

APPENDIX 1: Voucher information for the samples analyzed for the nuclear ribosomal spacer ITS2 and plastid datasets. The number of ribotypes (nrITS2 haplotypes) for each accession, ribotype diversity (Rd), nucleotide diversity per site (Nd), sequence length variation, and GC-content were calculated for sequences for each accession (compare Fig. 1, 3, and 5; Table 1). Letters A-H indicate the major clades in the ITS2 tree (Fig. 3). Ploidy levels are those reported in Talent and Dickinson (2005), Lo *et al.* (2007, 2013), or J. Coughlan and N. Talent (unpubl. data). Species are listed in the same order as in Table 1. All vouchers are deposited in the Green Plant Herbarium of the Royal Ontario Museum (TRT) except as noted. USA states and Canadian provinces, as well as the field collection numbers, are provided for the localities. Field collection numbers if not otherwise identified are those of J. Coughlan (JC), TAD (year-number, BB, PORE, and s.n.), E. Y. Y. Lo (EL), J. B. Phipps (JBP), M. Purich (MP), and N. Talent (NT). *Crataegus triflora* did not amplify for ITS2. Samples used in amplification of plastid markers indicated by an asterisk.

Species	Voucher	Nd	Rd	GC-content	No. of ribotypes	Distribution of ribotypes (Fig. 3)	Sequence length
<i>C. brachyacantha</i>	Louisiana: C. Reid 5206 (2x)	0.004 ±0.002	0.694 ±0.147	0.685	4	basal	340
	Louisiana: 2003-32 (2x)*	0.005 ±0.002	0.727 ±0.113	0.678	5	basal	340

	Loisiana: 2011-2 (2x)	0.055 ±0.029	0.952 ±0.096	0.624	6	basal	312, 340
<i>C. crus-galii</i>	Alabama: NT213a (2x)*	0.013 ±0.002	0.895 ±0.059	0.685	12	E	341-242, 344
<i>C. macracantha</i>	Ontario: NT224 (4x)*	0.014 ±0.002	0.892 ±0.063	0.684	10	E	344
	Colorado: NT440 (4x)	0.04 ±0.017	0.992 ±0.025	0.677	14	E	344-345
	Montana: 2001-17 (4x)	0.01 ±0.002	0.857 ±0.090	0.682	10	E	344
<i>C. punctata</i>	Ontario: MP73 (2x)	0.014 ±0.004	0.879 ±0.075	0.684	8	E	344
	Ontario: BB4 (2x)	0.013 ±0.003	1.00 ±0.096	0.686	6	E	344
	Ontario: s.n. (2x)*	0.015 ±0.003	0.900 ±0.161	0.679	4	E	344
<i>C. chrysocarpa</i>	Washington: s.n. (4x)*	0.016 ±0.002	0.967 ±0.036	0.672	13	E	343 - 344
<i>C. triflora</i>	Georgia: NT290 (4x)*	-	-	-	-	-	-
<i>C. chrysocarpa</i>	British Columbia: NT587 (4x)	0.021 ±0.004	0.949 ±0.042	0.684	10	E	342-344
<i>C. monogyna</i>	Oregon: EL-74 (2x)	0.002 ±0.001	0.533 ±0.180	0.675	5	A2	341-342

	Ontario: MP84 (2x)*	0.004 ±0.001	0.806 ±0.120	0.673	6	A2	341-342
	British Columbia: 2008-26 (2x)	0.01 ±0.001	0.933 ±0.077	0.672	8	A2	340-341
	Ontario: MP98 (2x)	0.004 ±0.001	0.758 ±0.122	0.675	7	A2	341-343
<i>C. pentagyna</i>	Denmark: K. I Christensen <i>s.n.</i> (2x)*	0.003 ±0.001	0.867 ±0.107	0.697	7	A3	341
<i>C. pinnatifida</i>	Russia: T. Romankova 2 (2x)*	0.008 ±0.001	0.893 ±0.111	0.668	6	A1	342
	Russia: T. Romankova 6 (2x)	0.006 ±0.002	0.933 ±0.062	0.668	7	A1	342
	Russia: T. Romankova 3 (2x)	0.007 ±0.001	0.972 ±0.064	0.667	8	A1	342
<i>C. erythropoda</i>	Colorado: NT349 (4x)*	0.025 ±0.005	0.909 ±0.079	0.657	10	E+F	296, 343-344
	New Mexico: NT358 (4x)	0.029 ±0.003	0.978 ±0.054	0.675	9	E+F	342-344

