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Advisory Committee on Climate Change and Natural Resource Science

Meeting Summary

The Advisory Committee on Climate Change and Natural Resource Science (ACCCNRS or the Committee) met for the eighth time on November 9-10, 2016 at the University of Arizona in Tucson, AZ.

Meeting Objectives

- Brief the committee on the enterprise-level strategic plan process and engage the committee in contributing to the plan. Specifically:
    - Discuss driving factors for allocations for Climate Science Center (CSC) products and activities
    - Discuss the emergent properties of the network as a whole
- Identify immediate communication needs associated with the Presidential transition
- Brief the committee on CSC re-compete process, the Association of Fish and Wildlife Agencies (AFWA) state climate survey, the Southwest CSC's activities, and ethics responsibilities of ACCCNRS members

Key Conclusions and Directions

The Committee:

- **Will submit a briefing letter to the new Secretary of the Interior (DOI)** communicating the value proposition of the National Climate Change and Wildlife Science Center and Climate Science Centers that support fish & wildlife, water quality, resilience to extreme weather, recreation, ecosystem services and other social and economic values. The letter will address responsibilities to stakeholders and federal obligations to tribes and for trust resources. It will also emphasize the importance of USGS climate science centers for other DOI bureaus and others more broadly. Bruce Stein will lead the drafting of the letter, and the Committee will review and approve the letter to be submitted upon appointment of the new Secretary. A conference call will be scheduled to review the draft letter. Individual members of the Committee can play a role in helping to amplify this message through outreach.
- Provided feedback into the **Network's strategic planning process**:
    - The Committee agreed that a **shift toward emphasis on supporting adaptation and adaptation planning** should be a priority of the Network,

and that this shift can occur at the local/individual Climate Science Center (CSC) level as well as through learning across the Network as a whole and through opportunities for cross-CSC collaboration. The Network strategic plan can explicitly address work areas for adaptation. The shift toward adaptation support includes: operationalizing high-level adaptation strategies; clarity on the client and context; innovation in adaptation design; support for decision-making and problem-solving to select appropriate and relevant strategies; and evaluation and monitoring for efficacy – including for specific, concrete contexts as well as through development of generalized frameworks.

  - The strategic planning process will also explore identification of **science priorities for the Network.** The strategic planning team will also further develop the **core services, benchmarks and metrics** section of the strategic plan. The ACCCNRS strategic plan subcommittee will provide input to the planning team on these issues (and expressed particular interest in science priorities), and the full committee will also have opportunity to review. Association of Fish and Wildlife Agencies data may also be useful for the strategic plan.
  - The committee identified a number of **emergent properties** of the Network as a whole, which include innovation diffusion, coordination and efficiency, communicating value proposition to broader audiences, and actionable science and co-production of science – particularly adaptation science and cross-regional priority science. These emergent properties map well against the core products and services identified by the strategic planning team (capacity building, partnerships, communications, and actionable science). These emergent properties can guide the enterprise-level outputs included in the strategic plan.

- Recommended holding the **next meeting on May 8, 2017 in Minneapolis**, prior to the National Adaptation Forum on May 9-11, 2017. Several Committee members have rooms available for events on May 8.

Proceedings, Day One

Welcome and Opening Remarks

Bruce Stein, Associate Vice President, Conservation Science and Climate Adaptation, National Wildlife Federation and ACCCNRS Co-Chair opened the meeting, noting that Robin O'Malley, Policy & Partnership Coordinator, NCCWSC and Designated Federal Official, was not able to join the meeting due to a family emergency. Bruce touched on the election results, and the importance of planning for uncertainty in the context of both

climatic and political change. He noted that the agenda would be rearranged to include administration transitions discussions earlier in the meeting than planned. The meeting would be focused on providing input into the ongoing strategic planning process for the Climate Science Centers (CSCs). Especially important would be to discuss the enterprise properties of the network, and how collectively the regional CSCs add up to something greater than the individual parts. The ability of any network to be sustained over the long-term is critical. Doug Beard, Chief, NCCWSC, made welcoming remarks. He emphasized the importance of strategic planning to demonstrate the value and relevance of the CSCs to helping US citizens adapt to climate change. He noted that the committee shouldn't lose sight of its priorities and the importance of its work.

ACCCNRS Member Introductions and Agenda Review

Julie Shapiro, Keystone Policy Center, facilitated member introductions, noting that quorum requirements had been met. The meeting agenda was reviewed, with the discussion on the presidential transition being moved to the first day of the meeting.

