

DISTURBING THE STATUS QUO:

In the Swan Valley, residents take a proactive approach to managing wildfire risk.

Shortly before midnight on July 17, 2023, a flash of lightning severed the dark sky before sinking into the forest canopy below. Firefighters responded to the resulting fire the next morning, but little could be done to contain the blaze. By the week's end, the Colt Fire ballooned to encompass nearly 3,000 acres north of Seely Lake, Montana.

Bill Junkermier watched the column of smoke grow from his home on the shore of Lindbergh Lake, only a few miles northwest of the fire's perimeter. The nearest communities had all been evacuated or placed under warning, and neighbors scrambled to complete last-minute yardwork and pack essential belongings, in case the Lindbergh Lake neighborhood was next.

Despite the chaos around him, Junkermier felt calm. He had known something like this was coming. Since his family first bought the property in the 1960s, the forest had changed, growing dense with woody debris and building up momentum for a major wildfire like this. To him, the Colt Fire was inevitable.

"If we don't do something, Mother Nature will," explained Junkermier.

And Junkermier had done something. Just the year before, he worked with the Montana Department of Natural Resources and Conservation (DNRC) and local nonprofit Swan Valley Connections to make the forest on his property more fire-resilient.

Now, with Mother Nature looming just over the hillside, Junkermier felt secure in the fate of his forest and home.



**"IF WE DON'T DO SOMETHING,
MOTHER NATURE WILL."**

The Colt Fire was the most expensive wildfire during Montana's 2023 fire season. It eventually burned over 7,000 acres in the Swan Valley. Photo courtesy of Inciweb.

The Colt Fire burned over 7,000 acres. Though it never touched down in the Lindbergh Lake neighborhood, it was the most expensive wildfire in Montana in 2023, largely because of the time fire crews spent containing the fire and protecting homes and other structures.

Over a year after the Colt Fire's containment, the work reducing risk to local neighborhoods from wildfire danger, continues. In fall 2024, the DNRC will implement the Southern Swan Valley Fuel Reduction Project (SSVFRP), which includes a series of educational workshops, resource sharing opportunities, and forestry projects, aimed at giving residents tools to increase their homes and neighborhoods wildfire-resilience.

The project is one of many examples of how the DNRC and its partners are changing narratives surrounding wildfire management. In 2023, House Bill 883 made several changes to the administration of Montana's fire suppression fund, including the designation of more funds towards projects that use proactive management strategies.

Jack White, the DNRC service forester for the Swan Unit, is the lead on the SSVFRP. During the summer and fall of 2023, White spent ample time in the Lindbergh Lake neighborhood, conducting home wildfire risk assessments as part of the DNRC's regular programming. He noticed several issues that increased the community's susceptibility to future wildfires.

The area had a large number of structures in close proximity to forestland, qualifying it as part of the Wildland Urban Interface. The only road in and out was unpaved and only wide enough for a single vehicle, making a quick evacuation virtually impossible. Taking defensive action before another wildfire occurred could save dozens of homes, and even make the difference between life and death.

With the newly available House Bill 883 funds and the near memory of the Colt Fire, White saw a unique opportunity to take largescale action. However, to envision a more fire-resilient future for the Lindbergh Lake community, White had to first revisit the past.



A narrow bridge is the only way in and out of some parts of the Lindbergh Lake neighborhood. The entire area is only accessible via an unpaved road.



Fire hoses that pump water from the lake are scattered throughout the neighborhood. The hoses are an example of a reactive management strategy that increases safety without lowering wildfire risk.

Past and future forests

Forests change over time,

as White eagerly reminds the landowners he meets with. In much of the western United States, fires can be natural catalysts for many of these changes and play a large role in forest health. Fires can reduce dead vegetation, recycle nutrients back into the soil, and promote new plant growth by creating open areas in the forest.

