

Roberts, D. R. and Hamann, A. 2011. Method selection for species distribution modelling: are temporally or spatially independent evaluations necessary? – *Ecography* 34: 000–000.

Supplementary material

Appendix 1

Each table contains AUC values for all species and all methods for one of the four evaluation methods: all-points (Table A1), out-of-bag data split (Table A2), north-to-south regional evaluation (Table A3), and the past-periods temporal evaluation (Table A4). Average AUC values are given for each individual method (across all species) and for each individual species (across all methods, excluding the ensembles) for each evaluation scenario. Total average AUC for all species and all methods is shown in bold.

Table A1. AUC values by species and modelling method for the all-points evaluation. Averages are given for each species and each modelling methods. The overall average for all models and all species is shown in bold.

Table A2. AUC values by species and modelling method for the out-of-bag data split evaluation. Averages are given for each species and each modelling methods. The overall average for all models and all species is shown in bold.

Table A3. AUC values by species and modelling method for the north-to-south regional evaluation. Averages are given for each species and each modelling method. The overall average for all models and all species is shown in bold. Species without records in both the north and south data sets are denoted with dashes (-) and were excluded from the analysis.

Table A4. AUC values by species and modelling method for the fossil/pollen temporal evaluation for all records from 6000, 11000, 14000, 16000, and 21000 years before the present. Averages are given for each species and each modelling methods. Species with fewer than 10 observations in the record are denoted with dashes (-) and were excluded from the analysis.

Table A1. AUC values by species and modelling method for the all-points evaluation. Averages are given for each species and each modelling methods. The overall average for all models and all species is shown in bold.

