



CLIMATE CHANGE AND THE NEWS
Climate Change Planning and Response

May 11-12, 2015

National Adaptation Forum | St. Louis Union Station Hotel, 2nd Floor
1820 Market Street
St. Louis, MO

Resources List

All links retrieved on 5.6.2015 unless otherwise noted.

SUMMARIES OF CLIMATE CHANGE SCIENCE

Intergovernmental Panel on Climate Change Fifth Assessment Report.

Working Group I, The Physical Science Basis: <https://www.ipcc.ch/report/ar5/wg1/>

Working Group II, Impacts, Adaptation, and Vulnerability: <https://www.ipcc.ch/report/ar5/wg2/>

Working Group III, Mitigation of Climate Change: <https://www.ipcc.ch/report/ar5/wg3/>

National Climate Assessment. <http://nca2014.globalchange.gov/>

National Aeronautics and Space Administration (NASA). Climate change: How do we know?
<http://climate.nasa.gov/evidence>

National Oceanic and Atmospheric Administration (NOAA) National Climatic Data Center. State of the Climate. <http://www.ncdc.noaa.gov/sotc/>

NOAA National Climatic Data Center. Global Climate Change Indicators.
<https://www.ncdc.noaa.gov/indicators/>

The Royal Society and U.S. National Academy of Sciences. (2014) Climate Change: Evidence and Causes.
<https://royalsociety.org/policy/projects/climate-evidence-causes/>

The Royal Society. (2014) The Basics of Climate Change.
<http://royalsociety.org/policy/projects/climate-evidence-causes/basics-of-climate-change/>

Weather Underground. Evidence of Climate Change.
<http://www.wunderground.com/climate/evidence.asp?MR=1>

PUBLIC OPINION OF CLIMATE CHANGE AND ADAPTATION

Bergeron, D., G. Clark, F. Lichtkoppler, and J. Lucente. (2008) Preparing Coastal Communities and Businesses for Climate Change: Duluth, MN and Toledo, OH: Focus Group Results. (Joint project of Great Lakes Sea Grant Network, NOAA Great Lakes Environmental Research Laboratory, and the Cooperative Institute for Limnology and Ecosystem Research.)
<http://climategreatlakes.com/wp-content/uploads/2013/10/16-Final-Report-Focus-Group-Survey-Work.pdf>

George Mason University Center for Climate Change Communication
(Conduct research regarding public opinion of climate change impacts, including targeted audiences such as broadcast meteorologists, physicians, and specific states.)

<http://www.climatechangecommunication.org/reports>

Stanford University Woods Institute for the Environment, Public Opinion Research
(Many surveys focus on climate change and energy. Recent reports include public opinion on climate adaptation and public preferences regarding preparation for climate change impacts.)

<https://woods.stanford.edu/research/public-opinion-research>

Yale Project on Climate Change Communication, Climate Change in the American Mind
(“This project 1) investigates, explains, and tracks public understanding of the causes, consequences, and solutions to climate change, support for climate policies, and the current barriers to action, and 2) designs and tests new strategies to engage the public in climate science and solutions.”)

<http://bit.ly/1baWxRj>

Various Authors. (2014, May 8) Climate Debate Isn’t So Heated in the U.S. The New York Times, New York, NY. (A Room for Debate feature in The Opinion Pages, with commentary authored by seven contributors from varying backgrounds.)

<http://www.nytimes.com/roomfordebate/2014/05/08/climate-debate-isnt-so-heated-in-the-us>

GETTING PAST THE JARGON: WHAT DEFINES “RESILIENCE?”

Borenstein, D. (2014) “Bouncing Forward: Why “Resilience” Is Important and Needs a Definition.” *New Security Beat*. Environmental Change and Security Program Woodrow Wilson International Center for Scholars. <http://bit.ly/1QubKnR>

Brewer, J. (2008) New Directions in Climate Change: Vulnerability, Impacts, and Adaptation Assessment. National Research Council. Retrieved on May 27, 2009 from

http://books.nap.edu/openbook.php?record_id=12545&page=R1

Cutter, S.L., and M.L. Zoback. (2013) Improving the nation’s resilience to disasters. *Eos, Transactions American Geophysical Union*, 94(9): 89. DOI: [10.1002/2013EO090007](https://doi.org/10.1002/2013EO090007)

Katsma, K. (2014) “The Religion of Resilience.” *Landscape Architecture Magazine*.

<http://landscapearchitecturemagazine.org/2014/11/18/the-religion-of-resilience/>

Mazur, L. (2013) “Goldilocks Had It Right: How to Build Resilient Societies in the 21st Century.” *New Security Beat*. Environmental Change and Security Program Woodrow Wilson International Center for Scholars.

<http://bit.ly/1ALAPBi>

Smithers, J., and B. Smit. (1997) Human adaptation to climatic variability and change. *Global Environmental Change*, 7(2): 129-46. DOI: [http://dx.doi.org/10.1016/S0959-3780\(97\)00003-4](http://dx.doi.org/10.1016/S0959-3780(97)00003-4)

Tompkins, E.L., and W.N. Adger. (2004) Does adaptive management of natural resources enhance resilience to climate change? *Ecology and Society*, 9(2): 10.

<https://www.seachangecop.org/sites/default/files/documents/2004%2011%20RA%20Adaptive%20NRM%20and%20Climate%20Change%20Resilience.pdf>

Pike, C. (2013) "Climate Resilience – Deconstructing the New Buzz Word." *Climate Access*. The Resource Innovation Group.
<http://bit.ly/1IpyYZt>

CASE STUDIES IN CLIMATE CHANGE ADAPTATION: WATER RESOURCES

Climate Change Impacts on Water Resources

Blanc, E. et al. (2013, February) *Analysis of U.S. water resources under climate change*. Report No. 239, MIT Joint Program on the Science and Policy of Global Change.
http://globalchange.mit.edu/files/document/MITJPSPGC_Rpt239.pdf

Godden, L., R.L. Ison, and P.J. Wallis. (2011) Water governance in a climate change world: appraising systemic and adaptive effectiveness. *Water Resources Management* 25:3971-3976.
<http://link.springer.com/article/10.1007%2Fs11269-011-9902-2>

Matonse, A.H., D.C. Pierson, A. Frei, M.S. Zion, A. Anandhi, E. Schneiderman, and B. Wright. (2013) Investigating the impact of climate change on New York City's primary water supply. *Climatic Change*, 116(3-4): 437-56. DOI: [10.1007/s10584-012-0515-4](https://doi.org/10.1007/s10584-012-0515-4)

Michel-Guillou, E. (In press) Water resources and climate change: water managers' perceptions of these related environmental issues. *Journal of Water and Climate Change*. DOI: 10.2166/wcc.2014.098
<http://www.iwaponline.com/jwc/up/jwc2014098.htm>

Mikkelsen, K.M., E.R.V. Dickinson, R.M. Maxwell, J.E. McCray, and J.O. Sharp. (2013) Water-quality impacts from climate-induced forest die-off. *Nature Climate Change*. DOI: 10.1038/nclimate1724
<http://www.nature.com/nclimate/journal/v3/n3/full/nclimate1724.html>

U.S. Environmental Protection Agency. Climate Impacts on Water Resources.
<http://www.epa.gov/climatechange/impacts-adaptation/water.html>

Adaptation for Water Resources

United States Environmental Protection Agency. Adaptation Examples: Water Resources.
<http://www.epa.gov/climatechange/impacts-adaptation/water-adaptation.html>

Wilk, J., and H. B. Wittgren. (2009) Adapting Water Management to Climate Change. Swedish Water House.
(Produced by the multi-sectoral Swedish Cluster Group in Climate, Water, and Vulnerability, this report targets an international audience with a focus on integrated water resource management (IWRM))
http://www.siwi.org/documents/Resources/Policy_Briefs/SWHWaterClimate.pdf

CASE STUDIES IN CLIMATE CHANGE ADAPTATION: ECOSYSTEMS AND AGRICULTURE

Climate Change Impacts on Agriculture, Forestry, Fisheries

Allison, E.H., et al. (2009) Vulnerability of National Economies to the Impacts of Climate Change on Fisheries. *Fish and Fisheries*. 10(2): 173-196. <http://onlinelibrary.wiley.com/doi/10.1111/j.1467-2979.2008.00310.x/abstract>

