FIRE HAS A ROLE

Discovering the multitude of ways in which ecosystems and communities adapt to fire and its accompanying involvement with forest policy and management.

FIRE HAS A ROLE

The Fire Has a Role program was created to educate the public, cooperators, and stakeholders on the importance of fire within our local ecosystem.

With this program, we can successfully translate the “who, what, where, and when” behind the decision-making process(es) pertinent to the use of fire to meet multiple resource and land objectives.

FIRE HAS A ROLE

Highlights the direct correlation between the wildland urban interface (WUI), forest sustainability, wildlife habitat, rangeland conditions, and watershed health utilizing hazardous fuels treatments, management of natural ignitions, and the use of prescribed fire.

FIRE HAS A ROLE:

"Our capacity as fire creatures defines our ecological imprint as no other trait can. Other animals knock over trees, dig holes, eat plants, and hunt, but only human beings apply and withhold fire.

The ecology of fire on Earth reflects our own existence; that is, its dynamics embody our knowledge (and ignorance) as well as our will and our capacity to choose.

The living world claimed ignition from lightning's lottery but lost sovereignty to something called culture."

– Stephen J Pyne, How Plants Use Fire (And Are Used By It)

FIRE HAS A ROLE

HOW?

- Fire severity reduction by use of prescribed fire and management of natural ignitions.
  - Explores the scale of adaptive action, influences, and fire-adapted thresholds.
    - Local approaches to creating and maintaining resilient landscapes.

FIRE HAS A ROLE:

- After decades of fire suppression, forest structure has been altered and forests have been taken out of their natural fire regime. This proves to be problematic as forests are becoming unhealthy and more susceptible to disease due to the lack of fire aiding in regeneration.
- Understory plant assemblage rots and creates an unnecessary acumination of ladder “fuel”.
- Prepares a mineral seedbed for the next generation of trees.
- The safety of the public and our firefighting community can be compromised due to the uncharacteristic fire behavior these unhealthy forest generate.

FIRE HAS AN ECOLOGICAL ROLE:

- Increases the frequency of fire disturbance to aid in the inhibition of woody species and certain types of nonnative invasive plant species.
- Improves native vegetation condition and distribution.
- Reduces accumulations of forest fuels that may exist.
- Thin tree stands, decrease competition, and recycle nutrients for future growth.

“Fire is our ecological signature.” – Steven Pyne

FIRE HAS AN ECOLOGICAL ROLE:

- "The role of fire varies greatly among plant communities depending on kind, quantity, and continuity of fuel, fuel moisture, topography, and frequency of droughts. Because of lightning and a variety of human activities, fire has been a part of natural ecosystems since the origin of vegetation on earth." (Wright, 1988)

- **Some fires meet land management objectives and are allowed to burn naturally.**

FIRE HAS AN ECOLOGICAL ROLE:

- **Prescribed fire reintroduces fire into the landscape in a controlled manner.**
- We achieve diversity, reduce understory, treat undesirable species, and prevent the creation of monocultures.

"There are a variety of vegetation types within the national forests and each type requires specific treatments to reduce hazardous fuels or to restore the health of specific plant species or entire ecosystems. These treatments are based on parameters prescribing temperatures, humidity, and winds which will achieve the desired results. An extensive planning process is followed to ensure that appropriate fuel and weather conditions are present and enough resources are on hand to manage any contingency."

- Chantel Anderson,
PNF Range Specialist

Utilizing Fire's Role:

- Pile burning reduces slash accumulation. Usually done in the winter months.
- Broadcast burning is effective for fuel reduction. Performed mostly in late summer or fall.
- Maintenance burning is used to ensure long-term reduction of risk for destructive fire.
- Trees scorched during growing season (May-August) are less likely to recover. Prescribed burning is timed to maximize survival and regeneration.

FIRE HAS A LOCAL ROLE:

WHERE?

- For example, let's take a look at our local South West ecosystem. This includes rangelands, timber health, watersheds, and the connectivity to the surrounding community.
- By working with specialists in multiple disciplines, we aim to inform our audiences about topics such as forest vegetation condition, wildlife habitat, as well as wildland firefighter and public safety.

Fire's ecological Role on the Prescott NF:

- **Prescott National Forest = 1.25 million acres of diverse vegetation.**
  - Chaparral, Pinon Pine, Juniper, and Ponderosa Pine.

Many plant species cannot regenerate without fire. Some communities can regenerate quickly after fire through sprouting and seed recruitment.

Fire adapted landscapes are healthy, resilient landscapes.

Fire Has An Ecological Role on the Prescott NF:

- Ponderosa Pine-Evergreen Oak forests need a low intensity fire on average every 6-12 years to maintain proper spacing.
- Treatment methods are aimed at reducing ladder fuels which could transition a ground fire to a canopy fire.
- Also reduces the amount of forest density and risk of severe wildfire, insect outbreaks, drought, and disease.

