

Regional Engagement Workshop Summary Report: Midwest Region

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Introduction

The Fourth National Climate Assessment (NCA4), currently in development, will assess the science of climate change and its impacts across the United States. It will document climate change-related impacts and responses for various sectors and regions, with the goal of better informing public and private decision-making at all levels.

To ensure that the assessment is informed by and useful to stakeholders, engagement workshops were planned for each of the 10 NCA4 regions. These workshops provided stakeholders an opportunity to provide input to and exchange ideas with the chapter author team on key message formulation, share relevant resources, and give feedback on issues of importance to their region.

Workshop Structure

In an effort to maximize participation while easing travel burden, organizers employed a ‘Hub and Satellite’ model for NCA4 Regional Engagement Workshops. A hub—or primary location—hosted stakeholders, the chapter author team, and NCA4 staff from the U.S. Global Change Research Program (USGCRP). Satellite locations throughout the region established remote connections to the hub for plenary presentations and discussion. Satellites were encouraged to hold break-out sessions on regional concerns and proposed topics for NCA4, reporting their discussions to the hub at a pre-determined time.

The Midwest Regional Engagement Workshop

On March 1, 2017, the NCA4 Midwest chapter team held its Regional Engagement Workshop. The objectives of the workshop were to gather input from a diverse array of stakeholders throughout the Midwest to help inform the writing and development of NCA4, and to raise awareness of the process and timeline for NCA4.

The Energy Policy Institute at University of Chicago, in Chicago, Ill., served as the hub location. Nine satellite locations were distributed throughout the region (Figure 1), and several stakeholders also participated virtually.

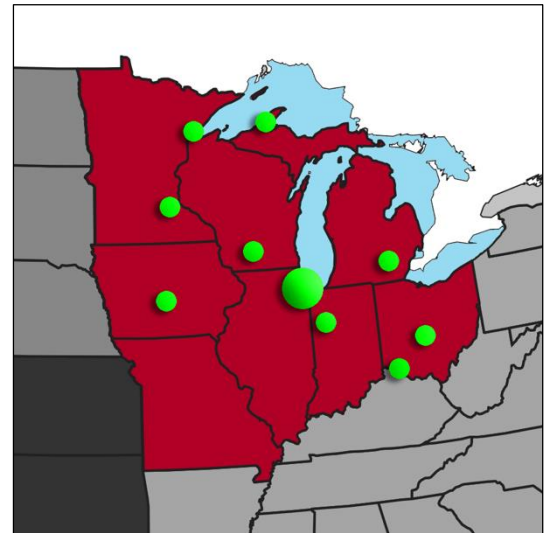


Figure 1. Map of the REW hub & satellite locations: Ames, IA; Ann Arbor, MI; Cincinnati, OH; Columbus, OH; Duluth, MN; Houghton, MI; Madison, WI; St. Paul, MN; West Lafayette, IN.

Authors, Locations, and Staff

Authors

- Chris Swanston, USDA-USFS (Coordinating Lead Author)
- Jim Angel, University of Illinois (Chapter Lead)
- Barbara Mayes Boustead, NOAA
- Kathryn Conlon, CDC
- Kim Hall, The Nature Conservancy
- Ken Kunkel, NOAA
- Maria Carmen Lemos, University of Michigan
- Brent Lofgren, NOAA
- Todd Ontl, USDA-USFS
- John Posey, East West Gateway
- Kim Stone, Great Lakes Indian Fish and Wildlife Commission
- Gene Takle, Iowa State
- Dennis Todey, USDA

Satellite & Hub Hosts

- University of Chicago Gleacher Center (Hub – Chicago, IL)
- National Laboratory for Agriculture and the Environment (Ames, IA)
- NOAA Great Lakes Environmental Research Laboratory (Ann Arbor, MI)
- Xavier University (Cincinnati, OH)
- Ohio State University (Columbus, OH)
- 1854 Treaty Authority (Duluth, MN)
- Michigan Technological University (Houghton, MI)
- University of Wisconsin-Madison (Madison, WI)
- Minnesota Department of Health (St. Paul, MN)
- Purdue University (West Lafayette, IN)

USGCRP Staff

- Kristin Lewis
- Katie Reeves
- Alexa Jay

Overview and Topics of Discussion

Kristin Lewis, Senior Climate Change Scientist with the National Climate Assessment, opened the workshop with a welcome to all participants, and an introduction of all chapter authors and USGCRP staff in attendance. Lewis gave an overview of NCA4, providing context and explaining the goals of the workshop. Don Wuebbles, Coordinating Lead Author of the Climate Science Special Report, then provided an overview of climate science and climate projections for the Midwest region.

The group then moved into its first breakout session, with the satellite locations having their own discussions and the hub location self-organizing into three groups focusing on impacts, adaptation, and decision-making. The goal of this session was to gather initial feedback on the impacts being observed in the region, specific adaptation efforts already underway, and the climate-relevant decisions being made.

