# Hyampom Fire Resilient Community Project
# Scoping Proposal

The Shasta-Trinity National Forest, South Fork Management Unit, is proposing the Hyampom Fire Resilient Community Project. This project is designed to reduce hazardous fuels around the community of Hyampom, California by conducting forest thinning, prescribed burning, and other related fuel reduction activities. Once fuel reduction is complete, reduced fuel profiles will be maintained within these areas. Thinned material will available for commercial sale during the initial fuel reduction phase but not during the maintenance phase.

## Existing Condition

The community of Hyampom is in Trinity County California and is bordered on all sides by the Shasta-Trinity National Forest. It is accessed by a single paved road (see Map 1). With over 200 residents, the community includes several farms, vineyards, a restaurant, a general store, and campgrounds. An electricity transmission line crosses the area and a summer camp which attracts hundreds of residents is within the community's wildland-urban interface (WUI).

Under typical summer conditions, much of the area surrounding Hyampom could support a wildfire with flame lengths of greater than 4 feet and many areas could support active crown fire.[1] Flame lengths of 4 feet or greater are too large to be controlled with hand tools and require heavy equipment such as dozers or aircraft to contain.

Although South Fork Mountain, located 5 miles west of Hyampom, is a natural feature that would slow fire spread (and could be used by firefighters as a location to construct control line) no large fuel breaks, ridges, or other large burned areas are located in Hyampom WUI that could be used to slow the spread of a wildfire.

Finally, California is experiencing a trend towards larger and more destructive fires. In a typical season, California will see about 300,000 acres burn. As of early September 2020, more than 1.8 million acres had already burned statewide, including the August Complex—the largest fire in California history that is partially burning in Trinity County. If this trend continues, it not only increases the risk of a severe fire within the Hyampom WUI, it also increases the possibility that firefighting resources would be scarce once a fire near Hyampom starts burning.

[1] An active crown fire burns in the crowns as a solid flame, advancing with the surface fire. The desired condition is passive or no crown fire. A passive crown fire has the involvement of one or, at most, just a few torching trees. This stage brings the fire from the surface to the crown level. Commonly, this type of behavior is referred to as "torching." The torching trees reinforce the spread rate, but these fires are not basically different from surface fires.

## Desired Future Condition

The Shasta Trinity National Forest Land and Resources Management Plan (Forest Plan) provides the following direction applicable to all land allocations:

- Natural fuels will be treated in the following order of priority: (1) public safety; (2) high investment situations (structural improvements, powerlines, plantations, etc.); (3) known high fire occurrence areas; and (4) coordinated resource benefits (page 4-18).
- Activity fuels that remain after meeting wildlife, riparian, soil, and other environmental needs will be considered surplus and a potential fire hazard (page 4-17).
- Plan and implement fuel treatments emphasizing those treatments that will replicate fire's natural role in the ecosystems (page 4-18).

The project area contains five different land allocations (see Map 2): Adaptive Management Area, Administratively Withdrawn, Late Successional Reserve, Matrix, and Riparian Reserve. Approximately 15% of the project area (3,090 acres) is part of Inventoried Roadless Areas, which overlap the other land allocations.

The objective of adaptive management areas is to learn how to manage forests on an ecosystem basis in terms of both technical and social challenges. The objective of the administratively withdrawn areas found in the project area is to provide for semi-primitive motorized and non-motorized recreation opportunities while maintaining predominantly natural-appearing areas. The objective of late successional reserves is to protect and enhance conditions of late-successional and old-growth forest ecosystems, which serve as habitat for the northern spotted owl.

In and around the Hyampom WUI, the desired future conditions are as follows

- A WUI that allows for safe firefighting by hand crews. Under 95% percentile fire weather conditions this can be achieved by sustaining flame lengths of 4 feet or less.
- A disrupted fuel ladder which prevents initiation of active crown fire. Under 90% percentile fire weather conditions this can be achieved by keeping the canopy base height 10 feet or greater.
- Low likelihood of active crown fire (passive crown fire may cause individual trees may 'torch', but the fire will not spread through the canopy). This can be achieved by increasing canopy spacing and reducing canopy bulk density below 0.1 $kg/m^3$.
- Stands with a diversity of age and size classes that are resilient to wildfire.
- A low risk of stand-replacing fire so that the late-successional and old growth stands in the area can survive and the mid-successional stands can reach maturity.

