



**WAFWA
CLIMATE CHANGE COMMITTEE**

**Annual Update for Committee Members
2010**

Updated July 7, 2010

Table of Contents

WAFWA Climate Change Contacts	3
Recommended Discussion Items for the Committee.....	4
Questions Covered in the 2010 Update	6
Alaska Department of Fish and Game	7
Alberta Sustainable Resource Development.....	9
Arizona Game and Fish Department.....	12
British Columbia Ministry of Environment.....	15
California Department of Fish and Game.....	19
Colorado Division of Wildlife	24
Hawaii Department of Land and Natural Resources	28
Idaho Department of Fish and Game	32
Montana Fish, Wildlife and Parks	38
Nebraska Game & Parks Commission.....	40
Nevada Department of Wildlife.....	42
New Mexico Department of Game and Fish	44
North Dakota Game and Fish Department.....	46
Oregon Department of Fish and Wildlife	48
South Dakota Department of Game, Fish and Parks	50
Texas Parks & Wildlife Department.....	52
Utah Division of Wildlife Resources.....	54
Washington Department of Fish and Wildlife	56
Wyoming Game and Fish Department	59
Association of Fish and Wildlife Agencies	61
National Wildlife Federation, Pacific Regional Center	63
U.S. Army Corps of Engineers, Institute for Water Resources	65
U.S. Fish and Wildlife Service– Alaska Region.....	67
U.S. Fish and Wildlife Service- Pacific Southwest Region, Sacramento.....	72
U.S. Geological Survey-National Climate Change and Wildlife Science Center	75
Wildlife Conservation Society	79

WAFWA Climate Change Contacts

State/Province	Name of coordinator
Alaska	Douglas S Vincent-Lang
Alberta	Lisa Matthias
Arizona	Eric Gardner
Arizona	Bob Broscheid
British Columbia	Tom Ethier
California	Amber Pairis, Ph.D.
Colorado	Thomas A. Schreiner
Hawaii	Ronald Cannarella
Idaho	Karla Drewsen
Idaho	Jeff Gould
Idaho	Ed Schriever
Kansas	Murray Laubhan
Kansas	Ken Brunson
Montana	Rob Brooks
Montana	Ken McDonald
Nebraska	Jeff Lusk
Nevada	Laura Richards
New Mexico	Matthew Wunder, Ph.D.
New Mexico	Terra Manasco
North Dakota	Terry Steinwand
<i>Oklahoma</i>	
Oregon	Holly Michael
<i>Saskatchewan</i>	Wayne Gosselin
South Dakota	John Lott
South Dakota	Eileen Dowd Stukel
Texas	Wendy Gordon, Ph.D.
Utah	Eric (Rick) Larson
Utah	Alan Clark
Washington	Lynn Helbrecht
Wyoming	Mike Stone
<i>Yukon Canada</i>	Karen Clyde

Recommended Discussion Items for the Committee

Regional Collaboration and Workshops

- Further discussion of CC workshop for mid-winter WAFWA – how to insure broadest participation in person or electronically.
- Regional workshop ideas that will specifically meet the needs of WAFWA states.
- Regional vulnerability assessments
 - Setting up regional vulnerability assessments that several or more western state agencies can engage in.
 - Ways to assist Pacific islands, which are generally small and highly vulnerable, to complete vulnerability assessments and adaptation strategies.

Building Internal Capacity and Supporting Department/Agency/Provincial Efforts

- How to incorporate existing department efforts in the development of a state natural systems adaptation plan since this is avenue through which states will receive funding to address climate impacts.
- How we can be more efficient and effective at synthesis of multiple climate initiatives and scientific endeavors to make good management decisions that have long-term implications?
- How to move from strategic planning/policy to planning and implementing on-the-ground actions.
- How to plan adaptation actions/options at different scales – from provincial to local, at policy and operational levels.
- Recommendations for how to go about integrating climate change considerations into our various programs, policies, planning efforts, and management activities.
- Empowering and building capacity of stakeholder groups

Information Sharing

- Highlights of any on-the-ground climate change adaptation actions that any fish and wildlife agency has taken already.
- Sharing examples of how states are overcoming challenges and barriers (lack of funding)
- The situation in Utah is relatively unique. Are there other state agencies facing or have faced similar circumstances.
- Showcasing the importance of regional climate change committees to the other regional associations so that they may create their own.
- Talking points and outreach: how are states going about building a business model for climate change adaptation and wildlife to increase buy in?

Budget and Funding Challenges

- Addressing short-term budget challenges and priorities
- How to fund positions within State governments dedicated to addressing Climate Change.

Opportunities for collaboration

- LCCs
 - LCCs will rely on state data, manpower, partnerships, resources, etc. States need to ensure that the LCC's provide adequate resources to the states and that they do not supersede states wildlife management authorities.
 - Collaboration with DOI's Climate Science Centers and LCCs. This committee is a good platform for engaging with both of these federal entities in order to make sure states needs are heard and, hopefully, met.
- Working with WGA.

Questions Covered in the 2010 Update

- Do you have a position(s) in your organization that is solely dedicated to climate change?
- Is there a cabinet level position for climate change in your state/province?
- Is your agency (Wildlife Agency) the lead on adaptation planning for your state/province?
- Please provide an estimate of the cost of your agency/organizations climate change related efforts for the past year and how many FTEs are dedicated to this work.
 - If yes, please provide a contact person for further follow up.
- Is your state/province using modeling to predict impacts of climate change on wildlife communities?
- Where are you at right now with respect to climate change and fish and wildlife issues in your agency/organization? (Examples-adaptation planning, integrating cc into action plans or programs, internal planning efforts, etc)
- Highlights and Accomplishments:
- New or ongoing initiatives and actions in the state/province/organization:
- Please describe any on the ground adaptation examples that your agency/organization is pursuing and/or planning to pursue.
- What's your vision, or what direction would you like to head in the coming year?
- Challenges or barriers that are holding you back from where you'd like to be?
- Opportunities for collaboration/partnerships for committee discussion?
- Discussion items for the committee meeting?

Alaska Department of Fish and Game

Contact Information: **Doug Vincent-Lang**
 douglas.vincent-lang@alaska.gov
 (907) 267-2339

	Yes/No
Do you have a position(s) in your organization that is solely dedicated to climate change?	NO
Is there a cabinet level position for climate change in your state/province?	NO , but there is a sub-cabinet formed to address climate change adaptation and mitigation.
Is your agency (Wildlife Agency) the lead on adaptation planning for your state/province?	YES , for fish and wildlife adaptation planning.
Please provide an estimate of the cost of your agency/organizations climate change related efforts for the past year and how many FTEs are dedicated to this work.	We do not have a dedicated staff focused solely on climate. Currently, 1/3 of the time for one special assistant position is dedicated to climate change and associated issues.
Is your state/province using modeling to predict impacts of climate change on wildlife communities?	YES
If yes, please provide a contact person for further follow up.	Doug Vincent-Lang Douglas.vincent-lang@alaska.gov (907) 267-2339

Where are you at right now with respect to climate change and fish and wildlife issues in your agency/organization? (Examples-adaptation planning, integrating cc into action plans or programs, internal planning efforts, etc)

We have completed an assessment of likely impacts to fish and wildlife and their habitats and uses. We have also identified research needs associated with assessing these impacts. Finally, we have developed a strategy the Department will use to address the impacts. We are developing a web site to post these accomplishments and are incorporating the work into the State's overall climate change strategy.

Highlights and Accomplishments:

The State's sub-cabinet on climate change has accepted 4 reports addressing climate change. These include an adaptation report, a mitigation report, a research needs report, and an immediate needs report. These are published on the State's climate change web site (www.climatechange.alaska.gov). They are being used by the sub-cabinet to develop Alaska's climate change strategy which is due out in fall of 2010.

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

A State-Federal Executive Climate Change Round Table has been formed to foster coordination on agency climate related actions. The Round Table is being used as a

governance board for efforts such as the USFWS LCC effort and the USGS Regional Climate Centers.

Please describe any on the ground adaptation examples that your agency/organization is pursuing and/or planning to pursue.

The Arctic LCC has been formed and is up and running. The State is co-chairing this effort with the USFWS. Similar efforts are planned for western Alaska, and Alaska's coastal rain forests.

What's your vision, or what direction would you like to be moving in the coming year? We would like to complete our Department web site and post our reports and strategy.

Challenges or barriers that are holding you back from where you'd like to be? Funding and staffing continue to pose major challenges.

Opportunities for collaboration/partnerships for committee discussion?

Our biggest challenge is how to wrap our efforts into the development of a state natural systems adaptation plan, something that WAFWA's Climate Change Committee is working on. This is important since this is avenue through which states will receive funding to address climate impacts.

Discussion items for the committee meeting? See above

Alberta Sustainable Resource Development Fish and Wildlife Division

Contact Information: Lisa Matthias
 Provincial Habitat Conservation Specialist
 Fish and Wildlife Division
 Alberta Sustainable Resource Development
 2nd Floor, 9920 108 St.
 Edmonton, Alberta T5K 2M4
 Phone: (780) 422-3400
 Fax: (780) 422-9557
 Email: Lisa.Matthias@gov.ab.ca

	Yes/No
Do you have a position(s) in your organization that is solely dedicated to climate change?	No; within the Government of Alberta there is, but not within Fish and Wildlife.
Is there a cabinet level position for climate change in your state/province?	Not exactly; the Minister of the Environment is considered to be the cabinet lead on climate change
Is your agency (Wildlife Agency) the lead on adaptation planning for your state/province?	No; Alberta Environment is lead
Please provide an estimate of the cost of your agency/organizations climate change related efforts for the past year and how many FTEs are dedicated to this work.	Within Fish and Wildlife Division, about 0.10-0.20 of one FTE went towards climate change efforts; although some unmeasured efforts probably aren't labeled as "climate change" but are in fact related to adaptation planning/implementation
Is your state/province using modeling to predict impacts of climate change on wildlife communities?	Not really; some modeling on key species like woodland caribou may incorporate some climate change in modeling, but generally a lot more work needed for predicting effects on wildlife populations
If yes, please provide a contact person for further follow up.	None reported

Where are you at right now with respect to climate change and fish and wildlife issues in your agency/organization? (Examples-adaptation planning, integrating cc into action plans or programs, internal planning efforts, etc)

- 1) Adaptation planning - a climate change adaptation framework and accompanying user manual have been completed for our department (includes fish and wildlife, forestry, lands); we are validating some of the vulnerability and risk assessments done, and identifying adaptation options based on those risk assessments
- 2) Adaptation planning - using the framework as a foundation, we will begin developing specific adaptation projects for 2010-12 in collaboration with other

- prairie provinces, and Natural Resources Canada, under a two-year funding program; focus is on policy and tools; identified focus on boreal forest (southern boreal) and grasslands systems
- 3) Integrating climate change into plans/programs - will continue work towards improved integration of climate change into plans/programs (e.g., species at risk recovery plans)

Highlights and Accomplishments:

Our department's climate change team recently completed a climate change adaptation framework and user manual as starting point for moving ahead with adaptation planning and implementation.

Our team acquired funding for additional policy work in climate change adaptation for 2010-2012 (Natural Resources Canada – Prairie Region Adaptation Collaborative http://adaptation.nrcan.gc.ca/collab/abosuj_e.php).

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

See number 2 for our organization. Province-wide there are a number of ongoing and new initiatives relating to climate change (e.g., Alberta Climate Change Adaptation Team, Climate Change Central <http://www.climatechangecentral.com/>, Climate Change and Emissions Management Corporation <http://ccemc.ca/>). Nationally, there is a federal/provincial/territorial working group for climate change and biodiversity that Alberta sits on. There are various climate change research initiatives in government and universities across the province.

Please describe any on the ground adaptation examples that your agency/organization is pursuing and/or planning to pursue.

At a provincial scale, Alberta Fish and Wildlife is mostly involved in policy and planning stages, which will hopefully lead to more on-the-ground actions. Some on-the-ground work in areas of the province, for example in wildlife disease management, species at risk recovery, may loosely be considered as adaptation actions being implemented at least in part because of anticipated climate changes.

What's your vision, or what direction would you like to head in the coming year?

We hope that one result from our ongoing climate change adaptation policy work in 2010-12 will be action/implementation plans for priority fish and wildlife/biodiversity in Alberta that we can move forward with carrying out on-the-ground.

We envision that wildlife and habitat management, species at risk recovery, land-use planning, increasingly integrate climate change considerations and adaptation options.

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

Lack of knowledge/understanding; additional research needed. While some work into biophysical impacts expected in Alberta has been completed (Sauchyn, D. et al, 2008, Assessment of Biophysical Vulnerability; final report to Alberta Environment, 79 pp),

comprehensive assessment of vulnerability and risks to Alberta's biodiversity needs systematic research.

Need to generate a comprehensive list of what species in Alberta will be most at risk from anticipated climate change scenarios, and necessary actions for conservation of biodiversity at all (genetic, species, and ecosystem) levels.

Too many other issues to plan/manage for (with limited staff/resources)

Opportunities for collaboration/partnerships for committee discussion?

Our adaptation framework (vulnerability and risk assessment) and user manual is designed for use in any jurisdiction and can be forwarded to anyone interested.

We would like to be kept apprised of any international opportunities that might arise between states and provinces.

Discussion items for the committee meeting?

Highlights of any on-the-ground climate change adaptation actions that any fish and wildlife agency has taken already.

How to move from strategic planning/policy to planning and implementing on-the-ground actions.

How to plan adaptation actions/options at different scales – from provincial to local, at policy and operational levels.

