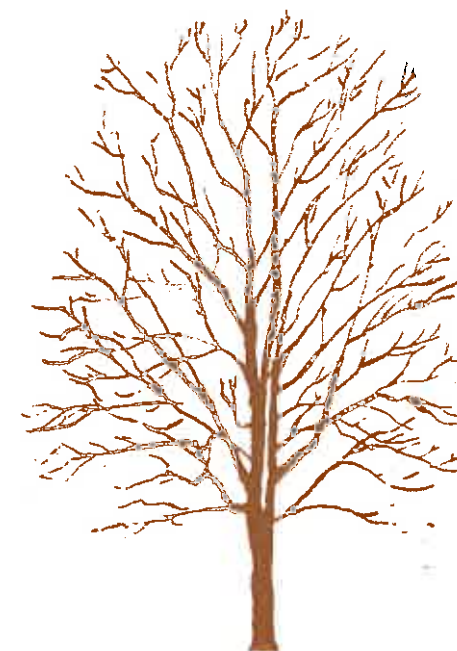


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**EDUCATIONAL NEEDS OF NORTHERN NEW YORK
TREE CARE MANAGERS AND PROFESSIONALS**



April 2000

HDRU Series No. 00-6

Prepared by:

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INTRODUCTION

The ice storm that occurred in January 1998 affected 4.6 million acres of forestland across six Northern New York State counties (Lewis, Jefferson, St. Lawrence, Franklin, Clinton, and Essex) (Miller-Weeks and Eagar 1999). Almost two years later, tree care managers and professionals were still assessing the impacts of the storm and seeking information on recovery efforts.

Cornell University's Human Dimensions Research Unit (HDRU) was funded to assess the human impacts of ice storm damage, evaluate educational efforts to date for tree care managers, and assess future educational needs. To accomplish these goals, we surveyed those who attended educational workshops, highway officials, and certified arborists in the ice storm damaged area by mail in the fall of 1999. The specific objectives for the survey were as follows:

1. Assess the characteristics of tree care managers and professionals and the degree to which they were affected by the ice storm.
2. Assess the extent to which tree care managers and professionals were able to find and make use of educational resources as they dealt with ice storm damage.
3. Determine future education needs and the most effective way to reach tree care managers and professionals such that information supplied would be promptly used.

METHODS

The population for this survey consisted of three groupings. First, names and addresses were taken from the lists of attendees at three workshops offered in the summer of 1998. The workshops, held in Watertown, Canton, and Plattsburgh, focused on urban forestry issues related to ice storm damage. All 66 names with U.S. addresses were included from this source. The second group of names came from the Cornell University Local Roads Program, which maintains a current list of town and county highway officials and city and village Department of Public Works heads. We took all officials from this list in the six county area that did not duplicate names from the list of workshop attendees (n=182). The third group, which yielded seven names, was the list of certified arborists with addresses in the six county area. The total population was 255.

A mail questionnaire was developed after discussions with Jerry Bond, community forester with Cornell Cooperative Extension of Monroe County, and Department of Environmental Conservation (DEC) staff working with the Forest Service ice storm grants to communities. The questionnaire (Appendix A) asked about past use of educational materials, including the workshops many members of the survey population attended, future educational needs, size of their operation, amount of damage suffered, and time spent on tree care.

Questionnaires were mailed to the population in late September, 1999. Up to three reminder mailings were sent over the course of the following month. Returned questionnaire data were entered into the computer and analyzed using SPSS software (SPSS Inc. 1994).

RESULTS AND DISCUSSION

Mail Survey Response

Of the 255 questionnaires mailed, 4 were undeliverable and 97 completed questionnaires were returned. This resulted in an adjusted response rate of 39%. The response rate was higher for certified arborists and those who attended a workshop (54%).

Characteristics of Responding Tree Care Managers and Their Operations

Respondents estimated the size of their operation in three possible ways: (1) number of miles of roadway maintained, (2) number of trees cared for per year, and (3) acres of land managed. Most (78%) indicated some amount of roadway miles maintained; far fewer indicated a specific number of trees (33%) or acreage (30%). We grouped respondents into two sizes of operations, defining those with large operations as: (1) maintaining 40 or more miles of roadway, or (2) caring for more than 40 trees per year, or (3) managing 40 or more acres of land. Sixty-five percent of respondents who answered the question were classified as having a large operation.

