



# California Department of Fish and Game Climate Science Program Annual Update 2011

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### *Additions to the DFG Family*

- **New Director Joins the DFG:** In 2011, DFG welcomed new Director Chuck Bonham. DFG's climate team had the opportunity to meet with Director Bonham to discuss exciting upcoming initiatives within the Climate Science Program as well as the importance and success of our stakeholder group. The Director showed great enthusiasm and support for the Climate Science program and we are very happy to have him aboard.
- **Whitney Albright joins Climate Team:** In June 2011, Whitney Albright joined the DFG's climate team. Whitney is an employee of the California Wildlife Foundation through funding provided by the U.S. Fish and Wildlife Service and will be working with DFG to help advance our climate change related initiatives. Whitney previously worked at the University of Washington in Seattle as a research scientist, studying the affects of climate change on natural systems in the Pacific Northwest.

### *Governor's Conference on Climate Change and Extreme Events*

California Governor Edmund G. Brown Jr. and environmental, business and public health and safety leaders came together on December 15 in San Francisco at "The Governor's Conference on Extreme Climate Risks and California's Future." DFG's Director attended the conference. In conjunction, a special workshop was held to focus on "Vulnerability and Adaptation to Extreme Events in California in the Context of a Changing Climate: New Scientific Findings". DFG's Climate Change Advisor Amber Pairis is a co-author on the "Impacts of Extreme Weather and Climate on Terrestrial and Aquatic Biota in California" presentation that will be given at the meeting by Terry Root, Ph.D.

### *Stakeholder Meetings and Working Groups*

For the last three years the DFG has had an ongoing process to address climate change adaptation for biodiversity through an engaged and active group of stakeholders. The stakeholder group includes almost 100 federal, state, NGO, industry, and academic leaders that meet to develop a collective vision for adaptation planning in the biodiversity sector. In order to facilitate progress and accomplish tasks the stakeholder group formed three smaller working groups focused on outreach, research & workshops, and policy that have been very effective in accomplishing their goals. Highlights of accomplishments listed below.

- **Outreach Working Group: "Confronting the Challenge-Climate Change and the California Department of Fish and Game"**  
This magazine is the result of a collaborative effort among DFG climate change stakeholders and can be used to communicate with and engage partners in climate change adaptation and mitigation efforts. This publication highlights the actions DFG is taking to address the challenges associated with climate change and illustrates the importance of biodiversity conservation in the implementation of climate change adaptation actions in other sectors. The magazine was printed in November 2010 thanks to the generosity of The Nature Conservancy California. It was also part of a special edition of the DFG's magazine Outdoor California (September/October 2010). "Confronting the Challenge" is available online at <http://www.dfg.ca.gov/climatechange/>.
- **Research and Workshops Working Group: "Bridging the Gap: Downscaling Climate Models to Inform Management Actions"**



Workshop sponsored by DFG, the U.S. Geological Survey, and USFWS-California Landscape Conservation Cooperative. DFG's climate change work group of stakeholders presented a day long workshop on November 3, 2010 at Sacramento State University. 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. 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/>.

- **CAT Biodiversity Working Group:** The Biodiversity working group provides a forum among state agencies to guide adaptation and integration efforts at the state level on topics specific to the Biodiversity sector. Specifically, the working group provides a forum within the CAT to focus on integration and implementation of biodiversity adaptation strategies with a focus on cross sector issues, increasing cooperation, and minimizing conflicts during adaptation strategy implementation. The DFG is the lead on this group.

