

The Forest Management Toolbox

When someone looks at a forest from a distance in Boulder County, it often looks like a sea of conifer trees, sometimes with the occasional meadow or aspen grove dotting the landscape. However, within that sea of trees lies an incredibly complex and nuanced landscape, with any given acre potentially varying markedly from the next. Factors such as elevation, aspect, soil type, past disturbance history, and many others facilitate an enormous amount of complexity among forest types, even when they appear to be quite similar from a distance.



The complexity of our ecosystem, especially when combined with additional considerations like climate change adaptation and human values at risk, necessitates a nuanced and thoughtful approach to forest management.

Despite how it is often characterized, forest management is not a monolith. It is not a rigid, one-size-fits-all approach that results in uniform outcomes, and it is neither simple nor unchanging. Likewise, thinning — the forest management tool that is often broadly applied to forest management projects throughout the Front Range — can take on nearly as many different forms as there are foresters. **Rather than a list of set options, forest management can be thought of as toolbox combined with a painter's pallet – it is both an art and a science that must be thoughtfully and intentionally applied.** A given approach is neither always good nor always bad. The benefits and potential drawbacks of forest management depend heavily on how the tools within the toolbox of forest management are used. The benefits of these tools can be vast when applied with nuance, critical thought, and careful consideration given to the complexities of forests. Here are a couple of recent examples:



A study from Davies et al. (2023) examined the impact of thinning projects in ponderosa pine forests along the Colorado Front Range on bee biodiversity and bee-flower interactions. The researchers found that **native bee abundance increased in thinned stands**, and that **bee-flower interactions responded positively to thinning treatments**. The researchers concluded that the creation of canopy gaps in thinning operations can support bee communities and potentially lead to more resilient plant-pollinator networks. Follow this link to learn more: <https://doi.org/10.1002/eap.2927>.

A 20-year study conducted by Stephens et al. (2023) in forests of the Sierra Nevada, CA looked at the impact of different management options on forest conditions and fuels. These management options included the following: mechanical treatments, prescribed fire, a combination of both, and no treatment. **The researchers concluded that all three active management options produced conditions that were much more resistant to wildfire after 20 years**. They also demonstrated how multiple management options can be used to achieve wildfire risk reduction objectives. While this study took place in California, it certainly has implications for our forests in Colorado. Follow this link to learn more: <https://doi.org/10.1002/eap.2932>.



Forest management can have a diversity of positive outcomes. Whether it be promoting pollinator biodiversity, improving tree health, or reducing wildfire risk, the secret sauce of forest management is how the tools in the toolbox are used. Forest management can encompass a myriad of approaches for stewarding our forests—it all comes down to how they are utilized. **Our approach of ecological forest management seeks to emulate natural forest processes and emphasizes the careful and nuanced consideration of a variety of aspects of forest management, from landowner objectives to ecological resilience and climate adaptation**. If you're interested in learning more or exploring how ecological forest management can support your goals for your property, we'd love to talk to you!