THE CLIMATE ACTION PLAN OF THE SIERRA NEVADA:
A Regional Approach to Address Climate Change

Version 1.4

9/8/2009

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A true conservationist is a man who knows that
the world is not given him by his father but borrowed from his children.

Audubon

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i. Acknowledgements

Just as climate change solutions require the effort of many different parties, so too did the creation of the Sierra Nevada Climate Action Plan. Heartfelt thanks goes to the following individuals and organizations that lent their perspectives and guidance in assisting Sierra Nevada Conservancy (SNC) staff in completing this plan:

Anthony Brunello, Deputy Secretary for Climate Change and Energy, California Natural Resources Agency
Beth Pendleton, Deputy Regional Forester, USDA Forest Service
Mike Chapel, Regional Forester's Representative, USDA Forest Service
Patrick Wright, Executive Officer, California Tahoe Conservancy

ii. Status of Project

The climate change effort of the Sierra Nevada Conservancy (SNC) began in December 2007 with a symposium evaluating the effects of climate change in the Sierra Nevada. Subsequent actions by the SNC Governing Board, the Secretary of California's Natural Resources Agency, and Governor Schwarzenegger directed the SNC to complete a Climate Action Plan for the SNC and the Sierra Nevada region. In considering the breadth and focus of such a plan the SNC has explored what a regional climate change plan might be, looking at other regional climate action plans and considering its' partners climate-related actions. This plan is the initial outcome of those explorations. This plan is not intended to answer all regional climate change questions nor to identify and meet all climate change needs of the Sierra Nevada. Instead, this has been an effort to determine what additional actions can be taken and what resources and information need to be generated to best serve the Sierra Nevada region and in better understanding, mitigating and adapting to the effects of climate change. The team that will be created to carry out the actions specified herein is envisioned to be made up of representatives from many Sierra Nevada communities and stakeholder organizations, as led by the SNC. The SNC will have its own internal Climate Change Initiative (CCI) as well. Along with the Sierra Nevada Climate Action Plan, the SNC Climate Change/Green Team Initiatives (Appendices A and B) determine how the SNC and its partners can best contribute to and enhance existing California climate change infrastructure in order to efficiently and cooperatively meet the needs of the ecosystems and communities of the region it serves. All climate-related plans will be reviewed by the SNC Board in September 2009, and will be submitted for final approval at the December 2009 board meeting. Activities identified within the plans and any outcomes will be tracked and reported on annually. As climate change research and programs develop new areas of focus and urgency, the SNC will consider changes to its CCI and the Sierra Nevada Climate Action Plan (SN CAP) in order to address emerging problems or take advantage of new opportunities to mitigate and/or adapt to the effects of climate change. The SN CAP will be updated not less than every two years, with the first update due in December of 2011.

iii. How to Participate

As with all SNC activities, the CAP was created and will be maintained with input from a broad group of constituencies including federal, tribal, state, and local government officials, stakeholder organizations representing interests in the region, and individual community members and businesses who live and work and have an interest in this area.

SNC staff will distribute CAP information and updates, including requests for input, through postings on its internal website and by distribution to interested parties through its climate change listserv. Requests for specific information or provision of ideas and projects may be initiated through the Climate Change Initiative Coordinator or any of its program or management staff, as identified on the SNC web page.

I. INTRODUCTION

A. The Sierra Nevada and Climate Change

The many communities of the Sierra Nevada provide multiple benefits to California, the nation and the world. The ecosystems of the Sierra Nevada provide 65% of California's water supply and they provide habitat for thousands of species – many identified as endangered and rare and some found only in the Sierra. Sierra forests and rangelands provide food, energy, timber, and other renewable resources that can be sustainably produced. They also offer a unique "service" in helping to achieve the State's AB 32[1] greenhouse gas emission reduction goals and reduce warming impacts by storing large amounts of carbon. The area's natural, cultural, and archaeological features teach us about our past, our present, and our future, and they provide needed respite and recreation to citizens from around the world. And the rural communities and historic towns of the Sierra are home to many generations of pioneers and attract new residents and visitors alike, each and every year.

Water flowing from this mountain range sustains all of Western Nevada and the majority of California – in particular serving California's vast agricultural industry and urban water needs in addition to its own. California agricultural products, both from the Sierra Nevada region and throughout California, literally feed the nation and the world. The Sierra snowpack serves as natural water storage and as it melts, fills California's expansive lakes and reservoirs from Spring through late Summer.

But, climate change threatens all of that.

Bark Beetle Damage- Forest mortality has increased in recent decades as tree-damaging pests expand their range with warmer temperatures
Photos courtesy of 2009 California Climate Adaptation Strategy

[1] Global Warming Solutions Act of 2006, goal to reduce California's greenhouse gas emissions to 1990 levels by 2020.

WATER: A warming climate and the problems that come with it, like decreased snowpack, increased invasive species, increasing catastrophic wildfires and changes in habitat can damage the health of our forests and quality of our watersheds. Loss of snowpack and changes in timing of snow melt is already contributing to less water Statewide – and more droughts, floods, and potentially devastating effects on California's agricultural industry and urban drinking water supply. Loss of snowpack also threatens the winter sport/recreation/ tourism industry upon which many Sierra Nevada communities depend for economic sustenance.

ENERGY: Less water from snowpack has a chilling effect on California's in-State energy production, as well. According to the August 2009 California Adaptation Plan, "California's hydroelectricity production relies on predictable water reserves. In 2007, nearly 12 percent of California's electricity was produced from large hydroelectric power plants, presently the state's largest source of renewable energy. With snow falling at higher elevations, creating less snowpack, and melting earlier in the year less water is available for this source of power generation when it is most needed, during the warmer summer months. When several dry years create drought conditions, reservoir levels can be reduced to levels lower than those required for hydroelectric power generation."

View of Lake Oroville in 2005 (left) and November 2008 (right)
Photos courtesy of 2009 California Climate Adaptation Strategy

WILDFIRE: Reducing the risk of catastrophic fire[2] is critical in terms of maintaining carbon storage and reducing greenhouse gas emissions from fires, not to mention protecting the natural resources and human health, lives and property put at risk during catastrophic fire episodes. Many forests are choked with overstocked biomass "fuels" – which contribute to conditions that support large, fast-moving and high-intensity wildfires. The urgency of this issue is no better demonstrated than through the devastation of the 2009 Station Fire.

[2] For these purposes "catastrophic" fire is defined as uncontrolled, uncharacteristic wildfire of a size and duration to have a destructive effect on lives, habitat, property, carbon sequestration and natural landscape.

According to Matthew Goldstein of Reuters News Service, [3] "[t]he so-called Station Fire is the largest in the history of Los Angeles County and one of the 10 biggest ever in California. It has burned 157,220 acres (63,600 hectares) -- an area larger than the city of Chicago." Not only can this type of fire destroy life, habitat and property, create air quality health hazards and destroy carbon storage potential, it can also weaken mature tree growth, and makes trees susceptible to pests like the bark beetle. Fire risk reduction and maintaining healthy resilient forests can include the controlled and sustainable removal of dangerous and damaging levels of biomass[4]. Managed properly this biomass has secondary benefits as well, creating a tremendous opportunity for renewable energy production, providing funding for sustainable forest management and creating jobs in the Sierra's rural communities.

The threat of loss of the resources of the Sierra, many of which cannot be replaced, has devastating implications throughout California and beyond. The potential for climate change impacts to dramatically alter provision of these services and continued existence of the habitat and species of this area is high, and, as emerging research is demonstrating, is increasing each year. Understanding the issues and making thoughtful, effective, and broadly supported changes is not easy in the Sierra. Land use and management planning in this rural region is complicated by the size and ownership of the land. Unresolved conflicts over land management policies and practices has in some instances led to single-issue solutions, which can have unintended negative consequences on the resource and the Sierra community at large. The diversity of interests and benefits that are dependent on the health of the communities and ecosystems of the Sierra is enormous.

There is good news, however. Many organizations exist that are working to define and understand climate change and its current and potential impacts on the Sierra. Many individuals and organizations are dedicated to this single effort and many others are making positive contributions by continuing their long-standing conservation and land management efforts. Collaborative groups are beginning to form that work together, finding common goals and building trust in order to benefit the natural health and economic vitality of their communities. Climate change research continues at the State and Federal levels and through academic and non-profit organizations as well.

In order to address the unique needs and protect the unique resources of the Sierra and to take advantage of the tremendous amount of effort and resources being dedicated to these

[3] http://www.reuters.com/article/marketsNews/idUSN0724527320090907, September 7, 2009

[4] Controlled and sustainable removal of biomass is defined by specific land management plans and practices whose primary focus is natural resource protection and land/forest health and resilience.

issues, this plan takes a regional view, focuses on educational efforts, and works to integrate new perspectives into existing programs and projects.

B. Why Climate Change in the Sierra Nevada Should be Addressed Regionally

One of the most significant natural and biologically diverse regions in the world, the Sierra Nevada constitutes about 25% of all of California's land area. It serves as a home to over 600,000 Californians, and provides recreational opportunities for millions of people (nearly 4 million Californians live within 30 minutes of the region). The Sierra Nevada also:

1. Provides 65% of California's most valuable commodity – water – the vast majority of which is used for energy production, residential, agricultural and environmental uses outside of the region (Southern California, Central Valley, and the Bay Area);

2. Supports 212 communities dependent upon natural resources for jobs, recreation, and community character;

3. Supports half of <u>all</u> plant species found in California;

4. Provides habitats for 66% of the bird and mammal species and about 50% of the reptile and amphibian species in California;

5. Is home to more than 400 species of terrestrial vertebrates and in excess of 320 species of aquatic invertebrates (the Region contains more endemic aquatic invertebrates than <u>any other ecological region in the ***world***</u>);

6. Produces from 33% to 50% of the State's annual timber supply; and

7. Sustains a growing tourism industry involving more than 50 million recreation visit days per year;

8. Provides solace and recreational opportunities for all.

California's tourism industry could be hit hard. Due to snowpack loss, California's snow sport sector could lose $1.4 billion annually by 2050 and 14,500 jobs.

Climate Change Scoping Plan
California Air Resources Board
December 2008

It should be noted that many of the communities of the Sierra are rural and not easily accessible. Traditionally these towns have relied on tourism or forest-based industries such as logging and lumber mills for jobs and sustenance. The closure of mills for a variety of reasons has economically devastated the surrounding economies. The potential climate impact on snowpack and recreational water and forestry resources can significantly reduce the tourism and snow sport industries throughout the region. Additional focus on the climate change impacts on the economic viability of these cities and towns of the Sierra

is needed, emphasizing creation of green jobs as a means to make a positive contribution to ecosystem health while buying them time to adapt to climate changes already underway.

Furthermore, there is a need to ensure that the rural perspective is understood by political decision-makers in Sacramento and Washington D.C., so that actions they take are sensitive to and protective of the services provided by the ecosystems of the Sierra Nevada. Policy-making and funding decisions tend to be focused on urban centers even when the well-being of urban dwellers is directly tied to the health and services of the forests, oak woodlands, and rangelands of the Sierra. For example, the California water supply debate taking place in Sacramento needs to address the impacts of snowpack loss in the Sierra because the documented effects of climate change on snowpack will make the Delta and urban Los Angeles water supply/quality challenge that much more difficult and costly. If water is not flowing to the dams down the streams and rivers of the Sierra throughout the year it will not be available to meet the needs of California's Valley, Bay Area and Southland. Decision-makers should be openly discussing this problem as part of the Delta water discussions, and should be considering how to fund and improve natural water storage systems that provide late season runoff and that enhance environmental services at the same time. These natural system improvements are being implemented today – and decision-makers should understand and expand cost effective approaches like "above-the-dam" meadow restoration in dealing with this problem.

> Politically, California is an urban oriented state. At the state government level, most legislators and administrators are from urban areas and focus on urban issues. At times, legislation focused on urban issues may not be viewed positively by rural California.
>
> ***Regional Council of Rural Counties***
> **2009**

Water, endangered and sensitive species, habitat, homes, economic development, tourism, recreation; like the Sierra itself, the services of the area are wide and invaluable, impacting on larger interests than the land area and population it encompasses. A regional perspective is needed that considers and ties together all of the services and interests of the Sierra.

C. The Sierra Nevada Climate Action Plan: A Starting Point

The Sierra Nevada Climate Action Plan of 2009 is a starting point – a stake in the ground – from which to begin to determine how climate change can best be addressed in such a diverse and complex region. In identifying initial opportunities to reduce regional greenhouse gas emissions and improve the sustainability and economic vibrancy of the Sierra Nevada region the SN CAP will:

- Respond to direction received and information gathered through the SNC December 2007 Symposium on Climate Change, the Sierra Nevada Climate Change Initiative, the climate change efforts of the California Natural Resources Agency and its departments and input provided by numerous regional organizations, communities, and individuals;

- Adopt a "bias for action," and in doing so emphasize achievement and reporting of specific objectives;

- Identify funding opportunities and other support for projects that will further the goals and objectives included herein;

- Suggest activities that benefit the Sierra Nevada region by highlighting agreed-upon needs and opportunities, by supporting pilot projects and other start-up efforts that address the climate change challenges of the region, and by seeking out partnerships that will further research efforts and demonstrate emerging climate change impact reduction techniques and technologies;

- Be a self-assessing effort that includes annual effectiveness reports and metrics that measure success;

- Establish a repository for information that will track research, reports, trends, and legislation that are relevant to climate change issues in the Sierra Nevada region and will seek to make that information meaningful for use by organizations and communities within the Sierra Nevada region;

- Disseminate information on relevant topics to interested audiences; and

- Educate SNC staff, partners, and constituents on climate change issues, practices, consequences, and opportunities in order to improve collaboration in the region.

In order to be as effective and efficient as possible the SN CAP will not:

- Seek to supplant the jurisdictional authorities of any organization or community contained within the Sierra Nevada region; nor

- Seek to "reinvent" the climate change efforts already underway – will instead tap into and support and enhance efforts by others.

D. Intended Audiences

The Sierra Nevada Climate Action Plan is intended to provide information, assistance and guidance, as well as enhanced awareness of the climate change-related needs of the Sierra Nevada region to the following general audiences:

- Federal, state and local government officials;

- Federal, state and private land managers;
- Stakeholder organizations who operate within and represent Sierra Nevada interests; and
- Sierra-based communities including individuals and businesses.

E. Coordination with Federal, Tribal, State, and Regional Programs

The Sierra Nevada Climate Action Plan (SN CAP) is focused on the broad climate-related issues and needs of the Sierra Nevada, including the impacts on environmental and economic viability in the region. The SN CAP is not an implementation plan for other efforts, however, it will harmonize with and support the climate change goals of other federal, tribal, state, regional and local public and private programs. The SN CAP will coordinate with other jurisdictions by working with their representatives and reviewing their programs for shared goals and objectives. The SN CAP will support achievement of mutual goals as identified in Appendix C (Sierra Nevada Climate Action Plan Coordination and Integration with Partner Programs and Efforts).

F. Summary of Key Plan Components

As directed by the Board of the Sierra Nevada Conservancy, the initial focus of the Sierra Nevada Climate Action Plan is on the regional issues of fire, forest, water and renewable energy, identifying and targeting ideas or actions for which consensus already exists, and using and leveraging available resources where possible. These issues are discussed below.

Fire/Forest: Because climate change and its predicted temperature increases throughout this century are expected to increase the intensity and duration of uncontrolled, catastrophic wildfires in the region, the SN CAP's first focus is on reduction of dangerous levels of fire fuels through application of sustainable land management practices. In a related effort, this plan also supports development and promotion of consensus community decision-making models to promote collaborative planning and reduce traditional regional conflict and resistance to changes in forestry land management practices.

The SN CAP also considers the impact on forest and rangeland carbon sequestration of wildfires

> The number of large wildfires could increase by 12–53 percent by the end of the century…
>
> ***The Future is Now***
> **California Climate Change Center**
> **September 2008**
>
> The long-term increase in fire occurrence…is substantial, with increases statewide ranging from 58 percent to 128 percent by 2085. Likewise, estimated burned area [will] increase…57 to 169 percent…
>
> ***Biennial CAT Report***
> **Climate Action Team**
> **March 2009**

and of rangeland and forestry "projects" developed and registered with the Climate Action Reserve. The plan further supports additional voluntary land conservation easements and purchases in order to capture the multiple benefits of protecting and enhancing land and resource values and carbon sequestration, and to provide contiguous habitat and migration corridors as an adaptation strategy.

Water: Because one of the most serious impacts of climate change on the provision of water throughout California is the reduction of natural water storage due to the reduction of the great Sierra snowpack, the SN CAP will look to improve natural water storage systems by supporting the development and promotion of "above-the-dam" water storage. Its first focus is on meadow restoration which is not only cost effective, but also captures the co-benefits of improving ecological health and restoring and extending habitat. Meadow restoration is also an effective adaptation strategy, in that it facilitates species migration in response to a warming climate.

The Sierra Nevada Conservancy will also continue its general efforts to improve water quality and overall supply by promoting the development of Integrated Regional Water Management Plans across the region and supporting and participating in the consensus groups undertaking this effort, as well as promoting events that encourage urban legislators and policy-makers to visit the watersheds to better understand the importance of the Sierra in the provision of clean, ample water to California's urban centers and agricultural industry.

Renewable Energy - Biomass: Closely connected with the fire threat reduction effort, and a potential funding source for increased sustainable land management, is the beneficial use of biomass to create clean, climate-friendly, local renewable energy. Efforts in this area include supporting the development of biomass-to-energy as well as biomass-to-fuels projects. The potential economic development benefits of these projects also support the SNC's program goal to "Assist the regional economy" by re-vitalizing communities devastated by the closure of mills throughout the Sierra region.

The SN CAP also supports the development of a region-wide energy "view" – an energy plan for the Sierra Nevada – that can provide an all-inclusive perspective of its "power" potential and lead future efforts to fund and sustainably develop its clean energy. These efforts have the additional statewide benefit of supporting achievement of California's renewable energy portfolio standard and low carbon fuel standard goals, as well.

Renewable Energy – Energy Efficiency: In the area of energy the SN CAP also promotes the development of energy efficiency programs at the local government level. Support is proposed through education and outreach efforts to local governments in the region.

Further supporting the focus of renewable energy development and energy efficiency efforts is the fact that federal and state funding sources have been developed that may be tapped to help fund near-term regional renewable energy and energy conservation projects.

II. PLAN ELEMENTS

The following mission, vision, goals, objectives and strategies of the SN CAP have been developed considering the issues addressed in Section I of this report and the climate change activities being conducted by organizations working within and on behalf of the Sierra Nevada region. These plan elements will be assessed annually to ensure they continue to represent the highest priority needs, and will be subject to change as appropriate as part of the annual SN CAP review.

A. Mission

The mission of the Sierra Nevada Climate Action Plan is to develop a regional community and ecosystem perspective on climate change, avoiding single-issue solutions and pursuing broad collaborative decision-making processes focused on holistic (system-wide) solutions that address all aspects of climate change impacts including those affecting the environmental, economic, and cultural resources of the Sierra Nevada region.