Species	Modelling method																	
	Species-based										Ensemble							
	Classification Tree Analysis Discriminant Analysis Generalised Additive Generalised Boosting Generalised Linear Adaptive Reg. Splines Artificial Neural Net. Random Forest Surface Range Envelopes										<i>Average</i>	Species: Kappa	Species: Mean	Species: Median	Species: ROC	Species: TSS	Species: Weighted	All methods: Mean
<i>Abies amabilis</i> (pacific silver fir)	0.97	0.95	0.98	0.97	0.98	0.96	0.97	1.00	0.79	<i>0.95</i>	0.99	0.99	0.99	0.99	0.99	1.00	0.99	0.99
<i>Abies lasiocarpa</i> (subalpine fir)	0.84	0.82	0.89	0.90	0.89	0.85	0.89	1.00	0.71	<i>0.86</i>	0.94	0.91	0.93	0.93	0.95	0.99	0.93	0.92
<i>Abies procera</i> (noble fir)	0.96	0.96	0.99	0.99	0.98	0.96	0.87	1.00	0.79	<i>0.94</i>	1.00	1.00	0.99	1.00	1.00	1.00	1.00	1.00
<i>Acer macrophyllum</i> (bigleaf maple)	0.98	0.97	0.98	0.98	0.98	0.98	0.50	1.00	0.81	<i>0.91</i>	1.00	0.99	0.99	0.99	0.99	1.00	0.99	0.99
<i>Alnus rubra</i> (red alder)	0.97	0.97	0.98	0.98	0.98	0.97	0.96	1.00	0.82	<i>0.96</i>	0.99	0.98	0.99	0.99	0.99	1.00	0.99	0.99
<i>Betula papyrifera</i> (paper birch)	0.90	0.83	0.90	0.88	0.89	0.89	0.88	0.98	0.73	<i>0.88</i>	0.97	0.93	0.95	0.94	0.95	0.99	0.94	0.93
<i>Calocedrus decurrens</i> (incense cedar)	0.98	0.97	0.99	0.99	0.99	0.98	0.99	1.00	0.80	<i>0.97</i>	1.00	0.99	1.00	1.00	1.00	1.00	1.00	0.99
<i>Chamaecyparis nootkatensis</i> (yellow cedar)	0.98	0.98	0.99	0.98	0.99	0.99	0.97	1.00	0.81	<i>0.96</i>	1.00	0.99	0.99	1.00	1.00	1.00	0.99	0.99
<i>Larix occidentalis</i> (western larch)	0.94	0.85	0.95	0.94	0.95	0.80	0.95	1.00	0.79	<i>0.91</i>	0.99	0.96	0.97	0.97	0.97	1.00	0.98	0.97
<i>Picea engelmannii</i> (Engelman spruce)	0.88	0.86	0.91	0.88	0.91	0.89	0.90	0.99	0.70	<i>0.88</i>	0.96	0.93	0.95	0.95	0.96	0.99	0.94	0.94
<i>Picea glauca</i> (white spruce)	0.89	0.86	0.90	0.89	0.90	0.83	0.89	0.98	0.74	<i>0.88</i>	0.95	0.92	0.94	0.94	0.95	0.99	0.94	0.93
<i>Picea mariana</i> (black spruce)	0.91	0.85	0.90	0.89	0.91	0.86	0.92	0.98	0.73	<i>0.88</i>	0.97	0.94	0.94	0.94	0.95	0.99	0.95	0.94
