Project Title:

California Climate Commons

Project Leader:

Deanne DiPietro, Research and Information Services Program Manager
Sonoma Ecology Center
PO Box 1486
Eldridge, CA 95431

707-996-0712
deanne@sonomaecologycenter.org

Scope & Budget:

Location: CA LCC Wide
Duration in months: 12
Requested Funding: $100,000.00
Leveraged Funding: $700,000.00

Partners:

Principal Investigators: Deanne DiPietro, Sonoma Ecology Center Grant Ballard, PRBO Conservation Science James Quinn, UC Davis Center for the Environment Principal Investigators of LCC-funded research projects and other conducting key climate change research will be engaged to contribute data and input on use and interpretation, and participate in communications with end-users. These include: Lorraine and Alan Flint, USGS/WRD California Water Science Center; Sam Veloz, PRBO Conservation Science; Healy Hamilton, UC Berkeley; Lisa Micheli and David Ackerly, Terrestrial Biodiversity Climate Change Cooperative, Berkeley CA; James Thorne, UC Davis, Information Center for the Environment; Kristen Byrd, USGS Resource managers of the LCC and beyond are our target audience for outreach, trained in the use of the Commons, asked to provide feedback and test cases as end-users, participate in communications with data originators, and contribute data from adaptation projects. These include: California State Parks National Park Service/Southern Sierra Conservation Cooperative The San Francisco Bay Joint Venture North Bay Climate Adaptation Initiative Bay Area Ecosystems Climate Change Consortium California Invasive Plant Council; California Department of Water Resources U.S. Forest Service U.S. Fish and Wildlife Service

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Briefly summarize the goals of the project, what products will result, and how the products support decision-making and conservation delivery for natural resource management within the CA LCC.

The California Climate Commons (climate.calcommons.org) is an online environment in which natural resource managers (managers) and their technical support staff can quickly find climate change and related environmental information they need, communicate with each other and with the researchers producing the information, and then share lessons learned. The Commons offers its users an easy point of entry to what can otherwise be an overwhelming world of rapidly changing data, rife with assumptions and uncertainties. It fosters participation in a community of practice for communicating, learning, and contributing, resulting in a greater shared understanding about the use of climate change science in conservation and more effective and coordinated conservation action. The goal of the Climate Commons is to support conservation practitioners in their application of climate adaptation science and help guide new research directions by facilitating more effective information exchange between the climate change research and conservation communities. In this next year our focus turns to engaging the user community, both the managers seeking scientific information and help using it, and the researchers producing data and results that need to be made widely available for managers and other researchers. We believe that the development of an active community of practice through direct communications and assistance is a crucial component in making the Commons relevant, responsive, and useful to the community it is designed to serve. The goal of this phase of the project is to build an LCC community of practice and develop the Commons as a conduit of intellectual exchange for the use of climate change science in conservation. Objectives for the coming year are: • Engage the CA LCC natural resource management community, train them in the use of the Commons for accessing climate data, and obtain their feedback and priorities for enhancements to the Climate Commons interface, content, and services; • Engage the CA LCC research community, train them in the use of the Commons for sharing and communicating about their data, and obtain their feedback; • Build upon the data and services offered by the Commons, as prioritized by the CA LCC community. The result will be a more coherent LCC community, maximized exchange of information between researchers and managers, and enhanced capacity for use of scientific data in conservation practice.

For continuing 2011 CA LCC projects, describe the accomplishments and outcomes to date, why additional funds are needed, and what this proposal will add to the project.

In its first year the Climate Commons project assembled its inter-agency team and developed a working prototype of the envisioned intuitive, informative Climate Commons system. This fully-functioning Climate Commons can now be found at http://climate.calcommons.org and contains the following services which are now ready to introduce to its user community: An online climate data clearinghouse, document and web resource catalogs, and information pages The library services of the Climate Commons are embodied in three searchable and inter-linked catalogs, one each for datasets, bibliographic resources, and web resources. These are supported by information pages, which serve to provide background knowledge on the many facets of climate change and climate adaptation science. The catalog records lead the user to the resources and provide for comparison across resources through standardized and consistent metadata. Hosting and download services for high-value, fine-scale model outputs and ecological data products The Climate Commons interactive environment for exploring, clipping, and downloading spatial data has been developed, tested, and loaded with a collection of high-priority climate model datasets. It is ready for ingestion of many more high-resolution datasets that currently have no other such point of access. An online environment for communication among Cal-LCC stakeholders and the research/modeling community at large. Communication forums and the opportunity to comment and provide additional information are linked throughout the Commons, associated with catalog records and general topics. These systems are ready to host conversations between researchers and managers, and these users and the Commons support team. In this next year our focus turns to engaging the user community, both the managers seeking scientific information and help using it, and the researchers producing data and results that need to be made widely available for managers and other researchers. The development of an active community of practice through direct communications and assistance is a crucial component in making the Commons relevant, responsive, and useful to the community it is designed to serve. These additional funds are needed to train and support managers and researchers so that they may take full advantage of the Commons services to support the work they do to protect and conserve natural resources in the face of climate change.

