The Time Is Now: Association Resilience and Adaptation and the Anthropocene Climate Disruption

By Shelly Alcorn, Principal Futurist, Michelle Alcorn and Associates, and Elizabeth Weaver Engel, M.A., CAE, Chief Strategist, Spark Consulting

CONTENTS

1 Imagine, If You Will…
3 The Anthropocene
9 Why Do We Fail to Take Action?
13 Setting the Stage for Action
16 Internal Operations
22 Member-Facing Programs, Products, and Services
26 The Professions and Industries Associations Represent
31 We Can – and Must – Act. Now.

CASE STUDIES

33 American Association of Geographers: A Member-Driven Climate Task Force and Annual Meeting "Nodes"
35 ASAE: Getting Started with Sustainability
37 SDG Align & the Strata Community Association: Sustainable Development - The Elephant in the Room
41 Stand.earth: Walking Your Talk on Sustainability

BONUS CONTENT

43 Climate Change Denialism, Politics, and National Security
47 Stories of Positive Change
49 Questions for Reflection
50 Additional Resources

Imagine, If You Will…

"To bend but not break when the winds blow. To grow from the rain. Life persists given even the slightest chance. In the future, natural life on Earth will be quite different than it is now, but it will survive just fine. It's just that humans may not be around to see it."

Dahr Jamail[1]

Imagine, if you will, that you own a home in California in what is considered a rural area, even though you are close to several towns. The house has been in the family for 50 years, and you are retired and living on a fixed income. The plan has always been to leave the home to your children, barring needing to sell it to cover medical needs or alternative living arrangements. It is your only nest egg.

Over the past few years, California has experienced the worst drought in decades. The water level in your well drops lower each year, and the recent atmospheric rivers haven't made a significant difference.[2] You can no longer rely on your well for drinking water and have resorted to purchasing bottled water. At the height of the dry season, your well is now regularly so low that your pipes are being damaged by the small gravel that is inadvertently being sucked in by your pump. Even using water for household chores or gardening is risky, and your well needs increasing amounts of time to recharge between uses.

1. *The End of Ice: Bearing Witness and Finding Meaning in the Path of Climate Disruption,* pg. 155
2. https://www.reuters.com/world/us/why-weeks-rain-california-will-not-end-historic-drought-2023-01-12/

spark consulting llc
explosive growth for associations

Michelle Alcorn and Associates

This work is licensed under the Creative Commons Attribution-Non-Commercial-ShareAlike 4.0 International license. To view a copy of this license, visit https://creativecommons.org/licenses/by-nc-sa/4.0/.

One day, you receive a notice from the County Board of Supervisors stating that, due to the drought, it may start metering the water you are pulling from your own well. If you go over your allotment, it will charge you. Being on a fixed income, this poses a serious problem. Additionally, the county may commandeer the water in your well, while still leaving you fully responsible for the costs of well maintenance and upkeep. The board hasn't done any of this yet, but the threat is there.

As if water shortages weren't enough, California has recently experienced three of the biggest wildfires in its history: the 2015 Butte Fire that burned 70,868 acres,[3] the 2021 Caldor Fire that burned 221,835 acres,[4] and the 2022 Electra Fire that burned 4,470 acres.[5] Your home was under threat from all three.

Adding insult to injury, just last year you received a letter from the small insurer you have used to insure your home for 40 years notifying you that it's pulling out of California and canceling your policy. A panicked hunt ensues, and you do catch one lucky break: Your long-standing auto insurance company reluctantly agrees to replace the coverage.

It turns out that your previous insurer was just an early adopter. A few months later you learn that, due to the increasing frequency and intensity of wildfires, two of the largest insurers in the state, State Farm[6] and Allstate, are joining AIG and no longer issuing new homeowners policies[7] in California, in part because the California Department of Insurance wouldn't approve a rate hike of 28%.[8] You understand the business reality and financial constraints insurers are operating under, but you would struggle to pay a 28% premium increase regardless.

Will you and your family lose all the equity you worked so hard to create? Do you sell your nest egg now, or wait and risk not being able to sell at all if the wells run dry in a place with no city water system? Even if you find an interested buyer, will the sale go through if the homebuyer can't secure home insurance – and, as a result, doesn't qualify for a mortgage? If you opt to stay in the house, do you want to leave your children a property that might become a burden rather than a benefit?

This isn't a *future* climate change scenario. This is happening to people Shelly knows *right now* in numerous communities in California.

We are not here to argue with people who are in denial about climate change, or to try to change their minds. If that's you, you can probably stop reading right now, although we'd like to leave you with a gentle reminder that science doesn't care about your feelings or political beliefs.

The vast majority of us, however, recognize the problem and want to do something about the climate crisis (or as journalist and author Dahr Jamail describes it in his book *The End of Ice,* "Anthropocene climate disruption"). But we're overwhelmed by the scale of the problem and don't know what to do or where to start.

So the question becomes: What can associations contribute to address this "wicked problem"? That is what this paper will address.

After laying out the scope of the problem and how we got here, we'll address some of the reasons humans fail to take action. We'll then detail some of the ways climate change is going to affect associations in particular and offer specific remedies and actions association executives and boards of directors can take, now and in the near future, to help humanity move together into a better future for our businesses, for our communities, and for ourselves.

3. https://www.fire.ca.gov/incidents/2015/9/9/butte-fire/
4. https://www.fire.ca.gov/incidents/2021/8/14/caldor-fire
5. https://www.fire.ca.gov/incidents/2022/7/4/electra-fire
6. https://calmatters.org/housing/2023/05/state-farm-california-insurance/
7. https://www.cbsnews.com/news/allstate-insurance-state-farm-california/
8. https://sfstandard.com/business/state-farm-asks-california-for-huge-insurance-rate-hike-as-home-coverage-halts/

This work is licensed under the Creative Commons Attribution-Non-Commercial-ShareAlike 4.0 International license. To view a copy of this license, visit https://creativecommons.org/licenses/by-nc-sa/4.0/.

The Anthropocene

"But the Anthropocene isn't a novel phenomenon of the last few centuries. Already tens of thousands of years ago, when our Stone Age ancestors spread from East Africa to the four corners of the earth, they changed the flora and fauna of every continent and island on which they settled. They drove to extinction all the other human species of the world, 90 percent of the large animals of Australia, 75 percent of the large mammals of America and about 50 per cent of all the large land mammals of the planet – and all before they planted the first wheat field, shaped the first metal tool, wrote the first text or struck the first coin."

Yuval Noah Harari[9]

Welcome to the newest geologic age in the history of our one and only planet Earth: The Anthropocene.

Geologists termed our planet's most recent epoch the Holocene, which began at the end of the last glacial age around 10,000 years ago. That era was characterized by a steady climate state that could support agriculture at scale, which led to the rise of modern civilization beginning around 4000 BCE in Mesopotamia.[10]

Although not officially recognized (yet) as a new geological era by the International Union of Geological Sciences, our current period is increasingly being referred to as the Anthropocene. Earth scientists have proposed this new term because of the measurable negative impact humans have had on the atmospheric, geologic, hydrologic, and other earth system processes in our biosphere. The root, *anthropo,* means *human* and *-cene,* is the standard suffix for *epoch* in geologic time. Some posit the Anthropocene began with the Industrial Revolution of the late 18th and early 19th centuries, while others believe it officially began in the 1950s, as we entered the Atomic Age.

Climate Change by the Numbers

"It's already worse than what I imagined. I feel like the heat dome event in the Pacific Northwest moved up my sense of where we are at by about a decade, or even more. I think a lot of my colleagues probably feel the same."

Peter Kalmus, NASA Jet Propulsion Laboratory[11]

Many of us will remember 2020 as the year of the global coronavirus pandemic. But for climate scientists, 2020 stands out as the year they began seeing extreme weather events arrive about 50 years ahead of predictions, sending them scrambling back to their models and declaring that we are now officially in a climate emergency.

A sampling of startling recent climate change facts:

1. July 3, 2023, was the hottest day ever recorded on Earth.[12] Then July 4, 2023, was even hotter.[13]
2. According to NASA, the five warmest years on record have all occurred since 2015.[14]

9. *Homo Deus: A History of Tomorrow,* pg. 73
10. https://www.anthropocene.info/
11. https://slate.com/news-and-politics/2021/07/scientists-fast-climate-change-summer.html
12. https://www.reuters.com/world/world-registers-hottest-day-ever-recorded-july-3-2023-07-04/
13. https://apnews.com/article/global-record-breaking-heat-july-27069b5380117534d78f1f40a6edc7a0
14. https://climate.nasa.gov/vital-signs/global-temperature/

This work is licensed under the Creative Commons Attribution-Non-Commercial-ShareAlike 4.0 International license. To view a copy of this license, visit https://creativecommons.org/licenses/by-nc-sa/4.0/.

3. Washington, DC, already recorded its hottest year on record by April 2023.[15]

4. All this happened right after record cold swept much of the United States over the 2022 Christmas weekend due, in part, to an increasingly erratic jet stream.[16]

5. Many countries in Europe observed the warmest January day on record in the first week of 2023.[17]

6. 2023 is also proving to be a difficult year in Canada, where as of June 3,000 fires have burned almost 19.7 million acres[18] and put 120 million U.S. residents under "unhealthy" to "hazardous" air quality index alerts.[19]

7. During the June 2021 Pacific Northwest heat dome, the ambient temperature was 30˚F higher than the mean of the hottest months in the previous decade. The heat dome was responsible for 250 deaths in the United States and 400 in Canada.[20]

8. As we are in process of completing this monograph in June of 2023, Texas is suffering under a heat dome that has already caused at least 20 deaths and "thousands" of emergency room visits due to heat-related illness.[21]

9. Heat domes also bring more extreme storms, like the ones in the Midwest that recently snarled air travel across the United States, with more than 3,000 flights canceled during the week of June 26, 2023, alone.[22]

10. "Sunny day flooding" has increased more than 300% in Miami since 1996.[23]

It's very likely we're in the midst of the sixth mass extinction, the Holocene extinction, directly caused by our actions and inactions.[24] (As a reminder, the previous five mass extinctions each killed between 75% and 95% of all living creatures on Earth at the time they occurred.[25] The planet will be fine – humans may not be.)

This may make it sound like climate change is a relatively new scientific observation. It's not. Warnings have been being sounded since the late 19th century, predicting the effects we are seeing today.

In 1856, a female scientist named Eunice Foote first documented the underlying science of climate change. Foote authored a paper that described the ability of carbon dioxide to retain enormous amounts of heat, and calculated the impact increasing concentrations of carbon dioxide could have on Earth's atmosphere.[26]

15. https://www.washingtonpost.com/weather/2023/04/17/record-warm-start-year-dc-maryland-virginia/
16. https://www.popsci.com/environment/bomb-cyclone-2022/
17. https://www.wfp.org/stories/climate-action-whats-new-and-whats-next-2023
18. https://www.nbcnews.com/news/us-news/live-blog/poor-air-quality-live-updates-rcna91545
19. https://www.cnn.com/us/live-news/canada-wildfire-smoke-air-quality-06-28-23/index.html
20. https://www.climatehubs.usda.gov/hubs/northwest/topic/2021-northwest-heat-dome-causes-impacts-and-future-outlook
21. https://www.texastribune.org/2023/06/30/texas-heat-wave-deaths-illness/
22. https://www.washingtonpost.com/transportation/2023/06/28/united-delays-cancellations-new-york-weather/
23. https://www.washingtonpost.com/weather/2019/08/08/analysis-sea-level-rise-is-combining-with-other-factors-regularly-flood-miami/
24. https://www.science.org/content/article/are-we-middle-sixth-mass-extinction
25. https://www.nhm.ac.uk/discover/what-is-mass-extinction-and-are-we-facing-a-sixth-one.html
26. https://theconversation.com/scientists-understood-physics-of-climate-change-in-the-1800s-thanks-to-a-woman-named-eunice-foote-164687

This work is licensed under the Creative Commons Attribution-Non-Commercial-ShareAlike 4.0 International license. To view a copy of this license, visit https://creativecommons.org/licenses/by-nc-sa/4.0/.

In 1896, Svante Arrhenius, a Swedish scientist and Nobel laureate, calculated that "the temperature in the Arctic regions would rise 8 or 9 degrees Celsius if carbon dioxide increased to 2.5 or 3 times." In his day, atmospheric carbon dioxide was hovering around 300 parts per million. As of June 8, 2023, we hit 424.26 parts per million, an increase of more than 40%. The Arctic has already warmed by about 3.8°C (6.8°F) and is warming more than three times faster than the rest of the world.[27]

In 1985, Dr. Carl Sagan, Professor of Astronomy at Cornell University, testified about the risks of climate change to the Senate Environment and Public Works Subcommittee on Hazardous Wastes and Toxic Substances Committee.[28] As part of his academic work, Dr. Sagan was studying the planet Venus, using data collected by NASA's Pioneer space mission. Dr. Sagan posited that Venus once had conditions somewhat like Earth, including an ocean. However, rising temperatures evaporated the ocean, hydrogen escaped into space, and the remaining carbon dioxide in the atmosphere heated the planet enormously, which came to be known as "the runaway greenhouse effect."[29] Senator Al Gore was in attendance that day, and subsequently created the presentation that led to the release of the documentary *An Inconvenient Truth* in 2006.

In 1988, Dr. James Hansen, Director of NASA's Institute for Space Studies, testified before the Senate Energy and Natural Resources Committee that, with a 99% degree of certainty, global temperature increases were a result of human industrial activity, not natural variations, and that current observed climate patterns were consistent with Sagan's greenhouse effect.[30]

The Uninhabitable Earth

> "It is worse, much worse, than you think. The slowness of climate change is a fairy tale, perhaps as pernicious as the one that says it isn't happening at all, and comes to us bundled with several others in an anthology of comforting delusions: that global warming is an Arctic saga, unfolding remotely; that it is strictly a matter of sea level and coastlines, not an enveloping crisis sparing no place and leaving no life undeformed; that it is a crisis of the 'natural' world, not the human one."
>
> *David Wallace Wells*[31]

Media discussions of climate change often highlight stories and consequences that may feel remote to us. As we'll discuss in the next section, this tendency to use rhetorical mechanisms to distance ourselves from the actual dangers of climate change is a natural function of the human mind. However, in practical terms, what that means is that these types of stories don't feel like actual emergencies. We tell ourselves there is plenty of time to respond to or ameliorate the effects of climate change.

That could not be further from the truth.

We'd like to share a few short descriptions of climate change impacts that are less frequently discussed but are impacting human habitat and health *now,* demonstrating that the worst predicted effects of climate change are *already here* and are accelerating.

27. https://www.pbs.org/newshour/politics/the-arctic-is-warming-nearly-four-times-faster-than-the-rest-of-the-world#
28. https://www.nytimes.com/1985/12/11/us/action-is-urged-to-avert-global-climate-shift.html
29. https://climate.nasa.gov/news/2475/nasa-climate-modeling-suggests-venus-may-have-been-habitable/#
30. https://www.nytimes.com/1988/06/24/us/global-warming-has-begun-expert-tells-senate.html
31. *The Uninhabitable Earth: Life After Warming,* pg. 3

This work is licensed under the Creative Commons Attribution-Non-Commercial-ShareAlike 4.0 International license. To view a copy of this license, visit https://creativecommons.org/licenses/by-nc-sa/4.0/.

Sea Level Rise

Sea level rise is already affecting many coastal areas of the United States (New York City,[32] Miami and other coastal cities in Florida,[33] North Carolina[34]) in unexpected ways, leaving home and business owners at a decision point much like the one Californians face due to wildfires: How long do we wait to sell before we risk losing the value in our homes or commercial real estate?

Additionally, as the oceans rise, salt water contaminates the water in the underground aquifers we use for drinking and agriculture,[35] causes septic systems to fail and sewage to be released near homes and businesses,[36] increases storm surge and flooding,[37] and damages ecosystems for marine and wildlife habitats long before it reaches the first doorstep.

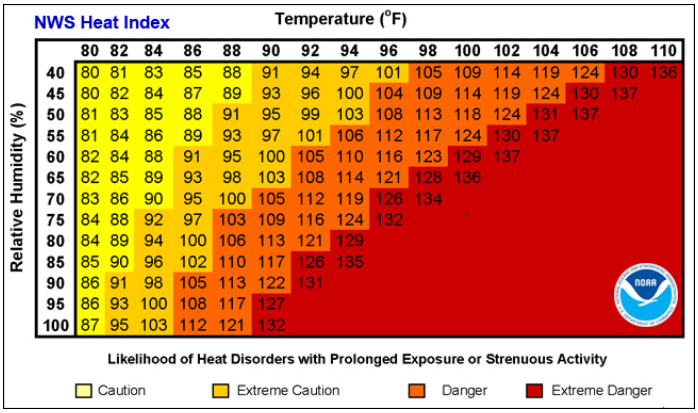
Furthermore, when you realize the houses and commercial properties endangered by sea level rise may have to be abandoned rather than sold (even at a loss), the anticipated financial toll increases dramatically.

Heat Death

The human body cools itself by sweating and respiration. If the surrounding air is dry, it absorbs our sweat. However, when high temperatures are combined with high humidity, a measurement known as "wet-bulb temperature," it is harder for the body's natural cooling processes to work.

"Wet-bulb temperature is the lowest temperature to which an object can cool down when moisture evaporates from it," according to a 2022 NASA report. "The lower the wet-bulb temperature, the easier it is for us to cool down. It measures how well our bodies cool down by sweating when it's hot and humid, and tells us if conditions may be harmful to our health, or even deadly."[38]

According to Colin Raymond of NASA's Jet Propulsion Laboratory in Southern California, the lead author of a 2020 study on extreme heat and humidity, "if humidity is low, extreme temperatures are tolerable. If you're sitting in the shade with unlimited drinking water in California's Death Valley, conditions may not be pleasant, but they're survivable. But in humid regions, once you approach wet-bulb temperatures of 34-to-36 degrees Celsius (93-to-97 degrees Fahrenheit), it doesn't matter what you're doing. You can't survive for extended periods of time."[39]



32. *NYC Mayor's Office of Climate and Environmental Justice: Climate Resiliency Design Guidelines,* pg. 26
33. https://www.miamidade.gov/global/economy/resilience/sea-level-rise-flooding.page
34. https://www.washingtonpost.com/climate-environment/interactive/2023/obx-rodanthe-erosion-rising-sea-levels/
35. https://grist.org/article/what-it-means-groundwater-is-rising/
36. https://weather.com/science/environment/news/2019-09-30-florida-septic-tanks-threatened-by-sea-level-rise
37. https://www.climatesignals.org/climate-signals/storm-surge-increase
38. https://climate.nasa.gov/explore/ask-nasa-climate/3151/too-hot-to-handle-how-climate-change-may-make-some-places-too-hot-to-live/
39. https://climate.nasa.gov/explore/ask-nasa-climate/3151/too-hot-to-handle-how-climate-change-may-make-some-places-too-hot-to-live/

This work is licensed under the Creative Commons Attribution-Non-Commercial-ShareAlike 4.0 International license. To view a copy of this license, visit https://creativecommons.org/licenses/by-nc-sa/4.0/.

Since 2005, there has been a rapid increase in the number of days that pass that wet-bulb temperature limit worldwide. As the global average temperature rises, there is more water vapor in the air due to evaporation and that, in turn, results in increased humidity. Ironically, increasing humidity itself increases global temperatures in the same way carbon dioxide and other greenhouse gasses do.[40]

Temperature rise is also uneven. When we hear that temperatures have risen 1.2˚C as a global average, that doesn't sound like much. However, the effects are compounded over land. As already mentioned, the "arctic amplification" effect is causing the Arctic region to warm more than three times faster than the rest of the planet, which created the first 100˚F day ever recorded in Siberia in 2020.[41] Meanwhile, the "urban heat island" effect means temperatures in cities can be up to 20˚F hotter than in surrounding nonurban areas.[42]

Food Insecurity

Global agriculture is also being affected by Anthropocene climate disruption. We tend to focus on agricultural innovations that increase crop yields year over year, but this is misleading. While it is true that scientific advancements have produced grain varieties that are more heat tolerant, a recent study pointed out that climate change has caused total global agricultural productivity to decline by an average of 21% since 1961. This has erased about seven years of technology-driven productivity gains. [43]

In the spring of 2022, India suffered extensive heatwaves, which reduced their wheat crop yield by 6%, with another 20% of the harvest being suboptimal. This forced India to suspend all wheat exports in May of 2022.[44] In the summer of 2022, massive rainfall-induced flooding damaged four million acres of farmland in Pakistan, or about 50% of its breadbasket.[45] The United States did not emerge unscathed from these climate disasters. Also in 2022, Florida lost 32% of its citrus harvest to Hurricane Ian, California's rice crop was cut by 50% due to drought, and Kansas's winter wheat harvest saw a 25% reduction due to flooding.[46]

Currently, 72% of global production of four staple crops – wheat, rice, soy, and corn – occurs in five countries, of which the United States is one. According to a recent study, globally we will face a 4.5 times higher risk of crop failure (defined as a 10% or more reduction in yield) by 2030, with crop failures predicted in at least one of the multi-breadbasket countries of the United States, China, and India every five years.[47]

Water Scarcity

With all the water we see around us, we might assume there's plenty for everyone. However, only 2.5% of the water on earth is freshwater fit for human consumption and sustaining life on land. Most of that is locked up in glaciers or underground, with only 1.2% of it available as the surface water that we depend upon to live.[48]

40. https://www.nrel.gov/news/press/2022/nrel-shows-impact-of-controlling-humidity-on-greenhouse-gas-emissions.html
41. https://www.climatesignals.org/climate-signals/arctic-amplification#more
42. https://phys.org/news/2022-07-urban-islands-degrees-hotter-city.html
43. https://www.nature.com/articles/s41558-021-01000-1
44. https://www.deccanherald.com/opinion/in-perspective/a-harsh-summer-and-a-looming-indian-wheat-crisis-1117143.html
45. https://www.theguardian.com/world/2022/oct/12/pakistan-floods-impact-years-crops-farms
46. https://www.theguardian.com/environment/2022/nov/01/climate-crisis-us-food-system-five-crops
47. https://iopscience.iop.org/article/10.1088/1748-9326/ac22c1/meta
48. https://www.usgs.gov/special-topics/water-science-school/science/where-earths-water#

This work is licensed under the Creative Commons Attribution-Non-Commercial-ShareAlike 4.0 International license. To view a copy of this license, visit https://creativecommons.org/licenses/by-nc-sa/4.0/.

