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Ag Water NetWORK

WEBINAR #10 Highlights – Wildfire and Watershed Management Planning

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Presenter: [Weston Toll](#), Watershed Program Specialist, Colorado State Forest Service

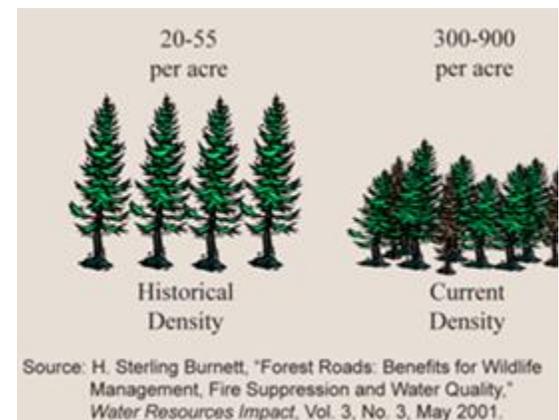
Background:

- Colorado's forests are adapted to a certain cycle and frequency of fire.
- Ponderosa pine forests thrive on low to moderate intensity fires every 5 – 25 years.
- The historic density of Ponderosa Pine forests was 20-55 trees per acre. Today it is 300 to 900 trees per acre.
- Some higher elevation forests like Lodgepole Pine require high intensity fires.
- Fire suppression and lack of forest management has altered the historic fire cycle and led to a dangerous build-up of fuels in some areas.
- Five of the 20 largest fires in Colorado's recorded history occurred in 2018.
- In the early 1900's, the US Forest Service created a "10 am" policy that had a goal to put all fires out by 10 am the next day. USFS is trying to move toward a policy to allow fires to burn in some areas, including Wilderness Areas.

Colorado's Forest Status:

- Colorado's 24.4 million forested acres supply water to 80% of Colorado's population.
- Unhealthy forest conditions have led to ripe conditions for insects, disease and fires.
- 6 million acres have been impacted by insect outbreaks since the mid-1990's.
- Pine beetle damage has declined but spruce beetle damage is increasing, which impacts higher elevation forests. It is not clear how this may affect snowpack.
- A 50 to 200 percent increase in annual area burned is projected in Colorado by 2050.

Colorado Ponderosa Pine Forests Historical Density vs. Current Density



Threats to Colorado's Forests and Water Supplies:

- Increases in tree mortality and high severity fires.
- Prolonged drought, reduced soil moisture and increasing temperatures.
- Increase in fire severity and duration.
- Increased runoff and sedimentation of streams and water delivery infrastructure.
- Half of the state's population live in the Wildland-Urban Interface (WUI). Population growth in the WUI increases risk to public health and safety, livestock and structures.

Post-Fire Impacts:

- The Buffalo Creek Fire in 1996 was followed by rains and debris flows that reduced the capacity of Strontia Springs Reservoir by one-third. Denver Water has spent over \$30M to remove 625,000 cubic yards of sediment, and is still dealing with the issue.
- Post-fire soil erosion rates from the High Park fire west of Fort Collins were as much as 9 tons per acre.
- Soils damaged by high-severity fires are slow to regenerate.



Graphic: Weston Toll, CSFS

Wildfire Costs: (suppression combined with property damage, livestock mortality, etc.)

- West Fork Complex Fire near Creede (2013): \$600 / acre (fairly remote, few structures)
- Hayman Fire: \$2,260 / acre
- Black Forest Fire (2013) ~\$37,000 per acre, primarily due to property damage.

Wildfire Mitigation costs:

- Ground fuel reduction and forest thinning work typically costs between \$1,500 and \$2,500 per acre.

Barriers to Forest Improvement:

- Funding for fuel reduction, fire risk mitigation
- Willing landowners
- Steep and inaccessible terrain
- Lack of a robust market for timber products
- Public Perception ("fire is bad")

Resources:

- The [National Cohesive Wildland Fire Management Strategy](#) is the framework which land management agencies and stakeholders use to address wildfire related issues.
- The [2020 Colorado Forest Action Plan](#) to be released this Fall will have "Composite Maps" prioritizing areas by wildfire risk, water supply infrastructure and forest condition.
- [Colorado Forest Atlas](#) – web-based application which enables users to view fire risk in an area of interest and develop a plan to address the risk.
- [Community Wildfire Protection Plans](#) prioritize areas for hazardous fuel reduction.