

## CLIMATE CHANGE AND RESILIENCE (2019)



### Policy Statement

The American Society of Landscape Architects believes climate change intensifies the negative impacts of development and puts ecosystems and communities at serious risk. Mitigation and adaptation require new paradigms that work with human and natural systems. Skillful, knowledge-based planning, design, and management contributes to addressing climate goals, including reduction of greenhouse gases, and significantly enhance resiliency in the face of extreme weather, sea-level rise, and shifting climatic patterns. Landscape architects have the responsibility to address these challenges in practice, advocacy, education, and research. As understanding of the effects and extent of these challenges grows, landscape architects should continue to respond with innovation and leadership. ASLA supports federal, state, and local policies that promote resilient and climate-smart design and planning; educate and empower communities; promote equity; promote active and multimodal transportation; protect natural systems; and support resilient agricultural practices.

### Rationale

Extreme weather events, temperature rise, and other impacts of climate change disrupt communities and economies, threaten landscapes, and set in motion global shifts. As the ramifications of climate change increase, development, mass displacement of people and ecosystems, and population growth will place even more pressure on natural resources. Impaired natural systems, and the ecoservices they provide, endanger the health and well-being of society. Undeveloped, rural, suburban, and urban lands are significantly affected by changes in habitat, loss of biodiversity, agricultural instability, and disruption of natural processes.

Landscape architecture arose as a distinct profession to mitigate negative physical and social effects resulting from the Industrial Revolution and rapid urbanization. Past and current professional values and goals are based on ecological stability and human health, safety, and welfare. Landscape architects are uniquely educated and experienced to address climate change through resilient and sustainable design. Expertise in green infrastructure and integration of natural systems into the built environment are but two of many facets of practice that landscape architects use to create a more resilient society. Landscape architects' proficiency in water management, coastal protection, landscape restoration and mitigation, urban design, regional planning, transportation, and other key areas provides a strong basis for ecologically based and societally equitable solutions.

Understanding and predicting the effects of climate change are beyond the realm of any single profession, mandating interdisciplinary analysis, research, and collaboration to advance development of new best practices. As communities grapple with the challenges of protecting the public and the built environment from the ramifications of climate change, there is a risk of too much reliance on gray infrastructure rather than a combination of gray and green infrastructure that works with natural systems. Landscape architects work with other disciplines to develop new approaches that help meet the goals of resiliency while maintaining and enhancing safe, livable, and vibrant communities and healthy ecosystems. Climate change impacts are all encompassing. Impacts of vital concern to the practice of landscape architecture include, but are not limited to:

- intensifying urban problems such as heat islands, public health issues due to weather, smog, and increasing need for more efficient water management;



- changes in regional weather patterns and hazards (increased tornadoes, droughts, flooding, intense storms, etc);
- changes in precipitation (seasonal patterns, intensity, amounts);
- shoreline flooding, erosion, species changes, and increasing water levels—seacoast as well as freshwater lakes and waterways;
- shifting flood zones affecting communities and individuals;
- shifting of USDA plant zones, with concurrent new invasive plant species, pests, and diseases, creating challenges to biodiversity;
- wildlife shifts and connectivity problems caused by development and changes in habitat;
- significant impacts to agricultural lands, aquatic ecosystems, forests, and rural landscapes, including conservation lands and historic landscapes; and
- depletion of the permafrost, an area covering 25 percent of the Northern Hemisphere alone

Landscape architects have the responsibility to apply their education and experience to protect natural ecosystems and social infrastructure through practice, advocacy, education, and research. Existing policies, codes, and practices may not be adequate for dealing with the effects of climate change, and thus need critical evaluation and revision at a global, national, state, and local level.

## Resources

### 1. ASLA

- Smart Policies for a Changing Climate: The Report and Recommendations of the ASLA Blue Ribbon Panel on Climate Change and Resilience, June 2018  
[www.asla.org/climatepolicies](http://www.asla.org/climatepolicies)
- Landscape Architecture Technical Information Series: A Landscape Performance + Metrics Primer (2018) by Emily McCoy, ASLA  
<https://my.asla.org/My-ASLA/Store/StoreLayouts/Shop-LATIS.aspx>
- American Society of Landscape Architects Stormwater Case Studies.  
[www.asla.org/stormwatercasestudies.aspx](http://www.asla.org/stormwatercasestudies.aspx)

