

Appendix A: Climate Justice

This Climate Justice Appendix pulls out the ***Comprehensive State Strategies to Safeguard California, High-level Recommendations, and Next Steps*** from each Chapter of the *Safeguarding California Plan: 2017 Update* that focus on:

- Developing social and economic resilience in communities most burdened by the impacts of climate change;
- Building capacity for responding to climate change at the local and community level; and
- Creating venues for meaningful public engagement.

Building a resilient California requires increasing the capacity of communities and people to be able to withstand and recover from climate-related disruptions, and to be able to learn and adapt in the face of this change. While all Californians are impacted by climate change, different groups are affected in unique and overlapping ways. And, certain communities and groups are in a better position to respond, recover, and adjust as these changes occur, while others are more vulnerable. In many cases, the most vulnerable are the same communities that already experience [health inequities](#), or systemic differences in health status that are preventable and therefore unfair.

Factors that contribute to vulnerability of people and communities to the impacts of climate change include:

- **Existing inequities, institutionalized racism or exclusion:** People facing disadvantage or discrimination often have lower socioeconomic status, and with poverty comes lack of resources for preparing, coping and recovering from climate impacts. People facing inequities tend to have higher rates of illnesses associated with or exacerbated by climate change, such as asthma or cardiovascular disease. In many cases, people in these groups are not inherently vulnerable to climate change impacts, but their vulnerability is the result of the inequitable distribution of power and resources, and resultant socio-economic and living conditions. For example, people of color are not biologically at higher risk of climate change impacts, but racism often forces them into lower quality living conditions that are less healthy or safe. Additionally, experiences of racism create chronic stress that wears at individuals' physiological and mental health. These [cumulative stressors](#) work together to increase vulnerability to the impacts of climate change. Similarly, people with disabilities are not inevitably more vulnerable to climate risks, but if their mobility, informational, health care and other needs are not taken into account in preparedness planning, they suffer higher rates of illness, injury and death in [climate-related events](#).
- **Poor environmental conditions, access to services, or living conditions:** Populations at

higher risk under a changing climate include those who are uninsured or underinsured or lack access to health care, lack access to transportation, , live in areas with poor air quality, live on upper floors of tall buildings, live in areas with lots of impervious surfaces and little tree cover, and lack life-supporting resources such as adequate housing, ways to cool living space, are food insecure or lack adequate medications, or are tenants or renters.

- **Physical states or conditions that increase vulnerability:** Older adults, young children, pregnant women, and people with chronic health conditions or mental illness are more susceptible to harm from effects of [climate change](#).
- **Lack of investment and opportunities:** The disinvestment and resource deprivation historically experienced by communities facing inequities leads to degraded living conditions and lack of power over decisions that affect their lives. Therefore, achieving a fair distribution of power and access to resources will require extra (not equal) investment and additional opportunities in and for these communities. With this targeted and equity-focused approach to investment and resource allocation comes reduced vulnerability to harm from climate change.

In addition, people often are affected by multiple forms of vulnerability at once. For example, an individual may experience racism, have a low income, and live in substandard housing without tree cover and surrounded by impervious surfaces, and thus may experience higher risk of heat illness, respiratory illness, and cardiovascular disease from extreme heat or air pollution.

Climate Justice-Related Comprehensive State Strategies to Safeguard California

Recommendation CA-2: Partner with California’s most vulnerable populations to increase equity and resilience through investments, planning, research, and education.

Climate change threatens the health and well-being of California’s diverse population of nearly 40 million people. The communities most vulnerable to the impacts of climate change also experience systemic differences in health status that are preventable and unfair. These vulnerable communities include but are not limited to: women, racial or ethnic groups, low-income individuals and families, individuals who are incarcerated and those who have been incarcerated, individuals with disabilities, individuals with mental health conditions, children, youth and young adults, seniors, immigrants and refugees, individuals who are limited-English proficient (LEP), and lesbian, gay, bisexual, transgender, queer, and questioning communities, or combinations of these populations.

In many cases, vulnerability to climate change is the result of the inequitable distribution of power and resources, and resultant socio-economic and living conditions. Because of existing inequities, institutionalized racism or exclusion, people in these groups are often poor, and poverty equates to a lack of resources and economic and political power. Vulnerable populations also often experience higher rates of health issues and living conditions that may be affected by climate change, such as asthma or cardiovascular disease, poor housing quality, or residency in areas at high risk of harm from sea level rise, extreme heat, drought, wildfire, or poor air quality associated with climate change. Vulnerable populations often have less capacity to manage extreme weather events and adapt to a changing climate.

Reducing disparities in employment, income, wealth, housing conditions, and health, in addition to prioritizing resources and investment to vulnerable communities, will help reduce these communities’ vulnerability to the impacts of climate change.

Decisions, plans and investments by agencies can help residents least able to cope with damage to their homes, communities, and physical and mental health. Prioritizing services, resources, training and jobs can improve living standards, build avenues for meaningful participation in decision-making and improve resiliency. Robust engagement of vulnerable communities pulls different perspectives into government decision-making, which leads to more responsive decisions, increased acceptance of decisions and support for implementation. It is essential to give people a voice and power over actions that affect their lives.

