

Appendix 2. Plants on and in the vicinity of the Bering Land Bridge during the Late Cretaceous and Tertiary. References: 1= Budantsev, 1997; 2= Penhallow, 1908; 3= LaMotte, 1952; 4= Knowlton, 1910; 5= Heer, 1855; 6= Chaney, 1951; 7= Lesquereux, 1874; 8= Berry, 1926; 9= Knowlton, 1899; 10= Wolfe and Wehr, 1987; 11= Heer, 1876; 12= Lesquereux, 1878; 13= Boyd, 1990; 14= Manchester et al., 2009; 15= Herman, 1990; 16= Golovneva, 2000 (Cretaceous-Paleogene boundary); 17= Stockey et al., 1997; 18= Spicer et al., 1994; 19= Shezpetov and Golovneva, 2010; 20= Herman and Spicer, 2010 (Middle Cretaceous); 21= Budantsev, 1994 [Paleogene (Paleocene-Eocene)]; 22= Lavrenko and Fot'janova 1994; 23= Lebedev, Ye. L., 1992; 24= Vakhrameev, 1991; 25= Zhilin (ed.), 1991 (see Appendix note 1); 26= Velichko et al., 2005; 27= Arkhipov et al., 2005; 28= Fradkina et al., 2005a; Fradkina et al., 2005b; 29= Akhmetiev, 2010 (see also Akhmetiev, 2007); 30= Pavlyutkin and Chekryzhov, 2007; 31= Herman, 2013 (all floras and taxa are listed here under K although some may extend into the Pa (Danian)? Fide Herman, 2013; Herman et al., 2004); 32= Hollick, 1930; 33= Bell, 1949; 34= Brink et al., 2009; 35= Wolfe et al., 1966; 36= Stockey et al., 2001; 37= Wolfe, 1977; 38= Vakhrameev, 1958; 39= Pigg et al., 2001, 2007; 40= Harris et al., 2014; 41= Piel, 1971; 42= Wolfe and Tanai, 1987; 43= Becker, 1969; 44= Leopold and Liu, 1994 (Miocene and probably early Pliocene); 45= Wolfe and Tanai, 1980; 46= Reinink-Smith and Leopold, 2005; 47= Chelebaeva, 1978; 48= Pound et al., 2015; 49= Spicer and Herman, 2001; 50= Spicer and Herman, 1996; 51= Moiseeva, et al., 2009; 52= Takhtajan and others (1974 et seq.); 53= McIver and Basinger, 1993 (Paleocene, Saskatchewan, Canada); 54= Bell, 1949 (Cretaceous/Paleocene; see pp. 17, 29 for age assignments of formations), western Alberta, Canada; 55= Falcon-Lang et al., 2016. Where the LaMotte (3) or Takhtajan and others (52) catalogs are cited as a source of the listing for a genus these are indicated in brackets ([-]). Numbers/letters immediately after

plant names refer to Notes at the end of the Appendices. Numbers in the right columns refer to the above references. w= widespread. Taxa are as listed by the original author. General catalogs of fossil plants are Lamotte (1952) for North America; Takhtajan (1974, 1982) and Budantsev (1994, 2005) for Russia; and Graham (2010, p. xiii; 2012, URL: <http://www.mobot.org/mobot/research/CatalogFossil/catalog.shtml>) for the New World and references therein to global databases. Note that three genera listed in Doyle and Hickey (1976) for the Potomac (mid-Cretaceous) Group of the Atlantic Coastal Plain also occur in Beringia (*Araliaephyllum*, *Protophyllum*, *Sapindopsis*). The complete inventory for the Potomac Group is included in Appendix 3 with the North Atlantic Land Bridge. Taxa listed in this and other Appendices have been extracted from more complete lists (I, II). Most of those identified by an artificial nomenclature with only mention of presumed biological affinities are not included.

Taxon	West Beringia (Siberia/Kamchatka)	East Beringia (Western North America)
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Cretaceous (Late)

Ferns and allied groups

<i>Acrostichopteris</i> aff. <i>parvifolia</i>	x (31)	
<i>A. pluripartita</i>	x (31)	
<i>Adiantopteris gracilis</i>	x (31)	
<i>Adiatum?</i> <i>paululum</i>		x (54)
<i>Anemia arctopteroides</i>	x (24)	

<i>A. cf. longata</i>		x (31)
<i>Arctopteris heteropinnula</i>	x (31)	
<i>A. cf. kolymensis</i>	x (20, 31, 49)	x (31, 49)
<i>A. lenaensis</i>	x (31)	
<i>A. obtusipinnatus</i>	x (31)	
<i>A. penzhinensis</i>	x (31)	x (31)
<i>A. rarinervis</i>	x (31, 49)	x (31, 49)
<i>A. aff. rarytkinensis</i>	x (31)	
<i>Asplenium dicksonianum</i>	x (20, 24, 31)	x (31)
<i>A. forester</i>		x (32)
<i>A. popovii</i>	x (31)	
<i>A. rigidum</i>	x (20, 31)	
<i>Azimia</i>	x (24)	
<i>Birisia acutana</i>	x (31)	x (31)
<i>B. alata</i>	x (31, 49)	x (31, 49)
<i>B. jelisejevii</i>	x (31)	x (31)
<i>B. ochotica</i>	x (31, 49)	x (31, 49)
<i>B.(?) oerstedtii</i>	x (31)	x (31)
<i>B. onychioides</i>	x (20, 24, 31)	x (31)
<i>Cladophlebis acuta</i>	x (31)	
<i>C. argutula</i>	x (31)	
<i>C. columbianus</i>		x (31)
<i>C. contrarius</i>	x (31)	

<i>C. cf. frigida</i>	x (31)	x (31)
<i>C. gluschinskii</i>	x (31)	
<i>C. aff. grandis</i>	x (31)	
<i>C. groenlandica</i>		x (33)
<i>C. haiburnensis</i>	x (31)	
<i>C. cf. kolymensis</i>		x (31)
<i>C. cf. lobulata</i>	x (31)	x (31)
<i>C. meyerii</i>	x (20)	
<i>C. pseudolobifolia</i>	x (31)	
<i>C. septentrionalis</i>	x (31)	x (31, 32)
<i>C. speranskae</i>	x (31)	
<i>C. ubiencaensis</i>	x (31)	
<i>C. venustus</i>	x (31)	
<i>C. virginensis</i>		x (31)
<i>C. aff. williamsonii</i>	x (31)	
<i>Cladophlebidium singulinerve</i>	x (31)	
<i>Coniopteridium</i>	x (31)	
<i>Coniopteris anadyrensis</i>	x (31)	
<i>C. arctica</i>	x (31)	x (31)
<i>C. aff. bicrenata</i>	x (31)	x (31)
<i>C. cf. brevifolia</i>	x (31)	x (31)
<i>C. cf. C. compressa</i>	x (20, 31)	x (31)
<i>C. dicksonioides</i>	x (31)	

<i>C. gracillima</i>	x (31)	
<i>C. (Birisia?) grebencaensis</i>	x (31)	x (31)
<i>C. aff. ketovae</i>	x (31)	
<i>C. aff. maakiana</i>	x (31)	x (31)
<i>C. cf. nympharum</i>	x (20, 31)	
<i>C. cf. saportana</i>	x (20, 31)	x (31)
<i>C. setacea</i>		x (31)
<i>C. tschuktschorum</i>	x (31)	
<i>C. yukonensis</i>		x (31)
<i>Danaeites kinesis</i>	x (24)	
<i>Dennstaedtia blomstrandii</i>		x (33)
<i>D. sp.</i>		x (31)
<i>Elatocladus</i>		x (31)
<i>Equisetites burejensis</i>	x (31, 49)	x (31, 49)
<i>E. ramosus</i>	x (31)	
<i>Equisetum arcticum</i>	x (31)	x (31, 33)
<i>E. perlaevigatum</i>		x (54)
<i>Filicites knowltoni</i>		x (54)
<i>Gleichenia crenata</i>		x (31)
<i>G. pseudocrenata</i>	x (31, 49)	x (31, 49)
<i>Gleichenites asiatica</i>	x (31)	
<i>G. giesekianus</i>		x (31)
<i>G. microphylla</i>	x (31)	x (31)

<i>G. onkilonica</i>	x (31)	
<i>G. zippei</i>	x (31)	x (31)
<i>Goniopteris arctica</i>	x (49)	x (49)
<i>Hausmannia</i> aff. <i>atwoodii</i>	x (31)	[3]
<i>H. bilobata</i>	x (31)	
<i>H. bipartita</i>	x (31)	
<i>H. nansenii</i>	x (20)	
<i>H. cf. undulata</i>	x (31)	
<i>Isöetites</i>	x (16)	[3]
<i>Kolymella</i> aff. <i>raevskii</i>		x (31)
<i>Lycopodium</i>		x (31)
<i>Ochotopteris ochotensis</i>		x (31)
<i>O. kamtchatica</i>	x (31)	
<i>Onoclea hesperia</i>	x (31)	x (31, 33)
<i>Onychiopsis elongata</i>	x (15, 31)	x (31)
<i>O. grandipinnula</i>	x (31)	
<i>O. psilotoides</i>	x (31, 49)	x (31, 49)
<i>Osmunda</i> cf. <i>cretacea</i>	x (31)	x (31)
<i>O. cf. denticulata</i>	x (31)	x (31)
<i>O. macrophylla</i>		x (33)
<i>O. serrulata</i>	x (31)	
<i>Osmundopsis efimovae</i>	x (31)	
<i>Penzhinopteris pergamentii</i>	x (31)	

<i>Ruffordia goeppertii</i>	x (31)	x (31)
<i>R. magnifolia</i>	x (31)	
<i>Salvinia</i>	x (24)	[3]
<i>Schizaea</i>	x (31)	
<i>Scleropteris verchojanensis</i>	x (31)	
<i>Selaginella</i>	x (31)	[3]
<i>Sphenopteris crispans</i>	x (31)	
<i>S. cf. dentata</i>		x (31)
<i>S. mclearnii</i>	x (31)	
<i>Tchaunia filatovii</i>		x (31)
<u>Gymnosperms</u>		
<i>Abies</i> (10)	x (24)	[3]
<i>Abietites</i>		x (31)
<i>Agathis tollii</i>	x (20)	
<i>Alatispermum malandinii</i>	x (20)	
<i>Anomozamites arcticus</i>	x (20, 31)	
<i>A. sp.</i>	x (24)	x (31)
<i>Araucarites anadyrensis</i>	x (15, 23, 31)	x (31)
<i>A. conophyllus</i>	x (31)	
cf. <i>Athrotaxites berryi</i>	x (31)	
<i>Athrotaxopsis expansa</i>	x (15, 31)	x (31)
<i>A. grandis</i>	x (31)	x (31)