### 2. Books

- After Nature: A Politics for the Anthropocene, Jedediah Purdy. Harvard University Press, 2015.
- Cities and Climate Change: Responding to an Urgent Agenda, edited by Daniel Hoornweg, Mila Freire, Marcus Lee, Perinaz Bhada-Tata, and Belinda Yuen. The World Bank, 2011.
- Climate Design: Design and Planning for the Age of Climate Change, Peter Droege. ORO Editions, 2009.
- Climate of Hope, How Cities, Businesses, and Citizens Can Save the Planet, Michael Bloomberg and Carl Pope. St. Martin's Press, 2017.
- The Community Resilience Reader: Essential Resources for an Era of Upheaval, edited by Daniel Lerch. Island Press, 2017.
- Drawdown: The Most Comprehensive Plan Ever Proposed to Reverse Global Warming, edited by Paul Hawken. Penguin Books, 2017.
- Energy Democracy: Advancing Equity in Clean Energy Solutions, edited by Denise Fairchild and Al Weinrub. Island Press, 2017.
- How to Thrive in the Next Economy: Designing Tomorrow's World Today, John Thackara. Thames & Hudson, 2015.
- Local Climate Action Planning, Michael Boswell, Adrienne Greve, and Tammy Seale. Island Press, 2011.
- Natural Capitalism: Creating the Next Industrial Revolution, Paul Hawken, Amory B. Lovins and L. Hunter Lovins. Little, Brown and Company, 1999.



- Nature and Cities: The Ecological Imperative in Urban Design and Planning, edited by Frederick Steiner, George Thompson, and Armando Carbonell. Lincoln Institute of Land Policy, 2016.
  - Resilient Cities: Overcoming Fossil Fuel Dependence, Second Edition, Peter Newman, Timothy Beatley, and Heather Boyer. Island Press, 2017.
  - Resilient Coastal City Regions: Planning for Climate Change in the United States and Australia, edited by Edward Blakely and Armando Carbonell. Lincoln Institute of Land Policy, 2012.
  - Urbanism in the Age of Climate Change, Peter Calthrope. Island Press, 2010.
3. Articles: Rising Seas
- “The Dutch Have Solutions to Rising Seas. The World Is Watching,” Michael Kimmelman. The New York Times, June 15, 2017. [www.nytimes.com/interactive/2017/06/15/world/europe/climate-change-rotterdam.html](http://www.nytimes.com/interactive/2017/06/15/world/europe/climate-change-rotterdam.html).
4. Articles: Resilience and Adaptation
- “Building Resilience? There’s a Standard for That,” Laurie Mazur. Planetizen, July 31, 2017. [www.planetizen.com/node/94011/building-resilience-theres-standard](http://www.planetizen.com/node/94011/building-resilience-theres-standard)
  - “How to Turn Neighborhoods into Hubs of Resilience,” Taj James and Rosa Gonzalez, Yes Magazine, April 14, 2017. [www.yesmagazine.org/planet/how-to-turn-neighborhoods-into-hubs-of-resilience-20170414](http://www.yesmagazine.org/planet/how-to-turn-neighborhoods-into-hubs-of-resilience-20170414).
  - “A Policy Approach Toward Climate Justice,” Jalonne L. White-Newsome. The Black Scholar, Vol. 46, Issue 3, 2016.
  - “Protecting Communities from Climate Change (Hint: It’s Not Just About Seawalls),” Jeni Miller. CoLab Radio, April 25, 2016. [colabradio.mit.edu/protecting-communities-from-climate-change-hint-its-not-just-about-seawalls](http://colabradio.mit.edu/protecting-communities-from-climate-change-hint-its-not-just-about-seawalls)
5. Articles: Environmental Justice
- “This is How We Can Tackle Climate Change, Even with a Denier in Chief,” Laurie Mazur, The Nation, December 12, 2016. [www.thenation.com/article/this-is-how-we-can-tackle-climate-change-even-with-a-denier-in-chief](http://www.thenation.com/article/this-is-how-we-can-tackle-climate-change-even-with-a-denier-in-chief) Articles: Environmental Justice • “Climate Change, Heat Waves, and Environmental Justice: Advancing Knowledge and Action,” Jalonne L. White-Newsome, et al., Environmental Justice, Vol. 2, no. 4, December 2009. Articles: Climate Change and Health
6. Articles: Climate Change and Health
- “Assessing Heat-adaptive Behaviors Among Older, Urban-dwelling Adults,” Jalonne L. White-Newsome et al., Maturitas, Vol. 70, Issue 1, September 2011.
  - “Climate Change and Health: Indoor Heat Exposure in Vulnerable Populations,” Jalonne L. White-Newsome et al., Environment Research, Vol. 112, January 2012.
  - “Climate Change and Public Health,” Jalonne L. White-Newsome et al., Non-governmental Actions by Individuals, Civil Society Organizations, and the Private Sector, Oxford University Press, June 2015.
  - “Strategies to Reduce the Harmful Effects of Extreme Heat Events: A Four-City Study,” Jalonne L. White- Newsome et al., International Journal of Environmental Research and Public Health, February 2014.