California Building Resilience Against Climate Effects (CalBRACE)

CalBRACE is a program funded by the U.S. Center for Disease Control and Prevention at the California Department of Public Health. It provides tools to help local health departments in California participate in planning for the impacts of climate change. CalBRACE seeks to improve living conditions in communities facing health inequities to reduce underlying vulnerability to climate change. The Project developed [Climate Change and Health Profile Reports](#) for all 58 California counties, forecasting climate impacts (i.e., extreme heat, sea level rise, wildfires, drought, and air quality) and health risks. It also developed vulnerability assessment reports for 11 counties, which identifies locations and communities

vulnerable to climate impacts, to assist in prioritizing effective strategies for local and state climate resilience.

Senate Bill 1000 and Senate Bill 379 – General Plans: Safety and Environmental Justice

In September 2016, General Plan Guidelines were updated to provide guidance on how to incorporate environmental justice in local general plans. This includes incorporating either a standalone Environmental Justice Element or through the adoption of goals, policies and objectives in other elements of general plans. [Senate Bill 1000](#) (Leyva), in coordination with Senate Bill 379 (Jackson), will help ensure that local governments build resilience in communities most vulnerable to health and economic impacts of climate change.

Senate Bill 350 – Low-Income Barriers Study

This study, mandated by [Senate Bill 350](#) (De León), provides recommendations intended to improve access to clean energy investments for low-income customers and local small businesses in disadvantaged communities. The California Energy Commission adopted the final report from the study on December 14, 2016.

Climate Justice-Related Recommendations: Social Systems and the Built Environment

Emergency Management

Recommendation EM-4: Identify access and functional needs communities exposed to greater risks from climate impacts and work collaboratively to build community resilience.

- EM-4.1.** Assess opportunities for inclusion of the Equity Checklist in the guidance “Planning and Investing for a Resilient California” in order to ensure compliance with [Executive Order B-30-15](#).
- EM-4.2.** Explore integration and utilization of all state resources and planning capabilities to address, accommodate, and meet the environmental justice impacts of climate change.
- EM-4.3.** Ensure that the climate change-related impacts, which exacerbate risks to access and functional needs populations, are incorporated within all threat and hazard analysis conducted by the State.

Energy

Recommendation E-6: Increase climate resiliency in low-income and disadvantaged communities.

- E-6.1.** Address equity issues identified in the Low-Income Barriers Study and link efforts related to its implementation to climate resilience.
- E-6.2.** Address programmatic, funding, and financing barriers for energy/water efficiency retrofits for low-income households and small businesses.
- E-6.3.** Investigate and address environmental justice issues around supporting community solar projects for low-income customers.
- E-6.4.** Work to coordinate energy-related programs that target low-income communities with broader climate adaptation efforts.
 - E-6.4a.** Assess opportunities with the [Department of Community Services and Development](#) to coordinate on low-income weatherization and solar programs.

Land Use and Community Development

Recommendation L-1: Develop innovative governance models and public engagement strategies to engage residents, especially vulnerable communities, to be sustainable, equitable, and adaptable.

- L-1.1.** Highlight and share case studies that demonstrate how the state is partnering with local governments, stakeholders and community leaders to successfully integrate climate preparation and readiness concepts into land use planning activities, resulting in neighborhoods that are engaged and intent on building a healthier and more resilient environment for its residents.

- L-1.2.** Require state grantees to incorporate appropriate community engagement strategies, including identifying and engaging the most vulnerable individuals in a planning or project area, in all relevant land use planning and community development grant applications.
- L-1.3.** Develop and share innovative practices for public engagement in the development of state grant guidelines, policies, and programs.
- L-1.4.** Explore opportunities to incorporate resident empowerment, leadership, and decision-making such as training programs, guided reviews of plans, neighborhood scans, and mapping activities as part of resident-led planning.
- L-1.5.** Assess policy options that reduce local government incentives to approve development in current and future hazard areas.

Recommendation L-2: Provide technical support, guidance, and capacity building to implement climate adaptation initiatives in local and regional governments and communities.