CSC Re-compete Update

Doug Beard updated members on the re-compete process. USGS is currently in the process of re-competing agreements for the first three CSCs (AK, NW, and SE) along with a competition for hosting a new CSC (Midwest). USGS put out a request for proposals and held a technical review panel; the review team convened in August recommended that the Alaska Climate Science Center and the Midwest Climate Science Center move forward. The committee is in negotiations with the Alaska proposal team to finalize the agreement; the process to open the Midwest CSC is on hold pending funding. Proposals from other regions were found to be insufficient; the competition was re-opened in early October for the Northwest and Southeast CSCs, with the goal to have a decision in place before agreements expire in April. New agreements cannot be awarded until USGS/NCCWSC has received full funding for FY17.

An independent team, organized by American Fisheries Society and Cornell University, is reviewing the effectiveness of each CSC as we come to the end of the existing cooperative agreement. The first three CSC (AK, NW, and SE) reviews were conducted earlier this year, and the second round of CSC reviews (NC and SW) are currently in the planning stage.

AFWA 2016 State Climate Survey Data Overview

Davia Palmeri, Climate Change Coordinator, AFWA presented an overview of AFWA's Climate Adaptation Surveys. The surveys have been conducted every two years since 2010; they received 33 responses in both the 2014 and 2016 surveys. The surveys include

three categories of questions: State climate adaptation activities; state climate science needs; and interaction with federal partners. The 2016 survey found that state fish and wildlife agencies are doing a large amount of work on vulnerability assessments. All states that responded indicated they have incorporated climate change into their state wildlife action plans, although some states are addressing climate change concerns more deeply than others. Many plans haven't incorporated actions to address climate change threats yet. The CSCs are now the number one ranked source of climate adaptation technical assistance for these state agencies. There has been a major increase in the direct interaction between agency staff and the CSCs. State agencies are looking for more translation of data into a format relevant to managers, synthesis of research, and more habitat connectivity information. High priority thematic areas include habitat conservation, water quantity and quality, and invasive species. Currently, no state agencies require climate adaptation training for staff. Only three state agencies offer internal training. Making training easily available for agencies would likely increase participation. Webinars and workshops are the most popular choice for receiving new information (much higher for instance than journal articles). Next steps for the survey project include a full report on regional results for the AFWA regions, presentations to the CSCs, and making survey responses available for the NCCWSC and CSC communities.

Committee members discussed the role that the CSCs might play in providing more climate adaptation training. CSCs could help develop content for training, however it may be difficult for the CSCs to offer the training themselves. It was suggested that on the leadership level, training is highly variable, and that directors often have to worry about the politics involved with climate science. Tribal leadership in providing training to other tribes was also discussed.

The discussion was closed, with a note that there are promising trends for the interactions between the CSCs and state agencies.

Southwest CSC Overview

Steve Jackson, Southwest CSC Director provided an overview of the Center and its work. The Southwest CSC prioritizes bridging the research-action gap. Science-informed action is emphasized, or "action science." Such implementable science requires partnership building and translational science. The Center seeks to identify the most effective translation practices, and works to leverage capacity at University of Arizona and partners in science translation. The Center offers opportunities to convene efforts across the university and to substantively support adaptation efforts.

Katharine Jacobs, Center for Climate Adaptation Science and Solutions Director discussed the Center's priorities to connect resources and outcomes, and to manage the interface between science and decision making. Major themes of the Center include: bridging the gap between science and decision making; managing risk in a complex, interdisciplinary, and multi-sectoral context; supporting transformational adaptation and preparing for extreme climate and weather events; and finding synergies among adaptation and mitigation strategies to promote sustainability. CCASS work includes training programs, conferences, needs assessments, and on the ground adaptation activities such as working with local water managers to incorporate climate change into their planning. A major effort of the Center has been to build support for Native Americans in their adaptation efforts.

Alison Meadow, CCASS Staff Scientist, discussed the Center's work to evaluate the process and impacts of "actionable" science. Collaboratively produced science makes it more likely that end users will use that information; it lends more credibility and resiliency. Implementing this process efficiently and effectively requires targeting the most helpful actions and practices, as well as incentivizing all stakeholders. The fields of information science, program evaluation, and action research provide guideposts to decide which theories and approaches are most useful in context. However, uncertainty can make it difficult to filter information. The Center is working to create a framework to evaluate actionable climate science research projects. The framework seeks to understand what influences the usability of the science, especially outside context and factors, and how to track this information. A set of indicators of successful, collaborative production of knowledge has been created. The Center is currently running a process to collect data against these indicators.