<i>C. rivularis</i>	Wyoming: 2001-42 (4x)*	0.005 ±0.002	0.682 ±0.148	0.658	6	E+F	309, 343
	Nevada: 2007-03 (4x)	0.014 ±0.005	0.895 ±0.070	0.677	10	E+F	343-344
	Idaho: EL-199 (4x)	0.017 ±0.005	0.912 ±0.059	0.68	10	E+F	343-344
	Colorado: NT373 (4x)*	0.024 ±0.006	0.900 ±0.161	0.682	4	E+F	343-344
	Utah: 2001-05 (4x)	0.027 ±0.003	0.939 ±0.058	0.681	9	E+F	343-344
<i>C. saligna</i>	Utah: 2004-05 (2x)	0.006 ±0.002	0.786 ±0.113	0.678	4	F	343
	Colorado: NT371 (2x)	0.007 ±0.003	0.722 ±0.159	0.678	5	F	343
	Colorado: NT368 (2x)	0.006 ±0.001	0.917 ±0.092	0.669	8	F	331 & 343
<i>C. castlegarensis</i>	Oregon: R. M. Love C-2003-23F (4x)*	0.031 ±0.004	1 ±0.076	0.677	7	E+H	342-344
	California: 2006-13 (4x)	0.007 ±0.001	0.971 ±0.032	0.676	14	E+H	343-344
	Saskatchewan: 2007-	0.013 ±0.002	0.895	0.684	13	E+H	343-344

	15 (4x)		± 0.0047				
	Idaho: EL-192 (4x)	0.033 ± 0.002	0.993 ± 0.023	0.672	16	E+H	342-344
<i>C. douglasii</i>	Ontario: EL-11 (4x)	0.027 ± 0.002	0.941 ± 0.041	0.678	13	E+H	343 - 344
	Ontario: 2007-22 (4x)	0.025 ± 0.002	0.912 ± 0.056	0.676	11	E+H	343-344
	Idaho: EL-166 (4x)	0.028 ± 0.003	0.967 ± 0.036	0.676	13	E+H	343 - 344
	Montana: EL-32 (4x)	0.028 ± 0.003	0.971 ± 0.033	0.677	12	E+H	342-344
	British Columbia:	0.03 ± 0.002	0.967 ± 0.030	0.679	14	E+H	343-345
	2010-28 (4x)						
	British Columbia:	0.036 ± 0.005	0.962 ± 0.040	0.639	12	E+H	343-345
	2010-29 (4x)						
	British Columbia:	0.03 ± 0.003	0.962 ± 0.034	0.674	13	E+H	343-344
	2010-36 (4x)*						
	Ontario: NT611 (4x)	0.017 ± 0.005	0.867 ± 0.079	0.674	10	E+H	343-345
	British Columbia:	0.044 ± 0.015	0.838	0.669	7	E+H	343-344
	JC387 (4x)*		± 0.01534				

	British Columbia: 2008-72 (4x)	0.03 ±0.004	0.905 ±0.103	0.671	4	E+H	343-344
	British Columbia: 2010-38 (5x)*	0.026 ±0.002	0.915 ±0.039	0.675	18	E+H	342, 343 - 344
	British Columbia: 2010-31 (5x)*	0.03 ±0.00218	0.952 ±0.032	0.647	20	E+H	343 - 344
	Montana: JC296 (4x)	0.039 ±0.006	0.933 ±0.122	0.671	5	E+H	343-344
<i>C. okennonii</i>	Washington: EL-152 (4x)*	0.024 ±0.004	0.971 ±0.104	0.675	14	E+H	343 - 344
	Montana: JC281 (4x)	0.027 ±0.005	1 ±0.034	0.683	12	E+H	342-344
	Washington: EL-153 (4x)	0.021 ±0.004	0.895 ±0.032	0.674	10	E+H	343 - 344
<i>C. shuswapensis</i>	British Columbia: 2007-11 (4x)*	0.022 ±0.004	0.879 ±0.075	0.679	7	E+F	343-345
<i>C. suksdorfii</i>	Washington: P. Zika 18485 (2x)*	0.014 ±0.002	0.964 ±0.051	0.671	9	H	343 - 344