Briefly describe how the project team (main PIs) provides the range of experience, expertise, and organizational capacity needed to accomplish the project.

The Climate Commons project team is comprised of a unique collaboration combining expertise in climate change, ecology, geography, and computer science. The collaboration's broad range of skills in web innovation, geographic analysis, and data visualization, climate change modeling, and vulnerability analysis combined with extensive computing resources and partnerships make this collaboration especially qualified to accomplish the project and provide leadership for reaching the long-term goals of the California Climate Commons. Recent and Current Projects (in addition to the Climate Commons): Deanne DiPietro Data Sharing and Metadata Training; USGS NSDI; PI time: 2%; Period covered: 2005 – 2009; funding amount: $25,000. Developing Prioritization Criteria for Reach-Scale Enhancement and Incision/Erosion Projects in Sonoma Creek Watershed; San Francisco Bay Regional Water Quality Control Board; PI time: 10%; Period covered: April 2011-Dec 2012; funding amount: $125,000. James Quinn California Drinking Water Information Clearinghouse (July 2002-present, ongoing, ~$250,000 per year); multiple awards through the Department of Public Health and USEPA. International Seminar on Climate Change and Natural Resource Management (Jan. 2010-Sept. 2015, 5 years, >$200,000 per year, $363,900 to date), Forest Service International Programs Grant Ballard Adélie penguin response to climate change at the individual, colony and metapopulation levels; NSF/OPP; Total Award Period Covered: Aug 2010 – Jul 2015; $1,400,000; Person Month/Year: 3.5. Our Coast-Our Future: Planning for sea level rise and storm hazards in the San Francisco Bay Area; NOAA-SARP & NERRS Science Collaborative; Award Period: Aug 2010 – Sep 2014; $1,200,000; Person Month/Year: 0.5. Environmental Change Network in the California Landscape Conservation Cooperative; US Fish & Wildlife Service/California LCC; Period Covered: Oct 2010 – Sep 2012; $186,065; Person Month/Year: 0.5.

Identify which National LCC Performance Measure(s), if any, your project addresses.

The California Climate Commons
Proposal to the California Landscape Conservation Cooperative
May 14, 2012

Deanne DiPietro, Grant Ballard, PhD, and James Quinn, PhD
Sonoma Ecology Center, PRBO Conservation Science, and the UC Davis Information Center for the Environment

Introduction
The California Climate Commons (climate.calcommons.org) is an online environment in which natural resource managers (managers) and their technical support staff can quickly find climate change and related environmental information they need, communicate with each other and with the researchers producing the information, and then share lessons learned. The Commons offers its users an easy point of entry to what can otherwise be an overwhelming world of rapidly changing data, rife with assumptions and uncertainties. It fosters participation in a community of practice for communicating, learning, and contributing, resulting in a greater shared understanding about the use of climate change science in conservation and more effective and coordinated conservation action.

In its first year the Climate Commons produced these deliverables, which are now ready to introduce to its user community:

- An online climate data clearinghouse, document and web resource catalogs, and information pages,
- hosting and download services for high-value, fine-scale model outputs and ecological data products,
- an online environment for communication among Cal-LCC stakeholders and the research/modeling community at large.

Project Description
In this next year our focus turns to engaging the user community, both the managers seeking scientific information and help using it, and the researchers producing data and results that need to be made widely available for managers and other researchers. We believe that the development of an active community of practice through direct communications and assistance is a crucial component in making the Commons relevant, responsive, and useful to the community it is designed to serve. These additional funds are needed to bring the Commons to its user community and integrate it into the work they do to protect and conserve natural resources in the face of climate change.

