

Supplementary Materials:

Table S1. Grouping of Forest Inventory and Analysis (FIA) forest types used to evaluate Forest Vegetation Simulator- Fire and Fuels Extension (FVS-FFE) mortality predictions.

Forest Type Group	FIA Forest Type	Number of Stands
California mixed conifer	California mixed conifer	105
California oaks	Canyon live oak	41
California oaks	Interior live oak	18
California oaks	Coast live oak	13
California oaks	California black oak	12
California oaks	Tanoak	12
California oaks	Blue oak	1
Douglas-fir	Douglas-fir	17
Douglas-fir	Bigcone Douglas-fir	2
Firs	Subalpine fir	10
Firs	Grand fir	8
Firs	Engelmann spruce/subalpine fir	5
Firs	Red fir	3
Other conifers	Redwood (Coast?)	3
Other conifers	Mountain hemlock	2
Other conifers	Western redcedar	1
Other hardwoods	California laurel	3
Other hardwoods	Bigleaf maple	2
Other hardwoods	Pacific madrone	2
Other hardwoods	Aspen	1
Other hardwoods	Cercocarpus woodland	1
Other hardwoods	Cottonwood	1
Other hardwoods	Giant chinkapin	1
Other hardwoods	Other hardwoods	1
Pines	Jeffrey pine	9
Pines	Lodgepole pine	6
Pines	Gray pine	1
Pines	Knobcone pine	1
Pinyon/juniper	Pinyon/juniper woodland	9
Pinyon/juniper	Western juniper	3
Ponderosa pine	Ponderosa pine	32
White fir	White fir	16

Table S2. Mean observed bole char height (m), mean error and root mean square error (RMSE)(m) of differences between field-assessed bole char height and weather scenario informed modeled flame length, by weather scenario, by forest type group, with weather scenario enabling error closest to zero in bold.

Forest Type Group	Max Wind	POTSev	Mean Wind	POTMod	Min Wind
Error					
California mixed conifer	4.5	7	0.2	-1.2	-0.8
California oaks	17.9	0.9	1.9	-0.4	0.1
Douglas-fir	6.7	10	2	-1	0.7
Firs	9.3	15.2	-0.2	-1.6	-1.2
Other conifers	33.8	5.2	-1	-1.5	-1.5
Other hardwoods	6.8	1.9	2.9	-0.2	0.9
Pines	6.8	6.8	0.4	-0.5	-0.4
Pinyon/juniper	1.4	3.1	-0.4	-1.3	-1.3
Ponderosa pine	1.1	4.9	-0.5	-1.1	-1.1
White fir	4	10.4	-0.2	-1.1	-0.8
RMSE					
California mixed conifer	8.7	11.7	3.5	2	2.5
California oaks	34.5	3.1	4.2	1.5	2
Douglas-fir	13.9	14.1	5.6	2.4	4.4
Firs	14.6	18.4	2.3	2.2	1.6
Other conifers	75.5	11	2.3	2.3	2.3
Other hardwoods	11	4.2	5.6	0.9	2.6
Pines	14.3	12.7	2	1	1.3
Pinyon/juniper	3.2	4.8	1.3	1.5	1.6
Ponderosa pine	3.6	9.2	2	1.8	1.7
White fir	6.5	12.8	1.5	1.4	1.3

