Thinning to reduce wildfire hazard; tradeoffs and consequences

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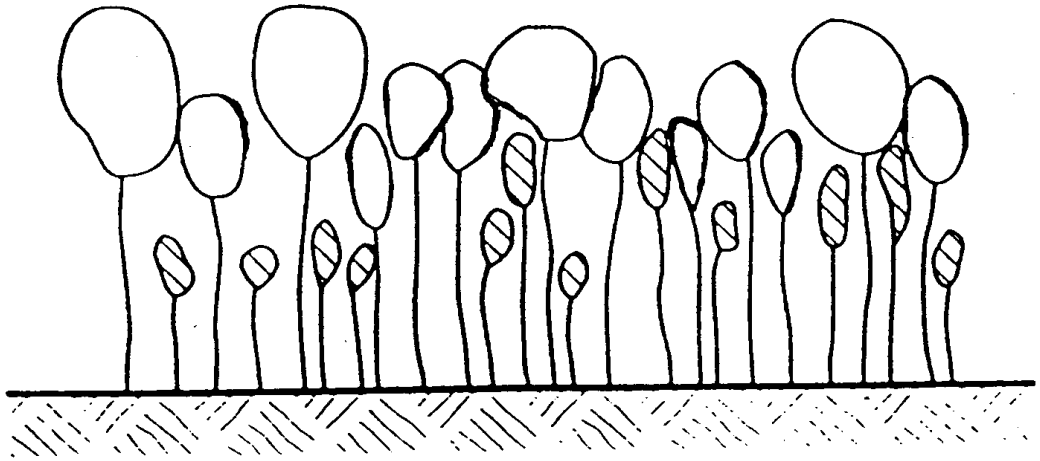
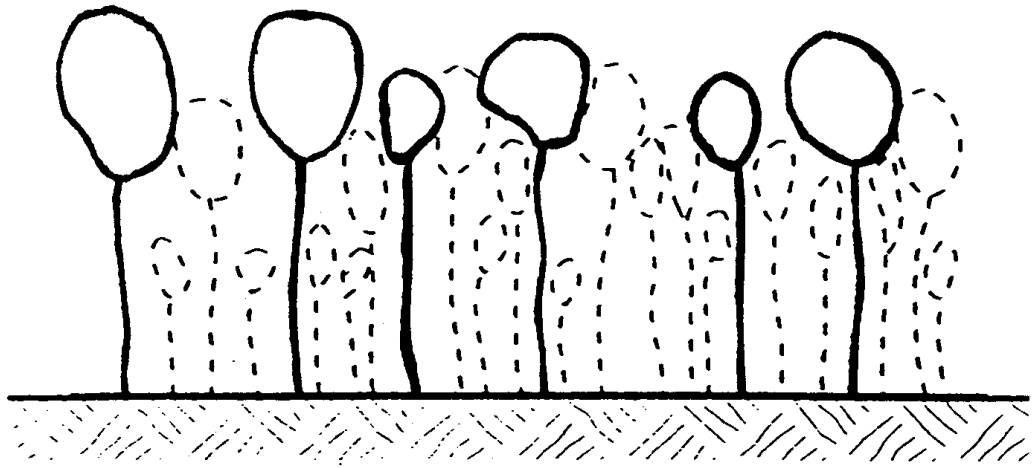