Arizona Game and Fish Department

Contact Information: **Bob Broscheid**
 bbroscheid@azgfd.gov
 Eric Gardner
 egardner@azgfd.gov

	Yes/No
Do you have a position(s) in your organization that is solely dedicated to climate change?	No
Is there a cabinet level position for climate change in your state/province?	No, however we have what is know as the Arizona Climate Change Initiatives Kurt Maurer Arizona Department of Environmental Quality 1110 W Washington St. Phoenix, AZ 85007 (602) 771-4500 Our Governor is in the process of designating a “Climate Change Task Force” made up of both private sector and cabinet seats. The Natural Resource Policy Advisor to the Governor is responsible for the group.
Is your agency (Wildlife Agency) the lead on adaptation planning for your state/province?	Yes – for wildlife related issues.
Please provide an estimate of the cost of your agency/organizations climate change related efforts for the past year and how many FTEs are dedicated to this work.	5 FTEs spend a considerable amount of time on climate change, ranging from CC Committee work (members of the AFWA Climate Change working group that developed the Guide), to meeting attendance and GIS work for SWAP.
Is your state/province using modeling to predict impacts of climate change on wildlife communities?	Currently, there are no statewide models. However, we are working with multiple partners to explore existing approaches to modeling climate change, downscaling of global circulation models, and species and habitat vulnerability modeling.
If yes, please provide a contact person for further follow up.	Joyce Francis jfrancis@azgfd.gov 623-263-7734

Where are you at right now with respect to climate change and fish and wildlife issues in your agency/organization? (Examples-adaptation planning, integrating cc into action plans or programs, internal planning efforts, etc)

AGFD is revising our SWAP and is more fully addressing possible effects of climate change in that revision. This effort will include examining the impact of climate change on other threats to wildlife, the effectiveness of our conservation actions in light of climate change, and may begin the process of vulnerability assessment, and adaptation planning.

Highlights and Accomplishments:

Two AGFD staff helped develop the Guide for including Climate Change into SWAPs developed by AFWA.

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

Many of our partners are currently engaged in modeling the effects of climate change on wildlife. We are currently assessing the effectiveness of these efforts.

On February 2, 2005, Governor Janet Napolitano signed Executive Order 2005-02 establishing the Climate Change Advisory Group (CCAG). Appointed by the Governor, the 35-member CCAG comprised a diverse group of stakeholders who brought broad perspective and expertise to the topic of climate change in Arizona. The Governor's Executive Order directed the CCAG, under the coordination of the Arizona Department of Environmental Quality (ADEQ), to:

- 1) Prepare an inventory and forecast of Arizona greenhouse gas (GHG) emissions; and
- 2) Develop a Climate Change Action Plan with recommendations for reducing GHG emissions in Arizona.

The Executive Order emphasized that "Arizona and other Western States have particular concerns about the impacts of climate change and climate variability on the environment, including the potential for prolonged drought, severe forest fires, warmer temperatures, increased snowmelt, reduced snow pack and other effects." The Executive Order also recognized that "actions to reduce GHG emissions, including increasing energy efficiency, conserving natural resources and developing renewable energy sources, may have multiple benefits including economic development, job creation, cost savings, and improved air quality." NOTE: this effort did not include wildlife. It did include agriculture and forestry.

Our state continues to participate with the Western Climate Change Initiative.

Please describe any on the ground adaptation examples that your agency/organization is pursuing and/or planning to pursue.

The Department is working with partners to identify important wildlife movement corridors across the state.

What's your vision, or what direction would you like to head in the coming year?

Complete the SWAP revision, to include climate change as a threat/stressor and begin vulnerability assessments for key species or habitats.

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

Lack of models with solid predictions of future conditions; lack of downsizing of models to the local level; lack of staff to dedicate to climate change work.

Opportunities for collaboration/partnerships for committee discussion?

There are numerous opportunities for collaboration with on going efforts (eg. TNC Adaptation Workshop, TNC down scaling models, USGS National Climate Change & Wildlife Science Center Project, etc.). However, participation in all of the opportunities represents a workload issue that, without additional resources, is placing a significant burden on staff.

Discussion items for the committee meeting?

LCCs will rely on state data, manpower, partnerships, resources, etc. States need to ensure that the LCC's provide adequate resources to the states and that they do not supersede states wildlife management authorities.

British Columbia Ministry of Environment

Contact Information: Jenny Feick
 Environmental Stewardship Division (ESD)
 BC Ministry of Environment (MoE)
 4th Floor, 2975 Jutland Road
 Victoria, BC;
 250-387-1837

	Yes/No
Do you have a position(s) in your organization that is solely dedicated to climate change?	No, no longer have such a position in the Environmental Stewardship Division (ESD) of the BC Ministry of Environment (MoE). ESD is the entity that includes the Fish and Wildlife Branch, the Ecosystems Branch, and the Oceans and Marine Fisheries Branch. Other divisions in the MoE do There is one division focused on climate change, the Climate Action Secretariat (CAS). Their mandate focuses primarily on climate change mitigation.
Is there a cabinet level position for climate change in your state/province?	Yes, Minister of State for Climate Action, John Yap, focused primarily on climate change mitigation
Is your agency (Wildlife Agency) the lead on adaptation planning for your state/province?	No. the Climate Action Secretariat plays the lead role in coordination of adaptation, including adaptation planning, for the BC Government
Please provide an estimate of the cost of your agency/organizations climate change related efforts for the past year and how many FTEs are dedicated to this work.	FTEs in 2009/10: full time manager from April to August; part-time after that; very little work on CCA after mid-February 2010 when manager's position reassigned to Ecosystems Branch. CAS has 4 FTEs devoted to CCA, however only three positions are currently filled as the manager position just became vacant.
Is your state/province using modeling to predict impacts of climate change on wildlife communities?	BC Ministry of Forests and Range (MFR) did some work on this as part of their Future Forests Ecosystems Initiative; however this initiative is winding down. The focus has been on commercial tree species, plus insect pests and hydrological changes. In BC MoE, the individual scientists who used to do this work for fish have retired and positions have not yet been filled in order to meet budget targets.

	Pacific Climate Impacts Consortium (PCIC) at the University of Victoria plays major role in modeling to predict impacts of climate change on a variety of things, including wildlife Individual researchers working on this at various universities.
If yes, please provide a contact person for further follow up.	MFR: Dave Spittlehouse, Climatologist Peter Tschaplinski, Research Scientist, Alanya Smith, Land Based Investments Research Officer MoE: Tory Stevens, Terrestrial Ecologist, Parks and Protected Areas Branch, Ted Down, Manager, Fisheries Science, Ecosystems Branch, ESD Kristine Ciruna, Assistant Director of Research, Ecosystems Branch, ESD (re: cumulative effects) Dave Fraser, Chair, Conservation Data Centre, Ecosystems Branch, ESD (re: Conservation Framework) Other Trevor Murdoch, Climate Scientist, PCIC Dr Fred Bunnell, Dept of Forestry, UBC

Where are you at right now with respect to climate change and fish and wildlife issues in your agency/organization? (Examples-adaptation planning, integrating cc into action plans or programs, internal planning efforts, etc)

On February 4th, the BC Government released its Strategic Plan for Climate Change Adaptation, which mandates that CCA must become part of all government business - http://www.livesmartbc.ca/attachments/Adaptation_Strategy.pdf. Program Plans developed for the Fisheries, Wildlife and Ecosystems programs all highlight the need to deal with climate change effects on fish, wildlife and ecosystems.

However, the BC Government natural resource management agencies have fewer financial and human resources to work with than they did a couple of years ago and this trend will continue. In their business planning for 2010/11, the ESD Management Committee assigned CCA a low priority and redeployed staff working on this to other projects. The focus is on meeting existing legal requirements and developing new business processes that require fewer resources. CCA work in ESD is thus at a standstill. A recent climate change adaptation assessment for BC MoE conducted by CAS concluded that ESD was the most vulnerable division within the ministry and the one least likely to be able to meet its goals, given climate change.

Highlights and Accomplishments:

- CCA research priorities articulated to PICS and PCIC
- June 1 and 2, 2009: “Fish and Wildlife in a Changing Climate” Symposium at the University of Victoria. Proceedings are on the FORREX website.
- Dec 7, 2009: Pacific Institute for Climate Solutions (PICS) Resilient Ecosystems Workshop, Victoria – final report at:
<http://www.forrex.org/publications/other/FileReports/fr09-02.pdf>
<http://www.pics.uvic.ca/assets/pdf/publications/Resilient%20Ecosystems%20Workshop%20Report.pdf>
- March 2010: Deputy Minister approves ministry statements of understanding and working principles on climate change adaptation
- April 2010: Crown of the Continent Managers workshop on climate change adaptation
- June 2010: Ecosystem Program Plan states “The Ecosystems Program will need to anticipate effects of climate change on species and ecosystems and the implications for our work.”
- Conservation Framework assessment incorporates consideration of climate change effects in assessments for the status of species and ecological communities
- Major progress in alien species removal in provincial parks and protected areas
- Progress with prescribed burning programs and other ecological restoration work

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

- BC contributions to Canadian Council of Resource Ministers Biodiversity Steering Group ‘s federal/provincial/territorial Task Force on CCA and Biodiversity: gap analysis and action plans developed
- Ongoing interagency partnerships in salmon recovery, grizzly Bear management
- First discussion of potential to cooperate through Landscape Conservation Cooperatives
- Oceans Strategy
- Workshop to develop a Water Science Strategy

Please describe any on the ground adaptation examples that your agency/organization is pursuing and/or planning to pursue.

- Regional Adaptation Collaborative: Federal funding from Natural Resources Canada enabling work on decision analysis to support decisions about adaptation in aquatic environments – enhances ability to legally designate and protect Temperature Sensitive Streams and Fisheries Sensitive Watersheds under the *Forest and Range Practices Act*, plus the Riparian Areas Regulation under the *Stream Protection Act*.
- Alien species removal in provincial parks and protected areas
- Prescribed burning programs and other ecological restoration work

What's your vision, or what direction would you like to head in the coming year?

- Get CCA for fish, wildlife and ecosystems recognized as a priority for action and resources
- Complete guidance and tool development for staff (halted when manager position redeployed)
- Get BC engaged in Landscape Conservation Cooperatives and other trans-boundary partnership opportunities
- Advance PICS Resilient Ecosystems theme
- Pursue partnerships with PICS and PCIC

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

1. MoE Executive does not see CCA for wildlife as a priority during a time of economic challenges. The focus is on what MoE is legally required to do. There are no legal drivers for CCA work for fish, wildlife and ecosystems.
2. Current legislation compels ESD to manage species and populations, not ecosystems at landscape level.
3. Key stakeholder groups focused on other issues, e.g. BC Wildlife Federation focus is on increasing opportunities for resident hunters, not climate change effects on wildlife.

Opportunities for collaboration/partnerships for committee discussion?

- Pacific Climate Impacts Consortium
- Pacific Institute for Climate Solutions
- Landscape Conservation Cooperatives

Discussion items for the committee meeting?

- Building a business case for CCA and wildlife
- Addressing short-term budget challenges and priorities
- Opportunities for collaboration – LCCs, transboundary work
- Empowering and building capacity of stakeholder groups

California Department of Fish and Game

Contact Information: Amber Pairis, Ph.D.
 Climate Change Advisor
 cell: 916-205-9478
apairis@dfg.ca.gov
<http://dfg.ca.gov/climatechange/>

	Yes/No
Do you have a position(s) in your organization that is solely dedicated to climate change?	yes
Is there a cabinet level position for climate change in your state/province?	yes
Is your agency (Wildlife Agency) the lead on adaptation planning for your state/province?	No- The California Natural Resources Agency is lead but CDFG is a Department under this Agency and has a lead role on the Biodiversity sector strategies.
Please provide an estimate of the cost of your agency/organizations climate change related efforts for the past year and how many FTEs are dedicated to this work.	1 FTE and approx 20 staff who work on various climate related projects for short periods of time.
Is your state/province using modeling to predict impacts of climate change on wildlife communities?	Yes
If yes, please provide a contact person for further follow up.	Amber Pairis apairis@dfg.ca.gov

Where are you at right now with respect to climate change and fish and wildlife issues in your agency/organization? (Examples-adaptation planning, integrating cc into action plans or programs, internal planning efforts, etc)

The California Department of Fish and Game (CDFG) is committed to minimizing to the maximum extent practical the effects of climate change on the state's natural resources. We recognize emerging climate change science brings uncertainty and are committed to focusing on an approach that effectively addresses this uncertainty through the use of a variety of planning tools and strategic initiatives. We also recognize the importance of developing and maintaining partnerships as an effective means of addressing the broad scope of climate change issues.

As a Department we are developing a climate change strategy within our management and policy branches and integrating a thought process into all of our natural resources activities that actively addresses climate change with a focus on both mitigation and adaptation. Key areas of focus include but are not limited to:

- Integrating climate change into Department functions
- Build Capacity and Invest in Staff
- Reducing the Department's carbon footprint
- Climate Change Adaptation Planning

- Creating and Maintaining Climate Change Partnerships
- Creating and Maintaining a National, Regional and State Level Presence

Highlights and Accomplishments:

- **California Climate Action Team:** CDFG Director McCamman sits on this team, which oversees climate change activities across state agencies. CDFG is now the lead on the CAT Biodiversity Working Group (BIO-CAT). The BIO-CAT is hosting a cross sector discussion in April with other state agencies to look for ways to work more closely together as adaptation strategies are implemented. Specifically, identifying those opportunities where we can work more closely together to support actions or where potential conflicts exist minimize them to the maximum extent practicable.
- **California Climate Adaptation Strategy (CAS):** The California Natural Resources Agency led the creation and release of the first comprehensive multi-sector climate change adaptation strategy across the nation. CDFG and State Parks co-lead the Biodiversity and Habitat Sectors and relied heavily on input from CDFG workshops, public meetings, and stakeholder input. The Strategy document was released December 2009.
<http://www.climatechange.ca.gov/adaptation/>
- **CDFG Climate Change Stakeholder Meetings:** The Department is very proud of its climate change stakeholder group that has been meeting regularly for over 2 years. Meetings are well-attended and composition of participants reflects an inclusive process with NGOs, state, federal, academic, private industry, and local land trusts at the table. Four working groups have been formed that focus on outreach, workshops & research, creating a framework (policy) for successfully implementing climate change adaptation strategies across the state, and a regional working group in southern California (details below).
 - **Outreach:** This group is focusing on crafting messages that can be used to engage the public, landowners, and organizations on a variety of topics that help us as a group tell the story and engage partners in adaptation and mitigation efforts.
 - **Research and Workshops:** This working group has been meeting regularly via conference call to put together a workshop on downscaling climate models. The intent of this workshop is to bring together those individuals doing cutting edge research on downscaling in California with key land managers and partners.
 - **Policy Framework:** This work group has been focusing its discussion on how to design a framework to successfully implement climate change adaptation strategies across agencies-organizations. This group has focused on key elements that will create a structure and process for implementing adaptation actions effectively across the state as well as within regions and local jurisdictions. With the recent publication of the 2009 Climate Change Adaptation Strategy, the state of California is one of the first to develop a comprehensive approach to addressing the impacts of climate change. As the state ramps up its efforts to address policy and management issues concerning energy production, hazard mitigation, and

vulnerability, the CA State Wildlife Action Plan could provide critical guidelines for incorporating the impact of climate change on natural resources into statewide planning. By clarifying climate change related goals, objectives and priorities in the plan, the CDFG will be uniquely positioned among other statewide interests to provide critical information on the current status and condition of wildlife and habitat as well as projected future vulnerabilities under climate change.