During lunch, the Midwest chapter authors then presented brief overviews of potential focal areas for the chapter. They were:

- Vulnerability and Adaptation – Maria Carmen Lemos
- Ecosystems – Kim Hall
- Forestry – Todd Ontl
- Human Health – Katie Conlon
- Agriculture – Gene Takle
- Transportation and Urban Systems – John Posey

Next, participants at the hub location held small-group discussions while satellite locations held their own discussions. In this session, participants shared specific questions, issues, ideas, resources, and case studies for each of the aforementioned focal areas. For each focal area, stakeholders were asked a specific series of questions around which to structure their responses:

- How is or has climate change affected this topic (i.e., observed change)?
- How is climate change projected to affect this topic in the next 20-30 years and at the end of the century (i.e., projected change)?
- What challenges, opportunities and success stories for addressing risk can be highlighted?
- Are there case studies or specific resources to highlight?
- What are the emerging issues and/or research gaps on this topic?

Stakeholders were also given the opportunity to share thoughts on areas that were not covered by the previously-identified focal areas.

The day concluded with report outs from each breakout group at the hub location as well as location-specific readouts from each of the satellite locations.

Key Takeaways

Stakeholders identified areas of opportunity and concern, case studies, and relevant regional information associated with each of the focal areas. This feedback was later distilled into key thematic takeaways for the chapter author team. These takeaways are summarized below.

Vulnerability and Adaptation

- Risk-based frameworks should be used for communicating climate information.
- Consider cultural impacts of climate change as well as economic impacts.
- Explore how adaptation efforts are chosen; how does economics affect which action is most beneficial or cost-effective?
- Adaptation efforts can provide opportunities for recovery and revitalization of urban areas.
- Participants would like more information on efforts within the private sector.

Ecosystems and Forestry

- This is a critical area for tribes within the region.
- Fragmented habitats are a concern as species may not be able to shift their ranges with a changing climate.
- There's a concern about the loss of cold and cool water fisheries due to changing temperatures and nutrient loading.
- Better communication (through story maps, visuals, impacts to beer, etc.) is needed in this area.

Human Health

- The region may see more disease vectors for longer seasons (ticks, mosquitos).
- Pollen seasons may be longer.
- Data highlighting health impacts directly related to climate are lacking.
- Stress the immediacy of health benefits from local mitigation measures.
- UW-Madison has a new CDC Center for Excellence on vector-borne diseases.
- Consider health more broadly; there are wildlife health impacts, as well.
- Include rural health.

Agriculture

- Explore different management practices, including reduced or no-till practices and the use of cover crops.
- Decision-making regarding irrigation becomes more important and water rights issues may become more common.
- Changes to summer humidity is important; it affects livestock stress and has implications for harvest and storage of crops.
- Farmers may not take advantage of longer growing seasons due to the risk of spring frosts and freezes.
- Plant breeders are making progress on drought-tolerant varieties of crops, but heat tolerance is more challenging.

Transportation and Urban Systems

- Continuity of operations and resiliency is important for urban systems, including power grids, municipal services, and hospital systems.
- Many culverts may not be designed for the increasing influx of water.
- Additional freeze/thaw cycles place additional strain on infrastructure.
- Urban flooding is a large concern, particularly with stormwater infrastructure.
- Several locales have been taking adaptation steps, including Chicago and DuPage County.
- Green infrastructure is an opportunity.

Other Topics/Messages

- There is a need for more explicit inclusion and emphasis of the Great Lakes and the impact of the lakes on climate across the basin.
- The Midwest (more so than other regions) may face fewer catastrophic climate issues and be a relative “climate haven,” driving people and businesses to move to the region.
- Water extremes are critical in the region, from drought to flooding (including increased pollutant runoff and urban sewer overflow).
- Precipitation intensity is changing; the region is seeing more mini-droughts in between intense storms.
- Milder winters may affect winter tourism; the Birkebeiner cross-country ski race was canceled this year due to the lack of snow.

- The regional economy is more energy-intensive than other regions and could be disproportionately impacted if the electricity supply is compromised.
- Impacts may be experienced disproportionately by the urban poor and minority populations, for instance with food price volatility and food insecurity resulting from future agricultural uncertainty.
- Short term forecasts and economic risk management tools are desired.
- There is a need for consistency of information in the sustained NCA assessment so decision makers can rely on recurring information from NCA to make their own recurring decisions.
- Tribal involvement is critical and needs to be more extensive than a single tribal natural resources manager; include elders, harvesters, and tribal members.
- Traditional Ecological Knowledge (TEK) contains relevant and useful information, but there are challenges in using it effectively, including sensitivity of non-public information.
- Consider including a key message on impacts to indigenous communities.
- Highlight “no-regrets” adaptation efforts.

Results

The feedback provided during this workshop serves as valuable input to the development of not only the Midwest chapter of NCA4, but of all chapters. This summary report is being shared with all NCA4 authors to inform the development of their chapters. It will also be made publicly available on the NCA4 website (www.globalchange.gov/nca4). Nearly 200 stakeholders throughout the Midwest region participated in the day-long meeting, providing authors with a great deal of useful feedback – from concerns they face, to resources they use, and specific case studies where communities are working to address the risks they face as a result of climate change. Responses from both authors and participants indicated that the workshop was not only positively received in and of itself, but it served to cultivate new relationships, research ideas and, hopefully, future collaborations across the Midwest.

