



**WAFWA
CLIMATE CHANGE
COMMITTEE**

**Annual Update for Committee
Members**

2009

Updated October 8, 2009

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WAFWA Climate Change Contacts

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Questions Covered in 2009 Update

1. Where are you at right now with respect to climate change and fish and wildlife issues in your agency/organization?
2. Highlights and accomplishments
3. New or ongoing initiatives and actions in the state/organization
4. Where would you like to be with respect to climate change and fish and wildlife issues? (What's your vision, or what direction would you like to be moving in).
5. Challenges
6. Opportunities for collaboration/partnerships that the committee should be aware
7. Discussion/Action items for the committee.

Possible Questions for 2010 Update

1. Please describe any on the ground adaptation examples that your state/province/organization is pursuing and/or planning to pursue.
2. Do you have a position(s) in your state/province/organization that is solely dedicated to climate change?
3. Is there a cabinet level position for climate change in your state/province?
4. Is your agency (Wildlife Agency) the lead on adaptation planning for your state/province?
5. Please provide an estimate of the cost of your agency/organizations climate change related efforts for the past year and if/how many FTEs are dedicated to this work.
6. Is your state using model data to predict impacts of cc on wildlife communities? If yes, please describe the community, the modeling effort, and the scale to which the model applies or a contact person for further follow up.

Alaska Department of Fish and Game

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Where are you at right now with respect to climate change and fish and wildlife issues in your agency/organization?

Governor Palin has established a Sub-cabinet on Climate Change to advise her on the preparation and implementation of an Alaska climate change strategy. The Sub-cabinet has selected over 100 individuals to serve on Mitigation and Adaptation Work Groups to help develop this strategy. The Mitigation Work Groups are examining ways green house gas emissions can be reduced through conservation, efficiency and technological advances and are arranged to develop a set of recommendations for (1) Oil & Gas, (2) Energy Supply and Demand, (3) Transportation/Land Use, (4) Forestry, Agriculture, Waste, and (5) Cross-Cutting, including Residential/Government-lead actions. The Adaptation Work Groups are focusing on areas such as how to design and/or prepare for the future and address impacts of climate change as it relates to (1) infrastructure, (2) human health and culture, (3) ecosystems and the economies that depend on them and (4) new shipping routes in the north. A Research Needs Work Group has also been formed to identify research gaps and needs. The goal is to develop a final product from the Advisory Groups to the Sub-cabinet which, in turn, will evaluate the recommendations and submit a Climate Change Strategy to the Governor by the end of 2009. Information on the Sub-cabinet and Work groups can be found by visiting <http://www.climatechange.alaska.gov/>.

While the sub-cabinet is looking comprehensively at climate related impacts throughout Alaska, the Alaska Department of Fish and Game has also formed a Think Tank to identify likely impacts

ADF&G's Climate Change Think Tank Purpose:

- (1) assess the short and long-term impacts of climate change on fish, wildlife and habitat;
- (2) determine data deficiencies and set research priorities to help us understand these impacts;
- (3) identify science-based management strategies for adaptation to a changing climate; and
- (4) provide input to ADF&G leadership and the Governor's Sub-cabinet on climate e change impacts.

to fish and wildlife and their uses. The group will also develop strategies to address these impacts. The group has chosen to focus on 6 main ecosystem types including: Forest, Tundra, Wetland, Coastal Marine, Freshwater Aquatic, and Karst Cave, previously identified in the Department's Wildlife Conservation Strategy (<http://www.sf.adfg.state.ak.us/statewide/ngplan/>). For each ecosystem type, likely impacts from climate change, monitoring and research needs, and specific species concerns will be identified. Both short and longer term time horizons will be used.

The goal is to develop a climate change strategy that can form a foundation for efforts to maintain healthy ecosystems and robust fish and wildlife populations in the face of a changing climate. This effort will also inform the Governor's Climate Change Sub-cabinet and be used as an application tool for future funding requests. Much of the federal legislation aimed at addressing climate change includes funding for addressing impacts to fish and wildlife and their uses.

Highlights and Accomplishments:

The Research Needs Work Group report has been completed and is out for public review. The Department's Think Tank report is expected to be completed in fall.

New or ongoing initiatives and actions in the state/organization:

Still under consideration and development.

Where would you like to be with respect to climate change and fish and wildlife issues? (What's your vision, or what direction would you like to be moving in).

We envision an integrated research and management infrastructure supporting multi-disciplinary systematic analyses and decision-making as an integral part of the climate change strategy that will allow Alaska to effectively, economically, and sustainably adapt to and mitigate the consequences of climate change. To accomplish this will require:

- Developing a comprehensive inventory of vulnerable resources, communities and infrastructure to determine consequences of climate change on the natural and cultural systems, infrastructure, and economic investment;
- Increasing acceptance of managing uncertainty with strengthened science-based research and probabilistic scenario analyses;
- Embracing a systematic outcome-focused approach to decision-making that addresses sustainability, climate change adaptation needs, and long-range planning;
- Promoting innovation and continuous quality improvement in increasing applied research capacity and incentivizing new methods for adapting to impacts and managing mitigation measures; and
- Establishing mechanisms to ensure communication & coordination among state agencies and with federal agencies and stakeholders to provide research-derived information to address multi-jurisdictional needs in mitigating greenhouse gas emissions and adapting to climate change.

Challenges or barriers that are holding you back from where you'd like to be?

Having sufficient research to implement and monitor the success of identified mitigation and adaptation strategies. The state has identified the following overarching research needs:

- Improved downscaled (local) climate models: The ability to effectively implement policy recommendations is largely dependent upon being able to act at local levels. This necessitates being able to predict the impacts of a changing climate locally. Programs like Scenario Network for Alaska Planning need to be expanded to include more variables and greater specificity, as well as the variety of Alaska ecosystems (ocean, coastal, terrestrial) and the needs of natural system services (e.g. wildlife, fisheries, subsistence, economic, etc.).
- Need for baseline environmental research and monitoring: The success and accuracy of downscaled models is largely dependent upon the quantity and quality of data available. There is an urgent need to collect baseline environmental research and monitoring data. This includes developing a robust baseline monitoring program of a variety of physical, chemical, biological and socio-economic variables that take into account seasonal, annual, and decade-long variability. It also includes implementing a well-developed research program that includes process studies and applications.
- Improved research infrastructure: Our ability to collect data is largely dependent upon our ability to improve our research infrastructure (e.g. computers, radars, ships, satellites, personnel, etc). This includes research as well as baseline data collection and monitoring.
- Improved data integration and sharing: To assure there is not duplication of efforts it is imperative to coordinate data integration and sharing between agencies. This will ensure the success of various inter-disciplinary efforts that will be needed to address climate change issues. Other key elements include data management, interoperability, access and archiving.
- Multiple level decision-making tools: Many of the identified policy recommendations will need to be implemented at the local level. There is an urgent need for expanding the availability of appropriate decision-making tools for local and state officials.
- Adaptable legal and policy frameworks: Many laws, regulations and policies on the federal, state, and local levels were developed for a static environment where climate change was not recognized. The challenge for government leaders and businesses will be to adapt to a future made less certain due to a more rapidly changing climate. This will necessitate an evaluation of existing laws, regulations and policies and possible changes to institutional, legal and policy frameworks in an adaptive manner
- Improved baseline mapping: The ability to predict landscape level changes due to climate change is dependent upon being able to define the status quo. Unfortunately, few baseline maps of key environmental variables are available for Alaska. Improved baseline mapping and associated data collection is a critical need.

- Education and Outreach: Our ability to implement policy changes is largely affected by public perception and understanding. There is a critical need to develop and implement an education and outreach program aimed at improving public understanding of climate change and its affects, as well as the need to address them.

Opportunities for collaboration/partnerships that the committee should be aware of:

Addressing climate impacts is complex and no single agency can by itself succeed. Collaboration with partners will be needed. In Alaska, we are working with agencies, the University of Alaska, legislative bodies, and other groups and private entities to identify areas of research focus and possible collaboration.

One very successful partnership has been the Alaska Climate Change Round Table, a partnership between state and federal agencies to address climate change impacts to natural systems.

Discussion/Action items for the committee:

Funding and funding mechanisms:

Alberta Sustainable Resource Development--Fish and Wildlife Division

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Where are you at right now with respect to climate change and fish and wildlife issues in your agency/organization?

Alberta Fish and Wildlife Division is starting to incorporate issues into climate change adaptation planning at multiple levels of government planning (department, province, and collaboration across prairie provinces). This is being accomplished through representation on the department's Team Taking Action on Climate Change.

Highlights and Accomplishments:

- Alberta Sustainable Resource Development (SRD) developed a Climate Change Adaptation Framework in 2007-2008.

New or ongoing initiatives and actions in the state/organization:

- A collaborative project with other prairie provinces has been proposed to test the draft SRD Climate Change Adaptation Framework and develop policy options for a number of high-priority issues in boreal forests and grasslands.
- Climate change is starting to feature more prominently in recovery planning for some species at risk in Alberta.

Where would you like to be with respect to climate change and fish and wildlife issues? (What's your vision, or what direction would you like to be moving in).

- Climate change mitigation policy and action take fish and wildlife values into consideration
- Climate change adaptation is fully integrated into fish and wildlife conservation and management
 - Identification of priorities for adaptation (e.g., detailed assessments of vulnerability and risk to biodiversity –identify populations and species most at risk, most sensitive to effects of climate change;)
 - Development of Alberta-specific adaptation options for identified priorities; modifications of management and programs as required to implement adaptation
 - Policy is reviewed in terms of how it might support climate change adaptation options

Challenges or barriers that are holding you back from where you'd like to be?

- Resources (for research and planning) relating to climate change scenarios and potential impacts on fish and wildlife
- Balancing multiple priorities
- Lack of knowledge/information/understanding of potential impacts to fish and wildlife

Opportunities for collaboration/partnerships that the committee should be aware of:

- SRD's draft Climate Change Adaptation Framework will be amenable for use in other jurisdictions

Discussion/Action items for the committee:

- Is there a direct role for fish and wildlife agencies in climate change mitigation discussions/policy/actions/initiatives?
- Is there a way to facilitate knowledge transfer across fish and wildlife agencies relating to climate change adaptation initiatives/research? (e.g., a shared website for this committee for distributing new/relevant information)?
- A summary of ongoing/planned climate change adaptation initiatives directly related to fish and wildlife habitat and populations would be a useful outcome from the meeting

Arizona Game and Fish Department

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Where are you at right now with respect to climate change and fish and wildlife issues in your agency/organization?

