Appendix 2. Management, Wildfire and Fuels.

Table A2.1. Effect of fire severity and management action on tree size, canopy cover, canopy layering and surface fuels.

Fire severity/management activity	Effect of disturbance
Surface fire (includes prescribed fire)	Reduces surface fuels; reduces multi-layer states to a single layer for some vegetation states
Mixed-severity fire	Reduces surface fuels; reduces multi-layer states to a single layer; decreases canopy cover by one or two classes
Stand-replacing fire	Reduces surface fuels and no canopy layers remain; decreases canopy cover to none or low; trees are killed with transition to grass-forb or shrub vegetation states
Mowing and grinding	Eliminates shrub layers and increases surface fuels
Pre-commercial thinning	Increases surface fuels; decreases high canopy cover to moderate or low cover
Thin from below	Increases surface fuels; generally reduces multi-layer states to single layer; decreases high canopy cover to moderate
Partial harvest	Increases surface fuels; generally reduces multi-layer states to single layer; generally decreases canopy cover by one class in high and moderate states
Partial harvest – heavy	Increases surface fuels; reduces multi-layer states to single layer; decreases canopy cover by one or two classes; reduces tree size by one class
Regeneration harvest	Increases surface fuels and no canopy layers remain; decreases canopy cover to none or low; trees are removed with transition to grass-forb or shrub vegetation states
Post-fire salvage of dead trees	No effect in canopy cover or layering. Increases surface fuels.

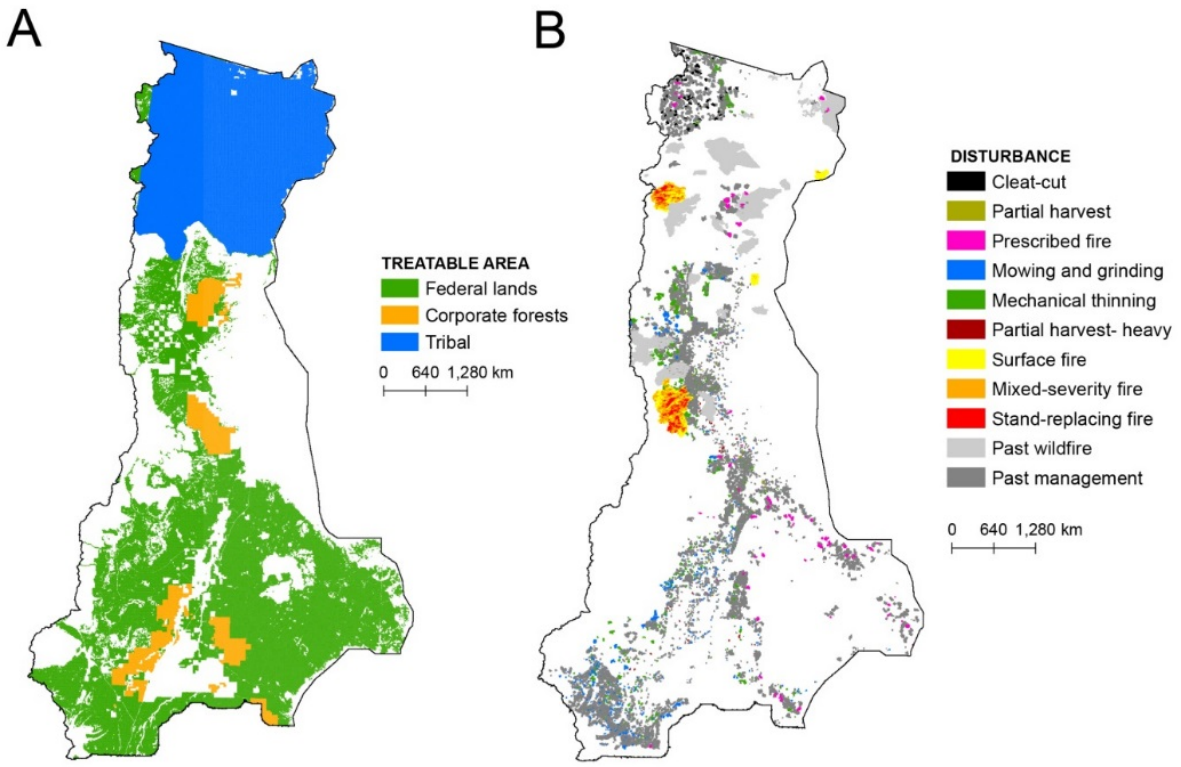

Fig. A2.1. Maps of A) treatable area and B) disturbance type (management and wildfire) at year 1 of the simulation (initial conditions) in the north sub-study area. Treatable area in federal lands corresponds to all forested lands excluding areas classified as wilderness and areas excluded from timber production due to biodiversity, conservation and amenity protection.

Table A2.2. Description of fuel model variants.

Fuel model variant	Description of variant and how it is applied	Time in variant (years)
1	Baseline fuel model for a vegclass	Remains the same until a disturbance or vegetation transition occurs
2	Assigned after a non-lethal surface fire in forested and non-forested (arid) vegclasses	5
3	Assigned after a mixed-severity fire in forested vegclasses	10
4	Assigned after a stand-replacing fire in forested vegclasses	10
5	Assigned after mowing/mastication treatments in forested vegclasses	5
6	Assigned after thinning treatments/partial harvests in forested vegclasses	5

Table A2.3. Fuel model codes assigned to post-disturbance conditions. All models are described in Scott and Burgan (2005) with exception of MAST, a custom fuel model for masticated fuel beds.

Baseline	Surface fire or prescribed fire	Mixed severity fire	Stand-replacing fire	Mastication	Thinning
Until transition/ disturbance	10 years	10 years	10 years	5 years	5 years
NB3	NB3	NB3	NB3	NB3	NB3
NB8	NB8	NB8	NB8	NB8	NB8
GR1	TL1	GR1	TL1	GR1	GR1
GR2	TL2	GR2	TL1	GR2	GR2
GR3	TL2	GR2	TL1	GR2	GR3
GS1	TL2	GS1	TL1	MAST	TL5
GS2	TL2	GR2	TL1	MAST	TL5
SH1	TL2	GS1	TL1	MAST	TL5
SH2	TL2	GS2	TL1	MAST	TL5
TU1	TL2	GR2	TL1	MAST	TL5
TU4	TL1	TL1	TL1	MAST	TL5
TU5	TL1	TL1	TL1	MAST	TL5
TL1	TL1	TL1	TL1	MAST	TL5
TL2	TL1	TL1	TL1	MAST	TL5
TL3	TL1	TL1	TL1	MAST	TL5
TL4	TL1	TL1	TL1	MAST	TL5
TL5	TL1	TL1	TL1	MAST	TL5
TL6	TL1	TL1	TL1	MAST	TL5
TL7	TL1	TL1	TL1	MAST	TL5
TL8	TL1	TL1	TL1	MAST	TL5
TL9	TL1	TL1	TL1	MAST	TL5

LITERATURE CITED

Scott, J. H. and R. E. Burgan. 2005. Standard fire behavior fuel models: a comprehensive set for use with Rothermel's surface fire spread model. Gen. Tech. Rep. RMRS-GTR-153, USDA Forest Service, Rocky Mountain Research Station.