- L-2.1.** Collect and organize information and outreach for coordinated State, regional, and local adaptation action through the Integrated Climate Adaptation and Resiliency Program.
 - L-2.1a.** Develop the Adaptation Clearinghouse to compile and point to adaptation resources, including best available science and research, local implementation case studies, policy guidance, and links to funding and analytical resources.
 - L-2.1b.** Work with local jurisdictions and communities using state adaptation resources to ensure that State efforts and investments respond to local information and resource needs.
 - L-2.1c.** Develop new ways for communities to access technical support in implementing adaptation practices, prioritizing efforts to provide support to vulnerable communities.
 - L-2.1d.** Utilize SGC’s [Sustainable Communities Planning Grant and Incentives Program](#) to build a foundation that facilitates the adoption of best climate planning practices across the state, focusing particularly on disadvantaged and vulnerable communities.
- L-2.2.** Support the update of the [Adaptation Planning Guide](#), prepared by the California Emergency Management Agency (now the Office of Emergency Services) and the Natural Resources Agency, to reflect the best available science, best local adaptation practices, and current state policy.
- L-2.3.** Update guidance included in [OPR’s General Plan Guidelines](#) document on a regular basis to reflect industry practice and norms, case studies and other appropriate content for use by local governments in developing responses to climate change.
- L-2.4.** Directly engage disadvantaged communities to participate in the development of state guidance documents and other resources.
- L-2.5.** Continue to support the [CivicSpark](#) Governor’s AmeriCorps Initiative to build local government capacity to address climate change and land use related challenges in line with State goals. The initiative places professionals in local governments around the state to build local capacity and support climate action.

- L-2.6. Promote local and regional performance targets for mitigation of the urban heat island effect and provide technical support for identification and implementation of urban greening, building and transportation policies, and programs to achieve it.
- L-2.7. Ensure that best available science continues to be available through Cal-Adapt.org.

Recommendation L-3: Coordinate state guidelines and policies to promote climate resilience and hazard avoidance through local government general plans, zoning ordinances, subdivision regulations, and development incentives.

- L-3.1. Track the utilization of OPR’s General Plan Guidelines update that provides guidance on how to incorporate climate considerations ([Senate Bill 379](#)) and environmental justice ([Senate Bill 1000](#)) in local general plans.
 - L-3.1a. Track how [Senate Bill 379](#) is realized on the ground through implementation tools such as zoning codes, grading ordinances, subdivision regulations, development incentives and other tools.
- L-3.2. Support engagement and outreach regarding changes in the California Environmental Quality Act guidelines that address long-term environmental impacts of projects.
- L-3.3. Develop and adopt guidance for how State agencies can support local government efforts on climate change.
 - L-3.3a. Support locally and regionally consistent adaptation planning via documents such as regional transportation plans, regional adaptation plans, local general plans, Local Agency Formation Commission municipal service reviews and other appropriate plans and programs.
- L-3.4. Ensure guidance across state government agencies addresses the need to consider climate change.
 - L-3.4a. Continue to assist making [regional transportation plans](#) and [Sustainable Communities Strategies](#) compliant with state requirements to incorporate climate change into all planning, investment, and operations.
- L-3.5. Assess opportunities to build on the work of the [Assembly Bill 2800](#) Climate-Safe Infrastructure Working Group, which will assist in incorporating climate change in all state infrastructure engineering, in the context of [State building codes and standards](#).
- L-3.6. Improve monitoring and evaluation of hazard areas with residential development.

Recommendation L-4: Integrate economic development initiatives with programs designed to bolster resilience.

- L-4.1. Actively identify and catalog opportunities to replicate or scale-up elements of the [Community and Watershed Resilience Program](#) being implemented to support post-Rim Fire recovery and resilience in Tuolumne County. (The Program is funded through a National Disaster Resilience Competition grant.)
- L-4.2. Identify and develop innovative and equitable market-based strategies to support new approaches for implementing and financing resilience projects in communities and natural systems. This includes engaging with the insurance industry and piloting new methods such as environmental impact financing or pay-for-success approaches.

- L-4.2a.** Work to implement the recommendations from the Natural Resources Agency’s Wood Products Working Group to address climate resilience and economic development.
- L-4.3.** Include metrics to track the progress of grantees in meeting workforce training, employment, and local business expansion goals under SGC’s [Transformative Climate Communities](#) program.
- L-4.4.** Promote workforce training programs that accelerate the creation of green jobs in fields such as brownfield cleanup and redevelopment, installation and maintenance of green energy and technologies, energy efficiency weatherization and retrofitting, planting and maintenance of urban forestry and parks, habitat restoration, and sustainable timber harvesting and biomass utilization.
- L-4.5.** Look for transferability of elements from the [SB 350 Low-Income Barriers Study](#) to realize potential synergies between emissions reduction and economic development initiatives, especially in low-income communities.
- L-4.6.** Expand pathways to the [CivicSpark](#) Governor’s AmeriCorp Initiative, [California Conservation Corps](#), and associated workforce development programs that train and place Californians in professions that increase climate resilience.

Recommendation L-5: Ensure a coordinated and robust strategy is implemented across State and local governments to address environmental justice issues and the state’s most vulnerable populations.