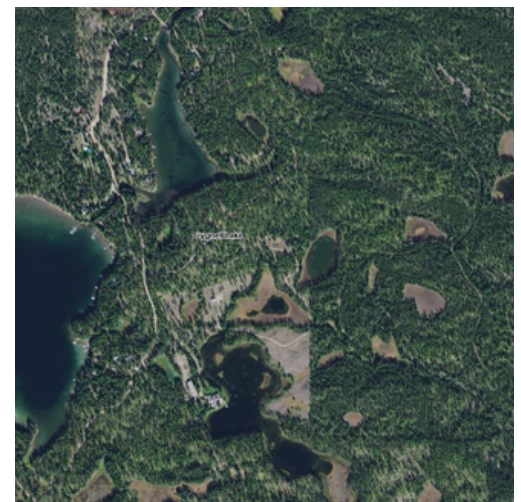
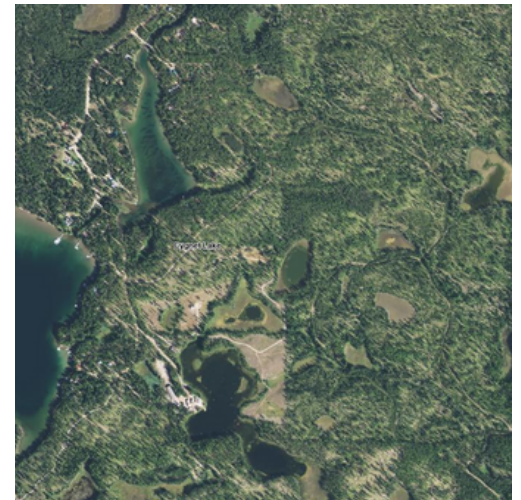
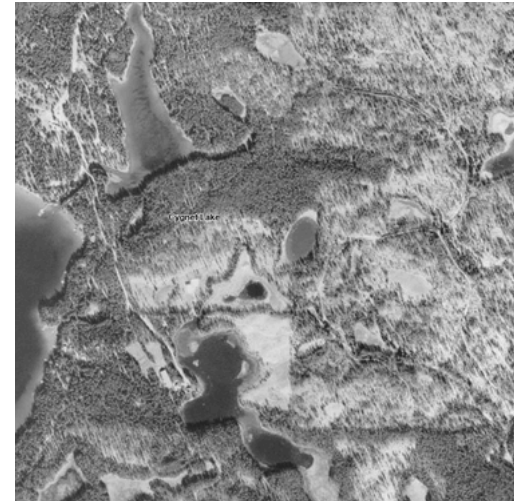
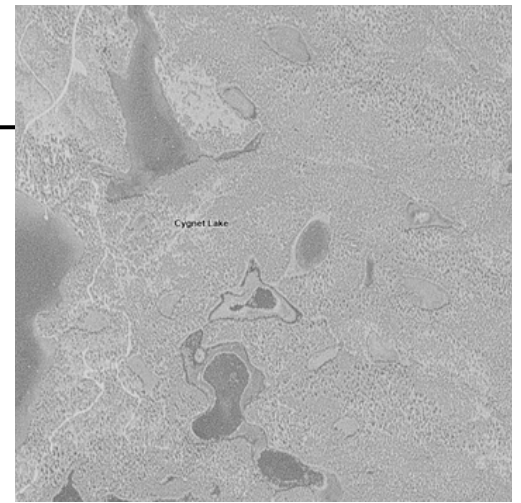
Forests also impact fire. Different tree species have different traits that affect both their individual ability to survive fires and the forest's ability to repopulate burned areas post-fire. As a result, fire regimes - the average frequency and severity at which fire occurs - are largely dependent on the dominant tree species in an area.

In 2024, dense groves of spindly lodgepole pines clustered around Lindbergh Lake. Lodgepole pine forests are notorious for large, high-severity fires because the trees grow close together and lack the thick, protective bark of some other species. However, White knew that an infrequent, high-severity fire regime was not the area's norm.