"Research has found that our forest historically had a very rapid fire return interval. This ranges from 5-8 years in higher elevation areas with mixed conifer to as quickly an average of less than 2 years for areas of Ponderosa Pine.
This information not only tells us how departed we are from historic trends, but highlights the importance of returning fire to the landscape, especially in our WUI areas."

– Ben Roe, PNF Forester

Fire Has A Role in Prescott NF Rangelands:

- Improve native vegetation condition and distribution by reducing shrub and Juniper encroachment into the grasslands and reduce current density.
- These particular species are considered obligated seeders, meaning that they require some kind of fire que to germinate new growth.

"Fire reduces the abundance of woody plants (unpalatable) and promote herbaceous plants (palatable species) including grasses, forbs, and grass-like plants. This creates more forage for livestock and better livestock grazing distribution across the land." - Chantel Anderson, PNF Range Tech

FIRE HAS A ROLE:

- **The ecology of most forests are largely driven by frequent disturbances caused by fire.**

"Over the last hundred years our forest has transitioned from regular low severity surface fires which promoted forest health to a system which regularly faces the risk of high severity stand replacing crown fires. This shift is a major driver in our effort to implement forest restoration with the goal of reintroducing fire at a landscape scale while maintaining the health of our forest ecosystems." – Ben Roe, PNF Forester

- **Fire brings back and maintains balance in the ecosystem.**

"The thinning treatments implemented by the PNF Forestry Program are aimed at reducing tree densities and ladder fuels so that fire managers have a larger burn window and can be more successful when they implement their prescribed burns." - Ben Roe, PNF Forester

Fire Has A Role in Protecting Our Watersheds:

- Maintains or improves soil stability, fertility, productivity, and watershed conditions by promoting strong tree densities, grasses, and forbs.
- Maintain or improves stream channels and drainage condition by improving and diversifying riparian dependent vegetation. Water quality is in direct correlation to healthy watersheds.
- Prescribed burning breaks up the consistent canopy and creates gaps which enhances runoff thus increasing water reservoir levels.

FIRE HAS A ROLE IN THE WUI:

- Wildland/urban interface (WUI) where communities meet wildlands and a substantial human presence coexists with areas of fire-prone forest, brush, and grassland vegetation.
- Due to concerns over fire risk and smoke management and its impact on human health, transportation, agriculture, atmospheric carbon loading, and global warming, managers may choose to use alternate methods to restore ecosystems and reduce hazardous fuels in the WUI, including biological (e.g., grazing animals), mechanical (cutting or mowing), or chemical (herbicides) treatment of vegetation. These all align with land management's goal of maintaining an ecological balance.
- While other techniques may be used, they cannot always replace the ecological role that fire plays.
- **When we understand fire's critical role, we can then embrace and plan. We can learn to adapt and manage accordingly.**

Fire Has A Role in Our Communities:

- "The ecology of the Prescott National Forest is largely driven by frequent disturbances caused by fire. Over the last hundred years our forest has transitioned from regular low severity surface fires which promoted forest health to a system which regularly faces the risk of high severity stand replacing crown fires." Ben Roe, PNF Forester

This requires communities to remain FireWise and understand the importance of fire's role in preventative ecological maintenance.