According to the *United Nations World Water Development Report 2023,* currently 26% of our global population (two billion people) does not have access to safe drinking water, and 46% (3.6 billion people) lacks access to safely managed sanitation.[49] As climate change induced water stressors increase, these numbers will as well. Per the Global Commission on the Economics of Water: "We now face the prospect of a 40% shortfall in freshwater supply by 2030, with severe shortages in water-constrained regions."[50]

In the United States, we are increasingly seeing the effects of climate change affecting water supply and quality, whether that be the historic droughts in the southwestern United States,[51] flooding and contamination of local water sources (in Houston due to Hurricane Harvey,[52] or, more recently, heavy rainfall in Fort Lauderdale, FL[53]) or the multiple atmospheric rivers that pummeled California in the winter and spring of 2022-23.[54]

49. https://unesdoc.unesco.org/ark:/48223/pf0000384657
50. *Turning the Tide: A Call to Collective Action,* pg. 10
51. https://yaleclimateconnections.org/2023/04/science-tackles-the-wests-megadrought/
52. https://www.hcfcd.org/About/Harris-Countys-Flooding-History/Hurricane-Harvey
53. https://wusfnews.wusf.usf.edu/weather/2023-04-13/floods-fort-lauderdale-airport-closed-forecast-more-rain
54. https://www.cnn.com/2023/03/21/us/california-weather-atmospheric-river-drought-climate/index.html

This work is licensed under the Creative Commons Attribution-Non-Commercial-ShareAlike 4.0 International license. To view a copy of this license, visit https://creativecommons.org/licenses/by-nc-sa/4.0/.

Why Do We Fail to Take Action?

"Climate change - the real climate change based on scientific facts - lacks any readily identifiable external enemy or motive, and has dispersed responsibility and diffuse impacts. Issues of this kind are notoriously hard to motivate and mobilize people around."

George Marshall[55]

The science is clear. So what is causing the disconnect between the scientific analysis of the situation and the continued failure on the part of businesses, associations, communities, and policy makers to actively engage in solution-building for a crisis that collectively affects us all?

Deficiencies in Our Understanding of Risk

According to the Future of Life Institute,

> "An existential risk is any risk that has the potential to eliminate all of humanity or, at the very least, kill large swaths of the global population, leaving the survivors without sufficient means to rebuild society to current standards of living."[56]

Fortunately, the list of existential risks is not long, but climate change joins nuclear conflict, bioengineered pandemic, and artificial intelligence that becomes misaligned with human values on it.

In his book *The Precipice: Existential Risk and the Future of Humanity,* Tony Ord explains some of the reasons humans fail to respond adequately to existential risks. He finds answers in the history of existential risk, and in economics, politics, and psychology.

Civilizations have risen and fallen throughout human history, and Earth has experienced catastrophes such as asteroid strikes in the distant past. But the odds of something like that happening on any time scale that's meaningful to a given human has historically been next to nil. For instance, so far, no world leader has launched a global thermonuclear war, which lulls us into complacency, believing no one ever will.

Additionally, economic incentives are built to favor short-term gain rather than long-term perspective, and thus consistently undervalue actions that would mitigate the worst effects of climate change. Politicians focus on their next election cycle, which disincentivizes making unpopular decisions that would prevent a longer-term catastrophe but might hurt their immediate chances for re-election.[57]

Behavioral psychology has also identified certain shortcuts humans use to help us make decisions in a complex world, two of which we discuss in detail below: the availability heuristic and scope neglect. In addition, humans have a tendency towards acute compassion, meaning we have an easier time feeling compassion for living beings we can see are in immediate peril. Effectively responding to climate change requires us to develop an expansive and imaginative compassion that embraces the humanity of people we don't know facing dangers we can't completely see right at this moment.

In short, we prioritize what's immediately in front of us over what may – or even is likely to – happen in the future.

Humans have also internalized the notion of *agency,* believing that we can save ourselves from any potential catastrophe simply by thinking our way out of it.

55. *Don't Even Think About It: Why Our Brains are Wired to Ignore Climate Change,* pg. 39
56. https://futureoflife.org/existential-risk/existential-risk/
57. https://ideas.repec.org/p/ctc/serie6/itemq0748.html

This work is licensed under the Creative Commons Attribution-Non-Commercial-ShareAlike 4.0 International license. To view a copy of this license, visit https://creativecommons.org/licenses/by-nc-sa/4.0/.

Climate change, however, is a fundamentally different type of risk because we are destabilizing a system we cannot control. Once the planet reaches any one of nine identified tipping points, the planet itself will begin releasing massive amounts of carbon into the atmosphere, joining the carbon already being emitted by human activity.[58] For example, Arctic permafrost is estimated to contain 1,700 billion metric tons of carbon, 51 times what humans emitted globally in 2019, and it is currently thawing faster than anticipated, beginning to release all that "locked up" carbon into the atmosphere.[59]

Deficiencies in Our Understanding of Change

Our current change management skills and practices are inadequate in an increasingly complex environment.

Change manifests itself as *simple, complicated,* or *complex.*

Think of *simple change* as analogous to painting a room in your house. The instructions are straightforward, the goal is clear, and almost anybody can do it. *Complicated change* is more like building an entire house. A variety of people with specialized expertise and different competencies must communicate and develop a common understanding of the blueprints to see the project to completion. *Complex change* is more like building a city. City planners have to deal with a complex system of residential and commercial spaces, public services such as water and sanitation, public safety and cultural spaces, elected officials and legislative processes, competing constituencies with differing priorities, and on and on. Moreover, in complex change, the different components are interactive, in that a change in one affects the others in often unanticipated ways.

There is also the concept of *linear* versus *exponential* change.

In *linear change,* one thing tends to logically lead to another, and the results are relatively predictable both in terms of timescale and impact. *Exponential change,* change like Anthropocene climate disruption, follows a different and much more complicated pattern.

Imagine that a single bacterium is placed in a beaker full of food, and it has room to double each minute for 60 minutes. At what point will the beaker be full of bacteria with no food left? Most people estimate 30 minutes. The actual answer is 59 minutes. At 58 minutes, the beaker is only 25% full. At 57 minutes, it is 12.5% full. If, at 57 minutes, you told the bacteria that in three minutes they would be out of food and space, they might look around at a beaker they have been in for 57 minutes with 87.5% of the food and space left and accuse you of being out of your mind.

Not only is climate change complex, it is exponential, and, based on scientific observation, we are approaching 59 minutes. It is time for us to get to work.

Neurological Biases

Humans have built-in biases that encourage us to ignore existential risk. Some of these biases include *hyperbolic discounting* (i.e., things happening now seem more urgent than things that are likely to happen in the future) and the *bystander effect* (i.e., we assume someone else is going to deal with this problem).[60] For our purposes, the *availability heuristic* and *scope neglect* are two of the most powerful.

The *availability heuristic* causes humans to judge the probability of something happening by how many recent examples we can think of in which something similar also happened.[61] We have historical and archeological evidence that civilizations do, in fact, collapse. In fact, there are cities and countries collapsing right now due to human-caused events such as war and our continuing degradation of the environment. However, because we have never collectively experienced a civilizational collapse in our recent memory in the United States, it is hard for Americans to even conceive of it happening here and to us.

58. https://www.science.org/doi/10.1126/science.abn7950
59. https://www.jpl.nasa.gov/news/thawing-permafrost-could-leach-microbes-chemicals-into-environment
60. https://www.bbc.com/future/article/20190304-human-evolution-means-we-can-tackle-climate-change
61. https://dictionary.apa.org/availability-heuristic

This work is licensed under the Creative Commons Attribution-Non-Commercial-ShareAlike 4.0 International license. To view a copy of this license, visit https://creativecommons.org/licenses/by-nc-sa/4.0/.

Scope neglect is defined as humans' lack of sensitivity to the scale of a predicted benefit or a harm.[62] In other words, we don't really care ten times more about something that is ten times as important. Once the stakes get to a certain point, we adapt to the unthinkable because our brains cannot allow us to stay in a perpetually hyper-aware state without suffering from mental exhaustion. We simply cannot sustain a high level of alarm indefinitely, and our ability to respond often suffers as a result.

For a recent example of scope neglect at work, consider our varied responses to the coronavirus pandemic. Many are comfortable saying the crisis is "over," but at the beginning of July 2023, 6,000 people a week were still being admitted to hospitals in the U.S. for coronavirus, and 400-500 people were still dying from it weekly.[63]

Problems Versus Predicaments

Our problem-solving skill sets evolved in a much less complex world. In the past, we were often able to seek single solutions to single problems, solutions which either returned the system in which the problem occurred to its original condition or improved the system to the point that it remained stable until another problem surfaced.

Humans are used to dealing with these sorts of problems, but climate change is a "wicked problem," a term coined by Horst W.J. Rittel and Melvin M. Webber (University of California at Berkeley) in their 1973 paper, *Dilemmas in a General Theory of Planning*.[64] What makes a problem "wicked" is that it's so complicated as to defy easy solutions.

Wicked problems, or predicaments, have no single solution. Faced with a predicament, people respond, and those responses may succeed, fail, or fall somewhere in between, but no single response can fully solve a predicament, nor will a system experiencing wicked problems ever return to its original condition.

Humans have evolved to be more comfortable with one problem/one solution scenarios, and we tend to find working on problems that have no easy solution frustrating or even frightening. This can cause us to disengage, as we become overwhelmed and feel like no response we choose will ever be "enough."

This brings us back to how we use and define terms. Climate scientists are *sure* climate change is happening, that it will be severe, that it will get worse even if we do everything right beginning tomorrow, and, absent immediate drawdowns of greenhouse gasses in the atmosphere, our way of life is at risk. They are *unsure* about the velocity of change, which appears to be happening faster than expected, and about precisely pinpointing the exact geographic location of many of the specific effects (although they have more confidence when considering entire regions as whole).

The media often seizes on the second point – the uncertainty around specific predictions – and misses the first – the certainty as to the overall cause. Uncertainty about where and when does not mean there is uncertainty about *what, how,* and *why.* We must get comfortable with the fact that, in this case, certainty and uncertainty are simultaneously true.

The Consequences of Denial

In her book *Living in Denial: Climate Change, Emotions and Everyday Life,* Kari Marie Norgaard tackles the question of climate denial and how even the most informed people can fail to act.

62. https://areomagazine.com/2019/10/01/bad-psychology-why-climate-change-wont-be-solved-by-better-decisions-at-the-supermarket/
63. https://covid.cdc.gov/covid-data-tracker/#datatracker-home
64. https://urbanpolicy.net/wp-content/uploads/2012/11/Rittel+Webber_1973_PolicySciences4-2.pdf

This work is licensed under the Creative Commons Attribution-Non-Commercial-ShareAlike 4.0 International license. To view a copy of this license, visit https://creativecommons.org/licenses/by-nc-sa/4.0/.

In the summer of 2000, Norgaard visited the city of Bygdaby to conduct research on how the environmentally progressive country of Norway was coping with climate change. As a wealthy, science-literate populace, Norwegians were well aware of climate change science. One might assume they would be actively engaged in climate solutions. However, Norgaard discovered that, by and large, they were not. In fact, they were rarely willing even to discuss the topic. Even as the Norwegian tourist economy was being decimated by a lack of snow at their ski resorts, Norway was investing heavily in oil and gas production to make up the lost revenue. A certain kind of madness leads people to produce and sell the very thing that is causing the problem.

Denial manifests in complicated ways.

In his book *States of Denial: Knowing about Atrocities and Suffering,* British sociologist Stanley Cohen describes three varieties of denial. The first is *literal* denial, which is simply the assertion that something did not happen or is not true. *Interpretive* denial is a condition where the facts themselves aren't denied but the meaning is "linguistically obscured." For example, a military commander may use the term "collateral damage" to refer to civilians who are harmed or killed in a conflict. The final type is *implicatory* denial: The information isn't denied, minimized, or obscured, but the psychological, political, or moral implications that follow from the knowledge are suppressed.

The cognitive dissonance that results from implicatory denial is negatively affecting humans' mental health and our political discourse. In a recent study by the Pew Research Center, 54% of Americans described climate change as being a major threat to the country's well-being, 61% said climate change is affecting their local area either a great deal or some, and 69% supported the United States becoming carbon neutral by 2050, including 67% of Republican voters under the age of 30.[65] Despite that, climate change was ranked 17 out of 21 issues that Americans prioritize, with only 37% considering it to be their top priority.

This highlights the paradox mentioned above: The more you know about climate change, the harder it often becomes to act. The overwhelming nature of the problem, and uncertainty about what to do about it, can paralyze people at the very moment they need to be the most active. Knowledge simply isn't enough.

65. https://www.pewresearch.org/short-reads/2023/04/18/for-earth-day-key-facts-about-americans-views-of-climate-change-and-renewable-energy/

This work is licensed under the Creative Commons Attribution-Non-Commercial-ShareAlike 4.0 International license. To view a copy of this license, visit https://creativecommons.org/licenses/by-nc-sa/4.0/.

Setting the Stage for Action

"In fact, the systems vulnerabilities created by climate change can turn into 'systems opportunities' for businesses to develop novel partnerships with government, other players in the supply chain, and even traditional competitors, for example in preparing the infrastructure needed for disaster recovery. By taking a leadership role in helping regions anticipate climate change and mitigate risk, companies can advance their interests while building goodwill in the communities in which they do business."

Peter Schwartz, *Harvard Business Review*[66]

Imagine the following scenarios:

- A major storm knocks out power to the neighborhood in which your association's office is located. And we mean *major:* Restoration doesn't come in hours or days, or even weeks; it takes more than a year for the power to come back on.
- You've flown your board of directors to a gorgeous desert location with a championship-level golf course designed by an acclaimed architect. After two and half days of productive meetings, delicious meals, and some truly excellent time on the links surrounded by spectacular views, no one can leave because high temperatures have grounded all departing flights.
- You've partnered with a highly ranked university to offer a three-day intensive for graduating seniors in your field, to help prepare them to take your entry-level certification exam by the time they graduate. More than 50 students have registered – and paid. You've lined up your trainers and materials. You've addressed AV needs and other logistics. You're ready to fly out to deliver the course when you learn that the campus has been shut down due to a wildfire.
- Your annual meeting, where you're expecting 5,000 attendees, is set to take place in Albuquerque in a week. And the city runs out of water.

Do these scenarios sound familiar? That's because they're all real.

- In New Orleans, in the wake of Hurricane Katrina in August of 2005, it took Louisiana energy supplier Entergy three weeks to restore power to 80% of the city,[67] with power not restored in some areas until well over a year later.[68]
- In the summer of 2017, American Airlines canceled nearly 50 flights out of Phoenix Sky Harbor airport because it was too hot for the planes to operate safely.[69]
- In the fall of 2018, dozens of California colleges and universities, including Stanford and UC Berkeley, had to shut down for several days, in some cases more than a week, due to the Camp Fire.[70]

66. https://hbr.org/2007/10/climate-business-_-business-climate
67. https://www.csoonline.com/article/2118955/energy-s-response-to-katrina.html
68. https://www.power-grid.com/customer-service/ten-years-after-how-entergy-new-orleans-survived-hurricane-katrina/#gref
69. https://www.azcentral.com/story/travel/airlines/2017/06/19/heat-cancels-phoenix-flights/409634001/
70. https://www.insidehighered.com/news/2018/11/19/colleges-cancel-class-due-poor-air-quality-california-fires

This work is licensed under the Creative Commons Attribution-Non-Commercial-ShareAlike 4.0 International license. To view a copy of this license, visit https://creativecommons.org/licenses/by-nc-sa/4.0/.

- Albuquerque hasn't run out of water yet, but the entire Colorado River basin is in a severe drought crisis[71] that this past spring's West Coast atmospheric rivers haven't really touched.[72] Cape Town, South Africa, a city of more than four million people, nearly ran out of water in 2018, a crisis that was only averted by taking "drastic" action.[73]

Climate change is going to affect every aspect of human life and interaction, of which associations are certainly a part. As important as recycling your cans in the break room and composting food scraps at your next annual conference are, the crisis is bigger than that.

Obviously, the association industry cannot solve the problem of Anthropocene climate disruption alone. But it does have a part to play. We know a lot of associations are already working on responding to climate change (as you'll learn in our case studies), although there is much more work to be done.

Given that, what do realistic goals for the association community even look like? What actions can we reasonably take as an industry that will be both possible and impactful?

We believe climate change is going to have an impact on associations in at least three key areas: internal operations; member-facing programs, products, and services; and as leaders in the professions and industries associations represent. We further believe there are two foundational principles that should influence the decisions you make about responding to climate change in these three areas: resilience and adaptation.

Resilience

We tend to be familiar with the concept of resilience as it applies to individuals – it's the ability to bounce back from challenges or bad situations. What is resilience, then, when it comes to human systems? It shares three characteristics:

- The system is able to maintain its structure and function (i.e., it is nimble, so it can continue to operate and fulfill its mission even in the midst of disruption).
- The system can self-organize (i.e., the people in it are empowered to act without having to wait to be told what to do by some external agent or higher authority).
- The system can learn (i.e., the people in it are curious, constantly seeking new information and transparently feeding that back into their decision-making processes).[74]

As Daniel Christian Wahl writes in *Designing Regenerative Cultures:* "Resilience contributes to maintaining the relative stability of living systems over time…" A resilient system responds to disturbances by persisting, adapting, or transforming.[75]

Adaptation

What do we mean by adaptation?

Simply put, it's too late to stop climate change, which we've known for more than 30 years. The Intergovernmental Panel on Climate Change stated as much in its first major report, published in 1990.[76] Some degree of warming is already baked into our existence, with all the impacts we've already discussed, from heat death to crop failures to sea level rise to drought to more extreme and unpredictable weather patterns. While we absolutely need to continue the vital work of reducing carbon emissions, humans will also have to make fundamental changes to the ways we live, work, and play, and the places where we do those things.

71. https://www.washingtonpost.com/climate-environment/2023/02/05/colorado-river-drought-explained/
72. https://www.koaa.com/weather/weather-science/did-atmospheric-rivers-in-california-reverse-their-drought
73. https://www.weforum.org/agenda/2019/08/cape-town-was-90-days-away-from-running-out-of-water-heres-how-it-averted-the-crisis/
74. https://www.resalliance.org/index.php/resilience
75. *Designing Regenerative Cultures,* pg. 105
76. *Climate Change: The IPCC 1990 and 1992 Assessments,* pg. 134

This work is licensed under the Creative Commons Attribution-Non-Commercial-ShareAlike 4.0 International license. To view a copy of this license, visit https://creativecommons.org/licenses/by-nc-sa/4.0/.

We may have to give up some of the material goods and ways of being we're accustomed to and "open up a space for alternative hopes."[77]

Adaptation means changing our frames and asking ourselves different questions. Traditional strategic planning processes are too rigid for the world we are moving into. Goal-setting against key performance indicators is not a sufficiently responsive approach. Associations require a renaissance in our organizational strategy practices. We don't need to overcomplicate our plans; the world is complicated enough. We need to change how we think about organizational strategy in the first place.

Dr. Jem Bendell, one of the founders of the Deep Adaptation movement, has laid out four questions that lead to different discussions about what we do next:

- Resilience: What do we most value that we want to keep and how?
- Relinquishment: What do we need to let go of so as not to make matters worse?
- Restoration: What could we bring back to help us with these difficult times?
- Reconciliation: With what and whom shall we make peace?[78]

If we are serious about adaptation, we need to intently focus on questions like these, that will elicit the best, most flexible strategies.

Now we turn to laying out how Anthropocene climate disruption is going to affect associations in particular and detailing the specific actions association executives can take to help their organizations, and the professions and industries those organizations serve, become resilient and learn to adapt in the face of the crises that are most assuredly coming our way.

77. *Deep Adaptation, A Map for Navigating Climate Tragedy,* pg. 61
78. *Deep Adaptation: A Map for Navigating Climate Tragedy,* pg. 73

This work is licensed under the Creative Commons Attribution-Non-Commercial-ShareAlike 4.0 International license. To view a copy of this license, visit https://creativecommons.org/licenses/by-nc-sa/4.0/.

What Does This Mean for Associations?

