



Landscape Scale Forest Restoration Projects in the Upper South Platte

Nate Beckman
Supervisory Forester – Communities and Communications
Golden Field Office
Colorado State Forest Service



Upper South Platte Watershed



- The 2,600 square-mile Upper South Platte watershed supplies drinking water to approximately one-third of all Colorado residents.
- It is also ground zero for fire risk, having experienced 5 major fires in the last 20 years.



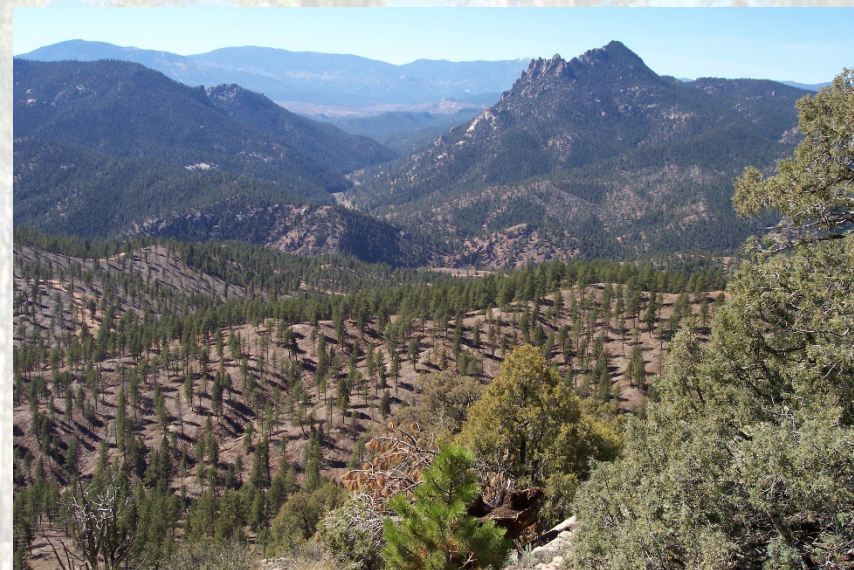
Watershed Protection



Upper South Platte Partnership



- In 2015, several organizations, came together to launch a new 5-year collaborative effort known as the USPP
- To complement work that had been primarily focused on federal and DW lands
- By accelerating forest treatment on private lands within the watershed.



