SUPPLEMENTARY DATA

Table S1. Species flowering in the populations where bees were sampled.

Population	Species	Common name	Pollen type	Ratio/M	Ratio/C
Arkell	*Trifolium pratense*	Red clover	2	0.47*	0.21
	Clinopodium vulgare	Dog mint	3	0.47	0.21
	Daucus carota	Wild carrot	3	0.47*	0.21
	Desmodium canadense	Canada Tick Trefoil	2	0.48*	0.22
	Hypericum perforatum	St. John's Wort	2	0.88	0.40
	Linaria vulgaris	Toadflax	2	0.93	0.42
	Monarda fistulosa	Wild bergamot	3	1*	0.45
	Solidago canadensis	Canada goldenrod	3	1.14	0.51
	Lotus corniculata	Bird's foot trefoil	2	1.35	0.61
	Silene vulgaris	Bladder campion	3	1.37	0.61
	Melilotus albus	White sweet clover	2	1.38	0.62
	Cichorium intybus	Chicory	3	1.40	0.63
	Pycnanthemum virginianum	Virginia mountain mint	3	1.46	0.66
	Cirsium arvense	Canada thistle	3	1.59	0.71
	Medicago sativa	Alfalfa	2	2.04*	0.92
	Centaure jacea	Brown knapweed	3	2.19	1
	Arctium lappa	Greater burdock	3	2.25*	1.01
	Centaurea nigra	Black knapweed	3	2.27*	1
	Erigeron strigosus	Plains fleabane	3	2.28	1.02
	Silene latifolia	White campion	3	3.17	1.42
	Rudbeckia hirta	Black eyed Susan	3	4.03	1.81
	Vicia cracca	Cow vetch	2	6.33	2.84
	Achillea millefolium	Yarrow	3	6.43	2.88
				Ratio/Sc	
Guelph	*Solidago canadensis*	Canada goldenrod	3	1	
	Solidago altissima	Late goldenrod	3	2.74	
	Euthamia graminiflia	Grass-leaved goldenrod	3	1	
	Erigeron strigosus	Plains fleabane	3	2.08	

Highlighted species, are ones that I didn't sample this summer. Totalling 12 species

Pollen type indicates bi- (2) or tri-nucleate (3). “Ratio/M” is the ratio of DNA contents (1C/1C) for each species relative to *M. fistulosa*, “Ratio/C” is the same relative to *Centaurea* (average of *C. jacea* and *C. nigra*), “Ratio/Sc” is relative to *S. canadensis*. *Tested using pollen from both species, otherwise leaves.

Table S2. Total measured nuclei and the corresponding number of pollen grains (minimum) from *Apis* and *Bombus* species foraging on *Solidago, Centaurea,* and *Monarda*, with fluorescence peak and histogram measures used to assess sample quality, and quality assessments based on melissopalynology (Q-m) and cell cycle analysis (Q-cc) standards.

Bee	Nuclei #	Pollen #	*RSE main	RSE max	BAD	Max CV	Q-m	Q-cc
*Apis.Sol.*01.2*x*	16,403	5,468	0.2%	3.2%	12.8%	3.59%	1000	CC
*Apis.Sol.*07.2*x*	14,768	4,923	0%	0%	7.1%	4.20%	1000	CC
*Apis.Sol.*12.2*x*	15,955	5,318	0.3%	2.0%	11.6%	3.56%	1000	CC
*Apis.Sol.*02.6*x*	14,604	4,868	0.2%	3.1%	17.5%	3.51%	1000	CC
*Apis.Sol.*03.6*x*	265**	88**	2.0%	18.8%	40.3%	3.06%	F	F
*Apis.Sol.*04.6*x*	10,894	3,631	0.9%	1.0%	16.1%	3.32%	1000	CC
*Apis.Sol.*05.6*x*	16,244	5,415	0.4%	1.6%	27.4%	3.96%	1000	F
*Apis.Sol.*06.6*x*	4,119	1,373	0.3%	7.9%	26.5%	3.41%	1000	F
*Apis.Sol.*08.6*x*	23,418	7,806	0.1%	4.3%	33.9%	3.29%	1000	F
*Apis.Sol.*09.6*x*	11,685	3,895	0.6%	1.4%	17.8%	4.23%	1000	CC
*Apis.Sol.*10.6*x*	14,428	4,809	0.8%	0.8%	18.2%	3.17%	1000	CC
*Apis.Sol.*11.6*x*	17,039	5,680	0.2%	2.5%	45.9%	2.87%	1000	F
*Apis.Cen.*01	21,298	7,099	0%	0%	35.9%	3.87%	1000	F
*Apis.Cen.*02	9,090	3,030	0%	0%	30.3%	3.81%	1000	F
*Apis.Cen.*03	4,882	1,627	0%	0%	20.0%	3.43%	1000	F
*Apis.Cen.*04	3,489	1,163	0%	0%	41.4%	3.80%	1000	F
*Apis.Cen.*05	28,173	9,391	0%	0%	22.7%	3.94%	1000	F
*Apis.Cen.*06	2,923	974	0%	0%	23.0%	3.71%	300	F
*Apis.Cen.*07	3,462	1,154	0%	0%	24.2%	3.80%	1000	F
*Apis.Cen.*08	14,609	4,870	0.2%	3.5%	19.3%	3.92%	1000	CC
*Apis.Cen.*09	24,172	8,057	0%	0%	20.9%	4.43%	1000	F
*Apis.Cen.*10	765	255	0%	0%	46.6%	3.60%	F	F
*Bombus.Mf.*01	677	226	2.8%	17.0%	88.0%	3.41%	F	F
*Bombus.Mf.*02	1,501	500	2.3%	21.7%	87.6%	4.11%	300	F
*Bombus.Mf.*03	3,709	1,236	1.0%	12.5%	27.8%	4.29%	1000	F
*Bombus.Mf.*04	2,194	731	1.1%	23.5%	59.5%	3.35%	300	F
*Bombus.Mf.*05	1,055	352	1.3%	7.5%	95.2%	4.57%	300	F
*Bombus.Mf.*06	34,537	11,512	0.3%	16.2%	64.2%	3.75%	1000	F
*Bombus.Mf.*07	4,067	1,478	0.8%	18.5%	48.8%	3.18%	1000	F
*Bombus.Mf.*08	390	130	1.8%	23.0%	>20%	4.33%	F	F
*Bombus.Mf.*09	243	81	2.6%	40.3%	76.6%	4.48%	F	F
*Bombus.Mf.*10	1,362	454	2.3%	3.2%	52.5%	3.48%	300	F

Apis.Cen, *Apis.Sol.*2*x* and *Apis.Sol.*6*x* samples are from *Apis mellifera* foraging on *Centaurea*, *Solidago canadensis*, and *S. altissima, Bombus.Mf* are from *Bombus* species foraging on *Monarda fistulosa*. "RSE main" is the relative standard error of the proportion of nuclei in the largest peak; "RSE max" is the maximum RSE for a proportion of nuclei in any peak; "BAD" is background aggregates and debris; "Max CV" is the highest coefficient of variation among fluorescence peaks for that sample. Quality rating Q-m: "300" is 300 to 999 pollen grains tested,

“1000” is ≥1000, “F” is <300; Quality rating Q2: “CC” meets all cell cycle criteria (CV<8%, BAD≤20%, 10,000+ nuclei), “F” fails to meet all three criteria.
*RSE values are 0% if there was only one nuclei peak (proportion of nuclei in main peak is 100%)
**Not run for the maximum time; estimated pollen number at maximum run time is 250.