Appendix A Literature database

Title	No.	Year published	Country of the first author's affiliation	Countries of all authors' affiliations	Addresses	Times cited	Journal	Research temporal scale: from	Research temporal scale: to	Temporal scale (year)	Mechanisms	Key messages	Vulnerable groups	Methods	Research type	Climatic health hazard	Region	Spatial scale
Modifiers of the temperature and mortality association in seven US cities	1	2003	United States	United States	[Marie S. O'Neill; Antonella Zanobetti; Joel Schwartz] Environmental Epidemiology Program, Department of Environmental Health, Harvard School of Public Health, Boston, MA 02115 USA;[Joel Schwartz] Department of Epidemiology, Harvard School of Public Health, Boston, MA 02115 USA	66	AMERICAN JOURNAL OF EPIDEMIOLOGY	1986	1993	7	Not clear	Deaths among Blacks compared with Whites, deaths among the less educated, and deaths outside a hospital were more strongly associated with hot and cold temperatures, but gender made no difference. Stronger cold associations were found for those less than age 65 years, but heat effects did not vary by age. The strongest effect modifier was place of death for heat, with out-of-hospital effects more than five times greater than in-hospital deaths, supporting the biologic plausibility of the associations. Place of death, race, and educational attainment indicate vulnerability to temperature-related mortality, reflecting inequities in health impacts related to climate change.	People with low SES, People of color and indegous people and migrants	Poisson regression	Quantitative methods	Heat, Cold Spell	North America	City or sub-national
Disparities by race in heat-related mortality in four US cities: The role of air conditioning prevalence	2	2005	United States	United States	[Marie S. O'Neill] Univ Michigan, Ctr Social Epidemiol & Populat Hlth, Robert Wood Johnson Hlth & Soc Scholars Program, Ann Arbor, MI 48104 USA;[Antonella Zanobetti; Joel Schwartz] Harvard Univ, Sch Publ Hlth, Dept Environm Hlth, Boston, MA 02115	8	JOURNAL OF URBAN HEALTH-BULLETIN OF THE NEW YORK ACADEMY OF MEDICINE	1986	1993	7	Adaptive capability	Revalence of central air conditioning (AC) among Black households was less than half that among White households in all four cities, and deaths among Blacks were more strongly associated with hot temperatures. Central AC prevalence explained some of the differences in heat effects by race, but room-unit AC did not.	People of color and indegous people and migrants, People with disadvantaged housing conditions	Poisson regression	Quantitative methods	Heat	North America	City or sub-national

					USA;[Joel Schwartz] Harvard Univ, Sch Publ Hlth, Dept Epidemiol, Boston, MA 02115 USA													
Neighborhood microclimates and vulnerability to heat stress	3	2006	United States	United States	[Sharon L. Harlan; Anthony J. Brazel; Lela Prashad]Arizona State Univ, Tempe, AZ 85287 USA;[William L. Stefanov] NASA, Lyndon B Johnson Space Ctr, Image Sci & Anal Lab, Houston, TX 77058 USA;[Larissa Larsen] Univ Michigan, Ann Arbor, MI 48109 USA	13	SOCIAL SCIENCE & MEDICINE	2003	2003	0	Exposure	People in warmer neighborhoods were more vulnerable to heat exposure because they had fewer social and material resources to cope with extreme heat. Lower socioeconomic and ethnic minority groups were more likely to live in warmer neighborhoods with greater exposure to heat stress. High settlement density, sparse vegetation, and having no open space in the neighborhood were significantly correlated with higher temperatures and human thermal comfort index (HTCI).	People with low SES, People of color and indegous people and migrants	Simulation model, mixed methods combining quantitative data and interviews	Mixed methods	Heat	North America	City or sub-national
Vulnerability of indigenous health to climate change: A case study of Uganda's Batwa Pygmies	4	2012	Canada	Canada, Uganda, Peru	[Berrang-Ford, Lea; Dingle, Kathryn; Ford, James D.; Henderson, Jim] McGill Univ, Dept Geog, Montreal, PQ H3A 0B9, Canada; [Lee, Celine] Queens Univ, Kingston, ON K7L 3N6, Canada; [Lwasa, Shuaib] Makerere Univ, Kampala, Uganda; [Llanos, Alejandro; Carcamo, Cesar] Univ Peruana Cayetano Heredia, Lima, Peru; [Edge, Victoria] Univ Guelph, Guelph, ON N1G 2W1, Canada	48	SOCIAL SCIENCE & MEDICINE	2010	2010	0	Adaptive capability	In sub-Saharan Africa, Indigenous peoples experience poorer than average health outcomes, marginal social status, and are especially sensitive to environmental change due to their resource-based livelihoods and traditional health systems.	People of color and indegous people and migrants	Rapid Rural Appraisal, PhotoVoice field methods complemented by qualitative data analysis	Qualitative methods	Heat, Droughts, Food-borne Diseases and Malnutrition, Climate-infectious Diseases	Africa	National

Climate change and environmental injustice in a bi-national context	5	2012	United States	United States, Mexico	[Grineski, Sara E.; Collins, Timothy W.] Univ Texas El Paso, Dept Sociol & Anthropol, El Paso, TX 79968 USA; [Ford, Paula] Univ Texas El Paso, Dept Publ Hlth Sci, El Paso, TX 79968 USA; [Fitzgerald, Rosa] Univ Texas El Paso, Dept Phys, El Paso, TX 79968 USA; [Aldouri, Raed] Univ Texas El Paso, Reg Geospatial Serv Ctr, El Paso, TX 79968 USA; [Lu, Duanjun] Jackson State Univ, Dept Phys Atmospher Sci & GeoSci, Jackson, MS USA; [Velazquez-Angulo, Gilberto] Univ Autonoma Ciudad Juarez, Dept Civil & Environm Engn, Ciudad Juarez, Chihuahua, Mexico; [Romo Aguilar, Maria de Lourdes] Colegio Frontera Norte Juarez, Dept Environm & Nat Resources, Tijuana, Baja California, Mexico	7	APPLIED GEOGRAPHY	2000	2000	0	Exposure, Adaptive capability	Lower social class neighborhoods generally faced increased risks from extreme heat in both cities, and from floods and peak ozone in El Paso. In El Paso, children also faced significant and disproportionate exposure to peak ozone, while female-headed households were significantly more burdened by flooding and peak ozone in Juarez.	Children, People with low SES	Linear regression, spatial regression models	Quantitative methods	Heat, Rising Sea Levels and Extreme Rainfalls, Other: Air Pollution	North America	National
Cardio-respiratory outcomes associated with exposure to wildfire smoke are modified by	6	2012	United States	United States	[Rappold, Ana G.; Cascio, Wayne E.; Neas, Lucas M.; Devlin, Robert B.; Diaz-Sanchez, David]	2	ENVIRONMENTAL HEALTH	2008	2008	0	Not clear	The largest difference in risk was observed after stratifying on the basis of Socio-Economic Factors. Difference in risk between bottom and top ranked counties by Socio-	People with low SES	HYSPLIT(Hybrid Single Particle Lagrangian Integrated Trajectory Mode)	Quantitative methods	Wildfires	North America	City or sub-national

measures of community health					US EPA, Environm Publ Hlth Div, Natl Hlth & Environm Effects Res Lab, Res Triangle Pk, NC 27711 USA; [Kilaru, Vasu J.] US EPA, Natl Exposure Res Lab, Res Triangle Pk, NC 27711 USA; [Stone, Susan L.] US EPA, Off Air Qual Planning & Stand, Res Triangle Pk, NC 27711 USA							Economic Factors was 85% and 124% for asthma and congestive heart failure respectively. For asthma, poverty was the most important predictor while for CHF it was income inequality.		model, and statistical analysis				
Spatial analysis of hospital admissions for respiratory diseases during summer months in Berlin taking bioclimatic and socio-economic aspects into account	7	2013	Germany	Germany	[Scherber, Katharina; Langner, Marcel; Endlicher, Wilfried] Humboldt Univ, Dept Geog, D-10099 Berlin, Germany	6	ERDE	2000	2009	9	Exposure	High building density and a lack of urban green and water spaces determine the adverse bioclimatic evaluation of urban environments. The resulting heat stress causes impacts on health, especially on respiratory illness. he relative risks for hospital admissions among > 64yearolds with RD during the summer months in Berlin based on the number of cases from 2000 to 2009 indicated significant clusters of increased risk in the northwestern and southeastern city centre. These areas are characterised by high population densities, densely builtup areas with a high annual mean number of days with heat load based on the period 19712000 and the average of the periods 19712000 and 20212050 and adverse socioeconomic conditions.	People in urban areas	Spatial epidemiological approach	Quantitative methods	Heat	Europe	City or sub-national
Heat-Related Mortality and Adaptation to Heat in the United States	8	2014	United States	United States	[Jennifer F. Bobb; Francesca Dominici] Department of Biostatistics, Harvard	354	ENVIRONMENTAL HEALTH PERSPECTIVES	1987	2005	18	Adaptive capability	We found statistically significant effect modification, with cities with cooler climates having larger temporal declines in risk than cities	People in regions with certain geo-climatic	Time-varying coefficient regression models and Bayesian	Quantitative methods	Heat	Europe	National

					School of Public Health, Boston, Massachusetts, USA; [Roger D. Peng] Department of Biostatistics, Johns Hopkins Bloomberg School of Public Health, Baltimore, Maryland, USA; [Michelle L. Bell] School of Forestry and Environmental Studies, Yale University, New Haven, Connecticut, USA							with warmer climates, although these cities also generally had larger risks of heat-related mortality at the beginning of the study period. Cities with larger increases in central air conditioning (AC) prevalence over the study period tended to have slightly larger reductions in heat-related mortality risk over time, but the association was not statistically significant	features, People with disadvantaged housing conditions	hierarchical models				
Heat waves and mortality in Frankfurt am Main, Germany, 2003-2013 What effect do heat-health action plans and the heat warning system have?	9	2014	Germany	Germany	[U. Heudorf; M. Schade]Amt für Gesundheit, Breite Gasse 28, 60313, Frankfurt am Main, Germany	28	ZEITSCHRIFT FÜR GERONTOLOGIE UND GERIATRIE	2003	2013	10	Adaptive capability	Temperature data as well as air pollution and daily mortality exhibited extreme values in summer 2003 compared to the summer periods 2004-2013. Never again were such levels of temperature and air pollution reached. In 2003, excess mortality was 78%, and as high as 113% among the population aged >80 years. During the heat wave of 2010, the total excess mortality was 23% (significant) and 38% in the population aged >80 years, while during heat waves in 2006 and 2013 no significant increase in total mortality was seen (total excess mortality 12% and 4%; not significant). Further efforts are needed to improve the resilience of the population, especially the elderly population, to better cope with heat waves	Elderly people	Statistical analysis, including bivariate and partial correlations	Quantitative methods	Heat	Europe	City or sub-national