Over half of respondents (56%) indicated they worked with a small staff of 5 or fewer people. There were several operations where the respondent supervised more than 100 employees. Respondents were asked questions both about their own experiences and that of their staff. In general, respondents indicated that their staff were long time employees of the organization. Many staff members had been employed by their current employer for more than 10 years. Over half (60%) of the respondents also had been employed by their current employer for more than 10 years.

Most respondents indicated that they spent little of their total work time on tree care. Over half (54%) spent 5% or less of their time on tree care; 81% spent 25% or less of their time on tree care. Average staff time spent on tree care was similar -- 54% of respondents indicated their staff spent 5% or less of their time and 77% indicated their staff spent 25% or less of their time on tree care.

Many respondents spent little time on tree care, but 39% felt it was an item of moderate priority and 20% felt it was one of the highest priorities on their list of job responsibilities. There was a relatively high, positive correlation between time spent on tree care and priority level (.5676). Forty percent of respondents felt it was an item of moderate priority for their staff; fewer (11%) felt it was of the highest priority for their staff.

Ice Storm Damage

Most respondents (81%) indicated that the trees they were responsible for suffered damage in the January 1998 ice storm. They estimated that on average, 43% of the trees suffered minor damage (e.g., some broken limbs) and 40% suffered major damage (e.g., tree tops broken off).

The majority of those with damage (56%) indicated that they spent more time now on tree care than before the ice storm; few (10%) spent less time. Over half of respondents said they think differently now about tree care than before the ice storm. They felt their thinking had changed in the following ways: (1) they appreciated trees more; (2) they thought more pruning was needed and more frequent surveys to see what

needed pruning; and (3) they felt an increased need for right-of-way maintenance. Most (83%) think about the possibility of future ice storms when making tree care decisions.

Evaluation of Educational Programs Since the Ice Storm

Evaluation of "Urban Forestry - A Crash Course" Workshop:

Most respondents (84%) whose names came from the list of attendees at the urban forestry workshop in the summer of 1998 accurately recalled one year later that they attended the workshop. A few whom we thought attended said they did not, and a few who were not on the list of attendees said they did attend. Obviously, not everyone's recall ability was perfect and it is possible that our list of attendees was not 100% accurate. In our evaluation of the workshop discussed below, we included everyone who said they attended the workshop.

One year after the workshop, the majority of respondents (55%) felt the information they received at the workshop was very useful. The average usefulness rating was 4.1 on a 5-point scale where 1 = not useful and 5 = very useful. Most felt the workshop helped them to better judge the hazard potential of trees and increase safety (Table 1). Over half of respondents also checked off a variety of other specific ways the workshop helped them. Few indicated the workshop helped them in more general ways like saving money or time. One could argue that the specific ways in which they were helped would lead to saving money or time, but respondents did not appear to make that association.

Table 1. Evaluation of ways the "Urban Forestry-A Crash Course" workshop helped those who attended.

<u>Ways Workshop Helped</u>	<u>Percent Checking^a</u>
Better judge the hazard potential of trees	73.5
Increase safety	61.8
Think differently about urban forestry	55.9
Know how to plant a new tree correctly	55.9
Better determine what and how to prune	55.9
Make better decisions about which trees to plant	52.9
Better analyze a planting site before choosing a tree	52.9
Learn who to contact when I had questions	50.0
Find help for the costs of urban forestry	35.3
Save time	29.4
Save money	26.5

^aPercentages add to more than 100% because workshop could have had more than one benefit.

Other Sources of Information:

All respondents, even those without damage, were asked if they had received information from sources other than the workshop since the ice storm, and many (63%) said they had. Those who suffered damage were almost twice as likely to say they had received information as those with no damage (69% versus 39%), and those with major damage were much more likely to have received information than those with only minor damage (77% versus 48%). Respondents who rated tree care as a moderate or high priority were more likely to have received information than those who rated tree care as a low priority (74% versus 44%).