Carbon Footprint

According to the American Institute of Architects, "[b]uildings represent nearly 40% of greenhouse gas emissions."[79]

You may be familiar with tools that allow you calculate your own personal carbon footprint, such as the one provided by the Environmental Protection Agency, available at *https://www3.epa.gov/carbon-footprint-calculator/*, or the somewhat more comprehensive one created by the Nature Conservancy, available at *https://www.nature.org/en-us/get-involved/how-to-help/carbon-footprint-calculator/*.

Did you know you can calculate the carbon footprint of your office building?

Builders for Climate Action have provided a free tool to allow you to do just that: *https://www.buildersforclimateaction.org/beam-estimator.html* (they do accept donations to support keeping the tool up to date and accessible).

Meanwhile, your employees have to get to work. The average American commutes 41 miles a day, and the average car gets 25 miles to the gallon. Assuming five days of commuting 48 weeks of the year, Stanford University's commute carbon calculator, available at *http://transportation-forms.stanford.edu/cost/*, reveals that each employee emits more than four tons of carbon per year. To offset that much carbon, you'd have to plant 160 trees (approximately 40 per ton emitted) per employee per year.[80]

Per the U.S. Bureau of Labor Statistics, approximately 200,000 people work in professional and trade associations.[81] To offset the total commuting carbon burn of all trade and professional association employees for one year, we'd have to plant 32 million trees. That's a lot of trees.

And your staff members can't just hit the off switch on their houses when they leave in the morning and shut everything down. While they're in the car on their way to you and in your office space for 8-plus hours a day five days a week, their homes are still emitting carbon dioxide.

The carbon burn of your association includes more than just your office building and getting your staff to and from it. It also includes the items you buy to run your association (computers, furniture, and office supplies), items you provide for your staff (coffee, water, and snacks), and items your association produces (books, magazines, journals, and branded items, and getting those things to your members and other customers).

It is possible to calculate the carbon footprint of your entire association. Greenly offers a paid service to calculate the carbon footprint of entire organizations, from your building to the lifecycle of your equipment to your supply chain to your investment policies for your reserves: *https://greenly.earth/*.

Investment Decisions

Speaking of investment policies, the investment choices you make for your reserves have a carbon footprint too. Increasing numbers of investment advisors are beginning to recognize this, a change that has led to the "ESG" movement.

79. https://www.aia.org/landing-pages/6456754-zero-carbon
80. https://8billiontrees.com/carbon-offsets-credits/how-many-trees-to-offset-1-ton-of-co2/
81. https://app.powerbi.com/view?r=eyJrIjoiNGMyZWZkMTMtNmUzOS00YjJhLWJjNDgtMjllNjcwZjNhZjdhIiwidCI6IjkzMzcwMjYxLTNjMjUtNDI1Mi05Nzg1LWQ1MzFmYTBmOGZmZSIsImMiOjF9, data sourced from the BLS Quarterly Census of Employment and Wages

This work is licensed under the Creative Commons Attribution-Non-Commercial-ShareAlike 4.0 International license. To view a copy of this license, visit https://creativecommons.org/licenses/by-nc-sa/4.0/.

Per the *Harvard Business Review:*

> "'ESG' (environmental, social, governance) is primarily the language the financial world uses to represent attempts to measure the risk (and opportunity) to a company or investment stemming from environmental and social issues. The 'G' part refers to how well a company [or association] manages the governance of these issues." [82]

Look, we're not investment advisors. But we do want to point out that while your association may have held shares of tobacco companies in 1963, we're betting that by the time the $14 billion judgment came down in *United States v. Philip Morris* in 2006, you had divested. All we're saying is that, eventually, certain investments may no longer carry the expectation of a reasonable return.

Negative Mental Health Effects

Meanwhile, as we discussed above, weather patterns are becoming less predictable and weather incidents are becoming more extreme. Yet we continue to act like showing up to work punctually and getting that typo-free memo out on time is supposed to be our highest priority.

If you're thinking your staff can just carry on as usual, think again.

While all of us are susceptible to negative mental health effects due to climate change, your youngest employees are particularly at risk.

Per a recent survey conducted by health insurer Blue Shield of California:

> "A significant majority of Gen Z youth (75% nationwide, 80% in California) have experienced a mental health-related issue, such as anxiety, stress, and/or feelings of being overwhelmed as a result of reading, seeing, or hearing news about climate change."[83]

According to a recent large-scale study of people aged 16-25 in ten different countries that was published in *The Lancet:* "Three in four young people said the future is frightening, while nearly half said their feelings about climate change negatively impact their daily life"[84] to the point that "close to 40 percent said that fears about the future have made them reluctant to have children of their own."[85]

The fact is, if you aren't taking climate change seriously, you will continue to lose talent and appear to be a part of the problem instead of part of the solution in the minds of the younger people you are trying to attract as staff and members.

Developing Resilience

Crisis Planning

Whatever level of crisis or disaster planning you're accustomed to is almost definitely insufficient for a rapidly changing climate.

82. https://hbr.org/2023/04/why-business-leaders-must-resist-the-anti-esg-movement
83. https://news.blueshieldca.com/2022/04/21/new-poll-finds-climate-change-is-taking-a-toll-on-gen-z-mental-health-while-also-inspiring-youth-to-take-action
84. https://e360.yale.edu/digest/young-people-are-experiencing-widespread-anxiety-about-climate-inaction-study-finds
85. https://e360.yale.edu/features/for-gen-z-climate-change-is-a-heavy-emotional-burden

This work is licensed under the Creative Commons Attribution-Non-Commercial-ShareAlike 4.0 International license. To view a copy of this license, visit https://creativecommons.org/licenses/by-nc-sa/4.0/.

It's not your fault. We are facing an unprecedented situation. The climate systems that are being disrupted are so complex and intertwined that it's difficult to predict exactly what is going to happen when, or where. For example, no one predicted the more than 30 atmospheric rivers that hit California during their 2022-23 wet season,[86] and, as we're writing this, no one is entirely sure what's going to happen as that historic snowpack melts.[87] How do you effectively plan to mitigate the risks of "unknown unknowns"?

The Washington, DC chapter of the American Planning Association recommends focusing on four things:

- Mitigation – thinking long-term to reduce risk
- Preparedness – having an emergency plan and making sure it's up-to-date
- Response – marshaling resources so you're ready to act during a crisis
- Recovery – helping your organization or community get "back on its feet" after the crisis[88]

Our friends in IT have contributed a useful concept here: *No single point of failure.* We tend to think about that concept in terms of critical computer networks in areas like financial systems, hospital systems, air traffic control, or utilities. But it's equally useful to your association's critical internal operations. What are the key functions that must continue for your association to stay in business? Receiving revenue, paying bills, customer service for your members and other audiences – how would you handle those things if you lost access to your physical space, electrical power, or key staff members for an extended period?

You will need to build the ability to fail into your budget. That means reserves and insurance (at least for what you can get covered, and for as long as you can continue to get it covered), but it also means flexibility. Your association is going to experience shocks, including financial shocks, which will be difficult to respond to if you have every penny precisely allocated down to the last box of pens.

Risk Management

Associations and our boards of directors tend to take a traditional approach to risk management: identify a key program or function, predict what could go wrong, estimate how likely that is, and project potential consequences. This is adequate for smaller, linear risks.

But what about the larger, integrated risks on the horizon in an exponentially evolving polycrisis world, one in which we are potentially facing the simultaneous interaction of multiple catastrophic events? By their interactive nature, these types of risk resist clear definitions, rendering the rest of the evaluative processes associations traditionally rely on inadequate.

We'd encourage you to consider shifting your planning process to incorporate *system dynamics methodology,* which has proved effective for evaluating risk in complex systems. It is a modeling approach that can help you understand the interactions between different variables and how they may affect the overall system.

To evaluate risk using system dynamics, one must:

- Identify the *key variables* that affect the system.
- Develop a *causal loop* diagram that shows how these variables are related to each other.
- Quantify the relationships between the variables.
- Simulate the model to see how it behaves over time.
- Test different *scenarios* to see how they affect the system.

What might that look like for an association attempting to manage risk related to the effects of Anthropocene climate disruption?

86. https://www.latimes.com/california/story/2023-04-11/californias-wild-winter-of-atmospheric-rivers
87. https://www.washingtonpost.com/weather/2023/04/28/california-heat-flooding-snowmelt/
88. *Climate Change Planning and the Role of Emergency Management,* pg. 2

This work is licensed under the Creative Commons Attribution-Non-Commercial-ShareAlike 4.0 International license. To view a copy of this license, visit https://creativecommons.org/licenses/by-nc-sa/4.0/.

Imagine you are working for a trade association that represents manufacturers. *Key variables* would include things like your members, the dues and non-dues revenue they generate; their struggles with supply-chain issues due to heat waves shutting down factories; and their resulting decrease in net profit. The *causal loop* relationships between those variables include: members to association revenue, members to profit margins, supply-chain issues to profit margins, profit margins to association revenue.

Next, *run scenarios.* For instance, if climate change-driven heatwave supply chain issues can be quickly resolved, the association may not experience a drop in dues and non-dues revenue. However, if supply chain issues persist and begin affecting members' profit margins, that is likely to affect the association's revenue streams as well. *Planning* for that outcome may, for instance, require you to rethink your current budget, as you would likely need to invest your reduced revenue differently than initially planned to help your members navigate through the situation.

Once you get used to this way of thinking, you can create additional models to address things like loss and damage from extreme weather events, conference cancellations or reduced attendance, etc.

Staff Mental Health

"We need to start by acknowledging that the kinds of actions that are needed today in the climate crisis are not just external. It is not just getting out in the streets and working to change policy. It's also working inwardly at the same time to build up the socio-emotional resilience to deal with the emotional harms of the climate crisis. Because when we are just doing the external stuff and avoiding — not even acknowledging — our emotions, we are less equipped to deal with the challenges we know we are going to have to face in an ongoing way for the rest of our lives."

Britt Wray, Stanford University Center for Innovation in Global Health.[89]

Many associations have followed good practice by adopting Employee Assistance Programs and instituting wellness programs. But, as documented by the American Psychological Association, the climate crisis is pushing people beyond the more typical "burnout" and "spending too much time sitting at the computer" problems EAP and wellness initiatives were designed to address. Specifically, research has found that the effects of climate change increase:

- Gender-based violence, which appears to be exacerbated by extreme weather and climate events, which produce economic shock, social instability, enabling environments, and stress.
- Posttraumatic stress disorder (PTSD). For example, survivors of the 2018 Camp Fire, one of the deadliest and most destructive wildfires in California history, had rates of PTSD on par with war veterans.
- Suicide, which is increasing among farmers, particularly those impacted by drought in the Global South.
- Aggression, where higher temperatures are positively correlated with increases in violent crime, particularly in large cities.[90]

There's a fine line to walk here between "doomers" and "deniers." The "we're all doomed" mentality leads to inaction (motivated by despair) nearly as reliably as the "there's no problem, and even if there is, we'll fix it!" mentality does (motivated by excessive resistance to evidence and/or excessive optimism). "To contend with environmental crises and make life better for everyone, we need the right kind of optimists: those who recognize that the world will only improve if we fight for it," Oxford researcher Hannah Ritchie wrote in *Vox* recently.[91]

How do we do that?

89. https://e360.yale.edu/features/for-gen-z-climate-change-is-a-heavy-emotional-burden
90. https://www.apa.org/topics/climate-change/mental-health-effects
91. https://www.vox.com/the-highlight/23622511/climate-doomerism-optimism-progress-environmentalism

This work is licensed under the Creative Commons Attribution-Non-Commercial-ShareAlike 4.0 International license. To view a copy of this license, visit https://creativecommons.org/licenses/by-nc-sa/4.0/.

Journalist and author Amanda Ripley has identified three critical ingredients of human thriving: agency, hope, and dignity. Combined, they represent the confidence that I can do something (even if it's small), the conviction that what I do will be effective and have a positive impact, and the certainty that who I am and what I do matters.[92]

The American Psychological Association recommends developing programs at the individual, organizational, community, and national level, that will promote "a sense of meaning or purpose, coping and self-regulation skills, self-efficacy, social connections, community cohesion, practical preparations for disasters and other climate impacts, and taking productive action on climate change" – in other words, resilience.[93]

Not to get too woo-woo on you, but as author and scientist Robin Wall Kimmerer urges, humans need to reconnect with each other and the natural world.

> "[S]ome of the wisest of Native elders still puzzle over the people who came to our shores. They look at the toll on the land and say, 'The problem with these new people is that they don't have both feet on the shore. One is still on the boat. They don't seem to know whether they're staying or not'… [T]he urgent work of the Second Man [the non-Indigenous immigrants to this land the vast majority of us are] may be to set aside the ways of the colonist and become Indigenous to place."[94]

Through this, we can repair at least some of our loneliness, disconnection, and anomie.

Learning to Adapt

Where We Work (and How We Get There)

Start by calculating your association's carbon footprint, using the resources previously referenced. You aren't going to get it exact, and that's fine. Just get a reasonable estimate. Leaving aside your annual conference for a minute, it's likely obvious that the two biggest contributors to your association's carbon emissions are your building itself and your employees' commutes (remember: 160 trees per employee per year).

Hopefully, by now you're asking: Do we really need to all be together in a central office five days a week?

After years of resisting remote work "because reasons," associations were compelled to accept it when the world stopped abruptly in March of 2020. The coronavirus pandemic lockdowns had an immediate effect: In 2020, the most intense period of coronavirus pandemic lockdowns, carbon emissions dropped a record 7% over the prior year.[95] (Unfortunately there was a big rebound in 2021.[96])

Permanently giving up office space is not something you can necessarily do overnight. Commercial leases tend to be long, and property owners tend to be loath to let tenants quit them early – and it definitely represents a fundamental change in the way you work. There are also "negative externalities" to consider, like municipal loss of tax revenue and previously bustling but now-deserted central business districts that are distressingly quiet and empty, leaving many small downtown businesses desperately seeking customers. If you're looking to seriously reduce your carbon footprint, though, it's worth considering.

92. https://www.washingtonpost.com/opinions/2022/07/08/how-to-fix-news-media/
93. *Addressing the Climate Crisis: An Action Plan for Psychologists,* pg. 12
94. *Braiding Sweetgrass,* pg. 207
95. https://earth.stanford.edu/news/covid-lockdown-causes-record-drop-carbon-emissions-2020
96. https://www.iea.org/data-and-statistics/data-product/global-energy-review-co2-emissions-in-2021

This work is licensed under the Creative Commons Attribution-Non-Commercial-ShareAlike 4.0 International license. To view a copy of this license, visit https://creativecommons.org/licenses/by-nc-sa/4.0/.

If you're unwilling or currently unable to permanently give up your office space, there are other steps you can take. Some questions to ask:

- Does every staff person need to be in the office every day?
- Can you subsidize use of public transportation or convert underused space to a shower and changing area for staff members who might want to commute via (standard or electric) bicycle?
- Can you shift to a four-day workweek, maybe by offering 4/10 (ten hours a day four days a week) rather than the traditional 5/8?
- Can you pursue LEED certification: ***https://www.usgbc.org/leed***? (We tend to think of LEED in the context of new construction, but the LEED rating system also applies to buildouts in and the operations and maintenance of existing buildings.)

The American Institute of Architects encourages business owners to plan their space design so that it "accommodates change, withstands wear and tear, and… serves as a vital and flexible community asset in times of crisis…. By being more intentional about the flexibility of a structure, buildings can hold neighborhoods together, encourage social equity, and contribute to community resilience for extended periods of time."[97] (For more specific advice on how to do that, download the full report, *Buildings that Last: Design for Adaptability, Deconstruction, and Reuse.*)

Investment Strategies

Now is not the time to have all your reserves eggs in one fossil-fuels basket.

We've already mentioned the ESG movement, and associations and other industries are learning that they can do well while doing good by joining it. ESG investments are showing growth and solid returns.[98] As of October 2022, PwC reports:

> "Asset managers globally are expected to increase their ESG-related assets under management to US $33.9 trillion by 2026, from US $18.4 trillion in 2021. With a projected compound annual growth rate of 12.9%, ESG assets are on pace to constitute 21.5% of total global assets under management in less than 5 years."[99]

As your association moves toward more ethical investing, you will join a growing community of institutions that are publicly divesting in fossil fuels and other high-emissions companies. According to the Global Fossil Fuel Divestment Commitments Database,[100] 1,591 institutions worldwide are now pursuing divestment, to the tune of $40.51 trillion dollars.

97. https://www.aia.org/resources/6282663-design-for-adaptability-deconstruction-and
98. https://www.nerdwallet.com/article/investing/esg-investing
99. https://www.pwc.com/gx/en/news-room/press-releases/2022/awm-revolution-2022-report.html
100. https://divestmentdatabase.org/

This work is licensed under the Creative Commons Attribution-Non-Commercial-ShareAlike 4.0 International license. To view a copy of this license, visit https://creativecommons.org/licenses/by-nc-sa/4.0/.

What Does This Mean for Associations?

The most obvious member-facing program that will be affected by climate change is anything that requires travel to desirable but vulnerable locations and significant advance planning and financial commitment. That means your annual conference and, potentially, additional large-scale in-person gatherings (leadership training for component volunteers and paid staff, professional development classes and workshops). Per ASAE's 2021 *Operating Ratio Report,* associations generated $13 billion in revenue from meetings and events in the prior 12-month period. That is a lot of revenue at risk.

The association industry recently got a taste of what this could look like during the coronavirus pandemic shutdowns of 2020. Virtually overnight, many associations had to cancel conferences or pivot to virtual events that generated less (or even no) registration revenue. While about half the respondents to the ASAE Research Foundation's *Association Impact & Policy Snapshot – February/March 4/14/2021* reported event losses of $100,000 or less in FY20, 30% reported losses of $100,000-$500,000, and 12% reported losses of more than $1 million.[101]

Risk & Insurance magazine reported a 43.2% decrease in tradeshow and conference revenue from 2019 to 2020. As many associations learned to their dismay, conference cancellation policies didn't always make that revenue loss whole. Insurers began classifying COVID-19 as a "known event" (which means it's not covered without a specific, often expensive, rider) in January 2020. Far from offering costly riders, some insurers have even begun specifically excluding communicable diseases from event cancellation policies.[102]

Neither of us is an attorney or an insurance agent, but we do want to note that while many event cancellation insurance providers do currently offer "adverse weather" coverage, either as part of their main policy or as a rider, that "adverse weather" coverage is often specific to outdoor events. If your opening reception concert is canceled due to thunderstorms, you can make a claim for the direct reception costs. But if your entire conference is canceled because water levels in Lake Mead drop to the point that the Hoover Dam can no longer generate electricity, causing severe brownouts in Los Angeles, you might not be covered.

Assuming climate-change-driven extreme weather cooperates and you can still hold your event, it has its own carbon footprint.

First you have to get attendees, speakers, exhibitors, volunteer leaders, and staff there. It is relatively simple to calculate the carbon emissions from flights, for instance via this calculator created by the International Air Transport Association: ***https://www.iata.org/en/services/statistics/intelligence/co2-connect/iata-co2-connect-passenger-calculator/***.

An "average" distance flight, from Washington, DC, Dulles International Airport to Chicago O'Hare International Airport generates about 500 pounds of carbon emissions round trip per person. For an event with 1,000 total participants, that would put 250 tons of carbon dioxide into the atmosphere. Offsetting that would require planting approximately 10,000 trees (remember, 40 trees offset one ton of carbon). Again, that's a lot of trees.

Once everyone is on site, you need to think about ground transport, the utilities used by your conference facilities (how much power you're using and how it's generated), conference waste, and your food and beverage (F&B) functions.

101. *Association Impact & Policy Snapshot – February/March 4/14/2021,* pg. 19
102. https://riskandinsurance.com/event-cancellation-insurance-the-impact-of-covid-19/

This work is licensed under the Creative Commons Attribution-Non-Commercial-ShareAlike 4.0 International license. To view a copy of this license, visit https://creativecommons.org/licenses/by-nc-sa/4.0/.

Carbon Footprint offers an event carbon calculator, but we'll warn you that it's complicated to fill out and does not include emissions from your F&B functions: ***https://www.carbonfootprint.com/event_carbon_calculator.html***.

Princeton University can help with your F&B carbon footprint, but again, to get a reasonably accurate result, you will need to provide a significant amount of detailed data: ***https://psci.princeton.edu/events-emissions-calculator***.

It's probably obvious at this point that it is not easy to get a full picture of the total carbon footprint of your event. A group at the University of Minnesota that attempted to hold a carbon-neutral meeting in May 2022 wrote a fascinating article,[103] which includes a link to the planning document the team used, about the challenges they encountered, the assumptions they operated under, and the compromises they had to make.

Another thing to keep in mind as you consider the carbon footprint of your events is that many of the sites that offer calculation tools do so as a means of selling carbon offsets. That may sound like a responsible solution. The problem is, carbon offsets are poorly defined, poorly monitored, and, per the UN's COP27 Climate Change Conference last fall, often amount to little more than corporate "greenwashing."[104] Allowing registrants to pay a few extra dollars to offset the carbon emissions of their conference experience might make them – and you – feel better, but it has virtually no measurable impact.

