

Dangers in the Woods: Root Causes Peligros en el Bosque: Causas Raíces



Northwest Forest Worker Center



PACIFIC NORTHWEST AGRICULTURAL SAFETY & HEALTH CENTER





ABOUT THE PROJECT

Falling trees, chainsaws kicking back, slipping, tripping and falling on steep slopes, high heat, extreme cold, poison oak – these are some of the hazards workers in the forestry services industry face. Forestry services workers activities include planting trees, thinning dense forest stands to reduce the risk of catastrophic wildfire and foster tree growth, and performing a host of other tasks necessary to tending America's forest lands. In fact, forest workers have very high job-related injury, illness and fatality rates.¹

The workforce in this industry today is largely made up of Latino immigrants who enter this line of work due to the relative higher rate of pay compared to other opportunities. They often have little previous experience and once they are working in the industry, they find that the forest labor force is segmented with Latino immigrants conducting the labor-intensive work.

Given this context, the Northwest Forest Worker Center (NFWC), the Labor Occupational Health Program (LOHP) at the University of California, Berkeley, and the Pacific Northwest Agricultural Safety and Health Center (PNASH) at the University of Washington, partnered together to learn more about Latino forest workers' experiences with work-related injuries, medical treatment and bettering working conditions in southern Oregon's Rogue Valley.

We applied principles of community-based participatory research, involving members of the local forest worker community in the project through participation in a project advisory group. NFWC's promotoras (community health workers), who were involved in every phase of the project, are also from the local forest worker community. We used snowball sampling (asking workers we interviewed to identify other

workers we might contact) and door-to-door canvassing (knocking on doors in neighborhoods where forest workers are known to live) to recruit workers who had been injured on the job in the previous 2 years or had taken some kind of action to improve working conditions to participate in the study. We conducted "pre-selection" interviews with 99 workers and selected 25 of these to do second, more in depth, case-study interviews. We asked questions about experiences with being injured on the job, getting medical treatment, accessing workers' compensation benefits, the current status of the injury, attempts to improve working conditions and general background experience.

To capture the broader industry context, we interviewed 8 employers and supervisors that use best safety and employment practices.

"Take all the precautions you can and, well, talk before going into work."

- Forest worker

All the workers we interviewed were men with an average age of 31.6 years. All were Spanish speakers, but 22 also spoke English. Workers had been with their current employer for an average of 3.3 years, and had been working in forestry for 9 years. Thirty-seven of the workers were in the United States on H-2B visas. At least 29 different forestry services companies were represented in our sample (Twenty workers did not state their employer's name.)

ACKNOWLEDGEMENTS

NFWC Project Staff: Virginia Camberos; Gladis García; Martha Valle Hernández; Carl Wilmsen, Ph.D.

PNASH – University of Washington: A. Butch de Castro, PhD, MSN/MPH, RN; Victoria Breckwich Vásquez, DrPH, MPH, MA; Marcy Harrington, MPA

LOHP – University of California at Berkeley: Diane Bush, MPH; Dinorah Barton-Antonio, MA; Charlotte Chang, DrPH, MPH

Worker Advisory Committee: Santiago Calzada; Bernardo Cortes; Emigdio Cortes, Andres Tellez Cortes; Braulio Maya; Ramon Gutiérrez

Technical Advisors: Marko Bey (Lomakatsi Restoration Project); John Garland, PhD, MS (PNASH and Garland & Associates); Chuck McFarland (Oregon OSHA).

Student contributors: Kim Doughty, UW MPH; Areli Contreras and Selena Guerrero, OHIP Summer Interns.

Report layout: Sarah Fish

Funding: National Institute for Occupational Safety and Health, Cooperative Agreement number 5U01OH010814

EXECUTIVE SUMMARY

We interviewed 99 Spanish-speaking, immigrant forest workers who had been injured on the job in the previous 2 years or had taken some kind of action to improve working conditions. The interviews with these workers served as pre-selection interviews from which a subset of 25 interviewees were identified for case study interviews.