- **Southern CA Regional Work Group:** This regional work group had its first meeting in February. At the meeting attendees were unanimous in moving from conceptualizing climate adaptation strategies to implementing many of the strategies identified in the Department's Climate Change Strategy document and the Department's Wildlife Action Plan. Many of the organizations present have been on the cutting edge of conserving natural communities and linking conserved areas with broad landscape linkages throughout Southern California.

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

- **CDFG Adaptation Strategy:** CDFG's internal climate change adaptation strategy "Confronting Climate Change: Adaptation Actions to Conserve California's Natural Resources" is nearing completion. The strategy contains many of the same elements as the state wide multi sector strategy but goes even further to identify the steps necessary for implementing these actions and the staff and funding required to be successful. The strategy also identifies the existing tools the CDFG will rely on to deliver actions on the ground and will be an important communication tool as well as a vision for actions needed to help species persist in a changing climate. A draft document is expected to be released in early summer.
- **California Wildlife Action Plan Revision:** The climate change program is working closely with the wildlife program to provide a stronger climate change component within the revision. Internal discussions are underway to begin planning for the revision. A primary objective of the revision will be to update the Species of Greatest Conservation Need (SGCN) and re-examine the stressors and actions described. A critical new component of the revision will be the inclusion of this comprehensive climate change adaptation strategy. The group is currently reviewing ideas for how public workshops that are held as part of the revision can help build support, buy in, and input from partners to create a collective vision for implementing adaptation actions across the state.
- **CDFG Going Green: Reducing our Carbon Footprint:** On October 30, 2009 a Director's Bulletin was sent out to all staff regarding the completion of a guidance document to help the Department reduce its carbon footprint and save the Department valuable resources <http://CDFG.ca.gov/climatechange/activities.html>. A CDFG Going Green Working Group is currently meeting to come up with an implementation strategy for some of the ideas in this document. This effort has strong support from both the Director and executive staff as well as CDFG employees from across the state.

- **Regional Climate Change Committees:** The Northern Region Climate Change Committee has been meeting for almost one year. This committee was formed to assist CDFG Regional staff in better understanding and managing the numerous issues associated with climate change in our personal and professional lives, and to help move CDFG forward on climate change issues. The Committee works closely with the Climate Change Advisor and meets monthly. Other Regional Committees are in planning stages.
- **BAECCC:** CDFG is involved in a recently formed group “Bay Area Ecosystems Climate Change Consortium,” a group of federal, state, and NGO partners looking to create a demonstration project in the Bay Area for large-scale climate change adaptation activities.

Please describe any on the ground adaptation examples that your agency/organization is pursuing and/or planning to pursue.

The CDFG has integrated climate change considerations into a number of restoration activities and research projects including the Elkhorn Slough Tidal Wetland Project. In addition, we have numerous management plans and recovery plans that are taking into consideration impacts associated with climate change and responding accordingly.

The South Coast Region of CDFG is conducting coastal wetland restoration planning for three DFG ecological reserves, Ballona Wetlands ER in Los Angeles County and Buena Vista Lagoon and San Elijo Lagoon ERs in San Diego County. All three will include an analysis of sea level rise for the various alternatives being discussed in the environmental documents. Public scoping meetings and agency meetings have been underway for a number of years and environmental documents are expected out in the next 1-2 years for each property.

What’s your vision, or what direction would you like to head in the coming year?

- To continue to grow the program and add more full time or even part time staff to the program. As of now we have 20+ employees who work on various climate change projects but these are always on top of their regular responsibilities. While this is helping to build capacity within our staff it is not sustainable in the long term.
- Pursue a vulnerability assessment as part of the revision of the Action Plan.
- Continue collaborative efforts with stakeholders to achieve shared goals and build a collective vision for delivering climate change adaptation actions throughout the state.

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

The State Budget crisis and three furlough days a month have been a real challenge to existing staff as well as any hopes of hiring new staff for climate change positions. The furlough days in particular have made it difficult to keep up with workloads and minimized the extra help staff were willing to take on to work on climate change activities and projects.

Opportunities for collaboration/partnerships for committee discussion?

- Western Governor's Association activities
- Sea level rise study that is being commissioned by CA, OR, and WA.
- Activities of the AFWA climate committee as well as other regional associations.

Discussion items for the committee meeting?

- Regional workshop ideas that will specifically meet the needs of WAFWA states.

Colorado Division of Wildlife

Contact Information: Tom Schreiner
 6060 Broadway Denver, CO 80216
tom.schreiner@state.co.us
 303-291-7162

	Yes/No
Do you have a position(s) in your organization that is solely dedicated to climate change?	Yes, Tom Schreiner is CDOW's Climate Change Coordinator
Is there a cabinet level position for climate change in your state/province?	Yes, Alice Madden is the Governor's Climate Change Advisor
Is your agency (Wildlife Agency) the lead on adaptation planning for your state/province?	The Colorado Water Conservation Board is actively involved in adaptation planning ... particularly as it relates to drought planning and water availability. They are coordinating with CDOW to learn about how these issues impact the Colorado's fish and wildlife resources, what our specific vulnerabilities are, and what mitigation measures or plans we have in place to minimize those vulnerabilities.
Please provide an estimate of the cost of your agency/organizations climate change related efforts for the past year and how many FTEs are dedicated to this work.	1 FTE
Is your state/province using modeling to predict impacts of climate change on wildlife communities?	So far, we anticipate using modeling in 2010-2011 to predict impacts of climate change on existing wildlife corridors for a suite of 7 species.
If yes, please provide a contact person for further follow up.	Josh Pollock / josh@nativeecosystems.org Healy Hamilton / HHamilton@calacademy.org

Where are you at right now with respect to climate change and fish and wildlife issues in your agency/organization? (Examples-adaptation planning, integrating cc into action plans or programs, internal planning efforts, etc)

- Colorado Division of Wildlife is in the early stages of planning for climate change impacts. We are coming to grips with how climate change will impact wildlife populations and their habitats, which will be vital to developing future adaptation strategies. We are working towards refining our understanding of crucial habitats

and corridors to assist in that effort, because those are likely to be the wildlife resources we will focus on when applying adaptation and protection strategies.

- We anticipate beginning the process of preparing a climate change update for our State Wildlife Action Plan in 2011, and will focus our efforts in 2010 toward gleaned what we can learn from a variety of climate/wildlife scientific investigations including those facilitated by the USGS and the USFWS through their various research and LCC activities.

Highlights and Accomplishments:

- Began a multi-year project in cooperation with Center for Native Ecosystems and Colorado Wild to update wildlife movement corridors maps and database, to perform a climate change analysis on existing corridors for a select suite of species, and to incorporate this information into Colorado's Wildlife Action Plan.
- Participated in a 2-day climate change workshop for the Gunnison Basin sponsored and organized by The Nature Conservancy, University of Arizona, University of Washington, Wildlife Conservation Society, and the United States Forest Service. The goal of the workshop was to identify land, water, and species management strategies that will help native plants, wildlife, and ecosystems adapt to a changing climate. The workshop focused on three conservation features within the Gunnison Basin: Gunnison sage-grouse, alpine wetlands, and Gunnison headwaters. A total of 57 participants representing 20 public agencies, private organizations, and academic institutions attended the workshop. Outcomes of the workshop included 1) review and interpretation of two climate scenarios, 2) definition of conservation features and management objectives, 3) conceptual models to illustrate the climate, ecological, and social factors that affect these features, 4) preliminary strategic actions for the climate change scenarios, 5) evaluation of opportunities for implementing strategies, and 6) a list of research and monitoring needs.
- Participated in the USGS's June 10-11 NCCWSC Central Regional Workshop.
- Reviewed the USFWS proposed national plan for fish and wildlife climate adaptation via the USFWS Draft Strategic Plan and 5-Year Action Plan.

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

- The Colorado Division of Wildlife is working with the Colorado Water Conservation Board to provide fish/wildlife information that will be used for the 2010 update of Colorado's Drought Mitigation and Response Plan.
- The Colorado Division of Wildlife has been invited to participate in a Colorado Climate Adaptation Task Force, comprised of members from various state agencies including the Governor's Energy Office, the Colorado Department of Health, the Colorado Water Conservation Board, the Colorado Division of Wildlife, and the Governor's Climate Advisor. Representatives of the Western Water Assessment have also joined the task force. The purpose of the task force is to look for opportunities to leverage resources, identify cross-cutting issues, and increase collaboration toward climate change adaptation. A primary task for 2010 will be to produce a report outlining who's doing what in Colorado relative to

climate adaptation and to identify priorities and areas of future climate adaptation work that may be pursued and investigated by the next administration.

- Colorado Division of Wildlife and the New Mexico Department of Game & Fish will be working on a pilot project to identify critical wildlife habitats and corridors on the New Mexico-Colorado State border in conformance with the Western Governors Wildlife Council's criteria for establishment of a "Decision Support System" (DSS) within each state. The partners will share existing data, identify data gaps, evaluate threats to critical wildlife habitats and habitat linkages, develop strategies to address threats in order to protect shared wildlife habitat (including winter range) and travel/migration corridors between the States of New Mexico and Colorado. The initiative will compile the best science and information available from various partners and generate a digitized product that will facilitate the ability of decision makers to effectively consider and protect wildlife and crucial habitats in their land management decisions.
- Monitoring the outcomes of other state efforts geared towards identifying future water availability and adaptation measures via the Colorado River Water Availability Study and the Front Range Water Availability Study. These studies may have direct or indirect climate change implications for fish and wildlife resources.

Please describe any on the ground adaptation examples that your agency/organization is pursuing and/or planning to pursue.

None reported

What's your vision, or what direction would you like to head in the coming year?

- Evaluating the relative vulnerabilities of major ecosystems within the state such as alpine/subalpine, montane, sagebrush-grass, grassland, and riparian/wetlands, and defining which geographic areas of the state may be most vulnerable to the impacts of climate change.
- Learning more about how the major ecosystems of the state will change and how species ranges will shift in response to the anticipated affects of climate change.
- Learning more about how individual species and/or assemblages of species are vulnerable to the anticipated affects of climate change.
- Learning more about how existing stressors on fish and wildlife resources will be exacerbated by the anticipated affects of climate change.
- Learning more about the degree and extent to which crucial habitats and migration corridors will become more fragmented by the anticipated affects of climate change.
- Learning more about the potential for positive impacts of climate change on existing fish and wildlife resources within our state and region, and how we might prepare to capitalize on those positive impacts.
- Mobilizing resources to inventory and assess the status of noxious weed infestations throughout Colorado on properties owned or managed by Colorado Division of Wildlife, particularly on crucial habitats and migration corridors.

- Evaluating the extent and distribution of forest pest issues (beetle kill) in montane forests throughout the state, how those issues intersect with crucial habitats and/or migration corridors, and what kinds of risks those issues present to fish/wildlife resources.
- Learning more about the major climatic regions of the state, how the hydrograph for major rivers within the state is likely to change, and how future water levels in streams and lakes within these major river basins will fluctuate throughout the year.
- Identify opportunities for future cooperation and/or collaboration with other Western fish and wildlife agencies that have mutual interests or concerns regarding specific habitats or species and where the potential exist to leverage resources and to participate in future climate studies and/or regional vulnerability assessments.

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

- Gaining the political support and leadership at the State Level for pursuing development of a statewide wildlife adaptation strategy and plan with key stakeholders, and mobilizing the financial resources needed to achieve these work products.
- Uncertainty of climate change models, particularly the level of variability of precipitation modeling output and lack of discernable trends.

Opportunities for collaboration/partnerships for committee discussion?

- Discuss options for coordinated climate change adaptation efforts, within each major region within the western states, by federal, state, and local government agencies, tribes, NGO's, and others for issues affecting fish and wildlife resources.

Discussion items for the committee meeting?

- Who is doing what?
- What have you learned so far, and what would you do differently if you had the chance to do it over again?
- Regional vulnerability assessments that several or more western state agencies can engage in.
- Recommendations for how to go about integrating climate change considerations into our various programs, policies, planning efforts, and management activities.

Hawaii Department of Land and Natural Resources

Contact Information: **Ronald Cannarella**
Division of Forestry and Wildlife
1151 Punchbowl St. Rm 325
Honolulu, HI 96813
Tel (808) 587-4189 direct, (808) 598-0166 office number
Ronald.J.Cannarella@hawaii.gov
www.dofaw.net

	Yes/No
Do you have a position(s) in your organization that is solely dedicated to climate change?	No; just the opposite; several individuals within the Division of Forestry and Wildlife (DOFAW) have been assigned as liaisons to various organizations such as yours. For some reason I got assigned as DOFAW’s liaison to WAFWA (and I’m a forester), while a colleague of mine, Sheri Mann, also a forester, has been assigned the liaison to the western region of the National Association of State Foresters (the Western Forestry Leadership Coalition or WFLC). This is the State Forester’s approach to “spreading the pain”. Sheri and I are good friends and communicate often, but we are frustrated that there is no “point person” in DLNR or DOFAW.
Is there a cabinet level position for climate change in your state/province?	Yes and No. (See following section for more detail). Nominally, the Director of the Office of Planning would be the Chair of a “Climate Change Task Force” established last year by the State Legislature. The Administration does not support this effort however, and so the Task Force has not officially met yet.
Is your agency (Wildlife Agency) the lead on adaptation planning for your state/province?	No. The 2009 State Legislature created a Climate Change Task Force, and appointed the Director of the Office of Planning as Chair of the Task Force. The Administration did not support the legislation due to the fiscal crisis, stating that they could not take on any new responsibilities as the government was implementing furloughs and a reduction in force. The Governor vetoed the enabling legislation; the Legislature overrode her

	<p>veto and allocated funds to support the Task Force. The Governor has refused to release the funds and there is currently a stalemate between the Legislature and Administration over the establishment of the Task Force.</p> <p>The Fish & Wildlife Service is setting up regional climate change centers, and the Pacific region is called PICCI (Pacific Islands Climate Change Initiative? Not sure). PICCI is being coordinated through the Hawaii Conservation Alliance, which is a voluntary coalition of agencies involved in natural resource stewardship in Hawaii (http://hawaiiconservation.org/).</p>
<p>Please provide an estimate of the cost of your agency/organizations climate change related efforts for the past year and how many FTEs are dedicated to this work.</p>	<p>0 FTE's. \$0 dollars. However, like all states, our Forestry Agency (DOFAW) is in the process of producing our Statewide Assessment of Forest Conditions and Resource Strategy as required by the 2008 Farm Bill. We have been working very closely with the Ocean Resources Management Plan (ORMP) Working Group. The Working Group consists of 10-15 representatives of various agencies working on ocean and coastal issues. Through the ORMP Working Group I have been able to engage two institutions at the University of Hawaii; most notably Maxine Burkett, Professor of Law and Director of the Center for Center for Island Climate Adaptation and Policy (ICAP, at http://www.law.hawaii.edu/icap) and Dr. Chip Fletcher, director of the University of Hawaii Coastal Geology Group and a world-redound climate change/sea-level researcher. By utilizing the ORMP Working Group, Maxine and Chip Hawaii's Statewide Forestry Assessment and Strategy will have a very strong Climate Change/Sea Level Rise chapter with a minimum amount of time and resources provided by my agency as per the Administration's policy.</p>

Is your state/province using modeling to predict impacts of climate change on wildlife communities?	Not yet. Weather and climate models are not yet at a fine enough spatial resolution for islands such as Hawaii, which have extremely variable microclimates.
If yes, please provide a contact person for further follow up.	