By training and communicating with the natural resource managers and data providers from the research community we will learn about their specific data and information needs, find out how well the services currently offered on the Climate Commons work for them and what additional services or improvements need to be developed. We will then prioritize development of these services through continued enhancements to the Commons user interface, content, and functionality, and ask for their review and feedback. Case-studies will be identified for presentation on the Commons as examples of the use of scientific data in planning or decision-making. Those with data to share will be supported with direct assistance in cataloging and hosting their data, and by helping them contribute supporting information in the form of forum communications, frequently asked questions, and interpretive materials. We will provide hosting services for new, highest priority data sets as they become available from the research projects, presented together with the reports and journal articles that explain how the data was created and what conclusions can be drawn from it. We will focus on researchers who have received LCC funding (see list under Products/Data Sharing), providing them with the valuable service of sharing their results with each other and the natural resource management community their work

is intended to serve. They will be provided with user accounts and shown how to manage their own materials on the Commons, allowing them to use the Commons to reach the LCC community and a wider audience.

Through these efforts the Climate Commons will foster the development of a community of practice comprised of CA LCC resource managers and the research/modeling community in which members support each other and influence the services offered on the Commons, resulting in increased competence and efficiency in the application of scientific products in resource management.

Project Goals and Objectives

The goal of the Climate Commons is to support conservation practitioners in their application of climate adaptation science and help guide new research directions by facilitating more effective information exchange between the climate change research and conservation communities. The goal of this phase of the project is to build an LCC community of practice and develop the Commons as a conduit of intellectual exchange for the use of climate change science in conservation.

Objectives for the coming year are:

- Engage the CA LCC natural resource management community, train them in the use of the Commons for accessing climate data, and obtain their feedback and priorities for enhancements to the Climate Commons interface, content, and services;
- Engage the CA LCC research community, train them in the use of the Commons for sharing and communicating about their data, and obtain their feedback;
- Build upon the data and services offered by the Commons, as prioritized by the CA LCC community.

CA LCC Priorities addressed

The project clearly addresses the **Decision Support for Managers (Synthesis, Translation, Integration, Tools and Modeling)** priority by developing a data access and communication system customized for adaptation decision-making processes across the LCC region. The resulting online system and services will enable resource managers and their GIS staff to quickly access what they need for evaluation, planning, and outreach, as well as to talk about the process of using the information in a practical setting. The system will encourage open access to data, take advantage where possible of existing climate data portals, and produce and host data where most urgently needed. The project will inform research directions and create new collaborations by facilitating communications between the climate research and resource management communities. This project supports other LCC projects (see list at end of proposal) by providing access to relevant data, hosting the products of research, and supporting its use through online utilities, documentation, and communication, especially the **Ecosystem Impact and Response, and Tracking Change Specific to Manager Needs** priority, by developing GIS based data layers at scales relevant to resource managers.

CA LCC Criteria addressed

Addresses Natural Resource Management Need – The Climate Commons creates an effective connection between climate change researchers and land use and policy decision-makers, improving the ability of conservation practitioners to apply the latest science to adaptive management and the ability of the research community to serve this process.

Ecosystem Response to System/Climate Change – A major focus of the project is improving understanding of the results of research in climate change science and how it may be applied to conservation practice. The Commons supports expanding understanding of climate change

science among managers and policy makers through organized and documented data supported by understandable information, enabling them to utilize scientific research and participate in guiding its future direction.

Integrative in nature– The project provides and enhances access to a variety of physical and biological data and simplifies the task of discovery, interpretation, comparison, and application of these data.

Accessibility – The Commons will provide for online data access and use of data generated by climate change research, and will work to make these data and information products more useful and relevant to conservation practitioners.

Partnerships/Leveraging – The Commons encourages partnerships across the range of disciplines necessary for climate change science to be applied in conservation practice. The Commons team itself is a collaboration and leverages partnerships with conservation practitioners and climate change scientists, and will strive to build new collaborations between them.

Transferability – The Commons will institute, support, and encourage data sharing and information exchange practices that are highly applicable to LCC-wide and cross-LCC adoption.

Capacity – The project team has a proven ability to accomplish the work.

Continued Relevance – Response to the services introduced by the Commons project has been overwhelmingly positive, and there is increased interest in the system as LCC projects begin to produce information products and have a need to deliver these products to the community.

Project Performance – The project delivered a high-quality and useful product in its first year.

Readiness – the project is ready for funding for its next phase of work.