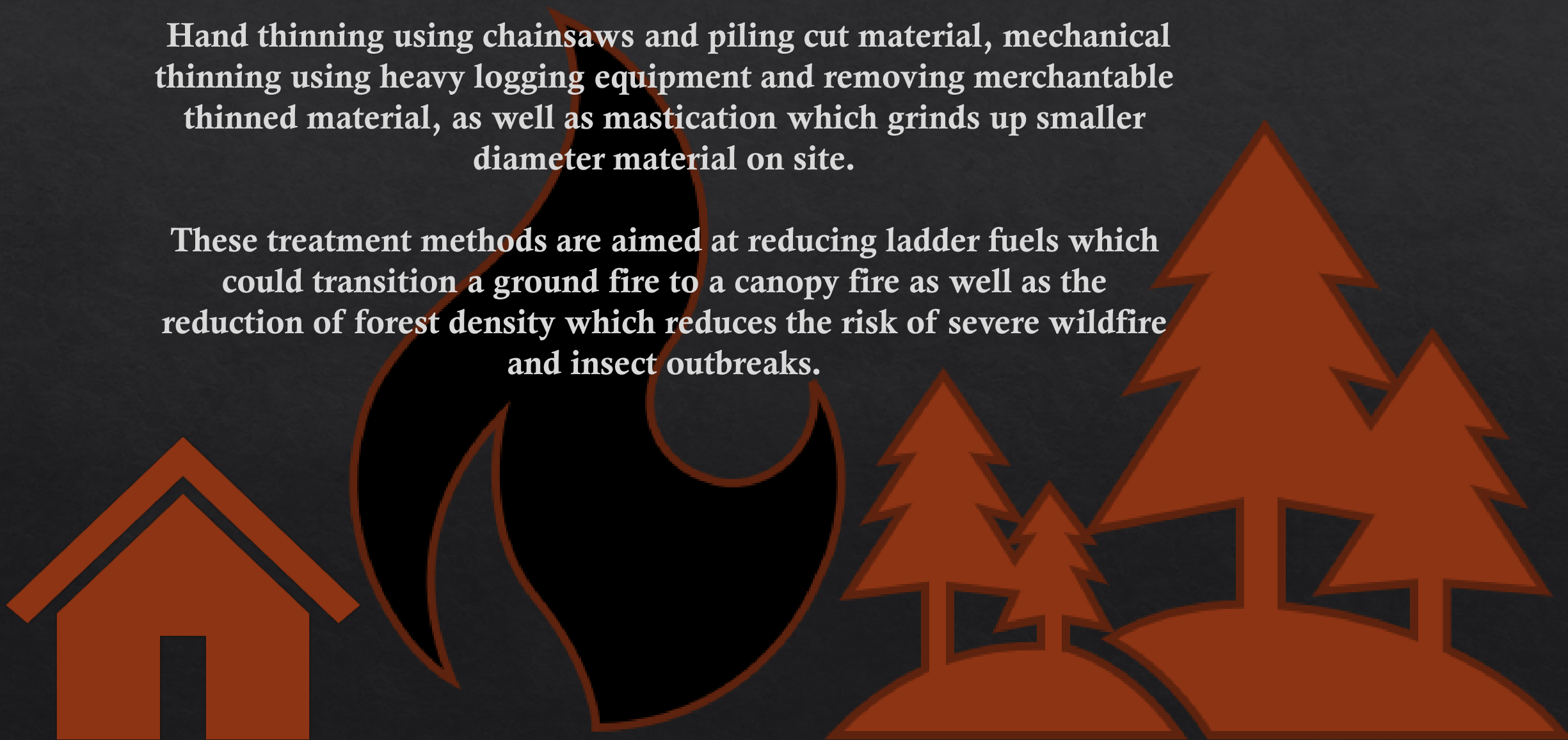
Wildfire and prescribed fire are both beneficial in the reduction of fire severity. Hazardous fuels are decreased, crown base heights are raised and ladder fuels are reduced. With less fuel loading, extreme fire behavior and uncontrollable fire activity is greatly reduced.

FIRE HAS A ROLE IN OUR COMMUNITIES:

Fire managers often plan the following treatments around or near communities:

Hand thinning using chainsaws and piling cut material, mechanical thinning using heavy logging equipment and removing merchantable thinned material, as well as mastication which grinds up smaller diameter material on site.

These treatment methods are aimed at reducing ladder fuels which could transition a ground fire to a canopy fire as well as the reduction of forest density which reduces the risk of severe wildfire and insect outbreaks.



FIRE HAS A ROLE:

"For starters, the environmental analysis concluded wildfires will produce about 5,000 pounds of smoke per acre.

A less intense controlled burn will produce about 3,500 pounds per acre. That's just an average – but it means wildfires produce 43 percent more smoke per acre burned than managed fires."

(Aleshire, 2019)

"In general, wildfires are far more likely to result in harmful air quality and public health impacts than prescribed fires because they are unplanned and typically are much larger. Wildfires also last longer, and burn and consume (on average) more vegetation per acre than prescribed fires."

(Berger, 2018)

FIRE HAS A ROLE:

- Overall, the Fire Has a Role program has been established to raise awareness of the ecological and historic role of fire in fire-adapted ecosystems amongst internal and external partners. This is emphasized and carried out by community members and fire managers alike.
- This is being accomplished through the development and implementation of a dynamic multi-phase campaign to create a shared understanding amongst multiple audiences about fire regimes, fire ecology, and the benefits of restorative treatments.

- "Understanding and appreciating the benefits of fire is the only way to truly keep our homes, population, and ecosystem safe from its dangers."

– National Geographic Society, The Ecological Benefits of Fire

FIRE HAS A ROLE:

- Firefighters from the Prescott National Forest have created an interactive trailer for the Fire Has A Role program. This trailer includes a walk-through display full of visuals and relevant information. There are items that can be rolled out for better viewing, available hookups for TV and audio projection.
- We can strategically place this trailer (and information) at community events, schools, and near prescribed burning operations.

Both photos are of the FHAR trailer in progress.

FIRE HAS A ROLE TRAILER:

The trailer is located outside – I will take you all along for a walk through tour.

CITATIONS

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