- Barange, M., et al. (2014) Impacts of climate change on marine ecosystem production in societies dependent on fisheries. *Nature Climate Change*, 4: 211-216. DOI: [10.1038/nclimate2119](https://doi.org/10.1038/nclimate2119)
- Boesch, D.F., V.J. Coles, D.G. Kimmel, and W.D. Miller. (2007, December) Coastal dead zones and global climate change: ramifications of climate change for Chesapeake Bay hypoxia. Pew Center on Global Climate Change. <http://www.c2es.org/docUploads/Regional-Impacts-Chesapeake.pdf>
- Ceres. (2014, June 11) Water and climate risks facing U.S. corn production: How companies and investors can cultivate sustainability. Ceres, Boston. (Access to this report requires a free registration.) <https://www.ceres.org/resources/reports/water-and-climate-risks-facing-u.s.-corn-production-how-companies-and-investors-can-cultivate-sustainability/view>
- Cinner, J.E., C. Huchery, E.S. Darling, A.T. Humphries, N.A.J. Graham, C. Hicks, N. Marshall, and T.R. McClanahan. (2013) Evaluating social and ecological vulnerability of coral reef fisheries to climate change. *PLoS One*, DOI: [10.1371/journal.pone.0074321](https://doi.org/10.1371/journal.pone.0074321)
- Cooney, C.M. (2011, April) Preparing a people: climate change and public health. *Environmental Health Perspectives* 119(4):166-171. <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3080957/>
- Doney, S.C. et al. (2012) Climate change impacts on marine ecosystems. *Annual Review of Marine Science*, 4: 11-37. DOI: [10.1146/annurev-marine-041911-111611](https://doi.org/10.1146/annurev-marine-041911-111611)
- Elliott, J., et al. (2014, March) Constraints and potentials of future irrigation water availability on agricultural production under climate change. *Proceedings of the National Academy of Sciences* 111(9):3239-3244. <http://dx.doi.org/10.1073/pnas.1222474110>
- Grimm, N.B., M.D. Staudinger, A. Staudt, S.L. Carter, F.S. Chapin III, P. Kareiva, M. Ruckelshaus, and B.A. Stein. (2013) Climate-change impacts on ecological systems: introduction to a US assessment. *Frontiers in Ecology and the Environment*, 11: 456–464. DOI: [10.1890/120310](https://doi.org/10.1890/120310)
- Lobell, D.B., M.B. Burke, C. Tebaldi, M.D. Mastrandrea, W.P. Falcon, and R.L. Naylor. (2008, February) Prioritizing climate change adaptation needs for food security in 2030. *Science* 319(5863):607-10. <http://dx.doi.org/10.1126/science.1152339>
- Miller, A.W. and G.M. Ruiz. (2014) Arctic shipping and marine invaders. *Nature Climate Change* 4: 413–416. DOI: [10.1038/nclimate2244](https://doi.org/10.1038/nclimate2244)
- Najjar, R.G., et al. (2010) Potential climate change impacts on the Chesapeake Bay. *Estuarine, Coastal and Shelf Science*, 86(1): 1-20. DOI: <http://dx.doi.org/10.1016/j.ecss.2009.09.026>
- Nelson, E.J., et al. (2013) Climate change's impact on key ecosystem services and the human well-being they support in the US. *Frontiers in Ecology and the Environment*, 11: 483–493. DOI: [10.1890/120312](https://doi.org/10.1890/120312)
- Nelson, G.C. et al. (2014, May) *Advancing global food security in the face of a changing climate*. The Chicago Council on Global Affairs. <http://www.thechicagocouncil.org/UserFiles/File/ClimateChangeFoodSecurity.pdf>

Patz, J.A., D. Campbell-Lendrum, T. Holloway, and J.A. Foley. (2005, November 17) Impact of regional climate change on human health. *Nature* 438:310-317.
<http://www.nature.com/nature/journal/v438/n7066/full/nature04188.html>

Payne, M.R. (2013) Fisheries: Climate change at the dinner table. *Nature*, 497: 320-321.
<http://www.nature.com/nature/journal/v497/n7449/full/497320a.html>

Sarfaty, M., M. Mitchell, B. Bloodhard, C. Blerg, and E. Maibach. (2014, June 25) *Key findings: National Medical Association physician survey*. National Medical Association and George Mason University Center for Climate Change Communication.

(The results of a survey of African-American physicians, concerning their views of the health impacts of climate change on patient care.)

<http://climatechangecommunication.org/sites/default/files/reports/20140623%20FINAL%20REPORT%20OF%20KEY%20FINDINGS%20NMA%20SURVEY.pdf>

Stein, B.A., et al. 2013. Preparing for and managing change: climate adaptation for biodiversity and ecosystems. *Frontiers in Ecology and the Environment* 11: 502–510. DOI: [10.1890/120277](https://doi.org/10.1890/120277)

Tillmann, P. and D. Siemann. (2011) Climate change effects and adaptation approaches in marine and coastal ecosystems of the North Pacific Landscape Conservation Cooperative Region: a compilation of scientific literature (phase I draft final report). National Wildlife Federation.
http://www.nwf.org/pdf/Marine%20Report%20Chapters/NPLCC_Marine_Climate-Effects_Draft-Final_Front-Matter.pdf

U.S. Environmental Protection Agency. Climate impacts on human health.
<http://www.epa.gov/climatechange/impacts-adaptation/health.html>

Vermeulen, S.J., B.M. Campbell, and J.S.I. Ingram. (2012, November) Climate change and food systems.

Annual Review of Environment and Resources 37:195-222.

<http://dx.doi.org/10.1146/annurev-environ-020411-130608>

Wheeler, T., and J. von Braun. (2013, August) Climate change impacts on global food security. *Science* 341(6145):508-513. <http://dx.doi.org/10.1126/science.1239402>
Public Health

Adaptation Strategies for Agriculture, Forestry, Fisheries

United States Department of Agriculture. (2014) USDA Climate Change Adaptation Plan.

http://www.usda.gov/oce/climate_change/adaptation/adaptation_plan.htm

FAO Inter-Departmental Working Group on Climate Change. (2007) “Adaptation to climate change in agriculture, forestry and fisheries: Perspective, framework and priorities.” *Food and Agriculture Organization of the United Nations*. PDF file.

http://www.fao.org/nr/climpag/pub/adaptation_to_climate_change_2007.pdf

Nelson, G. C., et al. (2009) “Climate Change Impact on Agriculture and Costs of Adaptation.” *International Food Policy Research Institute*. PDF file.