Identifying Populations at Risk: Interdisciplinary Environmental Climate Change Tracking	10	2014	United States	United States	[Anderko, Laura] Georgetown Univ, Sch Nursing & Hlth Studies, Washington, DC 20057 USA; [Davies-Cole, John] Dist Columbia Dept Hlth, Ctr Policy Planning & Evaluat, Washington, DC USA; [Strunk, Andrew] Boston Univ, Boston, MA 02215 USA	106	PUBLIC HEALTH NURSING	2007	2010	3	Not clear	Climate change, experienced as extreme weather events such as heat waves can lead to poorer air quality and underscores the critical need to consider the consequences of these environmental changes on health. Although no significant associations were found for PM2.5, PM10, or ozone with asthmarelated or AMI-related hospitalizations with seasonal changes, surveillance data found disparities in hospitalizations particularly in female, African American residents for both asthma and acute myocardial infarction (AMI).	Females, People of color and indegous people and migrants	Poisson regression	Quantitative methods	Heat, Other: Air Pollution	North America	City or sub-national
Associations between Extreme Precipitation and Gastrointestinal-Related Hospital Admissions in Chennai, India	11	2014	United States	United States, Canada, India	[Bush, Kathleen F.; O'Neill, Marie S.] Univ Michigan, Sch Publ Hlth, Dept Environm Hlth Sci, Ann Arbor, MI 48109 USA; [O'Neill, Marie S.] Univ Michigan, Sch Publ Hlth, Dept Epidemiol, Ann Arbor, MI 48109 USA; [O'Neill, Marie S.] Univ Michigan, Sch Publ Hlth, Risk Sci Ctr, Ann Arbor, MI 48109 USA; [Li, Shi; Mukherjee, Bhramar] Univ Michigan, Sch Publ Hlth, Dept Biostat, Ann Arbor, MI 48109 USA; [Hu, Howard] Univ Toronto, Dalla Lana Sch Publ Hlth, Div Global Hlth, Toronto, ON, Canada;	6	ENVIRONMENTAL HEALTH PERSPECTIVES	2004	2007	3	Not clear	Extreme precipitation was consistently associated with GI-related hospital admissions.The cumulative risk ratio for GI-related hospital admissions following extreme precipitation events was higher among the young (≤ 5 years of age) compared with the overall population.	Children	Generalized additive models (regression model)	Quantitative methods	Rising Sea Levels and Extreme Rainfalls	Asia	City or sub-national

					[Hu, Howard] Univ Toronto, Dalla Lana Sch Publ Hlth, Div Epidemiol, Toronto, ON, Canada; [Hu, Howard] Univ Toronto, Dalla Lana Sch Publ Hlth, Div Occupat & Environm Hlth, Toronto, ON, Canada; [Ghosh, Santu; Balakrishnan, Kalpana] Sri Ramachandra Univ, Dept Environm Hlth Engn, Madras, Tamil Nadu, India												
Urban heat and climate justice: a landscape of thermal inequity in Pinellas County, Florida	12	2014	United States	United States	[Mitchell, Bruce Coffyn] Univ S Florida, Tampa, FL 33620 USA; [Chakraborty, Jayajit] Univ S Florida, Sch Geosci, Tampa, FL 33620 USA	8	GEOGRAPHICAL REVIEW	2010	2010	0	Exposure	This creates a general spatial pattern with residences of higher-income population groups located in the cooler waterfront areas, while commercial sites and housing for lower-income residents tend to be located toward the interior of the peninsula wherethe urban heat island (UHI) effect is most pronounced.	People with low SES, People with disadvantaged housing conditions	Conventional and spatial statistical methods	Quantitative methods	Heat	North America	City or sub-national
The challenges posed by climate change to successful ageing	13	2014	Austria	Austria	[Wanka, A.] Univ Vienna, Inst Sociol, A-1090 Vienna, Austria; [Arnberger, A.; Allex, B.; Eder, R.] Univ Nat Resources & Life Sci Vienna, Inst Landscape Dev Recreat & Conservat Planning, Vienna, Austria; [Hutter, H. -P.; Wallner, P.] Med Univ Vienna, Inst Environm Hlth, Ctr	19	ZEITSCHRIFT FUR GERONTOLOGIE UND GERIATRIE	2011	2011	0	Adaptive capability	Older adults (>65 years) with a low socio-economic status and poor health conditions, who tend to be socially isolated, are most at risk. How much a person suffers from heat stress is highly dependent on the adaption strategies deployed. Adaption strategies of older urban residents mostly centred on body-related measures, such as drinking more or wearing lighter clothes, and indoor-centred measures, particularly avoiding the outdoors.	People with low SES, People with pre-existing health issues or disabilities	Quantitative survey, bivariate correlations, analyses of variances (ANOVA), linear regression models	Quantitative methods	Heat	Europe	City or sub-national

					Publ Hlth, Vienna, Austria													
Extreme heat and cultural and linguistic minorities in Australia: perceptions of stakeholders	14	2014	Australia	Australia	[Hansen, Alana; Saniotis, Arthur; Bi, Peng] Univ Adelaide, Discipline Publ Hlth, Adelaide, SA 5005, Australia; [Nitschke, Monika; Smyth, Val] Dept Hlth & Ageing, Adelaide, SA, Australia; [Benson, Jill] Univ Adelaide, Div Gen Practice, Adelaide, SA 5005, Australia; [Tan, Yan] Univ Adelaide, Discipline Geog Environm & Populat, Adelaide, SA 5005, Australia; [Wilson, Leigh] Univ Western Sydney, Sch Sci & Hlth, Sydney, NSW, Australia; [Han, Gil-Soo] Monash Univ, Clayton, Vic, Australia; [Mwanri, Lillian] Flinders Univ S Australia, Fac Nursing Med & Hlth Sci, Sch Hlth Sci, Discipline Publ Hlth, Bedford Pk, SA 5042, Australia	13	BMC PUBLIC HEALTH	2011	2011	0	Adaptive capability	Whilst migrants and refugees generally adapt well upon resettlement, there are sociocultural barriers encountered by some that hinder environmental adaptation to periods of extreme heat in Australia. These barriers include socioeconomic disadvantage and poor housing, language barriers to the access of information, isolation, health issues, cultural factors and lack of acclimatisation. Most often mentioned as being at risk were new arrivals, people in new and emerging communities, and older migrants.	Elderly people, People with low SES, People of color and indegous people and migrants, People with disadvantaged housing conditions	Interviews and focus groups, thematic analysis and a framework approach for data analysis	Qualitative methods	Heat	Oceania	National
Differential Effects of Temperature Extremes on Hospital Admission Rates for Respiratory Disease	15	2015	Australia	Australia	[Green, Donna; Goldie, James; Schultz, Rosalie; Webb, Leanne; Alexander, Lisa; Pitman, Andrew]	2	INTERNATIONAL JOURNAL OF ENVIRONMENTAL RESEARCH AND PUBLIC HEALTH	1993	2011	18	Not clear	Extreme hot and cold temperatures have a different effect on hospitalisations for respiratory disease between Indigenous and non-Indigenous people, and these health risks vary between the	People of color and indegous people and migrants, People in	Poisson loglinear models	Quantitative methods	Heat, Cold Spell	Oceania	City or sub-national

between Indigenous and Non-Indigenous Australians in the Northern Territory					Univ New S Wales, Climate Change Res Ctr, Sydney, NSW 2052, Australia; [Green, Donna; Goldie, James; Schultz, Rosalie; Alexander, Lisa; Pitman, Andrew] Univ New S Wales, ARC Ctr Excellence Climate Syst Sci, Sydney, NSW 2052, Australia; [Bambrick, Hilary] Univ Western Sydney, Sch Med, Ctr Hlth Res, Sydney, NSW 2150, Australia; [Tait, Peter] Publ Hlth Assoc Australia, Canberra, ACT 2605, Australia							different climate zones. Generally, admission rates for acute and chronic conditions were higher for people living in the Top End climate zone compared to the Central Australia climate zone. Stratified by disease class, admission rates for people with acute respiratory conditions were almost twice as high in the Top End climate zone as those for people living in the Central Australia climate zone.	regions with certain geo-climatic features					
Cardiovascular Mortality Associated with Low and High Temperatures: Determinants of Inter-Region Vulnerability in China	16	2015	China	China	[Yang, Xunfeng; Li, Lianfa; Wang, Jinfeng] Chinese Acad Sci, Inst Geog Sci & Nat Resources Res, State Key Lab Resources & Environm Informat Syst, Beijing 100101, Peoples R China; [Yang, Xunfeng] Univ Chinese Acad Sci, Beijing 100049, Peoples R China; [Huang, Jixia] Beijing Forestry Univ, Precis Forestry Key Lab Beijing, Beijing 100083, Peoples R China; [Huang, Jixia]	5	INTERNATIONAL JOURNAL OF ENVIRONMENTAL RESEARCH AND PUBLIC HEALTH	2008	2011	3	Exposure, Inherent sensitivity, Adaptive capability	Number of hospital beds (as an indicator of the availability of medical resources), percentage of population engaged in industrial occupations, and percentage of women showed direct impact on heat-related cardiovascular mortality. High level of industrialization typically corresponds to improved economic status, convenient transportation, A controllable indoor working environment, and good medical infrastructure. The findings in this study led us to hypothesize that the reason why the low level of industrialization is associated with highest risk is mainly because of the low economic status. Men tend to have higher risk at	Females, People with low SES, Males	A separate Poisson generalized additive model (GAM)	Quantitative methods	Heat, Cold Spell	Asia	National

