Exhibit A
PRELIMINARY DISCUSSION DRAFT
Guidance on Climate Change for Potential Grantees
California Coastal Conservancy
November 6, 2008

Purpose

The purpose of this *Guidance on Climate Change for Potential Grantees* document ("guidance document") is to clarify how the California Coastal Conservancy ("Conservancy") is currently considering climate change impacts in its decisions about what projects to fund, and what prospective grantees can do to help ensure that projects consider and address predicted climate change impacts at all stages of project development (project design, siting and environmental review), implementation, monitoring and adaptive management. We recognize that the science for climate change is rapidly developing and we anticipate revising this guidance document as needed.

This document also identifies some types of projects that the Conservancy is interested in funding to support adaptation to climate change, and provides guidance on use of mitigation funds related to greenhouse gas emissions ("carbon credits" or "carbon offsets") for financing projects funded by the Conservancy.
This document provides guidance for interpreting the proposed climate-change related revisions to the Conservancy's *Project Selection Criteria and Guidelines*. The proposed new project selection criteria are:

> Proposed Criterion: **Climate Change and Greenhouse Gas Emissions:** Project reduces greenhouse gas emissions, is greenhouse gas neutral, or incorporates feasible measures/features to compensate for carbon emissions.
>
> Proposed Criterion: **Climate Change and Project Vulnerability:** Project objectives, project design and siting consider and address vulnerabilities from a range of climate change scenarios.

Background

The Conservancy has authority to protect and restore natural resources along the state's coastline, coastal watersheds, ocean, and the entire San Francisco Bay area. It also works to provide public access to and along the coast and San Francisco Bay and supports other types of projects in the coastal and San Francisco Bay regions of the state. All of these regions are experiencing change as a result of global warming, and changes are expected to accelerate. Higher temperatures along with sea level rise and other effects of climate

change will have dramatic physical, ecological, economic, and social impacts on coastal, marine and inland resources.

The Conservancy's efforts to address climate change are driven by a number of initiatives and policy documents, including the following.

- The Governor's Executive Order S-3-05 identifies significant impacts from climate change, and requests a report on the State's adaptation efforts.
- The *California Climate Change Adaptation Strategy:* Coordinated by the California Resources Agency, this strategy responds to the Governor's Executive Order S-3-05 by synthesizing our current understanding on expected climate change impacts to California, providing strategies to promote resiliency, and identifying short and long term actions to address impacts.
- The proposed *Scoping Plan* for implementation of AB 32 (Global Warming Solutions Act) is the California Air Resource Board's plan for how to reduce greenhouse gas emissions and implement the Global Warming Solutions Act, which is mostly focused on mitigation along with some guidance on adaptation.
- The 2007 *Coastal Conservancy Strategic Plan* identifies climate change as a significant concern and includes thirteen objectives and strategies, including the need for:
    1. Implementing practices that minimize the Conservancy's contribution to environmental degradation and consumption of natural resources.
    2. Incorporating the best available science regarding climate change predictions and impacts into project selection, planning, siting, and design.
    3. Supporting the Ocean Protection Council and others to improve our understanding of impacts of climate change, and to identify tools to mitigate and plan for a range of predicted changes.
    4. Supporting the planning, design, or implementation of interpretive or educational displays, exhibits and events emphasizing climate change (among other topics).

In recognition that climate-change impacts need to be considered and incorporated into decisions about prioritization of expenditures, Conservancy staff anticipates that the Conservancy will conduct public meetings and hearings and adopt additional Project Selection Criteria; and periodically revise this guidance document to address climate change issues and impacts.

CLIMATE CHANGE SCENARIOS

Conservancy staff recognizes that if we are expecting prospective grantees to consider climate change impacts in project conception, design, and implementation, we need to provide direction on which climate change scenarios should be used in their analyses. In the next version of this document, the Conservancy staff will provide a range of climate change scenarios to be used by potential grantees in planning and evaluating proposed projects and will provide resources on the best available scientific information.

