

Addressing the Climate Crisis: An Action Plan for Psychologists  
Report of the APA Task Force on Climate Change

American Psychological Association

February 2022

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## APA Task Force on Climate Change

2020-2022

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## 1. Introduction

Successful responses to the climate crisis require the participation of all fields and sectors of society. Psychologists have conducted valuable work on the climate crisis and can make even greater contributions to understanding the crisis, mitigating and adapting to climate change, and achieving climate justice. This report from the American Psychological Association's Task Force on Climate Change examines the multiple roles that psychologists play in research, practice, education, advocacy, and communications related to the climate crisis and how APA can facilitate expansion of psychologists' work in these domains.

The task force recommends that APA pursue a set of activities that will both (a) strengthen the field by encouraging a larger number of psychologists, across all specializations, to work on climate change, and (b) broaden the impact of psychologists' work on climate change by supporting their engagement and collaborations with other fields and sectors. Further, the task force offers recommendations for how APA can help mitigate climate change by improving its own energy use and sustainability practices and encouraging improvements by other organizations and the public.

Responding to the climate crisis is an essential task for the current generation and many generations to come. Although the severity and urgency of the crisis should not be understated, it remains within the capacity of society to reduce its most adverse effects and to promote health, well-being, and justice for all people. Psychologists have the knowledge and skills to design and implement strategies that will help realize these aims. As a leading scientific and professional association, APA can prepare, support, and organize psychologists to address the climate crisis and amplify their work for greatest impact and visibility.

The task force presents this report not only to guide APA but also to inspire individual psychologists, psychology groups and departments, and other psychological associations to devote attention to the climate crisis, and to serve as a model for people and organizations in other disciplines and professions.

## 2. The Task Force and Its Work

The mission of the American Psychological Association's Task Force on Climate Change was to review the progress APA has made in addressing climate change and to offer recommendations for its future activities in the area. The task force was authorized in February 2020 by the APA Council of Representatives, the association's highest governing body, in a policy resolution titled [APA's Response to the Global Climate Change Crisis](#). The resolution included the following provision about the task force:

*[T]he President of APA shall appoint a task force, composed of leading international experts, to review APA's past and current activities related to global climate change and to recommend goals and strategies for future APA activities that will have a strong impact on the climate change crisis. The Council of Representatives requests that the task force keep in mind the prime importance of issues surrounding migration, human rights, and systemic aspects (including political, economic, and corporate) of climate change, as well as address how APA can improve its own sustainability practices. The task force will submit a report to the Council of Representatives, and the report will be disseminated to the membership of APA.*

APA issued a [call for nominations](#) for members of the task force in July 2020. The call specified that the task force was to "include individuals from psychology and from other disciplines or professions, and individuals from both within and outside the United States." Upon review of the nominations received, APA President Sandra L. Shullman appointed twelve individuals to serve on the task force in September 2020. The task force included members with backgrounds in psychology, medicine, epidemiology, nursing, environmental science, local government, law, social work, museums, and business. They were based in the United States, the United Kingdom, and New Zealand, with several having strong ties to other countries as

well. All members had significant expertise and experience in climate change and related topics.

The task force held twenty-six 90-minute virtual meetings (via Zoom) between October 2020 and January 2022. Between meetings, it engaged in discussion by email and at times worked in subgroups. In addition to task force members, participants included liaisons from five major APA boards (Board of Directors, Board for the Advancement of Psychology in the Public Interest, Board of Educational Affairs, Board of Professional Affairs, and Board of Scientific Affairs) and APA staff.

In their meetings, task force members reviewed, shared, and discussed information in a variety of areas, including:

- APA's past and current activities related to climate change.
- APA's own energy use and sustainability practices. (This topic was addressed by the task force as a whole, rather than by a subgroup as was originally announced.)
- Current directions in psychological science, practice, and education related to climate change.
- The public's understanding, attitudes, and emotional responses concerning climate change.
- Political, economic, and societal factors influencing climate change and individual and collective responses to it.
- International, national, and regional policies and programs related to climate change.
- Related environmental challenges, such as pollution and biodiversity loss.
- Human rights, environmental justice, and other social justice issues.
- Indigenous cultures' experiences of and responses to climate change.
- Strategies for communicating about climate change.
- Advocacy and activism on climate change issues.



- Work on climate change conducted by individuals and organizations in other fields, including sciences, humanities, healthcare, social justice, and public policy.

The task force considered these areas in relation to APA's [strategic plan](#) and APA's policies on [human rights](#), [ethics](#), [racism](#), [multiculturalism](#), [immigration](#), [socioeconomic status](#), [global perspectives](#), and [scientific freedom](#) as well as input received from APA boards and divisions and information about APA's other current activities.

A [previous APA task force](#), which met in 2008-09, produced a review of psychological research on climate change and offered recommendations for further research (Swim et al., 2011). That work served as the basis for a 2011 Council of Representatives [resolution](#) on psychologists' role in addressing climate change. The current task force consulted with several members of the earlier task force (Thomas J. Doherty, Joseph P. Reser, Paul C. Stern, and Elke U. Weber) to learn their perspectives on how the field of climate change and psychology has developed since 2009, current opportunities and needs in the field, and steps APA can take to advance the field. (In addition, two members of the earlier task force, Susan D. Clayton and Janet K. Swim, served as liaisons from APA boards to the current task force.)

The 2008-09 task force also produced "[policy recommendations](#)" for APA activities on climate change. Although not formally endorsed or adopted by APA, these recommendations informed APA's subsequent work. The recommendations were considered by the current task force in assessing the progress APA has made and in developing new recommendations.

The current task force focused on activities that are managed, conducted, or directly supported by APA's central office in Washington DC (including activities of boards and the Council of Representatives). It was not feasible to closely examine or develop specific recommendations for APA's 54 [divisions](#), which vary in size, resources, and structure and operate with a degree of autonomy from the central office. However, the task force suggested new activities that the central office might pursue in collaboration with divisions (as well as with

other organizations independent of APA, including state and regional psychological associations and ethnic psychological associations in the U.S.).

### **3. The Climate Crisis**

Changes in the climate due to emissions of gases resulting from human energy, industrial, and agricultural practices are having broad and harmful impacts on life on our planet, including on human health and well-being. Many of these impacts are violations of human rights and increase disparities among population groups. However, major actions taken now can limit the severity of climate change and its consequences. This section provides a brief overview of climate change and its effects and of the steps that individuals, organizations, and governments can take both to mitigate climate change and to enable people to adapt to it.

#### **Climate Change and Its Impacts**

Since the late nineteenth century, the average surface temperature of the earth has increased by about 1.1 degrees Celsius (2 degrees Fahrenheit), with most of the increase occurring since the mid-twentieth century (IPCC, 2021). Scientists have firmly established that this temperature change, referred to as *global warming*, is primarily due to increased amounts of carbon dioxide and other “greenhouse” gases being emitted into the atmosphere and that the increase in emissions is due to human activities. The gases essentially trap heat in the atmosphere, thus raising surface temperature (National Academy of Sciences, 2020).

The growth of carbon dioxide emissions stems from increased burning of fossil fuels (oil, coal, and natural gas) as well as clearing of forests and grasslands (which capture and store carbon dioxide). Although carbon dioxide comprises the largest percentage of greenhouse gas emissions, other greenhouse gases also contribute to global warming. These include methane, which is released in the production and transport of fossil fuels and in certain agricultural and waste processing practices. They also include nitrous oxide and fluorinated gases, emitted in various industrial and agricultural activities (U.S. Environmental Protection Agency, 2021b).

Higher surface temperatures have led to changes in the climate of every region of the planet, including altered precipitation patterns, rising sea levels, melting polar ice, and increases in severe storms, flooding, heatwaves, drought, and wildfires (IPCC, 2014a, 2018; U.S. Global Change Research Program, 2017). Such changes have begun to have profound impacts on people's health and on the well-being of individuals and communities. While outcomes vary across populations and settings, climate change is contributing to greater prevalence and severity of the conditions and events listed below (Al-Delaimy et al., 2020; Clayton et al., 2021; Ebi et al., 2018; Lawrance et al., 2021; National Intelligence Council, 2021; U.S. Global Change Research Program, 2018; Watts et al., 2021; Xu et al., 2020):

- Extreme weather and climate events (including wildfires) leading to deaths, injuries, and damage to infrastructure, buildings, and property.
- Mental health conditions, including post-traumatic stress, anxiety, depression, and substance misuse.
- Interpersonal aggression and violence.
- Impaired cognitive and brain function.
- Premature births and low birth weight.
- Shortages of safe water and food.
- Dehydration and heatstroke.
- Infectious diseases (transmitted through food, water, insects, and other animals).
- Cardiovascular, respiratory, kidney and allergic conditions.

Climate change can also lead to losses of jobs, disruptions of economies, interruptions in education and social services, losses of culturally significant places and resources, intergroup and international conflict, and population displacements (including voluntary and forced migrations, refugee movements, and planned relocations, both within and across national

boundaries).<sup>1</sup> Associated with these impacts, individuals may experience loss or alteration of identity, autonomy, or sense of control. Further, households, social networks, and communities may become less cohesive and effective, and communities that undergo major disasters or lose their homelands may experience collective or historical trauma. As climate change continues, these impacts will become more severe in future years.

Many of these impacts are violations of human rights under the [Universal Declaration of Human Rights](#) and other international agreements, including rights concerning life, health, and culture (Feygina et al., 2020; Gardiner, 2011; Office of the High Commissioner for Human Rights, 2015; United Nations Environment Programme, 2015). Further, some groups disproportionately bear the negative impacts of climate change, including Indigenous peoples, communities of color, and communities that are economically disadvantaged (Clayton et al., 2021; Jafry, 2019; Méndez et al., 2020). These disparities can be attributed in part to the facts that such communities are more likely to be located in areas in which extreme weather occurs or in which there are fewer protections against such weather, that they face other health and economic challenges that are exacerbated by climate impacts, and that they have less access to resources to recover from climate impacts. Other groups – including children, older adults, women, persons with disabilities, and outdoor workers – may also bear greater impacts of climate change due to various environmental, health, economic, and social factors. Growing recognition of these disparities has led to activism and policy efforts to achieve *climate justice*, part of the broader movement for *environmental justice* (Henry et al., 2020; Jafry, 2019; Méndez, 2020; NAACP, 2021; Robinson & Shine, 2018; Rouf & Wainwright, 2020).

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<sup>1</sup> Two World Bank (2018,2021) reports project that by 2050 as many as 216 million people throughout the world may be forced to migrate within their countries due to climate change unless significant mitigation and adaptation actions are taken.

## Responding to Climate Change

Unless major reductions in greenhouse gas emissions are made quickly, by about 2030, the earth's average surface temperature will continue to rise and climate change will intensify, with catastrophic consequences for human health, well-being, and equity (IPCC, 2018, 2021). The [Paris Agreement](#), an international treaty adopted in 2015, set a goal of limiting global warming to below 2 degrees Celsius (3.6 degrees Fahrenheit) and preferably to 1.5 degrees Celsius (2.7 degrees Fahrenheit). Major shifts in policy, investments, technology, and behavior – especially in the more economically developed countries, which currently produce most emissions – are needed to achieve either of these targets (Pearce, 2021).

Responses to climate change are generally classified under the broad categories of *mitigation* or *adaptation* (IPCC, 2014b). Mitigation refers to efforts to limit, prevent, and counteract greenhouse gas emissions so that human-driven climate change can be slowed and eventually halted. Mitigation approaches can aim to reduce overall consumption of energy as well as alter how energy is produced and used. Critical to mitigation is adoption of new norms, practices, and technologies for transportation, indoor heating and cooling, diet, land management, agriculture, industry, and waste processing (Carmichael, 2019; Meyer & Lord, 2021; Milfont, Satherley, et al., 2021). Mitigation also involves the development and widespread implementation of technologies for producing energy from sources other than fossil fuels (e.g., solar, wind, hydropower, geothermal, nuclear). In addition, proposals have been made for applying geo-engineering methods for removing greenhouse gases from the atmosphere (e.g., large-scale tree planting, carbon dioxide filtering devices) and reflecting sunlight back into space (e.g., by adding reflective particles to the upper atmosphere) (Converse et al., 2021; Cox et al., 2022; National Academies of Sciences Engineering & Medicine, 2019, 2021a, 2021b).

Adaptation refers to efforts to reduce the current and future negative impacts of climate change and help people to adjust to the impacts. These efforts are necessary because, even under the most optimistic projections, the climate will continue to change through much of this

century due to the greenhouse gases that have already been and are currently being emitted (IPCC, 2021). Adaptation can take many different forms. Examples include building seawalls, shifting to drought-resistant food crops, improving disaster preparation and response by households and communities, training healthcare workers, promoting psychological and social resilience within communities, incorporating climate risks into financial policy and planning, relocating populations from unsafe areas, and services for climate migrants and refugees, as well as regenerative approaches to agriculture and daily living (Clayton et al., 2021; Newton et al., 2020; Pelling & Garschagen, 2019; U.S. Environmental Protection Agency).

Large-scale mitigation and adaptation efforts build on ongoing research to develop effective new norms, practices, and technologies that will be accepted and adopted by households, communities, institutions, corporations, and nations. They also involve new laws, regulations, policies, infrastructure, staffing, and funding by governments and private entities; these can move society forward by creating the opportunities, supports, incentives, and requirements that will lead organizations and individuals to participate in mitigation and adaptation initiatives (Cambridge Sustainability Commission on Scaling Behaviour Change, 2021; Vandenberg & Gilligan, 2017). Although governments around the world have taken some steps to advance such initiatives, their efforts to this point are widely viewed as insufficient (Plumer & Friedman, 2021).

In the U.S., a majority of the population perceives climate change to be a significant issue and favors government action to address it (Ballew et al., 2019; Tyson & Kennedy, 2020; United Nations Development Programme & Univ. of Oxford, 2021). However, individuals affiliated with the two major political parties tend to hold or express contrasting views about climate change and policy (although these differences are moderated by age and gender) (Doell et al., 2021; Jenkins-Smith et al., 2020). Political leaders from the two parties are rarely able to reach agreement on new federal policies and programs for mitigation and adaptation, and therefore

those initiatives that are adopted tend to be limited in impact or scope (Karapın, 2016; Mildenerger, 2020).

Another noteworthy element of the political landscape in the U.S. is misinformation about climate change disseminated by individuals, think tanks, and corporations (Brulle, 2021; Brulle et al., 2020; Cook, 2020; Cook et al., 2019). Most prominent are sustained efforts by the fossil fuel industry since the 1960s to mislead the public and policymakers about global warming and to lobby against changes in laws (e.g., tax subsidies) that favor use of fossil fuels (Mann, 2021; Oreskes, 2010; Parry et al., 2021; Skovgaard, 2021; Skovgaard & van Asselt, 2018; Supran & Oreskes, 2021). Among the industry's strategies has been to downplay the dangers of its greenhouse gas emissions and the feasibility of alternative energy sources. The industry has also suggested that responsibility for the country's continued reliance on fossil fuels lies with individual customers (who usually have limited energy use options) rather than corporations and government. Some companies have acknowledged the need to move away from fossil fuels (Taylor & Rankin, 2008), but their plans are considered by many climate change observers to be insufficient in magnitude or speed (Waldman, 2018; Worland, 2020). Various scholars and advocates have worked to identify and counteract these and other forms of misinformation about climate change (Climate Social Science Network, 2022).

To be successful, mitigation and adaptation initiatives must recognize differences among individuals, communities, and countries in the amounts of emissions they produce, the nature and degree of climate change impacts they experience, and their capacities for transitioning to new technologies and practices. For example, wealthier people and countries generally produce more emissions and so they are generally expected to make greater emissions reductions and to assist others in their mitigation and adaptation efforts (Atwoli et al., 2021; Urpelainen & George, 2021). By contrast, workers who lose their jobs due to closures of fossil fuel facilities (e.g., coal mines and oil refineries) may need financial and other forms of support, as may people with low incomes in countries in which subsidies for fossil fuel prices are

removed (Richardson, 2021; Timperley, 2021). Taking a climate justice and human rights perspective, all those affected by climate change and potential responses to it in a region or community should be represented in decision-making to ensure that their needs and interests are addressed.

In addition, responses to climate change should take into account its interactions with other environmental problems, including pollution, biodiversity loss, ocean acidification, soil depletion, deforestation, animal diseases, and pandemics (Haines & Frumkin, 2021; Nielsen, Marteau, et al., 2021; United Nations Environment Programme, 2019). For example, greenhouse gas emissions contain pollutants that have adverse health effects besides those linked to global warming (e.g., [sulfur dioxide](#)), and deforestation contributes to both climate change and biodiversity loss. Climate change can lead animals to migrate to new habitats and make them more vulnerable to diseases, which in turn increases the risk for cross-species transmission of diseases to humans with potential pandemic spread (Baker et al., 2021).

Various multidisciplinary frameworks have emerged in recent years to capture the relationships among the environment, human activity, and human and animal health (e.g., [One Health](#) (Deem et al., 2018), [EcoHealth](#), [GeoHealth](#), [Planetary Health](#), the Anthropocene (Zalasiewicz et al., 2019). These frameworks can help guide more comprehensive mitigation and adaptation efforts that address the full range of environmental challenges. Although the scope of the task force (and this report) is limited to climate change, the task force encourages APA and others to address climate and other environmental issues in this broader, integrated fashion.<sup>2</sup>

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<sup>2</sup> The complexity of mitigating climate change increases when a broader range of environmental issues is examined. For example, assessments of proposed projects for mining lithium, used in batteries for electric vehicles, must consider their potential negative effects of endangering water supplies and ecosystems and disrupting the lands of Indigenous communities (Barringer, 2021; Zografos & Robbins, 2020).



#### **4. How Psychologists Can Address the Climate Crisis**

Psychologists have made significant contributions to responding to the climate crisis (Clayton & Manning, 2018; Ferguson & Schmitt, 2021; Swim et al., 2011) and are well positioned to contribute more. As researchers, practitioners, educators, consultants, communicators, leaders, and advocates, psychologists have multiple opportunities to take action to advance individual and collective health, well-being, and justice. Nearly all subject areas and approaches within psychology (including environmental, cognitive, social, community, developmental, educational, school, counseling, clinical, neuroscientific, health, psychodynamic, humanistic, industrial and organizational, human factors, and other subfields) offer concepts, methods, and tools that can be applied or elaborated to address climate change.