Unthinned

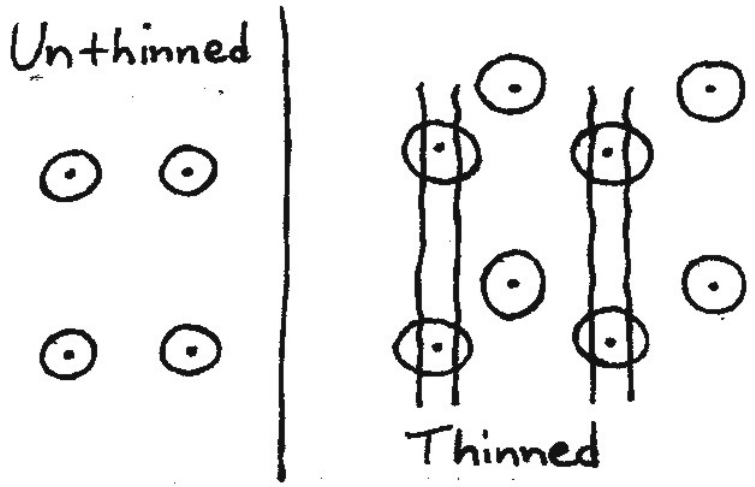


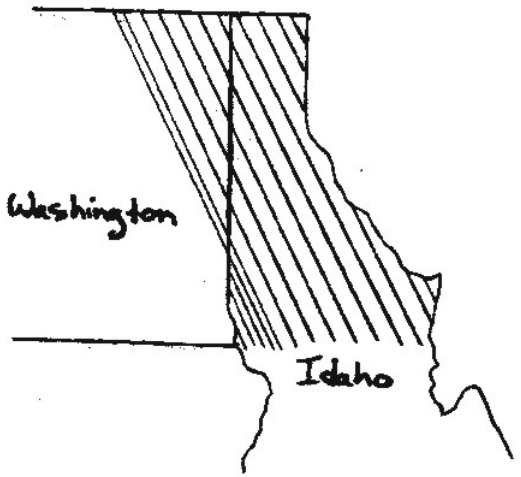
thinning from below

