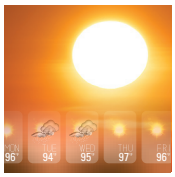
CLIMATE CHANGE: A WORKPLACE HAZARD

Climate change is changing the way we live – and the way we work. With greater temperature and precipitation extremes, more severe storms, and changing weather patterns, we are encountering new challenges – and more serious hazards – in the workplace. The BlueGreen Alliance, along with its partners and allies, is developing this card series to educate and to call for action to protect our lives, our livelihoods and the environment we share.



CLIMATE CHANGE: MORE HOT DAYS, WEEKS AND MONTHS

Sicker Patients

Across the United States, summers are getting hotter. According to the National Climatic Data Center, 2011 and 2012 included the hottest months on record. Heat waves are the largest source of weather-related deaths in the United States, and the extreme and prolonged heat makes the symptoms of cardiovascular and respiratory disease and diabetes worse, especially in the elderly and very young.

More hot days also mean more ground-level ozone. Ozone makes the symptoms of asthma and other respiratory diseases worse by inflaming airways and damaging lung tissue. If levels of air pollutants remain at today's levels until 2050, warming from climate change alone could increase the number of Red Ozone Alert Days by 68 percent in the 50 largest US cities.[1]

HEALTH CARE WORKERS

An Ever-More Demanding Job

Firefighters and other emergency responders are facing longer hours and more days of taxing work with fewer financial resources. In parts of the United States where milder temperatures during cold seasons are being followed by drier weather during hot seasons, massive fires are becoming more and more likely.

According to the National Climatic Data Center, 2012 was the warmest year on record for the contiguous U.S.[2] In that year, the total number of burn acres in the US topped 9 million for only the third time in history.[3] Nearly 40 percent of the Forest Service budget was dedicated to fire related activities, nearly four times what it was in 1991.[4] Add to that the fact that the wildfire season in this country now lasts over two months longer and burns up twice as much land as it did 40 years ago.[5] And it's only predicted to get worse: The National Research Council predicted that for every degree Celsius in temperature rise, burn area in the US could quadruple.[6]

FIREFIGHTERS

1 USGCRP (2009). Global Climate Change Impacts in the United States . Karl, T.R., J.M. Melillo, and T.C. Peterson (eds.). United States Global Change Research Program. Cambridge University Press, New York, NY, USA.

2 US NOAA, "NCDC Announces Warmest Year on Record for Contiguous U.S." http://www.ncdc.noaa.gov/news/ncdc-announces-warmest-year-record-contiguous-us.

3 National Interagency Coordination Center. "Wildland Fire Summary and Statics Annual Report," 2012.

4 US Forest Service. 2013. *Forest Service Chief testifies on wildfire response capabilities, challenges.* [press release] June 4, 2013.

5 Climate Central. "The Age of Western Wildfires." September 2012.

6 Climate Central. "The Age of Western Wildfires." September 2012.

Sicker Students

In the U.S., 7.1 million children under the age of 18 suffer from asthma. This translates to approximately 14 million school days missed per year.[7] As climate change brings warmer temperatures and more ground-level ozone, this situation will only worsen. Such pollution can damage lung tissue and can reduce lung function and inflame airways. And warmer temperatures also bring longer and more severe allergy seasons. Academic performance decreases with illnesses or absences from school, and when teachers get sick, student performance is also impacted.[8]

TEACHERS

A Riskier Business

Climate change means bigger, hotter, more explosive and more unpredictable fires. In June 2013, the nation was rocked with the death of 19 firefighters near Prescott, Arizona, as a raging blaze took an unpredicted turn.

Additionally, the increased heat puts more stress on firefighters, who are already operating under intense conditions. Warmer days usually bring warmer nights, which deprive firefighters of needed reprieves as well as crucial advantages: cooler nighttime temperatures often allow firefighters to catch a fire in a less active state and give them a greater opportunity to suppress the blaze.

