Forest composition and biomass affect the burn probability across Canada's forests

SUPPLEMENTARY MATERIAL

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Figure S1: Regression tree classification of selection ratios among the 12 composition x biomass classes across the 14 homogeneous fire regime zones (HFR), using class variables composition, biomass and HFR as classifiers. Box-and-whiskers plots show values of the median, first and fourth quartiles and the 95% confidence interval of the selection ratios within each classification. Note that the homogeneous fire zones NA and WJB were not included in the analysis.

Figure S1.

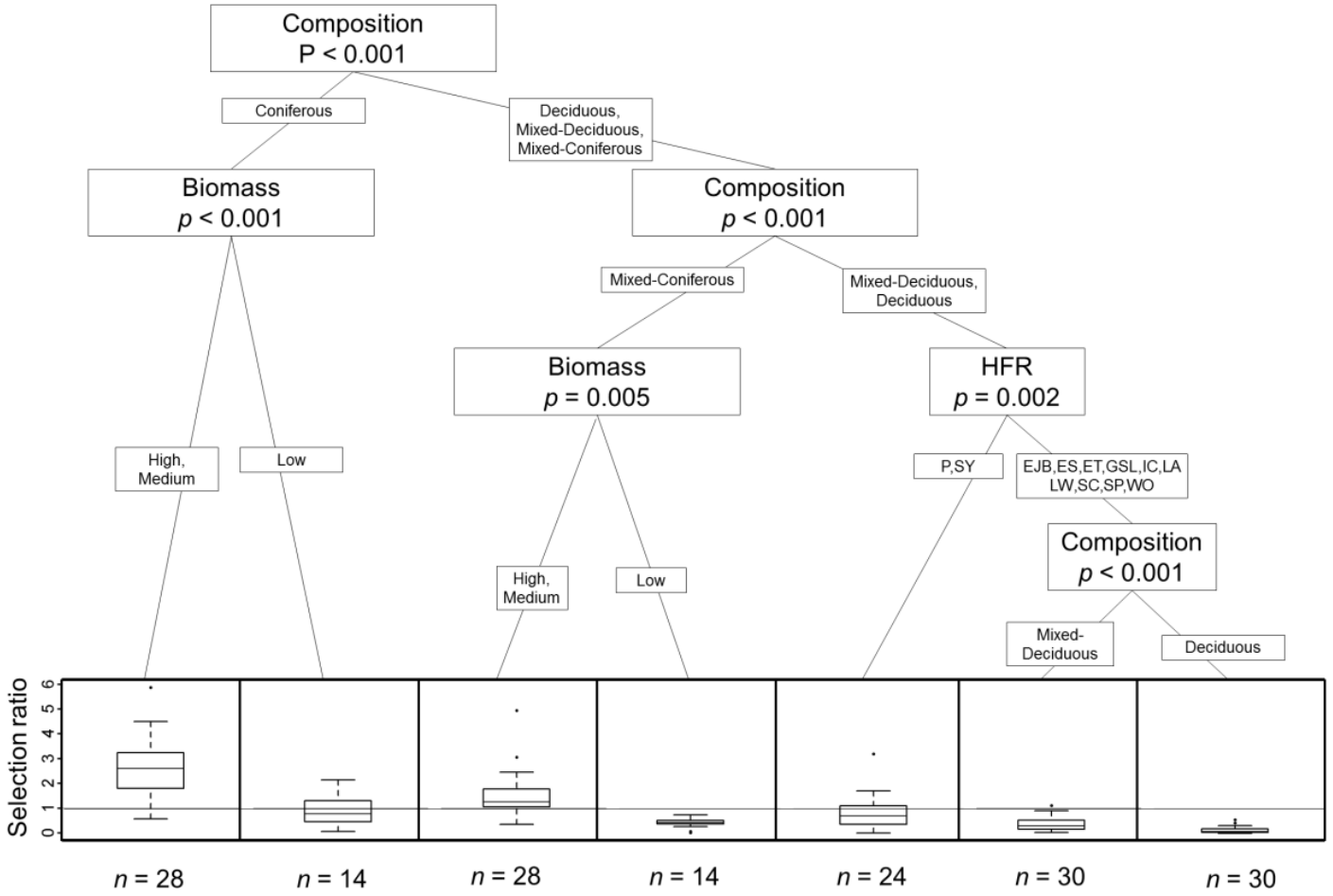
Composition
P < 0.001
Coniferous
Deciduous, Mixed-Deciduous, Mixed-Coniferous
Biomass
p < 0.001
Composition
p < 0.001
Mixed-Coniferous
Mixed-Deciduous, Deciduous
Biomass
p = 0.005
HFR
p = 0.002
High, Medium
Low
High, Medium
Low
P,SY
EJB,ES,ET,GSL,IC,LA LW,SC,SP,WO
Composition
p < 0.001
Mixed-Deciduous
Deciduous
Selection ratio
0
1
2
3
4
5
6
n = 28
n = 14
n = 28
n = 14
n = 24
n = 30
n = 30

Figure S2: Map of the homogeneous fire regime (HFR) zones of Boulanger et al (2014) in which the HFR-level fire risk has been modulated at the pixel level by fire selectivity given the pixel's composition and biomass. The legend refers to the fire return interval, in years, which is equal to 1/(fractional annual burn rate).

