceae	<i>Silphium laciniatum</i> L.	1					2 (7.5 ± 4.6)
Asteraceae	<i>Silphium perfoliatum</i> L.	1	1 (2.0 ± 0.0)			7 (3.0 ± 0.6)	5 (3.6 ± 1.5)
Asteraceae	<i>Solidago</i> sp. L.	1		4 (10.5 ± 4.4)		8 (8.9 ± 3.4)*	5 (3.8 ± 1.4)
Asteraceae	<i>Sonchus oleraceus</i> L.	0	4 (1.5 ± 0.3)				
Asteraceae	<i>Symphyotrichum dumosum</i> (L.) G.L. Nesom	1	2 (1.5 ± 0.4)	1 (34.0 ± 0.0)	3 (5.0 ± 0.8)		1 (1.0 ± 0.0)
Asteraceae	<i>Symphyotrichum lanceolatum</i> (Willd.) G.L. Nesom	1		5 (3.4 ± 1.0)			
Asteraceae	<i>Symphyotrichum novae-angliae</i> (L.) G.L. Nesom	1		4 (6.0 ± 1.8)		1 (4.0 ± 0.0)	
Asteraceae	<i>Symphyotrichum puniceum</i> (L.) Á. Löve & D. Löve	1	5 (5.8 ± 1.7)	1 (6.0 ± 0.0)			
Asteraceae	<i>Taraxacum officinale</i> F.H. Wigg.	0	1 (1.0 ± 0.0)	4 (3.0 ± 1.1)	2 (1.5 ± 0.4)		
Asteraceae	<i>Verbesina alternifolia</i> (L.) Britton ex Kearney	1					6 (10.5 ± 2.9)
Asteraceae	<i>Vernonia gigantea</i> (Walter) Trel.	1	18 (13.9 ± 3.9)*	12 (32.4 ± 9.7)	6 (10.7 ± 2.1)	7 (6.9 ± 3.2)	4 (1.8 ± 0.4)

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Brassicaceae	<i>Alliaria petiolata</i> (M. Bieb.) Cavara & Grande	0				5 (5.0 ± 1.5)	1 (1.0 ± 0.0)
Brassicaceae	<i>Barbarea vulgaris</i> W.T. Aiton	0					1 (10.0 ± 0.0)
Brassicaceae	<i>Brassica nigra</i> (L.) W.D.J. Koch	0				4 (9.8 ± 3.8)	
Brassicaceae	<i>Brassica rapa</i> L.	0			2 (8.0 ± 4.2)		
Brassicaceae	<i>Erysimum cheiranthoides</i> L.	0		6 (8.7 ± 5.6)			
Brassicaceae	<i>Hesperis matronalis</i> L.	0				4 (2.0 ± 0.5)	2 (10.5 ± 0.4)
Chenopodiaceae	<i>Chenopodium album</i> L.	0	10 (1.9 ± 0.5)	11 (14.2 ± 4.4)*	5 (4.0 ± 0.5)	6 (8.7 ± 1.7)	
Chenopodiaceae	<i>Chenopodium murale</i> L.	0	1 (48.0 ± 0.0)	1 (1.0 ± 0.0)			
Convolvulaceae	<i>Calystegia sepium</i> (L.) R. Br.	0				4 (3.3 ± 0.7)	
Convolvulaceae	<i>Convolvulus arvensis</i> L.	0					5 (8.4 ± 5.3)
Convolvulaceae	<i>Ipomoea purpurea</i> (L.) Roth	0				7 (2.6 ± 0.7)	9 (4.4 ± 1.5)
Cornaceae	<i>Cornus racemosa</i> Lam.	1					1 (1.0 ± 0.0)
Cupressaceae	<i>Juniperus virginiana</i> L.	1	1 (1.0 ± 0.0)				
Cyperaceae	<i>Carex hystericina</i> Muhl. ex Willd.	1	9 (11.7 ± 2.5)*		3 (6.3 ± 0.7)		
Dipsacaceae	<i>Dipsacus fullonum</i> L.	0				2 (3.0 ± 1.4)	
Equisetaceae	<i>Equisetum arvense</i> L.	1					1 (7.0 ± 0.0)
Fabaceae	<i>Senna hebecarpa</i> (Fernald) Irwin & Barneby	1	1 (1.0 ± 0.0)		1 (1.0 ± 0.0)	1 (1.0 ± 0.0)	3 (2.3 ± 0.7)
Lamiaceae	<i>Monarda fistulosa</i> L.	1	7 (7.1 ± 2.8)	2 (5.5 ± 3.2)	12 (15.1 ± 3.1)*	13 (21.5 ± 5.1)*	11 (9.0 ± 2.7)*
Lamiaceae	<i>Pycnanthemum tenuifolium</i> Schrad.	1		5 (9.6 ± 3.8)			