Developing Resilience

Localization

If the profession or industry your association serves is in any way dependent on supply chains, you are probably already having conversations about globalization versus localization in the wake of the significant interruptions wrought by the coronavirus pandemic, which at least in some cases have still not been fully resolved. Localization is a key component of preparing for the climate crisis as well.

Working with people we actually know in our communities to create solutions also creates solidarity and a sense of belonging and connectedness critical to being able to respond quickly, productively, and cooperatively to disruptions ranging from brownouts to natural disasters to water shortages to crop failures.

Localization also enables innovation, where myriad potential solutions can flourish in myriad communities, each of them amounting to a small-scale "bet" exquisitely adapted to the specific local conditions of the community in which it's tried.

Communities are experimenting with all kinds of re-localization, from food (community-supported agriculture) to electricity (solar co-ops) to real estate (community land trusts and social housing) to finance (community-financed small, local businesses, green banks) to governance.

What does localized governance look like?

Associations know the answer to this: chapters, sections, affiliates, and peer groups, all governance structures we're really good at.

For many association executives, the relationship between national leadership and components has been fraught, subject to power struggles and debates over "strong national / weak chapter" versus "strong chapter / weak national." Elizabeth has historically tried to play the role of Switzerland in this debate, while Shelly has historically been team "strong national." The unfolding Anthropocene climate disruption is pushing both of us toward team "strong chapter," and the reason is something already mentioned: *No single point of failure.*

If your association has more local groups with more autonomy, the association as a whole will have an easier time bouncing back from things that may go wrong in any one area, whether we mean "area" like "tornado alley" or "area" like "annual meeting."

103. https://extension.umn.edu/natural-resources-news/how-measure-your-events-carbon-footprint
104. https://www.spglobal.com/commodityinsights/en/market-insights/latest-news/energy-transition/110922-cop27-un-slams-use-of-greenwashing-offsets-ahead-of-direct-abatement-actions

This work is licensed under the Creative Commons Attribution-Non-Commercial-ShareAlike 4.0 International license. To view a copy of this license, visit https://creativecommons.org/licenses/by-nc-sa/4.0/.

Learning to Adapt

How We Gather

Association executives should also be shifting their meeting strategy to incorporate more regional and virtual events. Associations have a real opportunity to align form and function. As associations in many industries and professions have observed, some annual meeting functions lend themselves well to a virtual format: governance functions, business meetings, and certain types of education and information sharing. Some functions, like awards and recognition of achievements, can be accommodated in a virtual format if they're carefully planned. But some functions, like building one's network, creating connections, and the serendipitous conversations that occur because of who you happen to sit next to in a session, stand next to in line for lunch, or bump into at a reception work poorly (if at all) in a virtual environment, however carefully planned.

One example of how this could work in practice is related in the American Association of Geographers case study on *page 33*. AAG's member-driven climate task force recommended a "hub and spoke" meeting system organized around "nodes," which AAG piloted for their 2023 annual meeting. While not everything went perfectly (of course), the beta test was successful, and they are looking forward to continuing and expanding the practice at future events.

Communication

Taking collective action on climate change requires effective messaging to association volunteer leaders, members, and other stakeholders.

In 2014, researchers at the Yale Program on Climate Change Communication identified "Six Americas" when it comes to attitudes towards climate change: Alarmed, Concerned, Cautious, Disengaged, Doubtful, and Dismissive.[105]

Alarmed and Concerned populations are more interested in hearing about actions you are taking towards climate change mitigation and adaptation. Doubtful and Dismissive populations are more interested in evidence and causes, although the Dismissive will actively resist and are highly motivated to reject messaging that contradicts their views. The Cautious and the Disengaged are interested in all four elements to varying degrees: evidence, causes, consequences, and actions.

In a 2021 update, the Yale team stated:

> "When our surveys began in 2008, the Concerned were the single largest group. By 2010, they were slightly smaller, while the Cautious grew and became about equally as large. By contrast, the Alarmed were the second smallest group as recently as early 2015 (only the Disengaged were smaller), but have grown rapidly to become the largest segment of the U.S. population today. Meanwhile, the Cautious, Doubtful, and Dismissive groups have all gotten smaller in recent years."[106]

How can you most effectively communicate with these disparate groups? The original paper outlines the following strategies:

For the Alarmed and Concerned:

- Promote lasting behavior change
- Build perceptions of efficacy
- Recruit them to be opinion leaders

For the Cautious and Disengaged:

- Use images and short pieces
- Post climate-friendly action as popular, respected, and common
- Personalize the threat using physical proximity or emotional significance
- Use stories to encourage involvement

105. *Engaging Diverse Audiences with Climate Change: Message Strategies for Global Warming's Six Americas,* pg. 3
106. https://climatecommunication.yale.edu/publications/global-warmings-six-americas-september-2021/

This work is licensed under the Creative Commons Attribution-Non-Commercial-ShareAlike 4.0 International license. To view a copy of this license, visit https://creativecommons.org/licenses/by-nc-sa/4.0/.

For the Doubtful and Dismissive:

- Use an indirect and non-confrontational approach
- Use value-congruent ways that emphasize their values of individualism and established order
- Point out concrete ways people have personally experienced climate change

This work is licensed under the Creative Commons Attribution-Non-Commercial-ShareAlike 4.0 International license. To view a copy of this license, visit https://creativecommons.org/licenses/by-nc-sa/4.0/.

What Does This Mean for Associations?

The Anthropocene climate disruption is going to affect every area of human life, including our professional lives. And those effects will be felt differently across different professions and industries.

Some industries are going to be significantly impacted in a negative way. If you're in fossil fuels, you're probably in trouble, absent some radical changes.

Some industries are going to be significantly impacted in a positive way. If you're in solar panels or wind turbines or lithium-ion batteries or even nuclear power, your industry is probably already booming, and it's likely to continue to boom for the foreseeable future.

Some industries will have to pivot. If you are in mining, you probably need to stop focusing on coal and start focusing on the rare earth elements required by all the batteries humans are going to need as more of our lives become electrified.

Some industries will have to change the way they work. For instance, lots of people work in non-climate-controlled environments, and, at certain times of the year, that's just not going to be possible anymore. We all immediately picture construction and forestry and landscaping and farm work, but extreme heat is also going to affect industries as diverse as, for instance, golf courses and theme parks and first responders and park rangers and civil engineers. Does that mean all those industries are going to shut down during the summer? Of course not, but they may need new standards, regulations, and worker protections and accommodations.

Some industries will have to do serious crisis planning. Three immediately spring to mind: insurance, healthcare, and any industries that rely on complex supply chains.

We touched on impacts on the insurance industry above in our opening story and, in a roundabout way, in our discussion of potential impacts of climate change on association conferences and events. But as climate change continues to increase extreme weather events (both in quantity and severity), insurers are going to have to dramatically raise rates, limit coverage, exit certain markets altogether (or a combination of those), or risk bankruptcy. That will have ripple effects on both the commercial and residential real estate industries.

The healthcare industry is already facing significant additional pressure from extreme weather events and the emergence of zoonotic pandemics, leading to burnout of practitioners, professionals leaving the field of healthcare entirely, and increased illness and death among the very people we rely on to care for the rest of us in disaster situations.

The coronavirus pandemic provided a preview of supply chain disruptions. Remember when you couldn't find a five-pound bag of flour or an eight-pack of toilet paper anywhere? Most of us only saw the consumer effects of those problems, many of which were caused by a mismatch in supply (you could still buy a FIFTY-pound bag of flour) and demand (but who has space to store that at home?). And those mismatches were eventually resolved, at least for the most part.

However, emerging challenges like increasingly extreme temperatures and water shortages are going to have a much bigger effect, as they cause disruptions in the flow of, for instance, car parts manufactured in China[107] or pharmaceuticals manufactured in India.[108]

107. https://www.protocol.com/newsletters/climate/china-supply-chain-climate-change
108. https://pharmaphorum.com/views-and-analysis/pharmas-climate-change-vulnerability-and-opportunity

This work is licensed under the Creative Commons Attribution-Non-Commercial-ShareAlike 4.0 International license. To view a copy of this license, visit https://creativecommons.org/licenses/by-nc-sa/4.0/.

Some industries will have opportunities to innovate. Lithium-ion batteries, as we mentioned, are a booming industry, due to increased demand for electric vehicles. However, lithium-ion batteries are heavy, can take a long time to charge, degrade over time, and, occasionally, catch fire. Meanwhile, as communities increasingly come to rely on renewable energy sources, we need ways to store energy for times when the wind isn't blowing or the sun isn't shining (like at night). This represents a tremendous opportunity for innovation in metallurgy, materials science, chemistry, and physics around the ways we store energy for later use. [109]

Developing Resilience

Think Vertically

As the saying goes, "there's an association for everything." We can't describe exactly how climate change is going to disrupt things for yours, and what you'll need to do to recover. But everything – every industry, every profession – will be affected by climate change. The reason people associate in the first place is to solve problems they can't solve alone, which means your association does have a role to play in helping your profession or industry prepare.

We would encourage you, as association executives, to think about how you can contribute to, or even lead, efforts in the profession or industry you serve to:

- Identify the risks of Anthropocene climate disruption that are specific to your profession or industry, or that will have effects specific to your profession or industry, so you can collaboratively work on steps you could take to mitigate them in advance.
- Think through the elements of an emergency plan that might be unique to your profession or industry.
- Detail any special capabilities or resources your profession or industry can bring to bear on immediate and long-term disaster response.
- Map out any particular needs your profession or industry will have to have met in order to resume operations.

As you begin to think and talk through what the people, profession, or industry your association represents will need to "bounce back," remember to plan for your entire vertical. Consider not just your members but their suppliers, your members' colleagues and peers who are part of your community but are not formal association members, and your members and other stakeholders' own end users and customers. Don't just consult with and plan for your members' needs. Include all affected audiences when thinking through how the profession or industry as a whole will respond.

For an example of what this might look like, see the SDGAlign / Strata Community Association case study on *page 37*. The SDGAlign toolkit is designed to help entire communities, including industry or profession verticals, understand their current situation, commit to a sustainable future, plan for action, and track impact. SCA is using it to do just that in Australian "strata" communities.

Learning to Adapt

Legislative Affairs

Open Secrets, a nonprofit that tracks data on campaign finance and lobbying, reported that, in 2022, the total number of lobbyists deployed at the federal level in the United States was 12,673, with a total spend of $4.11 billion.[110]

Of that $4.11 billion, trade associations spent $138.8 million in 2022 and the oil and gas industry spent $125 million. The association industry can outspend oil and gas with our own lobbyists. We just need to recognize that climate change represents a clear and present business risk for all our industries and professions.

109. https://www.technologyreview.com/2023/01/05/1066228/why-2023-is-a-breakout-year-for-batteries/
110. https://www.opensecrets.org/federal-lobbying

This work is licensed under the Creative Commons Attribution-Non-Commercial-ShareAlike 4.0 International license. To view a copy of this license, visit https://creativecommons.org/licenses/by-nc-sa/4.0/.

Associations can directly lobby for climate-friendly policies. The moral imperative is clear. The practical imperative is increasingly clear as well. Traditionally, members tend to ask their associations to focus on advocacy issues that preserve the status quo. There's nothing more "status quo" than being able to continue to operate. One of the biggest risks your members most need protection from is the coming climate shifts that are projected to cause enormous economic losses. As Amy Hissrich, M.A., CAE, ASAE's Vice President, International Affairs, put it in our interview with her for the ASAE/AGU case study on *page 35*, "Climate change is finally becoming a business imperative for associations."

The Circular Economy

EcoAdapt, a DC-based nonprofit that focuses on creating frameworks for climate change adaptation, has created an Adaptation Ladder of Engagement.



[111]

The first step is "Awareness." As EcoAdapt defines it: "Climbing a ladder requires that you know the ladder exists and you take a first step up and on."

We know we've said multiple times that if you're in denial about the reality of climate change, this monograph isn't for you. (And truly, if that's you, we are astounded you're still with us.) However, we're also aware that many of you may have members, volunteer leaders, or board members who are "climate skeptics." The first step is to get those folks on board – or at least off YOUR board.

How do you combat climate denialism and get your key stakeholders to join you on the ladder?

Earlier in this whitepaper, we wrote about the mental and social constructs that produce denial and inaction. That's all helpful for understanding what's causing your stakeholders to reject all the available evidence in favor of what they wish was true. But it's not going to fix the problem.

For a solution, we'd like to refer you to the U.S. military. To quote Joe Bryan, senior climate adviser at the Pentagon, "Climate change is going to cost us."[112] The U.S. Department of Defense has chosen to address climate change from a risk-assessment perspective.

Rather than arguing about causes, DoD can observe the impact of climate change on "missions, plans, and installations" and has "elevat[ed] climate change as a national security priority" as a result, with formal risk analysis and adaptation plans, plus strategies specifically focused on the needs of the Army, Navy, and Air Force.[113] If you have climate-change deniers in positions of power in your association, move the discussion off causes and focus on tactical responses to observed changes and phenomena. (For more on the U.S. military response to climate change, see our sidebar **Climate Change Denialism, Politics, and National Security** on *page 43*.)

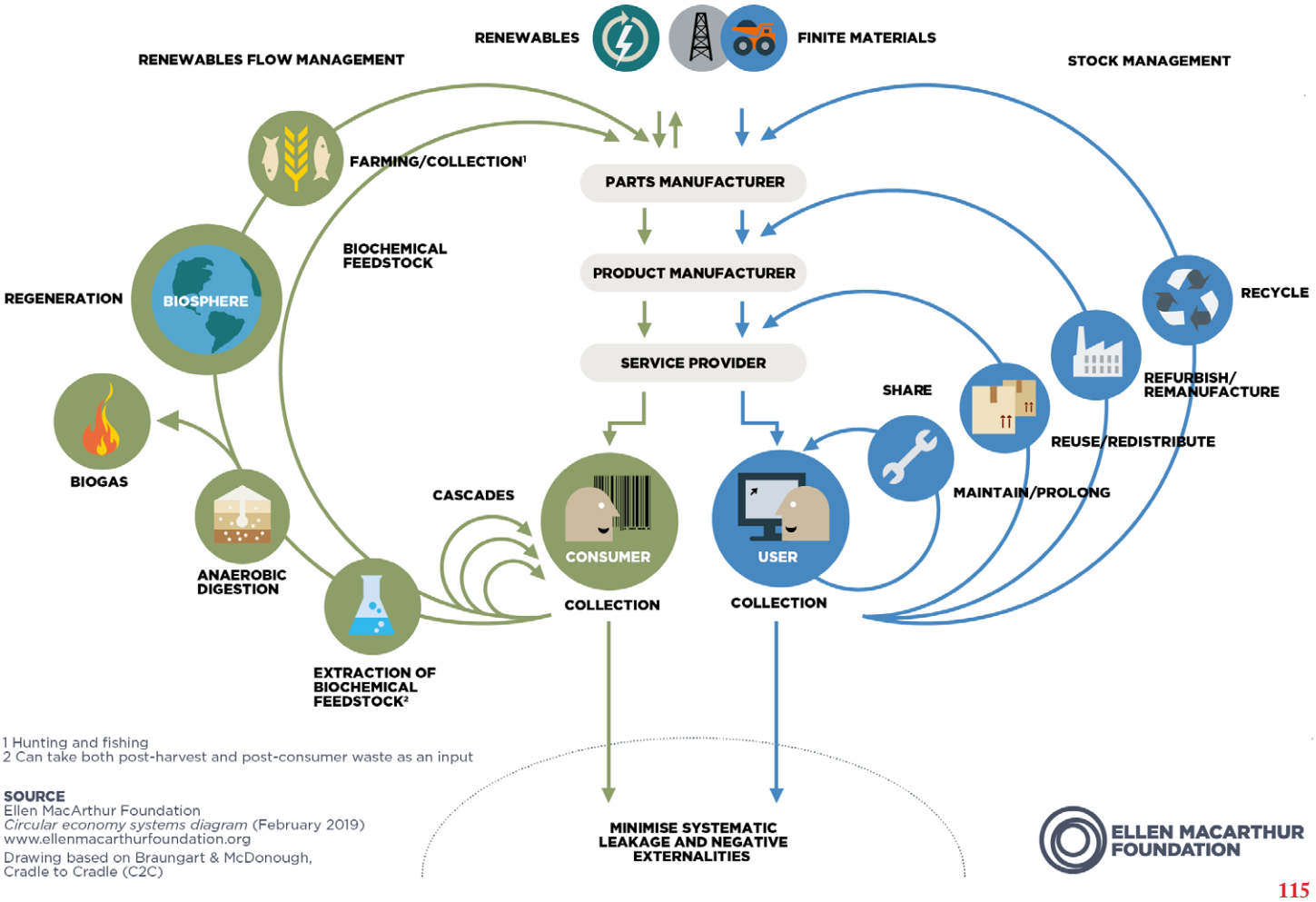
111. EcoAdapt. 2012. Adaptation Ladder of Engagement (ALOE). EcoAdapt. Bainbridge Island, WA USA
112. https://www.defensenews.com/smr/energy-and-environment/2021/08/09/climate-change-is-going-to-cost-us-how-the-us-military-is-preparing-for-harsher-environments/
113. https://www.defense.gov/spotlights/tackling-the-climate-crisis/

This work is licensed under the Creative Commons Attribution-Non-Commercial-ShareAlike 4.0 International license. To view a copy of this license, visit https://creativecommons.org/licenses/by-nc-sa/4.0/.

But there's a bigger change that needs to happen: Societies around the world need to adopt the *circular economy.* Per the U.S. Environmental Protection Agency: "A circular economy reduces material use, redesigns materials, products, and services to be less resource intensive, and recaptures 'waste' as a resource to manufacture new materials and products." This is in contrast to our more customary linear economy, "in which resources are mined, made into products, and then become waste."[114]

What does a circular economy look like?

The Ellen MacArthur Foundation has developed an illustrative graphic that breaks human activities down into two cycles: a biological cycle and a technical cycle. In the circular economy, all activities derive from and return to renewable sources throughout their entire lifecycle.



115

114. https://www.epa.gov/circulareconomy/what-circular-economy
115. https://ellenmacarthurfoundation.org/circular-economy-diagram

This work is licensed under the Creative Commons Attribution-Non-Commercial-ShareAlike 4.0 International license. To view a copy of this license, visit https://creativecommons.org/licenses/by-nc-sa/4.0/.

Once a material enters the cycle, the main question becomes: How do we eliminate waste?

The biological side is easy to understand, as we're already familiar with natural restoration processes. As long as we do not take too much at any one time, or pollute natural resources beyond their ability to recover, any natural resources humans use can be fed back into the system in order to regenerate nature's own stock. If you compost food or yard waste at home, you've already seen this process in action.

On the technical side, users and manufacturers share responsibility for eliminating waste.

The first level tasks users with sharing resources. In practice, that looks like Zipcar, public transportation, borrowing tools from a neighbor rather than buying, or checking out books and other resources from your local library.

The second level involves both users and manufacturers in maintaining or prolonging use. Manufacturers are tasked with developing durable, affordable, easy-to-repair products, and users are tasked with taking the trouble to repair those products when they break rather than just throwing them out. Even now, many municipalities offer free hands-on repair clinics, where people can bring in broken items and learn from experts how to fix them, with necessary tools provided.

On the third level, reusing and redistributing can happen in a one-to-one user way, for instance, via Buy Nothing groups and neighborhood-based "curb-cycling," or at a larger scale via thrifting and second-hand shops or even at the level of the original manufacturer taking used products back and reselling them. If you've ever bought a used car, you've participated in this process.

The fourth and fifth levels depend on manufacturers to refurbish products, break them down into their component parts for use in remanufacturing, or recycle base materials into something new.

In all cases, the goal is to minimize anything that drops entirely out of the system, e.g., "systematic leakage and negative externalities," and to learn to live with less.

What resources might your association be able to share with another organization? Office space or equipment? Exhibiting materials? If you sell or give away any physical objects, can you ensure that they're durable and well-made, able to be used, repaired, and re-used over the long term? Can you make it a policy to select vendors for durable goods your association purchases that have processes for refurbishing, remanufacturing, or recycling those goods when they're at the end of their useful lifespans?

This work is licensed under the Creative Commons Attribution-Non-Commercial-ShareAlike 4.0 International license. To view a copy of this license, visit https://creativecommons.org/licenses/by-nc-sa/4.0/.

We Can – and Must – Act. Now.

"This is all wrong. I shouldn't be up here. I should be back in school on the other side of the ocean. Yet you all come to us young people for hope. How dare you! You have stolen my dreams and my childhood with your empty words. And yet I'm one of the lucky ones. People are suffering. People are dying. Entire ecosystems are collapsing. We are in the beginning of a mass extinction, and all you can talk about is money and fairy tales of eternal economic growth. How dare you!"

Greta Thunberg, Speech to the United Nations, September 23, 2019[116]

We'd like to offer one final argument for taking meaningful action, now, to become more resilient and adaptive in the face of the Anthropocene climate disruption: your future. We don't mean in the longer-term "if we don't change, humanity may cease to exist" kind of way. (Although we mean that, too.) We mean in the immediate "your association needs to be able to recruit younger members and be seen as an attractive place to work for Millennials and Gen Z to continue to be a viable organization" kind of way.