About the NCA

The National Climate Assessment is the U.S. Government’s premier resource for articulating the risks posed to the Nation by climate change, as well as what is being and can be done to minimize those risks. It is an inter-agency effort, bringing together experts from the 13 Federal agencies of USGCRP, the broader Federal government, as well as hundreds of experts in the academic, non-profit, and private sectors.

Appendix A: Workshop Agenda

Midwest Regional Engagement Workshop

March 1, 2017

Objective: To gather input from a diverse array of stakeholders throughout the Midwest to inform the Midwest (and related) chapters of NCA4, and to make the stakeholder community aware of the process and timeline for the development of NCA4.

Draft agenda:

8:00 CST 9:00 EST	Registration
8:30	Introduction to workshop goals and participants
9:00	NCA4 timeline and process <ul style="list-style-type: none">• NCA4 background, process, timeline, etc.• Ways to get involved (ex. author, technical contributor, reviewer, etc.)• Q&A
9:45	Climate science and the Midwest
10:15	Break
10:30	Charge for morning breakout sessions: <ul style="list-style-type: none">• Impacts<ul style="list-style-type: none">○ What climate impacts are you seeing? What populations are most affected? How significant are these impacts?• Adaptation<ul style="list-style-type: none">○ What adaptation efforts are already being taken? What's driving that action? What can we learn from these efforts?• Decision-Making<ul style="list-style-type: none">○ What climate-relevant decisions are you making? Where do you seek climate information to help with this?
10:40	Breakout 1
11:00	Breakout 2
11:20	Breakout 3
11:40	Break/gather lunch
12:00	Midwest chapter authors outline notional focal areas for the chapter

12:30	<p>Charge for topical breakout groups (pick 3):</p> <table border="1" data-bbox="365 262 1339 483"> <tr> <td data-bbox="365 262 896 310">• Transportation and Urban Systems</td> <td data-bbox="896 262 1339 310">• Agriculture</td> </tr> <tr> <td data-bbox="365 310 896 359">• Ecosystems</td> <td data-bbox="896 310 1339 359">• Impacts on Human Health</td> </tr> <tr> <td data-bbox="365 359 896 407">• Vulnerability and Adaptation</td> <td data-bbox="896 359 1339 407">• Other Topics</td> </tr> <tr> <td data-bbox="365 407 896 483">• Forestry</td> <td data-bbox="896 407 1339 483"></td> </tr> </table> <ul style="list-style-type: none"> • For a given topic: <ul style="list-style-type: none"> ○ How is or has climate change affected this topic (i.e., observed change)? ○ How is climate change projected to affect this topic in the next 20-30 years and at the end of the century (i.e., projected change)? ○ What challenges, opportunities and success stories for addressing risk can be highlighted? ○ Are there case studies or specific resources to highlight? ○ What are the emerging issues and/or research gaps on this topic? 	• Transportation and Urban Systems	• Agriculture	• Ecosystems	• Impacts on Human Health	• Vulnerability and Adaptation	• Other Topics	• Forestry	
• Transportation and Urban Systems	• Agriculture								
• Ecosystems	• Impacts on Human Health								
• Vulnerability and Adaptation	• Other Topics								
• Forestry									
12:40	Topical break-out 1								
1:00	Topical break-out 2								
1:20	Topical break-out 3								
1:45	Report from morning breakouts								
2:00	Report from satellites								
3:00	Report from topical breakouts								
3:30	Concluding Remarks								
3:45 CST 4:45 EST	End of meeting								

Appendix B: List of Midwest Regional Chapter Authors

Coordinating Lead Author: Chris Swanston, US Forest Service

Chapter Lead: Jim Angel, University of Illinois

Authors:

- Kathryn Conlon (CDC)
 - Expertise: climate change epidemiology
- Kim Hall (The Nature Conservancy)
 - Expertise: impacts and adaptation for ecosystems & species
- Ken Kunkel (NOAA)
 - Expertise: climate variability, extreme events
- Maria Carmen Lemos (University of Michigan)
 - Expertise: knowledge co-production, usable knowledge, vulnerability and adaptation
- Brent Lofgren (NOAA)
 - Expertise: atmospheric systems and coupling to terrestrial and water surfaces
- Barb Mayes Boustead (NOAA)
 - Expertise: meteorology, extreme weather, climate-weather connections
- Todd Ontl (US Forest Service)
 - Expertise: forest adaptation, land use and carbon cycling
- John Posey (East West Gateway)
 - Expertise: urban and green infrastructure, transportation
- Kim Stone (Great Lakes Indian Fish and Wildlife Commission)
 - Expertise: climate change policy and impacts on treaty resources in the Ceded Territories
- Gene Takle (Iowa State University)
 - Expertise: agriculture, wind farms, regional climate change
- Dennis Todey (USDA)
 - Expertise: Midwest ag-climate trends and impacts

USGCRP staff:

- Kristin Lewis, Senior Climate Change Scientist
- Katie Reeves, Engagement and Communications Lead
- Alexa Jay, Science Writer