Cornell Cooperative Extension was the most often used source of information after the ice storm (63%) (Table 2). Over half of respondents cited DEC and two-fifths noted the USDA Forest Service as a source of information. Fewer respondents

Table 2. Sources of information used by tree care managers and professionals after the ice storm.

<u>Sources of Information After the Ice Storm</u>	<u>Percent Checking^a</u>
Cornell Cooperative Extension, including county agents	62.7
DEC	55.9
USDA Forest Service	42.4
Consulting foresters	32.2
Loggers, sawmill operators	16.9
Other sources	22.0
Can't recall the source	8.5

^aPercentages add to more than 100% because more than one source could be indicated.

indicated consulting foresters or loggers/sawmill operators as sources of information.

Some mentioned other sources of information, but none in sufficient numbers to report.

We did not ask respondents to evaluate the quality of information received from sources other than the workshop because of the high likelihood that the sample sizes would be too small for meaningful analysis.

Future Educational Needs

Most respondents (69%) were interested in learning more about tree care themselves or having their staff learn more. Those most interested in learning more were those who: (1) had attended the Urban Forestry workshop or were certified arborists (97%); (2) spent more than 5% of their time on tree care (81%); (3) had suffered damage in the ice storm (81%), especially those who suffered major damage (85%); and (4) said tree care was a moderate or high priority (81%).

Information on legal issues such as public right of way and private property rights was the topic most respondents indicated was of interest for future Cornell Cooperative Extension communications (Table 3). This topic was cited even more frequently by respondents from the list of highway officials and public works supervisors (77%). Over half of the respondents were interested in learning more about how to prune larger, older trees and how to communicate effectively with homeowners / landowners. Pruning was of greater interest to those who spent more time on tree care (71% were interested in this topic). Communicating more effectively was cited more frequently by respondents from the list of highway officials and public works supervisors (68%).

Table 3 lists a wide variety of other topics that had slightly less appeal to respondents. Some of these topics were of greater interest to specific subgroups. Respondents with smaller-sized operations were more likely to be interested in how to analyze a planting site before choosing a tree (57%). Those who spent more time on tree care were more interested in how to write a long-term maintenance contract (46%) and a detailed work order (26%).

Fewer respondents indicated that their staff would be interested in the list of topics in Table 3. This was particularly true for the topics of providing information on legal issues and learning how to communicate effectively with homeowners / landowners. However, learning to communicate effectively was of greater interest to those respondents with no staff employed more than 10 years (36%). Respondents who indicated that tree care was a moderate or high priority for their staff were much more likely to say their staff would be interested in learning more about the following topics:

Table 3. Topics of interest to respondents and their staffs for future Cornell Cooperative Extension communications.

Topics	Of Interest to Respondent	Of Interest to Respondent's Staff
	Percent Checking ^a	
Information on legal issues such as public right of way and private property rights	62.7	11.9
How to prune larger, older trees	58.2	38.8
How to communicate effectively with homeowners/landowners	53.7	19.4
How to choose the best tree species for the site you have available	49.3	26.9
How to judge the hazard and pruning work to be done	49.3	37.3
How to prune newly planted trees (1-2 years in the ground)	47.8	34.3
What to look for when identifying good nursery stock	44.7	25.4
How to evaluate the quality of tree work	43.3	14.9
How to analyze the planting site before choosing a tree	35.8	19.4
How to plant a new tree correctly	35.8	29.9
How to write a long-term tree maintenance contract	34.3	7.5
How to use a spreadsheet to manage tree maintenance	22.4	11.9
Proper mulching techniques	20.9	19.4
How to write a detailed work order	17.9	7.5
How to use tree gaiters	14.9	11.9
Other topics	6.0	4.5

^aPercentages add to more than 100% because more than one topic could be indicated.

(1) how to prune larger, older trees (66%); (2) how to judge the hazard and pruning work to be done (66%); (3) how to prune newly planted trees (62%); and (4) what to look for when identifying good nursery stock (45%).