<http://www.ifpri.org/sites/default/files/publications/pr21.pdf>

CASE STUDIES IN CLIMATE CHANGE ADAPTATION: COMMUNITIES, TRANSPORTATION, AND THE BUILT ENVIRONMENT

Adaptation for Communities and the Built Environment

- Adger, W.N., T.P. Hughes, C. Folke, S.R. Carpenter, and J. Rockstrom. (2005, August) Social-ecological resilience to coastal disasters. *Science*, 309(5737): 1036-39. DOI: [10.1126/science.1112122](https://doi.org/10.1126/science.1112122)
- Becker, A.H., et al. (2013, October) A note on climate change adaptation for seaports: a challenge for global ports, a challenge for global society. *Climatic Change*, 120(4): 683-95. DOI: [10.1007/s10584-013-0843-z](https://doi.org/10.1007/s10584-013-0843-z)
- Environmental Building News. (2006, May) Passive survivability: A new design criterion for buildings. *Environmental Building News*, 15(5). <http://bit.ly/1ciEIb6>
- Hinkel, J., et al. (2014) Coastal flood damage and adaptation costs under 21st century sea-level rise. *Proc. Nat. Acad. Sci.* DOI: 10.1073/pnas.1222469111
<http://www.pnas.org/content/early/2014/01/29/1222469111.abstract>
- Hunt, A., and P. Watkiss. (2011) Climate change impacts and adaptation in cities: a review of the literature. *Climatic Change* 104:13-49. <http://link.springer.com/article/10.1007/s10584-010-9975-6>
- King, D., et al. (2013) Planning, building and insuring: Adaptation of built environment to climate change induced increased intensity of natural hazards. *National Climate Change Adaptation Research Facility*. <http://bit.ly/1Krzgxm>
- Kirshen, P., Merrill, S., Slovinsky, P., and N. Richardson. (2012) Simplified method for scenario-based risk assessment adaptation planning in the coastal zone. *Climatic Change*. 113(3-4): 919-931. <http://link.springer.com/article/10.1007%2Fs10584-011-0379-z#page-1>
- Kirshen, P., Knee, K., and M. Ruth. (2008) Climate change and coastal flooding in Metro Boston: impacts and adaptation strategies. *Climatic Change*. 90(4): 453-473. <http://link.springer.com/article/10.1007%2Fs10584-008-9398-9#page-1>
- Kousky, C. (2014) Managing shoreline retreat: a US perspective. *Climatic Change*, 124(1-2): 9-20. <http://link.springer.com/article/10.1007/s10584-014-1106-3>
- Kresge Foundation. Climate Resilience and Urban Opportunity Initiative. <http://kresge.org/library/climate-resilience-and-urban-opportunity-initiative>
- Larsen, L., et al. (2011) Green Building and Climate Resilience: Understanding Impacts and Preparing for Changing Conditions. University of Michigan; U.S. Green Building Council. <http://www.usgbc.org/Docs/Archive/General/Docs18496.pdf>
- Lin, N., Emanuel, K., Oppenheimer, M., and E. Vanmarcke. (2012) Physically based assessment of hurricane surge threat under climate change. *Nature Climate Change*, 2(6): 462-467. <http://www.nature.com/nclimate/journal/v2/n6/abs/nclimate1389.html>
- Martinich, J., Neumann, J.E., Ludwig, L. and L. Jantarasami. (2012) Risks of sea level rise to disadvantaged communities in the United States. Mitigation and Adaptation Strategies for Global Change. <http://link.springer.com/article/10.1007%2Fs11027-011-9356-0>

Mazmanian, D, J. Jurewitz, and Hal T. Nelson. (2013) A Governing Framework for Climate Change Adaptation in the Built Environment. *Ecology and Society* 18.4. <http://bit.ly/1IpwNFk>

New York State Energy Research and Development Authority. (2014) Responding to Climate Change in New York State (ClimAID). NYSERDA. <http://www.nyserda.ny.gov/climaid>

Nicholls, R.J. and A. Cazenave. (2010) Sea-Level Rise and Its Impact on Coastal Zones. *Science*, 328: 1517-1520. <http://www.sciencemag.org/content/328/5985/1517.abstract>

Sanchez-Rodriguez, R., Fragkias, M., and W. Solecki. (2008) Urban Responses to Climate Change: A Workshop Report. Urbanization and Global Environmental Change, IHDP. <http://ccsl.iccip.net/ur2cc.pdf>

Wilby, R.L. and R. Keenan. (2012) Adapting to flood risk under climate change. *Prog in Phys Oc.*, 36: 348-378. DOI: [10.1177/0309133312438908](https://doi.org/10.1177/0309133312438908)

Zimmerman, R., and C. Faris. (2011) Climate change mitigation and adaptation in North American cities. *Current Opinion in Environmental Sustainability* 3(3):181-187. <http://www.sciencedirect.com/science/article/pii/S1877343510001430>

Adaptation for Transportation Infrastructure

Hodges, T. (2011) Flooded bus barns and buckled rails: public transportation and climate change adaptation. FTA Report No. 0001. Federal Transit Administration, U.S. Department of Transportation, Washington, D.C. http://www.fta.dot.gov/documents/FTA_0001_-_Flooded_Bus_Barns_and_Buckled_Rails.pdf

Ng, A., and J.-P. Rodrigue. (2013) Climate change and the adaptation of transport infrastructure. In *The Geography of Transport Systems*, 3rd edition. Routledge: New York, NY. <http://people.hofstra.edu/geotrans/eng/ch8en/appl8en/ch8a3en.html>

U.S. Department of Transportation. Climate Change Vulnerability Assessment Pilots. <http://1.usa.gov/1FUkgeB>

COASTAL CLIMATE CHANGE IMPACTS AND ADAPTATION

Hinkel, J., et al. (2014) Coastal flood damage and adaptation costs under 21st century sea-level rise. *Proceedings of the National Academy of Sciences* 111(9):3292-3297. <http://www.pnas.org/content/early/2014/01/29/1222469111.abstract>

Joughin, I., B.E. Smith, B. Medley. (2014) Marine ice sheet collapse potentially under way for the Thwaites Glacier Basin, West Antarctica. *Science*, 344(6185): 735-38. DOI: [10.1126/science.1249055](https://doi.org/10.1126/science.1249055)

Related resources:

Kolbert, E. (2014, May 13) The West Antarctic ice sheet melt: defending the drama. *The New Yorker*. <http://www.newyorker.com/online/blogs/elements/2014/05/the-west-antarctica-ice-sheet-melt-defending-the-drama.html>

Lynch, P. (2014, May 12) The “unstable” West Antarctic ice sheet: a primer. National Aeronautics and Space Administration. <http://www.nasa.gov/jpl/news/antarctic-ice-sheet-20140512/>

National Aeronautics and Space Administration. IceBridge – Arctic 2014.

http://www.nasa.gov/mission_pages/icebridge/index.html#.U3Yd9FPrkT9

IceBridge is the largest airborne survey of Earth's polar ice ever flown. It will yield an unprecedented

three-dimensional view of Arctic and Antarctic ice sheets, ice shelves and sea ice. These flights will provide a yearly, multi-instrument look at the behavior of the rapidly changing features of the Greenland and Antarctic ice.

Rasmussen, C. (2014, May 12) NASA-UCI study indicates loss of West Antarctic glaciers appears unstoppable. National Aeronautics and Space Administration, Release 14-131.

<http://www.nasa.gov/press/2014/may/nasa-uci-study-indicates-loss-of-west-antarctic-glaciers-appears-unstoppable/#.U3EQtMbnDWQ>

Rignot, E., J. Mouginot, M. Morlighem, H. Seroussi, and B. Scheuchi. (2014) Widespread, rapid grounding line retreat of Pine Island, Thwaites, Smith and Kohler glaciers, West Antarctica from 1992 to 2011. *Geophysical Research Letters*. DOI: [10.1002/2014GL060140](https://doi.org/10.1002/2014GL060140)

Kemp, A.C., and B.P. Horton. (2013) Contribution of relative sea-level rise to historical hurricane flooding in New York City. *Journal of Quaternary Science*, 28(6): 537-41. DOI: [10.1002/jqs.2653](https://doi.org/10.1002/jqs.2653)

Kousky, C. (2014) Managing shoreline retreat: a US perspective. *Climatic Change* 124(1-2):9-20.

<http://link.springer.com/article/10.1007/s10584-014-1106-3>

Lin, N., Emanuel, K., Oppenheimer, M., and E. Vanmarcke. (2012) Physically based assessment of hurricane surge threat under climate change. *Nature Climate Change*, 2(6): 462-467.

<http://www.nature.com/nclimate/journal/v2/n6/abs/nclimate1389.html>

Martinich, J., Neumann, J.E., Ludwig, L. and L. Jantarasami. (2012) Risks of sea level rise to disadvantaged communities in the United States. Mitigation and Adaptation Strategies for Global Change.

<http://link.springer.com/article/10.1007%2Fs11027-011-9356-0>

Meehl, G.A., et al. (2012) Relative outcomes of climate change mitigation related to global temperature versus sea-level rise. *Nature Climate Change*, 2(8): 576-580.

<http://www.nature.com/nclimate/journal/v2/n8/full/nclimate1529.html>

Nicholls, R.J. and A. Cazenave. (2010) Sea-Level Rise and Its Impact on Coastal Zones. *Science*, 328: 1517-1520. <http://www.sciencemag.org/content/328/5985/1517.abstract>

Sallenger, A.H., Doran, K.S., and P.A. Howd. (2012) Hotspot of accelerated sea-level rise on the Atlantic coast of North America. *Nature Climate Change*, 2(12), 884-888.

<http://www.nature.com/nclimate/journal/v2/n12/full/nclimate1597.html>

Strauss, B.H., Ziemiński, R., Weiss, J.L., and J.T. Overpeck, (2012) Tidally adjusted estimates of topographic vulnerability to sea level rise and flooding for the contiguous United States. *Environmental Research Letters*, 7(1): 014033. <http://iopscience.iop.org/1748-9326/7/1/014033>

Tol, R.S.J., Klein, R.J.T., and R.J. Nicholls. (2008) Towards Successful Adaptation to Sea-Level Rise along Europe's Coasts. *Journal of Coastal Research*, 24(2): 432-442. <http://www.bioone.org/doi/abs/10.2112/07A-0016.1>

Tollefson, J. (2013, February) New York vs. the sea. *Nature*, 494: 162-4.