- L-5.1.** Make equity a key consideration for State-funded research on and assessment of climate impacts.
 - L-5.1a.** Use regional assessments that synthesize best available science as part of California’s Fourth Climate Change Assessment to create baselines of knowledge about region-specific impacts to vulnerable communities.
- L-5.2.** Work with the [Office of Health Equity](#) in the Department of Public Health to identify key strategies to link resilience efforts in public health, land use planning, and community development.
- L-5.3.** Ensure that vulnerable community members in rural areas are included in State equity strategies.
- L-5.4.** Make environmental justice in local planning a key connection to state activities around climate adaptation.
 - L-5.4a.** Support local implementation of general plan statute requirements on environmental justice.
- L-5.5.** Collaborate with foundations, non-profits, and community groups to foster greater engagement with State agencies on policy that can improve equity and grassroots resilience.
- L-5.6.** Make equity a key part of best practices dissemination, including the Sustainable Communities Grant and Incentives Program and [Integrated Climate Adaptation and Resiliency Program clearinghouse](#).
- L-5.7.** Pilot the use of health and vulnerability screening tools to complement available tools for identifying disadvantaged communities.

Recommendation L-6: Provide financial support to promote infill development, affordable housing, transit-oriented development, smart planning and conservation to bolster grassroots resilience.

- L-6.1.** Analyze and assemble best practices that empower residents to stay and thrive in their communities while improving resilience to climate change.
- L-6.1a** In appropriate programs, use anti-displacement language like that found in the [Affordable Housing and Sustainable Communities Program](#) so that individuals are not pushed out of climate-safe and supportive neighborhoods.
- L-6.2.** Explore innovative approaches to finance local adaptation and resilience planning and projects.

Public Health

Recommendation P-1: Promote community resilience and health equity by improving underlying economic, environmental and social conditions.

- P-1.1.** Target residential energy efficiency funding and programs to populations with relatively higher ambient air pollution and ambient noise.
- P-1.2.** Develop actions to help prepare for mental health impacts of climate change.
- P-1.3.** Combine funding of weatherization programs to the extent possible to improve housing conditions through a holistic “healthy homes” model.

Recommendation P-2: Educate, empower and engage California residents, communities, organizations and businesses to take actions to reduce individual and community vulnerability to climate changes through mitigation and adaptation.

- P-2.1.** Identify opportunities for engagement and capacity building with vulnerable populations. Strengthen the skills, knowledge, and abilities of communities to participate in and influence decision-making processes.
- P-2.2.** Create a curriculum for residents to prevent water intrusion and mold after extreme storm events through the Department of Public Health’s [Indoor Air Quality Program](#).
- P-2.3.** Support and strengthen community social networks and other assets to build climate resilience. For example, fund or solicit participation from schools, faith-based communities, neighborhood-based groups, health equity or environmental justice groups, and businesses in climate resilience planning.
- P-2.4.** Translate climate science to make it locally relevant and accessible for community members, and highlight health, climate, and equity impacts and opportunities.
- P-2.5.** Work with regional public health organizations, local health departments and other interested stakeholders, and integrate adaptation and resiliency components into climate change and health curricula as part of the [Bay Area Regional Health Inequities Initiative](#), a coalition of 11 public health departments.
- P-2.6.** Refine and tailor existing educational and promotional materials for use by local health departments.

- P-2.7. Conduct outreach to community health clinics, nonprofit organizations, community groups, local and state public health programs, mental health centers, and health navigators to encourage participation in climate planning.
- P-2.8. Expand the [Outsideln SLO](#) project—a partnership of San Luis Obispo County and the state—to additional counties and statewide.

Recommendation P-3: Identify, assess impacts, and promote mitigation and adaptation strategies with public health and equity co-benefits, and assure they do not have unintended consequences for health equity.

- P-3.1. Take potential benefits and harm into account in transportation models used in local, regional, and state planning.
- P-3.2. Provide mitigation for poor indoor air quality for new and existing buildings sited near major roadways.
- P-3.3. Advocate to include climate considerations to the [National Healthy Homes Checklist](#), a federal resource developed for the National Healthy Homes Training Center to assist families in creating healthier homes for children.
- P-3.4. Integrate information from the vulnerability assessments for the Department of Public Health’s [California Building Resilience Against Climate Effects](#) program into location-specific state government efforts in order to identify county-level climate change and health assets and risks.
- P-3.5. Evaluate negative health consequences of possible adaptation strategies that may worsen public health outcomes by exacerbating pollen, gentrification and displacement, vector borne disease, or other impacts.
- P-3.6. Identify populations with climate vulnerabilities or limited access to transportation to assist planning for climate-related emergency events.
- P-3.7. Develop funding or evaluative mechanisms to ensure that energy efficiency upgrades are installed and operate as intended and do not adversely affect building ventilation or other indoor environmental quality factors and health consequences.

Recommendation P-4: Establish, improve, and maintain mechanisms for robust rapid surveillance of environmental conditions, climate-related illness, vulnerabilities, protective factors and adaptive capacities.

- P-4.1. Identify surveillance and tracking opportunities for heat and wildfire-related health impacts.
- P-4.2. Increase surveillance sampling of food commodities to avoid food-borne illness.

Recommendation P-5: Improve public health preparedness and emergency response.

- P-5.1. Provide support to health care facilities to prepare and respond to climate change events and provide continuity of medical care following extreme events.
- P-5.2. Ensure that warning tools are multi-lingual and accessible to diverse communities.
- P-5.3. Partner emergency responders and local health departments to identify and reach vulnerable populations in need of access to cooling centers or personal cooling resources.