USPP Goals and Desired Conditions



- Watershed Protection



Resilient Landscapes



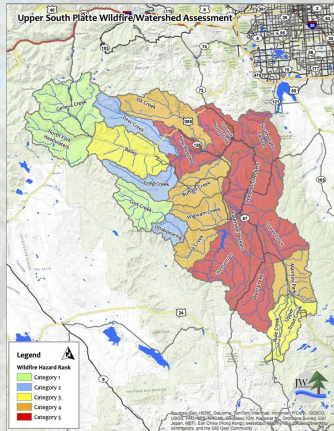
Fire Adapted Communities



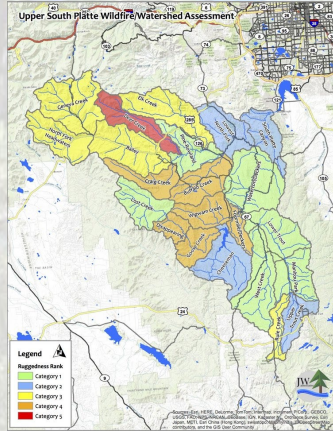
Safe and Effective Fire Response



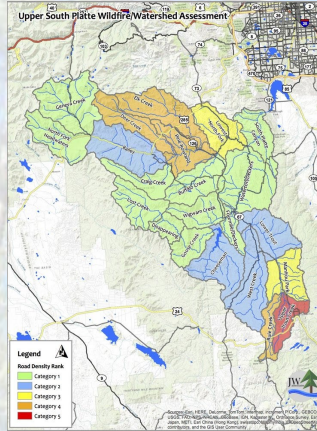
Prioritization



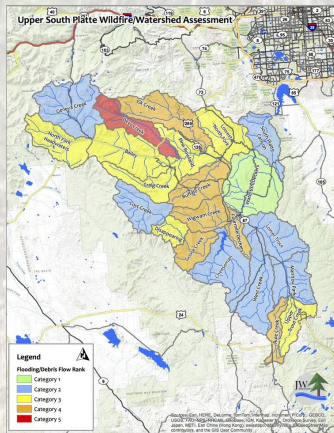
Wildfire Hazard



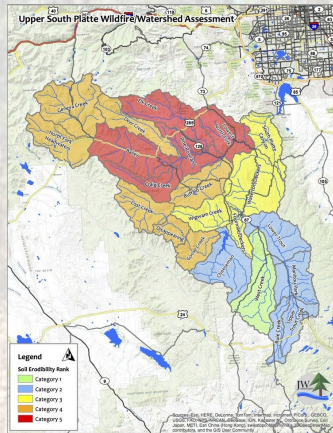
