



# International Society of Arboriculture (ISA) and TREE Fund

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## Research Needs Assessment

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## Introduction & Methodology

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The goal of the ISA and TREE Fund Research Needs Assessment survey is to examine the needs and interests of the arboriculture community and provide the insight needed to create a proactive research program that will prepare ISA and TREE Fund for long-term success within the profession.

The survey was launched on November 24, 2014 and it closed on December 16, 2014. An invitation to participate in the survey was successfully delivered to 17,986 individual email addresses. A total of 2,553 surveys were received (227 were partially completed surveys), for an overall response rate of 13%. This equates to a 95% confidence level with a margin of error of  $\pm 1.9\%$ .

*The industry standard for member research studies is to achieve a confidence interval of  $\pm 5\%$  at the 95% confidence level.*

### Interpreting the Data

This report summarizes findings from the study across the following areas:

- Employment and experience profile of respondents
- Research area preferences
- Donor status and future donation plans
- Personal research topics of interest

This report contains key findings from the data, implications from the findings, and recommendations based on the implications. The data can be viewed in the overall results section. The key findings section does not address all findings from the survey, but rather areas with enough significant and relevant information to support themes that emerged from the survey results. A brief explanation of the data will be located above each table in the overall results section. When present, statistically significant differences (by cross-tabulation, which is explained in the following paragraphs) are noted under these explanations.

Every study has some bias due to an overrepresentation by a certain segment of its audience. It is important to understand the level of influence by an overrepresented segment and take it into consideration during the analysis. To identify differences within a group when compared to the overall findings, Avenue M segmented the results by several demographic attributes. Statistically significant and relevant findings are noted below each question. Due to the nature of conducting an online survey, ISA and the TREE fund recognize that commercial arborists may have been under-represented in the survey. Since the majority of survey takers are “desk arborists” as opposed to production arborists, the results more heavily represent that audience. This statement in no way invalidates results, but it does require acknowledgment in the survey analysis.

To account for potential survey bias and to examine the results based on perceptions, importance and satisfaction levels of various audience segments, Avenue M analyzed the data by conducting the following cross-tabulation:

- Area of Employment (Q1)
- Current Position (Q2)
- Years of Experience (Q3)
- Donor Status (Q18)

Below is a cross-tabulation table, which can be seen in the overall results only when significantly important data is present. Otherwise, bullet points are used to discuss the cross-tabulation results. The data are displayed in column percentages. This means that column data are being used to segment the rows.

For example: 59 percent of survey respondents who work in commercial or residential areas are very interested in quantifying the benefits of trees; separately, 77 percent of utility workers are very interested in public awareness and perceptions of arborists.

Very Interested	Area of Employment					
	Commercial/ Residential	Municipal	Consulting	Utility	Landscape	Public Works
Quantifying the benefits of trees	59%	73%	69%	53%	65%	65%
Social, health, and psychological benefits of trees	56%	61%	69%	37%	67%	63%
Public awareness and perceptions of trees	70%	74%	66%	67%	76%	73%
Public awareness and perceptions of arborists	70%	52%	52%	77%	60%	54%
Monetary benefits of trees	48%	52%	51%	35%	53%	51%

When a number is blue, it is statistically significantly higher than the overall result; when the number is red, it is statistically significantly lower than the overall result. The overall result for the first row is 67 percent (67% of respondents are very interested in quantifying the benefits of trees.) Due to the difference from 67 percent of all respondents and 73 percent of municipal workers, for example, and the size of the municipal worker sample, we are certain, with our level of confidence, that more municipal workers are very interested in quantifying the benefits of trees than the rest of respondents. On the same page, due to the difference and sample size, we estimate that fewer who work in commercial or residential areas are interested in quantifying the benefits of trees than the rest of the respondents. These colors are only useful in comparing values in the same row. Municipal workers can be compared to utility workers for quantifying the benefits of trees, or public awareness and perception of trees, but municipal workers’ interest in quantifying the benefits of trees cannot be compared to utility workers interest in public awareness and perception of trees. This is why smaller red numbers and larger blue numbers can appear in the same table, because their color is only useful in explaining the results of a specific row.

Avenue M Group, an independent research and consulting firm, conducted the survey, analyzed the data, and prepared this white paper report. All respondent information is displayed in the aggregate and remains confidential. This report does not reveal information from any individual source.

## Key Findings

**1. ISA has a diverse membership and, accordingly, members' research interests span a variety of topics influenced by their position, employment area, and experience.** According to the top-ranked responses, members believe ISA and the TREE Fund should focus on: tree benefits and public awareness; tree risk assessment and management; plant health care; urban and community forestry; and mature tree care and preservation. Yet, each of the dozen areas listed generated a notable amount of interest from respondents, with even the lowest-ranking research field still an area of concern for close to one-third of this survey sample. This indicates that ISA and TREE Fund serve a broad audience that has complex needs.

Research Area	Rank
<b>Tree benefits and public awareness</b>	<b>1</b>
Tree risk assessment and management	2
Plant health care (diagnostics, treatments, invasive plants and pests)	3
Urban and community forestry	4
Mature tree care and preservation	5
Tree sciences (biology, biomechanics, ecology, soils, water relations)	6
Arboricultural practices (pruning, structural support, lightning protection)	7
Tree work, arboriculture workforce, and safe practices	8
Planting and establishment	9
Technology changes and new product development and testing	10
Utility arboriculture and vegetation management	11
Nursery production	12
Other	13

The need for better understanding of tree benefits and public awareness, the top-ranked area of interest, came up time and again in the open-ended “other” survey answers. Respondents are interested in both exploring best practices for engaging with community members to improve public awareness of trees, as well as fostering knowledge about the social, physical, and psychological benefits of trees. The following is a sample of responses:

- *“How to involve community members in urban forest management and how to sustain their involvement.”*
- *“Quantification of environmental and ecological services conferred by trees. Communicating the benefits of trees. Countering negative perceptions of trees.”*
- *“An extensive effort needs to be made to promote the successful career opportunities available in arboriculture and other green industries to secure future leaders for our industries.”*
- *“A better means of making the public aware of the benefits of a certified arborist vs. a non-certified arborist.”*
- *“How to translate tree benefits we already know to the public/homeowners/clients, so they understand how important tree care is.”*

**2. Respondents want to access ISA research through a variety of printed, in-person, and online resources.** Just over one-half of respondents expressed a high level of interest in receiving information via printed publications; 46 percent are very interested in learning by attending events at the chapter

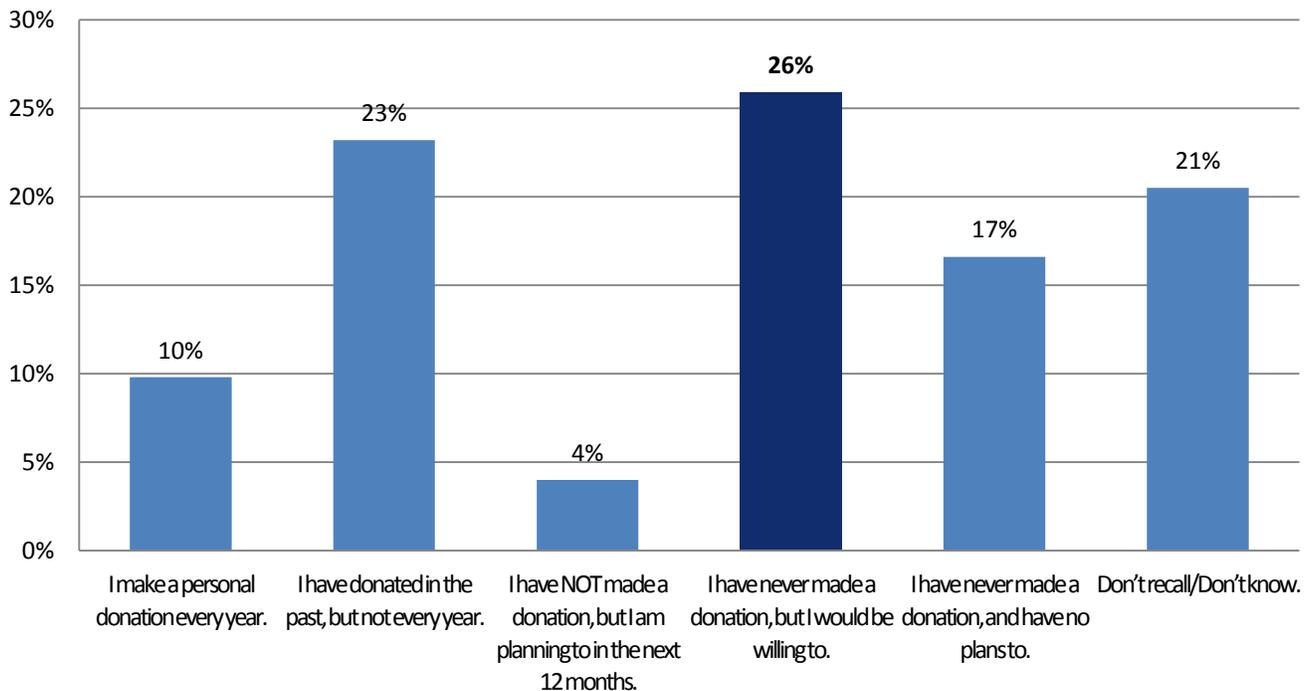
level; and 42 percent are very interested in reading industry-related scientific journals. Online courses, content from the ISA website, and e-newsletters ranked slightly lower; however, the majority of respondents are interested in accessing online resources to learn more about ISA research. Respondents are least interested in receiving research information from whitepaper reports, podcasts, and events at the national/international level.

- 52% of respondents who work in the consulting area are most interested in learning more about research reports via scientific journals. Those who work in consulting were also more likely to be interested in whitepaper reports (23%) and books (44%) compared to other areas of employment.
- While commercial/residential (39%) and consulting workers (44%) are very interested in books, municipal and utility workers are less likely to be very interested in books.
- Respondents with 1 – 5 years of experience are nearly twice as likely to be very interested in podcasts as an avenue to receive information compared to 15% of those with 25+ years of experience.
- Those working in the landscaping area (52%) are most interested in online courses.
- Respondents who donate every year are more likely to be very interested in learning about research by events at the chapter level (55%) and events at the national/international level (33%).

Format interests	Very Interested	Somewhat Interested	Neutral	Somewhat Disinterested	Not at all Interested
Scientific journal (i.e., Arboriculture and Urban Forestry)	42%	39%	15%	4%	1%
Podcast	20%	32%	32%	9%	6%
Online course	41%	38%	16%	4%	1%
Whitepaper report	16%	40%	36%	6%	3%
E-newsletter	36%	44%	17%	3%	1%
Printed publication (i.e., Arborist News)	53%	36%	9%	2%	0%
Content on the ISA website	39%	43%	15%	3%	1%
Event at the chapter level	46%	35%	16%	3%	1%
Event at the national/international level	24%	38%	27%	7%	4%
Video	33%	40%	21%	4%	2%
Books	34%	43%	19%	3%	1%

**3. Those who donate to the TREE Fund are passionate about supporting their profession and contributing to future arboriculture research.** Ten percent of respondents make a personal donation every year; 23 percent have donated in the past, but not every year; and four percent have not made a donation, but plan to in the next 12 months. Respondents with 21+ years of experience were more likely to have donated in the past but not every year (65%) or donate every year (24%). Only 10 percent of respondents with less than 10 years of experience replied that they make a donation every year, and 25 percent of respondents have made a donation in the past.