California: 2006-22 (2x)	0.011 ±0.001	0.945 ±0.054	0.676	9	H	343 - 344
California: 2006-16 (2x)	0.011 ±0.002	0.909 ±0.065	0.675	9	H	343 - 344
Oregon: JC092 (2x)	0.013 ±0.002	0.956 ±0.059	0.673	9	H	343
Oregon: JC119 (2x)	0.01 ±0.002	0.917 ±0.092	0.675	7	H	343-344
Oregon: EL-68 (2x)	0.016 ±0.002	0.982 ±0.046	0.674	10	H	343-344
Oregon: EL-71 (2x)	0.016 ±0.003	1 ±0.096	0.674	6	H	343-344
Oregon: JC039 (2x)	0.004 ±0.001	0.694 ±0.147	0.677	8	H	342-344
Oregon: JC060 (2x)	0.014 ±0.002	1 ±0.096	0.676	6	H	343-344
Oregon: JC098 (2x)	0.015 ±0.002	0.982 ±0.045	0.673	10	H	343, 352
Oregon: JC136 (2x)	0.007 ±0.001	0.756 ±0.130	0.676	7	H	343-344
Oregon: JC102 (2x)	0.01 ±0.002	0.933 ±0.122	0.674	5	H	343
Oregon: JC117 (2x)	0.006 ±0.03	0.667 ±0.314	0.625	2	H	343-344

	Oregon: JC118 (2x)	0.015 ±0.002	1.00 ±0.096	0.672	6	H	343-344
	Oregon: EL-65 (3x)	0.007 ±0.002	0.872 ±0.067	0.679	7	H	343-344
	Idaho: EL-172 (3x)*	0.003 ±0.002	0.295 ±0.156	0.674	3	H	343-344
	Idaho: EL-188 (3x)	0.011 ±0.002	0.927 ±0.066	0.677	8	H	343 - 344
	British Columbia: 2010-42 (3x)*	0.033 ±0.004	0.978 ±0.054	0.655	10	F+H	298, 342-344
	British Columbia: JC385 (3x)*	0.03 ±0.003	0.982 ±0.046	0.675	10	E+F+H	341, 343-344
	Montana: EL-30 (4x)	0.021 ±0.003	0.940 ±0.031	0.672	18	E+H	343 - 344
	British Columbia: 2008-38 (5x)	0.04 ±0.007	0.974 ±0.022	0.666	16	E+H	340, 343-344
<i>C. gaylussacia</i>	California: PORE-509- 1 (3x)*	0.023 ±0.013	0.773 ±0.128	0.665	7	H	336, 343-344
	California: JC005 (3x)	0.007 ±0.002	0.731 ±0.113	0.65	8	H	290, 336 & 344
	California: JC014 (3x)	0.009 ±0.002	0.844 ±0.101	0.68	6	H	335-336, 343-344

	California: JC018 (3x)	0.007 ±0.002	0.800 ±0.114	0.669	6	H	336, 343
	Oregon: EL-57 (3x)	0.011 ±0.002	0.927 ±0.066	0.664	9	H	309, 343
<i>C. rivuloadamensis</i>	Saskatchewan: 2007- 13 (4x)*	0.025 ±0.004	1 ±0.030	0.672	13	E+H	343-344
<i>C. rivulopugnensis</i>	Saskatchewan: 2007- 21 (4x)*	0.029 ±0.039	0.974 ±0.039	0.673	11	E+H	343-344
<i>C. aquacervensis</i>	Saskatchewan: 2007- 12 (4x)*	0.03 ±0.002	0.936 ±0.051	0.675	9	E+H	343-344
<i>C. atrovirens</i>	British Columbia: JBP8344*	0.03 ±0.002	0.989 ±0.031	0.675	13	E+H	343-344
<i>C. cupressocollina</i>	Saskatchewan: 2007- 20 (4x)*	0.029 ±0.002	0.952 ±0.00163	0.674	11	E+H	344
<i>C. enderbyensis</i>	British Columbia: P. Zika 18445 (4x)*	0.03 ±0.004	0.962 ±0.040	0.675	12	E+H	343-344
<i>C. okanaganensis</i>	British Columbia: 2008-46 (4x)*	0.023 ±0.006	0.972 ±0.064	0.661	8	E+H	272,342-344

