Supplementary Material

A neural network model to study factors impacting the selection of hazardous fuel treatment types in Colorado's national forests

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Table S1. Explanatory variable summary statistics

Variable	Minimum	Maximum	Mean	S.D.
Percent of Replacement-severity Fire (%)	1	20	8.35	5.50
Percent of Mixed-severity Fire (%)	1	16	6.55	2.77
Percent of Low-severity Fire (%)	1	20	6.46	5.41
Wildfire Hazard Potential	0	16,500	817	1,470
Burn Probability	0	0.0224	0.00364	0.00399
Flame Length Exceedance Probability – 4ft	0	1	0.514	0.349
Flame Length Exceedance Probability – 8ft	0	1	0.302	0.281
Conditional Risk to Potential Structures	0	99.9	53.0	21.3
Conditional Flame Length	0	112	8.47	9.20
Elevation (m)	1,890	3,680	2710	336
Slope (degrees)	0	54	9.99	7.37
Distance to Streams (m)	0	3,410	631	481
Distance to Roads (m)	0	6,720	506	764
Distance to Structures (m)	0	8,400	1,960	1,360

Table S2. Variance inflation factor values for explanatory variables in hazardous fuel treatment predictions

Variable	**Abbreviation**	VIF
Percent of Replacement-severity Fire (%)	PRS	198
Percent of Mixed-severity Fire (%)	PMS	54.2
Percent of Low-severity Fire (%)	PLS	199
Wildfire Hazard Potential	WHP	3.07
Burn Probability	BP	2.57
Flame Length Exceedance Probability – 4ft	FLEP4	10.7
Flame Length Exceedance Probability – 8ft	FLEP8	5.97

Conditional Risk to Potential Structures	CRPS	18.9
Conditional Flame Length	CFL	3.80
Elevation (m)	DEM	2.24
Slope (degrees)	Slope	1.21
Distance to Streams (m)	StreamEuc	1.06
Distance to Roads (m)	RoadEuc	1.28
Distance to Structures (m)	StrucEuc	1.21

Table S3. Leave-one-out cross-validation AUC scores for each HFT across each national forest. Each row represents a specific NF used as the testing set, while the remaining forests serve as the training set

Validation NF	Broadcast Burning	Yarding	Burning of Piled Material	Piling of Fuels	Thinning for HFR	Multi-Treatment
Rio Grande NF	0.928	0.482	0.691	0.765	0.828	0.482
San Juan NF	0.689	0.909	0.663	0.464	0.525	0.658
Arapaho and Roosevelt NF	0.822	0.795	0.693	0.523	0.350	0.694
Grand Mesa, Uncompahgre, and Gunnison NF	0.945	0.803	0.716	0.145	0.871	0.547
White River NF	0.807	0.845	0.737	0.614	0.459	0.719
Medicine Bow-Routt NF	0.923	0.408	0.592	0.377	0.942	0.665
Pike and San Isabel NF	0.683	0.0854	0.356	0.429	0.325	0.602