This section describes examples of the kinds of work that psychologists can undertake now and in coming years to address the climate crisis and how the role of psychologists can be strengthened. The “Recommendations for APA” below include further discussion of some of these topics. Across all areas, psychologists would be expected to abide by principles of justice, respect for others, and scientific integrity, as elaborated in the ethics codes, standards, and guidelines of national psychological associations and other psychological organizations.

##### **Mitigation**

As researchers and practitioners, psychologists can contribute to the design of new technologies for residences, transportation, industry, and other settings that will both result in reduced energy consumption or greenhouse gas emissions and be usable and accepted by people and organizations. Among these are new solar energy technologies, heating/cooling technologies, electric and self-driving vehicles, and devices regulated by artificial intelligence (Furszyfer Del Rio et al., 2021; Stein, 2020; Viola, 2021). Psychologists can participate as well in assessments of the potential environmental and societal impacts (both positive and negative) of broad application of these technologies. And for those technologies that are deemed appropriate for application, psychologists can develop and implement methods for motivating

and guiding people and organizations to adopt them (Palomo-Vélez & van Vugt, 2021; Verplanken & Whitmarsh, 2021). Adoption involves integrating them with – and in some cases modifying or replacing – other existing technologies, behaviors, and organizational structures. Throughout such transformations, psychologists can help people to understand and engage in collective decision-making and evaluation regarding changes to their environments and ways of living (Árvai & Gregory, 2021; Orlove et al., 2020).

Further, psychologists' perspectives and methods can enhance efforts, now being pursued across multiple disciplines and professions, to rethink and transform the design of people's environments and lives so that energy use and emissions are reduced (Creutzig et al., 2018; Faure et al., 2022; Nielsen, Clayton, et al., 2021; Uzell, 2018; Wynes & Nicholas, 2017). Psychologists can help forge new approaches in such domains as residence size and design (e.g., encouraging smaller homes that use less energy), virtual and remote work (e.g., making such work productive and satisfying with less need for commuting), regional, urban, and neighborhood planning (e.g., meeting people's needs locally and reducing shipping and travel), transportation (e.g., public transit, walking, cycling), diet (e.g., reducing consumption of meats, the production of which involves substantial greenhouse gas emissions), and agricultural, land management, and manufacturing practices (e.g., regenerative agriculture, innovations in materials and processes, recycling and reuse of materials) (Creutzig et al., 2020; Doidge et al., 2020; Fox-Penner et al., 2021; Mastrangelo et al., 2014; Newton et al., 2020; Nielsen, Clayton, et al., 2021). Psychologists can ensure that new environments, policies, and behaviors are compatible with human cognitive, emotional, and social functioning and with the identities, cultures, goals, and practices of the people involved and affected by the changes, and thereby increase the likelihood they will be adopted and maintained (Constantino et al., 2021).

## Adaptation

Psychologists have critical roles to play in helping individuals, households, communities, organizations, and countries understand and adjust to the impacts of climate change. They can produce research and offer interventions and services in areas such as:

- Psychological responses to climate (e.g., anxiety, trauma, grief, denial, solastalgia, as well as hope and optimism).
- Nature, development, and prevalence of mental health conditions and social problems associated with climate change (e.g., depression, anxiety, substance use disorders, dementia, academic problems, interpersonal conflict, and violence).
- Effects of climate change on health-related behaviors (e.g., diet, exercise, sleep, treatment adherence).
- Effects of pre-existing mental health conditions on capacity to cope with climate change impacts.
- Therapies specifically tied to climate and the environment (e.g., ecotherapy, outdoor therapies).
- Support and guidance for people and communities transitioning to new forms of living that are less energy-intensive and more protective and respectful of the environment (e.g., regenerative living).

In addition to providing services to people who experience challenges or transitions related to climate change, psychologists can help people prepare for climate change impacts and prevent or reduce distress by supporting them in building their psychological and social resilience (Clayton et al., 2021; Doppelt, 2016; Everett et al., 2020). Resilience encompasses such elements as positive attitudes, 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. Programs for

developing resilience can be organized at any level from individual to community to whole country. Although resilience does not guarantee that individuals and communities will escape negative consequences of climate change or “bounce back” fully from them, it may help them respond constructively to current challenges and develop new skills, strategies, and resources for moving forward.

As more people migrate (including those who are involuntarily displaced) due to climate change, it is likely that psychologists will be called upon to work with migrants, the communities to which they relocate (temporarily or permanently), and government and social service agencies to ensure that migrants’ social and health needs are met. Psychologists can also contribute to the design of policies and programs to ensure that they respect migrants’ cultures, address the needs of specific groups (e.g., children, women, LGBT groups), and prevent or counteract discrimination and injustice toward migrants.

### **Public Understanding and Attitudes**

What people believe and think about climate change and how to respond to it is key to the success of mitigation and adaptation initiatives and the adoption and implementation of effective climate policies. Psychologists have engaged in assessments of the public’s understanding and attitudes regarding climate change, how people’s views vary across demographic groups, what factors influence their views, and how their views are related to changes in behavior (Ballew et al., 2019; Doell et al., 2021; Milfont, Zubielevitch, et al., 2021; Priestley et al., 2021; Shi et al., 2016). As such work continues, further insights can be gained by examining how views on climate change relate to broader understanding and attitudes concerning nature, science, social justice, the role of government, and other topics.

Psychologists can also help develop effective forms of education (in schools and other settings) and public communication about climate change and climate policies, tailored to specific audiences and purposes. Especially important is developing methods to help people identify and accept accurate information about climate change and avoid or reject

misinformation, disinformation, and misleading arguments (Compton et al., 2021; Ecker et al., 2022; Sinatra & Hofer, 2021). False and manipulative messages include “discourses of delay,” by which some political and business groups acknowledge human-driven climate change but claim little can be done to mitigate it (Lamb et al., 2020), and “greenwashing,” by which companies present exaggerated or incomplete information about their efforts to reduce greenhouse gas emissions (Cislak et al., 2021).

More broadly, psychologists can contribute to the design of educational and communication initiatives to prepare people (especially young people) for a future life in a world in which climate change and other environmental challenges are principal features (Geiger et al., 2019; Guzmán et al., 2021; Markowitz & Guckian, 2018). These efforts would help people to understand the systemic relationships among climate and environmental processes and human behavioral and social processes. They would also enable people to become informed about options for mitigation and adaptation strategies and their implications for life in their communities and globally. Such initiatives would help individuals plan their own lives and be knowledgeable participants in public discussion and social action around the climate crisis.

Some issues related to climate change policies can be expected to become more widely discussed in coming years. These include assessments of the risks and benefits of geo-engineering technologies and nuclear power, which are controversial (Pearce, 2019). Proposals for achieving climate justice may also be debated as those involve not only directing efforts and resources to groups that historically have been disadvantaged and have less political power but also altering the behaviors, lifestyles, and energy use of affluent people and wealthier countries which produce greater amounts of greenhouse gas emissions (Nielsen, Nicholas, et al., 2021; Wiedmann et al., 2020). Psychologists can help frame and influence public discussions of these issues so that they are based on careful considerations of evidence, values, and justice while minimizing the influences of biases and manipulation.

## Social Action

Psychologists can take action themselves to establish policies and programs for mitigating and adapting to climate change and advancing climate justice. They can work on the “inside” as staff members and advisors to government, business, and other entities, applying their expertise to the development and justification of new initiatives. On the “outside,” psychologists can serve as advocates and activists for policies and programs on their own, within their local or professional organizations (including APA), and as participants in climate advocacy groups (e.g., the organizations affiliated with the [Climate Action Network International](#) and [ecoAmerica](#)).

Further, psychologists can conduct research and offer guidance on mechanisms for successful climate advocacy. For example, drawing on social and organizational psychology, they might advise on advocacy groups’ organization, leadership, and processes. Such guidance preferably is developed *with* the members of the groups, rather than imposed upon them, and reflects the groups’ goals, resources, cultures, and contexts.

In all these types of work, psychologists can apply their knowledge of public attitudes, persuasion, and communication (as noted above); how to motivate people to participate in collective efforts; how to promote sound information gathering, analysis, and decision-making; and how to facilitate productive interactions among stakeholders with various perspectives (such as community members, scientists, and policymakers).

Some scholars and advocates argue that new policies and programs alone will be insufficient to address climate change over the long term and that fundamental changes in economic, social, and political systems are needed (McPhearson et al., 2021; Paterson & P-Laberge, 2018). Proposals for new systems that would more effectively protect the environment and meet human needs include regulated capitalism (Budolfson, 2021), democratic socialism (Fraser, 2021), regenerative economics (Fath et al., 2019), circular economics (Korhonen et al., 2018), doughnut economics (Raworth, 2017), and no-growth, degrowth, and slow-growth economics (Jackson, 2017; Keyßer & Lenzen, 2021). Elaboration and assessment of such

proposals calls upon the expertise and experience of social scientists, political and cultural analysts, and community members.

Psychologists can contribute to these efforts through research on people's beliefs, attitudes, and behaviors related to prominent features of many contemporary societies – such as materialism, consumption, individualism, competition, hierarchy, and disconnection from nature – and how these psychological and behavioral characteristics are associated with energy use as well as health, well-being, and equity (Kasser, 2016; Milfont et al., 2013; Weintrobe, 2021). Such research could shed light on what kinds of systemic changes are most feasible, how to achieve them, and what their outcomes are likely to be. Psychologists can also join in efforts to gain public support for such systemic changes and help people and institutions implement them and adjust to the disruptions they may produce.

### **Building a Stronger Role for Psychologists**

For significant progress in these areas to be made, there is a need for more psychologists across all areas of the field to devote at least some of their efforts to climate change topics. Today only a small number of psychologists address climate change as a part of their professional work.<sup>3</sup> It would be valuable both for established psychologists to shift their attention to climate change (e.g., applying methods and theories they have used in work on other topics) and for graduate students and early career psychologists to adopt it as their focus (enabling progress to continue in future decades). The breadth and complexity of climate

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<sup>3</sup> An examination of scientific journals supports this point. As noted in the Appendix, across 15 years (2007-21) of APA's 90 journals, only 87 articles referred to "global warming" or "climate change." Among non-APA psychology journals, few other than the *Journal of Environmental Psychology*, *Ecopsychology*, and *Environment and Behavior* have published work on global warming or climate change (Swim, 2021). An inspection of the contents of the major climate change journals *Nature Climate Change* and *Climatic Change* indicates that fewer than 5% of their articles report psychological work. Also, the annual APA convention generally has few sessions on climate change (mainly sponsored by Division 34), and sessions on climate change are rare at other psychology conferences. In an informal [census of environmental psychologists](#) maintained by Robert Gifford, 103 out of 1330 list themselves as interested specifically in global warming or climate issues.

change topics, along with their significance for human health and well-being, offer many pathways for satisfying and successful careers. (The Recommendations sections below suggest methods for encouraging and training psychologists to engage in climate change work.)

To enhance the soundness and impact of their work, psychologists must engage with other domains that address climate change – not just other disciplines and professions but policymaking and advocacy as well. Psychologists also need to collaborate with and learn from the diverse populations, within countries and around the world, that are affected by climate change and by mitigation and adaptation initiatives (Nash et al., 2020; Tam & Milfont, 2020). This attention to diverse peoples and their varied experiences of climate change will keep human rights and climate justice concerns in the forefront of psychologists' work and offer psychologists new perspectives and insights.

For example, members of Indigenous communities have important knowledge of the physical and social impacts of climate change in their regions and valuable perspectives on mitigation and adaptation strategies, which they may choose to share with others in mutually respectful settings (Cowie et al., 2016; Kimmerer, 2013; Nakashima et al., 2018; Petzold et al., 2020; UNESCO, 2020). Further, many Indigenous cultures emphasize the interrelationships of humans, non-human living beings, and the earth, encouraging people to treat the environment with respect and as a partner. Indigenous peoples also often understand themselves as closely tied to the experiences and actions of multiple generations preceding them and following them. This type of holistic, interactive, and long-term view of humans' relationship with the environment can complement and enrich other scientific and technological approaches to the climate crisis, including those of psychologists.

Psychologists can be strong leaders in addressing the climate crisis. They have the knowledge and skills to help people understand the crisis and what is needed to respond to it. They can play key roles in designing and implementing initiatives and policies that will be broadly accepted and effective. They can guide individuals and institutions in incorporating



considerations of climate change and climate justice into their ongoing activities. Through such work, psychologists can help people develop confidence and hope that our society can meet the enormous challenges of the climate crisis.

## 5. APA's Role in Addressing the Climate Crisis

Given the association's leadership position in the field of psychology, its current goals, and its history of work on climate change, APA can do much to strengthen the role of psychologists in addressing the climate crisis. This section discusses the climate crisis in relation to APA's current [strategic plan](#) (approved by the Council of Representatives in 2019) and reviews APA's previous work on climate change.

### APA's Strategic Plan

APA's current strategic plan is organized around four main goals. As described below, work to address the climate crisis falls within these goals. Indeed, the goals suggest that APA devote attention and resources to the climate crisis.

- ***Utilize psychology to make a positive impact on critical societal issues.***

The climate crisis threatens the health and well-being of every human being on the planet in current and future generations, is exacerbating health and economic injustices, and risks magnifying social conflicts. It is an increasingly important factor in other societal issues that APA is currently addressing, such as those surrounding [human rights](#), [racism](#), [health equity](#), [population health](#), [immigration](#), [socioeconomic status](#), and [technology](#). And it is a major topic in APA's work with [international partners](#), including work within the [Global Psychology Alliance](#) and efforts to advance the [United Nations Sustainable Development Goals](#).

- ***Prepare the discipline and profession of psychology for the future.***

As concerns about climate change grow, all sectors of society – including psychologists – will become involved in the design and implementation of mitigation and

adaptation strategies. In fact, psychologists' involvement is necessary, as the success of these strategies will depend on careful consideration of their psychological, behavioral, and social dimensions. Moreover, psychological approaches can be used to help individuals and communities understand climate change and climate justice and build their sense of agency and capacity for collective action to address these challenges. APA can raise awareness of the multiple types of contributions psychologists can make to addressing climate change and help prepare psychologists for these roles.

Further, climate change offers opportunities for psychology to grow as a field. It presents a broad range of new topics for research, practice, education, and advocacy. Such work can build on existing approaches and methods as well as develop new ones. Climate change topics are not only highly relevant to health, well-being, justice, and social policy but intrinsically interesting and appealing to many people, including students. With support from APA and other institutions, work on climate change and related environmental issues can evolve into a major focus of psychology and draw new people into the field.

- ***Elevate the public's understanding of, regard for, and use of psychology.***

Psychologists' contributions to mitigation and adaptation initiatives can be expected to enhance understanding and respect for psychology among policymakers and members of other professions as well as other members of the public. Further, psychologists can play prominent public roles in helping people respond constructively to distress and anxiety related to climate change, which are increasingly prevalent, especially among youth (Hickman et al., 2021). APA can help organize and support psychologists to carry out these kinds of work and have an influential voice in public affairs.

- ***Strengthen APA’s standing as an authoritative voice for psychology.***

As the leading organization in the U.S. representing all areas of psychology, and with a history of work on climate change, APA has the breadth and stature to advance and speak for the full range of psychological approaches to the climate crisis. Its national and international prominence also enables APA to serve as a model and partner for other associations in psychology and related fields for action on the crisis.<sup>4</sup>

### **APA’s Work So Far**

As requested in the [Council of Representatives resolution](#) that established it, the task force reviewed APA’s past and current activities on climate change. It used 2007 as the starting point, as APA’s sustained attention to climate change can be traced to that year, when its then Science Directorate chief called on the field of psychology to address “the human behaviors responsible for global warming and energy consumption” ([Breckler, 2007](#)).<sup>5</sup> The task force focused on activities managed or supported by the APA central office, drawing on information gathered by staff (summarized in the Appendix below).<sup>6</sup>

The task force observed that APA has regularly conducted and sponsored work of high quality on climate change since 2007. Of note are the [2008-09 task force report](#) (later published

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<sup>4</sup> Related scientific and professional associations that support work on climate change include the [Australian Psychological Society](#), [International Society for Traumatic Stress Studies](#), and [Royal College of Psychiatrists](#). Groups with a primary focus on climate change include the [Climate Psychology Alliance](#), [Climate Psychology Alliance North America](#), [Climate Psychiatry Alliance](#), and [Medical Society Consortium on Climate and Health](#).

<sup>5</sup> Although earlier discussions and efforts within APA noted the need for psychologists to address energy use, global warming, or climate change, they did not result in sustained activity. For example, a Task Force on Psychology and Environmental Problems, organized by Division 34 and including representatives from other divisions and APA’s central office, met in 1993-94 and produced several brief unpublished reports and newsletter articles (Cvetkovich, 1994), but no further work from or related to that task force was found.

<sup>6</sup> As described earlier, the task force did not systematically examine the activities of divisions, although it noted that several divisions, including [Division 34: Society for Environmental, Population, and Conservation Psychology](#), [Division 9: Society for the Psychological Study of Social Issues](#), and [Division 8: Society for Personality and Social Psychology](#), have supported or disseminated work on climate change.

as a special issue of *American Psychologist* (Swim et al., 2011), which highlighted for a broad readership the progress and significance of psychological research on climate change, and APA's three reports with ecoAmerica ([2014](#), [2017](#), and [2021](#)), which brought the psychological and mental health dimensions of climate change to the awareness of environmental communities, policymakers, and the general public. Further, the regular coverage of climate change in the *Monitor on Psychology* has been a unique and valuable educational resource for psychologists and students.

However, the needs and opportunities for work by APA on climate change exceed what it has done to this point. As discussed in previous sections, the climate crisis is now widely recognized to be an immense and urgent threat to human health and well-being. Psychologists' expertise and experience are highly relevant to many aspects of mitigation, adaptation, public communication, and social action in response to the crisis. However, realizing that potential fully will require more psychologists, across the breadth of the field, to devote their efforts to climate change work and to engage more closely with other fields and sectors of society. As the largest and best resourced psychological organization in the U.S., and building on its previous work, APA can lead in developing the field's capacity and enhancing its impact. Taking on that responsibility will require a stronger and more strategic commitment to addressing the climate crisis than APA has made thus far.