<i>C. okanaganensis</i>	British Columbia: P.	0.033 ±0.004	0.978 ±0.031	0.676	15	E+H	341,343-343
<i>var. wellsii</i>	Zika 18451 (4x)						
<i>C. orbicularis</i>	British Columbia: JBP8365*	0.02 ±0.004	0.952 ±0.040	0.675	11	E+H	343-345
<i>C. phippii</i>	Washington: JC178 (4x)*	0.032 ±0.004	0.867 ±0.065	0.68	9	E+H	343-344
<i>C. germanica</i>	Morton Arboretum 6216V93 (2x)*	0.006 ±0.001	0.972 ±0.064	0.681	8	basal	340-341
	Turkey: A.A. Dönmez 11600 (2x; voucher in HUB)	0.002 ±0.001	0.556 ±0.165	0.682	3	basal	340
<i>C. kansuensis</i>	Arnold Arboretum: AA101-2001 (4x)	0.01 ±0.004	0.614 ±0.130	0.685	8	G	344
<i>C. maximowiczii</i>	Russia: T. Romankova 5 (2x)	0.015 ±0.006	0.6 ±0.154	0.642	6	G	343 - 344
	Russia: T. Romankova	0.003 ±0.001	0.727 ±0.113	0.681	6		343 - 344

	4 (2x)*						
<i>C. nigra</i>	Bulgaria: K. I. Christensen 294 (2x)*	0.011 ±0.005	0.848 ±0.104	0.674	8	A2	341-342
<i>C. wilsonii</i>	Arnold Arboretum: AA749-74A (2x)*	0.009 ±0.003	0.873 ±0.089	0.676	8	G	343-345
<i>C. ×cogswellii</i>	Oregon: EL-85 (2x)*	0.025 ±0.004	0.981 ±0.031	0.674	13	A2+H	341-344
	Oregon: EL-79 (2x)*	0.028 ±0.006	0.929 ±0.084	0.672	6	A2+H	341-343
<i>C. ×ninae-celottiae</i>	Ontario: MP85 (2x)*	0.026 ±0.004	0.952 ±0.096	0.685	6	A2+E	341, 344
	Ontario: MP86 (2x)*	0.011 ±0.004	0.873 ±0.071	0.675	6	A2+E	341-342, 344
<i>Amelanchier alnifolia</i>	British Columbia: JC431 (3x)*	0.006 ±0.002	0.643 ±0.184	0.677	4	outgroups	340-341

APPENDIX 2: GenBank identifiers for the ITS2 sequences were used for the current analyses. Species and voucher orders follow Table 1.

C. brachyacantha

Louisiana: 5206: KC173639, KC173640, KC173641, KC173642.

Louisiana: 2003-32: KC173746, KC173747, KC173748, KC173749, KC173750.

Louisiana: 2011-2: KC173751, KC173752, KC173753, KC173754, KC173755, KC173756.

C. crus-galii

Alabama: NT213a: KC173610, KC173611, KC173612, KC173613, KC173614, KC173615, KC173616, KC173617, KC173618, KC173619, KC173620, KC173621.

C. macracantha

Ontario: NT224: KC173847, KC173848, KC173849, KC173850, KC173851, KC173852, KC173853, KC173854, KC173855, KC173856.

Colorado: NT440: KC173933, KC173934, KC173935, KC173936, KC173937, KC173938, KC173939, KC173940, KC173941, KC173942, KC173943, KC173944, KC173945, KC173946.

Montana: 2001-17: KC174090, KC174091, KC174092, KC174093, KC174094, KC174095, KC174096, KC174097, KC174098, KC174099.

C. punctata

Ontario: MP73: KC173694, KC173695, KC173696, KC173697, KC173698, KC173699, KC173700, KC173701.

Ontario: BB4: KC174266, KC174267, KC174268, KC174269, KC174270, KC174271.

Ontario: s.n.: KC174272, KC174273, KC174274, KC174275.

C. chrysocarpa

Washington: s.n.: KC173834, KC173835, KC173836, KC173837, KC173838, KC173839, KC173840, KC173841, KC173842, KC173843, KC173844, KC173845, KC173846.

British Columbia: NT587: KC173947, KC173948, KC173949, KC173950, KC173951, KC173952, KC173953, KC173954, KC173955, KC173956.

C. monogyna

Oregon: EL-74: KC173650, KC173651, KC173652, KC173653, KC173654.

Ontario: MP84: KC174184, KC174185, KC174186, KC174187, KC174188, KC174189.

British Columbia: 2008-26: KC173655, KC173656, KC173657, KC173658, KC173659, KC173660, KC173661, KC173662.