					Beijing Forestry Univ, Coll Forestry, Beijing 100083, Peoples R China; [Lu, Shijun] Chinese Ctr Dis Control & Prevent, Natl Inst Nutr & Hlth, Beijing 100050, Peoples R China							cold temperatures, while women tend to have higher risk at high temperatures. The mechanism remains unclear. It may be that women usually have more fat than men, which makes women more cold-resistant but less heat-resistant.						
A scalable climate health justice assessment model	17	2015	United States	United States	[McDonald, Yolanda J.] Texas A&M Univ, Dept Geog, Coll GeoSci, College Stn, TX 77843 USA; [Grineski, Sara E.; Collins, Timothy W.] Univ Texas El Paso, Dept Sociol & Anthropol, El Paso, TX 79968 USA; [Kim, Young-An] Univ Calif Irvine, Dept Criminol Law & Soc, Sch Social Ecol, Irvine, CA 92717 USA	1	SOCIAL SCIENCE & MEDICINE	2008	2010	2	Not clear	The research identified several disease categories (i.e., cardiovascular, gastrointestinal, heat-related, and respiratory) associated with climate change, and then selected corresponding ICD-9 codes with the highest hospitalization counts for further analyses. Selected diseases include ischemic heart disease, diarrhea, heat exhaustion/cramps/stroke/syncope, and asthma. Blacks were disproportionately burdened by the selected diseases in comparison to non-Hispanic whites, while Hispanics were not.	People of color and indegous people and migrants	Down-scaled regional climate-change projection model	Quantitative methods	Climate-infectious Diseases	North America	City or sub-national
Landscapes of thermal inequity: disproportionate exposure to urban heat in the three largest US cities	18	2015	United States	United States	[Mitchell, Bruce C.] Univ S Florida, Sch Geosci, Tampa, FL 33620 USA; [Chakraborty, Jayajit] Univ Texas El Paso, Dept Sociol & Anthropol, El Paso, TX 79968 USA	32	ENVIRONMENTAL RESEARCH LETTERS	2010	2010	0	Exposure	The results indicate a consistent and significant statistical association between lower socioeconomic and minority status and greater urban heat risk, in all three cities. We also found disproportionate exposure to heat risk for neighborhoods that contain a higher proportion of disabled individuals and those who lack high school education.	People with low SES, People of color and indegous people and migrants	Bivariate correlation analysis using parametric and nonparametric tests	Quantitative methods	Heat	North America	City or sub-national

Economic Burden of Hospitalizations for Heat-Related Illnesses in the United States, 2001-2010	19	2016	United States	United States	[Schmeltz, Michael T.] US EPA, ASPPH EPA Environm Hlth Fellowship Program, Off Res & Dev, Natl Ctr Environm Assessment, Washington, DC 20001 USA; [Petkova, Elisaveta P.] Columbia Univ, Earth Inst, Natl Ctr Disaster Preparedness, New York, NY 10027 USA; [Gamble, Janet L.] US EPA, Off Res & Dev, Natl Ctr Environm Assessment, Washington, DC 20460 USA	8	INTERNATIONAL JOURNAL OF ENVIRONMENTAL RESEARCH AND PUBLIC HEALTH	2001	2010	9	Exposure, Inherent sensitivity, Adaptive capability	Costs of heat-related illness (HRI) hospitalizations were higher among racial/ethnic minorities compared to Whites. Observed differences in costs based on income, insurance, and gender were also significant.These results suggest that these populations are suffering disproportionately from health inequity, thus, they could shoulder greater disease and among HRIs, females have fewer hospitalizations but bear a greater burden of the hospitalization costs.Males may be more likely to have occupations that are outdoors, performing physical activity in high temperature environments, increasing their exposure. These males may be in generally good health (healthy worker effect) and may only suffer from minor heat-related illnesses, not incurring high healthcare costs. For females, we considered pregnancy as a potential cause for the increased costs among this population, dults aged 40–64 years old have a larger percentage of HRI hospitalizations during this time period, though older adults aged 65+ years old had significantly higher costs for HRI hospitalizations.Older adults were also more likely to be covered under Medicare.	Females, People of color and indegous people and migrants	Log-gamma model with patient and hospital characteristics	Quantitative methods	Heat	North America	National
Southwest climate gap: poverty and environmental justice in the US Southwest	20	2016	United States	United States, United Kingdom	[Wilder, Margaret; Liverman, Diana; Bellante, Laurel; Osborne, Tracey] Univ Arizona, Sch Geog & Dev, Tucson, AZ 85721 USA;	9	LOCAL ENVIRONMENT	2010	2012	2	Exposure, Adaptive capability	Our research found that the southwestern region is a hotspot both for physical climate change and for social vulnerability with a clear “climate gap” between rich and poor. The Southwest is projected to become hotter and	People with low SES	Quantitative methods using large-scale datasets and qualitative methods such as	Mixed methods	Food-borne Diseases and Malnutrition, Climate-infectious Diseases	North America	City or sub-national

					[Wilder, Margaret] Univ Arizona, Ctr Latin Amer Studies, Tucson, AZ 85721 USA; [Liverman, Diana] Univ Arizona, Inst Environm, Tucson, AZ USA; [Liverman, Diana] Univ Oxford, Sch Geog & Environm, Oxford, England							drier under future climate change, creating the potential for heightened vulnerability and increasing challenges to achieve EJ. The Southwest exhibits high social vulnerability, with rankings among the worst in the USA on a range of indicators, including poverty, health insurance, energy and food security, and childhood well-being.		interviews and photo elicitation				
Application of a Global Environmental Equity Index in Montreal: Diagnostic and Further Implications	21	2016	Canada	Canada	[Carrier, Mathieu] Ctr Hosp Univ Montreal, Res Ctr, Montreal, PQ H2X 0A9, Canada; [Apparicio, Philippe; Seguin, Anne-Marie] Natl Inst Sci Res, Ctr Urbanisat Culture Soc, Montreal, PQ H2X 2C6, Canada; [Kestens, Yan; Siemiatycki, Jack] Univ Montreal, Ecole Sante Publ, Dept Social & Prevent Med, Montreal, PQ H2X 0A9, Canada; [Pham, Hien] Univ Quebec, Dept Urban Studies, Montreal, PQ H2X 3X2, Canada; [Crouse, Dan] Univ New Brunswick, Dept Sociol, Fredericton, NB E3B 5A3, Canada	0	ANNALS OF THE AMERICAN ASSOCIATION OF GEOGRAPHERS	2006	2006	0	Exposure	The results obtained by using four statistical techniques show that, on the Island of Montreal, low-income persons and, to a lesser extent, visible minorities are more frequently located in city blocks close to major roads and with higher concentrations of NO2 and less vegetation. Finally, the environmental equity index is significantly lower in areas with high concentrations of low-income populations in comparison with the wealthiest areas.	People with low SES	Statistical analysis	Quantitative methods	Heat, Other: Air Pollution	North America	City or sub-national

Who Among the Elderly Is Most Vulnerable to Exposure to and Health Risks of Fine Particulate Matter From Wildfire Smoke?	22	2017	United States	United States	[Liu, Jia Coco; Peng, Roger D.] Johns Hopkins Univ, Bloomberg Sch Publ Hlth, Dept Biostat, Room 3137,615 N Wolfe St, Baltimore, MD 21205 USA; [Liu, Jia Coco; Ebisu, Keita; Bell, Michelle L.] Yale Univ, Sch Forestry & Environm Studies, New Haven, CT 06511 USA; [Wilson, Ander; Wang, Yun; Dominici, Francesca] Harvard Univ, TH Chan Sch Publ Hlth, Dept Biostat, Boston, MA 02115 USA; [Mickley, Loretta J.; Sulprizio, Melissa P.; Yue, Xu] Harvard Univ, Paulson Sch Engn & Appl Sci, Cambridge, MA 02138 USA	474	AMERICAN JOURNAL OF EPIDEMIOLOGY	2004	2009	5	Not clear	Risks of respiratory admissions from wildfire smoke was significantly higher for women than for men (10.4% vs. 3.7%), blacks than whites (21.7% vs. 6.9%), and, although associations were not statistically different, people in lower-education counties than higher-educated counties (12.7% vs. 6.1%).	Females, People with low SES, People of color and indegous people and migrants	GEOS-Chem (PM2.5 estimates), statistical analysis	Quantitative methods	Wildfires	North America	City or sub-national
Who Is Feeling the Heat? Vulnerabilities and Exposures to Heat Stress-Individual, Social, and Housing Explanations	23	2017	Germany	Germany	[Katharina Seebaß] University of Nuremberg-Erlangen	20	NATURE AND CULTURE	2011	2011	0	Exposure	Age, individual health, and social contexts all explain variations in how people experience heat stress. It is further hypothesized and confirmed that heat exposure due to disadvantaged housing conditions or distance from green space increases the levels of subjective heat stress.	People with disadvantaged housing conditions	Empirical survey, statistical analysis	Quantitative methods	Heat	Europe	City or sub-national

Climate change and gender equality in developing states	24	2018	United States	United States	[Eastin, Joshua] Portland State Univ, Dept Polit Sci, Portland, OR 97207 USA	2	WORLD DEVELOPMENT	1981	2010	29	Exposure, Adaptive capability	Gender disparities in climate change vulnerability not only reflect preexisting gender inequalities, they also reinforce them. Inequalities in the ownership and control of household assets and rising familial burdens due to male out-migration, declining food and water access, and increased disaster exposure can undermine women's ability to achieve economic independence, enhance human capital, and maintain health and wellbeing. Consequences for gender equality include reductions in intra-household bargaining power, as women become less capable of generating independent revenue. Model: the research incorporate an additional measure of climate change into the model: a count variable of the annual incidence of climatological and hydro-meteorological natural disasters occurring in a country. These include: droughts, floods, wildfires, storms, insect infestations, disease epidemics and heat waves.	Females	Panel data analysis, regression models	Quantitative methods	Heat, Droughts, Rising Sea Levels and Extreme Rainfalls, Cyclones and Storms, Wildfires, Food-borne Diseases and Malnutrition, Climate-infectious Diseases	Asia, Africa, South America	National
Will boys' mental health fare worse under a hotter climate in Australia?	25	2018	Australia	Australia	[Ying Xu; Sarah Ann Wheeler; Alec Zuo] Centre for Global Food and Resources, Faculty of Professions, University of Adelaide, 10 Pulteney Street, Adelaide, SA, 5005, Australia	18	POPULATION AND ENVIRONMENT	2008	2014	6	Adaptive capability	Results indicate that an increase in annual average daily maximum temperature worsened childhood mental health due to a direct and indirect effect through reduced participation in organised physical activities, as measured by the Strengths and Difficulties Questionnaire (SDQ) total score, but the result is only significant for boys (albeit the magnitude of the effect was small). Heterogeneous effects do exist by	Males, People with low SES	Mediation analysis	Quantitative methods	Heat	Oceania	National