### What best describes your support of the TREE Fund?



When asked, “Why do you donate to the TREE Fund?” respondents shared their personal and professional reasons, including increasing awareness of trees, advancing arboriculture research, and supporting riders in the Tour des Trees. Respondents expressed their desire to invest in, and give back to, the industry that has supported them, and they noted that research is critical to determining tree care best practices and educating the public about tree benefits. Some responses:

- *“As a student, I recognize how important the scholarship opportunities provided by the TREE Fund are.”*
- *“I am a professional arborist because I care about trees. So, the most important reason I donate to the TREE Fund is to put my money behind my convictions and contribute to research and education for the betterment of trees.”*
- *“I believe in living my values. By putting my money into avenues like the TREE Fund, which supports trees and the environment, I spend my money efficiently, support my profession, and support my lifetime of learning.”*
- *“To support awareness of trees as a crucial element in our environment; also, to promote the general understanding that trees are not lifeless elements in the landscape, but are rather living, beautiful, and should receive proper care.”*
- *“It helps train the next generation of citizen scientists who are aware of the benefits of urban forests.”*
- *“The research findings inform my work as an arborist and keep me competitive in the market.”*
- *“I donate as friends or colleagues become involved with the Tour des Trees.”*
- *“Critical mission...and if not arborists, who?”*

**4. Respondents choose not to donate to the TREE Fund primarily due to financial constraints. Other reasons for which they opt out of contributing include lack of awareness and information about the TREE Fund and how it directly benefits them; being new to the industry; and donating to other local organizations.** Overall, 26 percent of respondents have never made a donation but would be willing to; 17 percent have never made a donation and have no plans to; and 21 percent don't recall/don't know if they have made a donation. A closer look at the crosstabs reveals:

- Thirty-nine percent of respondents with 1–5 years of experience and 32% of respondents with 6–10 years of experience have never made a donation but would be willing to.
- Tree workers/climbers are more likely than other positions to have *not* made a donation but plan to do so in the next twelve months (13%), as are those in the commercial/residential areas of employment (31%).
- Those who work in consulting are more likely to have made a donation in the past (28%), as are managers (27% in the past; 11% every year.)

Why do respondents *not* donate to the TREE Fund? The following is a sample of responses illustrating some of the prominent reasons noted by respondents:

- *“My funds are very limited and I tend to volunteer time before donating money to organizations.”*
- *“I donate to other initiatives relevant and beneficial to my own country (Australia). The main focus of TREE Fund appears to be oriented towards the USA. If the focus and benefits were shown to be more globally oriented I would consider donating.”*
- *“Financial reasons. I find it challenging enough to come up with an annual membership fee.”*
- *“Not pushed through local chapter and lack of knowledge about purpose and goals.”*
- *“I give money to my local tree fund and my state urban forest council.”*
- *“I didn't know what the TREE Fund was until this survey. Also, I would need to do more research into the allocation of funds to ensure that my donation is going to the right places.”*
- *“I think my small donation would be more useful for some of the local housing and hunger needs in my community.”*

**5. Nearly one out of every three (31%) members have a specific topic they would like to see researched by ISA and the TREE Fund.** Of those, 37 percent would be more likely to donate if their preferred topic was available, and 47 percent indicated that maybe they'd be more likely to donate if their topic was available. Urban and community foresters, municipal arborists, and commercial/residential workers all face different challenges in their day-to-day jobs and long-term planning efforts. They look to ISA and the TREE Fund to conduct valuable research and provide valuable information that will advance their skills and allow them to stay up to date on best tree care practices. Beyond tree care specifically, respondents also expressed their desire to gain a better understanding of employee management, public outreach, and the effects of climate change.

Member's suggestions varied, but in many cases aligned with research topic and sub-topic areas included in the interest ranking survey questions.

- *“Addressing mature trees along public roadways, risk management.”*
- *“Best practices in managing and developing municipal tree care professionals.”*
- *“Cost benefit analysis of regularly pruning street trees.”*
- *“EAB and the future of Ash species in North America.”*

- *“Effects of pruning practices on mechanical and physiological condition of trees.”*
- *“Soil specific planting details.”*
- *“Tree microbiology and long term organic health management.”*
- *“Urban forest ecology and quantifiable effects of tree preservation benefits/removal mitigation.”*
- *“Best practices in communicating / connecting the general public to urban forestry.”*
- *“Quantitative comparisons between communities that have instituted a managed tree care program and those that have not. Effect over the long term.”*

## Recommendations

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The research conducted by Avenue M has given rise to a handful of strategic issues related to research needs, TREE Fund awareness, donation habits, and learning preferences. Below, Avenue M introduces these issues, and then provides a number of points to focus the discussion of the ISA and TREE Fund staff around each issue. We find this to be an effective way to tee up the key findings so that they can be translated into actionable next steps. Finally, we outline preliminary recommendations and suggested next steps for continued discussion among ISA and TREE Fund staff. It is important to recognize that the ISA will need to prioritize these efforts and make accommodations in its existing program of work. In addition, Avenue M recognizes that ISA and The TREE Fund may already be in the process of doing some of our proposed recommendations, in which case we suggest considering additional personnel or financial support.

**Recommendation #1: Increase awareness and support of TREE Fund through forming an ambassador committee, increasing ISA chapter outreach, and personalizing communications.**

**Ambassador Committee:** Identify a group of 100 influential ISA members and/or TREE fund donors who hold a range of positions, have varying years of experience, and come from different geographic locations to serve as volunteer ambassadors to promote the TREE fund.

- Ambassadors act as a communications committee who can influence their networks through making personalized phone calls, forwarding relevant information to friends and colleagues, and helping set up free programs and events that encourage ISA members to learn more about what the TREE fund is doing to support their needs.
- The Ambassador committee is a great way to gain feedback on a regular basis on research needs and professional challenges arboriculture professionals are experiencing. The committee could report back annually or bi-annually.
- Ambassadors can serve as resources for their local ISA chapter and surrounding area of non-members to promote awareness and answer any questions about the TREE fund.

### ISA Chapter Outreach

- Increase availability of online marketing templates. ISA and The TREE Fund should collaborate to allow Chapters to download marketing promotional templates (email, mail) and advertisements that can be customized based on local needs and interests throughout the year. Templates of marketing materials that can be easily customized will provide more value (and wider acceptance and use) at the local level.
- Conduct informational meetings for chapter leaders that cover TREE fund research updates and effective communication with members. Providing chapter leaders with firsthand knowledge of research being conducted will allow them to make an immediate impact on their chapter in a more personal way.
- Provide tangible examples of how research being conducted by TREE fund is beneficial and applicable based on region. In open-ended comments, members from European chapters mentioned that they feel ISA and TREE Fund research is U.S. centric. Emphasize the value of a

TREE Fund donation and explain how research is beneficial to their work and professional advancement.

**Encouraging Donors:**

- Identify segments of donors most likely to give every year, donors who have given in the past but not every year and non-donors who are willing to give and reach them through targeted email communications.
  - 31% of respondents who work in commercial/residential areas have never made a donation, but would be willing to.
  - Respondents with 21+ years of experience were more likely to have donated in the past, but not every year (65%) or to donate every year (24%) compared to other age groups.
  - 39% of respondents with 1 – 5 years of experience and 32% of respondents with 6 – 10 years of experience have never made a donation but would be willing to.
- Encourage broad-based support to emphasize increasing the total number of TREE fund donors, not just the dollar amount. Whether it’s \$5 or \$500, transitioning non-donors to donors will be beneficial to maintaining ongoing financial support and increasing awareness.
- Create marketing materials that promote the idea of employers, colleagues, or friends donating to TREE fund in recognition of professional career milestones. For example, ten years in the industry, retirement, or ending a term as committee chair.

**Recommendation #2: Audit and assess the 12 research area topics to determine coverage and gaps that present opportunities for ISA and The TREE FUND to better meet the research needs of arboriculture professionals.** Survey respondents were asked to “select the areas ISA and TREE Fund should focus on to support the future of urban trees and tree care?” Based on the research areas they chose, they also indicated their interest level in learning more about relevant priorities within each area. By conducting a thorough audit and assessment of ISA’s current resources, content and education using the information gathered from this study as a filter, ISA will be able to identify gaps and prioritize future efforts to collect and disseminate information that carries the most value for the community and the profession.

During the study, we asked: Please select the areas ISA and TREE Fund should focus on to support the future of urban trees and tree care? The following is a list of the top eight research areas.

Research Areas	Percent
<b>Tree benefits and public awareness</b>	<b>62%</b>
Tree risk assessment and management	61%
Urban and community forestry	58%
Plant health care (diagnostics, treatments, invasive plants and pests)	58%
Mature tree care and preservation	58%
Arboricultural practices (pruning, structural support, lightning protection)	52%
Tree sciences (biology, biomechanics, ecology, soils, water relations)	52%
Planting and establishment	50%

As part of the internal audit and assessment, we recommend evaluating the following:

- Audience Outreach: How is the research being distributed to ISA members and Tree Fund donors?
- What are the research area sub-topic priorities:
  - Level of interest rating: Review the percent of respondents who are “very interested” in learning more about each of the priorities within the area selected. For example, 64% of respondents who selected the urban and community forestry priority area are very interested in Trees and urban infrastructure while just 39% are very interested in storm response and mitigation of losses.
  - Coverage: Audit the TREE Fund and ISA research that has been conducted on specific topics. Assess how the information has been used, how profitable has it been, and what audience segments it appealed to.
  - Gaps: Determine what areas respondents are very interested in, but are not currently being given priority by ISA and the TREE Fund.

#### Next Steps:

- Once the internal audit and assessment is complete, ISA should evaluate and prioritize how it will dedicate personnel and financial resources over the next 12 months to begin closing the gaps between areas of high interest and the availability of information.
- Utilize the top three channel preferences identified by respondents to increase awareness and disseminate information: printed publications, in-person events, and online resources.
  - **Printed Publications:** Produce and distribute micro-trend or informational reports to appeal to the multitude of different types of arboriculture professionals.
  - **In-person chapter events:** Develop local ISA chapter education and information events that are based on the most recent research findings distributed by ISA. Encourage discussion, question and answer opportunities, and members to share their firsthand experiences.
  - **Online Resources:** Currently the ISA website, while functional, requires users to click through multiple pages to find research resources. We recommend developing a content strategy program that integrates and cross-promotes programs and information based on specific topics. For example, when ISA shares information on the topic of *climbing and rigging* through podcasts, members should also receive links or promotions and information on the topic including educational programs, journal articles, and website content.

#### **Recommendation #3: Focus efforts on becoming the prominent leader and knowledge provider on emerging and evolving research areas, including the economics of urban forestry, the effect of drought and water management techniques, and GIS/GPS related technologies to improve tree care efficiency.**

ISA has the opportunity to understand what pressing and recent issues are affecting its members and serve as a knowledge base and problem solver. Similar to conducting the audit assessment of the twelve established research categories, ISA can assess emerging topics to determine what research areas it can provide insight on, and dedicate resources to, in order to become a valuable leader today and in the future.

- Create an online forum on ISA’s website for discussion based on emerging topics where members can voice their opinions, share firsthand knowledge, and determine best practices.
- Identify industry and academic experts who have insights on emerging topics and hold educational events both in-person and online through podcasts or webinars to reach a large audience.
- Repurpose content from educational events into print summaries that provide background information, key takeaways, and questions to consider. Make it available to members through chapter distribution, and online.
- Publish a monthly blog post on a hot topic in the arboriculture industry. Diversify posts to appeal to multiple types of ISA member segments. Example topics include:
  - Best practices in managing and developing tree care professionals
  - Biological effects of various pruning methods
  - Climate change impacts on tree species and their adaptability
  - Promoting community engagement in urban forestry
  - Invasive species management techniques
  - Assessment of climbing systems
- In order to counter any bias from this survey due to the higher percent of “desk arborists” that were likely to respond, ask chapter leaders to reach out specifically to field arborists and any additional segments of the ISA and Tree Fund audience that may be underserved to gain their critical feedback.