B. Vision

The forests and communities of the Sierra Nevada are healthy and resilient to the impacts of climate change. Communities of the Sierra Nevada understand problems associated with climate change and the obligations and opportunities they have to participate in the solutions, protect the environment and vital ecosystem services, and meet their legal responsibilities. Sierra Nevada communities, businesses, and inhabitants are aware of and have access to opportunities to fund climate change mitigation and adaptation measures that address the value and support the health and vibrancy of the Sierra Nevada.

C. Problems and Goals

Climate change impacts of concern in the Sierra Nevada include:

- Warmer temperatures creating less snowpack and earlier melt;
- Increased flooding and drought conditions;
- Reduction of and damage to the State's water supply;
- Weakening of forest health and greater susceptibility to pest infestation and drought;
- Increase in catastrophic wildfires and loss of carbon sequestration;
- Warmer temperatures affecting habitat and species migration/survival;
- Economic devastation to remote and disadvantaged rural communities due to loss of businesses and jobs; and
- Lack of region-specific climate information on which to base development of specific problem identification and resolution tactics.

The goals of the SN CAP are intended to reverse the potential outcome of these impacts, should they be fully realized. These goals may grow and change over time, depending on many variables. The initial goals of the CAP are:

1. Healthy, resilient forests;
2. Exceptional, sustainable water resources;
3. Thriving local economies;
4. Long term conservation values;
5. Broad political awareness of the value and statewide impacts of the services provided by the Sierra Nevada and the needs of the region in order to retain those services;
6. Robust Sierra-based climate change research and data bases; and
7. Funding in support of the SN CAP goals and objectives.

D. Objectives

In order to successfully achieve its climate change-related mission, vision and goals the SNC will pursue and support activities to achieve the following objectives:

1. The Sierra Nevada Conservancy has developed a Climate Change Web Portal that connects the communities and citizens of the Sierra Nevada with important, understandable, up-to-date information, assisting them in taking action to reduce and combat the effects of climate change on their environmental and economic wellbeing.

2. Collaborative, inclusive and transparent planning projects have been organized throughout the Sierra Nevada region (in the model of the Amador/Calaveras Consensus and the Northern Sierra Partnership) to effectively address historic land, environmental, and business needs and issues.

3. Federal, state, and private land managers within the Sierra Nevada apply fire fuels management practices that maximize forest health and resiliency while addressing carbon

The Sierra Nevada Climate Action Plan is being developed as recommended by the 9/8/08 Eubanks report entitled Sierra Nevada Climate Change: Helping Address Climate Change Effects in the Sierra Nevada Region (Appendix D). As recommended, the guiding principles developed as part of this plan will be applied to the actions proposed within the SN CAP. They are:

1. Build Relationships; avoid duplication of efforts; coordinate and share existing information; pursue funding options; maintain good communication with stakeholders

2. Retain credibility to attract new partners and to create and retain high value of information provided

3. Adopt a bias for action; focus on high benefit/low cost actions first that can be implemented rapidly and effectively

4. Keep equal focus on mitigation and adaptation

sequestration.

4. All Sierra forests have been treated to remove dangerous fire fuels and are operating under integrated and connected fire management plans.

5. Registered forests and landscapes exist within the Sierra Nevada that comply with forestry protocols, protecting the natural values of the land and qualifying for restoration and maintenance funding through participation in carbon credit markets.

6. Biomass energy projects have been initiated in the Sierra Nevada region, reducing the cost of removing fire fuels while creating local jobs and contributing toward meeting the goals of the California Renewable Portfolio Standard and the Low Carbon Fuel Standard.

7. Counties and cities within the Sierra Nevada are aware of and are using smart growth and energy efficiency planning tools available such as the SB 375 Local Government Toolkit and the Sierra Nevada Alliance's Climate Change Toolkit that can help them take local action to reduce their greenhouse gas emissions in order to mitigate future impacts of climate change.

8. Climate Change educational materials and regional outreach plans have been completed to ensure the communities of the Sierra Nevada have the information they need to take effective mitigation and adaptation actions and to capitalize on opportunities for funding and economic development.

E. Strategies

Because more regional needs exist in these issue areas than resources are available to address them the SN CAP has focused on specific, high urgency, multi-benefit actions in each of these areas of concern in establishing the following strategies:

1. Promoting land management practices that contribute to forest health, resilience, and the reduction of catastrophic wildfire threats;

2. Increasing "above-the-dam," basin-wide natural water storage systems such as meadow restoration for storage and groundwater recharge;

3. Securing carbon sequestration[5] by forests, woodlands, and working landscapes;

4. Promoting clean and sustainable energy production (including but not limited to biomass to energy and biomass to fuel production) and energy efficiency program development throughout the region

[5] Carbon sequestration is an important element in meeting the goals of AB 32, however, pursuit of carbon sequestration through the SN CAP will be balanced with meeting the broad goals of forest and rangeland health and resilience, which should in turn secure and enhance existing carbon stores.

5. Reducing greenhouse gas emissions region-wide through support for local government efficiency and land use efforts;

6. Educating decision- and policy-makers, as well as community members on the services provided by the Sierra Nevada region and the potential impacts to the region and the State if those services are lost due to climate change;

7. Promoting continued development of region-specific climate research; and

8. Pursuing and promoting funding sources to achieve the goals and objectives of the SN CAP.

Action items to be conducted as part of these strategies are noted in Section F. below. The SN CAP has also been created to integrate with and enhance the efforts of its partners working for and living in the Sierra Nevada region. The SN CAP has identified partner climate-related programs, as they are currently known, and has identified how it will integrate with them in Appendix C.

It should be noted that these strategies and their specific action items do not strictly define the priorities of the Sierra Nevada Climate Team in conducting the business of the SN CAP. They are identified as a starting point. Assuming resources are provided in support of this plan many of the actions can be initiated and completed within the first 12 months of implementation. In all cases it is anticipated that all strategies and actions will be reviewed for continued priority as part of the SN CAP Annual Progress Report.

F. Specific Action Items by Strategy

In consideration of the noted climate change impacts of concern in the Sierra Nevada and in support of its eight strategies, the SN CAP has identified a number of action items to be carried out. These action items leverage and contribute to programs and projects undertaken by partner organizations, address SN CAP strategies, and adhere to the direction provided by the SNC Board. These action items each address one or more of the SNC focus areas as identified in the 9/8/08 Eubanks Climate Change Initiative report and subsequent Sierra Nevada Conservancy (SNC) Board guidance. Specifically, the SNC was directed to establish regional climate-related action in four "focus areas" of expertise: 1) to support demonstration and/or model projects; 2) to create a repository of web-based information, 3) to educate others; and 4) and to convene experts in the field. The action items as listed below have been organized by strategy and timeframe.

Of the thirty-four actions presented below nineteen are currently underway. A total of 21 actions are expected to be completed during the first year of implementation, with the remainder to be addressed within the first 24 months. The capacity to carry out at least twelve of the actions will be dependent upon active partner participation and support. The SNC will coordinate with the Sierra Nevada Climate Action Team (see Section III.B.) to

identify the participants and the final priorities and timeframes associated with these and other actions identified and proposed over time.

1) **Promoting land management practices that contribute to forest health, resiliency and the reduction of catastrophic wildfire threats**

Short Term (1-12 months)

a. Promote partnership strategies such as the Amador/Calaveras Consensus as a model process addressing land management practices that achieve multiple benefits, emphasizing the reduction of catastrophic wildfire threats and loss of carbon sequestration (Wildfire)

b. Focus the 2009 SNC Symposium on Fire/Carbon Sequestration/Land Management through models of collaborative policy-making (Wildfire)

2) **Addressing water quality and supply; increasing "above-the-dam," basin-wide natural water storage systems such as meadow restoration for storage and groundwater recharge**

Short Term (1-12 months)

a. Identify existing meadow restoration demonstration and model projects; capture and/or quantify benefits of the projects (Water)

b. Annually conduct the Great Sierra River Clean Up to promote watershed supply and quality improvement and awareness (Water)

Mid Term (13-24 months)

c. Work with federal partners (e.g., USFS, NPS, USGS) and existing public-private consortia groups such as the Feather River Coordinated Resource Management Group to identify and initiate meadow restoration and other "above-the-dam" water storage demonstration projects on public and private lands (Water)

> ….the Sierra Nevada snowpack has been melting earlier in the year than it did in the past…this trend will likely continue and accelerate in the future. Given the importance of high-resolution streamflow predictions for state water supply and reservoir management purposes, continued research on the California Sierra Nevada snowpack, a significant source of warm –season streamflow, is critical to understanding the state's future water supply.
>
> ***Observed Changes in the Sierra Nevada Snowpack: Potential Causes and Concerns***
> **California Climate Change Center**
> **March 2009**

3) Securing carbon sequestration by forests, woodlands, and working landscapes

Mid Term (13-24 months)

a. Work with partners (i.e., SNA, SBC , etc.) to identify and support private landowner interest in developing and submitting projects to the Climate Reserve to quantify and protect carbon sequestration on their lands (Carbon)

4) Promoting clean and sustainable energy production (including but not limited to biomass-to-energy and biomass-to-fuel production) and energy efficiency program development throughout the region

Short Term (1-12 months)

a. Create a region-wide model Energy Management and Production Plan for the Sierra Nevada (see Appendix E, Sample Strategy X); (Energy)

b. Work with the Interagency Forest Working Group to represent the Sierra perspective on biomass development; assist the IFWG with their landowner incentives and public education initiatives (Energy)

c. Track and promote the efforts of organizations like Placer County and the Amador/Calaveras Consensus in their beneficial management of biomass materials toward forest health, clean energy production, and economic development (Energy)

d. Track and promote the benefits of the Alder Springs Mendocino Project (USFS) to further carbon/energy/wildfire objectives (Wildfire, Carbon, Energy)

e. Track and promote BLM Sierra-based energy activities and educational efforts (Energy)

Biomass is arguably the most expensive of the renewable energies, but the most beneficial. Wildfire suppression coupled with forest management designed to grow more trees and the more recent policy to harvest fewer trees has resulted in increasingly dense forests that are now fire-prone. A direct result of this increased density is the accelerating costs associated with wildfire, such as fire suppression, fire prevention and community protection and restoration. Much of this excess vegetation is non-commercial and ideal for biomass energy production. Over time, removal of the excess vegetation would significantly reduce fire-related costs. Additionally, reduced forest density would improve the resistance to forest pathogens and insects, increase wildlife habitat for certain species and protect watershed values. Disposing of the removed forest biomass through energy production as opposed to open-field burning would reduce the impacts on air quality.

Mid Term (13-24 months)

f. Work with partners such as the Interagency Forest Working Group, the California Energy Commission, and the California Biomass Collaborative to recognize and develop clean and sustainable bio-energy, forestry, Sierra Nevada-based research and model projects (Energy)

g. Work with the CEC and PUC on the upcoming public goods charge process to consider including a source of funding for biomass energy development in the Sierra Nevada region of a as a potential (Energy)

5) Reducing greenhouse gas emissions region-wide through support for local government efficiency and land use efforts

Short Term (1-12 months)

a. Include "best practice" climate/sustainability documents that local governments can access as model plans (see Appendix F, including but not limited to ARB's Local Government Toolkit, CAPCOA's Model Policies for GHG in General Plans, various other jurisdictions' plans) in all Sierra Nevada Conservancy community outreach efforts (Local Government)

b. Work with public-private partners (e.g. ARB, Energy Commission, Regional Council of Rural Counties, the Sierra Nevada Alliance, etc.) to develop and schedule Sierra/rural-specific educational seminars with local government representatives (at least one in each of the SNC's 6 regions) to present information on climate change impacts on their local landscape and economy, how general planning efforts can help them address (mitigate and adapt to) these impacts, the importance of "smart growth" development and land use planning in these efforts, model efforts and organizational resources to help them get started and know where they are going, and funding and recognition opportunities for energy efficient communities (Local Government)

Mid Term (13-24 months)

c. Identify one or more representative rural Sierra communities to assess their "Climate Change-Readiness," document their status, and build a model educational plan (what they have done so far, what they need to know and do, where to get the information, how to get started with creating a local climate action plan); access information from TRPA/South Lake Tahoe for "lessons learned" and best practice ideas in this effort (Local Government)

6) Educating decision- and policy-makers, as well as community members on the services provided by the Sierra Nevada region and its potential climate-related benefits and losses

Short Term (1-12 months)

a. Develop the Sierra Nevada Climate Change website in order to coordinate public access to activities and materials created from the SN CAP; including but not limited to:

- Documenting the establishment of the SN CAP, including all component parts (i.e., the original CAP and all subsequent updates and annual reports), and including sections on news and events related to climate change in the Sierra Nevada, listing of organizations addressing or impacting Sierra-related climate change mitigation, adaptation, and carbon-market development, and current climate change-related activities of the SNC and its public and private partners (All)
- Creating a "Climate Change and the Sierra Nevada" speakers' bureau, identifying individuals and their area of expertise and including an outreach and promotion component encouraging local communities to invite speakers to their events (All)
- Listing, annotating and explaining the latest key research so that legislators, organizations, and community members can easily understand the impacts and track and highlight new and emerging research; archive existing research (All)
- Establishing a section on natural resource values including the latest research dedicated to demonstrating modeling on the climate change impact to various values (All)
- Identifying and promoting various climate and efficiency related awards programs such as the Cool California Small Business Award Program in order to further the recognition and achievements of efforts in the Sierra Nevada region (Local Government)
- Linking to other organization's educational components for different audiences (e.g. carbon calculator, curricula on climate change for teachers; kid's resources, etc.) (All)
- Creating a Funding Sources section that highlights/lists and describes funding sources for climate related efforts, including notation of summary sites such as the Database of State Incentives for Renewables and Efficiency DSIRE, the SNC's Funding Sources and Incentives page, and the California Energy Commission's funding opportunity summary page (All)
- Including an outreach mechanism to notify interested parties of all funding opportunities (All)

b. Invite urban legislators and decision-makers to the annual Great Sierra River Clean Up to participate and educate them on the urgency of protecting Sierra watersheds and agricultural water supply (Water)

c. Post on the SN CAP website model project tour information (see below) in outreach and educational efforts for the general community and for legislators, policy-makers, and other decision-makers (Wildfire, Water, Energy, Local Government)

d. Invite state and local policy-makers to participate in on-the-ground tour opportunities to educate them on the need to take action to protect the communities of the Sierra. Include projects such as the Placer County Biomass Project and the Amador/Calaveras Consensus as models of project development and community engagement in positively addressing traditional conflicts while creating multiple environmental and community benefits. (All)

Mid Term (13-24 months)

e. Work with SNC to consider water storage and management in the Sierra as its 2010 Symposium topic; assist SNC in development of the focus, content, and speakers for the symposium (Water)

f. As information and efforts are developed, additional information in the following areas should also be included in the SN CAP Website:

- Performance/cost data based on the Placer County Biomass Project (Energy)
- The Southern Sierra Consortia clearinghouse information (hosting their 2-year pilot project) (Carbon)
- The activities and findings of the Climate Change-Readiness project (see 5.c. above) (Local Government)
- Existing and developing demonstration and model water projects, including meadow restoration efforts and outcomes (Water)
- Carbon sequestration information developed by partners to promote the development of model policies and projects (Carbon)
- Model Project Video tours (see 6.h. below) (All)

g. Identify model Sierra Nevada projects for physical and virtual (video) tour development (including but not limited to the Amador/Calaveras Consensus, Placer County Biomass Project, the Hayfork Project, and the White Mountain Stewardship Project); establish a project tour "list" that highlights services provided and actual and potential ecosystem, community and economic losses addressed and opportunities gained through these projects; utilize this information to establish tours for legislators and others and to educate decision-makers on the benefits of these types of projects (Wildfire, Water, Energy, Local Government)

h. Develop video resources including virtual project "tours" (as described above) and discussion pieces aimed at "Changing the Dialogue" to move historic land management and financial support conflict to productive action; video should include the benefits of addressing climate and wildfire threats while creating new regional jobs, providing for clean local energy, and attracting new industries to the region; video should also represent many different perspectives in the analysis of the problems and recommendations for resolution (All)

7) Promoting continued development of region-specific climate research

Short Term (1-12 months)

a. Work with research organizations such as the USFS, PSW, CIRMOUNT, the Southern Sierra Consortia and CEC to identify existing research and model projects which quantify the multiple benefits of "above-the-dam" water storage systems such as meadow restoration including costs and environmental advantages relative to that of building water storage in the form of dams and reservoirs; post this information on the SN CAP website and distribute this information to policy and decision-makers (Water)

Mid Term (13-24 months)

b. Work with research organizations such as USFS' Pacific Southwest Research Station (PSW) and WESTCARB to identify carbon storage within various regional landscapes; use that information to support recommendations to utilize biomass materials in a manner that reduces catastrophic wildfire threats and benefits local ecosystems and economies while maintaining terrestrial carbon sequestration (Wildfire)

c. Work with research organizations in assessing and quantifying the climate change benefits of various conservation practices, developing measurement methodologies or tools (which could include but are not limited to "carbon calculators") that would help project proponents to determine the relative climate benefits of their efforts (see Appendix E, Sample Strategy XX) (All)

d. Work with research organizations such as the USFS' PSW, CIRMOUNT, and others to develop a white paper defining the climate-related research gaps for the Sierra Nevada region (survey all partners as a basis for this proposal); engage the CEC Pier program, the USFS and/or UC system to conduct this research (All)

8) Pursuing and promoting funding sources to support community action and achieve the goals and objectives of the SN CAP

Short Term (1-12 months)

a. Immediately work with CEC on possible ARRA EECBG funding available to support the SN CAP (All)

b. Work with CEC to establish outreach specific to local rural governments in the Sierra on how to build projects and access their funds (All)

c. Develop SNC grant project selection criteria that takes into consideration the climate change impacts and benefits of proposed projects (All)

d. Establish proactive climate-focused database funding search process; post on SN CAP Website; notify eligible entities of opportunities (All)

e. Work with the IFWG to identify appropriate and effective landowner incentives to implement sustainable land and expanded conservation practices (Wildfire, Water, Energy, Carbon)

Mid Term (13-24 months)

e. Research the broad applicability of unique and emerging funding opportunities such as Cuyamuca State Park (reforestation) and identify other public/private partnerships with funding opportunities; discuss findings with State entities in order to broaden funding base for forest and rangeland conservation, reforestation (wildfire restoration), and adaptive land management (Wildfire, Carbon, Water)

> …financial incentives and cost-share programs with government agencies encourage farmers and ranchers to implement more conservation practices. Many farmers and ranchers choose to implement these practices without the help of government agencies. However, those that do partner with agencies express willingness and desire to do more, if they can find the additional financial support they need to implement those programs.
>
> ***Commitment to Conservation***
> **California Farm Bureau Federation**
> **January 2002**

f. Document the carbon trading funding benefits of registered forest projects' participation in carbon markets through case study development and publication to the SN CAP Website (Wildfire, Carbon)

F. Resources and Accountability

Many of the actions proposed by the SN CAP are ambitious considering that to this point no significant resources have been identified for staffing or other financial support. The Sierra Nevada Conservancy (SNC), in its Climate Action Initiative presented in Appendix A of this Plan, proposes to lead the SN CAP implementation effort by providing funding for the first year for a dedicated Climate Change Initiative Coordinator, additional funding of up to $20,000 for the development and publication of the Sierra Nevada Climate Change Website and additional minor and in-kind funding and support for publication materials development and office and related logistical support. The SN CAP further proposes that additional staff resources for first year implementation be provided by its partner organizations, and that any activities proposed outside of what the SNC can reasonably do with its current staff be dependent upon receiving that level of support and collaboration. Assuming necessary support is provided, it is anticipated that all action items contained within this plan can be completed by the end of calendar year 2011.