## Purpose and Need

In order to move the area surrounding Hyampom, CA from the Existing Condition to the Desired Future Condition, the Shasta-Trinity National Forest, South Fork Management Unit worked collaboratively with the Hyampom Fire Safe Council to identify the following needs:

1. Provide safe public egress and responder access by reducing flame lengths to 4 feet or less and minimizing active crown fire along area roads.
2. Interrupt large fire spread through the Hyampom area, by reducing flame lengths to 4 feet or less and minimizing active crown fire along key ridges and private property boundaries.
3. Reduce potential for active crown fire in the wildland-urban interface,
4. Build ecological resilience to high-severity fire on National Forest System lands in the Hyampom area
5. Protect and enhance conditions of late-successional and old-growth forest ecosystems, and
6. Restore and maintain ecosystem function, particularly the role of fire.

Although fuels treatments can never be completely effective at moderating the effects of fire, the goal is to meet the needs listed above under 90$^{th}$ percentile wind and fuel moisture conditions.

## Treatment Strategy

In order to achieve the needs of this project, three suites of treatments (prescriptions A, B, and C) were developed. These prescriptions are arranged across an area of approximately 21,000 acres and are described as follows:

- Prescription A: Ridgetop, roadside, and Property Line Fuelbreaks (approximately 2,460 acres)
- Prescription B: Plantation Treatments (approximately 4,780 acres)
- Prescription C: Fuel Modification & Prescribed Fire only (approximately 13,880 acres)

Prescriptions A and B are designed to treat the larger trees in the forest overstory while prescription C treats smaller fuels primarily in the understory.[2] Prescriptions A and B also include all the fuel modification and prescribed fire treatments included in prescription C. The individual treatments that make up the prescriptions can be found in Appendix A.

The location of the prescriptions can be seen on Map 3. Generally, the more intensive Prescription A can be found along values at risk such as roads and property lines, or else in locations that would most effectively allow firefighters to interrupt large fire spread through the Hyampom area (ridgetops). Prescription B would only be used in plantations, and prescription C would be used in all other locations across the project area.

Table 1 shows the total proposed area of each treatment, by forest plan land allocation. Riparian reserves are not shown in the table because they are determined on the ground, based on the condition of the waterbody.

[2] Prescription C only allows for cutting trees 8 inches DBH and smaller but in brush fields and some young stands, this would affect the canopy.

Table 1, treatment areas by land allocation or designation, in acres.

| | Adaptive Management Area | Administra-tively Withdrawn | Late Successional Reserve | Matrix | Total by Prescription |
|---|---|---|---|---|---|
| Prescription A | 1,446 | 610 | 402 | 2 | 2,460 |
| Prescription B | 3,771 | 432 | 560 | 13 | 4,776 |
| Prescription C | 9,266 | 3,543 | 1,061 | 9 | 13,879 |
| Total by Land Allocation | 14,483 | 4,585 | 2,023 | 24 | 21,115 |

## Prescription A: Ridgetop, Roadside, and Property Line Fuelbreaks

This prescription consists of a silvicultural prescription for thinning, followed by the fuels modification and prescribed fire treatments described in Prescription C. Prescription A is similar to a collaborative fuelbreak prescription that is currently being developed by local agencies and private landowners in the vicinity of the Shasta-Trinity National Forest.

Prescription A is designed to reduce flame length to 4 feet or less and minimize active crown fire. This prescription will be applied 300 feet on either side of key roads, 300 feet on either side of key ridges, and along private property boundaries (see Map 3 for the location of these treatments). Where other resources located on a road, ridge, or private property boundary prevent implementation of this prescription, the width of this prescription could be reduced or, where practical, this prescription could begin at the edge of the exclusion area and extend 300 feet beyond it.