Ruggedness



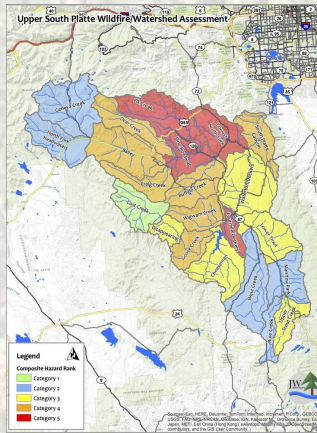
Road Density



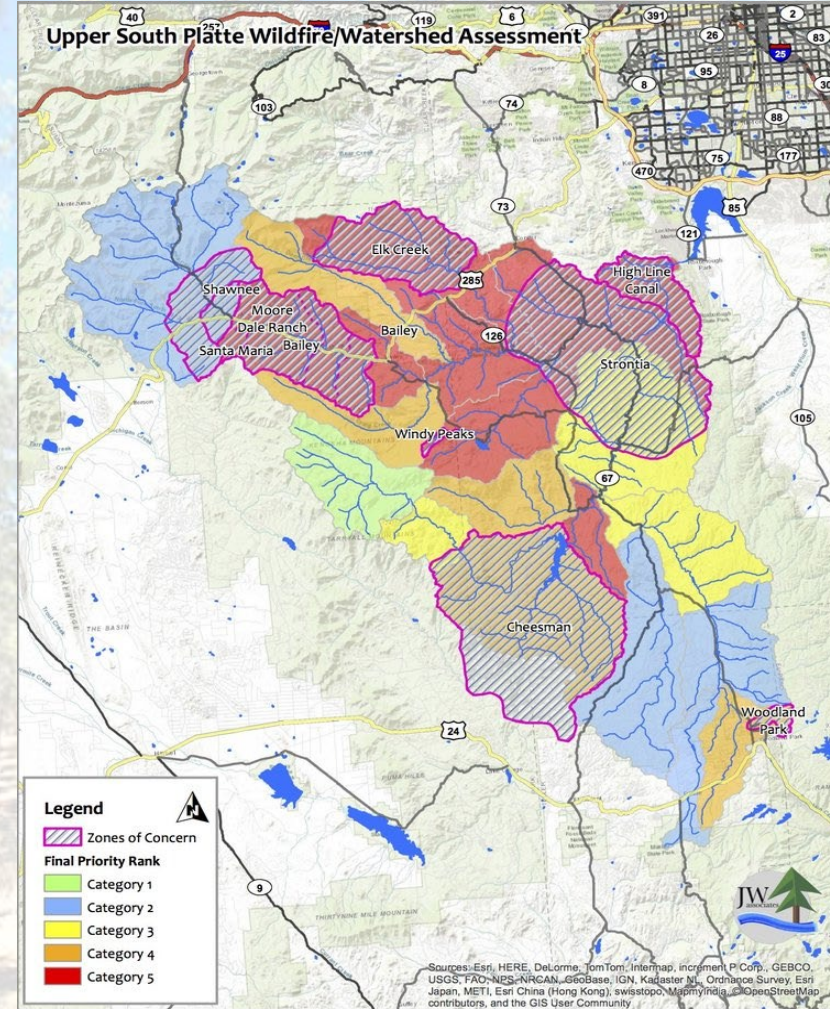
Debris Flow



Soil Erodibility

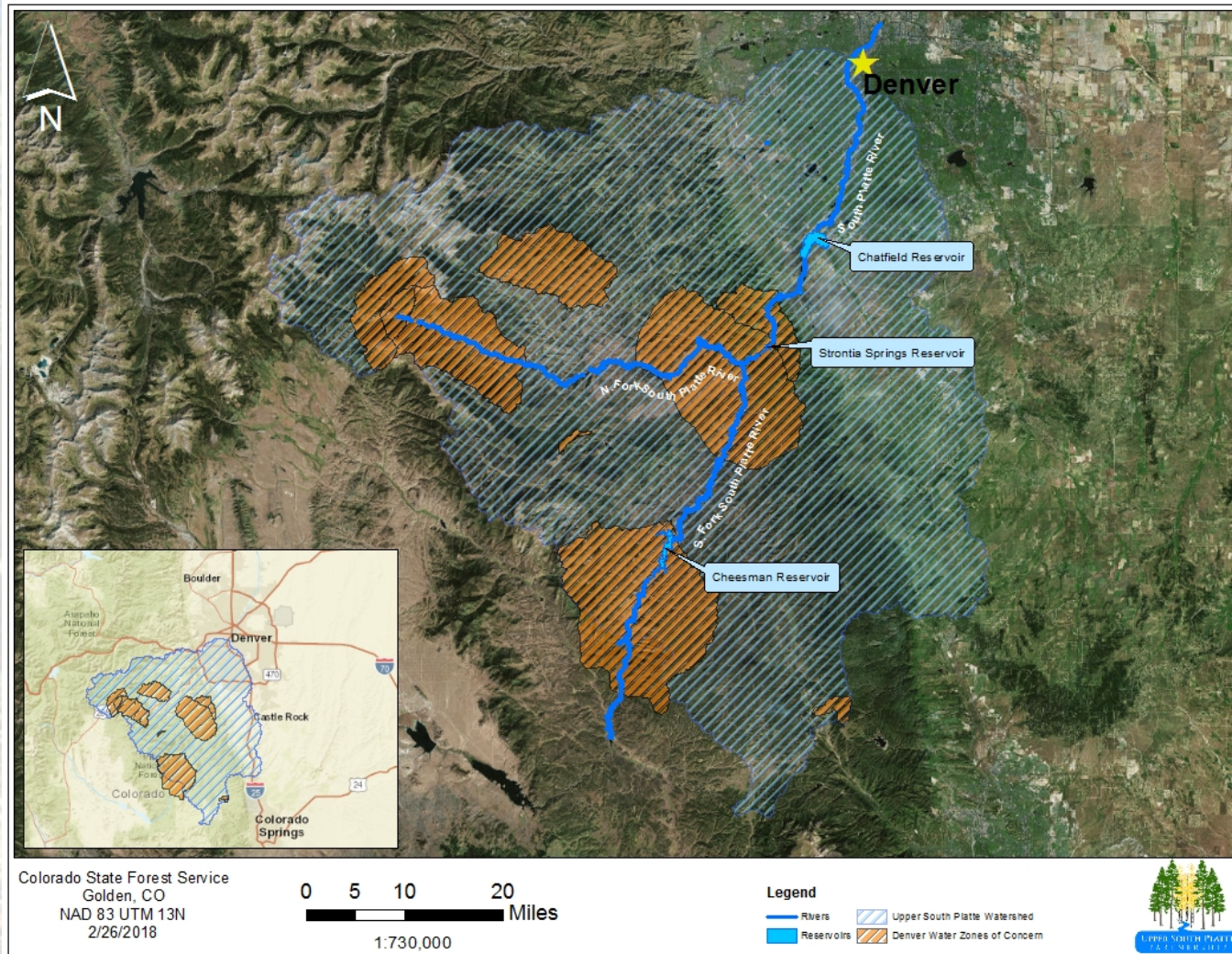


Composite Hazard

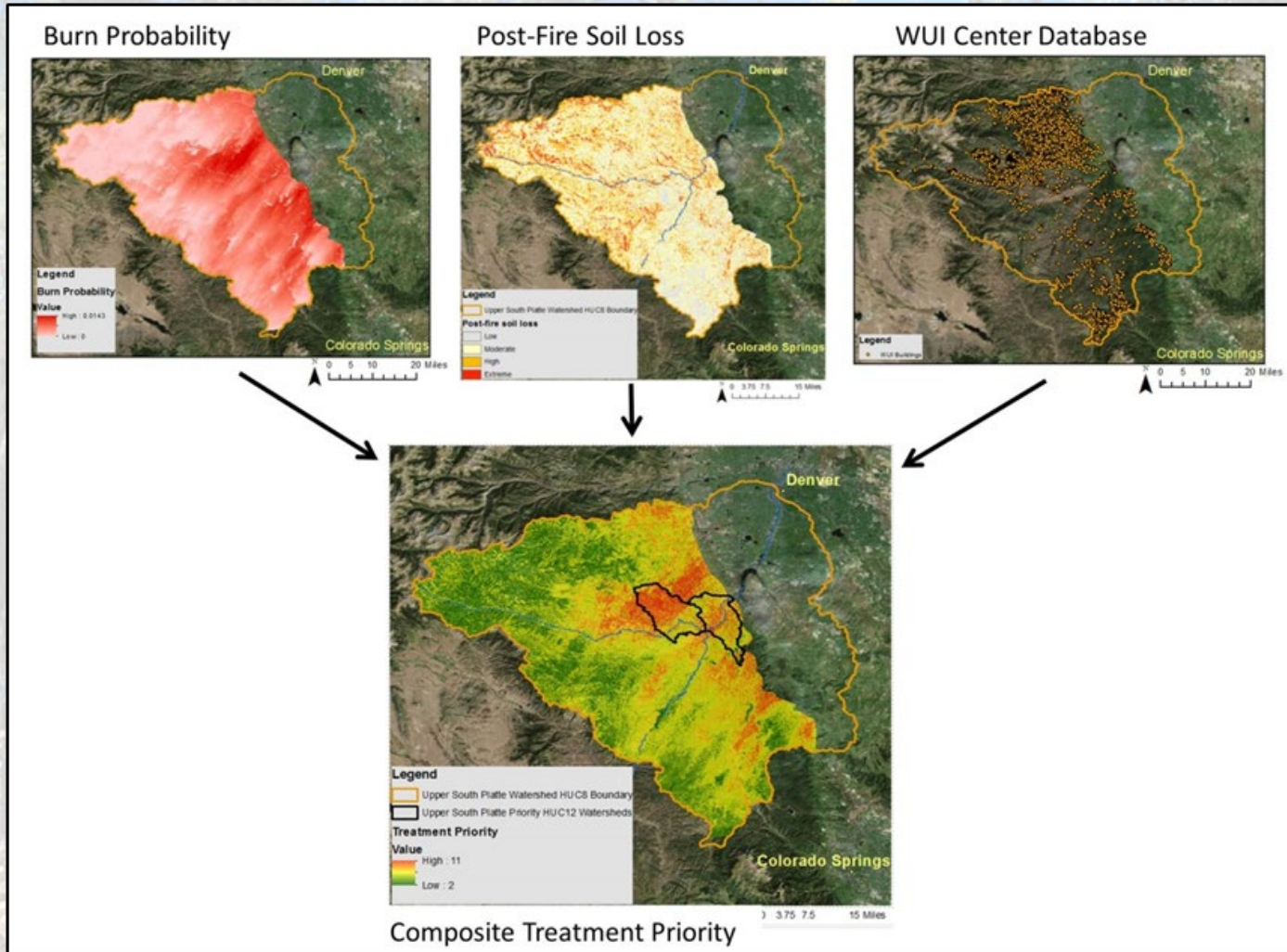


Zones of Concern

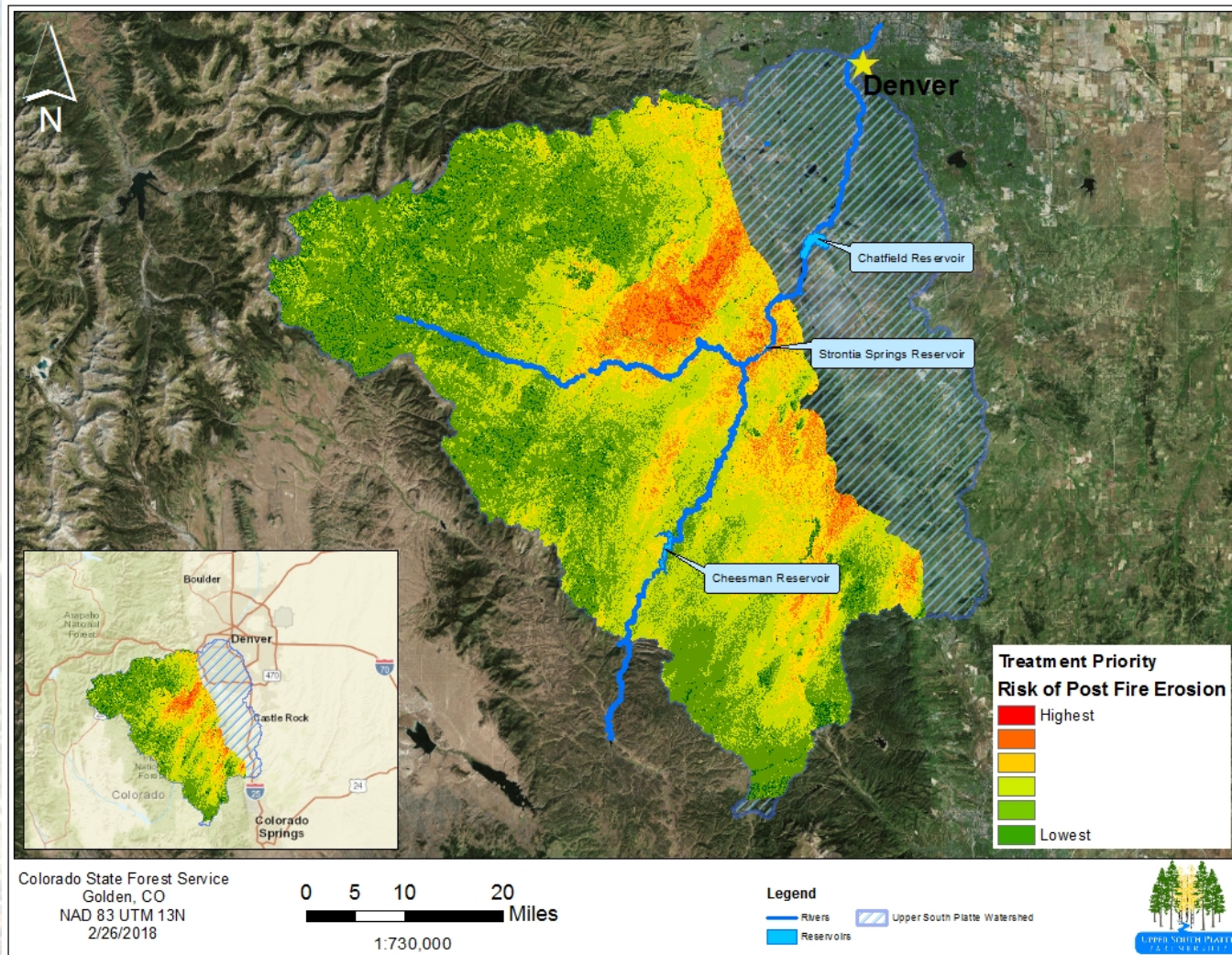
Prioritization



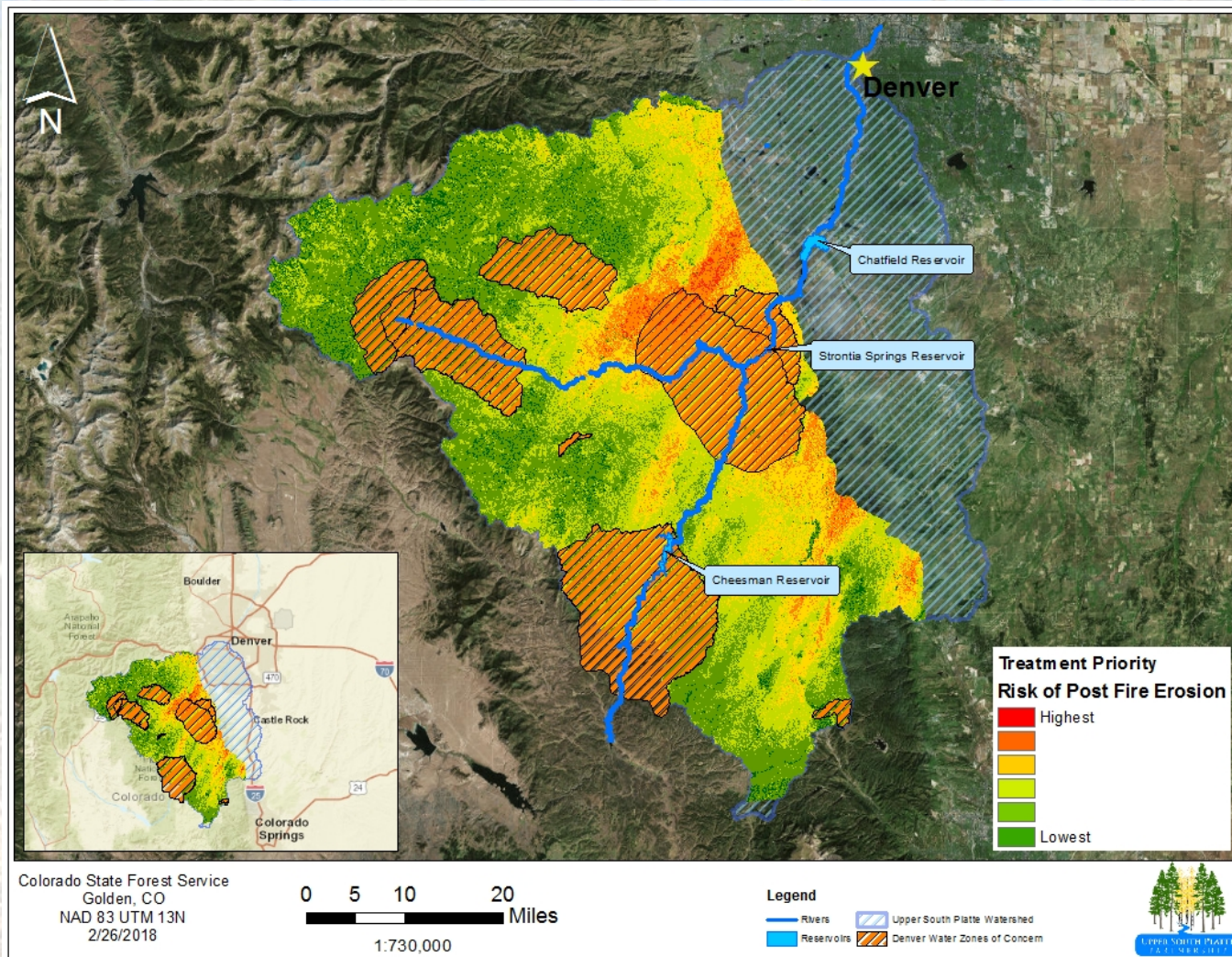