<i>Picea sitchensis</i> (sitka spruce)	0.97	0.98	0.99	0.98	0.99	0.98	0.97	1.00	0.83	<i>0.97</i>	1.00	0.99	0.99	1.00	1.00	1.00	0.99	0.99
<i>Pinus albicaulis</i> (whitebark pine)	0.93	0.91	0.95	0.93	0.95	0.90	0.93	1.00	0.74	<i>0.91</i>	0.99	0.96	0.98	0.97	0.97	1.00	0.97	0.96
<i>Pinus contorta</i> (lodgepole pine)	0.79	0.74	0.79	0.78	0.78	0.79	0.80	0.97	0.70	<i>0.79</i>	0.92	0.85	0.88	0.88	0.90	0.99	0.89	0.86
<i>Pinus edulis</i> (pinyon pine)	0.97	0.96	0.98	0.98	0.98	0.97	0.99	1.00	0.81	<i>0.96</i>	0.99	0.99	0.99	0.99	1.00	1.00	0.99	0.99
<i>Pinus monticola</i> (western white pine)	0.94	0.87	0.94	0.93	0.93	0.93	0.84	1.00	0.77	<i>0.90</i>	0.99	0.96	0.98	0.96	0.96	1.00	0.97	0.96
<i>Pinus ponderosa</i> (ponderosa pine)	0.93	0.88	0.95	0.92	0.94	0.89	0.89	1.00	0.76	<i>0.91</i>	0.98	0.97	0.97	0.97	0.98	1.00	0.97	0.97
<i>Populus tremuloides</i> (trembling aspen)	0.83	0.76	0.83	0.83	0.84	0.83	0.85	0.98	0.69	<i>0.82</i>	0.94	0.87	0.91	0.90	0.91	0.99	0.90	0.88
<i>Pseudotsuga menziesii</i> (Douglas-fir)	0.88	0.81	0.90	0.88	0.90	0.90	0.83	0.99	0.72	<i>0.87</i>	0.96	0.93	0.94	0.94	0.95	0.99	0.94	0.93
<i>Sequoia sempervirens</i> (giant sequoia)	0.99	1.00	1.00	1.00	1.00	1.00	0.95	1.00	0.79	<i>0.97</i>	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
<i>Thuja plicata</i> (western redcedar)	0.94	0.90	0.94	0.92	0.94	0.94	0.94	1.00	0.76	<i>0.92</i>	0.98	0.96	0.98	0.97	0.98	0.99	0.97	0.96
<i>Tsuga heterophylla</i> (western hemlock)	0.96	0.94	0.97	0.96	0.97	0.96	0.96	1.00	0.77	<i>0.94</i>	0.99	0.98	0.98	0.98	0.98	0.99	0.98	0.98
<i>Tsuga mertensiana</i> (mountain hemlock)	0.97	0.95	0.97	0.97	0.98	0.97	0.96	1.00	0.80	<i>0.95</i>	0.99	0.98	0.99	0.99	0.99	1.00	0.99	0.98
<i>Average</i>	<i>0.93</i>	<i>0.90</i>	<i>0.94</i>	<i>0.93</i>	<i>0.94</i>	<i>0.92</i>	<i>0.90</i>	<i>0.99</i>	<i>0.76</i>	<i>0.91</i>	<i>0.98</i>	<i>0.96</i>	<i>0.97</i>	<i>0.97</i>	<i>0.97</i>	<i>1.00</i>	<i>0.97</i>	<i>0.96</i>

Table A2. AUC values by species and modelling method for the out-of-bag data split evaluation. Averages are given for each species and each modelling methods. The overall average for all models and all species is shown in bold.