To guide APA's future work on the climate crisis, the task force developed a set of twelve recommendations along with suggestions for activities to implement them (see next section). These recommendations and activities stem from the [earlier set of recommendations](#) for APA activities made by the 2008-09 task force (which were only partially implemented and are still relevant); recommendations and ideas in the recent scientific, professional, and policy literature; and the task force's considerations of climate change and responses to it within psychology and other fields.

Reflecting the magnitude and complexity of the climate crisis, a great deal of work is

suggested for APA. Thus, the task force also offers comments on how APA might implement, manage, and prioritize the proposed activities.

## 6. Recommendations for APA

Building on the deliberations and observations described in the preceding sections, the task force developed recommendations to advance work on climate change within five primary domains of APA's central office programmatic activities: Research, Practice, Education, Advocacy, and Communications. Following its charge, the task force also developed recommendations for APA's own energy use and sustainability practices.<sup>7</sup> Although each domain is addressed separately, they are interrelated. For example, research and practice on climate change inform one another, and education, advocacy, and communications draw on shared approaches for conveying information and influencing attitudes and behaviors. Moreover, APA's efforts to enhance its own energy use and sustainability practices can draw on work in all these areas.

For each domain, the task force formulated a pair of recommendations (see Table 1). One recommendation in each pair focuses on strengthening the work of psychologists and APA on climate change, especially through programs and resources that will enable a greater number and breadth of psychologists to gain knowledge, skills, and career opportunities in the area. The other recommendation in each pair focuses on broadening the impact of psychologists' work through engagement and collaboration with people and organizations in fields beyond psychology and APA.

Each recommendation is accompanied by suggestions for activities that the APA central office can undertake over the next several years to implement them. The task force

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<sup>7</sup> These domains are not intended to map exactly to the [organizational structure](#) of APA's central office. For example, the Research domain encompasses activities in the Science Directorate, Office of Publications and Databases, and other units, and the Practice domain includes activities in the Practice Directorate (health service psychology), Science Directorate (applied psychology), among other units.

**Table 1**

***Task force recommendations for APA’s work on climate change***

	<b><i>Strengthening the field</i></b>	<b><i>Broadening impact</i></b>
<b>Research</b>	1) Advance research on climate change across all areas of psychological science.	2) Promote engagement of psychological scientists with policymakers, practitioners, and community members on climate change issues.
<b>Practice</b>	3) Build psychologists’ capacities to support people in mitigating and adapting to climate change.	4) Enlarge the range of settings and partnerships in which psychology practitioners address climate change.
<b>Education</b>	5) Incorporate coverage of climate change into all levels of psychology education.	6) Promote coverage of the psychological dimensions of climate change in the education of other professionals and the public.
<b>Advocacy</b>	7) Engage in sustained advocacy on climate change to government at all levels and to business and non-profit organizations.	8) Partner on climate advocacy with other scientific, professional, social justice, environmental, and health organizations.
<b>Communications</b>	9) Serve as an important channel of information to psychologists about climate change and how they can contribute to effective climate action.	10) Educate the public about the psychological dimensions of climate change and effective climate action.
<b>APA’s Energy Use/Sustainability</b>	11) Implement a strategic approach to reduce greenhouse gas emissions and improve sustainability across all of APA’s operations and in the psychological community.	12) Engage with other organizations and the public to reduce greenhouse gas emissions and improve sustainability practices.

aimed to formulate these recommendations with enough specificity to guide APA leadership, members, and staff but sufficient breadth to allow flexibility in light of new developments in climate change and psychology and at APA.

Although listed separately, the suggested activities could be integrated into single events and programs when implemented. For example, the various meetings and workshops that are proposed could be components of larger conferences. Ideally, most activities will be held virtually, to increase access by a broad range of participants as well as to reduce costs and avoid greenhouse gas emissions associated with long-distance travel.

### **Research**

Psychological research has produced important findings on a variety of topics, including public understanding and attitudes about climate change (Hoggett, 2019; Hornsey et al., 2018; Milfont, Abrahamse, et al., 2021), motivations to engage in mitigation and adaptation efforts (Brick et al., 2021; Sparkman et al., 2021; Truelove et al., 2015), factors shaping behaviors related to climate change (Lacroix & Gifford, 2018; Milfont & Markowitz, 2016), the design of interventions to help people alter their behaviors (Capstick et al., 2014; Karlin et al., 2015; Marghetis et al., 2019), and the mental health impacts of climate change (Burke et al., 2018; Clayton et al., 2021; Vergunst & Berry, 2021). However, as noted in previous sections, the field's full potential to respond to the climate crisis will not be realized until a greater number and broader range of psychologists address it. Research questions bearing on climate change can be formulated and investigated in virtually every area of basic and applied psychological research (as represented, for example, by APA's [54 divisions](#) and other psychology organizations). Many current lines of research could be extended to address climate change topics, including work in such areas as science education, decision-making, organizational behavior, and disaster response, to name a few.

Expanded psychological research on climate change can lead to more effective interventions and services advancing mitigation and adaptation and to a stronger role for psychology in shaping local, national, and international policies and programs on climate change and environmental justice. To have these impacts, researchers must formulate questions that address major practical issues related to climate change and consult with the communities most involved with or affected by these issues when designing, conducting, and disseminating the research. A line of research might start with studies in highly controlled settings or with limited participant samples. It then may need to be scaled up to determine whether the results are replicable and meaningful in the real world (including across populations and cultures) and are translatable into applications with significant effects on the trajectory of climate change or its consequences. Then, as research applications are implemented, further research is often needed to evaluate their effectiveness, identify unanticipated outcomes, and design improved applications. Successful research programs on climate change require that scientists have ongoing communications and cooperation with community members, practitioners, and/or policymakers.

As they investigate climate change, psychologists can take advantage of the field's position as a "hub science" (Cacioppo, 2007) to facilitate the sharing and integration of research findings and approaches across disciplines and the formation of multidisciplinary collaborations. For example, psychologists' engagement with researchers in other social science disciplines can help ensure that all levels of analysis – individual, family, organizational, community, national, international – are considered in addressing human behavior related to climate change (Dietz et al., 2020; Nielsen, Clayton, et al., 2021; Thomas et al., 2019). Collaborations with medical, epidemiological, and public health researchers can produce more sophisticated accounts of the mental, behavioral, and physical health effects of climate change and their interactions. And psychological research that engages with work in biology, environmental sciences, and agriculture can reveal how the human behavioral dimensions of climate change



are also linked to pollution, biodiversity loss, land use, and the survival and health of other species (Inauen et al., 2021).

In addition, fields outside of standard scientific disciplines offer perspectives and insights that can enrich psychological science. As noted earlier, the cultures and knowledge of Indigenous peoples offer important perspectives for the study of humans' relationship with nature. Psychologists can also draw from, and potentially contribute to, scholarship and creative work in the humanities, arts, design, engineering, and planning that address climate and the natural environment (Adamson & Davis, 2018; Baucom, 2020; Degroot et al., 2021; Holm & Brennan, 2018).

Climate change interacts with other health, social, and economic challenges as well. Throughout the world, populations already disadvantaged or discriminated against often bear the greatest adverse impacts of climate change (IPCC, 2014a; U.S. Environmental Protection Agency, 2021a). Increasingly, groups will be displaced or choose to migrate due to climate change in concert with other socioeconomic factors; these groups will face risks of social disruption and health problems as well as discrimination and conflicts in the regions to which they move (Carrico & Donato, 2019; Hauer et al., 2020; White House, 2021; World Bank, 2018, 2021). Overall, researchers must attend to the experiences and needs of diverse populations to understand climate change and its consequences adequately and to design mitigation and adaptation strategies that will be accepted, implemented, and effective (Bradley et al., 2020; Charlson et al., 2021; Nash et al., 2020; Pearson & Schuldt, 2018; Tam & Milfont, 2020). Cross-cultural research, international collaborations, and direct engagement of researchers with the affected communities will be valuable for much of this work.

In conducting research to advance mitigation and adaptation, it will be useful to examine other cases in which substantial modifications of individual and collective behavior have been achieved. These include bans and regulations on various pollutants, adoption of seatbelts, reductions in tobacco use, and responses to the COVID-19 pandemic. Also, the broader

literatures in such areas as disasters, migration, civil rights, and war may contain insights regarding how people think about and respond to environmental and social change that can inform mitigation and adaptation strategies.

The task force offers the following recommendations to guide APA's efforts to enhance psychological research on climate change:

***Recommendation 1 (Strengthening the field)***

***Advance research on climate change across all areas of psychological science.***

APA can implement this recommendation through activities such as the following:

Facilitating new research

- Sponsor international research workshops, reviews, and white papers in multiple areas of psychological and multidisciplinary research to assess the state of knowledge; identify the research needs of practitioners, policymakers, and communities; and determine high-priority topics for new psychological research on climate change.
- Develop joint initiatives with APA divisions, ethnic psychological associations, scientific and scholarly societies (in psychology and other disciplines), academic institutions, museums, zoos, and other research organizations to plan, sponsor, conduct, and disseminate psychological and multidisciplinary research on climate change.
- Organize and help obtain funding for multidisciplinary research networks and research teams on specific, high-priority topics.
- Advocate for funding of research on psychology and climate change by government and private bodies and offer guidance to researchers seeking funding. (See also Advocacy recommendations.)

### Publications

- Work with editors to include climate change in the scopes of all APA journals, develop special journal sections on climate change, and solicit submissions on climate change for APA journals and books.
- Explore development of a new journal on the psychological dimensions of climate change that would serve as a major outlet for high-quality research and information across the breadth of psychology and related multidisciplinary areas. To enhance impact, the journal might adopt such features as open access, rapid review, policy briefs, educational materials, and summaries for non-specialists.
- Aim to make articles about climate change in all APA journals open access to all readers.
- Build and maintain a repository of articles, datasets, and related materials on psychological research on climate change from both APA and non-APA sources.

### Meetings

- Make climate change research (including multidisciplinary work) one of the recurring themes of APA's annual convention and its other scientific events.
- Sponsor virtual international meetings of scientists, practitioners, and policymakers to disseminate research findings, examine the practical applications of current psychological and multidisciplinary research on climate change, and develop approaches for increasing the utility of research for practice and policy development.
- Organize virtual presentations, discussions, and trainings on psychological research on climate change aimed at multidisciplinary and international audiences, including researchers, practitioners, and policymakers. Also, promote and make available to psychologists similar resources from other disciplines and professions that can enhance psychological research.

***Recommendation 2 (Broadening impact)******Promote engagement of psychological scientists with policymakers, practitioners, and community members on climate change issues.***

APA can implement this recommendation through activities such as the following:

**Expanding scientists' reach**

- Train psychological scientists on how to present their climate research effectively to policymakers; and arrange opportunities for psychological scientists to give testimony and meet with government officials to advocate for science-based climate policies. (See also Advocacy recommendations.)
- Sponsor internships, fellowships, and other placements of psychological scientists who work on climate topics within government, policy, and advocacy organizations.
- Advocate for and encourage greater participation by psychologists in the work of the Intergovernmental Panel on Climate Change and other national and international climate research bodies.

**Fostering cooperation**

- Convene virtual meetings that bring psychological scientists together with U.S. and international leaders on climate issues from non-research fields (e.g., practitioners, community groups, environmental justice organizations, foundations, businesses, non-governmental organizations, faith groups, advocates, activists, artists, policy specialists, government officials) to identify research priorities, co-design research projects, and discuss the interpretation of research findings and how to apply findings for greatest impact.
- Sponsor gatherings of scientists and members of various sectors of the general public to share knowledge and experiences related to climate, identify research needs, plan

research projects, and discuss effective and equitable ways to apply findings from research.

- Provide training and guidance to both scientists and non-scientists on how they can successfully communicate and work together in the planning, conduct, dissemination, and application of research.

## **Practice**

Psychological practice on climate change encompasses both mitigation of and adaption to climate change. For mitigation, psychologists' work includes helping individuals, households, organizations, and communities alter the types and amounts of energy they use; contributing to the development and implementation of new technologies that produce lower levels of greenhouse gas emissions; and working with governments, businesses, and other institutions to design policies, environments, and processes that lead to lower emissions (Lutzke & Árvai, 2021; Sintov & Schultz, 2015; Whitmarsh et al., 2021; Wolske & Stern, 2018). Such efforts may involve, for example, working with communities to modify the opportunities and incentives in people's environments that influence their patterns of energy use, or helping to plan and manage organizational change to support new work or travel patterns or adoption of new technologies (Cambridge Sustainability Commission on Scaling Behaviour Change, 2021; Unsworth et al., 2021). Psychologists are increasingly interested in mitigation actions that result in rapid, large-scale decreases in emissions, which require consideration of a broad range of behaviors and of the social, cultural, and economic contexts of behavior (Nielsen, Clayton, et al., 2021).

Successful mitigation will require systemic changes at the organizational, community, national, and international levels. Psychologists can help design and implement mechanisms for bringing together stakeholders in ways that allow all relevant perspectives and interests to be represented in the development of new missions and organizational structures aimed at

reducing emissions (e.g., customers, suppliers, investors, neighbors, and regulators of energy companies). They can also help train and support organizational and political leaders responsible for advancing systemic changes, such as in motivating parties to participate in change processes, handling conflicts among parties, managing and communicating about complexity and uncertainty, and recovering from unanticipated consequences of change processes.

Psychologists' work on adaptation includes immediate counseling and support for people who have experienced disasters, extreme heat, migration, and other consequences of climate change, as well as counseling for climate-related distress (eco-anxiety) and longer-term treatment of conditions – such as mental health symptoms, substance misuse, academic problems, interpersonal conflicts, and violence – that are more likely to occur or worsen because of climate change (Baudon & Jachens, 2021; Clayton et al., 2021; Coffey et al., 2021; Ingle & Mikulewicz, 2020; Lawrance et al., 2021; McBride et al., 2021; Monsell et al., 2021; Obradovich et al., 2018; Pihkala, 2020; Suh et al., 2021). Psychologists may also work to prevent such conditions by implementing school and community programs to build people's socioemotional skills, resilience, and empowerment (Doppelt, 2016; Everett et al., 2020; Ntontis et al., 2020). In addition, psychologists help people manage the psychological and behavioral aspects of physical health conditions that can arise from climate change (e.g., pain management, medication adherence) and helping them adopt positive health behaviors (related to diet, activity, sleep, etc.) (Santos et al., 2021).

Further, psychologists can help guide disaster preparation, response, and recovery by households, organizations, and communities as well as contribute to the development and implementation of public policies and programs for addressing long-term climate change impacts (van Valkengoed & Steg, 2019). And they can provide guidance and services in communities that will or have received climate migrants and refugees.

Practitioners' interventions are generally rooted in research, but they may also be guided by current environmental and sociopolitical developments and people's experiences and preferences. Although the ideal foundation for practice is rigorous research, relevant research may not exist or be complete or may not yet be translatable or scalable for all areas of practice. Thus, interventions may need to be designed or selected based on the best available research on the topic and inferences or projections from evidence and accumulated knowledge in related areas. (The process and outcomes of implementing an intervention that had not been fully validated may then become a topic for research.) Whatever the basis for an intervention, it should be considered and discussed openly by stakeholder representatives before implementation to ensure it is understood, accepted, feasible, and appropriately adapted and managed. Consulting and co-designing with stakeholders is vital in working in communities with a history of disadvantage or environmental burden, so that past injustices are not repeated or reinforced.

As with research, more psychologists, working in a broader range of domains, need to become involved in mitigation and adaptation efforts. Practitioners in nearly all areas of psychology (e.g., members of APA and of other psychology organizations in the U.S. and globally) have expertise and experience that could be applied to climate change issues. And again like research, the value and impact of psychology practitioners' work will be increased through ongoing communications and collaborations with practitioners and professionals in other fields, policymakers, and community members.

The task force offers the following recommendations to guide APA's efforts to enhance psychological practice on climate change:

***Recommendation 3 (Strengthening the field)***

***Build psychologists' capacities to support people in mitigating and adapting to climate change.***

APA can implement this recommendation through activities such as the following:

- Establish and maintain a repository of information on effective assessments, interventions, services, and programs for mitigation and adaptation in diverse populations (including information on their theoretical and empirical foundations).
- Produce user-friendly written and video materials for practitioners and their clients, for use in sharing information about mitigation and adaptation and delivering interventions and services.
- Sponsor sessions for practitioners (within the U.S. and internationally) interested in mitigation and adaptation to learn about research in their areas and to share their experiences and needs with researchers.
- Provide guidance and training for practitioners who work with organizations and communities to develop and implement plans for reducing greenhouse gas emissions.

Among other features, these plans would:

- Address the roles of formal and informal leaders and other group members, as well as influences of outside groups and institutions.
  - Consider how individuals' knowledge, attitudes, goals, and behaviors; interpersonal behaviors; organizational structures and processes; cultural factors; physical environments; and technologies interact to determine energy use and emission levels.
  - Specify targets, actions, assessments, and feedback.
- Provide guidance and training for practice with specific populations, such as:
    - People and communities who are affected by climate change as well as experience discrimination and economic disadvantage.
    - People and communities facing extreme consequences of climate change, such as natural disasters and population displacement, migration, and refugeehood.



- Youth who have concerns, distress, or anxiety about climate change and its implications for their future lives.
- First responders, activists, journalists, scientists, attorneys, and others whose work focuses on climate change.
- Offer guidance on self-care for psychologists who experience stress or negative emotions from working on climate change and related issues.
- Incorporate considerations of climate change into future APA [practice guidelines](#) where relevant.
- Initiate the design and formal recognition of specialties, proficiencies, and/or certifications for climate change-related professional practice (e.g., through the APA [Commission for the Recognition of Specialties and Subspecialties in Professional Psychology](#)).

