

Midwest Association of Fish and Wildlife Agencies Climate Change Technical Working Committee Report

Meeting Time and Place – No face-to-face meeting was held. However, the committee met by conference call on May 21, 2013.

Attendance – Eight States participated on the call (see Appendix 1).

Executive Summary – States in this region are addressing climate change at a variable pace and in a variety of ways; approaches vary depending upon capacity, resources, and other factors. Committee members have engaged in several regional collaborations during the past year. For example, in December 2012, Chris Hoving convened a symposium at the Midwest Fish and Wildlife Conference in Wichita, KS which addressed climate change adaptation. The session included information about adaptation planning, tools available to assist adaptation activities, such as downscaled climate data available for the Midwestern region, and case studies. Also, Illinois, Iowa, and Nebraska engaged in a project which compared results of species-focused vulnerability assessments to put individual state results into a regional context. Chris Hoving also organized a symposium at the National Adaptation Forum, held in April in Colorado.

Using AFWA's climate adaptation survey as a jumping-off point, an ad-hoc subcommittee of this technical committee has been discussing how to foster additional collaboration among MAFWA states. These committee members will be calling around to state contacts within the MAFWA region in the near future to ask a set of questions. These questions are designed to identify potential roles that states could serve in future collaborations addressing fish, wildlife and habitat adaptation.

Director Action Items – None

Director Information Items –

1. The MAFWA Directors need to give full support for staff participation in this Committee and provide travel funds to meetings. Without attention to both items, this technical working committee cannot provide the guidance the Directors expect or agency staff need.
2. In response to a request for comments about federal budget priorities, this committee reviewed FY14 budget proposals for several federal agencies engaged in climate change science, planning and adaptation work relevant to fish and wildlife. The committee has two priorities to share with Directors:
 - a. The technical committee **supports the proposed increase** over the FY 12 enacted budget in the US Fish and Wildlife Service **Cooperative Landscape Conservation budget** (within the Resource Management Appropriation). The Landscape Conservation Cooperatives play a key role in how the Midwestern region can collaboratively address climate change and other landscape-level conservation concerns.

- b. The committee is **concerned** at the **decline** and subsequent stagnation of The **State and Tribal Wildlife Grants Program** funds. While this program is not intended to address climate change specifically, its intended use is to address threats to rare and declining species, and therefore is utilized for some climate change adaptation projects where appropriate. The impacts of climate change on rare and declining species, in addition to the threats rare and declining species already face in the Midwest, cannot be expected to be alleviated by such a small funding source. A more reliable source of funds to reduce both climate-related and non-climate stressors on rare and declining wildlife should be a part of a larger strategy to address climate change impacts on natural resources.
3. To aid in planning and coordination, this committee has agreed to establish a regular meeting schedule, following the model used by many more-established MAFWA technical working committees. That way, every member can anticipate which year they will need to chair the committee, or serve as vice-chair, and can also anticipate when it will be their turn to host the technical committee meeting. The chairmanship role will follow the same order as the location of the Director's meeting host state. Thus, for 2013-2014, Michigan's representative will assume the chairmanship role.

Time and Place of Next Meeting – The committee will attempt to hold a meeting in conjunction with The Wildlife Society Annual Conference to be held in Milwaukee, Wisconsin October 5-10, 2013. If a suitable number of this committee's representatives are unable to attend at that time, then we recommend convening a meeting in March or April of 2014, perhaps in conjunction with another technical working committee, such as the State Wildlife Action Plan committee or the Health committee.

Appendix 1 – Meeting Attendance

Representatives to this technical committee from each state are named below, with those who participated in the call highlighted in bold:

1. **Iowa – Katy Reeder**
2. **Illinois – Tom Heavyside (filling in for Ann Marie Holtrop)**
3. **Indiana – Katie Smith**
4. Kansas – Brad Simpson
5. Kentucky – None (this MAFWA member state has declined to name a representative; instead participates in SEAFWA Climate Technical Committee)
6. **Michigan – Chris Hoving**
7. **Minnesota – Olivia LeDee**, Ann Pierce (in addition, Kathy DonCarlos of MN DNR is the Director Liaison)
8. **Missouri – Janet Sternburg**
9. **Nebraska – Rick Schneider**
10. North Dakota – Terry Steinwand
11. Ohio – Nathan Stricker
12. South Dakota – John Lott
13. **Wisconsin – Tara Bergeson**, Karl Martin

Appendix 2 – Organizational Guidelines

ORGANIZATIONAL GUIDELINES FOR THE MIDWEST ASSOCIATION OF FISH AND WILDLIFE AGENCIES CLIMATE CHANGE TECHNICAL WORKING COMMITTEE

Mission: Advance wildlife and fish conservation in the member states of the Midwest Association of Fish and Wildlife Agencies (MAFWA) by providing a forum to facilitate sharing of climate change adaptation information, strategies, and resources, activity that will result in coordinated fish and wildlife adaptation planning actions and recommendations to MAFWA from the member states.