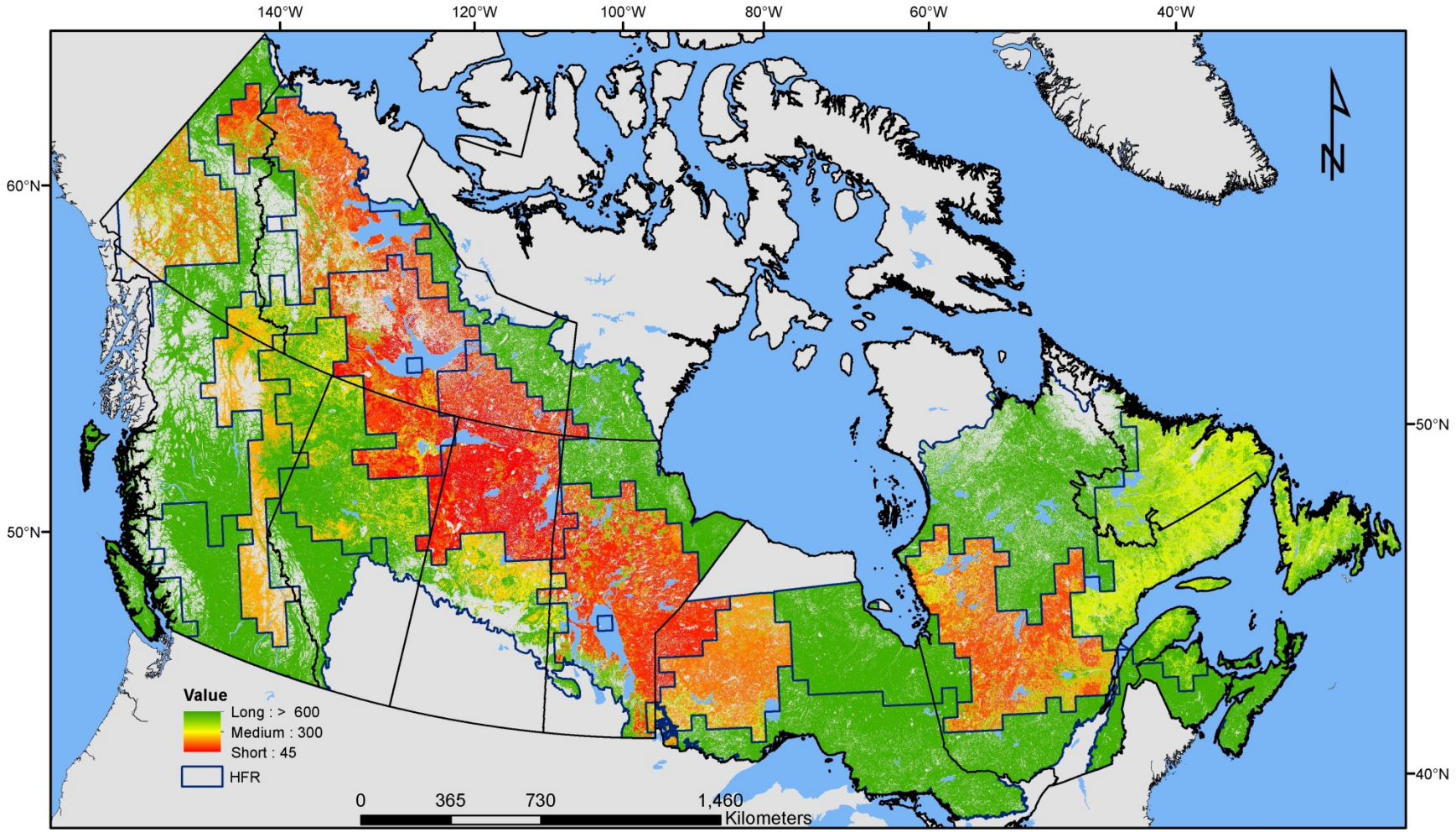

Table S1a: Relative abundance of each composition and age class, expressed as a fraction of total pixel numbers, within each of the 16 homogeneous fire regime (HFR) zones

HFR	Coniferous			Mixed-coniferous			Mixed-deciduous			Deciduous		
	Young	Mature	Old	Young	Mature	Old	Young	Mature	Old	Young	Mature	Old
EJB	0.100	0.498	0.118	0.072	0.128	0.000	0.014	0.065	0.000	0.002	0.003	0.000
ES	0.271	0.582	0.061	0.070	0.008	0.000	0.007	0.000	0.000	0.002	0.000	0.000
ET	0.009	0.170	0.060	0.022	0.301	0.015	0.020	0.284	0.013	0.004	0.085	0.016
GBL	0.257	0.503	0.004	0.063	0.086	0.001	0.040	0.022	0.000	0.021	0.003	0.000
GSL	0.156	0.397	0.037	0.062	0.157	0.023	0.025	0.067	0.003	0.017	0.056	0.000
IC	0.061	0.203	0.495	0.017	0.057	0.034	0.009	0.043	0.014	0.014	0.045	0.006
LA	0.247	0.599	0.012	0.068	0.045	0.002	0.008	0.010	0.000	0.003	0.007	0.000
LW	0.070	0.648	0.060	0.045	0.059	0.001	0.022	0.023	0.000	0.033	0.039	0.000
NAT	0.043	0.457	0.357	0.022	0.085	0.001	0.003	0.028	0.000	0.000	0.003	0.000
P	0.103	0.208	0.540	0.041	0.032	0.021	0.027	0.016	0.004	0.005	0.003	0.000
SC	0.007	0.141	0.676	0.006	0.034	0.015	0.007	0.032	0.006	0.029	0.045	0.001
SP	0.026	0.304	0.109	0.012	0.141	0.033	0.010	0.110	0.013	0.044	0.195	0.004
SY	0.120	0.479	0.075	0.064	0.137	0.004	0.047	0.045	0.000	0.022	0.007	0.000
WJB	0.184	0.520	0.238	0.017	0.026	0.002	0.005	0.008	0.000	0.000	0.000	0.000
WO	0.018	0.557	0.279	0.002	0.112	0.006	0.000	0.024	0.000	0.000	0.001	0.000
WS	0.577	0.314	0.000	0.092	0.004	0.000	0.012	0.000	0.000	0.002	0.000	0.000