Deloitte recently released the results of its 11th annual survey focused on the views young people hold about work and the world. One of their key findings was: "Protecting the environment remains a top priority for Gen Zs and millennials. About three-quarters of respondents believe the world is at a tipping point in responding to climate change, but less than half are optimistic that efforts to protect the planet will be successful…. They want businesses, and their own employers, to do more…. [They] want to see employers prioritize visible climate actions."[117] Survey responses revealed that, while employers' response to the climate crisis may not be "at the top of the priority list when choosing a job,…level of satisfaction with commitment to societal impact…and sustainability have a direct impact on job loyalty."[118]

If you want to remain competitive as an employer and attractive as a professional community, you have to take action on climate change. It's as simple as that.

You have to know what's going on.

You have to care.

You have to educate yourself about the consequences of choices you make every day, everything from choosing to walk a few extra steps to recycle a soda can to the choices you make in the voting booth to your association's investment policies and advocacy priorities.

You have to be willing to absorb some costs. Those costs may be financial, like opting for renewable energy sources, even at a few cents more per kWh. Those costs may involve eliminating some conveniences, like getting rid of the office Keurig machine and bottled water. They may be related to time investment, like taking public transportation or an e-cargo bike rather than driving.

You have to act. Individual action. Family action. Community action. Organizational action. Societal action. National action. International action. None of those is enough on its own – it's going to take all of them.

116. https://www.pbs.org/newshour/world/read-climate-activist-greta-thunbergs-speech-to-the-un
117. *Striving for Balance, Advocating for Change: the Deloitte Global 2022 Gen Z & Millennial Survey,* pp. 4-5
118. *Striving for Balance, Advocating for Change: the Deloitte Global 2022 Gen Z & Millennial Survey,* pp. 13-14

This work is licensed under the Creative Commons Attribution-Non-Commercial-ShareAlike 4.0 International license. To view a copy of this license, visit https://creativecommons.org/licenses/by-nc-sa/4.0/.

Elizabeth recently read Kim Stanley Robinson's novel *The Ministry for the Future.* Although she is a huge fan of dystopian science fiction, *Ministry* is both dystopian and utopian at the same time. It opens with a horrific tragedy in which millions of people in India die during a heat wave, then goes on to follow two protagonists as the world finally, meaningfully addresses climate change. The thing she liked best about it was that all the science already exists. There's no miracle *deus ex machina* technology that's invented out of nowhere and fixes everything. "The solution" is that there IS no ONE solution – humans throw everything we have at the problem.

One of the challenges humans face in addressing the climate crisis is a scarcity mindset. We worry that shifting away from a world based on fossil fuels means giving up all our modern conveniences and material goods and devolving to a subsistence economy.

What if that's backwards? What if we've framed the issue all wrong?

As writer and historian Rebecca Solnit posited in an article for the *Washington Post* excerpted from *Not Too Late: Changing the Climate Story From Despair to Possibility*, a recently-published anthology she co-edited: "What if the austerity is how we live now — and the abundance could be what is to come?"

Solnit points out that although some of us have material abundance in the fossil fuel-driven world, those resources are wildly unequally distributed, and even the wealthy and well-off often lack "social connectedness, mental and physical health, and other measures of well-being." We suffer the moral injury of this, which reduces our willingness and ability to act.

Solnit encourages us to pursue true riches, and asks: "What if we imagined 'wealth' consisting not of the money we stuff into banks or the fossil-fuel-derived goods we pile up, but of joy, beauty, friendship, community, closeness to flourishing nature, to good food produced without abuse of labor? What if we were to think of wealth as security in our environments and societies, and as confidence in a viable future?"

Solnit concludes:

> "To respond to the climate crisis — a disaster on a more immense scale than anything our species has faced — we can and must summon what people facing disasters have: a sense of meaning, of deep connection and generosity, of being truly alive in the face of uncertainty. Of joy."[119]

Where does this leave associations? Small wins and interim successes are excellent at helping people stay motivated towards the long-term effort of creating large-scale change. Different professions and industries are all operating at different levels of knowledge about the implications of climate change. But we all need to shift from third-level "implicatory denial" and recognize that the continued survival of the professions and industries associations serve depends on their ability to adapt quickly to this rapidly evolving situation. People must mobilize around the concrete steps we can take, now, that will both address Anthropocene climate disruption and make our businesses and communities more stable and profitable over the long term.

The good news is: This is all stuff that associations are good at!

We are perfect social laboratories to hold conversations and develop change agendas to help the industries and professions we serve take simple steps toward creating a better world for all of us. We're accustomed to tailoring our communications to groups with different levels of knowledge and information. We already freely and generously share solutions and good practices within the association industry itself. We regularly mobilize our members and the public to encourage group action. We have thousands of lobbyists and government relations professionals at our disposal who are skilled at influencing policy and policymakers.

Listen. Learn. Lead. Pursue joy and true abundance. The Anthropocene climate crisis is scary, and it's likely to get worse before it gets better, but we can handle this, we can take it in and live with it and take action anyway. We can do this, together.

119. https://www.washingtonpost.com/opinions/2023/03/15/rebecca-solnit-climate-change-wealth-abundance/

This work is licensed under the Creative Commons Attribution-Non-Commercial-ShareAlike 4.0 International license. To view a copy of this license, visit https://creativecommons.org/licenses/by-nc-sa/4.0/.

CASE STUDY
American Association of Geographers: A Member-Driven Climate Task Force and Annual Meeting "Nodes"

"The work we're doing around climate change is intentional, and we share it widely with our members and other audiences. It's through their efforts that we're taking the lead on sustainability."

Gary Langham, Ph.D., Executive Director

Members of the American Association of Geographers (AAG) have long been professionally interested in, concerned about, and working on climate change, from both the "hard" science perspective of how the environment and land interact and from the social-science perspective of how humans interact with them both.

In 2019, members came together to formally petition AAG to create a group to study the impact of AAG's annual meeting on the environment, with the goal of reducing emissions from the annual meeting by 45% by 2030.

In response, AAG formed a member-driven climate task force, whose initial recommendations addressed topics like virtual meetings and streamed content, etc., which most associations have been struggling with for some time.

The big changes came about in 2023, when AAG resumed in-person conferences.

"We had planned to go to Denver in March 2020, which obviously didn't happen," said Jill Treby, CAE, AAG's Chief of Staff. "We were able to quickly transition to a virtual meeting, and then held virtual meetings in 2021 and 2022. While it was initially a big initial effort, it helped create a template to facilitate hybrid meetings going forward. When we returned to Denver in 2023, we offered both virtual and in-person participation options. Our climate task force recognized that attendees might not want or be able to travel for a variety of reasons – climate, cost, health concerns – but would still benefit from the opportunity to experience the meeting sessions with other geographers. The task force recommended we create conference 'nodes,' recruiting partner institutions to host venues to stream content."

Those "nodes" operated in one of two modes. Most universities hosted "watch parties," where registered attendees made choices together about which sessions they would view. Additionally, one institution partnered as a satellite location, hosting presentations that were broadcast as part of the larger meeting.

How did it go?

"Before we moved forward with experimenting with the 'nodes' concept, our climate task force did a 'temperature check' survey of our members that indicated they were open to the idea," said Treby. "Post-conference, the initial response was very positive. We heard anecdotal feedback that attendees would value having more options, so we're currently fielding a survey among both participants and node organizers related to that specific issue along with our larger commitment to minimizing and mitigating the carbon emissions of all our convening activities, both in-person and virtual. We also know we may need to re-examine the pricing, because while attendees have the expectation that a virtual registration will be lower cost, there's a significant tech support investment related to high-quality livestreaming."

AAG's 2024 annual meeting will present an even bigger challenge, as it's scheduled to be held in Hawai'i.

"Hosting a meeting in Hawai'i potentially doubles the carbon impact of the event," said Treby. "Not only do we have to address typical issues like food waste and the production and disposal of conference materials, we also have to plan for the increased emissions created by transporting both materials and people roughly 4,000 miles."

This work is licensed under the Creative Commons Attribution-Non-Commercial-ShareAlike 4.0 International license. To view a copy of this license, visit https://creativecommons.org/licenses/by-nc-sa/4.0/.

Because of that, AAG plans to expand the node idea, incorporating lessons learned about the kind of support the nodes need related both to technology and on-site activities. "It's exciting to talk with our node partners about what they *could* do, but we've learned that one of the keys to success is to have a champion at the institution who acts as the point of contact to confirm that everything that needs to be done gets done so that all attendees have a positive experience," said Treby.

"We're also working with a Kānaka Maoli (Indigenous) local coordinator to ensure we're *welcome* guests, respectful of the Indigenous community and local environment," said Treby.

AAG is not just focusing on member-facing programs in its sustainability efforts. As Treby noted: "We're also 100% free of fossil fuel investments. We recently decided to make changes to our office space, which didn't meet our environmental or accessibility goals, and opted to move to an existing space in a LEED Gold building, rather than renovating our existing building, which would've had a much larger carbon footprint."

One of the elements that sets AAG's climate change work apart is measurement. "We set a specific target – a 45% reduction in carbon emissions from meetings by 2030," says Gary Langham, Executive Director of AAG. "To understand our baseline, we adapted a method that measured the impacts of the American Geophysical Union meetings.[120] We analyzed 11 of our recent meetings to measure the carbon impact of our convenings and forecast our performance over time. Our members have called on us to formalize our sustainability efforts and to go beyond looking at only the annual meeting or getting away with lip service: 'Oh, we'd like to use recycled materials where possible.' This is important to them. They provide input and guidance, and hold us accountable."

What advice would Treby have for another association looking to take a leadership role around climate change when it comes to member-facing programs, products, and services?

"AAG has an advantage that other associations may not have, even if their members are passionate and concerned about climate change," Treby advised. "We are fortunate in that we have committed volunteers who are experts in climate change, so we have someone to go to vet ideas. For instance, one of our staff members had suggested offering carbon offsets for our in-person convenings, and our member experts were able to validate that those are not effective. Our work around climate has been driven by our climate task force, but it's becoming fundamental to all our operations. We take inspiration from everywhere, and no element is too small. Incremental changes become policies over time. The key is to find a way in, but once you do, you realize that this affects everything."

About AAG

The American Association of Geographers (AAG) brings together members of the global geographic community.

We provide students, educators, practitioners, and partners with the resources they need to enter the field, develop their careers, and form professional friendships that can last a lifetime. Through annual and ongoing programs, events, and meetings, we aim to create a space in which all geographers—wherever they come from—will know they are valued, heard, and welcomed.

By taking care of our community, we ensure the health and vitality of the geographic discipline as it evolves to meet the challenges faced in today's world.

120. AAG [2021] "Carbon Emissions Associated with Travel to AAG Annual Meetings." Unpublished analyses prepared for the American Association of Geographers by JGS Projects, October 2021

This work is licensed under the Creative Commons Attribution-Non-Commercial-ShareAlike 4.0 International license. To view a copy of this license, visit https://creativecommons.org/licenses/by-nc-sa/4.0/.

CASE STUDY
ASAE: Getting Started with Sustainability

"If I look back a year from now, I'd like people to know they can start."

Amy Hissrich, M.A., CAE
Vice President, International Affairs, ASAE

Many of our readers might have already seen ASAE's press release[121] about the sustainability partnership it recently launched with the American Geophysical Union (AGU).

The partnership will initially include three components:

- A Sustainable Association Collaborative, comprised of seven association members, designed to help association CEOs explore sustainability issues, with an initial focus on sustainable office spaces.
- A sustainability toolkit designed to help associations embarking on their sustainability journey, where AGU will provide subject matter experts and ASAE will curate the types of resources that may be most useful to associations.
- A showcase of AGU's sustainability initiatives on the Expo floor at the 2023 ASAE Annual Meeting.

How did the idea for this project arise?

"In 2022, ASAE's Association Insight Center, led internally by Christin Berry, CAE, and facilitated by McKinley Advisors, convened a group of association CEOs to identify core priorities for associations at this moment in history," said Amy Hissrich, MA, CAE, Vice President, International Affairs at ASAE. "The group pinpointed two priorities: the need for new business models coming out of the coronavirus global pandemic and the ESG (environmental, social, governance) framework for association."

Hissrich pointed out that many associations have a "deep bench" on the "G" part of that equation – "doing governance better is a core competency of associations and always top of mind," she said – and that in the past decade, there's been a significant strategic focus on "S," including DEIA (diversity, equity, inclusion, and accessibility) initiatives. The newer consideration for a lot of associations was "E," where, she noted, many associations (other than scientific societies) have little experience.

The partnership with AGU arose from its involvement in the initial Association Insight Center cohort. "It was clear from the start that AGU is farther down the path on environmental issues than a lot of other associations," Hissrich said. "They have the experience of taking concrete steps to address climate change in everything from office space to investment portfolios to meeting practices. ASAE is just starting on their sustainability journey, too. The partnership provides access to expertise to help the association industry answer the critical question: 'Where do I start?' helping us compile resources like stories from associations that are already doing work in this area and questions to address with your board of directors. We want to educate and inform our members so associations can walk the 'E' path."

121. https://www.asaecenter.org/about-us/news_releases/2023/asae-and-agu-partnering-to-help-associations-improve-sustainability-initiatives

This work is licensed under the Creative Commons Attribution-Non-Commercial-ShareAlike 4.0 International license. To view a copy of this license, visit https://creativecommons.org/licenses/by-nc-sa/4.0/.

One of the key challenges all types of organizations face in addressing the climate crisis is knowing where to start. It's such a big issue it can feel overwhelming, which can easily lead to inaction. "One of our sayings is: 'Don't let the perfect be the enemy of the good,'" Hissrich said. "Obviously, we have to be thoughtful about the steps we take as individual associations and as an industry to prepare to respond to climate change and plan to ameliorate its effects on our own organizations and the professions and industries we serve, but one major change we've observed is that climate change is finally becoming a business imperative for associations, which allows us to move beyond personal convictions and individual choices to instituting organization-level initiatives around things like our chapters, supply chain, our conventions and events. We're finally getting to the point where climate change is driving cooperative action. This is now a priority for our members, and we're trying to serve them by sharing stories and good practices so we can all learn together."

As this paper was going to print, ASAE released their toolkit, *The Association's Starter Guide to Sustainability and ESG*. More information is available at ***https://www.asaecenter.org/asae-home/publications/***.

About ASAE

ASAE is the essential organization for association management, representing both organizations and individual association professionals. We believe associations have the power to transform society for the better. Our passion is to help association professionals achieve previously unimaginable levels of performance. We do this by nurturing a community of smart, creative, and interesting people: our members. In short, we are the Center for Association Leadership.

With the support of the ASAE Research Foundation, a separate nonprofit entity, ASAE is the premier source of learning, knowledge, and future-oriented research for the association and nonprofit profession and provides resources, education, ideas, and advocacy to enhance the power and performance of the association and nonprofit community.

About the American Geophysical Union

AGU is a global community supporting more than half a million advocates and professionals in the Earth and space sciences.

Through broad and inclusive partnerships, AGU aims to advance discovery and solution science that accelerate knowledge and create solutions that are ethical, unbiased, and respectful of communities and their values. Our programs include serving as a scholarly publisher, convening virtual and in-person events and providing career support. We live our values in everything we do, such as our net zero energy renovated building in Washington, D.C., and our Ethics and Equity Center, which fosters a diverse and inclusive geoscience community to ensure responsible conduct.

AGU was established in 1919 by the National Research Council and operated as an unincorporated affiliate of the National Academy of Sciences for more than 50 years. We were independently incorporated in 1972.

This work is licensed under the Creative Commons Attribution-Non-Commercial-ShareAlike 4.0 International license. To view a copy of this license, visit https://creativecommons.org/licenses/by-nc-sa/4.0/.

CASE STUDY
SDG Align & the Strata Community Association: Sustainable Development - The Elephant in the Room

"We believe it is important that our members embrace a sustainable future and that they play a critical role in propagating these practices to the communities they manage."

Alisha Fisher
CEO, Strata Community Association

Australia, listed 40th (just behind the United States) in the most recent ranking of member states on the UN Sustainable Development Goals Index,[122] has a population of 25 million, almost 90% of whom live in the four largest cities. Ten percent of those Australian city-dwellers live in properties that are jointly owned, with multiple units and shared common areas and facilities, what we in the U.S. think of as condo or co-op properties. In Australia, those are referred to as "strata" properties.[123] The Strata Community Association (SCA) is a membership association for managers, lot owners, tenants, and other stakeholders managing, living, or working in strata communities.

Consumers are demanding action on climate change and voting with their wallets on sustainable goods and services. National governments are increasingly following northern Europe's good practice of supporting the UN 2030 Agenda for Sustainable Development and reporting on their progress. Large companies are increasingly reporting on their ESG practices due to shareholder demand. They are also deploying their resources to meet consumer demand and align with national and international regulatory frameworks. However, many smaller companies and even large companies' supply-chain partners lack the time and resources to do the same.

Making sustainable practices a business habit requires rethinking the ways we work, live, and run our businesses. It requires a systems approach to align with the principles of the UN Sustainable Development Goals (SDGs) to accelerate the shift from economic growth to sustainable or even regenerative growth.

Associations play a leading role in supporting and educating their members. However, associations, like smaller companies and supply chains, often lack the aggregated sustainability data to develop policies and procedures for their entire industries or professions. This makes industry-wide attempts at sustainable development "the elephant in the room."

The Strata Community Association (SCA) leadership was being confronted with questions they couldn't answer. What is your vision on sustainability for the sector? How are we going to develop the skills needed to align our work with the new requirements? How are we going to train our staff? How do we work with our customers? What do we tell them?

Meanwhile, a team of people from Tasmania and the Netherlands with skills in strategy, data, technology, training, and change management came together during the 2020 coronavirus pandemic to found SDG Align, which is on a mission to deliver the tools and insights that help business leaders design the strategies to make sustainable practices a business habit.

122. https://dashboards.sdgindex.org/rankings
123. https://cityfutures.ada.unsw.edu.au/2022-australasian-strata-insights/

This work is licensed under the Creative Commons Attribution-Non-Commercial-ShareAlike 4.0 International license. To view a copy of this license, visit https://creativecommons.org/licenses/by-nc-sa/4.0/.

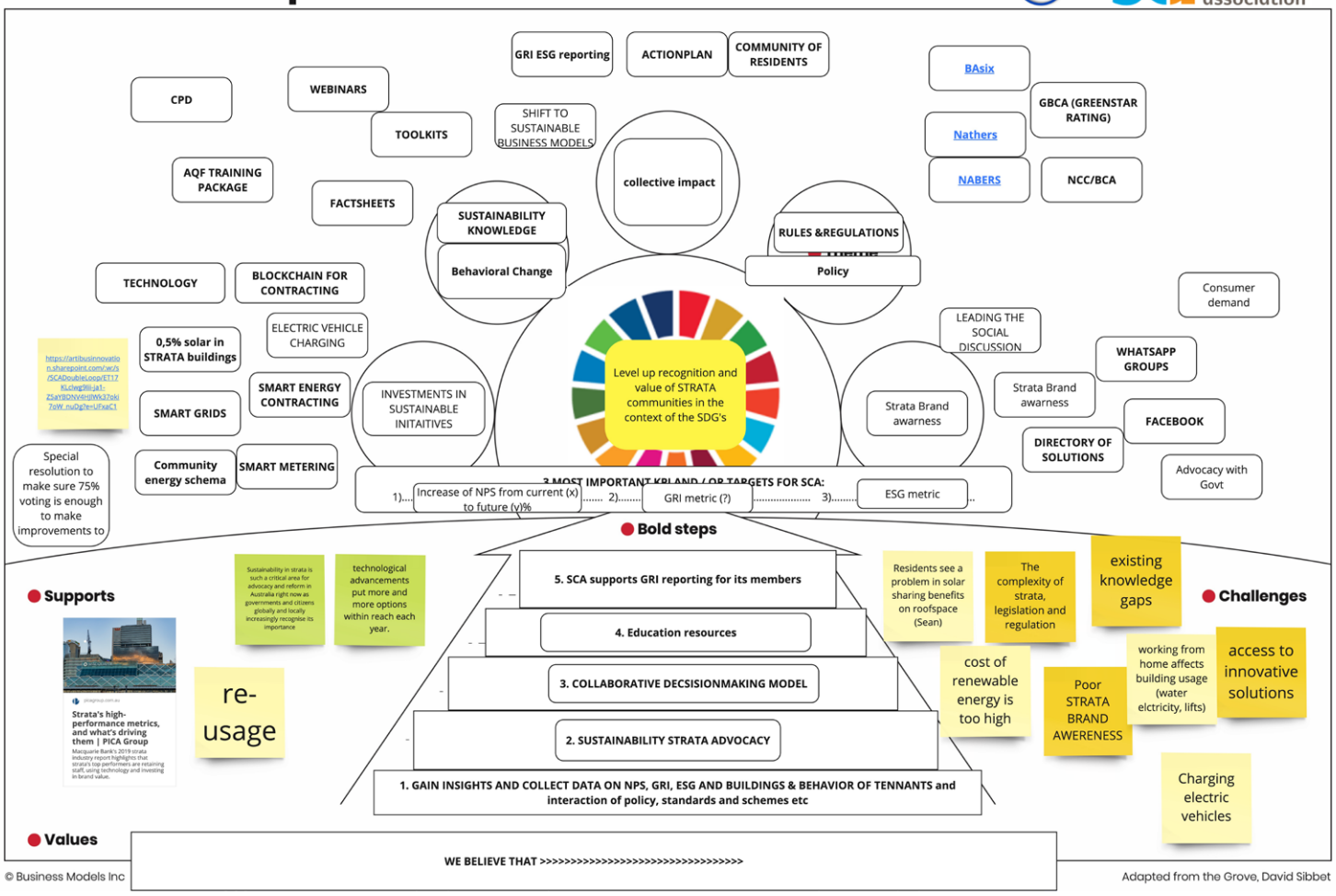
CASE STUDY
SDG Align & the Strata Community Association: Sustainable Development - The Elephant in the Room

Realizing that the strata sector has an untapped net-zero potential of $1.3 trillion,[124] SDG Align brought together the Strata Community Association and two other industry organizations to co-design a self-assessment tool that ties to the UN SDGs and helps entire industries aggregate data to develop good sustainability policies and procedures to build momentum for change.