Objectives:

1. Provide a forum for the discussion of how fish and wildlife agencies are addressing climate change in member states, including how agency staff view the role climate change plays in conservation, and how climate considerations are integrated into agency organizational structure, policy, and planning efforts.
2. Define common priorities, develop coordinated strategies, and seek multi-state grants to address climate change threats to fish and wildlife and their habitats in member states (as identified in their climate adaptation plans, if such plans exist).
3. Stimulate an exchange of information among member states on legislation, administrative rules, adaptation and mitigation activity, education, funding and research related to climate change and fish, wildlife, and habitat.
4. Ensure coordination and cooperation among member states and federal agencies in dealing with programs to address the likely impacts of climate change.

5. Work closely with the Association of Fish and Wildlife Agencies' Climate Change Committee, the Landscape Conservation Cooperatives, and other regional committees, institutions, organizations and groups working to address climate change.
6. Stay up-to-date on climate change issues that impact fish and wildlife and inform/advise the Midwest Association of Wildlife Agency directors on pertinent issues and solutions.

Membership: The membership of the MAFWA Climate Change Technical Working Committee (MAFWA CCC) is open to employees of member states and provinces. Member states will be allowed one vote each, regardless of delegation size. Representatives of federal agencies, research institutions, conservation organizations, and other individuals may be invited to attend Working Group meetings.

Officers: The MAFWA Executive Committee shall appoint a Chair each year. The Chair shall be an employee of a member state agency. The Chair and his/her member agency shall provide clerical support needed for conducting committee business and shall maintain a file of all minutes of committee meetings, correspondence and other items as necessary. The Chair's responsibility shall include, but not be limited to, organizing a minimum of one MAFWA CCC meeting per year, maintaining committee files, preparing necessary correspondence and preparing a report of all CCC activities for submission to the MAFWA Executive Committee. The MAFWA Executive Committee shall appoint a Vice-Chair. The duties of the Vice-Chair will be to assist the Chair as required, assume the duties of the Chair in the event that the Chair is unable to perform those duties, and to succeed the chair when her/his term is over.

Sub-Committees: Ad-hoc Sub-Committees may be appointed by the Chair to investigate and report on specific issues. Sub-Committees will be appointed by the Chair upon review of requests from members of the Executive Committee for specific Committee action.

Meetings: The MAFWA CCC will meet at least once per year. The meeting may be held in any member state or in conjunction with other regional or national meetings that are timely or to reduce travel costs, or be conducted by conference call or webinar. The schedule and duration of each meeting will be determined by the Chair after consultation with other members of the Working Group. Notice of meeting dates and locations will be made available to members far enough in advance to enable them to secure out-of-state travel authorization for attendance.

Meeting Agenda: The program will be organized to permit adequate time for discussion of agenda items. Each Working Group meeting should include a short (10-minute) report from each state on the status of climate change-related projects in that state. Other topics on the agenda will reflect current issues related to the relationship between climate change, fish and wildlife, and habitat, as well as progress toward meeting the objectives of the Working Group. The Chair may request special reports from states and individuals on current topics. State and special reports will also be submitted in written format to facilitate sharing them with agency directors, maintenance of proper files and provision of reports to other appropriate persons. Guest speakers may be invited to Working Group

meetings to make presentations on topics of interest. Short field trips may be arranged in conjunction with the meetings.

Attendance: To enhance an atmosphere of participation and exchange of ideas, attendance from all member states and provinces is strongly encouraged.

Business Meeting: A formal MAFWA CCC business meeting will be held in conjunction with any Working Group meeting. The business meeting will discuss and determine specific recommendations to the MAFWA Executive Committee. Recommendations to the Executive Committee must represent the majority view of member states/provinces. Each member state with a representative in attendance will be allowed one vote. Invited agencies, private citizens, NGOs and others in attendance are not eligible to vote.

Report: Following any MAFWA CCC meeting, the Chair will prepare a report for the Executive Committee of the MAFWA. The Chair will also send a copy of the report to all members of the Working Group. MAFWA CCC members should brief their own administration immediately following the Working Group meeting. The report shall contain a summary of the information presented at the Working Group meeting, items covered in the business meeting, any recommendations from the Working Group, appropriate handouts obtained at the meeting and names and address of all attendees. This report shall be submitted to the Executive Committee not less than 30 days before the MAFWA Directors Annual Meeting.