Approach and Scope of Work

The project team will conduct focused outreach using webinars, in-person sessions, and individual communications to CA LCC natural resource managers (such as California State Parks managers, Fish and Wildlife Service Refuge managers, and conservation planners at county open space districts and private land trusts) to train and engage them in the use of the Commons and enlist them in providing the feedback that will ensure that the services of the Climate Commons are on-target for the audience it intends to serve. We will reach these managers in collaboration with the CA LCC staff, and through groups coordinating the resource management community at the regional scale, including California State Parks, the Bay Area Ecosystems Climate Change Consortium, the North Bay Climate Adaptation Initiative, and the California Invasive Plant Council. Feedback will be captured in surveys and conversations, posted whenever possible on the forums on the Commons.

Commons services will be refined in response to feedback from LCC resource managers, and communications about these enhancements will be disseminated via the forums on the Commons. We will prioritize the opportunities that serve individual needs while creating services useful to the entire CA LCC partnership, such as exploring new ways to deliver data and creating case studies that serve as how-to guides.

We will also conduct outreach to the LCC and wider climate change research community and the sources of the latest new data and scientific information that the Commons seeks to bring to the resource managers. They will be engaged in the identification of additional high-priority datasets for inclusion in the Commons catalog and data hosting system, and enlisted in the sharing of their data by actively participating in the development of their catalog records, metadata, and supporting materials such as relevant journal articles and interpretive materials. They will be assisted and encouraged to develop frequently asked questions and talk with users on the communication forums about the appropriate use of the data.

Users from both communities will be trained, assisted, and encouraged to log in to ask questions and make comments regarding use of data, data gaps and needs, offer suggestions to improve or add Commons services, and discuss future directions for modeling and research.

The Commons will continue and enhance its hosting, download, documentation, and intuitive access tools for fine-scale model outputs and ecological data products designed specifically for conservation decision-making. Additional datasets will be prioritized for ingestion from LCC-funded projects and partners (see list under Products/Data Sharing). Data products targeted will be those determined by LCC stakeholder scientists and managers as high priority for evaluation of wildlife and habitat response to climate change at the preserve, landscape, and watershed scale. Raw data will be processed into more readily usable forms and outputs will be standardized with respect to grid and projection. Data contributors will be engaged in the hosting and distribution of their data to ensure appropriate standardization and presentation of the data.

To ensure that the Commons project fills gaps rather than reinvents existing systems, we will communicate with the developers of data portal efforts such as CalAtlas, CalAdapt, and Climate Wizard and investigate possibilities of increasing interoperability between existing tools such as the map-making utilities offered by CalAtlas, DataBasin, and LC Maps.

As we build upon the system developed in 2011/12 we will continue to leverage the informatics resources of PRBO Conservation Science, Sonoma Ecology Center, and the UC Davis Information Center for the Environment (ICE). Sonoma Ecology Center and ICE develop and host the Climate Commons website with its catalogs, interpretive information, and communications services. PRBO develops and hosts the interactive data access and hosting system. The Commons system can be grown and scaled as needed through collaborations with larger networks such as the California Digital Library and DataOne.

Project Tasks

Task 1: Outreach and Support to Resource Managers and Researchers

- Outreach to resource managers and researchers/data providers: Webinars and/or workshops, individual communications, and survey results with feedback on Commons services and next priorities,
- Individual assistance and support to managers and researchers/data providers as they work with Commons services to share data, communicate about projects, and get help accessing information.

Task 2: Commons Enhancements and Continued Development

- Enhancements to Climate Commons services in response to user feedback: additional information pages, user interface enhancements, additional utilities.
- Ingestion, presentation, and hosting of at least five new high-value spatial datasets,
- One or more case studies developed in the Commons as examples of the use of climate data and tools in planning efforts,
- Investigation of potential for interoperability with external tools (LC Maps, Data Basin, CERES/CalAtlas, CalAdapt, and other climate data portals),

Near and Long-term Goals:

The near-term goal is a Climate Commons serving the LCC community that is expanded and maintained to keep abreast of current resources produced by climate and ecology researchers and the needs of the conservation community. With increased use the Climate Commons will foster information exchange and mentoring among the research and conservation communities and create a coherent community of practice for adaptive conservation management in the LCC.

The long-term goal is a California Conservation Commons serving the state-wide conservation community that leverages multiple partnerships and data centers to coordinate and streamline California's environmental informatics services. A constantly evolving community of practice will offer a supportive and dynamic environment for conservation practitioners to find

and share the latest information resources, changing the way we manage and engage with our environmental knowledge and improving our ability to apply it to conservation practice.

