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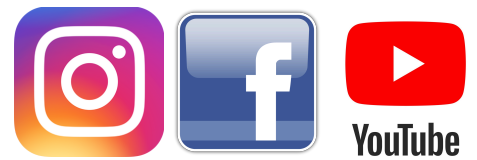
HFHC News Round Up

Healthy Forests Provide Clean and Abundant Water

healthyforests June 11, 2024 News

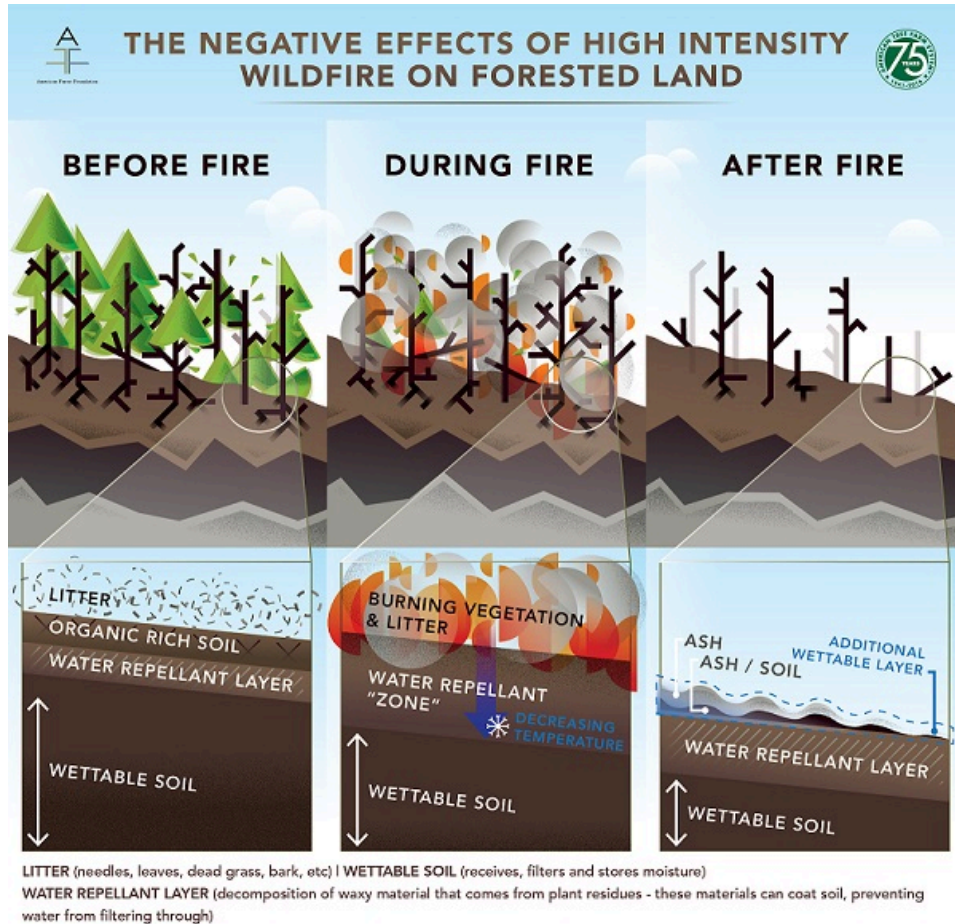
Active forest management plays a crucial role in protecting clean water supplies, particularly in regions vulnerable to wildfires and water scarcity, such as Arizona and California. For decades, passive management across the west has contributed to unnaturally thick forests that increase severe wildfire risks and impact water availability.

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Wildfire Risks in Overgrown Forests

In thick forests, wildfires tend to burn hotter and more destructively, consuming everything in their path and leaving the soil exposed and vulnerable to erosion. Without vegetation to hold the soil together, rainfall can wash ash and debris into rivers and reservoirs, compromising water quality and reducing storage capacity. Additionally, the infrastructure downstream, such as dams and water treatment plants, can suffer significant damage from the influx of debris.



Water Usage by Forests

Overgrown forests not only pose a fire hazard but also consume vast amounts of water. Trees and undergrowth take up water from the ground, reducing the amount available for aquifers and downstream flows. By contrast, research suggests thinning the forest can significantly reduce this water uptake.

Innovative Use of LiDAR Technology

A partnership between the Salt River Project (SRP) and Arizona State University (ASU) employed LiDAR (Light Detection and Ranging) technology to gather detailed data on forest density and water usage. LiDAR sensors, mounted on planes and helicopters, provide high-resolution scans of forest areas, allowing researchers to accurately count trees and estimate their water consumption. This precise data enables

the development of effective forest management strategies tailored to maximize water conservation.

Pilot Project in Kaibab National Forest

A pilot project in the Kaibab National Forest exemplifies the potential benefits of forest thinning. By thinning approximately 3,400 acres, researchers estimated an increase of about 230 acre-feet, or nearly 75 million gallons, of water in the first year alone. Considering that one acre-foot can supply water for three Arizona families for a year, this increase represents a significant contribution to the region's water supply.

Long-Term Benefits of Forest Thinning

Thinning forests to a more natural state, with fewer but larger trees, can lead to numerous long-term benefits. Reduced tree density allows more water to remain in the ground or flow into tributaries, recharging springs and rivers. It also decreases fire danger, promoting healthier, more resilient forests. This balance between tree growth and water availability can create a more sustainable ecosystem.



Water Savings for California

The implications of forest thinning extend beyond Arizona. A 2011 study by experts from UC Merced, UC Berkeley, and the Environmental Defense Fund suggests significant water conservation potential in California. The study found that reducing forest cover by 40% could increase total runoff by 9%, potentially adding 2.2 million acre-feet of water to California's supply annually. This highlights the broader applicability of forest thinning as a water management strategy.

Active forest management, through practices like forest thinning, offers substantial benefits for water conservation and wildfire risk reduction. Innovations in data collection and analysis, such as the use of LiDAR



technology, enable more precise and effective management strategies.

As demonstrated by the SRP and ASU’s efforts, thinning overgrown forests can enhance water availability, protect infrastructure, and promote healthier ecosystems. By adopting similar practices, other regions can also reap the benefits of improved forest and water management.

[← Forest Friday: Remembering the Roseburg Forest Product \(RFP\) Missoula Composites facility](#)

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