- “Survey of County-Level Heat Preparedness and Response to the 2011 Summer Heat in 30 U.S. States,” Jalonne L. White-Newsome et al., Environmental Health Perspectives, June 2014.
- “Validating Satellite-Derived Land Surface Temperature with In Situ Measurements: A Public Health Perspective,” Jalonne L. White-Newsome et al., Environmental Health Perspectives, August 2013.

#### 7. Reports: Coastal Resilience

- Buy-in for Buyouts: The Case for Managed Retreat from Flood Zones, a Policy Focus Report in collaboration with the Sonoran Institute, Lincoln Institute of Land Policy, 2016.
- “Climate Change and the Resilience of New Orleans: The Adaptation of Deltaic Urban Form,” Armando Carbonell and Douglas Meffert, in Cities and Climate Change: Responding to an Urgent Agenda, edited by Daniel Hoornweg, Mila Freire, Marcus Lee, Perinaz Bhada-Tata, and Belinda Yuen. The World Bank, 2012.
- Lessons from Sandy: Federal Policies to Build Climate-Resilient Coastal Regions, Robert Pirani and Laura Tolkoff. Lincoln Institute of Land Policy, 2014. [www.lincolninst.edu](http://www.lincolninst.edu) Reports: Resilience and Adaptation
- Bounce Forward: Urban Resilience in the Era of Climate Change, a Strategy Paper from Island Press and the Kresge Foundation
- CIRCLE-2 Adaptation Inspiration Book, edited by Marjolein Pijnappels and Philip Dietl, University of Lisbon, 2013. [www.circle-era.eu/np4/552.html](http://www.circle-era.eu/np4/552.html)
- Innovation in Climate Adaptation, Knowledge for Climate, Climate Adaptation in the Netherlands, 2014. [edepot.wur.nl/315807](http://edepot.wur.nl/315807)
- Planning for Climate Change in the West, a Policy Focus Report on urban form and GHG mitigation, Lincoln Institute of Land Policy, 2010. [www.lincolninst.edu](http://www.lincolninst.edu)
- Understanding and Responding to Climate Change: Highlights of National Academies Report. National Academies Press, 2008
- Urban Planning Tools for Climate Change Mitigation, Patrick Condon, Duncan Cavens, and Nicole Miller, Lincoln Institute of Land Policy, 2009. [www.lincolninst.edu](http://www.lincolninst.edu)

#### 8. Video:

- An Inconvenient Sequel: Truth to Power, 2017 – Al Gore  
[www.youtube.com/watch?v=FKww6xMTCc0](http://www.youtube.com/watch?v=FKww6xMTCc0)
- An Inconvenient Truth, 2006 Al Gore  
[www.youtube.com/watch?v=I-SV13UQXdK](http://www.youtube.com/watch?v=I-SV13UQXdK)
- An Inconvenient Sequel, 2017, TED talks, Al Gore. “Averting the Climate Crisis,” June 2016 “The Case for Optimism on Climate Change,” February 2016  
[www.youtube.com/watch?v=u7E1v24DIk](http://www.youtube.com/watch?v=u7E1v24DIk)

#### 9. Additional Information:

- Yale Environment 360 – Newsletter and articles  
Published at the Yale School of Forestry & Environmental Studies  
<https://e360.yale.edu/>
- Inside Climate News  
<https://insideclimatenews.org/>
- International Federation of Landscape Architects: Climate Change  
<http://iflaonline.org/professional-practice-and-policy/working-groups-and-task-forces/climate-change/>

- The Landscape Performance Series by the Landscape Architecture Foundation <https://www.landscapeperformance.org/>