Where are you at right now with respect to climate change and fish and wildlife issues in your agency/organization? (Examples-adaptation planning, integrating cc into action plans or programs, internal planning efforts, etc)

We are in the process of completing our Statewide Assessment of Forest Conditions and Trends (SWARS) as required by the 2008 Farm Bill. We will have an extremely robust Issue: Climate Change/Sea Level Rise. That section has been written as a collaboration of Dr. Chip Fletcher (Univ of Hawaii “Dr. Climate Change) Professor Maxine Burkett (UH School of Law, Director of ICAP), Deanna Spooner (Director of the Hawaii Conservation Alliance) and Jeff Burgett (acting director of USFWS Climate Change Pacific Region PICCI). The document will be released for a brief public review period, and submitted to the Secretary of Agriculture by June 18. Our SWARS assessment contains the most current information on CC/Sea Level Rise, as well as a set of strategies to address the issue. Planned strategies are a vulnerability assessment, followed by an adaptation strategy. Other than that, we are not authorized to devote a significant amount of time or resources towards addressing CC as per the policy of our Governor and Department Chair.

Highlights and Accomplishments:

Surviving this weekend would be a big one. Producing a killer SWARS would be a big one (this soufflé of a document will either come out perfect or flat, but it will still taste good). Recording and posting last years’ Hawaii Conservation Conference (focusing on Climate Change in Hawaii and the Pacific) to the Internet and as a podcast on the iTunes store was a big one last year. Currently, the Ocean Resources Management Plan Working Group is developing a framework for addressing CC, and executive order in preparation for a change in administration next year.

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

See above.

Please describe any on the ground adaptation examples that your agency/organization is pursuing and/or planning to pursue.

Still too early to call, but I would like to see a project proposal from Hawaii to fund a vulnerability assessment come out of the SWARS process we are completing. It is premature for me to say that the State would submit such a proposal to the Forest Service State & Private Forestry program, but at least the players here in Hawaii are working very well together and new partnerships have been established (i.e. between me/DOFAW, UH, ICAP, HCA and PICCI).

What's your vision, or what direction would you like to head in the coming year?

My perfect year would include secured funding for a vulnerability assessment and the change in State policy supporting a Climate Change Task Force.

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

Lack of funding, furloughs, layoffs, reduction in workforce through attrition, policy of the Executive Branch of Hawaii State govt. In this time of economic crisis, each agency is fighting for the resources to support their core mission. For us, that is the protection of the Forest Reserve System; road maintenance, fire fighting, invasive species control, endangered species conservation, emergency response.

Opportunities for collaboration/partnerships for committee discussion?

Always. Society of American Foresters annual convention scheduled for Honolulu 2011. I think there is also a large national wildlife conference next summer too. Pacific Island Foresters Committee will meet at about the time of the SAF conference.

Discussion items for the committee meeting?

- a) How to fund positions within State governments dedicated to addressing Climate Change. Because right now, we're broke.
- b) Ways to assist Pacific islands, which are generally small and highly vulnerable, to complete vulnerability assessments and adaptation strategies.

Idaho Department of Fish and Game

Contact Information: Sharon W. Kiefer
 Karla Drewsen
 208-334-2920
karla.drewsen@idfg.idaho.gov

	Yes/No
Do you have a position(s) in your organization that is solely dedicated to climate change?	No
Is there a cabinet level position for climate change in your state/province?	No
Is your agency (Wildlife Agency) the lead on adaptation planning for your state/province?	Yes, IDFG is the lead implementer for state fish and wildlife management. A primary implementation tool will be the State Wildlife Action Plans (SWAPs).
Please provide an estimate of the cost of your agency/organizations climate change related efforts for the past year and how many FTEs are dedicated to this work.	One FTE associated with the University of Idaho is working almost exclusively on climate change planning/research, including the project “Assessing the vulnerability of species and ecosystems to projected future climate change in the Pacific Northwest”. Several other people are working on climate change-related activities part-time. Estimated costs <\$50,000 annually.
Is your state/province using modeling to predict impacts of climate change on wildlife communities?	<p>The use of downscaled regional climate models (noted above), dynamic vegetation models, and models to predict potential species distribution shifts related to predicted climate changes is in progress as tools become available. There are several key studies to develop and disseminate these tools in progress.</p> <p>There is also additional research being done jointly by the University of Idaho, Idaho State University, and Boise State University under a NSF grant (see the link below) http://www.idahoclimatechange.org/ that is connected to the assessment of climate change on water management and related aquatic resources in the state. Idaho is encompassed by three USFWS</p>

	<p>Landscape Conservation Cooperatives (LCCs) that will be using models to predict changes of climate change on aquatic and terrestrial habitat. Specific regional projects funded to facilitate this initiative are not yet underway.</p> <p>IDFG is collaborating with Washington, Oregon, and Montana to integrate climate adaptation/change information into pilot Decision Support Systems (DSS) sponsored by the Western Governors' Association (WGA) as a tool for integrating wildlife and habitat information into transboundary infrastructure planning.</p> <p>See following for additional climate work.</p>
<p>If yes, please provide a contact person for further follow up.</p>	<p>Several individuals working on this effort contact Karla Drewsen for IDFG management work or Leona Svancara (Leona.svancara@idfg.idaho.gov) for University of Idaho climate research.</p>

Where are you at right now with respect to climate change and fish and wildlife issues in your agency/organization? (Examples-adaptation planning, integrating cc into action plans or programs, internal planning efforts, etc)

In general, IDFG is working on internal planning efforts via

- Incorporating climate change concerns into the revision of the State Wildlife Action Plans and the Idaho Comprehensive Wildlife Conservation Strategy.
- Beginning to include climate change consideration in IDFG management plans, such as for Bonneville cutthroat trout but has not developed specific management actions or requirements.
- Conducting vulnerability assessments, including participating in the University of Idaho project to downscale climate models.

Highlights and Accomplishments: Most initiatives, such as the WGA DSS pilot projects and the USFWS LCCs are too new to report specific accomplishments.

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

- Great Northern LCC, Steering Committee
- Great Basin LCC-anticipate IDFG contribution
- Highway Linkages/Wildlife Corridor efforts with Idaho Department of Transportation and Federal Highways Administration
- WGA's Decision Support System pilot projects
- LLC Decision support System Grant
- Mojave/Great Basin Desert Climate Change Conference in Las Vegas, NV

- Seeking Wildlife conservation Society grant pursuant to the Wildlife Action Opportunities Fund (to support WGA DSS).
- Partnering with USGS, WDFW, U of WA, U of Idaho, and TNC on the project “Assessing the vulnerability of species and ecosystems to projected future climate change in the Pacific Northwest”, funded by NCCWSC
- Participation in Safeguarding Wildlife from Climate Change web conference series.
- Participation in monthly conference calls among SWAP coordinators regarding wildlife and climate change and how best to update state action plans.
- Attendance at the PNW Climate Science Conference, June 15-16, 2010 in Portland, OR.
- Conducted an assessment of potential resilience of National Parks in the coterminous US to climate change given projected future species ranges, elevational variability, and landscape context.

Please describe any on the ground adaptation examples that your agency/organization is pursuing and/or planning to pursue.

Generally insufficient information at this time to put specific climate adaptation actions on the ground. Focus remains diverse populations and distributions with supporting habitat.

What’s your vision, or what direction would you like to head in the coming year?

General direction: Increased capacity and technical expertise shore up dedicated funding to support the needs, completion of vulnerability assessments, continue to build and strengthen partnerships, progress with the WGA DSS to assist real-time energy planning.

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

- Need consistent and integrated state and federal policy and expectations for addressing climate change effects on species and their habitat/management. For example, any integration between WGA policy efforts and WAFWA? Also consider consistent approach for adaptations:
 - Consider (as example) a three-way management framework that makes management sense that could apply to a wide range of sectors: resistance – manage for actions that “resist” climate change impacts; resilience – manage for actions that conserve and restore resilience of a particular system; facilitation – manage to shift to a better-adapted system that will still provide reasonable utility for stakeholders.
 - Citation: Galatowitsch, S., L. Frelich, and L. Phillips-Mao. 2009. Regional climate change adaptation strategies for biodiversity conservation in a midcontinental region of North America. *Biological conservation* 142:2012-2022.
 - Need consistent and “mature” information; the science is still developing and thus, difficult to act upon.
 - Need to formulate and understand how IDFG and Idaho will adapt management priorities to a changing climate.

- Need dedicated IDFG funding and resources to address climate information and implementation needs.
- Need improved IDFG capacity/technical expertise to deliver climate adaptation strategies as a conservation service.
- Need understanding of the risk tolerance of sectors and decision-makers.

Opportunities for collaboration/partnerships for committee discussion?

LCC, USGS Climate Science Centers, WGA DSS pilot projects across several Western States, efforts to collaborate with NGOs particularly to upgrade SWAPs, DSS, and the CWCS in western States using private funds directed at actions to improve species resilience.

Discussion items for the committee meeting? How we can be more efficient and effective at synthesis of multiple climate initiatives and scientific endeavors to make good management decisions that have long-term implications.

Kansas Department of Wildlife and Parks

Contact Information: **Ken Brunson**
 kenb@wp.state.ks.us
 620.672.0792

	Yes/No
Do you have a position(s) in your organization that is solely dedicated to climate change?	no
Is there a cabinet level position for climate change in your state/province?	no
Is your agency (Wildlife Agency) the lead on adaptation planning for your state/province?	Yes—for wildlife
Please provide an estimate of the cost of your agency/organizations climate change related efforts for the past year and how many FTEs are dedicated to this work.	0
Is your state/province using modeling to predict impacts of climate change on wildlife communities?	yes
If yes, please provide a contact person for further follow up.	Ken Brunson, Murray Laubhan

Where are you at right now with respect to climate change and fish and wildlife issues in your agency/organization? (Examples-adaptation planning, integrating cc into action plans or programs, internal planning efforts, etc)

Initiating plan revision update with grant beginning July 1, 2010. Will be training staff about maxent modeling which will be applied to refining existing geographical information on sensitive species occurrences and predictions of changes due to vulnerabilities from climate change.

Highlights and Accomplishments:

We have been identifying the geographic areas (HUC10 format) which harbor the highest number of top priority SGCN.

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

Will be applying maxent modeling for assessing climate change vulnerabilities.

Please describe any on the ground adaptation examples that your agency/organization is pursuing and/or planning to pursue.

Nothing to really report yet.

What's your vision, or what direction would you like to be moving in the coming year? Will be pursuing our plan revision with the integration of maxent modeling and development of priority Conservation Opportunity Areas.

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

Available additional people to do the work.

Opportunities for collaboration/partnerships for committee discussion?

Will be working with the Western states along with the Midwest plan coordinators as well for possible joint cooperative work. In the Midwest, we've collated the states' respective lists of SGCN and hope to collaborate on vulnerability assessments to share similar needs.

Discussion items for the committee meeting?

Simply continue to share processes, products and information on best approaches.

Montana Fish, Wildlife and Parks

Contact Information: Rob Brooks
 Montana Fish, Wildlife and Parks
 Strategic Planning and Data Services Bureau
 Energy and Climate Change Unit
 406-444-5786
rob Brooks@mt.gov

	Yes/No
Do you have a position(s) in your organization that is solely dedicated to climate change?	No
Is there a cabinet level position for climate change in your state/province?	NO
Is your agency (Wildlife Agency) the lead on adaptation planning for your state/province?	NO
Please provide an estimate of the cost of your agency/organizations climate change related efforts for the past year and how many FTEs are dedicated to this work.	>1 FTE No dedicated funding
Is your state/province using modeling to predict impacts of climate change on wildlife communities?	NO
If yes, please provide a contact person for further follow up.	

Where are you at right now with respect to climate change and fish and wildlife issues in your agency/organization? (Examples-adaptation planning, integrating cc into action plans or programs, internal planning efforts, etc).

Held two climate change workshops for FWP personnel. Plan to include a climate change addendum in the updated WAP.

Highlights and Accomplishments:

None reported

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

No

Please describe any on the ground adaptation examples that your agency/organization is pursuing and/or planning to pursue.

None

What's your vision, or what direction would you like to head in the coming year?

Update of WAP

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

\$\$\$ and FTE

Opportunities for collaboration/partnerships for committee discussion?

Currently have a CC working group to help define direction, goals, needs, etc.

Discussion items for the committee meeting?