Lessons learned from the project so far include:

- Earlier integration is more effective, but challenging.
- Collaborative research is a skill in which natural and physical scientists aren't always trained.
- The timeframe to see impacts may be longer than expected, and impacts may be different than expected.

Jonathan Overpeck, Southwest CSC University Director discussed the future of the SWCSC. In the next phase of the CSC, there will be a new focus on capacity building, with a goal to build the workforce needed to meet climate change challenges. The SWCSC is also looking to invest more in tribal community work. The SWCSC aims to collaborate more with other CSCs, finding areas of synergy and creating efficiencies of scale. It was noted that each Center represents a unique region with unique needs; some CSC

priorities will overlap, and others will not. The CSC network should work on coordinating and communicating investments.

Ethics Training

Nancy Baumgartner, Deputy Ethics Counselor, U.S. Geological Survey presented information on the ethical responsibilities of representative members of ACCCNRS. Charter language states that a member cannot participate in specific party matters or litigation in which the member has a direct financial interest. Matters of general applicability aren't specific party matters, such as legislation and general policy and objectives; these won't cause a conflict of interest. Personal financial interests refer to individual interest. Only advisory duties are restricted. When not engaged in advisory duties, members may engage in specific party matters. Members cannot act on that specific party matter in their advisory duties. Five examples of potential ethics concerns were reviewed. If a member is unsure about a potential conflict of interest, he or she should contact Nancy Baumgartner or Robin O'Malley.

Network Strategic Plan Briefing

The strategic planning team (Janet Cushing, Carolyn Enquist, Michael Langston) provided an overview of the strategic plan process. The strategic planning process aims to produce a collective vision, an overarching framework that operates as a living document and reflects the uniqueness of the network. Each CSC forms its own individual plan as well. Each CSC will come up with a science agenda out of this overarching strategic planning, and will identify science area priorities.

The process is led by a small, internal team that has been reviewing existing plans. The team has conducted structured interviews with CSC directors, key partners, and a subset of ACCCNRS members. Questionnaires have also gone out to CSC staff members. The goal of the interviews is to identify areas of consensus and areas of disagreement. The strategic planning team is preparing to finalize themes, identify draft goals and objectives, and begin the development of performance metrics.

The four strategic themes of the plan are partnerships and convening, communications, capacity building, and actionable science. In the partnerships and convening category, there was consensus among interview/survey participants that the CSC network can better meet the climate science needs of stakeholders by convening researchers, decision-makers, and stakeholders, understanding the decision context of management applications, and setting priorities across the network to meet common needs. There was more divergence in survey results in the communications category. Survey results indicated that the CSC network needs to do a better job distinguishing itself from other

entities. The network should be known for providing relevant, translated science and should facilitate dialogue between scientists and managers. There was strong consensus that capacity building should be an organic process within each CSC, but that NCCWSC should provide general, overarching guidance. In terms of actionable science, most CSCs ranked adaptation strategies as their highest priority going forward, although several CSCs are still primarily focused on identifying future climate and assessing impacts and vulnerability. Survey responses were split over whether regional priorities should be aligned with national priorities across the network.

The issue of specialization was raised. The planning team has discussed two models of structuring potential centers of expertise; there could be a center of expertise within each CSC, or each Center could contribute experts to a working group that operates across the network. There was discussion of whether each CSC is expected to provide a common or benchmark level of information; the strategic planning process will identify core services and benchmarks.

Administration Transition

The ACCCNRS meeting took place the morning after the presidential election, and the Committee discussed the upcoming Presidential transition and its implications for the climate science center program. It was hypothesized that the Department of Interior nomination may not be one of the earliest, and that the transition may not be fast-paced. FY 2017 budget development, however, will likely be very fast and compressed into a six-week period.

The committee discussed how to frame the work of the climate science centers with the new administration. It is currently unclear what the new administration's stance on climate change is, despite campaign rhetoric; it shouldn't be assumed that denial of climate science will be the official position. However, framing the work in terms of severe weather, wildfire, impacts on fish and wildlife, and natural resource management could be beneficial. It was suggested that policy changes related to adaptation and resilience, will likely be less dramatic than those related to climate mitigation. It was also noted that the program was initially conceived and established during the Bush administration.

The committee noted that it will be important to articulate the value that the CSC network provides for conserving fish and wildlife resources and supporting state fish and wildlife agencies, as well as for mitigating climate-related risks to people and communities. Honing in on the value proposition will be important to defend budgets. ACCCNRS needs a succinct description that clearly articulates the value of the climate science centers, and how they differ from other entities and provide value to the tax

payer. The committee should identify people resonant with the incoming administration to speak on behalf of the network.

