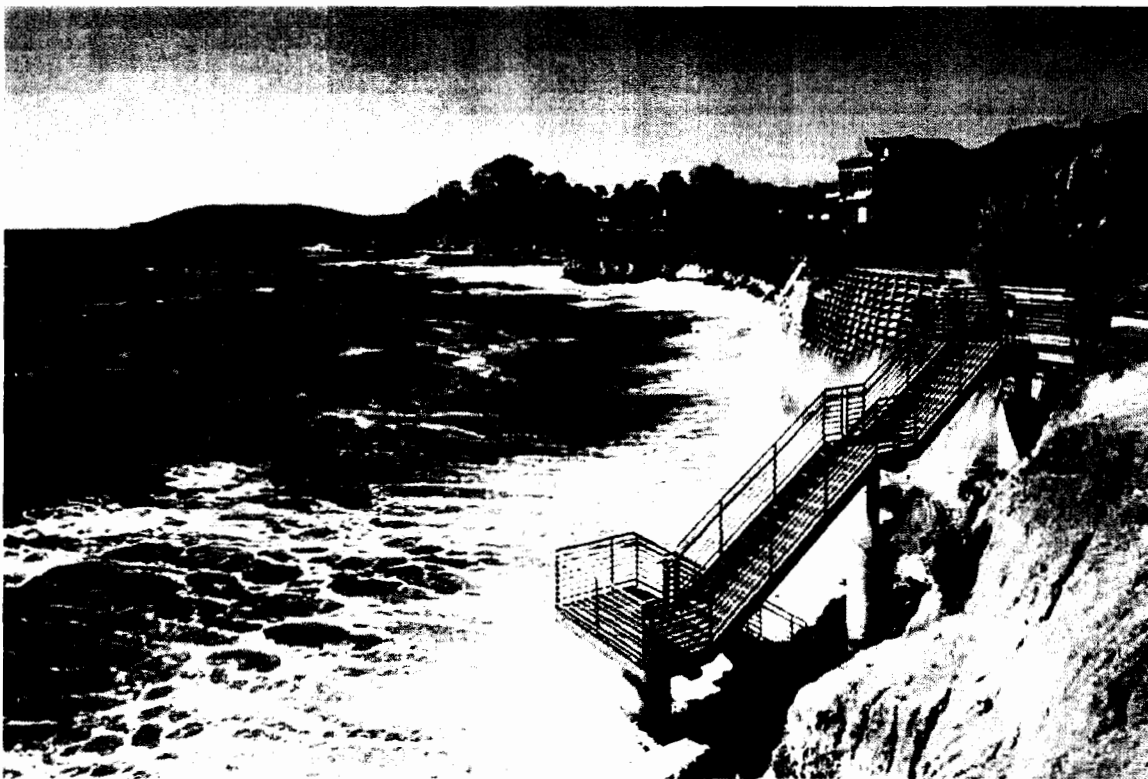




Climate Change and the California Coastal Act: Rising to the Challenge
Planning and Partnering for Reduction, Mitigation and Adaptation

A Proposal for the 2009 NOAA Coastal Management Fellowship Program



Submitted by:

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1. Background and Introduction

The California Coastal Management Program

The California Coastal Commission has regulatory and permitting responsibilities over all “development” taking place within the coastal zone, a 1.5 million-acre area stretching 1,100 miles along the state’s coastline from Oregon to Mexico, and around nine offshore islands. The Coastal Act of 1976 created a comprehensive coastal protection program grounded in partnerships between the Commission and local government jurisdictions (15 counties and 58 cities) within the coastal zone. The coastal zone extends seaward three miles, with a landward boundary that varies from several miles inland in some places, to a few hundred feet from the shore in others.



Among the coastal resources specifically protected within the Coastal Act are: public access, wetlands and other environmentally sensitive habitat areas (ESHA), agriculture, low-cost visitor-serving recreational uses, visual resources, commercial and recreational fishing, and community character.

The Commission is one of three state agencies that administer the federally-approved California Coastal Management Program (CCMP), the others being the San Francisco Bay Conservation and Development Commission (BCDC), and the California State Coastal Conservancy (the Conservancy). The CCMP incorporates many of the Commission’s authorities under the Coastal Act - including responsibility for comprehensive management of coastal resources - using planning, permitting, and non-regulatory mechanisms and relying on cooperation between federal, state, and local agencies. The Commission strives to balance demands for development with conservation, protection and enhancement of the Coastal Act resources, through sound and responsible stewardship of the State’s spectacular coastline.