In order to ensure accountability the SN CAP proposes an annual review and performance report on climate action measures and outcomes. The SN CAP Annual Report will include metrics that measure specific outcomes of its efforts. Part of the first year actions of the SN CAP implementation team will be to help the SNC determine how to capture and report performance data.

The draft Sierra Nevada Climate Action Plan also anticipates that the focus of its efforts may change over time. The plan recognizes that this is a starting point - that research, policy, and regulatory programs in this area are rapidly evolving. For this reason, in order to ensure the Climate Action Plan's perspective continues to address the most relevant research findings and policy guidelines, it is proposed that a full plan review be completed every two years.

F. Annual Review and Performance Reporting

An annual review of the activities carried out under of the Sierra Nevada Climate Action Plan will be conducted in March of each year. The SN CAP Annual Report will include metrics that measure specific outcomes including but not limited to:

1. Funding dollars pursued and applied to climate-related activities in the region,
2. Number of Sierra Nevada projects annually registered with the Climate Action Reserve,
3. Number of Sierra Nevada cities, towns, and communities with energy, efficiency/sustainability plans in place or under development,
4. Acres treated and tons of biomass removed from the Sierra Nevada,
5. Kilowatt-hours generated through clean energy projects in the region,
6. Greenhouse gas emissions avoided through SN CAP efforts, and
7. Jobs created and industries attracted to the region as part of the climate plan.

III. IMPLEMENTATION CHALLENGES

The staffing and resource needs to carry out the actions within this plan can be significant. No single organization has all of the expertise, jurisdictional authority, or staffing levels necessary to carry out these actions alone. Furthermore, coordination and collaboration are called for from across the partner organizations and stakeholders for effective long-term regional solutions and outcomes to be achieved.

In order to most efficiently capture these perspectives and utilize existing talents and resources while distributing the responsibilities reasonably and maintaining maximum flexibility, the SN CAP proposes a year-by-year resource plan. The Sierra Nevada Conservancy will provide paid staff and in-kind physical support for the first year; state, federal, and stakeholder partners in the region will be asked to provide part time staffing or other resources as identified in the staffing strategy below.

This short term approach allows the plan to get off the ground immediately without having to create long term resource commitments and mechanisms. It also allows each contributing organization to

work within its means while supporting mutual climate goals and objectives, building collaboration and a coalition approach needed to make a regional climate impact.

It is anticipated that at the end of the first 12 months of operation the SN CAP Action Team (SN CAT) will report successes, re-assess goals and objectives, and recommend how resources should be provided in the second and subsequent years. At a minimum first-year activities of the SN CAT should be to complete and populate the Sierra Nevada Climate Change web page, to inform Sierra Nevada communities of available funding that can reduce and address regional and local climate impacts, to create action strategies in the areas of a regional energy plan and conservation action climate benefits assessment, to assess and provide a layman's explanation of the scope and impact of regional climate-related research findings, to provide climate-related educational materials for presentation to local groups and community organizations, to assist in development of the 2010 SNC Symposium, and to prioritize and provide a specific timeline for all additional SN CAP activities.

A. Funding and Staffing Resources

It is proposed that the SN CAP procure funding and staffing resources for its first (and perhaps subsequent) year(s) in the following manner:

- The SNC will provide one (1) half- to full-time staff person, the Climate Change Initiative Coordinator, to oversee and guide the team in its first year implementation efforts, beginning January 2010 and continuing through December 2010.
- The SNC will provide office, supplies, and equipment resources in support of the SN CAP at its Auburn office, beginning January 2010 and continuing through December 2010.
- The SNC will provide funding for professional services, including technical support for the development of a SN Climate Change Website and services such as graphics and printing. Funding will be provided in fiscal year 2009-10.
- Climate partners will be requested to provide representatives and/or funding for staffing resources to participate on the SN CAT, per the staffing strategy defined below.
- The SNC and its climate partners will pursue additional monetary and staffing resources on behalf of this effort through private and federal grants and other funding mechanisms, as identified. The Funding and Resource Coordinator for the SNC will work with the Climate Change Initiative Coordinator to provide assistance in proactively identifying funding opportunities. The SNC and SN CAT will notify local governments, tribal organizations, and other qualified entities of funding opportunities for which they qualify that support the goals and projects of the SN CAP.

B. Staffing Strategy

The Sierra Nevada Conservancy will lead the SN CAP implementation effort and provide guidance to a Sierra Nevada Climate Action Team (SN CAT) for the first implementation year, through December 2010. This team is a working group and is proposed to be made of up representatives from the SNC's key partners and other organizations in the region. Membership on the team is proposed to be an initial commitment of one year (12 months). Members should have some connection/ experience in the Sierra Nevada region; final membership should represent all areas of the region. Activities to be carried out by the team will be guided by the SN CAP and the SN Climate Change Initiative Coordinator. A broad array of member expertise is recommended, including but not limited to:

- Research
- Natural resources/environmental studies
- Wild Fire
- Forestry/Woodland/Agricultural Land Management
- Forestry/wood products
- Spatial programming
- Architecture/energy efficiency
- Environmental engineering/biomass energy production
- Written communications
- Environmental non-profit
- Renewable energy production
- Regulatory government/natural resources/climate change
- Fundraising/grant writing
- Information Technology Services

A minimum of 10 team members will be sought to carry out the first year goals and objectives of the SN CAP. Time commitment would be approximately 8-10 hours per week per person. Partner organizations with climate change programs or projects could encompass participation on the SN CAT within existing dedicated resources.

Another option for SN CAP support would be for partner organizations to choose one or more specific projects to carry out and/or support, working with the Climate Team and the SN Climate Change Initiative Coordinator.

C. Technical Support (Website)

There is an immediate need for technical support for the development of the Sierra Nevada Climate Change website. Finding and providing this support will be one of the first tasks of the SN CAT. These activities will include identifying possible information technology resources available within its partner organizations for possible in-kind services. Sierra Nevada region partners with expertise and information technology server capacity will be

solicited for website development, hosting and technical support. The SNC will provide funding for website development services during FY 2009-10. Until the website is completed the SNC will use its existing climate change web page as a repository and access vehicle for information developed as part of the SN CAP.

IV. CONCLUSION

The inter-connectedness of water, forest, fire, habitat, species, human health and well being, land management practices and policies, economic vitality, and climate is the reason for the existence of this regional climate action plan. Actions that protect and ensure sustainability of species, ecosystems, and their services are essential – and those actions cannot stop at a landowner boundary or a county line, or a public or private interest. The very nature of the global damage from greenhouse gas emissions and global benefits of carbon sequestration – i.e., what happens here can affect systems' health and resilience elsewhere – demands a coordinated effort to address the total effects of regional actions and to work together to create processes that appropriately value multiple priorities and needs. This plan presents measures and actions that help the region and the organizations that serve the region to work toward solutions. This plan identifies tools and opportunities to help the communities of the Sierra Nevada continue to create a vibrant and healthy Sierra economy and environment that addresses its own impacts and helps its various occupants and landscapes adapt to certain change.

Addressing climate change on a regional level in such a sensitive and diverse geographical area is a huge undertaking. The problems are further exacerbated by the diversity of interests that operate within and on behalf of the Sierra Nevada – interests that don't all agree on the cause, duration or even the outcomes of recent warming trends. This plan does not focus on the cause of the change being experienced in the Sierra. Instead, it recognizes the measured dramatic changes that have been recorded and the profound impacts on the natural systems of the Sierra should those trends continue, unabated, into the future. This plan emphasizes the need for awareness, communication and collaborative action in order to protect the irreplaceable natural, cultural, and community resources of the Sierra Nevada. Its outcome and the future health of California's Sierra Nevada rely upon developing partnerships that build trust across the landscape and a working understanding of the broad and varied perspectives of the people and organizations of the Sierra.

V. APPENDICES

APPENDIX A
Sierra Nevada Conservancy Climate Change Initiative

APPENDIX B
Sierra Nevada Conservancy Green Team Initiative

APPENDIX C
Sierra Nevada Climate Action Plan Coordination and Integration with Partner Programs and Efforts

APPENDIX D
Eubanks' SNC Climate Change Report (September 9, 2008)

APPENDIX E
Sample Strategy Development Outlines

APPENDIX F
Samples of Model City, County, and Regional Climate Action Plans and Policies

APPENDIX A

Sierra Nevada Conservancy Climate Change Initiative

I. Background

The Sierra Nevada Conservancy (SNC) Climate Change Initiative is a collaborative effort to positively address the effects of climate change in the Sierra Nevada region. Following its 2007 Climate Change Symposium and assisted by Steve Eubanks, former Supervisor of the Tahoe National Forest, the SNC solicited input from a broad array of organizations and individuals in an effort to recognize the Sierra Nevada's important contributions and to take the actions necessary to help adapt to changing conditions. With the perspective of nearly 300 respondents it was determined that the region needs a cohesive, strategic approach, supported by key stakeholders, which would:

- reduce the effects of climate change through carbon sequestration in Sierran forests
- reduce the risk of wildfire through successful application of sustainable forest management practices on both public and private lands
- reduce localized greenhouse gas emissions from Sierra residents and businesses
- support the development of sustainable alternative energy production in the region

Potential actions that were recommended for consideration included:

1. Identify, encourage and support projects, including research and demonstration projects, designed to address climate change in the Sierra;
2. Establish a web-based information center for attracting and sharing information specific to Sierra Nevada climate change issues among broad-based networks;
3. Provide education and unbiased advocacy for actions within the Sierra Nevada region and the importance of investment in the region;
4. Serve as a convener to bring together researchers, practitioners, educators, government representatives and the public to discuss and learn more about climate change and how people and resources in the Sierra can contribute to the mitigation and adaptation effort.

The SNC was also tasked with the completion of the Sierra Nevada Climate Action Plan (SN CAP), in coordination with the USFS, Tahoe Conservancy, Northern Sierra Partnership, and California Natural Resources Agency. The first draft of the plan is expected to be finished, with additional outreach and stakeholder input, by December of 2009. The SNC Board will consider the plan for comment and direction at its public board meeting in September, 2009. All guidance from the Board and public comments received will be incorporated in the final SN CAP to be presented for SNC Board approval at its public meeting in December 2009.

II. Goals of the SNC Climate Action Initiative:

1. SNC has completed the first Sierra Nevada Climate Action Plan and leads partner efforts in implementation of the Plan's goals, objectives, and activities.
2. SNC has established climate change related grant selection criteria and performance measures SNC and the counties and cities within the Sierra understand and fully apply CEQA changes made to address greenhouse gas emission impacts on projects for which they are responsible
3. SNC applies a climate change focus to its actions and initiatives
4. SNC has a fully integrated green/sustainable program for its internal operations and has identified and certified it operational greenhouse gas emissions through the Climate Registry.

III. Objectives of the SNC Climate Action Initiative:

In addition to direction provided by its Board and any region-wide climate activities identified for the SNC as part of the SN CAP, the SNC, as a state department within the California Natural Resources Agency has other roles and responsibilities in relation to statewide climate change goals and plans. The SNC operates in a primarily supportive role relating to climate change and ecosystem health, preservation, resilience and adaptation. The following SNC climate change objectives reflect that role in supporting organizations with specific and designated authority to act in reducing the impact of climate change and protecting the State's natural and economic resources. These objectives comply with and support the implementation of AB 32 and its Scoping Plans and Biennial Reports, SB 97, SB 375, DWR's Adaptation Strategies, Cal/Fire's Forestry Sector Adaptation Plan, the SNC's mission, vision, and program areas focus, and the focus and intent of the Sierra Nevada Climate Action Plan.

A. The SNC will provide leadership to the development and implementation of the Sierra Nevada Climate Action Plan by:

- Providing staffing to coordinate and create the first Sierra Nevada Climate Action Plan
- Coordinating broad input into the plan
- Convening an action-oriented implementation team of to carry out the prioritized activities of the first year of the plan

B. The SNC will assist Cal/Fire and the California Board of Forestry to:

- Maintain no less than the current level of carbon sequestration by supporting and creating education opportunities on sustainable management practices including reducing the risk of wildfires, avoiding or mitigating land-use changes that reduce carbon storage, and supporting voluntary actions to conserve biodiversity.
- Reduce wildfire emissions through fuels reduction on private and federal lands and provide GHG benefits by using woody biomass for biofuels and biopower as fossil fuel alternatives

- Encourage documentation of forest conservation benefits through the Climate Registry Forestry Protocols
- Increase forest conservation purchases to produce annual benefits through continued growth and sequestration; prevent conversion of forestlands through publicly and privately funded acquisitions and easements.
- Increase attention to and implementation of reforestation/afforestation projects and identify educational opportunities on the benefits of reforestation/afforestation in mitigating impacts of climate change

C. The SNC will assist the Department of Water Resources to:

- Support local governments in promoting greater implementation of water conservation measures, including best management practices to improve efficiency, increase storage, and protect water quality.
- Develop regional solutions to adaptation needs and to disseminate those practices and recommendations to Sierra Nevada communities
- Identify and provide funding for integrated regional water management throughout the Sierra Nevada watersheds and for research and analysis on climate change impacts and adaptation strategies
- Identify and establish practices to enhance and sustain ecosystems, particularly as these practices protect, enhance, and restore upper watershed forests and meadow systems that act as natural water and snow storage

D. The SNC will facilitate Local Government Actions to comply with AB 32 et.al. by:

- Gathering and disseminating information useful to the rural communities that populate the Sierra Nevada region including but not limited to: funding opportunities in addressing AB 32 goals and climate change challenges; funding opportunities for energy conservation and energy conversion through distributed energy source applications; local government protocols and toolkits and business protocols and toolkits established by the ARB; emerging cap and trade program components; Climate Reserve forestry and other protocols applicable to activities in their region
- Disseminating information relating to CEQA changes mandated by AB 32, implemented through SB 97, and by distributing OPR's General Plan Guidelines Supplement to provide advice to cities and counties for including policies in their general plans to address climate change and greenhouse gas reduction strategies.

E. The SNC will assist the SCSA in meeting its green building objectives and targets by:

- Developing an internal Green Initiative to measure, report, certify, and reduce its own operational emissions, including fleet emissions (see Appendix B).

- Establishing goals for ghg reduction and reporting on progress toward those goals (and resultant contributions toward meeting the goals of AB 32).
- Joining the Climate Registry and reporting and certifying its operational ghg emissions.
- Benchmarking its energy consumption through the USEPA's EnergyStar Building program and encouraging its landlord to do the same for the entire business park.

F. Through its grants program and other collaboration/demonstration projects the SNC will contribute positively to:

- Sharing information on the benefits of certification, encouraging the certification of projects through the Climate Reserve's Forestry Protocol (and other applicable related protocols)
- Supporting the design and application of adaptive land management methods to land manager decisions that facilitate habitat preservation/adaptation, improve and increase water quality and storage
- Supporting the design and application of life cycle analysis methods in the development of holistic fire management practices that support healthy forests through fire suppression/fuel load reduction and contribute to the reduction of ghg emissions and the sequestration of carbon, as well as the economic viability and opportunities of surrounding communities
- Supporting the development of information on the value of ecosystem services and their potential in protecting and funding the conservation of Sierra Nevada resources
- Increasing climate change and ecosystem health and resilience monitoring, data analysis and management within the Sierra Nevada region; ensuring that funding for such pilot projects are focused on regions with adopted IRWM plans that meet DWR's plan standards and have broad stakeholder support

G. In its information dissemination role, the SNC will also:

1. Create a new website that will present climate change information relevant to the entities and organizations within the Sierra Nevada region, acting as a web-based information center for attracting and sharing information of broad interest to various parties
2. Measure the effectiveness of its website by tracking usage through "hits" and information inquiries and pursuing input on website content
3. Convene conferences, symposia, and other forums that help share and develop Sierra Nevada-based information about climate change
4. Establish a climate change speaker/presentation repository, with resources available upon request to local communities and organizations

5. Communicate the efforts of our partners in addressing the challenges of climate change in this unique area (i.e., the Sierra Business Council's Sierra Nevada Carbon Cooperative, the Sierra Nevada Alliance's Sierra Water and Climate Change Campaign, The Pacific Forest Trust's Working Forests Winning Climate program, etc.)

H. Additional SNC Initiatives with Climate Change Interaction

The SNC has a broad range of program areas its staff is working in, and through its Climate Change Initiative it will ensure that efforts in these areas integrate with and support the goals and objectives of the Sierra Nevada Climate Action Plan. These programs include the:

1. Northern Sierra Partnership
2. SNC Grant Guidelines
3. SNC Green Initiative/Green Team
4. Local Government
5. Fire and Fuels
6. Water
7. Communications & Outreach
8. Amador/Calaveras Consensus
9. Sustainable Sierra Task Force
10. System Indicators
11. Additional Initiatives with secondary relationships to climate change include the SNC Sub-Regional assessments, Water Bond, Geo-Tourism, and Youth Participation efforts.

IV. Leadership and Resource Commitment to the Sierra Nevada Climate Change Action Plan

In support of the Sierra Nevada Climate Action Plan the SNC will provide one full-time staff person to act as the Sierra Nevada Climate Change Initiative Coordinator (CCIC). The duties of the CCIC will include but are not limited to:

- Ensuring that deadlines and milestones established within the SN CAP are tracked and reported on
- Pursuing establishment of the SN CAP Strike Team; coordinating with key partners on provision of team members and/or funding; helping establish cooperative agreements and Strike Team structure
- Overseeing and guiding Strike Team members in their duties and responsibilities
- Ensuring that the SN CAP annual report is completed as per its schedule and presented to the SNC Board and the SNC key partners for review and approval
- Pursuing additional federal and other State funding in support of the SN CAP goals and objectives

- Communicating with interested parties and updating webpage postings with up-to-date SN CAP information

In addition, the SNC will provide operational assistance (in the form of an office and necessary equipment and supplies) to the CICC in support of the SN CAP. In the first year of operation (through 2010) the SNC will also provide funding and oversight for development of the Climate Change Website.

Attachment 1

A link to the SNC Action Summary 2007 Symposium on Climate Change is included here as additional information related to the development of the Sierra Nevada Climate Change Initiative, the Sierra Nevada Climate Action Plan, and all of the components contained as part of each of these efforts.

http://www.sierranevada.ca.gov/docs/Climate.pdf

APPENDIX B

Sierra Nevada Conservancy Green Team Initiative

In March 2009 the Sierra Nevada Conservancy's (SNC's) Green Team created and considered its draft Green Initiative, including the components necessary to create a robust and comprehensive strategy for identifying and reducing its own greenhouse gas emissions. The draft document created at that time, along with next steps to implement the identified strategies, is included here. This document is considered draft until it has been fully reviewed and approved by the SNC management team.