The project started with a three-month, SDG Align-facilitated online strategy design program with participants from all stakeholder groups. The team used digital Miro boards to collect ideas, allowing all the participants to contribute in a meaningful way.

The team also conducted stakeholder interviews and fielded brief surveys on participants' familiarity with the concept of sustainable development to collect data and develop insights on what mattered most to the various stakeholder groups.

Those inputs resulted in a co-created "strategic narrative" that described what sustainable development means to the strata industry, the full version of which is available at *https://www.strata.community/sustainability*.



124. https://www.afr.com/property/residential/the-untapped-net-zero-potential-of-the-1-3-trillion-strata-sector-20220323-p5a73e

This work is licensed under the Creative Commons Attribution-Non-Commercial-ShareAlike 4.0 International license. To view a copy of this license, visit https://creativecommons.org/licenses/by-nc-sa/4.0/.

That, in turn, led to the development of the prototype that became the SDG Align toolkit. The toolkit delivers real-time insights on members' perceptions about sustainability as well as their expectations as to how industry associations should lead on sustainability. Users take a 10-minute self-assessment and commit to the declaration for a sustainable future. The declaration is a third-party credential that users can share online or on social media.

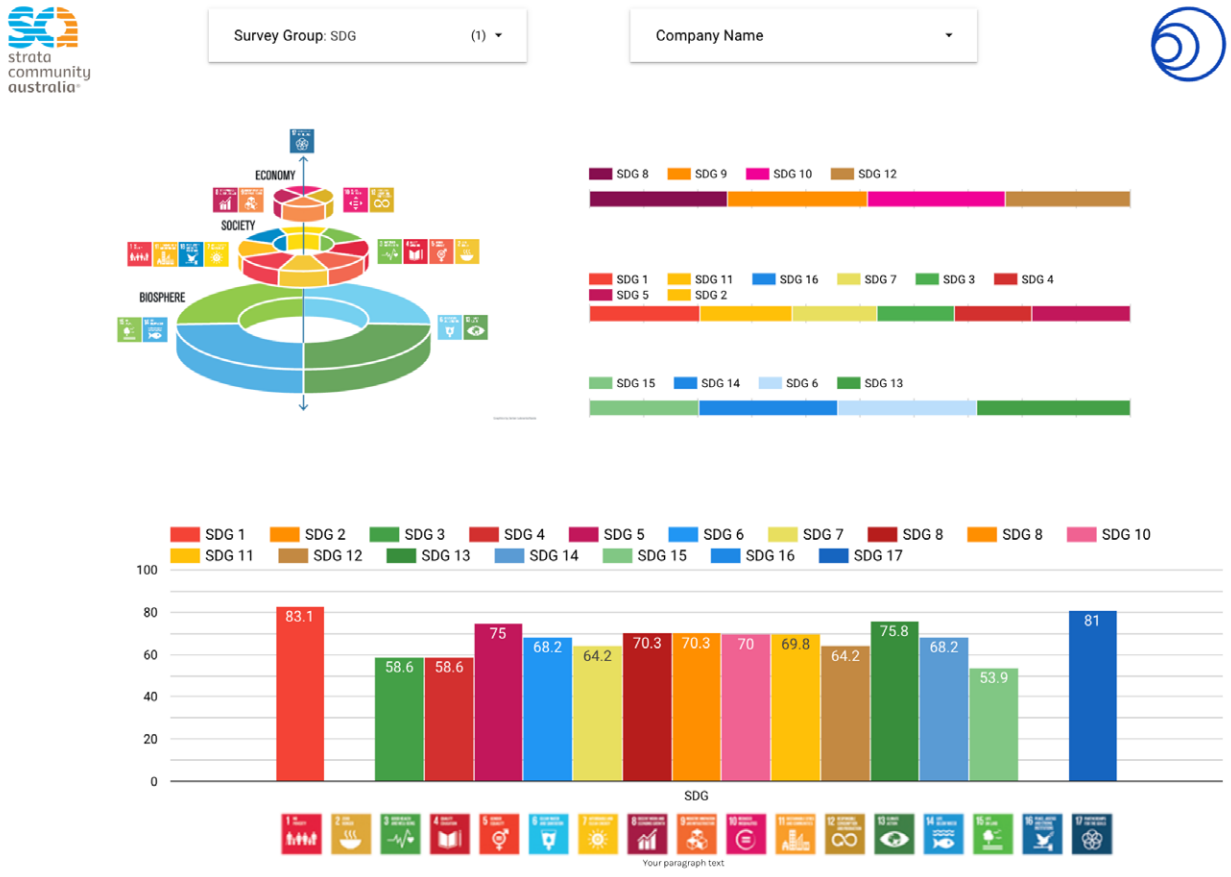
Example declarations:

- The Knight: *https://www.credential.net/9b0546f6-9c35-40ea-94a7-e506e874ed85*
- CHU: *https://www.credential.net/912e6659-5c79-415c-8896-bd5e5cff00d3*

This contributes to trust-building among participants and provides a tangible output for the association. The toolkit also provides users with a prioritized Business Sustainability Plan and delivers data-driven insights to determine the gap between current state and desired future, which allows users to develop relevant strategies, training, education, and advocacy. Finally, the program offers users branding and content marketing opportunities that help build momentum for change, while also generating non-dues revenue.

If you are interested in seeing how the SDGAlign toolkit can work for your association, you can create a free account and conduct your own online assessment at *https://bit.ly/MAA_SDGToolkit*.

Strata Community Australia: Which Sustainable Development Goals Matter Most to Members



This work is licensed under the Creative Commons Attribution-Non-Commercial-ShareAlike 4.0 International license. To view a copy of this license, visit https://creativecommons.org/licenses/by-nc-sa/4.0/.

What was SCA's most important objective in the partnership?

"Strata managers are custodians of the built environment and are centrally placed to contribute to the social, economic, and environmental impacts within the built environment," said Alisha Fisher, CEO of the Strata Community Association. Our holistic view of all the pieces of the puzzle gives us the opportunity and responsibility to raise our profile and start to take a leading role in bringing the industry together on the journey."

What does the future look like for SCA now that they are working with SDG Align?

"The Australian Government and the financial sector are shifting towards sustainable and equitable regulations and investment strategies," Fisher said. "As a result, investors in the built environment will need to shift their investment portfolios to ESG compliant assets. Meanwhile, current and future owner-occupiers and tenants are demanding comfortable, green, safe, and efficient units. As digitization and sustainability become the norm, strata managers will have to shift their focus from managing assets to managing communities. SCA has a vision of a sustainable future, and we now have the tools to capture behavioral change over time, which means our community is well positioned to lead the change," said Fisher.

About the Strata Community Association

The Strata Community Association (SCA) is the peak body in Australia and New Zealand for Industry Managers, Lot Owners, Tenants and Stakeholders living in Strata Title, Body Corporate, Community Title or Owners Corporations.

We believe in taking action with urgency in order to raise public awareness about some of the most pressing issues facing today's society.

About SDG Align

Our purpose is to have every business designed and driven to make positive impacts on people, planet and prosperity. We are on a mission to deliver the tools and insights that help business leaders design the strategies to make sustainable practices a business habit.

We provide unique aggregated data and insights on business sustainable development in a way that unpacks what sustainable development means at a personal, business as well as an industry level.

Our online SDG Align Toolkit features a 10-minute self-assessment, supporting company employees and SME end-users with practical opportunities for improvement while building knowledge about sustainable development. It helps to set business goals and commits to a future where sustainable business practices are a business habit.

Our data is used to deliver Strategy Design services, based on the principles of Design Thinking and Futures Thinking to help our customers develop their long-term Business Sustainability Strategies.

Website: ***http://sdgalign.com.au***

This work is licensed under the Creative Commons Attribution-Non-Commercial-ShareAlike 4.0 International license. To view a copy of this license, visit https://creativecommons.org/licenses/by-nc-sa/4.0/.

CASE STUDY
Stand.earth: Walking Your Talk on Sustainability

"By supporting the whole person, we benefit from them being able to bring more energy to their work. There isn't work and life, there's just life."

Todd Paglia
Executive Director

Founded as a result of the organizing work that went into the Great Bear Rainforest Agreements,[125] Stand.earth works every day to shift industries out of fossil fuels and coal, specifically focused on working with frontline groups on innovative solutions to protect old-growth forests and on mobilizing people to advocate for climate change-friendly government policy. Their team of 70 people has stopped oil pipelines and protected millions of acres of forests, with an impact many times greater than that of much larger groups.

But that success doesn't come without a price.

"The hard part is when you are taking on big fights and big companies, people get knocked on their ass," said Todd Paglia, Stand.earth Executive Director. Because of that, while Stand.earth takes steps to reduce carbon emissions, their definition of sustainability is broader, incorporating the mental, physical, emotional, financial, and spiritual well-being of staff. "We do a lot to keep our people going and keep them healthy," said Paglia.

Why does that matter so much?

Paglia related a particular example: "We were planning an action around the Royal Bank of Canada's annual shareholder meeting. RBC is the biggest fossil-fuel investor on the planet. They moved their meeting, hoping we wouldn't show up, but we did. Our team was greeted by snipers on the roof, armed police, and undercover police. There was violent pushback. Then the meeting itself was segregated: white people in some rooms, people of color in others. This was both emotionally and physically traumatic for our team. We have to support our people and equip them to be ready for an increasingly volatile world in the coming years."

In terms of reducing emissions, Stand.earth has taken good advantage of technology from its founding. It doesn't have a physical office; Paglia encourages staff to work from wherever is most comfortable for them, and Stand.earth pays for whatever staff members need to set up a comfortable work situation. This has allowed them to take advantage of an international talent pool to fill staff positions. Even pre-pandemic, Stand.earth used video conferencing extensively, and it takes an intentional approach to in-person gatherings. "There is a necessity for human interaction, so we do two in-person all-staff gatherings per year. You have to participate in the world in order to change it. We can't wring our hands too much over travel, but we try to minimize our impact," said Paglia.

However, sustainability, as Stand.earth defines it, also includes things like:

- A BIPOC wellness fund that includes coaching and a healing justice fund
- Fully paid health, dental, and vision for staff and their dependents
- Generous leave, including traditional offerings like vacation, bereavement leave, and sick time; a "winter break"; an annual one-week "inspiration vacation"; leave for family or elder care, body autonomy, and gender affirmation; and the option for a three-month sabbatical after seven years of service
- An annual professional development benefit
- An annual employer retirement benefit
- Life and disability insurance
- A pay equity project and compensation transparency
- A 4 ½-day work week and flexible schedules
- An Employee Assistance Program

125. https://www2.gov.bc.ca/gov/content/environment/natural-resource-stewardship/great-bear-rainforest/gbr-agreement-highlights

This work is licensed under the Creative Commons Attribution-Non-Commercial-ShareAlike 4.0 International license. To view a copy of this license, visit https://creativecommons.org/licenses/by-nc-sa/4.0/.

Moreover, mindfulness is foundational to everything the organization does. "Meditation practice has been core to Stand for over a decade," said Paglia. "We start all weekly staff calls and in-person meetings with mindful meditation, provide two guided meditation sessions for staff every week, and offer regular meditation training sessions, including at our biannual staff retreats. The science has finally caught up and shows clear physical and mental health benefits. Mindfulness practice is part of our overall investment in the well-being of our team."

This has resulted in significant benefits to the organization. "One of the keys to success for social impact organizations is keeping the right people," he said. "It takes time for someone to go from being a good campaigner to one of the best in the world, or from being an experienced organizer to successfully doing large-scale organizing. If you're not the right fit, we will help you get to your next job that is a better fit. But Stand.earth has been successfully retaining core staff for decades, because we support our staff in building the skills they need to become movement leaders, and our reputation has gotten around. We regularly have up to 500 people apply for openings."

Where do all these great ideas come from?

"Pretty much any time anyone thinks of a good benefit they'd like, we add it," said Paglia. This has had a tremendous positive effect particularly for Stand.earth's younger staff members. "Our younger staff are the future. They're the ones who will move our organization and our world forward, and they are being particularly affected by stories of climate doom. It's easy to understand why they perceive that they're inheriting a world on fire that will be hard to live in, so it's critical that we support them. We need to persist despite the 'broken world' narrative that's prevalent in some places, because if we keep working for change, it won't be broken."

What advice would Paglia offer for association executives looking to align their walk with their talk around supporting their staff members?

"I only wish we'd gone bigger earlier," said Paglia. "Initially, we were nervous about the cost of benefits, and we were overly focused on minimizing those costs. But over time, we've grown into a different understanding of things, and my own thinking on this issue has evolved. My advice would be: Invest to the point that you're scared of how much you're spending. People are dealing with so much strain right now, it's worth it to dig deep to support your staff in their journey and keep them healthy and strong so they can kick ass on your mission. Investing in our people helps make them awesome at their jobs."

"What this comes down to is that physical and mental healthcare are a right, not a privilege," he added. "Our staff takes on the enormous challenge of making real change in the world every day. Any way we can support them and help them feel whole, that's money well spent."

About Stand.earth

We are a growing team of strategists, researchers, communicators, policy and issue experts — plus a powerful global network of donors, activists, and community members from every walk of life, united in our demand for transformational change.

Our mission is to challenge corporations and governments to treat people and the environment with respect. We investigate, expose, organize, collaborate, and resolve – applying a just-right strategy to each issue we address. Our approach makes us one of the most efficient, effective problem-solving entities working on climate and environmental issues today.

This work is licensed under the Creative Commons Attribution-Non-Commercial-ShareAlike 4.0 International license. To view a copy of this license, visit https://creativecommons.org/licenses/by-nc-sa/4.0/.

Climate Change Denialism, Politics, and National Security

While climate change is a polarizing political topic in many countries, in the United States there is a particularly sharp partisan divide over both the science and the government's role in supporting efforts to reduce carbon emissions and engage in environmental policymaking. In February 2020, for instance, the Pew Research Center conducted a study on partisanship and environmental concerns and found that 78% of people who identified as Democrats said addressing global warming is a high priority, while only 21% of people who identified as Republicans agreed.[126]

This widening chasm has resulted in climate scientists receiving increasing amounts of direct threats of bodily injury and death, to the point that in June 2011, the American Association for the Advancement of Science (AAAS) felt compelled to release a press statement directly addressing the issue: "AAAS vigorously opposes attacks on researchers that question their personal and professional integrity or threaten their safety based on displeasure with their scientific conclusions."[127]

More recently, Global Witness conducted a poll of climate scientists in 2022, and about half of the 468 respondents reported that they had received online threats of sexual or physical violence. (Unsurprisingly, in all categories, women scientists reported more threats and more severe harassment.)[128]

These kinds of attacks aren't limited to climate scientists. For instance, in June 2023, Chris Gloniger, a meteorologist based in Iowa, announced he was resigning from television station KCCI because of the threats he and his family had received due to his reporting on climate change.[129]

The thing is, the science itself is apolitical. The negative effects of climate change will impact us all, regardless of whether we believe in the science or not, and irrespective of what party we align ourselves with.

The United States military can provide a useful template for navigating climate change, which has increasingly become a litmus test of party loyalty, used to isolate political "in-groups" and "out-groups" worldwide.

The U.S. intelligence apparatus and military have been studying and preparing for the impacts of climate change for many years, regardless of which political party is currently in power or of the political atmosphere surrounding climate change. They treat climate change as the clearly observed and observable threat that it is and approach it from a non-partisan national security perspective.

126. *Pew Research Center: As Economic Concerns Recede, Environmental Protection Rises on the Public's Policy Agenda,* pg. 6
127. https://www.aaas.org/resources/aaas-board-attacks-climate-researchers-inhibit-free-exchange-scientific-ideas
128. https://www.globalwitness.org/en/campaigns/digital-threats/global-hating/
129 https://www.commondreams.org/news/iowa-meteorolgist-quits-threats

This work is licensed under the Creative Commons Attribution-Non-Commercial-ShareAlike 4.0 International license. To view a copy of this license, visit https://creativecommons.org/licenses/by-nc-sa/4.0/.

Climate Change Denialism, Politics, and National Security Cont.

The National Intelligence Council paper *Climate Change and International Responses Increasing Challenges to US National Security Through 2040* makes it clear that climate change is a grave national security concern. The paper includes a chart that indicates the level of risk to the United States from various observed outcomes that are a direct result of climate change:

Climate Change and International Responses Increasing Risks to US Interests Through 2040

Risks to US national security interests through 2040 will increase as countries respond to the intensifying physical effects of climate change. Global temperatures most likely will surpass the Paris Agreement goal of 1.5°C by around 2030, and the physical effects are projected to continue intensifying.



Risk		2021	2030	2040
Geopolitical Tensions Over Climate Responses	Perception of Insufficient Contributions to Reduce Emissions	Low	Medium	High
	Carbon Dioxide Removal not at Scale for Countries' Net-Zero Pledges	None	Low	Medium
	Developing Country Demands for Financing and Technology Assistance	Medium	High	High
	Petro States Resisting Clean Energy Transition Away From Fossil Fuels	Low	Medium	High
	Competition With China Over Key Minerals and Clean Energy Technologies	Low	Medium	High
	Contention Over Use of Economic Tools To Advance Climate Interests	None	Low	Medium
Climate Exacerbated Geopolitical Flashpoints	Miscalculation Over Strategic Competition in the Arctic Leading to Conflict	None	Low	Medium
	Cross-Border Water Tension and Conflict	Low	Medium	High
	Cross-Border Migration Attributed to Climate Impacts	Medium	High	High
	Ungoverned Unilateral Geoengineering	None	Low	Medium
Climate Effects Impacting Country-Level Instability	Strain on Energy and Food Systems	Low	Medium	High
	Negative Health Consequences	Low	Medium	Medium
	Internal Insecurity and Conflict	Low	Low	Medium
	Greater Demand for Aid and Humanitarian Relief	Medium	High	High
	Strain on Military Readiness	None	Low	Medium

Note: This graphic does not project government and non-government actions that might mitigate risks. The IC defines the level of risk as the probability of the issue occuring multiplied by its assessed impact to US interests.

130

130. *National Intelligence Estimate: Climate Change and International Responses Increasing Challenges to US National Security Through 2040*

This work is licensed under the Creative Commons Attribution-Non-Commercial-ShareAlike 4.0 International license. To view a copy of this license, visit https://creativecommons.org/licenses/by-nc-sa/4.0/.

Climate Change Denialism, Politics, and National Security Cont.

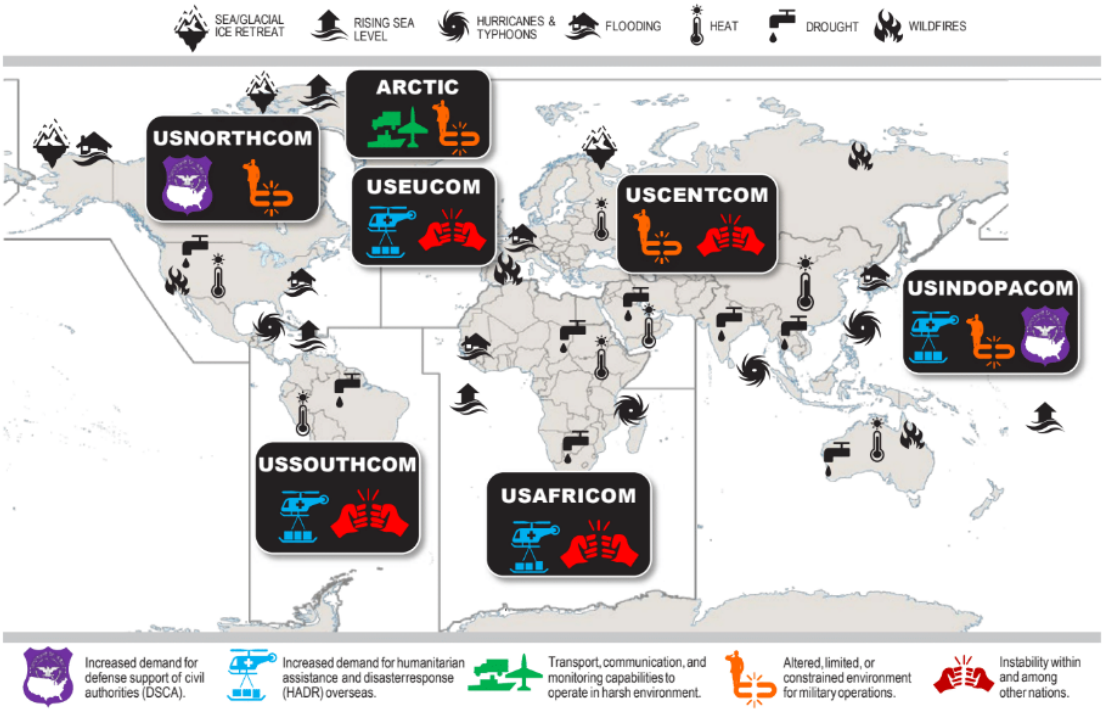
The U.S. Department of Defense routinely includes climate change in all their assessments of military readiness. As DoD put it in their October 2021 *Climate Risk Analysis* report:

> "To keep the nation secure, we must tackle the existential threat of climate change. The unprecedented scale of wildfires, floods, droughts, typhoons, and other extreme weather events of recent months and years have damaged our installations and bases, constrained force readiness and operations, and contributed to instability around the world. Climate change touches most of what this Department does, and this threat will continue to have worsening implications for U.S. national security. To meet this complex challenge, the Department of Defense (DoD) is integrating climate change considerations at all levels, including in our risk analyses, strategy development, planning, modeling, simulation, and war gaming." (Department of Defense, Office of the Undersecretary for Policy (Strategy, Plans, and Capabilities). 2021.[131]

The following chart, from that same report, sums up the general areas of concern in the different theaters in which the U.S. military operates. It includes information on what the DoD estimates the major climate change threats are in each region: sea ice retreat, rising sea levels, weather events like hurricanes and typhoons, flooding, excessive heat, drought, and wildfires.