**Recommendation #4: Direct ISA and TREE Fund research and programming resources based on audience segments including area of employment, position, years of experience, and donor status.**

Whether communicating with Individuals who are involved in commercial/residential roles, municipal roles or utility roles, targeted audience messaging eliminates unsolicited messages. Marketing to the correct demographic and providing relevant information will enhance ISA and the TREE Fund’s engagement and satisfaction levels.

Successful market segmentation recognizes that each segment desires a particular benefit. Not every member joins or donates for the same reason. Although groups may share needs and interests, primary drivers often vary. ISA’s goal in market segmentation should be to appeal to every audience. It is important that ISA develops messaging as if it was speaking to one person at a time.

For example, professionals who work in the field experience day-to-day issues and seek practical applications that they can apply to improve their knowledge, their practices, and enhance their marketability as a certified arborist. One respondent noted, “Educational outreach and chapter level classes and training for employees in the field are lacking. There are opportunities for those already certified but they are severely lacking for the "feet on the ground" employees.”

Likewise, managers/owners or consultants who have an impact in community relations and public outreach would best be served by research resources and methods that are geared towards communication best practices, promoting the value of certified arboriculture work, and translating research into key takeaways that the general public can understand and apply. Rather than individuals

having to research on their own, click through multiple links, and take initiative to find research that appeals to them, ISA and the TREE Fund can take a proactive approach by clearly determining the audience they hope to reach.

Many respondents who choose not to donate to the TREE Fund do so not because of lack of interest, but lack of additional income. Understanding that arboriculture professional's salary ranges vary greatly, it is in the best interest of ISA and the TREE fund to ask for donations appropriately given the audience they are trying to reach. In addition, several respondents who don't have the financial means to donate indicated they are willing to donate their time. Promoting volunteering on a TREE Fund committee or in their local chapter serves them professionally, while also serving the TREE Fund's mission.

Customizing the type of research and education based on audience segments will ensure that individual's needs are met and they feel personally connected to their ISA membership and/or TREE Fund donation.

Once you've focused on targeting programming and research distribution, prove it. Identify individuals from multiple arboriculture practice areas who have benefited from membership in ISA and research conducted by the TREE Fund. Include testimonials and photos in newsletters and online to effectively sell the benefits that professionals will gain if they contribute to the TREE Fund and utilize the research resources provided.

**Recommendation #5: Communicate the large supply and accessibility of research to ISA members.**

There exists phenomenal resources out there on "Tree benefits and public awareness", as well as "Tree risk assessment and management". In order to best leverage the informative research that ISA has available, it should focus on communicating the quantity and quality of its research resources through a content marketing program.

Content marketing's purpose is to "attract and retain customers by consistently creating and curating relevant and valuable content with the intention of changing or enhancing consumer behavior. It is an ongoing process that is best integrated into your overall marketing strategy, and it focuses on owning media, not renting it" (Content Marketing Institute). Applying this to ISA and the TREE Fund, there is opportunity to create relevant and valuable content through marketing the research publications and resources available to members. Rather than pitching products or services, a content marketing plan engages members through delivering information that makes them more knowledgeable.

There are a few specific ways ISA can implement content marketing in order to better serve members:

- Send members monthly or quarterly emails that list research topics of interest and links directly to recent reports, publication, or articles that have been conducted.
- Create a one page visually appealing info-graphic on ISA's research supply that can be emailed to members and displayed on ISA's homepage. Include the types of research ISA has conducted, major research topics, ISA's investment in research, and any other interesting facts that will communicate to members that ISA is a premier resource.

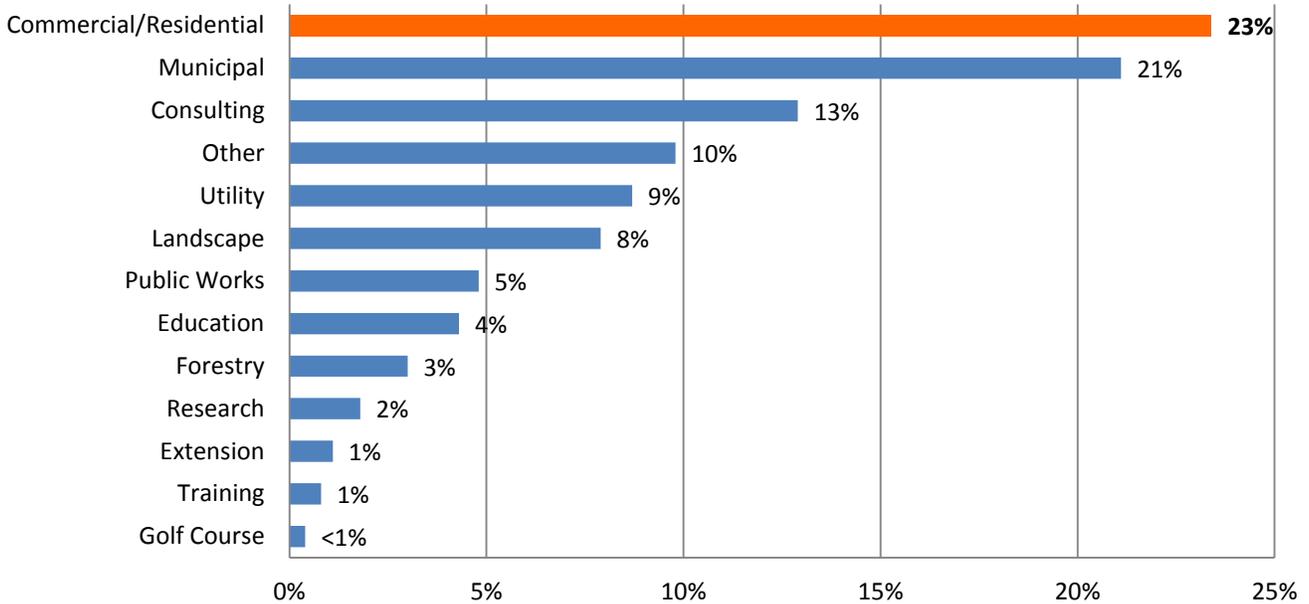
- Target communication based on research topic interests to ensure members receive relevant information. Municipal or Utility Arboriculture research should only be sent to those who work or manage in those job areas. Targeted marketing of ISA's supply of research has the potential increase members feeling that ISA is in tune with their needs and is providing tangible value.
- Identify other related sources of information on research topics. For example, when someone accesses ISA's website and searches for tree safety research, past research on tree safety should be linked on the page to increase the likelihood that respondents will use multiple resources.

## Overall Survey Results

### All Respondents

#### Question 1: What is your current area of employment?

Respondents hold a variety of arboriculture-related positions. Twenty-three percent of respondents work for a commercial/residential employer; 21% work for a municipal employer, and 13% are employed in the consulting field.



n = 2545

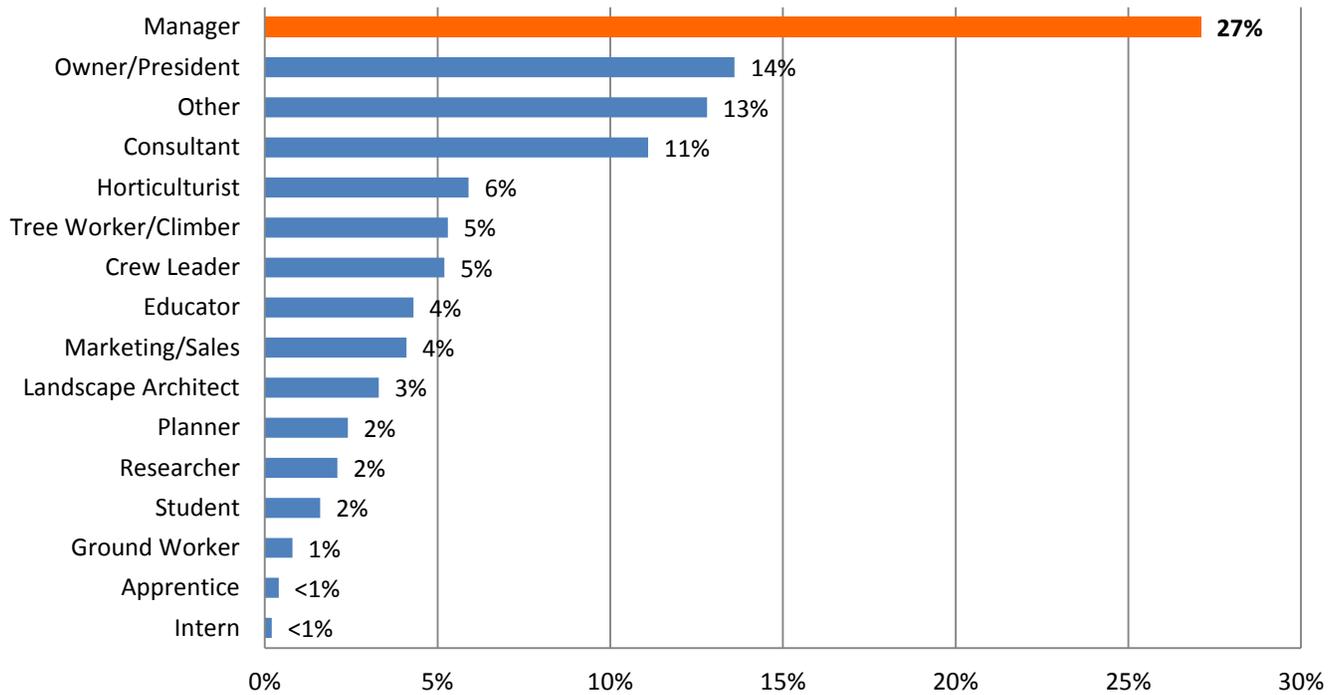
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#### Other (Top Themes)

- Non-profit
- State Government
- Retired
- Volunteer
- Public park
- Equipment Supplier
- University
- Nursery
- Botanic Garden
- Construction Management

**Question 2:** What option below most closely describes your current position?

The majority of respondents are managers (27%), followed by owners/presidents (14%), consultants (11%) and those who considered themselves to be in an “other” position (13%) such as an administrator, safety coordinator or municipal arborist.