Prioritization



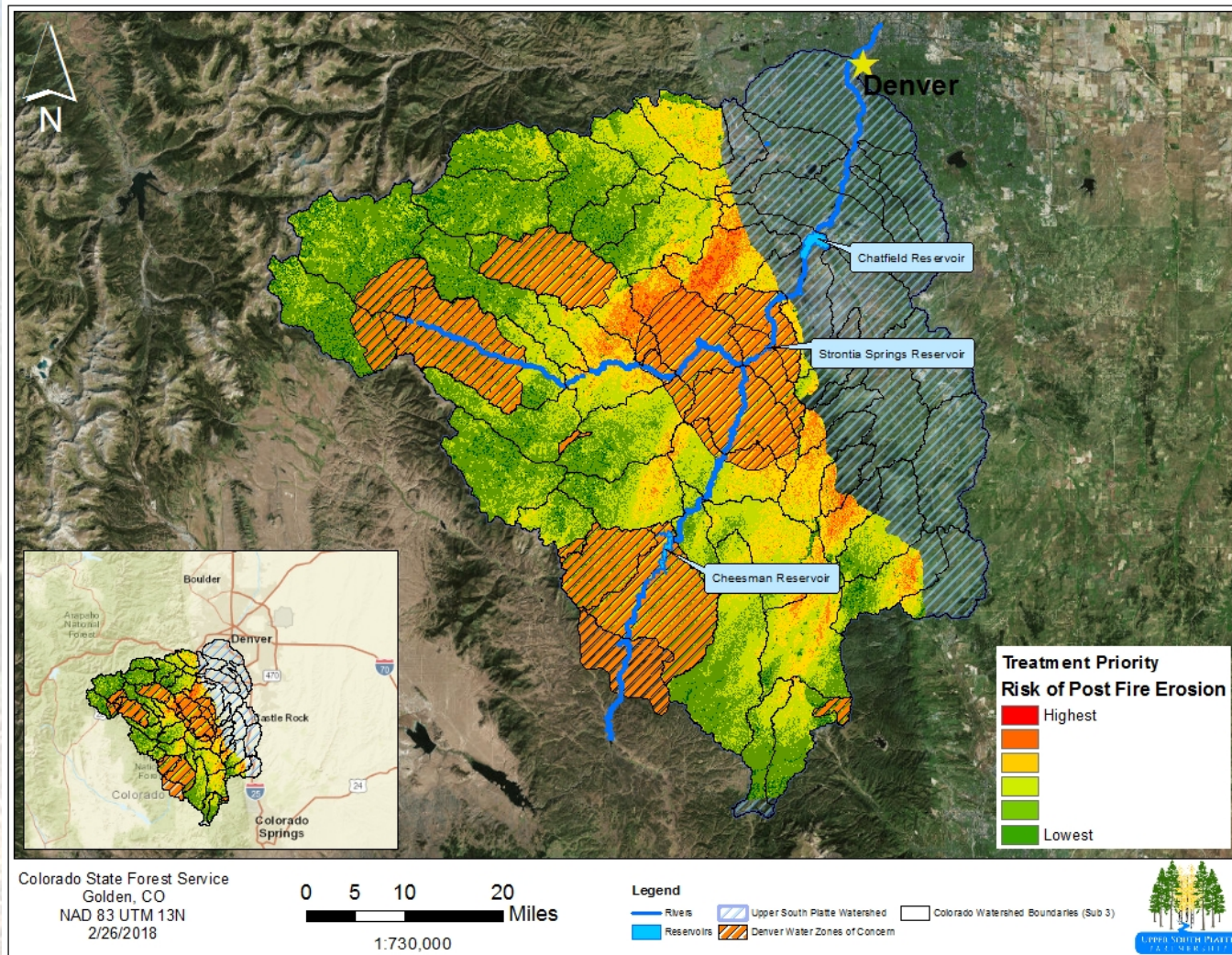
Prioritization



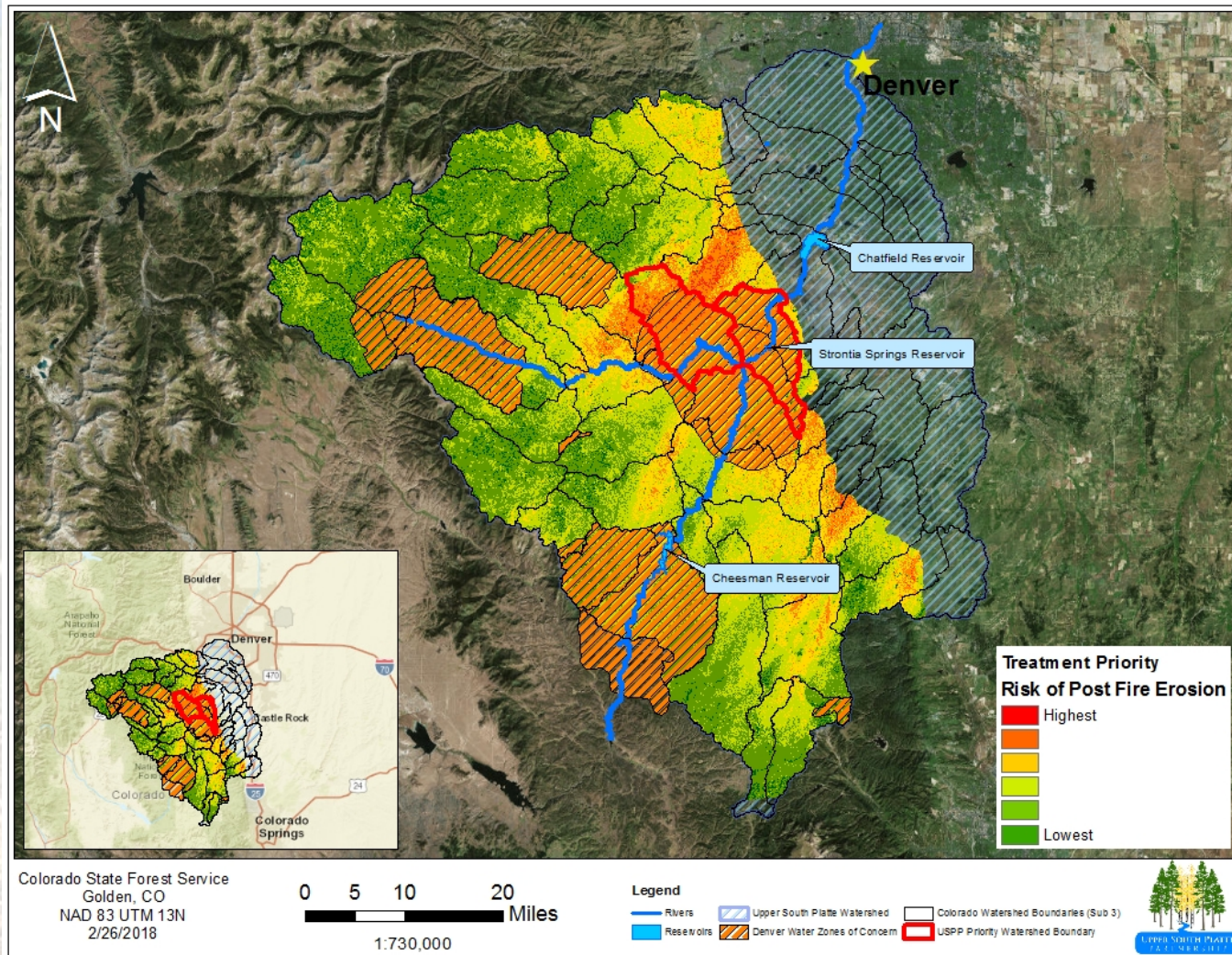
Prioritization



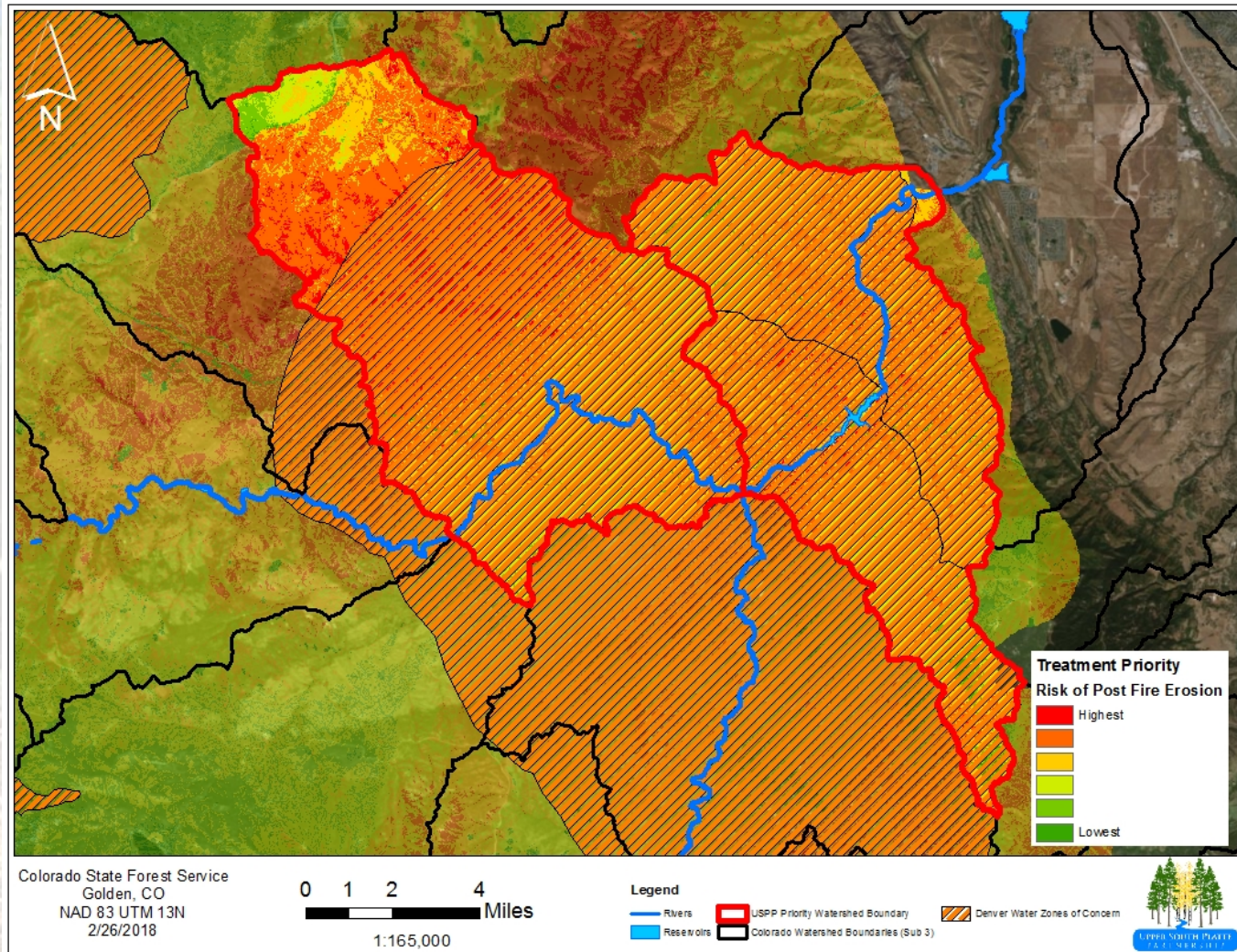
Prioritization



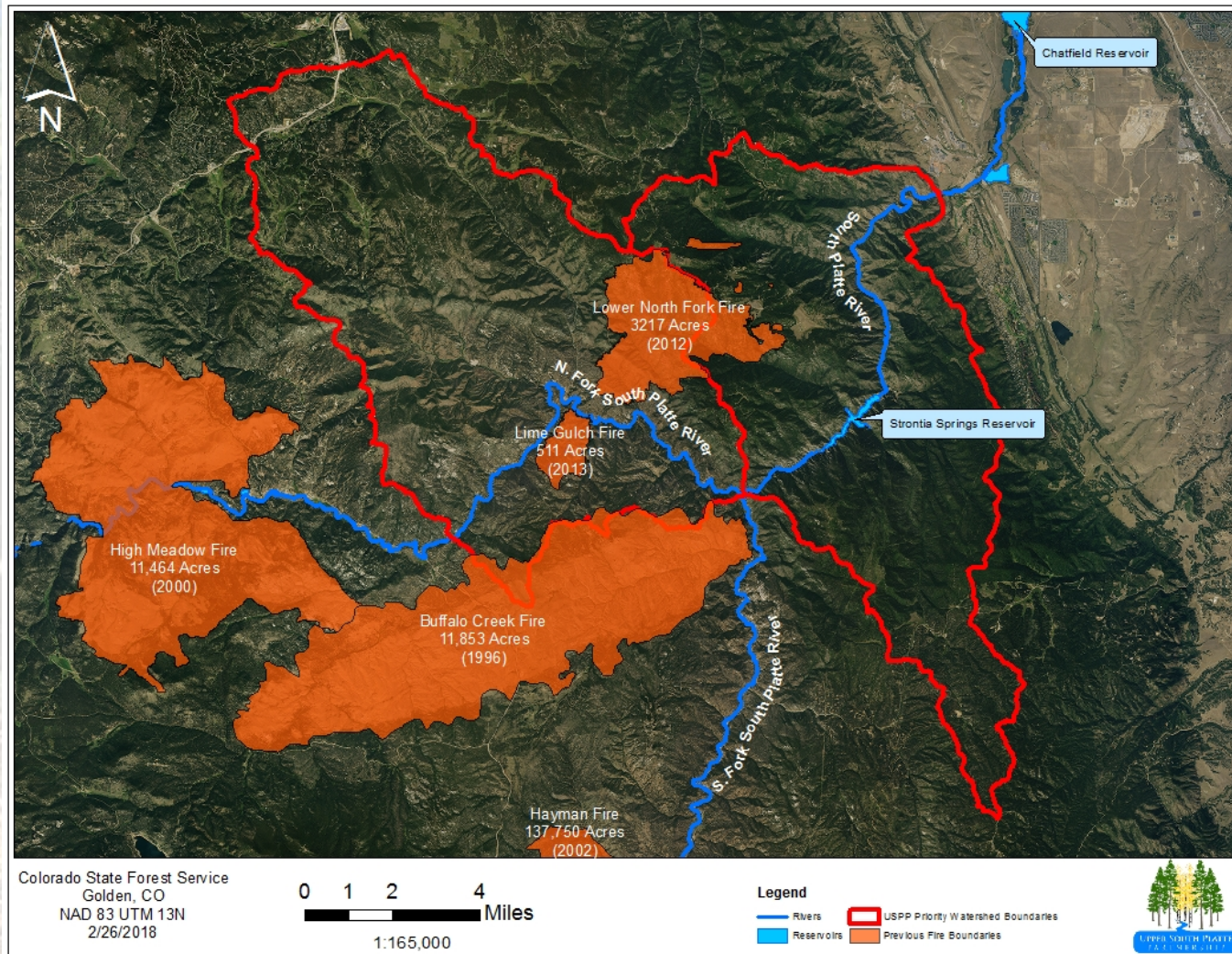
Prioritization



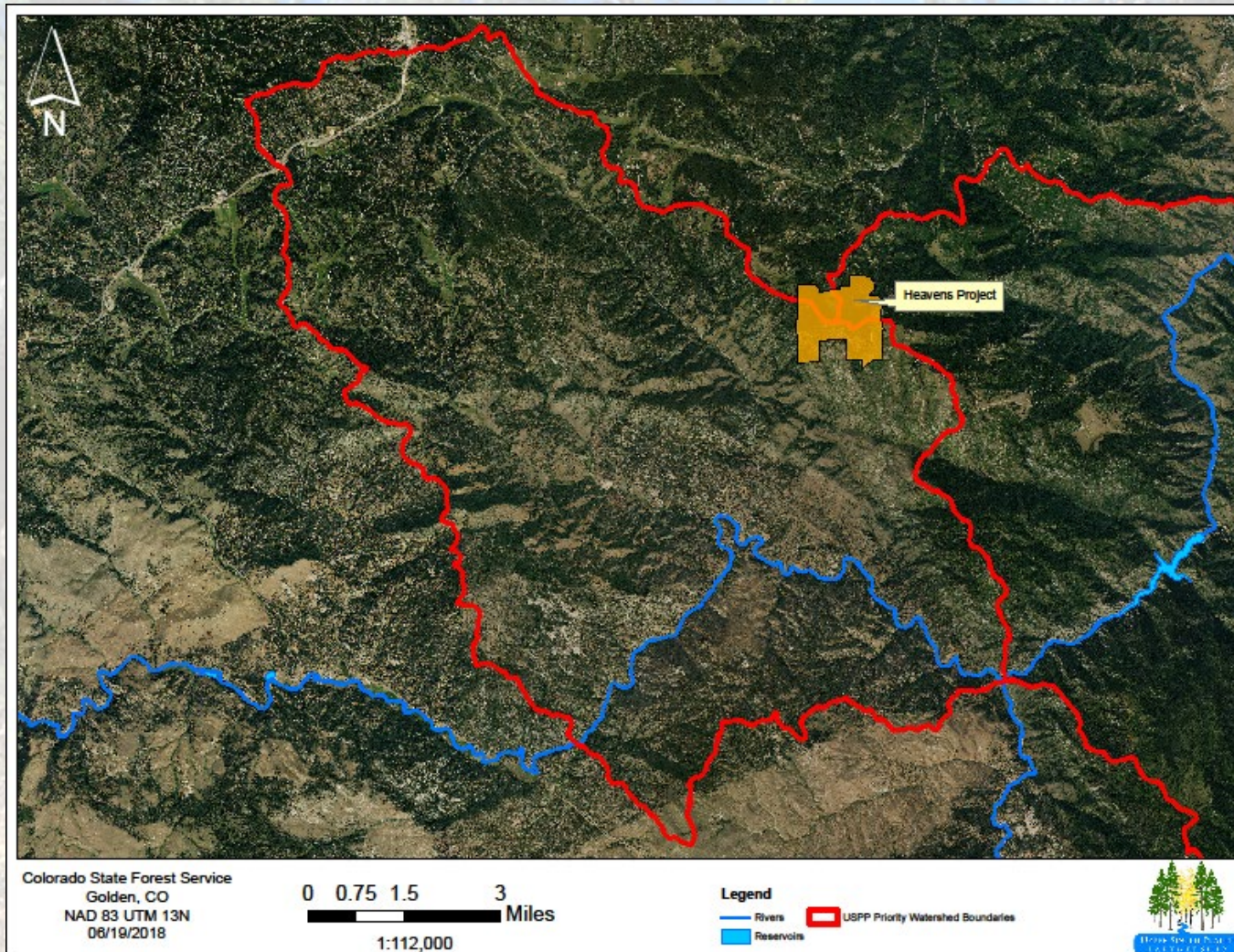
USPP Projects Background



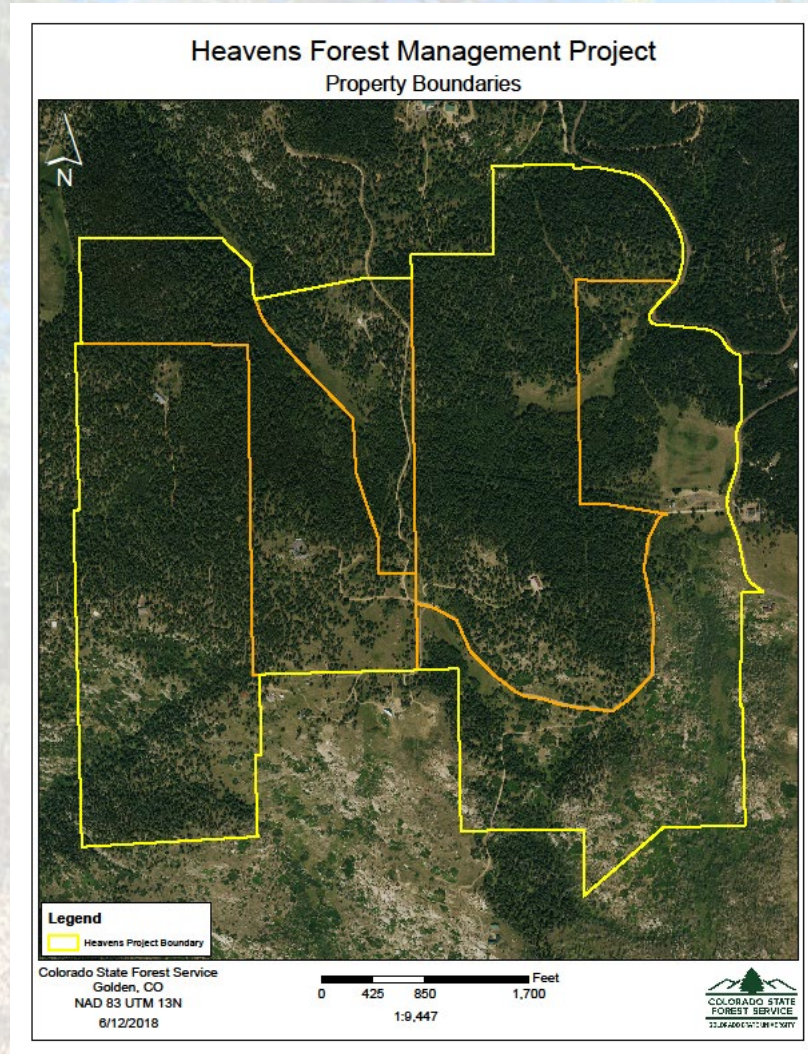