												gender; boys' mental health was influenced significantly by environmental factors, while girls' mental health appears to be more influenced by family and other socioeconomic locational factors. Furthermore, there is an increased impact of higher temperature on children's mental health in poorer households, indicating that wealthier households are perhaps more able to use resources to counter negative impacts.						
Mortality and Morbidity during Extreme Heat Events and Prevalence of Outdoor Work: An Analysis of Community-Level Data from Los Angeles County, California	26	2018	United States	United States	[Riley, Kevin; Delp, Linda] UCLA Labor Occupat Safety & Hlth Program, Los Angeles, CA 90095 USA; [Wilhalme, Holly] Univ Calif Los Angeles, David Geffen Sch Med, Dept Med Stat Core, Los Angeles, CA 90024 USA; [Eisenman, David P.] Univ Calif Los Angeles, David Geffen Sch Med, Div Gen Internal Med & Hlth Serv Res, Los Angeles, CA 90024 USA; [Eisenman, David P.] Univ Calif Los Angeles, Fielding Sch Publ Hlth, Ctr Publ Hlth & Disasters, Los Angeles, CA 90024 USA	14	INTERNATIONAL JOURNAL OF ENVIRONMENTAL RESEARCH AND PUBLIC HEALTH	2005	2010	5	Exposure	Each percentage increase in residents working in construction resulted in an 8.1 percent increase in heat-related ED visits and a 7.9 percent increase in heat-related hospitalizations, while each percentage increase in residents working in agriculture and related sectors resulted in a 10.9 percent increase in heat-related ED visits. The findings suggest that outdoor work may significantly influence the overall burden of heat-related morbidity at the community level.	Vulnerable industries	Poisson regression model	Quantitative methods	Heat	North America	City or sub-national

Classification of Heat-Related Illness Symptoms Among Florida Farmworkers	27	2018	United States	United States	[Mutic, Abby D.; Mix, Jacqueline M.; McCauley, Linda A.] Emory Univ, Nell Hodgson Woodruff Sch Nursing, 1520 Clifton Rd, Atlanta, GA 30322 USA; [Elon, Lisa] Emory Univ, Rollins Sch Publ Hlth, Dept Biostat & Bioinformat, Atlanta, GA 30322 USA; [Mutic, Nathan J.] Emory Univ, Hodgson Woodruff Sch Nursing, Atlanta, GA 30322 USA; [Economos, Jeannie; Tovar-Aguilar, Antonio J.] Farmworker Assoc Florida, Apopka, FL USA; [Flocks, Joan] Univ Florida, Levin Coll Law, Social Policy, Gainesville, FL USA; [Flocks, Joan] Univ Florida, Levin Coll Law, Ctr Govt Responsibil, Gainesville, FL USA	28	JOURNAL OF NURSING SCHOLARSHIP	2015	2016	1	Adaptive capability	Females had three times the odds of experiencing three or more symptoms (OR = 2.86, 95% CI 1.18–6.89). Biological factors such as high body surface to mass ratio and or morphology and adipose distribution among women could also contribute to this difference.	Females	Multivariable logistic regression	Quantitative methods	Heat	North America	City or sub-national
Awareness, Risk Perception, and Protective Behaviors for Extreme Heat and Climate Change in New York City	28	2018	United States	United States	[Madrigano, Jaime] RAND Corp, 1200 South Hayes St, Arlington, VA 22202 USA; [Lane, Kathryn; Ahmed, Munerah] New York City Dept Hlth & Mental Hyg, Bur Environm	18	INTERNATIONAL JOURNAL OF ENVIRONMENTAL RESEARCH AND PUBLIC HEALTH	2015	2015	0	Adaptive capability	In adjusted models, odds of not possessing AC were greater for non-Hispanic blacks compared with other races/ethnicities, odds ratio (OR) = 2.0 (95% CI: 1.1, 3.5), and for those with low annual household income, OR = 3.1 (95% CI: 1.8, 5.5). In NYC, lack of access to AC partially explains	People with low SES, People of color and indegous people and migrants	Random digit dial telephone survey, statistical analysis	Quantitative methods	Heat	North America	City or sub-national

					Surveillance & Policy, New York, NY 10013 USA; [Petrovic, Nada] Columbia Univ, Earth Inst, 2910 Broadway, New York, NY 10027 USA; [Blum, Micheline] Baruch Coll Survey Res, Marxe Sch Publ & Int Affairs, One Bernard Baruch Way, New York, NY 10010 USA; [Matte, Thomas] Vital Strategies, 61 Broadway, New York, NY 10006 USA							disparities in heat-related health outcomes.						
Assessing Vulnerability to Urban Heat: A Study of Disproportionate Heat Exposure and Access to Refuge by Socio-Demographic Status in Portland, Oregon	29	2018	United States	Japan	[Voelkel, Jackson; Hellman, Dana; Shandas, Vivek] Portland State Univ, Sch Urban Studies & Planning, Portland, OR 97201 USA; [Sakuma, Ryu] Peace Winds Japan, Tokyo 1510063, Japan	1	INTERNATIONAL JOURNAL OF ENVIRONMENTAL RESEARCH AND PUBLIC HEALTH	2014	2014	0	Exposure, Adaptive capability	Results indicate that groups with limited adaptive capacity, including those in poverty and non-white populations, are at higher risk for heat exposure, suggesting an emerging concern of environmental justice as it relates to climate change	People with low SES, People of color and indegous people and migrants	Mixed spatial and statistical methods, including data mapping, Student' s t-test method, network distance analysis, covariance analysis	Quantitative methods	Heat	North America	City or sub-national
Evidence for Urban-Rural Disparity in Temperature-Mortality Relationships in Zhejiang Province, China	30	2019	China	China, Australia, Austria, United States	[Hu, Kejia; Yang, Xuchao; Chen, Qian; Ye, Tingting] Zhejiang Univ, Ocean Coll, Inst Isl & Coastal Ecosyst, Zhoushan Campus,Haike Bldg 357,1 Zheda Rd, Zhoushan 316021, Peoples R China; [Hu, Kejia; Guo, Yunting; Zhao, Qi;	96	ENVIRONMENTAL HEALTH PERSPECTIVES	2009	2015	6	Exposure, Adaptive capability	Rural residents are more sensitive to both cold and hot temperatures than urban residents in Zhejiang Province, China, particularly the elderly.——We found that mortality risks (RRs) associated with both cold and hot temperatures were higher in rural areas than urban areas, for all types of diseases, people aged≥65 y, and both sex groups. This might be attributable to demographic and socioeconomic	Elderly people, People with disadvantaged housing conditions, People in rural areas	Meta regression	Quantitative methods	Heat, Cold Spell	Asia	City or sub-national

					Li, Shanshan] Monash Univ, Sch Publ Hlth & Prevent Med, Dept Epidemiol & Prevent Med, Melbourne, Vic, Australia; [Hoehrainer-Stigler, Stefan; Liu, Wei; See, Linda] Intt Inst Appl Syst Anal, Laxenburg, Austria; [Yang, Xuchao; Qi, Jiaguo] Michigan State Univ, Ctr Global Change & Earth Observat, E Lansing, MI 48824 USA; [Zhong, Jieming; Fei, Fangrong] Zhejiang Prov Ctr Dis Control & Prevent, 3399 Binsheng Rd, Hangzhou 310051, Zhejiang, Peoples R China; [Chen, Feng] Zhejiang Inst Meteorol Sci, Hangzhou, Zhejiang, Peoples R China; [Zhang, Yunquan; Ma, Lu] Wuhan Univ, Sch Hlth Sci, Dept Prevent Med, Wuhan, Hubei, Peoples R China; [Zhang, Yunquan] Wuhan Univ Sci & Technol, Sch Publ Hlth, Hubei Prov Key Lab Occupat Hazard Identificat & C, Wuhan, Hubei,							factors related to the urbanization level in China, including age structure, education, GDP, health care services, type of occupations, and air conditioners (TableS2). For instance, agricultural workers, generally living in rural areas, usually work outdoors and are directly exposed to extreme temperatures. Moreover, there are less air conditioners for rural residents than urban residents (1.21vs.1.66 per household), which could increase the urban–rural gap in vulnerability						

					Peoples R China; [Chen, Gongbo] Wuhan Univ, Sch Hlth Sci, Dept Global Hlth, Wuhan, Hubei, Peoples R China; [Zhang, Yizhe] Sun Yat Sen Univ, Sch Geog & Planning, Guangzhou, Guangdong, Peoples R China													
We're Just Sitting Ducks: Recurrent Household Flooding as An Underreported Environmental Health Threat in Detroit's Changing Climate	31	2019	United States	United States	[Sampson, Natalie R.; Doan, Jessica; Hussein, Janine] Coll Educ Hlth & Human Serv, 19000 Hubbard Dr, Dearborn, MI 48126 USA; [Price, Carmel E.; Kassem, Julia] Coll Arts Sci & Letters, 4901 Evergreen Rd, Dearborn, MI 48128 USA	318	INTERNATIONAL JOURNAL OF ENVIRONMENTAL RESEARCH AND PUBLIC HEALTH	2017	2018	1	Adaptive capability	Residents described exposure to diverse risk factors for chronic and infectious diseases, particularly for seniors and young children, and emphasized stressors associated with repeated economic loss and uncertainty.	Elderly people, Children, People with pre-existing health issues or disabilities	Semi-structured interviews and standard qualitative coding analysis	Quantitative methods	Rising Sea Levels and Extreme Rainfalls	North America	City or sub-national
Exploring the Environmental Justice Implications of Hurricane Harvey Flooding in Greater Houston, Texas	32	2019	United States	United States	[Chakraborty, Jayajit] Univ Texas El Paso, Dept Sociol & Anthropol, 500 West Univ Ave, El Paso, TX 79968 USA; [Chakraborty, Jayajit] Univ Texas El Paso, Socioenvironm & Geospatial Anal Lab, El Paso, TX 79968 USA; [Collins, Timothy W.] Univ Utah, Dept Geog, Salt Lake City, UT USA; [Grineski, Sara E.] Univ Utah, Dept	15	AMERICAN JOURNAL OF PUBLIC HEALTH	2017	2017	0	Exposure	The areal extent of Harvey-induced flooding was significantly greater in neighborhoods with a higher proportion of non-Hispanic Black and socioeconomically deprived residents. Results provide evidence of racial/ethnic and socioeconomic injustices in the distribution of flooding	People with low SES, People of color and indegous people and migrants	GIS-based methodology, bivariate correlations and multivariate generalized estimating equations	Quantitative methods	Rising Sea Levels and Extreme Rainfalls	North America	City or sub-national