Most tree care managers and professionals indicated that one of the best ways to reach them was via newsletters or special mailings (Table 4). Local workshops or meetings also was a popular choice. This is not surprising given that approximately one-third of respondents had attended the Urban Forestry workshop. This communication method was particularly popular among respondents who had attended the workshop (88%), possibly indicating a positive experience has led to their continued interest in this form of communication. Visits to demonstration areas was of interest to two-fifths of respondents. Computer-related sources of information were less popular with this audience.

Table 4. Best methods to use when communicating with tree care managers and professionals.

<u>Best Ways to Reach Audience</u>	<u>Percent Checking^a</u>
Newsletter/special mailing	82.1
Local workshops/meetings	76.1
Visits to demonstration areas	41.8
Lending library with videos and books	34.3
Web site on the Internet	25.4
CD-ROM disk that can be used on your computer	22.4
Notices on a listserv that comes to you as an e-mail	13.4

^aPercentages add to more than 100% because more than one method could be indicated.

No clear preference was found for the best time of year to hold a workshop (Table 5). About 40% of respondents indicated Jan.-Feb., March-April, or Sept.-Oct. would be among the easiest times to attend. The July-Aug. time frame was least popular. The Jan.-Feb. time frame was favored more by those who spent more time on tree care (51%), thought tree care was of moderate to high priority (50%), and respondents who attended the Urban Forestry workshop or who were certified arborists (61%).

Table 5. Easiest time of year to attend a workshop on tree care.

<u>Easiest Time of Year for a Workshop</u>	<u>Percent Checking^a</u>
Jan.-Feb.	38.8
Mar.-Apr.	40.3
May-Jun.	31.3
July-Aug.	16.4
Sept.-Oct.	35.8
Nov.-Dec.	29.9

^aPercentages add to more than 100% because more than one time of year could be indicated.

CONCLUSIONS AND RECOMMENDATIONS

The results of this study point toward several important conclusions and recommendations:

1. We found a relatively high, positive correlation between the priority assigned to tree care and the percentage of time spent on tree care. However, the proportion of time spent on tree care by most respondents was low (under 25%).

2. The ice storm has changed the thinking of many respondents and focused some of them on the need for tree assessment and then conducting more pruning and right-of-way maintenance. These topics could be used as the focus for future education programs or as a way to interest tree care managers in education.
3. Most respondents (83%) said they think about the possibility of future ice storms when making tree care decisions. We recommend relating education materials to the topic of possible future ice storms.
4. We found an overall positive evaluation of the "Urban Forestry - A Crash Course" workshop one year after the workshop took place. Sponsors and instructors should be pleased with their efforts. Attendees said they found the workshop useful, particularly in helping them to judge the hazard potential of trees and increasing safety.
5. Cornell Cooperative Extension was the most frequently cited source of information. Clearly, Cooperative Extension is a recognized name with this audience and has a role to play in educating tree care managers and professionals.
6. The top priorities for continuing education topics, based on respondents' interests include:
 - a. information on legal issues such as public right of way and private property rights. There was a great deal of interest in this topic, especially among highway officials and public works supervisors. These people also were particularly interested in learning how to communicate effectively with homeowners/landowners.

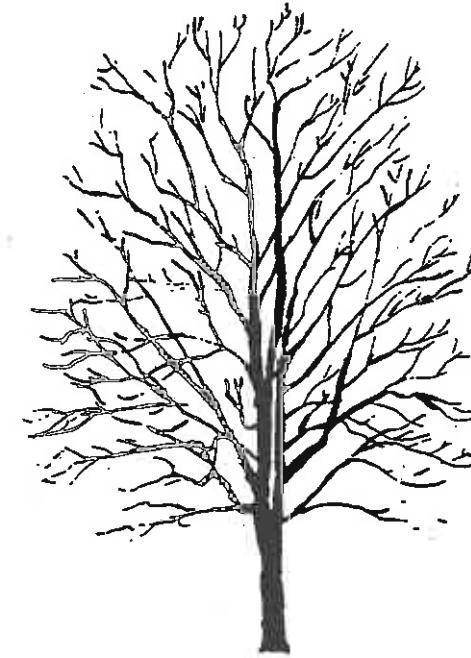
- b. various topics focused on pruning, particularly aimed at the staff of respondents.
7. Mailings and newsletters would be the best way to reach most respondents, followed by workshops. A fair number of our respondents were familiar with workshops because their attendance at a workshop was one way they could be included in our survey population. Thus, the results indicating the popularity of workshops may not be representative of the level of interest among all tree care managers, but the results could indicate a positive experience of those attending a past workshop, which translated into interest in workshops in the future. Currently, computer-related sources of information are not popular with this audience.
8. Some subgroups of respondents favored the Jan.-Feb. time frame for a future workshop, but there was no clear overall preference.