Upper South Platte Historic Fires



USPP Projects



Heavens Forest Management Project



Goals and Desired Conditions

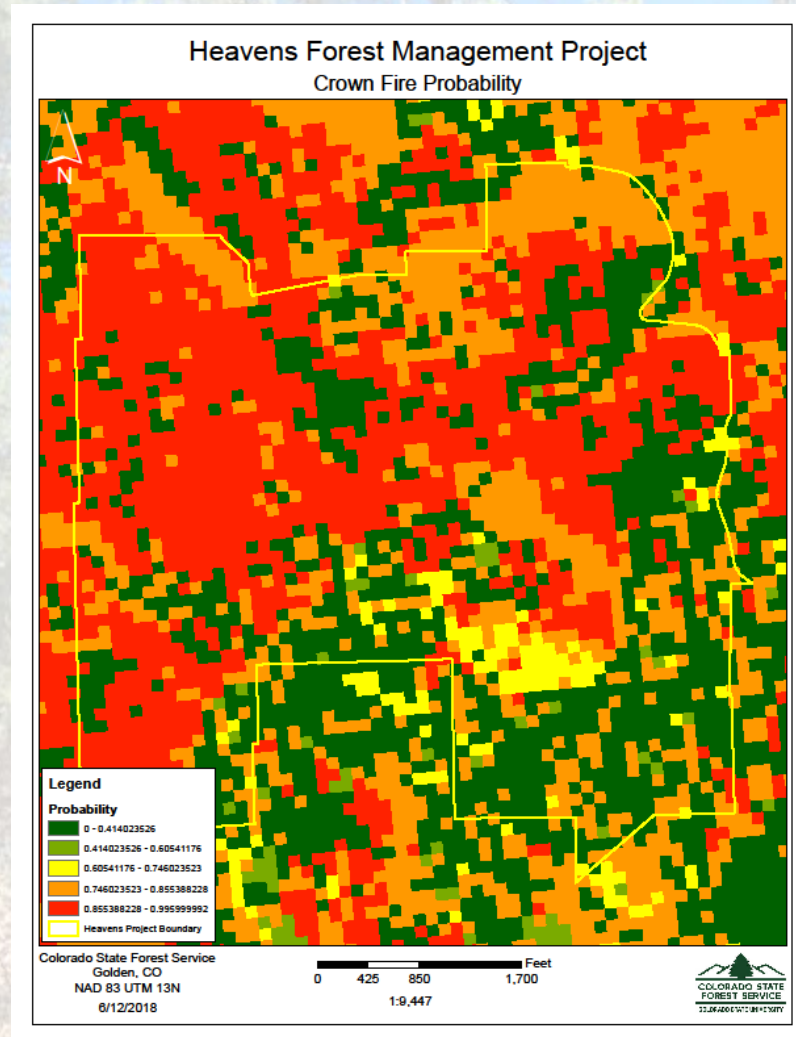


+



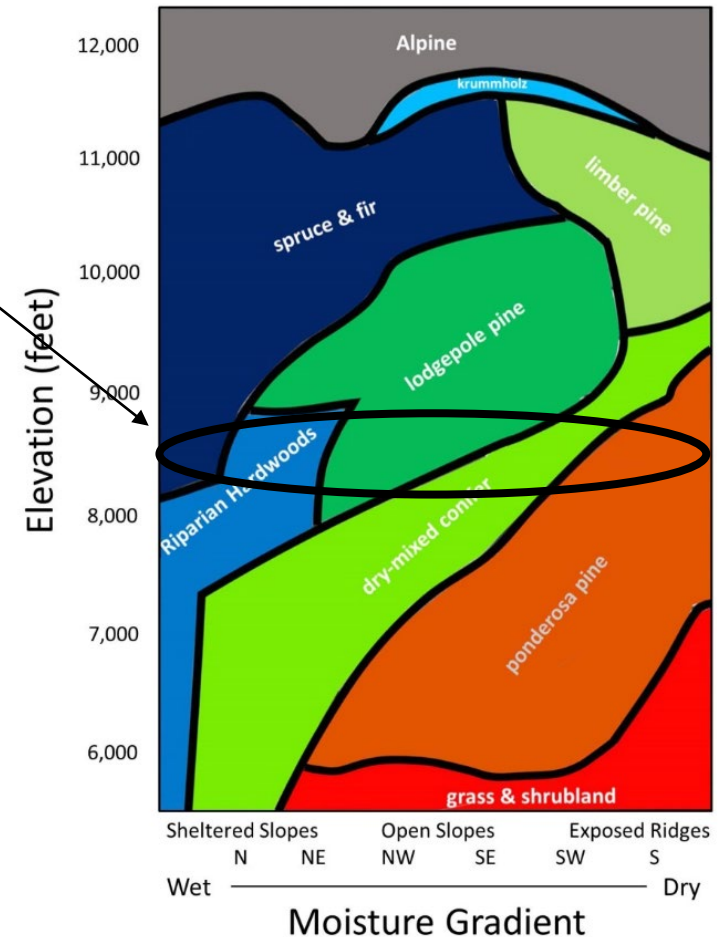
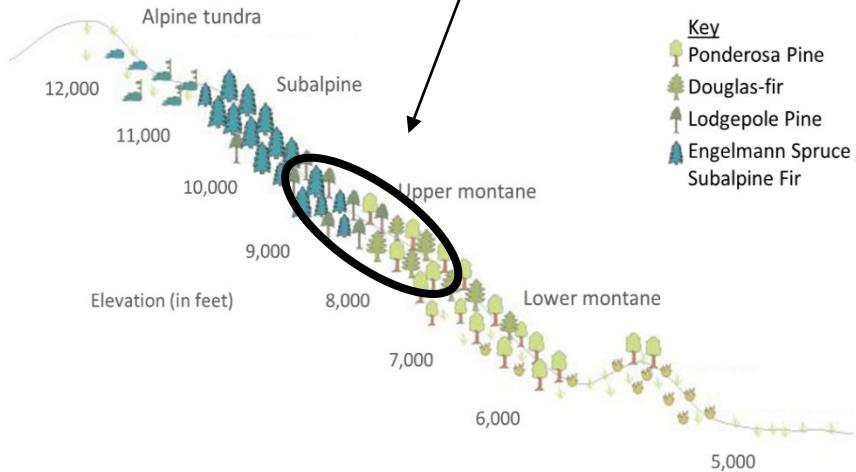
= Heavens Forest Management Project
Goals and Desired Conditions

Assess Current Conditions

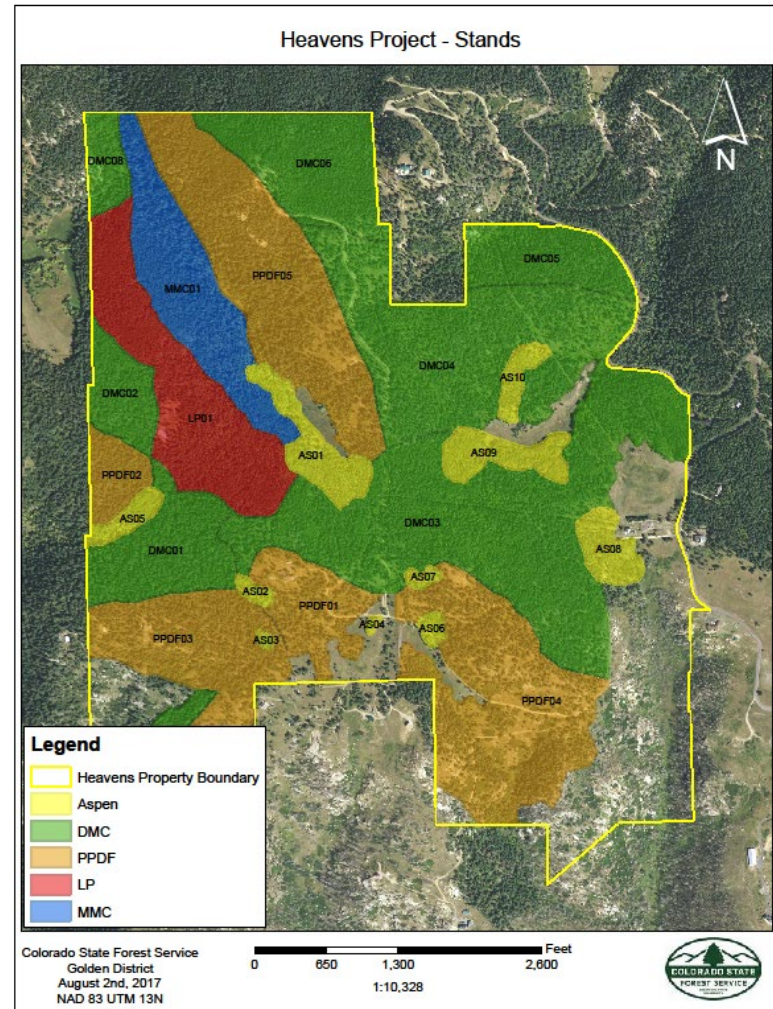