n = 2539

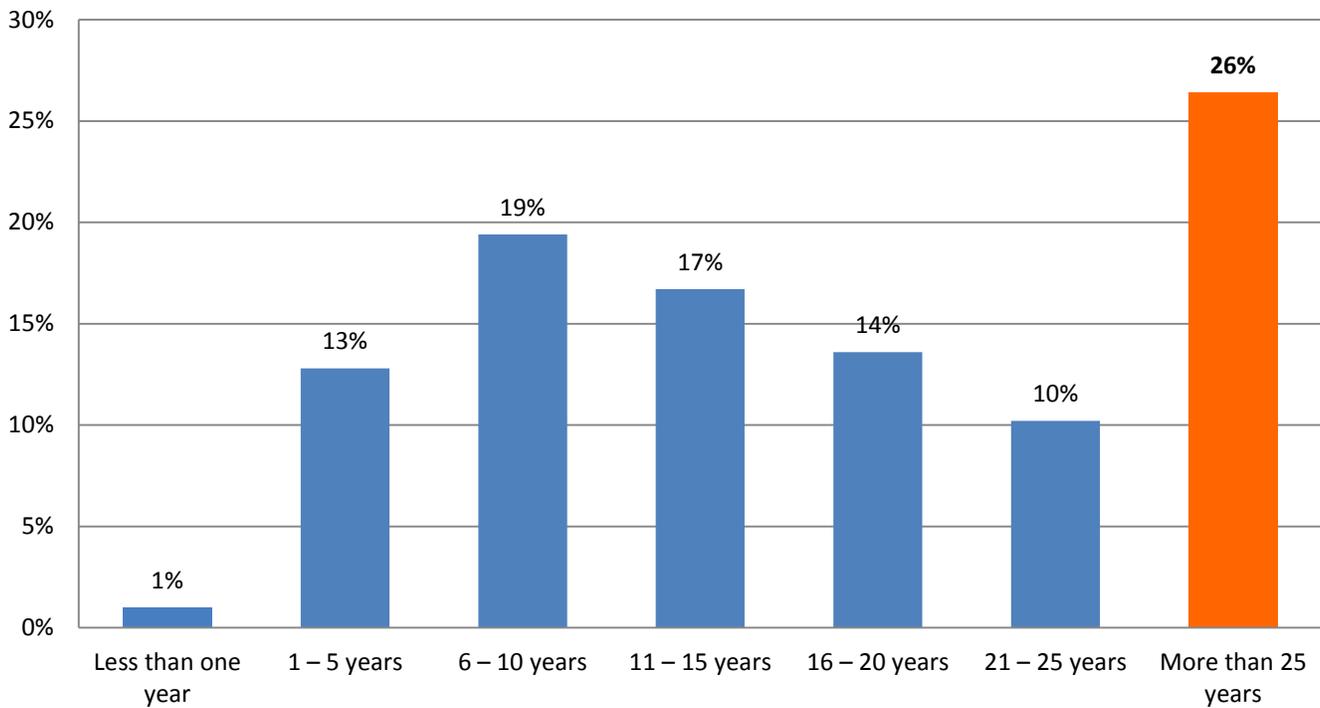
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**Other (Top Themes)**

- Administrator
- Botanist
- Urban Forester
- Utility Arborist
- Climber
- Crew Supervisor
- Municipal Arborist
- Office Manager
- Safety Coordinator
- Scientist
- Retired

**Question 3:** How long have you been involved in the arboriculture industry?

One out of four members (26%) have been involved in the arboriculture industry for more than 25 years. Thirty-two percent have been involved in the industry for less than 10 years, 30% for 6 to 15 years and 24% for 16 to 20 years. The average years of experience is 17.

- Respondents who work in consulting (36%) are significantly more likely to have 25+ years of experience.
- 59% of respondents who are tree workers/climbers have less than 10 years of experience.
- 21% of crew leaders have less than five years of experience.
- 31% of respondents who hold a manger position have 25+ years of experience.
- Respondents who have 25+ years of experience are significantly more like to donate to TREE Fund every year (15%).
- 39% of those with less than 5 years of experience and 32% of those with 6 - 10 years of experience have never made a donation, but are willing.
- 30% of respondents with 16+ years of experience have donated in the past, but not every year.



n = 2418

Response	Area of Employment					
	Commercial/ Residential	Municipal	Consulting	Utility	Landscape	Public Works
Less than 5 years	14%	11%	13%	8%	19%	15%
6 – 10 years	21%	19%	16%	19%	18%	16%
11 – 15 years	18%	19%	15%	15%	11%	19%
16 – 20 years	14%	15%	11%	15%	15%	19%
21 – 25 years	10%	10%	10%	12%	13%	10%
25+ years	22%	25%	36%	31%	25%	21%

	Current Position					
Response	Manager	Owner/ President	Consultant	Horticulturist	Tree Worker/ Climber	Crew Leader
Less than 5 years	8%	7%	12%	15%	30%	21%
6 – 10 years	17%	15%	17%	27%	29%	28%
11 – 15 years	17%	18%	15%	13%	20%	18%
16 – 20 years	16%	16%	13%	13%	7%	11%
21 – 25 years	12%	12%	10%	9%	6%	11%
25+ years	31%	31%	33%	23%	8%	10%

	Donor Status					
Response	Donor every year	Donor (not every year)	Non-donor (planning in next year)	Non-donor (willing to)	Non-donor (no plans to)	Don't recall/Don't know
Less than 5 years	5%	6%	18%	19%	13%	16%
6 – 10 years	12%	14%	25%	24%	20%	22%
11 – 15 years	15%	15%	18%	15%	20%	16%
16 – 20 years	19%	14%	10%	14%	10%	13%
21 – 25 years	9%	15%	8%	9%	9%	8%
25+ years	40%	36%	18%	17%	28%	24%

**Question 4:** Please select the areas ISA and TREE Fund should focus on to support the future of urban trees and tree care. (Check all that apply)

Respondents prefer that ISA and TREE fund focus on supporting tree benefits and public awareness (62%), followed by tree risk assessment and management (61%), urban and community forestry (58%), plant care health (58%), and mature tree care and preservation (58%). Respondents were less concerned about utility arboriculture and vegetation management (29%) and nursery production (28%).

	Percent
<b>Tree benefits and public awareness</b>	<b>62%</b>
Tree risk assessment and management	61%
Urban and community forestry	58%
Plant health care (diagnostics, treatments, invasive plants and pests)	58%
Mature tree care and preservation	58%
Arboricultural practices (pruning, structural support, lightning protection)	52%
Tree sciences (biology, biomechanics, ecology, soils, water relations)	52%
Planting and establishment	50%
Tree work, arboriculture workforce, and safe practices	48%
Technology changes and new product development and testing	35%
Utility arboriculture and vegetation management	29%
Nursery production	28%
Other	8%
None of the above	0%

n = 2365

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**Other (Top Themes)**

- Climate change
- Public Education
- Increasing perception/value of arborist role
- Ethics and Customer Service
- Native trees
- Recruitment of tree professionals
- Supporting legislation advocating for licensed, trained, and insured professionals
- Root management
- Beginners training course
- Tree preservation during construction
- Sustainable business practices
- Improving teaching skills and share knowledge

**Please rank order your interest in the areas that you selected in the previous question:**

Respondents’ rankings of their top research interests aligned closely with the order of the areas of interest listed above. Respondents were most interested in tree benefits and public awareness, followed by tree risk assessment and management, plant healthcare, and urban and community forestry.

	Score	Rank
<b>Tree benefits and public awareness</b>	<b>14297</b>	<b>1</b>
Tree risk assessment and management	13696	2
Plant health care (diagnostics, treatments, invasive plants and pests)	13125	3
Urban and community forestry	13045	4
Mature tree care and preservation	12396	5
Tree sciences (biology, biomechanics, ecology, soils, water relations)	11863	6
Arboricultural practices (pruning, structural support, lightning protection)	11513	7
Tree work, arboriculture workforce, and safe practices	10894	8
Planting and establishment	10365	9
Technology changes and new product development and testing	5974	10
Utility arboriculture and vegetation management	5273	11
Nursery production	5113	12
Other	1843	13
None of the above	0	14

Rank	Area of Employment					
	Commercial/ Residential	Municipal	Consulting	Utility	Landscape	Public Works
<b>First</b>	Plant health care	Urban and community forestry	Tree risk assessment and management	Utility arboriculture and vegetation management	Plant health care	Urban and community forestry
<b>Second</b>	Tree benefits and public awareness	Tree benefits and public awareness	Tree sciences	Tree risk assessment and management	Tree benefits and public awareness	Tree risk assessment and management
<b>Third</b>	Arboricultural practices	Tree risk assessment and management	Mature tree care and preservation	Tree work, arboriculture workforce, and safe practices	Planting and establishment	Tree benefits and public awareness

	Current Position					
Rank	Manager	Owner/ President	Consultant	Horticulturist	Tree Worker/ Climber	Crew Leader
<b>First</b>	Tree risk assessment and management	Plant health care	Tree risk assessment and management	Plant health care	Tree work, arboriculture workforce, and safe practices	Urban and community forestry
<b>Second</b>	Tree benefits and public awareness	Mature tree care and preservation	Tree benefits and public awareness	Tree benefits and public awareness	Tree risk assessment and management	Tree benefits and public awareness
<b>Third</b>	Urban and community forestry	Tree risk assessment and management	Mature tree care and preservation	Mature tree care and preservation	Tree benefits and public awareness	Tree work, arboriculture workforce, and safe practices

	Years of Experience					
Rank	1 – 5 years	6 – 10 years	11 – 15 years	16 – 20 years	21 - 25 years	25+ years
<b>First</b>	Tree benefits and public awareness	Tree benefits and public awareness	Tree benefits and public awareness	Tree benefits and public awareness	Tree risk assessment and management	Plant health care
<b>Second</b>	Urban and community forestry	Tree risk assessment and management	Tree risk assessment and management	Tree risk assessment and management	Tree benefits and public awareness	Tree risk assessment and management
<b>Third</b>	Plant health care	Plant health care	Urban and community forestry	Mature tree care and preservation	Mature tree care and preservation	Tree benefits and public awareness

	Donor Status					
Rank	Donor every year	Donor (in past)	Non-donor (planning in next year)	Non-donor (willing to)	Non-donor (no plans to)	Don't recall/Don't know
<b>First</b>	Tree benefits and public awareness	Tree benefits and public awareness	Tree benefits and public awareness	Tree benefits and public awareness	Urban and community forestry	Tree benefits and public awareness
<b>Second</b>	Tree sciences	Tree risk assessment and management	Tree risk assessment and management	Urban and community forestry	Tree benefits and public awareness	Tree risk assessment and management
<b>Third</b>	Mature tree care and preservation	Urban and community forestry	Arboricultural practices	Tree risk assessment and management	Tree risk assessment and management	Plant health care

**Question 5:** You selected **Tree work, arboriculture workforce, and safe practices** as a priority area for research. Please rate your level of interest in learning more about priorities within the area you selected above.

Of those who are interested in tree work, arboriculture workforce, and safe practices, 62% of respondents were very interested in improving the safety of work practices for arboricultural operations, 52% were very interested in identification and mitigation of workplace safety hazards and 48% were very interested in the effectiveness of safety standards.

- Respondents who worked in the utility practice area were significantly more likely to be very interested in improving the safety of work practices for arboricultural operations and identification (79%), mitigation of workplace safety hazards (72%), effectiveness of safety standards (64%), and emergency response (52%).
- Commercial/Residential workers are significantly more likely to be very interested in improving efficiency in tree care operations (58%), understanding and managing loads in rigging operations (49%), and new equipment for tree care operations (44%).

Tree work, arboriculture workforce, and safe practices priorities	Very Interested	Somewhat Interested	Neutral	Somewhat Disinterested	Not at all Interested	n =
Improving the safety of work practices for arboricultural operations	62%	31%	6%	1%	<1%	1115
Identification and mitigation of workplace safety hazards	52%	36%	10%	2%	<1%	1113
Understanding and managing loads in rigging operations	32%	38%	22%	5%	3%	1114
Demographics of the workforce	16%	32%	35%	11%	6%	1115
Next generation of arborists	42%	37%	16%	4%	1%	1118
Arboriculture/urban forestry industry salary analysis	23%	34%	29%	9%	5%	1113
Effectiveness of safety standards	48%	40%	10%	2%	<1%	1120
New equipment for tree care operations	35%	42%	18%	3%	1%	1116
Improving efficiency in tree care operations	45%	40%	13%	2%	<1%	1116
Emergency response	39%	43%	15%	2%	<1%	1114
Other	19%	12%	54%	1%	15%	314

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**Other (Top Themes)**

- Information about new climbing equipment, rigging methods, best practices
- Training non-certified “arborists,” e.g., landscapers, city service department workers, etc.
- Urban safety response to pruning
- How to find qualified tree care workers
- Outreach to/from tree care professionals

Very Interested	Area of Employment					
	Commercial/ Residential	Municipal	Consulting	Utility	Landscape	Public Works
Improving the safety of work practices for arboricultural operations	66%	61%	50%	79%	58%	56%
Identification and mitigation of workplace safety hazards	54%	52%	41%	72%	44%	46%
Understanding and managing loads in rigging operations	49%	22%	25%	25%	36%	28%
Demographics of the workforce	18%	11%	10%	14%	21%	17%
Next generation of arborists	48%	35%	40%	41%	42%	34%
Arboriculture/urban forestry industry salary analysis	26%	21%	19%	29%	21%	25%
Effectiveness of safety standards	54%	42%	36%	64%	47%	44%
New equipment for tree care operations	44%	32%	33%	40%	37%	38%
Improving efficiency in tree care operations	58%	41%	31%	50%	44%	52%
Emergency response	41%	40%	28%	52%	37%	42%

**Question 6:** You selected **Tree benefits and public awareness** as a priority area for research. Please rate your level of interest in learning more about priorities within the area you selected above.