- P-5.4. Provide sample health equity language for climate change-related health impacts to local governments for updates of Local Hazard Mitigation Plans and general plan safety elements pursuant to [Senate Bill 379](#) (Jackson).
- P-5.5. Solicit input from mental health professionals, consumers and advisory boards, regarding how to reduce the mental health impacts of climate change.
- P-5.6. Make resources available to support people suffering mental health consequences related to climate change.
- P-5.7. Encourage participation in climate resilience planning on the part of community health clinics, nonprofit organizations, community groups, local and state public health programs such as nutrition promotion programs, mental health centers, health navigators and others.

Recommendation P-6: Collaborate with multiple agencies and organizations at local, state and federal levels.

- P-6.1. Increase capacity at Department of Public Health and the Health and Human Services Agency to promote adaptation and resilience.
- P-6.2. Use the [Health in All Policies Action Plan on Urban and Community Greening](#) to increase parks, gardens, shade trees, and greening in disadvantaged communities, opting for low-allergen species.
- P-6.3. Deepen current partnerships, such as those within the Department of Public Health’s chronic disease and nutrition programs, to better integrate health and adaptation activities.
- P-6.4. Connect the [Department of Community Services and Development](#) to a local health department to launch a pilot program whereby vulnerable populations are prioritized for housing improvements such as weatherization, energy assistance, or appliance upgrades.
- P-6.5. Convene or join inter-agency work group on extreme heat to discuss collaboration and interventions.
- P-6.6. Incorporate a climate adaptation perspective into program guidance and documents of the [Department of Public Health’s California Breathing Asthma Program](#).

Recommendation P-7: Conduct research and promote access to best available data to enable enhanced promotion and protection of human health and equity in light of climate change.

- P-7.1. Research low-carbon or net-zero emissions strategies for keeping people cool in extreme heat events.
- P-7.2. Research the health and climate change adaptation and mitigation co-benefits of energy efficiency policies and building standards and “net-zero” energy and energy-efficient buildings.
- P-7.3. Identify a research agenda for climate adaptation and health equity for the California Energy Commission, which oversees climate research.
- P-7.4. Work with researchers at the University of California, Los Angeles on ongoing research on equity in local health department planning for climate adaptation.

Recommendation P-8: Implement policy changes at local, state and national levels.

- P-8.1.** Support implementation of California Energy Commission's [Existing Buildings Energy Efficiency Action Plan](#) in improving the performance and energy efficiency of existing residential, commercial, and public buildings.
- P-8.2.** Support incorporation of health considerations in general plans, environmental impact assessments, climate action planning, and other planning processes.
- P-8.3.** Collaborate with State agencies focused on green buildings and energy efficiency to include climate adaptation and health and equity considerations into State initiatives, planning, and policies, including updates to the [California Building Code](#) and [California Energy Efficiency Standards](#).

Recommendation P-9: Identify, develop, and maintain adequate funding for implementation of a public health climate adaptation strategy.

- P-9.1.** Prioritize community greening funding based on information from the California Environmental Protection Agency's [Urban Heat Island maps](#) and [California Building Resilience Against Climate Effects](#)' impervious surfaces maps.
- P-9.2.** Develop a plan to provide dedicated funding to local health departments to lead community preparation for health impacts of climate change.
- P-9.3.** Continue implementation of recommendations in [Preparing California for Extreme Heat](#), a 2013 multi-agency state guidance document.
- P-9.4.** Review climate mitigation and adaptation state funding opportunities for inclusion of public health, equity, and resilience components or criteria.
- P-9.5.** Consider a mechanism to fund community-based organizations to prepare for health impacts of climate change.
- P-9.6.** Explore partnerships that combine funding for energy efficiency, indoor air improvements, and health improvement.

Transportation

Recommendation T-4: Improve transportation system resiliency.

- T-4.6.** In the transit sector, provide service to cooling centers in easily accessible locations, encourage public transit design decisions that lower urban heat island, and use passive cooling where possible at transit stops.
- T-4.7.** Educate those who use active transportation (bicycle and pedestrian) about heat illness prevention and treatment. Along pedestrian facilities with high-heat days, provide shade sidewalks/paths, and public water fountains to prevent heat illness. Where possible, use pervious pavement for bicycle and pedestrian pathways to increase water infiltration.
- T-4.8.** Implement adaptation plans (see T-2.3) in order to reduce/eliminate vulnerabilities, as funding allows.

T-4.9. Provide information to the Governor’s Office of Emergency Services about segments of the transportation system that are expected to be impacted by future climate events in order to enhance emergency preparedness.

Recommendation T-5: Maintain and enhance information sharing and education.

T-5.3. Engage public organizations and individuals to discuss the expected impacts of climate change on the transportation system, and to identify adaptation solutions that protect nearby communities.

Climate Justice-Related Recommendations: Natural and Managed Resource Systems

Agriculture

Recommendation A-1: Build soil organic matter on farms and ranches to achieve multiple benefits.

