

Northeast Logger Executive Summary

The impact of COVID-19 on loggers in the Northeastern United States

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Mission Statement

The mission of the Northeast Center is to enhance the health of agricultural, forestry and fishing workers by identifying priority health and safety issues and working with agriculture, forestry and fishing communities and stakeholders to develop prevention solutions.

Summary

The COVID-19 impact survey revealed that the pandemic has had a significant impact on Northeast loggers. The impact was exacerbated—and in the case of Maine loggers, eclipsed—by the paper mill explosion in Jay, Maine, in April 2020.

Northeast loggers are predominantly male, with an average age of almost 50. Eight out of every 10 survey respondents reported that they are either sole operators or work in small logging companies (2-10 employees).The majority of respondents also reported working in conventional operations, where they are hand-felling trees I have not been able to run my business and have not worked for two months. My two employees are on unemployment, which is very hard on them. I still don't know whether or not I will continue my business.

and using chainsaws and skidders, than in mechanized operations doing cut-to-length or whole-tree harvesting.

Despite their remote work locations, loggers were not able to escape the highly infectious coronavirus. Approximately 4% of the 484 survey respondents said they tested positive for COVID-19, and six out of 10 loggers knew two or more people who tested positive. As of March 31, 2021, positivity rates for this region varied from 3.9% to 9.2%. Loggers cited the Centers for Disease Control and Prevention (CDC) and state departments of health (DOH), their healthcare provider, and TV/radio as top sources for reliable health information.

About 30% of loggers reported having high blood pressure, an area of concern given the 4% positive rate for COVID-19. Loggers reported significant increases in stress in their communities, based on observing higher incidence of anxiety, depression, alcohol/drug use, and physical/verbal abuse. Loggers also indicated that they had relatively strong emotional and social supports, demonstrating resilience in the face of adversity.

In addition to affecting loggers' physical health, the pandemic has had a significant financial impact, as many loggers were unable to work while logging companies stood idle. The one-two punch of the pandemic-related shutdown with the explosion at a major paper mill in Maine sent a number of logging companies reeling. Interestingly, the responses to a set of financial well-being questions in the survey indicated that loggers fared better than average, yet the comments of many loggers contrasted with this comparatively more positive outlook on financial well-being.

Introduction

Logging remains one of the most hazardous industries in the United States, despite many safety improvements made in the last decades. In 2019, logging was the second most fatal civilian occupation in the United States, with a fatality rate of 68.9 per 100,000 full-time employees.¹ This rate is almost 20 times higher than the all-worker fatality rate of 3.5 per 100,000.¹

From late 2018 to mid-2020, the Northeast Center for Occupational Health and Safety in Agriculture,

In my line of work, there are always financial struggles, but since the COVID-19 pandemic, the struggle has been constant. Putting food on the table has been a literal and constant struggle.

Forestry, and Fishing (Northeast Center) collected data on health and risk exposures for Maine loggers through quarterly surveys and in-person health screenings. The study's purpose was to close the knowledge gap about non-fatal health and safety issues facing this work population. Baseline results indicate that Maine loggers work long days with long commutes to remote locations, resulting in a lack of access to services that could facilitate healthy living.² Loggers may also be at higher risk of cardiac issues, as evidenced by higher than normal blood pressure rates and indications of sleep apnea.³

In the interest of understanding the impact of COVID-19 on loggers in the Northeast region, the Northeast Center developed and distributed surveys to loggers in six states: Maine, New Hampshire, New York, Pennsylvania, Vermont, and West Virginia.

The survey consisted of six sections containing a total of 61 questions, which were derived from two sources: the *Northeast Center's Farmworker Needs Assessment: The impact of COVID-19 on farmworker populations in the Northeastern United States (FWNA)* and the Maine logger health and safety study surveys. The Northeast Center worked with the following partners to develop mailing lists for each state: New Hampshire Timberland Owners Association, New York Logger Training, Pennsylvania Sustainable Forestry Initiative, Vermont Logger Education to Advance Professionalism, and West Virginia University. The survey was mailed in late November/mid-December 2020 to 3,652 loggers.

The objective of the survey was to develop a better understanding of what went well and what did not go well in the COVID-19 pandemic response. The information will be used to inform policymakers, medical institutions, and logging stakeholders on how to better assist this essential workforce in the future.



