

EASTERN REGIONAL WORKSHOP
National Climate Change and Wildlife Science Center
Workshop Summary
May 6-7, 2009

Changes in the earth's climate will pose significant challenges to wildlife managers. Adaptive management of fish and wildlife resources will depend on scientific information about climate change at scales useful to managers. The National Climate Change and Wildlife Science Center (NCCWSC) will act as a conduit between science and management by providing climate science information to federal, state, academic, and NGO partners to support improved management of fish, wildlife, and other natural resources affected by climate change. The USGS is convening a series of regional workshops that build on the outcomes of a 2008 national workshop, bringing together a broad range of stakeholders (federal, state agencies, academic, and NGO) to help develop the structure of the NCCWSC and partnership mechanisms needed to link climate science and national resource management in the United States

On 6–7 May 2009, the Eastern Regional Meeting was held at the Patuxent National Wildlife Refuge. Following a plenary session, participants split into three groups—Northeast, Southeast, and Midwest—to develop input on the following core issues:

Priorities of the NCCWSC:

- Downscaling global climate models
- Linking physical climate models with ecological/biological responses
- Forecasting population responses at temporal and spatial scales useful for resource management and development of policy
- Establishing partnerships to link results of adaptive management with policy and management planning.

Proposed structure of NCCWSC at national and regional levels:

This has been envisioned as a collaborative system of NCCWSC Regional Climate Science Hubs working with external adaptive application partnerships jointly organized by willing partners. These partnerships would create feedback loops to inform science priorities and adaptive resource management at regional and finer scales. Participants were asked to explore the science capabilities a Regional Climate Science Hub would need, and what sorts of oversight boards are desirable at the national and regional levels.

Potential regional hubs:

Participants listened to a presentation about a pilot project in the Southeast Region that could serve as a model for creating Regional Climate Science Hubs. After discussing what criteria would drive the creation of new hubs, they scoped out potential hub partners and locations of regional hubs.

SUMMARY OF PARTICIPANT DISCUSSIONS

Priorities of the NCCWSC:

1. Downscaling global climate models

- Downscaling requires knowing end users. Scale is important; managers need information at a much smaller scale than models can provide.
- Uncertainty is a big factor; it will be important to be candid about the level of uncertainty. Legitimate downscaling must be combined with records based on smaller-scale observation on the ground.
- Downscaling requires capacity building; this can be increased through partnerships.

2. Linking physical climate models with ecological/biological responses

- NCCWSC should work with partners to provide guidance on what metrics are important to meet specific resource management challenges (e.g., water temperature for trout)
- NCCWSC will deliver derivative products that combine outputs. For example, downscaling of climate parameters (e.g., temperature and precipitation) will be used to examine how changes in the parameters will affect wildlife and habitats (e.g., through changes in stream flow).
- Responsibilities would include setting the standards and criteria used in modeling efforts, but data management and communication is not envisioned as NCCWSC responsibility.

3. Forecasting population responses at temporal and spatial scales useful for resource management and development of policy.

- Is synthesis of information a function that is equally important as forecasting?
- Understanding trends is necessary for forecasting.
- Should focus be on resilience or on sustaining populations?
- The consensus was that landscape scale was appropriate, but several questions about scale and scope emerged: Should focus be only on wildlife and natural systems, or on broader issues (e.g., agriculture?). Should the NCCWSC consider how climate changes abroad will affect U.S. lands (e.g., how will drought in Australia put pressures on agricultural lands in U.S.?)
- Does “forecasting” include projection (i.e., scenario development)? Projections can be useful for policymakers.

4. Establish partnerships to link climate science results with adaptive management and policy development.

- The Center can't do all the science itself, so integration is essential.
- To what extent is true joint decision-making desirable or possible? NCCWSC would be the catalyst for decision-making at the scale of regional adaptation applications partnerships, not the decision-maker; joint decision-making at the regional scale is intriguing.
- Private landowners are key, because so much land is in private hands.
- Feedback from policy decisions will be important; e.g., new energy policy will affect wildlife.