GUIDANCE ON PROJECT SELECTION CRITERIA

Quantification and Minimization of Greenhouse Gas Emissions

Proposed Project Selection Criterion: *Project reduces greenhouse gas emissions, is greenhouse gas neutral, or incorporates feasible measures/features to compensate for carbon emissions.*

The State Office of Planning and Research (OPR) is in the process of developing California Environmental Quality Act ("CEQA") guidelines "for the mitigation of greenhouse gas emissions or the effects of greenhouse gas emissions." [1] OPR is required to "prepare, develop, and transmit" these guidelines to the Resources Agency on or before July 1, 2009. The Resources Agency must certify and adopt these guidelines on or before January 1, 2010. In the interim, project proponents need to quantify and address greenhouse gas emissions as part of CEQA evaluations for proposed projects. Conservancy legal staff are reviewing how best to apply CEQA to issues of climate change during the interim period prior to the Resources Agency adopting guidelines. Potential applicants are encouraged to contact Conservancy staff as early as possible in the design and evaluation of projects in order to learn more about the new CEQA approaches for quantifying and evaluating greenhouse gas emissions. The Conservancy intends to provide technical assistance to grantees to identify methodologies and resources for calculation and evaluation of greenhouse gas emissions and evaluation of carbon sequestration potential of projects.

Applicants are encouraged to use best management practices, such as adhering to *Leadership in Energy and Environmental Design* (*LEED)* standards in building design, in order to reduce the greenhouse gas emissions from projects and to incorporate measures that mitigate for unavoidable greenhouse gas emissions. Future drafts of this document will provide more detailed guidance for addressing the proposed project selection criteria regarding greenhouse gas emissions.

Considering and Addressing Climate Change in Project Objectives, Design and Siting

Proposed Project Selection Criterion: *Project objectives, project design and siting consider and address vulnerabilities from a range of climate change scenarios.*

Climate change is requiring us to make a fundamental shift in how we conceive, design, and implement natural resource and recreation projects. We need to move from planning based on a static view of landscapes and habitats, to one that is highly dynamic and accounts for the dramatic changes in the physical environment and biologic responses to climate change. Significant shifts in species' use of habitats are already being observed now and will accelerate in the future. For projects at or near shorelines, it is imperative

[1] Public Resources Code § 21083.05(a) Pursuant to (Senate Bill 97 (Chapter 185, 2007)).

that sea level rise and changes in storm waves and erosion be included as part of planning for projects. Prioritization of which properties to acquire will need to include consideration of how climate change will effect the feasibility of achieving the objectives of the acquisition. A paradigm shift is needed to move from preserving a site's current site characteristics to preserving factors that support the migration and survival of rapidly changing species assemblages and ecosystem processes.

Conservancy staff recommends that applicants develop project objectives with consideration of climate change impacts at the outset, clearly identify their proposed project's objectives, and assess the likelihood and means of achieving those objectives under a range of climate change scenarios. It is important to note that the Conservancy often funds projects that have multiple objectives and there may be projects that may have a limited lifespan due to climate change impacts, but may provide compelling benefits despite the limited lifespan. For example, there are often only narrow strips of land on which the Coastal Trail can be built based on current land ownership and property interests, which may result in some Coastal Trail segments having a limited lifespan due to sea level rise, storm surges and bluff retreat. These Coastal Trail segments are important to provide connectivity to other trail segments and are a recreational resource that is highly valued by the public.

Natural Resource Acquisition/Protection Projects

The following section presents common objectives for acquisition projects that are supported by the Conservancy's enabling legislation, and presents considerations for evaluation of the likelihood of achieving those objectives under a range of climate change scenarios.

Acquisition Objective 1: Protection of natural habitats and connecting corridors

Acquisition of natural lands can assist in the protection of biodiversity by supporting the resiliency of native species in responding to climate change and minimizing the number of extinctions that are predicted to occur in the next century due to climate change impacts. Protection of lands for a single or a narrow range of species may be more challenging and will require a higher degree of adaptive management. Clarifying the objectives of an acquisition is essential for assessing whether an applicant is likely to meet its objectives under climate change, and for establishing monitoring to inform adaptive management.

Applicants should clearly identify their project objective and how a proposed acquisition project provides one or more of the adaptation approaches that support ecosystem resilience to climate change:

- protection of key ecosystem features,
- replication of ecosystems or populations,
- creation of refugia, and
- achieving balanced representation of species and habitats.