Methodology

Section	Questions	Source for Questions	Comments
Demographics	6	Maine logger study survey and	Not included in version of
		FWNA	COVID survey sent to Maine
Work role and	4	Maine logger study	loggers, as these data were
company info			already collected
Impact of COVID-19	18	FWNA	
Impact of Androscoggin	1		Explosion at paper mill in
Mill explosion			April 2020 in Maine
Financial well-being	4	Consumer Financial Protection	Used in Maine logger study
		Bureau Financial Well-Being	survey
		Scale Questionnaire	
Personal health and	28	RAND 36-Item Short-Form	Used in Maine logger study
social support		Survey Instrument and RAND	survey
		Medical Outcomes Survey	
		Social Support Survey	
		Instrument	
Total	61		

The survey consisted of 61 questions in six sections, as described in Table 1.

Table 1: Composition of Survey

The survey was distributed by mail. To increase the likelihood that the addressee would open the envelope, fill out the survey and return it, West Virginia University and the Pennsylvania Sustainable Forestry Initiative permitted the use of their logos on the outer envelopes and survey instruments for mailings sent to loggers in their respective states. The Maine loggers also received a customized survey that used the Maine logger health and safety study logo. The Maine survey did not include demographic and work role/company questions because previous surveys collected that information.^{*}

Survey information was collected anonymously to encourage more transparent responses. Participants from all states except Maine were offered the opportunity to send in a sheet with a mailing address if they wished to participate in a drawing for \$125 in LLBean gift cards. The address sheet was removed from the survey and placed in a separate folder from the surveys to maintain the anonymity of the responses. For the Maine loggers, each previously enrolled logger received a \$25 LL Bean gift card with their blank survey, which was consistent with incentives for the prior Maine surveys.

Completed surveys began arriving in December 2020. Any mail returned with a forwarding address was mailed to the new address until February 1, 2021, after which returned mail was considered a non-response. Data entry collection instruments were designed in REDCap (Research Electronic Data Capture, Vanderbilt University) hosted at the Bassett Healthcare Network.^{4,5} Staff were trained on data entry and quality control, which was documented in a data entry manual. Data entry was completed on all surveys returned through the cut-off date of March 12, 2021, when analysis was initiated.

^{*} The survey tool is available by contacting the authors.

Quantitative analysis for the demographics, work role/company information, and COVID-19 sections was performed in SAS software Version 9.4 (SAS Institute Inc., Cary, NC). Quantitative analysis of the financial well-being and personal health/social support sections was performed in Microsoft Excel 2016 following the scoring methodology of the Consumer Financial Protection Bureau (CFPB) and RAND. Qualitative analysis of the comments was conducted in NVivo 12 (QSR International).

Demographics of Respondents

Of the 3,652 surveys mailed, 484 were returned, for an overall response rate of 13.3%. Table 2 shows the state-by-state response rate, and Figure 1 provides a map of the response rate at the county level.



Figure 1: Survey response rates by county

Of the respondents, 98% were male, and the average age was 50, with the youngest respondent being 19 and the oldest 84. The average household size was 3.2 people, with 42% of respondents having someone aged 18 or younger in the house.⁺ A majority (80%) of loggers reported working either as sole operators (38%) or in smaller companies with 10 or fewer employees (42%), as shown in Figure 2. The majority of survey respondents work in conventional logging operations, as shown in Figure 3. Between operating logging equipment and hand-felling trees, 68% of respondents said they spend most of the workday felling trees, as shown in Figure 4.



Figure 2: Size of logging operation by number of employees



Figure 3: Type of logging operation

⁺ Data on household size and composition were not gathered for the Maine loggers (n=154).



Figure 4: Primary logging tasks in a workday

COVID-19 Exposure

By March 31, 2021, the total number of US COVID-19 cases was 30,213,759, with deaths from the virus totaling 548,162 people.⁶ On that last day in March, the U.S. death rate was 165 per 100,000 people, and newly diagnosed cases remained high at over 62,000.⁶

The CDC provides state-based statistics on transmission and death rates related to the coronavirus pandemic. Table 3 provides data available as of March 31, 2021, for each of the states that took part in this survey.⁶

State	Total Cases	Cases/100K	Deaths/100K
ME	50,253	3,738	54
NH	83,340	6,129	90
NY	1,018,606	9,214	169
PA	1,015,268	7,930	195
VT	19,002	3,045	36
WV	140,991	7,867	147

Table 3: COVID-19 cases and deaths on March 31, 2021

Not surprisingly due to their populations, New York and Pennsylvania had the highest total number of cases, but each state that took part in the survey saw an increase in case rates since the middle of 2020. Although total case numbers have dropped since peaking in the fall 2020, trends appeared to increase once again as shown in Figure 5. At the end of March 2021, the number of new cases was trending upwards for each state that participated in this survey.