A. PURPOSE OF THE SNC GREEN INITIATIVE

The SNC Green Initiative is a critical component of the SNC Climate Action Plan. The Sierra Nevada Conservancy recognizes that action to protect the environment starts locally, and that each individual has an important role to play in reducing and mitigating greenhouse gas emissions in order to meet the goals of AB 32. "Individuals" includes individual organizations and their employees occupying the Sierra Nevada region, and therefore encompasses the SNC operations and employee activities. The Green Initiative is the SNC's internal program designed to assess and improve its operational ecological footprint in order to do the following:

- Hold itself accountable in reducing its own broad impact on the environment
- Contribute positively to achieving the goals of AB 32 by reducing its own direct and indirect carbon "contribution"
- Be a role model to others – lead by example – in addressing the grave challenges of climate change that the Sierra Nevada region faces
- Be an educator to its own staff and others regarding their personal potential to reduce global warming

1) GUIDING PRINCIPLES OF THE SNC GREEN INITIATIVE

VISION

The Sierra Nevada Conservancy (SNC) is a role model in operational efficiency and self-evaluation, undertaking consistent and positive actions toward reducing its own environmental and carbon impacts, and reducing operational costs to maximize its potential in carrying out program-based activities.

The SNC Green Initiative is emulated throughout the Sierra Nevada Region and is considered a progressive example of responsible government operations.

ALIGNMENT

The SNC Green Initiative will align with and positively contribute to the following State programs/priorities:

- AB 32 – Global Warming Solutions Act
- EO S-3-05 Climate Change
- EO S-20-04 – Green Building Initiative and Action Plan
- EO S-12-04 – Energy Efficiency and Energy-Use Management
- CEC Energy Action Plan
- PCC 12200-12320 – State Agency Buy Recycled Campaign
- PCC 12400-12404 – Environmentally Preferable Purchasing
- CCR Title 22, Chapter 23 – Universal Waste

The SNC Green Initiative will encompass internal operational activities for all SNC offices including Auburn, Susanville, Mariposa and Bishop.

2) ORGANIZATIONAL PLEDGE

The Sierra Nevada Conservancy pledges to assess, report on, and improve its resource-intensive operational activities in an effort to reduce the environmental impact of its operations and therefore to support a healthy, vibrant, resilient environment and economy as a citizen organization of the Sierra Nevada region and as a department of the State of California.

The Sierra Nevada Conservancy further pledges to report its own greenhouse gas emissions through membership in The Climate Registry and to establish goals to reduce those emissions through its Green Initiative Program.

The Sierra Nevada Conservancy further pledges to work with its lessors to benchmark energy consumption in order to establish real and reachable consumption reduction goals and to support the use and expansion of green energy where feasible.

The Sierra Nevada Conservancy further pledges to provide information and support to its own and its stakeholder's employees regarding actions they may take to reduce their personal "ecological" footprint.

3) GOALS

Energy: Reduce energy consumption 20% by 2020 for all SNC facilities.

Transportation: Reduce miles travelled on business using conventional fossil fuels 10% by 2020. Ensure that 100% of SNC employees are aware of any alternative modes of transportation and available benefits.

Technology: Increase use of web-conferencing 20% by 2020.

Purchasing: Increase the use of recycled content products to 30% by 2020, including proactive agency participation in the Environmentally Preferable Purchasing (EPP) Program.

Waste: Obtain waste diversion levels of 70% by 2020.

Water: Reduce water consumption 20% by 2020.

Education: Raise awareness internally and externally relative to the Green Initiative and its principles, activities, and successes.

4) STRATEGIES

- Energy – Join Climate Registry; Track energy usage and create a 12 month energy consumption baseline for each SNC office. Identify and implement focused energy reduction actions in each facility to begin no later than January 2010. Benchmark energy consumption in Auburn office; Review energy consumption and apply energy conservation methods and equipment as part of new lease efforts; Encourage Auburn lessor to assess possible energy benefits of transitioning to daytime cleaning schedule; determine how to reduce overnight energy consumption of computer systems and take action

- Transportation – Join local TMA to obtain rideshare benefits for employees; Notify staff of State's transit subsidy (75% up to $65/month); quantify results of 5/08 transportation survey, conduct annual transportation survey by Earth Day each year; Annually track and report on vehicle miles travelled per capita each January for the preceding 12 months. Establish policy to utilize e-meeting options for SNC-initiated meetings with external stakeholders to the extent possible. Establish policy on attendance at meetings that require travel to utilize webcasting first when possible and when there is no impact on effective involvement with the meeting topic/sponsors. Conduct annual employee commute survey. Distribute materials and access services to assist staff in avoiding single-occupant vehicle commuting.

- Purchasing – Purchase only high recycled content products when possible; Work with local suppliers to identify recycled products; Notify staff of availability of 100% recycled content products so that they can choose those items first; Track percent of recycled content product purchasing (as compared to non-recycled products) and report to staff on an annual basis

- Waste – Identify methods to measure and report on waste and recycling materials produced by SNC staff; Provide guidance to staff that consumption of materials should be reduced including but not limited to re-using waste paper for scrap paper, ensuring that all printers and copiers are set to double sided printing as default, encouraging use of re-usable eating utensils, plates, and cups, etc.). Report annually on success of efforts.

- Review recycling programs for all SNC offices; improve signage and/or processes to increase recycling; Educate staff on how to reduce use (not just increasing recycling)

- Indoor Air Quality – Train staff on personal impacts and impact reduction – use of dry erase markers, cleansers, air fresheners, personal fragrances etc.; set policies for reduction of impact of construction (low- zero-VOC paints/glues/carpets, no MDF, new MSF airing out, etc.)

- Personal Impacts – Develop and distribute to staff personal responsibility materials (how to measure and reduce your carbon footprint; how you make a difference in SNC's Green Initiative Program; Focus personal training around Earth and/or Arbor Day
- Create green program brochure/fact sheet to distribute to employees and other interested parties

5) ANNUAL PROGRESS REPORTING

The SNC Green Team will create an annual progress report, to be completed by the end of March each year. The annual report will include measurements toward meeting goals in each of the categories identified in this plan. The annual report will also include an analysis and adjustment of goals and strategies as needed.

The annual plan will be reviewed and approved by SNC management within 30 days of receiving the final draft.

B. NEXT STEPS

Specific actions to be taken by the Green Team and SNC's management team in order to put all of the components of this initiative into place are listed here.

1) Green Team to:

- Complete draft plan including proposed Vision, Guiding Principles, Pledge, Goals, Policies, Strategies and Regular Progress Reporting
- Consider how to incorporate recommendations created to date into draft plan (Limit watering of landscape to mornings and evenings, Establish a baseline for our water usage, Determine ways to decrease water flow in bathrooms, Rain catchment system for Auburn office, Staggered lighting, Install motion activated light sensors, Improve temperature regulation in office, Define package of incentives available for the installation of energy savings features, PV Array on roof, Energy management system/Energy Miser, Cool Roof Coating, Formalize recycling program, Window Glazing). If possible, establish goals rather than solutions in these areas. Where needed provide implementation details along with the recommendations.
- Identify timelines for action; completion of draft plan; review and approval by staff/management; annual update/action cycles; specific annual actions (when will we join TCR; when will we conduct the annual transportation survey; when will we conduct educational and outreach events)
- Create educational materials, brochures, web postings to promote the efforts and outcomes of the Green Initiative

2) Management Team to:

- Review and comment on draft plan including proposed Vision, Guiding Principles, Pledge, Goals, Policies, Strategies and Regular Progress Reporting. Provide specific directions on changes and expectations.
- Identify funding needed for essential activities (like annual fees for greenhouse gas registry and certifications and for membership in the local transportation management association).
- Support the success of the program by carrying out own personal responsibilities – benchmark personal carbon footprint and establish goals for reducing it; reduce, reuse, recycle; support staff efforts to comply with Green Initiative Strategies.
- Attend meetings with lessors, vendors, and other service providers to encourage their support of the SNC Green Initiative Goals and Objectives.
- Incorporate SNC Green Initiative efforts into regional presentations; ensure that goals and progress toward them are reported (as impacts on ghg reductions as well as tons/kWh, etc.)
- Review and comment on draft plan including proposed Vision, Guiding Principles, Pledge, Goals, Policies, Strategies and Regular Progress Reporting. Provide specific directions on changes and expectations.
- Identify funding needed for essential activities (like annual fees for greenhouse gas registry and certifications and for membership in the local transportation management association).

APPENDIX C

Sierra Nevada Climate Action Plan Coordination and Integration with Partner Programs and Efforts

Sierra Nevada Conservancy: The Sierra Nevada Conservancy (SNC) acts as the project manager for the development and implementation of the SN CAP. As directed by its Board, the SNC will support and develop demonstration projects that improve the region's adaptation to and mitigation of climate change impacts, will lead in the creation of a web-based portal focusing on the issues of and solutions to climate change in the Sierra Nevada region, and will convene experts to further the understanding of climate change impacts in the region. The SNC will modify its grants guidelines, with SNC Board approval, and will develop project selection criteria that takes into consideration the climate change impacts and benefits of proposed projects. The SNC will also carry out efforts to reduce its operational greenhouse gas emissions and will support the efforts of its sister-agencies in the achievement of AB 32 and related legislative goals. See Appendices A and B for SNC's full Climate Change and Green Team Initiatives.

There are three ways in which fuel reduction projects can reduce greenhouse gas emissions:

1. Thinning forests improves forest health, and healthy forests absorb more carbon dioxide (CO_2) from the atmosphere.

2. Thinned forests decrease fire risk and so have the potential to reduce greenhouse gas emissions from catastrophic wildfires.

3. Biomass from thinning projects can replace nonrenewable fossil fuels used to produce energy, potentially reducing fossil fuel carbon emissions.

Mendocino Project
U.S. Forestry Service
2008

USFS: Within the U.S. Forest Service climate change is one of three primary emphasis areas. The USFS Climate Change program is divided into eight different focus areas relating to forest lands owned and managed for the public's benefit. They are: Ecosystem Services: Carbon, Ecological Restoration, Biomass Utilization, Sustainable Resource Management, Educator Resources, Sustainable Operations, Research and Development, and International Programs. The USFS website contains a vast amount of information including tools, research and current activities in each of these focus areas. The SN CAP will work with USFS representatives in achieving their mutual goals and assist in outreach and education activities that will help address the public's understanding of climate challenges. The SN CAP will emphasize the collaborative power and outcomes of the Southern Sierra Consortia and will promote the development of California-based projects modeled on efforts such as the USFS White Mountain Stewardship project In Arizona. The SN CAP will also track and utilize outcomes from the Mendocino National Forest project of the USFS in order to make progress on carbon/fire/fuels objectives in the Sierra region.

California Tahoe Conservancy: The CTC was established to develop and implement programs through acquisitions and site improvements to improve water quality in Lake Tahoe, preserve the scenic beauty and recreational opportunities of the region, provide public access, preserve wildlife habitat areas, and manage and restore lands to protect the natural environment. The SN CAP will identify areas for coordination with and enhancement of CTC efforts to reduce regional wildfire risk, improve water quality and supply, and integrate climate change resiliency and adaptation efforts into land management practices across the Sierra landscape. Special emphasis will be placed on coordinating research and educational efforts, as well as funding opportunities, in these areas. The SN CAP will seek to identify and promote climate-related best practices developed by the CTC, Tahoe Regional Planning Authority, City of South Lake Tahoe and other local authorities for use as model efforts by other Sierra Nevada Communities.

BLM: Bureau of Land Management efforts correlate with SN CAP focus areas in wildfire management, including awareness and education efforts, and the development of clean energy production, including biomass, geothermal, solar and wind initiatives currently underway in California. The SN CAP will promote the educational efforts of the BLM in these areas to its audience, emphasizing its clean energy production efforts, and will encourage support and participation in these initiatives as well.

CNRA/DWR/CalFire/IFWG: In the area of climate change the California Natural Resources Agency and its subordinate departments have the responsibility to carry out various AB 32 scoping plan measures including various water and forestry based measures. The Department of Water Resources is leading the way in developing statewide climate change adaptation plans and is part of a team working on a possible public goods charge for water that could provide local and regional funding for water efficiencies and related sources of renewable energy. The Department of Forestry and Fire Protection (Cal/Fire) houses the Board of Forestry, which is leading the Interagency Forestry Working Group in developing statewide activities in five priority areas: 1) greenhouse gas inventory in forests statewide; 2) determining the effect of State regulations on meeting greenhouse gas goals; 3) defining sustainable woody biomass utilization for the LCFS and developing projects for AB 118 (alternative fuels development) funding; 4) enhance incentives to maintain/enhance carbon stocks; and 5) enhance education opportunities for landowner action. The SN CAP will support the development of adaptation plans across the Sierra Nevada, will identify possible opportunities to represent Sierra Nevada interests in the IFWG activities (particularly in the areas of landowner incentives and education), and will investigate possible opportunities for the proposed public goods charge to provide an ongoing source of funding for the region that provides 65% of California's developed water supply.

CALIFORNIA CLIMATE CHANGE PORTAL

ARB/CEC/Climate Action Team: The Air Resources Board and the California Energy Commission both have wide and varied regulatory and administrative responsibilities in addressing the issues and impacts of climate change statewide and within all greenhouse gas contributing sectors. There are a number of subgroups that the Climate Action Team has been divided into that look at the various issues and create opportunities to meet or exceed the goals of AB 32 and various related legislation. In supporting the work of these organizations in the Sierra Nevada region the SN CAP will pursue and develop additional opportunities to educate local communities on greenhouse gas emission reduction guidance and support as has been created in the Local Government Toolkit. The SN CAP will assist the CEC as it administers funds from the Energy Efficiency and Conservation Block Grant Program of the American Recovery and Reinvestment Act by helping to educate local Sierra Nevada governments on funding requirements and opportunities. The SN CAP will also work with the CEC to develop needed research focused on the Sierra Nevada region and will seek to direct CEC PIER funds toward this effort.

Northern Sierra Partnership: As an exemplary model of cross-organizational collaboration, the NSP demonstrates the power of partnerships in pinpointing common values, needs, challenges and opportunities for a large and diverse regional area. The NSP also sponsors the Carbon Collaborative which seeks to reduce barriers for landowners to participate in the emerging market for carbon credits with the potential to generate a reliable source of revenue to fund stewardship and restoration of the region's forestlands and watersheds. Additional work of the Carbon Collaborative is to implement sustainable forest management and land use practices that reduce the threat of catastrophic wildfire. The SN CAP will promote this partnership strategy as a model approach in addressing the complex cross-jurisdictional issues impacting the region, and will work to support the Carbon Collaborative goal to establish pilot projects using sustainable forest practices and to increase registered and verified forest projects in the area.

California is a national leader in establishing a policy framework to regulate carbon dioxide emissions and create a market for trading carbon reduction credits that would include carbon sequestered in northern Sierra forests. While this market is currently voluntary, regulatory policies may soon require polluters who don't meet legal emissions standards to purchase carbon credits or "offsets" on the open market. Proceeds from the sale of these carbon offsets can be directed towards registering additional credits, purchasing forestlands for conservation, and implementing best practices for land stewardship throughout the northern Sierra region. The Carbon Cooperative seeks to research and demonstrate ways to engage private forest landowners in the emerging carbon markets.

The Carbon Cooperative
Northern Sierra Partnership
2009

Sierra Nevada Alliance: The Sierra Nevada Alliance (SNA) consists of over eighty member conservation groups that are based or work in the Sierra Nevada region. The SNA unites individuals and groups behind a common vision where natural and human communities coexist in harmony and where residents and visitors alike understand and value the unique qualities of the range and the places they love. The SNA Sierra Water & Climate Change Program is a roadmap to broad community action and participation in the area of climate change. It alerts the public and decision makers to the impacts of climate change in the Sierra and seeks to ensure that smart local resource management plans (watershed plans, general plans, hydropower re-licensing, integrated regional water management, forestry, etc.) are adopted that protect natural resources by reducing emissions and adapting to the changing climate. The SN CAP will utilize the SNA's Climate Change Toolkit in developing additional educational and presentation materials for use with community groups within the Sierra Nevada region. The SN CAP will support expanded water education and active and robust community participation in the collaborative Integrated Regional Water Management Planning efforts throughout the Sierra Nevada. The SN CAP will look at opportunities to promote community involvement in upcoming hydro-power re-licensing activities, in particular emphasizing tribal participation.

Sierra Business Council: The mission of the Sierra Business Council (SBC) is to pioneer innovative projects and approaches that foster community vitality, environmental quality, economic prosperity, and social fairness in the Sierra Nevada. The SBC is a member-based organization of over 700 individuals and businesses committed to pioneering innovative solutions in the Sierra Nevada. SBC's forestry program is designed to develop effective systems for managing and restoring the region's forests, reducing the forests' exposure to catastrophic wildfire, preserving wild and natural landscapes, and sustaining Sierra's communities. Through their Sierra Nevada Carbon Cooperative the SBC has assisted two land projects to register their carbon emissions through the Climate Action Registry – Heart K Ranch in Plumas County and Waddle Ranch in Placer County. The Carbon Cooperative seeks to encourage additional project registrations in order for these projects to be able to capture the land conservation and environmental benefits of accessing the funding source that the sale of carbon credits might bring. The SBC is making a significant effort to educate potential project proponents on what it takes to register and is providing support to their efforts. The SN CAP will access SBC's expertise in developing further opportunities in this area and will support development of registered sustainable forestry projects.

> Creating the "third voice" on forestry and fire-safety issues - a voice that is tied to a broader movement for sustainable forestry in the Sierra…. Millions of dollars are spent on fire fighting while very little is being spent on restoring the Sierra's magnificent forests.
>
> ***Forestry Project***
> **Sierra Business Council**
> **2009**

Sierra Cascade Land Trust Council: SCLTC consists of 15 local land trusts scattered throughout the Sierra Nevada plus national and regional partners such as The Trust for Public Land, The Nature Conservancy, California Rangeland Trust, The Pacific Forest Trust and The American Land Conservancy. All of these organizations share the goal of protecting ranches, forest land and areas of vital wildlife habitat within dozens of critical watersheds across the Sierra Nevada and Cascades. Member groups often work in partnership on projects, and have succeeded in protecting tens of thousands of acres over the years through conservation easements or purchase. The very nature of this work makes it a vital component of preparing for climate change - which has become an important part of planning project areas for the land trusts and their partners.

Land trusts in the Sierra Nevada and Cascades operate on two principals that are critical. The first principal is that whether protecting sustainable forestry, farms, economically viable ranches or wildlife habitat, bigger is always better. Land trusts and their partners strive to protect large contiguous blocks of land and, where possible, to connect them with other protected lands. The second principal is that protecting upslope corridors will be important in providing for upslope migration of species – an essential service under a warming climate scenario. This often involves working toward protecting long stretches of river and stream corridors.

Changing landscapes, moving species. Under pressure from climate change, the habitat for plant and animal species will shift even further northward and upward on land or to cooler depths in the ocean. Species will respond in different ways and their ability to adapt and migrate to a better suited environment depends on the presence of barriers and protected areas.