In terms of impact of the transition on USGS, it was noted that USGS work, as a non-regulatory science agency, isn't usually greatly influenced by administration transitions. The USGS's director is its only political appointee; based on past precedent, this appointment likely will not happen until May. USGS has an unbiased approach to science, and has statutory authority to work on certain issues; its work on climate science goes back five decades. USGS will put together key documents to brief the new administration on certain issues and to provide information on USGS's work.

Enterprise Level Outputs

Bruce Stein introduced a discussion concerning the emergent properties of the CSC network as a whole. The goal of the discussion was to articulate the value of the CSCs operating as a national network, in order to more clearly describe the importance of investing in a network of regional climate centers.

Committee members individually brainstormed emergent properties. For a full list of brainstormed properties, see Appendix B.

Themes included:

- Innovation diffusion
- Coordination/efficiency
- Actionable science/co-production
- Value proposition/messages to broader audience
- Adaptation strategies
- Cross-regional issues, highest priorities
- Scales – regional differences/similarities
- Core products/services

Prior to the meeting, CSC directors provided feedback on emergent properties. They suggested that the network should consider what the Centers can create only through collaboration, what it would take a network approach to accomplish. Categories include:

- National syntheses
- National science, building on regional
- Regionally-based community of interest
- Bi-lateral science
- Emergent potential

The national network also allows opportunities for knowledge and innovation sharing among CSC members. Although committee members recognized that collaboration among centers already is occurring, they also felt that CSCs could operate more effectively as a network. Often, CSCs are limited to their regional work due to time and resource constraints; this can cause members to lose sight of how their work connects to other regions and the national network. Emergent properties can guide the enterprise-level outputs included in the strategic plan, and will help demonstrate goals and priorities to stakeholders. ACCCNRS members also emphasized their interest in contributing to the review of network science priorities that are being synthesized by the strategic planning team.

Public Comment
There were no public comments.

Proceedings, Day Two

Review of Day Two Agenda
Kevin Bryan, Keystone Policy Center reviewed the morning's agenda. Bruce Stein gave opening remarks, emphasizing that this is an important time to articulate the value of National Center and Regional Climate Science Centers, especially to the Department of Interior. Julie Shapiro provided a recap of the previous day. She demonstrated how the emergent properties discussed by the committee map against the core products and services outlined in the strategic plan. She also addressed the discussion regarding priority science; the strategic planning team is working to distill the laundry list of suggested science priorities and there will be opportunity for ACCCNRS to provide feedback.

Bruce Stein noted that the committee's primary responsibility is to provide advice to the Secretary of the Interior, and based on the previous day's discussion proposed that ACCCNRS provide a formal recommendation to the incoming Secretary that emphasizes the value proposition of the Climate Science Centers, and the importance of and need for continued commitment to and investment in the program. Members noted that the communication should make a business case for the importance of the climate science centers, particularly with regard to DOI meeting its trust responsibilities and obligations.

Continuation of Strategic Planning Discussion
Committee members made comments on strategic planning key topics, which included:

- Clarity about expectations and products will drive the necessary collaboration between centers.

- It will be necessary to frame climate science work in a way that resonates with audiences, without losing the core values of the group.
- The strategic plan needs to have an element of vision and mission in order to be effective and create buy-in, but the Centers should not be boxed into one vision.
- The Strategic Plan Core Team (Carolyn Enquist, Janet Cushing, Michael Langston) will work with the Core Functions/Strategic Plan sub-committee as the strategic plan is further developed, and the sub-committee will report back to the full committee with recommendations for consideration.

CSC Products and Activities

Committee members discussed the driving factors for allocations for CSC products and activities. A pre-meeting survey of directors and committee members showed that current allocations are close to the targets recommended by the committee. Recommended allocations in the actionable science category are slightly different than what directors currently allocate. The committee believes there should be an increased emphasis on supporting adaptation, relative to identifying climate signals and impacts/vulnerabilities. It was suggested that a follow-up survey be conducted on the allocations the directors would like to see, rather than what is currently in place.

It was noted that climate services are a challenge for CSCs to address, as the science staff do not get credited for this type of work that does not involve publication. Another challenge is being able to provide technical assistance to managers that is detached from the research. This challenge is especially important because the technical assistance component could be a powerful aspect of the CSC value proposition. It was noted that the committee should consider the type of staffing at CSCs going forward if these issues are to be addressed.