The 99 workers in our sample described a work climate that is hazardous, high pressure and often antagonistic between workers and supervisors. The leading cause of injury was being struck by an object, usually a tree or branch. Slips, trips and falls, chainsaw kickback and strain/repetitive stress tied for the second most common causes of injury. Lack of safety climate, namely production pressure, bullying, and organizing work in an unsafe manner, were associated with being injured on the job. These finding were supported in interviews with best practice employers and injury statistics.



Our employer interviews identified additional hazards of transportation to the job site, fatigue, and drug and alcohol abuse, They also raised several significant barriers to an investment in this workforce's safety including, government bidding and contract practices, and a lack of Spanish language skills and safety training.

There were two broad categories of experience with medical treatment and outcomes in our case study interviews: 1) those where the workers' compensation and healthcare system worked in the way they should (System Functional) and 2) those where some part of that system broke down (System Failures). Workers in the Systems Functional category generally received medical treatment and workers' compensation benefits. These workers were more likely to report that their employers paid attention to safety, and tended to experience better injury outcomes than the other workers in our sample. Workers in the System Failures category experienced difficulty receiving medical treatment and/or workers' compensation benefits. Half of them received no treatment or sought alternative treatment. Three were told to say their injuries were not work-related at the hospital. Seven were ultimately fired. Almost all workers in the System Functional category communicated with medical personnel directly or with interpreters who were not affiliated with their employers. On the other hand, workers in the System Failures category had interpreters affiliated with their employers.

Workers who sought to improve working conditions most often asked for personal protective equipment (PPE—such as chaps, gloves, hearing protection or hard hats) or tools in better working condition, and these requests were usually granted. Workers were less likely to ask for substantial changes such as rest breaks, drinking water, and a slower pace of work. Only about a quarter of requests of this type were granted. Rumors of retaliation, actual experience with retaliation and negative interactions with supervisors all contributed to a continuing "[Pressure] makes you not take into account the risks that are there...maybe if I had less of this [pressure], I would've taken the time how do I put it?—to have assessed the dangers."

fear of retaliation. Despite this fear, all but one of the injured workers in the sample reported their injuries to their supervisors and more than three-quarters requested improvements in working conditions. They did so because their injuries were so severe, or their equipment was in such poor shape that they could not perform their jobs well or at all. Although making requests together with co-workers rather than alone was a helpful strategy, the workers who were more assertive in making requests were even more likely to have their requests granted, than if making that request on their own.

INJURIES AND WORK ORGANIZATION

The workers we interviewed described fast-paced, hazardous work environments in which insufficient attention is paid to safety and health.

Fifty-one workers in our sample of 99 had been injured on the job in the previous 2 years.

The leading cause of injury was being struck by an object, usually a falling tree or branch. Slips, trips and falls, chainsaw kickback, and strain and repetitive stress tied for the second most common types of accidents. The most common injuries were lacerations, back strain, and broken bones (Table 1).

Accident type	Cut	Back Strain	Broken Bone	Sprain	Bruise	Puncture Wound	Head Injury	Heat Illness	Pesticide	Musculo- skeletal	Grand Total
Struck by object	2	1	7	2	3	1	1				17
Slip, trip, fall	3	2	1	3							9
Chainsaw kickback	9										9
Strain /repetitive stress		8								1	9
Saw cut	2										2
Auger injury			1								1
Axe injury	1										1
Heat illness								1			1
Pesticides									1		1
Blank				1							1
Grand Total	17	11	9	6	3	1	1	1	1	1	51

TABLE 1: TYPES OF ACCIDENTS AND INJURIES

Immediate causes of injuries, or environmental conditions and work practices that contributed to accidents, included the following.

Struck by an object

- Working too close together
- Lack of communication

Chainsaw kickback

- Saw tip hitting an object
- Dull chains
- Reaching too high

Slips, trips and falls

- Low visibility
- Wet and steep slopes

Back strain/repetitive stress

- Piling heavy brush
- Fatigue
- Jumping and impact with ground

Root causes of increased risk, or underlying causes that may contribute to increased risk of getting injured included the following.

Lack of a Safety Climate. Safety climate is commonly defined as the perception employees have of the value placed on safety in their workplace.² Other studies have shown that a strong safety climate may encourage safety behavior and reduce injuries.³⁻⁵ The indicators we looked at in our study – which included safety training, holding safety meetings, provision of rest breaks and inspecting the worksite for hazards – reflected a distinct absence of safety climate in most of the companies where the interviewees worked.