Products/Data Sharing:
Deliverables

- Presentations/outreach to at least ten CA LCC managers and researchers/data providers via two or more webinars, and individual communications; results of at least one survey with feedback on Commons services and next priorities;
- One or more case studies developed on the Commons as examples of the use of climate data and tools in planning or decision-making;
- Enhancements to Climate Commons services in response to user feedback: at least twenty new catalog records, ten additional information pages, multiple user interface enhancements, one or more additional utilities;
- At least five new high-priority datasets hosted on the Commons for enhanced access;
- Report with conclusions and next steps regarding interoperability with external tools (LC Maps, Data Basin, CERES/CalAtlas, CalAdapt, and other climate data portals).
- Increased usage of the Commons as evidenced by website visits, at least ten new user accounts, and activity on the communication forums.

LCC managers and researchers to be targeted for Commons outreach, engagement, and data hosting will include the following projects.

- Veloz: California Environmental Change Network
- Flint: Ensemble model downscaled climate and hydrologic response for California basins,,
- Psaros: Our Coast Our Future project (sea level rise data)
- Moyle: Effects of climate change on inland fishes of California: tools for adaptation
- Regan: Decision support for climate change adaptation and fire management strategies for at risk species in southern California
- Byrd: Integrating Science into Decisions: Climate Change/Land Use Change Scenarios and Outreach for Habitat Threat Assessments on California Rangelands
- Smith: Maximizing evolutionary potential under climate change in southern California protected areas
- Takekawa: Sea-level rise modeling across the California salt marsh gradient for resource managers: evaluation of methodology
- Morelli: Determining Landscape Connectivity and Climate Change Refugia Across the Sierra Nevada,
- Hamilton: Uncertainty in prediction modeling.

Measuring Results:
Short-term success of project deliverables may be evaluated by the increase in materials offered on the Commons, the number of new user accounts (in its first year we signed up 24 users, and these are expected to double in the next year), and the comments and feedback provided by project collaborators about their ease of use and relevance as they begin to apply them to their projects. Longer-term success will be evident in the usage of the Commons website, in number of accesses and downloads and activity on the communications tools by a growing audience of researchers, data providers, and conservation practitioners.

California Landscape Conservation Cooperative 2012 Proposal Budgets

Budget Categories	CA LCC Request	Partner(s) Contribution(s) (monetary)	Partner(s) Contribution(s) (non-monetary value/in-kind)	**Total**
Salaries	$ 61,959.42	$ 30,000.00	$ -	$ 91,959.42
Supplies	$ 500.00	$ -	$ -	$ 500.00
Overhead	$ 35,140.58	$ -	$ -	$ 35,140.58
Equipment	$ 2,400.00	$ -	$ -	$ 2,400.00
Other (specify)	$ -	$ -	$ 570,000.00	$ 570,000.00
Total	$ 100,000.00	$ 30,000.00	$ 570,000.00	$ 700,000.00

Other:

Explanation of Matching Funds: USGS California Water Science Center In-kind services: $120K for downscaling climate projections and model development, historical climate and hydrologic analyses, and future ensemble projections of climate and hydrology.
PRBO In-kind services: $50K for computing resources, $150K for bird and climate data layers.
PRBO direct contributions: $20K for salaries.
Sonoma Ecology Center In-kind services: $100K for existing Commons software, standards, and infrastructure.
UC Davis ICE direct contributions: $10k for Quinn salary.
UC Davis In-kind services: $150K for land use change, vegetation shift, and urban growth projection datasets
Total = $ 600K

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415-259-0334 phone
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Rebecca Fris
Science Coordinator
California Landscape Conservation Cooperative
East Modoc Hall Suite 2007
3020 State University Drive
Sacramento, CA 95819

13 May 2012

Dear Ms. Fris:

I am pleased to send this letter of support by the San Francisco Bay Joint Venture (SFBJV) for the project entitled: "The California Climate Commons," submitted by **Deanne Di Pietro** (Sonoma Ecology Center) for consideration of funding through the California Landscape Conservation Cooperative. The proposed project builds on the California Climate Commons (CCC) project funded by the CA LCC in 2011. In its second phase, it will build additional capacity and engage and train SFBJV and LCC stakeholders, resulting in regional data integration and sharing, a priority data management need outlined in the 2011 SFBJV Monitoring and Evaluation Plan.