<i>Baiera ahnertii</i>	x (31)	
<i>B. cf. gracilis</i>	x (31)	x (31)
<i>Brachyphyllum</i>	x (20, 24)	
<i>Butefia obliqua</i>	x (31)	x (31)
<i>Cedrus lopatinii</i>	x (20)	[3]
<i>C. sp.</i>	x (24, 31)	
<i>Cephalotaxopsis borealis</i>	x (31)	
<i>C. heterophylla</i>	x (20, 31)	
<i>C. intermedia</i>	x (24, 31, 49)	x (31, 32, 49)
<i>C. microphylla</i>		x (31, 32, 33)
<i>C. sangarensis</i>	x (31)	
<i>Cephalotaxopsis</i> (= <i>Taxites</i> fide Vakhrameev, 1991, p. 182)	x (15, 24)	
<i>Cryptomeria subulata</i>	x (31)	x (31)
<i>Cryptomerites ancistrophyllus</i>	x (31)	
<i>C. lambii</i>		x (33)
<i>Ctenis</i>	x (20, 24, 49)	x (31, 49)
<i>Cunninghamia hornbyensis</i>		x (34)
<i>C. sp.</i>	x (24)	
<i>Cupressinocladus cretaceous</i>	x (31)	x (31)
[genus as <i>Thuja</i> by Bell (33) fide Vakhrameev (24) p. 212]		x (33)
<i>Cycadites hyperborea</i>	x (31)	

<i>Cyparassisium</i>	x (24)	
<i>Czekanowskia rigida</i>	x (20?, 23, 31)	x (31)
<i>Desmiophyllum</i> (Gymnospermae, incertae sedis) <i>D. magnum</i>	x (31)	x (31)
<i>D. rigidum</i>	x (20)	
<i>Drepanolepsis</i>	x (31)	
<i>Elatides curvifolia</i>		x (31)
<i>Elatocladus</i> aff. <i>manchurica</i>	x (20, 31)	x (31)
<i>E. gracillimus</i>	x (31)	
<i>E. intermedius</i>		x (54)
<i>E. olriki</i>		x (54)
<i>E. smittiana</i>	x (15, 31)	x (31)
<i>E. talensis</i>	x (31)	
<i>E. ungeri</i>		x (54)
<i>Encephalartopsis vassilevskajae</i>	x (31)	
<i>Florinia borealis</i>	x (20, 31)	x (31)
<i>Fokieniopsis</i> aff. <i>catenulata</i>		x (31)
<i>Ginkgo adiantoides</i>	x (20, 24, 31, 49)	x (31, 49)
<i>G. angusticuneata</i>	x (31)	
<i>G. concinna</i>	x (31, 49)	x (31, 49)
<i>G. delicata</i>	x (31)	
<i>G. huttoni</i>	x (31)	x (31)
<i>G. lepida</i>	x (31)	x (31)

<i>G. minor</i>		x (32)
<i>G. nana</i>	x (31)	
<i>G. obrutschewii</i>	x (20)	
<i>G. paradiantoides</i>	x (31)	
<i>G. pilifera</i>	x (2)	
<i>G. polaris</i>	x (31)	
<i>G. sibirica</i>	x (31)	x (31)
<i>G. singularis</i>	x (31)	
<i>Ginkgoites adiantoides</i>		x (33,54)
<i>G. sibirica, G. volnovii</i>	x (20)	
<i>Glyptostrobus groenlandicus</i>	x (31)	x (31)
<i>G. nordenskioldii</i>	x (31)	
<i>Heilungia gaimanensis</i> (now includes <i>Butefia</i> , see ref. 19)	x (19)	
<i>H. cf. oloensis</i>	x (49)	x (31, 49)
<i>H. sangarensis</i>	x (31)	
<i>Ixostrobus laxus</i>	x (20)	
<i>Juniperites gracilis</i>		x (54)
<i>Karkenian</i>	x (20)	
<i>Leptostrobus marginatus</i>	x (31)	x (31)
<i>Libocedrus arctica</i> (11)	x (20)	[3]
<i>L. (Andrivettia)</i>	x (24)	
<i>Mesocyparis beringiana</i>	x (31)	

<i>M. borealis</i>		x (31)
<i>Metasequoia cuneata</i>	x (31)	
<i>M. disticha</i>	x (31)	
<i>M. occidentalis</i>	x (31)	x (31)
<i>Microconium beringiana</i>	x (18)	
<i>Neozamites verchojanensis</i>	x (31)	
<i>Nilssonia alaskana</i>	x (23, 24, 31)	x (31, 32)
<i>N. comtula</i>	x (31)	
<i>N. decursiva</i>	x (31, 49)	x (31, 49)
<i>N. aff. grossinervis</i>	x (31)	
<i>N. magnifolia</i>	x (31, 49)	x (31, 49)
<i>N. menneri</i>	x (49)	x (31, 49)
<i>N. pilifera</i>	x (31)	
<i>N. schaumburgensis</i>	x (31)	
<i>N. serotina</i>	x (31)	x (31, 32, 33, 49, 54)
<i>N. cf. yukonensis</i>	x (31)	x (31)
<i>Nilssoniocladus alaskensis</i>		x (50)
<i>N. chukotensis</i>	x (31, 50)	
<i>Nilssoniopteris pryadae</i>	x (31)	
<i>Otozamites jarmolenkoi</i>	x (24)	
<i>Pagiophyllum triangulare</i>	x (31, 49)	x (31, 49)
<i>Parataxodium cf. jacutensis</i>		x (31)

<i>P. neosibiricum</i>	x (20)	
<i>P. sugoiensis</i>	x (31)	
<i>P. wigginsii</i>	x (31, 49)	x (31, 49)
<i>Phoenicopsis angustifolia</i>	x (31, 20, 49)	x (31, 49)
<i>P. speciosa</i>	x (20)	x (31)
<i>Pinus</i> (6)	x (24)	x (55)
<i>P.(?) sp.</i>		x (32)
<i>Pityolepis tollii</i>	x (20)	
<i>Pityocladus</i>	x (31)	
<i>Pityophyllum arcticum</i>	x (20)	
<i>P. nordenskioldi</i>	x (20, 31, 49)	x (31, 49)
<i>P. pseudolaricis</i>	x (31)	
<i>P. staratschinii</i>	x (20, 31, 49)	x (31, 49)
<i>Pityospermum brachypterum</i>	x (31)	[3]
<i>P. nansenii</i>	x (31)	
<i>P. pachypterum</i>	x (31)	
<i>P. aff. piniformis</i>	x (31)	
<i>P. semiovale</i>	x (31)	
<i>P. umbonatum</i>	x (31)	
<i>P. yukonense</i>	x (31)	
<i>Pitystrobos piceoides</i>	x (31, 49)	x (31, 49)
<i>P. sp.</i>		x (54)
<i>Podocarpus</i> (12)	x (24)	

<i>Podozamites corbinensis</i>	x (31)	
<i>P. eichwaldii</i>	x (20, 49)	x (31, 49)
<i>P. lanceolatus</i>	x (31)	x (31)
<i>P. latifolius</i>	x (20)	
<i>P. minor</i>	x (31)	
<i>P. aff. tuvensis</i>	x (31)	
<i>Protophyllocladus obesus</i>		x (32)
<i>P. aff. sachlinensis</i>	x (31)	
<i>Pseudocycas</i>	x (24)	x (31, 49)
<i>Pseudolarix arctica</i>	x (31)	[3]
<i>P. schmalhauseni</i>	x (20)	
<i>Pterophyllum validum</i>	x (31)	x (32)
<i>Sachalinella kolymensis</i>	x (31)	
<i>Sagenopteris variabilis</i> (Caytoniales)	x (31)	x (32)
<i>S. sp.</i>	x (24, 31)	x (31)
<i>Schizolepis cretaceous</i>	x (31)	
<i>Sciadopitys sp.</i>	x (31)	[3]
<i>Sequoia ambigua</i>		x (31)
<i>S. concinna</i>	x (31)	x (31)
<i>S. fastigata</i>	x (31)	x (31)
<i>S. cf. minuta</i>	x (31)	x (31)
<i>S. obovata</i>	x (31)	x (31)
<i>S. rigida</i>	x (31)	x (31)

<i>S. reichenbachii</i>	x (24, 31)	
<i>S. tenuifolia</i>	x (20, 31)	x (31)
<i>Sequoiites artus</i>		x (54)
<i>S. dakotensis</i>		x (54)
<i>S. langsdorfii</i>		x (54)
<i>Sphenobaiera biloba</i>	x (31, 49)	x (31, 49)
<i>S. czekanowskiana</i>	x (31, 49)	x (31, 49)
<i>S. flabellata</i>	x (20, 31)	x (31)
<i>S. longifolia</i>	x (2, 31, 49)	x (31, 49)
<i>S. pulchella</i>	x (31)	
<i>S. vera</i>	x (31)	
<i>Stenorachis</i> (Gymnospermae, incertae sedis), <i>S. striolatus</i>		x (31)
<i>S. sp.</i>	x (20)	
<i>Taeniopteris lundgreni</i>	x (31)	x (31)
<i>T. platyrachis</i>	x (31)	x (31)
<i>Taiwania microphylla</i>	x (20)	
<i>T. sp.</i>	x (24)	x (31)
<i>Taxites cephalotaxifolius</i>	x (31)	[3]
<i>T. olrikii</i>	x (31)	
<i>T. (Florinia?) sp.</i>	x (31)	
<i>Taxodium dubium</i>	x (31)	
<i>T. sp.</i>		x (32)

<i>Taxus</i>	x (24)	[3]
<i>Thuites intermedius</i>		x (33)
<i>T. interruptus</i>		x (54)
<i>T. sp.</i>	x (24)	
<i>Thuja cretacea</i>	x (31, 20)	x (31)
<i>T. interrupta</i>		x (33)
<i>Tollia cunninghamoides</i>	x (20)	
<i>Torellia anadyrensis</i>	x (31)	
<i>Torreya gramillima</i>		x (31)
<i>Torreyites tyrellii</i>		x (54)
<i>Williamsonia philatovii</i> (13)	x (31)	x (see 13)

Angiosperms

<i>'Acer' arcticum</i>	x (24)	x (33)
<i>A. collieri</i>		x (32)
<i>"A." quercifolium</i>	x (20)	
<i>Amaamia tschucotica</i>	x (31)	
<i>Anacardites neuburgae</i>	x (24)	[3]
<i>Anadyricarpa altingiosimila</i>	x (31)	
<i>Anona robusta</i>		x (54)
<i>Antholithes marsilioides</i>		x (54)
<i>Araliaecarpum kolymensis</i>	x (31)	
<i>Araliaephyllum arenaria</i>	x (31)	