- Workers work in hazardous environments and do not receive training. In Oregon, forest workers experience three times the rate of occupational injury and illness of the workforce at large.1 Despite working in a high hazard industry, only 25 of the 99 workers we interviewed said they received some type of training in preventing injuries and illnesses. Some workers who said they received training described it as minimal.
- *Limited, safety meetings, rest breaks, and inspections for hazards*. Only 19 of the workers mentioned that someone in the company inspects work sites for hazards before they begin work. Thirty-six workers said that they regularly or sometimes have safety meetings. However, many of these workers described the safety meetings as consisting solely of the foreman telling them to be careful. Only 13 workers said that they regularly get the legally required 10-minute rest breaks during each 4-hour work period.

Bullying is a widespread problem that may contribute to injuries and illnesses. Workers described constant production pressure and bullying. When asked what three things they struggle with most at work, more workers (41% of the sample) chose "getting yelled at" than any other condition of work (Table 2). Fifteen of the 51 injured workers (or 29%) said they thought production pressure or bullying contributed to their accidents.

TABLE 2: WHAT 3 THINGS DO YOU STRUGGLE WITH MOST IN YOUR JOB?					
Getting yelled at	41				
Heat	32				
Steep terrain	32				
Cold	25				

Organization of work in an unsafe manner may also create or exacerbate risk. When asked if their supervisors could have done something differently to prevent their accidents, workers suggested that they could organize the work differently. For example, some workers thought their supervisors should have waited until the fog lifted or the sun rose for improved visibility. Other workers complained that the supervisors sometimes have the slower workers work in front of the faster workers to push them to work faster. Still others said that their supervisors do not ensure that crew members work at the legally required distance from one another when felling trees (2 tree lengths). Many workers also said that their supervisors often fail to provide tools or personal protective equipment (PPE) in good working condition.

EMPLOYER AND INDUSTRY PERSPECTIVES AND RECOMMENDATIONS

While this study's primary aim was to look at worker perspectives, the study also engaged industry expertise through technical advisors and initial interviews with employers that used best management practices in their safety and human resources programs. We interviewed four employers and four supervisors (one each from each company) and conducted field site visits. These firms conduct a variety of services on private, federal and state lands and together worked in five western states, although primarily in Oregon, Washington and California.

Employers and supervisors see forest work as inherently dangerous. It is viewed as hard work with dangerous tools in challenging environments characterized by steep slopes, presence of slash, dense brush, holes, rocks, extreme temperatures, rain and snow, poison oak, bees and ticks. Overall, risks the employers described conformed with the major causes of injury the workers reported, as well as with statistics on injuries in the forestry services industry.

Employers remarked on several risky worker practices, including: attempts by younger workers to impress supervisors by working rapidly; inadequate hydration; cutting toward oneself with the chainsaw, and; transportation. "Driving on forest roads in dangerous settings—steep terrain, curvy roads. Hauling equipment on top of the van makes it top heavy. The vans are full of people, adding more weight. Racing to get to the job; ice; tired drivers."

When asked what could be done, they stressed training and creating a culture of safety. Key recommendations included a slower work pace, communications up-and down the hierarchy, and evaluating safety performance annually. One suggested that the agencies need to accept higher costs that would result from a slower work pace and higher pay. Overall, we found that these best-practice employers described learning as a central part of their approach to safety and health. They summed it up as, "Investigate, learn, train."

Employers mentioned structural barriers, time and finances, and difficulty in establishing a culture of safety. They explained that competitive bidding "drags down safety," that other contractors circumvent the law, reducing costs, and bid lower. At such low bids, it is difficult to do training. As one employer put it, "The government tries to get best value to the government, not to the contractors."

Language barriers were also mentioned. In general, forest workers have limited English ability, and many are illiterate in Spanish. One employer explained, "Latino fire fighters sit through the safety training that is all " Accountability through the ranks. Emphasis on safety from overhead managers to operations managers to crew managers."