Species	Modelling method																					
	Ecosystem-based					Species-based										Ensemble						
	Discriminant Analysis	Minimum Distance	Random Forest	Classification Tree Analysis	Discriminant Analysis	Generalised Additive	Generalised Boosting	Generalised Linear	Adaptive Reg. Splines	Artificial Neural Net.	Random Forest	Surface Range Envelopes	Average	Ecosystem: Mean	Species: Kappa	Species: Mean	Species: Median	Species: ROC	Species: TSS	Species: Weighted	All methods: Mean	All methods: Median
<i>Abies amabilis</i> (pacific silver fir)	0.93	0.88	0.93	0.95	0.95	0.98	0.98	0.98	0.96	0.96	0.99	0.80	<i>0.94</i>	0.97	0.98	0.98	0.96	0.97	0.98	0.99	0.98	0.98
<i>Abies lasiocarpa</i> (subalpine fir)	0.82	0.78	0.82	0.83	0.82	0.88	0.89	0.88	0.88	0.89	0.92	0.71	<i>0.84</i>	0.86	0.91	0.90	0.87	0.88	0.88	0.92	0.91	0.90
<i>Abies procera</i> (noble fir)	0.83	0.70	0.85	0.86	0.96	0.98	0.98	0.97	0.95	0.91	0.94	0.81	<i>0.90</i>	0.91	0.99	0.97	0.96	0.97	0.97	0.99	0.99	0.98
<i>Acer macrophyllum</i> (bigleaf maple)	0.95	0.93	0.96	0.96	0.97	0.98	0.98	0.98	0.97	0.85	0.99	0.78	<i>0.94</i>	0.97	0.99	0.98	0.98	0.98	0.98	0.99	0.98	0.98
<i>Alnus rubra</i> (red alder)	0.96	0.93	0.96	0.93	0.97	0.97	0.97	0.97	0.94	0.95	0.97	0.81	<i>0.94</i>	0.97	0.98	0.97	0.94	0.96	0.96	0.98	0.97	0.97
<i>Betula papyrifera</i> (paper birch)	0.87	0.83	0.89	0.88	0.83	0.89	0.89	0.90	0.89	0.90	0.93	0.73	<i>0.87</i>	0.90	0.91	0.90	0.88	0.89	0.90	0.92	0.91	0.91
<i>Calocedrus decurrens</i> (incense cedar)	0.96	0.93	0.98	0.96	0.97	0.99	0.99	0.99	0.97	0.96	0.99	0.79	<i>0.96</i>	0.99	0.99	0.99	0.97	0.99	0.99	0.99	0.99	0.99
<i>Chamaecyparis nootkatensis</i> (yellow cedar)	0.94	0.93	0.94	0.96	0.98	0.99	0.99	0.99	0.99	0.97	0.99	0.80	<i>0.95</i>	0.97	0.99	0.99	0.97	0.99	0.99	0.99	0.99	0.99
<i>Larix occidentalis</i> (western larch)	0.86	0.77	0.87	0.87	0.85	0.95	0.95	0.95	0.93	0.94	0.97	0.78	<i>0.89</i>	0.92	0.96	0.95	0.88	0.95	0.95	0.96	0.96	0.97
<i>Picea engelmannii</i> (Engelman spruce)	0.81	0.74	0.81	0.88	0.86	0.91	0.90	0.90	0.90	0.91	0.93	0.69	<i>0.85</i>	0.86	0.92	0.91	0.89	0.90	0.91	0.93	0.92	0.92
<i>Picea glauca</i> (white spruce)	0.87	0.85	0.88	0.86	0.86	0.90	0.90	0.90	0.83	0.90	0.93	0.74	<i>0.87</i>	0.90	0.91	0.90	0.88	0.89	0.89	0.92	0.91	0.91