Additional priorities identified:

- Humans and human forcing; effects of climate need to be integrated with other land use change and other human impacts.
- Communication, both about the center itself and within and between hubs and partners. The ability to translate information into laymen's terms is key.
- Determining where monitoring will occur.
- Database coordination.

Proposed structure of NCCWSC

Participants focused on the following points:

1. The function and capacities of NCCWSC Regional Climate Science Hubs.

- Activities of hubs are directly linked to goals of the National center. They would provide technical assistance to partners, coordinate downscaled GCMs, and produce broad-scale ecological and biological response models.
- Key functions are synthesis of science and translation of science to resource managers, regulatory community, and policymakers.
- An important missing element is a social science component.
- Hubs need to have GIS, climate modeling, and computational ability, along with habitat/species response expertise.
- Hubs need accessibility to managers and scientists.

2. Relationship of the Regional Climate Science Hubs (RCSH) and the external regional adaptation applications partnerships, to each other and to the National Center.

- The Regional Climate Science Hubs are part of the National Climate Change and Wildlife Science Center. The external conservation partnerships that will inform the focus of activities at the RCSHs are broad partnerships that may differ in nature due to the conservation goals of the partnership.
- There needs to be a distinction between programmatic partners and the end user/stakeholder/client (e.g., refuge manager)

- The function of regional adaptation applications partnerships would be both to identify the management needs and to provide information and feedback from modeling and monitoring.
- Adaptation applications partnerships should draw on and represent a broad pool that includes agencies, academia, industry, NGOs, elected officials.
- The collaborating regional adaptation applications partnerships need to be viewed as neutral conveners, as there will be differing views about what is a positive outcome.
- The National Center would coordinate efforts with agency and organization partners at the national level that cross hub boundaries.
- In addition to regional adaptation applications partnerships, other national partnerships with existing programs would inform the work of the NCCWSC, such as the National Phenology Network, the Climate Effects Network, and the Regional Integrated Sciences and Assessments (RISA) program at NOAA.

3. The governance structure of the National Center and the Regional Climate Science Hubs.

- Priorities, standard practices and partnership frameworks developed at the National level would be interpreted at the regional level.
- National office will provide oversight of the Regional Climate Science Hubs.
- National center is envisioned as having a scientific advisory board and a governing board with which the Center director would consult on scientific and management issues.
- Regional Climate Science Hubs should have regional oversight boards or steering committees that would reflect stakeholders and users of the output, not just the programmatic partners. Should regional hubs also have advisory committees to oversee science quality?
- Pending legislation may dictate who does the decision-making.

Potential Regional Climate Science Hubs

1. The Southeastern Regional Assessment Pilot

- This pilot program can serve as *a* model, not necessarily *the* model, for Regional Climate Science Hubs.
- The pilot grew out of a need identified at a meeting of natural resource stakeholders.
- Potential partnerships were already evident and easy to put in place.
- Pilot studies are already funded and underway.

2. Drivers for establishing the Regional Climate Science Hubs

- The purpose of the hubs is to inform and to provide science. They must be driven by needs identified by managers.
- National coverage is desirable, but how should that be achieved? By geopolitical considerations (e.g., existing administrative regions)? By ecological criteria (e.g., a hub for grasslands)? By resource management needs (e.g., water quality)?
- Creation of hubs is likely to be phased. The first hubs will likely be established where a need is expressed, where resources become available, where partnerships already exist, and where there is a good chance of success in delivering results fast.

Potential partnerships for Regional Climate Science Hubs

Numerous existing programs, including many collaborative efforts, were envisioned as potential adaptive applications partners for hubs within the Eastern region. Participants stressed that the marine component needed more emphasis, and that international partnerships would be essential in some regions.

Examples include:

- Chesapeake Bay Program
- NOAA's Regional Integrated Sciences and Assessments (RISA) program
- EPA's Great Lakes program
- Cooperative Research Units
- NOAA's Sea Grant program
- Land grant universities
- Native American tribes
- Bi-national groups (Latin America, Canada, the Caribbean).
- Cooperative extension services
- Wildlife databases (e.g., Xerxes)
- Communications groups (e.g., farmers' unions, NGOs such as Environmental Defense Fund)
- Cooperative Ecosystems Study Units