Global Climate Change and the California Coastal Act

Coastal managers, local coastal jurisdictions, and the public understand that global climate change will likely have far-reaching and long-term adverse impacts on the coastline of California. According to the Public Policy Institute of California (PPIC) survey, *Californians and the Environment*, released in July 2008: 64% of Californians believe that the effects of global warming have already begun and one in four believe that its effects will ultimately occur. Eight in 10 of those surveyed believe that global warming poses a very (52%) or somewhat (27%) threat to California’s future economy and quality of life. According to the PPIC report, “the percentage calling the threat of global warming very serious has increased 13 points since 2005 (39% to 52%).”¹

The Commission, local coastal jurisdictions, and other state and federal agencies that have regulatory authorities within California’s coastal zone are now grappling with how to best prepare for the impacts of global climate change, including sea level rise, increased storm frequency and intensity, coastal erosion and flooding. Those impacts could be devastating to coastal and marine habitats, wetlands and water quality; pose expensive disruptions or long-term damage to coastal recreation and public access, commercial and residential developments; and result in the inundation of public facilities and infrastructure, including highways, bridges, airports, commercial harbors, ports, and water treatment and wastewater facilities. The economic impacts could be breathtaking, when considering that a National Ocean Economics Program study in 2005 valued California’s “ocean economy” at \$43 billion.²

There are many efforts underway within the State of California to address both the causes and impacts of global climate change. Legislation – including AB 32, which was signed into law in 2006, and SB 375, signed into law in 2008 – will drive dramatic policy changes within the state regarding the reduction of greenhouse gas emissions and land use planning. Because it is widely accepted that global climate change will have particularly far-reaching and long-term adverse impacts on coastal areas, including the coastal resources protected by the California Coastal Act, the Commission will be an integral player on the implementation of some of those policy changes.

¹“Californians & the Environment,” July 2008, Public Policy Institute of California, pg. 14

² “A Vision for Our Ocean and Coast - Five year Strategic Plan,” The California Ocean Protection Council, 2006, pg. 8.

Global Climate Change and the Coastal Zone Management Act (CZMA)

Coastal managers from the nation's 34 federally-approved coastal management programs have been working with NOAA and the Coastal States Organization (CSO) on a multi-year process in preparation for the reauthorization of the Coastal Zone Management Act (CZMA). Front and center in that process has been the issue of global climate change and the challenges it presents to the coastal management community. CSO created a Climate Change Work Group, which in August 2007 released its draft "The Role of Coastal Management Programs in Adaptation to Climate Change." The report, which was approved by the full CSO membership in October 2007, was prepared in order to:

- Inform Congress and federal agencies of the role of state coastal zone management programs in addressing climate change
- Inform CSO and NOAA's efforts to reauthorize the Coastal Zone Management Act
- Inform federal agencies of key research, information and policy needs; and
- Provide for information exchange among coastal states and territories.

The report highlights the need for a federal strategy and greater interagency cooperation between NOAA, federal agencies and coastal states' and territories' coastal program managers on the issue of climate change, and also calls on Congress to recognize the importance of the CZMA as a statute that can "foster adaptation to climate change at the state and local levels." CSO also facilitated a CZMA Reauthorization Work Group which developed draft language for a reauthorized CZMA, the "Coastal Management Act of 2009," which the CSO membership will be voting on at its annual meeting the week of October 20, 2008, in order to be prepared for, and have something as a starting point, if and when a new Administration and Congress prioritizes CZMA reauthorization.

The Challenge for the Coastal Commission

The dynamic nature of information about global climate change can be overwhelming to coastal managers and other policy makers, who may barely have digested one study before another one is released. The slow and deliberative process in which public agencies work can also be a barrier to swift implementation of strategic policies, especially when multiple jurisdictions are involved. The scientific community warns that even immediate and decisive policies to dramatically reduce the greenhouse gases contributing to global climate change may not prevent or significantly reduce the dramatic and adverse impacts in coming decades. While the information and predictions are constantly evolving as new scientific research and analysis emerge, the Coastal Commission can neither ignore the evidence that global climate change will directly affect coastal areas and coastal resources, nor wait for some final consensus or more information before coordinating with and assisting local governments and others in the development of strategies that address the impacts of global climate change affecting coastal areas and Coastal Act resources. Strategies would include, but not necessarily be limited to: 1) considering, calculating, and identifying mitigation techniques for the impacts of climate change on Coastal Act resources; 2) identifying adaptation strategies for protection of coastal communities and resources; and, 3) identifying ways to reduce greenhouse gas emissions from new development within the Coastal zone.