<i>Picea mariana</i> (black spruce)	0.88	0.86	0.89	0.88	0.85	0.91	0.91	0.91	0.84	0.88	0.94	0.73	<i>0.87</i>	0.90	0.93	0.92	0.88	0.92	0.92	0.94	0.93	0.92
<i>Picea sitchensis</i> (sitka spruce)	0.94	0.91	0.95	0.97	0.98	0.99	0.99	0.99	0.98	0.50	0.99	0.81	<i>0.92</i>	0.97	0.99	0.99	0.97	0.98	0.99	0.99	0.99	0.99
<i>Pinus albicaulis</i> (whitebark pine)	0.78	0.78	0.77	0.89	0.92	0.95	0.94	0.94	0.92	0.92	0.95	0.74	<i>0.87</i>	0.85	0.95	0.94	0.88	0.94	0.94	0.96	0.95	0.95
<i>Pinus contorta</i> (lodgepole pine)	0.81	0.78	0.82	0.80	0.74	0.79	0.81	0.79	0.79	0.79	0.87	0.70	<i>0.79</i>	0.84	0.84	0.82	0.82	0.81	0.82	0.86	0.85	0.83
<i>Pinus edulis</i> (pinyon pine)	0.80	0.74	0.83	0.97	0.96	0.98	0.98	0.98	0.98	0.98	0.99	0.81	<i>0.92</i>	0.91	0.99	0.98	0.97	0.98	0.98	0.99	0.99	0.99
<i>Pinus monticola</i> (western white pine)	0.87	0.79	0.89	0.89	0.89	0.94	0.94	0.94	0.93	0.94	0.95	0.77	<i>0.89</i>	0.93	0.95	0.94	0.89	0.93	0.94	0.95	0.95	0.95
<i>Pinus ponderosa</i> (ponderosa pine)	0.83	0.80	0.88	0.92	0.87	0.94	0.95	0.94	0.93	0.95	0.96	0.75	<i>0.89</i>	0.92	0.95	0.95	0.93	0.94	0.95	0.96	0.96	0.96
<i>Populus tremuloides</i> (trembling aspen)	0.82	0.79	0.83	0.82	0.75	0.83	0.84	0.84	0.83	0.84	0.88	0.69	<i>0.81</i>	0.85	0.86	0.85	0.82	0.83	0.84	0.88	0.86	0.86
<i>Pseudotsuga menziesii</i> (Douglas-fir)	0.85	0.84	0.88	0.86	0.81	0.90	0.91	0.91	0.90	0.91	0.94	0.72	<i>0.87</i>	0.90	0.92	0.92	0.89	0.89	0.90	0.93	0.92	0.92
<i>Sequoia sempervirens</i> (giant sequoia)	0.80	0.76	0.96	0.99	1.00	1.00	1.00	1.00	0.98	0.95	1.00	0.80	<i>0.94</i>	0.96	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
<i>Thuja plicata</i> (western redcedar)	0.93	0.87	0.94	0.93	0.90	0.94	0.95	0.94	0.93	0.93	0.97	0.76	<i>0.92</i>	0.95	0.96	0.95	0.91	0.94	0.95	0.96	0.96	0.96
<i>Tsuga heterophylla</i> (western hemlock)	0.94	0.90	0.95	0.95	0.94	0.97	0.97	0.97	0.96	0.96	0.98	0.76	<i>0.94</i>	0.97	0.97	0.97	0.94	0.96	0.96	0.98	0.97	0.98
<i>Tsuga mertensiana</i> (mountain hemlock)	0.90	0.87	0.86	0.93	0.95	0.97	0.97	0.97	0.96	0.92	0.97	0.78	<i>0.92</i>	0.94	0.97	0.97	0.93	0.96	0.96	0.98	0.97	0.98
<i>Average</i>	<i>0.87</i>	<i>0.83</i>	<i>0.89</i>	<i>0.91</i>	<i>0.90</i>	<i>0.94</i>	<i>0.94</i>	<i>0.94</i>	<i>0.92</i>	<i>0.90</i>	<i>0.95</i>	<i>0.76</i>	<i>0.90</i>	<i>0.92</i>	<i>0.95</i>	<i>0.94</i>	<i>0.92</i>	<i>0.94</i>	<i>0.94</i>	<i>0.96</i>	<i>0.95</i>	<i>0.95</i>