Table S1b: Relative abundance of each composition and biomass class, expressed as a fraction of total pixel numbers, within each of the 16 homogeneous fire regime (HFR) zones

HFR	Coniferous			Mixed-coniferous			Mixed-deciduous			Deciduous		
	Low	Medium	High	Low	Medium	High	Low	Medium	High	Low	Medium	High
EJB	0.099	0.403	0.214	0.022	0.092	0.085	0.004	0.013	0.061	0.002	0.001	0.003
ES	0.232	0.642	0.039	0.032	0.045	0.000	0.007	0.000	0.000	0.002	0.000	0.000
ET	0.149	0.151	0.552	0.049	0.016	0.029	0.029	0.006	0.013	0.006	0.001	0.001
GBL	0.392	0.367	0.004	0.097	0.053	0.000	0.055	0.008	0.000	0.024	0.001	0.000
GSL	0.261	0.287	0.042	0.101	0.093	0.049	0.034	0.037	0.023	0.017	0.017	0.040
IC	0.078	0.166	0.515	0.022	0.035	0.053	0.010	0.020	0.036	0.012	0.019	0.034
LA	0.198	0.565	0.095	0.069	0.033	0.012	0.008	0.004	0.006	0.003	0.001	0.006
LW	0.154	0.465	0.159	0.054	0.034	0.017	0.022	0.014	0.009	0.023	0.028	0.021
NAT	0.082	0.389	0.386	0.005	0.049	0.054	0.001	0.006	0.025	0.000	0.000	0.003
P	0.006	0.067	0.166	0.009	0.079	0.250	0.007	0.047	0.263	0.003	0.005	0.097
SC	0.015	0.078	0.731	0.007	0.011	0.037	0.006	0.015	0.024	0.020	0.036	0.020
SP	0.097	0.224	0.117	0.026	0.077	0.084	0.011	0.043	0.079	0.031	0.056	0.156
SY	0.209	0.404	0.060	0.101	0.099	0.005	0.070	0.022	0.000	0.028	0.001	0.000
WJB	0.324	0.389	0.229	0.011	0.017	0.017	0.001	0.004	0.007	0.000	0.000	0.000
WO	0.039	0.312	0.503	0.001	0.025	0.094	0.000	0.004	0.021	0.000	0.000	0.001
WS	0.630	0.260	0.001	0.083	0.013	0.000	0.012	0.000	0.000	0.002	0.000	0.000

Table S2 : Abundance-weighed mean of the 12 national selection ratios for Age and composition and for Biomass and composition Age *Composition forest property classes

HFR	Abundance-weighed mean	
	Age and composition	Biomass and composition
EJB	1.64	1.93
ES	1.60	1.90
ET	1.13	1.36
GBL	1.38	1.41
GSL	1.35	1.36
IC	2.09	2.11
LA	1.52	1.87
LW	1.65	1.81
NAT	2.11	2.22
P	2.18	2.17
SC	2.37	2.38
SP	1.33	1.36
SY	1.51	1.53
WJB	1.92	1.94
WO	2.09	2.35
WS	1.14	1.34

Table S3a : Adjusted burn rate for each forest property classes of each HFR region for Age*composition forest property classes

HFR	Coniferous			Mixed-coniferous			Mixed-decidous			Decidous			Burn rate (%)
	Young	Mature	Old	Young	Mature	Old	Young	Mature	Old	Young	Mature	Old	
EJB	0.28	0.71	1.03	0.15	0.41	0.63	0.08	0.20	0.34	0.05	0.14	0.22	0.58
ES	0.02	0.06	0.09	0.01	0.04	0.06	0.01	0.02	0.03	0.005	0.01		0.05
ET	0.02	0.05	0.08	0.01	0.03	0.05	0.01	0.02	0.03	0.004	0.01	0.02	0.03
GBL	0.06	0.16	0.23	0.03	0.09	0.14	0.02	0.05	0.08	0.01	0.03	0.05	0.64
GSL	0.60	1.51	2.20	0.32	0.88	1.36	0.16	0.43	0.73	0.11	0.30	0.48	1.02
IC	0.12	0.31	0.44	0.07	0.18	0.27	0.03	0.09	0.15	0.02	0.06	0.10	0.32
LA	0.78	1.94	2.82	0.41	1.13	1.74	0.21	0.56	0.93	0.14	0.39	0.61	1.48
LW	0.40	0.99	1.44	0.21	0.58	0.89	0.11	0.28	0.48	0.07	0.20	0.31	0.82
NAT	0.08	0.21	0.30	0.04	0.12	0.19	0.02	0.06	0.10	0.02	0.04	0.07	0.22
P	0.01	0.04	0.05	0.01	0.02	0.03	0.004	0.01	0.02	0.003	0.01	0.01	0.04
SC	0.02	0.05	0.07	0.01	0.03	0.05	0.01	0.01	0.02	0.004	0.01	0.02	0.06
SP	0.12	0.30	0.44	0.06	0.17	0.27	0.03	0.09	0.14	0.02	0.06	0.09	0.20
SY	0.21	0.52	0.75	0.11	0.30	0.46	0.06	0.15	0.25	0.04	0.10	0.16	0.39
WJB	0.27	0.66	0.97	0.14	0.39	0.60	0.07	0.19	0.32	0.05	0.13		0.11
WO	0.19	0.47	0.68	0.10	0.27	0.42	0.05	0.13	0.22	0.03	0.09		0.49
WS	0.07	0.18	0.26	0.04	0.10	0.16	0.02	0.05		0.01	0.04		0.10

Table S3b : Adjusted burn rate for each forest property classes of each HFR region for BIomass*composition forest property classes