The Future is Now
California Climate Change Center
September 2008

In addition to protecting habitat vital to the ability of native plants and animals to adapt to a changing climate, land trusts also protect the resources that will help reduce the impacts of increasing human influence on global climate. The woodlands and grasslands protected by conservation easements continue to remove and store carbon dioxide from the atmosphere that would otherwise contribute to climate change. Additionally, by protecting productive forests, ranches and small farms in rural areas, land trusts help to encourage development in areas better suited to it, thereby acting as a restraint to urban sprawl and preserving the potential for a local food economy not dependent upon long-distance transport for vital food supplies.

Land protection through supporting expansion of conservation easements and purchase will be a vital part of the Climate Action Plan for the Sierra Nevada. These tools can permanently remove key properties from uses that would be negative in terms of climate change while keeping these lands available for sustainable timber and ranching uses that contribute to local community economies. Land trusts have been working to mitigate the effects of “climate change” long before the term was coined and will continue to provide time tested tools for responding to this increasingly urgent issue.

California Biomass Collaborative: The CBC is a statewide collaboration of government, industry, environmental groups, and educational institutions administered by the University of California, Davis. The CBC works to enhance the sustainable management and development of biomass in California for the production of renewable energy, bio-fuels, and products. It realizes is mission through statewide coordination with government and industry; resource inventory and generation assessment; facility performance reporting and evaluations; technology research, development, demonstration, and deployment; the study of policy issues and implications; developing standards; research management; education and training; and extension and public outreach. The SN CAP will work with and through the CBC to create and support projects that develop the bio-energy industry throughout the Sierra Nevada.

PSW: The Pacific Southwest Research Station (PSW), an element of the U. S. Forest Service, plays a leadership role in climate change and greenhouse gas science at national and international levels. Research of PSW scientists focuses on assessing climates, evaluating ecosystem responses, promoting approaches to sequester carbon and reduce greenhouse gas emissions, and developing adaptation strategies to manage natural resources in the face of changing climates. The PSW coordinates research with the western Forest Service Research Stations in the Pacific Northwest and Rocky Mountains, and with federal, state, academic, and non-governmental partners. Through collaborations, PSW has taken key leadership roles in catalyzing coordinated and integrated research, resulting in the following outcomes: the Global Change Research Strategy , the Westwide Climate Initiative and the Climate Change Resource Center , CIRMOUNT (see below), the Forest Service Strategic Framework for Responding to Climate Change (version 1.0) Strategic Aspirations - FS National Leadership Council, and the Climate Change Science Program. The SN CAP will look to the PSW to incorporate the latest climate-related actions into its objectives, will partner with PSW in identifying landscape-wide research perspectives, and will promote the efforts and outcomes of the PSW for others to access and utilize.

CIRMOUNT: The Consortium for Integrated Climate Research in Western Mountains **(**CIRMOUNT) is a research-focused consortium of ecological scientists working in western North American mountain climate sciences. While coming from diverse disciplines, these scientists and those who align with CIRMOUNT share a common passion to improve and integrate understanding and applications about climate in western mountains and its effects on ecosystems and its goods and services. CIRMOUNT focuses on improving the understanding and ability to predict future climate and ecosystem changes in the West. In particular, they work to develop strategies to encourage close collaboration among researchers from many scientific disciplines regarding the likely impacts that temperature and precipitation changes arising from both natural variability and greenhouse warming may have on

western North American mountain ecosystems. The SN CAP will assist in the development of regional research perspectives and needs to address climate change in the Sierra Nevada. The SNC will partner with CIRMOUNT to provide in-kind and logistical support as needs are identified.

WESTCARB: The West Coast Regional Carbon Sequestration Partnership (WESTCARB) is a collaborative research project bringing together dedicated scientists and engineers at more than 80 public agencies, private companies, and nonprofits to identify and validate the best regional opportunities for keeping CO_2 out of the atmosphere and thereby reducing mankind's impact on the climate. WESTCARB is exploring opportunities in seven Western states and one Canadian province for removing CO_2 from the atmosphere by enhancing natural processes (terrestrial sequestration) and by capturing it at industrial facilities before it is emitted and storing it underground (geologic sequestration). SN CAP will work to partner with WESTCARB in identifying the carbon stored in Sierra Nevada forests, rangelands, and woodlands and in using that information to help develop model policies that support broad landscape services while retaining and enhancing as much natural carbon storage as possible.

The Climate Reserve: The California Climate Action Registry (California Registry) was created by the State of California in 2001 to address climate change through voluntary calculation and public reporting of emissions. The California Registry established protocols to guide emissions inventory reporting and served as a central database for emissions reports. As the California Registry grew and became more successful, the need became apparent for emissions reporting and protocol development to exist in an integrated system that stretched beyond California's borders. For this reason, the California Registry was involved in establishing The Climate Registry and the Climate Reserve. Through collaborative development of the Forestry Protocol, the Climate Reserve is promoting the opportunity to both conserve forest carbon assets through conservation-based forest management, forest conservation, and reforestation project registry and verification, and to assist projects to utilize their carbon credits in the developing carbon market to provide a long term source of funding for these efforts. Of the nine California forestry projects listed or registered in the Reserve only two reside in the Sierra Nevada mountain range. The SN CAP will support additional Sierra Nevada project development and registration and will participate in additional Climate Reserve activities that benefit the projects and communities of the Sierra Nevada. The Sierra Nevada Conservancy is also a member of the Climate Registry, a sister agency of the Climate Reserve, and is underway to report and verify its own greenhouse gas emissions in order to monitor and reduce its own impact on greenhouse gas emissions in the region.

Various Coalition Organizations and Efforts: Coalition organizations are being developed throughout the Sierra Nevada region that seek to address environmental, institutional, and governmental challenges through broad stakeholder collaboration. In addition to the NSP, SBC, and SNA noted above, organizations of note include the California Rangeland Conservation Coalition and the Amador/Calaveras Consensus, and programs such as the Nature Conservancy's "Fire Learning Networks" which emphasize working together to overcome historic conflicts for the benefit of the natural environment and human health and well-being. Also of note is the 2004 USFS White Mountain Stewardship Project that continues to build trust and legitimacy through inclusion of a citizen-based Multi-Party Monitoring Board component. The SN CAP will promote the expansion of these models of collaboration as an essential tool in bringing environmental and economic resilience and vibrancy to the towns and communities of the Sierra Nevada.

> One way the Initiative builds partner capacity is by sponsoring collaborative, multi-stakeholder learning networks. Fire Learning Networks take a long-term approach to restoring the natural role of fire through a collaborative process that ensures the needs of different stakeholders are met. All stakeholders -- from community groups to federal agencies -- come together to develop a shared vision for a given landscape, and to learn how to overcome critical challenges related to maintaining or restoring ecosystem health. Network projects demonstrate successful approaches, speed technology transfer and generate on-the-ground results.
>
> ***Fire Learning Networks***
> **The Nature Conservancy**
> **2009**

APPENDIX D

Sierra Nevada Climate Change Initiative: Helping Address Climate Change Effects in the Sierra Nevada Region September 8, 2008

Author: Steve Eubanks

Executive Summary:

In December 2007, the Sierra Nevada Conservancy convened a symposium on climate change. The enthusiasm resulting from the symposium generated interest in establishing a Climate Change Initiative for the Sierra Nevada Region. To further explore this idea, an assessment was completed. A broad range of organizations and interests was contacted through a combination of facilitated meetings and a web-based survey to ask whether people thought a Climate Change Initiative would be beneficial, what role a Climate Change Initiative would fulfill, and where a Climate Change Initiative should be headquartered.

The facilitated meetings and web-based survey provided much valuable information. There was solid support for establishment of a Sierra Nevada Climate Change Initiative and for associating the Initiative with the Sierra Nevada Conservancy. Responses from participants about possible roles for the Initiative generated the following recommendations for initial focus of a Climate Change Initiative:

-Establish a web-based information center for attracting and sharing information in broad-based networks.
-Provide education about climate change to a broad audience.
-Be a convener of conferences, symposia and other forums that help share and develop information about climate change.
- Encourage and fund demonstration projects that address climate change mitigation and adaptation
- Actively pursue and develop partnerships with a wide range of organizations and agencies that have an interest in addressing climate change effects.

Background:

The effects of climate change on the Sierra Nevada region are expected to be significant and could have far-reaching consequences. Based on this understanding, the Sierra Nevada Conservancy (SNC) convened a symposium in December, 2007, to learn more about the potential impacts and consequences to the Region and the opportunity for mitigation and/or adaptation. Panelists included experts from government, academic, business and non-profit fields. The workshop panels explored the implications of changes in precipitation and temperature on water supply and management, vegetation, fish and wildlife habitat, fire frequency and intensity and recreation. There was also discussion regarding Sierra-specific tools and community strategies for reducing greenhouse gas emissions and adapting to anticipated impacts in the Region.

The symposium was considered successful in terms of both attendance and enthusiasm about the topic of climate change. That enthusiasm generated post-symposium discussions about further actions that could be taken to deal with climate change-related issues. One such action discussed was the creation of some kind of Climate Change Initiative in the Sierra Nevada region, perhaps even establishment of a Climate Change Center. The SNC Board endorsed the further exploration of this idea and the decision was made to do outreach among a broad spectrum of interests to ask two primary questions:

-Should some kind of climate change-related initiative or center be established for the Sierra Nevada region?
- If so, what should be the role or focus of an initiative or center?

Also woven into discussions was a third question:

-Where should any initiative or center be headquartered?

The various interests were reached in two main ways. When interests were represented by an organization that had a regularly scheduled meeting that could accommodate a 1 to 1 ½ hour topic, a facilitated discussion was held (see Appendix for discussion template). This approach was used for meetings with Federal Land Managers, the Sierra Nevada Alliance, climate change researchers, The Sierra Nevada Conservancy "Kitchen Cabinet", The Mountain Counties Water Resource Agency Managers, and the Sierra Nevada Land Trust Board. To supplement the facilitated meetings, there were also informal phone discussions with some other individuals representing various organizations or agencies. Their input was incorporated into results from the facilitated meetings.

It was clear early on that many interests could not be adequately surveyed at some kind of meeting. Therefore, a web-based survey was developed to reach more interests and individuals (see Appendix for web-based survey text). The web-based survey was sent to attendees of the December symposium, federal land managers, Fire Safe Councils, the Sierra Nevada Alliance, Lake Tahoe area interests via the California Tahoe Conservancy, the Quincy Library Group, the SNC Communications and Outreach Plan List, representatives of California State agencies involved in forestry climate change issues, and climate change contacts in non-land managing federal agencies, ultimately reaching 947 people. Responses were received from 261 people representing numerous organizations and interests. This 26% response rate is considered by web survey professionals to be quite good and seems to further indicate the level of interest and concern that exists for issues surrounding climate change.

Findings:

Results of the facilitated meetings: Though the meetings were held with very diverse interests, the feedback received from all the interests was almost surprising in its similarity.

Responses to Question 1: "Should some kind of climate change-related initiative or center be established for the Sierra Nevada region?"

-The answers to this question were a nearly unanimous "yes."

-Several people suggested that there is effort coming from the State of California to address climate change and that perhaps that is a more appropriate level for climate change actions to occur. However, other people quickly suggested that statewide efforts tend, often just by default, to be "urban-centric" and cannot be relied upon to address concerns or opportunities specific to the Sierra Nevada region or communities. There was general consensus that any concerns could be avoided by ensuring that there is good communication and cooperation between and among efforts at the state level and those focused on the Sierra Nevada region.

-Feedback indicated that it did not matter whether an effort is called an "Initiative" or a "Center", rather what mattered was the role or focus of the effort. There was much input about where a "center" might be located and that is addressed later in this report.

Responses to Question 2: "If so, what should be the role or focus of an initiative or center? "

-At each facilitated meeting, there were many individual ideas about what a climate initiative or climate center should focus on but there was strong commonality among the meetings in ideas presented and in agreement about what should be the most important focus or roles.

-There was strongest support for the following suggestions for focus or roles:

--Create a Site for Sharing Information Concerning Climate Change:

* Be a place/site that provides credible information on climate change. This would include scientific/research results, information on actions that are being undertaken to address climate change (adaptation and mitigation), and information from other organizations that are dealing with climate change issues. Accompanying this suggestion were the quotes: "Provide sound science, not political science;" "Create the 'Switzerland' of climate change discussion" (I.e., be a place where it is "safe" to discuss differing views); "Be a place that is visible and 'attracts' wide interest and information;" Be a primary "voice" for the Sierra Nevada region in the climate change arena.

* The point was made that an information site needs to be more than just a dumping ground for data or general information; i.e., there needs to be a concerted effort to catalog information so that it can be easily found and retrieved by those who seek it.

-- Provide Education and "Unbiased Advocacy" for Climate Change, Climate Change Issues and Actions to Address Climate Change Effects.

* Provide information to the State Legislature to increase understanding about climate change and to encourage action by the Legislature to address climate change issues.

* Provide information to the general public to increase understanding and to encourage support for addressing climate change issues. This should include helping develop "Climate Change Best Management Practices" for people who want to know what they can do as individuals to implement mitigation or adaptation actions.

* Provide information to educators to increase understanding and to encourage development of curricula that builds understanding among young people.

* Help develop climate change "Best Management Practices" (BMPs) that would provide simple "how-to" guides for people wanting to know what they can do in their daily lives to help offset the effects of climate change.

* Provide information to organizations and communities to increase understanding and encourage actions to address climate change issues.

* Help distill research and technical information into information products useable by broad audiences.

--Be a "convener."

* Organize additional symposia/conferences to bring together researchers, practitioners, educators, government representatives and the public to discuss and learn more about climate change and what can be done to mitigate and adapt.

* Organize teams of experts and bring them together to develop strategies for addressing climate change effects.

* Develop a "sabbatical" program where individual experts can spend time developing strategies for addressing climate change effects.

* All of the above would include development of strategies that would encourage Sierra Nevada communities and organizations to work together to implement programs to address climate change synergistically.

--Help encourage and fund demonstration projects designed to address climate change.

* This could be a logical spin-off of the current SNC programs providing funding for projects in the Sierra Nevada region.

Responses to Question 3: "Where should any initiative or center be headquartered?

-The general consensus of meeting participants was that the appropriate sponsoring organization for a climate initiative or location for a climate center is the Sierra Nevada Conservancy. There were three primary reasons stated: 1. The Sierra Nevada Conservancy has a reputation as a neutral body that has developed a broad constituency and sponsorship that would ensure good support for any effort directed at climate change; 2. The Conservancy has the kind of visibility that, together with its reputation, would strongly attract the participation that is necessary for a successful climate initiative or center; and 3. Establishing a new entity or

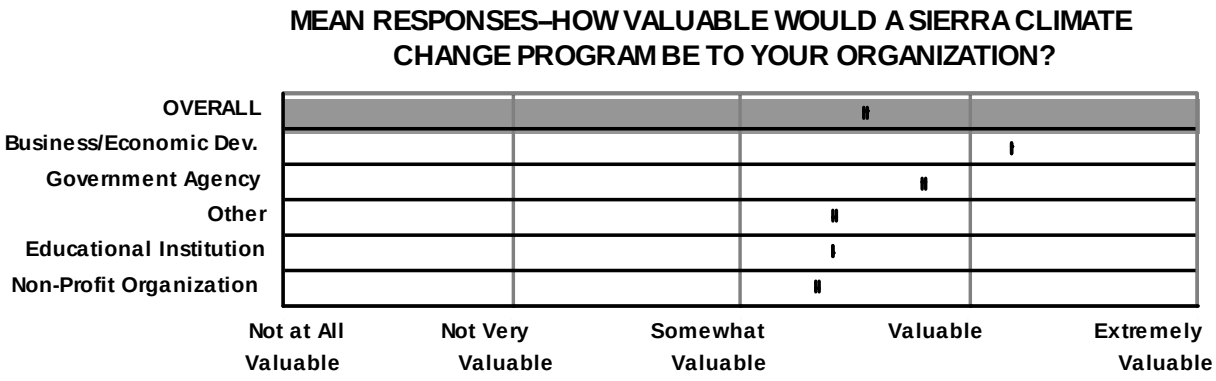
a new location would require the expenditure of funding on "bricks and mortar" and there is a much higher need to spend available funds on actual work dealing with mitigation or adaptation.

Results of the web-survey:

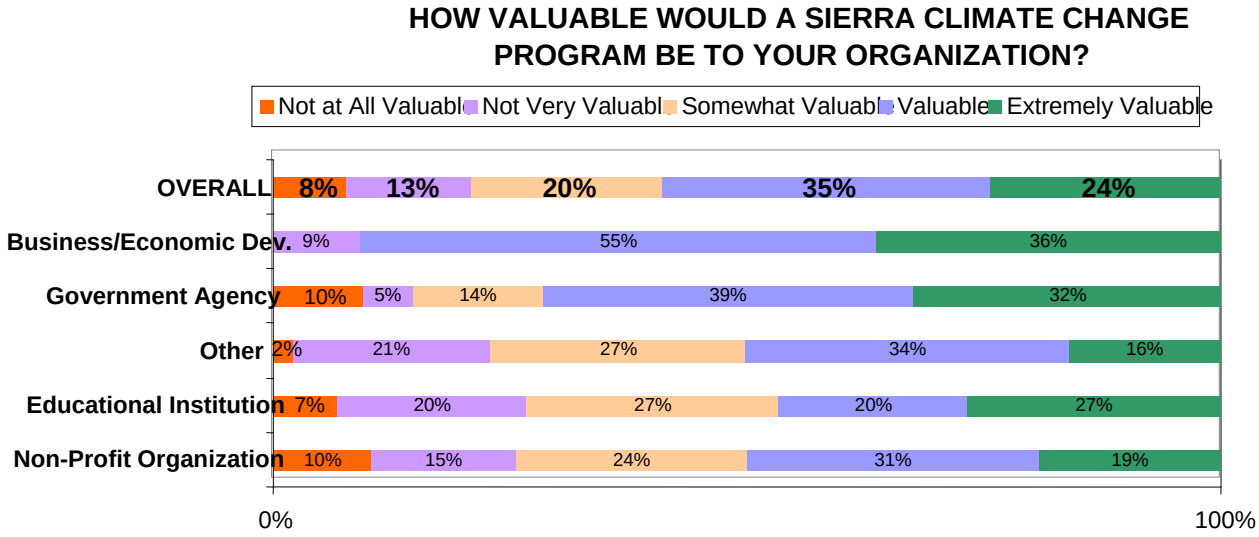
Responses to Question 1: In the web-based survey, this question was stated, "How valuable would a Sierra Climate Change Program Be to Your Organization?"

-The responses were tallied in several ways and, overall, give support for the establishment of some kind of Climate Change Initiative.