LITERATURE CITED

- Miller-Weeks, M. and C. Eagar. 1999. The northeastern ice storm 1998: a forest damage assessment. North East State Foresters Association. Concord, NH.
- SPSS Inc. 1994. SPSS 6.1 syntax reference guide. SPSS Inc., Chicago, IL.

APPENDIX A:
Mail Questionnaire

**EDUCATIONAL NEEDS OF
NORTHERN NEW YORK
TREE MANAGERS AND PROFESSIONALS**



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**EDUCATIONAL NEEDS OF
NORTHERN NEW YORK
TREE MANAGERS AND PROFESSIONALS**

Research conducted by the
Human Dimensions Research Unit
in the Department of Natural Resources
Cornell University

The purpose of this survey is to learn more about your interest in educational resources for tree care and how Cornell Cooperative Extension can best meet your needs. We are particularly interested in tree care managers' and professionals' needs as they recover and help others recover from the January 1998 ice storm. We would also like your evaluation of educational training you may have received since the ice storm. Results from this survey will help Cornell Cooperative Extension to improve and develop new educational programs to meet your needs.

Please complete this questionnaire at your earliest convenience, seal it, and drop it in any mailbox (no envelope is needed); return postage has been provided. Your responses will remain confidential and will never be associated with your name. The questionnaire has an identification number so your name can be crossed off our list when you return it. Your prompt response will save us postage and keep us from bothering you with reminder letters.

THANK YOU FOR YOUR HELP!

1. What percent of your time do you personally spend on tree care (pruning, planting, removal, hazard evaluation, needs assessment, time in the office for planning, etc.)?

_____ %

2. How large a staff does your municipality/company employ and what percent of their time is spent on tree care? (Please do NOT include time for leaf collection.)

_____ Number of staff

_____ Average % of time they spend on tree care

3. How large is your operation? (Please answer categories that are appropriate for your work.)

_____ Miles of roadway maintained

_____ Number of trees cared for per year

_____ Acres of land managed

4. Did the trees you care for suffer damage in the January 1998 ice storm?

_____ No (SKIP to Question 9)

_____ Yes

5. What percent of trees your municipality/company worked on suffered minor damage (ex., some broken limbs), major damage (ex., tree tops broken off), or no damage?

_____ % with minor damage (ex., some broken limbs)

_____ % with major damage (ex., tree tops broken off)

_____ % with no damage

6. How does the amount of time you spend today on tree care compare with the amount of time you spent on it before the ice storm?

- I spend more time on tree care now than before the ice storm.
- I spend the same amount of time now as before.
- I spend less time on tree care now than before the ice storm.

7. Thinking back over your experiences since the ice storm, do you think differently now about tree care than you did before the ice storm?

- No
- Yes --> Can you describe how your thinking has changed?

8. Do you think about the possibility of future ice storms when you make decisions about tree care in your area?

- No
- Yes

9. Did you attend one of the workshops entitled "Urban Forestry - A Crash Course" offered last summer in Watertown, Canton, or Plattsburgh?

- No (SKIP to Question 12)
- Yes

10. Now, one year later, how useful has the information been that you received at the workshop? (Please circle one number.)