					Sociol, Salt Lake City, UT USA												
Environmental injustice and Hurricane Harvey: A household-level study of socially disparate flood exposures in Greater Houston, Texas, USA	33	2019	United States	United States	[Collins, Timothy W.; Flores, Aaron B.] Univ Utah, Dept Geog, 260 Cent Campus Dr,Rm 4625, Salt Lake City, UT 84112 USA; [Grineski, Sara E.] Univ Utah, Dept Sociol, 380 S 1530 E,Rm 301, Salt Lake City, UT 84112 USA; [Chakraborty, Jayajit] Univ Texas El Paso, Dept Sociol & Anthropol, 500 West Univ Ave, El Paso, TX 79968 USA	52	ENVIRONMENTAL RESEARCH	2017	2017	0	Exposure	Hispanic, black and other racial/ethnic minority households experienced more extensive flooding than white households, and lower SES households faced more extensive flooding than higher SES households.	People with low SES, People of color and indegous people and migrants	Household survey, generalized estimating equations (GEEs)	Quantitative methods	Rising Sea Levels and Extreme Rainfalls	North America	City or sub-national
Disparities of population exposed to flood hazards in the United States	34	2019	United States	United States	[Qiang, Yi] Univ Hawaii Manoa, Dept Geog & Environm, Saunders 416,2424 Maile Way, Honolulu, HI 96822 USA	11	JOURNAL OF ENVIRONMENTAL MANAGEMENT	2017	2017	0	Exposure	At the national scale, economically disadvantaged population are more likely to reside in flood zones than outside. At the local scale, economically disadvantaged population tend to reside in flood zones in inland areas, while coastal flood zones are more occupied by wealthier and elderly people.	People with low SES, People in regions with certain geo-climatic features	Flood risk mapping, dasymetric Mapping Tool (DMT), statistical analysis including t-test and principal component analysis	Quantitative methods	Rising Sea Levels and Extreme Rainfalls	North America	National
Air pollution from wildfires and human health vulnerability in Alaskan communities under climate change	35	2020	United States	United States	[Woo, Seung Hyun Lucia; Liu, Jia Coco; Bell, Michelle L.] Yale Univ, Sch Forestry & Environm Studies, New Haven, CT 06511 USA; [Liu, Jia Coco] Johns Hopkins Bloomberg Sch Publ Hlth, Dept Biostat, Baltimore,	1	ENVIRONMENTAL RESEARCH LETTERS	1997	2010	13	Exposure	Wildfire-PM2.5 exposure levels during 1997–2010 were highest in interior Alaska during July. Among subpopulations, average summer (June-August) exposure levels for urban dwellers and African-American/Blacks were highest at 9.1 μg m-3 and 10 μg m-3, respectively.	People of color and indegous people and migrants	GEOS-Chem model	Quantitative methods	Wildfires	North America	City or sub-national

					MD USA; [Yue, Xu] Chinese Acad Sci, Inst Atmospher Phys, Beijing, Peoples R China; [Mickley, Loretta J.] Harvard Univ, John A Paulson Sch Engn & Appl Sci, Cambridge, MA 02138 USA													
The Mortality Risk and Socioeconomic Vulnerability Associated with High and Low Temperature in Hong Kong	36	2020	China	China	[Liu, Sida; Chan, Emily Yang Ying; Huang, Zhe] Chinese Univ Hong Kong, Collaborating Ctr Oxford Univ & CUHK Disaster & M, Hong Kong, Peoples R China; [Liu, Sida; Chan, Emily Yang Ying; Goggins, William Bernard; Huang, Zhe] Chinese Univ Hong Kong, Fac Med, JC Sch Publ Hlth & Primary Care, Hong Kong, Peoples R China	19	INTERNATIONAL JOURNAL OF ENVIRONMENTAL RESEARCH AND PUBLIC HEALTH	2007	2015	8	Exposure	The minimum mortality temperature in Hong Kong was 28.9°C, low temperature had a stronger effect on non-accidental, cardiovascular, respiratory and cancer deaths, high temperature only had a significant effect on low SES groups, older people were more vulnerable to low temperature.	Elderly people, People with low SES	Poisson-generalized additive models, distributed lag non-linear models	Quantitative methods	Heat, Cold Spell	Asia	City or sub-national
Association of Summer Heat Waves and the Probability of Preterm Birth in Minnesota: An Exploration of the Intersection of Race and Education	37	2020	United States	United States	[Smith, M. Luke; Hardeman, Rachel R.] Univ Minnesota, Minnesota Populat Ctr, Minneapolis, MN 55455 USA; [Smith, M. Luke] Univ Minnesota Twin Cities, Div Epidemiol & Community Hlth, Minneapolis, MN 55455 USA; [Hardeman, Rachel R.] Univ Minnesota	4	INTERNATIONAL JOURNAL OF ENVIRONMENTAL RESEARCH AND PUBLIC HEALTH	2009	2015	6	Exposure	Pregnant women exposed to heat waves have a 14% higher relative risk of preterm birth than those not exposed. College-educated Black women exposed to heat waves have a nearly three-fold higher relative risk of preterm birth than college-educated White women in a heat wave.	Females, People of color and indegous people and migrants	Linear regression	Quantitative methods	Heat	North America	City or sub-national

					Twin Cities, Div Hlth Policy & Management, 420 Delaware St SE, Minneapolis, MN 55455 USA; [Hardeman, Rachel R.] Measuring & Operationalizing Racism Achieve Hlth, Minneapolis, MN 55455 USA													
The (in)visible victims of disaster: Understanding the vulnerability of undocumented Latino/a and indigenous immigrants	38	2020	United States	United States	[Mendez, Michael] Univ Calif Irvine, Sch Social Ecol, Dept Urban Planning & Publ Policy, 300 Social Ecol 1, Irvine, CA 92697 USA; [Flores-Haro, Genevieve] Mixteco Indigena Community Organizing Project, 520 W 5th St,Suite G, Oxnard, CA 93030 USA; [Zucker, Lucas] Cent Coast Alliance United Sustainable Econ CAUSE, 2021 Sperry Ave 9, Ventura, CA 93003 USA	48	GEOFORUM	2017	2019	2	Exposure, Adaptive capability	Based on the case study of Thomas Fire in California, undocumented Latino and Indigenous immigrants are especially vulnerable to disasters due to their marginalization before, during and after the events. The intersectionality of race, gender, indigeneity, immigration status, health care access and income in shaping disaster vulnerability is highlighted.	People of color and indegous people and migrants	Participant observation, semi-structured interviews, archival analysis	Qualitative methods	Wildfires	North America	City or sub-national
Urbanization-driven increases in summertime compound heat extremes across China	39	2021	China	China, United States	[Wu, Sijia; Wang, Peng; Tong, Xuelin; Tian, Hao; Luo, Ming] Sun Yat Sen Univ, Sch Geog & Planning, Guangzhou 510275, Peoples R China; [Wu, Sijia; Wang, Peng; Tong, Xuelin; Tian, Hao;	103	SCIENCE OF THE TOTAL ENVIRONMENT	1961	2017	56	Exposure	Compound heat extremes have increased significantly across China during 1961–2017, with higher frequency and fraction in urban agglomerations (UAs) than rural areas. Urbanization contributes to around 40% of the increased frequency and fraction of compound hot extremes in UAs, while anthropogenic influence	People in urban areas	Quantitative comparison of long term trends between urban and rural regions	Quantitative methods	Heat	Asia	National

					Luo, Ming] Sun Yat Sen Univ, Guangdong Prov Engn Res Ctr Publ Secur & Disaster, Guangdong Key Lab Urbanizat & Geosimulat, Guangzhou 510275, Peoples R China; [Luo, Ming] Chinese Univ Hong Kong, Inst Environm Energy & Sustainabil, Sha Tin, Hong Kong, Peoples R China; [Zhao, Yongquan] Ohio State Univ, Dept Geog, Columbus, OH 43210 USA							accounts for most of the increase across China.						
Recurrent Home Flooding in Detroit, MI 2012–2020: Results of a Household Survey	40	2021	United States	United States	[Larson, Peter S.; Gronlund, Carina] Univ Michigan, Survey Res Ctr, Inst Social Res, Social Environm & Hlth Program, Ann Arbor, MI 48109 USA; [Larson, Peter S.] Univ Michigan, Sch Publ Hlth, Dept Epidemiol, Ann Arbor, MI 48109 USA; [Thompson, Lyke; Washington, Ramona] Wayne State Univ, Ctr Urban Studies, Detroit, MI 48202 USA; [Sampson, Natalie] Univ Michigan, Dept Hlth & Human Serv, Fairlane Ctr South, 19000 Hubbard Dr,	11	INTERNATIONAL JOURNAL OF ENVIRONMENTAL RESEARCH AND PUBLIC HEALTH	2012	2020	8	Adaptive capability	Rental occupied units were more likely to report flooding than owner occupied homes (Odd ratio (OR) 1.72 [95% Confidence interval (CI) 1.49, 1.98]). Housing conditions such as poor roof quality and cracks in basement walls influenced home flooding risk. Homes located in census tracts with increased percentages of owner occupied units (vs. rentals) had a lower odds of flooding (OR 0.92 [95% (CI) 0.86, 0.98]). When controlling for housing and neighborhood factors, we found that flooding disproportionately impacts communities of color.	People with low SES, People with disadvantaged housing conditions	Regression	Quantitative methods	Rising Sea Levels and Extreme Rainfalls	North America	City or sub-national