Appendix 3 - Abstracts from Climate Adaptation Symposium held at 2012 Midwest Fish and Wildlife Conference

Climate Adaptation in the Midwest: What Does it Look Like?

*Midwest Fish and Wildlife Conference
Wichita, Kansas
December 11, 2012*

10:20 AM: Introduction by Moderators

Naomi Edelson, Director (Director, State and Federal Wildlife Partnerships National Wildlife Federation) and Christopher Hoving (Adaptation Specialist, Michigan Department of Natural Resources)

10:30 AM: Climate Change Adaptation in Wildlife Management, Policy, and Research in Wisconsin

Suzanne Hagell (Department of Forest and Wildlife Ecology, University of Wisconsin) and Christine A. Ribic (US Geological Survey, Wisconsin Cooperative Wildlife Research Unit, University of Wisconsin)

We conducted a survey of wildlife professionals in Wisconsin to 1) assess the perception of risks from climate change, 2) identify constraints on climate-adaptive management, and 3) identify effective methods for information sharing. Our results suggest that in order to help managers adapt to a changing climate, research needs to be delivered in-person and be locally relevant. Because we also found strong agreement among managers, researchers, and policy-makers about what constitutes good decision-making, we suggest that these groups are ready to work together to confront climate change, despite the inherent uncertainties.

10:50 AM: Intentionality: The Key to Successful Climate Adaptation

Bruce Stein, Director of Adaptation, National Wildlife Federation

Climate change already is affecting wildlife and their habitats, and preparing for and coping with these impacts is now central to effective conservation action. Climate adaptation goes beyond “doing more of the same, only better” and requires intentionality in its design and execution. This talk will review key characteristics for “climate smart conservation,” and describe an adaptation planning and implementation cycle that offers practical steps for incorporating climate change into existing or new conservation efforts.

11:10 AM: To Adapt or Not: A Tale of Two Sites

Hector Galbraith, Staff Scientist, National Wildlife Federation

While it is essential that we evaluate and, if necessary, modify our on-the-ground conservation tools and approaches to make them “climate-smart”, we also need to give careful thought to whether adaptation is necessary or, indeed, possible at sites. By comparing results from two very different New England sites, the Allen-Whitney Forest in Maine and Century Bog in Massachusetts, this presentation identifies some of the problems that may be inherent in adaptation at sensitive sites, and outlines the thought processes and calculations that may be necessary before the decision is made to expend significant resources.

11:30 AM: **Panel Discussion**

12:00 AM: **Lunch**

1:20 PM: **Statistical Downscaling of Climate Projections across the Landscape Conservation Cooperatives of Central-Eastern North American**

Michael Notaro, David Lorenz, Dan Vimont, and Steve Vavrus, Nelson Center for Climate Research, University of Wisconsin-Madison

A recently-developed climate projections dataset of the Wisconsin Initiative on Climate Change Impacts (WICCI) will be discussed, which was produced by the Nelson Center for Climatic Research through funding from the Michigan Department of Natural Resources (Great Lakes Restoration Initiative funds), Landscape Conservation Cooperatives, and Wisconsin Focus on Energy. Statistical downscaling was applied to thirteen global climate models (GCMs) from the Climate Model Intercomparison Project Phase Three (CMIP3); the CMIP3 GCMs were the primary source of climate projection information applied in the Fourth Assessment Report of the Intergovernmental Panel on Climate Change (IPCC AR4). Through the downscaling, the GCM biases were eliminated, the spatial resolution was greatly enhanced (from roughly 250-km to 8-km), weather extremes were more accurately represented, and future climate projections were developed in a probabilistic fashion through the application of cumulative distribution functions. The resulting product includes daily maximum temperature, minimum temperature, and precipitation for 1961-2000, 2046-2065, and 2081-2100, according to three emission scenarios (A2, A1B, and B1). In addition, this data was used to force an operational snow model (SNOW-17) through the 21st century to quantify potential changes in snowfall and snow depth. These high spatial and temporal resolution projections of temperature, precipitation, and snowfall will aid decision-makers and resource managers in assessing risk and formulating adaptation strategies across the Land Conservation Cooperatives in central-eastern North America.