<u>Not Useful</u>					<u>Very Useful</u>
1	2	3	4	5	

11. Did the workshop help you in any of the following ways? (Please check all that apply.)

- Save time
- Save money
- Increase safety
- Think differently about urban forestry
- Learn who to contact when I had questions
- Better analyze a planting site before choosing a tree
- Make better decisions about which trees to plant
- Know how to plant a new tree correctly
- Better judge the hazard potential of trees
- Find help for the costs of urban forestry
- Better determine what and how to prune

12. Have you received information on tree care from sources other than the workshop since the January 1998 ice storm?

- No
- Yes --> What was the source(s) of the information received? (Please check all that apply.)
 - USDA Forest Service
 - Department of Environmental Conservation (DEC)
 - Cornell Cooperative Extension, including county agents
 - Consulting foresters
 - Loggers, sawmill operators
 - Other (Please specify: _____)
 - I can't recall the source

13. Are you (or your staff) interested in learning more about tree care?

- No (SKIP to Question 17)
- Yes

14. Which of the following topics that could be addressed in future Cornell Cooperative Extension communications or educational programs would be of interest to you or your staff? (Please check all that apply.)

<u>Of Interest To Me</u>	<u>Of Interest To My Staff</u>	
<input type="checkbox"/>	<input type="checkbox"/>	How to judge the hazard and pruning work to be done
<input type="checkbox"/>	<input type="checkbox"/>	How to use a spreadsheet to manage tree maintenance
<input type="checkbox"/>	<input type="checkbox"/>	How to write a detailed work order
<input type="checkbox"/>	<input type="checkbox"/>	How to write a long-term tree maintenance contract
<input type="checkbox"/>	<input type="checkbox"/>	How to evaluate the quality of tree work
<input type="checkbox"/>	<input type="checkbox"/>	How to prune larger, older trees
<input type="checkbox"/>	<input type="checkbox"/>	How to use tree gaiters
<input type="checkbox"/>	<input type="checkbox"/>	Proper mulching techniques
<input type="checkbox"/>	<input type="checkbox"/>	How to analyze the planting site before choosing a tree
<input type="checkbox"/>	<input type="checkbox"/>	How to choose the best tree species for the site you have available
<input type="checkbox"/>	<input type="checkbox"/>	What to look for when identifying good nursery stock
<input type="checkbox"/>	<input type="checkbox"/>	How to plant a new tree correctly
<input type="checkbox"/>	<input type="checkbox"/>	How to prune newly planted trees (1 - 2 years in the ground)
<input type="checkbox"/>	<input type="checkbox"/>	Information on legal issues such as public right of way and private property rights
<input type="checkbox"/>	<input type="checkbox"/>	How to communicate effectively with homeowners / landowners
<input type="checkbox"/>	<input type="checkbox"/>	Other (Please specify: _____)

15. What are the best ways to provide you (or your staff) with educational information on the topics you checked above? (Please check all that apply.)

- Newsletter / special mailing
- Local workshops / meetings
- Visits to demonstration areas
- Lending library with videos and books
- Web site on the Internet
- Notices on a listserv that comes to you as an e-mail
- CD-ROM disk that can be used on your computer

16. What time of year would it be easiest for you or your staff to attend a workshop in your local area? (Please check all possible times.)

- Jan. - Feb.
- March - April
- May - June
- July - Aug.
- Sept. - Oct.
- Nov. - Dec.

17. Where is tree care on your list of job priorities and that of your staff?

<u>For Me</u>	<u>For My Staff</u>	
<input type="checkbox"/>	<input type="checkbox"/>	Among the highest priority items
<input type="checkbox"/>	<input type="checkbox"/>	An item of moderate priority
<input type="checkbox"/>	<input type="checkbox"/>	An item of low priority
<input type="checkbox"/>	<input type="checkbox"/>	At the bottom of the list of priorities

18. How many years have you worked for your current employer?

_____ Number of years

19. Approximately how many years has your staff worked for your current employer?

Number
Of Staff

- Less than 1 year
- 1 to 3 years
- 4 to 10 years
- More than 10 years

Please use the space below for any comments you wish to make.

THANK YOU FOR YOUR TIME AND EFFORT!
To return this questionnaire, simply seal it (postage has been provided) and drop it in the nearest mailbox.