– Employer on practices to reduce risks

WORKER KNOCKED UNCONSCIOUS BY TREE

We were thinning the forest on flat terrain on a nice day in Idaho. We were working *pretty close together, about* 15 feet apart. The foreman had us really pressured and threatened. He was telling us to work harder, that we weren't worth a s**t, and that later they were going to say that the company was no good. He told the new people to work hard or they would be sent to another foreman. My coworker was new, and the foreman was pressuring him a lot. I wasn't watching when he cut a tree, and it fell on my head, knocking me out for about 40 seconds. Afterwards I felt dizzy, and the dizziness wouldn't go away. A week later the boss took me to a chiropractor. He told me to say that I hit myself at his house and that's how I got hurt. The chiropractor said I had sprained some tendons in my neck and that's why I felt dizzy. It took about 4 or 5 months for the dizziness to finally go away.

done in English." More work is needed to fulfill OSHA law under 437-07-140 for Training to "Assure that job safety and health instruction and training is:

- a) Presented in a language and manner that the employee(s) is able to understand.
- b) Appropriate in content for the skill level of the employee(s) being trained.

TREATMENT OF INJURIES AND INJURY OUTCOMES

Despite fearing retaliation for reporting job-related injuries and illnesses to their supervisors, all but 1 of the 51 injured workers said that they informed their supervisors of their injuries. The main reason interviewees gave for reporting their injuries was that their injuries were so severe that they prevented them from working and they could not hide the fact that they were unable to work from the foreman.

Reporting an injury to the job foreman is the first step in getting medical treatment, and we conducted in-depth, case-study interviews with 23 of the 51 injured workers in our study to understand how medical treatment and outcomes unfolded. These 23 workers had a range of experiences that fell into two broad categories: 1) those where the workers' compensation and healthcare system worked in the way they should (System Functional) and 2) those where some part of that system broke down (System Failures).

System Functional. In seven cases the workers' compensation and healthcare system functioned more or less as intended. The workers were taken to hospitals or clinics where they told the staff that the injuries were work related and workers' compensation claims were initiated. Workers in this category were more likely to report that their employers provided safety training, inspected worksites for safety hazards, held safety meetings and provided rest breaks. They also tended to report a broader array of training than workers in the System Failures category, and also were more likely to have fully recovered from their injuries. These findings suggest that employers who are more conscientious about safety are more likely to follow through with proper care when workers are injured.

System Failures. In the remaining sixteen cases, the employers did not comply with system requirements. While some workers did receive medical treatment or pay for lost time, employers put up barriers even when workers were able to access workers' compensation benefits, or, in a few cases, employers provided benefits, but outside the required system. Only five workers in this category (31%) received workers compensation benefits. Two of these went to the hospital on their own, and were later fired for doing so. The other three of these workers faced obstacles such as having to wait a week before being taken to the hospital, being left to fend for themselves after the initial visit, and being made to work while injured against the doctor's orders. "It affects me in my private life and in everything. Because my plans for the future went under... I couldn't hold my son when he was little and newborn because, well, my right hand was broken. And well, that's what I wanted to do the most."

– Forest worker

WORKER WITH HEAT ILLNESS TOLD TO KEEP WORKING

I was piling brush in very hot weather in direct sunlight. It was over 100 degrees. After working for about 6 hours, I got a headache. I felt dizzy and nauseous, and my nose was bleeding. When I told the foreman how I was feeling, he said *"it's nothing," and got on my* case and told me to hurry up and quit f***ing around. When I told the foreman that I'd run out of water, he said that the van was far away and to just keep working. *I had some paper in my* pocket I used to clean my nose, and a coworker gave me water.

Four of the workers in the System Failures category were paid by their employers for missed days of work, but outside of the workers' compensation system. Three of these were specifically instructed to tell medical personnel that their injury was not work related. Two were told to say they were cutting firewood at home. The other eight workers in this category (50%) were not taken to a hospital or clinic. They sought the care of curanderos (traditional healers) or chiropractors or treated themselves with home remedies. The workers in this category were less likely to have fully recovered from their injuries than workers in the System Functional category. All told, seven of the workers in our sample were fired for being injured and one, we later learned, committed suicide.