The SFBJV is one of 17 wetland habitat Joint Ventures operating under the certification of the North American Waterfowl Management Plan, a Congressional agreement between the United States, Canada, and Mexico. It is a partnership of non-governmental organizations, utilities, landowners, and non-voting agencies. The goal of the SFBJV is to protect, restore, increase and enhance all types of wetlands, riparian habitat and associated uplands throughout the San Francisco Bay region to benefit birds, fish and other wildlife. The Management Board consists of 27 agencies and private organizations whose members agree to support and promote the goal of the Joint Venture and who represent the diversity of wetlands interests found in the San Francisco Bay region.

Climate change is already impacting California's environment and practitioners tasked with managing natural resources need a website that provides easy data access and interpretation. The proposed project will provide outreach and training opportunities to California research and resource manager communities on how to utilize and integrate with the CCC as a web-based centralized forum for access and sharing of data and associated information. The current prototype of the CCC already shows that it will provide support for managers in finding, accessing, and applying climate change research data and products to support conservation planning. We strongly support the project to develop more useful utilities and especially to see the outreach that will engage the community in its use. The CCC will become a crucial tool for regional and landscape scale decision-making and planning, and as part of the SFBJV's ongoing process for establishment of a regionally coordinated San Francisco Bay area wetland monitoring framework.

We look forward to collaborating with the CCC in building a community of practice that applies climate change science to conservation action in California. The SFBJV Management Board therefore fully supports this proposal to develop the California Climate Commons, and urges the California Landscape Conservation Cooperative to fund it in full.

Sincerely,

Diane Ross-Leech
Chair, SFBJV Management Board

United States Department of the Interior

NATIONAL PARK SERVICE
Sequoia and Kings Canyon National Parks
47050 Generals Highway
Three Rivers, California 93271-9651
(559) 565-3341

IN REPLY REFER TO:

Deanne DiPietro
Sonoma Ecology Center
P.O. Box 1486
Eldridge, CA 95431

May 12, 2012

CC: Rebecca Fris, Science Coordinator; California Landscape Conservation Cooperative

Re: CA LCC Proposal-- Letter of Support and Intent to Collaborate

Dear Deanne,

Sequoia & Kings Canyon National Parks would like to offer its support and intent to collaborate with the California Climate Commons. The parks are especially interested in the Commons in regards to our collaborative work with the Southern Sierra Conservation Cooperative, for which I serve as coordinator. We're interested in the Commons as a way to help us access, understand, and apply climate change research data and products in support of our conservation planning. We have been using spatial data already in our planning efforts and would welcome the opportunity to incorporate the Climate Commons into our tool set. In particular, we would like to collaborate on sharing data and lessons learned from the "Alternative Fire Management Futures" exercise that incorporates scenario planning and a geospatial vulnerability assessment.

We welcome the chance to explore ways that the Commons can help meet our informatics needs, and hope this would lead to solutions for other LCC partners. We would like to take advantage of training webinars in the use of the Climate Commons. We look forward to collaborating with the Climate Commons and becoming early implementers, and helping to further develop this much-needed resource.

Sincerely,

Koren Nydick, PhD
Science Coordinator/Ecologist
Coordinator, Southern Sierra Conservation Cooperative

State of California • Natural Resources Agency
DEPARTMENT OF PARKS AND RECREATION
(916) 653-6725

Edmund G. Brown Jr., *Governor*
Ruth Coleman, *Director*

May 15, 2012

Deanne DiPietro
Sonoma Ecology Center
P.O. Box 1486
Eldridge, CA 95431

Dear Deanne,

California State Parks is writing to express its support for the proposed California Climate Commons project for the Landscape Conservation Cooperative. State Parks sees the Commons as a portal that can provide support for managers in finding, accessing, and applying climate change research data and products. This type of data infrastructure is needed to support conservation planning and field management activities.

Implementation of the Commons' latest proposal will continue key steps in the direction of supplying the tools to find and view relevant spatial climate change data. It will also support training on how to apply these tools. As they are developed, State Parks looks forward to the opportunity to provide feedback that will make these products more relevant and accessible to land managers.

We look forward to collaborating with the Climate Commons and other LCC partners to further develop these much-needed resources.