Table A3. AUC values by species and modelling method for the north-to-south regional evaluation. Averages are given for each species and each modelling method. The overall average for all models and all species is shown in bold. Species without records in both the north and south data sets are denoted with dashes (-) and were excluded from the analysis.

Species	Modelling method																						
	Ecosystem-based					Species-based								Ensemble									
	Discriminant Analysis	Minimum Distance	Random Forest	Classification Tree Analysis	Discriminant Analysis	Generalised Additive	Generalised Boosting	Generalised Linear	Adaptive Reg. Splines	Artificial Neural Net.	Random Forest	Surface Range Envelopes	Average	Ecosystem: Mean	Species: Kappa	Species: Mean	Species: Median	Species: ROC	Species: TSS	Species: Weighted	All methods: Mean	All methods: Median	
<i>Abies amabilis</i> (pacific silver fir)	0.92	0.91	0.95	0.69	0.94	0.98	0.96	0.97	0.86	0.96	0.97	0.67	0.90	0.97	0.98	0.98	0.95	0.97	0.98	0.98	0.98	0.98	0.98
<i>Abies lasiocarpa</i> (subalpine fir)	0.83	0.88	0.92	0.84	0.93	0.95	0.87	0.85	0.78	0.92	0.93	0.54	0.85	0.93	0.91	0.93	0.86	0.84	0.88	0.91	0.93	0.93	0.95
<i>Abies procera</i> (noble fir)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<i>Acer macrophyllum</i> (bigleaf maple)	0.76	0.86	0.93	0.80	0.89	0.75	0.94	0.75	0.90	0.74	0.90	0.50	0.81	0.94	0.91	0.90	0.92	0.91	0.91	0.90	0.92	0.92	0.92
<i>Alnus rubra</i> (red alder)	0.94	0.95	0.94	0.91	0.94	0.96	0.96	0.96	0.75	0.85	0.88	0.54	0.88	0.96	0.96	0.97	0.94	0.96	0.96	0.97	0.97	0.97	0.96
<i>Betula papyrifera</i> (paper birch)	0.49	0.63	0.83	0.88	0.87	0.93	0.90	0.94	0.89	0.79	0.69	0.51	0.78	0.80	0.92	0.90	0.83	0.86	0.89	0.88	0.93	0.93	0.93
<i>Calocedrus decurrens</i> (incense cedar)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<i>Chamaecyparis nootkatensis</i> (yellow cedar)	0.95	0.87	0.88	0.72	0.95	0.98	0.95	0.98	0.85	0.85	0.86	0.54	0.86	0.95	0.96	0.94	0.77	0.90	0.94	0.96	0.97	0.97	0.96
<i>Larix occidentalis</i> (western larch)	0.67	0.60	0.65	0.67	0.21	0.48	0.63	0.63	0.43	0.54	0.67	0.56	0.56	0.76	0.64	0.64	0.65	0.71	0.68	0.69	0.67	0.71	0.71
<i>Picea engelmannii</i> (Engelman spruce)	0.60	0.73	0.80	0.83	0.83	0.49	0.87	0.25	0.33	0.82	0.89	0.54	0.67	0.87	0.80	0.75	0.84	0.88	0.88	0.86	0.86	0.89	0.89
<i>Picea glauca</i> (white spruce)	0.34	0.55	0.79	0.34	0.90	0.95	0.53	0.90	0.95	0.82	0.90	0.50	0.71	0.42	0.90	0.88	0.45	0.45	0.48	0.90	0.89	0.98	0.98
<i>Picea mariana</i> (black spruce)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<i>Picea sitchensis</i> (sitka spruce)	0.74	0.85	0.97	0.89	0.99	0.99	0.91	0.98	0.72	0.56	0.99	0.50	0.84	0.97	0.99	0.99	0.92	0.98	0.97	0.99	0.99	0.99	0.99
<i>Pinus albicaulis</i> (whitebark pine)	0.48	0.83	0.81	0.72	0.93	0.86	0.93	0.35	0.90	0.91	0.89	0.63	0.77	0.84	0.88	0.89	0.82	0.92	0.91	0.87	0.91	0.93	0.93
<i>Pinus contorta</i> (lodgepole pine)	0.79	0.84	0.84	0.85	0.84	0.85	0.89	0.66	0.86	0.79	0.82	0.53	0.80	0.89	0.86	0.87	0.83	0.78	0.85	0.87	0.88	0.89	0.89
<i>Pinus edulis</i> (pinyon pine)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<i>Pinus monticola</i> (western white pine)	0.70	0.75	0.70	0.44	0.51	0.73	0.82	0.80	0.79	0.71	0.85	0.56	0.70	0.83	0.81	0.81	0.78	0.84	0.85	0.80	0.83	0.83	0.83
<i>Pinus ponderosa</i> (ponderosa pine)	0.63	0.56	0.65	0.61	0.50	0.58	0.57	0.66	0.67	0.61	0.58	0.51	0.60	0.71	0.66	0.65	0.68	0.70	0.70	0.67	0.68	0.67	0.67
<i>Populus tremuloides</i> (trembling aspen)	0.53	0.69	0.82	0.78	0.61	0.88	0.87	0.75	0.84	0.74	0.64	0.50	0.72	0.85	0.83	0.84	0.56	0.63	0.61	0.77	0.86	0.88	0.88
<i>Pseudotsuga menziesii</i> (Douglas-fir)	0.67	0.73	0.78	0.53	0.38	0.52	0.54	0.69	0.55	0.64	0.77	0.57	0.61	0.81	0.71	0.69	0.64	0.64	0.65	0.77	0.78	0.79	0.79
<i>Sequoia sempervirens</i> (giant sequoia)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<i>Thuja plicata</i> (western redcedar)	0.84	0.88	0.90	0.85	0.74	0.94	0.86	0.88	0.80	0.90	0.84	0.61	0.84	0.92	0.94	0.95	0.94	0.93	0.93	0.94	0.95	0.94	0.94
<i>Tsuga heterophylla</i> (western hemlock)	0.92	0.93	0.94	0.93	0.96	0.95	0.97	0.87	0.77	0.88	0.94	0.59	0.89	0.96	0.96	0.94	0.95	0.95	0.95	0.96	0.97	0.97	0.97
<i>Tsuga mertensiana</i> (mountain hemlock)	0.71	0.78	0.86	0.81	0.92	0.96	0.96	0.94	0.94	0.75	0.94	0.54	0.84	0.89	0.97	0.96	0.77	0.90	0.92	0.97	0.96	0.95	0.95
Average	0.71	0.78	0.84	0.74	0.78	0.83	0.84	0.78	0.77	0.78	0.84	0.55	0.77	0.86	0.87	0.87	0.80	0.83	0.84	0.88	0.89	0.90	