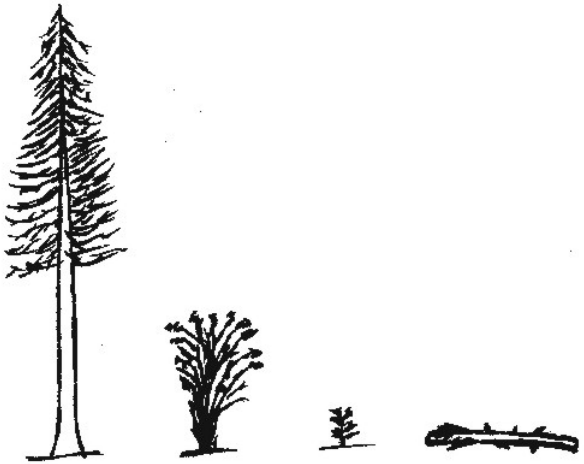
Unthinned; 15% visible sky

Thinned; 72% visible sky

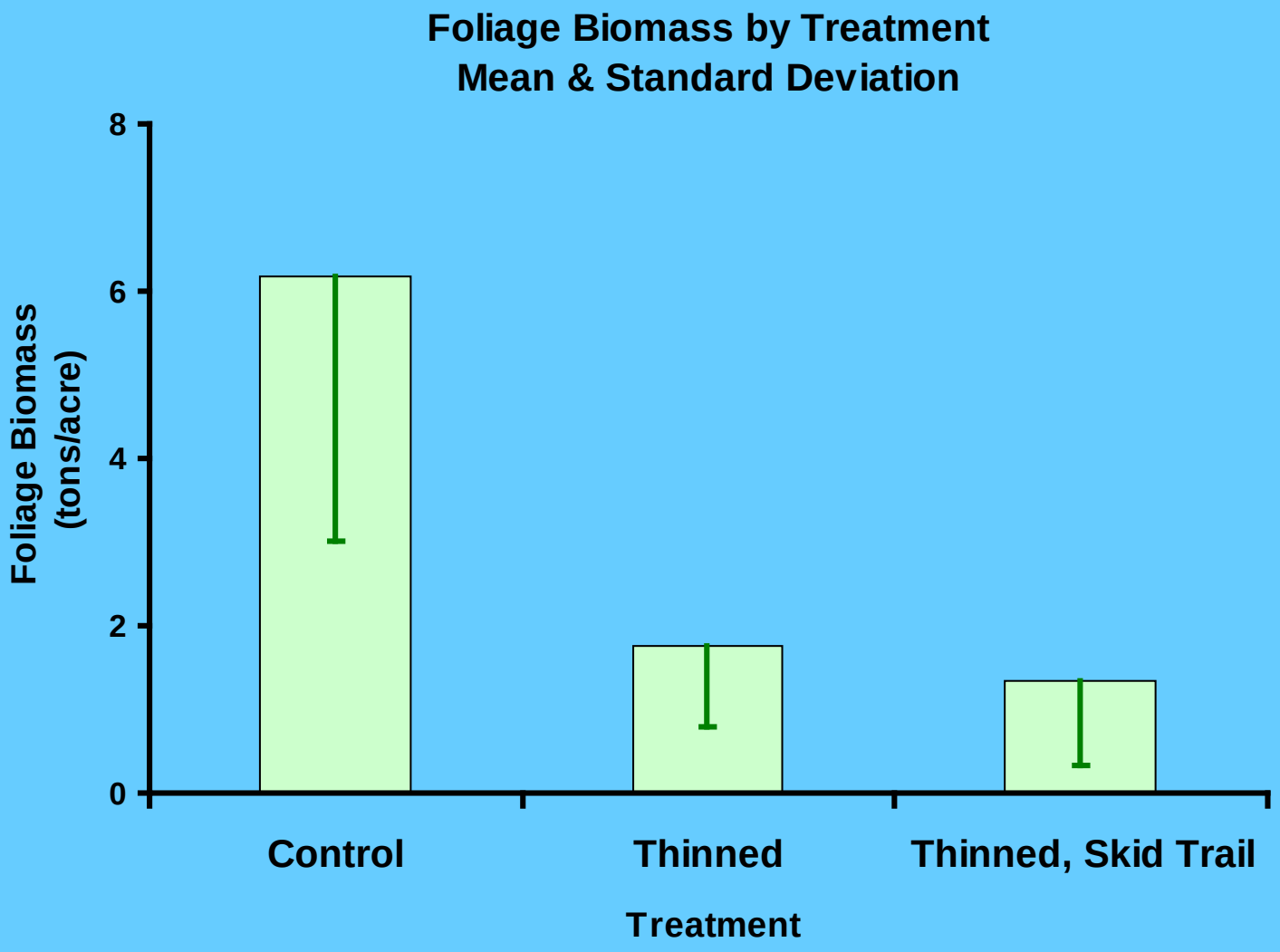