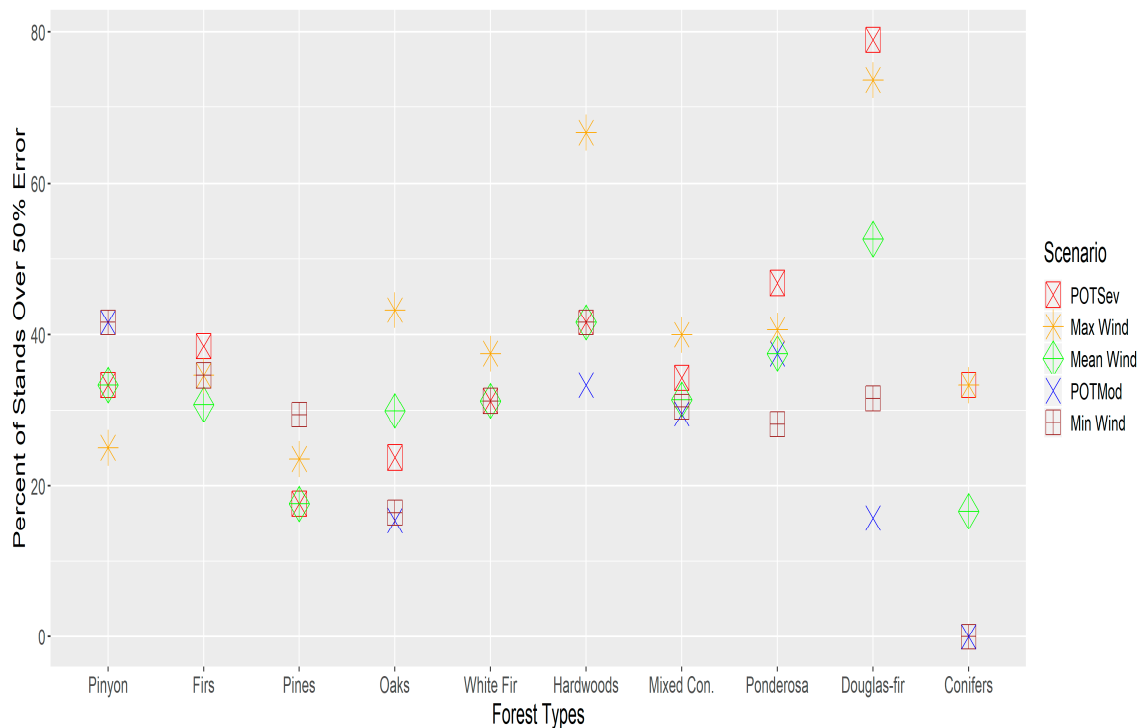


Figure S1. Percentage of stands with over 50% error (absolute) in fire-induced mortality as a percent of pre-fire, live tree basal area by weather scenario, and forest type group.

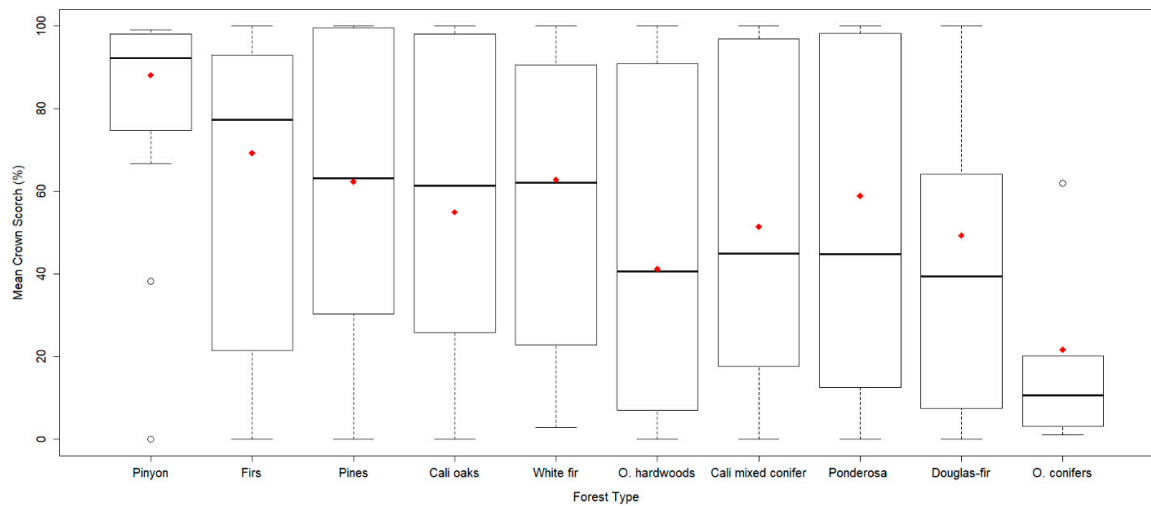


Figure S2. Boxplots of observed stand-level crown scorch (% of crown length scorched and burned) by forest type group, showing means (red diamonds), medians (black lines), quartiles (box ends), 5th and 95th percentiles (whiskers), and outlier (open circles).