Numerous fire scientists have used a combination of historical records, soil cores, tree rings, and models to estimate historical fire regimes across the United States. Studies of Lindbergh Lake and the surrounding areas showed that, through the 19th century, fires likely occurred every 20 years, either from natural causes or as prescribed burns done by Indigenous peoples.

These fires were usually low in severity, burning grasses, shrubs, and some trees. While thin-barked lodgepole pines often perished in these fires, mature Douglas-fir and western larch trees survived, resulting in a forest primarily composed of these more fire-resistant species.

White suspected the forest around Lindbergh Lake changed in the 1900s when the United States government enacted policies to suppress all forest fires, even if no structures or lives were in danger. Without regular disturbances, the Douglas-fir and western larch no longer had a competitive advantage, and lodgepole pine began to take over.



Aerial views of the Lindbergh Lake neighborhood in 1976, 2003, 2013, and 2021.



**"THIS ISN'T A HEALTHY FOREST.
IT NEEDS A DISTURBANCE."**



Jack White, the service forester at the DNRC's Swan Unit, explains the natural history and current conditions of the forest around Lindbergh Lake.

The change was later cemented by development efforts in the 1960s, which removed much of the remaining Douglas-fir and western larch to make space for housing.

The aftereffects of the fire suppression era still linger in many forests. While forests change, they often do so slowly, over centuries. In the meantime, many scientists say the altered forests are contributing to an increase in severe wildfires.

In essence, not actively managing the forests around Lindbergh Lake meant upholding the management decisions made during the 1900s.

"Doing nothing is a management decision, and I don't think a lot of people realize that," said White. "A good steward recognizes that a disturbance is a natural part of the environment, whether it's a fire, insect and disease, or a human-caused disturbance. You can't say you're being a good forest steward if you completely remove disturbance from the landscape."



The Lindbergh Lake neighborhood is primarily lodgepole pine, and many areas are overgrown.

A Model for Good Management

Fire is one of the most common disturbances in Montana forests, but prescribed burning was not a viable option for the Lindbergh Lake area. The forest was packed with decades of unburned fuels. Even a small misstep could result in an out-of-control wildfire. Plus, it would be difficult to selectively burn lodgepole pines while preserving Douglas-firs and western larches.

Instead, White prescribed a forestry practice called “thinning” in which trees are removed to create more space in the tree canopy. The practice improves overall fire-resistance by reducing the chances a fire can spread treetop to treetop. In the case of Lindbergh Lake, White would also focus on removing lodgepole pines and preserving more fire-resistant Douglas-fir and larch trees.

Despite the benefits, White knew that landowners would be hesitant. Many had deep emotional connections to the forest, and changes - even beneficial ones - were a difficult sell.

“Everyone who lives here loves the Swan Valley so there’s a lot of momentum to keep it the way it is,” said White. “Removing trees is asking a little more [of landowners].”

White turned to Bill Junkermier for help. Like many residents, Junkermier’s connection to his land ran deep. His family had owned their property since the 1960s, long enough for Junkermier to have firsthand knowledge of some of the changes, White suspected.

Junkermier spent his childhood summers playing in the woods around Lindbergh Lake, but several decades later, the forest of his childhood was all but non-existent, replaced by “matchsticks of lodgepole pine.”

After consulting with foresters at the DNRC, Junkermier thinned much of his forest in 2022, a decision that quickly paid off the next summer when the Colt Fire broke out. If the Colt Fire had reached Junkermier’s property, the wide tree spacing likely would have slowed or even stopped the fire’s progress. Junkermier also said the thinned forest is healthier and provides better wildlife habitat.

Since thinning his forest, Junkermier regularly campaigns his neighbors to complete similar projects, using his land as a model to showcase potential benefits.

“It’s not big and scary,” Junkermier said. “It’s a matter of willingness to do it. If I can do it, anybody can.”



Thinning creates space in the tree canopy and removes ladder fuels, like small trees.