Respondents who selected tree benefits and public awareness are most interested in public awareness and perception of trees (72%), followed by quantifying the benefits of trees (67%) and the social, health and psychological benefits of trees (61%).

- Municipal workers are interested significantly more about quantifying the benefits of trees (73%) than those who work in the utility area (53%) or commercial/residential area (59%).
- Utility workers (77%) and commercial/residential workers (70%) are very interested in public awareness and perception of arborists.
- Utility workers are the least interested in monetary benefits of trees (35%).

Tree benefits and public awareness priorities	Very Interested	Somewhat Interested	Neutral	Somewhat Disinterested	Not at all Interested	n =
Quantifying the benefits of trees	67%	29%	4%	1%	0%	1467
Social, health, and psychological benefits of trees	61%	32%	6%	1%	<1%	1469
Public awareness and perceptions of trees	72%	24%	3%	<1%	0%	1470
Public awareness and perceptions of arborists	60%	32%	7%	2%	<1%	1466
Monetary benefits of trees	50%	39%	9%	1%	<1%	1461
Other	32%	14%	43%	<1%	11%	333

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**Other (Top Themes)**

- New approach to communication/messaging public about tree care do’s and don’ts
- Importance of proper tree planting and maintenance
- Most effective methods for educating the public about tree benefits
- Increasing public value of quality tree work (certified arborists vs. non-certified)
- Costs and benefits of trees in urban areas
- Working with specific groups (neighborhood, business, school, etc.)

Very Interested	Area of Employment					
	Commercial/Residential	Municipal	Consulting	Utility	Landscape	Public Works
Quantifying the benefits of trees	59%	73%	69%	53%	65%	65%
Social, health, and psychological benefits of trees	56%	61%	69%	37%	67%	63%
Public awareness and perceptions of trees	70%	74%	66%	67%	76%	73%
Public awareness and perceptions of arborists	70%	52%	52%	77%	60%	54%
Monetary benefits of trees	48%	52%	51%	35%	53%	51%

**Question 7:** You selected **Urban and community forestry** as a priority area for research. Please rate your level of interest in learning more about priorities within the area you selected above.

Respondents interested in urban and community forestry are very interested in trees and urban infrastructure (64%), tree species diversity in the urban forest (60%) and cost/benefits of tree maintenance (56%).

- Respondents who work in the municipal area (74%) are very interested in trees and urban infrastructure, compared to just 49% of respondents who work in either commercial/residential or utility areas.
- Respondents who work in the utility practice area are most interested in research on storm responses and mitigation of losses (55%).

Urban and community forestry priorities	Very Interested	Somewhat Interested	Neutral	Somewhat Disinterested	Not at all Interested	n =
Trees and urban infrastructure	64%	30%	5%	1%	<1%	1375
Tree species diversity in the urban forest	60%	34%	6%	<1%	<1%	1379
Climate change effects and tree management adjustment	44%	35%	14%	4%	3%	1372
Pruning and management cycles	49%	39%	11%	2%	<1%	1376
Costs/benefits of tree maintenance	56%	35%	7%	1%	<1%	1377
Inventories and tree management plans	45%	40%	13%	2%	1%	1374
Storm response and mitigation of losses	39%	43%	14%	3%	1%	1375
Urban ecology	49%	40%	10%	1%	<1%	1377
Other	28%	15%	45%	<1%	11%	254

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**Other (Top Themes)**

- Tree preservation regulations and policy
- Public involvement in projects
- Public awareness of proper tree pruning and impacts of improper management
- Communication to civic leaders and residents
- Monetary benefits of young tree care management
- Tree technologies
- Tree growth cycles in urban environments

Very Interested	Area of Employment					
	Commercial/ Residential	Municipal	Consulting	Utility	Landscape	Public Works
Trees and urban infrastructure	49%	74%	64%	49%	70%	68%
Tree species diversity in the urban forest	53%	64%	61%	40%	67%	58%
Climate change effects and tree management adjustment	44%	40%	47%	24%	47%	38%
Pruning and management cycles	54%	49%	41%	57%	55%	49%
Costs/benefits of tree maintenance	59%	61%	49%	51%	53%	52%
Inventories and tree management plans	40%	50%	47%	27%	42%	50%
Storm response and mitigation of losses	36%	45%	30%	55%	35%	39%
Urban ecology	43%	53%	53%	18%	56%	37%

**Question 8:** You selected **Utility arboriculture and vegetation management** as a priority area for research. Please rate your level of interest in learning more about priorities within the area you selected above.

Analyzing the utility arboriculture and vegetation management research area, respondents are most interested in research being conducted on failure probability levels of trees with and without visible defects (59%), the cost of not maintaining trees (54%), and sustainable integrated vegetation management practices (52%). As expected, those who work in the utility practice area were significantly more interested in nearly every research sub-topic than those who work in other areas of employment.

Utility arboriculture and vegetation management priorities	Very Interested	Somewhat Interested	Neutral	Somewhat Disinterested	Not at all Interested	n =
Cost of not maintaining trees	54%	36%	9%	2%	1%	666
Sustainable integrated vegetation management practices	52%	36%	10%	2%	<1%	667
Pruning cycles; establishment and evaluation	48%	42%	9%	2%	<1%	670
Storm preparation and response	46%	36%	15%	2%	1%	668
Failure probability levels of trees with and without visible defects	59%	32%	7%	1%	<1%	670
Potential for contacts between trees and energized conductors to ignite wildfires	30%	37%	24%	7%	2%	671
Distribution system construction alternatives for resistance to failure caused by trees	38%	38%	19%	3%	2%	668
Benefits, values, and hazards associated with different methods of line-clearance pruning	47%	38%	11%	3%	1%	670
Crown asymmetry resulting from line-clearance pruning and risk of failure	48%	35%	12%	4%	1%	669
Other	22%	18%	43%	2%	16%	127

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**Other (Top Themes)**

- Herbicide impacts
- Cost-Benefits of utility services such as removal and replacement programs
- Integrated vegetation management
- Public education

Very Interested	Area of Employment					
	Commercial/ Residential	Municipal	Consulting	Utility	Landscape	Public Works
Cost of not maintaining trees	52%	45%	52%	63%	42%	64%
Sustainable integrated vegetation management practices	49%	44%	43%	69%	53%	52%
Pruning cycles; establishment and evaluation	43%	38%	35%	63%	47%	52%
Storm preparation and response	46%	40%	39%	58%	27%	64%
Failure probability levels of trees with and without visible defects	61%	57%	68%	66%	51%	64%
Potential for contacts between trees and energized conductors to ignite wildfires	32%	16%	30%	47%	13%	28%
Distribution system construction alternatives for resistance to failure caused by trees	32%	37%	51%	51%	11%	36%
Benefits, values, and hazards associated with different methods of line-clearance pruning	37%	43%	35%	70%	22%	44%
Crown asymmetry resulting from line-clearance pruning and risk of failure	49%	53%	39%	54%	40%	52%

**Question 9:** You selected **Tree sciences (biology, biomechanics, ecology, soils, water relations)** as a priority area for research. Please rate your level of interest in learning more about priorities within the area you selected above.

Respondents who are interested in tree sciences as a priority area for research indicated that they are very interested in root growth and development (71%), followed by tree and soil relationships (69%), understanding tree structure and function (66%), biomechanics of trees (62%), and tree and water relations (61%).

- Those who work in the utility practice area are less likely to be very interested in root growth and development (53%) and tree and water relations (36%) compared to those who work in other practice areas.
- 45% of commercial or residential workers are very interested in how plant growth regulators control growth and response, compared to 29% of municipal workers.

Tree sciences priorities	Very Interested	Somewhat Interested	Neutral	Somewhat Disinterested	Not at all Interested	n =
Understanding tree structure and function	66%	29%	4%	1%	0%	1244
Biomechanics of trees; loads and response growth	62%	32%	6%	<1%	<1%	1245
How plant growth regulators control growth and response	36%	37%	19%	6%	2%	1242
Tree and soil relationships	69%	27%	3%	<1%	<1%	1248
Root growth and development	71%	25%	3%	<1%	<1%	1250
Tree and water relations	61%	33%	6%	<1%	<1%	1248
Other	35%	13%	40%	<1%	12%	224

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**Other (Top Themes)**

- Possible differences between Urban and Rural Tree biology, biomechanics, etc. Cost-Benefits of utility services such as removal
- Effect of drought, water usage in urban areas
- Climate change impacts
- Tree ecology and ecological interactions
- Tree response to construction impacts

Very Interested	Area of Employment					
	Commercial/ Residential	Municipal	Consulting	Utility	Landscape	Public Works
Understanding tree structure and function	71%	62%	70%	67%	76%	53%
Biomechanics of trees; loads and response growth	68%	61%	65%	62%	60%	56%
How plant growth regulators control growth and response	45%	29%	32%	52%	37%	37%
Tree and soil relationships	73%	62%	76%	53%	78%	63%
Root growth and development	73%	71%	73%	53%	82%	65%
Tree and water relations	62%	56%	64%	36%	71%	53%

**Question 10:** You selected **Planting and establishment** as a priority area for research. Please rate your level of interest in learning more about priorities within the area you selected above.

Respondents who selected planting and establishment as a priority area for research are most interested in best practices for early tree care (68%), young tree care to enhance longevity (68%), and pruning for structural development (64%).

- Respondents who work in the landscape area are more likely to be very interested in soil preparation and alteration (70%), staking and structural support at planting (52%), pruning at planting (58%), pruning for structural development (77%), and water management and planting (72%).
- Respondents who work in the utility area are less likely to be very interested in most effective practices for planting hole/pit preparation (21%), soil volume needs and variation by species and climate (22%), soil preparation and alteration (25%), staking and structural support at planting (13%), and water management after planting (37%).