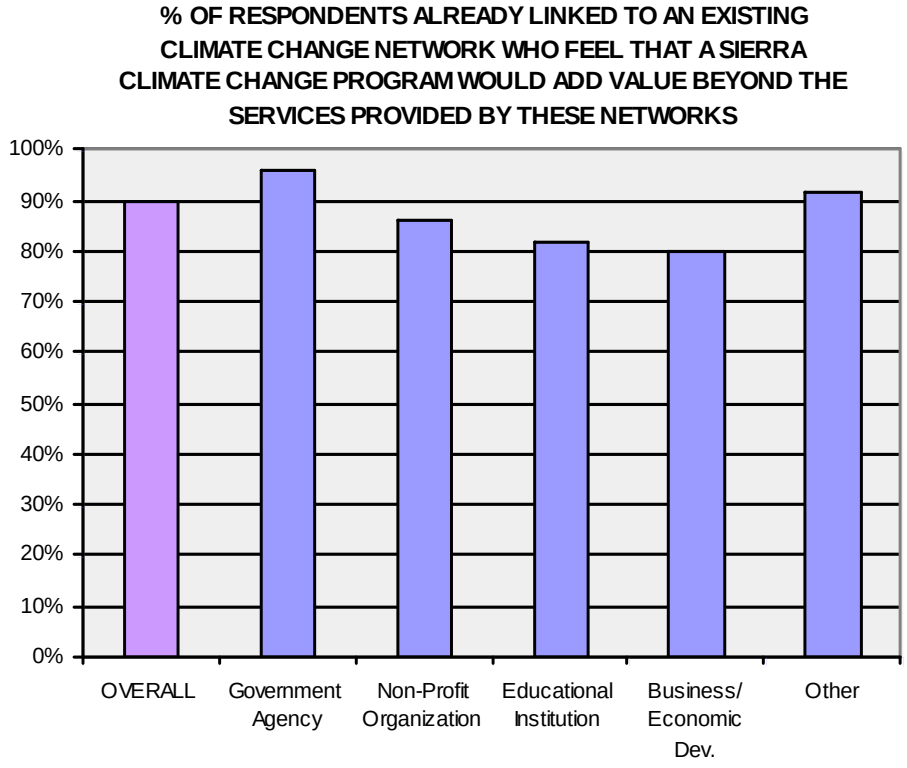
-This first chart lists the mean ratings for all respondents in their constituency category:



-This second chart further breaks down ratings from respondents. Note that well over 50% of respondents indicated that it would valuable or extremely valuable to establish some kind of Climate Change Initiative.



-This third chart is perhaps most informative and important. Among those respondents who seem to be most connected with and knowledgeable of climate change information there is strong support for establishment of some kind of Climate Change Initiative.



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Responses to Question 2: In the web-based survey, respondents were given sample roles to rate, the roles having been derived from input in earlier facilitated meetings. The question asked in the survey was "How valuable would the following potential roles of a Sierra Climate Change Program be to your organization?" The first roles listed were some that received most interest in the facilitated meetings.

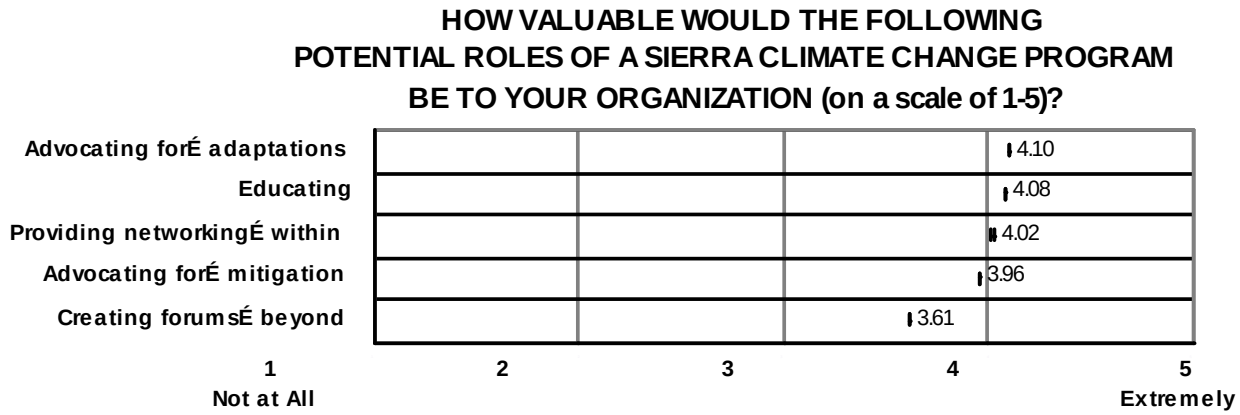
Advocating for…adaptations = "Advocating for and supporting Climate Change adaptations."

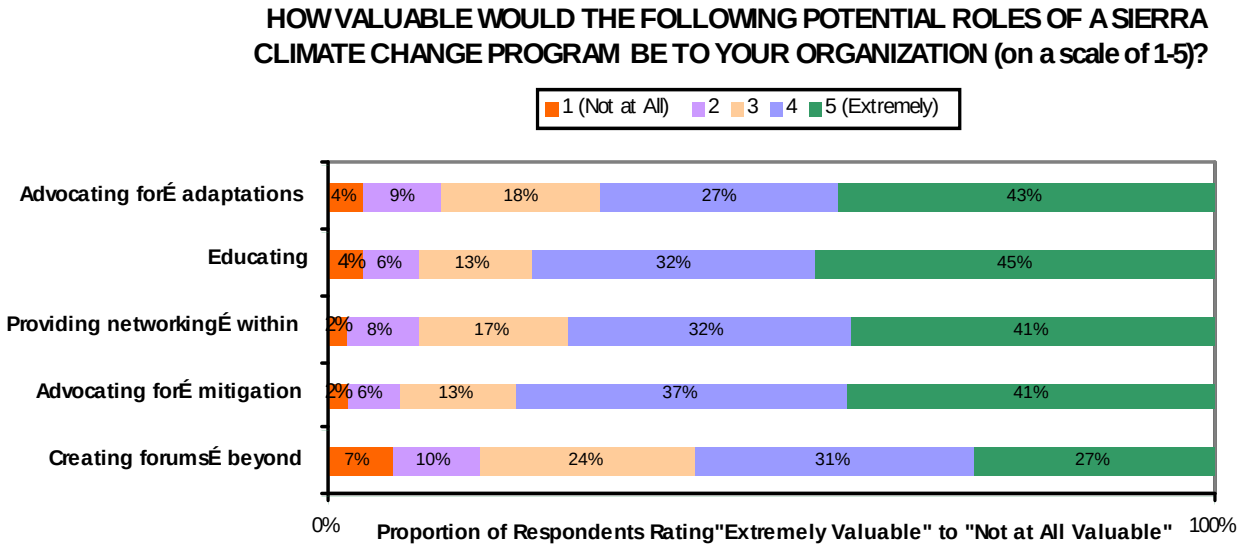
Educating = "Educating organizations, agencies, legislators and the general public on Climate Change issues, research, and programs."

Providing networking…within = "Providing networking and coordination within the Sierra Nevada for organizations working on Climate Change issues."

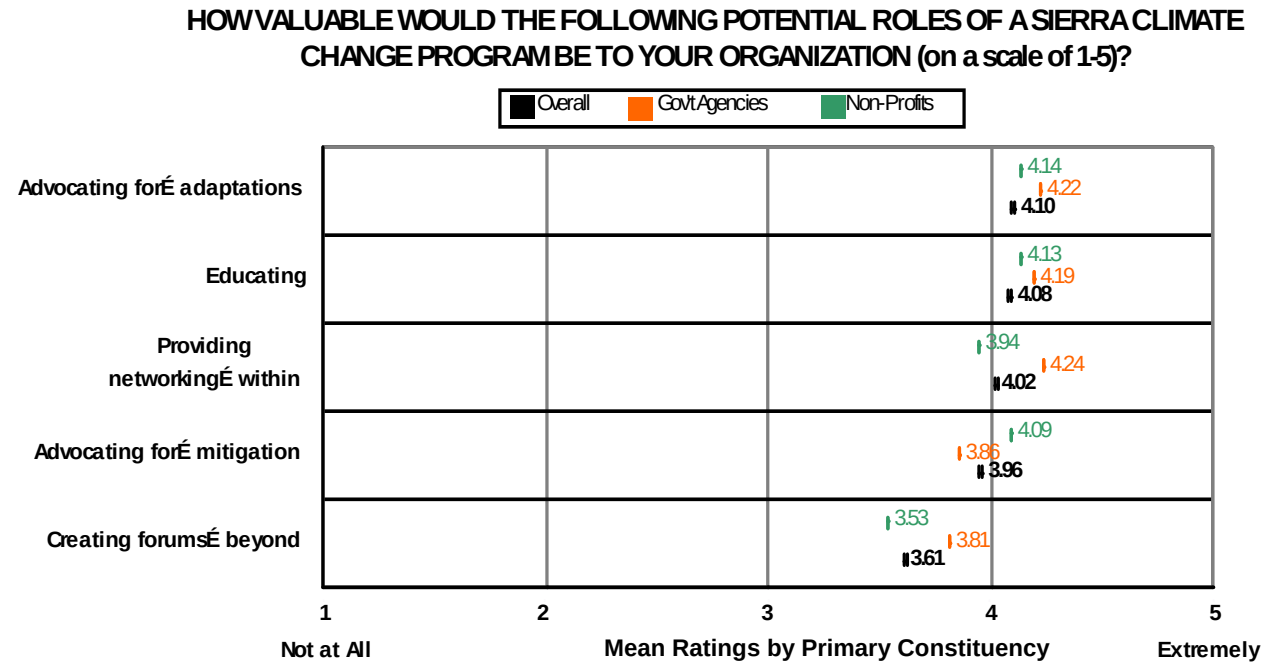
Advocating for…mitigation = "Advocating for and supporting Climate Change mitigation."

Creating forums…beyond = "Creating forums for sharing information with organizations working on Climate Change issues beyond the Sierra (to compare strategies, research, etc.)."





It is also interesting to look at how the mean value for people serving each of the primary constituencies varies from the overall mean. The following chart demonstrates this variation for Government Agencies and Non-Profit Organizations—the other primary constituencies were not included because of their small sample size.



As you can see from the graph, the respondents from Government Agencies placed more value on "Providing networking within the Sierras" and "Creating forums beyond the Sierras" than those from Non-Profit Organizations. Conversely, respondents from Non-Profit Organizations placed more value on "Advocating for mitigation" than those from Government Agencies. The valuation of "Advocating for…adaptations" and "Educating" were very close.

There were other roles from the facilitated meetings that were available for rating in the web-survey and the results are shown in the charts below. It's important to note that there were many more potential roles that came up in discussions at the facilitated meetings. The web-survey concentrated on those that seemed to have elicited the most support in those meetings.

Recommendations…Land Mngrs = "Develop Recommendations on how land managers can incorporate climate-related changes into their management decisions."

Conferences/Seminars/Webinars = "Offer periodic Sierra-specific Climate Change conferences, seminars, and/or webinars."

Publicity Materials = "Create publicity materials to educate the general public about Sierra-specific Climate Change issues."

Online Database…Within Sierra = "Host an online database of organizations, projects, research and events dealing with Climate Change within the Sierra."

Newsletter/Ebulletin = "Produce a regular newsletter/e-news bulletin publicizing new Climate Change research, case studies and Sierra-specific projects."

Regular Press Releases = "Produce regular press releases to a wide base of Sierra-Nevada media to publicize the latest research and successful initiatives."

Neutral Venue = "Provide a neutral venue in which to discuss issues with people of disparate viewpoints and help facilitate solutions to those issues."

Think Tank = "Convene and facilitate an ongoing 'Think Tank' of Climate Change experts."

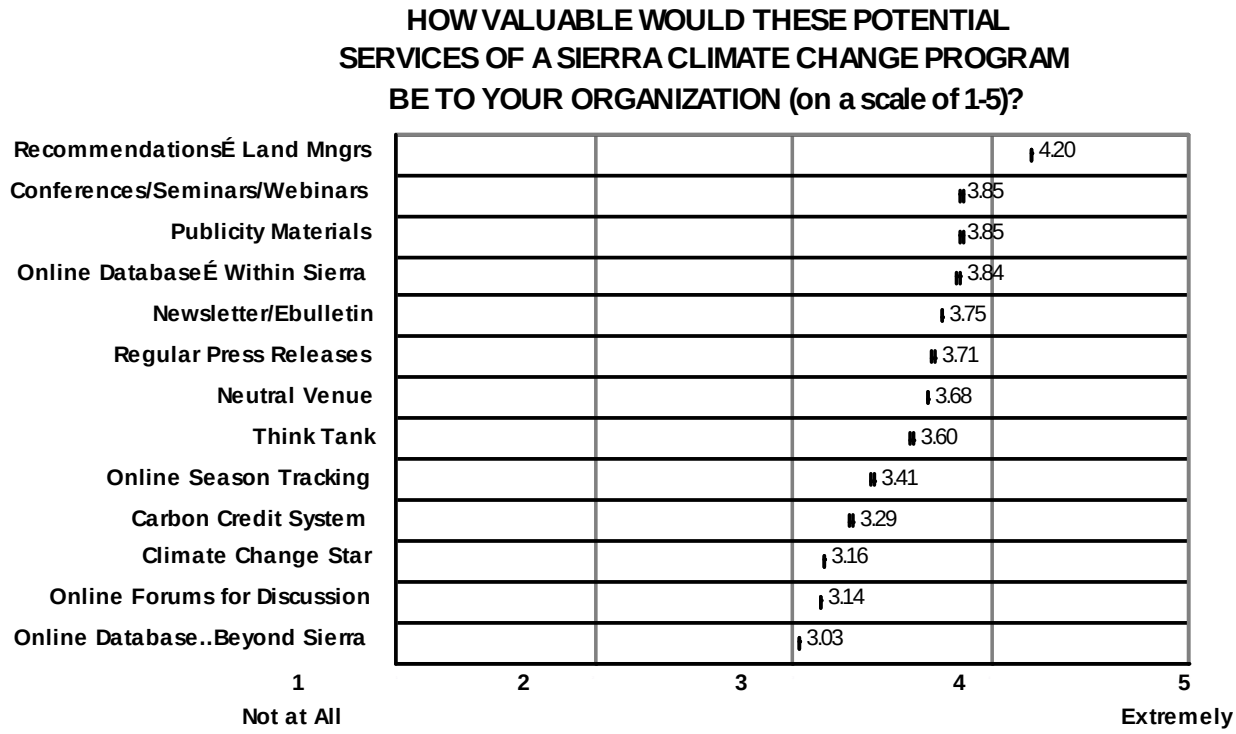
Online Season Tracking = "Provide an online venue where volunteers of all ages can record and view seasonal change trends across the Sierra."

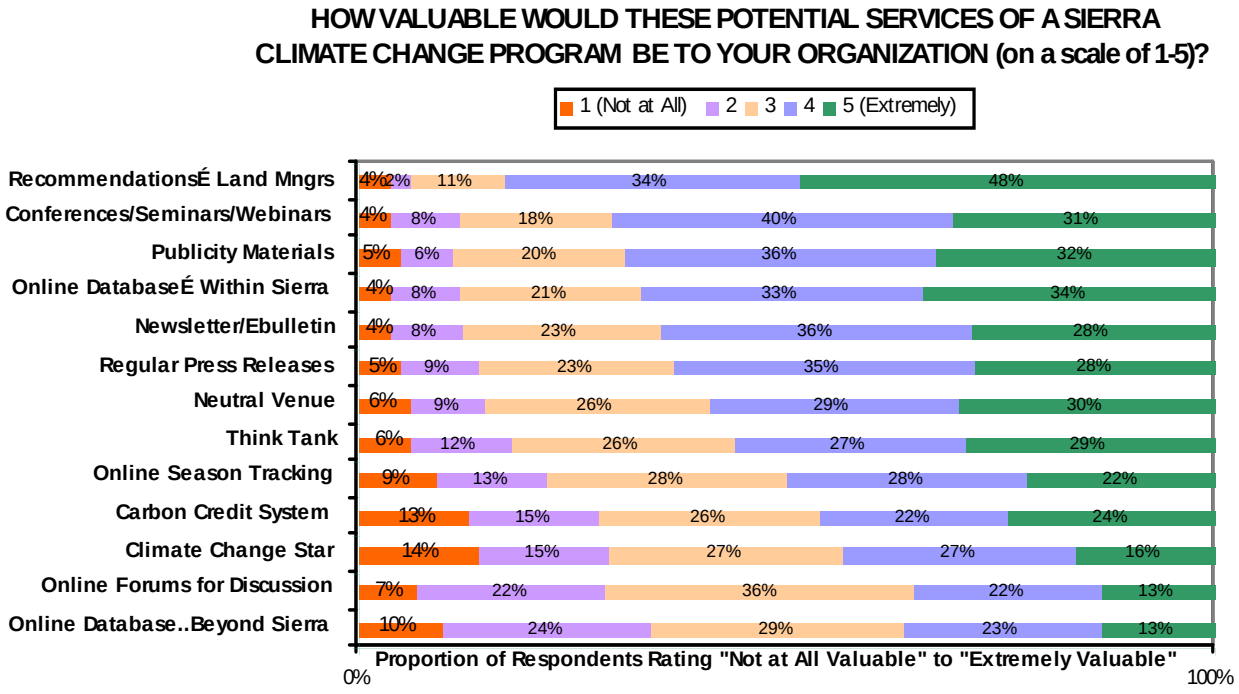
Carbon Credit System = "Create/promote a Sierra-wide carbon credit system."

Climate Change Star = "Create/promote a system for a Climate Change Star certification similar to *Energy Star* and *Water Sense*."

Online Forums for Discussion = "Host online forums for ongoing discussion of Climate Change issues."

Online Database…Beyond Sierra = "Host an online database of organizations, projects, research and events dealing with Climate Change outside the Sierra."


HOW VALUABLE WOULD THESE POTENTIAL SERVICES OF A SIERRA CLIMATE CHANGE PROGRAM BE TO YOUR ORGANIZATION (on a scale of 1-5)?
RecommendationsÉ Land Mngrs
Conferences/Seminars/Webinars
Publicity Materials
Online DatabaseÉ Within Sierra
Newsletter/Ebulletin
Regular Press Releases
Neutral Venue
Think Tank
Online Season Tracking
Carbon Credit System
Climate Change Star
Online Forums for Discussion
Online Database..Beyond Sierra
4.20
3.85
3.85
3.84
3.75
3.71
3.68
3.60
3.41
3.29
3.16
3.14
3.03
1
2
3
4
5
Not at All
Extremely

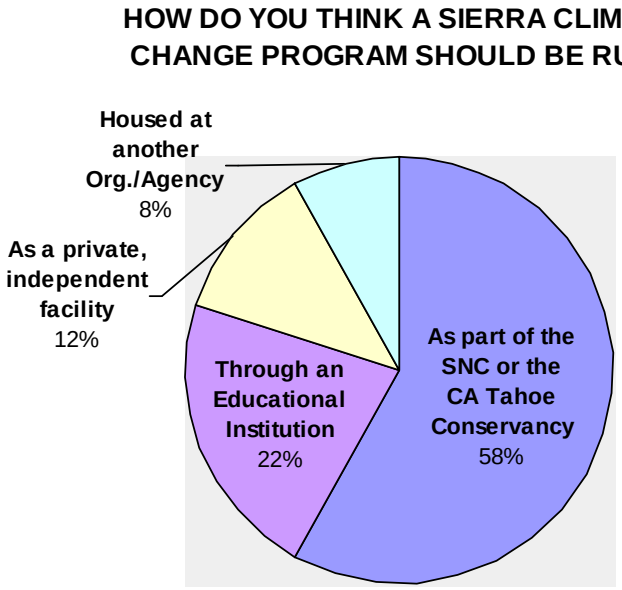

HOW VALUABLE WOULD THESE POTENTIAL SERVICES OF A SIERRA CLIMATE CHANGE PROGRAM BE TO YOUR ORGANIZATION (on a scale of 1-5)?
1 (Not at All)
2
3
4
5 (Extremely)
RecommendationsÉ Land Mngrs 4% 2% 11% 34% 48%
Conferences/Seminars/Webinars 4% 8% 18% 40% 31%
Publicity Materials 5% 6% 20% 36% 32%
Online DatabaseÉ Within Sierra 4% 8% 21% 33% 34%
Newsletter/Ebulletin 4% 8% 23% 36% 28%
Regular Press Releases 5% 9% 23% 35% 28%
Neutral Venue 6% 9% 26% 29% 30%
Think Tank 6% 12% 26% 27% 29%
Online Season Tracking 9% 13% 28% 28% 22%
Carbon Credit System 13% 15% 26% 22% 24%
Climate Change Star 14% 15% 27% 27% 16%
Online Forums for Discussion 7% 22% 36% 22% 13%
Online Database..Beyond Sierra 10% 24% 29% 23% 13%
Proportion of Respondents Rating "Not at All Valuable" to "Extremely Valuable"
0%
100%

Again, it is interesting to look at how the mean value for people serving each of the primary constituencies varies from the overall mean. The following chart demonstrates this variation for Government Agencies and Non-Profit Organizations—the other primary constituencies were omitted once again due to their small sample size.