Study Design



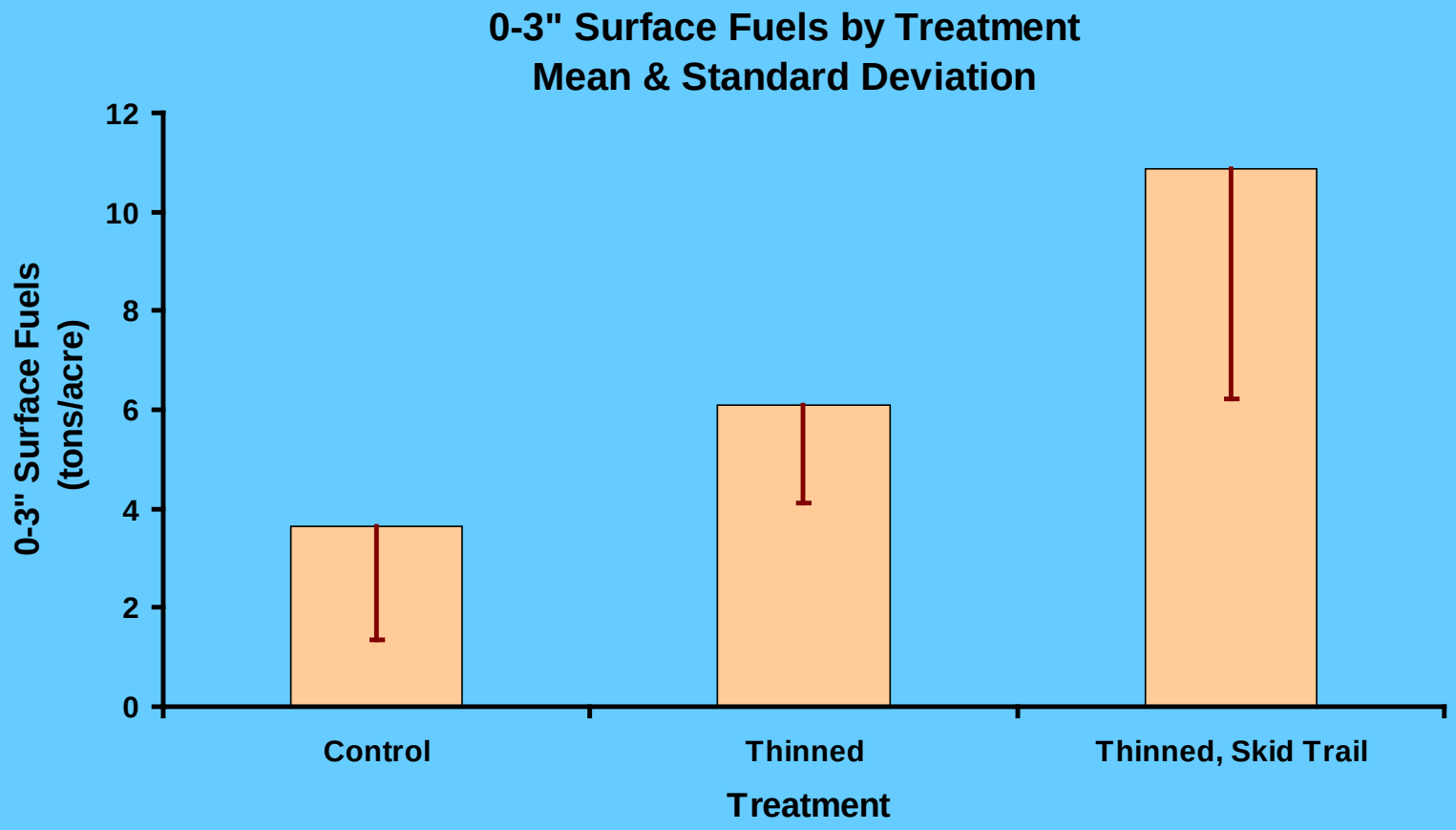




Crown Foliage After Thinning



Surface Fuels



Fuels Treatment Necessary?