Planting and establishment priorities	Very Interested	Somewhat Interested	Neutral	Somewhat Disinterested	Not at all Interested	n =
Most effective practices for planting hole/pit preparation	54%	36%	8%	1%	<1%	98
Soil volume needs and variation by species and climate	56%	33%	10%	1%	<1%	112
Soil preparation and alteration	55%	35%	8%	1%	<1%	94
Staking and structural support at planting	31%	46%	19%	3%	1%	216
Best practices for early tree care	68%	28%	4%	<1%	0%	44
Pruning at planting	45%	40%	12%	2%	1%	144
Pruning for structural development	64%	30%	6%	1%	<1%	71
Young tree care to enhance longevity	68%	27%	4%	<1%	<1%	47
Water management after planting	56%	36%	7%	1%	0%	78
Mulch benefits and limitations	47%	42%	11%	<1%	<1%	123
Other	28%	11%	46%	0%	16%	94

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**Other (Top Themes)**

- Planting for species diversity
- Public involvement and education
- Soil structure
- Management and implementation
- Planting tree correctly in limited space

Very Interested	Area of Employment					
	Commercial/ Residential	Municipal	Consulting	Utility	Landscape	Public Works
Most effective practices for planting hole/pit preparation	55%	56%	48%	21%	67%	52%
Soil volume needs and variation by species and climate	53%	59%	62%	22%	67%	48%
Soil preparation and alteration	55%	56%	56%	25%	70%	56%
Staking and structural support at planting	34%	27%	27%	13%	52%	30%
Best practices for early tree care	72%	65%	61%	55%	78%	69%
Pruning at planting	51%	39%	38%	43%	58%	36%
Pruning for structural development	67%	64%	54%	58%	77%	66%
Young tree care to enhance longevity	70%	63%	64%	54%	76%	67%
Water management after planting	56%	53%	52%	37%	72%	54%
Mulch benefits and limitations	55%	36%	47%	33%	58%	44%

**Question 11:** You selected **Nursery production** as a priority area for research. Please rate your level of interest in learning more about priorities within the area you selected above.

Those interested in nursery production indicated that they are very interested in research around producing structurally strong trees (75%), managing roots in the nursery and impact on future growth (69%) and enhancing post-installation performance (61%).

Nursery production priorities	Very Interested	Somewhat Interested	Neutral	Somewhat Disinterested	Not at all Interested	n =
Increasing nursery survival rates	39%	36%	21%	2%	2%	632
Producing difficult-to-grow/transplant species	39%	33%	21%	5%	2%	632
Producing structurally strong trees	75%	22%	3%	1%	<1%	634
Enhancing post-installation performance	61%	31%	7%	1%	1%	630
Sustainable nursery practices	47%	36%	15%	2%	1%	630
Managing roots in the nursery and impact on future growth	69%	24%	6%	1%	<1%	636
Deep planting impact and treatment	51%	36%	11%	2%	1%	635
Nursery practices and transplantability	52%	37%	9%	1%	<1%	636
Other	34%	17%	41%	0%	8%	121

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**Other (Top Themes)**

- Species diversification
- Root systems and structure
- Improving nursery practices to facilitate proper planting
- Promoting production and sale of native species

	Area of Employment					
	Commercial/ Residential	Municipal	Consulting	Utility	Landscape	Public Works
<b>Very Interested</b>						
Increasing nursery survival rates	43%	38%	38%	35%	43%	27%
Producing difficult-to-grow/transplant species	37%	40%	38%	18%	48%	38%
Producing structurally strong trees	76%	73%	70%	65%	88%	65%
Enhancing post-installation performance	60%	59%	67%	35%	78%	50%
Sustainable nursery practices	52%	38%	46%	35%	56%	50%
Managing roots in the nursery and impact on future growth	69%	69%	78%	41%	72%	50%
Deep planting impact and treatment	55%	51%	46%	24%	60%	42%
Nursery practices and transplantability	47%	49%	47%	47%	58%	58%

**Question 12:** You selected **Arboricultural practices (pruning, structural support, lightning protection)** as a priority area for research. Please rate your level of interest in learning more about priorities within the area you selected above.

The top three research topics within the arboricultural practices area that respondents are interested in are pruning to enhance tree structural strength and stability (78%), tree growth responses to various pruning practices (71%), and biological effects of various pruning practices (66%).

- Commercial/residential workers are more likely to be very interested in effectiveness of various supplemental support systems and components (45%) and effectiveness of various lightning protection systems and components (22%).
- Respondents who work in commercial/residential (51%) and consulting areas (53%) are significantly more likely to very interested in research on biological and mechanical effects of tree support systems. Those who work in municipal (31%) and utility (23%) areas are least likely to be very interested.

Arboricultural practices interests	Very Interested	Somewhat Interested	Neutral	Somewhat Disinterested	Not at all Interested	n =
Pruning to enhance tree structural strength and stability	<b>78%</b>	19%	2%	<1%	<1%	1198
Biological effects of various pruning practices	<b>66%</b>	30%	4%	1%	<1%	1195
Effects of pruning on biomechanics	<b>59%</b>	34%	6%	<1%	<1%	1198
Tree growth responses to various pruning practices	<b>71%</b>	26%	2%	<1%	0%	1198
Effectiveness of various supplemental support systems and components	31%	<b>49%</b>	17%	3%	1%	1189
Biological and mechanical effects of tree support systems	41%	<b>45%</b>	12%	2%	<1%	1190
Effectiveness of various lightning protection systems and components	16%	<b>38%</b>	33%	10%	3%	1194
Best practices in wound treatment	<b>50%</b>	37%	9%	2%	1%	1195
Other	20%	17%	<b>49%</b>	1%	14%	199

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**Other (Top Themes)**

- Species diversification
- Root systems and structure
- Improving nursery practices to facilitate proper planting
- Promoting production and sale of native species

	Area of Employment					
	Commercial/ Residential	Municipal	Consulting	Utility	Landscape	Public Works
<b>Very Interested</b>						
Pruning to enhance tree structural strength and stability	78%	80%	79%	73%	82%	69%
Biological effects of various pruning practices	67%	64%	71%	51%	75%	58%
Effects of pruning on biomechanics	62%	60%	69%	53%	63%	46%
Tree growth responses to various pruning practices	76%	69%	66%	78%	79%	68%
Effectiveness of various supplemental support systems and components	45%	24%	33%	20%	29%	14%
Biological and mechanical effects of tree support systems	51%	31%	53%	23%	43%	25%
Effectiveness of various lightning protection systems and components	22%	12%	14%	10%	24%	7%
Best practices in wound treatment	56%	44%	53%	40%	61%	47%

**Question 13:** You selected **Tree risk assessment and management** as a priority area for research. Please rate your level of interest in learning more about priorities within the area you selected above.

Respondents who selected tree risk assessment and management as a priority area for research are very interested in predicting the likelihood of failure from extent of decay (71%), improving decay detection in branches, trunks, and roots (67%) and communicating tree risk principles and practices to decision makers and the public (64%).

Tree risk assessment and management interests	Very Interested	Somewhat Interested	Neutral	Somewhat Disinterested	Not at all Interested	n =
Comparison of tree risk assessment methodologies	46%	41%	12%	1%	<1%	1392
Application of different levels of tree risk assessment	50%	41%	8%	1%	<1%	1391
Risk management strategies and plans	58%	35%	7%	<1%	<1%	1399
Approaches to tree risk mitigation	55%	37%	7%	1%	0%	1397
Stratification and prioritization of tree risk zones	39%	45%	15%	2%	<1%	1394
Risk tolerance and tree risk evaluation	62%	33%	5%	<1%	<1%	1404
Communicating tree risk principles and practices to decision makers and the public	64%	29%	6%	1%	<1%	1399
Improving decay detection in branches, trunks, and roots	67%	28%	4%	<1%	<1%	1403
Predicting the likelihood of failure from extent of decay	71%	26%	3%	<1%	<1%	1399
Predicting Sudden Branch Drop	50%	37%	11%	1%	1%	1403
Develop tree species failure profiles	60%	33%	6%	1%	<1%	1397
Other	20%	15%	50%	<1%	15%	235

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**Other (Top Themes)**

- Cost/Benefit analysis on risk mitigation
- Risk assessment technologies
- Improving methods of reporting
- Improving decay detection in braches, trunks, and roots

Very Interested	Area of Employment					
	Commercial/ Residential	Municipal	Consulting	Utility	Landscape	Public Works
Comparison of tree risk assessment methodologies	51%	46%	50%	42%	47%	43%
Application of different levels of tree risk assessment	56%	50%	48%	52%	48%	53%
Risk management strategies and plans	58%	61%	53%	62%	56%	57%
Approaches to tree risk mitigation	59%	58%	57%	53%	54%	48%
Stratification and prioritization of tree risk zones	41%	41%	37%	36%	41%	44%
Risk tolerance and tree risk evaluation	63%	64%	63%	58%	64%	68%
Communicating tree risk principles and practices to decision makers and the public	67%	66%	55%	68%	63%	64%
Improving decay detection in branches, trunks, and roots	72%	66%	73%	57%	67%	73%
Predicting the likelihood of failure from extent of decay	78%	72%	73%	66%	72%	70%
Predicting Sudden Branch Drop	59%	47%	50%	48%	52%	52%
Develop tree species failure profiles	61%	61%	60%	60%	58%	61%

**Question 14:** You selected **Plant health care (diagnostics, treatments, invasive plants and pests)** as a priority area for research. Please rate your level of interest in learning more about priorities within the area you selected above.

Among the plant health care area topics, respondents are most interested in learning about detection and identification of pest problems (69%), managing invasive pests and plants (66%), pest and disease management (64%) and principles and practice in tree diagnostics (62%).

- With the exception of managing invasive pests and plants, respondents who work in commercial/residential were significantly more likely to be very interested in plant health care interest sub-topics.
- 81% of landscape workers are very interested in learning about detection and identification of pest problems.
- Utility workers are less likely to be very interested in pest and disease management (44%), PHC to manage abiotic disorders (24%), and development of new management products and practices (34%).

Plant health care priorities	Very Interested	Somewhat Interested	Neutral	Somewhat Disinterested	Not at all Interested	n =
Principles and practice in tree diagnostics	62%	33%	5%	<1%	0%	1343
Detection and identification of pest problems	69%	28%	3%	<1%	0%	1344
Application of integrated pest management principles in arboriculture	57%	36%	7%	1%	<1%	1337
Pest and disease management	64%	32%	4%	<1%	<1%	1344
PHC to manage abiotic disorders	48%	40%	11%	1%	<1%	1339
Managing invasive pests and plants	66%	29%	4%	1%	<1%	1340
Development of new management products and practices	51%	38%	10%	1%	<1%	1341
Other	28%	16%	44%	0%	13%	223

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**Other (Top Themes)**

- Alternative (non-chemical) approaches to managing tree/shrub health
- Biological controls for exotic pests/diseases/plant species
- Long term effects of treatment
- Easy access to diagnostic tools
- Pest control measures in highly populated urban areas

Very Interested	Area of Employment					
	Commercial/ Residential	Municipal	Consulting	Utility	Landscape	Public Works
Principles and practice in tree diagnostics	70%	57%	66%	49%	71%	49%
Detection and identification of pest problems	75%	66%	68%	56%	81%	65%
Application of integrated pest management principles in arboriculture	64%	52%	51%	49%	66%	51%
Pest and disease management	70%	62%	65%	44%	73%	60%
PHC to manage abiotic disorders	60%	40%	47%	24%	50%	39%
Managing invasive pests and plants	65%	66%	68%	54%	72%	74%
Development of new management products and practices	62%	44%	51%	34%	58%	48%

**Question 15:** You selected **Mature tree care and preservation** as a priority area for research. Please rate your level of interest in learning more about priorities within the area you selected above.

Respondents who selected mature tree care and preservation as a priority research area indicated that they are very interested in enhancing tree longevity in urban environments (74%), root management for mature trees (72%), and best practices in plant health care for mature trees (70%).

- Respondents who work in the commercial/residential area are more likely to be very interested in learning about pruning mature trees (72%) and equipment and techniques to evaluate tree health (61%).
- 70% of respondents who work in the consulting area are interested in learning more about veteran and heritage tree management.

