

A PRELIMINARY ANALYSIS OF THE HAINES WOOD HEAT PROPOSAL
For Lynn Canal Conservation
by Eric Holle

Local employment, greater energy independence, local control, and lower costs are potential positive impacts from using wood heat. Additionally it makes sense to move away from fossil fuels toward more sustainable energy sources. Whether or not the wood heat proposal is sustainable depends on the biomass source used over the long term. It is possible to identify biomass sources with minor or no negative impacts, and rule out biomass sources of greater impact. In this way, this project could be a unifying rather than divisive project for the community.

Unlike other communities that have experienced some success with wood heat due to a local source of waste wood from lumber mills, Haines will need to find other sources. The following analysis assumes that chips rather than pellets will be chosen.

Possible Sources of Biomass for Heating in Haines with Minimal Impacts

- **CARDBOARD.** At present, the market for recycled cardboard is low relative to the cost of shipping it. If cardboard were used as biomass, there should be clearly established guidelines to avoid burning white cardboard and other bleached paper products to prevent formation of dioxins and other serious risks to human health.
- **ROADSIDE WOOD.** Wood that is currently left on roadsides by DOT could be chipped, as could wood from Haines Highway and other DOT construction projects.
- **WASTE WOOD.** Waste wood could be used from other local sources, such as lot clearing, construction sites, and small lumber mills. A central processing area could be set up to accept waste wood from these smaller sources.
- **MILL WASTE.** Waste could be barged in from Hoonah, Wrangell or other large mill sites. Transportation costs would be a factor.
- **PRE-COMMERCIAL THINNING ON THE HAINES STATE FOREST.** More than 10,000 acres of the Haines State Forest have been clearcut and are in various stages of second growth. 1,900 acres have been pre-commercially thinned to date, leaving approximately 8,000 acres that would benefit from pre-commercial thinning. Some trees are too young to be useful as biomass at present, but several thousand acres of older trees could be thinned, and provide a steady source of biomass, benefiting the production of timber, and providing local employment. Portable chippers could process biomass on site and transport chips directly to the drying facility. Perhaps a funding source could be found to offset labor costs.

The Most Negative Impacts Would Occur from Clearcutting Old Growth in the Haines State Forest and Would be Opposed by LCC for the Following Reasons:

- **IMPACTS TO FISH HABITAT.** Biologists have so firmly established the negative impacts of clearcutting on salmon habitat that the issue is seldom debated. Old growth forests are the main source of large woody debris in river systems, with large logs and rootwads providing spawning and rearing habitat for several species of salmon. Old growth forests also prevent devastating floods that occur in cut areas.

Such floods cause siltation and scouring of spawning beds, simplification of river channels, and negative impacts to hydrologic features essential to salmon reproduction. The Pacific Northwest lost several salmon runs due entirely or in part to overcutting of old growth forest. Logging impacts in the Kelsall River watershed led the Department of Fish and Game to request a moratorium on logging in the Kelsall in 1998. This recommendation has yet to be followed by the Department of Natural Resources, to the detriment of local king salmon.

- **IMPACTS TO WILDLIFE.** Many bird species are heavily dependent on Southeast Alaskan old growth forests, including marbled murrelets, northern goshawks, sharp shinned hawks, crossbills, woodpeckers, great horned and great gray owls, varied thrushes, blue grouse, spruce grouse, and many other cavity nesters and songbirds. Habitat loss is the leading cause of bird mortality worldwide, greater than window crashes, domestic cats, windmills, etc. Mammals that depend on old growth in Southeast Alaska for part of their life cycle include brown bear, black bear, moose, coastal mountain goats, river otters, pine marten, and the Alexander Archipelago wolf.
- **NET RELEASE OF CARBON INTO THE ATMOSPHERE.** While burning a piece of wood is technically considered “carbon-neutral,” cutting and burning old growth forests is not. Conventional wisdom until recently held that young forests absorbed carbon and that old forests did not. More accurate methods of measuring carbon flow in forests (the eddy covariance or eddy flux method) now conclusively prove the opposite. Forests up to 800 years of age in the Pacific Northwest continue to sequester carbon. In addition, clearcuts in old growth release more carbon than they absorb for up to twenty years after replanting, due to increased activity of microbial decomposers.¹ Under the 120-year Haines State Forest rotation period, cut areas can never regain old growth characteristics.
- **VISUAL IMPACTS.** Estimates to provide biomass from old growth on the Haines State Forest for this proposal vary from 17 to 25 acres annually, depending on the amount of sawlogs removed prior to chipping. There are currently about 20 acres provided for firewood sales, and 30 to 50 acres of small commercial timber sales. The trend of firewood sales is strongly upward, suggesting that sales totaling more than 100 acres annually could soon become the norm. Although well below the annual allowable cut on the forest, this would clearly have a large visual impact.

Conclusion

This is a preliminary look at the proposal to burn wood to heat public buildings in Haines. Hopefully one or more sources of reliable waste wood or other biomass can be identified that allows true sustainability and energy independence, without major negative impacts and without inflaming community divisiveness. In addition, we should not overlook energy saving actions such as weatherproofing, turning down thermostats, etc, or other methods of heating, such as geo-thermal, especially in new buildings.

¹ “Scaling Net Ecosystem Production and Net Biome Production over a Heterogeneous Region in the Western U.S., Biogeosciences Vol. 4., and numerous studies by Harvard Atmospheric Chemist Steven Wofsy