

**California Department of Fish and Game
Climate Change Program Annual Update
2010**

California Climate Action Team

DFG Acting Director McCamman sits on this team, which oversees climate change activities across state agencies. DFG 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.

DFG Climate Change Stakeholder Meetings

The Department is very proud of its climate change stakeholder group. 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. The first meeting covered elements of a successful communications plan and examples of different kinds of outreach materials that the group could pursue. At this time several members of the group have submitted media plans and messages for a group outreach document/magazine. DFG is currently compiling these ideas and putting it into a format for the group to review.

- 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. This workshop will provide a summary of the strengths and weaknesses of various approaches such as dynamic vs. statistical modeling and provide an opportunity for discussion on data needs and the challenges of dealing with uncertainty, scale and resolution. (See details on this workshop in the section below)

- 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 DFG 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. The State's Wildlife Action Plan is scheduled to be revised by 2015. 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.

- 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. Local, state and federal agencies, developers and non-profits have expended hundreds of millions of dollars in these efforts and climate change will undo much of what has been accomplished unless adaptation strategies tested, monitored and modified as necessary to achieve identified goals. This group plans to reconvene over the summer and pursue a discussion about a possible workshop to bring key conservation and management organizations together as well as proposals for regional monitoring priorities.

Workshop: "Bridging the Gap: Downscaling Climate Models to Inform Management Actions"

Workshop sponsored by the CA Department of Fish and Game, the US Geological Survey, and the US Fish and Wildlife Service-CA Landscape Conservation Cooperative. The Department's climate change work group of stakeholders presented a day long workshop on November 3, 2010 at Sacramento State University. The intent of this workshop was to bring together those individuals doing cutting edge research on downscaling in California with key ecologists, land managers and partners. The workshop provided participants with a shared technical understanding of potential downscaling applications to ecological resource management and provided an opportunity for discussion on data needs and the challenges of dealing with uncertainty, scale and resolution. Following each set of presentations a panel discussion was held between the presenters and invited participants to discuss key topics and respond to audience questions regarding how downscaled models can be used to help inform climate change adaptation planning and natural resource management activities. The workshop was well attended with in person participation reaching capacity and web cast participants from all over the country.

More information, PowerPoint presentations, and archived web cast can be found at <http://www.dfg.ca.gov/climatechange/downscaling-workshop/>

California Climate Adaptation Strategy (CAS)

CA Resources Agency led the creation and release of the first comprehensive multi-sector climate change adaptation strategy across the nation. DFG and State Parks co-lead the Biodiversity and Habitat Sectors and relied heavily on input from DFG workshops, public meetings, and stakeholder input. The Strategy document was released December 2009. <http://www.climatechange.ca.gov/adaptation/>

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. Even though the revised document is not due until 2015 the DFG wants to get the process moving early.

Association of Fish and Wildlife Agencies (AFWA)-U.S. Fish and Wildlife Service National Strategy

Acting Director McCamman is a participant with AFWA and the USFWS on discussions about the creation of a national strategy for climate change. Chief Deputy Kevin Hunting is also a participant in these discussions and will serve on the steering committee to oversee the creation of a national adaptation strategy. Chief Deputy Hunting will represent the CA Department of Fish and Game as well as the WAFWA Climate Change Committee. DFG is the Western States representative for AFWA in this effort; this includes all states west of the Mississippi.

Western Association of Fish and Wildlife Agencies

- WAFWA Climate Change Committee

The Department continues to oversee and serve as the chair for the WAFWA climate change committee. This committee held its second meeting during the WAFWA annual meeting in Anchorage, AK. Several new products related to the committee's activities have been recently released including an annual update and white paper on multi sector climate change adaptation planning efforts. More information on the committee can be found at <http://dfg.ca.gov/climatechange/wafwa/>

- WAFWA Multi-Sector Climate Change Adaptation Planning White Paper

At the January 2010 mid-winter meeting, the Directors unanimously approved the creation of a working group within the Climate Change Committee to develop a white paper on multi sector natural resources climate change adaptation planning, as well as a suggestions for how these planning efforts might overlap or interact with State Wildlife Action Plans or other management plans. It is generally agreed that with, or without, federal funding, state agencies need to determine how they will address climate change in order to reduce vulnerability to

climatic changes and strengthen their ability to adapt. By creating a multi-sector climate change natural resource adaptation plan that details a comprehensive response, your state will be put on a proactive path to address vulnerabilities and attract resources to implement their response. In keeping with its charge, the Climate Change Committee is pleased to announce the completion of this report and hopes it will provide some food for thought to support conservation planning efforts in your state. The report is available online at <http://www.dfg.ca.gov/climatechange/wafwa/committee.asp>

- WAFWA Regional Climate Workshops
AFWA and WAFWA will co-host a climate change forum at the midwinter meeting on January 7th. The forum will provide an opportunity for a policy level discussion among Directors and their key climate change staff followed by an open forum among state fish and wildlife agencies and other conservation partners. A steering committee of WAFWA state representatives is overseeing the content, communication, and logistics for the workshop.
- WAFWA Climate Change Annual Update
The WAFWA states and provinces have completed their 2010 climate change annual update. This document contains a thorough overview of climate change activities and planning efforts in all WAFWA states and provinces. This document is incredibly useful as a communication tool among states and partners, saves time in the committee to focus on action items, and provides a resource for those that are not able to attend the meeting. The 2009 and 2010 updates are available online at <http://dfg.ca.gov/climatechange/wafwa/committee.asp>

