Forest Service
U.S. DEPARTMENT OF AGRICULTURE

FS–1161(g) | April 2021

A lift unloads wood chips used to make particleboard. USDA Forest Service photo by Larry Swan.

Sustainable Particleboard Reduces Wildfire Risk

Each year, approximately 73,000 wildfires burn about 7 million acres of Federal, Tribal, State, and private land. The recent catastrophic wildfires ravaging the Western United States have brought new meaning to these statistics. In California alone, almost 42,000 structures were damaged or destroyed over the last 5 years.

The U.S. Department of Agriculture (USDA), Forest Service has been managing wildland fire on national forests and grasslands for more than 100 years.

But the Forest Service doesn't—and can't—do it alone. Instead, the agency works closely with other Federal, Tribal, State, and local partners. In California, the Forest Service and the Governor recently signed a shared stewardship agreement to treat 1 million acres of forest per year to improve forest health and reduce wildfire risk. Forest restoration treatments produce wood and biomass that needs to be disposed of in ways that reduce wildfire risk.

One local partner helping with the effort is Ampine, a particleboard manufacturer in the central Sierra Nevada foothills near Sutter Creek, CA. Ampine, a division of Timber Products Co., is California's only remaining particleboard plant that uses wood. Ampine is unique in that it can use low-value logs and broken log segments, while other particleboard manufacturers tend to use only wood processing waste like sawdust and shavings. Ampine's geographical location makes it well-placed to help reduce forest fuel loads and improve sustainable forest management on both public and private forest lands.

National forests in the Sierra Nevada mountain range experienced extensive tree mortality from prolonged drought and bark beetles from 2012 through 2015. The combined effects of drought and bark beetles increased the amount of fuel available for large and increasingly intense forest fires. Ampine is strategically located between the Eldorado and the Stanislaus National Forests, both of which experienced elevated levels of bark beetle-caused tree mortality, totaling at least 12 million dead trees over the last 3 to 5 years.

In 2019, Ampine used about 6,000 tons of wood from national forests and about an equal amount from private forests. In 2020, those numbers doubled because of a relationship established between Ampine and the Forest Service. This relationship provides a use for forest management byproducts that reduces fire danger and improves forest health. They hope to continue to increase their impact in the future.

These results were made possible in part with funding from a Forest Service Wood Innovations Grant, which allowed Ampine to lease a chipper as part of its plan to increase the use of local brush and bark beetle-killed trees to supplement their other raw material supply. The goal is to eventually use up to 100,000 tons, annually, from forest restoration projects. Reducing hazardous fuels and improving forest health on National Forest System and other forest lands are key priorities for the Wood Innovations grant program.

A drum chipper, leased with Forest Service grant funds, loads a truck with wood chips in the Ampine log yard. USDA Forest Service photo by Larry Swan.

The Ampine facility near Sutter Creek, CA, employs more than 150 people. USDA Forest Service photo by Larry Swan.

Supporting Local Environmental and Economic Sustainability

Many forest management byproducts are disposed of by burning, increasing smoke emissions and their negative health and environmental impacts. By using these byproducts for manufacturing particleboard, Ampine is reducing local smoke emissions. Using the wood also stores carbon. Ampine estimates it can reduce its net CO_2 emissions by tens of thousands of tons annually through its use of forest management byproducts.

In addition to the environmental benefits, Ampine helps generate forest management cost savings for the Eldorado and Stanislaus National Forests by reducing the cost of fire crews and engines who have to light and monitor burn piles. Ampine also employs more than 150 staff at its plant, contributing to the local economy's health and resilience.

FAST FACTS

- Ampine is an end-user of wood fiber from 50-70 local sources, including national forests.
- A Forest Service grant program improves Ampine's capacity for processing raw materials.
- Using dead trees for manufacturing removes a source of fuel for wildfires.
- Processing raw materials reduces open burning and related smoke emissions and effects.
- Lower CO_2 emissions because of reduced burning and carbon storage in particleboard.
- Equipment leased through grant supports 1.5 direct jobs and helps retain 156 existing jobs.