For information on these approaches, refer to this report (commonly referred to as "SAP 4.4")[2]: CCSP, 2008: *Preliminary review of adaptation options for climate-sensitive ecosystems and resources.* A Report by the U.S. Climate Change Science Program and the Subcommittee on Global Change Research. [Julius, S.H., J.M. West (eds.), J.S. Baron, L.A. Joyce, P. Kareiva, B.D. Keller, M.A. Palmer, C.H. Peterson, and J.M. Scott (Authors)]. U.S. Environmental Protection Agency, Washington, DC, USA.

Conservancy staff members are working with conservation biologists to identify and/or develop methods for evaluating the feasibility of a particular property to provide for the objective of protecting natural habitats into the future and providing connecting corridors with the potential to mitigate the effects of climate change. Applicants should consult with Conservancy staff as early as possible in their consideration of a property as a potential acquisition project.

If one of the objectives of an acquisition project is to protect habitat for one or more specific species, it is important to assess whether the property will continue to provide adequate habitat for those specific organisms under climate change scenarios for various time horizons.[3] In general, given the severity of impacts from climate change and the purposes of its enabling legislation, the Conservancy will focus on supporting acquisitions that result in reserve systems that will enable the rapid migration and survival of as many species as possible, instead of acquisitions whose objectives are to preserve one or more specific species.

If an objective of a proposed acquisition project is to provide connectivity with adjacent areas, it is important to consider barriers (e.g. highways and urban areas) that impede migration and genetic exchange (e.g. seed or pollen dispersal).

Acquisition Objective 2: Protection of open space, areas accessible to urban populations for recreational and educational purposes, and scenic areas

In addition to protecting natural habitat and connecting corridors, the Conservancy's enabling legislation also seeks to protect and enhance open space areas, (including areas of regional importance), areas accessible to urban populations for recreational and educational purposes, and scenic areas. Preserving open space areas accessible to urban populations will help to reduce greenhouse gas emissions from vehicle miles traveled during visitation of parklands. To the extent possible, it is desirable for potential grantees to choose acquisition projects that also provide connectivity with other undeveloped lands and have multi-use trails and/or public transit options for providing low impact transportation to the properties. Such connectivity and accessibility will support the

[2] Available at http://www.climatescience.gov/Library/sap/sap4-4/final-report/, as viewed on October 27, 2008.

[3] For an example of an existing resource for evaluation of species' responses to climate change, see the niche modeling and maps showing possible changes in distributions for 2069 native Californian plant species, available at: http://www.plosone.org/article/info:doi/10.1371/journal.pone.0002502, as viewed on October 30, 2008.

proposed project achieving multiple objectives, which will make it more attractive for Conservancy funding.

Acquisition Objective 3: Protection of riparian areas, floodplains, and other sensitive watershed lands, including watershed lands draining to sensitive coastal or marine areas

One important climate change adaptation measure is to protect riparian corridors, floodplains and areas that may be subject to flooding under future climate change scenarios, in order to minimize impacts to human infrastructure and to support riparian functions and values. One benefit of riparian and floodplain protection projects is to promote sediment processes that support the delivery of sediment to coastal and bay areas and help intertidal and submerged habitats keep pace with sea level rise.

Acquisition Objective 4: Agricultural preservation and preservation of working landscapes (e.g. grazing, dairy operations, timber production)

The Conservancy's enabling legislation states that in acquiring interest in agricultural lands, the Conservancy shall give the highest priority to urban fringe areas where the impact of urbanization on agricultural lands is greatest.[4] Such protection of agricultural land in coastal and San Francisco Bay Area regions of the state can assist in reducing sprawl, thus reducing greenhouse gas emissions. If the working landscapes provide local sources of food and timber, these properties can also contribute to reduction of greenhouse gas emissions from transporting these goods long distances.

<u>Restoration/Enhancement Projects</u>

Habitat restoration and enhancement projects provide beneficial adaptation to climate change by improving ecosystem processes and habitats, and reducing stressors such as invasive species, contamination, and impairment of sediment processes. "Reducing anthropogenic stresses is one approach for which there is considerable scientific confidence in its ability to promote resilience for virtually any situation."[5] To ensure projects provide maximum benefits to ecosystem processes and habitats, they will need to incorporate and implement robust monitoring and adaptive management.