<http://www.seagrant.sunysb.edu/media/sandy12/NatureMagazine-Sandy021413.pdf>

GOVERNANCE, POLICY, LEGAL, AND FINANCING ISSUES IN ADAPTATION

The Bay Institute. The Horizontal Levee.

“The Horizontal Levee, The Bay Institute’s groundbreaking study about the economic value of tidal marshes, demonstrates conclusively that nature performs critical functions for society. During the current era of sea level rise, the forgotten marshlands of San Francisco Bay have become a critical adaptation tool.”

<http://bay.org/bay-restoration/the-horizontal-levee>

Bierbaum, R., et al. (2013) A comprehensive review of climate adaptation in the United States: more than before, but less than needed. *Mitigation and Adaptation Strategies for Global Change* 18:361-406.

<http://dx.doi.org/10.1007/s11027-012-9423-1>

Canada-Caribbean Coastal Climate Adaptation Strategies (C-Change). <http://www.coastalchange.ca/>

Carmin, J., N. Nadkarni, and C. Rhie. (2012) Progress and challenges in urban climate adaptation planning: results of a global survey. MIT, Cambridge, MA.

<http://web.mit.edu/jcarmin/www/urbanadapt/Urban%20Adaptation%20Report%20FINAL.pdf>

Ceres. (2012) Insurer Climate Risk Disclosure Survey 2012. Ceres

(This “report summarizes responses from insurance companies to a survey on climate risk developed by the National Association of Insurance Commissioners (NAIC).” Access to report requires free registration.)

<http://www.ceres.org/resources/reports/naic-report/view>

Crawford, M., and S. Seidel. (2013, July) Weathering the storm: building business resilience to climate change. Center for Climate and Energy Solutions and Bank of America.

(A report exploring “effective methods used by leading companies to build greater resilience into their operations, supply chains, preparedness policies, and risk management plans.”)

<http://www.c2es.org/publications/weathering-storm-building-business-resilience-climate-change>

Cutter, S.L., and M.L. Zoback. (2013) Improving the nation’s resilience to disasters. *Eos, Transactions American Geophysical Union* 94(9): 89. <http://dx.doi.org/10.1002/2013EO090007>

GAO. (2013, April 12). Climate Change: Future Federal Adaptation Efforts Could Better Support Local Infrastructure Decision Makers. GAO-13-242, April 12. <http://www.gao.gov/products/GAO-13-242>

Georgetown Climate Center. State and Local Adaptation Plans.

<http://www.georgetownclimate.org/node/3324?page=1>

Headwaters Economics. (2012) Implementing climate change adaptation: lessons learned from ten examples. (A report by an independent research group, focusing on “lessons learned in the process of moving from planning to implementation of climate adaptation,” using the following case studies: Boulder, CO; Chicago, IL; Chula Vista, CA; Eugene, OR; Keene, NH; Miami-Dade County, FL; New York, NY; Olympia, WA; Portland, OR; and Taos, NM.)

http://headwaterseconomics.org/wphw/wp-content/uploads/Climate_Adaptation_Lessons_Learned.pdf

Jergler, D. (2014, October 16) “States’ Efforts on Climate Change Adaptation: Half Full or Half Empty?” *Insurance Journal*. Wells Media Group

<http://www.insurancejournal.com/news/national/2014/10/16/343904.htm>

Kelly, C. and G. Dotson. (2015, January 16) “How State Future Funds Can Help States Build Resilient Infrastructure and Cut Carbon Pollution.” Center for American Progress. <http://ampr.gs/15enqbt>

Morello, L. (2013) Poll finds U.S. support for adaption to climate change. *Nature*.
<http://blogs.nature.com/news/2013/03/poll-finds-americans-favor-adaptation-to-climate-change.html>

New York City Panel on Climate Change. (2010) Climate change adaptation in New York City: building a risk management response. *Annals of the New York Academy of Sciences*, 1196: 1-354.
<http://onlinelibrary.wiley.com/doi/10.1111/nyas.2010.1196.issue-1/issuetoc>

Neumann, J.E., Hudgens, D.E., Herter, J. and J. Martinich. (2010) The economics of adaptation along developed coastlines. *Wiley Interdisciplinary Reviews (WIREs) Climate Change*, 2(1): 89-98.
<http://onlinelibrary.wiley.com/doi/10.1002/wcc.90/full>

Olcott, C., and E. Penn. (2013) Adaptive Planning for Flooding and Coastal Change in Virginia: Legal and Policy Issues for Local Government. Virginia Coastal Policy Clinic.
<http://law.wm.edu/academics/programs/jd/electives/clinics/vacoastal/docs/adaptive%20planning%20conference%20documents/finalreport.pdf>

Polefka, S. (2013, December 12) Moving out of harm's way. *Center for American Progress*.
<http://ampr.gs/1EiEeJu>

PopTech. Climate Resilience Lab Resources.
The CRLR is “exploring innovation at the intersection of community resilience, climate change, and the empowerment of girls and women.” http://poptech.org/climate_lab_resources

Re:focus Partners. (2015) REinvest: A Roadmap for Resilience.
http://www.reinvestinitiative.org/reports/RE.invest_Roadmap-For-Resilience.pdf

Rosenzweig, et al. (2011) Developing coastal adaptation to climate change in the New York City infrastructure-shed: Process, approach, tools, and strategies. *Climatic Change*, 106, 93-127.
<http://pubs.giss.nasa.gov/abs/ro06110e.html>

Sussman, F.G. and J.R. Freed. (2008) Adapting to Climate Change: A Business Approach. Center for Climate and Energy Solutions, Arlington, VA
<http://www.c2es.org/docUploads/Business-Adaptation.pdf>

Swart, R., R. Biesbroek, S. Binnerup, T.R. Carter, C. Cowan, T. Henrichs, S. Loquen, H. Mela, M. Morecroft, M. Reese and D. Rey. (2009) Europe Adapts to Climate Change: Comparing National Adaptation Strategies. PEER Report No 1. Helsinki: Partnership for European Environmental Research.
http://www.peer.eu/fileadmin/user_upload/publications/PEER_Report1.pdf

Tulou, C. (2009) Resilient Coasts: A Blueprint for Action. The Heinz Center, Washington DC.
<https://www.travelers.com/about-us/docs/ResilientCoastsBlueprint.pdf>

United Nations Framework Convention on Climate Change. Least Developed Countries National Adaptation Plans. http://unfccc.int/adaptation/workstreams/national_adaptation_plans/items/6057.php
Detailed information on adaptation plans and planning processes for Least Developed Countries.

U.S. Agency for International Development. (2009, May). Adapting to Coastal Climate Change: A Guidebook for Development Planners. United States Agency for International Development.
<http://www.crc.uri.edu/download/CoastalAdaptationGuide.pdf>

U.S. Environmental Protection Agency. Climate Change Impacts and Adapting to Change.
<http://www.epa.gov/climatechange/impacts-adaptation/>

U.S. Environmental Protection Agency. Federal and EPA Adaptation Plans. <http://www.epa.gov/climatechange/impacts-adaptation/fed-programs.html>

U.S. Geological Survey. Sea-level Rise Hazards and Decision Support. <http://wh.er.usgs.gov/slr/index.html>

U.S. Government Accountability Office. (2013, April 12) Climate Change: Future Federal Adaptation Efforts Could Better Support Local Infrastructure Decision Makers. GAO. <http://www.gao.gov/products/GAO-13-242>

U.S. Government Accountability Office. (2013, April 12) Climate change: future federal adaptation efforts could better support local infrastructure decision makers. GAO. <http://www.gao.gov/products/GAO-13-242>

Urban, M.C., De Meester, L., Vellend, M., Stoks, R., and J. Vanoverbeke. (2012) A crucial step toward realism: responses to climate change from an evolving metacommunity perspective. *Evolutionary Applications*, 5(2): 154-167. <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3353337/>