Under Prescription A trees greater than 8 inches diameter at breast height (DBH) would be thinned from below to a total basal area of 50 to 100 $ft^2$/acre. Hand thinning and mechanical thinning could be used.[3] Thinning from below favors the retention of larger trees, however, some larger trees would be cut in order to reach the target basal area and some smaller trees would be retained to create diversity in the stand. After thinning, a minimum 30% canopy cover would remain with an average of 10 feet of space between individual tree canopies (up to 30 feet spacing on steep ground). Tree spacing would vary, however, creating openings and clumps of leave trees to resemble the historic stand structure.

When selecting trees to cut or retain, Prescription A would retain the largest, healthiest trees; non-blister-rust-infected sugar pine, and hardwoods. Prescription A would remove suppressed, intermediate, and codominant conifer trees that compete with the largest, healthiest trees. Trees in obvious decline and recently dead trees would be removed while retaining sufficient large snags to be consistent with Forest Plan guidelines. Snags and standing dead trees, which are no longer sound enough to move would remain untouched by the treatment, unless they are hazards. Hardwood trees with multiple stems would be cultured, retaining 1-3 of the best stems

[3] See Appendix A, "Treatment Tools"

and removing the rest. Thinning would retain a diversity of ages, size classes, and tree species appropriate for the area.

After trees are cut, they would be whole-tree yarded[4] and utilization could occur (e.g. sold commercially, sold as personal use firewood, or transferred to a party via stewardship contract in exchange for non-economical fuel reduction services). Trees smaller than 8 inches DBH and other fuels would be treated according to the specifications in Prescription C.

## Prescription B: Plantation Thinning

This prescription consists a silvicultural prescription for thinning followed by the fuels modification and prescribed fire treatments as described in Prescription C. Prescription B was developed initially for the Westside Plantations project and was refined for the Dubakella Insect and Disease Project. This prescription would mitigate the threat of high-intensity fire behavior and high severity fire effects in plantations within and around the Hyampom community.

In general, the treatments are structured to accomplish a variable density thinning[5] and would be applied in plantation stands. To create a variable density thinning, the spacing is varied to retain not only the healthiest of trees, but a mix of species currently growing on the site. Approximately 55 to 80 percent of the total competing vegetation will be removed. The number of trees per acre remaining post-project varies depending on the Forest Plan management allocation in which the unit is located, the dominant tree species (mixed conifer or pine), site quality, and average tree size. Approximately 45 to 135 trees per acre would be retained after treatment.

The specific thinning treatment intensity falls within three major groups:

- Within Upland Pine stands with an average diameter of less than 10 inches DBH, retain an average of 105 trees/ac (21'x21' spacing) with substantially varied spacing. Gaps of up to 0.25 acres could be left in all Forest Plan Land allocations other than Riparian Reserves.
- Within Mixed Conifer Stands with an average diameter of less than 10 inches DBH, retain an average of 135 trees/ac (18'x18' spacing) with substantially varied spacing. Gaps of up to 0.25 acres could be left in all Forest Plan Land allocations other than Riparian Reserves.
- Within all stands with an average diameter of greater than 10 inches DBH, retain an average of 45 to 100 trees per acre (depending tree size and species). In all Forest Plan land allocations other than Riparian Reserves, create openings of up to 3 acres in size. Openings towards the upper end of the range would be appropriate if there is an active forest health agent causing mortality and damage.