Sincerely,

Jay Chamberlin
Chief, Natural Resources Division
California Department of Parks and Recreation

cc: Rebecca Fris, Science Coordinator; California Landscape Conservation Cooperative

DEANNE Y. DIPIETRO
Research & Information Services Program
Sonoma Ecology Center

EDUCATION

M.A., Geography; University of California Davis, 2002
B.S., Botany; University of California Davis, 1984

EXPERIENCE

2004 – present; Program Manager, Research & Information Services Program, Sonoma Ecology Center
2002 – 2004; Project Manager, Sudden Oak Death Research Project, Sonoma State University
2000 – 2002; Project Manager for the California Information Node of the USGS National Biological Information Infrastructure (NBII). UC Davis, Information Center for the Environment
1994 – 2000; Technical Projects and Outreach Coordinator, California Resources Agency CERES Program

OTHER PROFESSIONAL ACTIVITIES

Founding member of North Bay Climate Adaptation Initiative (NBCAI), 2009 – present
Co-chair, Science and Technology Working Group, NBCAI, 2009 – present
California Invasive Plant Council Board of Directors, 2002 – 2003
Cal-IPC Weed Mapping Committee, member 2004 – present
Bay Area Early Detection Network Technical Advisory Committee, member 2008 – present
Bay Area Ecosystems Climate Change Consortium, member 2011– present

RECENT PROJECTS AND REPORTS

DiPietro, D., Stewart, Z. 2012. The California Weed Mapping Handbook (website) http://calweedmappinghandbook.org/

DiPietro, D., R. Lawton, L. Collins, A. Young. In progress. Developing Prioritization Criteria for Reach-Scale Enhancement and Incision/Erosion Projects in Sonoma Creek Watershed.

DiPietro, D., G. Ballard, J. Quinn. The California Climate Commons. (website) http://climate.calcommons.org

DiPietro, D., Z. Stewart. The San Francisco Bay Area Conservation Commons. (website) http://sfcommons.org

DiPietro, D., P. Steifer, Z. Stewart. Sonoma Valley Knowledge Base. (digital library website) http://knowledge.sonomacreek.net

Trotta, M., Sesser, B., DiPietro, D., Lawton, R. 2011. Sonoma Valley Groundwater Recharge Mapping. http://knowledge.sonomacreek.net/groundwaterrecharge

Napa County, et. al. 2010. Application and Findings of the North Bay-Delta Transect Watershed Assessment Framework (WAF), and Napa Watershed Report Card 2010. http://sfcommons.org/scorecards/waf/napa.

Sonoma Ecology Center, et. al. 2010. Sonoma Creek and Napa River Watershed Health Scorecards. http://sfcommons.org/scorecards/.

Biographical Sketch: Grant Ballard

Climate Change and Informatics Director, PRBO Conservation Science

EDUCATION

- PhD, University of Auckland, Auckland, NZ. (2010): Ecology, Evolution and Behavior.
- BA, Cornell University, Ithaca NY. English. (1989): English

SELECTED CURRENT AND RECENT PROJECTS

2010-2015: (co-PI) Adélie penguin response to climate change at the individual, colony and metapopulation levels – funded by National Science Foundation- more information

2010-2014: (co-PI) Our Coast-Our Future: Planning for sea level rise and storm hazards in the San Francisco Bay Area – funded by NOAA-SARP & NERRS Science Collaborative-more information.

2010-2013: (PI) How do we monitor the ecological consequences of climate change? Developing an Environmental Change Network in the California Landscape Conservation Cooperative funded by USFWS/California LCC – more information

2011-2012: (co-PI) The California Climate Commons – funded by USFWS/California LCC – more information

2010-2012: (PI) Tidal Marsh Bird Population and Habitat Assessment for SF Bay Under Future Climate Change Conditions – funded by USFWS/California LCC & California State Coastal Conservancy – more information

2006-2010: (co-PI) Multi-scaled data in ecology: Scale dependent patterns in the environment - funded by National Science Foundation – more information

SELECTED RELEVANT PUBLICATIONS (full list available here)

Ballard, G., D. Jongsomjit, S. D. Veloz, and D. G. Ainley. 2011. Coexistence of mesopredators in an intact polar ocean ecosystem: The basis for defining a Ross Sea marine protected area. Biol. Conserv., doi:10.1016/j.biocon.2011.11.017

Ballard, G., V. Toniolo, D.G. Ainley, C.L. Parkinson, K.R. Arrigo, P.N. Trathan. 2010. Responding to climate change: Adélie penguins confront astronomical and ocean boundaries. Ecology 91(7):2056-2069.

Ballard, G., M. Herzog, M. Fitzgibbon, D. Moody, D. Jongsomjit, D. Stralberg. 2008. The California Avian Data Center. [web application]. Petaluma, California. http://www.prbo.org/cadc.