***Recommendation 4 (Broadening impact)***

***Enlarge the range of settings and partnerships in which psychology practitioners address climate change.***

APA can implement this recommendation through activities such as the following:

New collaborations

- Build and strengthen international networks of psychologists, other healthcare professionals, social service providers, local governments, businesses, faith leaders, first responders, and others to enable more efficient and coordinated delivery of services to communities experiencing natural disasters related to climate change.
- Provide guidance and sponsor planning meetings, involving healthcare professionals and community leaders, to establish community-based psychosocial resilience programs for preventing negative mental health impacts of climate change and efficiently delivering care when needed.

- Work with governments, attorneys, and private organizations to ensure that people who have migrated due to climate change (including refugees) receive appropriate mental and behavioral healthcare coordinated with other health, social, and legal services.
- Provide guidance to psychologists on opportunities for organizing and working with government entities, private companies, and community groups on climate change mitigation planning and implementation. Include advice on how to maximize psychologists' effectiveness in those settings and how to detect and reduce risks for delay, cooptation, and greenwashing (Cislak et al., 2021; Lamb et al., 2020).

#### Engaging other organizations

- Build and strengthen connections with national and international organizations representing labor, business, farming, and other economic sectors to enhance mitigation and adaptation efforts in workplace and community settings.
- Engage with professional associations in such fields as management, urban/regional planning, engineering, architecture, and industrial design to incorporate consideration of psychological aspects of mitigation and adaptation into those fields.
- Help practitioners arrange to offer services and programs in libraries, museums, zoos, aquariums, parks, and other public spaces.
- Serve as a sponsor of organizations and events concerned with large-scale mitigation efforts (e.g., [Behavior, Energy, and Climate Change Conference](#)) and encourage greater involvement of psychologists.
- Facilitate partnerships of psychologists with climate change and sustainability officers in government and business (e.g., members of the [Association of Climate Change Officers](#) and [American Society of Adaptation Professionals](#)) to ensure inclusion of mental and behavioral health in those officers' scope of work and to apply psychology to physical mitigation and adaptation efforts.

## Education

The preceding sections on research and practice point to needs to increase the number of psychological researchers and practitioners working on climate change and to expand the range of domains and settings in which they work. A major route to achieving these goals is to incorporate coverage of climate change into the training of psychologists. Ideally, the coverage of climate change will take a multidisciplinary approach, as psychological work that connects with other fields often has greater value and impact.

At the same time, trainees and professionals in other fields can also benefit from education on the psychological dimensions of climate change. Gaining knowledge about psychological research and practice can broaden their perspectives and enhance the effectiveness of their work, as well as enable them to collaborate more successfully with psychologists and others who work on or are affected by climate change.

Educating the general public is necessary as well. By gaining appreciation of the psychological, not just physical, dimensions of climate change, people will attain a more complete understanding of the climate challenge and be better equipped to contribute to discussions and decision making about climate change policies and programs. In some communities, educators may need to address denial of the reality of climate change and its human causes (Sinatra & Hofer, 2021; Wong-Parodi & Feygina, 2020).

Climate change education can take place in various formal and informal settings, including the classroom, laboratory, clinic, museums, internet, and elsewhere. Of course, education programs should be geared to the developmental and educational levels of the participants. For all settings and levels, programs can aim to raise participants' awareness of how humans engage with the rest of nature, how climate change emerges from a complex set of interacting physical and human processes, and how climate change is related to other environmental challenges (e.g., pollution, biodiversity loss, deforestation) (Guzmán et al., 2021). Programs can also show how climate change is linked to social, economic, and political conditions

(including those leading to human rights violations and environmental injustice) and inform participants about actions they can take to address climate change and its consequences (Jafry, 2019).

Many participants will already have knowledge, assumptions, and attitudes about climate change when they enter an education program (van der Linden, 2021). Program leaders can respectfully address distortions or misinformation that any participants express. And all participants would benefit from being taught how to identify, question, and inoculate themselves against misinformation (Compton et al., 2021). Participants can also be shown how to make sense of and contribute effectively to highly polarized or politicized debates and be given the space to exchange views about open issues surrounding climate change and climate solutions. The topic of climate change presents an opportunity to encourage critical thinking and constructive debate on a foundation of scientific evidence (Lombardi et al., 2013).

Participants may experience a variety of emotional responses to climate change throughout the course of an educational program and after it ends. For some, these may take the form of depression, post-traumatic stress, or anxiety from having experienced or from envisioning climate-related disasters or injustices (Clayton et al., 2021; Hickman et al., 2021). Educational programs can help support participants by including guidance on how to identify one's feelings about climate change and express and act on them in positive ways (such as by seeking social support and through individual or collective activism). For those participants with more severe emotional reactions, referrals can be made to mental health professionals.

The task force offers the following recommendations to guide APA's efforts to enhance education on climate change:

***Recommendation 5 (Strengthening the field)***

***Incorporate coverage of climate change into all levels of psychology education.***

APA can implement this recommendation through activities such as the following:

- Develop curricula, textbooks, videos, and other teaching materials on climate change and its psychological dimensions for high school, undergraduate, graduate, and continuing education courses in psychology. (Apply principles from educational psychology and science education in designing these materials.)
- Provide guidance and funding for courses, research experiences, practica, and internships on climate change (including multidisciplinary/multiprofessional activities) for undergraduate and graduate students and postdoctoral fellows in psychology and other fields.
- Offer guidance to faculty on the design of dual majors (e.g., psychology/environmental science), minors, and certificates for undergraduate education in the psychological dimensions of climate change.
- Offer guidance on successful multidisciplinary co-mentorship to faculty in psychology and other disciplines who work with graduate students and postdoctoral fellows pursuing multidisciplinary work on climate change.
- Regularly include educational sessions on climate change topics in APA's annual convention and other events.
- Include coverage of education about psychological aspects of climate change in guidelines such as APA's [National Standards for High School Psychology Curricula](#) and [Guidelines for the Undergraduate Psychology Major](#) and in advisory materials for graduate and continuing education.

***Recommendation 6 (Broadening impact)***

***Promote coverage of the psychological dimensions of climate change in the education of other professionals and the public.***

APA can implement this recommendation through activities such as the following:

- Work with faculty and associations in other fields to design curricula and course materials about the psychological dimensions of climate change for use in the training of other professionals, such as environmental scientists, physicians, nurses, lawyers, journalists, clergy, urban/regional planners, forest managers, engineers, and architects.
- Develop curricula and teaching materials for elementary and middle school students on climate change and psychology with educational and environmental organizations
- Develop informal educational materials and experiences for the public on climate change and psychology through collaborations with other organizations (e.g., broadcasters, libraries, museums, zoos, national and state parks).
- Include coverage of climate change in materials for broader psychology education in schools and public settings.

### **Advocacy**

APA's advocacy encompasses a range of activities: educating and sharing information with policymakers and leaders of governmental and other organizations, advising them on the development and updating of policies and programs, advocating for and against specific policy and program proposals (and related funding), and organizing and training psychologists to be effective advocates. In the last several years, APA has strengthened its advocacy on climate change issues, with a primary focus on the U.S. federal government (see Appendix). Building on the [2011](#) and [2020](#) Council of Representatives resolutions, APA has argued to Congress, the White House, and executive branch departments and agencies that climate change is driven largely by human behavior (at individual, group, and societal levels), that it is harmful for psychological health and well-being, and that responses to climate change must be guided by a scientific understanding of behavior.

APA has also emphasized that responses must address environmental justice issues, as groups that are socially and economically marginalized often bear the greatest negative impacts

of climate change while other groups, including those that make larger contributions to climate change, are generally shielded from its most extreme effects.

Psychological research and practice are relevant to many topics concerning climate change adaptation and mitigation that federal policies and programs are likely to address in coming years. These include disaster preparation and response, prevention and treatment services for climate-related mental health problems, services for climate-related migrants and refugees (both domestic and international), and transitions to new forms of energy, transportation, and agriculture (including support for affected workers and communities). Psychology can also contribute to policy and program development in other areas in which climate issues arise, such as public health; infrastructure, housing, and community development; population and reproduction; national security and international affairs; and taxation and financial regulation (e.g., understanding incentives and potential behavioral outcomes of climate-related financial policies). Further, existing and new federal programs addressing climate change could be made more effective and equitable with input from psychologists, including from such areas as community, educational, environmental, organizational, and social psychology.

While APA pursues some climate advocacy efforts on its own, it also collaborates with other scientific, health, and environmental organizations. Collaborations enable scientific and policy expertise to be shared, advocacy resources to be coordinated, and APA's perspectives to be incorporated into a greater number of advocacy efforts. Through collaborations, APA contributes to advocacy on key climate topics that involve fields outside psychology, including topics related to physical health, new technologies (e.g., electric vehicles), and energy or economic policies. This engagement elevates APA's voice on major public policy issues and increases the likelihood that other organizations will support advocacy rooted in psychology in which APA takes the lead. APA's participation in advocacy on topics that extend beyond psychology has focused on issues and positions for which the evidence base is strong and

broadly accepted (as in APA's endorsement of the conclusions of climate science in the 2011 and 2020 resolutions).

As climate change is global, APA engages in advocacy at the international level. It has begun to do this through advocacy to federal departments (such as the Department of State), involvement with United Nations agencies (APA currently has liaisons to the United Nations and observer status with the Intergovernmental Panel on Climate Change and Framework Convention on Climate Change), and collaborations with other national psychological associations and the Global Psychology Alliance (e.g., the [2019 Lisbon conference](#)). These efforts are guided by international standards and goals, such as found in the [Universal Declaration of Human Rights](#), [United Nations Declaration on the Rights of Indigenous Peoples](#), and [United Nations Agenda for Sustainable Development](#). In future years, APA can work with these and other governmental and non-governmental organizations to address major international climate issues, including supporting less wealthy countries and Indigenous populations in their efforts to have a voice and receive just treatment in the design and implementation of global climate policies and helping ensure that countries are prepared to meet the needs and respect the human rights of climate-related migrants and refugees.

Additional opportunities for APA advocacy are with state, local, tribal, and territorial governments, which increasingly are developing and implementing their own climate change policies and programs (Farber, 2021; Jones, 2020). Critical work on greenhouse gas emission reductions, disaster preparation and response, public health (including mental and behavioral health), social services, education, regional planning, and economic and infrastructure development is carried out by governments at these levels. While reflecting regional needs and perspectives, their efforts also serve as models and test cases for one another and the federal government. These governments' experiences can be highly informative for APA and other organizations as they work to identify and promote effective forms of climate action. In turn, APA can share psychological knowledge and perspectives with these governments both directly



and through such organizations as the [National Conference of State Legislatures](#), [National Governors Association](#), [U.S. Climate Alliance](#), [National Congress of American Indians](#), [National Association of Counties](#), [National League of Cities](#), [U.S. Conference of Mayors](#), [Climate Mayors](#), [National Association of County and City Health Officials](#), [National Association of State Mental Health Program Directors](#), [America Is All In](#), and related groups. State and territorial psychological associations and ethnic psychological associations can be invited to serve as partners with APA in this work.

Further, APA can explore advocacy directed to businesses, trade associations, labor unions, and non-profit organizations. It could provide information and guidance about the psychological aspects of mitigating and adapting to climate change to entities operating in sectors such as energy, transportation, manufacturing, agriculture, waste management, finance, health, education, and social services.

APA's advocacy to governments and private entities might lead to partnerships or consultant relationships with them on specific initiatives, for example in designing a new program or preparing educational materials. As noted under Practice, such relationships can be productive but must be carefully vetted. APA should ensure that the methods and expected outcomes of any initiative it signs onto with another entity will have a genuinely positive impact on climate and environmental justice, rather than serve private interests alone or as a cover for other activities that may be harmful to the climate or marginalized groups.

At the same time, APA must respect the expertise and interests of the entities it works with. It can learn much from organizations, such as tribal governments and environmental justice organizations, that represent communities with substantial knowledge and experience related to climate change and its effects. Their perspectives can contribute to the development of APA's policy positions and advocacy strategies.

To complement the advocacy work of its own professional staff, APA can encourage individual psychologists to engage in climate advocacy and activism, either in concert with APA

or on their own. It can offer training to psychologists on climate policy and environmental justice issues, methods for advocating effectively to policymakers in government and the private sector at national and regional levels, and methods for organizing other individuals in climate advocacy. To support such efforts, APA can sponsor advocacy days for groups of psychologists, facilitate other meetings and communications between psychologists and policymakers, and provide policy and advocacy informational materials. Findings from psychological and other social science research on communication, persuasion, and political behavior can be incorporated into the training of psychologists on advocacy and activism (Kotcher et al., 2021; Schulte et al., 2021; Swim et al., 2021).

The task force offers the following recommendations to guide APA's efforts to enhance advocacy on climate change:

***Recommendation 7 (Strengthening the field)***

***Engage in sustained advocacy on climate change to government at all levels and to business and non-profit organizations.***

APA can implement this recommendation through activities such as the following:

- Expand APA's current advocacy efforts on climate change directed to governments at the U.S. federal and international levels. As with other APA advocacy work, specific goals and strategies would be determined based on periodic assessments of the policy and political landscape, but in general these efforts would involve the following:
  - Focus on issues for which psychology has a unique or important perspective.
  - Emphasize science: Advocate for federal funding of psychological research on climate change and for the application of psychological research in federal climate policies and programs. In particular, highlight specific areas of psychological research and application that have potential for strong impacts but have not received sufficient attention or funding.

- Emphasize environmental justice and related social justice and human rights issues in the U.S. and internationally, including those linked to climate-related migration.
- Produce policy briefs, research summaries, guidance on successful interventions and programs, and other resources on climate change issues from a psychological perspective to inform policymakers, advocates, and the public.
- Collaborate on advocacy with APA divisions, state and regional psychological associations, ethnic psychological associations, Global Psychology Alliance, and other psychological organizations.
- Strengthen involvement in United Nations bodies that address climate change, including the [Framework Convention on Climate Change](#), [Intergovernmental Panel on Climate Change](#), [United Nations Environment Programme](#), [Pan American Health Organization](#), and [World Health Organization](#).
- Develop new APA advocacy efforts on climate change (with features like those above) directed to:
  - State, local, tribal, and territorial governments.
  - Businesses, trade associations, labor unions, non-profit associations, and other private organizations.
- Educate psychologists and other psychological organizations on climate change issues and how to pursue advocacy on them (both with APA and on their own).
  - Include coverage of broader economic, social, political, and legal contexts in which climate issues arise.
  - Include training on methods for activism and public communications about climate and related issues.
- Advocate through the justice system:

- Develop and endorse amicus briefs for federal and international court cases related to climate change.
- Train and support psychologists involved in cases related to climate change, including those concerning climate migrants, refugees, and displaced populations.

***Recommendation 8 (Broadening impact)***

***Partner on climate advocacy with other scientific, professional, social justice, environmental, and health organizations.***

APA can implement this recommendation through activities such as the following:

- Partner with non-psychological organizations on national and international advocacy through established climate coalitions (see, e.g., [Alliances for Climate Action](#)) as well as ad hoc coalitions for addressing specific topics.
  - Goals of coalitions should be compatible with APA's advocacy goals on climate change and other issues.
  - Positions that depend on non-psychological evidence can be supported when the evidence is strong and broadly accepted.
  - APA can take leadership roles in some of these coalitions.
- Engage science and health advocacy coalitions of which APA is a member (e.g., [Coalition for Health Funding](#), [Coalition for National Science Funding](#), [Coalition for National Security Research](#), [Consortium for Citizens with Disabilities](#), [Consortium of Social Science Associations](#), [Federation of Associations in Behavioral and Brain Sciences](#), [Mental Health Liaison Group](#), [Research!America](#)) in work on climate change issues.
- To lay the foundations for possible future advocacy partnerships, share information about the psychological dimensions of climate change issues with non-psychological

organizations, and learn from those organizations about the perspectives of other fields and communities.

## **Communications**

Successful implementation of the initiatives recommended in the preceding sections will require APA to communicate broadly with psychologists and other professionals about opportunities for participation in the initiatives and their products and outcomes. Building on these communications, APA can serve as a comprehensive source of information to journalists, policymakers, community leaders, business owners, youth, and other elements of the public about the psychological aspects of climate change and how they can contribute to efforts to mitigate and adapt to climate change. In these ways, APA can encourage more people in the U.S. and globally to engage in individual and collective climate action and provide them with resources and guidance to strengthen their work.

Various authors have examined how to communicate effectively about climate change (Holmes & Richardson, 2020; Markowitz & Guckian, 2018). Research findings and other organizations' experiences suggest points such as the following:

- Place climate change in the context of other topics of importance to specific audiences, such as other environmental challenges (e.g., pollution, biodiversity loss), human rights, environmental justice, natural disasters, migration, health, intergenerational equity, and economic policy.
- Offer constructive responses to climate change that people can adopt now and going forward, without blaming them for past behavior or inaction. Point to the benefits of climate action for health, well-being, and social justice, drawing on sources trusted by the audience. Such an approach can motivate people to act and help them avoid feelings of guilt, despair, or apathy (Bain et al., 2016; Geiger et al., 2019; Markowitz & Guckian, 2018; Ojala, 2012).

- Talk about collective actions – what people can do together as communities and societies – and not just individual actions (Climate Outreach, 2021). This approach recognizes that the impacts of most people’s individual actions on climate change are limited, as well as highlights the psychological benefits of working with others (Kieft, 2021). Effective collective action may include not only specific mitigation or adaptation projects (e.g., insulating homes, disaster response planning) but also activism on political and economic issues related to climate change.
- Tailor terminology to the purpose, audience, and context of the message. For example, such terms as *climate change*, *climate crisis*, *climate emergency*, *global warming*, and *planetary health crisis* are all useful labels for the problem, but some terms may be more effective or appropriate for particular settings or audiences (Bruine de Bruin et al., 2021; Schuldt et al., 2020; Sol Hart & Feldman, 2018, 2021). The same point holds for alternative terms for specific concepts, such as *greenhouse gas* and *heat-trapping gas*. Certain terms, including *mitigation* and *adaptation*, may need to be defined for some audiences or be replaced by other, less abstract terms.
- Use techniques such as metaphors, analogies, stories, graphics, and animation to convey information about complex processes and systemic relationships involved in climate change. Research on environmental communication and science education can help guide design of such materials (Constantino & Weber, 2021; Danielson et al., 2016; Raimi et al., 2017; Thibodeau et al., 2017).
- Aim to detect, prevent, and challenge the various forms of misinformation, disinformation, and “fake news” about climate change, and teach people how to do this themselves (Compton et al., 2021; Farrell et al., 2019; Sinatra & Lombardi, 2020). Consider the multiple factors that may lead people to accept and defend inaccurate information, such as insufficient knowledge, cognitive biases, exposure to propaganda,

ideological beliefs, political affiliations, personal values and priorities, and social influences (National Academies of Sciences Engineering & Medicine, 2017; Sinatra & Hofer, 2021).

