



RESILIENCE AND ADAPTATION TO A CHANGING CLIMATE: INSIGHTS FROM PSYCHOLOGY

Climate change poses serious risks to mental health and well-being. Research and communications about the impacts of climate change have generally focused on physical impacts, like more extreme storms, rising sea levels, and increasingly severe droughts. Impacts to human health and well-being have received comparatively little attention, but are also critically important. By understanding the psychology of climate change, we can better ensure human flourishing, resilience, and adaptation in the face of adversity.

CLIMATE CHANGE CAN ADVERSELY AFFECT HUMAN HEALTH AND WELL-BEING

Impacts on mental health. Disasters carry the potential for immediate and severe psychological trauma from personal injury, death of a loved one, and loss of livelihood.¹ In some cases, the psychological trauma of a disaster can lead to more severe conditions, such as a major depressive disorder, or post-traumatic stress disorder (PTSD). PTSD is often linked to higher levels of suicide—an effect seen among male farmers in Australia during periods of prolonged drought.²

Impacts on physical health. The spread of infectious diseases is likely to accompany climate change as insect carriers such as mosquitoes and ticks increase their geographical range.³ Climate change may also produce less serious, although still significant, health effects. For example, allergy season is likely to be more severe in many places due to the higher pollen counts climate change will cause.⁴

Impacts on community health. Research shows that domestic abuse often increases among families who have experienced disasters, such as Hurricane Katrina.⁵ Climate change may also increase conflict due to the direct impact of rising temperatures. Both lab-based experiments and quasi-experiments have demonstrated a causal relationship between heat and aggression. In other words, as the temperature goes up, so does aggression.⁶

¹ Neria, P. & Shultz, J. M. (2012). Mental health effects of Hurricane Sandy characteristics, potential aftermath, and response. *JAMA*, 308(24), 2571–2572; Terpstra, T. (2011). Emotions, trust, and perceived risk: Affective and cognitive routes to flood preparedness behavior. *Risk Analysis*, 31(10), 1658–1675; Simpson, D. M., Weissbecker, I., & Sephton, S. E. (2011). Extreme weather-related events: Implications for mental health and well-being. In I. Weissbecker (Ed.) *Climate Change and Human Well-Being: Global Challenges and Opportunities* (pp. 57–78). New York: Springer.

² Hanigan, I. C., Butler, C. D., Kocic, P. N., & Hutchinson, M. F. (2012). Suicide and drought in New South Wales, Australia, 1970–2007. *Proceedings of the National Academy of Sciences*, 109(35), 13950–13955.

³ USGCRP (2009). *Global Climate Change Impacts in the United States*. Karl, T.R., J.M. Melillo, & T.C. Peterson (Eds.). United States Global Change Research Program. New York, NY: Cambridge University Press.

⁴ Seeley, M. (2012). Climate trends and climate change in Minnesota: A review. Minnesota State Climatology Office. Available at: <http://climate.umn.edu/seeley/>

⁵ Yun, K., Lurie, N., & Hyde, P. S. (2010). Moving mental health into the disaster-preparedness spotlight. *The New England Journal of Medicine* 363(13), 1193–1194.

⁶ Anderson, C. A. (2012). Climate change and violence. In D. Christie (Ed.), *The Encyclopedia of Peace Psychology*. Hoboken, NJ: Wiley-Blackwell.

COMMUNITIES CAN PREPARE FOR THE PSYCHOLOGICAL IMPACTS OF CLIMATE CHANGE

Give people confidence that they can prepare for and mitigate the effects of climate change. Communities can prepare to cope with the effects of a changing climate, not just with the negative consequences. Talking with people about specific impacts their communities might experience seems to motivate them to prepare.⁷ For example, conversations could focus on how agricultural planting practices might change with changing growing season patterns.

Strengthening community and social networks. Nearly every study of resilience emphasizes the importance of strengthening the social networks within communities and encouraging communities to create patterns of working together to overcome adversity. For example, research on the survivors of the 2001 earthquakes in El Salvador shows that people are better able to cope if there are community and social activities available to help them through difficult circumstances.⁸

Informing and involving the community. Planners should work to help communities or neighborhoods, as social units, to prepare themselves to collectively and creatively respond to psychological adversity.⁹ For example, communities may want to strengthen pre-existing social and community support networks, develop plans to attend to the most vulnerable members of a community, and identify how organizations and individuals can work together to provide mental health assistance during and after disasters.

Developing trusted and action-focused warning systems. An effective warning system for severe weather events can save lives, reduce injuries, and reduce property damage. Communities should test their warning systems to be sure that (1) all residents are reached, (2) all residents understand what the warning means and the steps they should take to respond to it, (3) the warnings are perceived as reliable, credible, and (4) the warnings communicate that government and other organizations are actively taking steps to care for the community.

Be sensitive to the needs of displaced people. Communities should use screening tools to assess refugees' resource losses, both physical and psychological, along with screening tools to determine refugee needs and symptoms. Refugees are likely to also need counseling services and other mental health treatments from mental health professionals who have been trained to recognize and be sensitive to the challenges posed by environmental and climate change.¹⁰

⁷ Moser, S. C., & Dilling, L. (2007). Toward the social tipping point: Creating a climate for change. In S.C. Moser and L. Dilling (Eds.), *Creating a Climate for Change: Communicating Climate Change and Facilitating Social Change* (pp. 491-516). 1st ed. Cambridge: Cambridge University Press.

⁸ Terpstra, T. (2011). Emotions, trust, and perceived risk: Affective and cognitive routes to flood preparedness behavior. *Risk Analysis*, 31(10), 1658–1675.

⁹ Cox, L. A. Jr. (2012). Community resilience and decision theory challenges for catastrophic events. *Risk Analysis*, 32(11), 1919–1934; Norris, F. H., Stevens, S. P., Pfefferbaum, B., Wyche, K. R., & Pfefferbaum, R. L. (2008). Community resilience as a metaphor, theory, set of capacities, and strategy for disaster readiness. *American Journal of Community Psychology*, 41, 127–150; Moser, S. C., & Boykoff, M. T. (2013). Climate change and adaptation success: The scope of the challenge. In S.C. Moser and M.T. Boykoff (Eds.), *Successful Adaptation to Climate Change: Linking Science and Policy in a Rapidly Changing World* (pp. 1–33). New York, NY: Routledge.

¹⁰ Hollifield, M., Thompson Fullilove, M., & Hobfoll, S. E. (2011). Climate change refugees. In I. Weissbecker (Ed.), *Climate Change and Human Well-Being: Global Challenges and Opportunities* (pp. 135–162). New York: Springer.