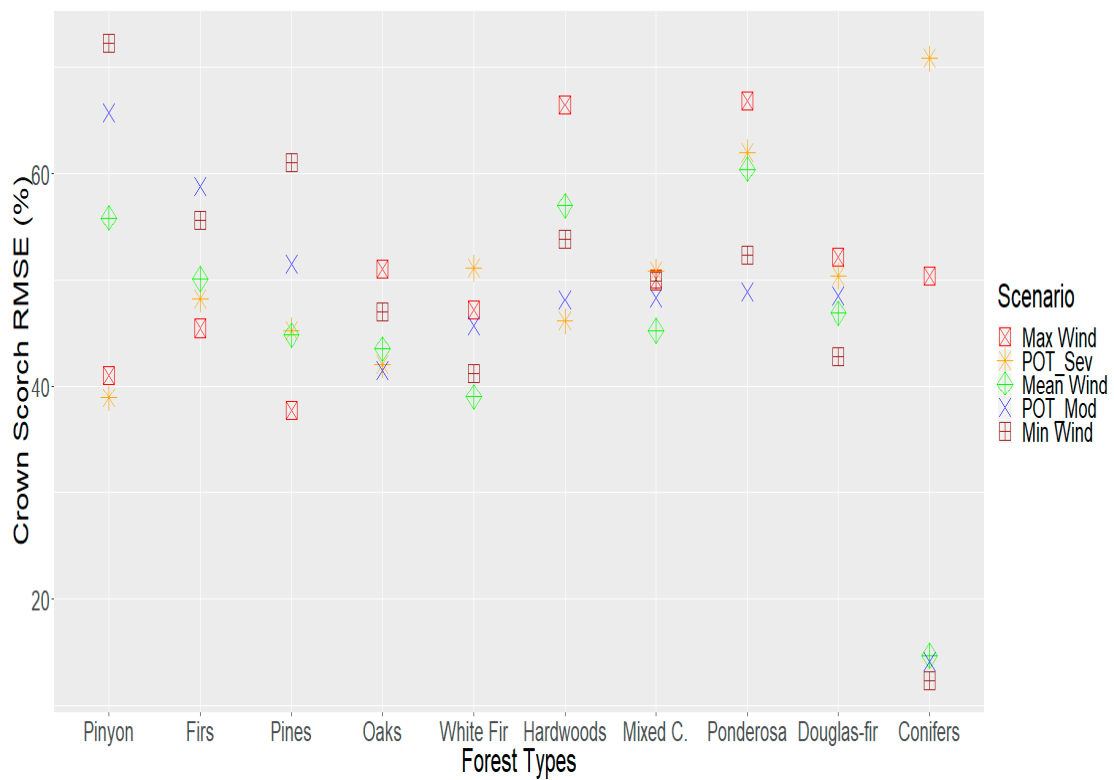


Figure S3. Root mean square error (RMSE) for model-predicted mean stand-level crown scorch (%) by forest type group and weather scenario.

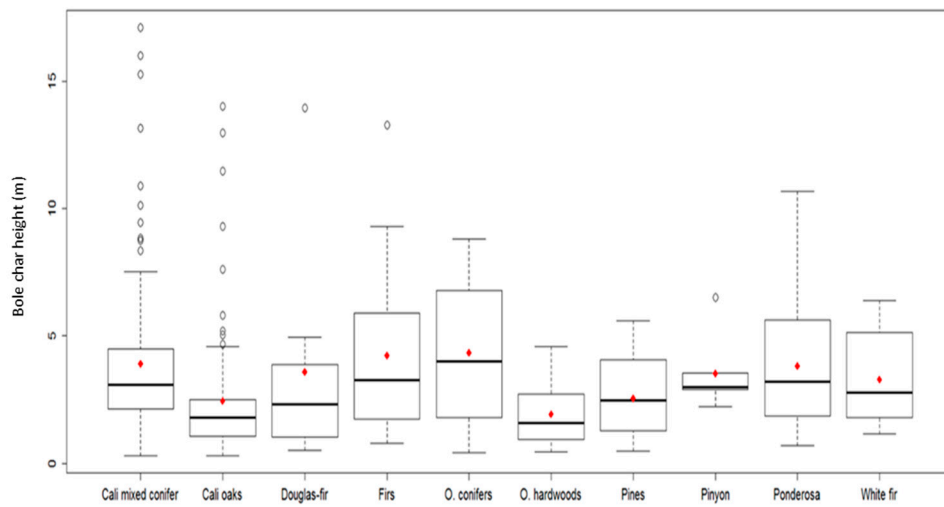


Figure S4. Boxplots of mean stand-level bole char height (meters) by forest type. Boxes depict quantiles, whiskers are 5th and 95th percentiles, and red diamonds are means.

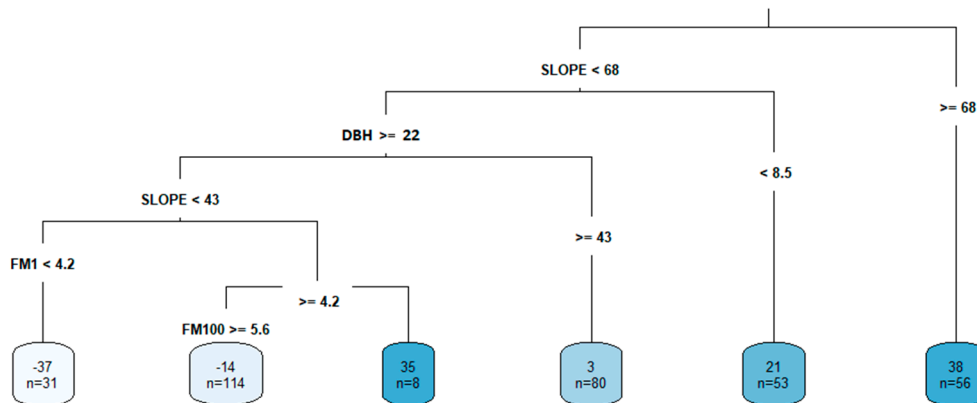


Figure S5. Pruned regression tree of pre-fire stand measurements, remote automated weather stations (RAWS) weather, and modeled attributes on predicted mortality errors (predicted – observed % basal area (BA)) in the Mean Wind weather scenario. Values in boxes are mortality percent and number of stands. Slope is topographic slope (%), dia1_mean is mean stand tree diameter (in), FM1_Mean and FM100_mean are 1- and 100-hr fuel moisture (%), respectively.