- A-1.2.** Identify a process for identifying co-benefits to water and air quality at a community level.
- A-1.5.** Scale incentive programs to farms of all sizes, being inclusive of all crops, demographics, and regions

Recommendation A-3: Support Dairies in Climate Smart Management Practices.

- A-3.3.** Seek input from communities with dairy-dependent economies regarding the benefits and drawbacks of different dairy management practices.
- A-3.4.** In collaboration with partner agencies and stakeholders, develop and implement an incentive program for manure management practices (non-digester practices) that reduce greenhouse gas emissions and have co-benefits for dairies.

Recommendation A-4: Increase farmland conservation.

- A-4.1.** Continue working with land owners and local governments to support Williamson Act participation, identifying opportunities to improve implementation.

Recommendation A-5: Grow the Climate Smart Agriculture Outreach Platform.

- A-4.2.** Expand the utility of the California Department of Food and Agriculture Climate Smart Agriculture [webpage](#) for discussion of research and practical applications.

Biodiversity and Habitat

Recommendation B-1: Strengthen the climate adaptation component of conservation planning efforts at multiple scales.

- B-1.3.** Engage and support local and tribal communities in their planning processes where significant ecological resources are concerned.

Recommendation B-6: Provide educational opportunities to the public and state agency staff regarding climate impacts and adaptation options for ecosystems, fish, wildlife, and plants.

- B-6.1.** Continue existing climate education initiatives such as Climate Science Alliance South-Coast [Climate Kids initiative](#) and the Department of Fish and Wildlife's internal Climate Course for its employees.
- B-6.2.** Promote, support, or develop opportunities for on-the-ground climate action courses for State agency staff.

- B-6.3.** Develop an ongoing informational component related to climate risks to species and ecosystems in the Department of Fish and Wildlife’s Office of Communications, Education, and Outreach program.

Forests

Recommendation F-1: Enhance forest health and resilience by improving forest management on private and public lands

- F1.4.** Partner with Native American tribes to benefit from traditional knowledge of prescribed fire and forest management.
- F1.5.** Increase education and forestry assistance efforts for non-industrialized private forest land owners; connect landowners to funding sources and cost-share programs to facilitate these efforts

Recommendation F-3: Continue investing in urban forestry to enhance the health of current urban forests and expand urban tree canopy statewide.

- F-3.1.** Establish local tree canopy cover goals (locally and regionally) and work towards the Forest Carbon Plan’s objective of increasing total urban tree canopy statewide by one-third above current levels, to 20 percent coverage of urban areas by 2030.
- F-3.2.** Assist local governments and others in assessing their urban forest resources and best management practices using basic urban forest assessment standards such as percentage of tree canopy cover, tree inventory, and management plans.
- F-3.3.** Obtain and share with local governments tree canopy coverage data on a periodic basis, and support adoption of long-term comprehensive urban forest management plans including relevant tree inventories.
- F-3.4.** Help local governments identify optimal locations for green infrastructure and increased tree canopy cover in the 372 communities identified in CAL FIRE’s [2010 Forest and Rangeland Assessment](#) as high-priority areas for urban tree planting in order to conserve energy and improve air quality.
- F-3.5.** Develop urban forestry protocols to ensure that communities are engaged in site choice and project development from the onset of planning.
- F-3.6.** Support the creation of jobs, training programs, and workforce development in urban forest management, tree planting, and green infrastructure development to provide sustained economic benefit and ensure long-term capacity for maintenance in these communities.
- F-3.7.** Fund urban tree planting and green infrastructure projects where they yield multiple benefits such as reducing energy use, capturing storm water, and improving water and air quality.
- F-3.8.** Provide resources and technical assistance to local governments as they assess urban forestry and green infrastructure policies and regulations.

- F-3.9.** Create incentives for the use of best management practices, including tree maintenance and preservation, by local governments and others to protect large, established trees and increase the short-term and long-term tree canopy.
- F-3.10.** Improve and expand highest and best use of urban biomass to avoid traditional waste streams.
- F-3.11.** Fund urban tree planting and green infrastructure projects where they yield multiple benefits such as reducing energy use, capturing storm water, and improving water and air quality
- F-3.12.** Provide resources and technical assistance to local governments as they assess urban forestry and green infrastructure policies and regulations
- F-3.13.** Consider creating incentives for the use of best management practices, including tree maintenance and preservation, by local governments and others. This would help protect large, established trees and increase the short-term and long-term tree canopy above the baseline
- F-3.14.** Improve and expand use of urban biomass that is removed for valid management purposes, including, but not limited to, pests and disease. The highest and best use should be sought for this resource, rather than viewing it as a waste product

Recommendation F-4: Promote rural and tribal economic development by expanding wood products markets, biomass utilization, and outdoor recreation.

