



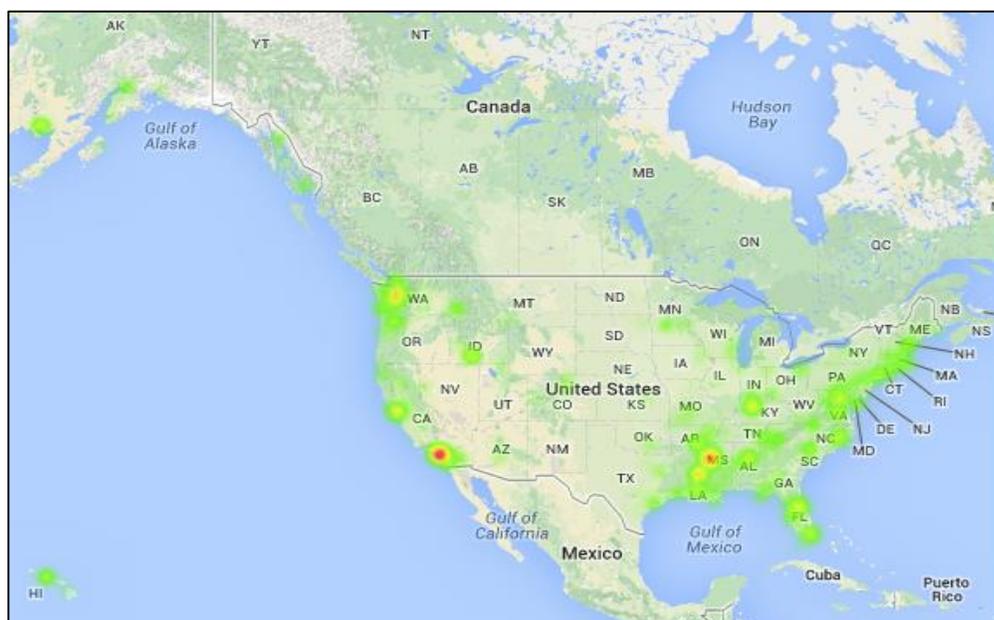
AQUACULTURE WORKERS

The Public Health Service Act provides the definition of migratory and seasonal agricultural workers for health center grantees, and includes those working in aquaculture and animal production provided the patient meets the guidelines for being a migratory or seasonal worker. The Uniform Data System Manual, the reporting mechanism for all health centers, states “For both [migratory and seasonal] categories of workers, the term agriculture means farming in all its branches as defined by the OMB-developed North American Industry Classification System (NAICS), and includes seasonal workers included in the following codes and all sub-codes within: 111, 112, 1151, and 1152.”¹

Identifying those working on a seasonal basis with live animals & fish destined for human use or consumption (excluding fisherman, hunters, and those working in processing plants that are not adjunct to a farm) may increase the number of agricultural workers a health center serves, which may increase funding or provide new ways to serve the local community. Aquaculture workers are a unique subset of agricultural workers and have a distinct set of occupational health risks and disparities.

WORKER OVERVIEW

- The United States Department of Agriculture administers the Census of Aquaculture, a representative survey of aquaculture businesses throughout the U.S. The most recent Census of Aquaculture was conducted in 2005, which reported a total of 10,519 workers employed in the industry nationally. This number may have been significantly affected by the destruction caused by Hurricane Katrina.²
- The largest numbers of aquaculture workers in 2005 were concentrated in Louisiana and Washington states, employing 17.3% and 12.2% of all U.S. aquaculture workers, respectively.
- The map below demonstrates the locations of 1,228 aquaculture businesses in 2014, with areas of red and orange indicating greater concentrations of employees.³



LABOR CONDITIONS

- Aquaculture workers in the U.S. primarily raise oysters, clams, mussels, salmon, and shrimp.⁴
- The median annual wage for laborers attending to livestock or aquacultural animals in 2013 was \$22,650. The median hourly wage was \$10.89.⁵
- Aquacultural employers can utilize the H-2A visa program to hire foreign workers if they are experiencing a labor shortage. In 2013, there were 300 H-2A workers certified specifically for employment in aquaculture. These workers earned a median hourly wage of \$9.45 and were concentrated in Arkansas, Mississippi, and Louisiana.⁶
- The seasonality of aquaculture may cause workers to migrate for employment and create economic hardships for workers who are seasonally unemployed.⁷
- Workers in the aquacultural industry often labor outdoors, and may be exposed to extremely cold or extremely hot temperatures, depending on which region of the country they are employed in.⁸
- Job tasks in aquaculture may include monitoring water quality, moving and transporting fish from near-shore to offshore facilities, facility maintenance, harvesting fish, and post-harvest processing.⁹