<i>A. dentatum</i>	x (31)	
<i>A. devjatilova</i>	x (31)	x (31)
<i>A. cf. jarmoljukii</i>		x (31)
<i>A. leonvii</i>	x (31)	
<i>A. medium</i>	x (31)	x (31)
<i>A. pekulneense</i>	x (31)	
<i>A. pentalobatum</i>	x (31)	
<i>A. polevoii</i>	x (15, 31)	
<i>A. quinquelobum</i>	x (31)	x (31)
<i>A. speciosum</i>	x (31)	
<i>A. cf. subitum</i>	x (31)	x (31)
<i>Araliopsis</i>	x (24)	
<i>Archeampelos mullii</i>		x (31)
<i>Arctoterum rubifolium</i>	x (31)	
<i>Aristolochia paigei</i>	[52]	x (32)
<i>Aristolochites kamchaticus</i>	x (31)	[3]
<i>Arthollia inordinata</i>	x (15, 31)	(31)
<i>A. insignis</i>	x (31)	
<i>A. inundata</i>	x (31)	
<i>A. pacifica</i>	x (31)	x (31)
<i>A. rarytkensis</i>	x (31)	
<i>Arundo</i>	x (24)	[3]
<i>Barykovia kamchatica</i>	x (31)	

<i>B. tchucotica</i>	x (31)	
<i>Caricopsis compacta</i>	x (31)	
<i>C. laxa</i>	x (31)	
<i>Castalites acutidentatus</i>		x (31, 32)
<i>C. flabelliformis</i>		x (31)
<i>C. inordinatus</i>		x (31)
<i>Celastrinites insignis</i>		x (33)
<i>C. septentrionalis</i>	x (31)	
<i>C. wardii</i>	x (31)	
<i>C. zakharovii</i>	x (31)	
<i>C. sp.</i>		x (31)
<i>Celastrophyllum acutidens</i>	x (31)	
<i>C. aff. kolymensis</i>	x (31)	
<i>C. latifolium</i>	x (31)	
<i>C. oppositifolia</i>	x (31)	
<i>C. ovale</i>	x (24, 31)	
<i>C. serrulatus</i>	x (31)	
<i>C. sp.</i>	x (15, 24)	x (31)
<i>Celastrus herendeensis</i>		x (31)
<i>C. pseudocurvinervis</i>		x (31)
<i>C. septentrionalis</i>	x (18)	
<i>C. sp.</i>	x (15)	
<i>Celtis</i>	x (24)	[3, w]

<i>Cercidiphyllum potomacensis</i>	x (31)	[3, w]
<i>Cinnamomoides ievlevii</i>	x (31)	[<i>Cinnamomum</i> w]
<i>Cissites(?) asymmetricus</i>	x (31)	
<i>C. beljaevii</i>	x (31)	x (31, 32)
<i>C. comparabilis</i>	x (24)	
<i>C. cordatus</i>		x (31)
<i>C. hermanii</i>	x (31)	
<i>C. inscissus</i>	x (31)	
<i>C. kautajamensis</i>	x (31)	
<i>C. microphylla</i>	x (24)	
<i>C. orbiculatus</i>	x (31)	x (31)
<i>C. pekulneensis</i>	x (31)	
<i>C. volobuevae</i>	x (18)	
<i>Cissus pseudomarginata</i>	x (31)	[3, w]
<i>Cocculophyllum cf. furcinerve</i>	x (31)	
“ <i>Cocculus</i> ” cf. <i>extinctus</i>	x (31)	
<i>C. (?) sp.</i>		x (31)
<i>Corylites beringianus</i>	x (31)	x (31)
<i>Corylus ageevii</i>	x (31)	
<i>C. beringiana</i>	x (18)	
<i>C. denverensis</i>		x (33)
<i>Crataegites cf. borealis</i>	x (24, 31)	[3, w]

<i>“Credneria”</i> cf. <i>grewiopsoides</i>		x (31, 32)
<i>Credneria</i> (= <i>Artholia</i>)	x (20, 24, 31)	
<i>C. sp.</i>		x (31)
<i>Dalbergites elegans</i>	x (31)	
<i>D. cf. simplex</i>		x (31)
<i>Dalembia farajevii</i>	x (31)	
<i>D. krassilovii</i>	x (31)	
<i>D. pergamentii</i>	x (15, 31)	x (31)
<i>D. vachrameevii</i>	x (23, 31)	x (31)
<i>Daphnophyllum dakotense</i>		x (32)
<i>D. sp.</i>	x (24)	
<i>“Diospyros”</i> aff. <i>steenstrupi</i>	x (31)	x (31, 32)
<i>D. sp.</i>	x (24)	
<i>Disanthophyllum longipetiolatum</i>	x (31)	
<i>Dombeyopsis nebrascensis</i>		x (54)
<i>Dyrana orientalis</i>	x (31)	
<i>Ettinghausenia affinis</i>	x (31)	
<i>E. embicola</i>	x (31)	
<i>E. cf. latilobata</i>		x (31)
<i>E. louravetlanica</i>	x (31)	x (31)
<i>E. cf. marginata</i>	x (31)	
<i>E. newberryana</i>	x (31)	
<i>E. primaeva</i>	x (31)	x (31)

<i>E. prisca</i>	x (31)	
<i>E. rarivervis</i>	x (31)	
<i>E. raynoldsii</i>	x (31)	x (31)
<i>Fraxinus leii</i>		x (54)
<i>Grebenkia anadyrensis</i>	x (31)	x (31)
<i>Grewiopsis akhmetjevii</i>	x (31)	
<i>G. nemorosus</i>	x (31)	
<i>G. yukonensis</i>		x (32)
<i>Haemanthopyllum cordatum</i>	x (16, 18, 31)	
<i>H. kamtschaticum</i>		x (31)
<i>Hedera curvata</i>		x (32)
<i>H. gracile</i>	x (20)	
“ <i>Hedrea</i> ” sp.		x (31)
<i>Hollickia quercifolia</i>	x (31)	
<i>Ievlevia dorofeevii</i>	x (31)	
<i>Ilex vernicosa</i> (14)	x (31)	[3, w]
<i>Jenkinsella arctica</i>		x (54)
<i>Juglans lecontiana</i>		x (33)
<i>J. sp.</i>	x (24)	
<i>Kakanautia repanda</i>	x (31)	
<i>Kenella filatovii</i>	x (31)	x (31)
<i>K. harrisiana</i>	x (31)	
<i>Laurophyllum laraminum</i>		x (33)

<i>Laurophyllum (Laurus plutonia)</i>	x (24)	
<i>Leguminosites stagnum</i>		x (54)
<i>Limnobiophyllum scutatum</i>	x (16)	
<i>Lindera jarmolenkoi (Sassafras polevoii)</i>	x (24)	
<i>L. minima</i>	x (31)	[3]
<i>Liriophyllum aeternum</i>	x (31)	x (31)
<i>Macclintockia beringiana</i>	x (31)	
<i>M. crenata</i>	x (31)	
<i>M. decurens</i>	x (20)	
<i>M. cf. dentata</i>	x (31)	
<i>M. electilis</i>		x (32)
<i>M. neosibirica</i>	x (20)	
<i>M. ochotica</i>	x (23, 31)	
<i>M. sp.</i>	x (15, 24)	
<i>Magnolia amplifolia</i>		x (31)
“ <i>Magnolia</i> ” cf. <i>lakesii</i>		x (31)
<i>M. sp.</i>	x (24)	
<i>Magnoliaephyllum alternans</i>	x (31)	x (31)
<i>M. magnificum</i>	x (31)	
<i>Menispermities belli</i>		x (33)
<i>M. efimovae</i>	x (31)	
<i>M. ginterensis</i>	x (31)	
<i>M. grebenkaens</i>	x (31)	

<i>M. marcovoensis</i>	x (31)	
<i>M. minutus</i>	x (31)	
<i>M. aff. reniformis</i>	x (31)	x (31)
<i>M. septentrionalis</i>	x (15, 31)	x (31)
<i>M. sibiricus</i>	x (31)	x (31)
<i>M. vasetskii</i>	x (31)	
<i>Mirella borealis</i>	x (31)	
<i>Myrtophyllum acuminata</i>	x (31)	
<i>M. penzhinense</i>	x (31)	
<i>Myrica(?) trifoliata</i>		x (32)
<i>M. sp.</i>	x (24)	
<i>Nelumbites aff. minimus</i>	x (31)	
<i>N. protoluteus</i>		x (33)
<i>N. sp.</i>	x (24)	x (31)
<i>Nelumbo</i>	x (24)	
<i>Nordenskioldia</i>	x (24)	[3]
<i>Nuphar</i>	x (31)	
<i>Nymphaeites angulatus</i>		x (33, 54)
<i>N. striatus</i>		x (54)
<i>N. sp.</i>	x (31)	
<i>Nyssa tschucotica</i>	x (18)	[3]
<i>Nyssidium arcticum</i>	x (31)	x (31)
<i>Palaeotrappa aculeata</i>	x (31)	

<i>P. bicornata</i>	x (31)	
<i>P. triangulata</i>	x (31)	
<i>Paliurus</i> aff. <i>visibilis</i>	x (31)	x (32)
<i>Paraprotophyllum cordatum</i>	x (31)	
<i>P. ignatianum</i>	x (24, 31)	x (31)
<i>P. pseudopeltatum</i>	x (31)	
<i>Peculnea lancea</i>	x (31)	
<i>P. pinnatiloba</i>	x (31)	
<i>Penzhinia vachrameevii</i>	x (31)	
<i>Phragmites alaskana</i>	x (31)	x (31)
<i>Pistia corrugata</i>		x (33)
<i>Pistia(?) marginata</i>	x (24)	
<i>Platanophyllum</i> sp.		x (54)
<i>Platanus basilobata</i>		x (33)
<i>Platanus cuneifolia</i>	x (24)	
<i>P. cuneiformis</i>	x (24)	
<i>P. embicolia</i>	x (23, 24)	
<i>P. latior</i>		x (32)
<i>P. louravetlanica</i>	x (49)	x (49)
<i>P. reynoldsii</i>	x (18, 31)	x (54)
<i>P. sp.</i>	x (15, 23, 24, 31)	x (31)
<i>Platimelis platanoides</i>	x (31)	
<i>P. umcuvensis</i>	x (31)	

<i>Populites cf. pseudolancastriensis</i>	[52]	x (31)
<i>Potomageton</i>	x (24)	
<i>Protophyllum boreale</i>		x (31)
“ <i>Protophyllum</i> ” <i>terechova</i>	x (31)	
<i>Pseudoprotophyllum boreale</i>	x (20, 31)	x (31)
<i>P. dentata</i>	x (31)	
<i>P. giganteum</i>	x (20)	
<i>P. parvaefolium</i>	x (20)	
<i>P. sp.</i> (2)	x (15, 20, 24)	
<i>Quercus groenlandica</i>	x (31)	
<i>Q. pseudomarioni</i>		x (32)
<i>Q. tchucotica</i>	x (15, 23)	
“ <i>Quercus</i> ” <i>viburnifolia</i>	x (31)	
<i>Quereuxia</i>	x (15, 23, 24)	
<i>Q. angulata</i>	x (16, 24, 31)	x (31)
<i>Q. flabellata</i>	x (31)	
<i>Q. rotundifolia</i>	x (31)	
<i>Rarytkinia amaamensis</i>	x (31)	
<i>R. aff. terechovae</i>	x (18, 31)	x (31)
<i>Rhamnites cornifolia</i>		x (32)
<i>R. cf. eminens</i>	x (31)	
<i>R. septentrionalis</i>	x (31)	
<i>Renea actinidifolia</i>	x (31)	

