

Historical Fuel Modification

In addition to fire damage, many of the fuels within the Unit have been modified by human activity. In Western Shasta County, thousands of acres of land became barren because of copper mining activities that occurred between 1896 and 1919. A large amount of wood was cut to fuel copper smelting operations. The fumes resulting from smelting the heavy sulfide ores killed and damaged vegetation as far south as agricultural lands in the south of the county. In 1910, USFS Forester John D. Coffman reported on areas of complete devastation and that Pine species were the most sensitive to the smelter operations whereas Black Oak and Poison Oak were the least. In 1921, State Forester E. N. Munns in a report to the legislature estimated that 180,000 acres of forestland had been damaged by smelter operations.¹²

Early smelting operations utilized “open air roasting that destroyed all the vegetation within a radius of several miles of Keswick”¹³ Even when the open air roasting was replaced by mechanical roasting, fume damage continued to destroy vegetation and damage agricultural crops as far away as Corning. By 1910 litigation and declining copper prices led to the cessation of most smelting.

Vegetation killed by smelter operations created a large fire hazard resulting in 275 fires in the Kennett area between 1929 and 1936. Some of these fires are shown on the “1900 to Present Fire History” map.

Land devoid of vegetation suffered a high amount of erosion estimated at 35 million cubic yards of soil in ten to fifteen years in the Kennett area. In 1922 E.N. Munns planted twenty-five experimental plots of various plants for erosion control with minimal success. Between 1932 and 1938 reforestation efforts also occurred.¹⁴ Until the construction of Shasta Dam, eroded soils washed down the Sacramento River. After the construction of Shasta and Keswick Dams, it was feared erosion would reduce water storage capacity. Starting in 1946 an erosion control program was started which included check dam construction, broadleaf plantings and watershed reforestation. These efforts continued through the mid 1960’s and were successful in slowing the erosion.

Today, much of the landscape is covered in brush, however several areas have small stands of timber. On north facing slopes and in drainages pockets of pine exist. Unfortunately much of this land is primed for burning which has the potential to lose the last 80 years of regeneration. South of the town of Keswick much of this land has become urbanized.

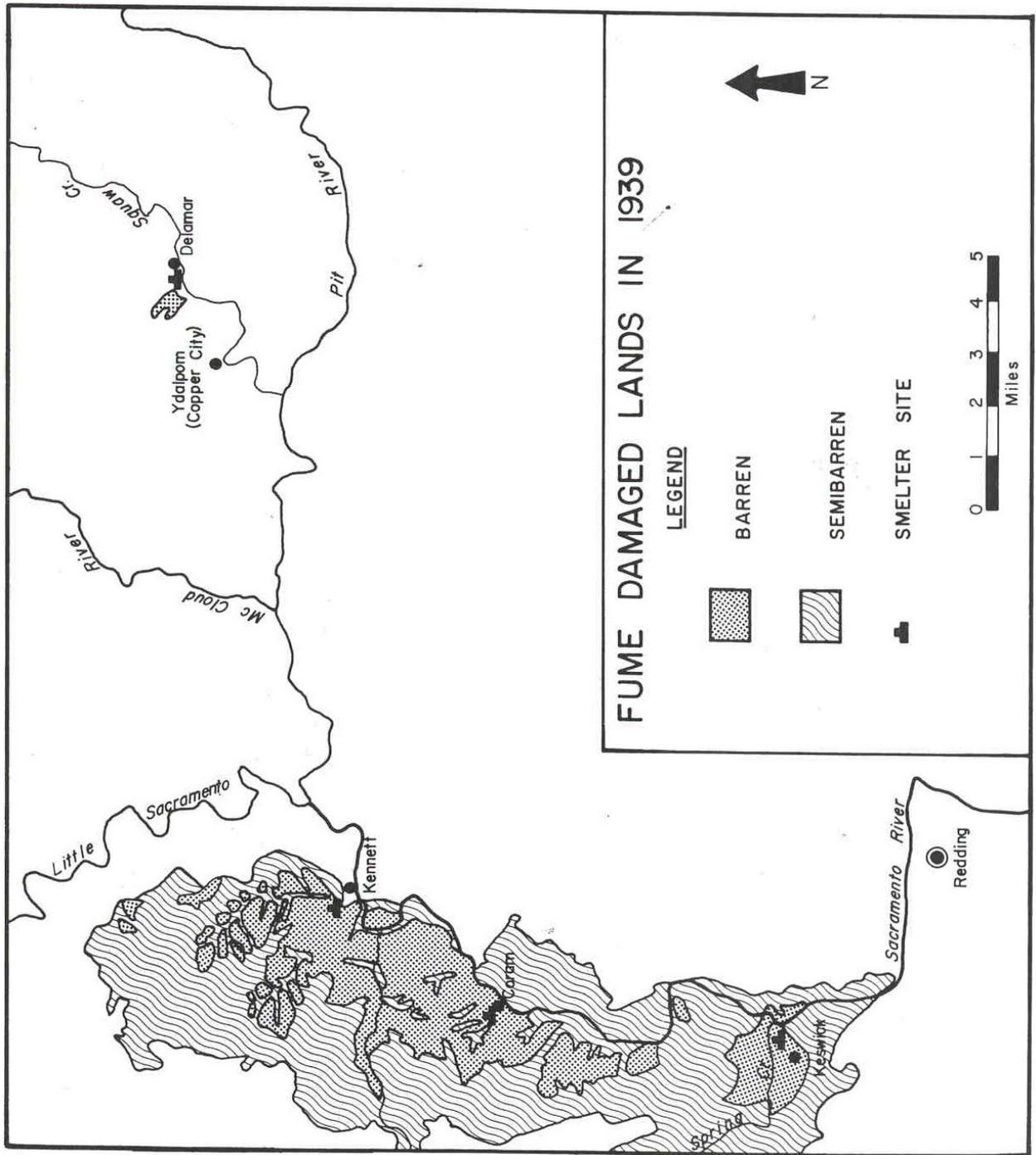
The Cow Creek Watershed Fuels Plan¹⁵ indicates that fuels in eastern Shasta County were removed for smelter fuel in mining operations, possibly for the Ingot Smelter as well as lumber milling operations. Kristofors’ work does not include any environmental information concerning the Ingot Smelter but does state that it was never included in any litigation perhaps because of its remote location and that air currents carried fumes away from populated areas. Looking at the fuels map of the Ingot area indicate expanses of brush fields surrounding the Ingot mine that would indicate similar environmental damage.

¹² “The Copper Mining Era in Shasta County, California, 1896 – 1919, An Environmental Impact Study, pg.97
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¹³ Ibid pg.40

¹⁴ Ibid pg.101

¹⁵ <http://wim.shastacollege.edu/>



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¹⁶ “The Copper Mining Era in Shasta County, California, 1896 – 1919, An Environmental Impact Study, pg.96

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