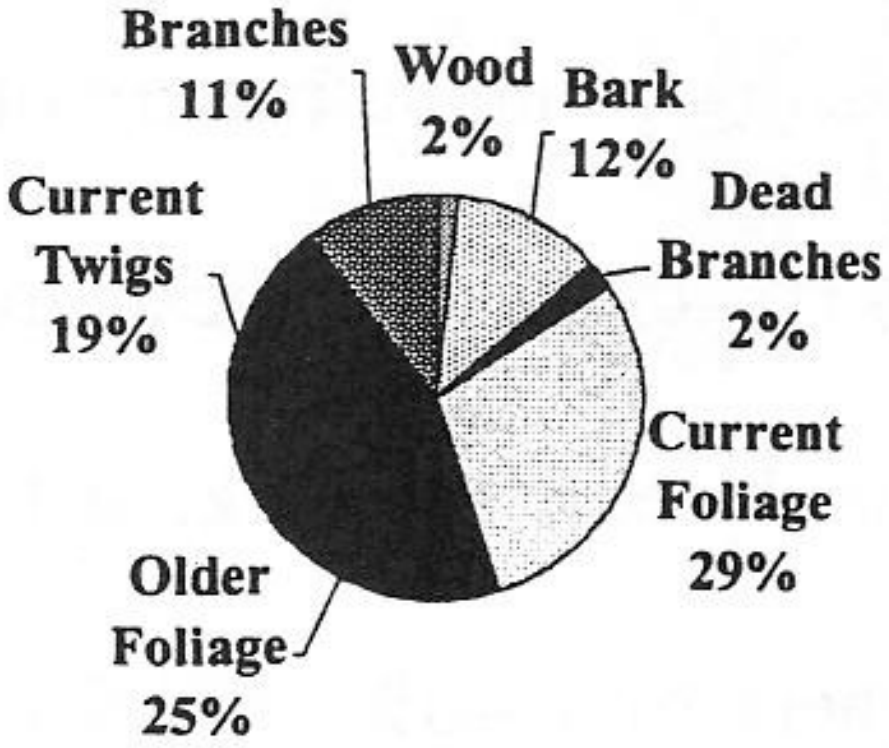
Ladder Fuels

Ladder Fuels

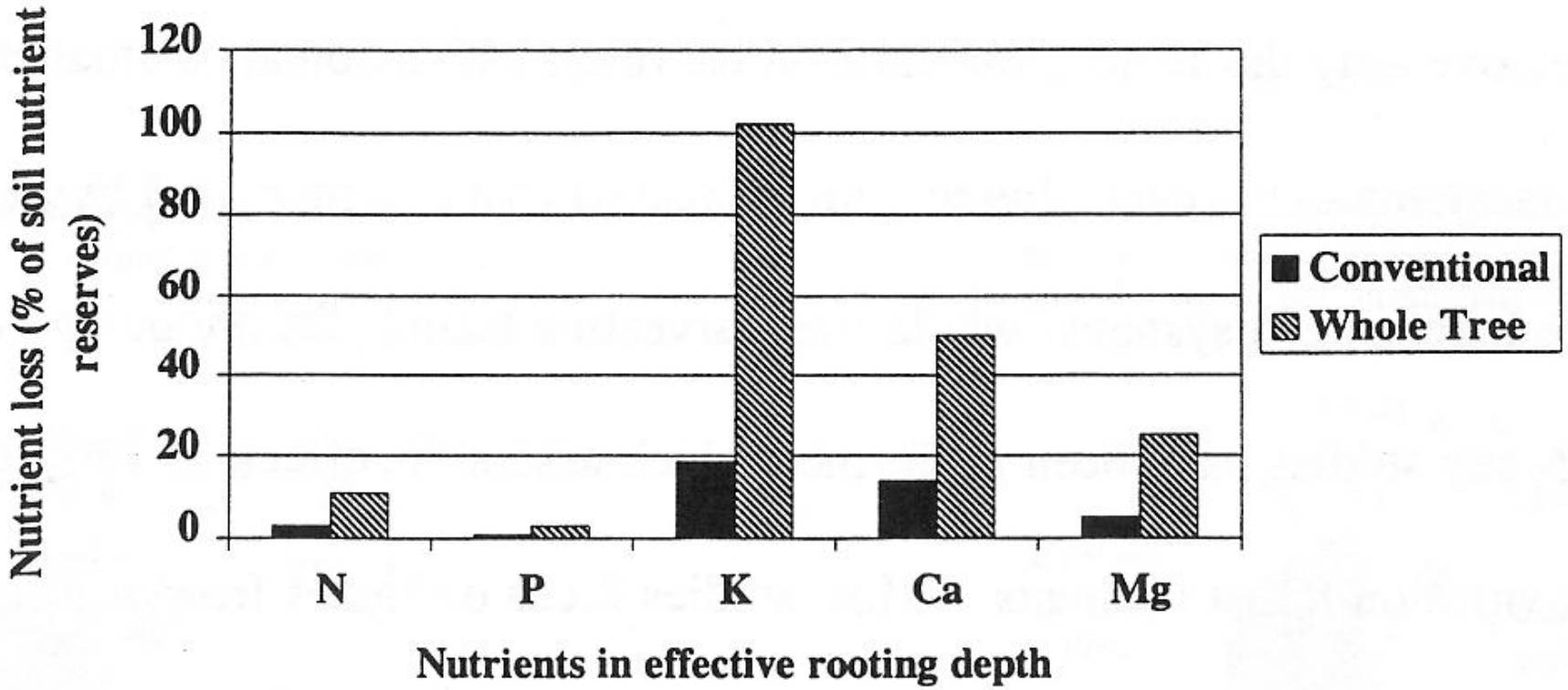
Nutrients

- local soils generally nutrient deficient
- nutrients concentrated in fine fuels

Figure 11c: Potassium in Douglas-fir. Estimated allocation of potassium to various tree components in 34-year-old Douglas-fir. From Pang et al. (1987).



Nutrient losses from a 41-year old stand following two harvesting regimes



Nutrient Management

(how to lose nutrients)

- Crown fires
- Piling slash too early
- Doing whole tree harvesting

Logging Systems

What we've learned

1. Thinning did reduce crown fire hazard
2. Fuels treatment necessary
3. Treat ladder fuels
4. Need to manage for nutrients
5. Effects of logging system

Are our suggestions out of line?