OCCUPATIONAL HEALTH RISKS

- The occupational health risks of aquaculture workers are poorly documented compared to those experienced by fisherman or by seafood processing workers.¹⁰ However, aquaculture workers are likely exposed to many of the same hazards that are present throughout the seafood industry, including extreme temperatures, bacterial pathogens, heavy lifting, repetitive motions, chemical exposures, hazardous machinery, and all-terrain vehicles.¹¹
- Workers in the U.S. aquaculture industry are at an elevated risk of work-related fatalities. The agriculture, forestry, and fishing industry sector has the highest rate of work-related fatalities in the U.S, and in Norway, aquaculture workers have been found to have a fatality rate 17 times higher than the average.^{12,13}
- The greatest risks for fatalities in aquaculture are drowning, electrocution, head injuries, & gas poisonings.¹⁴
- Non-fatal injuries and illnesses that may occur among aquaculture workers include work-related musculoskeletal disorders, slips, trips, & falls, hypothermia, heat stress, sprains & strains, respiratory illnesses, skin allergies, bites & cuts, poisonings & envenomation, and work-related stress.¹⁵
- Occupational allergies are of particular concern to aquaculture workers. Prolonged exposure to both finfish and shellfish without personal protective equipment may result in itching, eczema, urticaria, and irritation. Workers in processing facilities with poor ventilation have an elevated risk of developing work-related asthma.¹⁶

¹ Bureau of Primary Health Care, Health Resources and Services Administration. (2013). BPHC Uniform Data System Manual 2013. Retrieved from <http://bphc.hrsa.gov/healthcenterdatastatistics/reporting/2013udsreport.pdf>

² United States Department of Agriculture. (2005). Table 22: Farm employment and the annual payroll associated with aquaculture production, by state and United States, 2005. Retrieved from http://www.agcensus.usda.gov/Publications/2002/Aquaculture/aquacen2005_22.pdf

³ ReferenceUSA. (2014 Aug 21). Heat map of finfish farming & fish hatcheries, shellfish farming, other aquaculture [query of private database].

⁴ National Oceanic and Atmospheric Administration. (n.d.). Aquaculture in the United States. Retrieved from http://www.nmfs.noaa.gov/aquaculture/aquaculture_in_us.html

⁵ United States Department of Labor, Bureau of Labor Statistics. (2014). Occupational employment and wages, May 2013. Retrieved from <http://www.bls.gov/oes/current/oes452093.htm>

⁶ United States Department of Labor. (2014). OFLC performance data [Data analysis by the National Center for Farmworker Health of FY 2013 H-2A disclosure data. Retrieved from <http://www.foreignlaborcert.doleta.gov/performance/cfm>

⁷ Liebman, A.K., Wiggins, M.F., Frser, C., Levin, J., Sidebottom, J., & Arcury, T. (2013). Occupational health policy and immigrant workers in the agriculture, forestry, and fishing sector. *American Journal of Industrial Medicine*, 56(8):975-84. Doi: 10.1002/ajim.22190

⁸ Quandt, S., Kucera, K., Haynes, C., Klein, B., Langley, R., Agnew, M., Levin, J., Howard, T., & Nussbaum, M. (2013). Occupational health outcomes for workers in the agriculture, forestry, and fishing sector: Implications for immigrant workers in the southeastern US. *American Journal of Industrial Medicine*, 56:940-959. DOI: 10.1002/ajim.22170

⁹ Moreau, D., & Neis, B. (2009). Occupational health and safety hazards in the Atlantic Canadian aquaculture: Laying the groundwork for prevention. *Marine Policy*, 33: 401-411. DOI: 10.1016/j.marpol.2008.09.001

¹⁰ Quandt, S., Kucera, K., Haynes, C., Klein, B., Langley, R., Agnew, M., Levin, J., Howard, T., & Nussbaum, M. (2013). Occupational health outcomes for workers in the agriculture, forestry, and fishing sector: Implications for immigrant workers in the southeastern US. *American Journal of Industrial Medicine*, 56:940-959. DOI: 10.1002/ajim.22170

¹¹ Moreau, D., & Neis, B. (2009). Occupational health and safety hazards in the Atlantic Canadian aquaculture: Laying the groundwork for prevention. *Marine Policy*, 33: 401-411. DOI: 10.1016/j.marpol.2008.09.001

¹² United States Department of Labor, Bureau of Labor Statistics. (2014). Number and rate of fatal occupational injuries, by industry sector, 2012. Retrieved from <http://www.bls.gov/iif/oshwc/cfoi/cfch0011.pdf>

¹³ Myers, M., & Durborow, R. (n.d.). Aquacultural safety and health. Retrieved from http://cdn.intechopen.com/pdfs/35150/InTech-Aquacultural_safety_and_health.pdf

¹⁴ Ibid

¹⁵ Ibid

¹⁶ Moreau, D., & Neis, B. (2009). Occupational health and safety hazards in the Atlantic Canadian aquaculture: Laying the groundwork for prevention. *Marine Policy*, 33: 401-411. DOI: 10.1016/j.marpol.2008.09.001

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