Ontario: MP98: KC173643, KC173644, KC173645, KC173646, KC173647, KC173648, KC173649.

C. pentagyna

Turkey: s.n.: KC174276, KC174277, KC174278, KC174279, KC174280, KC174281, KC174282.

C. pinnatifida

Russia: 2: KC173714, KC173715, KC173716, KC173717, KC173718, KC173719.

Russia: 6: KC173720, KC173721, KC173722, KC17373, KC17374, KC17375, KC17376.

Russia: 3: KC173727, KC173728, KC173729, KC173730, KC173731, KC173732, KC173733, KC173734.

C. erythropoda

Colorado: NT349: KC174160, KC174161, KC174162, KC174163, KC174164, KC174165, KC174166, KC174167, KC174168, KC174169.

New Mexico: NT358: KC174151, KC174152, KC174153, KC174154, KC174155, KC174156, KC174157, KC174158, KC174159.

C. rivularis

Wyoming: 2001-42: KC173787, KC173788, KC173789, KC173790, KC173791, KC173792.

Nevada: 2007-03: KC173793, KC173794, KC173795, KC173796, KC173797, KC173798, KC173799, KC173800, KC173801, KC173802.

Idaho: EL-199: KC173803, KC173804, KC173805, KC173806, KC173807, KC173808, KC173809, KC173810, KC173811, KC173812.

Colorado: NT373: KC174100, KC174101, KC174102, KC174103.

Utah: 2001-05: KC174104, KC174105, KC174106, KC174107, KC174108, KC174109, KC174110, KC174111, KC174112.

C. saligna

Utah: 2004-05: KC173434, KC173435, KC173436, KC173437.

Colorado: NT371: KC173813, KC173814, KC173815, KC173816, KC173817.

Colorado: NT368: KC173818, KC173819, KC173820, KC173821, KC173822, KC173823, KC173824, KC173825.

C. castlegarensis

Oregon: C-2003-23F: KC173757, KC173758, KC173759, KC173760, KC173761, KC173762, KC173763.

California: 2006-13: KC173857, KC173858, KC173859, KC173860, KC173861, KC173862, KC173863, KC173864, KC173865, KC173866, KC173867, KC173868, KC173869, KC173870.

Saskatchewan: 2007-15: KC173998, KC173999, KC17400, KC17401, KC17402, KC17403, KC17404, KC17405, KC17406, KC17407, KC17408, KC17409, KC17410.

Idaho: EL-192: KC173982, KC173983, KC173984, KC173985, KC173986, KC173987, KC173988, KC173989, KC173990, KC173991, KC173992, KC173993, KC173994, KC173995, KC173996, KC173997.

C. douglasii

Ontario: EL-11: KC173438, KC173439, KC173440, KC173441, KC173442, KC173443, KC173444, KC173445, KC173446, KC173447, KC173448, KC173449, KC173450.

Ontario: 2007-22: KC173764, KC173765, KC173766, KC173767, KC173768, KC173769, KC173770, KC173771, KC173772, KC173773, KC173774.

Idaho: EL-166: KC173451, KC173452, KC173453, KC173454, KC173455, KC173456, KC173457, KC173458, KC173459, KC173460, KC173461, KC173462, KC173463, KC173464.

Montana: EL-32: KC173775, KC173776, KC173777, KC173778, KC173779, KC173780, KC173781, KC173782, KC173783, KC173784, KC173785, KC173786.

British Columbia: 2010-28: KC174027, KC174028, KC174029, KC174030, KC174031, KC174032, KC174033, KC174034, KC174035, KC174036, KC174037, KC174038, KC174039, KC174040.

British Columbia: 2010-29: KC174041, KC174042, KC174043, KC174044, KC174045, KC174046, KC174047, KC174048, KC174049, KC174050, KC174051, KC174052.

British Columbia: 2010-36: KC173874, KC173875, KC173876, KC173877, KC173878, KC173879, KC173880, KC173881, KC173882, KC173883, KC173884, KC173885, KC173886.

Ontario: NT611: KC173965, KC173966, KC173967, KC173968, KC173969, KC173970, KC173971, KC173972, KC173973, KC173974.

British Columbia: JC387: KC173975, KC173976, KC173977, KC173978, KC173979, KC173980, KC173981.

British Columbia: 2008-72: KC173710, KC173711, KC173712, KC173713.