					Dearborn, MI 48126 USA; [Thorsby, Jamie Steis; Lyon, Natalie; Miller, Carol] Wayne State Univ, Hlth Urban Waters, Detroit, MI 48202 USA													
Water, Sanitation, and Hygiene Vulnerability among Rural Areas and Small Towns in South Africa: Exploring the Role of Climate Change, Marginalization, and Inequality	41	2021	South Africa	South Africa	[Abrams, Amber L.; Carden, Kirsty; Teta, Charles; Wagsaether, Katinka] Univ Cape Town, Future Water Res Inst, ZA-7700 Cape Town, South Africa	759	WATER	2013	2018	5	Exposure, Adaptive capability	High inequality linked to rising unemployment and the Apartheid legacy of a segregated service delivery system result in inequitable access to water, sanitation, and hygiene (WASH) services. The intertwined ways in which natural elements and historical, social, economic, governance, and policy aspects are changing in South Africa increase WASH vulnerability in rural areas and small towns.	People with low SES, People of color and indegous people and migrants, People in regions with certain geo-climatic features	Semi-structured interviews, case study	Qualitative methods	Droughts, Rising Sea Levels and Extreme Rainfalls	Africa	City or sub-national
Drought and disproportionate disease: an investigation of gendered vulnerabilities to HIV/AIDS in less-developed nations	42	2021	United States	United States	[Berndt, Virginia Kuulei] Univ Delaware, 18 Amstel Ave, Newark, DE 19716 USA; [Austin, Kelly F.] Lehigh Univ, 31 Williams Dr, Bethlehem, PA 18015 USA	21	POPULATION AND ENVIRONMENT	2008	2012	4	Adaptive capability	While droughts have an inconsistent impact on total HIV prevalence, suffering from drought significantly increases the proportion of HIV cases among women in comparison to men, net of the impact of common economic, social, cultural, and political predictors.	Females	ordinary least squares (OLS) regression	Quantitative methods	Droughts	Asia, Africa, South America	National
Dimensions of Thermal Inequity: Neighborhood Social Demographics and Urban Heat in the Southwestern U.S.	43	2021	United States	United States, Lebanon	[Dialesandro, John; Brazil, Noli; Wheeler, Stephen] Univ Calif Davis, Geog Grad Grp, One Shields Ave, Davis, CA 95616 USA; [Abunnasr, Yaser] Amer Univ Beirut, Dept Landscape Design & Ecosyst Management, Bliss	0	INTERNATIONAL JOURNAL OF ENVIRONMENTAL RESEARCH AND PUBLIC HEALTH	2013	2017	4	Exposure	On average, the poorest 10% of neighborhoods in an urban region were 2.2 °C (4 °F) hotter than the wealthiest 10% on both extreme heat days and average summer days. The difference was as high as 3.3–3.7 °C (6–7 °F) in California metro areas such as Palm Springs and the Inland Empire.	People with low SES, People of color and indegous people and migrants	Spatial regression	Quantitative methods	Heat	North America	City or sub-national

					St,POB 11-0236, Beirut 11072020, Lebanon												
The social correlates of flood risk: variation along the US rural–urban continuum	44	2021	United States	United States	[Rhubart, Danielle] Penn State Univ, Dept Biobehav Hlth, University Pk, PA 16802 USA; [Sun, Yue] Syracuse Univ, Dept Sociol, Maxwell Sch Citizenship & Publ, Syracuse, NY USA	48	POPULATION AND ENVIRONMENT	2020	2020	0	Exposure	Risk of flooding is higher in rural tracts, in tracts with larger relative shares of socioeconomically vulnerable populations, and in tracts reliant on flood-vulnerable industries.	People with low SES, People in rural areas, Vulnerable industries	exploratory spatial data analysis (ESDA), exploratory data analysis (EDA), fixed-effects linear regression	Quantitative methods	Rising Sea Levels and Extreme Rainfalls	North America	National
Evolution of temperature-attributable mortality trends looking at social inequalities: An observational case study of urban maladaptation to cold and heat	45	2022	Italy	Italy, Spain	[Ellena, Marta] Univ CaFoscari Venezia, Dept Environmnetal Sci Informat & Stat, I-30172 Venice, Italy; [Ballester, Joan; Achebak, Hicham] Fdn Ctr Euromediterraneo Cambiamenti Climati, Reg Model & Geohydrol Impacts REMHI Div, I-81100 Caserta, Italy; [Costa, Giuseppe] Univ Pompeu Fabra, Barcelona Inst Global Hlth ISGlobal, CIBER Epidemiol & Salud Publ, Barcelona 08003, Spain; ASL TO3 Piedmont Reg, Reg Epidemiol Unit, I-10095 Grugliasco, Italy	1	ENVIRONMENTAL RESEARCH	1982	2018	36	Adaptive capability	The overall increase in cold- and heat- related mortality risk suggests a maladaptation to ambient temperatures in Turin. In relation to social differences, women were characterized by greater values in respect to men, and similar estimates were observed among the elderly in respect to the youngest subgroup.	Females, Elderly people	Standard quasi-Poisson regression models, distributed lag non-linear models (DLNM)	Quantitative methods	Heat, Cold Spell	Europe	City or sub-national

Gender differences in adaptation to heat in Spain (1983–2018)	46	2022	Spain	Spain, Colombia, Denmark	[Navas-Martin, M. A.; Lopez-Bueno, J. A.; Ascaso-Sanchez, M. S.; Culqui, D.; Linares, C.; Diaz, J.] Carlos III Inst Hlth, Natl Sch Publ Hlth, Madrid, Spain; [Navas-Martin, M. A.] Univ Nacl Educ Distancia, Doctorate Program Biomed Sci & Publ Hlth, Madrid, Spain; [Sarmiento-Suarez, R.] Univ Appl & Environm Sci, Med Sch, Bogota, Colombia; [Follos, F.; Vellon, J. M.] Tdot Soluc Sostenibles SL Ferrol, La Coruna, Spain; [Miron, I. J.] Reg Hlth Author Castile La Mancha, Toledo, Spain; [Luna, M. Y.] State Meteorol Agcy, Madrid, Spain; [Sanchez-Martinez, G.] UNEP DTU Partnership, Copenhagen, Denmark	77	ENVIRONMENTAL RESEARCH	1983	2018	35	Adaptive capability	Average minimum mortality temperature (MMT) for all of Spain's provinces was 29.4 °C in the case of men and 28.7 °C in the case of women. The MMT for men was greater than that of women in 86 percent of the total provinces analyzed, which indicates greater vulnerability among women.	Females	Bivariate model, Multi-level linear regression model	Quantitative methods	Heat	Europe	National
Drought and all-cause mortality in Nebraska from 1980 to 2014: Time-series analyses by age, sex, race, urbanicity and drought severity	47	2022	United States	United States, New Zealand	[Abadi, Azar M.; Bell, Jesse E.] Univ Nebraska Med Ctr, Coll Publ Hlth, Dept Environm Agr & Occupat Hlth, Omaha, NE 68198 USA; [Abadi, Azar M.; Bell, Jesse E.] Univ Nebraska,	33	SCIENCE OF THE TOTAL ENVIRONMENT	1980	2014	34	Not clear	Mortality in middle aged white population in Nebraska shows a greater association with drought. Moreover, women aged 45-54 were more affected than men in non-metro counties.	Females	Bayesian zero-inflated censored negative binomial (ZICNB) regression model	Quantitative methods	Droughts	North America	City or sub-national

					Daugherty Water Food Global Inst, Lincoln, NE 68588 USA; [Gwon, Yeongjin] Univ Nebraska Med Ctr, Coll Publ Hlth, Dept Biostat, Omaha, NE USA; [Gribble, Matthew O.] Univ Alabama Birmingham, Sch Publ Hlth, Dept Epidemiol, Birmingham, AL USA; [Berman, Jesse D.] Univ Minnesota, Sch Publ Hlth, Div Environm Hlth Sci, Minneapolis, MN USA; [Bilotta, Rocky] LLC & Natl Oceanog & Atmospher Adm Natl Ctr Enviro, ISci, Asheville, NC USA; [Gwon, Yeongjin] Univ Colorado, Cooperat Inst Res Environm Sci, Boulder, CO USA; [Gwon, Yeongjin] NOAA Phys Sci Lab, Boulder, CO USA; [Bell, Jesse E.] Univ Nebraska Lincoln, Sch Nat Resources, Lincoln, New Zealand													

A global comprehensive analysis of ambient low temperature and non-communicable diseases burden during 1990–2019	48	2022	China	China	[Song, Jian; Qin, Wei; Pan, Rubing; Yi, Weizhuo; Song, Shasha; Cheng, Jian; Su, Hong] Anhui Med Univ, Sch Publ Hlth, Dept Epidemiol & Hlth Stat, 81 Meishan Rd, Hefei 230032, Anhui, Peoples R China; [Song, Jian; Pan, Rubing; Yi, Weizhuo; Song, Shasha; Cheng, Jian; Su, Hong] Inflammat & Immune Mediated Dis Lab Anhui Prov, Hefei, Peoples R China; [Qin, Wei] Luan Ctr Dis Control & Prevent, Luan 237000, Anhui, Peoples R China	2	ENVIRONMENTAL SCIENCE AND POLLUTION RESEARCH	1990	2019	29	Inherent sensitivity	Age-standardized DALY and death rates attributable to low temperature have exhibited wide variability across regions, with the highest in Central Asia and Eastern Europe and the lowest in Caribbean and Western sub-Saharan Africa. During the study period (1990-2019), there has been a significant decrease in the burden of NCDs attributable to low temperature, but progress has been uneven across countries, whereas nations exhibiting high sociodemographic index (SDI) declined more significantly compared with low SDI nations. Notably, three nations, including Uzbekistan, Tajikistan, and Lesotho, had the maximum NCDs burden attributed to low temperature and displayed an upward trend.	People with low SES, People in regions with certain geo-climatic features	Joinpoint regression model	Quantitative methods	Heat, Cold Spell	Whole World	Global
Forecasting Malaria Morbidity to 2036 Based on Geo-Climatic Factors in the Democratic Republic of Congo	49	2022	Congo	Congo, United Kingdom, South Africa	[Panzi, Eric Kalunda; Kafinga, Emery Luzolo; Tampwo, Bertin Mbenga; Kandala, Ngianga-Bakwin] Inst Super Tech Medicates Kinshasa ISTM Kin, Dept Sante Communautaire, BP 774, Kinshasa, DEM REP CONGO; [Kandala, Ngianga Ii] Univ Portsmouth, Fac Sci & Hlth, Sch Hlth & Care Professionals, Portsmouth PO1 2QG, Hants, England; [Kandala, Ngianga-Bakwin] Western	69	INTERNATIONAL JOURNAL OF ENVIRONMENTAL RESEARCH AND PUBLIC HEALTH	2001	2019	18	Exposure	The geo-climatic predictors most associated with malaria were geographic location (western, central and northeastern region of the country), total evaporation under shelter, maximum daily temperature at two meters altitude. Finally, the average number of malaria cases increased positively as a function of the average number of rainy days, the total quantity of rainfall and the average daily temperature.	People in regions with certain geo-climatic features	Regression, multivariate time series analysis	Quantitative methods	Climate-infectious Diseases	Africa	National