- F-4.1.** Expand wood products manufacturing in California, focusing on industries with sustainable long-term supply and market viability.
- F4.1a.** Identify potential for expanded and new markets for products such as cross-laminated timber and other engineered mass timber, biochar, and other soil amendments, and liquid biofuels that can be made from traditionally low-value biomass. Encourage the siting of complementary wood products manufacturing facilities near small-scale bioenergy businesses to create regional economic hubs.
- F-4.2.** Provide financial and technical assistance to rural communities and Native American Tribes near forested areas to increase capacity for biomass utilization.
- F4.2a.** Invest in long-term workforce development in forest-dependent areas to ensure that economic benefits of biomass utilization support the communities from which forest products derive.
- F-4.3.** Provide community representation in decision-making for biomass facility siting and ensure that air quality impacts to local communities are considered in project siting and development.
- F-4.4.** Increase the total volume of carbon stored in long-lived wood products from California forests, particularly in buildings; ensure that the California Green Building Standards Code supports this objective.
- F-4.5.** Develop and support the generation of and markets for compost from forest biomass for agricultural, rangeland, municipal, and residential soil amendments.
- F-4.6.** Work with Native American tribes to protect tribal access to non-timber forest products and traditional activities such as cultural burns and activities related to subsistence in

forests such as hunting, fishing, and trapping. Work across agencies to ensure that forests continue to provide an abundance of outdoor recreational and tourism opportunities.

Recommendation F-6: Foster fire-adapted communities through local planning and fire preparedness.

- F-6.3.** Further support landowner-initiated hazardous fuels reduction through grants, cost-share agreements, and other programs, and work to remove regulatory barriers that limit hazardous fuels reduction activities.
- F-6.4.** Increase public education on fire risks and the increasing importance of forest thinning, prescribed fire, managed fire, and other fuels treatment projects. Educate landowners, residents, business owners, and fire safe councils about responsibilities of living in the wildland and necessary prevention measures.
- F-6.5.** Ensure that ongoing, proactive fire prevention through forest management remains a priority for CAL FIRE hand crews and other CAL FIRE resources despite fire suppression costs.
- F-6.6.** Support efforts to reduce risk factors and vulnerability of existing structures. Improve monitoring of fire safety regulations, increase the number and effectiveness of defensible space inspections, and promote an increasing level of compliance with defensible space laws. Apply building standards for fire safety uniformly.
- F-6.7.** Create land-use and community-based wildland fire protection plans and decision support tools that are informed by climate projections and an ongoing understanding of wildfire risk.
 - F-6.7a.** Assist governmental bodies in developing a comprehensive set of wildland and wildland urban interface protection policies for inclusion in each county general plan and other relevant planning documents.
 - F-6.7b.** Encourage local land use planning efforts to conduct thorough risk assessments if considering development within the wildland-urban interface.
 - F-6.7c.** Develop county and regional fire readiness plans with community-based groups such as fire safe councils, fire and land management agencies; engage individual community and tribal members these efforts.
- F-6.8.** Identify and evaluate the risks wildland fire hazards pose to life, property, and natural resources, and use science-based approaches to understand how climate change will affect these risks.
 - F6.8a.** Maintain consistent, detailed, and regularly updated vegetation and fuels maps and CAL FIRE [Very High Fire Hazard Severity Zone maps](#); improve sharing of all maps and analyses across ownerships to ensure communities understand local fire risks.
 - F6.8b.** Engage local stakeholder entities such as fire safe councils to validate and prioritize the assets at risk and to update data for values and assets at risk.
- F-6.9.** Create provisions for local emergency plans to ensure public safety when wildfires occur.

- F6.9a.** Initiate and maintain cooperative fire protection agreements with local, state, and federal partners to create an integrated regional fire protection system and deliver a cost effective and efficient emergency response.
- F-6.10.** Address post-fire responsibilities for community revival and natural resource recovery.
 - F-6.10a.** Conduct rapid post-fire assessments and project implementation to minimize flooding, protect water quality, limit sediment flows, and reduce other risks on lands impacted by wildfire.
 - F-6.10b.** Engage landowners and land management agencies in designing and implementing salvage and reforestation activities and vegetation treatment plans to restore ecosystem function to burned areas. Refine best management practices by assessing the effects of pre- and post- fire treatments.
 - F-6.10c.** Investigate all wildland fires to understand their causes; analyze trends of causes and focus community prevention and education efforts based on findings.

Ocean and Coast

Recommendation O-1: Leverage regulatory, permitting, and planning authority to preserve coastal communities and resources by adapting infrastructure and other development to be more resilient to sea level rise and extreme events.