Interpretation at medical exams. A striking trend in the case studies was that almost all the workers in the System Functional category were able to communicate with medical personnel without the aid of an interpreter who worked for their employer. Two workers spoke English. In another case the doctor spoke Spanish, and in all the other cases except one, hospital personnel provided the interpretation. In contrast, almost all the workers in the System Failures category had interpreters who worked for their employer, typically a company manager or job foreman. This suggests that interpreters who are not medically knowledgeable or have an interest in protecting the company may have a negative impact on injury outcomes. In addition, the fact that three workers were instructed to lie at the hospital suggests that some employers take advantage of language barriers to further their own financial interests.

COLLECTIVE ACTION

Despite the widespread belief that they will be reprimanded or fired if they speak up or complain about working conditions, the majority of workers we interviewed (79 or 81%) had asked for changes in working conditions in the past. Many had done so on more than one occasion. We asked the interviewees to focus on the most memorable occasion in which they asked for improvements in working conditions.

PPE and tools were the most frequently requested items, accounting for 71% of all requests. It was less common for the workers to request substantial changes in working conditions such as rest breaks, drinking water and a slower pace of work. These types of appeals accounted for only 25% of all requests. Requests for mutual assistance and unpaid wages accounted for 3% and 1% respectively.

Concern for safety and non-functioning equipment impeding the work were the two main reasons workers gave for asking for

improvements. Non-functioning safety equipment poses hazards to workers, and the workers' concern for their safety and that of their co-workers overcame their fear of reprisals. Non-functioning tools prevent workers from doing their jobs, and, just as was the case with reporting injuries, workers sought functioning tools when they could no longer perform their tasks. In nine cases workers made requests due to physical exhaustion (for rest breaks) or unusually unpleasant physical conditions.

"Because other coworkers started doing the same, and we said we were going to stop working."

 Forest worker explaining why the foreman gave him the chainsaw in better working condition he had asked for **The workers were successful in having their requests granted about half the time.** Denials were often accompanied by an angry or sarcastic response from the foreman. Even when granting requests, sometimes the foremen expressed anger or sarcasm at the worker. In other cases, the foremen simply refused to get the equipment for the worker. Sometimes the foreman led the worker on, saying, "Okay, I'll get that for you," and then never followed through. On the other hand, in about 40% of the cases, the request was granted in a more or less positive manner (Table 3). In many cases this was because it was obvious that the equipment was not working.

The foremen were much more likely to grant requests for PPE or tools in good condition than they were requests for substantial changes in working conditions (such as rest breaks). Indeed, they granted 60% of the requests for PPE and tools compared to only 26% of requests for changes in working conditions. The foremen almost always denied requests for rest breaks.

TABLE 2: FREQUENCY OF RESPONSE TO REQUESTS							
Type of Response	Successful Request	Unsuccessful Request					
Angry Response Ignored/Refused Led on Granted Request	6 31	22 9 7					
Total	37	38					

Getting together with one's coworkers and asking for improvements to working conditions was not sufficient to being successful. To be successful, workers needed to be assertive in addition to acting collectively. For example, one group of workers insisted on taking a rest break. Other factors that contributed to successful requests included demonstrating a true need or reasonable request, knowing one's rights, having a good relationship with the supervisor, and how well the supervisor knew the boss.

RETALIATION

Fear of retaliation seemed to stem from threats to fire workers made by job foremen as well as a sense of vulnerability related to immigration status. These fears were buttressed by the fact that workers actually do get fired. Seven workers in our sample were fired for being injured on the job, although none were fired for proactively attempting to improve working conditions. U.S. immigration law creates power imbalances between employers and employees by criminalizing undocumented workers and tying workers who come to the U.S. on H-2B (guest worker) visas to a single employer. This gives employers tremendous leverage over their employees. Threats and acts of retaliation serve to maintain those power imbalances.

WORKERS TAKE ACTION ON THEIR OWN

One time we were thinning really close together. There were 7 of us, and I was afraid that a tree would get thrown on top of me. I was afraid to say anything because sometimes if you say something, they fire you. But, I felt like I was in danger, so I resigned myself to being fired, and talked to my coworkers. We decided to work further apart from one another. The foreman *just ignored us. He didn't* care what we were doing. He doesn't care about us.