HFR	Coniferous			Mixed-coniferous			Mixed-decidous			Decidous			Burn rate (%)
	Low	Medium	High	Low	Medium	High	Low	Medium	High	Low	Medium	High	
EJB	0.33	0.69	0.85	0.16	0.35	0.42	0.08	0.18	0.23	0.05	0.13	0.14	0.58
ES	0.03	0.06	0.07	0.01	0.03	0.04	0.01	0.02	0.02	0.005	0.01		0.05
ET	0.02	0.05	0.06	0.01	0.03	0.03	0.01	0.01	0.02	0.004	0.01	0.01	0.03
GBL	0.09	0.18	0.22	0.04	0.09	0.11	0.02	0.05	0.06	0.01	0.03	0.04	0.64
GSL	0.82	1.70	2.11	0.39	0.87	1.05	0.21	0.46	0.57	0.13	0.31	0.35	1.02
IC	0.17	0.35	0.43	0.08	0.18	0.21	0.04	0.09	0.12	0.03	0.06	0.07	0.32
LA	0.87	1.80	2.22	0.41	0.92	1.11	0.22	0.48	0.61	0.14	0.33	0.37	1.48
LW	0.50	1.03	1.27	0.24	0.53	0.64	0.13	0.28	0.35	0.08	0.19	0.21	0.82
NAT	0.11	0.23	0.28	0.05	0.12	0.14	0.03	0.06	0.08	0.02	0.04	0.05	0.22
P	0.02	0.04	0.05	0.01	0.02	0.03	0.01	0.01	0.01	0.003	0.01	0.01	0.04
SC	0.03	0.06	0.07	0.01	0.03	0.04	0.01	0.02	0.02	0.004	0.01	0.01	0.06
SP	0.16	0.34	0.42	0.08	0.17	0.21	0.04	0.09	0.11	0.03	0.06	0.07	0.20
SY	0.28	0.58	0.72	0.13	0.30	0.36	0.07	0.16	0.19	0.04	0.11	0.12	0.39
WJB	0.36	0.75	0.93	0.17	0.38	0.46	0.09	0.20	0.25	0.06	0.14	0.15	0.11
WO	0.23	0.47	0.59	0.11	0.24	0.29	0.06	0.13	0.16	0.04	0.09	0.10	0.49
WS	0.08	0.17	0.21	0.04	0.09	0.10	0.02	0.05	0.06	0.01	0.03	0.03	0.10

Table S4a: Values of "Receiver Operating Characteristic" (ROC) used to compare regression models to explain the pixel-level occurrence of fire within the homogeneous fire regime zones of Boulanger et al (2014), and using forest composition (conifer, mixed-conifer, mixed-deciduous and deciduous) and age (0-30, 31-90, 91+) as independent variables. Values in bold indicate the model used to compute the regional selection ratio based on the logistic regression results obtained with *glm*.

HFR	Models							
	Age * Compostion		Age + Compostion		Age		Composition	
	AUROC	CI 95%	AUROC	CI 95%	AUROC	CI 95%	AUROC	CI 95%
EJB	63.13%	63.04%-63.21%	**62.96%**	**62.88%-63.04%**	58.04%	57.96%-58.12%	58.76%	58.71%-58.82%
ES	63.54%	63.44%-63.65%	**63.54%**	**63.44%-63.65%**	62.32%	62.22%-62.43%	51.04%	50.97%-51.12%
ET	74.66%	74.26%-75.06%	**74.38%**	**73.98%-74.78%**	60.35%	59.94%-60.77%	71.34%	70.95%-71.72%
GBL	58.29%	58.16%-58.42%	**58.29%**	**58.16%-58.42%**	56.79%	56.67%-56.90%	52.62%	52.50%-52.73%
GSL	68.36%	68.27%-68.44%	**68.35%**	**68.26%-68.43%**	62.18%	62.11%-62.26%	59.52%	59.44%-59.60%
IC	62.15%	61.98%-62.32%	**62.12%**	**61.95%-62.29%**	55.73%	55.52%-55.93%	60.51%	60.43%-60.59%
LA	63.86%	63.81%-63.91%	**63.85%**	**63.81%-63.90%**	61.36%	61.32%-61.41%	55.57%	55.54%-55.6%
LW	61.71%	61.64%-61.78%	**61.69%**	**61.62%-61.75%**	56.25%	56.18%-56.32%	59.37%	59.32%-59.41%
NAT	58.33%	58.15%-58.51%	58.22%	58.04%-58.40%	**56.01%**	**55.82%-56.20%**	54.82%	54.74%-54.90%
P	61.22%	61.05%-61.39%	**61.19%**	**61.02%-61.36%**	58.98%	58.80%-59.15%	54.67%	54.59%-54.76%
SC	62.35%	62.26%-62.45%	**62.35%**	**62.26%-62.45%**	60.98%	60.87%-61.08%	58.26%	58.21%-58.30%
SP	71.32%	71.23%-71.42%	**71.32%**	**71.23%-71.42%**	54.58%	54.49%-54.68%	69.83%	69.75%-69.92%
SY	59.73%	59.61%-59.86%	**59.73%**	**59.60%-59.85%**	58.61%	58.51%-58.72%	54.30%	54.18%-54.41%
WJB	63.86%	63.56%-64.16%	63.86%	63.56%-64.16%	**62.92%**	**62.61%-63.23%**	52.48%	52.41%-52.54%
WO	63.70%	63.55%-63.86%	**63.70%**	**63.54%-63.85%**	61.14%	60.97%-61.30%	55.66%	55.59%-55.72%
WS	77.68%	77.53%-77.82%	**77.67%**	**77.53%-77.82%**	77.42%	77.29%-77.56%	54.50%	54.45%-54.56%

Table S4b: Values of "Receiver Operating Characteristic" (ROC) used to compare regression models to explain the pixel-level occurrence of fire within the homogeneous fire regime zones of Boulanger et al (2014), and using forest composition (conifer, mixed-conifer, mixed-deciduous and deciduous) and biomass (low: < 19 tons/ha; medium: 19-55 tons/ha; high: > 55 tons/ha) as independent variables. Values in bold indicate the model used to compute the regional selection ratio based on the logistic regression results obtained with *glm*.