Figure 5: New cases of COVID-19, reported to CDC, in surveyed logger states as of March 31, 2021: Seven day moving average of new cases, by number of days since 10 average daily cases first recorded⁶

When asked if they personally knew anyone who had tested positive for COVID-19 (see Figure 6), almost 6 out of every 10 loggers knew more than two people who had tested positive, and 21 (4%) had tested positive themselves.



Figure 6: Testing positive for COVID-19

Worksite COVID-19 Infection Control Preparedness

One-third of the survey respondents stated that they work alone; as a result, worksite infection control practices were relevant to 2 out of 3 loggers who responded.

Personal Protective Equipment for COVID-19 Prevention

Of those loggers who worked with others, we asked those who were employees about whether their employer supplied personal protective equipment (PPE) specific to controlling the spread of COVID-19: hand sanitizer and a face covering of some kind (cloth face covering, bandana/neck gaiter) or a respirator. As seen in Figure 7, of the 317 who responded, about 1 in 3 received hand sanitizer and some kind of face covering. More than 27% of loggers did not receive COVID-19 PPE from their employers.





Social Distancing and Mask Wearing

To limit the spread of COVID-19, the CDC recommended social distancing by at least 6 feet, wearing a face covering, and washing hands. As shown in Figure 8, loggers were less inclined to wear face coverings when unable to maintain 6 feet of distance from their co-workers. Sixty-two percent said that they never or rarely wore face coverings and 55% noted that their co-workers never or rarely wore face coverings in these situations.



Figure 8: Loggers wearing face covering when unable to maintain 6-feet distance

Training

Only about 43% of loggers (185 of 428) said that employers or supervisors informed them on how to prevent getting COVID-19. Of the 185 that did receive employer-based training, some of the training topics that were covered included how to social distance, how long to wash your hands, how to use a respirator or face covering, how to recognize COVID symptoms, and what to do when you have symptoms. Figure 9 shows a breakdown of the

When meeting with landowners spacing makes it harder to communicate with them. Some 40 have canceled altogether the cut.

topics covered for loggers who responded that they had received training. Employers used a number of different formats to deliver the training, as shown in Figure 10, with the majority talking with staff and/or providing an informational sheet. Only a small number (21 out of 185, or 11%) were shown how to use the PPE.



Figure 9: COVID-19 PPE training topics



Figure 10: Delivery of COVID-19 PPE training

Sources for Health Information

When asked, "Where do you find reliable health information?" the results were mixed. As shown in Figure 11, almost 4 out of 10 respondents selected the DOH and/or CDC, as well as their own healthcare providers, as reliable information sources. These two public health sources were followed closely by television/radio (3.5 out of 10) and internet research (3 out of 10). One-quarter of respondents looked to friends and relatives as a source of reliable health information. A little more than 1 in 10 respondents I don't believe much of it is very reliable. I weigh what I know about disease and healthy living with info from all sources and use God-given common sense to sort through it and reach a conclusion.

selected social media as a reliable health information source. Employers and trade journals/newsletters were least relied on for health information. Many commented on the reliability of health information sources. Family members in the healthcare field seemed to be the most trusted sources, according to the comments.



Figure 11: Health information sources for COVID-19

Daily Work

Many (44%) of the survey respondents indicated that the COVID-19 pandemic affected their daily work activities in profound ways, including loss of jobs, loss of workers, loss of market for wood, increased quotas at mills, and significant changes in home life and work responsibilities. A number of loggers switched to tree work, firewood, trucking, and other side jobs to make up for the loss in income.

Healthcare

Yes COVID has impacted me and my business pretty hard due to mills I deliver to shutting down. Couldn't find employees due to high unemployment pay scale. It's been a real struggle.

At-risk conditions

Of the 484 loggers that answered questions about at-risk conditions relating to COVID-19, less than 2% have kidney disease, and less than 6% indicated that they have asthma. However, over 30% of the respondents reported that they have high blood pressure, a significant risk factor in COVID-19 disease.

Access to care

Two out of 3 loggers indicated nothing would stop them from getting medical care during the pandemic. However, a significant percentage (20%) of respondents indicated that fear of getting coronavirus in the healthcare facility would stop them from getting medical care during the pandemic. Other issues, including no medical insurance, no sick days at work, and not being able to afford medical expenses, were reported as factors that would prevent loggers from seeking care. (Refer to Figure 12.)