Mature tree care and preservation interests	Very Interested	Somewhat Interested	Neutral	Somewhat Disinterested	Not at all Interested	n =
Pruning mature trees	63%	30%	6%	1%	<1%	1321
Balancing tree risk and tree benefits to the community	59%	33%	7%	1%	<1%	1321
Best practices in plant health care for mature trees	70%	27%	3%	<1%	<1%	1325
Preservation practices during construction	68%	26%	5%	1%	<1%	1324
Mitigating tree loss following construction	60%	32%	7%	1%	<1%	1318
Tree appraisal and valuation	47%	37%	13%	3%	1%	1326
Enhancing tree longevity in urban environments	74%	24%	2%	<1%	0%	1322
Veteran and heritage tree management	59%	33%	7%	1%	<1%	1319
Equipment and techniques to evaluate tree health	52%	40%	8%	1%	<1%	1318
Root management for mature trees	72%	25%	3%	<1%	0%	1326
Other	26%	14%	43%	1%	15%	208

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**Other (Top Themes)**

- By-law protection
- Case studies on ecology of mature trees
- Updated tree valuation methods/procedures
- Climate change effecting mature tree preservation
- Communication to public

Very Interested	Area of Employment					
	Commercial/ Residential	Municipal	Consulting	Utility	Landscape	Public Works
Pruning mature trees	72%	61%	55%	68%	70%	80%
Balancing tree risk and tree benefits to the community	56%	64%	60%	45%	58%	56%
Best practices in plant health care for mature trees	74%	66%	68%	68%	75%	65%
Preservation practices during construction	65%	70%	75%	51%	76%	66%
Mitigating tree loss following construction	62%	62%	66%	37%	61%	54%
Tree appraisal and valuation	45%	46%	55%	41%	53%	47%
Enhancing tree longevity in urban environments	70%	78%	76%	59%	70%	73%
Veteran and heritage tree management	58%	59%	70%	46%	55%	53%
Equipment and techniques to evaluate tree health	61%	49%	52%	49%	55%	52%
Root management for mature trees	73%	71%	77%	47%	76%	74%

**Question 16:** You selected **Technology changes and new product development and testing** as a priority area for research. Please rate your level of interest in learning more about priorities within the area you selected above.

Respondents who selected technology changes and new product development and testing indicated they were most interested in technology to improve tree management (58%), development of new products and techniques to treat pest problems (52%) and digital advancements and their effects on arboriculture and urban forestry practices (41%).

- Respondents in commercial/residential roles are more likely to be very interested in development of new products and techniques to treat pest problems (64%).
- Respondents in commercial/residential roles are more likely to be very interested in learning about research on development and testing of new products for climbing and rigging (56%), while those who work in municipal (21%) or consulting (20%) areas are less likely to be very interested.

Technology changes and new product development and testing interests	Very Interested	Somewhat Interested	Neutral	Somewhat Disinterested	Not at all Interested	n =
Development of new products and techniques to treat pest problems	52%	39%	8%	1%	<1%	794
Development and testing of new products for climbing and rigging	32%	31%	27%	7%	3%	792
Technology to improve tree management	58%	35%	7%	1%	0%	794
Digital advancements and their effects on arboriculture and urban forestry practices	41%	43%	13%	2%	1%	792
Use of the internet by arborists/urban foresters/public	36%	42%	19%	3%	1%	795
Use of social media in arboriculture and urban forestry	24%	40%	27%	6%	4%	795
Other	22%	19%	46%	1%	12%	131

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**Other (Top Themes)**

- Developing open source applications for urban forest management and citizen science engagement
- Mobile software that can be used in the field
- Incorporating GIS/GPS to advance tree inventory/management
- Decay detection equipment

Very Interested	Area of Employment					
	Commercial/ Residential	Municipal	Consulting	Utility	Landscape	Public Works
Development of new products and techniques to treat pest problems	64%	49%	42%	37%	54%	42%
Development and testing of new products for climbing and rigging	56%	21%	20%	37%	26%	30%
Technology to improve tree management	61%	59%	55%	70%	49%	65%
Digital advancements and their effects on arboriculture and urban forestry practices	38%	47%	44%	39%	39%	39%
Use of the internet by arborists/urban foresters/public	36%	33%	36%	43%	40%	32%
Use of social media in arboriculture and urban forestry	25%	25%	17%	30%	19%	35%

**Question 17:** What is your level of interest in the following formats to learn more about research distributed by ISA?

Fifty-three percent of respondents are very interested in receiving information via printed publications, 46% are very interested in learning by attending events at the chapter level, and 42% are very interested in reading scientific journals. Online courses, content from the ISA website, and E-newsletter ranked slightly lower, however the majority of respondents are very interested or somewhat interested in accessing online resources to learn more about ISA research.

- 52% of respondents who work in the consulting area are most interested in learning more about research reports via scientific journals. Those who work in consulting were also more likely to be interested in whitepaper reports (23%) and books (44%) compared to other areas of employment.
- While commercial/residential (39%) and consulting workers (44%) are very interested in books, municipal and utility workers are less likely to be very interested in books.
- Respondents with 1 – 5 years of experience are nearly twice as likely to be very interested in podcasts as an avenue to receive information compared to 15% of those with 25+ years of experience.
- Those working in the landscaping area (52%) are most interested in online courses.
- Respondents who donate every year are more likely to be very interested in learning about research by events at the chapter level (55%) and events at the national/international level (33%).

Format interests	Very Interested	Somewhat Interested	Neutral	Somewhat Disinterested	Not at all Interested	n =
Scientific journal (i.e., Arboriculture and Urban Forestry)	42%	39%	15%	4%	1%	2281
Podcast	20%	32%	32%	9%	6%	2232
Online course	41%	38%	16%	4%	1%	2263
Whitepaper report	16%	40%	36%	6%	3%	2238
E-newsletter	36%	44%	17%	3%	1%	2262
Printed publication (i.e., Arborist News)	53%	36%	9%	2%	<1%	2269
Content on the ISA website	39%	43%	15%	3%	1%	2264
Event at the chapter level	46%	35%	16%	3%	1%	2268
Event at the national/international level	24%	38%	27%	7%	4%	2260
Video	33%	40%	21%	4%	2%	2247
Books	34%	43%	19%	3%	1%	2248

	Area of Employment					
Very Interested	Commercial/ Residential	Municipal	Consulting	Utility	Landscape	Public Works
Scientific journal	39%	41%	52%	33%	38%	37%
Podcast	21%	23%	20%	13%	16%	19%
Online course	44%	40%	38%	39%	52%	42%
Whitepaper report	14%	14%	23%	8%	14%	12%
E-newsletter	34%	39%	37%	33%	38%	32%
Printed publication	53%	55%	57%	49%	55%	49%
Content on the ISA website	40%	40%	36%	36%	43%	41%
Event at the chapter level	50%	50%	44%	45%	39%	38%
Event at the national/international level	26%	20%	30%	27%	18%	15%
Video	40%	29%	26%	34%	37%	30%
Books	39%	28%	44%	24%	40%	30%

	Current Position					
Very Interested	Manager	Owner/ President	Consultant	Horticulturist	Tree Worker/ Climber	Crew Leader
Scientific journal	35%	37%	53%	41%	46%	44%
Podcast	18%	20%	21%	21%	25%	23%
Online course	39%	42%	40%	44%	43%	36%
Whitepaper report	12%	16%	25%	13%	14%	9%
E-newsletter	38%	28%	43%	29%	29%	36%
Printed publication	50%	51%	60%	56%	61%	49%
Content on the ISA website	40%	38%	43%	43%	34%	34%
Event at the chapter level	48%	47%	42%	48%	48%	49%
Event at the national/international level	24%	27%	29%	17%	29%	24%
Video	32%	38%	25%	30%	36%	42%
Books	28%	39%	44%	35%	45%	38%

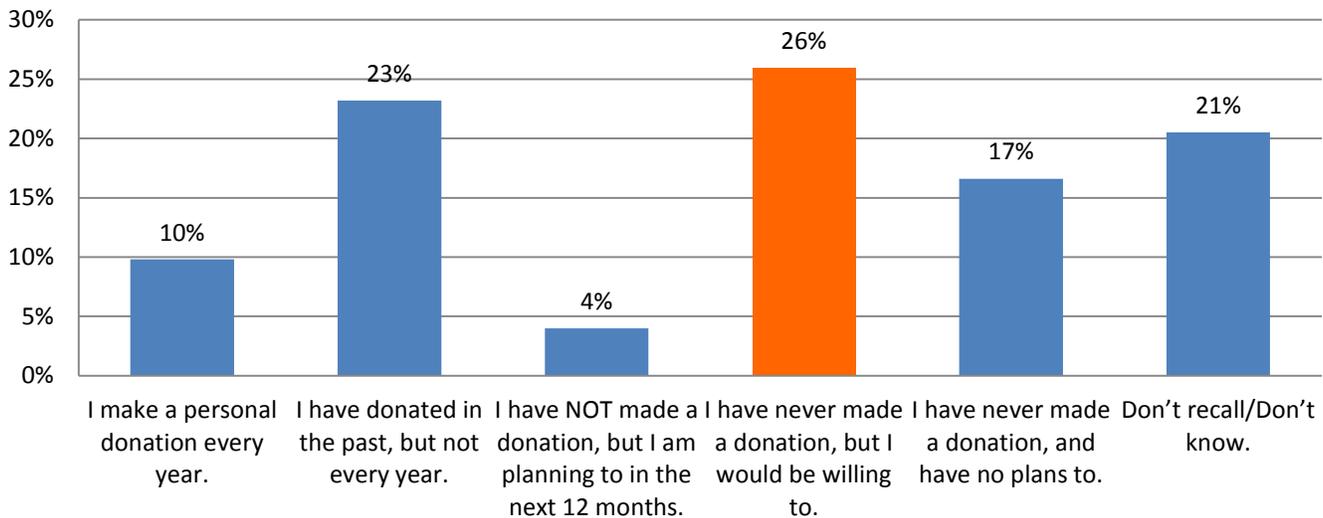
Very Interested	Years of Experience					
	1 – 5 years	6 – 10 years	11 – 15 years	16 – 20 years	21 - 25 years	25+ years
Scientific journal	45%	39%	36%	37%	37%	47%
Podcast	29%	24%	19%	18%	14%	15%
Online course	46%	42%	40%	42%	44%	34%
Whitepaper report	16%	14%	14%	17%	11%	18%
E-newsletter	35%	33%	32%	36%	43%	37%
Printed publication	51%	49%	51%	50%	54%	59%
Content on the ISA website	36%	37%	40%	35%	45%	40%
Event at the chapter level	41%	46%	45%	47%	51%	46%
Event at the national/international level	24%	19%	23%	27%	21%	28%
Video	36%	34%	28%	33%	31%	31%
Books	37%	32%	31%	33%	32%	36%

Very Interested	Donor Status					
	Donor every year	Donor (in past)	Non-donor (planning in next year)	Non-donor (willing to)	Non-donor (no plans to)	Don't recall/Don't know
Scientific journal	36%	43%	51%	46%	32%	42%
Podcast	19%	21%	24%	24%	16%	17%
Online course	30%	38%	50%	51%	31%	41%
Whitepaper report	17%	18%	19%	16%	11%	14%
E-newsletter	37%	39%	44%	39%	26%	34%
Printed publication	48%	51%	58%	62%	47%	51%
Content on the ISA website	34%	40%	41%	44%	30%	41%
Event at the chapter level	55%	54%	55%	50%	33%	37%
Event at the national/international level	33%	24%	39%	26%	16%	22%
Video	27%	30%	48%	39%	27%	32%
Books	27%	30%	51%	42%	28%	33%

**Question 18: What best describes your support of the TREE Fund?**

Ten percent of survey respondents indicated they make a personal donation every year and 23% indicated they have donated in the past, but not every year. Twenty-six percent of respondents have never made a donation but are willing to, while 17% have never made a donation, and have no plans to and 21% don't recall/don't know.