<i>“Rubus”</i>	x (31)	x (31)
<i>Samaropsis cirrifera</i>	x (31)	
<i>Sapindopsis</i>	x (31)	
<i>Sapotacites cf. alaskensis</i>	x (31)	[3]
<i>Scheffleraephyllum venustum</i>	x (31, 49)	x (31, 49)
<i>Smilax aff. grandifolia</i>	x (31)	
<i>S. sp.</i>		x (31)
<i>Sorbus alaskana</i>		x (32)
<i>Sorbus(?) sp.</i>	x (18)	[3]
<i>Sparganiophyllum multinervosum</i>	x (16)	
<i>S. sp.</i>	x (31)	x (31)
<i>Spirodela scutata</i>		x (54)
<i>Stenorachis lepida</i>	x (31)	
<i>Sterculia basiauriculata</i>		x (32)
<i>S. sp.</i>	x (24)	
<i>Sugio opposita</i>	x (31)	
<i>Terechovia anadyrensis</i>	x (31)	
<i>T. intermedia</i>	x (31)	
<i>Ternstroemites harwoodensis</i>	x (15, 31)	[3]
<i>Tiliaephyllum (Tilia) brooksense</i>		x (31)
<i>T. tsagaianicum</i>	x (24)	
<i>Trochodendrocarpus</i>	x (24)	
<i>Trochodendroides arctica</i>	x (20, 31)	x (31, 54)

<i>T. bidentata</i>	x (18, 31)	
<i>T. bifida</i>	x (31)	
<i>T. emimensis</i>	x (31)	
<i>T. grossidentata</i>	x (31)	
<i>T. lamutensis</i>	x (18, 31)	x (31)
<i>T. longifolia</i>	x (31)	
<i>T. notabilis</i>	x (23, 31)	x (31)
<i>T. pekulnejensis</i>	x (31)	
<i>T. richardsonii</i>	x (20, 31)	
<i>T. sachalinensis</i>	x (31)	
<i>T. smilacifolia</i>	x (20)	
<i>T. speciosa</i>	x (31)	
<i>T. vassilenkoi</i>	x (31)	x (31)
<i>Typha</i>		x (54)
<i>Ulmus oblongifolia</i>		x (31)
<i>U. sp.</i>	x (31)	
<i>Viburniphyllum alnoides</i>	x (31)	
<i>V. basicordatum</i>	x (31)	
<i>V. lebedevii</i>	x (31)	
<i>V. cf. newberrianum</i>	x (31)	
<i>V. whymperi</i>	x (15, 31)	x (31)
<i>Viburnum acutifolium</i>	x (31)	
<i>V. aff. asperum</i>	x (31)	x (33)

<i>V. oblongum</i>	x (31)	
<i>V. pseudoantiquum</i>	x (31)	
<i>V. rarytkense</i>	x (31)	x (31)
<i>V. simile</i>		x (33, 54)
<i>V. stenophyllum</i>	x (31)	
<i>Vitis dakotana</i>		x (33)
<i>Vitis olrikii</i>	x (31)	
“ <i>Vitis</i> ” <i>penzhinica</i>	x (31)	
“ <i>V.</i> ” <i>populoides</i>	x (31)	x (32)
“ <i>V.</i> ” <i>stantoni</i>	x (31)	x (33, 54)
<i>Vitis</i> (24, p. 212)	x (24)	
<i>Zizyphoides colombi</i>		x (33)
<i>Z. heterophylla</i>	x (24)	
<i>Z. mackayi</i>		x (33)
<i>Z. smilacifolia</i>	x (20)	
<i>Z. varietas</i>	x (20)	
<i>Zizyphus anadyrensis</i>	x (31)	
<i>Z. electilis</i>	x (31)	
“ <i>Z.</i> ” <i>kujiensis</i>	x (31)	x (31)
“ <i>Z.</i> ” <i>smilacifolia</i>	x (31)	x (31)

Paleocene

Ferns and allied groups

<i>Amurocyparis</i>	x (29)	
<i>Asplenium? penhallowi</i>		x (54)
<i>Asplenium</i> (a)	x (29)	[3]
<i>Azolla schopfii</i>		x (53)
<i>A.vellus</i>		x (53)
<i>Cladophlebis</i> cf. <i>arctica</i>	x (24)	[3]
<i>C. groenlandica</i>		x (54)
<i>C. oerstedtii</i>	x (24)	
<i>Dennastra sorimarginata</i>		x (53)
<i>Dennstaedtia americana</i>		x (35, 53)
<i>D. blomstrandia</i>		x (54)
<i>D. sp.</i>	x (29)	
<i>Dryopterites georgii?</i>		x (54)
<i>Equisetum alexoensis</i>		x (54)
<i>E. arctium</i>		x (54)
<i>E. boreale</i>		x (54)
<i>E. fluviatoides</i>		x (54)
<i>E. sp.</i>	x (22, 29)	[3]
cf. <i>Isöetites horridus</i>		x (53)
<i>Onaclea hebridica</i>		x (54)
<i>Onoclea hespera</i>		x (35, 53)
<i>O. sp.</i>	x (29)	
<i>Osmunda macrophylla</i>		x (35, 53, 54)

<i>O. sachalinensis</i>	x (24)	
<i>Salvinia</i>	x (29)	[3]
<i>Woodwardia gravida</i>		x (53)
<i>W. sp.</i>	x (24)	[3]

Gymnosperms

<i>Androvettia catenulata</i>		x (54)
<i>Chamaecyparis</i>	x (29)	[3]
<i>Cryptomerites lambii</i>		x (54)
<i>Cupressinocladus (a)</i>	x (29)	[3]
<i>Elatocladus campbellii</i>		x (53)
<i>E. nordenskioldi</i>		x (54)
<i>E. olriki</i>		x (54)
<i>E. tinajorum</i>		x (54)
<i>E. ungeri</i>		x (54)
<i>Fokienia ravenscragensis</i>		x (53)
<i>Fokieniopsis (a)</i>	x (29)	
<i>Ginkgo adianoides</i>	x (21, 24)	
<i>G. biloba</i>		x (35)
<i>G. cretaceae</i>	x (24)	
<i>G. spitsbergensis</i>		x (53)
<i>Ginkgoites adiantoides</i>		x (54)
<i>Glyptostrobus europaeus (b)</i>	x (24)	

<i>G. nordenskioldi</i>		x (35, 53)
<i>Mesocyparis borealis</i>		x (53)
<i>Metasequoia foxii</i>		x (36)
<i>M. occidentalis</i>	x (21, 22)	x (53, w)
<i>Quasisequoia couttsiae</i>	x (29)	
<i>Sequoiites artus</i>		x (54)
<i>S. dakotensis</i>		x (54)
<i>S. langsdorfii</i>		x (54)
<i>Taxites olrikii</i> (b)	x (29)	[3]
<i>Taxodium dubium</i>	x (24)	x (w)
<i>Thuites interruptus</i>		x (54)

Angiosperms

<i>Acer arcticum</i> (a)	x (21)	[3], (54)
<i>Aesculus magnificum</i>	x (21)	x (40)
<i>Alnus beringiana</i>	x (21)	
<i>A. serrata</i>		x (54)
<i>A. sp.</i>	x (24, 29)	x (35)
<i>Amelanchites similis</i>		x (53)
<i>Anoetomeria brongniartii</i>	x (29)	
<i>Apollonias</i>	x (29)	
<i>Aralia alexoensis</i>		x (54)
<i>A. venulosa</i>	x (29)	[3]

<i>Archeampelos acerifolia</i>		x (53)
<i>A. mullii</i>		x (51)
<i>Artocarpus</i>	x (29)	[3]
<i>Betula</i> (b)	x (29)	[3]
<i>Bumelia oblongifolia</i>	x (29)	[3]
<i>Callistemophyllum melaleucaeformae</i>	x (29)	[3]
<i>Carex</i> (b)	x (29)	[3]
<i>Carpinus</i> (b)	x (29)	[3]
<i>Celastrinites insignis</i>		x (54)
<i>Cornophyllum newberryi</i>		x (53)
<i>C. tenuinerva</i>	x (21)	
<i>Cornus denverensis</i>		x (54)
<i>C. krassilovi</i>	x (14)	
<i>Corylites</i>	x (29)	[3]
<i>C. fosteri</i>	x (35)	x (54)
<i>Corylus</i> (a)	x (29)	[3]
<i>Craigia</i> (b)	x (29)	
<i>Cryptomerites</i>	x (29)	
<i>Cyperacites</i>	x (29)	[3]
<i>Daphnogene lanceolata</i>	x (29)	[3]
<i>Davidia</i> (b)	x (29)	[3]
<i>Dewalquea gelindensis</i>	x (29)	
<i>Dombeyopsis nebrascensis</i>		x (54)

<i>Dryandra karakulensis</i>	x (29)	[3]
<i>Dryophyllum</i> sp.		x (54)
<i>Fagopsis</i> (b)	x (29)	[3]
<i>Ficus murczisonii</i> (b)	x (29)	[3]
<i>Hydrangea</i> (b)	x (29)	[3]
<i>Jenkinsella arctica</i>		x (54)
<i>Juglans lecontiana</i>		x (54)
<i>J. nigella</i>		x (54)
<i>J. thermalis</i>		x (54)
<i>Juglans</i> (a)	x (29)	[3]
<i>Laurophyllum laraminum</i>		x (54)
<i>L.</i> sp.	x (29)	[3]
<i>Laurus</i> (b)	x (29)	[3]
<i>Leucothoë protogaea</i> (b)	x (29)	[3, Q]
<i>Limnobiophyllum scutatum</i>	x (16)	x (17)
<i>Lindera</i> (a)	x (29)	[3]
<i>Litsea</i>	x (29)	[3]
<i>Macclintockia</i> (a)	x (29)	[3]
<i>Magnolia embica</i> (a)	x (29)	[3]
<i>Menispermites belli</i>		x (54)
<i>Mimosites</i>	x (29)	[3]
<i>Myrica banksiaefolia</i> (a)	x (29)	[3]
<i>M. beringiana</i>	x (22)	

<i>Myrciophyllum americanum</i>		x (53)
cf. <i>Myristica catahouleensis</i>		x (53)
<i>Nelumbo montanum</i>		x (53)
<i>Nelumbites protoluteus</i>		x (54)
<i>Nelumbo</i> (b)	x (29)	[3]
<i>Nymphaea polyrhiza</i>	x (29)	[3]
<i>Nymphaeites angulatus</i>		x (54)
<i>N. striatus</i>		x (54)
<i>Nyssa bureica</i> (b)	x (29)	[3]
<i>Nyssidium</i> (a)	x (29)	[3, as <i>Cercidiphyllum</i>]
<i>Ocotea</i> (a)	x (29)	[3]
<i>Oxycarpia bifaria</i>	x (29)	
<i>Palaeocarpinus</i>	x (29)	
<i>Paranymphaea crassifolia</i>		x (53, 54)
<i>Peltandra</i>	x (29)	[3]
<i>Persea enormis</i> (b)	x (29)	[3]
<i>P. paleomorpha</i>	x (29)	
<i>Phoebe</i> (b)	x (29)	[3]
<i>Phragmites</i> (a)	x (29)	[3]
<i>Pistia corrugata</i>		x (53, 54)
<i>Platanites canadensis</i>		x (53)
<i>Platanus basicordata</i> (a)	x (21)	[3]