HOW VALUABLE WOULD THESE POTENTIAL SERVICES OF A SIERRA CLIMATE CHANGE PROGRAM BE TO YOUR ORGANIZATION (on a scale of 1-5)?

As you can see from the graph, respondents from Government Agencies and Non-Profit Organizations valued some services equally. However, other services, such as "Online Database…Within Sierra" and "Neutral Venue," are valued very differently by respondents representing each of these two primary constituencies.

Responses to Question 3: In the web-based survey, this question was stated, "How do you think a Sierra Climate Change Program should be run?" Based on responses to this question at the facilitated meetings, there were several options offered to respondents. Also similar to the facilitated meetings, the strongest support was for having a climate program run by the Sierra Nevada Conservancy.



Summary of Findings:

Question 1: "Should some kind of climate change-related initiative or center be established for the Sierra Nevada region?"

-There is good overall support for the idea of establishing some kind of climate initiative for the Sierra Nevada region. This support was expressed both in the facilitated meetings and in the web-based survey. Moreover, there is good support for the initiative to include a Climate Center associated with the Sierra Nevada Conservancy.

Question 2: "If so, what should be the role or focus of an initiative or center? "

-The top responses for this question from the facilitated meetings and the web-based survey had many common threads but were somewhat different. This may be due to the fact that participants in the facilitated meetings were not able to see total results of the other meetings and had a smaller number of initial prompting ideas to which to respond. Adding to this perspective is the fact that participants of some of the facilitated meetings also received and responded to the web-based survey. With this in mind it may be appropriate to assign a somewhat higher priority to the results of the web-based survey when considering roles for an initiative or center.

Overall, the potential roles for a climate initiative or climate center receiving strongest support were:

-Be an information center, collecting and sharing information broadly.

-Be an advocate for mitigation and adaptation.

-Provide education to a broad spectrum of interests.

-Be a convener.

- Encourage and fund demonstration projects that address climate change mitigation and adaptation.

- Actively pursue and develop partnerships with a wide range of organizations and agencies that have an interest in addressing climate change effects.

Question 3: "Where should any initiative or center be headquartered?"

-As discussed earlier, strongest support was for any Sierra Nevada Climate Change Initiative or Center to be connected to the Sierra Nevada Conservancy.

Recommendations:

Establish a Sierra Nevada Climate Initiative (SNCI). Facilitated meetings and web-based survey responses indicated good support for establishing a Climate Initiative that would focus on the Sierra Nevada region. It seems likely there will be new sources of funding available to establish and maintain such an initiative. There is also a strong likelihood that several organizations will help an initiative succeed by providing staff support and by helping in the initial establishment or startup of the various roles of an initiative.

Headquarter the Climate Initiative with the Sierra Nevada Conservancy. This would essentially mean establishing a "Climate Center" at the Conservancy office as part of a climate initiative. Connecting the Climate Initiative with a known and successful organization like the Sierra Nevada Conservancy offers several advantages:

1. There would be no need to spend time or funding establishing a new organization or seeking additional office space. In addition, new staff time necessary for implementing a climate initiative can be easily incorporated into the existing Conservancy operation. And, redirecting or ending the initiative would be much simpler than for a new, separate organization;

2. The Sierra Nevada Conservancy has an established network of partners and constituents. This would facilitate the initial development of climate change information networks and cooperation throughout the region;

3. The Sierra Nevada Conservancy has a solid and positive reputation for fairness and objectivity that would make it much easier to begin a positive initiative dealing with an issue like climate change that

has attracted controversy. The Conservancy's reputation will also allow it to effectively "attract" the kind of cooperation and sharing of information that will be necessary for an initiative to succeed;

4. The Conservancy has an established information network and processes for things like distribution of project funding that can be easily adapted to work associated with a climate initiative; and

5. The Conservancy's established networks and its reputation would facilitate successful securing of the funding and support necessary for operation and ongoing maintenance of a climate initiative.

In addition to consideration of the above advantages, the Sierra Nevada Conservancy mission and Key Objectives fit quite well with leading the establishment of a Climate Initiative and being the headquarters for that Climate Initiative:

Mission Statement:

The Sierra Nevada Conservancy initiates, encourages, and supports efforts that improve the environmental, economic and social well-being of the Sierra Nevada Region, its communities and the citizens of California.

Sierra Nevada Conservancy's Key Objectives:

* The SNC seeks to "add value" and build upon existing community and regional efforts.
* The SNC brings a regional focus to the issues of the Sierra Nevada, collecting and sharing information across the region and communicating the benefits and contributions of the region.
* The SNC encourages community-based solutions and will assist communities with technical expertise, information and resources necessary to achieve local solutions.
* The SNC uses the best available information and science in making decisions, identifying opportunities to fill information and technical gaps and building on and expanding community information.
* The SNC informs and educates the public throughout the Region and the State about eh important contributions the Sierra Nevada provides to all Californians, including providing clean water for many uses outside the Sierra, access to world-class recreation and tourism and the production of a variety of important commodities.
* The SNC strives to identify and implement activities that result in integrated environmental, economic and social benefits rather than "either or" outcomes.

Begin implementing important roles as soon as possible and generally in the following order (as listed below, roles incorporate more than one of the roles discussed at facilitated meetings and in the web-based survey):

Establish a web-based information center for attracting and sharing information in broad-based networks. This information would be multi-faceted:

1. Climate change-related research/science, particularly as it relates to the Sierra Nevada region;

2. Information on current mitigation and adaptation activities occurring in and applicable to the Sierra Nevada region;

3. Climate change educational information and sources of such information; and

4. Information on climate change and "cumulative effects" related to climate change that agencies are incorporating in Environmental Assessments or Environmental Impact Statements to ensure consistency and thoroughness in these kinds of environmental documents.

Provide education about climate change to a broad audience. This role is related to the first priority of establishing an information center but includes additional elements particularly, the preparation and providing of information and publicity materials to legislators, educators, communities, partner organizations and the general public to increase understanding and to promote actions for mitigation and adaptation. This would help fulfill the input related to "advocacy. Help develop BMP guides for implementing mitigation and adaptation activities.

Be a convener. Coordinate and convene conferences and symposia to share climate change information. Associated with the convener role, develop a "think tank" operation that involves bringing together key interests to quickly develop suggestions for addressing key climate change issues that can then be shared widely.

Encourage and fund demonstration projects that address climate change mitigation and adaptation. Ideally, this will involve developing an additional grant program that focuses on climate change-related projects or programs. However, it will also be beneficial to build additional climate change emphasis into existing SNC grant programs. This should include having SNC staff work with grant applicants to consider climate change benefits in their submittals. As an example, a project that **involves hazard** reduction cutting and chipping of biomass might, with little additional need for funding, also include removal of the chips to a cogeneration facility where the chips offset the need for fossil fuels.

The Sierra Nevada region offers particularly attractive opportunities to explore projects that focus on forest resource-oriented projects such as those related to reducing effects of wildfire, protection an enhancement of water and watersheds, and protection and enhancement of wildlife habitat.

Actively pursue and develop partnerships with a wide range of organizations and agencies that have an interest in addressing climate change effects. This should include exploring the possibility of establishing a climate change project "clearing house" similar to the one that is now used among federal agencies in California to allocate grant funds. There is an opportunity to combine the actions described in "4" above to pursue projects that can be partially funded by SNC grants and various state or federal programs. This can produce a synergistic effect by expanding the funding available overall and helping focus available funding on the highest priorities.

One example of a possible partnership is the Pacific Forest Stewardship Program, where certain lands currently owned by Pacific Gas and Electric Company will be dispersed to various entities in the next few years. These lands may offer an opportunity for the SNC and the Stewardship Council to explore possible climate change-related research, management, mitigation and adaptation projects.

Roles Perspective. It should be noted that all the roles discussed above, though listed separately, are inter-related and overlapping to some extent and should be considered a holistic package. Any one or several of the recommended roles might provide a benefit, but there will be a much greater overall benefit if all are implemented together and used to complement one another. In addition, these are recommended roles for initial implementation of a Climate Change Initiative. Over time, additional roles will certainly be added and the initial roles may be modified, all in order to provide more effective and beneficial operation of the Initiative.

Adopt General Principles for the Sierra Nevada Climate Initiative. Based on discussions and input from facilitated meetings and the web-survey, there is support for several principles to guide implementation and operation of the SNCI:

-Coordinate widely to build relationships and avoid duplication of efforts. There are many public and private organizations involved in climate change activities and discussions. This includes state and federal agencies and many nonprofit organizations. They are doing much good work related to climate change that does not need to be duplicated. A valuable role that can be fulfilled by the Sierra Nevada Climate Initiative is coordination and sharing of information about all these activities. There is also a potential role that would involve support of various activities through acquisition and distribution of funding. All this will require good coordination and communication.

-Retain the credibility necessary to successfully attract people who want information, want to share information and want to find ways to help address climate change.

-Adopt a bias for action. Climate change effects seem to be occurring faster than predicted, making mitigation and adaptation actions increasingly important. Thus it is essential to ensure the Sierra Nevada Climate Initiative focuses on, encourages and facilitates streamlined implementation of climate-related activities. It is also important to focus initially on actions that can be implemented rapidly and effectively.

-Focus on both mitigation and adaptation. There are advocates for putting top priority on either mitigation or adaptation activities. However, there seems to be a growing consensus that both are needed in order to adequately address climate change effects.

Appendices:

Implementation Plan

Included below are actions to be taken to initiate the Sierra Nevada Climate Initiative and to carry it through the first few years of operation. It should be noted that the authorities and mission of the SNC are sufficient to allow establishment of a SNCI, to provide leadership in addressing climate change issues and to fully implement the actions outlined in this report. However, the SNC does not currently have sufficient staff and resources for implementation, thus the need to seek additional funding and support.

-Assign responsibility for initial coordination of the SNCI to an Interim Coordinator.

-Begin process of recruiting full-time coordinator.

-Begin seeking grant funding for coordinator and for initial operation of the SNCI.

-Set up a basic website for the SNCI.

-Establish an Advisory/Steering Committee. This would include one or more SNC Board members.

-Prepare a "Business Plan" that would outline operations and staffing for the foreseeable future. (Work on steps 2,3,4,5 and 6 would occur concurrently and would begin as soon as the Interim Coordinator Position was established)

-Create a web-based center for information sharing. Coordinate widely to attract pertinent information and encourage use of the center. Include a section for sharing information on approaches being taken for mitigation and adaptation.

-Hire or contract for full-time coordinator.

-Develop an initial SNCI Education Plan, focusing on priorities for audiences to reach with education and for the topics and types of educational materials to most effectively reach theses audiences.

-Convene key stakeholders to gather further information regarding operation of the SNCI; i.e., what should be the next tier of priorities for the SNCI to focus on, what role would the stakeholders like to play in the future operation of the SNCI, how can the SNCI best assist stakeholders?

-Update the SNCI Business Plan to reflect information resulting from convening stakeholders.
-Establish and implement an initial SNCI grant program to encourage and assist implementation of climate change mitigation and adaptation projects.

-Concurrent with "12" above, actively pursue the establishment of partnerships with interested organizations and agencies.

-At the end of the first year of operation of the SNCI, convene stakeholders to do an assessment of the operation and value of SNCI and to update priorities for future operation.

Key Comments

There were literally hundreds of comments documented from the facilitated meetings and the web-survey representing different points of view and organizations. Obviously not all can be included in a report like this. There was commonality among many in terms of general concepts and the comments below are an attempt to capture some of those concepts. Some are in the words of specific participants because they portray ideas so well. Others are combinations of several comments that relate to the same idea but were stated differently.

-Create a "Switzerland" of scientific ideas and sharing; i.e., a forum or place that different opinions and information can be shared safely and discussed diplomatically.

-Be a center for true science, not political science as related to climate change; i.e., be sure information is accurate and not just opinions.

-Distill all the information about climate change, especially research/science, into something suitable for broad distribution and understanding.

-Create a "think tank" for addressing climate change issues.

-A think tank would be a good idea, but also needed is a "Do Tank", an entity that does more than generate ideas or coordinate information—a "Do Tank" would promote and implement solutions in a timely manner.

-Do not try to be the "doer" of everything. There are many organizations getting things done already. Be a place for "doers" to come to obtain information and share ideas.

-Be an advocate for implementing mitigations and adaptations to address the effects of climate change (advocate action and how to take action). Advocate to the Legislature, to key interests, to educational institutions and to the public in general.

-Most organizations do not have adequate staff to keep attuned to all the information relating to climate change. Serve as the "information distiller" to help these organizations focus on the information that is most important; i.e., do not just create data bases of pertinent information. Catalog that information in ways that make it easy and efficient to access.

-Help develop guides (similar to Best Management Practices) for people to use to address mitigation and adaptation in their daily lives.

-There may be climate change efforts at the state level, but they tend to be "urban-centric" and will not adequately represent the Sierra Nevada region.

-Help bring Sierra Nevada counties together to address climate change in a synergistic way.

-Because of its extensive natural resource base, the Sierra Nevada region has huge potential for helping mitigate the effects of climate change. This can be a benefit to Sierra Nevada communities. Help communities develop plans to help the region and the state deal with climate change.

-Be a main, credible voice for climate change issues in the Sierra Nevada region.

APPENDIX E

Sample Strategy Development Outlines

This appendix includes sample project development outlines for potential projects as identified in the SN CAP. These projects are:

1. Strategy X – Energy Management and Production Plan for the Sierra Nevada
2. Strategy XX – Assessing and Quantifying the Climate Change Benefits of Various Conservation Practices

Strategy X – Energy Management and Production Plan for the Sierra Nevada

Intent:

To redefine the discussion of fire/fuels management and biomass around the larger issue of energy production, linking possible actions to meeting the goals and objectives of a variety of existing energy programs (such as the Low Carbon Fuel Standard and the Renewable Portfolio Standard) and in doing so illuminating co-benefits and garnering non-traditional support (other agencies and programs not usually connected with forestry/wildfire issues). This approach connects the related climate issues in the water, local government/land use, forestry, waste, and energy sectors around goals and objectives that benefit them all (each sector has energy-related strategies).

Discussion:

Development of a cohesive region-wide perspective on energy, focusing on its use, management, and production will allow the Sierra Nevada to capitalize on many energy related opportunities. By assessing and actualizing the potential for the Region to become a power-producer, the Region's importance in solving State and Nation wide energy problems can be elevated and the potential to contribute to its own energy independence, the development of alternative fuels and "green jobs/technology," and the reduction of the State's use of non-renewable polluting fossil fuels can be identified. By developing the metrics that support the cost-benefit opportunities of the region in energy production (and secondarily, reducing consumption), with co-benefits in a variety of climate and environmental areas (land use, forestry health/ecosystem resilience, water, waste) we change the scale of the region's impact. In other words, the Region can be seen as a number of small counties and communities, and/or a disparate set of landowners and managers, and/or small business interests/opportunities -- or it can be seen as 25 million acres of energy generating potential. Furthermore, by becoming a regional player in the energy discussion the Sierra Nevada can become a larger voice in the debate regarding water storage, dam management and development, and hydroelectric power that protects natural resources while providing a small but significant source of energy to the State's portfolio. Finally, framing fire fuels management as an energy issue rather than a forestry or fire management issue helps to reduce the traditional silo-view of the problems associated with it and invites other decision makers and stakeholders to the table.

For the purposes of this proposal "energy management" includes two focus areas: fire danger reduction and energy conservation. "Energy production" includes the potential for biomass to energy, biomass to fuel, and the development and provision of energy through other renewable sources such as solar, wind, geothermal, and small hydroelectric.

Fire fuels management and wildfire danger reduction is included here as a category of energy management because fire fuels are a significant source of energy. Whether that energy is wasted and released into the atmosphere, with health, environmental, and climate impacts, or is harvested and

used as a productive, clean, and controlled source of energy is simply a matter of management practices. The same holds true for grid- or other fossil fuel based energy consumed by residents of the Sierra – the difference between the efficient use/reduction of demand and wasted resources (with commensurate unnecessary cost and environmental impacts) is simply a matter of operational practices.

Needs/Issues:

1) In order to represent the "power" of the Sierra Nevada Region we first must establish it. In order to do so we will need to assess its capacity, which will include (but is not limited to) gathering the following region-specific information:

- Possible sources of electricity generation, by type (biomass to energy-electricity/thermal/combined heat and power, biomass to fuel-cellulosic ethanol/bio-oil, solar, wind, geothermal, hydroelectric (resource:
- Estimated # bone dry tons (BDT) of biomass available for conversion to fuels (by land ownership) (resource:
- Estimated energy benefit of available BDT of biomass (by land ownership)
- Current CO2e sequestered
- CO2e sequestered via potential fire risk reduction measures
- Estimated BDT of biomass available from fire risk reduction measures for use as energy fuel stock

2) In order to determine progress and to provide focus to the effort we need to establish goals in each area, taking into consideration what the appropriate role of the SNC would be in these matters:

- Identify actions needed to increase acres treated by xx per year to reduce fire risk (could establish this by landowner category) and provide biomass fuel stock
- Identify actions needed to maintain acres currently treated to continue to maintain fire risk reductions (could establish this by landowner category) and provide on-going fuel feed stock
- Work with federal agencies to address federal lands issues regarding biomass management practices
- Coordinate with local and county representatives region-wide to expand Placer County's biomass pilot project to xx additional counties by 20xx
- Coordinate with local and county representatives region-wide to replicate the communication and planning model of the Calaveras Collaborative to xx additional counties by 20xx
- Work with xx local governments to increase CEC funding for Sierra Nevada-based renewable energy projects by $500,000 per year

3) In order to provide motivation in meeting the established goals we must quantify the potential benefits, including but not limited to:

- CO2e avoided
- CO2e sequestered
- Dollar value of megawatts of potential available energy from these sources
- Criteria pollution reductions from provision of "clean" energy

- Funding available for these purposes
- Jobs created/preserved
- Ecosystem services preserved/enhanced
- Co-benefits toward goals of AB 32 sector scoping plans (land use/local government, waste, energy, agriculture, transportation); as well as the goals of the Low Carbon Fuel Standard and the Renewable Portfolio Standard

4) In order to determine issues to be addressed we must also identify problems/obstacles to meeting these goals.