Dr. Susanne Moser and John Tribbia surveyed California county and city government employees with coastal management responsibilities in 2006, concluding that California was inadequately preparing for the impacts of climate change on coastal areas and that local governments need substantial support from state and federal agencies to increase preparedness for climate change and other inundation-related risks. They noted that:

*"... local coastal managers would benefit from regular doses of relevant and accessible information on the latest climate change science, especially that relevant to coastal areas. Such information also must highlight feasible management strategies to counter perceptions that "there are no viable response options." there is a need to improve not only managers' and the public's awareness, but maybe, more importantly, their deeper understanding of climate change impacts on coastal communities. Such awareness and understanding will—from the bottom up—support and create demand for greater local preparedness as climate change creates ever growing challenges from sea-level rise and storm-related inundation along this state's resource-rich and beautiful shoreline."*³

³ "Vulnerability to Inundation and Climate Change Impacts in California: Coastal Managers Attitudes and Perceptions." Marine Technology Society Journal, Vol. 40, No. 4, Winter 2006/2007, pgs. 35-24.

The Coastal Commission recognizes the importance of better understanding the expected impacts of climate change and its effects on coastal resources. To that end, Commission staff coordinated the first in a series of global climate change workshops for the Coastal Commission's December 2006 meeting, when the Commission heard from former Assembly Member Fran Pavley on AB 1493 and AB 32; from Dr. Jim Barry on marine resource impacts from climate change; and from Dr. Susanne Moser about local government awareness and responses to climate change. Commission staff is planning another workshop for the December 2008 meeting.

Additionally, for more than a year, the Commission's Climate Change Task Force (CCTF) and its subcommittees have been meeting regularly. The CCTF is an internal group of staff from a cross-section of divisions, including: planning, enforcement, public education, management, water quality, federal consistency, and technical services. CCTF subcommittees have been examining topics including: adaptation, green building, smart growth, public education and information, carbon footprint scoring systems, and carbon offsets/cap and trade/sequestration.

The overarching purpose of the CCTF is to gain the knowledge necessary to advise and update Commission staff and the Commission on global climate change science and research; on the opportunities for multi-jurisdictional cooperation in responding to and preparing for its impacts; and on how the Commission's authorities under the Coastal Act may be exercised to minimize the adverse impacts over time on the resources specifically protected by the Coastal Act. At this writing the CCTF is developing workshop topics and speakers for future Commission meetings. The Commission has already included extensive climate change conditions in several large planning and regulatory decisions, using information and recommendations from the CCTF.

Some CCTF members are also coordinating with other state agencies, such as the Ocean Protection Council (OPC) and the Resources Agency Climate Team, but their participation is increasingly constrained by staffing and workload challenges. State budget cuts have prevented the Commission from filling several vacancies, so working on climate change issues has become more difficult for staff absorbing greater workloads. The Fellow chosen for this project will work closely with the CCTF throughout the two-year Fellowship to provide much-needed continuity and connection on this issue between Commission staff and others. The Fellow will be focused solely of global climate change issues and will interact not only with Commission staff, but also with staff at other state agencies and local jurisdictions who are working on this issue to leverage, enhance and advance the CCTF efforts.

Additionally, if BCDC's proposal is selected to be matched with a 2009 Fellow, we expect there will also be significant opportunities for both Fellows to coordinate and work together to achieve greater efficiency on some components of the Commission's and BCDC's projects, where appropriate.

2. Goals and Objectives

Because information about global climate change is dynamic, the scope of this project will be dynamic in nature. The following goals and objectives may be reordered and/or revised by the Fellow and Supervising Mentors at the start of fellowship. The fellow will be working closely with the CCTF, its subcommittees, other Commission staff, and external groups to achieve several overarching **goals** with a focus on results-oriented actions, including:

1. Development of a process to assess the available information that is relevant to the threat climate change poses to California's coastal resources, with specifics about how to assess how that information is relevant to the Coastal Act and the Commission's authorities.
2. Acquiring an understanding of the extent to which local coastal jurisdictions and state and federal agencies with regulatory authority within the California coastal zone understand and are preparing for the impacts of global climate change.
3. Ensuring that the Commission is informed about and involved with other state agencies' efforts and activities and policy initiatives to ensure its appropriate role in addressing global climate change within the coastal zone.
4. Development an overall strategy and schedule for workshops designed to educate and provide recommendations to the Commission on its authorities under the Coastal Act, relative to global climate change, and to inform and assist local governments, coastal managers, and the general public in

understanding and preparing for global climate change, especially as it relates to the Commission's implementation of the Coastal Act

The Fellow will also work closely with the CCTF and its subcommittees, other Commission staff, and others to achieve the following **objectives**:

1. Make the necessary contacts to analyze and assess how local jurisdictions within the California Coastal zone, other state agencies, and other states' coastal management programs have implemented any activities associated with climate change, including strategies for the reduction of greenhouse gas emissions, as well as mitigation and adaptation strategies.
2. Review the literature and research related to global climate change, especially information focused specifically on the impacts on coastal areas, in particular the California Coastal zone.
3. Identify and establish contact with researchers and experts who may be resources for information.
4. Design a method to maintain the information collected throughout this project and develop a plan for its ongoing maintenance and management to ensure its long term usefulness
5. Focusing on the information gathered from Objectives 1 and 2 develop and present a series of "Brown Bag" presentations for Commission staff
6. Work with the CCTF on development of Commission workshops, focusing specifically on the relationship to the Coastal Act and the Commission's responsibilities for Coastal Act resources.
7. Work with local government organizations (e.g. League of Cities, Local Government commission, CSAC) to identify ways to develop and share information among local government land use planners and decision makers, coastal landowners, and the general public about the Commission's authorities under the Coastal Act, and local government programs that offer good examples of best practices in addressing the coastal zone impacts from climate change

3. Milestones and Outcomes

TASK	FOCUS	MILESTONES	TIMELINE
1	Fellow Orientation Finalization of Work Plan	Orientation Staff Brown Bag #1 Work Plan completed Mentor Check In #1	September – December 2009
2	Contact Cultivation Research Review Information Gathering Development of Database (or other system for Information storage, maintenance and retrieval)	Contacts established Database (or other system) developed Data input completed Staff Brown Bag #2 Mentor Check In #2	January – June 2010
3	Information Analysis Development of Recommendations for Workshop Topics Meeting with CCTF, mentors and others to identify additional information needs and refine recommendations, and plan Commission Workshops #1 and 2	Report prepared with data analysis and draft recommendations Staff Brown Bag #3 Mentor Check In #3 Commission Workshop #1	July 2010 – February 2011
4	Completion of Earlier Tasks (review of new information and recommendations)	Complete Tasks 2 & 3 Commission Workshop #2 Mentor Check In #4	March –June 2011
5	Transition of Tasks Sharing Lessons Learned	Transition plan Staff Brown Bag #4	July - August 2011

Task 1 – Fellow Orientation & Finalizing Work Plan

This period will be spent in one-on-one meetings with Commission staff in San Francisco and in district offices; attending CCTF meetings and meeting with CCTF subcommittees; attending Coastal Commission meetings; and reviewing information including: staff reports that illustrate the breadth of projects and issues that come before the Commission; the Coastal Act and the Coastal Zone Management Act; and other documents that are core to the Commission's work.. The supervising Mentors and the CCTF will assist the Fellow in scheduling meetings and identifying priorities that focus on the Fellow's individual skills and interests and that support the Fellow's personal and professional goals. During this time the Fellow will also interact with other groups and attend relevant meetings, as determined by the Mentors. The Fellow will develop a presentation for a Commission staff "Brown Bag" meeting for October or November 2009 to discuss with staff the many ways that this project will support and inform them in their work at the Commission as well as to identify ways in which the Fellow can maintain effective coordination with staff to optimize the utility and value of this project to the agency.

This stage will also focus on revising the Fellow's work plan. The Supervising Mentors will have a key role in assisting the Fellow in completion of that plan, however the CCTF will also be involved as the Fellow will be building on and carrying forward work already started or identified as important by the CCTF.