Building Defenses for the Future

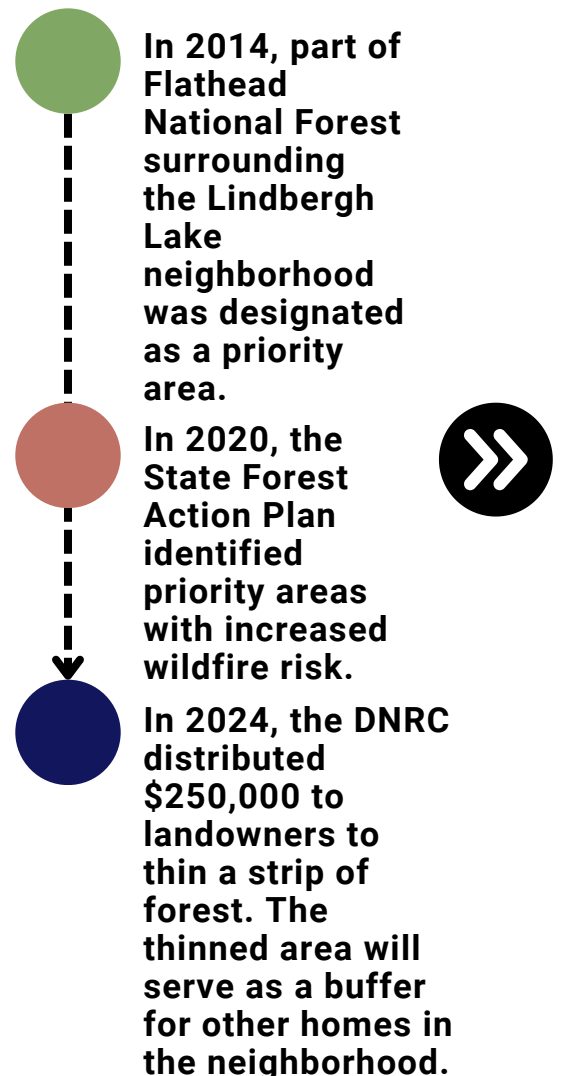
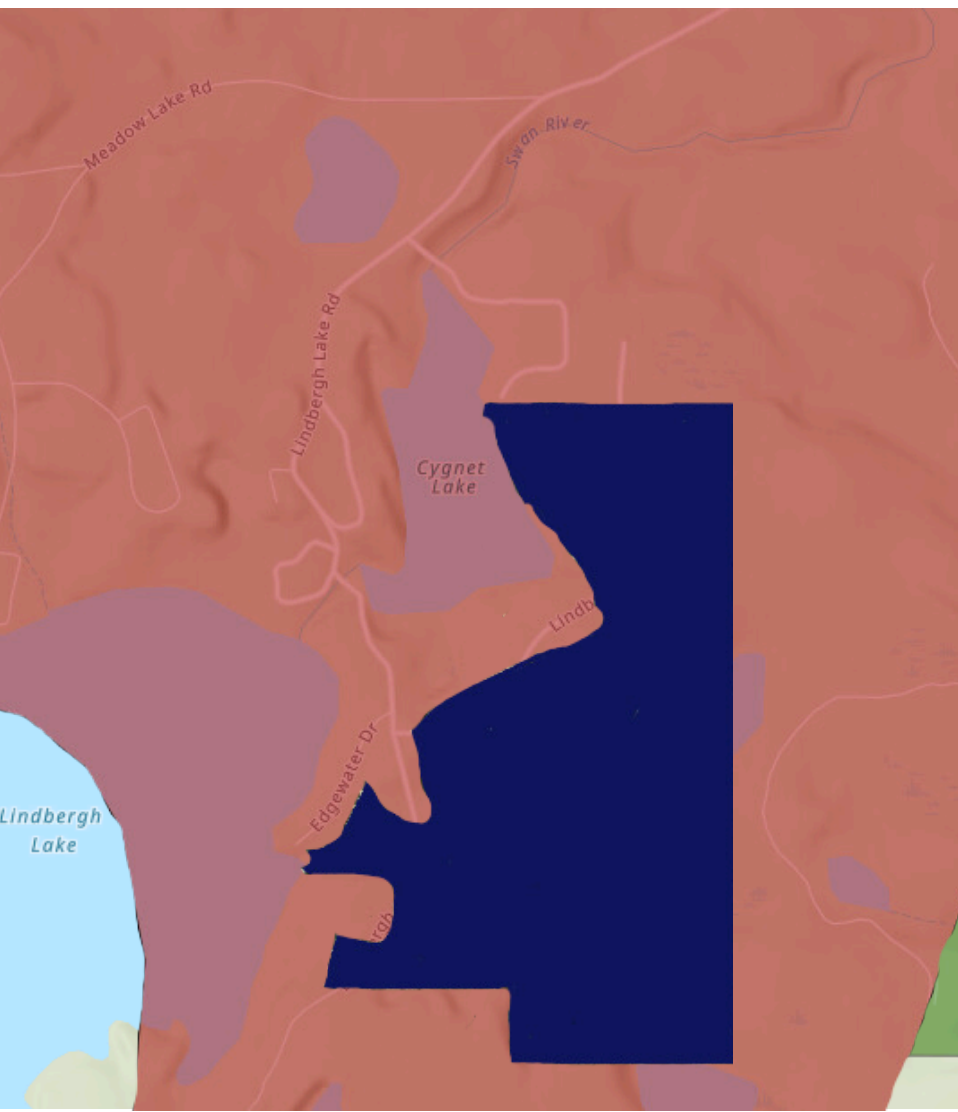
Four landowners will thin their forests in fall 2024. The number is