1:40 PM: **Climate Change Vulnerability Assessment for Vertebrates in Midwestern Agricultural Landscapes**

Stacy L. Small-Lorenz, Conservation Scientist, Environmental Defense Fund

Climate change predictions for the interior US include increased risk of severe weather events like deadly storms, heat waves and drought, floods, and wildfire. Many of the extreme Midwestern weather events of the past several years were consistent with climate change predictions and the cumulative effects of such events have the potential to simultaneously impact agriculture and wildlife. We conducted an assessment of species' relative climate change vulnerability for the vertebrates of Illinois, using the NatureServe Climate Change Vulnerability Index, and compared our results to a similar assessment in Iowa. We found fish, reptiles, and amphibians to be the most climate-vulnerable vertebrate groups, mammals and birds the least. Species associated with freshwater ecosystems, particularly those affiliated with ephemeral wetlands, cold/coolwater environments, and shallow streams appear to be most vulnerable. Many of the most climate vulnerable species in our assessment area currently have no special conservation status. Water is likely to be the defining environmental crisis of the 21st century for society, agriculture, and biodiversity. We propose both public and private funding

strategies to engage growers in building resilience of freshwater ecosystems at scales that will produce climate change adaptation benefits for both agriculture and biodiversity.

2:00 PM: Development of natural resource adaptation strategies to address changing climatic conditions in Wisconsin

Dr. Karl J. Martin, Chief, Wildlife and Forestry Research Section, Wisconsin Department of Natural Resources

One of the goals for the Wisconsin Initiative on Climate Change Impacts (WICCI) is to facilitate the assessment of species and ecosystem vulnerability to changing climatic conditions. These assessments provide the foundation for developing on-the-ground adaptation strategies designed to increase ecosystem resilience and/or resistance to changing conditions. In 2011, WICCI produced an assessment report outlining climate vulnerable species and ecosystems and potential management actions.

The report also identified significant knowledge gaps that need to be addressed through additional research and monitoring. Development and implementation of the WICCI adaptation report and future challenges facing WICCI and ecological systems will be discussed.

2:20 PM: Embracing Uncertainty

Jennifer Hoffman, Directing Scientist, Eco-Adapt

Uncertainty has commonly been cited as a major obstacle to planning and decision-making in the face of climate change, with some claiming that the deep uncertainty around climate change makes it different from other issues faced by the conservation and resource management community. The reality is that our world is rife with uncertainty, and the uncertainty surrounding climate change is not the only or even the biggest source of uncertainty for many aspects of management decisions. Other sources of uncertainty include uncertainty about future funding or staffing, the state of the economy, weakening or tightening of environmental regulations, the development of a transformative new technology, or even whether or not an asteroid will hit Earth. In this talk, we explore tools and attitudes for working with uncertainty, and examples of successful on-the-ground applications.

2:40 PM: Panel Discussion

3:00 PM: Coffee Break

3:20 PM: Funding opportunities for applied climate adaptation

Darren Long, Program Officer, Wildlife Conservation Society

With funding provided by the Doris Duke Charitable Foundation and managed by the Wildlife Conservation Society (WCS), the Climate Adaptation Fund provides competitive grants to non-profit conservation organizations. These grants support applied, on-the-ground projects focused on implementing priority conservation actions for climate adaptation at a landscape scale. In 2012, the Climate Adaptation Fund awarded more than \$2.1 million for projects working to demonstrate effective interventions for wildlife adaptation to climate change.

3:40 PM: **Adaptation Forestry in Minnesota's Northwoods**

Meredith Cornett, Director of Conservation Science, The Nature Conservancy (MN/ND/SD)

Adaptation forestry encompasses new forest management tactics designed to favor native species combinations likely to persist under warmer, drier conditions. We will discuss applications of adaptation forestry for three currently common forest types of the Great Lakes Region: Boreal-Mixed, Pine, and Hardwoods. The project emphasizes within-range plantings of climate-adapted tree species (e.g., red oak, bur oak, white pine, and basswood) sourced from the Northern Superior Uplands and N. Minnesota Drift & Lake Plains Ecological Sections of Minnesota. The overarching project goal is to increase the adaptive capacity of northern forests such that they continue to provide a variety of ecosystem services, including critical habitat for forest-dependent songbirds. The work will be conducted at 12 recently harvested sites (2,000 acres). The project is a first step in helping northern forests transition to an uncertain future, ultimately influencing the adaptive capacity across millions of acres in the Great Lakes region.

4:00 PM: **IT'S BEING DONE: Climate Smart Conservation in Action on the Black River in Ohio**

Doug Inkley, Senior Scientist, National Wildlife Federation

Climate adaptation is a new science still early in development. The nascent stages of climate adaptation science combined with very few examples in place on the ground, is why development and implementation of climate-smart conservation projects can seem over-whelming at the start. Moving from theory and design to action is when the rubber meets the road and practical experience is gained. We review a case study of climate-smart conservation on-the-ground on Ohio's Black River. The discussion reviews some of the challenges encountered, how they were overcome, and specific ways in which the project was modified to account for climate change. The lessons learned have applicability across a wide-range of proposed climate-smart conservation projects.

4:20 PM: **Panel Discussion**