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Malvaceae	<i>Abutilon theophrasti</i> Medik.	0	4 (1.0 ± 0.0)	2 (4.5 ± 0.4)		1 (3.0 ± 0.0)	1 (1.0 ± 0.0)
Moraceae	<i>Morus alba</i> L.	0					1 (1.0 ± 0.0)
Oxalidaceae	<i>Oxalis stricta</i> L.	1		3 (7.3 ± 4.8)	1 (1.0 ± 0.0)	2 (1.5 ± 0.4)	3 (3.0 ± 0.9)
Phytolaccaceae	<i>Phytolacca americana</i> L.	1		6 (2.5 ± 0.7)		2 (6.5 ± 3.2)	4 (3.0 ± 1.2)
Plantaginaceae	<i>Plantago major</i> L.	0		1 (39.0 ± 0.0)			
Poaceae	<i>Andropogon gerardii</i> Vitman	1	2 (11.5 ± 7.4)	1 (39.0 ± 0.0)			
Poaceae	<i>Elymus virginicus</i> L.	1					7 (13.7 ± 5.7)*
Poaceae	<i>Panicum virgatum</i> L.	1		4 (61.3 ± 36.8)*		3 (16 ± 2.4)	
Poaceae	<i>Phalaris arundinacea</i> L.	1				4 (4.8 ± 2.1)	2 (5.0 ± 0.0)
Poaceae	Poaceae sp.			1 (8.0 ± 0.0)			
Poaceae	<i>Setaria faberi</i> Herrm.	0	7 (2.4 ± 0.4)	5 (78.6 ± 36.1)*			
Poaceae	<i>Setaria pumila</i> (Poir.) Roem. & Schult.	0				1 (3.0 ± 0.0)	1 (9.0 ± 0.0)
Poaceae	<i>Setaria viridis</i> (L.) P. Beauv.	0	1 (5.0 ± 0.0)				
Poaceae	<i>Spartina pectinata</i> Bosc ex Link	1	3 (14.0 ± 8.2)	4 (6.5 ± 1.3)	10 (26.8 ± 8.2)*		
Polygonaceae	<i>Polygonum pensylvanicum</i> L.	1		9 (6.6 ± 1.3)*	8 (18.4 ± 6.0)*	5 (29.6 ± 10.4)*	10 (9.7 ± 3.4)*
Polygonaceae	<i>Polygonum virginianum</i> L.	1				3 (17.7 ± 8.2)	
Polygonaceae	<i>Rumex crispus</i> L.	0		4 (3.5 ± 1.3)		2 (4.0 ± 2.1)	
Portulacaceae	<i>Portulaca oleracea</i> L.	0	1 (1.0 ± 0.0)	1 (1.0 ± 0.0)			
Rosaceae	<i>Agrimonia rostellata</i> Wallr.	1		3 (2.0 ± 0.8)			

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Rosaceae	<i>Fragaria virginiana</i> Duchesne	1		2 (4.5 ± 1.8)	1 (1.0 ± 0.0)		
Rosaceae	<i>Geum canadense</i> Jacq.	1		1 (1.0 ± 0.0)		3 (1.3 ± 0.3)	6 (3.2 ± 1.2)
Rosaceae	<i>Geum laciniatum</i> Murray	1				2 (5.0 ± 0.7)	
Rosaceae	<i>Rubus allegheniensis</i> Porter	1		1 (13.0 ± 0.0)		1 (2.0 ± 0.0)	4 (2.3 ± 0.8)
Scrophulariaceae	<i>Penstemon digitalis</i> Nutt. ex Sims	1	16 (6.4 ± 1.7)*		1 (9.0 ± 0.0)	4 (6.3 ± 0.7)	1 (6.0 ± 0.0)
Solanaceae	<i>Solanum carolinense</i> L.	1	4 (1.0 ± 0.0)				3 (1.0 ± 0.0)
Urticaceae	<i>Boehmeria cylindrica</i> (L.) Sw.	1				1 (4.0 ± 0.0)	
Urticaceae	<i>Pilea pumila</i> (L.) A. Gray	1		7 (9.9 ± 3.2)	3 (4.7 ± 1.9)		1 (2.0 ± 0.0)
Urticaceae	<i>Urtica dioica</i> L.	1		1 (3.0 ± 0.0)	1 (1.0 ± 0.0)	6 (11.8 ± 3.5)	7 (8.0 ± 1.6)
Verbenaceae	<i>Verbena hastata</i> L.	1				3 (4.0 ± 1.7)	
Verbenaceae	<i>Verbena urticifolia</i> L.	1				3 (1.3 ± 0.3)	3 (2.0 ± 0.5)
Vitaceae	<i>Parthenocissus quinquefolia</i> (L.) Planch.	1					1 (1.0 ± 0.0)
Vitaceae	<i>Vitis riparia</i> Michx.	1			3 (1.7 ± 0.3)	2 (2.5 ± 0.4)	1 (1.0 ± 0.0)