The AGFD included Climate Change as a stressor in our existing State Wildlife Action Plan (SWAP), noting that it will likely contribute to other existing stressors.

Highlights and Accomplishments:

Land acquisitions or protections of critical riparian habitats in the state such as Coal Mine Springs.

AGFD has worked with many partners including the Arizona Department of Transportation, The Nature Conservancy (TNC), Northern Arizona University and others to identify wildlife movement corridors and begin protection of these corridors through transportation infrastructure modification (e.g., inclusion of wildlife-specific crossing structures), which will facilitate animal movements across the landscape in response to climate change.

New or ongoing initiatives and actions in the state/organization:

The AGFD is preparing to update our SWAP for several reasons, including a more robust inclusion of climate change issues. The Department has 2 personnel assigned as members of the Climate Change/SWAP Revision subcommittee formed by AFWA's Climate Change Committee and is actively engaged in the development of guidance documents for use by the states.

Another ongoing effort is the further development of a GIS (data) driven system that will allow the Department to identify key areas of conservation priority. The identification of areas includes an assessment of the importance of wildlife corridors, which have been identified as critical for wildlife conservation in light of climate change. This is a significant undertaking and will require a high level of coordination with other federal, state, local and non-governmental organizations.

Where would you like to be with respect to climate change and fish and wildlife issues? (What's your vision, or what direction would you like to be moving in).

Through predictive modeling, determine when our limited resources should be used now to provide the best outcome in the future (related to climate change). Desired future conditions should be identified and management actions should be implemented to achieve those conditions.

Challenges or barriers that are holding you back from where you'd like to be?

Complicated and contradictory climate change projection models – the inability to know what the landscape will look like in the next 10, 20, 30 (etc.) years due to climate change.

Opportunities for collaboration/partnerships that the committee should be aware:

TNC's efforts to work in certain states to determine actual effects of climate change. The University of Arizona has a Climate Assessment for the Southwest Program whose mission is to improve the ability of the southwest region to respond to climate change and they have established many partnerships and collaborations in the U.S. and Mexico. Northern Arizona University (NAU) houses the Western Region Center of the National Institute for Climate Change Research which encourages collaboration and research on climate change at a variety of universities.

Discussion/Action items for the committee:

How does this committee interact with the T&E committee and their development of a white paper on ESA issues? Are those issues and the requested actions compatible with states' efforts to acquire climate change funding?

Is this committee working with wildlife conservation groups like Rocky Mountain Elk Foundation and the National Wild Turkey Federation? They have staff and resources to examine landscape changes and provide for habitat enhancements.

If the climate continues to change significantly and habitats alter sufficiently to be outside of the environmental tolerances of species, what will have to happen in order to allow active management such as translocation of species into areas in which they previously have not occupied but may now be suitable habitat due to climate change? Actions such as these often require lengthy administrative/bureaucratic processes such as Section 7 consultations, Environmental Impact Statements, and Environmental Assessments, which will not facilitate quick action by managers to either save species that are declining or respond proactively to maintain common species as common. Natural species movements in response to climate change would be ideal, but are unlikely for many species due to habitat fragmentation and movement barriers. In what ways can AFWA work now with federal partners to streamline the administrative processes to facilitate active management in response to landscape-level changes?

British Columbia Ministry of Environment

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Where are you at right now with respect to climate change and fish and wildlife issues in your agency/organization?

B.C. is in the early stages of learning about adaptation and beginning to carry out adaptation planning and policy development. We've established principles, identified research priorities, are conducting a wildlife vulnerability assessment (first draft stage), and establishing dialogues, networks and partnerships.

Highlights and Accomplishments:

Climate Change Adaptation Statements of Understanding and Working Principles approved by ADM of Environmental Stewardship Division and the Executive Director of the Parks and Protected Areas Division in November 2008 to serve as a "climate change lens" for management of fish and wildlife, ecosystems and parks & protected areas. See attached document.

The symposium, "Fish & Wildlife in a Changing Climate: Options for Future Management Practices", took place on June 1 and 2 at the University of Victoria - http://www.mitacs.ca/conferences/site/?site_id=10039 . Over 130 individuals attended from government agencies, stakeholder groups, academic institutions, private sector and First Nations. Initiated by BC Ministry of Environment, the event was co-hosted by the Mathematics of Information Technology and Complex Systems (MITACS), the School of Environmental Studies at the University of Victoria, the Pacific Climate Impacts Consortium (PCIC) and the Forest Research Extension Partnership (FORREX) and sponsored by the Canadian Wildlife Federation and the BC Wildlife Federation. Presentations included: setting the context for what will change, identifying what adaptation options exist (the 5 Rs of CCA), cumulative effects of human development and climate change, implications of climate change effects on fish and wildlife, on ecological processes and on the use of fish and wildlife, and tackling the human dimensions of climate change. Breakout sessions allowed participants to discuss potential adaptation options. Input from participants is being compiled by FORREX and funded by CWF into proceedings that will be posted on the FORREX and CWF websites by September 2009. Video recordings of speaker presentations will also be made available on these websites.

New or ongoing initiatives and actions in the state/organization:

Taking Nature's Pulse: The Status of Biodiversity in British Columbia, a comprehensive science based assessment of BC's natural environment released in 2008, identified climate change as "the foremost threat to biodiversity".

New position reporting to the Assistant Deputy Minister established April 1, 2008 – Manager of Climate Change Adaptation and Stewardship for the Environmental Stewardship and Parks and Protected Areas divisions. Dr. Jenny Feick was redeployed from her previous job to the position. Jenny chairs a joint divisional technical team. She serves on Ministry of Environment Adaptation Working Group and supports the Ministry of Forests and Range's Future Forests Ecosystems Initiative Technical Team and the Zero Net Deforestation Policy Review team. She is the B.C. representative on a federal/provincial/territorial Task Force on Climate Change Adaptation and Biodiversity.

ESD/PPAD Climate Change Adaptation Technical Team (CCATT) established in August 2008 to initiate climate change adaptation "mainstreaming" by developing capacity in climate change adaptation headquarters and regions, so that resource people are developed throughout the province. The Ministry of Forests and Range's Future Forests Ecosystems Initiative (FFEI) weekly seminar series has also helped to increase knowledge of climate change adaptation relevant to natural resource management.

The CCATT canvassed divisional staff and compiled a paper on the research needs and interests related to fish, wildlife, ecosystems and parks. The MoE Adaptation Working Group then developed a set of ministry research priorities, which were conveyed to the Pacific Institute for Climate Solutions (PICS).

A subset of the CCATT is developing a discussion and guidance paper entitled "Climate Change Adaptation Options and Best Practices for Biodiversity", which summarizes adaptation literature and takes a portfolio approach that recommends potential adaptation options at a provincial landscape scale, at a sub-regional scale, and at a local parks/protected area scale. Completion is expected by the fall of 2009.

As part of a graduate course at the University of Victoria that was jointly funded and coordinated with Ministry of Environment, Mark Haines completed a paper that summarized current policies related to climate change adaptation and biodiversity from other jurisdictions.

The Conservation Framework, which guides the ministry's decisions about conservation investments, considers climate change in its assessment scheme for prioritization of species and ecological communities. A landscape component is also being developed. More information can be found at <http://www.env.gov.bc.ca/conservationframework/>

Climate change is being explicitly considered in the development of the new Boreal Caribou Recovery Strategy. It is being considered after the fact in the implementation phase of the Mountain Caribou Recovery Strategy. It is being considered in the Mountain Goat Management Plan. The next Hunting Synopsis will contain an article on climate change adaptation and wildlife (see attached).

The Ministry of Forests and Range's Future Forests Ecosystems Initiative (http://www.for.gov.bc.ca/hts/Future_Forests/) has just completed the first draft of a Vulnerability Assessment, which includes a section on wildlife values.

Ministry of Environment staff is providing input into the development of a new policy and legislation on Zero Net Deforestation, which is scheduled for consideration by the legislature in 2010. This initiative is being led by led by ministries of Forests and Range and Agriculture and Lands.

Monitoring frameworks that consider climate change are being developed by Ministries of Environment and Forests and Range.

Where would you like to be with respect to climate change and fish and wildlife issues? (What's your vision, or what direction would you like to be moving in).

BY 2010, THE ENVIRONMENTAL STEWARDSHIP AND PARKS AND PROTECTED AREAS DIVISIONS ARE RECOGNIZED AS LEADERS IN PROMOTING AND APPLYING KNOWLEDGE OF CLIMATE CHANGE ADAPTATION OPTIONS AND BEST PRACTICES TO CONSERVE BIODIVERSITY IN BRITISH COLUMBIA.

This is the proposed vision in the Adaptation options and Best practices paper currently in preparation. We want to help staff realize this vision and be able to apply a climate change adaptation lens to all of our work. The management approaches currently used may not be appropriate in light of climate change. Our divisions may need to think about things differently. This may mean we need to encourage other government agencies and sectors to take a different approach, and to try different things in different parts of the province. In parks and protected areas where MoE has jurisdiction, it may require a realignment of priorities for existing work, an adjustment to the way we do our work, and potentially applying completely different policies, procedures and practices. We recognize that many other jurisdictions and sectors are likewise engaged in a similar process, and it is vital that we collaborate and share lessons learned.

Challenges or barriers that are holding you back from where you'd like to be?

1. Capacity issues: extremely limited financial resources in 2009/10; travel restrictions; total time available to focus on adaptation reduced due to staff redeployment and organizational uncertainty related to budget balancing
2. BC Government focus to date has been on mitigation measures – reducing Greenhouse gases, the new Pacific Carbon Trust, new carbon tax, etc.

3. Government goals not yet integrated and coordinated and assessed with a climate change lens, e.g. carbon offsets through alternative energy that do not consider impacts on fish and wildlife that preclude their capacity to adapt and move (wind power projects, independent run of the river small hydro power projects); current restriction on land use planning hampers landscape level wildlife corridor planning; Current Zero Net Deforestation policy focuses on mitigation and carbon sequestration without realizing opportunities for adaptation for fish, wildlife and ecosystems.
4. Key research gaps in adaptive capacity and climate thresholds for priority species and ecological communities.
5. Knowledge gaps based on pilot testing of adaptation strategies.