"Because in reality, the day that you're of no use to the company, they just get rid of you, and that's it."

- Forest worker

CONCLUSIONS

The workers we interviewed often work in a fast-paced, hazardous work environment in which insufficient attention is paid to safety and health. Relations between workers and job foremen were often described as negative and antagonistic, although some workers said they had good relationships with their supervisors. Lack of training, poor communication, failure to undertake safety responsibilities, extreme production pressure, and bullying reflect a perspective that devalues workers, and treats them as disposable objects. The interviewees were ever cognizant of the possibility of reprisals for getting injured on the job or proactively seeking improvements in working conditions; some indeed were fired while many others faced verbal abuse from their supervisors. In addition, the failure of many employers to follow proper protocols when workers were injured indicates that the system is not robust either because incentives to participate or enforcement of labor laws are not strong enough or both. Overall, these adverse working conditions had a profound impact on worker experiences with being injured, being treated for their injuries, and attempting to improve safety and health at work.

TOWARD SAFETY AND FAIRNESS IN THE WOODS

DISCUSSION

With new national and state investments in wildfire prevention, our study's findings are timely in informing sustainable practices for our forests and forestry workforces. For example, the state of California is now proposing to double the acreage annually treated with fuels reduction work. These investments will mean more jobs in forest fuels reduction and restoration.

Likewise, more workers will need skills and safety training, and employers, land managers and agencies will need to support this workforce. Latino immigrants conducting forestry services work experience systemic barriers to education and other types of employment, as well as institutional racism. Once they are working in the industry, they find that the forest labor force is segmented: Latino immigrants do the labor-intensive work of tree planting, and thinning, while white forest workers tend to do the more technical and/or mechanized jobs that pay better.⁶ This stratification and segmentation is institutionalized in immigration policy, creating disproportionate power imbalances between employers and employees.

In the forest restoration low-bid contracting system, rewards flow to low-road employers who cut corners (to cut costs). This context places best-practice employers at a disadvantage in obtaining contracts and hired workers in physical, psychological and social harm.^{7, 8}

It is notable that the Oregon Forest Activities Code⁹ provides a good regulatory standard that addresses most of the issues characterized in this study. This standard is a model for other states, yet further work is needed to address barriers to adequate enforcement efforts. Other states need regulatory coverage of forestry services that recognize those operations use the same tools and procedures used in logging which is also covered by regulatory standards.

There are immediate safety solutions that can be implemented at the ground level with employer and community-level support, such as improved skills and safety training, fostering safety practices and a safety climate, improvements to PPE and other tools, and improved access to medical services, workers compensation, and support for returning to work. Yet real change will require system-wide efforts with workers, policy makers, land managers (government and private) and industry working in coordination.

IDENTIFIED NEEDS

Government, employers, and workers can all take steps to improve safety and health and working conditions in the woods. Here are some initial actions recommend from this study's results.

Government Agencies & Land Managers (public and private)

- Review your state standards for forestry services and ensure appropriate investment in enforcement.
- Set production goals for planting and thinning that allow a safe pace of work.
- Require pre-work safety meetings and provide resources for contractors to conduct them
- Require contractors to show evidence that they have trained their crews in safety when bidding on contracts
- Increase consultations and inspections by agencies.
- Improve collaboration between land management agencies and the Department of Labor.
- Require professional, independent interpreters at medical exams

Federal OSHA

• Provide codes for forestry services or link forestry services to logging code CFR 1910.266

Employers

- Understand your state's labor and workers' compensation rules, programs and resources.
- Provide new employee and refresher trainings for workers on skills, safety and health. Offer training in the language of your workers.
- Inspect work sites for hazards and hold safety meetings prior to starting work on a new site. Adopt learning as a central part of your safety and health program, "Investigate, learn, train."
- Maintain good communications up and down the hierarchy.
- Set production goals that allow a safe pace of work.
- Provide 10-minute rest breaks during each 4-hour period of work.
- Train foremen in fostering a strong safety climate and evaluate foremen and employees for safety annually.
- Train foremen to recognize and respond to emergencies for cases of heat stress, acute pesticide poisoning and other acute illnesses and injuries.
- Do not postpone medical treatment and advocate for workers to have a medical interpreter.
- Dedicate regular time for tools and PPE maintenance.