When selecting trees to cut or retain, Prescription B would retain the largest, healthiest trees; non-blister-rust-infected sugar pine, and hardwoods. Prescription B would remove suppressed, intermediate, and codominant conifer trees that compete with the largest, healthiest trees. Trees

[4] See Appendix A, "Treatment Tools"

[5] Variable density thinning (VDT) is a silvicultural strategy designed to accelerate development of late-successional habitat by applying a variety of harvest intensities within a stand.

in obvious decline and recently dead trees would be removed while retaining sufficient large snags to be consistent with Forest Plan guidelines. Snags and standing dead trees, which are no longer sound enough to move would remain untouched by the treatment, unless they are hazards. Hardwood trees with multiple stems would be cultured, retaining 1-3 of the best stems and removing the rest. Thinning would retain a diversity of ages, size classes, and tree species appropriate for the area.

After trees are cut, they would be whole-tree yarded and utilization could occur (e.g. sold commercially, sold as personal use firewood, or transferred to a party via stewardship contract in exchange for non-economical fuel reduction services). Once thinning is complete, fuels would be treated according to the specifications in Prescription C.

## Prescription C: Fuel Modification & Prescribed Fire

This prescription does not involve thinning of trees larger than 8 inches DBH or whole-tree yarding. Instead, it includes all the other treatment tools described in Appendix A. The treatments outlined in this section would also be utilized in Prescription A and B. The following are possible fuel treatments[6] that could occur under this prescription:

- Hand thinning of brush and small-diameter trees (up to 8" DBH)
    - Small diameter trees could be thinned to 20 – 25 foot spacing where needed to prevent excessive mortality during prescribed fire.
    - Brush fields would be thinned to retain clumps of brush (or individual shrubs) up to 10 feet in diameter spaced 20 - 30 feet apart.
    - Shrub/clump spacing distance will increase with slope.
    - All brush would be removed from under the drip line of leave trees.
- Release of residual conifers and hardwoods
- Pruning of residual trees to 8'-10'
- Goat grazing
- Hand Piling and Machine piling of activity fuels and natural fuels
- Lopping and Scattering thinned material
- Burning of hand piles and machine piles
- Mastication as an alternative to piling and burning, where access is possible, and slope is not too steep
- Jackpot burning
- Broadcast burning
- Construction and preparation of fire control lines
- Reforestation

### Broadcast Burning

Specific areas will be evaluated for the suitability of broadcast burning prior to implementation, and all burning will be conducted under an approved prescribed fire plan and smoke management plan. The landscape may be segmented and compartmentalized for broadcast burning based on the locations of control lines.

[6] See appendix A, "Treatment Tools" for definitions of each of these treatments.

Control lines may be created by hand or equipment on ridges or other favorable terrain. Roads, rivers, non-burnable areas, and previously burned areas may be used as control line locations.

Generally, low severity prescribed fires will be implemented to meet desired conditions; however, small pockets of moderate-to-high severity, as well as pockets that are unburned or very lightly burned, will also help to meet desired conditions. Prescribed fires will be designed to kill less than 15% of the canopies of dominant and co-dominant trees (less than 10% canopy mortality would be experienced in suitable habitat for the northern spotted owl).

### Maintenance of Treatments

Prescription C treatments would be maintained over time to retain the fuels reduction and fire behavior modification benefits, improve establishment of planted trees, and guide the development of the forest toward desired conditions. The maintenance treatments would occur in the same areas where initial treatments are planned.

Once the initial treatments are complete, the treatment areas will be characterized by discontinuous ladder fuels and surface fuels, but these conditions will gradually fill in over time. Treated areas will need to be monitored every 3-7 years to determine if they still meet the fire behavior objectives. When the area begins to exceed the fire behavior objectives, one or more treatments from Prescription C would be implemented.

## Public Involvement

You are invited to participate in the design and analysis of the Hyampom Fire Resilient Community project by providing comments to us during this public scoping period. If you have information you feel the Forest Service may not be aware of or have issues (points of dispute, debate, or disagreement) regarding potential effects of this proposed action, please send those issues in writing to the address listed at the close of this letter. Due to the current unprecedented fire conditions in Trinity County and much of California, the Forest has decided to extend the scoping period to November 13, which is longer than the usual 30-day scoping period. While comments will be accepted and considered up until the decision is made, only those who submit project-specific written comments during a public comment period are eligible to file an objection.