Opportunities for collaboration/partnerships the committee should be aware of:

Pacific Climate Impacts Consortium - <http://pacificclimate.org/>

Pacific Institute for Climate Solutions - <http://www.pics.uvic.ca/>

Forest Research and Extension Partnership - <http://www.forrex.org/default.asp>

Mathematics of Information Technology and Complex Systems (MITACS) -

<http://www.mitacs.math.ca/main.php>

Wildlife Federations – US, Canadian (<http://www.cwf-fcf.org/en/index.html>), state, provincial (<http://www.bcwf.bc.ca/>)

World Wildlife Fund (policy paper on Zero Net Deforestation) -

http://assets.panda.org/downloads/wwf_2020_zero_net_deforest_brief.pdf

Land trusts and nature conservancy organizations - <http://www.landtrustalliance.bc.ca/> -

see new report *Credible Conservation Offsets for Natural Areas in British Columbia*.

Discussion/Action items for the committee:

Set a good example by finding and using innovative ways to engage committee members that reduce travel costs and carbon footprint – video conferencing

Establish Climate Change Adaptation Principles to guide our work as agencies

Identify intra and inter-jurisdictional actions can we take to support connectivity and flow? (terrestrial, aquatic, marine, aerial)

Create a revenue stream from carbon pricing mechanisms to support climate change adaptation actions for fish & wildlife – support from Western Climate Initiative

California Department of Fish and Game

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Where are you at right now with respect to climate change and fish and wildlife issues in your agency/organization?

Over the last year and a half the Department has made climate change a priority and has made great headway in tackling the complex and large scale challenges that climate change will pose. The Department is an important part of the climate change solution and is working internally and with partners to create a strategy for addressing climate change impacts to trust resources while also responding to the needs of the public. The Department created a climate change advisor position and Director's climate change task force to oversee and organize the Department's climate change activities. To meet the growing activities surrounding the climate change topic staff have been tasked with additional climate change related responsibilities and in some cases redirected to work on climate change. Most notably, the Department established a Renewable Energy Support and Climate Change Branch.

Highlights and Accomplishments:

- Over the last year the Department has been part of an ongoing effort to develop a climate change adaptation strategy (CAS) for California. The CAS will synthesize the most up-to-date information on expected climate change impacts to California for policy-makers and resource managers, identify vulnerabilities, provide strategies to enhance and restore ecosystem function and develop implementation plans for short and long term actions. The CAS has six different sectors that will identify and prioritize climate adaptation strategies on a per-sector basis. The Department has taken the lead on the Biodiversity and Habitat Sector and has been working collaboratively to develop the strategies. The Department has solicited public comment and held several public meetings throughout the development process and is now preparing for a public release this summer.
- The Department recently became a member of California's Climate Action Team (CAT). The CAT is a special task force formed to develop a strategy for the state to meet the greenhouse gas emission-reduction goals and the creation and coordination of climate change adaptation planning. In addition, the Department is participating on several of the CAT subgroups that focus on different sector issues (forestry, public health, water, etc) to ensure that ecosystem and species conservation is a consideration in the development and implementation of climate change adaptation strategies outside of the Department's purview.

- Department employees in Region 1 recently initiated the formation of the first regional Climate Change Committee. This group now has 15 members and was formed to assist regional staff in better understanding and managing the numerous issues associated with climate change in their personal and professional lives. The group is taking on a variety of issues that will assist the Department in the process of integrating climate change into the Department's activities.
- A climate change web page was created to serve as a resource to staff and send a positive message to the public and our partners about the Department's commitment to addressing climate change. <http://dfg.ca.gov/climatechange/>
- A joint climate change seminar was held by the Department and the CA Energy Commission, Public Interest Research (PIER) group in 2008 in Sacramento, CA. The workshop brought together many different researchers to talk about the potential impacts of climate change specific to California. The seminar was well attended with more than 95 participants in the audience and 35 participants on the web.
- The Department's Elkhorn Slough National Estuarine Research Reserve hosted the 24th annual NERR meeting with the primary theme of *NERRS and Sea level Change: Focusing Partnerships and Integration for a Changing Coast*.
- The Department is a member of the Climate Action Registry and completed inventory of all Department operations for 2007 and 2008.

New or ongoing initiatives and actions in the state/organization:

- California's Wildlife Action Plan (Action Plan) is already proving to be an important blueprint for how the Department will address future and current climate change challenges and will play a significant role in identifying a course of action. Within the Action Plan climate change was identified as a major threat to the biodiversity of California and the Department is committed to encouraging use of the Action Plan by all agencies and partners as a guidance document. A more detailed version of the California wide climate change adaptation strategies are being developed and will be integrated into the Action Plan. The Department held a workshop with select stakeholders and staff in 2008 to focus on climate change and its relationship to priority issues identified in the plan. In addition, the Department is updating important species of special concern information for birds, fish, amphibians and reptiles, and mammals to better focus future priority actions. The process of creating a climate change adaptation strategy for fish and wildlife is ongoing and the Department is committed to pursuing this process in the coming year.
- The Climate Change Program is establishing a guidance document titled "DFG Going Green" to assist staff in becoming more energy efficient and carbon neutral. The document details actions that the Department could take to create a more climate change friendly way of doing business. Many of the examples mentioned would not only help decrease the Department's contribution to the climate change challenge but also save the Department valuable resources and funds. Comments and suggestions

received from employees are being compiled and the document is intended to become a department wide initiative.

- Given our authorities as an agency and our roles and responsibilities within our branches *the Department has embarked on an internal process to integrate climate change into all department policy activities through the work of the Department's climate change task force.*
 - The Department has initiated the integration of climate change into all department documents.
 - Small groups of staff have been assembled to tackle “burning issues” that require the Department’s immediate attention including integrating climate change into CEQA and discussing carbon sequestration policy for Department lands as examples.
- The Department’s Natural Community Conservation Planning (NCCP) program is an unprecedented effort by the State of California, and numerous private and public partners that takes a broad-based ecosystem approach to planning for the protection and perpetuation of biological diversity. The program seeks to anticipate and prevent the controversies and gridlock caused by species' listings. NCCP planning efforts focus on protecting ecosystem processes and the long-term stability of wildlife and plant communities by creating large reserves and habitat connectivity. The Department is committed to pursuing discussions both internally and with our partners to determine how NCCP can be used as one of the key strategies for conserving habitat in the face of climate change.
- The Department’s Areas of Conservation Emphasis (ACE) mapping effort involved a statewide prioritization of areas considered to be of highest conservation value. The ACE effort is still in its preliminary mapping phase and the intended purpose of this effort is to help identify opportunities for expanding existing reserve areas. The ACE mapping effort will directly support efforts to create a system of priority sustainable habitat reserves across California and can be used in conjunction with other mapping efforts to identify areas overlooked within biological subregions to ensure representative examples of every ecotype have been accounted for. This effort will also help identify linkages and corridors that will help aid species movement and migration. The Department is committed to continuing coordination with our conservation partners as the final ACE maps are developed and informing all levels of government to better build collaboration and focus resources to the highest priorities.
- The Department is committed to continuing public communication/outreach that articulates the role the Department plays in helping species persist in the face of a changing climate.
- The Department continues to serve on several national, regional, and international climate change working groups and committees including but not limited to AFWA’s climate change committee, the Bay Area Ecosystems Climate Change Consortium,

development of a national climate change adaptation strategy, participation in a working group sponsored by AFWA and the Doris Duke Charitable Fund to develop guidance for states to integrate climate change into their wildlife action plans, and participant in climate change adaptation meetings in Andalusia, Sevilla, Spain.

Where would you like to be with respect to climate change and fish and wildlife issues? (What's your vision, or what direction would you like to be moving in).

With the appropriate resources and staff the Department will continue to focus on minimizing the effects of climate change on the state's natural resources through the development of adaptation and mitigation measures, policies, and practices that provide clear benefits to fish and wildlife on a landscape level and help species persist in the face of a changing climate.

Challenges or barriers that are holding you back from where you'd like to be?

- Tight budget times for many states restrict travel and participation in important events and meetings limiting opportunities for collaboration and/or input.
- Under representation of state personnel and other land managers at the planning phase of many initiatives and actions at the local-regional-and national scale.
- Challenges in coordination and collaboration between academic research community and land managers.
- Lack of coordination among activities and projects at multiple scales that result in duplication of efforts and miscommunication.

Opportunities for collaboration/partnerships that the committee should be aware

- AFWA climate change committee and proposed committees for Midwest and Northeast regional associations
- West Coast Governor's agreement and work on sea level rise
- Other collaborative partnerships such as the North American Waterfowl Management Plan, the National Fish Habitat Action Plan, and other efforts will help in our efforts to support the management of robust populations and healthy fish and wildlife habitats.

Colorado Division of Wildlife

Contact Information: Tom Schreiner
Climate Change Advisor
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CDOW – Headquarters
6060 Broadway, Denver, CO 80216

Highlights and Accomplishments:

Participated in Colorado Conservation Summit in Oct 2008 – with purpose of developing a vision, goals, and objectives for preserving Colorado’s wildlife resource for next 50 years (through 2058 and beyond); 5 Working Groups – Climate Change, Federal Lands, Land Use & Growth, Water Quality & Flows, and Youth Outreach & Recruitment

Participated in Western Governors’ Association Wildlife Corridors initiative – 2008

Currently serving as Chairman of Colorado Conservation Summit/Climate Change Working Group: coalition of Federal Agencies, State Agencies, Water Providers, NGO’s, Environmental Groups, Conservation Interests; 25-30 active participants; currently developing priorities and action items for 2009.

Participated in USGS/National Climate Change and Wildlife Science Center (NCCWSC) workshop in June, 2009 – Denver, CO

New or ongoing initiatives and actions in the state/organization:

: Will be incorporating climate change updates into our State Wildlife Action Plan – in process of developing a Technical Advisory Team, and pursuing climate downscaling modeling results from USGS efforts to incorporate into vulnerability assessments for habitat types and species.