Future revisions to this document will include specific brief guidance on considerations for restoration and enhancement projects such as:

1. tidal wetlands,

[4] Division 21 of the Public Resources Code, Section 31151.

[5] CCSP, 2008: *Preliminary review of adaptation options for climate-sensitive ecosystems and resources.* A Report by the U.S. Climate Change Science Program and the Subcommittee on Global Change Research. [Julius, S.H., J.M. West (eds.), J.S. Baron, B. Griffith, L.A. Joyce, P. Kareiva, B.D. Keller, M.A. Palmer, C.H. Peterson, and J.M. Scott (Authors)]. U.S. Environmental Protection Agency, Washington, DC, USA, Executive Summary, p. 1-4.

2. watershed and riparian projects (inc. fish passage and urban creeks),
3. restoration of other habitats (*e.g.* beaches, dunes, coastal prairie and scrub habitats, forests),
4. invasive species management,
5. protected species recovery projects, including relocation (human-facilitated transplantation of organisms from one location to another in order to bypass a barrier (*e.g.*, urban area)), and
6. sediment management projects (*e.g.* projects that restore transport of sediment to coastal and bay regions and/or involve beneficial reuse).

Projects with Risk of Inundation, Storm Surges or Shoreline Erosion

Proposed projects that are close to shorelines may be subject to risks posed by inundation, storm surges or shoreline erosion under a range of climate change scenarios. These projects will pose challenges to assess and plan for climate change impacts. A key consideration for climate change impacts on these types of projects is the identification of the likely lifespan of the project before it is inundated, eroded or otherwise subject to impacts from climate change that make the project objectives unfeasible. Refer to "Climate Change Scenarios" section of this document for guidance on the range of scenarios that we recommend be considered and for resources to identify the latest information.

Other Types of Projects

Conservancy staff recommends that applicants include information on climate change as part of the development of environmental education projects and include prediction and measurement of climate change effects as an integral component of resource evaluation projects.

GUIDANCE ON MONITORING AND ADAPTIVE MANAGEMENT

Baseline and Periodic Monitoring

For natural resource protection and restoration projects, the Conservancy's standard practice will be that projects must include the development, submittal and implementation of baseline and periodic monitoring plans, using certain basic methodologies and dissemination of monitoring results to improve understanding of key parameters such as species distribution information (while protecting against release of sensitive information). Conservancy staff recognizes that it will take time to develop recommendations on methodologies and methods for disseminating or sharing the results.

Species are now and will continue to migrate (when possible) in response to climate change. Some species will not be able to migrate quickly enough and some species will not have sufficient remaining suitable habitat to survive. Conservation biologists predict that 20-40% of known species will become extinct due to climate change in the next

century[6]. It is important to improve understanding of species distributions and abundances, to support analyses of the impacts of climate change and help to identify and prioritize management actions to minimize extinctions. The baseline monitoring results will provide information on the amount of biodiversity at the proposed project site, which the Conservancy will use as part of its evaluation of the priority of a proposed acquisition or protection project.

Applicants are encouraged to contact Conservancy staff as early as possible during the process of evaluating or designing a potential project, to learn about resources and current guidance for designing monitoring plans and for the format and process for delivery of results of monitoring to Conservancy staff (for input into shared databases, with controls to protect information on uncommon species). The size of the project will influence the type of monitoring program that may be appropriate. The monitoring program should be designed in a manner that measures progress towards meeting the objectives of the proposed project and supports decision-making regarding adaptive management (see below).

It is especially important for the monitoring plan to address species likely to experience significant population shifts, such as species for which the property is located near the boundaries of their current distributions. It is important to note that conservation biologists are predicting that there will be significant shifts in the assemblages of species comprising habitats; instead of simply identifying and mapping current habitat types, it is important to document and evaluate anticipated or potential changes in the locations of specific species over time. In order to make this type of monitoring feasible, approaches will need to be developed to focus the monitoring on the information most needed to inform management decisions.

One way of maximizing the benefits of monitoring is to ensure that the data on distributions and abundance of species be shared with other scientists, managers and educators, by inputting the data into shared databases. In order to conserve biodiversity in the face of significant impacts from climate change, it is very important that there be robust, widely available, and up-to-date information on species ranges (while acknowledging the need for sensitively reporting data to avoid intentional harm to rare species). Applicants are encouraged to design their monitoring plan to include measures to promote partnerships between scientists, managers and educators.