Workers

- Inform yourself. Learn as much as you can about working safely in the woods. Understand that the law protects you from retaliation for speaking up about unsafe practices or situations at work.
- Don't compete with your co-workers.
- Stay hydrated. When working hard and in the heat, you will need ½ liter of water, every ½ hour frequent, small amounts of water or a sports drink is best.

- Collaborate with your co-workers and foremen in fostering a strong safety climate.
- Do not postpone medical treatment when injured and understand your state's workers compensation program.

Congress

- Enact comprehensive immigration reform.
- Reform the H-2B visa program; allow workers to switch employers (participate in free labor markets).

PROJECT RESOURCES

Download safety training materials and watch videos of other injuries in the woods told by workers themselves at https://nwforestworkers.org/programs/occupational-safety-and-health and http://deohs.washington.edu/pnash/forestry-services



- Forest Worker Safety Talks / Platicas sobre seguridad para los trabajadores forestales (English and Spanish) Train your crew with these short but important "Safety Talks." Real worker stories are used to start conversations and give essential safety tips. Injury prevention Safety Talks include: Struck by tree felling; Chainsaw; Herbicide application, and; Speaking-up for safety.
- 2) Reality Tales Videos: Injuries in the Woods / Videos historia Reales: Lesiones en los bosque. (English and Spanish) Real worker injury stories, told in their own voice, from immigrant workers conducting contract services in our U.S. forests. These stories are for workers and trainers with the goal to increase awareness on forestry workforce needs and the importance of safe practices, personal protection, and rights – for themselves and their co-workers. Worker injury prevention stories and training materials available for promotoras de salud: Searching for a better future / Buscando un mejor future; American dreams / Sueños Americanos; Broken dreams / Sueños truncados, and Sadness, loneliness and hope / Tristeza, soledad, y esperanza.



CONTACT

For further assistance in identifying training guides:

Northwest Forest Worker Center (541) 499-0626, info@nwforestworkers.org

Pacific Northwest Agricultural Safety and Health Center 1-800-330-0827, pnash@uw.edu

LITERATURE CITED

- 1. Vawter E. Oregon Forest Industry: A Comparison of Occupational Safety and Health Measures, 2016. Oregon Dept. of Consumer and Business Services December 2017. Accessed online December 21, 2018 at https://www.oregon. gov/dcbs/reports/Documents/osha-activities/safety-health/16-4840.pdf
- 2. Schwatka NV, Hecker S, Goldenhar LM. Defining and Measuring Safety Climate: A Review of the Construction Industry Literature. Annals of Occupational Hygiene. 2016;60(5):537-550.
- 3. Fang D, Wu C, Wu H. Impact of the Supervisor on Worker Safety Behavior in Construction Projects. Journal of Management in Engineering. 2015;31(6):04015001-04015001-04015001-04015012.
- 4. Schwarz UvT, Hasson H, Tafvelin S. Leadership Training as an Occupational Health Intervention: Improved Safety and Sustained Productivity. Safety Climate. 2016;81:35-45.
- 5. Jiang L, Probst TM, Benson W, Byrd J. Voices Carry: Effects of Verbal and Physical Aggression on Injuries and Accident Reporting. Accident Analysis and Prevention. 2018.
- 6. Moseley C. Ethnic Differences in Job Quality Among Contract Forest Workers on Six National Forests. Policy Sciences. 2006;39:113-133.
- 7. Okechukwu CA, Souza K, Davis KD, de Castro AB. Discrimination, Harassment, Abuse, and Bullying in the Workplace: Contribution of Workplace Injustice to Occupational Health Disparities. American Journal of Industrial Medicine. 2014;57:573-586.
- 8. Quesada J, Hart LK, Bourgois P. Structural Vulnerability and Health: Latino Migrant Laborers in the United States. Medical Anthropology. 2011;30(4):339-362.
- Oregon OSHA. Oregon Occupational Safety and Health Standards: Division 7 Forestry Activities. AO2-2-2014. 2014. Accessed online December 21, 2018 at https://osha.oregon.gov/OSHARules/div7/div7.pdf