- Costs/available resources
- Organizational/jurisdictional impediments
- Public support/education
- Uncertainties of modeling or estimation methods

Guiding Principles: Actions taken to develop and apply this strategy should:

- Ensure that all issues are identified and addressed before implementation. Resultant actions/plans should avoid "single issue" policy drivers that only affect one area (i.e., carbon vs. habitat vs. energy production). Actions should be based on balanced, reasoned considerations that work to improve the overall health and resiliency of the community, environment, economy and culture.

- Involve all members of the community in their consideration. To convert supplemental natural resources into energy and to reduce fire danger and carbon loss in the forests will require bringing federal, tribal, multiple state, county and city, non-governmental organizations, businesses/business representatives and impacted citizens to the table.

- Not be hindered by initial difficulties. This process addresses sensitive and complicated issues that will take time and the construction of

- Keep in mind that provision of energy production through the use of natural resource materials is a sensitive matter and has a long history of legal contentiousness and mistrust. All issues must be discussed and addressed in an open and transparent manner in order to restore trust and ensure broad cooperation.

Strategy XX – Assessing and Quantifying the Climate Change Benefits of Various Conservation Practices

Intent:

To explore the potential benefits and possible initiation of a project to identify climate-related benefits of "sub-protocol" projects and practices. For these purposes the term "sub–protocol" refers to those projects for which it is too resource intensive or otherwise impractical to register with the Climate Reserve in order to define their carbon/climate benefits. The outcome of this project would be to develop measurement methodologies or tools (which could include but are not limited to "carbon calculators") that would help project proponents to determine the relative climate benefits of their efforts. The intent of this strategy would not be to create methodologies that compete with the Climate Reserve. The outcomes of this effort would simply allow conservation managers and others to understand the relative climate benefits of their plans and practices, so that information can be transmitted to the public in an understandable and consistent manner.

Discussion:

Environmental management, protection and conservation organizations are, in general, unaware of how to determine or communicate the climate change benefits associated with their current conservation efforts. They know that their land management practices, easement/trust efforts, and restoration activities not only mitigate climate change impacts but they also facilitate adaptation to climate change impacts. Some of these benefits include:

- improved carbon capture and storage (mitigation)
- improved water quality, storage and supply (mitigation)
- reduction of catastrophic wildfire threat (mitigation)
- improved natural landscape health resulting in improved resiliency to increased thermal stressors (adaptation)
- increased resistance to invasive species (adaptation)
- protection of natural habitat which supports the survival of species and allows those species affected by a warming environment to migrate upward, as possible (adaptation)

The protocols being established by the Climate Reserve and other organizations that intend to accommodate carbon "trading" systems will help some projects measure and verify their carbon benefits. But most conservation organizations will not have the means or otherwise be able to meet the high and conservative "reporting" bar of the protocols. Regardless, these programs and their projects can and do contribute significantly and positively to reducing greenhouse gas emissions and their impacts on the natural resources of the Sierra and the services they provide for the rest of California.

These organizations would benefit from a consistent and real, but more generalized "measure" of the climate outcomes of their programs by educating the public on the relative carbon values and impacts of their efforts. Efforts to stop and reverse climate impacts would benefit through a better understanding

of the climate-related impacts of conservation and land management. Natural resources would benefit because a better understanding of the climate-related benefits of a broad range of conservation and management methodologies can lead to more effective application of those methodologies to a broader landscape.

Needs/Issues:

A need exists to identify existing resources and to develop a Sierra-related methodology that will uniformly measure the climate benefits of a vast array of conservation efforts, including but not limited to:

- Conservation through easements and trusts
- Adaptive land management
- Avoided land conversion and "Smart" land use planning
- Habitat/natural resource restoration
- Fire fuel load reduction
- Various other voluntary, public, and private efforts to protect the environment

Potential "cons" of this proposal may include:

- Measurements may not be real/accurate (the generalization applied could dilute potential benefit for any given landscape or could overstate the benefits of one measure over another)
- Measurements may be manipulated (applied inappropriately, exaggerated) resulting in harm, not protection, and in skewing funds and resources away from real protective measures
- Planning decisions may be overly focused on singular issues, such as carbon sequestration, rather than holistic efforts that improve forest and working landscape health and benefits

Guiding Principles: Actions taken to develop and apply this strategy should:

Include working with all interested private and public organizations to identify the appropriate scope of and all potential issues related to such a project.

- Identify potential funding and research partners to carry it out.
- Include guidelines in the use of resultant tools such as "carbon calculators" and the appropriate application of resulting information (including caveats and/or limits).

APPENDIX F

Samples of Model City, County, and Regional Climate Action Plans and Policies

The **City of South Lake Tahoe** has acknowledged that "Mountain Communities are quite unique when it comes to the opportunities and challenges of incorporating green initiatives and sustainability. Climate, seasons, aspect, erosion, vegetation, growing season and solar exposure play an important role in defining unique opportunities for sustainability." In response to these challenges the City has created a Sustainability Plan, engaging the public in a community-based process designed to be inclusive, interactive and informed. The City of SLT's Sustainability Plan includes programs focused on reducing greenhouse gas (GHG) emissions and climate change impacts. Energy conservation and reducing the City's carbon footprint will take concerted efforts by the public and private sectors. The concept of sustainability will guide City policy, programs and projects. The long-term impacts of policy choices will be considered to ensure a sustainable legacy. The City is committed to meeting its existing needs without compromising the ability of future generations to meet their own needs.

The Plan builds on existing projects, programs and policies and sustainability strategy, tailored to the specific needs, challenges and opportunities of the City. There are over 35 projects and programs in progress that will help move the City and region toward a sustainable future including:

- Supporting "Green" transit (low and zero-emission transit)
- Focusing on a mix of land uses that support transit use
- Emphasizing infill instead of Greenfield development
- Using alternative energy sources and infrastructure investment
- Incorporating "Cradle to cradle" design solutions and green building for new construction
- Planning for infrastructure that improves water and air quality
- Working with the public and private sector to reduce energy use in all buildings including residential, commercial and industrial properties

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The **City of San Francisco's** Climate Action Plan is a primer on climate change and its effects on an urban environment, addressing the causes of climate change, its impacts on San Francisco, existing mandates to curb climate change, San Francisco's greenhouse gas inventory and reduction target, and an action plan to meet the City's reduction goals. Areas the plan addresses include:

1. Transportation – public transit, driving disincentives, use of alternative modes of transportation
2. Energy efficiency – incentives, disincentives, technical assistance in residential, commercial, and municipal building efficiency, education and outreach, codes and standards changes
3. Renewable energy – including solar, wind, and biomass project development and pilot projects for emerging technologies, supporting green power purchasing

4. Solid Waste – recycling, composting, including residential, commercial, and construction demolition debris, innovative collection techniques, source reduction programs.

San Francisco estimates that by implementing this plan fully they will reduce annual CO2 emissions by 2.6 million tons.

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The **Bay Area Climate Change Collaborative** (BACCC) was created in March 2009. The purpose of the BACCC is found in its simple two-page Charter , which states "No one agency, company or organization's actions alone can effectively address the challenge of climate change. We recognize the profound need for cross-sector, regional collaboration to promote energy efficiency, renewable energy, and other best practices at the regional, State and Federal levels to address the challenge of climate change. The Bay Area Climate Change Collaborative brings together leaders from government, the business community, academia, and not-for-profit advocacy groups to address the challenge of climate change across the region to best meet these challenges and sustain our quality of life.

Its members are the Cities of Oakland, San Francisco and San Jose, the Silicon Valley Leadership Group, the Bay Area Council, the Joint Venture Silicon Valley, and Santa Clara County. These organizations and agencies signed a compact that specifies ten measurable goals in such areas as renewable energy, zero emission vehicles, municipal and organizational climate adaptation plans and workforce training for the new clean and green economy:

1. Establish a standard for "baseline" green building and rooftop solar by the end of 2010.
2. Change transportation patterns to reduce gasoline consumption 3 percent by the end of 2013; and 8 percent by the end of 2018.
3. Increase renewable sources of electricity by 30 percent by the end of 2013 and by 50 percent by the end of 2018.
4. Through conservation and energy efficiency, reduce electricity use in buildings by 10 percent by the end of 2013 and 15 percent by the end of 2018.
5. Increase the available blue and white collar "clean and green workforce" course/trainings and help place 20,000 trainees and graduates in the labor force by the end of 2013.
6. Decrease community water consumption by 15 percent by the end of 2013 and 20 percent by the end of 2018. Increase water recycling by 10 percent by the end of 2013 and 15 percent by the end of 2018.
7. Develop and adopt climate adaptation plans by the end of 2013 to increase resiliency to the impacts of climate change.
8. Implement a region-wide public information campaign by the end of 2010.
9. Increase solid waste diversion from landfills to 75 percent by the end of 2013, and achieve zero waste by the end of 2020.
10. Increase the number of zero emission and other ultra-low emission vehicles to 10 percent of municipal fleets by the end of 2013, and to 25 percent by the end of 2018.

The San Diego Association of Governments (SANDAG) (representing 18 cities and county government) serves as the forum for regional decision-making. SANDAG builds consensus, makes strategic plans, obtains and allocates resources, plans, engineers, and builds public transportation, and provides information on a broad range of topics pertinent to the region's quality of life. The SANDAG Regional Climate Action Plan (RCAP) will include an inventory of regional GHG emissions, establish an emissions reduction target for 2030 and identify policy and planning methods to meet the target. It will focus on the largest emitting sectors: transportation and energy. In 2007 SANDAG published the Background Report on Climate Action Plans is a helpful resources which describes the CAPs at that time of Chula Vista CA, King County WA, Los Angeles CA, Portland-Multnomah County OR, San Diego CA, San Francisco CA, and Santa Monica CA. This report also lists Mitigation Best Practices from those plans in ground transportation, buildings and industry, solid waste, aviation and freight, sequestration and offsets, and policy and education.

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The South Coast Air Quality Management District (SCAQMD) has created a Climate Change Policy, which guides their regional program to identify, certify, and reduce greenhouse gases in their region and within their jurisdiction. The SCAQMD policy includes guidance on coordinating with other jurisdictions' climate change programs, sharing their experiences and lessons learned with their own command and control market based rules, weigh in on legislative proposals, prioritization of projects to include reduction of ghgs (as appropriate), help to define and assist in establishing significance thresholds and mitigating ghg emissions within the CEQA process, include ghg strategies, compliant with AB 32, into their local government guidance document, update the South Coast Air Basin ghg inventory and help local governments to update theirs, reduce their own operational ghg emissions, provide multi-lingual educational materials on climate change and available actions to reduce ghgs and conduct various climate change related conferences. At the direction of their board they have created the SoCal Climate Solutions Exchange, in order to provide high quality greenhouse gas emission reductions that enhance the local economy and capture needed co-benefits for Southern California as businesses achieve voluntary, early reductions of greenhouse gases.

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Sonoma County's Climate Action Plan states that it is "…in essence, a public works project to meet Sonoma County's bold goal for reducing greenhouse gas emissions 25 percent below 1990 levels by 2015. All nine Sonoma cities and the County established this goal in 2005." The four major categories of the Sonoma County plan include:

1. Efficiency First: Invest in widespread energy and water efficiency to reduce demand.
2. Smart Transit and Land Use: Shift transportation from fossil fuel vehicles to transit, walking, bicycling, and electric vehicles.
3. Power Up Locally: Invest in Sonoma County renewable energy sources and jobs.
4. Conserve and Capture: Protect our forests and farmland, sequestering carbon, and convert waste into energy.

In 2007 several large counties from across the country joined the Sierra Club in announcing the creation of the Cool Counties Climate Stabilization Declaration, a major initiative to combat global warming. The counties - led by King County, Washington, Fairfax County, Virginia, and Nassau County, New York - pledged to reduce global warming emissions 80 percent by 2050, an achievable average annual reduction of 2 percent. The Cool Counties Climate Stabilization Declaration also urges the federal government to adopt legislation requiring an 80 percent emissions reduction by 2050 and calls for fuel economy standards to be raised to 35 miles per gallon within a decade. On July 16, 2007 at the National Association of Counties Annual Conference in Richmond, Virginia, 12 pioneering counties representing 17 million people launched "Cool Counties." The Cool Counties initiative seeks to marshal the resources of all 3,066 counties across the nation to address the challenges climate change poses to our communities. Participating counties commit to four smart actions:

1. reducing our own contributions to climate change through our internal operations;
2. demonstrating regional leadership to achieve climate stabilization and protect our communities;
3. helping our community become climate resilient;
4. urging the federal government to support our efforts.

As of December 2007 nearly 40 counties had joined in taking this pledge. Six of these counties were from California; none were counties within the Sierra Nevada.

The **California Air Pollution Control Officers Association** has created a report to assist cities and counties to address climate change in their general plans. **CAPCOA's Model Policies for Greenhouse Gases in General Plans** is available on their website. CAPCOA summarized the intent of its efforts:

> "The General Plans developed and implemented by cities and counties must be at the heart of any effort to change our built environment, and many of these local governments have stepped up to the challenge. In order to support their important efforts, the California Air Pollution Control Officers Association (CAPCOA) has prepared this report of Model Policies for Greenhouse Gases in General Plans. The report is intended to serve as a resource for cities and counties. It discusses General Plan structure and options for including GHG policies in existing General Plan Elements, or by creating a separate GHG Element and/or GHG Reduction Plan. The Model Policies Report contains a menu of model language for inclusion in the General Plan Element(s). The report does not dictate policy decisions rather it provides cities and counties with an array of options to help them address GHGs in their General Plans."

Chapter 2 "Climate Change Statutes and Regulations in California" of this plan includes an excellent listing of State climate change requirements that "…create a strong foundation upon which General Plan

elements for GHGs can be built." Various appendices of this report include additional helpful information.

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The Regional Greenhouse Gas Initiative (RGGI) is a cooperative effort by ten Northeast and Mid-Atlantic states to limit greenhouse gas emissions. RGGI is the first mandatory, market-based CO_2 emissions reduction program in the United States. The states of Connecticut, Delaware, Maine, Maryland, Massachusetts, New Hampshire, New Jersey, New York, Rhode Island, and Vermont are signatory states to the RGGI agreement. These ten states will cap CO_2 emissions from the power sector, and then require a 10 percent reduction in these emissions by 2018.RGGI is composed of individual CO_2 Budget Trading Programs in each of the ten participating states. These ten programs are implemented through state regulations, based on a RGGI Model Rule, and are linked through CO_2 allowance reciprocity. Regulated power plants will be able to use a CO_2 allowance issued by any of the ten participating states to demonstrate compliance with the state program governing their facility. Taken together, the ten individual state programs will function as a single regional compliance market for carbon emissions.

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The Western Climate Initiative, launched in February 2007, is a collaboration of seven U.S. governors and four Canadian Premiers. The WCI identifies, evaluates, and implements collective and cooperative ways to reduce greenhouse gases in the region, focusing on a market-based cap-and-trade system.

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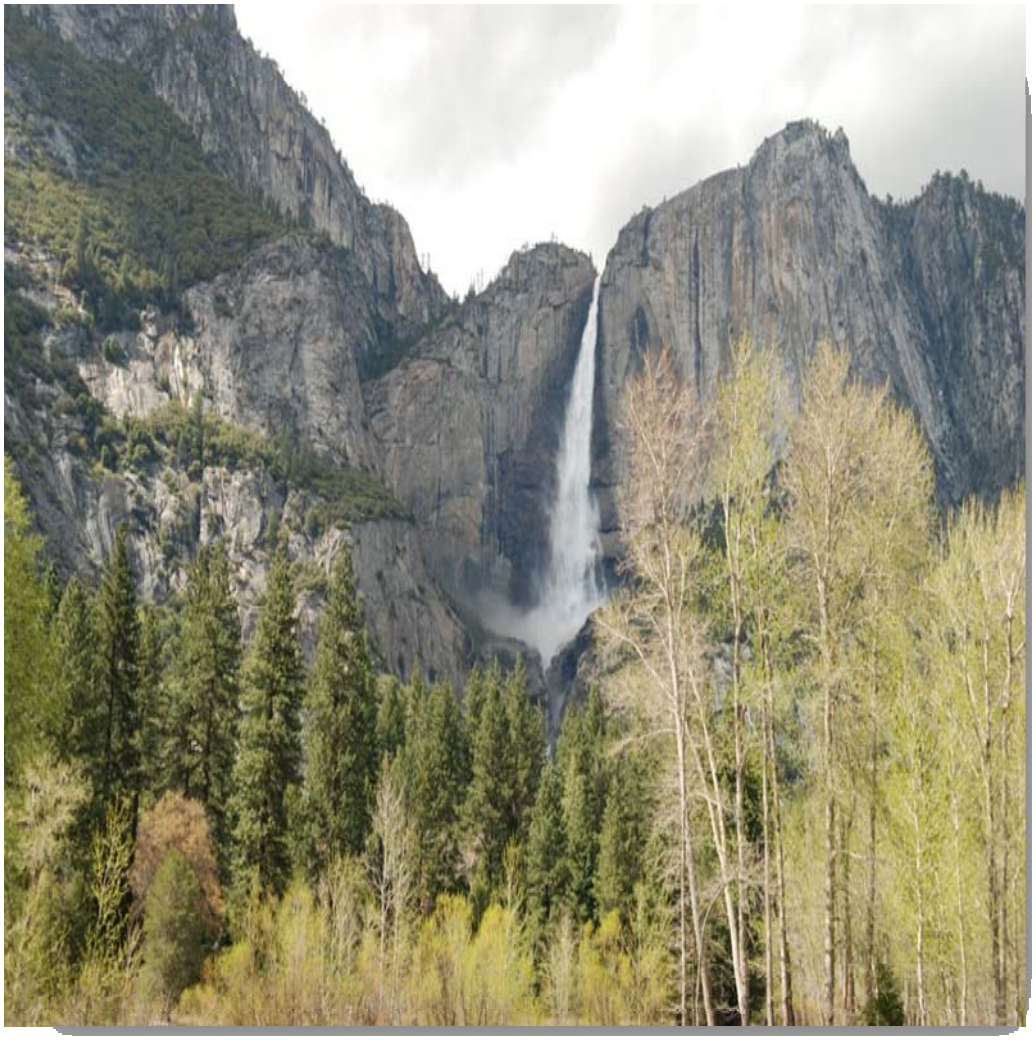
Oregon's Metro (an elected regional government, serving more than 1.4 million residents in Clackamas, Multnomah and Washington counties and the 25 cities in the Portland region) Climate Change Action Plan is aimed at establishing regional greenhouse gas emissions, documenting regional goals, and working with regional constituents to create new goals and identify ways to meet them.



Everybody needs beauty as well as bread, places to play in and pray in, where nature may heal and give strength to body and soul.

John Muir