Wagner, M., N. Chhetri, and M. Sturm. (2014) Adaptive capacity in light of Hurricane Sandy: the need for policy engagement. *Applied Geography*, 50: 15-23. DOI: <http://dx.doi.org/10.1016/j.apgeog.2014.01.009>

The White House Council on Environmental Quality. (2010, October 5) Progress Report of the Interagency Climate Change Adaptation Task Force: Recommended Actions in Support of a National Climate Change Adaptation Strategy. <http://www.whitehouse.gov/sites/default/files/microsites/ceq/Interagency-Climate-Change-Adaptation-Progress-Report.pdf>

CLIMATE CHANGE ADAPTATION: JOURNALISM RESOURCES

Browner, C.M. (2013, August 18) “The importance of Maryland’s leadership on climate change.” *The Baltimore Sun*. <http://bit.ly/1dT3C1W>

Bulla, L. (2014, July 10) “Cities and businesses prepare for the threat climate change poses to water.” *The Guardian*, New York, NY. <http://bit.ly/1mjCV7Z>

Gillis, J. (2014, January 13) “Tide gauges needed for research are often victims of storms.” *The New York Times*. <http://nyti.ms/1dT3zU2>

Glass, D. (2014, May 27) “The future of evacuations in the climate change era.” *CityLab*. <http://www.citylab.com/cityfixer/2014/05/the-future-of-evacuations-in-the-climate-change-era/371584/>

Goodell, J. (2013, June 20) “Goodbye, Miami: Why the city of Miami is doomed to drown.” *Rolling Stone*. <http://www.rollingstone.com/politics/news/why-the-city-of-miami-is-doomed-to-drown-20130620>

Gordon, K. (2015, May 6) “How climate change will affect infrastructure needs.” *The Wall Street Journal*. (column) <http://blogs.wsj.com/experts/2015/05/06/how-climate-change-will-affect-infrastructure-needs/>

Gose, B. (2013, May 14) “Rockefeller Pledges \$100-Million to Help 100 Cities Cope With Crises.” *The Chronicle of Philanthropy*. <http://bit.ly/1Krv3ds>

Heikkinen, N, and ClimateWire. (2014, August 22) “Oceans hid the heat and slowed pace of global warming.” *Scientific American*, New York, NY.

<http://www.scientificamerican.com/article/oceans-hid-the-heat-and-slowed-pace-of-global-warming/>

ICTMN staff. (2014, July 16) “Obama allocates \$10 million for tribal climate change adaptation.” *Indian Country Today Media Network*, Verona, NY.

<http://bit.ly/1t6fMGM>

Jaffe, E. (2013, May 2). “Why Sewage Plants Are Especially Vulnerable to Climate Change.” *Atlantic Cities*.

<http://bit.ly/1GU5oqA>

Klinenberg, E. (2013, January 7) “Adaptation: How can cities be “climate-proofed?”” *The New Yorker*, pp. 32-37. <http://www.uri.edu/sustainability/documents/Klinenberg%20Adaptation.pdf>

Lascher, B. (2014, January 20) “The next generation of infrastructure: Building for hotter, wetter, stormier cities.” *Next City*. <http://nextcity.org/forefront/view/the-next-generation-of-infrastructure>

Life After Sandy. Series on WNYC. <http://www.wnyc.org/series/life-after-sandy/>

Marshall, B. (2013, February 21) “New research: Louisiana coast faces highest rate of sea-level rise worldwide.” *The Lens*. <http://bit.ly/1JUMKfp>

Minnesota Public Radio. Climate change coverage (various topics and reporters).

<http://www.mprnews.org/topic/climate>

Mooney, C. (2015, January 23) “The Midwest’s climate future: Missouri becomes like Arizona, Chicago becomes like Texas.” *The Washington Post*. <http://wapo.st/1GI1nLy>

Morales, A. (2014, May 15) “Climate change to hit sovereign creditworthiness: S&P.” *Bloomberg.com*.

<http://www.bloomberg.com/news/2014-05-15/climate-change-to-hit-sovereign-creditworthiness-s-p.html>

Noguchi, Y. (2014, August 27) “Driven by climate change, cotton buyers look for alternatives.” *National Public Radio*. <http://n.pr/1zDWfPV>

Oakes, B. (2013, August 23) “As climate changes, urban planners help cities adapt.” *WBUR*.

<http://www.wbur.org/2012/08/23/cities-adapt-climate-change>

Palmer, Lisa. (2015, January 12) “Military Experts Weighing Impacts on Mighty Miss River.”

Yale Climate Connections. <http://bit.ly/1KBPVAX>

Perry, F. (2015, February 27) “Boston plans for an underwater future.” *The Guardian*.

<http://www.theguardian.com/cities/2015/feb/27/boston-flooding-underwater-future-climate-change>

Plumer, B. (2014, May 22) “Should we try to fight rising sea levels – or abandon the coasts?” *Vox*.

<http://www.vox.com/2014/5/22/5735144/rising-sea-levels-abandoning-the-coasts>

Porter, E. (2013, May 14) “For Insurers, No Doubts on Climate Change.” *The New York Times*.

<http://nyti.ms/1Fas2jQ>

Scott, M. (2013, September 12) “Cities bypass slow government to lead the way on climate change.” *The Guardian*, New York, NY.

<http://www.theguardian.com/sustainable-business/cities-bypass-government-climate-change>

van der Linden, S.L., A.A. Leiserowitz, G.D. Feinberg, and E.W. Maibach. (2014) How to communicate the scientific consensus on climate change: plain facts, pie charts or metaphors? *Climatic Change*. DOI: 10.1007/s10584-014-1190-4.

<http://link.springer.com/article/10.1007/s10584-014-1190-4>

Walsh, B. (2013, October 1) The hard math of flood insurance in a warming world. *Time*

<http://science.time.com/2013/10/01/the-hard-math-of-flood-insurance-in-a-warming-world/>

Ward, B. (2008) Communicating on Climate Change: An Essential Resource for Journalists, Scientists, and Educators. Metcalf Institute, University of Rhode Island, Narragansett, RI.

<http://metcalfinstitute.org/resources/communicating-on-climate-change/>

WBEZ, Chicago Public Radio. "After Water" (novel approach toward covering water, integrating journalism, science, and art) <http://www.wbez.org/series/front-center/after-water-science-art-and-journalism-around-climate-change-110544>

Weeks, J. (2013, February 22) Coastal Development. *The CQ Researcher*, 23(8): 181-204.

<http://bit.ly/1P6CBZN>

Zolli, A. (2012) Good-bye Sustainability, Hello Resilience. *Conservation Magazine*.

<http://www.conservationmagazine.org/2013/03/good-bye-sustainability-hello-resilience/>

TOOLS AND DATABASES

Adaptation Tools for Public Officials

Resources to help public officials with climate change adaptation planning

<http://www.epa.gov/climatechange/impacts-adaptation/adapt-tools.html>

AgroClimate

"Tools for managing climate risk in agriculture" <http://agroclimate.org/>

Ahwahnee Principles for Climate Change

Community and regional principles and implementation strategies to help local governments address climate change <http://www.lgc.org/about/ahwahnee/climate-change-principles>

Climate Adaptation Databases

Compiled by the University of Colorado <http://wwa.colorado.edu/resources/adaptation/>

Climate Basic

Provides farm-scale weather and ergonomic data <http://climate.com/products/climate-basic/>

Holmberg, E. (2014, November 20) "Old McDonald had a ...database?" *Public Source*.