DFG Going Green

- Activities
The DFG has had an ongoing effort to address its carbon footprint and create a more sustainable work environment. For the past 6 months the Director convened a “Going Green Work Group” to provide recommendations for consideration by Department leadership.
- 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. A DFG 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 DFG employees from across the state.
- Next Steps Towards Sustainability
The Department is preparing to release a second report from the Going Green work group to report on the Department's efforts to address its carbon footprint and create a more sustainable future for the department's activities and its employees. This report is a collection of actions that the Department and its employees are pursuing as well as recommendations for consideration by executive leadership for future actions. The first report “DFG Going Green: Reducing Our Carbon Footprint” (PDF) and an evaluation of carbon impact of all

departmental operations can be found online. The second report will be posted in early 2011. Both reports can be found at <http://www.dfg.ca.gov/climatechange/activities.html>

Director's Bulletin: Actions for a More Sustainable Workplace

The Department is planning to release a Director's bulletin to follow up on the going green work group recommendations on actions that can be easily and immediately implemented with little disruption or alteration of daily operations and with no increase in operating expenses. During this period of significant and persistent state-wide budget shortfalls, this bulletin provides guidelines that will help the Department continue to look for ways to reduce or optimize operating expenses, including fuel and energy costs while also resulting in potentially significant reductions in greenhouse gas emissions. By implementing these guidelines the Department will better embody its mission and continue to set an example of innovation and sustainability. These guidelines put the Department on a path to becoming a more sustainable organization and minimize the Department's contribution to emissions that contribute to climate change. When available the bulletin will be posted at <http://www.dfg.ca.gov/climatechange/bulletins.html>

Regional Climate Change Committees

The Northern Region Climate Change Committee (see below) has been meeting for one year. Other Regional Committees are in planning stages.

- **DFG Northern Region* Climate Change Committee**

Committee lead: Mark Smelser; Committee members: Jennifer Carlson, Vicki Frey, Gayle Garman, Eric Haney, Sharon Hope, Tony LaBanca, Gordon Leppig, Rich Lis, Linda Miller, Amber Pairis, Bruce Webb, Mark Wheatley

This DFG regional committee was formed to assist DFG Regional staff in better understanding and managing the numerous issues associated with climate change in our personal and professional lives, and to help move DFG forward on climate change issues. The Committee works closely with DFG's Climate Change Advisor, Amber Pairis. The Committee meets monthly.

Initiatives/Goals:

- Keep informed of current literature and Climate Change news; inform ourselves and staff of local impacts to the resources in our region; summarize existing literature to share with staff
- Integration of climate change issues into CEQA Guidelines, both for project proponents (public), and for internal guidance to CDFG staff responsible for reviewing projects
- Maintain Northern Region Climate Change Intranet Portal, to increase communication among Regional staff
- DFG Going Green. Assisted in development of DFG Going Green document <http://www.dfg.ca.gov/climatechange/>
- Paperless Office. Goal is to reduce our production/consumption of paper in office communications and business

- High Elevation Species Loss. Will be evaluating climate change and its impacts on wildlife habitat at higher elevations, e.g., Sierra Nevada Red Fox, American Pika
- Coastal Watershed Impact Analysis. Investigate strategies to predict and assess the impacts of climate change at the scale of a small watershed (e.g., less than 100 sq miles).
- Sea-level Rise. Goal is to educate ourselves and inform staff about impacts of sea-level rise, and develop recommendations for incorporating into project review process. Pilot project is a presentation with maps showing potential impacts to Humboldt Bay resources
- Give input to statewide documents such as the Resources Agency Climate Adaptation Strategy, and DFG's Climate Adaptation Strategy
- Understand and communicate both sides of Climate Change argument
- Keep abreast of what local partners are doing, cross-communication

Bay Area Ecosystems Climate Change Consortium (BAECCC)

DFG 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.

Outreach Document: Climate Change Magazine

This outreach document is the result of a collaborative effort among DFG climate change stakeholders to craft messages that can be used to engage the public, landowners, and organizations on a variety of topics related to climate change adaptation planning that will help the Department communicate with and engage partners in climate change adaptation and mitigation efforts. This climate change publication is an important outreach document that highlights the actions the Department is taking to address the challenges associated with climate change, makes a statement that the Department is part of the climate change solution, and provides an outreach document that illustrates the importance of biodiversity conservation in the implementation of climate change adaptation actions in other sectors. The magazine will be distributed locally but a PDF version will be available online in early 2011 at

<http://www.dfg.ca.gov/climatechange/>

Climate Change Vulnerability Assessment

The Department is in the initial stages of conducting a climate change vulnerability assessment. A vulnerability assessment provides the scientific basis for developing or enhancing climate adaptation strategies and uses information about future climate scenarios with ecological information about climate sensitivity and adaptive capacity to help manager anticipate how a species or system is likely to respond under the projected climate change conditions. The relative vulnerability of species or habitats can be used to set goals, determine management priorities and inform decisions about appropriate adaptation strategies. The goals of a vulnerability assessment are to describe the following elements: 1) exposure; 2) sensitivity; and 3) the capacity to adapt to climate change.