In addition to its own communications, APA can encourage and train psychologists and others to communicate about climate change. Their efforts can take various forms (speeches, interviews, columns, blogs, tweets, graphics, videos, discussions, etc.) and be pitched to local, national, or international audiences. These communications can serve not only to disseminate information but also to draw more people to work on climate issues, facilitate networking among people with related interests and expertise, and enable new collaborations for climate action.

The task force offers the following recommendations to guide APA's efforts to enhance communications about climate change:

***Recommendation 9 (Strengthening the field)***

***Serve as an important channel of information to psychologists about climate change and how they can contribute to effective climate action.***

APA can implement this recommendation through activities such as the following:

- Continue to inform the general psychology community about climate change through regular coverage in APA's magazine, *Monitor on Psychology*, and other APA news outlets.
- Support and grow a community of psychologists and other professionals with interests in climate change by establishing a dedicated newsletter and Twitter account on psychology and climate change. These forums would facilitate the sharing of information about APA's climate change activities as well as other news, opportunities, and commentary related to psychology and climate change (e.g., new research, job announcements, policy developments, trainings, conferences).

- Build and maintain a readily discoverable section of the APA website that organizes and links to information about all of APA's climate change activities and to other climate change materials.
- Exchange information on psychology and climate change with APA divisions, state and regional psychological associations, ethnic psychological associations, Global Psychology Alliance, and other psychology organizations for dissemination to each group's members.

***Recommendation 10 (Broadening impact)***

***Educate the public about the psychological dimensions of climate change and effective climate action.***

APA can implement this recommendation through activities such as the following:

APA communications

- Develop informational materials for the public on the psychological aspects of climate change and climate action (including topics likely to draw significant interest, such as disaster response, environmental justice, mental health effects, migration, and youth concerns). Design materials that appeal to specific audiences (defined, for example, by age, culture, or interests) and disseminate them through institutions (e.g., libraries, workplaces, community organizations) and channels (e.g., websites, videos, social media) that reach those audiences.
- Recommend story ideas, experts, and information sources to journalists and other traditional and new media producers for coverage of the psychological aspects of climate change.
- Engage with news organizations and social media companies (e.g., Meta/Facebook, Twitter) to develop strategies to facilitate dissemination of accurate information about climate change and limit the spread of misinformation.



- In collaboration with primary emergency response agencies, serve as a public information resource on the psychological components of preparing for and responding to climate-related disasters.
- Incorporate coverage of climate change into other APA public communications that convey the nature and scope of psychology.
- Apply effective public communications approaches in other activities suggested in this report, e.g., policy briefs (Advocacy), informal public education (Education), and updates on APA's environmental practices (APA's Energy Use and Sustainability).

#### Psychologists as communicators

- Offer training for psychologists to acquire skills in communicating and leading conversations about climate change with various audiences (e.g., other professionals, businesses, journalists, youth, community groups). Among other topics, the training can cover how to facilitate collective action as well as how to address emotional responses to climate change and climate-related disasters, misconceptions about climate change, and related political issues.
- Work with psychologists to produce articles and blogs about climate change to appear in outlets that draw significant audiences interested in psychology, the environment, or justice issues (e.g., [Psychology Today](#), [Yale Environment 360](#), [Medium](#)).
- Spotlight psychologists who engage in public communication about climate change as models for other psychologists and professionals.

#### Collaborations

- Co-sponsor public forums and workshops (with other professional organizations, environmental justice organizations, schools, museums, libraries, etc.) for sharing information about the psychological aspects of climate change and applying that information in planning climate action.

- Collaborate with APA divisions and other psychological and non-psychological organizations on communications activities about climate change and climate action.

### **APA's Energy Use and Sustainability Practices**

The task force reviewed information provided by APA staff about the association's recent energy use, greenhouse gas emissions, and sustainability practices and consulted with APA's deputy chief executive officer to learn about the association's planning in those areas. An initial assessment indicates that the magnitude of APA's greenhouse gas emissions is largely determined by the sources and amounts of energy that are used at APA facilities, by APA staff at other locations as part of their work, and in professional travel by staff, APA members, and others involved in APA activities (including the annual convention, governance meetings, division meetings, and other events). APA's other sustainability practices – such as those related to waste handling, recycling, and water use – have less impact than emissions on climate change but can affect environmental quality and health in other ways.

APA owns two [LEED](#) Platinum Certified office buildings in downtown Washington, DC. Since the beginning of the COVID-19 pandemic, nearly every APA employee has worked entirely by telecommuting, most professional travel has been halted, and most meetings and conferences have been held virtually. APA's leadership is currently considering how the association will operate in the period following the pandemic with respect to usage of its office buildings, the distribution of office work and telework, the role and amount of business travel, and which meetings and conferences will be held in-person or virtually. This broad examination of the association's future operations creates a window of opportunity for APA to take major steps to reduce its emissions, improve its sustainability, and serve as a model of environmental responsibility for psychologists, other organizations, and the public.

The task force offers the following recommendations to guide APA's efforts to improve its energy use and sustainability practices:

***Recommendation 11 (Strengthening the field)***

***Implement a strategic approach to reduce greenhouse gas emissions and improve sustainability across all of APA's operations and in the psychological community.***

APA can implement this recommendation through activities such as the following:

APA buildings and programs

- Develop and implement a comprehensive climate action plan to significantly reduce energy use and greenhouse gas emissions across all activities overseen by APA's central office.
  - The plan should consider not only energy use and emissions at APA's office buildings but also those linked to data centers and cloud computing; shipping and mailing; physical storage; APA staff's commuting, telecommuting, business travel, and work-related internet and digital equipment use; travel and participation of all attendees at APA meetings and events; and other aspects of APA operations.
  - The plan should include regular [greenhouse gas emissions inventories](#), quantitative goals for emissions reductions, specific policies and practices to achieve these goals, and regular progress reports.
  - Emission reduction targets should be set in line with U.S. [nationally determined contributions](#) (for complying with the Paris Agreement) and guidance from sources such as the [U.S. Environmental Protection Agency](#), [United Nations Global Compact](#), and [Science Based Targets Initiative](#).
  - The plan might include the purchase of carbon offsets, but only in addition to (not instead of) APA reducing its own emissions and only if the offsets are fully verified.

- Make most APA events, such as annual conventions and governance meetings, fully virtual to reduce emissions associated with long-distance travel and large professional gatherings.
  - Develop criteria for when it would be appropriate for events to be held in person or in hybrid in-person/virtual form.
  - In planning virtual events, APA should apply findings from research and other organizations' experiences on how to make virtual events productive, inclusive, and satisfying for participants.
  - Aim for any in-person events to be local or regional (e.g., in partnership with state and regional psychological associations).
- Appoint a chief sustainability officer and/or hire consultants to oversee the design and implementation of the climate action plan and other sustainability improvements and to provide ongoing guidance to the association.
- In addition to maintaining LEED Platinum Certification<sup>8</sup>, improve the energy use and sustainability of APA's buildings by following guidance from the District of Columbia government ([Building Energy Performance Standards](#)) and organizations such as the [Association for the Advancement of Sustainability in Higher Education](#), [National Institute of Building Sciences](#), and [World Resources Institute](#).

#### APA financial practices

- Select and negotiate with suppliers and contractors with the goal of ensuring that goods purchased by APA are produced, transported, recycled, and disposed of according to methods that generate fewer emissions and are more sustainable.

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<sup>8</sup> The adequacy of the LEED certification system is currently under debate. See Hu (2021), Scofield (2021), and Scofield et al. (2021).

- Adopt a socially and environmentally responsible investment strategy that involves both divestment from industries that harm the environment (e.g., fossil fuels) and investment in industries that are safer for the environment (e.g., solar and wind energy).
- Establish a [green revolving fund](#), such that cost savings from climate and sustainability efforts (e.g., reducing business travel) are redirected to new climate and sustainability projects (e.g., solar panels, electric vehicle charging stations).

#### Psychological community

- Meet regularly with APA divisions, state and regional psychological associations, ethnic psychological associations, Global Psychology Alliance, and other psychology organizations to share information and experiences and develop joint goals and initiatives on reducing greenhouse gas emissions and improving sustainability.
- Produce guidance (e.g., articles, websites, videos) on reducing greenhouse gas emissions and improving sustainability for psychology departments, programs, and clinics and for individual psychologists (in both their professional and personal lives).

#### ***Recommendation 12 (Broadening impact)***

#### ***Engage with other organizations and the public to reduce greenhouse gas emissions and improve sustainability practices.***

APA can implement this recommendation through activities such as the following:

- Produce and disseminate regular reports on the association's progress in reducing emissions and improving sustainability, including illustrative accounts of the decisions, processes, obstacles, and tradeoffs that led to particular outcomes.
- Develop initiatives with tenants of APA's two buildings to reduce emissions and improve sustainability in both common and leased spaces.
- Exchange information and experiences and develop joint initiatives with other scientific and professional organizations (e.g., [Consortium of Social Science Associations](#), [Federation of Associations in Behavioral and Brain Sciences](#), [American Geophysical Union](#), [International](#)

[Science Council](#), [International Union of Psychological Science](#), [National Academies of Sciences, Engineering, and Medicine](#), and [World Resources Institute](#)).

- Incorporate guidance on steps that individuals and households can take to reduce emissions and improve sustainability in APA's communications with the public about psychology and climate change (see Communications recommendations).

## 7. Implementing the Recommendations

It will be the responsibility of APA's leadership to determine whether and how to implement the recommendations and suggested activities put forward in this report. To support planning, the task force offers the following thoughts on how APA might achieve a successful implementation:

**Distribution of work.** Given that the twelve recommendations fall within the domains of various APA directorates and offices, the suggested activities could be pursued in parallel by different groups of staff (and perhaps their associated boards and committees). This distribution entails an APA-wide approach to addressing climate change.

**Staff coordination.** Specific staff member(s) should be assigned the responsibility of coordinating climate change activities across directorates/offices. These staff would facilitate information sharing and help ensure consistency of goals and approaches. In addition, these staff could serve as contact points for engaging with divisions and outside organizations and take lead roles in any special projects.

**Advisory group.** An advisory group of external experts in climate change (from psychology and other fields) would be needed to inform staff of new developments and ideas related to climate change and to offer input on prioritizing and planning APA's activities. This group might also engage in projects on its own, with staff oversight and support. (APA's [Coalition for Psychology in Schools and Education](#) is one potential model for such a group.)

**Prioritization of activities.** As each of the twelve recommendations captures a critical area of work, it is vital that progress be made on each one. Ideally, activities within each

recommendation will be initiated as soon as possible and substantive work on each recommendation will be underway within two years. A strategic approach to prioritizing and selecting activities would involve identifying a mix of those that address mitigation and address adaptation, as well as a mix of those that will have rapid impacts (given the need to address the immediate threats of climate change) and those that will have longer-term impacts (as climate change and its effects will continue).

**Integration with other activities.** To supplement APA efforts that are explicitly focused on climate change, work on climate change can also be included within other APA programs and initiatives, such as those addressing population health, health equity, anti-racism, human rights, ethics, socioeconomic status, changes in the workplace, and international collaboration.

**Broad environmental perspective.** Climate change overlaps and interacts with other environmental problems that are the result of human behaviors and have impacts on human health and well-being. These include pollution, biodiversity loss, soil depletion, ocean acidification, deforestation, animal diseases, and pandemics. Ideally, APA's activities would address environmental challenges in a comprehensive manner that encompasses these problems as well as climate change. This approach would strengthen the impact of APA's work, in part by enabling it to engage with a broader range of stakeholders and partners.

**Planning and assessment.** APA should develop annual goals, work plans, and budgets for its climate change and environmental activities (while maintaining flexibility to address emerging opportunities and needs). Some activities listed as separate items in this report could be combined into single events or projects. Assessments of effectiveness, using pre-identified objective metrics, should be used to guide improvements in APA's activities and to focus APA's efforts in areas where they can have the greatest impact. The advisory group noted above, as well as relevant boards and committees, could contribute to setting goals and assessing effectiveness.

**Award.** APA could consider establishing an award to honor psychologists who have

made significant contributions to addressing climate change and related environmental issues. Such an award would help raise the visibility of work in this area and motivate other psychologists to pursue new efforts.

### **8. Final Comment**

The task force offers these recommendations and suggested activities as guidance for the next stage of APA's work on the climate crisis. It invites others to refine these ideas and to offer additional ideas for how psychologists and APA can effectively respond to the crisis. Most important, however, is that APA act. The task force urges APA to direct its attention and resources to mobilizing psychologists to address the fundamental threat of climate change to the health, well-being, and equity of people throughout the world.



## References

- Adamson, J., & Davis, M. E. (Eds.). (2018). *Humanities for the environment: Integrating knowledge, forging new constellations of practice*. Routledge. <https://www.routledge.com/Humanities-for-the-Environment-Integrating-knowledge-forging-new-constellations/Adamson-Davis/p/book/9781138612518>.
- Al-Delaimy, W., Ramanathan, V., & Sánchez Sorondo, M. E. (Eds.). (2020). *Health of people, health of planet and our responsibility: Climate change, air pollution and health*. Springer Nature. <https://link.springer.com/book/10.1007/978-3-030-31125-4>.
- Árvai, J., & Gregory, R. (2021). Beyond choice architecture: A building code for structuring climate risk management decisions. *Behavioural Public Policy*, 5(4), 556-575. <https://doi.org/10.1017/bpp.2020.37>
- Atwoli, L., Baqui, A. H., Benfield, T., Bosurgi, R., Godlee, F., Hancocks, S., Horton, R., Laybourn-Langton, L., Monteiro, C. A., Norman, I., Patrick, K., Praities, N., Olde Rikkert, M. G. M., Rubin, E. J., Sahni, P., Smith, R., Talley, N., Turale, S., & Vázquez, D. (2021). Call for emergency action to limit global temperature increases, restore biodiversity, and protect health: Wealthy nations must do much more, much faster. *Nutrition Reviews*, 79(11), 1183-1185. <https://doi.org/10.1093/nutrit/nuab067>
- Bain, Paul G., Milfont, Taciano L., Kashima, Y., Bilewicz, M., Doron, G., Garðarsdóttir, Ragna B., Gouveia, Valdiney V., Guan, Y., Johansson, L.-O., Pasquali, C., Corral-Verdugo, V., Aragonés, Juan I., Utsugi, A., Demarque, C., Otto, S., Park, J., Soland, M., Steg, L., González, R., . . . Saviolidis, N. M. (2016). Co-benefits of addressing climate change can motivate action around the world. *Nature Climate Change*, 6(2), 154-157. <https://doi.org/10.1038/nclimate2814>
- Baker, R. E., Mahmud, A. S., Miller, I. F., Rajeev, M., Rasambainarivo, F., Rice, B. L., Takahashi, S., Tatem, A. J., Wagner, C. E., Wang, L.-F., Wesolowski, A., & Metcalf, C. J. E. (2021). Infectious disease in an era of global change. *Nature Reviews Microbiology*. <https://doi.org/10.1038/s41579-021-00639-z>
- Ballew, M. T., Leiserowitz, A., Roser-Renouf, C., Rosenthal, S. A., Kotcher, J. E., Marlon, J. R., Lyon, E., Goldberg, M. H., & Maibach, E. W. (2019). Climate change in the American mind: Data, tools, and trends. *Environment: Science and Policy for Sustainable Development*, 61(3), 4-18. <https://doi.org/10.1080/00139157.2019.1589300>
- Barringer, F. (2021). Car batteries are the goal. Lithium is the quickest way to make them. Does a global good require local sacrifice in the Southwest? In *& the West* (Stanford Univ.). <https://andthewest.stanford.edu/2021/car-batteries-are-the-goal-lithium-is-the-quickest-way-to-make-them-does-a-global-good-require-local-sacrifice-in-the-southwest/>
- Baucom, I. (2020). *History 4° Celsius: Search for a method in the age of the Anthropocene*. Duke University Press. <https://www.dukeupress.edu/history-four-degrees-celsius>
- Baudon, P., & Jachens, L. (2021). A scoping review of interventions for the treatment of eco-anxiety. *International Journal of Environmental Research and Public Health*, 18(18), 9636. <https://www.mdpi.com/1660-4601/18/18/9636>
- Bradley, G. L., Babutsidze, Z., Chai, A., & Reser, J. P. (2020). The role of climate change risk perception, response efficacy, and psychological adaptation in pro-environmental behavior: A two nation study. *Journal of Environmental Psychology*, 68, 101410. <https://doi.org/https://doi.org/10.1016/j.jenvp.2020.101410>