None reported

Nebraska Game & Parks Commission

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

	Yes/No
Do you have a position(s) in your organization that is solely dedicated to climate change?	NO
Is there a cabinet level position for climate change in your state/province?	NO
Is your agency (Wildlife Agency) the lead on adaptation planning for your state/province?	NO
Please provide an estimate of the cost of your agency/organizations climate change related efforts for the past year and how many FTEs are dedicated to this work.	<\$10,000.00; 0 FTEs (work related to climate change is conducted by staff whose primary duties are not directly climate-change related.
Is your state/province using modeling to predict impacts of climate change on wildlife communities?	YES
If yes, please provide a contact person for further follow up.	jeff.lusk@nebraska.gov

Where are you at right now with respect to climate change and fish and wildlife issues in your agency/organization? (Examples-adaptation planning, integrating cc into action plans or programs, internal planning efforts, etc)

We are in the process of a 5-year revision of the Nebraska Natural Legacy Plan (NNLP), which will involve the addition of climate change issues. We also have a Climate Change working group that will be involved in the modeling, research, and evaluations related to climate change impacts on wildlife

Highlights and Accomplishments:

We have begun the formal process of revising our comprehensive wildlife management plan (NNLP) and have begun preliminary modeling of climate change impacts on prairie chicken lek site suitability.

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

See above.

Please describe any on the ground adaptation examples that your agency/organization is pursuing and/or planning to pursue.

None.

What's your vision, or what direction would you like to head in the coming year?

After completing revisions to the NNLP, I would like to begin setting up a monitoring program to begin gathering baseline data on impacts of climate change. I would also like to get some more 'triage' modeling done to evaluate potential impacts on species of importance/concern.

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

Money and administrative/political support.

Opportunities for collaboration/partnerships for committee discussion?

We are looking forward to working with the new Climate Change & Wildlife program of the DOI, including the LCCs

Discussion items for the committee meeting?

NA.

Nevada Department of Wildlife

Contact Information: **Laura Richards**
Chief, Division of Wildlife Diversity
1100 Valley Road, Reno, NV 89512
(775-688-1996)
lrichard@ndow.org

	Yes/No
Do you have a position(s) in your organization that is solely dedicated to climate change?	No
Is there a cabinet level position for climate change in your state/province?	No
Is your agency (Wildlife Agency) the lead on adaptation planning for your state/province?	No
Please provide an estimate of the cost of your agency/organizations climate change related efforts for the past year and how many FTEs are dedicated to this work.	\$125,000 through state contracts with NGO partners, and \$60,000 in federal State Wildlife Grant funds matched with state general funds for salary of several NDOW staff members assigned to the Wildlife Action Plan climate change revision.
Is your state/province using modeling to predict impacts of climate change on wildlife communities?	Yes, through a state contract in partnership with The Nature Conservancy in Nevada
If yes, please provide a contact person for further follow up.	Laura Richards, NDOW, lrichard@ndow.org Susan Abele, TNC in Nevada, sabele@TNC.org

Highlights and Accomplishments:

The Nevada Department of Wildlife (NDOW) and our conservation partners are in the process of revising Nevada’s Wildlife Action Plan to address potential impacts of climate change on Nevada’s wildlife resources. NDOW is 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 awarded a \$400,000 State of Nevada Question 1 Bond Habitat Conservation Planning Grant in order to help fund these efforts. This grant will provide funding for NDOW staff to coordinate and lead a conservation partner planning team to

revise Nevada's Wildlife Action Plan to incorporate potential impacts of climate change on Nevada's fish, wildlife, and habitats by 2011.

TNC will work cooperatively with all partners involved in the development of this plan for Climate Change and develop ecological models that predict the relative risk of Nevada's key wildlife habitats to the projected impacts of climate change. This information will be integrated into the development of effective adaptation strategies for managing and protecting key habitats for species and communities threatened by climate change in Nevada.

GBBO will model bird population change in response to habitat change, as projected by climate change models for Nevada. This information will be used to predict losses and expansions of bird populations as a result of change in habitat extent and distribution. The predictive models will also provide a basis for a monitoring program of the effects of climate change on the birds of Nevada.

NNHP will map high-priority species as indicated by the Wildlife Action Plan Implementation Team through a project with using NatureServe's Climate Change Vulnerability Index. This project will be tiered to an analysis of potential impacts from climate change assessing both short and long-term effects.

LAS will assist in the planning and facilitation of public workshops during the scoping phase of the project. Staff will draft, edit and print the climate change revision of the Wildlife Action Plan and also develop educational materials related to this project.

State Wildlife Grant funds will support Wildlife Diversity Division staff and Fisheries Division staff to coordinate and lead the conservation partnership in the revision of Nevada's Wildlife Action Plan. Staff time will include coordination of revision planning meetings, holding public scoping meetings, coordinating with state, federal and local agencies, gathering pertinent information for plan revision, and writing, editing and producing the revised plan.

NDOW 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 Mexico Department of Game and Fish

Contact Information: **Matthew Wunder**
PO Box 25112
Santa Fe, NM 87504
Matthew.wunder@state.nm.us
Phone : 505-476-8118

	Yes/No
Do you have a position(s) in your organization that is solely dedicated to climate change?	No
Is there a cabinet level position for climate change in your state/province?	No
Is your agency (Wildlife Agency) the lead on adaptation planning for your state/province?	No
Please provide an estimate of the cost of your agency/organizations climate change related efforts for the past year and how many FTEs are dedicated to this work.	Approximately \$50,000/yr .5FTE combined time from Department staff
Is your state/province using modeling to predict impacts of climate change on wildlife communities?	No; the Department looks at modeling information to assess potential changes at different scales for New Mexico but it does no internal modeling.
If yes, please provide a contact person for further follow up.	None

Where are you at right now with respect to climate change and fish and wildlife issues in your agency/organization? (Examples-adaptation planning, integrating cc into action plans or programs, internal planning efforts, etc)

The Department is trying to assess the potential impacts of climate change on wildlife, their habitats, and sportsmen and sportswomen participation in outdoor recreation. We have not gotten to the stage of making specific management recommendations based on anticipated climate change scenarios. The Department will begin to revise The Comprehensive Conservation Strategy for New Mexico and incorporate climate change into that revision.

Highlights and Accomplishments:

Staff have attended several workshops dedicated to climate change issues related to fish and wildlife. Department sponsored research on nongame species has tried to identify relationships between species and habitat changes and documented climate changes including drought, elevated temperatures, and changing mountain snow pack.

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

On December 7, 2009 signed a Climate Change Executive Order directing state agencies to identify new emission control strategies to address climate change in New Mexico.

The identified activities include:

- Continuing to participate in the Western Climate Initiative to develop a regional greenhouse gas emission reduction program that addresses the unique characteristics of New Mexico;
- Working with the State’s electrical utilities and stakeholders to develop recommendations for reducing greenhouse gas emissions from existing coal-fired power plants within the State’s jurisdiction;
- Developing recommendations for establishing an emission performance standard for new fossil-fueled generating facilities and new long-term power purchase agreements;
- Developing recommendations for offset protocols that are consistent with the Western Climate Initiative;
- Evaluating mechanisms for quantifying and awarding greenhouse gas emission allowances for emission reductions that occur before mandatory State or Federal cap-and-trade programs require such reductions;
- Convening a Resilience Advisory Group to develop a plan for adapting to climate changes; and
- Strengthening state government efforts to reduce emissions associated with energy use and transportation in state government operations.

Please describe any on the ground adaptation examples that your agency/organization is pursuing and/or planning to pursue.

The Department of Game and Fish only has authority to implement actions on Game Commission owned properties. At this time, the Department has no specific climate change adaptation initiatives planned.

What’s your vision, or what direction would you like to head in the coming year?

I would like to begin reviewing the Department’s perspective on state listed T&E species that are threatened or endangered because New Mexico is on the fringe of their range. Some of these species will cease to exist in NM and others will become more common with climate change. Achieving a realistic approach to addressing these changes would enable the Department to more effectively use the resources available to protect those species for which we could make a difference.

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

The Department’s short term management horizon, weather variability, model spatial scale, and uncertainty make it difficult to commit resources to implementation projects.

Opportunities for collaboration/partnerships for committee discussion?

Unknown at this time.

Discussion items for the committee meeting?

North Dakota Game and Fish Department

Contact Information: Terry Steinwand
 100 North Bismarck Expressway
 Bismarck, ND 58501

	Yes/No
Do you have a position(s) in your organization that is solely dedicated to climate change?	No
Is there a cabinet level position for climate change in your state/province?	No
Is your agency (Wildlife Agency) the lead on adaptation planning for your state/province?	No
Please provide an estimate of the cost of your agency/organizations climate change related efforts for the past year and how many FTEs are dedicated to this work.	This is difficult to determine at the present time. It's being incorporated into much of what we do but no definitive contact (except me). I estimate approximately 7 different FTE's working approximately 60 hours/year.
Is your state/province using modeling to predict impacts of climate change on wildlife communities?	No-but we're waiting for some information on this.
If yes, please provide a contact person for further follow up.	

Where are you at right now with respect to climate change and fish and wildlife issues in your agency/organization? (Examples-adaptation planning, integrating cc into action plans or programs, internal planning efforts, etc)

We're working on incorporating climate change issues into our state wildlife action plan. As mentioned, we're waiting on a climate change model from the Plains and Prairie Pothole LCC to model the potential impacts.

Highlights and Accomplishments:

We had the state climatologist present his views on climate change to our management team (upper level supervisors) and ask advice on where to go from there. Not much help at this time.

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

None—other than waiting for LCC model.

Please describe any on the ground adaptation examples that your agency/organization is pursuing and/or planning to pursue.

None. Staff spend an enormous amount of time on energy issues and with a small staff we don't have enough time to put substantial effort into this issue.

What’s your vision, or what direction would you like to head in the coming year?

Have the ability to predict where we need to put our efforts in the coming years. Given that 95% of our state is private land we have nominal authority to effect any land use changes so are putting whatever effort we can into determining where we get the best ‘bang for the buck’.

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

Staff and staff time.

Opportunities for collaboration/partnerships for committee discussion?

None Reported

Discussion items for the committee meeting?

None Reported

Oregon Department of Fish and Wildlife

Contact Information: Holly Michael
Holly.b.michael@state.or.us
 503 947-6072

	Yes/No
Do you have a position(s) in your organization that is solely dedicated to climate change?	No , although 1 position in the Directors Office spends approx. 70% of her time on climate change science and policy.
Is there a cabinet level position for climate change in your state/province?	No
Is your agency (Wildlife Agency) the lead on adaptation planning for your state/province?	We are co-lead for the Natural Resource piece of the Statewide Adaptation Framework and a member of the full work group addressing economic, social, infrastructure, public health and safety, and communities.
Please provide an estimate of the cost of your agency/organizations climate change related efforts for the past year and how many FTEs are dedicated to this work.	.7 FTE Approx. \$.5 M in staff, contracts, and research
Is your state/province using modeling to predict impacts of climate change on wildlife communities?	ODFW is not conducting modeling, but working collaboratively with 4 universities. 2 in Oregon, 1 in Washington and 1 in California
If yes, please provide a contact person for further follow up.	Contact Holly Michael Holly.b.michael@state.or.us 503 947-6072

Where are you at right now with respect to climate change and fish and wildlife issues in your agency/organization? (Examples-adaptation planning, integrating cc into action plans or programs, internal planning efforts, etc)

- Updating our SWAP to add CC as the 7th Key Conservation issue and adding/revising the existing climate info on species and habitat impacts
- Working with Grad student on a human dimensions survey of ODFW staff and leadership on their views of climate change and the impacts and opportunities they see (if any).
- Part of the statewide Adaptation Framework development.

Highlights and Accomplishments:

- a. Collaboration with several universities on vulnerability assessments and modeling.
- b. Participation in WGA CC Scoping workgroup and scoping report, to address States needs form federal partners.

- c. Held a climate workshop for our Commission
- d. Participated in AFWA adaptation workgroup and Voluntary Guidance to states.

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

- the internal human dimension survey
- WGA climate See above.

Please describe any on the ground adaptation examples that your agency/organization is pursuing and/or planning to pursue.

- Wildlife Area management plan updates are describing future climate impacts and likely actions.
- Research on coldwater streams and salmonids.

What's your vision, or what direction would you like to head in the coming year?

- Complete human dimension survey.
- Complete SWAP update.
- Continue statewide framework development.

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

- Funding and staffing

Opportunities for collaboration/partnerships for committee discussion?

no

Discussion items for the committee meeting?

no

South Dakota Department of Game, Fish and Parks

Contact Information: Eileen Dowd Stukel
 523 E. Capitol Ave.,
 Pierre, SD 57501
Eileen.dowdstukel@state.sd.us;
 605-773-4229

	Yes/No
Do you have a position(s) in your organization that is solely dedicated to climate change?	No
Is there a cabinet level position for climate change in your state/province?	No
Is your agency (Wildlife Agency) the lead on adaptation planning for your state/province?	No; I'm not aware that any agency has been designated as a lead on this issue
Please provide an estimate of the cost of your agency/organizations climate change related efforts for the past year and how many FTEs are dedicated to this work.	\$2500; no FTEs are dedicated to this work; This figure represents time spent by various employees in discussing methods of incorporating climate change into the state wildlife action plan revision
Is your state/province using modeling to predict impacts of climate change on wildlife communities?	No decision yet, but that is likely.
If yes, please provide a contact person for further follow up.	

Where are you at right now with respect to climate change and fish and wildlife issues in your agency/organization? (Examples-adaptation planning, integrating cc into action plans or programs, internal planning efforts, etc)

We are having internal discussion and discussions with a potential consultant to assist with the state wildlife action plan revision to learn what information is available on state climate change trends, climate change adaptation strategies of potential use, and to learn what other Midwestern states are considering, so our efforts are potentially complementary to theirs.

Highlights and Accomplishments:

One of our staff has made a contact with the state climatologist, who is interested and willing to share expertise and potentially assist with our climate change efforts.

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

None reported

Please describe any on the ground adaptation examples that your agency/organization is pursuing and/or planning to pursue.

Too early to share any examples.

What's your vision, or what direction would you like to be moving in the coming year? We will begin our wildlife action plan revision in the coming year. Our vision for incorporating climate change is that it will be coordinated with other entities, such as forestry, agriculture and natural resource entities concerned with native habitats and other natural resources

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

Skepticism on the part of some segments of the general public about the severity of climate change. Fear that climate change regulations may hamper economic development.

Opportunities for collaboration/partnerships for committee discussion?

Sharing information, such as that collected in this survey, will encourage collaborative efforts.

Discussion items for the committee meeting?

Sharing examples of overcoming items identified in question #6 could be helpful to other states.