<i>P. basilobata</i>		x (54)
<i>P. raynoldsii</i>		x (54)
<i>Poacites</i>	x (29)	[3]
<i>Populus carneosa</i>		x (54)
<i>P. daturaefolia</i>		x (54)
<i>P. penhallowi</i>		x (54)
<i>P. raynoldsii</i>	x (29)	
<i>P. snatolensis</i> (b)	x (21)	[3]
<i>P. sp.</i>	x (22, 24)	
<i>Porosia</i>	x (29)	
<i>Protoacerophyllum perfoliatum</i>	x (29)	
<i>Protophyllum</i> (a)	x (24)	[3]
<i>Prunites maclearnii</i>		x (53)
<i>Pterocarya</i> (b)	x (29)	[3]
<i>Pterospermites dawsoni</i>		x (54)
<i>P. haguei</i> ?		x (54)
<i>P. whitei</i>		x (54)
<i>Quercus praegroenlandica</i>		x (54)
<i>Rhamnites cleburnii</i>		x (53)
<i>R. marginatus</i>		x (54)
<i>R. ovatus</i>		x (54)
<i>Rorippides aquatica</i>		x (53)
“ <i>Sapindus</i> ” <i>affinis</i>	x (35)	[3]

<i>cf. Sapindus grandifoliolus</i>		x (53)
<i>S. sp.</i>	x (29)	
<i>Sideroxylon</i> (b)	x (29)	[3]
<i>Sorbus</i> (a)	x (29)	[3]
<i>Spirodela scutata</i>		x (54)
<i>Tetracentron</i> (b)	x (29)	
<i>Tiliaephyllum brookense</i>		x (51)
<i>T. sp.</i>	x (29)	
<i>Trapago angulata</i>		x (53)
<i>Trochodendrocarpus</i>	x (29)	
<i>Trochodendroides arctica</i>	x (21, 22, 24, 29)	x (35, 54)
<i>T. flabella</i>		x (53)
<i>T. serrulata</i>		x (35)
<i>T. speciosa</i>		x (53)
<i>Ulmus furcinervis</i>	x (29)	[3]
<i>U. cf. longifolia</i>	x (24)	
<i>U. pseudobraunii</i>	x (21, 24)	
<i>Ushia alnifolia</i>	x (29)	
<i>U. janishevskii</i>	x (29)	
<i>U. kamyschinensis</i>	x (29)	
<i>Viburnum antiquum</i> (a)	x (21)	[3], x (54)
<i>V. asperum</i>		x (54)

<i>V. lakesii</i>		x (54)
<i>V. ravenscragensis</i>		x (53)
<i>V. simile</i>		x (54)
<i>V. trinervum</i>		x (54)
<i>V. volgensie</i>	x (29)	
<i>Vitis stantoni</i>		x (54)
<i>V. sp.</i>		x (53)
<i>Zingiberopsis</i>	x (29)	
<i>Zizyphoides colombi</i>		x (54)
<i>Z. mackayi</i>		x (54)

Eocene

Ferns and allied groups

<i>Acrostichum</i>	x (29)	[3]
<i>Anemia gunni</i>		x (37)
<i>Anemia</i>	x (29)	
<i>Azolla vera</i>	x (29)	[3]
<i>Blechnum akartscheschmens</i>	x (29)	[3]
<i>Cyclosorus</i>	x (29)	
<i>Dennstaedtia americana</i>	x (1, 21, 22 29)	x (3, w)
<i>Dryopteris alaskana</i>		x (37)
<i>D. grosseserrata</i>	x (1, 21)	

<i>Equisetum arcticum</i>	x (1, 21, 29)	x (w, 3)
<i>Hydropteris indutus</i> (3)	x (29)	
<i>Lastrea badchyzica</i>	x (29)	[3]
<i>Lygodium asiaaticum</i>	x (29)	
<i>L. coloradense</i>	x (29)	
<i>L. larsoni</i>		x (37)
<i>Onoclea hesperia</i> (a)	x (29)	[3]
<i>Osmunda macrophylla</i>	x (1, 21, 22, 29)	x (BC, 2)
<i>O. sachalinensis</i>	x (29)	
<i>Osmundastrum heisljanum</i>	x (1, 21, 22)	
<i>Polypodites nepphrotiopsis</i>	x (29)	[3]
<i>Regnellidium</i>	x(29)	
<i>Salvinia mildeana</i> (b)	x (29)	[3]
<i>S. natanella</i>	x (29)	
<i>Woodwardia</i> (b)	x (29)	[3]
<u>Gymnosperms</u>		
<i>Abies tigilensis</i> (b)	x (1, 21)	[3]
<i>Araucaria dubia</i>	x (1, 21)	
<i>Athrotaxis</i>	x (29)	[3]
<i>Cryptomeria kamtschatica</i> (a)	x (1, 21)	
<i>Cunninghamia sinelnikova</i> (a)	x (1, 21)	[3]

<i>Doliosirobus</i>	x (29)	
<i>Ginkgo adiantoides</i> (a)	x (1, 21, 29)	[3]
<i>G. kamtschatica</i>	x (22, 29)	
<i>Glyptostrobus europaeus</i>	x (1, 29)	x (5, w)
<i>G. groenlandicus</i>	x (21)	
<i>G. nordenskioldii</i>	x (22)	
<i>G. sp.</i>		x (37)
<i>Larix</i> (b)	x (29)	[3]
<i>Metasequoia glyptostroboides</i>		x (37)
<i>M. occidentalis</i>	x (1, 21, 22, 29)	x (6, w)
<i>Picea sp.</i> (b)	x (1, 29)	[3]
<i>Pinus kovatschensis</i>	x (1, 21)	[3]
“ <i>Podocarpus</i> ” <i>eocenica</i> (b)	x (29)	[3]
<i>Pseudolarix</i> (b)	x (29)	[3]
<i>Quasisequoia couttsiae</i>	x (29)	
<i>Sciadopitys sveshnikovae</i> (b)	x (1, 21)	[3]
<i>Sequoia affinis</i>	x (1, 21)	x (7, w)
<i>Taxodium dubium</i>	x (1, 21, 29)	x (5, w)
<i>T. tinajorum</i>	x (29)	
<i>Thuites napanensis</i> (a)	x (1, 21)	[3]
<i>Torreya kamschatica</i>	x (1)	[3]
<i>T. seminovii</i>	x (21)	

Angiosperms

<i>Acer arcticum</i>	x (1, 21, 22)	x (11)
<i>A. ezoanum</i>	x (29)	
<i>A. glabroides</i>		x (37)
<i>A. kinkilense</i>	x (1, 21)	
<i>A. cf. kushiroanum</i>	x (29)	
<i>A. cf. palaeoplatanoides</i>	x (29)	
<i>Actinidia ovata</i> (b)	x (21)	
<i>A. semenovii</i>	x (1)	
<i>Aesculus hickeyi</i>		x (40)
<i>A. magnifica</i>	x (22, 29)	
<i>Ailanthus</i> (b)	x (29)	[3]
<i>Alangium bergensis</i>		x (37)
<i>A. lenaense</i>	x (1, 21)	
<i>Alnus beringiana</i>	x (22)	
<i>A. cuprovallis</i>		x (37)
<i>A. ezoensis</i>	x (29)	
<i>A. hokkadoensis</i>	x (29)	
<i>A. ishikariensis</i>	x (29)	
<i>A. kushiroensis</i>	x (29)	
<i>A. onorica</i>	x (29)	
<i>A. protophylloides</i>	x (1, 21, 29)	

<i>A. raridentata</i>	x (1)	
<i>Ampelopsis cercidifolia</i> (b)	x (1)	[3]
<i>A. cordifolia</i>	x (21)	
<i>A. schischkinii</i>	x (29)	
<i>Amygdalus turcmenensis</i> (b)	x (29)	[3]
<i>Anacardites badchyzicus</i>	x (29)	[3]
<i>Andromeda</i>	x (29)	[3]
<i>Apocynophyllum helveticum</i>	x (25)	[3]
<i>Archeampelos acerifolia</i>	x (29)	
(= <i>Acer arcticum</i> fide 29)		
<i>Arunidites roginiei</i>	x (29)	[3]
<i>Asclepiadites</i>	x (21)	[3]
<i>Astronium ninae</i> (b)	x (29)	[3]
<i>Banksia myricifolia</i> (b)	x (29)	[3]
<i>Betula acutidentata</i>	x (1, 21)	
<i>B. sp.</i>		x (37)
<i>Broussonetia kamtschatica</i> (b)	x (1, 21)	
<i>Byttneria iizimae</i> (b)	x (29)	
<i>Camellia</i> (b)	x (29)	
<i>Carpinus japonica</i> (4)	x (29)	x (w)
<i>C. kushiroensis</i>	x (29)	
<i>Carya atlasovii</i>	x (21)	
<i>C. casmanensis</i>		x (37)

<i>C. grandidentata</i>	x (21)	
<i>C. typical</i>	x (29)	
<i>Cassia</i> (b)	x (29)	[3]
<i>Castanea kamtschatica</i> (b)	x (1, 21, 29)	[3]
<i>C. longifolia</i>	x (29)	
<i>C. sachalinensis</i>	x (29)	
<i>Castanopsis kazachstanensis</i> (b)	x (29)	[3]
<i>C. pavlodarensis</i>	x (29)	
<i>Ceanothus rectinervus</i> (b)	x (1, 21)	[3]
<i>Cedrela</i> (b)	x (29)	[3]
<i>Celtis</i> (b)	x (29)	[3]
<i>Cercidiphyllum crenatum</i>		x (37)
<i>C. grandifolium</i>	x (1)	
<i>C. intermedium</i>	x (1, 21, 29)	
<i>C. kamtschaticum</i>	x (1, 21)	
<i>Cinnamophyllum kushtakensis</i>		x (37)
<i>C. sp.</i>	x (29)	
<i>Cissites ochotensis</i> (a)	x (29)	[3]
<i>Cissus beringiana</i> (b)	x (21)	[3]
<i>Coccoloba</i> (b)	x (29)	[3]
<i>Cocculus ezoanum</i>	x (29)	
<i>C. sp.</i>		x (37)
<i>Comptonia</i> (b)	x (29)	[3]

