

RESEARCH ABSTRACT

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**Study Title:** Observations on the floating log raft in Spirit Lake.

**Key Words:** plant trees deforestation transport aquatic  
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**Abstract:** Observations on Spirit Lake and its log raft have been conducted since 1982. At that time a significant number (close to 20%) of the stumps (not the broken flotsam) had settled into an upright position in the water. This number included some that had floated into shallow water and had grounded lightly on the bottom (Coffin, 1983).

In 1987 side scan sonar equipment was used to determine what was happening to the trees on the bottom. Based on this research, approximately 19,500 erect stumps are calculated to sit on the lake bottom (Coffin, 1987). Those closer to the south end where streams and significant runoff bring sediments into the lake are being buried in an upright stance. The south shore is advancing into the lake at 20 to 30 feet per year where streams are building a delta.

Since the lake water level was lowered by the outlet tunnel, some of these upright stumps protruded above water until removed by the floating log mat that moves back and forth over the lake surface.

Wood sampling of the horizontal floating logs indicates that the greater portion are Douglas Fir. Those standing on the bottom are mostly Silver Fir, Noble Fir, and Hemlock. Apparently the Douglas Fir is less likely to sink to the bottom. Cedar was found mostly among the broken debris. The brittleness of the wood apparently allowed the cedar trees to be shattered by the eruption.

**Type of Measurement(s):** Counts of numbers and percentages of upright and horizontal floating stumps and logs.

**Frequency of Measurement(s):** Side-scan sonar research was a one shot situation although there is the slight possibility that it could be done again several years in the future.

**Data Storage:** Sonograph (charts) from side-scan sonar work are stored in the Geoscience Research Institute. Also stored here are wood samples from 40+ erect floating trees and 20+ horizontal floating trees.

**Long-term plans:** Data available for collaborative efforts: Most of Coffin's research has been observational except for the side-scan sonar work and taxonomic studies of the wood samples of floating trees. Coffin wishes to continue to monitor the behavior of the floating log mat in Spirit Lake in the coming years. At this point he doubts if any high-tech or sophisticated research will be involved.

Coffin and his data are available for future collaborative efforts.