: Will review and provide comment on proposed National Adaptation Strategy by USFWS when available

: Developing in-house teaching/training capability for CDOW staff

: Pursuing climate change/wildlife research opportunities for big game, birds/waterfowl, cold water fish, wildlife corridors

: Will be collaborating with the NCCWSC and the USGS/USFWS on future research, vulnerability assessments, and development of adaptation strategies for fish and wildlife resources in Colorado.

: Will be contacting fish and wildlife representatives of other neighboring Rocky Mountain states and looking for opportunities for future collaboration and coordination.

Where would you like to be with respect to climate change and fish and wildlife issues? (What's your vision, or what direction would you like to be moving in).

- Would like to develop an effective in-house as well as external teaching and training program on climate change and wildlife issues.
- Would like to develop a portfolio of effective messages and a messaging strategy for a variety of audiences that outlines our financial vulnerability, our anticipated impact on viable populations and species, potential adaptation strategies, our monitoring capabilities, research needs and/or questions to be answered, and ways to engage a larger audience to help in protection/enhancement/restoration efforts.
- Would like to have on-going monitoring and research capabilities for all major game and sport-fish species, as well as T&E/sensitive species.
- Would like to have a source of long-term, reliable funding to implement on-the-ground adaptation measures and monitoring to evaluate the effectiveness of adaptation measures.

Challenges or barriers that are holding you back from where you'd like to be?

Barriers to communication/coordination due to severe financial constraints and travel restrictions.

Opportunities for collaboration/partnerships that the committee should be aware of:

Multi-State Grant Applications that would provide capability for coordination with neighboring states to facilitate identification, protection, and restoration of crucial migration/movement corridors that cross state boundaries.

Discussion/Action items for the committee:

- 1) What benefits could each state agency provide and what role could they play to contribute to a coordinated, unified regional initiative for fish/wildlife resources. Colorado might be particularly interested in what's happening in the Rocky

Mountain Region within WAFWA. I.e.: Colorado has healthy, robust populations of rocky mountain bighorn sheep – perhaps we could focus on and provide expertise in effects of climate change on rocky mountain bighorn sheep as well as a number of other species that we have strong concerns for: including but not limited to moose, lynx, river otter, sandhill cranes and wetland dependent species, and native cutthroat trout. Other Rocky Mountain States may have expertise in other species such as desert bighorn sheep, mountain goat, pronghorn antelope, mule deer, elk, Colorado river endangered fish species, etc.

- 2) What are the specific areas of mutual interest or concern and can we identify opportunities to pool resources for greater collaboration and coordination?
- 3) Can we produce a policy document or set of recommendations for monitoring protocols for habitat types, and species to detect changes in vegetative composition, species diversity, species distribution, species abundance, species vitality?
- 4) It may be premature to start a dialogue about what are we learning from application of specific adaptation strategies or methods, yet we may be able to develop a library of scientific publications/reports on climate change that are specific to the needs and/or ecology of Western fish and wildlife resources, and possibly game species/watchable wildlife species/T&E species/sensitive species.

Hawaii Department of Land and Natural Resources

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Alternate Contact: Sheri S. Mann, Forester
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Where are you at right now with respect to climate change and fish and wildlife issues in your agency/organization?

I. Green House Gas Task Force

Ms. Mann has participated in the establishment of the Hawaii Greenhouse Gas Emissions Task Force (GHGTF) which was established in 2007 by Act 234, Session Laws of Hawaii 2007. The Act established the State's policy framework and requirements to address Hawaii's greenhouse gas emissions, recognizing the potential adverse effects of the recent climate change and global warming to Hawaii's economy, public health, natural resources, and environment. The general purpose of Act 234 is to establish and cost-effectively achieve State policy of greenhouse gas (GHG) emissions reductions and limits at or below the best estimates and updates of the inventory of Hawaii's greenhouse gas emissions estimates of 1990 emissions levels by January 1, 2020. The GHGTF is administratively located in the Department of Business, Economic Development and Tourism (DBEDT), and is required to submit a report of their findings to the Hawaii State Legislature by December 2009. (<http://hawaii.gov/dbedt/info/energy/greenhouse/>)

II. Statewide Assessment of Forest Conditions and Resource Strategy (SWARS)

As of August 25, 2009 the Division of Forestry and Wildlife is incorporating Climate Change in our Statewide Assessment of Forest Conditions and Long-term Resource Strategy (Hawaii SWARS) as required by the 2008 Farm Bill. Each State, Territory and Freely Associated State must submit their completed SWARS to the USDA Secretary of Agriculture by June 18, 2010. (<http://www.hawaii.stateassessment.info>)

New or ongoing initiatives and actions in the state/organization:

I. Establishment of the Hawaii Climate Change Task Force

In 2009 the Hawaii State Legislature established the Climate Change Task Force (CCTF), and charged it with:

1. Scoping the current and potential impacts of global warming and climate change on the people, natural resources, and the economy of the State
2. Scoping the potential impacts of rising ocean levels as a result of climate change on the people, natural resources, and the economy of the State
3. Estimating the costs to the State of the adverse effects associated with climate change and rising sea levels
4. Making recommendations to the legislature and the governor on measures that would address or mitigate the near- and long-term effects of climate change.

The CCTF will consist of 17 members representing government agencies (Local, State and Federal), The University of Hawaii and several at-large appointments by the State House of Representatives and State Senate. The Task Force was allocated \$50,000 per year, and will exist from July 31, 2009. It will cease to exist on June 30, 2011. The Task Force must submit their preliminary findings to the 2010 Hawaii Legislature and their final recommendations to the 2011 Legislature.

It must be noted that the Governor of Hawaii vetoed the enabling legislation for the Task Force, and that the Executive Branch agencies including the Department of Land and Natural Resources and the Department of Health did not support this legislation due to the current economic crisis, reduction in the State workforce, and their inability to take on new initiatives at this time. Nevertheless, the Hawaii legislature overrode the Governor's veto and created the Task Force. It is unclear at this time to what extent State agency representatives will participate in this task force, or how budget restrictions potentially imposed by the Governor in Fiscal Years 2010 and 2011 will affect the fiscal support for the CCTF authorized by the enabling legislation.

Full text of the legislation can be found at

http://www.capitol.hawaii.gov/session2009/Bills/SB266_CD1_.HTM

II. The 2009 Hawaii Conservation Conference – Climate Change

In the last week of July 2009 the Hawaii Conservation Alliance (HCA) produced the 17th annual Hawaii Conservation Conference (HCC). The HCA is a partnership of 15 Federal, State, and non-governmental organizations actively involved in conservation in the

Hawaiian Islands (for a list of members please visit <http://hawaiiconservation.org/alliance.asp>)

The theme of this year's Conference was "Hawaii in a Changing Climate". This three-day conference featured over 120 posters, presentations, symposia and workshop on a wide variety of issues, many of which specifically addressed climate change. Eighty-four of the presentations were recorded and are available for viewing online or for downloading as podcasts. The main index page for the 2009 HCC is http://hawaiiconservation.org/2009_hcc.asp

The keynote speeches by Dr. Stephen Schneider (who shared the 2007 Nobel Peace Prize in Science with Al Gore and 6 other scientists for their work in climate change; <http://blip.tv/file/2465166/>) and Ben Namakin <http://blip.tv/file/2465212>, a 22 year old climate change activist from Kiribati and Pohnpe in Micronesia are particularly moving and persuasive.

Follow the link to Powerpoints with Audio (http://hawaiiconservation.org/2009hcc_presentations.asp) for a detailed index of presentations. The website for all of the presentations is <http://hcc09.blip.tv/>

III. Hawaii Conservation Alliance Climate Change Leadership Summit, July 31, 2009

The day following the Hawaii Conservation Conference, the Hawaii Conservation Alliance held a Climate Change Leadership Summit. Over 60 people representing government, academia, Native Hawaiians and non-government organizations participated in this day-long workshop. The goal of the workshop was to promote dialogue about climate change impacts and response in Hawaii, and to develop a set of action items. The Preliminary Report and list of attendees is attached.

Where would you like to be with respect to climate change and fish and wildlife issues? (What's your vision, or what direction would you like to be moving in).

At this time, the State of Hawaii, and the Department of Land and Natural Resources do not have an articulated policy with respect the direction that we would like to be moving in.

Challenges or barriers that are holding you back from where you'd like to be?

The current fiscal crisis and reductions in workforce affecting the State of Hawaii government are severely hampering our ability to meet current obligations. There is a great deal of uncertainty on what the immediate future holds for State employees. Contract negotiations between State unions and the Executive branch are at an impasse, and will be decided by binding arbitration, the courts, or some other means by January 2011. In the mean time, the economy of the State is projected to decline through the next biennium, and it is reasonable for all State agencies to respond to a combination of

furloughs, reductions in the State workforce and budget restrictions for the foreseeable future. Currently, State employees are being told to implement a reduction in force plan which, if fully implemented, would result in a cascading effect as employees with higher seniority “bump” less senior employees. This would create a situation where the continuity of existing projects and programs would be interrupted as experienced people are bumped out of their existing positions, and replaced with senior employees from other branches of government.

Opportunities for collaboration/partnerships that the committee should be aware:

Currently the US Fish & Wildlife Service in Honolulu is ramping up for a significant response to climate change. The USFWS is expected to create several new positions in their Honolulu office to meet the challenges of climate change/sea level change.

The National Park Service is also hosting a two day meeting in the near future to address climate change (Sheri Mann may be able to provide more information on these two items).

Discussion/Action items for the committee:

While State of Hawaii DLNR staff are well aware of the forecasted challenges facing Hawaii and the Pacific Islands due to climate change, as individuals and as agency staff we are unable to commit significant time or resources to this issue until the ongoing uncertainty in our workforce, levels of staffing and future budget restrictions are resolved.

Idaho Department of Fish and Game

Excerpt from the Western Association of Fish and Wildlife Agencies Report June 2009

Climate Change – Technical information and funding are not in place for Fish and Game to address how climate change will affect fish, wildlife, and habitats.

Kansas Department of Wildlife and Parks

Contact Information: Murray Laubhan, Environmental Services
Kansas Department of Wildlife and Parks
512 SE 25th Ave.
Pratt, Kansas 67124
Phone: 620-672-5911

Where are you at right now with respect to climate change and fish and wildlife issues in your agency/organization?

The KDWP Environmental Services Section has discussed potential methods to update the state action plan to address climate change. Also have discussed modeling efforts that may be useful for understanding the affects of climate change on wildlife.

