Table 3. 1973-1981; Tree-work labor-hours in relation to pole miles completed

	Total labor-hours	*Pole-miles maintained*	*Labor-hours per pole-mile*
Central	372,042	2,237	166
Lebanon	175,534	2,335	75
Eastern	350,497	1,397	251
Western	500,858	3,355	149
Company	1,398,931	9,324	150

By using average labor-hours per mile and calculating pole-miles per year to project cycles, we have a "normal curve" graph. Our years per cycle that we calculate annually by using actual miles completed are very close to the theoretical graph.

Maintenance cycles less than 4 or 5 years are probably unnecessary and certainly expensive for the respective incremental shortening of cycles achievable (very similar to tree-caused interruptions). Likewise, maintenance cycles greater than 8 years are probably unrealistic with regard to customer service reliability and professional ethics of utility management.

Correlation Summary

Tree-caused disturbances are recorded and counted in a manner that will provide meaningful statistics for the different operating areas. The tree disburbances are then correlated to measured tree work units, or tree work effort to determine the effect of the tree maintenance performed. The tree work units and tree work effort are then correlated to pole-miles, an electrically acceptable "exposure" reference, to determine the tree work density of the different operating areas. Tree budgets are thereafter fairly apportioned to provide the labor effort resources necessary to accomplish the prescribed tree work volume required to maintain a tolerable and objective level of tree-caused disturbances.

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ABSTRACT

Struve, D.K. 1982. **Breeding for tree improvement requires industry cooperation.** Am. Nurseryman 156(1): 179-181.

After a species is chosen, three basic tree improvement steps should follow. First, the amount and cause of variaton that exists in the traits of interest are determined. Second, the variation is "packaged" or reproduced, and third, the variation is mass-produced and made available for operational use. Variation is the key to success in any breeding program. Range-wide sampling indicates the amount of variation present in the traits of interest. An educated guess can be made as to whether the variation is under environmental or genetic control using these data. Genetically controlled variation, that which is inherited, is the only type available to a breeder. Alternatively, provenance tests can be established to determine the amount and cause of variation. But it may take years before this information is available. Generally, most species have enough genetically controlled variation to justify a breeding program. Breeding for fast growth, wide adaptability, and resistance to disease and insect pests holds great promise for ornamental plants. Trees might be bred to tolerate or perhaps flourish under harsh urban environments. Although it is more difficult, trees might be bred for resistance to combinations of air pollutants, or trees could be bred that perform well over climatically diverse areas.