University of California Cooperative Extension

BREAKTIME

The Newsletter of the Tree Failure Report Program

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CTFRP ANNUAL MEETING RETURNS!

The Annual Meeting will return this year. Please mark your 1996 calendars for Friday, **January 12**. This will be a one-day meeting focused on tree failures and related topics. We are lining up some excellent speakers, so don't miss out. Once again this will be a FREE meeting open to all CTFRP cooperators and those interested in joining. Meeting announcements with information on location and topics will be mailed to you in November.

Report Count

With 129 reports being submitted to date in 1995, we now have a total of **1,594**. Although 1995 report totals are better than those in 1994 when only 119 reports were received, they are still substantially less than 1993 totals when 368 reports were filed. **Please** continue to report failures --- let's try to reach at least 200 this year.

Last winter's storms generated a good number of failures across the state. Many of these have yet to be reported. Now that much of the storm aftermath has been attended to, please take some time to fill out failure reports, or send in those that you have completed. It is not too late --- as long as the details are still available. Thanks.

If you need report forms and envelopes, call Larry Costello at 415-726-9059 and leave a message saying how many you need. We'll send them out right away.

Half of Failures Occur from December through March

Almost half (48%) of all CTFRP failures occurred during the 4-month period from December to March. The four summer months of June, July, August, and September account for only 22% of all reports. Fewest failures were reported for August and September (5% for each month). The California climate and the mixed composition of conifer, broadleaf evergreen, and deciduous trees typical in many parts of our state are likely to be key factors contributing to this distribution. In areas where deciduous trees represent a greater percentage of the population and rainfall is extended throughout the year, a higher failure frequency in the summer months would be expected.

International TFR Program

Over the past 2 years, we have received an increasing number of inquiries regarding the CTFRP from individuals and organizations outside California (eg., Arizona, Colorado, Ohio, Oregon, Pennsylvania, Washington, Canada, and England), each expressing interest in developing similar programs. We presented an overview of the CTFR Program at US Forest Service conferences in New Mexico (1994) and in Visalia (1995) to considerable interest. From these indications, we have been encouraged to extend the concept of tree failure reporting beyond California to other states and countries.

To explore the feasibility of extending the CTFRP to the national and international levels, a survey assessing arborist interest was conducted in the Fall of 1994. By February,1995, 292 responses had been received (53% of total sent). Respondents represented various occupations (urban foresters, consultants, commercial arborists, etc.) with a range of management levels (field supervisors to company presidents). Replies came from Canada, Alaska, and Hawaii, as well as most of the states in the continental U.S. In addition, all the principal professional organizations were represented: ISA, NAA, ASCA, and SAF.

Surveys requested information in three areas: tree hazard assessment, tree failure reporting, and future participation. Some of the key results can be summarized as follows:

* although most respondents note that they assess trees for hazard (86%), almost two-thirds reported that they did not collect any information regarding tree failures (60%). Some noted that mental notes were kept, but no written reports.
* 88% of the respondents said they would be interested in participating in a national network for tree failure reporting.

* 91% would be willing to contribute reports to a national database.
* 127 respondents expressed an interest in participating in sessions on tree failure monitoring at a national planning conference.

The great majority of comments written at the end of the survey were very positive with some strong expressions of interest and support. There was a repeated concern that budgets and staffing were very limited and a failure monitoring program would have to be streamlined. A sampling of comments included: "Let's do it", "Great project", "... ill-conceived program because many departments are in crisis management", and "we really need scientific information on this subject".

From these results, the following was surmised:

1) there is strong interest within the tree care profession in tree failure monitoring at the national level.
2) there appears to be a good number of individuals who are willing to become active in helping to plan and coordinate a national program.
3) there is a real need to make the process as simple and short as possible.
4) an advisory board needs to be established to address the multitude of funding and organizational questions posed by an endeavor of this magnitude.

With funding assistance provided by a grant from the ISA Research Trust, we will now organize an advisory board to address operational and funding questions.

Sudden Limb Drop Survey

We are interested in collecting further information about sudden limb drop. Specifically, we would like to know if you have encountered this type of failure and, if so, learn some of the details. A short survey is enclosed in this newsletter --- on a stamped reply card. Please take 5 minutes to fill out the card and mail it back to us. We will share the results at the Annual Meeting in January. Please remember that sudden limb drop is associated with limbs that are **defect-free**.

Tree Inventories and Failure Monitoring

Combining a city's tree inventory with a failure monitoring program creates a powerful management tool. Assessments of the frequency of failure for a particular species (or cultivar) can generate useful information on maintenance needs for the species, liability risks, and structural stability as a factor in species selection. Let's look at 2 examples to see how this works:

1) Suppose a total of 1000 failures had been reported in a large city in the last 5 years,

and 50 of these were for species "A". Using the city's inventory, it is found that species A constitutes only 1% of the population, or 564 trees. This indicates that of the 564 trees, 50 trees had failed, for a frequency of 8.9%. Almost 1 out of every 10 trees of species A had a failure in the 5 year period! Clearly, this provides good reason to ask a number of questions about species A: What types of failure occur? What are the key reasons for the failures? If the principal failure type is caused by a structural weakness, can it be corrected by early training? Is there an inherent structural defect that is very difficult to correct? What are the maintenance investments needed to retain this species in the population? What are the liability risks relative to the benefits?

2) Suppose that species B represents only 2% of all failures. Again using the inventory, it is found that B constitutes 10% of the population. Here there are 20 failures among 2,820 trees of species B, or a failure frequency of 0.7%. Only one tree in 141 was found to fail. This suggests that species B may have some desirable structural qualities that result in a low failure frequency. The liability risks and maintenance costs associated with species B are likely to be substantially less than those for species A.

These 2 hypothetical examples are presented to show some of the potential of using failure monitoring in tree management programs. Typically, maintenance costs and liability risks increase as failure potential increases. If the failure frequency of certain species is substantially higher than that of other species, then failure potential would be expected to be higher in the urban forest with the greater number of trees of the species with high failure frequency. Conversely, the urban forest composed largely of species with low frequency of failure will have a lower failure potential. This is obvious. The difficulty, however, is in knowing the failure frequency of the species. Here is where failure monitoring comes in. Species failure frequency information is generated from **inventory** and **failure monitoring** data. A failure monitoring program combined with an existing inventory will produce all the information needed to assess failure frequency.

Many cities in California (and elsewhere) already have inventories and are in a good position to include failure monitoring in their management programs. Several years ago, the Parks Department in the city of San Francisco initiated a failure monitoring program and now is able to generate very useful management information on species regarding failure frequency.