Kelling, S., W.M. Hochachka, D. Fink, M. Riedewald, R. Caruana, G. Ballard, G. Hooker. 2009. Data Intensive Science: A New Paradigm for Biodiversity Studies. Bioscience 59:613-620.

Martín, E. and G. Ballard. 2010. Data Management Best Practices and Standards for Biodiversity Data Applicable to Bird Monitoring Data. U.S. North American Bird Conservation Initiative Monitoring Subcommittee. Online at http://www.nabci-us.org/.

Veloz, S., M. Fitzgibbon, D. Stralberg, S. Michaile, D. Jongsomjit, D. Moody, N. Nur, L. Salas, J. Wood, G. Ballard. 2011. San Francisco Bay sea level rise: Climate change scenarios for tidal marsh habitats. [web application]. Petaluma, California. http://www.prbo.org/sfbayslr.

SYNERGISTIC ACTIVITIES

California LCC Steering Committee and Science Committee. Ca. Dept. of Fish and Game Climate Stakeholders Working Group, delegate to USGS National Climate Change and Wildlife Climate Science Center organizational workshop (2009) and USFWS Ca. LCC Cooperative organizational workshop (2010). Peer reviewer for NSF, CNRS (French National Center for Scientific Research), Journal Avian Ecology, Behavioral Ecology, Biological Conservation, Ecology, Polar Biology, Antarctic Science, Journal Wildlife Management, Auk, Condor, Ibis, Marine Ecology Progress Series, Wilson Journal of Ornithology.

James Franklin Quinn
Professor, Environmental Science and Policy, UC Davis

Professional Preparation:
Harvard University Biology AB cum laude, 1973
University of Washington Zoology PhD, 1979

Appointments:
1981 present Assistant, Associate and Full Professor, Environmental Science and Policy, UC Davis
1994-present Director, Information Center for the Environment, UC Davis
1979 1981 Lecturer in Biology, University of Pennsylvania

Selected Relevant Publications (For complete list see http://ice.ucdavis.edu):

Parks BO, Fornwall MD, Quinn JF. (2004). First NBII Biodiversity Modeling Workshop: Results and Recommendations. Proceedings of NBII Biodiversity Modeling Workshop, July 27-31, 2003, Maui, HI. Prepared by the North American Consortium for Biodiversity and Ecosystem Informatics (NAC-BDEI) at the University of Colorado at Boulder for the National Biological Information Infrastructure. Denver, CO: U. S. Geological Survey, Center for Biological Informatics. http://www.nbii.gov/about/pubs/NBIIBiodiversityModeling.pdf

Viers JH, Thorne JH, Quinn JF. (2006). CalJep: A spatial distribution database of CalFlora and Jepson plant species. San Francisco Estuary and Watershed Science, 4(1): Article 1. http://repositories.cdlib.org/jmie/sfews/vol4/iss1/art1

Meynard CN, Quinn JF. (2007). Predicting species distributions: A critical comparison of the most common statistical models. Journal of Biogeography, 34: 1455-1469.

Maynard CN, Howell CA, Quinn JF. (2009). Comparing alternative systematic conservation planning strategies against a politically-driven conservation plan. Biodiversity and Conservation, 18:3061-3083.

Thode, A; JW van Wagtendonk; JD Miller; JF Quinn. Quantifying the Fire Regime Distributions for Severity in Yosemite National Park, California, USA. International Journal of Wildland Fire (in press)

Underwood, EC, JF. Quinn, (2010). Response of ants and spiders to prescribed fire in oak woodlands of California. J. Insect Conserv. 14:359–366

Underwood, EC, AD Hollander and JF Quinn, in press. Geospatial Tools for Identifying and Managing Invasive Plants, in Invasive Plant Ecology, S. Jose, H. Singh, D. Batish and R. Kohli, eds., CRC Press/Taylor & Francis (June 2011)

Synergistic Activities:

Head, California Node (CAIN) of the National Biological Information Infrastructure (NBII). (http://cain.nbii.gov) (Funding from USGS, the Forest Service, and the California Resources Agency);

NSF-ITR Science on the Semantic Web: Prototypes in Bioinformatics. (http://spire.umbc.edu/about.html).

CALFED Bay-Delta Research. (http://watershed.ucdavis.edu/crg)

Information Systems for Water Quality. PI on a series of cooperative projects with the California Department of Public Health and both California and U.S. Environmental Protection Agencies to standardize and communicate water quality data required by the Clean Water Act and Safe Drinking Water Act.