Texas Parks & Wildlife Department

Contact Information: Wendy Gordon, Ph.D.
 (512) 389-8741
wendy.gordon@tpwd.state.tx.us

	Yes/No
Do you have a position(s) in your organization that is solely dedicated to climate change?	No. I am the contact for the agency, which is in addition to my regular job responsibilities.
Is there a cabinet level position for climate change in your state/province?	No
Is your agency (Wildlife Agency) the lead on adaptation planning for your state/province?	Yes
Please provide an estimate of the cost of your agency/organizations climate change related efforts for the past year and how many FTEs are dedicated to this work.	1/10 th of an FTE < \$10,000
Is your state/province using modeling to predict impacts of climate change on wildlife communities?	Not at the moment, though we would like to.
If yes, please provide a contact person for further follow up.	

Where are you at right now with respect to climate change and fish and wildlife issues in your agency/organization? (Examples-adaptation planning, integrating cc into action plans or programs, internal planning efforts, etc)

Waiting to see if a climate change assessment proposal will received FWS funding. Thinking about what adaptation planning would look like. Trying to establish collaborations with outside entities like NGOs and universities to pursue funding of specific vulnerability assessment projects. Talking about the overall issue of climate change impacts with partners.

Highlights and Accomplishments:

Coordinating with external partners to submit a climate change research proposal to FWS.

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

None reported

Please describe any on the ground adaptation examples that your agency/organization is pursuing and/or planning to pursue.

None reported

What's your vision, or what direction would you like to head in the coming year?

Try to develop more concrete plans for adaptation and actually secure outside dollars for a vulnerability assessment. Develop materials to include in our 2010 revision of our Wildlife Action Plan.

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

Lack of time to coordinate with outside parties. Lack of a state-wide framework to address climate change that would help jumpstart these collaborations. The sheer size of Texas and diversity of resources makes any sort of climate change assessment a daunting challenge.

Opportunities for collaboration/partnerships for committee discussion?

None reported

Discussion items for the committee meeting?

None reported

Utah Division of Wildlife Resources

Contact Information: Eric (Rick) Larson
 Utah Division of Wildlife Resources
 1594 W.N. Temple, Suite 2110
 PO Box 146301
 Salt Lake City, Utah 84114-6301
 801-538-4881 (o) 801-538-4709 (f) 801-520-0145 (c)

	Yes/No
Do you have a position(s) in your organization that is solely dedicated to climate change?	No
Is there a cabinet level position for climate change in your state/province?	No
Is your agency (Wildlife Agency) the lead on adaptation planning for your state/province?	No
Please provide an estimate of the cost of your agency/organizations climate change related efforts for the past year and how many FTEs are dedicated to this work.	No specific expenditures No FTEs
Is your state/province using modeling to predict impacts of climate change on wildlife communities?	No
If yes, please provide a contact person for further follow up.	

Where are you at right now with respect to climate change and fish and wildlife issues in your agency/organization? (Examples-adaptation planning, integrating cc into action plans or programs, internal planning efforts, etc)

We're trying to figure out where our legislature is going on this issue.

Highlights and Accomplishments:

None

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

None

Please describe any on the ground adaptation examples that your agency/organization is pursuing and/or planning to pursue.

None

What's your vision, or what direction would you like to head in the coming year?

I'd like to see some level of political support. Without that, we're pretty much limited to what we can try to do.

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

Our state legislature has refused to accept climate change as a reality and has convened hearings to dispute its existence. This has obviously placed a damper on any initiative my agency might choose to pursue to address the issue...

Opportunities for collaboration/partnerships for committee discussion?

None

Discussion items for the committee meeting?

The situation in Utah is relatively unique. I'm curious if any other state agency is facing or has faced similar circumstances.

Washington Department of Fish and Wildlife

Contact Information: Lynn Helbrecht
 Climate Change Coordinator
 Washington Department of Fish and Wildlife
 PO Box 43143
 Olympia, WA 98504-3143
 Lynn.helbrecht@dfw.wa.gov
 360-902-2238

	Yes/No
Do you have a position(s) in your organization that is solely dedicated to climate change?	Yes
Is there a cabinet level position for climate change in your state/province?	No, but the Director of the Department of Ecology has been directed to lead climate mitigation and adaptation efforts for the state, and the director is a part of the Cabinet.
Is your agency (Wildlife Agency) the lead on adaptation planning for your state/province?	WDFW is leading the development of an adaptation strategy for species and ecosystems. The Washington Department of Ecology is the lead for developing an overarching adaptation strategy for the state.
Please provide an estimate of the cost of your agency/organizations climate change related efforts for the past year and how many FTEs are dedicated to this work.	Currently, 1.5 FTEs are dedicated to this effort. Last year, a budget of approximately 150k was used for climate change staff and activities.
Is your state/province using modeling to predict impacts of climate change on wildlife communities?	Yes. Several modeling efforts are underway at several scales. 1. Climate Impact Group: downscaling IPCC projections for Washington State. Contact: http://cses.washington.edu/cig/ 2. Climate Vulnerability Database: Modeling impacts on habitats and species. Contact: Sarah Schaffer/USGS
If yes, please provide a contact person for further follow up.	

Where are you at right now with respect to climate change and fish and wildlife issues in your agency/organization? (Examples-adaptation planning, integrating cc into action plans or programs, internal planning efforts, etc)

- The agency has adopted a Climate Change Strategic Plan to guide the agency's internal efforts.
- A full time climate change coordinator position has been established and filled.
- A climate Task Force, composed of representatives across the agency, has been formed to guide implementation of the agency's strategic plan.
- In collaboration with the NW states fish and wildlife agencies, USGS, U of W, U of I and OSU we are conducting both a fine and coarse scale cc vulnerability assessment for fish and wildlife.

Highlights and Accomplishments:

See Above.

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

- Puget Sound Nearshore Partnership is developing a climate change initiative to guide restoration planning.
- Washington Habitat Connectivity Working Group is developing a statewide analysis of wildlife connectivity. A key component of this project is addressing adaptation needs related to climate change.
- Six agencies are leading development of a statewide Climate Change Response and Adaptation Strategy, required by state legislation passed in 2008. WDFW is participating and leading development of adaptation strategies for Species, Habitats and Ecosystems.
- USGS has funded a pilot project in the Methow Watershed to develop a decision support system to assist regional decision makers in planning for and responding to the projected impacts of climate change.

Please describe any on the ground adaptation examples that your agency/organization is pursuing and/or planning to pursue.

What's your vision, or what direction would you like to be moving in the coming year? The agency is ready to accelerate its climate change adaptation response. We would like to advance our internal strategic plan for addressing climate change, as well as actively participate in regional initiatives to coordinate and leverage efforts. Education and outreach on climate change to our partners and stakeholders is also a high priority.

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

The degree of political will and commitment to implement adaptation strategies remains to be seen, and may ultimately be a challenge. Adequate funding for conducting outreach and sponsoring dialogues to foster understanding and support is a challenge. Resources for implementation may also be a limiting factor.

Opportunities for collaboration/partnerships for committee discussion?

None reported

Discussion items for the committee meeting?

None reported

Wyoming Game and Fish Department

Contact Information: **Mike Stone**
5400 Bishop Blvd.,
Cheyenne, WY 82006
307-777-4559
Mike.stone@wgf.state.wy.us

	Yes/No
Do you have a position(s) in your organization that is solely dedicated to climate change?	Yes, temporary position less than 6 months duration to help with climate change portion of 2010 SWAP revision.
Is there a cabinet level position for climate change in your state/province?	No.
Is your agency (Wildlife Agency) the lead on adaptation planning for your state/province?	No overall agency lead exists for our state.
Please provide an estimate of the cost of your agency/organizations climate change related efforts for the past year and how many FTEs are dedicated to this work.	No basis for reliable estimate. A few people spent some time, no FTE specifically dedicated to CC work, except temporary position for SWAP revision started May 2010.
Is your state/province using modeling to predict impacts of climate change on wildlife communities?	No, initiated research funding, see question 4.
If yes, please provide a contact person for further follow up.	

Where are you at right now with respect to climate change and fish and wildlife issues in your agency/organization? (Examples-adaptation planning, integrating cc into action plans or programs, internal planning efforts, etc)

- Integrating CC into 2010 SWAP revision.
- Agency workshop in Jan 2010 helped increase awareness, understanding, set framework for future CC attention.
- One individual on AFWA, WAFWA, etc. CC committees, and coordinating with others peripheral to primary duties.

Highlights and Accomplishments:

- Agency CC workshop Jan 2010.
- Temp help to incorporate CC into 2010 SWAP revision.

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

- SWAP revision 2010 will incorporate CC.

Please describe any on the ground adaptation examples that your agency/organization is pursuing and/or planning to pursue.

- Strong habitat protection and enhancement emphasis relates to CC adaptation although not specifically done for that reason. Ex. - habitat connectivity projects – fish passage and wildlife migration corridors. Conservation easements.
- Initiated research project to project effects of CC on Colorado River cutthroat trout throughout their range – provided partial (seed) funding to Colorado State University to initiate research.

What's your vision, or what direction would you like to head in the coming year?

Administrative staff with time assigned to take a more active leadership role in CC coordination.

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

Staffing levels

Opportunities for collaboration/partnerships for committee discussion?

None reported

Discussion items for the committee meeting?

- Further discussion of CC workshop for mid-winter WAFWA – how to insure broadest participation in person or electronically.

Association of Fish and Wildlife Agencies

Contact Information: **Arpita Choudhury**
 achoudhury@fishwildlife.org
 202-624-5853

	Yes/No
Do you have a position(s) in your organization that is solely dedicated to climate change?	no
Is there a cabinet level position for climate change in your state/province?	n/a
Is your agency (Wildlife Agency) the lead on adaptation planning for your state/province?	n/a
Please provide an estimate of the cost of your agency/organizations climate change related efforts for the past year and how many FTEs are dedicated to this work.	n/a
Is your state/province using modeling to predict impacts of climate change on wildlife communities?	n/a
If yes, please provide a contact person for further follow up.	n/a

Where are you at right now with respect to climate change and fish and wildlife issues in your agency/organization? (Examples-adaptation planning, integrating cc into action plans or programs, internal planning efforts, etc)

We will be conducting regional climate change workshops that focus on regional planning and increased state capacity for climate change.

Highlights and Accomplishments:

Completion of the Guidance on Incorporating Climate Change into State Wildlife Action Plans.

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

- We will be working with USFWS on adaptive management webinars for state F&W agencies.

- We will be creating a biological C sequestration document to inform states on the current science and policy on biological carbon sequestration across a variety of habitats.

Please describe any on the ground adaptation examples that your agency/organization is pursuing and/or planning to pursue.

N/A

What's your vision, or what direction would you like to be moving in the coming year? Increased communication and coordination on state adaptation strategies.

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

Opportunities for collaboration/partnerships for committee discussion?

- Collaboration with DOI's Climate Science Centers and LCCs. This committee is a good platform for engaging with both of these federal entities in order to make sure states needs are heard and, hopefully, met.
- Working with WGA.

Discussion items for the committee meeting?

- My answer for #7.
- Showcasing the importance of regional climate change committees to the other regional associations so that they may create their own.

National Wildlife Federation, Pacific Regional Center

Contact Information: Dan Siemann
 Senior Environmental Policy Specialist
 National Wildlife Federation, Pacific Region
 6 Nickerson St. Suite 200 Seattle, WA 98109
 206.285.8707 Ext. 105 (Office)
siemannd@nwf.org

	Yes/No
Do you have a position(s) in your organization that is solely dedicated to climate change?	yes
Is there a cabinet level position for climate change in your state/province?	
Is your agency (Wildlife Agency) the lead on adaptation planning for your state/province?	
Please provide an estimate of the cost of your agency/organizations climate change related efforts for the past year and how many FTEs are dedicated to this work.	
Is your state/province using modeling to predict impacts of climate change on wildlife communities?	
If yes, please provide a contact person for further follow up.	

Where are you at right now with respect to climate change and fish and wildlife issues in your agency/organization? (Examples-adaptation planning, integrating cc into action plans or programs, internal planning efforts, etc)

- NWF Pacific Regional Office is working with WDFW to incorporate climate science into the State Wildlife Action Plan
- We are working with Josh Lawler at University of Washington to conduct a 3-state habitat vulnerability assessment that will complement a species level vulnerability assessment

- We are assisting WDFW produce science summaries of climate impacts to habitats and ecosystems that are being used by a statewide adaptation planning process.
- We are prioritizing the most significant impacts and identifying the most important adaptation responses so that we can begin implementing high priority no-regrets adaptation actions as soon as possible.

Highlights and Accomplishments:

- NWF Pacific Regional Office has produced 3 science summaries compiling climate impacts to 1) marine and coastal systems; 2) freshwater aquatic and riparian systems, and 3) forest and alpine systems. We will soon produce the final paper in this series on arid lands and grasslands.
- We also produced a report titled Setting Stage: Ideas for safeguarding Washington’s fish and wildlife in an era of climate change.

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

- Washington state passed legislation (5560) directing state agencies to work with stakeholders to develop a statewide climate change response strategy. One of 4 focal areas is Ecosystems, Habitats, and Species. A draft strategy is expected in Spring of 2011.

Please describe any on the ground adaptation examples that your agency/organization is pursuing and/or planning to pursue.

- One of the priority adaptation responses is expected to be preventing habitat loss due to sea level rise. We are engaged in a study to further assess sea level rise impacts to habitats and to identify priority areas for protection.

What’s your vision, or what direction would you like to be moving in the coming year? Our focus is to collaboratively develop priorities for adaptation responses and work to get them implemented.

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

- Lack of adequately specific information and assessment on climate impacts to species, habitats, ecosystems, especially geographically specific information.

Opportunities for collaboration/partnerships for committee discussion?