### **DFG Climate Resources and Reports**

- **DFG Climate Website Update:** The climate team completed an update to the DFG's climate change website. The new site contains updated information on DFG's climate change projects and products and also provides new resources for DFG staff and the public. Explore the website at its new location:  
[http://www.dfg.ca.gov/Climate\\_and\\_Energy/Climate\\_Change/](http://www.dfg.ca.gov/Climate_and_Energy/Climate_Change/).
- **Unity, Integration, and Action: DFG's Vision for Confronting Climate Change in California:** The DFG's climate vision outlines the objectives that the Department is striving to meet in order to effectively confront the challenges associated with climate change. In this document we also acknowledge the DFG's accomplishments to date and the existing programs and projects that can be utilized and built upon as we work towards meeting these goals.  
[http://www.dfg.ca.gov/Climate\\_and\\_Energy/Climate\\_Change/Activities/](http://www.dfg.ca.gov/Climate_and_Energy/Climate_Change/Activities/).
- **Unity, Integration, and Action: Climate Change Adaptation Case Studies:** This document lists a sampling of climate change related projects and programs within the Department that provide examples of actions being taken on the ground to minimize the negative impacts of climate change. The case studies also highlight existing programs and projects that are helping the DFG to plan for or minimize the impacts associated with climate change now and in the future. This document as well as a series of web pages is now online  
[http://www.dfg.ca.gov/Climate\\_and\\_Energy/Climate\\_Change/Case\\_Studies/](http://www.dfg.ca.gov/Climate_and_Energy/Climate_Change/Case_Studies/).
- **California Department of Fish and Game Climate Change Research Considerations:** This report provides an overview of the DFG's collaborative approach to climate change research and to integrating this research into DFG activities. Also provided in this report is a list of current climate change related research activities taking place within the Department. This report can be found online at [http://www.dfg.ca.gov/Climate\\_and\\_Energy/Climate\\_Change/Activities/](http://www.dfg.ca.gov/Climate_and_Energy/Climate_Change/Activities/).



- **DFG Climate Change Vulnerability Assessment Resource Center:** The number of climate change vulnerability assessments being conducted has skyrocketed in recent years. As the DFG began accelerating its own efforts on adaptation planning and vulnerability assessments, we recognized a unique opportunity to begin compiling this information at the early stages of development and to present it in a venue that is accessible and convenient for others to use. The DFG already houses a well established base of biogeographic and biological data, making it a natural fit for amassing this information, especially since our current data catalog can be extensively utilized in fish, wildlife, and habitat vulnerability assessments state-wide. The DFG will continue to regularly maintain this site as updated and new project information becomes available. Specifically, the website provides links to tools and guidelines for conducting climate change vulnerability assessments for fish and wildlife in addition to specific assessments for fish and wildlife that have been conducted around the world.  
[http://www.dfg.ca.gov/Climate\\_and\\_Energy/Vulnerability\\_Assessments/](http://www.dfg.ca.gov/Climate_and_Energy/Vulnerability_Assessments/)

### **DFG Going Green Activities**

DFG has had an ongoing effort to address its carbon footprint and create a more sustainable work environment. The Director convened a “Going Green Work Group” to provide guidance and recommendations for consideration by DFG leadership. Activities listed below.

- **DFG Going Green web page:** New web page dedicated to the activities of the Going Green work group and resources for staff and partners.  
[http://www.dfg.ca.gov/Climate\\_and\\_Energy/Going\\_Green/](http://www.dfg.ca.gov/Climate_and_Energy/Going_Green/)
- **DFG Going Green: Next Steps towards Sustainability** DFG released a second report from the Going Green work group on DFG’s efforts to address its carbon footprint and create a more sustainable future within the DFG. This report is a collection of actions that DFG and its employees are currently pursuing as well as recommendations for future actions to be considered by executive leadership. The report is available online at  
[http://www.dfg.ca.gov/Climate\\_and\\_Energy/Going\\_Green/](http://www.dfg.ca.gov/Climate_and_Energy/Going_Green/)
- **Director’s Bulletin-Actions for a More Sustainable Workplace:** Director Bonham has released a Director's bulletin to follow up on the Going Green work group’s 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 statewide budget shortfalls, this bulletin provides guidelines that will help DFG 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 DFG will better embody its mission and continue on a path to becoming a more sustainable organization. The bulletin is now available at  
[http://www.dfg.ca.gov/Climate\\_and\\_Energy/Director\\_Bulletins.aspx](http://www.dfg.ca.gov/Climate_and_Energy/Director_Bulletins.aspx).
- **DFG Bikes!:** In response to the release of the department-wide guidelines a new DFG Going Green committee was formed called DFG Bikes! The goal of the committee is to create incentives to encourage employees to bike more frequently in order to reduce the Department’s carbon footprint while increasing employee morale around an activity that promotes a healthy lifestyle. Activities to date have focused on



creating incentives to encourage employees to bike more frequently and tools and resources for existing bikers. A new DFG Bikes! forum was created for DFG staff and a public web page can now be found online at