- 31% of respondents who work in commercial/residential areas have never made a donation, but would be willing to.
- Horticulturists (1%) are least likely to make a personal donation every year.
- Tree worker/climbers (13%) were significantly more likely to have not made a donation but be willing to in the next 12 months than other positions.
- Respondents with 21+ years of experience were more likely to have donated in the past, but not every year (65%) or donate every year (24%) compared to other age groups.
- 39% of respondents with 1 – 5 years of experience and 32% of respondents with 6 – 10 years of experience have never made a donation but would be willing to, while just 17% of respondents with 25+ years of experience who have not made a donation would be willing.



n = 2302

	Area of Employment					
	Commercial/Residential	Municipal	Consulting	Utility	Landscape	Public Works
I make a donation every year	11%	7%	11%	12%	5%	3%
I have donated in the past, but not every year.	22%	25%	28%	25%	12%	19%
I have NOT made a donation, but planning on to in the next 12 months.	6%	3%	3%	3%	5%	6%
I have never made a donation, but I would be willing to.	31%	26%	23%	17%	33%	29%
I have never made a donation, and have no plans to.	11%	19%	17%	18%	22%	21%
Don't recall/Don't know	19%	21%	18%	25%	23%	22%

	Current Position					
	Manager	Owner/ President	Consultant	Horticulturist	Tree Worker/ Climber	Crew Leader
I make a donation every year	11%	14%	8%	1%	7%	5%
I have donated in the past, but not every year.	27%	24%	28%	16%	14%	15%
I have NOT made a donation, but planning on to in the next 12 months.	4%	5%	2%	4%	13%	6%
I have never made a donation, but I would be willing to.	23%	25%	25%	29%	30%	38%
I have never made a donation, and have no plans to.	17%	11%	19%	24%	18%	15%
Don't recall/Don't know	18%	21%	18%	25%	18%	21%

	Years of Experience					
	1 – 5 years	6 – 10 years	11 – 15 years	16 – 20 years	21 - 25 years	25+ years
I make a donation every year	4%	6%	9%	14%	9%	15%
I have donated in the past, but not every year.	9%	16%	22%	25%	34%	31%
I have NOT made a donation, but planning on to in the next 12 months.	6%	5%	4%	3%	3%	3%
I have never made a donation, but I would be willing to.	39%	32%	24%	26%	23%	17%
I have never made a donation, and have no plans to.	17%	17%	21%	13%	14%	17%
Don't recall/Don't know	26%	23%	20%	19%	17%	18%

**Question 19:** Why did you (are you) planning to donate to the TREE Fund? (Open-ended)



*n* = 567

Themes:

- Worthy investment to give back to the industry I work in
- If not arborists donating, then who?
- Supports critical arboriculture research that advances industry
- Support a Tour des Trees bike rider
- Good/Great cause
- Believe in the mission
- Have extra money to donate
- Tree health, education, and research on best practices is essential
- Advertising/Marketing to audience
- Professional responsibility
- Knowledge gained through TREE fund is beneficial
- To promote the arboriculture industry
- Trees are important to respondents personally, need to be better understood and appreciated
- Better meet the environmental changes brought on by climate change
- Scholarship opportunities
- Helps train the next generation
- Industry needs additional funding

\*The complete list of participant's verbatim responses is located in the appendix.

**Question 20:** Why do you not donate to the TREE Fund? (Open-ended)



$n = 650$

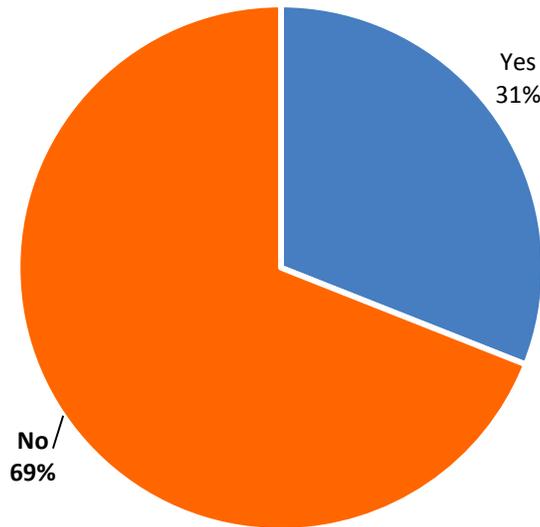
Themes:

- Lack of awareness and information on what research the TREE fund supports and how it is beneficial
- Rent, bills, family expenses are priorities over donating
- Low income as an arborist
- Busy and haven't thought about it
- Didn't know it existed
- Donate to other organizations that make more impact on local community
- New to the industry
- Retired, on a fixed income
- Don't know the best way to donate
- Thought part of membership dues went to research
- Feel contribution to dues, recertification, and educational resources is already expensive
- Volunteer time
- Not pushed through local chapter
- Don't believe in mission, member because employer requires

\*The complete list of participant's verbatim responses is located in the appendix.

**Question 21:** Is there a specific topic you would like to see researched?

Thirty-one percent of respondents have a specific topic they would like to see researched. Topics of interest include risk management and worker safety, control/management of invasive species, municipal forest management, soil health, and effects of pruning and root loss. The complete list of participant’s verbatim responses is located in the appendix.



n = 2074

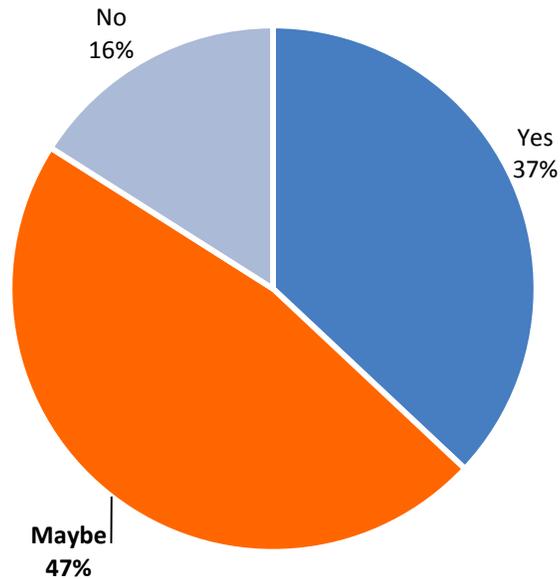
If yes, what is it?

Top Themes:

- Urban forestry and tree care
- Risk management and worker safety
- Effects of pruning practices and root loss
- Climate change impacts on tree species and adaptability
- Control/management of invasive pest/species
- Promoting public education, perception, and involvement in tree preservation
- Soil health
- Workforce management, development and retention
- Utility best practices
- Biomechanics
- Addressing poor nursery practices
- Municipal forest management
- Effect of drought and water management on tree health
- Native and non-native species research and best practices
- Legal and political issues that effect arboriculture industry
- Mature tree care

**Question 22:** Would you be more likely to donate if this topic was available?

Forty-seven percent of respondents who had a specific topic of interest would “maybe” be more likely to donate if the topic was available. Thirty-seven percent would be more likely to donate and 16% would not be any more likely to donate if their preferred topic was available. Respondents who are non-donors with no plans to donate were more likely to state that they would not be more likely to donate if their topic was available.



n = 520

	Donor Status					
	Donor every year	Donor (in past)	Non-donor (planning in next year)	Non-donor (willing to)	Non-donor (no plans to)	Don't recall/Don't know
<b>Yes</b>	41%	41%	59%	34%	<b>20%</b>	43%
<b>No</b>	17%	10%	9%	13%	<b>44%</b>	9%
<b>Maybe</b>	42%	49%	32%	53%	36%	47%

**Question 23:** In what ISA chapter or Associate Organization do you currently participate?

Chapter	Count	Percent	Chapter	Count	Percent
Atlantic Chapter	27	1%	Quebec Chapter	7	<1%
Austria Chapter	4	<1%	Rocky Mountain Chapter	83	4%
Brazil Chapter	8	<1%	Southern Chapter	144	7%
Czech Republic Chapter	6	<1%	Spain Chapter	6	<1%
Denmark Chapter	1	<1%	Swedish Chapter	9	<1%
Florida Chapter	105	5%	Texas Chapter	93	4%
Germany Chapter	6	<1%	United Kingdom/Ireland Chapter	30	1%
Hong Kong Chapter	41	2%	Utah Chapter	21	1%
Illinois Chapter	110	5%	Western Chapter	258	12%
Indiana Chapter	46	2%	Wisconsin Chapter	61	3%
Italy Chapter	13	1%	Arboriculture Australia	21	1%
Kentucky Chapter	24	1%	Asociación Mexicana de Arboricultura	14	1%
KPB Dutch Chapter	21	1%	Belgian Arborist Association	1	<1%
Michigan Chapter	37	2%	Croatia Arboricultural Society	1	<1%
Mid-Atlantic Chapter	117	5%	European Arboricultural Council	1	<1%
Midwestern Chapter	93	4%	Federation of Polish Arborists	0	0%
Minnesota Chapter	47	2%	Finnish Tree Care Association	2	<1%
New England Chapter	76	4%	ISA Slovensko - Slovak Republic	1	<1%
New Jersey Chapter	22	1%	Japan Arborists Association	8	<1%
New York Chapter	70	3%	Lithuanian Arboricultural Center	2	<1%
New Zealand	22	1%	Malaysia Society of Arborists	3	<1%
Norway	8	<1%	Queensland Arboricultural Association Inc.	4	<1%
Ohio Chapter	77	4%	Singapore Arboriculture Society (SAS)	9	<1%
Ontario Chapter	112	5%	Société Française d'Arboriculture	0	0%
Pacific Northwest Chapter	207	9%	Swiss Arborist Association	0	0%
Penn-Del Chapter	64	3%	Taiwan Arboricultural Society	2	<1%
Prairie Chapter	54	3%			

## Do you have any additional comments that you were not able to convey throughout this survey?

There was a wide range of comments expressed in response to this survey question. A sample of verbatim responses is included below. A full list of all participant responses is available in the appendix.

### Sample of Responses:

- “ISA is an excellent Association, but needs promoting regionally in the UK.”
- “More online resources for people studying for the arborist exam would be great.”
- “Thank you for all your efforts and for reaching out regarding future research needs!”
- “Need for more in person educational opportunities locally”
- “Trees are complex, urban forestry is complex, arboriculture is complex. To be able to care properly for trees, you need to know about a lot of aspects. Please be very careful with narrowing aims of research down. For a lot of people that I know ISA is valuable because it's wide scope.”
- “Educational outreach and chapter level classes and training for employees in the field are lacking. There are opportunities for those already certified but are severely lacking for the ‘feet on the ground’ employees.”
- “As a newbie to the arboriculture and urban forestry world, I would love to see resources specifically towards helping new people get a foothold in the industry. Maybe job postings, mentoring programs, etc.”
- “When going to go get your CEU's at conventions I would prefer to learn things about trees that are going on now and around you then trying to see the product people sell.”
- “Poor research (reviewed or not) many times becomes "gospel". It seems it takes years to dispel poor advice while trees and programs suffer. Method changing information would be better accepted if more partners (from several areas of expertise) were involved in any final paper.”
- “I'm concerned about the geographic disparity in where grants are awarded. They seem to be heavily weighted towards the eastern and Midwest of the United States - not much out west or internationally other than occasionally Europe. I will be watching this in the future to help determine whether I donate to the TREE Fund or support other tree research organizations that do fund research relevant to my area.”
- “I enjoy the magazines and other reference journals I receive, but, would like to see more online CEU opportunities. I come from a small budget municipality so can't afford to attend all the seminars I would like to.”
- “I would like to have courses for experienced arborists at conferences.”
- “ISA as a whole needs to direct market proper tree care practices so consumers place pressure on nurseries to produce better quality trees.”