

## CLIMATE CHANGE & THE SAFETY PROFESSION

By Scott Gunderson

Climate change represents one of the most significant emerging issues of this century. Forecasts include rising temperatures, increasing frequency and severity of extreme weather events such as storms, and serious effects on public health (Allen et al., 2018; USGCRP, 2018).

Climate change is also predicted to bring significant impacts to the economy: industries such as forestry, agriculture, commercial fishing and winter outdoor recreation will be threatened in many geographic areas; infrastructure from facility air conditioning to coastal sea level protections will need to be installed; recovery and insurance expenses will rise with continued response to disasters such as floods and wildfires (Jenkins, 2019; NOAA, 2021).

Climate change is a complex subject with serious and widespread effects. It is also a dynamic subject, with rapid developments in scientific understanding, public opinion, public policy and technology. All of this makes a comprehensive review in this space challenging. However, there is strong evidence that safety professionals will have to respond to the impacts and hazards of climate change for their employers, employees and clients.

### The Scope of the Safety Profession

The safety profession is not yet explicitly connected to the management of climate change issues. The scope of the safety profession primarily includes occupational injury and illness prevention, often with additional responsibilities such as property loss prevention. At many locations, safety professionals also have responsibilities for environmental compliance such as hazardous waste disposal, wastewater permits and other reporting to environmental regulatory agencies. At some locations, safety pro-

professionals are moving beyond regulatory compliance and working toward risk management approaches, environmental management systems and sustainability.

Both ASSP (n.d.) and BCSP (n.d.) describe the scope of professional safety practice in similar terms, emphasizing occupational injury and illness prevention, property loss prevention, environmental protection and sustainable business practices. But while both organizations include sustainability and the environment in their descriptions, neither organization specifically identifies climate change. This is reflected in the examination blueprint for the Certified Safety Professional (CSP) credential; the section on emergency preparedness includes response planning for natural disasters, and the section on environmental protection includes sustainability principles, but no section of the examination blueprint describes climate change as an emerging issue for testing to earn the CSP (BCSP, 2019).

Despite this absence of climate change in these descriptions of professional practice and professional certification, climate change is surfacing as a subject for continuing education and professional development, with appearances at presentations and courses in several regional OSH conferences (Franz et al., 2020; Haggerty et al., 2019). However, at the time of this writing, the topic of climate change does not appear to be included in the agenda of any national safety conference.

Some debate has occurred in the safety profession about the number of certifications and the potential for reduced prestige because too many certifications compete for attention. Those outside the safety profession such as recruiters in human resources may not know the relative value of one certification over another (Hill, 2002). That said, at this time professionals working on climate change issues have one option for certification on this subject: the Certified Climate Change Professional (CC-P) credential (ACCO, 2021).

### Heat & Extreme Weather

Heat stress is a recognized occupational hazard, with increasing attention within the safety profession on prevention and response (Garvey, 2017; McKinnon & Utley, 2005; Tymvios et al., 2019). With increasing heat and humidity, strategies such as hydration, shade and the growing availability of cooling clothes become more critical (Raymond et al., 2020). But despite recognition of this hazard, currently there are no uniform regulations on heat stress prevention, nor national rules, and a range of guidelines exist in various states (CDIR, n.d.-a; Oregon OSHA, n.d.; OSHA, n.d.).

Beyond heat and drought, extreme weather will lead to natural disasters such as hurricanes and floods, and outbreaks of communicable diseases (Thomas, 2020). Safety professionals will have to respond to these natural disasters in their roles supporting emergency management and business continuity programs. As extreme weather increases the frequency and severity of natural disasters, safety professionals likely will have to respond in cooperation with neighbors because the scale of these disasters will touch entire communities and not be limited to practiced scenarios such as hazardous materials spills, medical emergencies and evacuations of a single facility (Huff, 2020).

### Wildfires & Air Quality

Increased risk of wildfires will draw safety professionals into a review of at least two issues: property loss prevention and outdoor air quality. The wildfires that devastated communities from Australia to California claimed homes and businesses. Fire loss prevention has traditionally been about hazards and controls within the facility, such as designated spaces for welding and other hot work, and fire detection and suppression systems inside the building. But with wildfires, the source of the fire is outside the facility, and hazards such as dry veg-

### Vantage Point

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etation will extend the zone for review of prevention and control of fires.