The chart also addresses likely consequences of these climate change-induced catastrophes for U.S. military readiness: increased demand for support by civilian authorities, increased need for humanitarian assistance, impacts on transportation and communication, impacts on ability to sustain military operations, and full-scale instability and conflict within and between nations.

As you can see, every region of the world will be affected, and there is significant risk of intra- and inter-national conflict in most regions.



[132]

131. Department of Defense, Office of the Undersecretary for Policy (Strategy, Plans, and Capabilities). 2021. *Department of Defense Climate Risk Analysis. Report Submitted to National Security Council,* pg. 4
132. Department of Defense, Office of the Undersecretary for Policy (Strategy, Plans, and Capabilities). 2021. *Department of Defense Climate Risk Analysis. Report Submitted to National Security Council,* pg. 10

This work is licensed under the Creative Commons Attribution-Non-Commercial-ShareAlike 4.0 International license. To view a copy of this license, visit https://creativecommons.org/licenses/by-nc-sa/4.0/.

Climate Change Denialism, Politics, and National Security Cont.

As a result, the DoD is incorporating Anthropocene climate disruption considerations in their strategy processes, in tactical planning, in force management, in budgeting, and in all partnership considerations and activities.

As Secretary of Defense Lloyd Austin puts it in the report's conclusion: "No nation can find lasting security without addressing the climate crisis." [133]

133. Department of Defense, Office of the Undersecretary for Policy (Strategy, Plans, and Capabilities). 2021. *Department of Defense Climate Risk Analysis. Report Submitted to National Security Council,* pg. 16

This work is licensed under the Creative Commons Attribution-Non-Commercial-ShareAlike 4.0 International license. To view a copy of this license, visit https://creativecommons.org/licenses/by-nc-sa/4.0/.

Bonus Content

Stories of Positive Change

Lest we be accused of being climate "doomers," we want to point out that there are many, many groups, both inside and outside the association industry, that are taking action around reducing carbon emissions, creating sustainable and resilient local communities, educating people, and re-envisioning humans' relationships to the living beings and systems around us.

We'd encourage you to check out our case studies on pages 33-42 for an in-depth look at some of the ways tax-exempt organizations are responding to Anthropocene climate disruption. But they aren't the only associations taking steps to address the climate crisis:

Associations Take Action

- The American Association for the Advancement of Science launched ***"What We Know,"*** a project designed to combat climate denialism, in 2014.
- The American Hospital Association's ***sustainability roadmap*** addresses the impact of climate change on human health and focuses heavily on ways hospitals can improve sustainability across their supply chains.
- The American Institute of Architects has a ***"zero-carbon initiative,"*** focused on getting the built environment to net zero via improving energy efficiency and tackling the carbon emissions that are embedded in construction materials and processes.
- The American Society of Landscape Architects has created a ***climate action plan*** that focuses on designing for carbon sequestration, green jobs, climate justice, restoring ecosystems, and protecting biodiversity.
- The Entomological Society of America has been intensively studying the ***"insect apocalypse"*** and has provided public information so we can all help protect "the little things that run the world."
- ***IEEE*** has an initiative dedicated to preparing engineers to combat and mitigate the effects of climate change through "pragmatic and accessible technological solutions."
- The Institute of Management Accountants is focusing on ***sustainable business management***, which mean "operating in a way that recognizes resources are limited and valuable…delivering profits with a purpose."
- PCMA is focusing on the ***carbon emissions of business air travel*** and has created a new senior position in global sustainability to, in part, manage their new partnership with the ***American Geophysical Union***.

Other stories that give us hope:

- ***Enaleia*** is working with Greek, Italian, and Kenyan fishers to remove marine plastic from the oceans. So far, more than 500,000 kg of plastic have been recycled.
- ***The Foundation for Intentional Community*** supports more than 1,000 intentional communities worldwide, places where people can come together to create sustainable and just ways of living. ***Findhorn***, located in Moray, Scotland, UK, is one of the most well-known and offers residency educational programs.
- ***Gaia Education*** provides holistic education for sustainable development, teaching people the skills to design regenerative communities.
- ***The Lower 9th Ward Center for Sustainable Engagement and Development*** in New Orleans has created one of the first carbon-neutral communities in the U.S., one that also focuses on environmental justice, food security, and coastal sustainability.
- ***Marine Corps Logistics Base Albany*** in Albany, Georgia, has recently become the first net-zero military base in the world.
- ***Net Zero Carbon Events*** is an initiative to drive events to net zero emissions, and your association can join.

This work is licensed under the Creative Commons Attribution-Non-Commercial-ShareAlike 4.0 International license. To view a copy of this license, visit https://creativecommons.org/licenses/by-nc-sa/4.0/.

Stories of Possitive Change Cont'd

- ***Second Nature*** works with higher education institutions to make bold commitments to addressing climate change on their campuses and then create initiatives and solutions so they can meet those commitments. Yes, your child can choose her or his college based on ***climate change action***.
- ***The Solar Impulse Foundation*** has identified more than 1,000 sustainable solutions for everything from buildings and infrastructure to how goods are manufactured and transported to our food, water, and energy use.
- ***The Soul Fire Farm Institute*** combats food apartheid by training Black and Brown growers and urban youth in sustainable agriculture practices and environmental justice.

One final bright spot: In 2022, for the first time ever, the U.S. generated more energy from renewable sources than from coal,[134] and economic growth is increasingly untethered from fossil fuel emissions worldwide (with the exception of China).[135]

134. https://www.voanews.com/amp/us-renewable-electricity-surpassed-coal-in-2022-/7025802.html
135 https://www.technologyreview.com/2023/01/23/1067190/good-news-on-climate-change/

This work is licensed under the Creative Commons Attribution-Non-Commercial-ShareAlike 4.0 International license. To view a copy of this license, visit https://creativecommons.org/licenses/by-nc-sa/4.0/.

Questions for Reflection

- What lessons did your association learn during the coronavirus pandemic that you can apply in climate-driven crisis planning and risk management situations?
- We are in a time of complex, exponential change, where traditional association structures (boards and committees) and processes (three-year strategic planning cycles) may no longer be adequate. What can you shift to become more agile and creative in your organizational responses to Anthropocene climate disruption?
- Have you spoken with your staff, particularly your younger staff, about how the climate crisis is affecting their mental health? What steps are you taking, or can you take, to help them process those thoughts and emotions?
- Do you have a staff group focused on climate solutions? A member volunteer group? What can you do to support their efforts and elevate their work?
- If you have a formal component structure, how can you strengthen your local affiliates to build resilience into your association? If you don't have formal components, are there other, more informal local groups you can empower to build resilience?
- How can you begin shifting your investment practices to better align with your association's goals around climate change?
- How is Anthropocene climate disruption likely to impact the profession or industry your association serves? Remember to think about both upstream (suppliers) and downstream (your members' clients or end users) effects, in addition to what will affect your members directly. What opportunities do you have to educate your members about what's coming? How can you best take advantage of those opportunities?
- How can you begin shifting your advocacy positions and practices to better prepare the profession or industry your association represents for the effects climate change is having and will have on it?
- The paper identifies many steps your association can take to build resilience. What is the first one you will take? Who are your allies in that effort? How will you work together to advance it? Who are your detractors? How can you communicate effectively with them about the urgency of taking action?
- The paper identifies many steps your association can take to adapt. These are mostly longer-term projects. Which seems like the most fruitful path for your association to begin following? How will you lay the groundwork to be successful? Who can you recruit to help you?

This work is licensed under the Creative Commons Attribution-Non-Commercial-ShareAlike 4.0 International license. To view a copy of this license, visit https://creativecommons.org/licenses/by-nc-sa/4.0/.

Additional Resources

2021 Annual Average Data for Business Associations and Professional Organizations. (n.d.). ASAE: The Center for Association Leadership. (Data sourced from the BLS Quarterly Census of Employment and Wages.) ***https://app.powerbi.com/view?r=eyJrIjoiNGMyZWZkMTMtNmUzOS00YjJhLWJjNDgtMjllNjcwZjNhZjdhIiwidCI6IjkzMzcwMjYxLTNjMjUtNDI1Mi05Nzg1LWQ1MzFmYTBmOGZmZSIsImMiOjF9***

2021 Northwest Heat Dome: Causes, Impacts and Future Outlook. (n.d.). U.S. Department of Agriculture. ***https://www.climatehubs.usda.gov/hubs/northwest/topic/2021-northwest-heat-dome-causes-impacts-and-future-outlook***

Action Is Urged to Avert Global Climate Shift. (1985, December 11). The New York Times. ***https://www.nytimes.com/1985/12/11/us/action-is-urged-to-avert-global-climate-shift.html***

Adaptation Ladder of Engagement (ALOE). (2012.) EcoAdapt. Bainbridge Island, WA USA

Addressing the Climate Crisis: An Action Plan for Psychologists: Report of the APA Task Force on Climate Change. (2022, February). American Psychological Association. ***https://www.apa.org/science/about/publications/climate-crisis-action-plan.pdf***

Air quality alerts from Canadian wildfires affecting millions across U.S. (2023, June 29). [Video]. NBC News. ***https://www.nbcnews.com/news/us-news/live-blog/poor-air-quality-live-updates-rcna91545***

Americans' views of climate change in 8 charts. (2023, May 4). Pew Research Center. ***https://www.pewresearch.org/short-reads/2023/04/18/for-earth-day-key-facts-about-americans-views-of-climate-change-and-renewable-energy/***

Andrade, S. *What Climate Scientists Are Saying About This Catastrophic Summer.* (2021, July 15). Slate. ***https://slate.com/news-and-politics/2021/07/scientists-fast-climate-change-summer.html***

APA Dictionary of Psychology. (n.d.). American Psychological Association. ***https://dictionary.apa.org/availability-heuristic***

Arctic Amplification. (n.d.). Climate Signals. ***https://www.climatesignals.org/climate-signals/arctic-amplification#more***

Arnestad, M. N. *Bad Psychology: Why Climate Change Won't Be Solved by Better Decisions at the Supermarket.* (2019). Areo. ***https://areomagazine.com/2019/10/01/bad-psychology-why-climate-change-wont-be-solved-by-better-decisions-at-the-supermarket/***

ASAE and AGU Partnering to Help Associations Improve Sustainability Initiatives. (2023, April 11). ASAE: The Center for Association Leadership. ***https://www.asaecenter.org/about-us/news_releases/2023/asae-and-agu-partnering-to-help-associations-improve-sustainability-initiatives***

Associated Press. *US Renewable Electricity Surpassed Coal in 2022.* (2023, March 28). Voice of America. ***https://www.voanews.com/amp/us-renewable-electricity-surpassed-coal-in-2022-/7025802.html***

Association Impact & Policy Snapshot – February/March. (2021, April 14). ASAE Research Foundation.

Baisas, L. *Extreme cold is blasting half the US this weekend.* (2022, December 23). Popular Science. ***https://www.popsci.com/environment/bomb-cyclone-2022/***

Baloch, S. M. *"We have no dry land left": impact of Pakistan floods to be felt for years.* (2022, October 12). The Guardian. ***https://www.theguardian.com/world/2022/oct/12/pakistan-floods-impact-years-crops-farms***

Barrell, A. *Pharma's climate change vulnerability and opportunity.* (n.d.). Pharmaphorum. ***https://pharmaphorum.com/views-and-analysis/pharmas-climate-change-vulnerability-and-opportunity***

This work is licensed under the Creative Commons Attribution-Non-Commercial-ShareAlike 4.0 International license. To view a copy of this license, visit https://creativecommons.org/licenses/by-nc-sa/4.0/.

Begum, T. *What is mass extinction and are we facing a sixth one?* (2023, February 21). Natural History Museum, United Kingdom. ***https://www.nhm.ac.uk/discover/what-is-mass-extinction-and-are-we-facing-a-sixth-one.html***

Bendell, J. *Deep Adaptation: A Map for Navigating Climate Tragedy.* (2018, July 27). ***https://www.lifeworth.com/deepadaptation.pdf***

Bendell, J. & Read, R. *Deep Adaptation: Navigating the Realities of Climate Chaos.* (2021). Polity Press.

Benson, A. *ESG for Beginners: Environmental, Social and Governance Investing.* (2023). NerdWallet. ***https://www.nerdwallet.com/article/investing/esg-investing***

Brackett, R. *In Florida, Flushing the Toilet Is Threatened by Rising Sea Levels for Tens of Thousands of Homeowners.* (2019, September 30). The Weather Channel. ***https://weather.com/science/environment/news/2019-09-30-florida-septic-tanks-threatened-by-sea-level-rise***

Brooks, K. J. *Another major insurer is halting new policy sales in California.* (2023, June 2). CBS News. ***https://www.cbsnews.com/news/allstate-insurance-state-farm-california/***

Buis, A. *Too Hot to Handle: How Climate Change May Make Some Places Too Hot to Live.* (2022, March 9). NASA Global Climate Change: Vital Signs of the Planet. ***https://climate.nasa.gov/ask-nasa-climate/3151/too-hot-to-handle-how-climate-change-may-make-some-places-too-hot-to-live/***

Butler, O. *Parable of the Sower.* (1993). Grand Central Publishing.

Butler, O. *Parable of the Talents.* (1998). Grand Central Publishing.

Caparas, M., Zobel, Z., Castanho, A. D. A., & Schwalm, C. R. *Increasing risks of crop failure and water scarcity in global breadbaskets by 2030.* (2021). Environmental Research Letters, 16(10), 104013. ***https://iopscience.iop.org/article/10.1088/1748-9326/ac22c1/meta***

Cape Town almost ran out of water. Here's how it averted the crisis. (2021, March 23). World Economic Forum. ***https://www.weforum.org/agenda/2019/08/cape-town-was-90-days-away-from-running-out-of-water-heres-how-it-averted-the-crisis/***

Cappucci, M. *Sea level rise is combining with other factors to regularly flood Miami.* (2019, August 8). The Washington Post. ***https://www.washingtonpost.com/weather/2019/08/08/analysis-sea-level-rise-is-combining-with-other-factors-regularly-flood-miami/***

Carbon Emissions Associated with Travel to AAG Annual Meetings. Unpublished analyses prepared for the American Association of Geographers by JGS Projects. (2021, October). American Association of Geographers. ***https://www.aag.org/wp-content/uploads/2021/12/AAG_Annual_Meetings_and_Carbon_Emissions.pdf***

Christopher, B., & Gedye, G. *State Farm won't sell new home insurance in California. Can the state shore up the market?* (2023, June 1). CalMatters. ***https://calmatters.org/housing/2023/05/state-farm-california-insurance/***

Clarion Energy Content Directors. *Ten Years After: How Entergy New Orleans survived Hurricane Katrina.* (2021). Powergrid International. ***https://www.power-grid.com/customer-service/ten-years-after-how-entergy-new-orleans-survived-hurricane-katrina/#gref***

Climate action: what's new and what's next in 2023. (2023, January 13). World Food Programme. ***https://www.wfp.org/stories/climate-action-whats-new-and-whats-next-2023***

This work is licensed under the Creative Commons Attribution-Non-Commercial-ShareAlike 4.0 International license. To view a copy of this license, visit https://creativecommons.org/licenses/by-nc-sa/4.0/.

Climate Business | Business Climate. (2015, November 23). Harvard Business Review. ***https://hbr.org/2007/10/climate-business-_-business-climate***

Climate Change Planning and the Role of Emergency Management: A Discussion Paper for Community Resilience. (2015, June). American Planning Association - Washington Chapter. ***https://www.washington-apa.org/assets/docs/2015/Ten_Big_Ideas/cc-emergency-management.pdf***

Climate Resiliency Design Guidelines. (2022). New York City Mayor's Office of Climate & Environmental Justice. ***https://www.nyc.gov/assets/sustainability/downloads/pdf/publications/CRDG-4-1-May-2022.pdf***

Cohen, S. *States of Denial: Knowing about Atrocities and Suffering.* (2001). Polity.

Conley, J. *Iowa Meteorologist Resigns After Receiving Death Threats for Climate Coverage.* (2023, June 22). Common Dreams. ***https://www.commondreams.org/news/iowa-meteorolgist-quits-threats***

Conn, A. *Existential Risk.* (2015, November 16). Future of Life Institute. ***https://futureoflife.org/existential-risk/existential-risk/***

Connor, R., & Miletto, M. *The United Nations World Water Development Report 2023: partnerships and cooperation for water.* (2023). UNESCO World Water Assessment Programme. ***https://unesdoc.unesco.org/ark:/48223/pf0000384657***

COVID Data Tracker. Centers for Disease Control and Prevention. Data retrieved July 14, 2023. ***https://covid.cdc.gov/covid-data-tracker/#datatracker-home***

Crownhart, C. *A few pieces of good news on climate change (and a reality check).* (2023, January 23). MIT Technology Review. ***https://www.technologyreview.com/2023/01/23/1067190/good-news-on-climate-change/***

Crownhart, C. *Why 2023 is a breakout year for batteries.* (2023, January 5). MIT Technology Review. ***https://www.technologyreview.com/2023/01/05/1066228/why-2023-is-a-breakout-year-for-batteries/***

CSO Staff. *Energy's Response to Katrina.* (2005, November 1). CSO Online. ***https://www.csoonline.com/article/516226/business-continuity-energy-s-response-to-katrina.html***

Dee, S. G. *Scientists understood physics of climate change in the 1800s – thanks to a woman named Eunice Foote.* (n.d.). The Conversation. ***https://theconversation.com/scientists-understood-physics-of-climate-change-in-the-1800s-thanks-to-a-woman-named-eunice-foote-164687***

The Deloitte Global 2022 Gen Z and Millennial Survey: Striving for balance, advocating for change. (n.d.). Deloitte. ***https://www2.deloitte.com/content/dam/Deloitte/at/Documents/human-capital/at-gen-z-millennial-survey-2022.pdf***

Dennis, B. *Retreat in Rodanthe.* (2023, March 13). The Washington Post. ***https://www.washingtonpost.com/climate-environment/interactive/2023/obx-rodanthe-erosion-rising-sea-levels/***

Department of Defense Climate Risk Analysis. Report Submitted to National Security Council. (2021). Department of Defense, Office of the Undersecretary for Policy (Strategy, Plans, and Capabilities). ***https://media.defense.gov/2021/Oct/21/2002877353/-1/-1/0/DOD-CLIMATE-RISK-ANALYSIS-FINAL.PDF***

Design for Adaptability, Deconstruction, and Reuse. (n.d.). American Institute of Architects. ***https://www.aia.org/resources/6282663-design-for-adaptability-deconstruction-and***

This work is licensed under the Creative Commons Attribution-Non-Commercial-ShareAlike 4.0 International license. To view a copy of this license, visit https://creativecommons.org/licenses/by-nc-sa/4.0/.