HFR	Models							
	Biomass * Composition		Biomass + Composition		Biomass		Composition	
	AUROC	CI 95%	ROC	CI 95%	ROC	CI 95%	ROC	CI 95%
EJB	62.27%	62.18%-62.35%	**62.24%**	**62.16%-62.32%**	57.01%	56.92%-57.10%	58.76%	58.71%-58.82%
ES	63.38%	63.29%-63.48%	**63.32%**	**63.23%-63.42%**	62.33%	62.25%-62.41%	51.04%	50.97%-51.12%
ET	72.90%	72.52%-73.28%	**72.89%**	**72.51%-73.27%**	52.61%	52.26%-52.95%	71.34%	70.95%-71.72%
GBL	56.21%	56.07%-56.35%	**56.07%**	**55.94%-56.21%**	54.55%	54.42%-54.68%	52.62%	52.50%-52.73%
GSL	66.69%	66.59%-66.79%	**66.68%**	**66.58%-66.77%**	58.90%	58.81%-59.90%	59.52%	59.44%-59.60%
IC	63.19%	63.02%-63.36%	**63.16%**	**62.99%-63.33%**	53.15%	52.95%-53.35%	60.51%	60.43%-60.59%
LA	62.73%	62.68%-62.78%	**62.72%**	**62.67%-62.77%**	59.78%	59.73%-59.83%	55.57%	55.54%-55.6%
LW	63.64%	63.56%-63.73%	**63.53%**	**63.44%-63.61%**	58.07%	57.97%-58.16%	59.37%	59.32%-59.41%
NAT	61.76%	61.60%-61.93%	61.70%	61.53%-61.87%	**59.00%**	**58.83%-59.18%**	54.82%	54.74%-54.90%
P	60.60%	60.41%-60.78%	**60.46%**	**60.27%-60.64%**	58.26%	58.06%-58.45%	54.67%	54.59%-54.76%
SC	60.82%	60.74%-60.90%	**60.81%**	**60.73%-60.89%**	56.81%	56.72%-56.89%	58.26%	58.21%-58.30%
SP	72.44%	72.34%-72.54%	**72.32%**	**72.22%-72.42%**	53.30%	53.17%-53.42%	69.83%	69.75%-69.92%
SY	58.73%	58.60%-58.87%	**58.64%**	**58.51%-58.77%**	57.74%	57.62%-57.86%	54.30%	54.18%-54.41%
WJB	61.61%	61.28%-61.94%	61.61%	61.28%-61.93%	**59.13%**	**58.79%-59.47%**	52.48%	52.41%-52.54%
WO	56.82%	56.67%-56.97%	**56.81%**	**56.67%-56.96%**	51.28%	51.12%-51.44%	55.66%	55.59%-55.72%
WS	73.22%	73.05%-73.40%	**73.03%**	**72.85%-73.21%**	71.81%	71.63%-71.99%	54.50%	54.45%-54.56%

Table S5a: - Predicted 10-year probabilities of burning (2002-2011) and their corresponding standard error for each combination of composition and age from logistic binomial regression models. Homogeneous fire regime (HFR) zones and their annual burn rates (BR; %) are from Boulanger et al. (2014). HRF zone names are detailed inFig. 1 of the main text.