Table A4. AUC values by species and modelling method for the fossil/pollen temporal evaluation for all records from 6000, 11000, 14000, 16000, and 21000 years before the present. Averages are given for each species and each modelling methods. Species with fewer than 10 observations in the record are denoted with dashes (-) and were excluded from the analysis.

Species	Modelling method																					
	Ecosystem-based					Species-based								Ensemble								
	Discriminant Analysis Minimum Distance Random Forest	Classification Tree Analysis Discriminant Analysis Generalised Additive Generalised Boosting Generalised Linear Adaptive Reg. Splines Artificial Neural Net. Random Forest Surface Range Envelopes	Average	Ecosystem: Mean	Species: Kappa	Species: Mean	Species: Median	Species: ROC	Species: TSS	Species: Weighted	All methods: Mean	All methods: Median										
<i>Abies amabilis</i> (pacific silver fir)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<i>Abies lasiocarpa</i> (subalpine fir)	0.58	0.63	0.57	0.67	0.54	0.73	0.72	0.63	0.71	0.69	0.74	0.52	0.64	0.61	0.71	0.73	0.70	0.71	0.70	0.73	0.68	0.72
<i>Abies procera</i> (noble fir)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<i>Acer macrophyllum</i> (bigleaf maple)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<i>Alnus rubra</i> (red alder)	0.79	0.78	0.75	0.52	0.87	0.89	0.87	0.84	0.92	0.85	0.84	0.62	0.79	0.82	0.89	0.91	0.70	0.88	0.85	0.88	0.89	0.91
<i>Betula papyrifera</i> (paper birch)	0.48	0.56	0.78	0.74	0.71	0.85	0.75	0.79	0.80	0.70	0.78	0.62	0.71	0.75	0.82	0.84	0.81	0.83	0.82	0.81	0.83	0.83
<i>Calocedrus decurrens</i> (incense cedar)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<i>Chamaecyparis nootkatensis</i> (yellow cedar)	0.56	0.73	0.62	0.56	0.85	0.58	0.59	0.52	0.39	0.54	0.74	0.49	0.60	0.77	0.58	0.71	0.50	0.60	0.57	0.67	0.84	0.73
<i>Larix occidentalis</i> (western larch)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<i>Picea engelmannii</i> (Engelman spruce)	0.57	0.57	0.52	0.68	0.43	0.64	0.74	0.61	0.54	0.62	0.78	0.49	0.60	0.56	0.67	0.70	0.53	0.65	0.65	0.73	0.61	0.69
<i>Picea glauca</i> (white spruce)	0.63	0.64	0.68	0.66	0.63	0.80	0.73	0.81	0.67	0.71	0.73	0.55	0.69	0.72	0.76	0.78	0.75	0.78	0.78	0.76	0.77	0.78
<i>Picea mariana</i> (black spruce)	0.63	0.64	0.73	0.72	0.65	0.82	0.79	0.76	0.75	0.72	0.79	0.55	0.71	0.75	0.79	0.83	0.66	0.77	0.78	0.81	0.81	0.85
<i>Picea sitchensis</i> (sitka spruce)	0.78	0.76	0.77	0.83	0.83	0.90	0.94	0.87	0.84	0.91	0.94	0.73	0.84	0.81	0.93	0.93	0.85	0.92	0.92	0.94	0.93	0.92
<i>Pinus albicaulis</i> (whitebark pine)	0.56	0.56	0.54	0.46	0.58	0.67	0.56	0.53	0.66	0.38	0.68	0.50	0.56	0.65	0.64	0.61	0.51	0.61	0.61	0.67	0.61	0.68
<i>Pinus contorta</i> (lodgepole pine)	0.62	0.57	0.59	0.50	0.68	0.71	0.67	0.66	0.72	0.72	0.69	0.50	0.64	0.63	0.69	0.71	0.66	0.66	0.68	0.69	0.70	0.72
<i>Pinus edulis</i> (pinyon pine)	0.61	0.50	0.54	0.47	0.91	0.74	0.54	0.65	0.82	0.30	0.78	0.50	0.61	0.65	0.78	0.75	0.59	0.63	0.76	0.75	0.90	0.78
<i>Pinus monticola</i> (western white pine)	0.63	0.64	0.56	0.45	0.81	0.79	0.72	0.81	0.73	0.78	0.78	0.57	0.69	0.66	0.83	0.82	0.67	0.82	0.81	0.82	0.83	0.82
<i>Pinus ponderosa</i> (ponderosa pine)	0.57	0.54	0.64	0.82	0.68	0.87	0.87	0.85	0.52	0.81	0.86	0.58	0.72	0.64	0.82	0.84	0.79	0.78	0.79	0.85	0.79	0.86
<i>Populus tremuloides</i> (trembling aspen)	0.54	0.54	0.50	0.45	0.65	0.51	0.40	0.47	0.63	0.54	0.43	0.48	0.51	0.58	0.46	0.48	0.49	0.44	0.44	0.43	0.55	0.53
<i>Pseudotsuga menziesii</i> (Douglas-fir)	0.66	0.68	0.69	0.70	0.79	0.82	0.81	0.75	0.80	0.77	0.83	0.59	0.74	0.71	0.83	0.83	0.78	0.77	0.81	0.83	0.83	0.83
<i>Sequoia sempervirens</i> (giant sequoia)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<i>Thuja plicata</i> (western redcedar)	0.85	0.88	0.82	0.91	0.90	0.95	0.90	0.93	0.89	0.87	0.92	0.52	0.86	0.88	0.93	0.93	0.89	0.93	0.93	0.94	0.93	0.94
<i>Tsuga heterophylla</i> (western hemlock)	0.82	0.79	0.79	0.87	0.91	0.92	0.88	0.88	0.89	0.90	0.89	0.58	0.84	0.84	0.92	0.91	0.89	0.91	0.91	0.92	0.92	0.91
<i>Tsuga mertensiana</i> (mountain hemlock)	0.76	0.79	0.71	0.82	0.88	0.89	0.86	0.80	0.79	0.81	0.86	0.61	0.80	0.82	0.89	0.89	0.68	0.89	0.86	0.88	0.90	0.90
<i>Average</i>	0.65	0.66	0.66	0.66	0.74	0.78	0.74	0.73	0.73	0.70	0.78	0.56	0.70	0.71	0.77	0.79	0.69	0.75	0.76	0.78	0.80	0.80