None received

Discussion items for the committee meeting? None received

U.S. Army Corps of Engineers, Institute for Water Resources

Contact Information: Janet Cushing
janet.a.cushing@usace.army.mil
 703-428-7087

	Yes/No
Do you have a position(s) in your organization that is solely dedicated to climate change?	Yes.
Is there a cabinet level position for climate change in your state/province?	N/A
Is your agency (Wildlife Agency) the lead on adaptation planning for your state/province?	N/A
Please provide an estimate of the cost of your agency/organizations climate change related efforts for the past year and how many FTEs are dedicated to this work.	For FY 2010, \$2.4 M on Response to Climate Change Program; approximately 10 FTEs (time/funds split amongst many people)
Is your state/province using modeling to predict impacts of climate change on wildlife communities?	We are working with other Federal agencies to develop best practices for using climate model information in planning and decision models.
If yes, please provide a contact person for further follow up.	Dr. Rolf Olsen j.rolf.olsen@usace.army.mil and Dr. Kate White (Kathleen.d.white@usace.army.mil)

Where are you at right now with respect to climate change and fish and wildlife issues in your agency/organization? (Examples-adaptation planning, integrating cc into action plans or programs, internal planning efforts, etc)

We are conducting internal activities to help the Corps adapt to climate change. Activities include writing white papers on climate change implications for certain mission areas. We are working with other Federal agencies to assess different methodologies and actively involved on several CEQ Working Groups on Climate Change Adaptation. We participate on the Climate Change and Water Working Group (C-CAWWG), which also includes NOAA, USGS, and BOR, and currently drafting short-term and long-term needs report.

Highlights and Accomplishments:

- We published a document with NOAA, BOR, and USGS on climate change and water operations (USGS Circular 1331).

- We recently released guidance on incorporating future sea-level rise into our project management, planning, engineering, design, construction, operation, and maintenance (EC 1165-2-211 “Incorporating Sea-Level Change Considerations in Civil Works Programs”).
- We co-sponsored a non-stationarity workshop in January 2010 to discuss operational alternatives to the assumption of stationarity in hydrologic frequency analysis that can be used by water managers and planners. The proceedings from this workshop are currently be compiled.
- Presented at the Structure Decision-Making for Climate Change Adaptation workshop, organized by the AFWA Climate Change Committee at the North American Fish and Wildlife conference (March 2010).

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

We are planning vulnerability assessments and pilot studies on climate change adaptation. We will also begin regional climate change assessments; for the conterminous Western States, we will build on the Bureau of Reclamation regional assessments to address issues of critical interest to USACE and its stakeholders. We will also compile existing information to develop regional climate impact assessments for Alaska and the Pacific Islands.

Please describe any on the ground adaptation examples that your agency/organization is pursuing and/or planning to pursue.

We will be initiating four pilot studies that cover a variety of mission areas (multi-purpose reservoir, ecosystem restoration, beach renourishment, and planning for sea level change) to investigate adaptation measures and challenges.

What’s your vision, or what direction would you like to be moving in the coming year?

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

We are working on the challenges that the Corps faces in managing water resources – for example, lack of data/ knowledge of the vulnerability of our infrastructure; lack of guidance to address the various aspects of climate change effects; determining the appropriate methodologies for use in adaptation and mitigation planning.

Opportunities for collaboration/partnerships for committee discussion?

We have been coordinating with the AFWA Climate Change Committee and Science and Research Committee, and wish to enter into discussion with the WAFWA Climate Change Committee on potential collaboration opportunities. We are also collaborating with the Department of Interior to better coordinate federal agency activities related to climate change and ecosystems.

Discussion items for the committee meeting?

U.S. Fish and Wildlife Service– Alaska Region

Contact Information: **Charla Sterne**
Regional Climate Change Coordinator
907-786-3471
Charla_sterne@fws.gov

	Yes/No
Do you have a position(s) in your organization that is solely dedicated to climate change?	Yes. My position as Regional Climate Change Coordinator
Is there a cabinet level position for climate change in your state/province?	There is a Sub-cabinet for Climate Change that advises the Governor of Alaska. The Commissioner of the Department of Environmental Conservation, Larry Hartig, serves as the chair of that sub-cabinet.
Is your agency (Wildlife Agency) the lead on adaptation planning for your state/province?	In Alaska, the FWS together with the State Department of Fish and Game and USGS has taken a leadership role in convening conservation partners in discussions to address climate change at a landscape level, particularly through the development of Landscape Conservation Cooperatives.
Please provide an estimate of the cost of your agency/organizations climate change related efforts for the past year and how many FTEs are dedicated to this work.	\$??? FTEs: 5 in the Alaska Region
Is your state/province using modeling to predict impacts of climate change on wildlife communities?	In 2008 an FWS initiated partnership project “Connecting Alaska Landscapes into the Future”, explored using climate envelope methodology for assessing landscape connectivity within Alaska. The pilot results of biome shift models indicated extreme change throughout Alaska and were informative in making the decision to launch the Western Alaska LCC following the Arctic LCC. Partners agree that refining the biome shift methodology is a key step in providing critical information for future conservation planning and delivery. The Arctic LCC is completing the predictive biome shift modeling using several of the key methodological changes recommended by

	the broad partnership group.
If yes, please provide a contact person for further follow up.	Karen Murphy, Western Alaska LCC Science Coordinator, 907-786-3501, Karen_A_Murphy@fws.gov ,

Where are you at right now with respect to climate change and fish and wildlife issues in your agency/organization? (Examples-adaptation planning, integrating cc into action plans or programs, internal planning efforts, etc)

The Alaska Region has been actively engaged at local, statewide, and national levels for several years in addressing the challenges posed by climate change and is committed to facilitating proactive collaboration and integration among programs, partners and stakeholders, and incorporating climate change into decision-making.

- e. The Alaska Region began thinking in earnest about climate change planning in 2007 with the Climate Change Forum for Alaska, which we co-hosted with USGS. This 3-day conference was attended by more than 250 scientists from across the state and provided the opportunity for Service biologists to begin the necessary dialog to facilitate strategic action in response to climate change.
- f. Following the Forum, the Region established the Alaska Region Climate Change Advisory Committee to facilitate cross-programmatic coordination and integration of climate change efforts, and to recommend proactive strategies to Regional leadership for addressing climate change impacts to FWS trust resources.
- g. The Alaska Region continues to co-host, with USGS and Alaska Department of Environmental Conservation, the Alaska Climate Change Executive Roundtable, a coalition of senior level executives of both federal and state resource management agencies from throughout Alaska that has been meeting regularly since the Forum in 2007 to share information and facilitate cooperation among agencies.
- h. In 2008, the Alaska Region began looking at climate change impacts in the Arctic under our "Arctic Strategy." In 2009, we redefined this effort by hiring an "America's Arctic" coordinator who initiated landscape conservation planning for the America's Arctic by hosting a Workshop (WILDREACH - attended by over 100 physical and biological scientists), which served as a springboard for developing partnerships, produced a comprehensive 130 page report outlining current knowledge, and recommended next steps in refining objectives, filling data gaps, and identifying downscaled model needs.
- i. In 2010, from the foundation provided by WildREACH, efforts to build capacity to use the most rigorous scientific modeling tools and to collect the information required to make informed decisions about how best to adapt to climate change were initiated with the establishment of the Arctic LCC were initiated.
- j. We are piloting the Western Alaska and Aleutian/Bering Sea Islands LCCs in 2010, with plans for full implementation in 2011, and are participating in the efforts to pilot the North Pacific LCC, which is being led by the FWS Portland

office. In 2011, we anticipate piloting the Northwestern Interior Forest LCC, the final LCC in Alaska.

Highlights and Accomplishments:

- k. Land and resource management agencies in Alaska have shown a laudable commitment to working cooperatively to address climate change impacts. Efforts to bring LCCs online have been met with a great deal of interest and support.
- l. The Arctic LCC has met several times, has begun the difficult process of defining conservation goals, and is committed to developing a process for identifying science needs for 2011 and beyond.
- m. The Alaska Climate Change Executive Roundtable has evolved into a very useful vehicle for ensuring seamless and integrated implementation of climate science and landscape conservation tools becoming available in Alaska, namely the DOI Climate Science Center for Alaska, Landscape Conservation Cooperatives, and NOAA's Regional Climate Service for Alaska.

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

- n. The Arctic LCC has identified a suite of projects which will go far in addressing our needs to improve our understanding of the effect of climate change on Arctic hydrological processes and the resources that depend on them and to make better use of existing models, which will allow us to make more accurate forecasts of ecological change.

Please describe any on the ground adaptation examples that your agency/organization is pursuing and/or planning to pursue.

None reported

What's your vision, or what direction would you like to be moving in the coming year? Nothing reported

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

- o. Improved data integration and sharing: The relatively data-poor environment in Alaska, together with a serious need of increased access to information to respond to climate-driven changes and increasingly complex resource management issues, makes existing information prized by many. Each of our agencies or organizations recognizes this and is attempting to improve resource data management systems and develop new tools to support decision-making and data visualization.
- p. Physical parameter monitoring networks: The mechanisms by which a changing climate may affect biological communities are exceedingly complex and poorly understood; however, understanding how these environmental features relate to past and present ecosystems will help shape our understanding of the climate-related changes that may be anticipated with further warming. There are currently too few monitoring stations dispersed over the state to adequately monitor physical parameters or to provide a basis

for predictive modeling, and many networks have significant gaps in coverage.

- q. Scaled down climate data and models: While General Circulation Models are the most widely used tools for projections of global climate change over 100 years, the climate information required for most resource management decisions is at a spatial scale much finer than that provided by global models. Predicting impacts of climate change on natural systems requires the equivalent of point climate observations, not yet available, and is sensitive to finer scale climate variations due to complex topography and coastal influences.
- r. Sea level rise: Many natural, cultural and constructed assets are in areas likely to be affected by coastal erosion, flooding, salinization, and submergence. Mitigation and adaptive responses need to be designed with knowledge of the full magnitude of changes likely to occur. Specific data needs include: historical and current shoreline configuration, sea level modeling input data such as post-glacial isostatic rebound rates, and coastal substrate (bedrock, permafrost, ice, sand, etc.) data to identify areas at risk of subsidence or collapse.
- s. Forecasting species and habitat change: Understanding how climate change will affect our ability to sustain species, biodiversity, and traditional subsistence uses into the future is a common challenge faced by Federal, State, Native and Private land managers in Alaska. Rather than focusing on restoring connectivity to fragmented ecosystems, the challenge facing Alaska's resource managers is to maintain relatively intact systems in a time of rapid ecological and development changes. Identifying lands, regardless of ownership, which are important to ensure connectivity for resource movement and long-term sustainability would help refine and coordinate conservation and management direction. Specific data needs include: statewide land cover data layers (National Land Cover Database, LandFire, Unified Ecoregions of Alaska); current wildlife and fish species Alaska range maps; wildlife-vegetation associations; and digital elevation models.
- t. Biological inventory, monitoring and research: Understanding the effects of climate change on Alaska's biological populations, and the ecosystems they contribute to, will require bringing a level of coordination to many of the disparate inventory, monitoring, and research activities that federal, state, and non-governmental organizations are involved in. Establishing baselines through ongoing inventory and census programs, monitoring for changes in status, documenting trends through repeated sampling and analysis, and conducting research to understand response will serve to provide the scientific basis for developing predictive models, as well as assessments for measuring the effectiveness of the adaptation and mitigation strategies enacted by managers and policy makers as part of an adaptive management framework.
- u. Invasive species and biological hazards: Changing temperatures and moisture levels can put native plants, animals, and aquatic species at stress and increase their susceptibility to both native and non-native competitors, pests, and disease organisms. Disease risk, for plants, animals and humans, can be

expected to increase as additional vector species and intermediate hosts expand into Alaska. Understanding trigger points and transmission routes will facilitate prioritization of prevention and control efforts and identifying common needs and priorities will facilitate coordinated action. Specific data needs include: invasive species (plant, animal, aquatic, pests) Alaska distribution data/maps and native pest species outbreak maps.

- v. Wildland fire trends: Fire frequency and intensity affects wildlife and fish habitat suitability. Arctic and subarctic plant communities may require many years to recover from a severe fire and under changing climatic conditions may not be replaced by the same or similar plant types. Resource managers need to understand fire trends to determine appropriate management responses.
- w. Regulatory and policy issues: Many environmental laws, regulations and policies on the federal, state, and local levels were developed before the signs of climate change were observed. The challenge for environmental and resource management agencies will be to manage for healthy, productive ecosystems in a future made less certain due to a changing climate. This will necessitate possible changes to their institutional, legal and policy frameworks to respond quickly enough to sustain the natural resources they manage for the “public trust”. For example, resource managers in Alaska may need to revise Alaska policies relative to wildland fire management in light of the effects of climate change.
- x. The Arctic LCC includes the Arctic Plains and Mountains Bird Conservation Region, which encompasses northern Alaska and Canada. The international scope of the LCC presents unique challenges to the ability to model ecological change. Down-scaled climate data and foundational layers may be unavailable or may be derived by incompatible processes.

Opportunities for collaboration/partnerships for committee discussion?

None reported

Discussion items for the committee meeting?

None reported

U.S. Fish and Wildlife Service- Pacific Southwest Region, Sacramento

Contact Information: **Richard Kearney**
 Richard_Kearney@fws.gov
 Office: (916) 978-6160
 Cell: (916) 468-2020

	Yes/No
Do you have a position(s) in your organization that is solely dedicated to climate change?	Yes – Assistant Regional Director, Climate Change and Science Applications
Is there a cabinet level position for climate change in your state/province?	Not applicable.
Is your agency (Wildlife Agency) the lead on adaptation planning for your state/province?	Not applicable.
Please provide an estimate of the cost of your agency/organizations climate change related efforts for the past year and how many FTEs are dedicated to this work.	\$2.3 million (California LCC) 3 FTE
Is your state/province using modeling to predict impacts of climate change on wildlife communities?	USFWS is using the results of downscaled climate model to infer likely future ecological conditions. Models to predict changes in wildlife distributions are only now becoming available. Future models will focus on projecting population-level impacts of climate on fish and wildlife.
If yes, please provide a contact person for further follow up.	

Where are you at right now with respect to climate change and fish and wildlife issues in your agency/organization? (Examples-adaptation planning, integrating cc into action plans or programs, internal planning efforts, etc)

The USFWS is integrating climate change into its plans and programs and using the results of downscaled climate model projections to infer likely future ecological conditions. Climate scenarios and data available from the State of California’s Climate Change Research Center (<http://www.climatechange.ca.gov/research/index.html>) provide a common basis for local, state, and federal agencies to use in building their management plans.

Highlights and Accomplishments:

The USFWS was among a group that hosted a three-day workshop at the University of Nevada, Las Vegas to exchange information on climate change science and management in the Great Basin and Mojave Desert. This workshop attracted more than 330 people from federal, state, and regional wildlife agencies, Native American tribes, academic institutions, and nongovernmental organizations across the West. The agenda included presentations on the latest climate research, paired talks during which a researcher and natural resource manager each discussed a specific climate adaptation issue, and breakout sessions where groups of 15-20 scientists and managers exchanged information on needs, capabilities, and priorities. Videos and presentations from the workshop will soon be made available via the internet.