In calculating the costs of a project, applicants are encouraged to include costs for the design and implementation of monitoring programs and Conservancy staff will consider these costs during the development of funding recommendations. The Conservancy staff recognizes the lack of available funding sources to support monitoring programs and is interested in working to increase the amount of funding available for monitoring.

[6] Dr. Terry Root, Stanford University, Presentation at California Climate Change Conference, September 10, 2008.

Adaptive Management

Climate change is expected to be a tremendous stress on most species. Reducing other stressors will provide the greatest means of improving resiliency for species. The Conservancy will consider it standard business practice for natural resource protection and restoration projects to include the design and implementation of adaptive management programs that use the results of monitoring programs to guide implementation of management actions to address changing physical and biological conditions.

Key to successful implementation of adaptive management is clearly identifying project objectives, monitoring in a manner that measures progress towards meeting these objectives and identifying and implementing management actions to support the achievement of these objectives. The Conservancy encourages its grantees to implement management actions that will efficiently support species migration, maintenance of ecosystem functions, and other management of other stressors such as the prevention and eradication of invasive species. Grantees are also encouraged to evaluate and take action to maximize carbon sequestration at project sites, to the extent that this can be achieved while meeting the project objectives.

In calculating the costs of a project, applicants are encouraged to include costs for the design and implementation of adaptive management programs and Conservancy staff will consider these costs during the development of funding recommendations.

PROEJCTS BENEFICIAL TO ADAPTATION TO CLIMATE CHANGE

The Conservancy will consider projects that are highly beneficial to supporting adaptation to climate change as a high priority. Staff has identified the following types of projects as being especially beneficial to supporting adaptation to climate change:

a) areas upland from tidal wetlands (to allow for “estuarine roll-over” or transgression, where the shoreline moves inland due to sea level rise),
b) areas with high biodiversity,
c) areas that contribute to continuous undeveloped regions (for migration of species and connectivity),
d) areas with high elevational or microclimactic variability and
e) riparian areas and land within and adjacent to current floodplains.

The Conservancy is also interested in supporting innovative pilot or demonstration projects that help to implement the state’s climate change adaptation strategy for the ocean and coastal resources sector. The Conservancy and Ocean Protection Council are working with other state agencies on the development of the ocean and coastal resources climate change adaptation strategy, which is part of the state’s adaptation strategy that is anticipated to be completed in April 2009. In order to support implementation of these strategies, the Conservancy is interested in funding projects that develop, evaluate and refine adaptation measures for climate change, including from sea level rise impacts.

These types of projects fit within Goal 8 of the Conservancy's *2007 Strategic Plan*, which supports projects that provide regulatory alternatives to reduce conflict.

CARBON SEQUESTRATION/CARBON CREDITS

Carbon markets, both regulated cap and trade and voluntary offset markets, are expected to increase dramatically with the implementation of the California Global Warming Solutions Act (AB 32) and other initiatives. The Conservancy recognizes the potential value of carbon offset projects that reduce, avoid or sequester the greenhouse gas emissions from a specific project or activity. Carbon markets have enormous potential to support conservation projects that are greatly needed for climate change mitigation and adaptation, while also providing co-benefits such as supporting biodiversity and providing natural lands for recreation and scenic values. There is currently uncertainty about how funding from carbon offsets/mitigation related to greenhouse gas emissions can be combined with the funding from state agencies such as the Conservancy. Please contact a Conservancy staff member to discuss the latest status of this issue.

If an applicant or recipient of a Conservancy grant intends to seek funding for use of a project as a carbon offset project to mitigate the emission of greenhouse gases, the applicant or grantee must inform the Conservancy. If the Conservancy has provided funding to protect or improve a property, the Conservancy will need to provide authorization for receipt of carbon credits or other mitigation funds related to that property. It is important to consider how state funds can be combined with carbon credits or other mitigation funds, to avoid violating state laws, policies or principles related to the Conservancy's investment in a project.

RESOURCES

(In the next version of this document, the Conservancy staff intends to provide a list of websites and documents that are most relevant and informative for addressing issues addressed in this document.)