Table S1: The area under the curve (AUC) of the receiver operating characteristic, provided for each species and each modelling method for each of the two GCMs (GFDL and CCM1): discriminant analysis (DA), minimum distance (MD), Random Forests (RF), and the averaged ensemble method (Ens). AUCs are also noted for model projections based on the 1961-1990 observed climate (Modern). The number of palaeoecological records used for the validation is also reported (N). CCM1 projections were validated with data from 6,000, 11,000, 14,000, 16,000, and 21,000 years ago. GFDL projections were validated with data from 6,000, 9,000, 16,000, and 21,000 years ago.

Species	Modern					CCM1 Model					GFDL Model				
	N	DA	MD	RF	Ens	N	DA	MD	RF	Ens	N	DA	MD	RF	Ens
A. amabilis	1615	0.93	0.83	0.93	0.97	3	0.97	0.79	0.63	0.95	3	0.97	0.79	0.80	0.97
A. lasiocarpa	10804	0.82	0.72	0.82	0.86	83	0.63	0.66	0.66	0.70	81	0.69	0.68	0.69	0.78
A. procera	82	0.83	0.68	0.85	0.91	1	0.49	0.49	0.49	0.48	1	1.00	0.99	1.00	1.00
A. macrophyllum	437	0.95	0.94	0.96	0.97	9	0.70	0.69	0.69	0.69	11	0.75	0.74	0.73	0.74
A. rubra	715	0.96	0.94	0.96	0.97	24	0.80	0.73	0.76	0.82	22	0.82	0.80	0.81	0.81
C. decurrens	561	0.96	0.88	0.98	0.99	2	0.99	0.74	0.74	0.99	3	1.00	0.65	0.99	1.00
C. nootkatensis	707	0.94	0.93	0.94	0.97	64	0.62	0.62	0.64	0.67	65	0.69	0.61	0.61	0.72
L. occidentalis	821	0.86	0.67	0.87	0.92	6	0.66	0.57	0.65	0.73	7	0.63	0.70	0.84	0.91
P. engelmannii	6223	0.80	0.69	0.81	0.86	87	0.62	0.60	0.63	0.70	79	0.66	0.60	0.67	0.76
P. glauca	7115	0.87	0.83	0.88	0.90	108	0.68	0.64	0.72	0.73	145	0.66	0.61	0.69	0.69
P. mariana	2922	0.88	0.80	0.89	0.89	87	0.70	0.66	0.76	0.77	99	0.73	0.65	0.73	0.75
P. sitchensis	1016	0.94	0.90	0.95	0.98	55	0.74	0.80	0.76	0.83	56	0.74	0.77	0.74	0.81
P. albicaulis	1038	0.77	0.70	0.77	0.85	82	0.58	0.54	0.58	0.63	61	0.63	0.63	0.67	0.75
P. contorta	11275	0.81	0.72	0.82	0.83	234	0.64	0.63	0.63	0.69	219	0.62	0.66	0.69	0.73
P. edulis	2836	0.80	0.61	0.83	0.90	44	0.61	0.51	0.55	0.63	45	0.63	0.53	0.59	0.70
P. monticola	820	0.87	0.74	0.89	0.92	28	0.62	0.61	0.59	0.69	24	0.62	0.63	0.67	0.68
P. ponderosa	3967	0.83	0.76	0.88	0.91	55	0.68	0.59	0.68	0.72	54	0.67	0.62	0.67	0.71
P. tremuloides	7241	0.82	0.78	0.83	0.85	33	0.57	0.55	0.55	0.58	24	0.60	0.59	0.60	0.61
P. menziesii	8808	0.85	0.79	0.88	0.90	306	0.66	0.66	0.68	0.72	320	0.73	0.72	0.77	0.80
T. plicata	3798	0.93	0.81	0.94	0.95	69	0.88	0.80	0.87	0.89	70	0.87	0.82	0.85	0.89
T. heterophylla	4860	0.93	0.87	0.95	0.97	164	0.84	0.77	0.82	0.87	167	0.84	0.80	0.84	0.87
T. mertensiana	1136	0.90	0.80	0.86	0.94	98	0.78	0.71	0.73	0.81	78	0.75	0.71	0.76	0.80
Average (n≤10)		*0.87*	*0.79*	*0.89*	*0.92*		*0.69*	*0.65*	*0.68*	*0.73*		*0.71*	*0.68*	*0.71*	*0.75*