Task 2 – Contact Cultivation, Research Review, Information Gathering, Database Development

The Fellow will compile a list of local, state and federal agency contacts, researchers and other experts with assistance from CCTF and other Commission staff, work with the Supervising Mentors and other Commission staff to develop a timeline and strategy for surveying local jurisdictions, other state agencies, and other states' coastal management programs about their activities associated with climate change; and reviewing the literature and research specifically related to global climate change and its impacts on the California coastal zone. The Fellow will schedule and begin the meetings and phone calls necessary to compile information and design a database or other information storage system to organize information gained through the interviews. The Fellow will prepare another "Brown Bag" presentation for Commission staff sometime in April or May 2010, as a preview of the poster the Fellow will present at the Coastal Zone Conference , as required by this Fellowship. (If it is determined by the Fellows mentors that the information would also be useful to the Commission, a Commission workshop may also be scheduled.)

Task 3 – Information Analysis and Development of Recommendations

During this phase, the Fellow will complete any interviews from Task 2 and update the database or information system to ensure all information is accurate. Once that information is organized, the Supervising Mentors and the Fellow will work with an ad hoc committee to complete a assessment of additional information and data that may be needed, and make recommendations for: 1) topics for a Commission workshops #1 and 2 with a focus on information that will also inform local government planners and decision makers, coastal land owners, and the general public about the Commission's authorities under the Coastal Act and its strategies associated with global climate change; 3) specific actions and next steps for the CCTF related to organizing the workshops. The Fellow will also present another Brown Bag presentation for Commission staff at some point during this phase.

Task 4 – Project Assessment, Development of Web-based Information

This time may be needed to complete some of those tasks and/or other tasks that were identified during the fellowship period. Once other tasks have been fully completed, the Fellow will work with Commission IT and Public Education staff to begin the development of the web-based information and tools that will inform and encourage specific actions addressing global climate change from specific audiences (general public, local governments, coastal managers, others).

Task 5 – Transition of Tasks and Sharing Lessons Learned

It is expected there may be some as-yet unfinished earlier tasks, but in order to ensure the Fellow and the Commission benefit to the fullest extent from this experience, the Commission would like the Fellow to use the final two months of the fellowship primarily in the development and sharing of "lessons learned," and working with the Mentors to evaluate any unfinished tasks. The Fellow will also present a final "Brown Bag" presentation for Commission staff sometime during this time to share observations and thoughts about the experience.

4. Project Description

This project presents both challenges as well as opportunities, for the Fellow, as well as for the Commission staff who will mentor the Fellow. This project would offer the Fellow a challenging opportunity for professional development as an integral member of an interdisciplinary team charting the course for how the Commission, working closely with local jurisdictions and other partners, will incorporate and integrate information about global climate change into the application of its authorities under the Coastal Act. As a member of the CCTF, the Fellow will work closely with staff whose specialties range from engineers and scientists to planners and attorneys – providing the Fellow an opportunity to consider the impacts of climate change from diversity or perspectives. The fellow will also benefit from being in the unique position to act as a bridge providing important communication between all those perspectives.

While the Fellow will be based in the Commission's headquarters in San Francisco, there will be some travel within California to meet with Commission staff located in district offices (Eureka, Santa Cruz, Ventura, Long Beach and San Diego), as well as local government representatives, researchers, and others who may be important to the successful completion of this project. The extent of travel will depend on available budget, scheduling constraints, and other factors.

The ideal candidate would have a keen interest both in public policy, science and global climate change, as well as land use planning and coastal management. The Fellow will need to effectively balance working and developing policies within a multi-jurisdictional regulatory arena; understanding, interpreting, and demystifying science and research, especially related to global climate change; coastal management issues; and other issue areas that may be important to this project. While the Commission will designate two Supervising Mentors, the Fellow will work closely with the CCTF, which will collectively and, in some cases, individually provide informal as well as formal mentoring.

The Fellow will be an integral member of the CCTF and benefit from the collective experience, training and knowledge of CCTF members, who will play an integral role in supporting and advising the Fellow

Throughout the fellowship, there will also be communication and collaboration with coastal managers from other states and other Fellows who may be working on similar issues and projects. The Fellow will participate with Commission staff on external Work Groups, as appropriate (i.e. the Coastal States Organization (CSO) Climate Change Work Group, the Resources Agency Climate Team, etc.).

This project will inform and provide a foundation for the Coastal Commission as it strives to develop and implement climate change strategies and policies. The Fellow will have the unique opportunity to work closely with Commission staff, local jurisdictions within the Coastal zone, other state and federal agencies, and outside experts to ensure the Commission is well prepared to make informed decisions that are consistent with its authorities and responsibilities under the Coastal Act. The Fellow will gain an understanding about what each of those stakeholders and their respective authorities and activities, relative to preparing for and responding to the impacts of climate change, and be in the position to make recommendations, in concert with the appropriate Commission staff, for consideration by the Commission. Those recommendations could range from providing the justification for recommended findings and conditions on a specific LCP or development project or some other issue before the Commission to more far-reaching policy recommendations.