<i>Cordia ochotensis</i> (b)	x (21)	[3]
<i>Cornophyllum</i> sp.	x (1, 21, 22; see 14)	
<i>Corylopsiphyllum carpinifolium</i>	x (21)	
<i>Corylopsis kamtschatica</i>	x (21, 22)	
<i>C.</i> sp.		x (37)
<i>Corylus kinkilensis</i> (4)	x (1, 21)	x (w)
<i>C. palaeomaximovicziana</i>	x (29)	
<i>Cotinus</i>	x (29)	[3]
<i>Cragia oregonensis</i> (b)	x (29)	
<i>Crataegus</i> (b)	x (29)	[3]
<i>Daphne</i> (b)	x (29)	[3]
<i>Daphnogene</i>	x (29)	[3]
<i>Davidoidea kamschatica</i>	x (22)	
<i>Delavaya</i>	x (29)	
<i>Diospyros dubiosa</i> (a)	x (1)	[3]
<i>Dombeya</i> (b)	x (29)	
<i>Dryophyllum curticellense</i>	x (29)	
<i>D. dewalque</i>	x (29)	
<i>D. kryshtofovichii</i>	x (29)	
<i>D. pugetensis</i>		x (37)
<i>Echitonium</i>	x (29)	[3]
<i>Eotrigonobalanus</i>	x (29)	

<i>Eucalyptus</i> (b)	x (29)	[3]
<i>Eugenia haeringiana</i>	x (29)	
<i>E. kirshiensis</i>	x (29)	
<i>E. sp.</i>		x (37)
<i>Euonymus denticulata</i>	x (29)	[3]
<i>Euphorbiophyllum erodofolium</i>	x (21)	[3]
<i>E. insolitum</i>	x (1)	
<i>Fagopsis nipponica</i>	x (29)	
<i>F. undulata</i>	x (1)	x (9, 10)
<i>Fagus napanensis</i>	x (1, 21, 29)	
<i>F. sp.</i>		x (37)
<i>Ficus spiculifolia</i> (b)	x (29)	[3]
<i>Firmiana alaskana</i>		x (37)
<i>F. kovatschensis</i>	x (1, 21)	
<i>Fothergilla</i>	x (29)	x (37)
<i>Fraxinus</i> (b)	x (29)	[3]
<i>Grewiopsis auriculaecordatus</i>	x (21)	[3]
<i>G. conjuctivus</i>	x (21)	
<i>Guoania</i>	x (29)	
<i>Hakea spathulata</i> (b)	x (29)	[3]
<i>Hamamelites kinkilensis</i>	x (1)	[3]
<i>H. palanensis</i>	x (21)	
<i>H. snatolensis</i>	x (22)	

<i>H. viburnifolius</i>	x (21)	
<i>Hamamelis kushiroensis</i> (b)	x (29)	[3]
“ <i>Hibiscus</i> ” <i>kalmakpaica</i>	x (29)	[3]
“ <i>H.</i> ” <i>neuburgae</i>	x (29)	
<i>Hydrangea alnifolia</i> (b)	x (21, 22)	[3]
<i>Idesia romanovii</i> (b)	x (29)	[3]
<i>Juglans beringiana</i>	x (21)	
<i>J. palaeocathayensis</i>	x (22)	
<i>J. pogozhevii</i>	x (1, 21, 29)	
<i>J. protocinerea</i>	x (1, 29)	
<i>J. sp.</i>		x (37)
<i>Kalopanax latifolia</i> (b)	x (21)	
<i>Kleinhovia bastiruncata</i> (b)	x (29)	
<i>Koelreuteria kamtschtica</i> (b)	x (1, 21)	[3]
<i>Laurus</i> (b)	x (29)	[3]
<i>Leucothoë protogaea</i> (b)	x (29)	[3]
<i>Limnobiophyllum</i> (a)	x (29)	
<i>Lindera vassilenkoi</i> (a)	x (29)	
<i>Liquidambar brevilobata</i>	x (1, 29)	
<i>L. europaea</i>	x (29)	
<i>L. kazakhstanica</i>	x (29)	
<i>L. miosinica</i>	x (29)	
<i>L. sp.</i>		x (37)

<i>Lithocarpus</i> (b)	x (29)	[3]
<i>Litsea</i> (b)	x (29)	[3]
<i>Litseaphyllum carbonensis</i>		x (37)
<i>Lomatia macrophylla</i> (b)	x (29)	[3]
<i>Macclintockia pugetensis</i>	[52]	x (37)
<i>Macginitiea grandifolia</i>	x (1, 21)	
<i>M. kanei</i>	x (29)	
<i>Magnolia basicordata</i> (a)	x (22)	
<i>M. kryshstofovichii</i>	x (29)	
<i>M. ochotica</i>	x (21)	
<i>M. praekobus</i>	x (1, 21, 29)	
<i>M. reticulata</i>		x (37)
<i>Majanthemophyllum</i>	x (29)	[3]
<i>Melastomites</i>	x (29)	
<i>Mallotus hokkaidoensis</i> (b)	x (29)	[3]
<i>Musophyllum complicatum</i>	x (1, 21)	x [9, 12, 13 (as <i>Mussopsis</i>)]
<i>Myrica acuminata</i> (b?)	x (29)	[3]
<i>M. beringiana</i>	x (1, 21, 29)	
<i>M. dilodendrofolia</i>	x (29)	
<i>M. cf. lignitum</i>	x (29)	
<i>M. longifolia</i>	x (25)	
<i>M. ovalifolia</i>	x (29)	

<i>M. vindobonensis</i>	x (29)	
<i>Myrsine</i> (b)	x (29)	[3]
<i>Nelumbo nipponica</i> (b)	x (29)	[3]
<i>N. protospeciosa</i>	x (21)	
<i>Neolitsea</i>	x (29)	[3]
<i>Nitophyllites</i>	x (29)	
<i>Nordenskioldia borealis</i>	x (22, 29)	[3]
<i>N. sp.</i>	x (38, 39)	x (38, 39)
<i>Nyssidium arcticum</i> (a)	x (22, 29)	[3]
<i>Nuphar</i> (b)	x (29)	
<i>Nypa burtinii</i>	x (29)	(w, tropical)
<i>Nyssa dubiosa</i> (b)	x (21)	
<i>N. integerrima</i>	x (1)	
<i>Ocotea</i> (a)	x (29)	
<i>Oxycarpia</i>	x (29)	
<i>Palibinia pinnatifida</i>	x (25)	
<i>Peltandra</i> (b)	x (29)	[3]
<i>Persea</i> (b)	x (29)	[3]
<i>Phellodendron kovatschense</i>	x (21)	
<i>Phragmites</i>	x (22)	[3]
<i>Phytocrene acutissima</i>		x (37)
<i>P. sp.</i>	x (29)	
<i>Pittosporum</i>	x (29)	

<i>Plafkeria basiobliqua</i>	x (29)	
<i>Platanus acutiloba</i>	x (29)	
<i>P. comstocki</i>		x (37)
<i>P. iljinskajae</i>	x (22)	
<i>P. insolida</i>	x (21)	
<i>P. mabuti</i>	x (29)	
<i>P. newberriana</i>	x (29)	
<i>P. snatolana</i>	x (1)	
<i>P. zhuravlevii</i>	x (29)	
<i>Platycarya pseudobrauni</i>		x (37)
<i>P. sp.</i>	x (29)	
<i>Populus arnaudii</i>	x (29)	
<i>P. budantsevii</i>	x (1, 21, 29)	
<i>P. celastrophylla</i>	x (29)	
<i>P. gigantophylla</i>	x (21, 22, 29)	
<i>P. grandifolia</i>	x (29)	
<i>P. iljinskaja</i>	x (29)	
<i>P. kryshthofovichii</i>	x (29)	
<i>P. microdentata</i>	x (21, 29)	
<i>P. napanensis</i>	x (21)	
<i>P. snatolensis</i>	x (22)	
<i>P. sp.</i>		x (37)
<i>Posidonia parisiensis</i>	x (29)	

<i>Pterocarya antiqua</i>	x (21)	
<i>P. pugetensis</i>		x (37)
<i>Quercus furuhjelmi</i>		x (37)
<i>Q. irtyshensis</i>	x (29)	
<i>Q. kornilovae</i>	x (29)	
<i>Q. stolbovii</i>	x (1)	
<i>Rhamnus</i>	x (29)	x (37)
<i>Rhododendron mainachense</i> (b)	x (1, 21)	[3]
<i>Rhus angustifolia</i>	x (29)	
<i>R. cf. mixta</i>		x (37)
<i>R. turcomanica</i>	x (25, 29)	
<i>Rubus fretalis</i> (b)	x (29)	[3]
<i>Sabal</i> (b)	x (29)	[3]
<i>Sabalites</i>		x (37)
<i>Sassafras</i> (b)	x (22, 29)	[3]
<i>Sorbaria</i>	x (29)	
<i>Spondylos</i>	x (29)	
<i>Sterculia kalkamanica</i> (b)	x (29)	[3]
<i>Ternstroemites kamtschaticus</i>	x (1)	[3]
<i>Tetracentron piperoides</i>		x (37, 39)
<i>T. sp.</i>	x (29)	
<i>Tetracera</i>	x (29)	[3]
<i>Tilia beringiana</i>	x (21)	

<i>T. carbonensis</i>		x (37)
<i>T. eojaponica</i>	x (29)	
<i>T. rectinervis</i>	x (21)	
<i>Trochodendroides arctica</i>	x (1, 21, 22, 29)	x (8, BC)
<i>T. plutonii</i>	x (1, 21)	
<i>Tsukada tiliifolia</i>	x(?)	
<i>Typha</i> (b)	x (29)	[3]
<i>Ulmites pacifica</i>	x (22)	
<i>Ulmus compacta</i>	x (1, 21, 29)	
<i>U. ezoana</i>	x (29)	
<i>U. harutoriensis</i>	x (29)	
<i>U. latiserrata</i>	x (1)	
<i>U. longifolia</i>	x (29)	
<i>U. monstrosa</i>	x (21)	
<i>U. sp.</i>		x (37)
<i>Ungnandia kryshtofovichii</i>	x (29)	[3]
<i>Ushia</i>	x (29)	
<i>Vaccinium</i> (b)	x (29)	[3]
<i>Viburnum antiquum</i> (a)	x (22)	
<i>V. gracile</i>	x (21)	
<i>Vitis grigorenkoi</i>	x (21)	
<i>V. microdentata</i>	x (22)	

<i>V. sachalinensis</i>	x (29)	
<i>V. sp.</i>		x (37)
<i>Zelkova kushiroensis</i> (b)	x (29)	[3]
<i>Z. zelkovaefolia</i>	x (29)	
<i>Zingiberites borealis</i>	x (29)	[3]
<i>Zingiberopsis</i> (b)	x (29)	
<i>Zizyphus alaskanus</i>		x (37)
<i>Z. sp.</i>	x (29)	

Oligocene

Ferns and allied groups

<i>Osmunda claytonites</i>		x (41)
<i>O. heeri</i>	x (25)	
<i>Salvinia mildeana</i>	x (25)	[3]