<http://publicsource.org/from-the-source/old-mcdonald-had-database-.VT5BkGRVikr>

McDonnell, T. (2014, November 14) "Monsanto Is Using Big Data to Take Over the World." *Mother Jones*. <http://www.motherjones.com/environment/2014/11/monsanto-big-data-gmo-climate-change>

Ross, A. S. (2013, November 13) "Monsanto buys Climate Corp. for \$930 million." *San Francisco Chronicle*. <http://www.sfgate.com/business/bottomline/article/Monsanto-buys-Climate-Corp-for-930-million-4975474.php>

European Climate Adaptation Platform Database
Compiled by the European Commission and European Environment Agency
<http://climate-adapt.eea.europa.eu/data-and-downloads>

Georgetown Climate Center. State and Local Adaptation Plans.
A directory of climate adaptation plans from across the U.S.
<http://www.georgetownclimate.org/node/3324?page=1>

Green and Blue Space Adaptation for Urban Areas and Eco Towns (GRaBS)
GRaBS is a network of European organizations working to integrate climate change adaptation into regional planning and development. This database of case studies features 15 climate change adaptation case studies from across the world, with an emphasis on those relating to green and blue infrastructure.
<http://www.grabs-eu.org/casestudies.php>

CASES Database and Adaptation Library
Developed by the Climate Impacts Group at the University of Washington, it is a “user-driven, searchable database that provides basic information on state and local level adaptation planning efforts.”
<http://cses.washington.edu/cig/cases>

Climate Change Adaptation Database
“Web-based guidance on the integration of biodiversity within adaptation planning.”
<https://adaptation.cbd.int/>

GLAA-C. Socioeconomics and Climate Change in the Great Lakes Region.
An interactive mapping tool that displays how climate change may impact local economies, infrastructure, and vulnerable populations around the Great Lakes. <http://graham.umich.edu/glaac/great-lakes-atlas>

National Climate Change Viewer
http://www.usgs.gov/climate_landuse/clu_rd/nex-dcp30.asp

National Snow & Ice Data Center. Arctic Sea Ice News and Analysis.
Sea ice data are updated daily with a one-day lag; the site also provides contextual information.
<http://nsidc.org/arcticseaicenews/>

Charctic Interactive Sea Ice Graph
An interactive online display of Arctic sea ice extent from 1979 to 2014.
<http://nsidc.org/arcticseaicenews/charctic-interactive-sea-ice-graph/>

The Nature Conservancy. Climate Wizard.
An interactive online data visualization tool, for examining projected temperature and rainfall changes under IPCC emission scenarios. <http://www.climatewizard.org>

National Aeronautics and Space Administration (NASA). Global Change Master Directory.
An extensive repository of varied Earth science data, visualization tools, and services.
<http://gcmd.nasa.gov/>

NOAA Coastal Services Center. OpenNSPECT.
An open-source tool for simulating erosion and pollution from surface water runoff, under different land use and climate change scenarios. Note that the website provides examples of the tool’s use by various projects; however, it is a downloadable program, rather than an interactive online interface.
<http://www.csc.noaa.gov/digitalcoast/tools/opennspect>

National Integrated Drought Information System (NIDIS).

NIDIS developed the U.S. Drought Portal (www.drought.gov/drought) to provide early warning about emerging and anticipated droughts.

Sign up for weekly alerts from the U.S. Drought Monitor at <http://droughtmonitor.unl.edu/>

Notre Dame Global Adaptation Index (ND-GAIN).

“Summarizes a country's vulnerability to climate change and other global challenges in combination with its readiness to improve resilience. It aims to help businesses and the public sector better prioritize investments for a more efficient response to the immediate global challenges ahead.” <http://index.gain.org/>

Ohio Watershed Data

A project hosted by Ohio University that “compiles and tracks changes in Ohio’s watersheds to measure the success of ongoing reclamation efforts.”

<http://www.watersheddata.com/default.aspx>

Partnership for Sustainable Communities. Sustainable Communities HotReport.

An interactive online tool for viewing “sustainability indicators”—transportation, housing, economic development, income, and equity—by U.S. county.

http://thedataweb.rm.census.gov/TheDataWeb_HotReport2/EPA2/EPA_HomePage2.html

Private Sector Database of Actions on Adaptation

Case studies of private businesses implementing strategies to reduce risks to their companies.

http://unfccc.int/adaptation/workstreams/nairobi_work_programme/items/6547.php

Regional Adaptation Collaborative Toolkit

The Alliance of Regional Collaboratives for Climate Adaptation (ARCCA) developed this toolkit to provide others with; a framework for forming a regional adaptation network; guidance for structuring a regional collaborative; and insights into effective governance mechanisms for engaging local, regional, state, and national stakeholders in adoption of new collaborative relationships. By drawing on lessons from ARCCA regions and sharing some of our tips, tools and resources, we hope to advance regional adaptation efforts more broadly. <http://arccacalifornia.org/toolkit/>

Surging Seas: A Project of Climate Central.

Interactive online tool for viewing sea level rise and storm surge effects upon 3000+ coastal towns, cities, counties, and states in the Lower 48 U.S. states. <http://sealevel.climatecentral.org/>

United Nations Framework on Climate Change Private Sector Initiative.

“This online database of case studies... features good practices and profitable climate change adaptation activities being undertaken by private companies (sometimes in partnership with NGOs or the public sector) from a wide range of regions and sectors.”

http://unfccc.int/adaptation/workstreams/nairobi_work_programme/items/6547.php

U.S. Climate Change Policy Action at the State Level.

List compiled by the Center for Climate and Energy Solutions provides links to climate change legislation, statewide climate change commissions, and climate action plans around the U.S. The list is not exhaustive, but provides a good starting point for additional information.

http://www.c2es.org/what_s_being_done/in_the_states/state_legislation.cfm

U.S. Climate Resistance Toolkit.

A product of Climate.gov, this site “provides resources and a framework for understanding and addressing the climate issues that impact people and their communities.”

<http://toolkit.climate.gov/>

U.S. Environmental Protection Agency. Federal and EPA Adaptation Plans.
Lists a variety of U.S. adaptation plans developed by the EPA and across agencies.

<http://www.epa.gov/climatechange/impacts-adaptation/fed-programs.html>

U.S. Environmental Protection Agency. National Greenhouse Gas Emissions Data.
A page for the Inventory of U.S. Greenhouse Gas Emissions and Sinks, an annual report accounting for all human-made emission sources in the U.S.

<http://www.epa.gov/climatechange/ghgemissions/usinventoryreport.html>

U.S. Environmental Protection Agency. Smart Location Mapping.
Interactive mapping tools for urban planning applications, particularly for considering public transit networks.

<http://www.epa.gov/smartgrowth/smartlocationdatabase.htm>

U.S. Environmental Protection Agency. Water Quality Management Research.
A repository of links to projects for improving water quality, and models/tools that are used in such research.

<http://www.epa.gov/nrmrl/wswrd/wq/>

U.S. Geological Survey Climate Projection Portal.
Another interactive online data visualization tool, capable of mapping temperature, rainfall and growing season length under IPCC emission scenarios. <http://cida.usgs.gov/climate/derivative/>

U.S. Geological Survey Newsroom. (2013, December 10) What Are Future Climate Projections for Precipitation and Temperature for Your County?

This news release links to the online interactive National Climate Change Viewer, which uses various models to display projected changes in temperature and precipitation for U.S. counties under future emission scenarios. <http://www.usgs.gov/newsroom/article.asp?ID=3745#.VAjD12O1EuI>

U.S. National Oceanic and Atmospheric Administration Fisheries Data. <http://www.st.nmfs.noaa.gov/index>

Commercial Fisheries Statistics. <http://www.st.nmfs.noaa.gov/commercial-fisheries/>

Vulnerability & Adaptation Database

Developed by World Resources Institute, “This tool brings together 135 examples of adaptation projects, policies, and other initiatives from the developing world.” <http://projects.wri.org/adaptation-database>

Yale Climate Opinion Maps (YCOM)

“This tool allows users to visualize and explore differences in public opinion about global warming in the United States in unprecedented geographic detail.

<http://environment.yale.edu/climate-communication/article/yale-climate-opinion-maps/>

USEFUL ORGANIZATIONS AND NETWORKS

Association of State Floodplain Managers <http://www.floods.org/>

Association of State Wetland Managers <http://www.aswm.org/>

Business Council on Climate Change

This San Francisco-based coalition looks for collaborative, local solutions to climate change.

<http://www.bc3sfbay.org/>

Center for Climate & Security

A nonprofit policy institute “exploring the security risks of climate change.”

<http://climateandsecurity.org/>

Center for Integrative Environmental Research. Climate Change Adaptation.

CIER is a university-wide research hub based at the University of Maryland, School of Public Policy

<http://cier.umd.edu/research-adaptation.html>

Ceres

Boston-based non-profit working to “mobilize a powerful network of investors, companies and public interest groups to accelerate and expand the adoption of sustainable business practices and solutions to build a healthy global economy.” <http://www.ceres.org/>

Climate Access

Global network of climate and clean energy communicators. <http://www.climateaccess.org/>

Climate Central

“Surveys and conducts scientific research on climate change and informs the public of key findings.” Great source for digestible reports and graphics.