Moving into Adaptation Research, Design and Evaluation

Given the interest in promoting more adaptation support and planning across the network, Committee members discussed what it would mean for centers to increase their support for adaptation decision-making.

Among the ideas discussed were: The CSCs can emphasize the application of decision science and analytics to help partners/stakeholders better determine the risks and benefits of different adaptation strategies. CSCs can also help teams across different sectors to integrate climate change into developing management strategies. CSCs can assist partners with scenario analysis, as well as evaluating the efficacy and consequences of decisions down the road. Climate monitoring frameworks are needed in order to do evaluation. There's a potential for leveraging the user community to fund monitoring and evaluation.

It was noted that there are already a few projects looking into efficacy, but nothing systematic. The CSC network could also have a role in promoting more innovation and thinking about novel adaptation solutions. The Committee noted that CSCs could have a major role in helping partners operationalize key adaptation strategies, many of which are still heavy on theory and light on practice.

Areas of adaptation decision making support should be approached on a network wide basis, but there should also be a strong focus on CSC regional perspectives. Local enterprises should be allowed agility to experiment; learning opportunities can inform broader understanding. Lessons from local execution can be harvested for broader/national application. Also, the CSC network should coordinate better with the LCCs and state agencies.

Going forward, questions to consider include how to compare different adaptation strategies, defining the spectrum of applicability, and the extent to which strategies require down-scaled projections. It was noted that adaptation strategies need to have logical connection to risk mitigation; actions should be linked to climate impacts. Decisions should embed flexibility, allowing a broad spectrum of options going forward.

Next Steps
Committee members clarified the tasks and objectives going forward. It was agreed that next steps for the committee would be 1) the briefing letter to the new Secretary of the Interior communicating the CSC value proposition and 2) feedback into the strategic planning process *(see the 'Key Conclusions and Directions' section on page 1 of this summary).*

Public Comment
There were no public comments.

Closing Remarks
Bruce Stein closed the meeting, thanking hosts and staff. He noted that there has been good progress towards more clearly defining the shift towards supporting adaptation decisions. Janet Cushing, NCCWSC Deputy Chief added that the strategic planning team will be refining the strategic plan based on the meeting discussions.

Appendix A
Participant List *(* denotes remote participant)*

ACCCNRS MEMBERS/ALTERNATES

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Appendix B
Emergent Properties Brainstormed on Day One

- Provide a network of regional expert teams and interface with fish, wildlife, plant, and public land managers
- Efficiency – coordinate and sharing info amongst CSCs
- Administrative capacity to match organization of other reginal focused entities like climate hubs
- Broader partners list both NGOs and government
- Improved ability to collaborate/engage internationally – climate issues transcend borders
- Able to form centers of excellence, groups to be more efficient and avoid unneeded duplication of services
- More flexibility to utilize existing concentrations of expertise
- Interaction and co-production across CSCs

- Climate and flyways – timing, water, planning
- Climate and the Mississippi river – flood control, shipping, ecology
- American rivers and climate, focused on common approaches, emerging issues and policies

- Design plans to leverage federal investment to gain blended public/private support for highest priority subjects
- Strong demand for an on-going well-funded national climate service
- Identify highest priority initiatives
- Focus on strengths – there is a lot of good work that has been done at the CSCs – building and enhancing that gets u further than recreating
- Ability to identify establish core products and services – don't end up with "haves" and "have nots"
- Synthesizing ecological responses/climate scenarios

- Translation of science for actionable outcomes
- Provide a process or template for achieving actionable science
- Co-design new adaptation science with DOI constituencies
- Development of a co-production paradigm
- Co-production of knowledge with stakeholders and tribes

- Understanding qualities of life issues – tie work to individuals' values (recreation, jobs, etc.) – make work relatable
- Integration of science and engagement with resource managers on climate-sensitive topics
- Consistently state our value proposition
- Messaging and value added – need to make science very relatable to decision makers
- As a whole, increase public awareness on climate change science, impacts – cultural revolution
- Entry point to climate science/information for fish and wildlife managers, wherever they are found

- Supports multiple scales/jurisdictions (state agencies, federal, NGO, etc.) adaptation decisions
- As individual CSCs – grassroots ownership of adaptation projects
- Scale – can answer urgent questions at a larger scale using the network
- Covers full range of wildlife and natural resource climate impacts and adaptation options
- Insight into continental-scale change and adaptation emerging from regional collaborations
- Widely understood shared understanding of the best practices for actionable adaptation science
- Development and evaluation of a broad group of adaptation strategies
- Develop effective climate adaptation strategies (implementation of planning)