Gymnosperms

<i>Cedrus cf. atlantica</i>	x (25)	
<i>C. perialata</i>		x (41)
<i>Glyptostrobus europaeus</i>	x (25)	
<i>G. vacuipites</i>		x (41)
<i>Metasequoia disticha</i> (5)	x (25)	
<i>M. papillapollenites</i>		x (41)
<i>Pinus flexuosa</i>	x (25)	
<i>P. sp.</i>		x (41)

<i>Sequoia abietina</i>	x (25)	
<i>S. affinis</i>		x (43)
<i>Taxodium dubium</i>	x (25)	
<i>T. hiatipites</i>		x (44)
<i>Taxus palaeocuspidata</i>	x (25)	[3]

Angiosperms

<i>Acer aegopodiifolium</i>	x (25)	
<i>A. chaneyi</i>		x (42)
<i>A. compositifolium</i>	x (25)	
<i>A. kenaicum</i>		x (42)
<i>A. kinjakense</i>	x (25)	
<i>A. monoides</i>	x (25)	
<i>A. paleosaccharinum</i>	x (25)	
<i>A. cf. saccharinum</i>	x (25)	
<i>A. subcampestre</i>	x (25)	
<i>Ailanthus americana</i>		x (43)
<i>A. confucii</i>	x (25)	
<i>Alnus hersutiiformis</i>	x (25)	
<i>A. jeroniae</i>	x (25)	
<i>A. korniloviae</i>	x (25)	
<i>A. aff. martini</i>		x (37)
<i>A. neuburgiae</i>	x (25)	

<i>A. protomaximowiczii</i>		x (43)
<i>A. schmalhauseni</i>	x (25)	
<i>A. verus</i>		x (41)
<i>Ampelopsis</i> cf. <i>delavayana</i>	x (25)	[3]
<i>A. schischkinii</i>	x (25)	
<i>Aponogeton czokusianus</i>	x (25)	
<i>A. tertiaries</i>	x (25)	
<i>Asclepias zaissanica</i>	x (25)	[3]
<i>Astronium ninae</i>	x (25)	
<i>A. truncatum</i>		x (43)
<i>Betula claripites</i>		x (41)
<i>B. subpubescens</i>	x (25)	
<i>B. thor</i>		x (43)
<i>Carex scheuchzeri</i>	x (25)	[3]
<i>Carpinus lanceolata</i> (a)	x (25)	[3]
<i>Carya juxtaporipites</i>		x (41)
<i>C. libbeyi</i>		x (43)
<i>C. sp.</i>	x (25)	
<i>Castanea antipovii</i>	x (25)	
<i>C. dolichophylla</i>		x (43)
<i>C. protocrenata</i>	x (25)	
<i>C. zaisanica</i>	x (25)	
<i>Cedrela lancifolia</i>		x (43)

<i>C. sp.</i>	x (25)	
<i>Celastrus aralensis</i>	x (25)	
<i>C. oregonensis</i>		x (43)
<i>Cercidiphyllum arcticum</i>		x (43)
<i>C. crenatum</i>	x (25)	
<i>Cocculus heteromorpha</i>		x (43)
<i>C. schischkinii</i>	x (25)	
<i>Comptonia acutiloba</i>	x (25)	[3]
<i>Cornus cornella</i>		x (43)
<i>C. graeffii</i>	x (25)	
<i>C. studeri</i>	x (25)	
<i>Corylus jarmolenkoi</i>	x (25)	
<i>C. sp.</i>		x (41)
<i>Cotinus lavrovii</i> (a)	x (25)	
<i>Crataegus pacifica</i>		x (43)
<i>C. sp.</i>	x (25)	
<i>Cyperacites angustifolia</i>	x (25)	[3]
<i>Diospyros brachysepala</i>	x (25)	
<i>D. kryshstofovichii</i>	x (25)	
<i>D. oregoniana</i>		x (43)
<i>Eucalyptus borissoyii</i>	x (25)	[3]
<i>Eucommia borissoyii</i>	x (25)	
<i>E. montana</i>		x (43)

<i>E. palaeoulmoides</i>	x (25)	
<i>Euonymus pacificus</i>		x (43)
<i>E. proserpinae</i>	x (25)	
<i>Fagus antipofii</i>	x (25)	
<i>F. granulata</i>		x (41)
<i>Firmiana</i>	x (25)	
<i>Fraxinus columbiana</i>		x (41)
<i>F. dubia</i>	x (25)	
<i>Hemiptelea kryshstofovichii</i>	x (25)	
<i>Hovenia thunbergii</i>	x (25)	
<i>Juglans horniana</i>		x (41)
<i>J. sp.</i>	x (25)	
<i>Laurus aff. nobilis</i>	x (25)	[3]
<i>Lindera vassilenkoi</i> (b)	x (25)	[3]
<i>Liquidambar europaea</i>	x (25)	
<i>L. manucoica</i>	x (25)	
<i>L. sp.</i>		x (41)
<i>Magnolia reticulata</i>		x (37)
<i>M. takhtajanii</i>	x (25)	
<i>Mimosites acaciafolius</i>		x (43)
<i>M. sp.</i>	x (25)	
<i>Myrica annulites</i>		x (41)
<i>M. cf. lignitum</i>	x (25)	

<i>M. longifolia</i>	x (25)	
<i>M. serrulata</i>		x (43)
<i>Nelumbo protospeciosa</i>	x (25)	
<i>N. sp.</i>		x (43)
<i>Nyssa</i>	x (25)	x (41)
<i>Palibinia pinnatifida</i>	x (25)	
<i>Phragmites alaskana</i>		x (43)
<i>P. oeningensis</i>	x (25)	
<i>Phellodendron grandifolium</i> (b)	x (25)	
<i>Pistacia zaisanica</i>	x (25)	
<i>Platanus comstocki</i>		x (37)
<i>P. dissecta</i>		x (43)
<i>P. vassilijevii</i>	x (25)	
<i>Poacites</i>	x (25)	[3]
<i>Populus arnaudii</i>	x (25)	
<i>P. balsamoides</i>		x (43)
<i>P. mutabilis</i>	x (25)	
<i>Physocarpus</i>	x (25)	
<i>Pterocarya paradisiaca</i>	x (25)	
<i>P. stellatus</i>		x (41)
<i>Quercus alexeevii</i>	x (25)	
<i>Q. borissovii</i>	x (25)	
<i>Q. convexa</i>		x (43)

<i>Q. klinkerishica</i>	x (25)	
<i>Q. oxyodon</i>	x (25)	
<i>Q. palaeoserrata</i>	x (25)	
<i>Q. parainfectoria</i>	x (25)	
<i>Q. parazaisanica</i>	x (25)	
<i>Q. patelliformis</i>	x (25)	
<i>Q. protopontica</i>	x (25)	
<i>Q. pseudorobur</i>	x (25)	
<i>Q. shiabensis</i>		x (41)
<i>Q. zaisanica</i>	x (25)	
<i>Rhamnus rectinervis</i> (a)	x (25)	
<i>Rhus altynica</i>	x (25)	
<i>R. klinkerishica</i>	x (25)	
<i>R. miosuccedanea</i>		x (43)
<i>R. turocomanica</i>	x (25)	
<i>Salix truckeana</i>		x (43)
<i>S. sp.</i>	x (25)	
<i>Sorbus praetorminalis</i> (a)	x (25)	[3]
<i>Spiraea danibekii</i>	x (25)	[3]
<i>Strelitzia borealis</i>	x (25)	
<i>Toxicodendron junnanense</i>	x (25)	
<i>Typha latissima</i>	x (25)	
<i>T. lesquereuxi</i>		x (43)

<i>Ulmus carpinoides</i>	x (25)	
<i>U. drepanodonta</i>	x (25)	
<i>U. paucidentata</i>		x (43)
<i>U. schischkinii</i>	x (25)	
<i>Vitis cf. vulpina</i> (a)	x (25)	[3]
<i>Zelkova ungeri</i>		x (43)
<i>Z. zelkovifolia</i>	x (25)	

Miocene

Ferns and allied groups

<i>Dryopteris</i>	x (30)	x (35, 45)
<i>Equisetum</i>	x (47)	x (35)
<i>Onoclea sensibilis</i>	x (47)	x (35, 45)
<i>Osmunda doroshiana</i>	x (47)	
<i>O. heeri</i>	x (25)	
<i>O. sp.</i>		x (44)
<i>Salvinia mildeana</i>	x (25)	[3]

Gymnosperms

<i>Ginkgo biloba</i> (7)		x (35, 45)
<i>Glyptostrobus europaeus</i>	x (25, 47)	x (35, 45)
<i>Keteleeria</i>	x (30)	x (46)
<i>Larix cf. L. omoloica</i>	x (47)	

<i>L. sp.</i>	x (30)	x (44)
<i>Metasequoia disticha</i>	x (25, 47)	
<i>M. glyptostrobooides</i>		x (35, 45)
<i>Picea koeftiensis</i>	x (47)	
<i>P. sp.</i>		x (44)
<i>Pinus cf. ponderosa</i>		x (35)
<i>P. sp.</i>	x (30)	
<i>Pseudolarix fossilis</i>	x (25)	
<i>P. sp.</i>	x (47)	x (36)
<i>Sequoia sempervirens</i> (8)		x (35)
<i>S. sp.</i>		x(44)
<i>Taxodium distichum</i>		x (35)
<i>T. dubium</i>	x (25, 47)	

Angiosperms

<i>Acer aegopodiifolium</i>	x (25)	
<i>A. chaneyi</i>		x (42)
<i>A. compositifolium</i>	x (25)	
<i>A. ezoanum</i>		x (35)
<i>A. monoides</i>	x (25)	
<i>A. palaeosaccharinum</i>	x (25)	
<i>Alangium mikii</i>		x (45)
<i>A. sp.</i>	x (30)	

<i>Alfaropsis</i>	x (30)	
<i>Alnus barnesi</i>		x (35)
<i>A. feroniae</i>	x (25)	
<i>A. hirsutiformis</i>	x (25)	
<i>A. kerniloviae</i>	x (25)	
<i>A. schmalhauseni</i>	x (25)	
<i>Apocynophyllum helveticum</i>	x (25)	[3]
<i>Aponogeton czokusianus</i>	x (25)	
<i>Betula sublutea</i>		x (35)
<i>B. subpubescens</i>	x (25)	
<i>Carex</i>	x (28)	[3]
<i>Carpinus cappensis</i>		x (35)
<i>C. sp.</i>	x (30)	
<i>Carya bendieri</i>		x (35)
<i>C. sp.</i>	x (30)	
<i>Castanea antipovii</i> (b)	x (25)	[3]
<i>Celastrus aralensis</i> (a)	x (25)	[3]
<i>Celtis japeti</i>	x (25)	
<i>C. sp.</i>		x (44, 45, 46)
<i>Cercidiphyllum crenatum</i>	x (25, 47)	x (35)
<i>Cercis turgaica</i>	x (25)	[3]
<i>Cissus</i> (b)	x (30)	[3]
<i>Cladrastis japonica</i>		x (35, 46)