Dickie, G. *World registers hottest day ever recorded on July 3.* (2023, July 5). Reuters. ***https://www.reuters.com/world/world-registers-hottest-day-ever-recorded-july-3-2023-07-04/***

Did atmospheric rivers in California reverse their drought? (2023). KOAA News 5. ***https://www.koaa.com/weather/weather-science/did-atmospheric-rivers-in-california-reverse-their-drought***

Douglas, E. *Emergency room visits surge, Texans die amid dangerous heat wave.* (2023, July 5). The Texas Tribune. ***https://www.texastribune.org/2023/06/30/texas-heat-wave-deaths-illness/***

Duncan, I., & Aratani, L. *United Airlines suffers fourth day of heavy cancellations, delays.* (2023, June 29). The Washington Post. ***https://www.washingtonpost.com/transportation/2023/06/28/united-delays-cancellations-new-york-weather/***

Easthope, H., Wade, R., Lu, Y., & Hynes, D. *2022 Australasian Strata Insights.* (2022). UNSW Sydney City Futures Research Centre. ***https://cityfutures.ada.unsw.edu.au/2022-australasian-strata-insights/***

Edwardes-Evans, H. *S&P Global Commodity Insights: COP27: UN slams use of 'greenwashing' offsets ahead of direct abatement actions.* (2022, November 9). S&P Global. ***https://www.spglobal.com/commodityinsights/en/market-insights/latest-news/energy-transition/110922-cop27-un-slams-use-of-greenwashing-offsets-ahead-of-direct-abatement-actions***

ESG-focused institutional investment seen soaring 84% to US$33.9 trillion in 2026, making up 21.5% of assets under management: PwC report. (n.d.). PwC. ***https://www.pwc.com/gx/en/news-room/press-releases/2022/awm-revolution-2022-report.html***

Eversden, A. *'Climate change is going to cost us': How the US military is preparing for harsher environments.* (2022, August 18). Defense News. ***https://www.defensenews.com/smr/energy-and-environment/2021/08/09/climate-change-is-going-to-cost-us-how-the-us-military-is-preparing-for-harsher-environments/***

For Gen Z, Climate Change Is a Heavy Emotional Burden. (n.d.). Yale E360. ***https://e360.yale.edu/features/for-gen-z-climate-change-is-a-heavy-emotional-burden***

Frisaro, F., & Kozin, D. *Floods: Fort Lauderdale airport remains closed. Forecast calls for more rain.* (2023, April 13). WUSF Public Media. ***https://wusfnews.wusf.usf.edu/weather/2023-04-13/floods-fort-lauderdale-airport-closed-forecast-more-rain***

Garrì, I. *Political Short-termism: A Possible Explanation.* (2007). IDEAS. ***https://ideas.repec.org/p/ctc/serie6/itemq0748.html***

Gibbons, A. *Are We in the Middle of a Sixth Mass Extinction?: Study finds that three-quarters of Earth's species could vanish within 300 years.* (2011, March 2). Science magazine. ***https://www.science.org/content/article/are-we-middle-sixth-mass-extinction***

Global Energy Review: C02 Emissions in 2021. (updated March 2022). IEA. ***https://www.iea.org/data-and-statistics/data-product/global-energy-review-co2-emissions-in-2021***

Global Hating: How online abuse of climate scientists harms climate action. (2023, April 4). Global Witness. ***https://www.globalwitness.org/en/campaigns/digital-threats/global-hating/***

Global Fossil Fuel Commitments Database. (2023, June 22). Global Fossil Fuel Commitments Database. Data retrieved July 17, 2023. ***https://divestmentdatabase.org/***

Global Warming Has Begun, Expert Tells Senate. (1988, June 24). The New York Times. ***https://www.nytimes.com/1988/06/24/us/global-warming-has-begun-expert-tells-senate.html***

This work is licensed under the Creative Commons Attribution-Non-Commercial-ShareAlike 4.0 International license. To view a copy of this license, visit https://creativecommons.org/licenses/by-nc-sa/4.0/.

Global Warming's Six Americas, September 2021 - Yale Program on Climate Change Communication. (2022, January 26). Yale Program on Climate Change Communication. ***https://climatecommunication.yale.edu/publications/global-warmings-six-americas-september-2021/***

Graciano, T. *Event Cancellation Debacles Will Have Insurers Reframing Coverage Terms for Years to Come.* (2022, November 9). Risk & Insurance magazine. ***https://riskandinsurance.com/event-cancellation-insurance-the-impact-of-covid-19/***

Great Bear Rainforest Agreement Highlights. (n.d.). The Government of British Columbia. ***https://www2.gov.bc.ca/gov/content/environment/natural-resource-stewardship/great-bear-rainforest/gbr-agreement-highlights***

Hansen, Z. *Nearly 50 flights canceled Tuesday as Phoenix nears 120-degree day.* (2017, June 20). The Republic | ***azcentral.com***. ***https://www.azcentral.com/story/travel/airlines/2017/06/19/heat-cancels-phoenix-flights/409634001/***

Harari, Y. N. *Homo Deus: A Brief History of Tomorrow.* (2017). Harper.

How to measure your event's carbon footprint. (2022, August 10). University of Minnesota Extension. ***https://extension.umn.edu/natural-resources-news/how-measure-your-events-carbon-footprint***

Hurricane Harvey. (n.d.). Harris County Flood Control District. ***https://www.hcfcd.org/About/Harris-Countys-Flooding-History/Hurricane-Harvey***

Incidents | CAL FIRE. (n.d.). State of California. ***https://www.fire.ca.gov/incidents***

IPCC First Assessment Report and 1992 Supplement — IPCC. (n.d.). United Nations Intergovernmental Panel on Climate Change. ***https://www.ipcc.ch/site/assets/uploads/2018/05/ipcc_90_92_assessments_far_full_report.pdf***

IPCC Sixth Assessment Report — IPCC. (n.d.). United Nations Intergovernmental Panel on Climate Change. ***https://www.ipcc.ch/assessment-report/ar6/***

Jahren, H. *The Story of More: How We Got to Climate Change and Where We Go from Here.* (2020). Vintage.

Jamail, D. *The End of Ice: Bearing Witness and Finding Meaning in the Path of Climate Disruption.* (2019). The New Press.

Kahn, B., & Team, T. C. *China's hot supply chain summer is a huge problem.* (2022, August 23). Protocol. ***https://www.protocol.com/newsletters/climate/china-supply-chain-climate-change#toggle-gdpr***

Kane, J., Tran, L., Kruzman, D. *Rising groundwater levels are threatening clean air and water across the country.* (2023). Grist. ***https://grist.org/article/what-it-means-groundwater-is-rising/***

Kilgore, G. *How Many Trees to Offset 1 Ton of CO2 (& Why It Doesn't Matter).* (2023). 8 Billion Trees: Carbon Offset Projects & Ecological Footprint Calculators. ***https://8billiontrees.com/carbon-offsets-credits/how-many-trees-to-offset-1-ton-of-co2/***

Kimmerer, R. W. *Braiding Sweetgrass: Indigenous Wisdom, Scientific Knowledge and the Teachings of Plants.* (2020). Milkweed Editions.

King, M. W. *How brain biases prevent climate action.* (2022, February 24). BBC Future. ***https://www.bbc.com/future/article/20190304-human-evolution-means-we-can-tackle-climate-change***

Kolbert, E. *The Sixth Extinction: An Unnatural History.* (2014). Henry Holt & Co.

This work is licensed under the Creative Commons Attribution-Non-Commercial-ShareAlike 4.0 International license. To view a copy of this license, visit https://creativecommons.org/licenses/by-nc-sa/4.0/.

Kupfer, M. *State Farm Asks California for Huge Insurance Rate Hike as Home Coverage Halts.* (2023, June 2). The San Francisco Standard. ***https://sfstandard.com/business/state-farm-asks-california-for-huge-insurance-rate-hike-as-home-coverage-halts/***

Lane, E. *AAAS Board: Attacks on Climate Researchers Inhibit Free Exchange of Scientific Ideas.* (2022, June 29). American Association for the Advancement of Science. ***https://www.aaas.org/resources/aaas-board-attacks-climate-researchers-inhibit-free-exchange-scientific-ideas***

Livingston, I. *This year so far has been D.C.'s warmest on record.* (2023, April 17). The Washington Post. ***https://www.washingtonpost.com/weather/2023/04/17/record-warm-start-year-dc-maryland-virginia/***

Lobbying Data Summary. (n.d.). OpenSecrets. Data retrieved July 17, 2023. ***https://www.opensecrets.org/federal-lobbying***

Markley, S. *The Deluge.* (2022). Simon & Schuster.

Marshall, G. *Don't Even Think About It: Why Our Brains Are Wired to Ignore Climate Change.* (2014). Bloomsbury Publishing USA.

Mazzucato, M., Okonjo-Iweala, N., Rockström, J., & Shanmugaratnam, T. *Turning the Tide A Call to Collective Action.* (2023). Global Commission on the Economics of Water. ***https://watercommission.org/wp-content/uploads/2023/03/Turning-the-Tide-Report-Web.pdf***

McCarthy, M. C., & L. *NASA climate modeling suggests Venus may have been habitable.* (2016, August 10). NASA Global Climate Change: Vital Signs of the Planet. ***https://climate.nasa.gov/news/2475/nasa-climate-modeling-suggests-venus-may-have-been-habitable/***

McKay, D. I. A., Staal, A., Abrams, J., Winkelmann, R., Sakschewski, B., Loriani, S., Fetzer, I., Cornell, S., Rockström, J., & Lenton, T. M. *Exceeding 1.5°C global warming could trigger multiple climate tipping points.* (2022). Science magazine. ***https://www.science.org/doi/10.1126/science.abn7950***

Nair, K. P. *A harsh summer, and a looming Indian wheat crisis.* (2022, June 11). Deccan Herald. ***https://www.deccanherald.com/opinion/in-perspective/a-harsh-summer-and-a-looming-indian-wheat-crisis-1117143.html***

National Intelligence Estimate: Climate Change and International Responses Increasing Challenges to US National Security Through 2040. (2021). National Intelligence Council. ***https://www.dni.gov/files/ODNI/documents/assessments/NIE_Climate_Change_and_National_Security.pdf***

New Poll Finds Climate Change is Taking a Toll on Gen Z Mental Health While Also Inspiring Youth to Take Action. (2022, April 21). Blue Shield of California, News Center. ***https://news.blueshieldca.com/2022/04/21/new-poll-finds-climate-change-is-taking-a-toll-on-gen-z-mental-health-while-also-inspiring-youth-to-take-action***

News Release: Scientists Show Large Impact of Controlling Humidity on Greenhouse Gas Emissions. (n.d.). National Renewable Energy Laboratory. ***https://www.nrel.gov/news/press/2022/nrel-shows-impact-of-controlling-humidity-on-greenhouse-gas-emissions.html***

Norgaard, K. M. *Living in Denial: Climate Change, Emotions, and Everyday Life.* (2011). MIT Press.

Novotney, A. *How does climate change affect mental health?* (2023, April 21). American Psychological Association. ***https://www.apa.org/topics/climate-change/mental-health-effects***

This work is licensed under the Creative Commons Attribution-Non-Commercial-ShareAlike 4.0 International license. To view a copy of this license, visit https://creativecommons.org/licenses/by-nc-sa/4.0/.

Nowell, C. *Waterlogged wheat, rotting oranges: five crops devastated by a year of extreme weather.* (2022, November 2). The Guardian. ***https://www.theguardian.com/environment/2022/nov/01/climate-crisis-us-food-system-five-crops***

Ord, T. *The Precipice: Existential Risk and the Future of Humanity.* (2020). Hachette Books.

Ortiz-Bobea, A., Ault, T. R., Carrillo, C., Chambers, R., & Lobell, D. B. *Anthropogenic climate change has slowed global agricultural productivity growth.* (2021). Nature Climate Change, 11(4), 306–312. ***https://www.nature.com/articles/s41558-021-01000-1***

Partlow, J. *The Colorado River drought crisis: How did this happen? Can it be fixed?* (2023, February 6). The Washington Post. ***https://www.washingtonpost.com/climate-environment/2023/02/05/colorado-river-drought-explained/***

Petach, T., & Mateo, E. *Science tackles the West's megadrought.* (2023). Yale Climate Connections. ***https://yaleclimateconnections.org/2023/04/science-tackles-the-wests-megadrought/***

Powers, R. *The Overstory.* (2019). W. W. Norton & Company.

Ramirez, R. *Is this normal? California is facing its 12th atmospheric river this winter following a historic drought.* (2023, March 21). CNN. ***https://www.cnn.com/2023/03/21/us/california-weather-atmospheric-river-drought-climate/index.html***

Read climate activist Greta Thunberg's speech to the UN. (2019, September 23). PBS NewsHour. ***https://www.pbs.org/newshour/world/read-climate-activist-greta-thunbergs-speech-to-the-un***

Resilience. (n.d.). Resilience Alliance. ***https://www.resalliance.org/index.php/resilience***

Ripley, A. *I stopped reading the news. Is the problem me — or the product?* (2022, July 8). The Washington Post. ***https://www.washingtonpost.com/opinions/2022/07/08/how-to-fix-news-media/***

Ritchie, H. *We need the right kind of climate optimism.* (2023, March 21). Vox. ***https://www.vox.com/the-highlight/23622511/climate-doomerism-optimism-progress-environmentalism***

Rittel, H.W. J., & Webber, M.M. *Dilemmas in a General Theory of Planning.* (1973). Policy Sciences, 4:2 p.155-169

Robinson, K.S. *The Ministry for the Future.* (2021). Orbit.

Roser-Renouf, C., PhD, Stenhouse, N., Rolfe-Redding, J., Maibach, E., MPH, PhD, & Leiserowitz, A., PhD. *Engaging Diverse Audiences with Climate Change: Message Strategies for Global Warming's Six Americas.* (2014). Yale Program on Climate Change Communication. ***https://climatecommunication.yale.edu/wp-content/uploads/2014/03/Global_Warmings_Six_Americas_book_chapter_2014.pdf***

Sachs, J.D., Lafortune, G., Fuller, G., Drumm, E. *Implementing the SDG Stimulus. Sustainable Development Report 2023.* (2023). Paris: SDSN, Dublin: Dublin University Press, 2023. 10.25546/102924. Data retrieved July 17, 2023. ***https://dashboards.sdgindex.org/rankings***

Sangal, A., Hayes, M., & Yan, H. *Millions under air quality alerts in the US due to Canadian wildfire smoke.* (2023, June 28). CNN. ***https://www.cnn.com/us/live-news/canada-wildfire-smoke-air-quality-06-28-23/index.html***

Sea Level Rise and Flooding. (2018). Miami Dade County. ***https://www.miamidade.gov/global/economy/resilience/sea-level-rise-flooding.page***

Simard, S. *Finding the Mother Tree: Discovering the Wisdom of the Forest.* (2022). Vintage.

This work is licensed under the Creative Commons Attribution-Non-Commercial-ShareAlike 4.0 International license. To view a copy of this license, visit https://creativecommons.org/licenses/by-nc-sa/4.0/.

Simos, M. *The Earth Path.* (2004). HarperCollins.

Simos, M. *The Fifth Sacred Thing.* (1993). Bantam Books.

Solnit, R. *What if climate change meant not doom — but abundance?* (2023, March 22). The Washington Post. ***https://www.washingtonpost.com/opinions/2023/03/15/rebecca-solnit-climate-change-wealth-abundance/***

Stillman, D., & Leonard, D. *Near-record California heat is melting snow and triggering flooding.* (2023, April 28). The Washington Post. ***https://www.washingtonpost.com/weather/2023/04/28/california-heat-flooding-snowmelt/***

Storm Surge Increase. (n.d.). Climate Signals. ***https://www.climatesignals.org/climate-signals/storm-surge-increase***

Sweeney, N. *The untapped net zero potential of the $1.3 trillion strata sector.* (2022, March 23). The Australian Financial Review. ***https://www.afr.com/property/residential/the-untapped-net-zero-potential-of-the-1-3-trillion-strata-sector-20220323-p5a73e***

Tackling the Climate Crisis. (n.d.). U.S. Department of Defense. ***https://www.defense.gov/spotlights/tackling-the-climate-crisis/***

The Anthropocene | Welcome. (n.d.). ***https://www.anthropocene.info/***

The Arctic is warming nearly four times faster than the rest of the world. (2022, August 15). PBS NewsHour. ***https://www.pbs.org/newshour/politics/the-arctic-is-warming-nearly-four-times-faster-than-the-rest-of-the-world***

The butterfly diagram: visualizing the circular economy. (n.d.) Ellen MacArthur Foundation. ***https://ellenmacarthurfoundation.org/circular-economy-diagram***

Thawing Permafrost Could Leach Microbes, Chemicals Into Environment. (2022, March 9). NASA Jet Propulsion Laboratory. ***https://www.jpl.nasa.gov/news/thawing-permafrost-could-leach-microbes-chemicals-into-environment***

Toohey, G. *Volcano? Climate change? Mystery behind California's epic storms.* (2023, April 11). Los Angeles Times. ***https://www.latimes.com/california/story/2023-04-11/californias-wild-winter-of-atmospheric-rivers***

Trotta, D. *Explainer: Why weeks of rain in California will not end historic drought.* (2023, January 13). Reuters. ***https://www.reuters.com/world/us/why-weeks-rain-california-will-not-end-historic-drought-2023-01-12/***

University of East Anglia and University of Exeter Communications. *COVID lockdown causes record drop in carbon emissions for 2020.* (2021, January 13). Stanford Earth. ***https://earth.stanford.edu/news/covid-lockdown-causes-record-drop-carbon-emissions-2020***

Wahl, D. C. *Designing Regenerative Cultures.* (2022). Triarchy Press.

Walling, M., & Borenstein, S. *Tuesday set an unofficial record for the hottest day on Earth. Wednesday may break it.* (2023, July 6). AP News. ***https://apnews.com/article/global-record-breaking-heat-july-27069b5380117534d78f1f40a6edc7a0***

Water Science School. *Where is Earth's Water? (*2018, June 6). U.S. Geological Survey. ***https://www.usgs.gov/special-topics/water-science-school/science/where-earths-water#***

Wells, D.W. *The Uninhabitable Earth: Life After Warming.* (2020). Tim Duggan Books.

What is a Circular Economy? (2023, May 26). U.S. Environmental Protection Agency. ***https://www.epa.gov/circulareconomy/what-circular-economy***

This work is licensed under the Creative Commons Attribution-Non-Commercial-ShareAlike 4.0 International license. To view a copy of this license, visit https://creativecommons.org/licenses/by-nc-sa/4.0/.

Whitford, E. *College Closures Due to Poor Air Quality.* (2018). Inside Higher Ed. ***https://www.insidehighered.com/news/2018/11/19/colleges-cancel-class-due-poor-air-quality-california-fires***

Williams, A. R. *Urban heat islands are why it can feel 20 degrees hotter in different parts of the same city.* (2022, July 25). ***Phys.org***. ***https://phys.org/news/2022-07-urban-islands-degrees-hotter-city.html***

Winston, A. *Why Business Leaders Must Resist the Anti-ESG Movement.* (2023, April 7). Harvard Business Review. ***https://hbr.org/2023/04/why-business-leaders-must-resist-the-anti-esg-movement***

Young People Are Experiencing Widespread Anxiety About Climate Inaction, Study Finds. (n.d.). Yale E360. ***https://e360.yale.edu/digest/young-people-are-experiencing-widespread-anxiety-about-climate-inaction-study-finds***

Zero-Carbon. (n.d.). American Institute of Architects. ***https://www.aia.org/landing-pages/6456754-zero-carbon***

This work is licensed under the Creative Commons Attribution-Non-Commercial-ShareAlike 4.0 International license. To view a copy of this license, visit https://creativecommons.org/licenses/by-nc-sa/4.0/.

About Shelly Alcorn

Shelly Alcorn is the principal futurist at Michelle Alcorn and Associates and the founder of xPresso Ed. She stands at the intersection of technology, the education-to-employment system, and the organization of the hypercomplex future.

Shelly conducts volunteer leadership and staff retreats focusing on our capacity and willingness to change and how to think deeply and respond positively to our individual and collective existential crises. She also speaks on critical issues faced by society including artificial intelligence, deep adaptation strategies for climate change, and what it means to be human in the 21st century. Shelly is unapologetically idealistic and obsessed with the idea that associations can and should make a significant difference in the world around us.

She has published numerous articles in trade journals, and she blogs at the Association Forecast. Other works she has co-authored include: *xPresso Ed – The Association Leadership Series, 42 Rules for Engaging Members Through Gamification: Unlock the Secrets of Motivation, Community, and Fun,* and white papers including *Associations, Generation Y and Millennials: What You Need to Know About Your Next Generation Members, The Association Role in the New Education Paradigm,* and *Blockchain for Associations: Separating the Hype from the Promise.*

About Elizabeth Weaver Engel

Elizabeth Weaver Engel, M.A., CAE, chief strategist at Spark Consulting LLC, has more than 25 years of experience in association management. Although her primary focus has been in membership, marketing, and communications, her work has been wide-ranging, including corporate sponsorship and fundraising, technology planning and implementation, social media and internet strategy, budgeting, volunteer management, publications, and governance.

Spark provides strategic membership and marketing advice and assistance to associations that have the willingness and capacity at both the staff and board levels to ask themselves tough questions and take some risks in service of reaching for big goals. Forget settling for incremental growth by making minor changes to what you're doing—we're going to uncover and solve the root problems that are holding your association back!

Elizabeth combines a focus on asking the right questions and finding and implementing creative solutions with a broad understanding of the association sphere. Throughout her career, she has excelled at increasing membership, revenue, public presence, and member satisfaction while decreasing costs through a focus on the efficient and effective use of data, staff, and technology to serve organizational goals and constituents.

Prior to launching Spark, Elizabeth consulted in online campaigns and marketing and internet and social media strategy for Beaconfire Consulting and in a wide range of subject areas in association management in the not-for-profit consulting practice at RSM McGladrey, Inc. She has also served associations directly in a variety of positions, including director of member services and IT, director of marketing and sponsorship, vice president of marketing, and acting CEO.

Elizabeth is a certified association executive (CAE) and holds a master's degree in government and foreign affairs from the University of Virginia.

This work is licensed under the Creative Commons Attribution-Non-Commercial-ShareAlike 4.0 International license. To view a copy of this license, visit https://creativecommons.org/licenses/by-nc-sa/4.0/.