<http://www.climatecentral.org/>

Climate Change Education Partnership Alliance

Based at the University of Rhode Island Graduate School of Oceanography, this alliance coordinates a network of six NSF-funded regional and national efforts to advance climate change education.

<http://ccepalliance.org/>

Climate Impacts Groups, University of Washington

Interdisciplinary research group studying the impacts of natural climate variability and global climate change.

<http://cses.washington.edu/cig/>

Climate Nexus

“...a strategic communications organization dedicated to changing the conversation on climate and clean energy solutions in the United States.”

<http://climatenexus.org/>

CoastAdapt

Project financed in part by the European Union to help coastal communities in the North Atlantic adapt to climate change. <http://coastadapt.org/>

Coastal Resources Center, University of Rhode Island Graduate School of Oceanography

This group of researchers and faculty work within the U.S. New England region and in developing nations around the world to build sustainable coastal communities, bridging economic, environmental, and social justice objectives. <http://www.crc.uri.edu/>

Community & Regional Resilience Institute

This Tennessee-based group works to strengthen communities’ and regions’ abilities to prepare for, respond to, and rapidly recover from human-caused and natural disasters. <http://www.resilientus.org/>

Council of Great Lakes Industries

“CGLI’s mission is to promote the economic growth and vitality of the region in harmony with its human and natural resources (sustainable development).” <http://cgli.org/>

Emerald Cities Collaborative

“A national nonprofit network of organizations working together to advance a sustainable environment while creating economic opportunities for all” <http://emeraldcities.org/>

Eno Center for Transportation

A think-tank concerned with improving transportation policy. <https://www.enotrans.org>

Federal Emergency Management Agency National Flood Insurance Program

This site contains information on the NFIP, flood hazard mapping, the Community Rating System, and much more. <http://www.fema.gov/national-flood-insurance-program>

First Stewards

“...seeks to unite indigenous voices to collaboratively advance adaptive climate change strategies to sustain and secure our cultures” <http://www.firststewards.org/>

FloodRISE: Resilient Infrastructure and Sustainable Environments

A University of California Irvine research project that aims to promote coastal resilience to flooding in Southern California. <http://floodrise.uci.edu/>

George Mason University Center for Climate Change Communication

Uses “social science research methods...to find ways of effectively engaging the public and policy makers in the problem, and in considering and enacting solutions.” <http://www.climatechangecommunication.org/>

Gulf Coast Center for Evacuation and Transportation Resiliency

A joint effort of Louisiana State University and the University of New Orleans, the Center conducts research and outreach on issues affecting transportation under emergency conditions. <http://www.evaccenter.lsu.edu/>

Infrastructure and Climate Network

“A network of over 50 academics, students, and practitioners who are dedicated to accelerating climate science and engineering research in the Northeastern United States.” <http://theicnet.org/>

ISET-International

“The Institute for Social and Environmental Transition-International collaborates with local partners to build resilience and catalyze adaptation to social and environmental change.” <http://i-s-e-t.org/>

Institute for Sustainable Cities

A research organization at the City University of New York with focus on including cities “as part of the solution to global sustainability challenges.” <http://www.cunysustainablecities.org>

Institute for Sustainable Communities

A non-profit dedicated to providing “tools and skills...to inspire active citizenship, protect the environment, and take on climate change.” <http://www.iscvt.org/>

Institute for Tribal Environmental Professionals

“...created to be a catalyst among tribal governments, research and technical resources at Northern Arizona University in support of environmental protection of Native American natural resources.” <http://www4.nau.edu/itep/>

Landscape Conservation Cooperatives.

“With the signing of [Secretarial Order No. 3289](#), the Department of the Interior launched the Landscape Conservation Cooperatives (LCCs) to better integrate science and management to address climate change and other landscape scale issues.” <http://lccnetwork.org/>

Local Environmental Observer Network

“Tribal professionals who apply traditional knowledge, western science and technology to document unusual plants and wildlife, extreme weather, erosion, flooding, droughts, wildfire and other events that can threaten food security, water security and community health.” <http://www.anthc.org/chs/ces/climate/leo/>

National Hazard Mitigation Association

<http://nhma.info/>

National Laboratory for Agriculture and the Environment

http://www.ars.usda.gov/main/site_main.htm?modecode=50-30-15-00

Network for Climate Educators, hosted by the Department of Ecology, State of Washington.

A listing of local, state, federal, tribal and non-governmental specialists in Washington state.

http://www.ecy.wa.gov/climatechange/climateed_networkdirectory.htm

New Climate Economy

A project of The Global Commission on the Economy and Climate, this “new international initiative to analyze and communicate the economic benefits and costs of acting on climate change.”

<http://newclimateeconomy.net/>

Northeast Climate Science Center

A consortium of universities, research groups, and government agencies part of a “federal network of eight Climate Science Centers created to provide scientific information, tools, and techniques that managers and other parties interested in land, water, wildlife and cultural resources can use to anticipate, monitor, and adapt to climate change.” <https://necsc.umass.edu>

Northern Region Adaptation Partnership (NRAP)

NRAP is a science-management collaboration with the goals of assessing vulnerability of natural resources to climate change and develop science-based adaptation strategies to be used by national forests. This link lists the NRAP leadership team and contacts for each of the resource teams, focused on topics from water resources to wildlife and economics.

<http://adaptationpartners.org/nrap/teams.php>

The Water Project, Ohio University

A “public clearinghouse for information related to environmental water issues within the Appalachian Ohio Valley. Its mission is to bring information to citizens, policymakers and researchers from Ohio University’s journalism and academic communities and to provide a forum for community blogs and action groups.”

<http://ouwaterproject.org/about/>

Our Natural Resources

“An alliance of tribal natural resources organizations and tribes committed to develop and advance a national tribal natural resources strategy.”

<http://www.ournaturalresources.org/>

Partnership for Sustainable Communities

An interagency partnership of the Dept. of Housing and Urban Development, Dept. of Transportation, and Environmental Protection Agency. <http://www.sustainablecommunities.gov>

Penn State Center for Solutions to Weather and Climate Risk

A research group with a mission “to advance the science of exploiting environmental opportunities and understanding environmental impacts to manage risk.” <http://solutions2wxrisk.psu.edu>

Pacific Northwest Tribal Climate Change Network

This network “fosters communication between tribes, agencies, and other entities about climate change policies, programs, and research needs pertaining to tribes and climate change.”

<http://tribalclimate.uoregon.edu/network/>

Re:focus

A group of “social entrepreneurs” who “design integrated resilient infrastructure systems — including water, waste, and energy projects — and develop new public-private partnerships to align public funds and leverage private investment for vulnerable communities around the world.

<http://www.refocuspartners.com/>

Resilient America

Aims to help communities and the nation build resilience to extreme events in order to save lives and reduce the physical and economic costs of disasters).

<http://sites.nationalacademies.org/PGA/ResilientAmerica/index.htm>

Resilient City

An open non-profit network with the mission to develop creative, practical, and implementable planning and design strategies. <http://www.resilientcity.org/>

Rhode Island Shoreline Change Special Area Management Plan (SAMP)

Otherwise known as the “Beach SAMP,” this is a nationally innovative, multi-stakeholder effort to develop coastal regulations to help Rhode Islanders prepare for sea level rise, stronger and more frequent coastal storms, and coastal erosion. <http://www.beachsamp.org/>

Risky Business Project.

A joint partnership of Bloomberg Philanthropies, the Paulson Institute, and TomKat Charitable Trust, with a focus on “quantifying and publicizing the economic risks from the impacts of a changing climate.”

<http://riskybusiness.org/>

Rural Climate Network, Institute for Agriculture and Trade Policy.

An organization established to build collaboration among communities particularly dependent on natural resources, and consequently potentially more vulnerable to climate change.

<http://www.ruralclimatenetwork.org/about/about-us>

Sabin Center for Climate Change Law at Columbia University Law School.

“...develops legal techniques to fight climate change...provides up to date resources on key topics in climate law and regulation.”

<http://web.law.columbia.edu/climate-change>

San Diego Climate Collaborative.

“A network for public agencies serving the San Diego region to share expertise, leverage resources, and advance...solutions to facilitate climate change planning.” <http://sdclimatecollaborative.org/>

Science of Science Policy (SoSP).