[http://www.dfg.ca.gov/Climate\\_and\\_Energy/Going\\_Green/DFG\\_Bikes.aspx](http://www.dfg.ca.gov/Climate_and_Energy/Going_Green/DFG_Bikes.aspx).

- **Paperless Office Pilot Project:** The DFG believes that there are significant benefits to be gained by converting many internal forms to an automated, electronic document format utilizing electronic signatures. This simplifies the process of filling out, submitting and routing forms, and saves time and money while reducing DFG's overall carbon footprint. As a first step a memo was released by the Director in November with guidelines for creating electronic signatures. The DFG continues to make great strides in moving towards a more paperless process.
- **California Department of Water Resources (DWR) Sustainability Initiative:** The going green team is working with Mary Simmerer, DWR's Sustainability Coordinator, to discuss opportunities for DWR-DFG to partner on sustainability activities between our organizations.

### **Climate Change Vulnerability Assessment for Rare Plants**

The DFG began carrying out the Climate Change Vulnerability Assessment for Rare Plants Project which uses NatureServe's Climate Change Vulnerability Index to assess the risk from various climate change scenarios for 140 rare plants in California. This study serves as a pilot for further comprehensive assessment of all plant species on the DFG Special Plants List and other key plants which serve as habitat for animals of greatest conservation need. This assessment is scheduled for completion in early 2012. More information at

[http://www.dfg.ca.gov/Climate\\_and\\_Energy/Climate\\_Change/Activities/](http://www.dfg.ca.gov/Climate_and_Energy/Climate_Change/Activities/).

### **California Wildlife Action Plan Revision**

The state's Wildlife Action Plan (SWAP) is scheduled to be revised by 2015. Primary objectives of the revision are to incorporate new information developed through updates to Species of Special Concern documents for birds, mammals, reptiles, amphibians and fish; update the stressors and actions affecting fish and wildlife on an ecoregional scale; expand the analysis of threats posed by climate change and down-scale the state's adaptation strategy to on-the-ground, implemental actions. The DFG is working with Defenders of Wildlife to facilitate a training for DFG staff to use the Open Standards Process to guide the development of the two-phase update. The first phase of the revision will include public scoping and coordination with stakeholders, agencies and tribes with the goal of making the SWAP relevant to all levels of natural resource managers in California. This revision is being led by Armand Gonzales. For more information please email [agonzales@dfg.ca.gov](mailto:agonzales@dfg.ca.gov).

### **California Fish and Wildlife Strategic Vision**

In 2010, the AB 2376 (Huffman) bill was signed into law, requiring the California Natural Resources Agency to convene an executive committee to develop a new strategic vision for the DFG. The DFG is fully engaged and supporting this process. A draft interim strategic vision plan was released to the public on November 22, 2011 and a series of public meetings are taking place around the state. The draft strategic vision contains a description of the process, a summary of past plans, partial report on barriers to implementation, and suggestions for public recommendations.



## DFG Climate Change Training Course

The DFG climate team has begun planning a climate science training course to be made available to all DFG staff. The training course will cover the fundamentals of climate science and will provide the tools and resources necessary to empower staff to better incorporate climate change into their responsibilities. The course will include monthly guest speakers, required readings, discussion forums, and an end-of-course project where staff will have the opportunity to think about the ways in which their job might change because of climate change. All course materials, including webinars, required reading materials, and optional reading materials will be archived as a permanent resource for staff and partners. The climate training course is tentatively slated to begin in the spring of 2012.