Assess Current Conditions

HEAVENS!

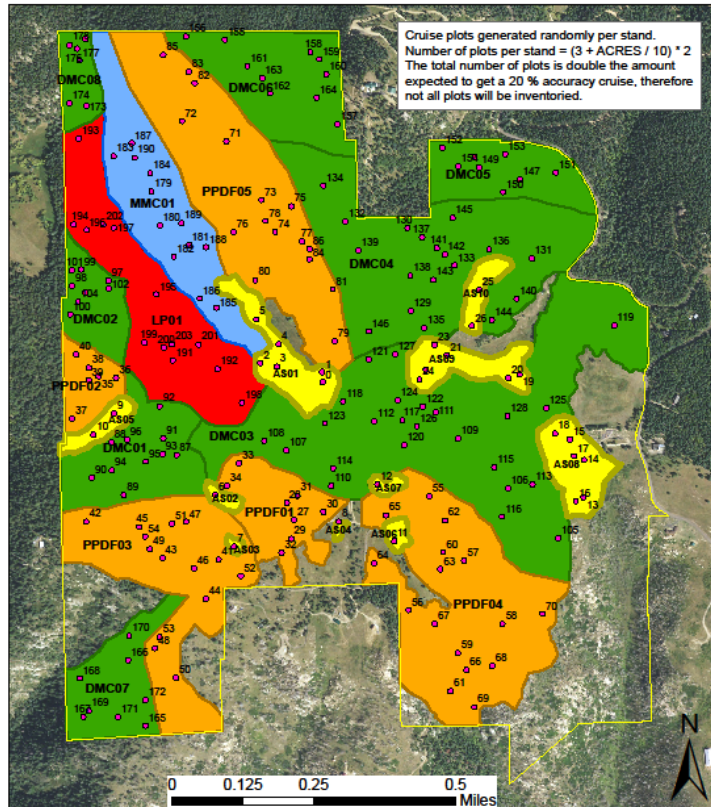


Assess Current Conditions



Assess Current Conditions

Heavens Project - Inventory



Legend

- Heavens_Plots
- Heavens Property Boundary
- Aspen
- PPDF
- DMC
- MMC
- LP

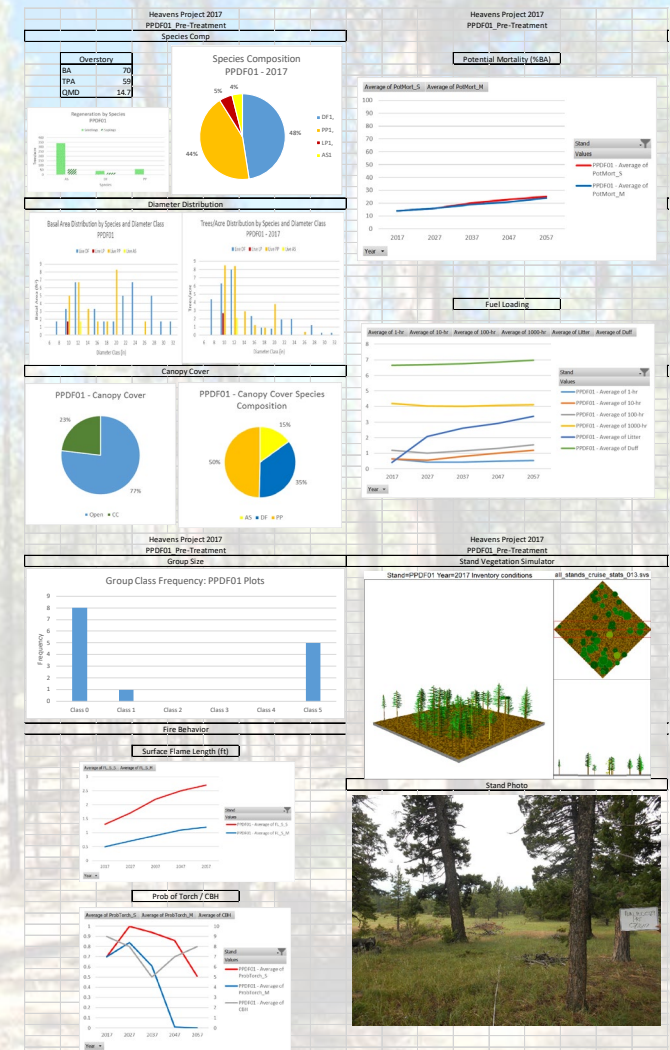
CSFS - Golden District
June 1st, 2017
NAD 1983 UTM Zone 13N