Highlights and Accomplishments: Nothing to report.

New or ongoing initiatives and actions in the state/organization: No initiatives or actions have been implemented at this time.

Where would you like to be with respect to climate change and fish and wildlife issues? (What's your vision, or what direction would you like to be moving in).

By 2010, KDWP would like to develop a broad "working" plan that identifies climate change issues and, more importantly, identifies strategies to generate information necessary to make informed decisions regarding those issues. Current examples include alternative energy developments (e.g., wind, solar, hydro) to reduce carbon emissions. This information would facilitate developing partnerships, conducting research, securing grants.

Challenges or barriers that are holding you back from where you'd like to be?

Positions and funding.

Opportunities for collaboration/partnerships that the committee should be aware of:

KDWP currently is considering partnerships as part of the National Fish Habitat Action Plan, USGS Climate Change Program, and the USFWS Fish Passage and Partners for Wildlife Programs.

Discussion/Action items for the committee: Understanding cumulative impacts of scenarios designed to address climate change, assisting states in developing capacity (personnel, funding) to address climate change, developing a communication framework to ensure approaches of individual states contribute to regional issues.

Montana Fish, Wildlife and Parks

Contact Information: Ken McDonald
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Helena, MT 59620
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kmcdonald@mt.gov

Where are you at right now with respect to climate change and fish and wildlife issues in your agency/organization?

Montana Fish, Wildlife and Parks is in the early stages of planning for climate change impacts. As part of a planning effort to identify crucial areas, FWP is completing risk assessments to crucial areas based on impacts from climate change, energy development, subdivision, and transportation. The Climate Change risk assessment will help the agency to incorporate climate change planning, monitoring, and mitigation into the state's comprehensive fish and wildlife conservation strategy.

Highlights and Accomplishments: FWP, in conjunction with WWF, NWF, and WCS sponsored a workshop for FWP staff to discuss and solicit input on potential impacts of climate change in the middle Yellowstone River and in the sage-grassland ecosystems, and what we should be doing about it. The objectives of the workshop were:

- Increased awareness of the relevance of climate change as a challenge facing fish and wildlife managers in Montana;
- Identification of potential impacts and opportunities related to climate change on Yellowstone River fisheries and sage-steppe wildlife communities;
- Identification of areas where existing fish and wildlife management plans for these 2 systems are inadequate to address potential challenges posed by a climate change and development of a process for making needed changes;
- Identification of important ecosystem attributes that should be monitored to assess direction and pace of climate-induced changes in the selected ecosystems;
- Identification of available and useful management responses to changes anticipated under different scenarios or observed by monitoring efforts;
- Recommendations for further exploration of the impacts of climate change on fish and wildlife conservation in these and other ecosystems in Montana.

The workshop was very useful to get field staff beginning to think about climate change and how the agency might begin to position itself now for impacts that might be slowly happening but not readily apparent until many years from now (after it's too late to do much). The effort did highlight the range of uncertainty in models. Another workshop is planned for western Montana using cold water river and coniferous forest as the focus ecotypes.

New or ongoing initiatives and actions in the state/organization:

None reported

Where would you like to be with respect to climate change and fish and wildlife issues? (What's your vision, or what direction would you like to be moving in).

It would be helpful to be able to make predictions of potential impacts (positive and negative) to habitats and species at a statewide and regional scale, and then implement targeted monitoring to evaluate the predictions over time. In conjunction with that, based on the best predictions, begin to implement conservation measures based on predicted impacts.

Challenges or barriers that are holding you back from where you'd like to be?

Uncertainty of climate change models at the scales we work at within a state – makes it hard to make specific predictions about specific impacts.

The usual – dollars and personnel.

Opportunities for collaboration/partnerships that the committee should be aware of:

Information sharing – especially with regards to models that appear to enable better predictions at more localized scales. Regional looks at specific habitat types such as sagebrush, and potential predicted changes in distribution -> would help facilitate development of regional conservation strategies.

Discussion/Action items for the committee:

Who is doing what out there?

Nebraska Game & Parks Commission

Contact Information: Dr. Jeffrey Lusk
2200 N. 33rd St.,
Lincoln, NE 68503
jeff.lusk@nebraska.gov;
402-471-1756

Where are you at right now with respect to climate change and fish and wildlife issues in your agency/organization?

Nebraska Game & Parks Commission has set up a climate change working group with the purpose of 1) developing an understanding of the impacts of climate change on the wildlife and natural resources of the state, 2) informing Commission administration regarding these potential impacts and making policy recommendations, and 3) updating the state wildlife action plan (Nebraska Natural Legacy Plan) to include the consideration of climate change. We are currently in the beginning phases of preparing a white paper on the effects of climate change as currently understood, with specific emphasis on Nebraska and its ecosystems. Next on the Working group's agenda is to identify at-risk species and to determine the extent of impacts from climate change. This research will be done in conjunction with the University of Nebraska and/or the USGS National Climate Change & Wildlife Science Center currently being formed.

Where would you like to be with respect to climate change and fish and wildlife issues? (What's your vision, or what direction would you like to be moving in).

We would like to be further along in the process of developing the white paper and in addressing the updating of the Natural Legacy Plan. However, without dedicated funding for staff time, current efforts along this line are secondary to primary job tasks of staff involved.

Opportunities for collaboration/partnerships that the committee should be aware of:

University research programs (Coop Units, &c.), and the USGS National Climate Change and Wildlife Science Center.

Nevada Department of Wildlife

Contact Information: Laura Richards, Chief,
Wildlife Diversity Division
lrichard@ndow.org
775-688-1996

Highlights and Accomplishments:

Nevada's Wildlife Action Plan is being implemented by targeting conservation actions to support species of greatest conservation need and the key habitats on which they depend. Several important "step-down" planning projects that have been completed or are ongoing include the Nevada Wetlands Plan, the Steptoe Valley Conservation Assessment, a Habitat Conservation Plan for Springs of Biodiversity Significance, and a revision of the Nevada Partners in Flight Plan.

The Nevada Department of Wildlife (NDOW) and our conservation partners identified a need to revise Nevada's Wildlife Action Plan to address potential impacts of climate change on Nevada's wildlife resources. Nevada's Wildlife Action Plan identified climate change as a stressor to key habitats and species of conservation concern in a few specific areas. The growing profile of this issue has necessitated that the Wildlife Action Plan be revised to incorporate climate change throughout the plan.

NDOW is again partnering with our original Wildlife Action Plan Team, including The Nature Conservancy (TNC), the Nevada Natural Heritage Program (NNHP), the Lahontan Audubon Society (LAS), and also the Great Basin Bird Observatory (GBBO) to develop this climate change revision to the plan. This partnership team was recently awarded a \$400,000 State of Nevada Question 1 Bond Habitat Conservation Planning Grant in order to help fund these efforts.

Over the next two years, we will work with multiple stakeholders to assess key habitats and species most likely to be affected by climatic shifts. Ecological modeling and species assessments will be integrated into the development of effective strategies for managing and mitigating impacts. By identifying key locations where conservation efforts can be targeted, we will be in a stronger position to ensure ecosystem resiliency across the changing landscape for key habitats and species.

New or ongoing initiatives and actions in the state/organization:

With key support from the University of Nevada, Reno, NDOW participated as a "demonstration state" in a project aimed at developing a framework for selecting key performance indicators and measures to monitor the effectiveness of conservation actions emanating from the State Wildlife Action Plans. The project was developed by a science team convened by the H. John Heinz III Center for Science, Economics, and Environment. A team of sagebrush ecologists was convened with the task of selecting

performance indicators for sagebrush habitats and building a draft monitoring protocol for measuring sagebrush performance statewide. Performance indicators for riparian/springs were selected as part of a multi-partner Springs Conservation planning effort headed by the Nevada Natural Heritage Program in collaboration with The Nature Conservancy's Northern Nevada Office funded by a Question One Bond Planning Grant. The performance indicators team for the Mojave shrub target has not yet been convened, but is targeted for late 2009.

New Mexico Department of Game and Fish

Contact Information: Matthew Wunder
matthew.wunder@state.nm.us

Where are you at right now with respect to climate change and fish and wildlife issues in your agency/organization?

We are trying to understand how, with limited regulatory authority, to be proactive in addressing and responding to climate change.

Highlights and Accomplishments:

- Participated in a USGS/USFWS sponsored workshop: “Effects of Climate Change on Fish, Wildlife, and Habitats in the Arid and Semi-Arid Southwestern United States: Putting Knowledge and Science into Action” – August 2008, Tucson, AZ
- Nature Conservancy Jemez Mountains Climate Change Workshop, May 2000, Los Alamos, NM
- Participation in the NM Climate Change Advisory Group, associated analysis of potential effects of climate change in NM, and development of a Final Report (2005)

New or ongoing initiatives and actions in the state/organization:

- Review and revisions of our state wildlife action plan, the Comprehensive Wildlife Conservation Strategy (CWCS) to incorporate climate change.
- Providing financial support and sponsorship for data collection to document, predict, and manage climate change effects.
- Creating refugia for native fishes and protecting populations to forestall drought and climate change related threats.

Where would you like to be with respect to climate change and fish and wildlife issues? (What’s your vision, or what direction would you like to be moving in).

We would like to use strategic planning to prioritize our conservation efforts and create long-term planning for Wildlife Management Area acquisition and management in order to provide refugia for declining populations as habitats migrate, shrink, or disappear.

Challenges or barriers that are holding you back from where you’d like to be?

We need an increased understanding of the following:

- impacts of climate change on the ground
- scientific uncertainty surrounding the severity of potential impacts
- triage versus management options

Opportunities for collaboration/partnerships that the committee should be aware of:

Working with tribes to help them build more robust ecosystem function that will permit/facilitate ecosystem transition or migration.

Discussion/Action items for the committee:

How to explore or understand how best to move beyond short term impact response and get to (and justify) longer term response when dealing with climate variation.

North Dakota Game and Fish Department

Contact Information: Terry Steinwand (new contact to be named in 2010)
100 North Bismarck Expressway
Phone: 701-328-6305
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e-mail: tsteinwa@nd.gov

Highlights and Accomplishments: N/A

New or ongoing initiatives and actions in the state/organization:

We are in the initial stages of working on climate change issues. We are planning a retreat in January, 2010 with one of the primary topics being climate change and how do we address it.