HFR		Coniferous			Mixed-coniferous			Mixed-deciduous			Deciduous		
		Young	Mature	Old	Young	Mature	Old	Young	Mature	Old	Young	Mature	Old
EJB	P(x)	4.34E-02	7.52E-02	1.09E-01	2.26E-02	3.98E-02	5.86E-02	8.37E-03	1.49E-02	2.22E-02	1.42E-03	2.53E-03	3.80E-03
	Se	2.48E-04	1.62E-04	3.98E-04	1.59E-04	2.16E-04	3.98E-04	1.21E-04	1.98E-04	3.09E-04	1.84E-04	3.29E-04	4.93E-04
ES	P(x)	7.69E-03	3.29E-02	5.58E-02	2.37E-02	9.63E-02	1.56E-01	4.04E-04	1.77E-03	3.07E-03	1.13E-04	4.97E-04	8.62E-04
	Se	6.53E-05	9.99E-05	4.02E-04	2.17E-04	9.44E-04	1.74E-03	1.04E-04	4.57E-04	7.92E-04	1.11E-04	4.89E-04	8.48E-04
ET	P(x)	8.95E-04	2.42E-03	5.57E-03	5.17E-04	1.40E-03	3.22E-03	1.67E-04	4.52E-04	1.04E-03	1.06E-05	2.85E-05	6.59E-05
	Se	6.59E-05	3.93E-05	9.94E-05	3.79E-05	2.27E-05	8.31E-05	1.29E-05	1.32E-05	3.71E-05	2.10E-06	5.30E-06	1.23E-05
GBL	P(x)	2.53E-02	4.65E-02	8.03E-02	3.55E-02	6.47E-02	1.10E-01	2.97E-02	5.44E-02	9.33E-02	2.31E-02	4.26E-02	7.37E-02
	Se	1.40E-04	1.49E-04	2.00E-03	2.54E-04	3.81E-04	2.70E-03	3.24E-04	5.80E-04	2.48E-03	4.77E-04	8.81E-04	2.36E-03
GSL	P(x)	2.37E-02	1.05E-01	1.68E-01	1.47E-02	6.69E-02	1.10E-01	7.43E-03	3.48E-02	5.85E-02	3.63E-03	1.73E-02	2.94E-02
	Se	1.74E-04	2.42E-04	8.47E-04	1.23E-04	2.92E-04	6.71E-04	9.14E-05	3.40E-04	6.45E-04	6.35E-05	2.71E-04	4.89E-04
IC	P(x)	1.37E-02	2.28E-02	2.19E-02	2.90E-03	4.87E-03	4.67E-03	1.23E-03	2.07E-03	1.99E-03	1.96E-04	3.30E-04	3.16E-04
	Se	2.61E-04	1.86E-04	1.18E-04	9.12E-05	1.27E-04	1.24E-04	6.62E-05	1.05E-04	1.01E-04	2.55E-05	4.25E-05	4.09E-05
LA	P(x)	8.42E-02	2.24E-01	3.08E-01	3.63E-02	1.06E-01	1.55E-01	1.88E-02	5.66E-02	8.49E-02	8.45E-03	2.60E-02	3.97E-02
	Se	2.34E-04	2.34E-04	1.77E-03	2.00E-04	5.13E-04	1.27E-03	3.08E-04	8.82E-04	1.43E-03	2.54E-04	7.67E-04	1.20E-03
LW	P(x)	2.42E-02	5.14E-02	4.92E-02	8.52E-03	1.85E-02	1.76E-02	3.34E-03	7.29E-03	6.95E-03	8.66E-04	1.90E-03	1.81E-03
	Se	2.29E-04	1.18E-04	3.81E-04	1.14E-04	2.11E-04	2.47E-04	9.66E-05	2.05E-04	2.04E-04	3.74E-05	8.08E-05	7.85E-05
NAT	P(x)	3.88E-03	7.31E-03	1.06E-02	3.88E-03	7.31E-03	1.06E-02	3.88E-03	7.31E-03	1.06E-02	3.88E-03	7.31E-03	1.06E-02
	Se	8.36E-05	3.98E-05	6.07E-05	8.36E-05	3.98E-05	6.07E-05	8.36E-05	3.98E-05	6.07E-05	8.36E-05	3.98E-05	6.07E-05
P	P(x)	5.55E-03	1.81E-02	1.12E-02	2.56E-03	8.39E-03	5.17E-03	1.45E-03	4.78E-03	2.94E-03	1.96E-03	6.44E-03	3.97E-03
	Se	8.22E-05	1.11E-04	5.52E-05	5.48E-05	1.53E-04	9.70E-05	5.25E-05	1.66E-04	1.04E-04	1.43E-04	4.65E-04	2.88E-04
SC	P(x)	9.59E-04	9.14E-03	2.10E-02	2.91E-04	2.78E-03	6.45E-03	4.38E-05	4.20E-04	9.76E-04	2.87E-05	2.76E-04	6.41E-04
	Se	1.45E-04	1.18E-04	8.31E-05	4.47E-05	9.81E-05	2.26E-04	8.06E-06	4.53E-05	1.06E-04	5.49E-06	3.51E-05	8.19E-05
SP	P(x)	1.52E-02	4.45E-02	3.54E-02	5.90E-03	1.76E-02	1.39E-02	2.85E-03	8.54E-03	6.73E-03	1.27E-03	3.83E-03	3.01E-03
	Se	2.39E-04	1.35E-04	1.94E-04	9.98E-05	1.18E-04	1.18E-04	5.48E-05	9.62E-05	8.52E-05	2.51E-05	4.93E-05	4.30E-05
SY	P(x)	3.47E-02	8.41E-02	1.07E-01	3.25E-02	7.89E-02	1.01E-01	2.40E-02	5.91E-02	7.58E-02	2.32E-02	5.71E-02	7.32E-02
	Se	2.79E-04	2.63E-04	7.41E-04	2.93E-04	4.52E-04	9.15E-04	2.97E-04	6.39E-04	9.85E-04	5.22E-04	1.25E-03	1.67E-03
WJB	P(x)	1.26E-03	5.48E-03	9.59E-03	1.26E-03	5.48E-03	9.59E-03	1.26E-03	5.48E-03	9.59E-03	1.26E-03	5.48E-03	9.59E-03
	Se	4.10E-05	5.21E-05	1.04E-04	4.10E-05	5.21E-05	1.04E-04	4.10E-05	5.21E-05	1.04E-04	4.10E-05	5.21E-05	1.04E-04
WO	P(x)	1.88E-02	2.77E-02	5.96E-02	6.24E-03	9.27E-03	2.04E-02	2.02E-03	3.01E-03	6.66E-03	9.84E-04	1.47E-03	3.25E-03
	Se	6.07E-04	1.33E-04	2.71E-04	2.32E-04	1.64E-04	3.77E-04	1.57E-04	2.11E-04	4.67E-04	4.40E-04	6.53E-04	1.45E-03
WS	P(x)	2.99E-03	3.69E-02	2.01E-01	1.77E-03	2.22E-02	1.29E-01	3.11E-03	3.83E-02	2.07E-01	1.48E-03	1.86E-02	1.11E-01
	Se	3.30E-05	1.56E-04	3.39E-02	5.33E-05	6.71E-04	2.40E-02	2.34E-04	2.82E-03	3.69E-02	3.95E-04	4.88E-03	3.35E-02

Table S5b: - Predicted 10-year probabilities of burning (2002-2011) and their corresponding standard error for each combination of composition and biomass from logistic binomial regression models. Homogeneous fire regime (HFR) zones and their annual burn rates (BR; %) are from Boulanger et al. (2014). HRF zone names are detailed inFig. 1 of the main text..