smaller than White initially hoped, but the project will still create community-wide benefits. The landowners that have signed on are next-door neighbors. Once thinned, their properties will create a continuous section of thinned forest at a critical intersection in the landscape.

In 2014, the public forestland immediately to the east of Lindbergh Lake was named a “priority landscape,” a designation denoting especially unhealthy forests in need of intensive management. The Lindbergh Lake area was also called out in the 2020 State Forest Action Plan as a “priority area for focused attention” due to elevated fire risk.

The to-be-thinned land sits at the crossroads of these two designations. It also forms the eastern border of much of the neighborhood, and so will act as a buffer for the entire community against westward-moving fires.

To optimize the project’s community-wide benefits, the SSVFRSP will also help homeowners complete smaller projects, like pruning trees in their yard and removing ladder fuels. The first event on the docket is a “chipper day.” On a designated day, a chipper will circle the rural neighborhood, safely disposing of the branches, stumps, and other leftover debris residents leave on the curb.



The promise of easy waste removal has already incentivized several residents to increase their home's fire-resistance by removing fuels from the Home Ignition Zone - the area within 200 feet of their house.

As with the thinning portion of the SSVFRSP, these changes improve the overall fire-resistance of the entire community in addition to protecting individual homes. Removing excess fuel from the Home Ignition Zone and surrounding yard reduces the chances a fire will spread across property lines.

"So smaller landowners work on improving the Home Ignition Zone, larger landowners work on doing some largescale thinning, and then that community is a little more protected," said White.

However, it's not the physical changes to the forest that make the most difference to White. Just like forests, he sees changes in people over time as a result of healthy forest management. Participating in the SSVFRSP will give landowners hands-on skills and knowledge to continue to make informed decisions on how to manage the forest they live in.

White regularly works with the local Forest Service branch and nonprofit Swan Valley Connections to offer workshops to residents on skills like pile burning and tree planting. He also co-chairs the Firesafe Swan group, which uses resident feedback to inform future priorities for wildfire management in the Swan Valley.

"I really want to push that being a landowner, especially a forest owner in Montana, is a responsibility, and you have to take on some of that responsibility," said White. "If people at least have the tools to make educated decisions, that'd be a win."