Comments received in response to this solicitation, including names and addresses of those who comment will be part of the public record for this proposed action. Comments submitted anonymously will be accepted and considered; however, anonymous comments will not provide the respondent with standing to participate in subsequent administrative review or judicial review. This project is not authorized under the Healthy Forests Restoration Act of 2003.

The Forest Supervisor will decide whether to implement the proposed action, implement an alternative action that meets the purpose and need, or take no action. Additional project information is available on our website at: http://www.fs.usda.gov/project/?project=46044. For more information, please contact project lead, Dan Ostmann at 530-226-2496 or via email at Daniel.Ostmann@usda.gov.

Email comments to comments-pacificsouthwest-shasta-trinity-yollabolla-hayfork@usda.gov and include "Hyampom Project" in the subject line. Comments may also be sent via postal mail to Dan Ostmann, 3644 Avtech Parkway, Redding, CA 96002.

We appreciate your interest in the management of our public lands and look forward to hearing from you.

## APPENDIX A: Treatment Tools

The following specific treatments will be used in one or more of the prescriptions. These treatments can be classified in three major groups: thinning, physical treatment of fuels, and prescribed fire.

Thinning is a broad term to describe actions that reduce the density of vegetation and connectivity of wildland fuels, by hand or with equipment, to meet a variety of objectives, such as fuel reduction, fuel modification, improved forest health, and enhanced ecological function.

Following is a list of methods used to accomplish thinning.

- *Hand thinning* is the felling of trees with a chainsaw. Trees would then be cut into smaller pieces. The subsequent treatment of the thinned material is addressed below.
- *Mechanical thinning* is the felling of trees using mechanical equipment, such as a feller-buncher. The subsequent treatment of the thinned material is addressed below.
- *Mastication* pulverizes or chops small standing trees, brush, and logs into smaller particles. Mowing, mulching, or chipping are also terms that are often used to describe this process of rearranging vegetative material into smaller pieces. This work is often done by wheeled or tracked equipment that can travel over the landscape.
- *Release* is the cutting of brushy vegetation competing with conifer trees. This can be accomplished using chainsaws or non-motorized tools.
- *Pruning* is the removal of lower branches on trees. For this project, trees would be pruned to a height of up to eight feet to promote tree health and remove ladder fuels, which reduces the potential for crown fire initiation.
- *Grazing* by goats or would involve contracting with a herder to graze her animals across the landscape in order to remove competing vegetation. Goats eat green vegetation and limited amounts of woody material including seedlings and saplings. Goats are confined to the target area using a temporary fence.

Physical treatment of fuels: thinned material (activity fuels) as well as well as surface fuels that existed before thinning (natural fuels) may be removed, rearranged, or reduced to meet desired conditions. The following methods describe how natural and activity-created fuel can be reorganized:

- *Whole tree yarding* is the pulling of the whole cut tree to a landing by machine (or cable system) to be processed on the landing site. This method reduces the amount of surface fuel left in the treatment area.
- *Utilization* of thinned material (slash/treetops/logs) would be done whenever possible. This can include commercial uses or personal firewood.
- *Lopping and scattering* is the process of cutting thinned material into pieces small enough to lie flush with the ground and dispersing them over a wide area. For this project, areas containing scattered material greater than 16 inches high will need to be processed with another method (such as one described below) to reduce the potential for excessive flame lengths and suppression difficulty in the event of a future wildfire.
- *Mastication* at this stage of treatment refers to the rearrangement of activity-created and natural fuel into smaller pieces, commonly by hand-feeding material into a chipper. Masticators, wheeled or tracked equipment that travels over the landscape, may also be

used to pulverize small standing trees and brush, as well as the tops and limbs that have been cut or fall naturally.

- *Hand piling* natural and activity-created fuel consolidates smaller-diameter fuels within the treated area and facilitates subsequent burning. Piles can vary in size but, for this project, generally would not cover an area larger than 36 ft2.
- *Machine piling* natural and activity-created fuel consolidates small- and large-diameter fuels within the treated area and facilitates subsequent burning. Piles can vary in size but for this project generally would be no greater than 1/16th of an acre.