British Columbia: 2010-38: KC173559, KC173560, KC173561, KC173562, KC173563, KC173564, KC173565, KC173566, KC173567, KC173568, KC173569, KC173570, KC173571, KC173572, KC173573, KC173574, KC173575, KC173576.

British Columbia: 2010-31: KC173539, KC173540, KC173541, KC173542, KC173543, KC173544, KC173545, KC173546, KC173547, KC173548, KC173549, KC173550, KC173551, KC173552, KC173553, KC173554, KC173555, KC173556, KC173557, KC173558.

Montana: JC296: KC173622, KC173623, KC173624, KC173625, KC173626.

C. okennonii

Washington: EL-152: KC173464, KC173465, KC173466, KC173467, KC173468, KC173469, KC173470, KC173471, KC173472, KC173473, KC173474, KC173475, KC173476, KC173477.

Montana: JC281: KC173627, KC173628, KC173629, KC173630, KC173631, KC173632, KC173633, KC173634, KC173635, KC173636, KC173637, KC173638.

Washington: EL-153: KC173478, KC173479, KC173480, KC173481, KC173482, KC173483, KC173484, KC173485, KC173486, KC173487.

C. shuswapensis

British Columbia: 2007-11: KC173926, KC173927, KC173928, KC173929, KC173930, KC173931, KC173932.

C. suksdorfii

Washington: 18485: KC173513, KC173514, KC173515, KC173516, KC173517, KC173518, KC173519, KC173520, KC173521.

California: 2006-22: KC173522, KC173523, KC173524, KC173525, KC173526, KC173527, KC173528, KC173529, KC173530.

California: 2006-16: KC173531, KC173532, KC173533, KC173534, KC173535, KC173536, KC173537, KC173538.

Oregon: JC092: KC173957, KC173958, KC173959, KC173960, KC173961, KC173962, KC173963, KC173964.

Oregon: JC119: KC174144, KC174145, KC174146, KC174147, KC174148, KC174149, KC174150.

Oregon: EL-68: KC173577, KC173578, KC173579, KC173580, KC173581, KC173582, KC173583, KC173584, KC173585, KC173586.

Oregon: EL-71: KC173663, KC173664, KC173665, KC173666, KC173667, KC173668.

Oregon: JC039: KC173887, KC173888, KC173889, KC173890, KC173891, KC173892, KC173893.

Oregon: JC060: KC173587, KC173588, KC173589, KC173590, KC173591, KC173592.

Oregon: JC098: KC173595, KC173596, KC173597, KC173598, KC173599, KC173600, KC173601, KC173602, KC173603, KC173604.

Oregon: JC136: KC173605, KC173606, KC173607, KC173608, KC173609.

Oregon: JC102: KC174113, KC174114, KC174115, KC174116, KC174117.

Oregon: JC117: KC174118, KC174119.

Oregon: JC118: KC174178, KC174179, KC174180, KC174181, KC174182, KC174183.

Oregon: EL-65: KC173506, KC173507, KC173508, KC173509, KC173510, KC173511, KC173512.

Idaho: EL-172: KC173871, KC173872, KC173873.

Idaho: EL-188: KC173826, KC173827, KC173828, KC173829, KC173830, KC173831, KC173832, KC173833.

British Columbia: 2010-42: KC173906, KC173907, KC173908, KC173909, KC173910, KC173911, KC173912, KC173913, KC173914, KC173915.

British Columbia: JC385: KC173916, KC173917, KC173918, KC173919, KC173920, KC173921, KC173922, KC173923, KC173924, KC173925.

Montana: EL-30: KC173488, KC173489, KC173490, KC173491, KC173492, KC173493, KC173494, KC173495, KC173496, KC173497, KC173498, KC173499, KC173500, KC173501, KC173502, KC173503, KC173504, KC173505.

British Columbia: 2008-38: KC174011, KC174012, KC174013, KC174014, KC174015, KC174016, KC174017, KC174018, KC174019, KC174020, KC174021, KC174022, KC174023, KC174024, KC174025, KC174026.

C. gaylussacia

California: PORE-509-1: KC174062, KC174063, KC174064, KC174065, KC174066, KC174067, KC174068.

California: JC005: KC174069, KC174070, KC174071, KC174072, KC174073, KC174074, KC174075, KC174076.

California: JC014: KC174077, KC174078, KC174079, KC174080, KC174081, KC174082, KC174083.