“This website is intended to serve as a resource for the emerging community of practice engaged in developing and applying the Science of Science Policy. It offers a central location for news, information, and the communication of research findings.” The site also contains a members directory.

<http://www.scienceofsciencepolicy.net>

SheSource, Women's Media Center.

An "online braintrust of female experts on diverse topics designed to serve journalists, producers and bookers." <http://www.shesource.org/>

Southwest Tribal Climate Change Network

"Provides ongoing engagement among those interested in tribal climate change issues in Arizona and New Mexico." http://www4.nau.edu/itep/climatechange/tcc_SWProj.asp

Superclime

"Visual frameworks for strategic planning & change adoption" <http://www.superclime.us/>

Tribal Science Council

The Council is composed of EPA representatives from across the Agency, a tribal representative from each of the EPA regions with federally recognized tribes, and a representative of the Alaska Native Villages.

<http://www.epa.gov/osp/tribes/who.htm>

USDA Regional Climate Hubs

Regional networks across the U.S. that "deliver information to farmers, ranchers and forest landowners to help them adapt to climate change and weather variability."

http://www.usda.gov/oce/climate_change/regional_hubs.htm

Water Utility Climate Alliance

"Provides leadership in assessing and adapting to the potential effects of climate change through collaborative action. We seek to enhance the usefulness of climate science for the adaptation community and improve water management decision-making in the face of climate uncertainty."

<http://www.wucaonline.org/html/>

weAdapt

"An online 'open space' on climate adaptation issues and synergies with mitigation which allows practitioners, researchers and policy makers to access credible, high quality information and to share experiences and lessons learnt." <http://weadapt.org/>

Yale Project on Climate Change Communication

Based at Yale University, this group "conducts research on public climate knowledge, risk perceptions, decision-making and behavior." <http://environment.yale.edu/climate-communication/>

ADDITIONAL SOURCES

Kristin Baja, Baltimore City Department of Planning, Office of Sustainability (municipal climate adaptation planning) <http://www.baltimoresustainability.org/about/staff>

Meghna Babbar-Sebens, Hydroinformatics Research Group, Oregon State University (engineering solutions for sustainable planning and climate adaptation, with a focus on water-based systems such as wetlands and stormwater)

<http://research.engr.oregonstate.edu/hydroinformatics/members>

Rosina Bierbaum, University of Michigan. (climate change adaptation and mitigation)

<http://www.snrc.umich.edu/profile/rbierbau>

Kathryn A. Buckner, Buckner Law Group. (environmental law, corporate sustainability)
<http://www.bucknerlaw.com/about-us/>

Joyce Coffee, Notre Dame Global Adaptation Index (ND-GAIN). (risk management, climate mitigation and adaptation) <http://www.gain.org/our-team/ms-joyce-coffee>

Teresa Crean, Rhode Island Sea Grant and University of Rhode Island Coastal Resources Center. (municipal climate adaptation, community and regional planning, coastal management, stakeholder engagement)
http://www.crc.uri.edu/contacts_page/teresa-crean/

Grover Fugate, Rhode Island Coastal Resources Management Council. (coastal climate change impacts, sea level rise, storm surge, coastal management, climate adaptation)
<http://www.crmc.ri.gov/contact.html>

Sherri Goodman, CNA Corporation. (climate change impacts on national security)
<http://www.cna.org/about/leadership/sherri-goodman>

Sean Hart, Bureau of Indian Affairs. (BIA and tribal support for climate change adaptation)
sean.hart@bia.gov
<http://www.firststewards.org/sean-hart.html>

Nichole L. Hefty, Office of Sustainability, Miami-Dade Dept. of Regulatory and Economic Resources.
<http://www.miamidade.gov/planning/contact.asp>

Elle Hempen, re:focus. (public policy and partnerships between government and private sector)
<http://www.refocuspartners.com/about-us/>

John Hummel, Center for Integrated Resiliency Analyses, Argonne National Lab. (research on tools to enhance resiliency for disruptive events such as climate change and natural disasters)
<http://www.anl.gov/articles/argonne-announces-new-center-integrated-resiliency-analyses>

Alessandra Jerolleman. (expert on the effects of disasters on people as well as local hazard mitigation and adaptation) agazzo@gmail.com <http://jeo.com/2013/08/dr-alessandra-jerolleman-joins-jeo-consulting-group-inc/>

Shawn Johnson, Center for Natural Resources & Environmental Policy, The University of Montana. (landscape-scale adaptation planning, environmental policy) http://www.cnrep.org/staff_listing.html

Kelly Klima, Carnegie Mellon University. (expert on climate science and adaptation, hazard mitigation)
<https://www.epp.cmu.edu/people/bios/klima.html>

Marni Koopman, Geos Institute. (climate-informed conservation in Rocky Mountain West, effects of climate change on wildlife and wildlife habitat)
<http://www.geosinstitute.org/staff/561-marni-koopman-phd-climate-change-scientist.html>

Jon Krosnick, Stanford University. (public opinion polling related to environmental issues, especially climate change)
<https://comm.stanford.edu/faculty-krosnick/>

Howard Kunreuther, University of Pennsylvania Wharton School of Business. (risk assessment, insurance sector's responses to climate change)
<http://opim.wharton.upenn.edu/risk/faculty/kunreuther.html>

Arthur Lee, Chevron. (climate change)

<http://www.globalchange.umd.edu/gtsp/topical-workshops/spring-2013/participant-biographies/>

Anthony Leiserowitz, Yale Project on Climate Change Communication. (public opinion polling on climate change and perception of risks)

<http://environment.yale.edu/profile/leiserowitz/>

Edward Maibach, George Mason University Center for Climate Change Communication (public opinion polling on climate change and adaptation)

<http://communication.gmu.edu/people/emaibach>

Rachel Misliv, Climate + Energy Project. (leads Water and Energy Efficiency Project which identifies farmers and ranchers successfully innovating to conserve resources in Kansas)

<http://www.climateandenergy.org/page.9.our-leadership>

Molly Mowery, Wildfire Planning International. (climate adaptation related to wildfire)

molly@wildfireplanning.com <http://wildfireplanning.com/about/>

Jonathan Patz, Global Health Institute; University of Wisconsin-Madison. (public health impacts of climate change)

<http://www.sage.wisc.edu/people/patz/patz.html>

Jeff Payne, Acting Director, NOAA Office for Coastal Management (coastal climate change impacts and mitigation) <http://coastalmanagement.noaa.gov/backmatter/contacts.html>

Kristina Peterson, University of New Orleans (studies scientist/community interactions, with focus on rural community resilience to climate change) krajeskipeterson@msn.com

<http://www.ruralsociology.org/?p=4154>

Don Scavia, Graham Environmental Sustainability Institute, University of Michigan. (water quality, climate change in Great Lakes, resource management, ecological changes in Great Lakes food webs)

<http://www.snre.umich.edu/profile/scavia>

Katie Skakel (expert on local adaptation, land use planning, floodplain management, climate action at local level & hazard mitigation) kdskakel.nhma@gmail.com <http://nhma.info/about/board-of-directors/skakel/>

Joel Smith, Stratus Consulting (climate change impacts and adaptation)

<http://stratusconsulting.com/staff/>

Amy Snover, Climate Impacts Group, U. Washington (climate adaptation and decision-making, climate impacts, integrated assessment, stakeholder engagement)

<http://cses.washington.edu/db/personnel/>

Eugene S. Takle, Iowa State University (Models Midwestern effects of climate change)

<http://www.meteor.iastate.edu/faculty/takle/>

Shalini Vajjhala, Founder and CEO of re:focus. (“social entrepreneurs with expertise in public policy and sustainable development. We design integrated resilient infrastructure systems — including water, waste, and energy projects — and develop new public-private partnerships to align public funds and leverage private investment for vulnerable communities around the world”)

<http://www.refocuspartners.com/about-us/>

Jason Vogel, Abt Associates (community-based climate adaptation) <http://stratusconsulting.com/staff/jvogel@stratusconsulting.com>

Donald Watson, FAIA (EarthRise001@SBCglobal.net) and Michele Adams, PE (michelea@melioradesign.net). Authors of the book, “Design for Flooding: Architecture, Landscape, and Urban Design for Resilience to Climate Change.”

John Wiener, University of Colorado (energy policy, agricultural aspects of climate adaptation, and linkages to first nations) <http://www.colorado.edu/ibs/eb/wiener/>