A Prescribed Fire is a wildland fire originating from a planned ignition in accordance with applicable laws, policies, and regulations to meet specific objectives. Prescribed fire can be used in conjunction with thinning to meet forest health and fuel management objectives. Prescribed fire may be implemented following thinning treatments or on its own. Multiple entries with prescribed fire may be necessary, as a part of this proposal, to achieve and maintain the desired fuel profiles. Prescribed fires may be ignited by hand (using devices such as, but not limited to, dip torches, propane torches, fusees, and pistol-launched flares or plastic spheres) or aircraft (crewed or un-crewed; and using ignition devices such as, but not limited to, plastic spheres or helitorch). Portable air-curtain burners may also be used in areas where road access could make it an effective tool. An unplanned wildfire in the treatment area, under the right conditions, could have the same effect as a prescribed fire and could reduce the number of prescribed fire entries required to establish or maintain the desired condition. Post-burn monitoring will inform the assessment of when, and if, additional entries are needed.

The following activities are related to prescribed fire:

- *Pile burning* is a type of prescribed fire that allows for the targeted reduction of only piled fuels and would, generally, occur when conditions would prevent fire from spreading beyond the immediate vicinity of the piled material.
- *Jackpot burning* is a type of prescribed fire ignited to deliberately burn natural or modified concentrations (jackpots) of wildland fuels under specified environmental conditions, which allows the fire to be confined to a predetermined area and reduces the fireline intensity and rate of spread required to attain planned resource management objectives. Jackpots are more loosely concentrated than piled material and, when constructed, require less time and effort. This burning can be used to target larger fuels for burning because it can be carried out when larger fuel is dry enough to burn, but fine fuel is too wet or too discontinuous to sustain fire spread.
- *Broadcast burning* is a type of prescribed fire where fire is applied generally to most or all an area within well-defined boundaries for reduction of fuel hazard, as a resource management treatment, or both. This is the most effective treatment for reducing surface fuel loading.
- *Control line* is an inclusive term for all constructed or natural barriers and treated fire edges used to control a fire. Natural barriers could include non-burnable surfaces such as water or rocks. Human-made barriers to fire spread, such as roads, can also function as control lines. Control lines can also be constructed to connect to existing barriers. Control line construction is the act of scraping all combustible material away from the control line, exposing bare soil. Constructed control lines will be 2-10’ in width depending on the orientation to the slope, position on the slope, steepness, vegetation

type, and method of line construction (hand tools will create a narrower line and while equipment such as dozers will create a wider control line). Control lines may be utilized to contain prescribed fires to designated areas. Constructed control lines may be water-barred to reduce erosion potential and are covered with litter, duff, and small-diameter woody debris when they are no longer needed. Another element of control line construction is the modification of fuels adjacent to the control line which primarily consists of cutting dead/down fuels, brush, and small trees and pruning trees to a height of up to 8 feet. This preparation will occur within 1 - 50 feet of the control line, depending on fuel conditions. Fuels manipulated for control line preparation may be masticated/chipped, piled and burned in advance of broadcast burning, lopped and scattered within the broadcast burn unit, or scattered outside the unit. In order to reduce erosion potential, cut material can sometimes be used for the repair of control lines, when burning is complete, by scattering or chipping material onto the line. Construction of control lines will be phased with the implementation of prescribed fire throughout the project area, and control lines will be covered over when not in use; however, control lines may be re-opened for subsequent burn entries required to achieve or maintain the desired condition.

Finally, reforestation may occur in areas where gaps have been created by insect or disease issues or storm damage, or where the species composition of the plantation does not reflect the natural stands located adjacent to the plantation. Although fire behavior across most of the project area would generally be moderated by reducing stand densities, certain areas that lack trees could benefit from additional shade that would help reduce fire intensity. In these areas, additional tree planting could occur.