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

The USFWS is supporting the creation of the California Landscape Conservation Cooperative (LCC) to provide dedicated science support for conservation partners in California. The USFWS is working closely with the California Department of Fish and Game, Department of Water Resources, and others to ensure our respective agencies' climate adaptation efforts are coordinated and mutually supportive. Both state agencies have seats on the LCC Steering Committee and actively participate in LCC direction, decision making, and priority setting. Similarly, the USFWS actively participates in CDFG-led working groups associated with the update of the California State Wildlife Action Plan and the development of CDFG climate adaptation strategies.

In addition to helping organize the California LCC, the USFWS is also supporting the Bureau of Land Management (BLM) as it convenes meetings with local, state, and federal agencies to organize the Great Basin LCC. This multi-state initiative will address climate change and other landscape-scale conservation challenges across the Great Basin region. BLM and USFWS are hosting meetings with state fish and wildlife agency and other potential Great Basin LCC partners in Boise, Salt Lake City, and Reno during the month of May.

Please describe any on the ground adaptation examples that your agency/organization is pursuing and/or planning to pursue.

The USFWS is using tools such as the habitat connectivity maps developed by the California Department of Fish and Game (<http://www.dfg.ca.gov/habcon/connectivity/>) to identify locations suitable for restoration as wildlife corridors.

Working with the California Department of Fish and Game, Army Corps of Engineers, and other partners, the USFWS is conducting a tidal marsh restoration project that will provide for flood control brought about by rising sea levels as well as more than 9,600 acres of habitat for shorebirds, fish and other wildlife at the Don Edwards San Francisco Bay National Wildlife Refuge.

What's your vision, or what direction would you like to head in the coming year?

The USFWS is seeking to build a strategic approach with the States, federal agencies, Native American tribes, NGOs, and others to address climate adaptation using resources provided through the California LCC. By agreeing upon a set of shared conservation

goals and objectives, partners can leverage existing programs and projects to achieve greater results than working individually. Climate change is a 21st Century challenge that needs a 21st Century strategy to overcome.

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

Organizational inertia and resistance to change.

Opportunities for collaboration/partnerships for committee discussion?

Habitat connectivity / wildlife corridors – developing common strategies for their identification; linking with WGA Wildlife Council corridors initiative; getting federal agencies, land trusts, ranchers, and others to support

Discussion items for the committee meeting?

None reported

U.S. Geological Survey-National Climate Change and Wildlife Science Center

Contact Information: **Robin O'Malley**
703.648.4086
romalley@usgs.gov

	Yes/No
Do you have a position(s) in your organization that is solely dedicated to climate change?	Yes, The National Climate Change and Wildlife Science Center (NCCWSC) within the USGS was established by Congress to provide the science and technical support to help fish and wildlife resource managers anticipate climate change impacts and evaluate options that will facilitate adaptation to changing landscapes.
Is there a cabinet level position for climate change in your state/province?	N/A
Is your agency (Wildlife Agency) the lead on adaptation planning for your state/province?	USGS and the NCCWSC provides science to support the adaptation planning that states, Federal land management agencies and other stakeholders need.
Please provide an estimate of the cost of your agency/organizations climate change related efforts for the past year and how many FTEs are dedicated to this work.	Almost \$8M of funding has been distributed to research projects in 2010. Awards for an additional \$1.5 million (for each of three years) are in process, and additional funds will be used to establish three climate science centers in this FY (in AK, the Northwest and Southeast)
Is your state/province using modeling to predict impacts of climate change on wildlife communities?	Yes
If yes, please provide a contact person for further follow up.	Several of the current research projects that are underway include the use of modeling tools and/or are developing models for regional specific issues in addition to the development of national models for specific issues or species. See nccw.usgs.gov for contact information on these projects.

Where are you at right now with respect to climate change and fish and wildlife issues in your agency/organization? (Examples-adaptation planning, integrating cc into action plans or programs, internal planning efforts, etc)

USGS, the science agency of the U.S. Department of Interior, is tasked with providing the science and data that enables land and resource managers to make informed adaptive management decisions to address the impacts of climate change and other stresses on fish and wildlife and ecosystem habitat.

The National Climate Change and Wildlife Science Center (NCCWSC) was established as a partnership-oriented institution to work closely with natural resource agencies and scientists inside and outside government gather the information and build the tools for managers of fish and wildlife, and their habitats and ecosystems, affected by climate change. Interactions with partners at the national, regional and landscape levels will enable key priorities for science to be defined by the managers who are in need of adaptive management strategies.

The Department of the Interior (DOI) is establishing DOI Regional Climate Science Centers (CSCs), a dynamic network of geographically dispersed centers to be hosted at institutions with substantial climate change science expertise and partnerships. These Regional Centers will have a geographic scope and a mission to work in close partnership with resource management communities to develop the science information and tools that enable land, water, fish and wildlife, and cultural heritage managers develop strategies for responding to climate change. The USGS NCCWSC is acting as the agent of the Department in establishing these CSCs, and will provide the initial staffing and scientific resources at most of the Centers.

The establishment of the eight DOI Regional Climate Science Centers is underway. The selection of the University of Alaska as the first Regional Climate Science Center was announced on March 4, 2010 and the Northwest and Southeast centers will be established later in 2010, with the Southwest and North Central locations to be selected in 2011. It is anticipated that Regional Centers will be established in the Northeast, South Central and Pacific Islands regions in 2012, subject to available funding and resources.

DOI is also establishing a network of Landscape Conservation Cooperatives (LCCs) that will interact closely with the CSCs. The LCCs are partner-driven science-application initiatives that will engage federal agencies, local and state partners and the public to craft practical, landscape-level strategies for managing climate change impacts. The LCCs will focus on specific regions (see <http://www.doi.gov/whatwedo/climate/strategy/>) and focus on effects of climate change such as altered wildlife migration patterns, wildfire risk, drought or invasive species that transcend national and state land management agency boundaries.

Recognizing that climate change effects will vary by regional as well as landscape areas, USGS is sponsoring a pilot project for a southeastern U.S. regional assessment. Scientists from multiple agencies and institutions in the southeast are working to identify climate impacts on key resources: birds, fish, and coastal areas. Using high quality downscaled information, the team is developing integrated approaches to evaluating the effects of a large regional stressor on these key resources. USGS hopes to learn from and expand this type of pilot to other regions of the U.S.

Nineteen multi-year projects are currently underway. These projects range from research that is addressing regionally specific issues to projects that have nationwide importance with significant participation from state, Federal and NGO partners. All

projects were selected based on rigorous criteria and meet the stated direction of providing data and tools to assist resource managers develop effective and informed policy, and make strategic management decisions based on science. While addressing many specific resources, all projects are focused on the linkage between high level climate projections and models and the “next tier” of ecological models – vegetation, hydrology, etc., and subsequent impacts on fish and wildlife and habitat. This linkage of global and regional models to understanding and modeling of ecosystem processes is the core focus of NCCWSC activity.

Many of these research projects will provide inventory data for fish, wildlife, ecosystems and habitat in addition to models, forecasts and tools to support regional level information to states and land management agencies. Projects in the western area include “Impacts of climate change and melting glaciers on coastal ecosystems in the near shore waters of the Gulf of Alaska” and “Predicting climate change threats to key estuarine habitats and ecosystem services in the Pacific Northwest”. Many research projects are being conducted jointly with scientists from state Fish and Wildlife agencies, for example, “Assessing the Vulnerability of Species and Ecosystems to Projected Future Climate Change in the Pacific Northwest” has a co-PI from the Washington Department of Fish and Wildlife.

A complete list of current research projects can be found here:
<http://nccw.usgs.gov/2009RFP-projects.html>

Highlights and Accomplishments:

The national office continues progress in developing long term strategic partnerships to ensure the work of the DOI Regional Climate Science Centers closely supports the needs of resource managers develop policies and management decisions within an adaptive management framework.

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

Establishment, staffing, and startup of the eight regional Climate Science Centers is the NCCWSC’s highest priority. Fully staffing the national office will enable increased cross-regional coordination, national issue identification, and strategic partnership building. As the Science Centers begin to be staffed, the opportunity for additional climate science research projects will grow. Each Science Center will respond directly to the needs identified by regional stakeholders (e.g., LCCs, states, federal managers, etc).

Please describe any on the ground adaptation examples that your agency/organization is pursuing and/or planning to pursue.

The USGS and the NCCWSC are working to support the adaptation models and plans for resource managers at DOI land management agencies as well as states and science partners. Several of the projects referenced in #1 will provide adaptation models for resource managers to utilize.

What’s your vision, or what direction would you like to head in the coming year?

The establishment of the DOI Climate Science Centers is core to delivering the high priority science needed by land managers at state and federal agencies to address current and future impacts of climate change on America’s lands, waters, ocean, fish, wildlife and cultural resources. The partnerships developed at a regional level for each of these centers is going to be a significant driver in ensuring success.

Focus areas for future research to further the science goals of the centers include:

- Forecast fish and wildlife populations and habitat changes in response to climate change
- Assess the vulnerability and risk of species and habitats to climate change
- Link models of physical climate change (such as temperature and precipitation) with models that predict ecological, habitat, and population response
- Develop standardized approaches to monitoring and help link existing monitoring efforts to climate and ecological or biological response models.

DOI Secretarial Order 3289 has the goal of “provid(ing) a coordinated strategy to address renewable energy efforts and to increase scientific understanding of and development of effective adaptive management tools to address the impacts of climate change on our natural and cultural resources.” DOI Climate Science Centers thus have a broad mission to analyze climate impacts to land, water, fish and wildlife and cultural heritage resources and to assist DOI’s managers and partners.

The NCCWSC and DOI Climate Science Centers will continue to collaborate with the Landscape Coordination Cooperators (LCCs), the national network of partnerships that are tasked with developing landscape scale conservation plans.

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

None reported

Opportunities for collaboration/partnerships for committee discussion?

The NCCWSC would invite all WAFWA members to work with the DOI Regional Climate Science Centers in their geographic area to learn more about the research and activities taking place. Each Regional Center will have a steering committee that seeks input from state representatives in addition to other regional constituents. In addition, the LCCs will be establishing steering/advisory committees to support the collaboration and interaction among and between partners.

The ability to help define the priorities for science to address adaptation provides an important opportunity for fish and wildlife partners, within the states, Federal agencies and NGOs. We encourage scientists and managers at state fish and wildlife agencies, state forestry agencies, water management agencies and other natural resource managers to participate and collaborate with their peers at the DOI Regional Climate Science Centers.

Discussion items for the committee meeting? None reported

Wildlife Conservation Society

Contact Information: Molly Cross
mcross@wcs.org
 406-522-9333 x110

	Yes/No
Do you have a position(s) in your organization that is solely dedicated to climate change?	Yes. I am the Climate Change Adaptation Coordinator for WCS' North America Program.
Is there a cabinet level position for climate change in your state/province?	
Is your agency (Wildlife Agency) the lead on adaptation planning for your state/province?	
Please provide an estimate of the cost of your agency/organizations climate change related efforts for the past year and how many FTEs are dedicated to this work.	Over \$300,000 spent on climate change projects in Western US. At least 2-2.5 FTEs are dedicated to this work.
Is your state/province using modeling to predict impacts of climate change on wildlife communities?	
If yes, please provide a contact person for further follow up.	

Where are you at right now with respect to climate change and fish and wildlife issues in your agency/organization? (Examples-adaptation planning, integrating cc into action plans or programs, internal planning efforts, etc)

WCS is engaged in research to understand the vulnerabilities of particular species and ecosystems to the impacts of climate change, and adaptation planning and implementation projects in several landscapes across the United States (including western US).

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 helping managers get started with climate change adaptation planning (Cross et al. in review at Environmental Management – draft manuscript available on request).

- Workshop held Oct 2009 with U.S. FWS on consequences of climate change and priority conservation recommendations for grizzly bears and wolverine in the Northern Rockies (workshop report available on request). This workshop involved participants from several state and federal resource management agencies including MTFWP, IDFG, NPS, USFWS, USFS, and USGS. We will be holding a follow-up workshop in the US-Canada Transboundary region in Fall 2010 to discuss issues specific to the Transboundary Rockies area, and further develop priority conservation, research and monitoring recommendations for these two species.
- Co-lead on the Adaptation Chapter of the AFWA guidance document: Voluntary Guidance for States to Incorporate Climate Change into State Wildlife Action Plans & Other Management Plans.
- Held a workshop in April 2009 that brought together conservation organizations and state and federal management agencies in Arctic Alaska to identify new priorities of wildlife conservation in the arctic under specific scenarios of climate change (report available on request).

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

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

- Conducting field 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. Some focal species/systems include: wolverine, arctic shorebirds, musk oxen, and a suite of focal species around the Crown of the Continent.
- 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, grizzly bears and wolverine in the Northern Rockies, the Jemez Mountains in New Mexico, the Gunnison basin in central Colorado, the Four Forest Initiative in northern Arizona, and the Bear River in Utah (workshop reports available on request). Each of these workshops has involved state fish and wildlife agencies from relevant states within the WAFWA region.
- Identifying connectivity needs for species as climate changes.
- Working with Montana Fish, Wildlife and Parks and partner organizations to identify priority adaptation strategies in several ecological systems in the state, and provide guidance on addressing climate change in an addendum to their state wildlife action plan.
- Initiating a project to look at the consequences of climate change for fish and wildlife management in two watersheds in Montana: the Upper Big Hole and Upper Yellowstone watersheds.
- Initiating a project to conduct adaptation planning exercises in three landscapes across the US (Northern US Rockies, the Adirondack State Park, and Arctic Alaska), and compare and contrast lessons learned across those sites to provide general guidance to those wishing to initiate climate change adaptation work in their own landscapes.

Please describe any on the ground adaptation examples that your agency/organization is pursuing and/or planning to pursue.

N/A

What's your vision, or what direction would you like to be moving in the coming year? WCS will continue to provide capacity and support for fish and wildlife adaptation planning and implementation within state and federal agencies in Western US and other regions of the US. 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.

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

Opportunities for collaboration/partnerships for committee discussion?

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.

Discussion items for the committee meeting?