5. Fellow Mentoring

The Supervising Mentors will be Chief Deputy Director Susan Hansch and the Federal Programs Manager Anne McMahon, who will work together to identify other staff who will provide important mentorship, as needed, on specific aspects of this project. The Fellow will be working in a team environment with others, especially members of the CCTF - who are already engaged in the issues that will be the focus of this project, and the Federal Programs Manager.

In addition to the formal interaction with the Supervising Mentors, which will include a “Mentor Check In” every four months (as noted above in the Milestones and Outcomes section), during which the Fellow and the mentors will review the work completed to date, and update the Fellow’s work plan as needed. There will also be a significant amount of interaction and informal mentoring occurring throughout the two-year term of the project. The Fellow will have the opportunity to work closely with highly qualified and dedicated Commission staff, as well as with other stakeholders.

The Fellow will be a member of the CCTF and will also work closely with the CCTF subcommittees. The Supervising Mentor may also designate a contact in each of the Commission’s district offices to act as the liaison between the Fellow and local jurisdictions. Specifics will be developed and finalized between the Fellow and the Supervising Mentor as part the Fellow’s orientation period during of Task 1.

6. Project Partners

This project will be highly interactive and depend on a significant amount of contact with local, state and federal agencies, Commission staff, and other experts in the field. There will be varying degrees of contact with various entities, which may include:

- Local coastal counties and cities
- Other NOAA Fellow who may be working on similar projects
- The San Francisco Bay Conservation and Development Commission (BCDC)
- The California State Coastal Conservancy
- California Ocean Protection Council
- Caltrans
- California Air Resources Board
- California Energy Commission
- California State Association of Counties
- NOAA
- USGS
- Coastal States Organization
- Sea Grant – California and USC
- California League of Cities
- California State Associations of Counties (CSAC)

7. Cost Share Description

The \$15,000 cost-sharing element of this proposal will be funded from the Coastal Commission’s regular personnel budget, provided from the State’s general fund. In addition, the State will provide the Fellow with other in-kind services, including office space and general supplies, computer equipment, training and mentoring, telephone, and some travel costs, depending on budgetary constraints.

The Commission recognizes that cost-of-living expenses in the San Francisco Bay Area are significantly higher than in other locations where Fellowship programs may be available. The Commission will explore the possibility of securing some additional funding to augment the Fellow’s stipend in Year 1 in an effort to address that concern. We understand that the NOAA Coastal Services Center has funding budgeted to provide a locality pay to the Fellow in Year 2.

8. Thematic Areas

While this project may indirectly address or provide information relevant to some aspects of all of the Thematic Areas, it will most directly address Thematic Areas 3, 5 and 7.

Thematic Area 3 - Climate Change will challenge the resilience of coastal communities to address the increased erosion, flooding, habitat shifts and changes in species diversity that will be part of Climate

Change. This project will incorporate outreach to local government planners and decision makers, and other state and federal agencies that will provide for increased sharing of information and understanding of resilience concepts and applications and the actions that can be taken to either mitigate or adapt to the future conditions. Both mitigation and adaptation would be concepts and applications for any broad-reaching effort to develop resilience to climate change.

Thematic Area 5 – During the completion of this project, the Fellow will directly generate data, tools and information related to landscape and seascape conditions or use patterns that will have many applications for the Commission and local jurisdictions and that will support and inform:

- conservation and habitat restoration planning
- alternative land use planning
- recreation and tourism planning

Each of those areas are specifically addressed in the California Coastal Act and they are all important considerations for any comprehensive effort to understand and plan for the impacts of global climate change on California's Coastal zone. The information gathered during this project will have very direct benefits for coastal managers and others.

Thematic Area 7 – This project's focus on the connection between the Coastal Act and planning for reduction, mitigation and adaptation will include considerable analysis of laws, policies and decision-making processes for coastal – and by extension – watershed management. The Fellow's interaction with other states' coastal managers, local governments, and Commission staff will enable information sharing that would otherwise not be occurring, and this project will result in new information and materials that can be shared with other coastal managers, within California and from other states.