FIREFIGHTERS

CLIMATE CHANGE: WETTER WEATHER EXTREMES

More Diseases

Dengue fever, malaria, Lyme disease, West Nile virus. The geographic area of the ticks and mosquitoes that carry these diseases has grown dramatically as our weather gets wetter and warmer. For example, the first known case of West Nile virus caused by a mosquito bite in the United States was in New York in 1999. By 2012, it had spread to more than a dozen states, infecting more than 4,500 people and causing 183 deaths within a nine month period.[9] The increased incidence of gastroenteritis and food poisoning from salmonella is also tied to warmer, wetter weather that promotes the spread of pathogens transmitted through food, water, insects and animals.

HEALTH CARE WORKERS

7 Asthma's Impact on Children and Adolescents. Atlanta: National Center for Environmental Health, Centers for Disease Control and Prevention. 8 June 2005.

8 US EPA. "IAQ Tools for Schools: Improved Academic Performance." http://www.epa.gov/iaq/schools/student_performance/evidence.htmlhttp://www.epa.gov/iaq/schools/student_performance/evidence.html

9 US CDC, "West Nile Virus," http://www.cdc.gov/ncidod/dvbid/westnile/index.htm.

Worse Public Health

HEALTH CARE WORKERS

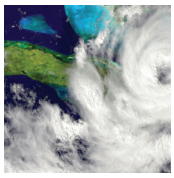
Over the last century, the average precipitation has increased by 6.4 percent in the continental US.[10] For the nearly 800 US towns and cities that have combined sewer systems, this can spell a public health disaster. These systems carry both storm water and sewage in the same pipes, so an overload of the system often results in raw sewage spilling into lakes and waterways that supply drinking water, increasing the risk of water-borne illnesses. For a city like Chicago, it's been estimated that the frequency of such spills could increase by 50 percent to 120 percent during this century.

More Damage to Out-of-Date School Buildings

TEACHERS

As outdoor conditions tilt towards unhealthy extremes due to climate change, the poor state of our schools will only be amplified and aggravated, putting a strain on our children's ability to learn and teachers' ability to teach.

Poor ventilation and indoor air quality, moisture, and extreme temperatures are causing suffering for students, teachers and staff in our nation's public schools. The American Society of Civil Engineers estimated that we need to invest at least $270 billion in school facilities across the country to get them into proper working order. Double that to modernize them over the next decade and ensure they meet today's education, safety and health standards. Schools without major maintenance backlogs have a higher average daily attendance and a lower annual dropout rate.[11]



CLIMATE CHANGE: MORE POWERFUL STORMS

An Assault on Education

TEACHERS

Extreme weather wreaks havoc on schools and learning processes. In 2012, Superstorm Sandy forced the closure of all 1,750 New York City public schools for an entire week, some longer. The majority of schools were eventually able to reopen, but in the meantime, students, teachers and staff had to contend with relocation, overcrowding, long commutes, and the emotional and physical impacts of a community devastated by severe weather. As the devastation passes, teachers and staff face intense pressure to make up for lost time.

Greater Dangers on the Job

HEALTH CARE WORKERS

When Hurricane Katrina slammed into New Orleans in 2005, the failure of the levees forced the evacuation of more than 20 hospitals. Seven years later, almost 1,000 patients had to be evacuated from New York University Langone and Bellevue Hospitals when Hurricane Sandy pushed a tidal surge of water into lower Manhattan. Lower floors and elevator shafts in these hospitals filled with 10 to 12 feet of water that knocked out the backup generators and fuel pumps. In the middle of a hurricane, health care workers were forced to carry critically ill patients and premature infants down darkened corridors and stairwells and into ambulances for transport to hospitals on higher ground.[12]

Collect the whole series, share them, and tell us at ***climate@bluegreenalliance.org*** *how climate change is impacting your job.*

---

10 US EPA, "Climate Change Indicators in the United States," http://www.epa.gov/climatechange/science/indicators/weather-climate/precipitation.html.

11 Branham, D. 2004. "The wise man builds his house upon the rock: The effects of inadequate school building infrastructure on student attendance." *Social Science Quarterly* (85) 5.

12 J. David Goodman and Colin Moynihan, "Patients Evacuated from City Medical Center after Power Failure," *New York Times*, October 30, 2012.