Challenges: Being an exceptionally small staff it becomes a matter of priorities. We are certainly paying attention to it and adapting as we can but given all the stressors on fish and wildlife populations at the current time in North Dakota, climate change has not been a pressing issue.

Cross-border collaboration: None

Discussion items for the committee: None

Oregon Department of Fish & Wildlife

Contact Information: Holly Michael
Conservation Policy & Projects Coordinator
503.947.6072 & 503.569-3896
holly.b.michael@state.or.us

Where are you at right now with respect to climate change and fish and wildlife issues in your agency/organization?

Minor update to original cc text in SWAP, participating in several state, regional and national cc committees, coordinating with state & federal agencies in developing priorities for cc research and management, & partnerships, some research underway in coldwater systems

Highlights and Accomplishments:

- Completed a policy-level adaptation strategy for fish, wildlife and habitats in Oregon, adopted by Commission and the Governor's Oregon Global Warming Commission
- Held 1-day workshop on cc for our agency leadership and our Commission
- All new and updated agency species and habitat plans and area management plans must address cc and be reviewed/approved by our Commission

New or ongoing initiatives and actions in the state/organization:

- Developing cc policy that ODFW will adopt in rule for addressing cc in research and management of species, habitats and ecosystems
- Beginning planning for major SWAP revision to address climate change

Where would you like to be with respect to climate change and fish and wildlife issues? (What's your vision, or what direction would you like to be moving in).

Full integration of cc into agency programs. Secure, permanent funding for cc research, adaptation and management. Establish full-time cc staff within agency. Coordination across all elements of Governor's Natural Resource Office programs.

Challenges or barriers that are holding you back from where you'd like to be?

Funding. Not enough staff. Too many redundant efforts not coordinated at any level (federal, state, regional, national). No clear messaging to general public at national or regional scales. Continuing denial or resistance from some stakeholders.

Opportunities for collaboration/partnerships that the committee should be aware of:

- Western Governor's Wildlife Corridors Initiative (includes direction to map crucial habitats and corridors to address climate change)Council

Discussion/Action items for the committee:

Saskatchewan Environment- Fish and Wildlife Branch

Contact Information: Doug Campbell
Doug.Campbell@gov.sk.ca

Where are you at right now with respect to climate change and fish and wildlife issues in your agency/organization?

Highlights and Accomplishments:

We have submitted proposals for funding to support climate change adaptation planning and implementation in Sask. They include:

- Modeling CC impacts on ecosites, Critical Habitat, etc.
- Establishing land management programs to strengthen resilience in the face of CC.
- The Ministry has tabled a CC policy
- The Ministry has established a Go Green fund to fund projects that address CC issues and mitigation, including biodiversity conservation.

New or ongoing initiatives and actions in the state/organization:

Currently we manage CC issues as a part of regular business, no separate group focusing on these issues.

Where would you like to be with respect to climate change and fish and wildlife issues? (What's your vision, or what direction would you like to be moving in).

I'd like to have a CC resilience program strategy in place, through which we can conserve/enhance natural habitats to meet the CC challenges. This work should also address SAR and critical habitat, wetland conservation, native prairie mgmt, etc.

Challenges or barriers that are holding you back from where you'd like to be?

Greatest challenge is money, which relies on clear policy and legislation to guide activities. None of these are really in place for biodiversity conservation yet. Strong partnerships with other agencies & partners can only help the process.

Opportunities for collaboration/partnerships that the committee should be aware:

We have a multi-species SAR mgmt initiative underway in SW Sask, which could expand to include participation of other agencies.

Discussion/Action items for the committee: Nothing specific

South Dakota Game, Fish and Parks

Contact Information: John Lott
john.lott@state.sd.us
605-773-4508

Where are you at right now with respect to climate change and fish and wildlife issues in your agency/organization?

We are doing nothing at the present time but thinking of ways to approach the issue.

Highlights and Accomplishments:

None

New or ongoing initiatives and actions in the state/organization:

We plan to incorporate the topic of climate change into the update of our states Comprehensive Wildlife Action Plan and begin to get staff more involved/informed of climate change issues and workgroups.

Where would you like to be with respect to climate change and fish and wildlife issues? (What's your vision, or what direction would you like to be moving in).

SDGFP would like to be at the point where predictive models can be used to build management scenarios for habitats and associated species, as habitats change with climate change. It would be nice to know what geographic areas may become important for species of concern as habitats change with changing climates.

Challenges or barriers that are holding you back from where you'd like to be?

- Lack of information on potential changes in climate in South Dakota and the potential rate of change.
- Lack of information on approaches being used within the fisheries/wildlife professions to address the issue.
- Managing for existing communities while looking down the road for future community needs due to climate change

Opportunities for collaboration/partnerships that the committee should be aware of:

We would be interested in participating in such efforts.

Discussion/Action items for the committee:

Texas Parks & Wildlife Department

Contact Information: Dr. Wendy Gordon
wendy.gordon@tpwd.state.tx.us;
(512) 389-8741
Wildlife Division,
4200 Smith School Road, Austin, TX 78744

Where are you at right now with respect to climate change and fish and wildlife issues in your agency/organization?

- We have developed internal talking points staking out a position on climate change that can be used to respond to public inquiries.
- We are planning to incorporate climate change issues into our 2010 revision of the Texas Wildlife Action Plan.
- Climate change is being recognized as an emerging issue in revisions to our agency's strategic planning document called the Land and Water Conservation and Recreation Plan.
- We are partners in two climate change proposals being submitted for possible funding: one with NWF and one with USGS.
- We have been actively participating in regional climate change meetings and workshops.
- We have named me the agency's contact person on this issue.

Where would you like to be with respect to climate change and fish and wildlife issues? (What's your vision, or what direction would you like to be moving in).

My personal vision is that we would set up an ad hoc working group that would include representatives from across the agency to be discussing and planning for this issue in a coordinated fashion. We also need access to downscaled GCMs so we can start assessing specific impacts.

Challenges or barriers that are holding you back from where you'd like to be?

The agency hasn't moved on the issue in a large-scale fashion. That may change with additional leadership in our executive office. Lack of necessary information means that we can't do anything more than hand wave on the issue at the moment. Ultimately, dedicated FTEs or funding resources may be necessary.

Opportunities for collaboration/partnerships that the committee should be aware:

Discussion/Action items for the committee:

It would be good to hear/see how other states are approaching the coordination issue. There were some examples presented at the North American meeting. Personally, I'm

getting a little burned out on webinars and other communications whose main message is “adaptation, adaptation, adaptation.” I’m interested in nuts and bolts of moving people toward action through internal coordination and then starting to build a web of partners who can reinforce whatever message is developed.

Ultimately, I am concerned that we’re going to end up with conflicting information and messages coming out of different entities. I saw one example of this in the past week in a USFS publication that showed a national map and color-coded climate change risks. According to that map, E. Texas is at high risk from climate change, but much of the rest of the state isn’t. This information flies in the face of what we know about projected temperature change and likely changes in drought frequency, particular in the western part of the state. If each agency or program starts developing their own analyses of climate change impacts, the public is going to end up very confused and ultimately that will undermine our ability to rally support for adaptation.

Utah Division of Wildlife Resources

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Salt Lake City, UT 84114-6301

Where are you at right now with respect to climate change and fish and wildlife issues in your agency/organization?

Highlights and Accomplishments:

None specific to our agency. Agency administrators have attended the national and western presentations on this topic.

New or ongoing initiatives and actions in the state/organization:

None

Where would you like to be with respect to climate change and fish and wildlife issues? (What's your vision, or what direction would you like to be moving in).

We would like to be in a position to reasonably forecast potential effects of climate change on Utah's environment; adapt Division goals and objectives to accommodate those potential effects; and determine how Division resources may be efficiently allocated to benefit fish, wildlife, and associated habitats under those new conditions.

Challenges or barriers that are holding you back from where you'd like to be?

The Division philosophically does not believe it prudent to ignore climate change; however some state lawmakers do not currently accept climate change as supported science. Consequently, the reality of the political situation makes us reluctant to proceed with measures that might allow us to better address climate change issues.

Opportunities for collaboration/partnerships that the committee should be aware:

None

Discussion/Action items for the committee:

None

Washington Department of Fish and Wildlife

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Where are you at right now with respect to climate change and fish and wildlife issues in your agency/organization?

WDFW has formed an internal cross-program Climate Task Force to provide leadership in reviewing agency activities and policies through a climate change filter and to develop recommendations for actions to prepare for, and adapt to, likely climate change impacts on fish, wildlife and ecosystems, and agency facilities and infrastructure. The Task Force will lead the development of an agency climate strategy and action plan to provide policy direction and guide agency actions. The Task Force will coordinate this work with efforts to develop an integrated climate response strategy for Washington State.

WDFW continues to participate in climate change adaptation planning efforts at the state level that have been on-going since 2007. Currently, efforts are underway to develop an initial integrated climate change response strategy for Washington State by December 2011. WDFW is one of six state agencies identified to lead this effort, which also includes the Washington Departments of Agriculture, Commerce, Ecology, Natural Resources and Transportation. WDFW will seek a state leadership role in this process for issues relating to biodiversity, resiliency and vulnerability of the natural environment.

Highlights and Accomplishments:

The WDFW Climate Task Force has prioritized the agency activities likely to be affected by climate change and is forming workgroups for the highest priority activities to develop recommendations for potential changes necessary to prepare for, and adapt to, climate change.

WDFW co-sponsored, along with NWF and the Washington Biodiversity Council, a workshop in February 2009 entitled “Assessing Climate Impacts on Washington’s Fish and Wildlife”. This workshop identified some of the most significant climate impacts on biodiversity and identified policy and management actions to help safeguard fish and wildlife in a changing climate. A follow-up conference is planned for late fall 2009.

WDFW, ODFW and IDFG have worked closely with researchers at the University of Washington and the UW Climate Impacts Group to initiate a fish and wildlife vulnerability assessment for the Pacific Northwest region. Work to date has included

development of a database that identifies climate change sensitivities for key fish and wildlife species.

New or ongoing initiatives and actions in the state/organization:

WDFW is participating as one of six lead state agencies in the effort to develop an initial integrated climate response strategy for Washington State by December 2011.