## State-wide, Regional, and National Activities

- **Association of Fish and Wildlife Agencies (AFWA) Climate Change Committee:** DFG's Chief Deputy Director Kevin Hunting was named as the co-chair of the AFWA Climate Change Committee. The committee serves as the principle forum for climate change adaptation planning and collaborative efforts among natural resource agencies at the national level. DFG staff are involved in several national projects to support and represent the DFG and WAFWA.
- **Western Association of Fish and Wildlife Agencies (WAFWA) Climate Change Committee:** DFG has continued to oversee and serve as the chair for the WAFWA climate change committee. All products and committee activities including white papers and climate change updates from members can be found at [http://www.dfg.ca.gov/Climate\\_and\\_Energy/WAFWA/](http://www.dfg.ca.gov/Climate_and_Energy/WAFWA/)
  - **WAFWA Regional Climate Workshops:** The Association of Fish and Wildlife Agencies and the WAFWA Climate Change Committee co-hosted a climate change forum at the WAFWA midwinter Director's meeting in January 2011. The forum provided 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. This forum resulted in a prioritized list of needs in the form of action items,
- **Landscape Conservation Cooperatives (LCCs):** LCCs are public-private partnerships that seek to foster communication at the science-management interface and promote the dissemination of climate change research and tools across agencies at all levels. DFG currently has representation on the steering committees of all four LCCs within the boundaries of California. Whitney Albright, DFG's Climate Associate is acting as a liaison between the DFG and LCCs to support coordination and communication between DFG and our LCC partners. LCCs within California include the California LCC, the Desert LCC, the Great Basin LCC, and the North Pacific LCC.
- **Bay Area Ecosystems Climate Change Consortium (BAECCC):** DFG is currently involved in the BAECCC, a group of federal, state, and NGO partners.
- **California Climate Action Team Research Working Group:** DFG is represented on the CAT Research Working Group, which is a forum for communication and collaboration on climate change research among agencies and the public. Activities have included an update of the state's online climate change research catalog: <http://www.climatechange.ca.gov/research/search.php>.



- **National Fish, Wildlife, and Plants Climate Adaptation Strategy:** The DFG worked with Department of Interior, NOAA, and other states to develop a national strategy that will provide decision makers and resource professionals with adaptation actions to promote species and habitat resiliency in the face of climate change. The intent is to promote a nation-wide unified approach to climate driven adaptation strategies, reflecting shared principles and science-based practices to safeguard the nation’s biodiversity, ecosystem function, and sustainable human uses of fish, wildlife and plants. Chief Deputy Director Kevin Hunting served on the steering committee representing the DFG as well as the WAFWA Climate Change Committee. In addition, DFG staff Armand Gonzalez co-chaired one of seven system technical sub-teams.
- **National Climate Assessment:** The National Climate Assessment (NCA) is being conducted under the auspices of the Global Change Research Act of 1990, which requires a report to the President and the Congress that evaluates, integrates and interprets the findings of the \$2.6 billion federal research program on global change (USGCRP) every four years. The DFG’s Climate Change Advisor Amber Pairis is a core member of the technical team for Ecosystems for the National Climate Assessment section of the report, “Ecosystems, Biodiversity, and Ecosystem Services: Assessing Climate Change Impacts and Evaluating Responses.”
- **DOI Southwest Climate Science Center:** The DFG was invited to participate on the stakeholder advisory committee for the Southwest Climate Science Center.
- **National Conference on Climate Change Adaptation:** Facilitated by EcoAdapt, DFG is on the steering committee for the creation of a national conference on climate change adaptation. Current planning participants include a variety of state and federal agencies, AFWA, universities, and non-governmental organizations. This conference is in the early stages of development and more details will be released when available.

**Note: New DFG Climate Change Stakeholders Google listserv is up and running!** We have transitioned DFG’s climate stakeholder email list to a new listserv to better streamline communication and ensure that all partners are receiving updates. This new listserv is our primary means of communication and offers the opportunity for partners to post a response or share information among each other. If you would like to join please email [climatechange@wildlife.ca.gov](mailto:climatechange@wildlife.ca.gov).