<i>C. sp.</i>	x (30)	
<i>Comptonia acutiloba</i>	x (25)	
<i>C. cf. naumani</i>		x (35)
<i>Cornus graeffii</i>	x (25)	
<i>C. sp.</i>		x (35)
<i>Corylus harrimani</i>		x (35)
<i>C. jarmolenkoi</i>	x (25)	
<i>Cotinus lavrovii</i>	x (25)	
<i>Crataegus itelmenensis</i>	x (47)	
<i>C. sp.</i>	x (25)	x (35, 46)
<i>Davidia</i>	x (30)	
<i>Desmodium</i>	x (30)	[3]
<i>Eucommia cf. montana</i>		x (45)
<i>E. sp.</i>	x (30)	
<i>Fagus antipofii</i>	x (25)	x (35)
<i>F. chankaica</i>	x (30)	
<i>F. evenensis</i>	x (30)	
<i>Fraxinus dubia</i>	x (25)	
<i>F. kenaica</i>		x (45)
<i>Hovenia thunbergii</i>	x (25)	
<i>Hydrangea minima</i>	x (47)	
<i>H. sp.</i>		x (46)
<i>Idesia</i>	x (30)	[3]

<i>Ilex</i>	x (30)	x (44)
<i>Indigofera</i>	x (30)	
<i>Juglans</i>	x (25, 30)	
<i>J. type (9)</i>		x (44)
<i>Liquidambar europaea</i>	x (25)	
<i>L. mioformosana</i>		x (35)
<i>Lindera</i>	x (30)	[3]
<i>Litsea</i>	x (30)	[3]
<i>Magnolia takhtajanii</i>	x (25)	[3]
<i>Meliosma</i>	x (30)	[3]
<i>Microtropis</i>	x (30)	
<i>Myrica czokusiana</i>	x (25)	
<i>M. sp.</i>		x (35, 46)
<i>Nelumbo protospeciosa</i>	x (25)	[3]
<i>Nuphar</i>	x (25)	x (35, 46)
<i>Nyssa knowltoni</i>		x (35)
<i>N. sp.</i>	x (30)	x (35, 44, 46)
<i>Ostrya</i>	x (30)	[3]
<i>Paliurus</i>	x (30)	[3]
<i>Parrotia prisitina</i>	x (25)	[3]
<i>Periploca kryshtofocichii</i>	x (25)	
<i>Phellodendron grandifolium</i>	x (25, 47)	
<i>Phragmites oeningensis</i>	x (25)	[3]

<i>Platanus bendirei</i> (a)		x (35, 45)
<i>Populus kenaiana</i>		x (35)
<i>P. populina</i>	x (25)	
<i>Potamogeton alaskanus</i>		x (45)
<i>P. sp.</i>	x (28, 44)	x (35, 46)
<i>Prunus rubeshibensis</i>	x (47)	
<i>P. sp.</i>		x (46)
<i>Pterocarpa mixta</i>		x (35)
<i>P. paradisiaca</i>	x (25)	
<i>Pterocarya nigella</i>		x (44)
<i>P. kamtschatica</i>	x (47)	
<i>Quercus alexeevii</i>	x (25)	
<i>Q. bretzi</i>		x (35)
<i>Q. pseudorobur</i>	x (25)	
<i>Rhamnus</i>		x (46)
<i>R. sp.</i>	x (47)	
<i>Rhus altynica</i>	x (25)	
<i>R. aff. glabra</i>		x (35)
<i>Rosa</i>	x (47)	x (46)
<i>Salix cappsensis</i>		x (35)
<i>S. itelmenensis</i>	x (47)	
<i>Scirpus</i>	x (25)	[3]
<i>Sorbus gabrieljaniae</i>	x (25)	[3]

<i>Sparganium</i>	x (28)	x (44, 46)
<i>Spatholobus</i>	x (30)	
<i>Spiraea korfiensis</i>	x (47)	
<i>S. sp.</i>		x (46)
<i>Strelitzia borealis</i>	x (25)	
<i>Tilia</i>	x (25)	x (35, 44, 46)
<i>Trapa</i>	x (25)	x (46)
<i>Trochodendron</i>	x(38, 39)	x (38,39)
<i>Typha latissima</i>	x (25)	
<i>T. sp.</i>		x (35, 44, 46)
<i>Ulmus carpinoides</i>	x (25)	
<i>U. drepanodonta</i>	x (25)	
<i>U. longifolia</i>		x (35, 46)
<i>Zelkova oregoniana</i>		x (35)
<i>Z. sp.</i>	x (30)	

Pliocene

Ferns and allied groups

<i>Lycopodium</i>	(w)	x (48)
<i>Pteridium</i>	(w)	x (48)
<i>Selaginella</i>	(w)	x (48)

Gymnosperms

<i>Abies</i>	x (26, 28)	x (48)
<i>Ephedra</i>	x (27)	

<i>Larix</i>	x (26, 29)	x (48)
<i>Picea</i>	x (26, 28, 29)	x (48)
<i>Pinus</i>	x (26, 28, 29)	x (48)
<i>Taxodium</i>	x (26)	
<i>Tsuga</i>	x (26, 28, 29)	
 <u>Angiosperms</u>		
<i>Acer</i>	x (26)	[3]
<i>Alnaster</i>	x (29)	
<i>Alnus</i>	x (26, 28, 29)	[3]
<i>Anromeda</i>	x (27)	x (48)
<i>Aralia</i>	x (26, 27, 28)	[3]
<i>Artemisia</i>	x (26, 27)	(w)
Asteraceae	x (26)	
<i>Betula</i> sect. <i>alba</i>	x (26)	
<i>B. humulis</i>	x (26)	
<i>Betula</i>		x (48)
<i>Bunias cochlearrioides</i>	x (26)	
<i>Carpinus</i>	x (27, 28, 29)	[3]
<i>Carya</i>	x (26)	[3]
Chenopodiaceae	x (26, 27)	(w)
<i>Comptonia</i>	x (27)	[3]
<i>Corylus</i>	x (27, 29)	x (48)

<i>Diervilla</i>	x (27)	
Ericaceae	x (28, 29)	x (48)
<i>Fagus</i>	x (26, 28)	[3]
<i>Fraxinus</i> (a)		x (48)
<i>Ilex</i>	x (26, 29)	x (48)
<i>Juglans</i>	x (29)	[3]
<i>Lemna</i>		x (48)
<i>Liquidambar</i>	x (26)	[3]
<i>Magnolia</i>	x (26)	[3]
<i>Morus tanaitica</i>	x (26, 27)	[3]
<i>Myrica</i>	x (28, 29)	[3]
<i>Myriophyllum</i>		x (48)
<i>Nyssa</i>	x (26)	[3]
<i>Ostrya</i>	[52]	x (48)
<i>Parrotia</i>	x (26)	[3]
<i>Pittosporum</i>	x (26)	
Plumbaginaceae	x (27)	
Poaceae	x (27, 28)	x (48)
<i>Polycnemum</i>	x (26)	
<i>Polygonum</i>		x (48)
<i>Pterocarya</i>	x (26)	[3]
<i>Quercus</i>	x (26, 27)	x (48)
<i>Rubus</i>	x (26)	[3]

<i>Rumex marshallianus</i>	x (26)	[3]
<i>Salix</i>	x (26)	[3]
<i>Sambucus</i>	x (27)	[3]
<i>Saxafraga</i>		x (48)
<i>Staphylea</i>	x (26)	[3]
<i>Tilia</i>	x (26, 27, 29)	[3]
<i>Typha</i> (a)		x (48)
<i>Ulmus</i>	x (26, 27)	[3]
<i>Urtica</i>	[52]	x (48)
<i>Vitis</i>	x (27)	[3]

Notes to Appendix 2.

1. In Zhilin (1991, ed., p. 77, table 3) ages in the three columns translate as early Oligocene, late Oligocene, and early Miocene. In table 4 (p. 77) the ages are late Eocene, early Oligocene, late Oligocene, and early Miocene. Table 4 (p. 119) is a comparison of early Miocene vegetation at three different localities.

2. *Protophyllum* and *Aspidiophyllum* now transferred to *Pseudoprotophyllum* fide Vakhrameed (1991, p. 182).

3. See Rothwell and Stockey (1994) for report of *H. pinnata* from the Cretaceous St. Mary River Formation, southern Alberta, Canada.

4. See Pigg et al. (2003) for reports of *Carpinus*, *Corylus*, and *Palaeocarpinus* from the Eocene of northwestern North America.

5. See LePage et al. (2005) for a summary of the fossil record and ecology of *Metasequoia*. Eocene occurrences in the Canadian High Arctic (Axel Heiberg Island) and in the early Oligocene Bridge Creek flora of Oregon are discussed by Richter and LePage and by Meyer in LePage et al. (2005).
6. *Pinus* was thought to have originated in the Cretaceous (Albian, ca. 100 Ma) and spread from centers in eastern North America and Western Europe (Millar, 1999). Its presence in Beringia at 133-140 Ma pre-dates this time (Falcon-Lang et al., 2016).
7. The oldest *Ginkgo* (as opposed to Ginkgophytes) is from the Lower Jurassic (ca. 190 Ma) in the Asiatic part of the former USSR (<http://www.ucmp.berkeley.edu/seedplants/ginkgoales/ginkgofr.html>; Taylor, 2009, chapter 18).
8. The oldest *Sequoia* fide Ahuja and Neale (2002) is from the Jurassic of south Manchuria.
9. *Juglans* as a genus dates from the middle Eocene (ca. 45 Ma) of North America (Stanford et al., 2000; see also Aradhya, 2006; Manchester, 1987; Wilson et al.-
<http://people.brandon.ca/greenwood/files/2013/wilsonbasinger-small.pdf>).
10. The North American occurrences listed in [3] is 'Paleocene or Eocene', Kodiak Island, Alaska (Hollick, 1936).
11. The North American occurrences listed in [3] are Paleocene, Spitzbergen (Heer, 1870, 1883).
12. See Dilcher (1969), Eocene, southeastern U.S.; Graham and Jarzen (1969, Oligocene, Puerto Rico; Graham, 1976, Veracruz, Mexico; Graham et seq.).
13. Reported from the Cretaceous (Campanian, ca. 83-70 Ma), Vancouver Island, Canada, Stockey and Rothwell (2003).
14. Earliest reported occurrence of *Ilex* as a genus is in the Paleocene (65 Ma) of Australia but placement is uncertain and Beaulieu et al. (2013) accept it as evidence of the family

Aquifoliaceae with the broader Campanulids originating in the middle Albian (Cretaceous, ca. 105 Ma) in the Southern Hemisphere (see also Manen et al., 2002).

a. Indicates listed elsewhere in the Appendix in both eastern and western Beringia.

b. Indicates oldest occurrence for the genus as listed in the Appendix is western Beringia and vicinity.

c. Op cit.- eastern Beringia and vicinity.

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