California: JC018: KC174084, KC174085, KC174086, KC174087, KC174088, KC174089.

Oregon: EL-57: KC174053, KC174054, KC174055, KC174056, KC174057, KC174058, KC174059, KC174060, KC174061.

C. rivuloadamensis

Saskatchewan: 2007-13: KC174253, KC174254, KC174255, KC174256, KC174257, KC174258, KC174259, KC174260, KC174261, KC174262, KC174263, KC174264, KC174265.

C. rivulopugnensis

Saskatchewan: 2007-21: KC174242, KC174243, KC174244, KC174245, KC174246, KC174247, KC174248, KC174249, KC174250, KC174251, KC174252.

C. aquacervensis

Saskatchewan: 2007-12: KC174222, KC174223, KC174224, KC174225, KC174226, KC174227, KC174228, KC174229, KC174230.

C. atrovirens

British Columbia: JBP8344: KC174196, KC174197, KC174198, KC174199, KC174200, KC174201, KC174202, KC174203, KC174204, KC174205, KC174206, KC174207, KC174208, KC174209.

C. cupressocollina

Saskatchewan: 2007-20: KC174231, KC174232, KC174233, KC174234, KC174235, KC174236, KC174237, KC174238, KC174239, KC174240, KC174241.

C. enderbyensis

British Columbia: 18445: KC173894, KC173895, KC173896, KC173897, KC173898, KC173899, KC173900, KC173901, KC173902, KC173903, KC173904, KC173905.

British Columbia: 18451: KC174129, KC174130, KC174131, KC174132, KC174133, KC174134, KC174135, KC174136, KC174137, KC174138, KC174139, KC174140, KC174141, KC174142, KC174143.

C. okanaganensis

British Columbia: 2008-46: KC174170, KC174171, KC174172, KC174173, KC174174, KC174175, KC174176, KC174177.

C. orbicularis

British Columbia: JBP8365: KC174210, KC174211, KC174212, KC174213, KC174214, KC174215, KC174216, KC174217, KC174218, KC174219, KC174220, KC174221.

C. phippi

Washington: JC178: KC174120, KC174121, KC174122, KC174123, KC174124, KC174125, KC174126, KC174127, KC174128.

C. germanica

Russia: 6216V93: KC173735, KC173736, KC173737, KC173738, KC173739, KC173740, KC173741, KC173742.

Turkey: AAD11600: KC173743, KC173744, KC173745.

C. kansuensis

? : 2002-02A: KC173426, KC173427, KC173428, KC173429, KC173430, KC173431, KC173432, KC173433.

C. maximowiczii

Russia: 5: KC173406, KC173407, KC173408, KC173409, KC173410, KC173411.

Russia: 4: KC173412, KC173413, KC173414, KC173415, KC173416, KC173417.

C. nigra

Bulgaria: KIC 294: KC173702, KC173703, KC173704, KC173705, KC173706, KC173707, KC173708, KC173709.

C. wilsonii

? : AA749-74A: KC173418, KC173419, KC173420, KC173421, KC173422, KC173423, KC173424, KC173425.

C. ×cogswellii

Oregon: EL-85: KC173669, KC173670, KC173671, KC173672, KC173673, KC173674, KC173675, KC173676, KC173677, KC173678, KC173679, KC173680, KC173681.

Oregon: EL-79: KC173682, KC173683, KC173684, KC173685, KC173686, KC173687.

C. ×ninae-celottiae

Ontario: MP85: KC174190, KC174191, KC174192, KC174193, KC174194, KC174195.

Ontario: MP86: KC173688, KC173689, KC173690, KC173691, KC173692, KC173693.

Amelanchier alnifolia

British Columbia: JC431: KC174283, KC174284, KC174285, KC174286.

TABLE S3. GenBank accession numbers for the plastid sequences used for the current analyses. Species and voucher orders follow Table 1. GenBank accession numbers are in the order *trnL-F*, *trnG-trnS*, *rpl2-trnH*, *rpl20-rps12*. – indicates no sequence generated.