					Univ, Schulich Sch Med & Dentristy, Dept Epidemiol & Biostat, London N6G 2M1, England; [Kandala, Ngianga-Bakwin] Univ Witwatersrand, Sch Publ Hlth, Div Epidemiol & Biostat, ZA-2193 Johannesburg, South Africa; [Kandala, Ngianga-Bakwin] Univ Warwick, Warwick Med Sch, Coventry CV4 7AL, W Midlands, England													
Maternal acute thermophysiological stress and stillbirth in Western Australia, 2000–2015: A space-time-stratified case-crossover analysis	50	2022	Australia	Australia, Ghana, Norway	[Nyadanu, Sylvester Dodzi; Tessema, Gizachew Assefa; Mullins, Ben; Pereira, Gavin] Curtin Univ, Curtin Sch Populat Hlth, Kent St, Bentley, WA 6102, Australia; [Nyadanu, Sylvester Dodzi] Echo Res Grp Int, Educ Culture & Hlth Opportun ECHO Ghana, Aflao, Ghana; [Tessema, Gizachew Assefa] Univ Adelaide, Sch Publ Hlth, Adelaide, SA 5000, Australia; [Pereira, Gavin] Curtin Univ, EnAble Inst, Kent St, Bentley, WA 6102, Australia; [Pereira, Gavin] Norwegian Inst Publ	108	SCIENCE OF THE TOTAL ENVIRONMENT	2000	2015	15	Exposure	There are positive associations between acute maternal cold and heat stresses and higher risks of stillbirth, increasing with the intensity and duration of the thermal stress episodes. The risks were disproportionately higher in term and male stillborn fetuses, smoking, unmarried, ⩽19 years old, non-Caucasian, and low socioeconomic status mothers.	People with low SES, People of color and indegous people and migrants, People with pre-existing health issues: smokers, People with pre-existing health issues or disabilities	Space-time-stratified case-crossover analysis, distributed lag non-linear models, conditional quasi-Poisson regression	Quantitative methods	Heat	Oceania	City or sub-national

					Hlth, Ctr Fertil & Hlth CeFH, N-0473 Oslo, Norway													
Association of Extreme Heat and Cardiovascular Mortality in the United States: A County-Level Longitudinal Analysis From 2008 to 2017	51	2022	United States	United States	[Khatana, Sameed Ahmed M.] Univ Penn, Div Cardiovasc Med, Philadelphia, PA 19104 USA; [Khatana, Sameed Ahmed M.; Groeneveld, Peter W.] Univ Penn, Penn Cardiovasc Outcomes Qual & Evaluat Res Ctr, Philadelphia, PA 19104 USA; [Werner, Rachel M.; Groeneveld, Peter W.] Univ Penn, Div Gen Internal Med, Perelman Sch Med, Philadelphia, PA 19104 USA; [Khatana, Sameed Ahmed M.; Werner, Rachel M.; Groeneveld, Peter W.] Univ Penn, Leonard Davis Inst Hlth Econ, Philadelphia, PA 19104 USA; [Werner, Rachel M.; Groeneveld, Peter W.] Michael J Crescenz Vet Affairs Med Ctr, Ctr Hlth Equ Res & Promot, Philadelphia, PA USA	5	CIRCULATION	2008	2017	9	Not clear	Extreme heat was associated with a greater relative increase in mortality rates among men compared with women (0.20% [95% CI, 0.07%-0.33%]) and non-Hispanic Black compared with non-Hispanic White adults (0.19% [95% CI, 0.01%-0.37%]). There was a greater absolute increase among elderly adults compared with nonelderly adults (16.6 [95% CI, 14.6-31.8] additional deaths per 10 million individuals per month).	Elderly people, People of color and indegous people and migrants, Males	Poisson fixed-effects regression model	Quantitative methods	Heat	North America	National

Use of a high-volume prescription database to explore health inequalities in England: assessing impacts of social deprivation and temperature on the prescription volume of medicines	52	2022	United Kingdom	United Kingdom, France	[Lambourg, Emilie] Univ Dundee, Ninewells Hosp, Dept Populat Hlth & Genom, Dundee, Scotland; [Siani, Carole] Aix Marseille Univ, Fac Pharm, INSERM, UMRS 1252,SESSTIM,IRD, Marseille, France; [de Preux, Laure] Imperial Coll, Ctr Hlth Econ & Policy Innovat, Business Sch, London, England	75	JOURNAL OF PUBLIC HEALTH-HEIDELBERG	2011	2018	7	Inherent sensitivity	Lowest temperature conditions appear to intensify vulnerabilities while hot temperatures do not increase these differences in terms of prescriptions. Populations residing in the most deprived layer super output areas (LSOAs) could be more sensitive to environmental variables, leading to higher consumption of medicine under cold temperature and increased air pollution.	People with pre-existing health issues or disabilities	Fixed-effect negative binomial regression models	Quantitative methods	Heat, Cold Spell, Other: Air Pollution	Europe	City or sub-national
Extreme Temperature and Mortality by Educational Attainment in Spain, 2012–2018	53	2022	Italy	Italy	[Keivabu, Risto Conte] European Univ Inst, Dept Social & Polit Sci, Via Badia dei Rocettini 9, I-50014 Fiesole, Italy	13	EUROPEAN JOURNAL OF POPULATION-REVUE EUROPEENNE DE DEMOGRAPHIE	2012	2018	6	Not clear	Results on the interaction between SES and extreme temperatures show a positive and significant effect of exposure to heat and cold for individuals with medium and low SES level. Conversely, for high SES individuals we do not find evidence of a robust association with heat or cold.	People with low SES	Poisson regression	Quantitative methods	Heat, Cold Spell	Europe	National
Effects of Urban Landscape and Sociodemographic Characteristics on Heat-Related Health Using Emergency Medical Service Incidents	54	2022	United States	United States	[Lee, Kanghyun] Univ Oklahoma, Div Landscape Architecture, Coll Architecture, Norman, OK 73019 USA; [Brown, Robert D.] Texas A&M Univ, Dept Landscape Architecture & Urban Planning, Coll Architecture, College Stn, TX 77843 USA	9	INTERNATIONAL JOURNAL OF ENVIRONMENTAL RESEARCH AND PUBLIC HEALTH	2016	2020	4	Inherent sensitivity, Adaptive capability	Heat-related health has been alleviated in block groups with high green areas. However, the negative effects of thermal environments on human health were higher in areas with a high percentage of impervious surface, over 65 years, non-white people, no high school diploma, or unemployment.	Elderly people, People with low SES, People of color and indegous people and migrants	Negative binomial regression	Quantitative methods	Heat	North America	City or sub-national

Modeling the relationships between historical redlining, urban heat, and heat-related emergency department visits: An examination of 11 Texas cities	55	2022	United States	United States	[Li, Dongying; Newman, Galen D.; Zhang, Yue; Brown, Robert D.] Texas A&M Univ, College Stn, TX 77845 USA; [Wilson, Bev] Univ Virginia, Sch Architecture, Charlottesville, VA 22903 USA	39	ENVIRONMENT AND PLANNING B-URBAN ANALYTICS AND CITY SCIENCE	2016	2019	3	Exposure	Regression or spatial error/lag models revealed significant associations between higher proportions of redlined areas in the neighborhood and higher land surface temperature (Coef. = 0.0122, 95% CI = 0.0039 - 0.0205). After adjusting for indicators of social vulnerability, neighborhoods with higher proportions of redlining showed significantly elevated heat-related outpatient visit rate (Coef. = 0.0036, 95% CI = 0.0007-0.0066) and inpatient admission rate (Coef. = 0.0018, 95% CI = 0.0001-0.0035).	People of color and indegous people and migrants	Regression	Quantitative methods	Heat	North America	City or sub-national
Global Disability Justice In Climate Disasters: Mobilizing People With Disabilities As Change Agents	56	2022	United States	United States	[Engelman, Alina] Calif State Univ, Hayward, CA 94542 USA; [Craig, Leyla] Univ Sydney, Sydney, Australia; [Iles, Alastair] Univ Calif Berkeley, Berkeley, CA USA	70	HEALTH AFFAIRS	2019	2022	3	Inherent sensitivity, Adaptive capability	There are multiple vulnerabilities of disabled people to disasters and climate change, such as physical, mental, social, or spatial susceptibility; lack of access to information and resources; and intersection with “creeping” forms of climate impacts.	People with pre-existing health issues or disabilities	Case study	Qualitative methods	Heat, Rising Sea Levels and Extreme Rainfalls	Whole World	Global
Adaptation outcomes in climate-vulnerable locations: understanding how short-term climate actions exacerbated existing gender inequities in coastal Bangladesh	57	2022	United States	United States	[Ahmed, Saleh] Boise State Univ, Sch Publ Serv, Boise, ID 83725 USA; [Eklund, Elizabeth] Univ Arizona, Sch Anthropol, Tucson, AZ USA; [Kiester, Elizabeth] Albright Coll, Sociol, Reading, PA 19612 USA	0	JOURNAL OF ENVIRONMENTAL PLANNING AND MANAGEMENT	2015	2018	3	Adaptive capability	Agricultural institutions have traditionally and historically linked with gender roles. Outmigration from the region is gendered as males leave first. This forces increased household and farm responsibilities onto female household members and increased vulnerability. This gendered vulnerability becomes compounded by the ways critical weather information flows at the local level.	Females	Participant observation, Focus Group Discussions (FGDs), key informant interviews	Qualitative methods	Rising Sea Levels and Extreme Rainfalls, Food-borne Diseases and Malnutrition	Africa	City or sub-national
Rising temperatures erode human sleep globally	58	2022	Denmark	Denmark, Germany	[Minor, Kelton; Bjerre-Nielsen, Andreas; Lehmann, Sune] Univ Copenhagen,	71	ONE EARTH	2015	2017	2	Exposure, Inherent sensitivity	When linked with global weather and climate measurements, sleep-tracking data from wristbands reveal that warmer nighttime temperatures do indeed harm sleep,	Females, Elderly people, People with low SES,	Multivariate flexible fixed effects panel regression	Quantitative methods	Heat	Whole World	Global