USPP – CSFS Inventory/ Monitoring Data

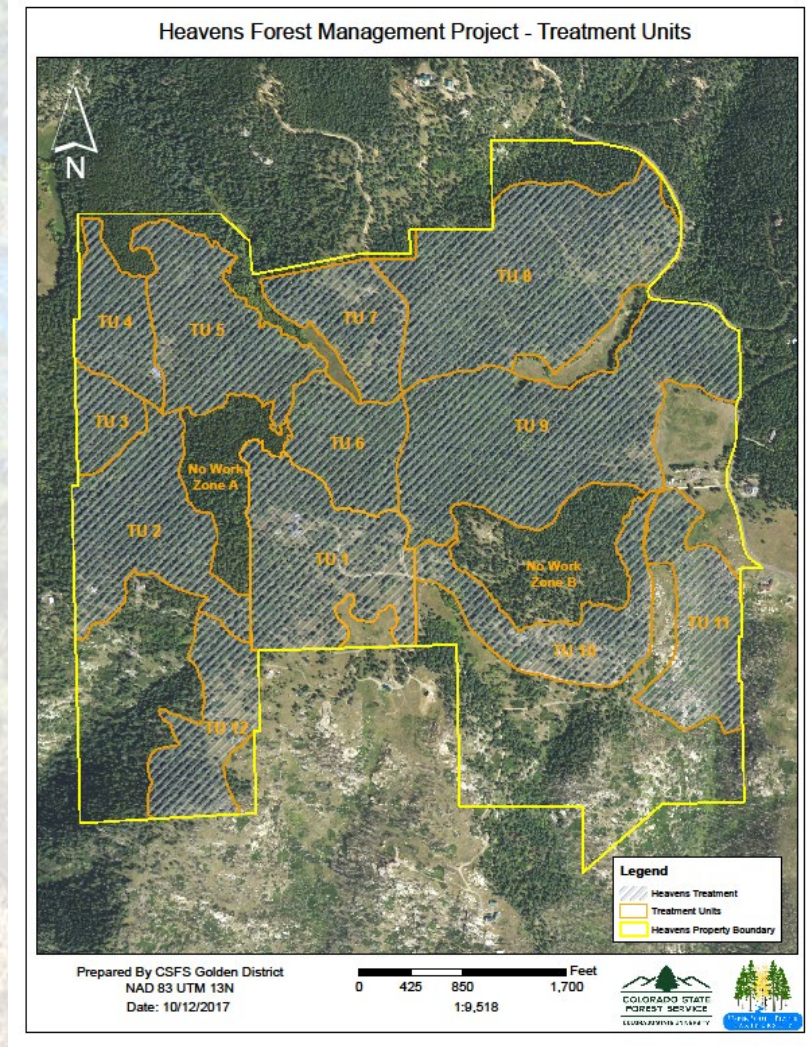
Developed by: CSFS – Golden District

	Standard Inventory for FVS	CSFS Monitoring (USPP Protocol) – Simple or Mothership)	GTR XXX (upcoming for Front Range)	Forest Restoration Literature	FVS – Fire and Fuels Extension (FFE)	Behave	Fuels Characteristic Classification System (FCCS)- Used in WRRG program monitoring	Stand Fire	CSFS USPP & Restoration Project HYBRID- (VOL, RESTO, FIRE BEHAVIOR)
Stand ID	X				X				X
Stand Count	X				X				X
Variant	X				X				X
Inventory Year	X	X			X				X
Groups (Forest Types)	X			X	X		X		X
Region	X				X		X		X
Forest	X				X				X
Plot ID	X	X			X		X		X
Aspect	X	X	X	X	X	X	X		X
Slope	X	X	X	X	X	X	X		X
Elevation	X	X	X	X	X	X			X
BAF	X	X	X		X				X
Tree ID	X				X				X
Tree Count	X	X	X						X
History	X				X		X		X
Species	X	X	X	X	X		X		X
DBH	X	X	X		X		X		X
Radial Growth	X				X				X
Height	X	X			X		X		X
Damage	X			X	X				X
Severity	X				X				X
Age	X		X	X	X				X
Regen (1/100 th ac.)	X	X		X	X		X		X
Seeding (1/100 th ac.)	X	X		X	X		X		X
Crown Base Height (CBH)		X	X	X	X	?	X		X
Surface Fuel Loading		X	X	X	X	?	X		X
CWD (Loading)		X	X	X			X		X
Overstory Canopy Cover		X		X			X		X
Group Sizes		X		X					X
Litter, duff, herb veg		X	X				X		X
Stand History (Notes)		X		X					X
Understory Species (quantity or general description)		Both	Both	Both			X		DESCRIPTION
Photos	X	X			X				X
Remote Sensing (Pre & Post)		X	X	X					X
Shrub Cover		X					X		As Appropriate