Childcare

More than a quarter of loggers indicated that the pandemic has been a serious issue when it comes to childcare and education. Many have had to rely on family members to care for young children as well as homeschool older children. This has affected incomes and altered familial roles, which has been a difficult adjustment for the logging community. Based on comments in the survey, there is some animosity toward teachers and the educational system for impacts on children and families.

I became a logger because I wanted to be a logger. I didn't want to be a teacher. I should get some of the teacher's pay while they are sitting at home.

Housing

Most loggers (96%) reported that their households did not increase or decrease in size due to the pandemic. When asked how they would handle a household member getting COVID-19, a little more than 4 in 10 indicated they would isolate the person in a separate room, and about 1 in 3 said they had no plan. Figure 13 shows all the responses. Among the comments, some loggers reported that everyone in the household already had it and were immune, or that they would all quarantine together. In Maine, several loggers mentioned having a camp where they would send the infected household member.



Figure 13: Plans for isolating COVID-19-infected household member(s)

In response to a question about how loggers had changed their behavior to protect household members when they got home from work, the top three behavioral changes were washing hands differently, taking a shower upon arrival, and changing out of work clothes (see Figure 14).





Other Topics

Androscoggin Mill Explosion

Pulpwood and biomass chips make up the bulk of wood flow in Maine with 7.02 million green tons of pulpwood and 1.61 million biomass chips. Sawlogs make up about 4.04 million green tons of wood flow in Maine.⁷

On April 15, 2020, a pulp digester exploded at the Androscoggin Mill in Jay, Maine. None of the employees was injured, and two paper-making machines at the mill were up and running a week later, using imported pulp. Ultimately, 177 of the 500 mill workers were laid off during 2020.⁸

The combination of the ongoing slump in the biomass market (1.6 million tons harvested in 2019 compared to

With very limited paper mills left in ME, the Jay Mill digester explosion has broken a link in one of the last solid chains of the logging industry. Every wood lot produces pulp and if that pulp has no market it becomes a cost. There is no more room in the industry for more costs.

2.2 in 2018), the increase in imports of forest products in 2019 into Maine, the explosion at Jay, and the disruption in industrial paper product markets from the pandemic has significantly affected the pulpwood and biomass market.⁷

This has been extremely difficult for loggers because they need to get rid of their chips and pulpwood. This loss of market was clearly voiced by survey respondents. According to some industry stakeholders, harvesters and haulers are suffering the worst of the market declines. Some felt that loggers had been left out of initial federal COVID-19 relief packages (most dollars going to larger corporations and mills).⁹

More than eight out of 10 loggers surveyed in Maine said the digester explosion at the Androscoggin Mill had affected their business. An additional 18% of Northeast loggers surveyed who did not reside in Maine said the closing of that mill also affected their business. The local markets for softwood pulp and biomass were already questionable. Our company hasn't sold a single load of pine pulp since the explosion. And chipping the softwood pulp isn't a great option either. Very tight quotas and biomass pays considerably less money.

Mental Health

Mental health issues related to the pandemic have been felt on a community-wide basis. Almost two out of three loggers responded that they had noticed their own community members seeming more tense, restless, nervous, and anxious because of the pandemic. More than half of those surveyed said people seemed down, depressed, or hopeless in recent months. One in 4 reported noticing more alcohol and illicit drug use since March 2020. In addition, more than one in 10 loggers said they noticed individuals in the community who were verbally or physically abusive to their family/household members since March 2020.





Social and Emotional Support

In recognition of the isolating nature of the pandemic, the COVID-19 impact questionnaire included questions about the level and type of social and emotional supports used by loggers. These questions were drawn from the Medical Outcome Study (MOS) Social Support Survey developed by the RAND Corporation, a validated and reliable survey tool that is used to determine health outcomes in various healthcare settings. The MOS Social Support Survey includes four functional support scales: emotional/informational, tangible, affectionate, and positive social interaction. It uses these to construct an overall functional social support index.

As indicated in Table 4, Northeast loggers overall ranked positively at 77.23 out of 100 points for social support. They scored 71.46 out of 100 points for emotional/informational support, which was the lowest scoring component of the functional support scale; and the highest scoring was affectionate support at 83.88.