					Copenhagen Ctr Social Data Sci, Copenhagen, Denmark; [Bjerre-Nielsen, Andreas] Univ Copenhagen, Dept Econ, Copenhagen, Denmark; [Jonasdottir, Sigga Svala; Lehmann, Sune] Tech Univ Denmark, Dept Appl Math & Comp Sci, Lyngby, Denmark; [Obradovich, Nick] Max Planck Inst Human Dev, Ctr Humans & Machines, Berlin, Germany								with unequal effects. The elderly, residents of lower-income countries, females, and those already living in hotter climates are disproportionately impacted.	People in regions with certain geo-climatic features				
Economic and mental health impacts of multiple adverse events: Hurricane Harvey, other flooding events, and the COVID-19 pandemic	59	2022	United States	United States	[Callender, Rashida; Canales, Joally M.] Rice Univ, Childrens Environm Hlth Initiat, Houston, TX USA; [Avendano, Carolina; Miranda, Marie Lynn] Univ Notre Dame, Childrens Environm Hlth Initiat, South Bend, IN USA; [Craft, Elena] Environm Def Fund, Austin, TX USA; [Ensor, Katherine B.] Rice Univ, Dept Stat, Houston, TX USA; [Miranda, Marie Lynn] Univ Notre Dame, Dept Appl & Computat Math & Stat, South Bend, IN	11	ENVIRONMENTAL RESEARCH	2018	2020	2	Adaptive capability	Approximately 17% of Black and 15% of Hispanic households had difficulty paying rent, compared to 5% of non-Hispanic white households. The odds of COVID-19 income loss are 1.20 (1.02, 1.40) times higher for those who previously had storm-related home damage compared to those who did not and 3.84 (3.25-4.55) times higher for those who experienced Harvey income loss compared to those who did not. For registrants for whom Harvey was a severe impact event, the odds of having more severe anxiety during the pandemic are 5.14 (4.02, 6.58) times higher than among registrants for whom Harvey was a no meaningful impact event.	People with low SES, People of color and indegous people and migrants	Logistic regression, generalized estimating equations	Quantitative methods	Rising Sea Levels and Extreme Rainfalls	North America	City or sub-national

					USA; [Miranda, Marie Lynn] Univ Notre Dame, Childrens Environm Hlth Initiat, 1013 Flanner Hall, Notre Dame, IN 46556 USA													
Compound Risk of Air Pollution and Heat Days and the Influence of Wildfire by SES across California, 2018–2020: Implications for Environmental Justice in the Context of Climate Change	60	2022	United States	United States	[Masri, Shahir; Wu, Jun] Univ Calif Irvine, Dept Environm & Occupat Hlth, Program Publ Hlth, Irvine, CA 92697 USA; [Jin, Yufang] Univ Calif Davis, Dept Land Air & Water Resources, Davis, CA 95616 USA	4	CLIMATE	2018	2020	2	Exposure	Results showed census tracts with a higher frequency of CR days to have statistically higher rates of poverty and unemployment, along with high proportions of child residents and households without computers.	People with low SES	Multivariate regression analysis	Quantitative methods	Wildfires	North America	City or sub-national
How food-system resilience is undermined by the weather: the case of the Rama Indigenous group, Nicaragua	61	2022	United Kingdom	United Kingdom	[Papworth, Andrew J.] Univ York, Dept Hlth Sci, York, England; [Maslin, Mark; Randalls, Samuel] Univ Coll London UCL, Dept Geog, London, England	18	ECOLOGY AND SOCIETY	2015	2016	1	Adaptive capability	There are different levels of food system resilience between the Rama who fish using the traditional methods of hand nets and paddle-powered canoes, and those that can afford gill nets and motorboats. Secondly, there are significant differences in the way Rama farmers respond to threats to their food security: some rely on short-term resilience-based strategies, whereas others focus on more transitional responses. These differences contribute to short-term inequalities in food security and are also likely to have a differential impact on the future food-system resilience of the Rama community.	People with low SES, Vulnerable industries	Explanatory sequential mixed-methods approach: household survey and interviews	Mixed methods	Food-borne Diseases and Malnutrition	North America	City or sub-national

Significant social inequalities exist between hot and cold extremes along urban-rural gradients	62	2022	China	China	[Zeng, Peng; Liu, Yaoyi; Chen, Cheng; Tian, Tian; Dong, Qianqian; Che, Yue] East China Normal Univ, Sch Ecol & Environm Sci, Shanghai 200241, Peoples R China; [Zeng, Peng; Liu, Yaoyi; Chen, Cheng; Tian, Tian; Dong, Qianqian; Che, Yue] East China Normal Univ, Shanghai Key Lab Urban Ecol Proc & Ecorestorat, Shanghai 200241, Peoples R China; [Zeng, Peng; Liu, Yaoyi; Chen, Cheng; Tian, Tian; Dong, Qianqian; Che, Yue] Inst Ecochongming IEC, Shanghai 200062, Peoples R China; [Sun, Fengyun] Shanghai Normal Univ, Sch Environm & Geog Sci, Shanghai 200234, Peoples R China	13	SUSTAINABLE CITIES AND SOCIETY	2020	2020	0	Exposure, Adaptive capability	Children and ethnic minorities in low-urbanization areas and residents of vulnerable housing in high-urbanization areas are vulnerable to CEs. Females and drivers are vulnerable to CEs in all areas. However, inequality in HEs is most pronounced among the elderly, those with low levels of education, and outdoor workers. Exposure inequality increases with decreasing urbanization among the elderly, while the opposite is true for outdoor workers. Females are severely threatened by HEs in suburban and rural areas.	Females, Elderly people, Children, People with low SES, People of color and indegous people and migrants, Vulnerable industries	Geographically weighted regression model	Quantitative methods	Heat, Cold Spell	Africa	City or sub-national
Montreal's environmental justice problem with respect to the urban heat island phenomenon	63	2022	Canada	Canada	[Fan, Jia Yi; Sengupta, Raja] McGill Univ, Bieler Sch Environm, Montreal, PQ, Canada; [Fan, Jia Yi; Sengupta, Raja] McGill Univ, Dept Geog, 805 Sherbrooke St West,	40	CANADIAN GEOGRAPHER-GEOGRAPHE CANADIEN	2019	2019	0	Exposure	Low income and lack of high school education are positively correlated with higher temperatures ($P < 0.05$)	People with low SES	Regression models, GIS	Quantitative methods	Heat	North America	City or sub-national

					Montreal, PQ H3A 0B9, Canada; [Fan, Jia Yi] Univ Toronto, Dept Phys & Environm Sci, Toronto, ON, Canada													
Integrating anthropogenic heat emissions and cooling accessibility to explore environmental justice in heat-related health risks in Shanghai, China	64	2022	China	China	[Zeng, Peng; Liu, Yaoyi; Tian, Tian; Che, Yue] East China Normal Univ, Sch Ecol & Environm Sci, Shanghai 200241, Peoples R China; [Zeng, Peng; Liu, Yaoyi; Tian, Tian; Che, Yue] East China Normal Univ, Shanghai Key Lab Urban Ecol Proc & Ecorestorat, Shanghai 200241, Peoples R China; [Zeng, Peng; Liu, Yaoyi; Tian, Tian; Che, Yue] Inst Ecochongming IEC, Shanghai 200062, Peoples R China; [Sun, Fengyun] Shanghai Normal Univ, Sch Environm & Geog Sci, Shanghai 200234, Peoples R China; [Shi, Dachuan] Univ Hong Kong, Dept Mech Engn, Pokfulam Rd, Hong Kong, Peoples R China; [Zhang, Ran] Shanghai Invest Design & Res Inst Co Ltd, Shanghai	35	LANDSCAPE AND URBAN PLANNING	2020	2020	0	Exposure, Adaptive capability	The anthropogenic heat emissions (AHEs) and the accessibility of blue-green space and pharmaceutical resources dominate the increasing heat sensitivity and decreasing heat adaptability from the city center to the periphery. The city center has 42% higher health risks than the periphery and the highest social inequalities. Residents living in nontoilet/old housing have significant inequalities in exposure, adaptability, and vulnerability to heat-related health risks. Furthermore, elderly people and ethnic minorities have the poorest adaptability.	Elderly people, People of color and indegous people and migrants, People in urban areas	OM-Kmeans, geographically weighted regression model	Quantitative methods	Heat	Asia	City or sub-national

					200050, Peoples R China													
Health Disparities and Climate Change: The Intersection of Three Disaster Events on Vulnerable Communities in Houston, Texas	65	2022	United States	United States	[Adepoju, Omolola E.; Gilbert, Lauren; Woodard, LeChauncy] Univ Houston, Coll Med, Dept Hlth Syst & Populat Hlth Sci, 4849 Calhoun Rd,Bldg 2, Houston, TX 77204 USA; [Adepoju, Omolola E.; Chae, Minji; Choudhury, Sumaita; Woodard, LeChauncy] Univ Houston, Humana Integrated Hlth Syst Sci Inst, Houston, TX 77204 USA; [Han, Daikwon] Texas A&M Sch Publ Hlth, Dept Epidemiol & Biostat, College Stn, TX 77845 USA; [Smith, Kendra L.] Smith Res & Consulting LLC, Spring, TX 77386 USA	112	INTERNATIONAL JOURNAL OF ENVIRONMENTAL RESEARCH AND PUBLIC HEALTH	2021	2021	0	Exposure, Inherent sensitivity, Adaptive capability	Greater social vulnerability and risks in minority communities. As geographic residence interacts with structural differences in power and social biases, the tangible products are lower life expectancy, high uninsured rates, and poorer physical and mental health among racial/ethnic groups. The presence and magnitude of these inequities will not fade as events caused by climate change grow in frequency and intensity. Rather, they will continue to work in tangent with the current frameworks of power that incite structural marginalization.	Elderly people, People with low SES, People of color and indegous people and migrants	GIS, descriptive statistics, focus group discussions	Mixed methods	Cold Spell, Cyclones and Storms	North America	City or sub-national