WDFW is currently planning to hire a new position dedicated to coordinating climate change issues affecting fish and wildlife at the national, regional, state and local level.

WDFW continues to participate on a number of national and regional climate change workgroups, including the WAFWA climate change committee, an AFWA workgroup developing guidance for updating the State Wildlife Action Plans to incorporate climate change, the AFWA Climate Think Tank, and a Climate Vulnerability Working sponsored by the NWF intended provide the “state of the art” in fish and wildlife climate change vulnerability assessments to conservation community.

Where would you like to be with respect to climate change and fish and wildlife issues? (What’s your vision, or what direction would you like to be moving in).

Full integration of climate change adaptation into WDFW’s policies, planning efforts and management activities

Coordinated climate change adaptation efforts by federal, state and local government agencies, tribes, NGOs, private businesses and citizens for issues affecting fish and wildlife resources

Dedicated agency staff to track and coordinate climate change issues at the national, regional, state and local level

Challenges or barriers that are holding you back from where you’d like to be?

Lack of funding to complete a fish and wildlife vulnerability assessment; lack of species and habitat-specific information upon which to make informed decisions to increase resilience to anticipated climate change impacts

Lack of dedicated staff to track and coordinate climate change issues affecting fish and wildlife

Lack of a broad-scale climate education and outreach program for agency staff, partners, stakeholders and the public

Lack of coordination of multiple climate planning efforts currently underway leading to duplication of efforts and inconsistent approaches

Opportunities for collaboration/partnerships that the committee should be aware

See the proposed the NW regional vulnerability assessment mentioned above.

Discussion/Action items for the committee:

Development of downscaled GCM and vulnerability assessment modeling for the various regions of WAFWA. (E.g. NW, SW, Midwest)

Wyoming Game and Fish Department

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Where are you at right now with respect to climate change and fish and wildlife issues in your agency/organization?

Highlights and Accomplishments:

The Department has made progress on several fronts over the past year. This has largely involved work at the regional and national level including information gathering, coordination with other state wildlife agencies, document updates and draft policy directive review, and familiarization with, and understanding of, the many pieces of comprehensive federal climate change legislation. Secondly, a climate change lead has been named for our agency and initial steps taken to discuss and examine internally the scope of the climate change issue, and the elements of a potential program/approach to address climate change, as well as the need to prioritize actions. Specifics follow:

1) **Information Gathering**

In an effort to learn as much as possible, as soon as possible, about climate change and its potential effects, key agency staff have aggressively begun identifying and gathering relevant information and gaining first-hand knowledge to use in formalizing a comprehensive strategy to begin addressing this threat. One of the most significant opportunities came in March, when two agency staff attended a day-long workshop on how to minimize impacts to fish and wildlife resulting from climate change, while at the North American Wildlife and Natural Resources Conference in Arlington, Virginia.

Additionally, steps have taken internally to begin to consolidate information and documents related to climate change for ease in access and retrieval.

2) **Coordination with Other States**

The Department is a member of both the Association of Fish and Wildlife Agencies (AFWA) - based in Washington, D.C. - and a regional counterpart, the Western Association of Fish and Wildlife Agencies. Both have new Climate Change committees. The Department has been engaged in the former since it was first organized more than a year ago, and, likewise, attended the first meeting of the latter when it convened in July.

Additionally, a staff representative attended a special two-hour session after the AFWA Climate Committee meeting in March at the North American dealing with how state and federal agencies need to work more

closely to develop and carry out adaptation and funding strategies that relate to the effects of climate change. The Department will also attend the special two-hour Climate Change Vulnerability Assessment Workshop at the AFWA annual conference in Austin, Texas, in September.

Similarly, a Department representative has been named to be part of the Climate Change Network, a group of professionals from state and federal resource agencies, academia and the non-governmental conservation community – again, to maximize communications and learning on this issue, and better utilize staff and fiscal resources.

3) **Document Updates and Draft Policy Directive Review**

State Wildlife Action Plans (SWAP) are proactive strategies to maintain the health and diversity of wildlife within a state and to avoid the need for future listing actions under the Endangered Species Act. While state fish and wildlife agencies are responsible for overseeing the development and implementation of SWAPs, they are mandated to be coordinated with natural resources agencies, organizations, and industries at the federal, state, and local levels. The Department completed Wyoming's first SWAP in 2005. Wyoming's SWAP is now being revised. Revisions will be completed by July 2010.

For the 2010 plan, a three-tiered conservation strategy at the statewide, habitat, and species level is being pursued. Statewide issues will be organized around the leading challenges that are facing wildlife within the state. These challenges have been identified as: 1) rural subdivision; 2) energy development; 3) invasive species; 4) climate change; 5) and disruption of natural disturbance regimes such as fire and flooding.

The US Fish and Wildlife Service (Service), which approves SWAPs, has put state wildlife agencies on notice that strategies to address climate change will be required in future plans.

AFWA's Climate Change Committee established a Climate Change/Wildlife Action Plan Workgroup last September. This workgroup, which has representation from the Department, is developing guidance and recommendations to help states incorporate climate change into SWAPs. The Service also has representation on this workgroup. These recommendations will address plan revision, communication, research, vulnerability and adaptation strategies. Draft recommendations were presented to the SWAP coordinators at a meeting in July 2009. Final workgroup recommendations will be presented to AFWA's membership at their annual meeting in September 2009.

These recommendations will be reviewed by the Department and discussed at a planned inter-agency focus group meeting of climate change experts. Focus groups are being held for all five leading statewide wildlife issues in order to assist the Department in identifying practical and quantifiable conservation actions to include in Wyoming's SWAP. Conservation actions that focus on integrating climate change into ongoing wildlife management activities and reinforce existing conservation objectives will be targeted. The 2010 SWAP will also likely include a climate change sensitivity-ranking index for both habitats and species.

Proposed federal climate change legislation, that includes carbon cap and trading systems, may produce significant financial resources to assist states in adapting to climate change and protecting their natural resources. Draft bills have required the development of State Natural Resource Adaptation Plans that must be consistent with the state's SWAP.

4) **Federal Climate Change Legislation**

There currently are no less than 15 pieces of federal legislation dealing with climate change. All are complex, all are controversial, and there are multiple committees of jurisdiction and oversight. Understanding the features of each, potential funding opportunities, the political nuances involved and tracking their progress (or lack thereof) is important, but very time consuming. For those services, the Department relies on AFWA staff who specialize in legislative affairs. That said, agency staff now are doing a better job of keeping abreast of the rapidly-changing landscape of the climate change debate in Congress.

5) **Climate Change Lead**

In February, Direct Steve Ferrell named Larry Kruckenberg – his Assistant to the Director – to be the Department's lead on climate change issues. He was heavily involved in all aspects of the work identified in this report and, along with all senior staff in the agency, was also engaged from a policy perspective. With Larry's pending retirement in September, a new lead will need to be named.

6) **Agency Preparedness and Response**

Director Ferrell held a Game and Fish Staff Retreat in Cheyenne in late-May. Among the priority topics on the agenda was an in-depth look at where we are, where we want to position ourselves, and how we get there – as it relates to the Department's response to climate change. This was a small step, albeit a first real hard look and internal discussion on this topic by senior staff, but critically important in ultimately fashioning an agency program and/or its approach/approaches to address a future that includes a new, significant challenge – **climate change** – for which there currently

are far more questions than answers, but more clarity and urgency with each passing day. The most direct and immediate actions will come in the form of the aforementioned update of the State Wildlife Action Plan and the suite of species it encompasses – those in need of greatest conservation attention in Wyoming.

New or ongoing initiatives and actions in the state/organization:

The Governor’s Office has spearheaded a Drought Task Force for a number of years to share information/updates and convene formally at least once a year to improve coordination and cooperation among the agencies. Within the past year, this group has morphed into the Climate Issues Committee and is beginning to focus more broadly on the question of climate change. At the first meeting of the group since the Governor sharpened its focus – last May – it was apparent it will take some time for all the agencies to make that transition and become/stay as fully engaged as they had previously. Nonetheless, several state and federal agencies and the University of Wyoming offered instructive and illuminating reports and assessments about the climate change challenges that lie ahead – especially as it relates to water use and allocation. This group has the potential to be a significant driver in elevating awareness about the consequences of climate change and developing a coordinated state response to the threats and opportunities it poses.

Where would you like to be with respect to climate change and fish and wildlife issues? (What’s your vision, or what direction would you like to be moving in).

Like most states, we aspire to be fully engaged on this front and, as previously noted, have taken some steps to get where we need to be. Certainly, a full-time staff person with a singular responsibility for climate change/adaptation strategies would be a great start. Additionally, enhanced internal and external outreach concerning climate change are needed, as is consideration and integration of this discipline into every facet of our planning, work and decision-making. That will require changes in agency culture and how we go about doing business. It will also require strong leadership, long-term commitment and additional fiscal resources. Ideally, we would have a senior-level Team organized and functioning - comprised of all agency disciplines - that would convene regularly and provide leadership direction for our climate change program, as well as and help implement agreed-upon actions throughout the various administrative/organization units in the agency.

Challenges or barriers that are holding you back from where you’d like to be?

The aforementioned “fiscal resources” will always be a challenge for strapped fish and wildlife agencies, including ours. Staffing will be too, although upcoming vacancies and staff turnover, and other organizational restructuring in our agency may/could provide unique opportunities to more strategically and forcefully address climate change.

Opportunities for collaboration/partnerships that the committee should be aware:

Most of the partners are undoubtedly known to most of the agencies, but I would certainly encourage the states to look to the habitat Joint Ventures within their jurisdictions as an underutilized and potentially critically important partner in this effort. All of the JVs are ramping up their knowledge base, activities and funding involving climate change. Their business is habitat prioritization, enhancement and protection and they specialize in building partnerships and leveraging funding.

Discussion/Action items for the committee:

The committee needs to not only be a source for information sharing, but also initiate projects and have periodic deliverables that will benefit and have utility for all of WAFWA's membership. Stay focused, be productive and above all, keep this topic at the forefront of the directors' and commissioners' mind from this point forward, utilizing all available venues at mid-winter meetings and annual conferences.

Climate Change Secretariat - Yukon

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Highlights and Accomplishments:

In early 2009, both the **Yukon Government Climate Change Action Plan** and the **Energy Strategy for Yukon** were released.