Section	Score
Emotional/Informational Support	71.46
Tangible Support	81.15
Affectionate Support	83.88
Positive Social Interaction	80.30
Additional Item	78.35
Overall	77.23

Table 4: Social and emotional support results (n=478)

The Maine loggers who participated in the COVID-19 impact survey also participated in a longitudinal health and safety research project that included the MOS Social Support Survey questions. The first time that most of the Maine loggers completed the MOS survey questions was prior to or at the beginning of the pandemic. Having data prior to and concurrent with the pandemic was useful in providing insight into the changes in emotional and social well-being. Preliminary analysis of data collected from COVID-19 surveys distributed in Maine indicate a negative correlation between loggers' social support and the pandemic. As shown in Table 6, in all MOS categories, Maine loggers scored lower (-1% to- 5%) during the pandemic compared to the months leading up to the pandemic.

	Maine Health &	COVID-19		
Section	Safety Survey	Survey	Difference	% Difference
Emotional/Informational Support	75.31	72.12	-3.19	-4%
Tangible Support	85.64	81.07	-4.57	-5%
Affectionate Support	85.28	83.66	-1.62	-2%
Positive Social Interaction	83.20	81.85	-1.35	-2%
Additional Item	81.00	80.10	-0.90	-1%
Overall	80.60	77.81	-2.79	-3%

Table 5: Comparison of social and emotional support results for Maine logger cohort

Emotional Well-Being

To understand loggers' emotional well-being, respondents were asked four questions relating to how they felt in the previous four weeks. These questions were drawn from the RAND 36-Item Short-Form Survey Instrument Version 1.0 (SF-36 v1.0). For the 476 respondents, the average score was 72 out of 100, indicating a more positive emotional status.

Fatigue and Energy Level

Four questions from the SF-36 v1.0 were used to measure fatigue and energy levels during the pandemic. For the 476 respondents, the average score was 53 out of 100, which may not be surprising given the often-physical nature of logging work.

Financial Well-Being

The financial well-being section of the survey used the CFPB Financial Well-being Scale to measure how loggers were feeling about their personal financial situation. According to CFPB research, "overall consumers perceive financial well-being as a state of being wherein a person can fully meet current and ongoing financial obligations, can feel secure in their financial future, and is able to make choices that allow them to enjoy life".¹⁰ The pillars of financial well-being include security and freedom of choice over an individual's present and future finances. For the 439 loggers who answered the financial well-being portion of the survey, the average score was 54 out of 100 total points, with a minimum score of 19 and high score of 95 indicating great variation among respondents. According to national CFPB data for all people, the average score for ages 18-61 was 49.¹⁰ As a group, loggers seem to fall in the "medium-high" (50-57) range for financial score range and financial experiences. People who fall in this range are more likely to have direct deposit retirement accounts, pay off their credit cards monthly and very few (<16%) have food insecurity or hardship.¹⁰

While the financial well-being score for the cohort is considered medium-high, the impacts of the pandemic were clearly felt across all regions. Many loggers indicated in comments that the industry as a whole is suffering, which in turn affects people on an individual level. Loss of markets, loss of workers, and changes in family roles and care for children have taken a toll on the financial and overall well-being of Northeast loggers. The seeming contradiction between the medium-high financial wellbeing score and the comments about the financial strain

C [The COVID-19 pandemic] has slowed my line of work down putting all financial burden on my wife, who works 12-hour, full time days at a factory. My kids are falling behind in school.

they are experiencing may be explained by the way that the CFPB financial well-being scale was developed, which included people with a wide range of incomes, including those making less than \$20,000.¹⁰ A population of employed loggers may tend to skew higher on the CFPB scale because their incomes may start at a higher range.

Limitations

The findings of this report are subject to several limitations. The mailing list, which included 3,652 individuals and/or businesses, was not a complete list of all Northeast loggers, and may not be representative of the entire population. The Northeast Center has varying levels of name recognition in the six logging states, which may be reflected in the state-specific response rates (see Table 2). Researchers attempted to overcome the lack of name recognition by partnering with local organizations and branding the surveys with the partners' logos, but that effort may have had limited success. In addition, the surveys were mailed when the U.S. Post Office was experiencing delivery issues, which may also have affected the response rate.[‡] The 484 loggers who did respond may also not represent the views of all loggers. As with any self-reported data, these results are subject to memory decay, reporting bias, and limited detail.¹¹ The components of the survey that used validated instruments—RAND SF-36, RAND MOS Social Support Survey, and CFPB—have not been used with this population before; comparing the results to the general population may be of limited relevance.

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⁺ The Northeast Center received returned mail with no forwarding address as late as May 2021, six months after it was mailed.

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