HFR		Coniferous			Mixed-coniferous			Mixed-deciduous			Deciduous		
		Low	Medium	High	Low	Medium	High	Low	Medium	High	Low	Medium	High
EJB	P(x)	5.26E-02	8.92E-02	6.29E-02	2.36E-02	4.09E-02	2.84E-02	1.07E-02	1.87E-02	1.29E-02	1.71E-03	3.01E-03	2.07E-03
	Se	2.96E-04	1.93E-04	2.17E-04	1.83E-04	2.24E-04	1.67E-04	1.57E-04	2.54E-04	1.72E-04	2.23E-04	3.92E-04	2.69E-04
ES	P(x)	5.18E-03	3.31E-02	5.47E-02	7.64E-03	4.82E-02	7.89E-02	3.95E-04	2.59E-03	4.37E-03	1.13E-04	7.43E-04	1.25E-03
	Se	5.92E-05	9.60E-05	4.95E-04	1.05E-04	4.13E-04	9.72E-04	1.02E-04	6.69E-04	1.13E-03	1.11E-04	7.30E-04	1.23E-03
ET	P(x)	1.84E-03	2.01E-03	3.65E-03	8.12E-04	8.86E-04	1.61E-03	2.51E-04	2.73E-04	4.97E-04	1.76E-05	1.92E-05	3.49E-05
	Se	1.41E-04	4.98E-05	4.98E-05	6.26E-05	2.42E-05	2.65E-05	2.03E-05	1.02E-05	1.45E-05	3.52E-06	3.59E-06	6.47E-06
GBL	P(x)	3.25E-02	4.70E-02	5.15E-02	4.56E-02	6.55E-02	7.17E-02	3.64E-02	5.25E-02	5.75E-02	2.56E-02	3.71E-02	4.07E-02
	Se	1.37E-04	1.72E-04	1.68E-03	2.81E-04	4.13E-04	2.32E-03	3.81E-04	5.83E-04	1.96E-03	5.25E-04	7.76E-04	1.58E-03
GSL	P(x)	5.20E-02	1.08E-01	1.65E-01	3.03E-02	6.47E-02	1.01E-01	1.36E-02	2.96E-02	4.74E-02	5.32E-03	1.17E-02	1.89E-02
	Se	2.04E-04	2.82E-04	7.34E-04	1.71E-04	3.10E-04	5.24E-04	1.46E-04	3.00E-04	4.78E-04	8.87E-05	1.91E-04	2.98E-04
IC	P(x)	1.38E-02	2.55E-02	2.13E-02	2.91E-03	5.43E-03	4.53E-03	1.24E-03	2.31E-03	1.93E-03	1.93E-04	3.61E-04	3.01E-04
	Se	2.31E-04	2.17E-04	1.14E-04	8.75E-05	1.44E-04	1.19E-04	6.54E-05	1.17E-04	9.74E-05	2.51E-05	4.66E-05	3.89E-05
LA	P(x)	8.65E-02	2.09E-01	2.44E-01	3.87E-02	1.01E-01	1.20E-01	1.94E-02	5.24E-02	6.32E-02	8.06E-03	2.22E-02	2.69E-02
	Se	2.62E-04	2.34E-04	5.89E-04	2.13E-04	5.02E-04	6.42E-04	3.20E-04	8.26E-04	9.83E-04	2.44E-04	6.59E-04	7.92E-04
LW	P(x)	2.51E-02	5.48E-02	5.42E-02	8.91E-03	1.98E-02	1.96E-02	3.27E-03	7.34E-03	7.25E-03	7.74E-04	1.74E-03	1.72E-03
	Se	1.65E-04	1.43E-04	2.41E-04	1.09E-04	2.28E-04	2.34E-04	9.34E-05	2.06E-04	2.05E-04	3.32E-05	7.42E-05	7.34E-05
NAT	P(x)	1.61E-03	1.11E-02	6.82E-03	1.61E-03	1.11E-02	6.82E-03	1.61E-03	1.11E-02	6.82E-03	1.61E-03	1.11E-02	6.82E-03
	Se	4.78E-05	5.57E-05	4.26E-05	4.78E-05	5.57E-05	4.26E-05	4.78E-05	5.57E-05	4.26E-05	4.78E-05	5.57E-05	4.26E-05
P	P(x)	1.01E-02	2.15E-02	1.02E-02	4.27E-03	9.21E-03	4.33E-03	2.37E-03	5.11E-03	2.40E-03	2.99E-03	6.45E-03	3.03E-03
	Se	9.59E-05	1.43E-04	5.21E-05	7.98E-05	1.73E-04	8.10E-05	8.23E-05	1.79E-04	8.41E-05	2.16E-04	4.66E-04	2.19E-04
SC	P(x)	1.54E-03	1.06E-02	2.00E-02	3.32E-04	2.31E-03	4.39E-03	4.60E-05	3.21E-04	6.11E-04	2.66E-05	1.86E-04	3.53E-04
	Se	1.42E-04	1.72E-04	7.81E-05	3.25E-05	8.67E-05	1.52E-04	6.51E-06	3.49E-05	6.59E-05	4.12E-06	2.35E-05	4.47E-05
SP	P(x)	2.70E-02	3.90E-02	5.49E-02	9.67E-03	1.41E-02	2.00E-02	4.43E-03	6.47E-03	9.23E-03	1.85E-03	2.71E-03	3.87E-03
	Se	1.80E-04	1.43E-04	2.26E-04	9.16E-05	1.04E-04	1.40E-04	5.92E-05	7.71E-05	1.05E-04	2.72E-05	3.67E-05	5.00E-05
SY	P(x)	5.22E-02	8.79E-02	9.94E-02	4.78E-02	8.09E-02	9.15E-02	3.52E-02	6.01E-02	6.82E-02	3.08E-02	5.27E-02	5.98E-02
	Se	2.84E-04	2.87E-04	7.87E-04	3.27E-04	4.83E-04	9.00E-04	3.87E-04	6.73E-04	9.35E-04	6.76E-04	1.17E-03	1.40E-03
WJB	P(x)	2.97E-03	6.45E-03	7.72E-03	2.97E-03	6.45E-03	7.72E-03	2.97E-03	6.45E-03	7.72E-03	2.97E-03	6.45E-03	7.72E-03
	Se	4.92E-05	6.55E-05	9.14E-05	4.92E-05	6.55E-05	9.14E-05	4.92E-05	6.55E-05	9.14E-05	4.92E-05	6.55E-05	9.14E-05
WO	P(x)	2.29E-02	3.78E-02	3.93E-02	5.70E-03	9.51E-03	9.90E-03	1.75E-03	2.93E-03	3.05E-03	8.29E-04	1.39E-03	1.45E-03
	Se	4.57E-04	2.06E-04	1.65E-04	1.55E-04	1.77E-04	1.76E-04	1.28E-04	2.06E-04	2.14E-04	3.70E-04	6.19E-04	6.44E-04
WS	P(x)	6.16E-03	3.58E-02	2.12E-01	1.52E-03	9.06E-03	6.20E-02	3.11E-03	1.84E-02	1.19E-01	1.43E-03	8.50E-03	5.84E-02
	Se	4.56E-05	1.69E-04	8.45E-03	4.59E-05	2.71E-04	3.42E-03	2.35E-04	1.37E-03	9.58E-03	3.81E-04	2.25E-03	1.49E-02