- Brick, C., Bosshard, A., & Whitmarsh, L. (2021). Motivation and climate change: A review. *Current Opinion in Psychology*, 42, 82-88. <https://doi.org/https://doi.org/10.1016/j.copsy.2021.04.001>
- Bruine de Bruin, W., Rabinovich, L., Weber, K., Babboni, M., Dean, M., & Ignon, L. (2021). Public understanding of climate change terminology. *Climatic Change*, 167(3), 37. <https://doi.org/10.1007/s10584-021-03183-0>
- Brulle, R. J. (2021). Networks of opposition: A structural analysis of U.S. climate change countermovement coalitions 1989–2015. *Sociological Inquiry*, 91(3), 603-624. <https://doi.org/https://doi.org/10.1111/soin.12333>
- Brulle, R. J., Aronczyk, M., & Carmichael, J. (2020). Corporate promotion and climate change: An analysis of key variables affecting advertising spending by major oil corporations, 1986–2015. *Climatic Change*, 159(1), 87-101. <https://link.springer.com/article/10.1007/s10584-019-02582-8>
- Budolfson, M. (2021). Arguments for well-regulated capitalism, and implications for global ethics, food, environment, climate change, and beyond. *Ethics & International Affairs*, 35(1), 83-98. <https://doi.org/10.1017/S0892679421000083>
- Burke, S. E. L., Sanson, A. V., & Van Hoorn, J. (2018). The psychological effects of climate change on children. *Current Psychiatry Reports*, 20(5), 35. <https://doi.org/10.1007/s11920-018-0896-9>
- Cacioppo, J. (2007, Sept.). Psychology is a hub science. *APS Observer*. <https://www.psychologicalscience.org/observer/psychology-is-a-hub-science>
- Cambridge Sustainability Commission on Scaling Behaviour Change. (2021). *Changing our ways? Behaviour change and the climate crisis*. <https://www.rapidtransition.org/resources/cambridge-sustainability-commission/>
- Capstick, S., Lorenzoni, I., Corner, A., & Whitmarsh, L. (2014). Prospects for radical emissions reduction through behavior and lifestyle change. *Carbon Management*, 5(4), 429-445. <https://doi.org/10.1080/17583004.2015.1020011>
- Carmichael, R. (2019). *Behaviour change, public engagement and net zero: A report for the Committee on Climate Change*. [https://www.imperial.ac.uk/media/imperial-college/research-centres-and-groups/icept/Behav-Change-report\\_10.10.19\\_Final-for-upload.pdf](https://www.imperial.ac.uk/media/imperial-college/research-centres-and-groups/icept/Behav-Change-report_10.10.19_Final-for-upload.pdf)
- Carrico, A. R., & Donato, K. (2019). Extreme weather and migration: Evidence from Bangladesh. *Population and Environment*, 41(1), 1-31. <https://doi.org/10.1007/s11111-019-00322-9>
- Charlson, F., Ali, S., Benmarhnia, T., Pearl, M., Massazza, A., Augustinavicius, J., & Scott, J. G. (2021). Climate change and mental health: A scoping review. *International Journal of Environmental Research and Public Health* 18(9), 4486. <https://www.mdpi.com/1660-4601/18/9/4486>
- Cislak, A., Cichocka, A., Wojcik, A. D., & Milfont, T. L. (2021). Words not deeds: National narcissism, national identification, and support for greenwashing versus genuine proenvironmental campaigns. *Journal of Environmental Psychology*, 74, 101576. <https://doi.org/https://doi.org/10.1016/j.jenvp.2021.101576>
- Clayton, S., & Manning, C. (Eds.). (2018). *Psychology and climate change: Human perceptions, impacts, and responses*. Academic Press. <https://www.sciencedirect.com/book/9780128131305/psychology-and-climate-change>.
- Clayton, S., Manning, C., Speiser, M., & Hill, A. N. (2021). *Mental health and our changing climate: Impacts, inequities, responses*. American Psychological Association & ecoAmerica.

<https://ecoamerica.org/wp-content/uploads/2021/11/mental-health-climate-change-2021-ea-apa.pdf>

- Climate Outreach. (2021). *Linking individual action and system change in climate advocacy*. <https://climateoutreach.org/reports/linking-individual-action-system-change-climate-advocacy/>
- Climate Social Science Network. (2022). *Climate-washing litigation: Legal liability for misleading climate communications*. <https://www.cssn.org/cssn-research-report-20221-climate-washing-litigation-legal-liability-for-misleading-climate-communications/>
- Coffey, Y., Bhullar, N., Durkin, J., Islam, M. S., & Usher, K. (2021). Understanding eco-anxiety: A systematic scoping review of current literature and identified knowledge gaps. *Journal of Climate Change and Health*, 3, 100047. <https://doi.org/https://doi.org/10.1016/j.joclim.2021.100047>
- Compton, J., van der Linden, S., Cook, J., & Basol, M. (2021). Inoculation theory in the post-truth era: Extant findings and new frontiers for contested science, misinformation, and conspiracy theories. *Social and Personality Psychology Compass*, 15(6), e12602. <https://doi.org/https://doi.org/10.1111/spc3.12602>
- Constantino, S. M., Schlüter, M., Weber, E. U., & Wijermans, N. (2021). Cognition and behavior in context: a framework and theories to explain natural resource use decisions in social-ecological systems. *Sustainability Science*, 16(5), 1651-1671. <https://doi.org/10.1007/s11625-021-00989-w>
- Constantino, S. M., & Weber, E. U. (2021). Decision-making under the deep uncertainty of climate change: The psychological and political agency of narratives. *Current Opinion in Psychology*, 42, 151-159. <https://doi.org/https://doi.org/10.1016/j.copsyc.2021.11.001>
- Converse, B. A., Hancock, P. I., Klotz, L. E., Clarens, A. F., & Adams, G. S. (2021). If humans design the planet: A call for psychological scientists to engage with climate engineering. *American Psychologist*, 76(5), 768-780. <https://doi.org/10.1037/amp0000656>
- Cook, J. (2020). Introduction to climate science denial. In D. C. Holmes & L. M. Richardson (Eds.), *Research handbook on communicating climate change*. Edward Elgar Publishing. <https://doi.org/https://doi.org/10.4337/9781789900408.00012>
- Cook, J., Supran, G., Lewandowsky, S., Oreskes, N., & Maibach, E. (2019). *America misled: How the fossil fuel industry deliberately misled Americans about climate change*. George Mason University Center for Climate Change Communication. <https://www.climatechangecommunication.org/america-misled/>
- Cowie, L. J., Greaves, L. M., Milfont, T. L., Houkamau, C. A., & Sibley, C. G. (2016). Indigenous identity and environmental values: Do spirituality and political consciousness predict environmental regard among Māori? *International Perspectives in Psychology*, 5(4), 228-244. <https://doi.org/10.1037/ipp0000059>
- Cox, E., Pidgeon, N., & Spence, E. (2022). But they told us it was safe! Carbon dioxide removal, fracking, and ripple effects in risk perceptions. *Risk Analysis* (on line). <https://doi.org/https://doi.org/10.1111/risa.13717>
- Creutzig, F., Bai, X., Khosla, R., Viguie, V., & Yamagata, Y. (2020). Systematizing and upscaling urban climate change mitigation. *Environmental Research Letters*, 15(10), 100202. <https://doi.org/10.1088/1748-9326/abb0b2>
- Creutzig, F., Roy, J., Lamb, W. F., Azevedo, I. M. L., Bruine de Bruin, W., Dalkmann, H., Edelenbosch, O. Y., Geels, F. W., Grubler, A., Hepburn, C., Hertwich, E. G., Khosla, R., Mattauch, L., Minx, J. C.,

- Ramakrishnan, A., Rao, N. D., Steinberger, J. K., Tavoni, M., Ürge-Vorsatz, D., & Weber, E. U. (2018). Towards demand-side solutions for mitigating climate change. *Nature Climate Change* 8(4), 260-263. <https://doi.org/10.1038/s41558-018-0121-1>
- Cvetkovich, G. (1994). Psychological science applied to environmental problems. *Psychological Science Agenda (APA)*, (Jan-Feb), 7-8.
- Danielson, R. W., Sinatra, G. M., & Kendeou, P. (2016). Augmenting the refutation text effect with analogies and graphics. *Discourse Processes*, 53(5-6), 392-414. <https://doi.org/10.1080/0163853X.2016.1166334>
- Deem, S. L., Lane-deGraaf, K. E., & Rayhel, E. A. (2018). *Introduction to One Health: An interdisciplinary approach to planetary health*. Wiley-Blackwell. <https://www.wiley.com/en-us/Introduction+to+One+Health%3A+An+Interdisciplinary+Approach+to+Planetary+Health-p-9781119382850>
- Degroot, D., Anchukaitis, K., Bauch, M., Burnham, J., Carnegy, F., Cui, J., de Luna, K., Guzowski, P., Hambrecht, G., & Huhtamaa, H. (2021). Towards a rigorous understanding of societal responses to climate change. *Nature*, 591(7851), 539-550. <https://www.nature.com/articles/s41586-021-03190-2>
- Dietz, T., Shwom, R. L., & Whitley, C. T. (2020). Climate change and society. *Annual Review of Sociology*, 46(1), 135-158. <https://doi.org/10.1146/annurev-soc-121919-054614>
- Doell, K. C., Pärnamets, P., Harris, E. A., Hackel, L. M., & Van Bavel, J. J. (2021). Understanding the effects of partisan identity on climate change. *Current Opinion in Behavioral Sciences*, 42, 54-59. <https://doi.org/https://doi.org/10.1016/j.cobeha.2021.03.013>
- Doidge, M., Irwin, E., Sintov, N., & Wilson, R. S. (2020). Human behavior and adaptation. In P. Saundry & B. Ruddell (Eds.), *The Food-Energy-Water Nexus*. Springer. <https://link.springer.com/book/10.1007/978-3-030-29914-9>
- Doppelt, B. (2016). *Transformational resilience: How building human resilience to climate disruption can safeguard society and increase wellbeing*. Routledge. <https://www.routledge.com/Transformational-Resilience-How-Building-Human-Resilience-to-Climate-Disruption/Doppelt/p/book/9781783535286>
- Ebi, K. L., Boyer, C., Bowen, K. J., Frumkin, H., & Hess, J. (2018). Monitoring and evaluation indicators for climate change-related health impacts, risks, adaptation, and resilience. *International Journal of Environmental Research and Public Health*, 15(9), 1943. <https://doi.org/10.3390/ijerph15091943>
- Ecker, U. K. H., Lewandowsky, S., Cook, J., Schmid, P., Fazio, L. K., Brashier, N., Kendeou, P., Vraga, E. K., & Amazeen, M. A. (2022). The psychological drivers of misinformation belief and its resistance to correction. *Nature Reviews Psychology*, 1(1), 13-29. <https://doi.org/10.1038/s44159-021-00006-y>
- Everett, A., Sugarman, O., Wennerstrom, A., Pollock, M., True, G., Haywood, C., Meyers, D., Raines, A., Wells, K., Johnson, A., Arevian, A. C., Sato, J., & Springgate, B. (2020). Community-informed strategies to address trauma and enhance resilience in climate-affected communities. *Traumatology*, 26(3), 285-297. <https://doi.org/10.1037/trm0000225>
- Farber, D. (2021). State governmental leadership in U.S. climate policy. *Wilson Center*. <https://www.wilsoncenter.org/article/state-governmental-leadership-us-climate-policy>

- Farrell, J., McConnell, K., & Brulle, R. (2019). Evidence-based strategies to combat scientific misinformation. *Nature Climate Change*, 9(3), 191-195. <https://doi.org/10.1038/s41558-018-0368-6>
- Fath, B. D., Fiscus, D. A., Goerner, S. J., Berea, A., & Ulanowicz, R. E. (2019). Measuring regenerative economics: 10 principles and measures undergirding systemic economic health. *Global Transitions*, 1, 15-27. <https://doi.org/https://doi.org/10.1016/j.glt.2019.02.002>
- Faure, C., Guetlein, M.-C., Schleich, J., Tu, G., Whitmarsh, L., & Whittle, C. (2022). Household acceptability of energy efficiency policies in the European Union: Policy characteristics trade-offs and the role of trust in government and environmental identity. *Ecological Economics*, 192, 107267. <https://doi.org/https://doi.org/10.1016/j.ecolecon.2021.107267>
- Ferguson, M., & Schmitt, M. (Eds.). (2021). *Psychology of climate change (Special issue)*, *Current Opinion in Psychology* (42). <https://www.sciencedirect.com/journal/current-opinion-in-psychology/vol/42/suppl/C>.
- Feygina, I., Chapman, D., & Markowitz, E. (2020). Climate change: A challenge to human rights, justice, equality, and human well-being. In N. S. Rubin & R. L. Flores (Eds.), *The Cambridge handbook of psychology and human rights* (pp. 443-458). Cambridge University Press. <https://doi.org/DOI:10.1017/9781108348607.031>
- Fox-Penner, P., Hart, D. M., Kelly, H., Murphy, R. C., Roth, K., Sharon, A., & Cunliff, C. (2021). *Clean and competitive: Opportunities for U.S. manufacturing leadership in the global-low carbon economy*. Information Technology & Innovation Foundation. <https://itif.org/publications/2021/06/21/clean-and-competitive-opportunities-us-manufacturing-leadership-global-low>
- Fraser, N. (2021). Climates of capital: For a trans-environmental eco-socialism. *New Left Review* (127), 94-127. <https://newleftreview.org/issues/ii127/articles/nancy-fraser-climates-of-capital>
- Furszyfer Del Rio, D. D., Sovacool, B. K., & Griffiths, S. (2021). Culture, energy and climate sustainability, and smart home technologies: A mixed methods comparison of four countries. *Energy and Climate Change*, 2, 100035. <https://doi.org/https://doi.org/10.1016/j.egycc.2021.100035>
- Gardiner, S. M. (2011). *A perfect moral storm: The ethical tragedy of climate change*. Oxford University Press. <https://oxford.universitypressscholarship.com/view/10.1093/acprof:oso/9780195379440.001.0001/acprof-9780195379440>
- Geiger, N., Gasper, K., Swim, J. K., & Fraser, J. (2019). Untangling the components of hope: Increasing pathways (not agency) explains the success of an intervention that increases educators' climate change discussions. *Journal of Environmental Psychology*, 66, 101366. <https://doi.org/https://doi.org/10.1016/j.jenvp.2019.101366>
- Guzmán, C. A. F., Aguirre, A. A., Astle, B., Barros, E., Bayles, B., Chimbari, M., El-Abbadi, N., Evert, J., Hackett, F., Howard, C., Jennings, J., Krzyzek, A., LeClair, J., Maric, F., Martin, O., Osano, O., Patz, J., Potter, T., Redvers, N., . . . Zylstra, M. (2021). A framework to guide planetary health education. *The Lancet Planetary Health*, 5(5), e253-e255. [https://doi.org/10.1016/S2542-5196\(21\)00110-8](https://doi.org/10.1016/S2542-5196(21)00110-8)
- Haines, A., & Frumkin, H. (2021). *Planetary health: Safeguarding human health and the environment in the Anthropocene*. Cambridge University Press. <https://www.cambridge.org/core/books/planetary-health/33E5DF80318C63C41606E106FF85D99D>

- Hauer, M. E., Fussell, E., Mueller, V., Burkett, M., Call, M., Abel, K., McLeman, R., & Wrathall, D. (2020). Sea-level rise and human migration. *Nature Reviews Earth & Environment*, 1(1), 28-39. <https://doi.org/10.1038/s43017-019-0002-9>
- Henry, C., Rockström, J., & Stern, N. E. (Eds.). (2020). *Standing up for a sustainable world: Voices of change*. Edward Elgar Publishing. <https://www.elgaronline.com/view/edcoll/9781800371774/9781800371774.xml>.
- Hickman, C., Marks, E., Pihkala, P., Clayton, S., Lewandowski, R. E., Mayall, E. E., Wray, B., Mellor, C., & van Susteren, L. (2021). Climate anxiety in children and young people and their beliefs about government responses to climate change: a global survey. *The Lancet Planetary Health*, 5(12), e863-e873. [https://doi.org/10.1016/S2542-5196\(21\)00278-3](https://doi.org/10.1016/S2542-5196(21)00278-3)
- Hoggett, P. E. (Ed.). (2019). *Climate psychology: On indifference to disaster*. Springer. <https://link.springer.com/book/10.1007/978-3-030-11741-2>.
- Holm, P., & Brennan, R. (2018). Humanities for the environment 2018 report—Ways to here, ways forward. *Humanities*, 7(1), 3. <https://www.mdpi.com/2076-0787/7/1/3>
- Holmes, D. C., & Richardson, L. M. (2020). *Research handbook on communicating climate change*. Edward Elgar Publishing. <https://doi.org/https://doi.org/10.4337/9781789900408>
- Hornsey, M. J., Harris, E. A., & Fielding, K. S. (2018). Relationships among conspiratorial beliefs, conservatism and climate scepticism across nations. *Nature Climate Change* 8(7), 614-620. <https://doi.org/10.1038/s41558-018-0157-2>
- Inauen, J., Contzen, N., Frick, V., Kadel, P., Keller, J., Kollmann, J., Mata, J., & van Valkengoed, A. M. (2021). Environmental issues are health issues: Making a case and setting an agenda for environmental health psychology. *European Psychologist*, 26(3), 219-229. <https://doi.org/10.1027/1016-9040/a000438>
- Ingle, H. E., & Mikulewicz, M. (2020). Mental health and climate change: Tackling invisible injustice. *The Lancet Planetary Health*, 4(4), e128-e130. [https://doi.org/10.1016/S2542-5196\(20\)30081-4](https://doi.org/10.1016/S2542-5196(20)30081-4)
- IPCC. (2014a). *Climate change 2014: Impacts, adaptation, and vulnerability. Contribution of Working Group II to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change*. <https://www.ipcc.ch/report/ar5/wg2/>
- IPCC. (2014b). *Climate change 2014: Synthesis report. Contribution of Working Groups I, II and III to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change* <https://www.ipcc.ch/report/ar5/syr/>
- IPCC. (2018). *Global warming of 1.5°C. An IPCC special report*. <https://www.ipcc.ch/sr15/>
- IPCC. (2021). *Climate change 2021: The physical science basis. Contribution of Working Group I to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change*. <https://www.ipcc.ch/report/ar6/wg1/>
- Jackson, T. (2017). *Prosperity without growth: Foundations for the economy of tomorrow (2nd ed.)*. Routledge. <https://www.routledge.com/Prosperity-without-Growth-Foundations-for-the-Economy-of-Tomorrow/Jackson/p/book/9781138935419>
- Jafry, T. (Ed.). (2019). *Routledge handbook of climate justice*. Routledge. <https://www.routledge.com/Routledge-Handbook-of-Climate-Justice/Jafry/p/book/9780367732592>.