Ingroup

C. brachyacantha Louisiana: 2003-32 (2x) KC206775, KC206671, KC206837, KC206926. *C. crus-galii* Alabama: NT213a (2x) KC206763, KC206754, KC206839, KC206928. *C. macracantha* Ontario: NT224 (4x) KC206788, KC206721, KC206853, KC206942. *C. punctata* Ontario: *s.n.* (2x) KC206834, KC206746, -, -. *C. chrysocarpa* Washington: *s.n.* (4x) KC206790, KC206720, KC206852, KC206941. *C. triflora* Georgia: NT290 (4x) KC206835, KC206753, KC206879, KC206966. *C. monogyna* Ontario: MP84 (2x) KC206802, KC206728, KC206859, KC206947. *C. pentagyna* Turkey: *s.n.* (2x) KC206827, KC206759, KC206878, KC206965. *C. pinnatifida* Russia: 2 (2x) KC206799, KC206724, KC206844, KC206933. *C. erythropoda* Colorado: NT349 (4x) KC206817, KC206736, KC206866, KC206954. *C. rivularis* Wyoming: 2001-42 (4x) KC206776, KC206737, KC206845, KC206934. *C. saligna* Utah: 2004-05 (2x) KC206778, KC206742, KC206846, KC206935. *C. castlegarensis* Oregon: C-2003-23F (4x) KC206764, KC206674, KC206838, KC206927. *C. douglasii* British Columbia: 2010-36 (4x) KC206797, KC206700, KC206855, KC206944, British Columbia: JC387 (4x) KC206820, KC206709, KC206868, KC206956, British Columbia: 2010-38 (5x): KC206798, KC206699, KC206856, KC206945, British Columbia: 2010-31 (5x) KC206796, KC206698, KC206854, KC206943. *C. okennonii* Washington: EL-152 (4x) KC206768, KC206683, KC206843, KC206932. *C. shuswapensis* British Columbia: 2007-11 (4x) KC206779, KC206685, KC206847, KC206936. *C. suksdorfii* Washington: 18485 (2x) KC206784, KC206690, KC206849, KC206938, Idaho: EL-172 (3x) KC206785, KC206691, KC206850, KC206939, British Columbia: 2010-42 (3x) KC206819, KC206706, KC206867, KC206955, British Columbia: JC385 (3x) KC206821, KC206710, KC206869, KC206957. *C. gaylussacia* California: PORE-509-1 (3x) KC206810, KC206713, KC206863, KC206951. *C. rivuloadamensis* Saskatchewan: 2007-13 (4x) KC206829, KC206749, KC206876, KC206964. *C. rivulopugnensis* Saskatchewan: 2007-21 (4x) KC206831, KC206748, KC206875, KC206963. *C. aquacervensis* Saskatchewan: 2007-12 (4x) KC206832, KC206756, KC206873, KC206961. *C. atrovirens* British Columbia: JBP8344 KC206828, KC206758, KC206871, KC206959. *C. cupressocollina* Saskatchewan: 2007-20 (4x) KC206830, KC206752, KC206874, KC206962. *C. enderbyensis* British Columbia: 18445 (4x) KC206809, KC206712, KC206862, KC206950. *C. okanaganensis* British Columbia: 2008-46 (4x) KC206816, KC206718, KC206865, KC206953. *C. orbicularis* British Columbia: JBP8365, KC206824, KC206757, KC206872, KC206960. *C. phippsi* Washington: JC178 (4x) KC206825, KC206755, KC206870, KC206958. *C. germanica* Russia: 6216V93 (2x) KC206772, -, KC206840, KC206929. *C. maximowiczii* Russia: 4 (2x) KC206773, KC206682, KC206841, KC206930. *C. nigra* Bulgaria: KIC 294 (2x) KC206774, KC206719, KC206842, KC206931. *C. wilsonii* AA749-74A (2x) KC206787, KC206732, KC206851, KC206940. *C. ×cogswellii* Oregon: EL-85 (2x) KC206805, KC206750, KC206860, KC206948. Oregon: EL-79 (2x) KC206836, KC206751, KC206861, KC206949. *C. ×ninae-celottiae* Ontario: MP85 (2x) KC206822, KC206761, KC206857, KC206945, Ontario: MP86 (2x) KC206801, KC206727, KC206858, KC206946.

Outgroup

Amelanchier alnifolia British Columbia: JC431 (3x) KC206800, KC206745, KC206880, KC206967. *Cotoneaster taoensis* GenBank JQ392203, JQ391914, JQ392094, JQ390794. *Malus angustifolia* GenBank AM157404, EF127116, EF127190, EF127227. *Pyrus pyrifolia* GenBank AP012207, AP012207, AP012207, AP012207.