Table S6a: Selection ratios by homogeneous fire regime (HFR) zone for the 12 composition and age classes.

HFR	Coniferous			Mixed-coniferous			Mixed-deciduous			Deciduous		
	Young	Mature	Old	Young	Mature	Old	Young	Mature	Old	Young	Mature	Old
EJB	1.30	2.25	3.25	0.68	1.19	1.75	0.25	0.45	0.66	0.04	0.08	0.11
ES	0.24	1.04	1.76	0.75	3.05	4.94	0.01	0.06	0.10	0.00	0.02	0.03
ET	0.68	1.84	4.23	0.39	1.06	2.45	0.13	0.34	0.79	0.01	0.02	0.05
GBL	0.45	0.82	1.42	0.63	1.14	1.95	0.52	0.96	1.65	0.41	0.75	1.30
GSL	0.45	1.97	3.15	0.28	1.26	2.06	0.14	0.65	1.10	0.07	0.32	0.55
IC	2.13	3.55	3.41	0.45	0.76	0.73	0.19	0.32	0.31	0.03	0.05	0.05
LA	0.88	2.34	3.23	0.38	1.11	1.62	0.20	0.59	0.89	0.09	0.27	0.42
LW	1.51	3.22	3.08	0.53	1.16	1.10	0.21	0.46	0.44	0.05	0.12	0.11
NAT	0.53	1.00	1.46	0.53	1.00	1.46	0.53	1.00	1.46	0.53	1.00	1.46
P	0.92	2.99	1.85	0.42	1.39	0.86	0.24	0.79	0.49	0.32	1.07	0.66
SC	0.27	2.55	5.86	0.08	0.78	1.80	0.01	0.12	0.27	0.01	0.08	0.18
SP	1.15	3.37	2.67	0.45	1.33	1.05	0.22	0.65	0.51	0.10	0.29	0.23
SY	0.56	1.34	1.71	0.52	1.26	1.61	0.38	0.94	1.21	0.37	0.91	1.17
WJB	0.23	1.01	1.76	0.23	1.01	1.76	0.23	1.01	1.76	0.23	1.01	1.76
WO	0.05	0.57	3.12	0.03	0.34	2.01	0.05	0.59	3.21	0.02	0.29	1.72
WS	1.41	2.09	4.49	0.47	0.70	1.53	0.15	0.23	0.50	0.07	0.11	0.24

Table S6b: Selection ratios by homogeneous fire regime (HFR) zone for the 12 composition and biomass classes.

HFR	Coniferous			Mixed-coniferous			Mixed-deciduous			Deciduous		
	Low	Medium	High	Low	Medium	High	Low	Medium	High	Low	Medium	High
EJB	1.82	3.09	2.18	0.82	1.42	0.98	0.37	0.65	0.45	0.06	0.10	0.07
ES	0.26	1.68	2.77	0.39	2.44	3.99	0.02	0.13	0.22	0.01	0.04	0.06
ET	1.86	2.03	3.68	0.82	0.89	1.62	0.25	0.28	0.50	0.02	0.02	0.04
GBL	0.69	1.00	1.10	0.97	1.40	1.53	0.77	1.12	1.22	0.54	0.79	0.87
GSL	0.96	2.00	3.06	0.56	1.20	1.88	0.25	0.55	0.88	0.10	0.22	0.35
IC	2.07	3.83	3.21	0.44	0.82	0.68	0.19	0.35	0.29	0.03	0.05	0.05
LA	1.05	2.53	2.95	0.47	1.22	1.46	0.24	0.63	0.76	0.10	0.27	0.33
LW	1.47	3.22	3.18	0.52	1.16	1.15	0.19	0.43	0.43	0.05	0.10	0.10
NAT	0.25	1.70	1.05	0.25	1.70	1.05	0.25	1.70	1.05	0.25	1.70	1.05
P	1.47	3.15	1.49	0.63	1.35	0.63	0.35	0.75	0.35	0.44	0.94	0.44
SC	0.45	3.13	5.89	0.10	0.68	1.29	0.01	0.09	0.18	0.01	0.05	0.10
SP	1.68	2.42	3.41	0.60	0.88	1.25	0.28	0.40	0.57	0.12	0.17	0.24
SY	0.82	1.38	1.56	0.75	1.27	1.43	0.55	0.94	1.07	0.48	0.82	0.94
WJB	0.52	1.13	1.35	0.52	1.13	1.35	0.52	1.13	1.35	0.52	1.13	1.35
WO	0.14	0.80	4.75	0.03	0.20	1.39	0.07	0.41	2.67	0.03	0.19	1.31
WS	2.01	3.32	3.45	0.50	0.84	0.87	0.15	0.26	0.27	0.07	0.12	0.13