- Jenkins-Smith, H. C., Ripberger, J. T., Silva, C. L., Carlson, D. E., Gupta, K., Carlson, N., Ter-Mkrtyan, A., & Dunlap, R. E. (2020). Partisan asymmetry in temporal stability of climate change beliefs. *Nature Climate Change*, 10(4), 322-328. <https://doi.org/10.1038/s41558-020-0719-y>
- Jones, N. (2020, Feb. 11). How native tribes are taking the lead on planning for climate change. *Yale Environment 360*. <https://e360.yale.edu/features/how-native-tribes-are-taking-the-lead-on-planning-for-climate-change>
- Karapın, R. (2016). *Political opportunities for climate policy: California, New York, and the federal government*. Cambridge University Press. <https://www.cambridge.org/core/books/political-opportunities-for-climate-policy/D9268993A4819406AA3E2A741F64E297>
- Karlin, B., Zinger, J. F., & Ford, R. (2015). The effects of feedback on energy conservation: A meta-analysis. *Psychological Bulletin*, 141(6), 1205-1227. <https://doi.org/10.1037/a0039650>
- Kasser, T. (2016). Materialistic values and goals. *Annual Review of Psychology*, 67(1), 489-514. <https://doi.org/10.1146/annurev-psych-122414-033344>
- Keyßer, L. T., & Lenzen, M. (2021). 1.5 °C degrowth scenarios suggest the need for new mitigation pathways. *Nature Communications*, 12(1), 2676. <https://doi.org/10.1038/s41467-021-22884-9>
- Kieft, J. (2021). The responsibility of communicating difficult truths about climate influenced societal disruption and collapse. *Ata: Journal of Psychotherapy Aotearoa New Zealand*, 25(1), 65-97. <https://insight.cumbria.ac.uk/id/eprint/5950/>
- Kimmerer, R. W. (2013). *Braiding sweetgrass: Indigenous wisdom, scientific knowledge and the teachings of plants*. Milkweed Editions. <https://milkweed.org/book/braiding-sweetgrass>
- Korhonen, J., Honkasalo, A., & Seppälä, J. (2018). Circular economy: The concept and its limitations. *Ecological Economics*, 143, 37-46. <https://doi.org/https://doi.org/10.1016/j.ecolecon.2017.06.041>
- Kotcher, J., Feldman, L., Luong, K. T., Wyatt, J., & Maibach, E. (2021). Advocacy messages about climate and health are more effective when they include information about risks, solutions, and a normative appeal: Evidence from a conjoint experiment. *Journal of Climate Change and Health*, 3, 100030. <https://doi.org/https://doi.org/10.1016/j.joclim.2021.100030>
- Lacroix, K., & Gifford, R. (2018). Psychological barriers to energy conservation behavior: The role of worldviews and climate change risk perception. *Environment and Behavior*, 50(7), 749-780. <https://doi.org/10.1177/0013916517715296>
- Lamb, W. F., Mattioli, G., Levi, S., Roberts, J. T., Capstick, S., Creutzig, F., Minx, J. C., Müller-Hansen, F., Culhane, T., & Steinberger, J. K. (2020). Discourses of climate delay. *Global Sustainability*, 3, e17. <https://doi.org/10.1017/sus.2020.13>
- Lawrance, D., Thompson, R., Fontana, G., & Jennings, D. (2021). The impact of climate change on mental health and emotional wellbeing: Current evidence and implications for policy and practice. *Grantham Institute Briefing Paper No 36*. <https://www.imperial.ac.uk/grantham/publications/all-publications/the-impact-of-climate-change-on-mental-health-and-emotional-wellbeing-current-evidence-and-implications-for-policy-and-practice.php>
- Lombardi, D., Sinatra, G. M., & Nussbaum, E. M. (2013). Plausibility reappraisals and shifts in middle school students' climate change conceptions. *Learning and Instruction*, 27, 50-62. <https://doi.org/https://doi.org/10.1016/j.learninstruc.2013.03.001>

- Lutzke, L., & Árvai, J. (2021). Consumer acceptance of products from carbon capture and utilization. *Climatic Change*, 166(1), 15. <https://doi.org/10.1007/s10584-021-03110-3>
- Mann, M. E. (2021). *The new climate war: The fight to take back our planet*. Hachette UK. <https://www.hachettebookgroup.com/titles/michael-e-mann/the-new-climate-war/9781541758216/>
- Marghetis, T., Attari, S. Z., & Landy, D. (2019). Simple interventions can correct misperceptions of home energy use. *Nature Energy*, 4(10), 874-881. <https://doi.org/10.1038/s41560-019-0467-2>
- Markowitz, E. M., & Guckian, M. L. (2018). Climate change communication: Challenges, insights, and opportunities. In S. Clayton & C. Manning (Eds.), *Psychology and climate change* (pp. 35-63). Academic Press. <https://doi.org/https://doi.org/10.1016/B978-0-12-813130-5.00003-5>
- Mastrangelo, M. E., Gavin, M. C., Lattera, P., Linklater, W. L., & Milfont, T. L. (2014). Psycho-social factors influencing forest conservation intentions on the agricultural frontier. *Conservation Letters*, 7(2), 103-110. <https://doi.org/https://doi.org/10.1111/conl.12033>
- McBride, S. E., Hammond, M. D., Sibley, C. G., & Milfont, T. L. (2021). Longitudinal relations between climate change concern and psychological wellbeing. *Journal of Environmental Psychology*, 78, 101713. <https://doi.org/https://doi.org/10.1016/j.jenvp.2021.101713>
- McPhearson, T., M. Raymond, C., Gulsrud, N., Albert, C., Coles, N., Fagerholm, N., Nagatsu, M., Olafsson, A. S., Soininen, N., & Vierikko, K. (2021). Radical changes are needed for transformations to a good Anthropocene. *npj Urban Sustainability*, 1(1), 5. <https://doi.org/10.1038/s42949-021-00017-x>
- Méndez, M. (2020). *Climate change from the streets: How conflict and collaboration strengthen the environmental justice movement*. Yale University Press. <https://yalebooks.yale.edu/book/9780300232158/climate-change-streets>
- Méndez, M., Flores-Haro, G., & Zucker, L. (2020). The (in)visible victims of disaster: Understanding the vulnerability of undocumented Latino/a and indigenous immigrants. *Geoforum*, 116, 50-62. <https://doi.org/10.1016/j.geoforum.2020.07.007>
- Meyer, B., & Lord, T. (2021). *Planes, homes and automobiles: The role of behaviour change in delivering net zero*. Tony Blair Institute for Global Change. <https://institute.global/policy/planes-homes-and-automobiles-role-behaviour-change-delivering-net-zero>
- Mildenberger, M. (2020). *Carbon captured: How business and labor control climate politics*. MIT Press. <https://doi.org/10.7551/mitpress/12393.001.0001>
- Milfont, T. L., Abrahamse, W., & MacDonald, E. A. (2021). Scepticism of anthropogenic climate change: Additional evidence for the role of system-justifying ideologies. *Personality and Individual Differences*, 168, 110237. <https://doi.org/https://doi.org/10.1016/j.paid.2020.110237>
- Milfont, T. L., & Markowitz, E. (2016). Sustainable consumer behavior: a multilevel perspective. *Current Opinion in Psychology*, 10, 112-117. <https://doi.org/https://doi.org/10.1016/j.copsyc.2015.12.016>
- Milfont, T. L., Richter, I., Sibley, C. G., Wilson, M. S., & Fischer, R. (2013). Environmental consequences of the desire to dominate and be superior. *Personality and Social Psychology Bulletin*, 39(9), 1127-1138. <https://doi.org/10.1177/0146167213490805>
- Milfont, T. L., Satherley, N., Osborne, D., Wilson, M. S., & Sibley, C. G. (2021). To meat, or not to meat: A longitudinal investigation of transitioning to and from plant-based diets. *Appetite*, 166, 105584. <https://doi.org/https://doi.org/10.1016/j.appet.2021.105584>



- Milfont, T. L., Zubielevitch, E., Milojev, P., & Sibley, C. G. (2021). Ten-year panel data confirm generation gap but climate beliefs increase at similar rates across ages. *Nature Communications*, 12(1), 4038. <https://doi.org/10.1038/s41467-021-24245-y>
- Monsell, A., Krzanowski, J., Page, L., Cuthbert, S., & Harvey, G. (2021). What mental health professionals and organisations should do to address climate change. *BJPsych Bulletin*, 45(4), 215-221. <https://doi.org/10.1192/bjb.2021.17>
- NAACP. (2021). *Fossil fueled foolery: An illustrated primer on the fossil fuel industry's deceptive tactics (2nd ed.)*. NAACP Environmental and Climate Justice Program. <https://naacp.org/resources/fossil-fueled-foolery-20>
- Nakashima, D., Krupnik, I., & Rubis, J. E. (Eds.). (2018). *Indigenous knowledge for climate change assessment and adaptation*. Cambridge University Press. <https://doi.org/DOI:10.1017/9781316481066>.
- Nash, N., Whitmarsh, L., Capstick, S., Gouveia, V., de Carvalho Rodrigues Araújo, R., dos Santos, M., Palakatsela, R., Liu, Y., Harder, M. K., & Wang, X. (2020). Local climate change cultures: Climate-relevant discursive practices in three emerging economies. *Climatic Change*, 163(1), 63-82. <https://doi.org/10.1007/s10584-019-02477-8>
- National Academies of Sciences Engineering & Medicine. (2017). *Communicating science effectively: A research agenda*. <https://www.nap.edu/catalog/23674/communicating-science-effectively-a-research-agenda>
- National Academies of Sciences Engineering & Medicine. (2019). *Negative emissions technologies and reliable sequestration: A research agenda*. <https://www.nap.edu/catalog/25259/negative-emissions-technologies-and-reliable-sequestration-a-research-agenda>
- National Academies of Sciences Engineering & Medicine. (2021a). *Reflecting sunlight: Recommendations for solar geoengineering research and research governance*. <https://www.nap.edu/catalog/25762/reflecting-sunlight-recommendations-for-solar-geoengineering-research-and-research-governance>
- National Academies of Sciences Engineering & Medicine. (2021b). *A research strategy for ocean-based carbon dioxide removal and sequestration*. <https://www.nap.edu/catalog/26278/a-research-strategy-for-ocean-based-carbon-dioxide-removal-and-sequestration>
- National Academy of Sciences. (2020). *Climate change: Evidence and causes: Update 2020*. <https://www.nap.edu/catalog/25733/climate-change-evidence-and-causes-update-2020>
- National Intelligence Council. (2021). *Climate change and international responses increasing challenges to US national security through 2040 (NIC-NIE-2021-10030-A)*. [https://www.dni.gov/files/ODNI/documents/assessments/NIE\\_Climate\\_Change\\_and\\_National\\_Security.pdf](https://www.dni.gov/files/ODNI/documents/assessments/NIE_Climate_Change_and_National_Security.pdf)
- Newton, P., Civita, N., Frankel-Goldwater, L., Bartel, K., & Johns, C. (2020). What is regenerative agriculture? A review of scholar and practitioner definitions based on processes and outcomes. *Frontiers in Sustainable Food Systems*, 4. <https://doi.org/10.3389/fsufs.2020.577723>
- Nielsen, K. S., Clayton, S., Stern, P. C., Dietz, T., Capstick, S., & Whitmarsh, L. (2021). How psychology can help limit climate change. *American Psychologist*, 76(1), 130-144. <https://doi.org/10.1037/amp0000624>

- Nielsen, K. S., Marteau, T. M., Bauer, J. M., Bradbury, R. B., Broad, S., Burgess, G., Burgman, M., Byerly, H., Clayton, S., Espelousin, D., Ferraro, P. J., Fisher, B., Garnett, E. E., Jones, J. P. G., Otieno, M., Polasky, S., Ricketts, T. H., Trevelyan, R., van der Linden, S., . . . Balmford, A. (2021). Biodiversity conservation as a promising frontier for behavioural science. *Nature Human Behaviour*, 5(5), 550-556. <https://doi.org/10.1038/s41562-021-01109-5>
- Nielsen, K. S., Nicholas, K. A., Creutzig, F., Dietz, T., & Stern, P. C. (2021). The role of high-socioeconomic-status people in locking in or rapidly reducing energy-driven greenhouse gas emissions. *Nature Energy*, 6(11), 1011-1016.
- Ntontis, E., Drury, J., Amlôt, R., Rubin, G. J., & Williams, R. (2020). What lies beyond social capital? The role of social psychology in building community resilience to climate change. *Traumatology*, 26(3), 253-265. <https://doi.org/10.1037/trm0000221>
- Obradovich, N., Migliorini, R., Paulus, M. P., & Rahwan, I. (2018). Empirical evidence of mental health risks posed by climate change. *Proceedings of the National Academy of Sciences*, 115(43), 10953. <https://doi.org/10.1073/pnas.1801528115>
- Office of the High Commissioner for Human Rights. (2015). *Understanding human rights and climate change*. Submission of the Office of the High Commissioner for Human Rights to the 21st Conference of the Parties to the United Nations Framework Convention on Climate Change. <https://www.ohchr.org/Documents/Issues/ClimateChange/COP21.pdf>
- Ojala, M. (2012). Hope and climate change: The importance of hope for environmental engagement among young people. *Environmental Education Research*, 18(5), 625-642. <https://doi.org/10.1080/13504622.2011.637157>
- Oreskes, N. C., E.M. (2010). *Merchants of doubt: How a handful of scientists obscured the truth on issues from tobacco smoke to climate change*. Bloomsbury Press. <https://www.bloomsbury.com/us/merchants-of-doubt-9781608193943/>
- Orlove, B., Shwom, R., Markowitz, E., & Cheong, S.-M. (2020). Climate decision-making. *Annual Review of Environment and Resources*, 45(1), 271-303. <https://doi.org/10.1146/annurev-environ-012320-085130>
- Palomo-Vélez, G., & van Vugt, M. (2021). The evolutionary psychology of climate change behaviors: Insights and applications. *Current Opinion in Psychology*, 42, 54-59. <https://doi.org/https://doi.org/10.1016/j.copsyc.2021.03.006>
- Parry, I., Black, S., & Vernon, N. (2021). Still not getting energy prices right: A global and country update of fossil fuel subsidies. *IMF Working Papers*, 236. <https://www.imf.org/en/Publications/WP/Issues/2021/09/23/Still-Not-Getting-Energy-Prices-Right-A-Global-and-Country-Update-of-Fossil-Fuel-Subsidies-466004>
- Paterson, M., & P-Laberge, X. (2018). Political economies of climate change. *WIREs Climate Change*, 9(2), e506. <https://wires.onlinelibrary.wiley.com/doi/abs/10.1002/wcc.506>
- Pearce, F. (2019, May 29). Geoengineer the planet? More scientists now say it must be an option. *Yale Environment 360*. <https://e360.yale.edu/features/geoengineer-the-planet-more-scientists-now-say-it-must-be-an-option>
- Pearce, F. (2021, Oct. 12). At climate summit, can the world move from talk to action? *Yale Environment 360*. <https://e360.yale.edu/features/at-glasgow-can-the-world-move-from-aspiration-to-action>

- Pearson, A. R., & Schuldt, J. P. (2018). A diversity science approach to climate change. In S. Clayton & C. Manning (Eds.), *Psychology and climate change* (pp. 95-124). Academic Press. <https://doi.org/https://doi.org/10.1016/B978-0-12-813130-5.00005-9>
- Pelling, M., & Garschagen, M. (2019). Put equity first in climate adaptation. *Nature*, 569, 327-329. <https://www.nature.com/articles/d41586-019-01497-9>
- Petzold, J., Andrews, N., Ford, J. D., Hedemann, C., & Postigo, J. C. (2020). Indigenous knowledge on climate change adaptation: A global evidence map of academic literature. *Environmental Research Letters*, 15(11), 113007. <https://iopscience.iop.org/article/10.1088/1748-9326/abb330>
- Pihkala, P. (2020). Anxiety and the ecological crisis: An analysis of eco-anxiety and climate anxiety. *Sustainability*, 12(19), 7836. <https://www.mdpi.com/2071-1050/12/19/7836>
- Plumer, B., & Friedman, L. (2021, Nov. 13). Negotiators strike a climate deal, but world remains far from limiting warming. *The New York Times*. <https://www.nytimes.com/2021/11/13/climate/cop26-glasgow-climate-agreement.html>
- Priestley, R. K., Heine, Z., & Milfont, T. L. (2021). Public understanding of climate change-related sea-level rise. *PLoS ONE*, 16(7), e0254348. <https://doi.org/10.1371/journal.pone.0254348>
- Raimi, K., Stern, P., & Maki, A. (2017). The promise and limitations of using analogies to improve decision-relevant understanding of climate change. *PLoS ONE*, 12(1), e0171130. <https://doi.org/10.1371/journal.pone.0171130>
- Raworth, K. (2017). *Doughnut economics: Seven ways to think like a 21st-century economist*. Chelsea Green Publishing. <https://www.chelseagreen.com/product/doughnut-economics-paperback/>
- Richardson, J. (2021). Supporting the nation's coal workers and communities in a changing energy landscape. *Union of Concerned Scientists*, (May 4). <https://www.ucsusa.org/resources/support-coal-workers>
- Robinson, M., & Shine, T. (2018). Achieving a climate justice pathway to 1.5 °C. *Nature Climate Change*, 8(7), 564-569. <https://doi.org/10.1038/s41558-018-0189-7>
- Rouf, K., & Wainwright, T. (2020). Linking health justice, social justice, and climate justice. *The Lancet Planetary Health*, 4(4), e131-e132. [https://doi.org/10.1016/S2542-5196\(20\)30083-8](https://doi.org/10.1016/S2542-5196(20)30083-8)
- Santos, O., Virgolino, A., Vaz Carneiro, A., & Gaspar de Matos, M. (2021). Health behavior and planetary health. *European Psychologist*, 26(3), 212-218. <https://doi.org/10.1027/1016-9040/a000437>
- Schuldt, J. P., Enns, P. K., Konrath, S., & Schwarz, N. (2020). Shifting views on “global warming” and “climate change” in the United States. *Journal of Environmental Psychology*, 69, 101414. <https://doi.org/https://doi.org/10.1016/j.jenvp.2020.101414>
- Schulte, M., Bamberg, S., & Rees, J. (2021). We, the change. *European Psychologist*, 26(3), 172-183. <https://doi.org/10.1027/1016-9040/a000445>
- Shi, J., Visschers, V. H. M., Siegrist, M., & Arvai, J. (2016). Knowledge as a driver of public perceptions about climate change reassessed. *Nature Climate Change*, 6(8), 759-762. <https://doi.org/10.1038/nclimate2997>
- Sinatra, G. M., & Hofer, B. K. (2021). *Science denial: Why it happens and what to do about it*. Oxford University Press. <https://doi.org/10.1093/oso/9780190944681.003.0001>