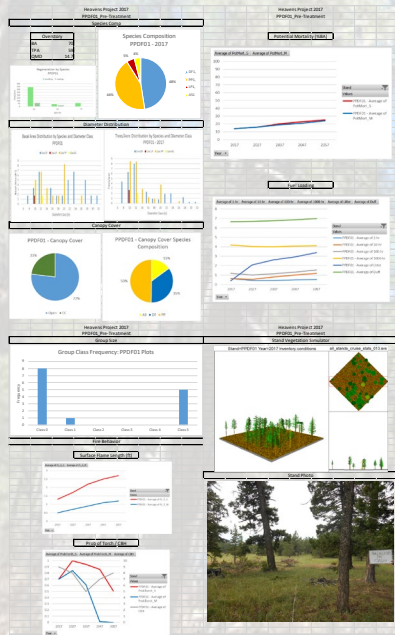
Assess Current Conditions



Treatment Plans and Prescriptions

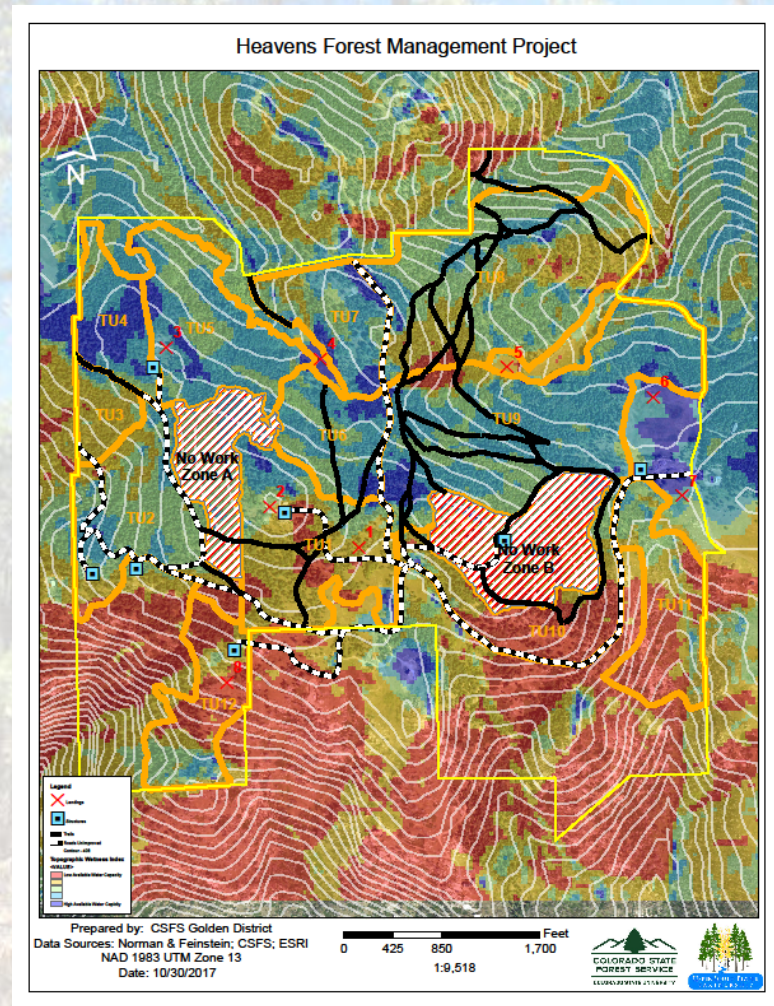


Treatment Plans and Prescriptions

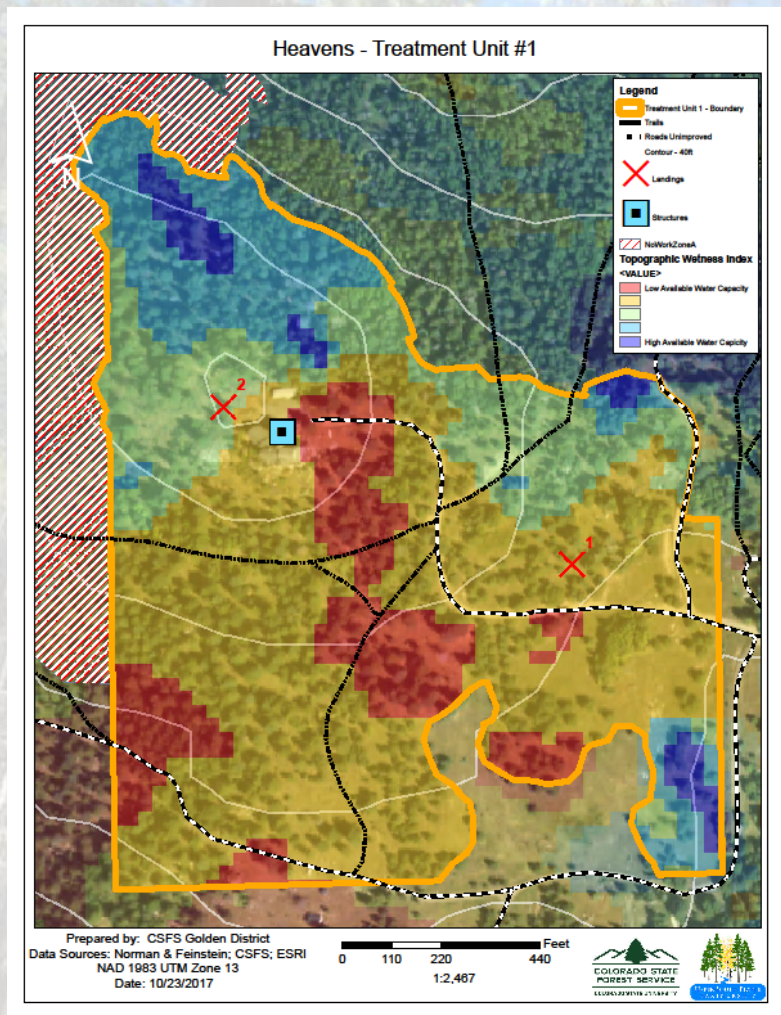


$$\text{Heavens Project} + \text{Goals and Desired Conditions} = \frac{\text{Heavens Project}}{\text{Prescription}}$$

Treatment Plans and Prescriptions



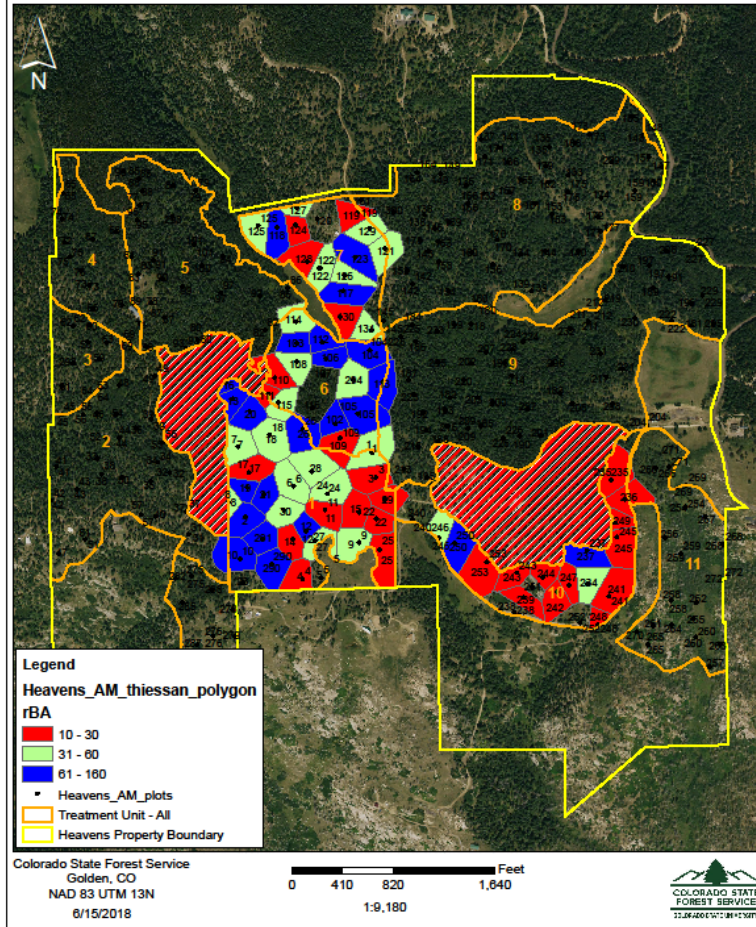
Treatment Plans and Prescriptions



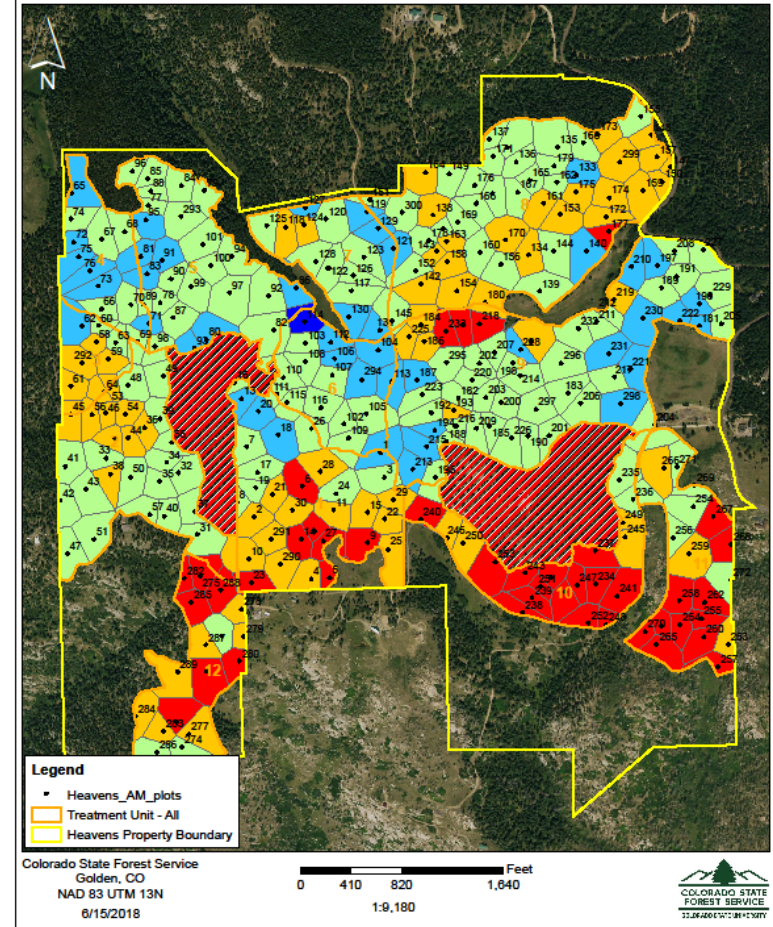
TU 1			
Desired Structure			
<ul style="list-style-type: none">• Ponderosa Pine Restoration• Group Classes 1-3• Openings and Low Density		Current	Target
	BA	70	30
	CC	23	15
Information			
Layout	Take Tree (Blue)	Access	
Operability	Good	<ul style="list-style-type: none">• Heavens Ln and Rocky Top Trail• Multiple landings• Some adverse skidding	
Slopes (%)	0-30		
Acres	38		
Prescription			
Silviculture	<ul style="list-style-type: none">• Thin from Below• Single Tree Selection		
Ponderosa Pine	<ul style="list-style-type: none">• Remove 90% of Seedlings and Saplings; retention as single trees and groups of 2-3 trees• 6-12" DBH: remove 75%• Remove diseased, dead, dying• Retain all trees that show signs of fire scars or old growth (yellow belly, flat tops, etc.)• Tree group class 1 and 2 near meadow and lower elevations within unit; transition to classes 2-3 at higher elevations within unit and near adjacent DMC units		
Douglas-fir	<ul style="list-style-type: none">• Seedlings and Saplings: remove 95%; retention in isolated groups of large diameter class DF• 6-16" DBH; remove 95%; retention trees in isolated groups of large diameter class DF• 18-32" DBH: Remove single trees that are within defined PP or AS groups. Target residual TPA in this class = 4		
LP	<ul style="list-style-type: none">• Remove all		
AS	<ul style="list-style-type: none">• Remove all conifers within healthy AS stands/groups that show signs of conifer succession• Remove trees that show signs of heavy ungulate browsing/disease		
Meadows	<ul style="list-style-type: none">• Expand meadow by removing all 16" DBH and less conifers; single trees ok		
Other	<ul style="list-style-type: none">• Rocky Mountain Juniper: remove all that are under driplines of retention trees; select for retention only in areas of openings		
Wildlife	<ul style="list-style-type: none">• Large diameter, dead aspen that show signs of cavity nesting birds should be favored for retention• Where appropriate, small diameter fir will be retained under over-story fir to allow for vertical structure• If presence of middens are observed, these trees will be favored for retention		
Other Considerations			

Adaptive Management

Heavens Forest Management Project
Adaptive Management Inventory



Heavens Forest Management Project
Adaptive Management Inventory







Questions?

Nate Beckman

Nathan.Beckman@Colostate.edu

(303) 279-9757