- The Climate Change Action Plan identifies priority actions, to be corporately coordinated by the Climate Change Secretariat, which will help government respond to the challenges and opportunities most relevant to our northern setting. http://environmentyukon.gov.yk.ca/pdf/YG_Climate_Change_Action_Plan.pdf
- The Energy Strategy, which is Yukon's first comprehensive energy strategy, is a vision for conserving, using and developing energy resources to meet the territory's energy needs. http://www.esc.gov.yk.ca/pdf/energy_strategy.pdf

New or ongoing initiatives and actions in the state/organization:

Key 2009 actions to be coordinated by the Climate Change Secretariat are:

- Monitor Yukon government operations greenhouse gas emissions by reporting through 'The Climate Registry' and establishing a Yukon-wide emission target by 2011.
- Source and coordinate climate change adaptation projects.
- Participate at the fifteenth Conference of the Parties (COP 15) under the United Nations Climate Change Convention taking place in Copenhagen, Denmark in December 2009 (with the goal to establish an ambitious global climate agreement for the period post-Kyoto from 2012).

Yukon has been successfully working to deliver and develop adaptation projects with support from Indian and Northern Affairs Canada Climate Change Adaptation Program to Assist Northerners in Assessing Key Vulnerabilities and Opportunities. The four projects approved for funding in 2009 include partnerships across YG departments, Council of Yukon First Nations, Yukon College and outside universities. They include:

- **Regional Climate Change Scenarios**
The first Canadian Climate Change Scenarios Network server node 'North of 60' was established at the Yukon College in March 2009.
- **Assessing Vulnerability of Yukon Forest Tree Species**
Using case studies, this project will identify knowledge gaps and assess adaptation options to report on the vulnerability of Yukon tree species.

- **Infrastructure Vulnerability to Permafrost Degradation**
This project will use a permafrost synthesis for Yukon and a Yukon government infrastructure spatial inventory to inform decision makers and communities about vulnerability due to permafrost degradation.
- **Adaptive Management for Water Users**
Through completing a synthesis of current water information in Yukon, this project will analysis climate change implications to guide adaptive action in water management.

Challenges:

As a small jurisdiction with limited resources, Yukon is focusing on actions that provide the most benefit to the territory. The territory is feeling the impacts of climate change now and must respond.

Yukon Government's top priority is to enable effective adaptation to climate change in Yukon (Arctic and sub-Arctic regions) including impacts to permafrost, water and forests.

Priority is also being given to forging partnerships with other governments, organizations and individuals to facilitate a comprehensive and coordinated approach addressing climate change

Cross-border collaboration:

In 2007 the Northern Premiers released the Northern Vision which committed to building sustainable communities that are able to adapt to the implications of climate change.

Northern Adaptation was raised as an issue at the Council of the Federation Adaptation Summit held in Vancouver in January 2008. Developing a Northern Adaptation Strategy was an outcome from the adaptation summit.

Yukon has been actively developing partnerships both within Canada and internationally. For example, partnerships such as the federal, provincial and territorial meetings leading up to Copenhagen, Arctic Council, the Northern Forum, and the International Polar Year.

As Yukon shares a boarder and will experience similar impacts to climate change, exploring partnerships with Alaska have been sought. Some of the cross-boarder climate change initiatives with Alaska include:

- **The Climate Registry** – Includes most US States as well as most provinces and territories. Its purpose is greenhouse gas emissions accounting and is linked to emerging mandatory reporting mechanisms to harmonize regulations and avoid duplication.
- **Permafrost research** – Partnership with the Federal Highways Administration and the University of Alaska to find ways to reduce solar heat absorption and increase cold air convection for road bed protection of permafrost to reduce melting and concomitant road surface damage.

- **Permafrost Outreach Program** - A partnership between the Yukon government and the University of Alaska to install long term permafrost monitoring systems, allowing students to monitor local permafrost changes. It will also support academic research on permafrost and effects on infrastructure.

Discussion items for the committee:

Association of Fish & Wildlife Agencies

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Highlights and Accomplishments:

The Association is currently drafting a guidance document to assist states in updating their State Wildlife Action Plans for climate change. The document will be completed by the September Annual Meeting in Austin, TX where we will host a Vulnerability Workshop with NWF and preview the document. It will eventually be hosted on the Associations website as an online document that will be updated from time to time.

The Association is currently involved in legislative/advocacy actions to ensure natural resources funding in national cap and trade legislation.

New or ongoing initiatives and actions in the state/organization:

Creating an information hub for state climate change folks to present their current efforts and issues as well as find pertinent information to assist them with their work.

Creating regional workshops to help states network and plan their adaptation strategies for their current management plans and for future legislative requirements.

Where would you like to be with respect to climate change and fish and wildlife issues? (What's your vision, or what direction would you like to be moving in).

I would like to assist the states in coordinating efforts both between states and with federal agencies and distributing important information whether it is legislation or funding to those in state agencies who need that information the most.

Challenges or barriers that are holding you back from where you'd like to be?

Lack of coordination between agencies and organizations who are involved with climate change issues creates a duplication of efforts. Since funding is limited we need to be aware of this issue as well as actions that really do nothing to help us reach our goals. There is a lot of that going on right now and it makes it difficult to determine what is important and what is not. It can be a huge time drain for everyone.

Opportunities for collaboration/partnerships that the committee should be aware of:

The WAFWA climate change committee should try to engage with the AFWA climate change committee and, hopefully, with the other regional climate change committees

once they come to fruition. It is really important that the states are engaged with each other in order to make sure that our needs are met both on Capitol Hill and elsewhere.

The committee should also work with USGS and their National Climate Change & Wildlife Science Center. The center is focused on partnerships and collaboration and could be a powerful source of information in the future.

The committee should also work with the Western Governors Association and other related organizations.

Discussion/Action items for the committee:

What is the best way to do business while keeping travel restrictions and carbon footprints in mind?

USGS National Climate Change and Wildlife Science Center

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Highlights and Accomplishments:

The USGS National Climate Change and Wildlife Science Center was launched in December 2008 at a national workshop to help determine the research priorities and collaborative structure. 2009 accomplishments include a listening session at the 74th North American Wildlife and Natural Resources Conference, and three regional stakeholder meetings in the eastern, central and western US. The purpose of the 2009 workshops was to bring the NCCWSC concept to established and new natural resource management partners, and to establish foster new partnership opportunities to complete the science to adaptive management feedback loop necessary for strategic planning for adaptation to climate change across all geographic scales.

New or ongoing initiatives and actions in the state/organization:

The 2009 federal budget provided funding to found the National Climate Change and Wildlife Science Center national staff, and to provide climate change research capabilities to federal, state, Tribal and non-governmental organizations in collaboration with universities. A Request for Proposals for collaborative projects was issued with well over 200 collaborative proposals submitted for scientific review and funding. \$5M in funding was made available for these proposed projects that were developed with natural resource managers.

Challenges or barriers that are holding you back from where you'd like to be?

As the enormous response to the NCCWSC Request for Proposals demonstrates, funding is not sufficient to meet all the needs of natural resource managers for projections and tools needed for adaptive management of aquatic and terrestrial plants and animals and their habitats in the face of climate change. Every proposal was required to produce letters of support from natural resource managers, and as evidenced by the many letters of support, collaboration is the key to efficiently meeting these needs through shared resources. A significant challenge is the institutional barriers that affect the ability to share resources in a timely and cost-effective manner. The design of the NCCWSC deliberately challenges these barriers by promoting shared expertise and collaborative decision making.

Opportunities for collaboration/partnerships that the committee should be aware of:

The National Climate Change and Wildlife Science Center will be establishing the Regional Climate Science Hubs in cooperation with universities and regional conservation partnerships. At the same time, the Center is coordinating development of the Regional Climate Science Hubs with the cooperative adaptive application offices that other agencies are developing, for example, the USFWS Landscape Conservation Cooperatives and NPS Planning and Adaptation Units.

Discussion/Action items for the committee:

1. What conservation partnerships already exist that can represent states' interests at ecological scales relevant to climate change forecasting?
3. How can the states prioritize conservation issues in the State Wildlife Action Plans and coordinate to request climate change science assistance at regional and national scales?
2. What resources are needed for states to participate in regional and national partnerships centered on specific natural resource issues related to future climate change impacts?

Wildlife Conservation Society

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Where are you at right now with respect to climate change and fish and wildlife issues in your agency/organization?

WCS is engaged in many types of climate change research and adaptation projects:

- Conducting field data collection and modeling research on climate change impacts to a number of wildlife species and their habitats throughout North America, with several projects in western United States.
- Working with partner agencies and organizations to apply a general framework for climate change adaptation planning and implementation in specific places/species, including the Yellowstone River, sagebrush steppe habitats in Montana, carnivores in the Northern Rockies, the Jemez Mountains in New Mexico, the Gunnison valley in central Colorado, and two yet-to-be-named landscapes in Arizona and Utah.
- Identifying connectivity needs for species as climate changes.
- Working with Montana Fish, Wildlife and Parks to identify priority adaptation strategies in several ecological systems in the state, and determine how to address climate change in their state wildlife action plan.
- Participating in an AFWA workgroup that is writing a guidance document to assist state fish and wildlife agencies with addressing climate change in their state wildlife action plans.

Highlights and Accomplishments:

- Workshop held in Dec 2008 with MT-FWP on climate change adaptation planning in two systems – the Yellowstone River and sagebrush steppe habitats in the state (workshop summary report available on request).
- Paper describing a general framework for climate change adaptation (Cross et al. in review at Conservation Letters – draft manuscript available on request).
- Workshop to be held Oct 2009 (with U.S. FWS) on consequences of climate change for carnivores in the Northern Rockies and priority conservation recommendations.

New or ongoing initiatives and actions in the state/organization:

(see list above)

Where would you like to be with respect to climate change and fish and wildlife issues? (What's your vision, or what direction would you like to be moving in).

WCS will continue to provide capacity and support for fish and wildlife adaptation planning and implementation within state and federal agencies. By applying our general framework in multiple systems and locations, we aim to refine it into a widely-applicable model for adaptation planning and implementation that has broad use.

Opportunities for collaboration/partnerships that the committee should be aware of:

WCS is interested in supporting state agency efforts to tackle the difficult challenge of addressing climate change in their fish and wildlife conservation work. We welcome opportunities to interact with all potential partners.