- Sinatra, G. M., & Lombardi, D. (2020). Evaluating sources of scientific evidence and claims in the post-truth era may require reappraising plausibility judgments. *Educational Psychologist*, 55(3), 120-131. <https://doi.org/10.1080/00461520.2020.1730181>
- Sintov, N. D., & Schultz, P. W. (2015). Unlocking the potential of smart grid technologies with behavioral science. *Frontiers in Psychology*, 6. <https://doi.org/10.3389/fpsyg.2015.00410>
- Skovgaard, J. (2021). *The economisation of climate change: How the G20, the OECD and the IMF address fossil fuel subsidies and climate finance*. Cambridge University Press. <https://www.cambridge.org/core/books/economisation-of-climate-change/B0A4F8595A76B316C774850DD646B526>
- Skovgaard, J., & van Asselt, H. (2018). *The politics of fossil fuel subsidies and their reform*. Cambridge University Press. <https://www.cambridge.org/core/books/politics-of-fossil-fuel-subsidies-and-their-reform/B8CB7D383F33AD9AF9CC82EB50A74DE5>
- Sol Hart, P., & Feldman, L. (2018). Would it be better to not talk about climate change? The impact of climate change and air pollution frames on support for regulating power plant emissions. *Journal of Environmental Psychology*, 60, 1-8. <https://doi.org/10.1016/j.jenvp.2018.08.013>
- Sol Hart, P., & Feldman, L. (2021). The benefit of focusing on air pollution instead of climate change: How discussing power plant emissions in the context of air pollution, rather than climate change, influences perceived benefits, costs, and political action for policies to limit emissions. *Science Communication*, 43(2), 199-224. <https://doi.org/10.1177/1075547020980443>
- Sparkman, G., Howe, L., & Walton, G. (2021). How social norms are often a barrier to addressing climate change but can be part of the solution. *Behavioural Public Policy*, 5(4), 528-555. <https://doi.org/10.1017/bpp.2020.42>
- Stein, A. L. (2020). Artificial intelligence and climate change. *Yale Journal on Regulation*, 37(3). <https://www.yalejreg.com/issue/volume-37-issue-3/>
- Suh, S. M., Chapman, D. A., & Lickel, B. (2021). The role of psychological research in understanding and responding to links between climate change and conflict. *Current Opinion in Psychology*, 42, 43-48. <https://doi.org/https://doi.org/10.1016/j.copsyc.2021.02.003>
- Supran, G., & Oreskes, N. (2021). Rhetoric and frame analysis of ExxonMobil's climate change communications. *One Earth*, 4(5), 696-719. <https://doi.org/https://doi.org/10.1016/j.oneear.2021.04.014>
- Swim, J. K. (2021). Climate change and psychology: Past, present, and a better future. (Unpublished manuscript).
- Swim, J. K., Geiger, N., & Guerriero, J. G. (2021). Not out of MY bank account! Science messaging when climate change policies carry personal financial costs. *Thinking & Reasoning*, 1-29. <https://doi.org/10.1080/13546783.2021.1957710>
- Swim, J. K., Stern, P. C., Doherty, T. J., Clayton, S., Reser, J. P., Weber, E. U., Gifford, R., & Howard, G. S. (2011). Psychology's contributions to understanding and addressing global climate change. *American Psychologist*, 66(4), 241-250. <https://doi.org/10.1037/a0023220>
- Tam, K.-P., & Milfont, T. L. (2020). Towards cross-cultural environmental psychology: A state-of-the-art review and recommendations. *Journal of Environmental Psychology*, 71, 101474. <https://doi.org/https://doi.org/10.1016/j.jenvp.2020.101474>

- Taylor, S., & Rankin, J. (2008, April 9). Scrambling for blueprints. *Politico*.  
<https://www.politico.eu/article/scrambling-for-blueprints/>
- Thibodeau, P. H., Frantz, C. M., & Berretta, M. (2017). The earth is our home: Systemic metaphors to redefine our relationship with nature. *Climatic Change*, 142(1), 287-300.  
<https://doi.org/10.1007/s10584-017-1926-z>
- Thomas, K., Hardy, R. D., Lazrus, H., Mendez, M., Orlove, B., Rivera-Collazo, I., Roberts, J. T., Rockman, M., Warner, B. P., & Winthrop, R. (2019). Explaining differential vulnerability to climate change: A social science review. *WIREs Climate Change*, 10(2), e565.  
<https://doi.org/https://doi.org/10.1002/wcc.565>
- Timperley, J. (2021). Why fossil fuel subsidies are so hard to kill. *Nature*, 598, 403-405.  
<https://www.nature.com/articles/d41586-021-02847-2>
- Truelove, H. B., Carrico, A. R., & Thabrew, L. (2015). A socio-psychological model for analyzing climate change adaptation: A case study of Sri Lankan paddy farmers. *Global Environmental Change*, 31, 85-97. <https://doi.org/https://doi.org/10.1016/j.gloenvcha.2014.12.010>
- Tyson, A., & Kennedy, B. (2020). *Two-thirds of Americans think government should do more on climate*. Pew Research Center. <https://www.pewresearch.org/science/2020/06/23/two-thirds-of-americans-think-government-should-do-more-on-climate/>
- U.S. Environmental Protection Agency. *Climate Change Adaptation Resource Center*.  
<https://www.epa.gov/arc-x>
- U.S. Environmental Protection Agency. (2021a). *Climate change and social vulnerability in the United States: A focus on six impacts*. <https://www.epa.gov/cira/social-vulnerability-report>
- U.S. Environmental Protection Agency. (2021b). *Inventory of U.S. greenhouse gas emissions and sinks: 1990–2019*. <https://www.epa.gov/ghgemissions/inventory-us-greenhouse-gas-emissions-and-sinks-1990-2019>
- U.S. Global Change Research Program. (2017). *Fourth national climate assessment, Volume I*.  
<https://science2017.globalchange.gov/>
- U.S. Global Change Research Program. (2018). *Fourth national climate assessment, Volume II: Impacts, risks, and adaptation in the United States*. <https://nca2018.globalchange.gov/>
- UNESCO. (2020). *Report of the UNESCO expert meeting on Indigenous knowledge and climate change in Africa, Nairobi, Kenya, 27-28 June 2018*.  
<https://unesdoc.unesco.org/ark:/48223/pf0000374999.locale=en>
- United Nations Development Programme & Univ. of Oxford. (2021). *The G20 peoples' climate vote 2021*.  
<https://www.undp.org/publications/g20-peoples-climate-vote-2021>
- United Nations Environment Programme. (2015). *Climate change and human rights*.  
<https://www.unep.org/resources/report/climate-change-and-human-rights>
- United Nations Environment Programme. (2019). *Global environment outlook 6*.  
[https://www.unep.org/resources/global-environment-outlook-6?\\_ga=2.119555905.872690169.1643046931-1986048971.1642767358](https://www.unep.org/resources/global-environment-outlook-6?_ga=2.119555905.872690169.1643046931-1986048971.1642767358)

- Unsworth, K. L., Davis, M. C., Russell, S. V., & Bretter, C. (2021). Employee green behaviour: How organizations can help the environment. *Current Opinion in Psychology*, 42, 1-6. <https://doi.org/https://doi.org/10.1016/j.copsyc.2020.12.006>
- Urpelainen, J., & George, E. (2021). *Reforming global fossil fuel subsidies: How the United States can restart international cooperation*. Brookings Institution. <https://www.brookings.edu/research/reforming-global-fossil-fuel-subsidies-how-the-united-states-can-restart-international-cooperation/>
- Uzell, D. (2018). *Behavior change: Energy consumption*. British Psychological Society. <https://www.bps.org.uk/sites/www.bps.org.uk/files/Policy/Policy%20-%20Files/Changing%20behaviour%20-%20energy%20consumption.pdf>
- van der Linden, S. (2021). The gateway belief model (GBM): A review and research agenda for communicating the scientific consensus on climate change. *Current Opinion in Psychology*, 42, 7-12. <https://doi.org/https://doi.org/10.1016/j.copsyc.2021.01.005>
- van Valkengoed, A. M., & Steg, L. (2019). Meta-analyses of factors motivating climate change adaptation behaviour. *Nature Climate Change*, 9(2), 158-163. <https://doi.org/10.1038/s41558-018-0371-y>
- Vandenbergh, M. P., & Gilligan, J. M. (2017). *Beyond politics: The private governance response to climate change*. Cambridge Univ. Press. <https://www.cambridge.org/us/academic/subjects/politics-international-relations/political-economy/beyond-politics-private-governance-response-climate-change>
- Vergunst, F., & Berry, H. L. (2021). Climate change and children's mental health: A developmental perspective. *Clinical Psychological Science*, (Online). <https://doi.org/10.1177/21677026211040787>
- Verplanken, B., & Whitmarsh, L. (2021). Habit and climate change. *Current Opinion in Behavioral Sciences*, 42, 42-46. <https://doi.org/https://doi.org/10.1016/j.cobeha.2021.02.020>
- Viola, F. (2021). Electric vehicles and psychology. *Sustainability*, 13(2), 719. <https://www.mdpi.com/2071-1050/13/2/719>
- Waldman, S. (2018, April 5). Shell grappled with climate change 20 years ago, documents show. *Scientific American*. <https://www.scientificamerican.com/article/shell-grappled-with-climate-change-20-years-ago-documents-show/>
- Watts, N., Amann, M., Arnell, N., Ayeb-Karlsson, S., Beagley, J., Belesova, K., Boykoff, M., Byass, P., Cai, W., & Campbell-Lendrum, D. (2021). The 2020 report of the Lancet Countdown on health and climate change: Responding to converging crises. *The Lancet*, 397(10269), 129-170. [https://www.thelancet.com/article/S0140-6736\(20\)32290-X/fulltext](https://www.thelancet.com/article/S0140-6736(20)32290-X/fulltext)
- Weintrobe, S. (2021). *Psychological roots of the climate crisis: Neoliberal exceptionalism and the culture of uncare*. Bloomsbury Press. <https://www.bloomsbury.com/us/psychological-roots-of-the-climate-crisis-9781501372872/>
- White House. (2021). *Report on the impact of climate change on migration*. <https://www.whitehouse.gov/wp-content/uploads/2021/10/Report-on-the-Impact-of-Climate-Change-on-Migration.pdf>
- Whitmarsh, L., Poortinga, W., & Capstick, S. (2021). Behaviour change to address climate change. *Current Opinion in Psychology*, 42, 76-81. <https://doi.org/https://doi.org/10.1016/j.copsyc.2021.04.002>

- Wiedmann, T., Lenzen, M., Keyßer, L. T., & Steinberger, J. K. (2020). Scientists' warning on affluence. *Nature Communications*, 11(1), 3107. <https://doi.org/10.1038/s41467-020-16941-y>
- Wolske, K. S., & Stern, P. C. (2018). Contributions of psychology to limiting climate change: Opportunities through consumer behavior. In S. Clayton & C. Manning (Eds.), *Psychology and climate change* (pp. 127-160). Academic Press. <https://doi.org/https://doi.org/10.1016/B978-0-12-813130-5.00007-2>
- Wong-Parodi, G., & Feygina, I. (2020). Understanding and countering the motivated roots of climate change denial. *Current Opinion in Environmental Sustainability*, 42, 60-64. <https://doi.org/https://doi.org/10.1016/j.cosust.2019.11.008>
- Worland, J. (2020, Jan 16). The reason fossil fuel companies are finally reckoning with climate change. *Time*. <https://time.com/5766188/shell-oil-companies-fossil-fuels-climate-change/>
- World Bank. (2018). *Groundswell: Preparing for internal climate migration*. <https://openknowledge.worldbank.org/handle/10986/29461>
- World Bank. (2021). *Groundswell Part 2: Acting on internal climate migration*. <https://openknowledge.worldbank.org/handle/10986/36248>
- Wynes, S., & Nicholas, K. A. (2017). The climate mitigation gap: education and government recommendations miss the most effective individual actions. *Environmental Research Letters*, 12(7), 074024. <https://doi.org/10.1088/1748-9326/aa7541>
- Xu, C., Kohler, T. A., Lenton, T. M., Svenning, J.-C., & Scheffer, M. (2020). Future of the human climate niche. *Proceedings of the National Academy of Sciences*, 117(21), 11350-11355. <https://doi.org/10.1073/pnas.1910114117>
- Zalasiewicz, J., Waters, C. N., Williams, M., & Summerhayes, C. P. E. (Eds.). (2019). *The Anthropocene as a geological time unit: A guide to the scientific evidence and current debate*. Cambridge University Press. [https://doi.org/DOI: 10.1017/9781108621359](https://doi.org/DOI:10.1017/9781108621359).
- Zografos, C., & Robbins, P. (2020). Green sacrifice zones, or why a green new deal cannot ignore the cost shifts of just transitions. *One Earth*, 3(5), 543-546. <https://doi.org/10.1016/j.oneear.2020.10.012>

## Appendix

### APA's Climate Change Activities (2007-21)

APA staff identified the following as major activities on climate change that were managed, conducted, or directly supported by the APA central office (including activities of boards and the Council of Representatives) in the period 2007-21:

- In a 2007 [column](#) in the *APA Monitor*, APA's Executive Director for Science called for psychologists to address climate change.
- In 2008, APA President Alan E. Kazdin identified climate change as one of [Society's Grand Challenges](#) and made it a theme of his [presidential address](#). APA produced a [booklet](#) for the general public describing psychological research on climate change.
- Also in 2008, the APA Board of Directors established the APA Task Force on the Interface Between Psychology and Global Climate Change. The task force produced a major [report](#) (2009) that later became a special issue of *American Psychologist* (2011).
- In 2011, building on the 2009 report, the APA Council of Representatives passed a [Resolution on Affirming Psychologists' Role in Addressing Global Climate Change](#), which serves as the foundation of APA's subsequent work in this area.
- APA produced three reports with ecoAmerica:
  - [Beyond Storms & Droughts: The Psychological Impacts of Climate Change](#) (2014). This report served as a major source for the mental health section of the U.S. federal government's 2016 [Climate and Health Assessment](#).
  - [Mental Health and Our Changing Climate](#) (2017), which received widespread attention in the media and policy communities.
  - [Mental Health and Our Changing Climate, 2021 Edition](#)
- APA received observer status in two United Nations bodies concerned with climate change:



- [Intergovernmental Panel on Climate Change](#) (2017), which enables APA to send representatives to IPCC meetings and nominate contributors and reviewers for its reports.
- [Framework Convention on Climate Change](#) (2021), which enables APA to participate in Conference of the Parties (COP) meetings. An APA representative attended [COP26](#) as part of a [Global Psychology Alliance](#) group.
- In 2019, APA cohosted the [International Summit on Psychology and Global Health](#) in Lisbon, Portugal, at which representatives of 44 national and international psychological associations [committed](#) to take action on climate change. The Global Psychology Alliance, an ongoing coalition of psychological associations, emerged from this summit.
- APA conducted a [survey](#) of U.S. adults in December 2019 in which 56% of respondents said that climate change is the most important issue facing society today and 60% said they have changed their behavior to reduce their contribution to climate change.
- In 2019 and 2020, APA participated in the annual [Farm Aid Festival](#) in sessions that addressed stress, substance abuse, and mood disorders in farming communities that face multiple stressors, including climate change.
- In February 2020, the APA Council of Representatives passed a resolution, [APA's Response to the Global Climate Change Crisis](#), reaffirming APA's commitment to action to address global climate change, both on its own and in collaboration with other organizations in the U.S. and internationally. The resolution also authorized establishment of the current task force.
- APA's [advocacy](#) efforts on climate change expanded in 2020-21:
  - In March 2020, APA's CEO and other staff met with the U.S. House of Representatives' [Sustainable Energy and Environment Coalition](#) to discuss the APA survey (above) and other climate change topics.

- In the summer of 2020, APA submitted letters describing the mental health and behavioral dimensions of climate change to the House of Representatives' [Subcommittee on Environment and Climate Change](#) (of the Committee of Energy and Commerce) and [Committee on Science, Space, and Technology](#).
- In 2021, APA submitted letters on the contributions of psychology to addressing climate change to officials of the Biden administration: [National Climate Advisor Gina McCarthy](#), [Special Presidential Envoy John F. Kerry](#), and [Environmental Protection Agency Administrator Michael S. Regan](#). It also discussed directions for psychological research on climate change in a response to a [request for information](#) from the National Institutes of Health.
- Throughout 2021, APA participated with other professional and scientific organizations in joint statements and meetings directed to members of Congress, Biden administration officials, and attendees of COP26. These efforts addressed climate policy issues related to health, migration, emissions reduction, and research priorities.
- Across the [90 journals published by APA](#), 87 articles (including reviews and editorials) that addressed “global warming” or “climate change” were published in the period 2007-21. Fifty-nine of these articles were published in the period 2015-21. Two special issues of journals focused on climate change: [American Psychologist](#) (May-June 2011, which was the report of the 2008-09 task force) and [Traumatology](#) (Sept. 2020). A special issue on climate change is planned for [Translational Issues in Psychological Science](#) in 2022.
- APA Books will release [Sustainable Solutions: The Climate Crisis and the Psychology of Social Action](#) by Robert G. Jones in 2022. Also, APA's Magination Press, which publishes children's books, has issued two titles addressing climate change: [All the](#)

[\*Feelings Under the Sun: How to Deal With Climate Change\*](#) (2021) by Leslie Davenport and [\*What to Do When the News Scares You: A Kid's Guide to Understanding Current Events\*](#) (2021) by Jacqueline B. Toner.

- In the period 2007-2021, 27 articles in which climate change was the primary topic were published in APA's magazine, currently titled [\*Monitor on Psychology\*](#). Eighteen of these articles were published in the period 2015-21. The magazine appears in print and on-line on a monthly or bimonthly basis. It is sent to all association members (currently more than 120,000) and is accessible on-line for free to the public.