Safety professionals have traditionally been involved in the management of industrial hygiene issues, from ventilation to respiratory protection. This typically involves attention to hazards directly related to the process such as painting. Wildfire smoke has caused hazardous outdoor air quality from sources far from the process and beyond the control of the organization. As with heat stress, there are currently no uniform regulations on exposure to wildfire smoke, but guidelines are established and rules are emerging in several jurisdictions (CDIR, n.d.-b; Washington State Department of Labor and Industries, n.d.). Whether safety professionals work in an area with or without wildfire smoke regulations, they may experience times when employees in industries such as agriculture and construction must work outdoors during conditions with hazardous air quality.

### Capital Projects & Infrastructure

Safety professionals often work with stakeholders such as engineers and contractors to review equipment and facilities projects, and climate change will bring much work in this space. This will involve increased cooling systems for building areas and processes, asset hardening for resilience against extreme weather and rising water levels, and even relocation in response to changing environmental conditions (ASCE, n.d.; Houston et al., 2018; Ringman, 2013). Much of this work will also involve conservation projects in response to pressure on resources such as water (Weaver & Simmons, 2012).

Additionally, developments in technology and customer expectations will also drive much of this work. Organizations are making changes from fleet operations to energy consumption, with electric vehicles on the road and solar arrays on the roof (Frangoul, 2020; Horovitz, 2019; Shama, 2019). In some cases, these changes are so significant that they alter industries, requiring a partial or complete redesign of processes and manufacturing systems such as converting an assembly line to manufacture electric vehicles (Rogoway, 2019). These and similar projects will require safety professionals to

work with engineers for safe design, contractors for safe construction and installation, and employees for training on safe operation and maintenance.

### Risk & Reputation

In addition to work with engineers and contractors on capital projects, the increasing recognition of climate change as a financial risk may draw safety professionals into more work with their leaders and peers in finance. Awareness of climate change as an issue for risk management and financing is increasing in the insurance industry (Hope & Friedman, 2018). In the author's experience, safety professionals work less often with insurance underwriters and more often with loss prevention representatives, but this work will also include reviews and recommendations on specific areas of coverage for damages from storms, floods and wildfires related to climate change (Berg, 2020).

Finance professionals are navigating new expectations in addition to insurance as climate risk gains traction as an element of business and investment risk (Jergler, 2019). Finance professionals in publicly traded organizations are working in an environment of developing standards where securities risk disclosures to investors must account for the risk of climate change to the business (Jones, 2021; Ramani, 2020). These disclosures are also influencing decisions by individual and institutional investors, who are increasingly considering the environmental, social and corporate governance of organizations as part of their selection criteria for investing (Wursthorn, 2020).

As ASSP (n.d.) notes, organizations are increasingly focusing on reputation management. While safety professionals generally do not write securities risk disclosures, opportunities exist for collaboration with business leaders because this is where sustainability and safety, health and environmental management align

with core business strategies (Camplin, 2011; Hill & Seabrook, 2013; Knott et al., 2014; Taubitz, 2010). The sustainability profession is growing parallel to the safety profession, with larger organizations having director- and even executive-level sustainability leaders. Safety professionals in these larger organizations can partner with colleagues who work exclusively in sustainability. Safety professionals in smaller organizations without leaders or peers in sustainability may have to develop initiatives and programs working with consultants and industry associations or benchmarking with peers in other organizations. At both larger and smaller organizations, safety professionals recognizing climate change and climate risk as an issue for professional attention can improve their safety, health and environmental management systems as well as their own professional capabilities.

### Conclusion

Climate change will bring significant changes to everyone on the planet. Individuals in different areas will experience these changes differently, as risks and uncertainties vary from region to region. Safety professionals will also experience climate change differently depending on their location, industry and organization. However, as climate change continues, safety professionals will find themselves working on issues beyond heat stress. As the climate changes, so will the safety profession, and safety professionals should look ahead to how they can best prepare for and respond to the hazards and developments that are already happening in this warming world. **PSJ**

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