- O-1.1.** Allocate additional local assistance grants for updating and certifying Local Coastal Programs to address climate change and sea level rise in all 76 coastal jurisdictions.
- O-1.2.** Provide technical assistance and guidelines to plan for sea level rise within local jurisdictions and other agencies.
- O-1.3.** Integrate climate adaptation considerations into state agency planning, investment, and funding decisions more fully by increasing coordination with local and regional partners, developing useful guidance, standards, and evaluation criteria for decision-making, and prioritizing the use of total economic valuation that accounts for market and non-market values.
- O-1.4.** Facilitate planning and implementation of adaptation measures in communities with unequal burdens from climate risks or insufficient resources to respond to these risks.
 - O1.4a** Incorporate environmental equity into various local adaptation grants by using demographic indicators of disadvantaged communities to help target outreach.
- O-1.5.** Develop policies to protect public trust, cultural, and archaeological resources along the coast.
 - O1.5a** Identify existing or potential threats to public trust assets and develop policies that ensure the ongoing availability of trust lands and their values for current and future generations.
 - O1.5b** Assess and plan for the protection of beaches and public access to the shoreline so that the loss of beaches does not disproportionately burden underserved or other underrepresented populations.

- O1.5c** Safeguard cultural and archeological resources threatened by sea level rise and ensure California Native American tribes and other affected groups are involved and supported in planning efforts to address these impacts.
- O-1.6.** Promote hazard avoidance for new development.
- O-1.7.** Use regulatory authority to reduce risk to existing property impacted by sea level rise.
 - O1.7a** Begin planning to adapt state-owned existing critical infrastructure at risk from sea level rise such as highways, wastewater treatment plants, airports, ports, pipelines, and transmission lines. Provide guidance and technical assistance to assist non-state entities to begin planning to address critical infrastructure at risk from sea level rise.
 - O1.7b** When feasible, use phased retreat, or buyout of vulnerable property.
 - O1.7c** Prioritize the remediation of hazardous material cleanup sites on the coast and in high flood risk areas so that they do not spread contamination later due to flooding.

Recommendation O-4: Assess community and ecosystem vulnerability through the use of decision-support tools and analyses.

- O-4.1.** Provide continual grants and funding for community-based vulnerability assessments.
 - O-4.1a.** Seek input from residents, beach users, local businesses, and other stakeholders affected by climate impacts in the community through workshops and community events, and ensure that these workshops are accessible to the most vulnerable stakeholders.
 - O-4.1b.** Continue to identify and map coastal infrastructure and vulnerable assets, such as water, energy infrastructure, ports, tourism, and fishing sites.
- O-4.2.** Assess the vulnerability of archaeological sites and natural and cultural resources to sea level rise.
 - O-4.2a.** Work with tribes on participatory mapping of coastal tribal resources and development of vulnerability assessments.
 - O-4.2b.** Initiate vulnerability study of DPR’s natural and cultural resources’ exposure to sea-level rise.
- O-4.3.** Study the vulnerability of ecosystems to impacts of climate change such as northward species shifts, lower productivity and food, exotic species, reduced coastal water quality, toxic algae blooms, health hazards, inundation of beaches and wetlands.
 - O-4.3a.** Identify critical areas of habitat at risk along the coast and areas needed to allow them to migrate as seas rise; prioritize funding to acquire and preserve them.
 - O-4.3b.** Identify vulnerability of coastal beaches and wetlands and priority upland transition sites.

Recommendation O-5: Widely communicate guidance, data, and resources for ocean and coastal adaptation strategies, further outreach and education efforts, and provide pathways for meaningful community engagement.

- O-5.1.** Conduct outreach and communication on impacts to beaches, dunes, and wetlands from “coastal squeeze,” when shoreline protection and other development prevent the inland migration of shoreline habitats, leading to inundation of that land area and loss of

habitat/beach area. Communicate best practices for managing coastal squeeze, such as natural infrastructure.

- O-5.2.** Develop best practices for seeking inclusive participation in planning decisions related to sea level rise and climate change along the coast. Use targeted, culturally-sensitive communication to engage underserved, low income, and linguistically isolated communities and communities of color, and strategies such as providing interpreters, offering a variety of venues for public comment, and locating community meetings so that they are accessible to public transportation and closest to communities most affected by climate impacts.
- O-5.3.** Continue outreach/training of local officials regarding implementing adaptation options through updates to Local Coastal Programs, Hazard Mitigation Plans, General Plans, and/or other relevant planning documents.
- O-5.4.** Conduct relevant outreach directly to specific marine resource users and sector communities, like fishers, who may be impacted by climate change.
- O-5.5.** Engage community and increase education opportunities through citizen science projects that further our understanding of climate impacts.
- O-5.6.** Employ [community-based habitat restoration](#), involving individuals, organizations, and academic institutions, in helping to improve and restore coastal habitat in their communities.
- O-5.7.** Expand existing public awareness programs like the [California King Tides](#) website and the [Whale Tail Program](#).

Water

Recommendation W-1: Vigorously prepare California for flooding.

- W-1.5.** DWR and the Water Board will collaborate with federal, State and local agencies as well as the research and academic community to assess the adverse impacts to human health and safety, industries, water and other physical infrastructures, communities and ecosystems of floods and related extreme events.
- W-1.7.** DWR will update grant guidelines and proposal solicitations for its [Small Community Flood Risk Reduction](#) and [Urban Flood Risk Reduction](#) programs to include consideration of future projections of flood flows and to support climate change adaptation in future rounds of funding.

Recommendation W-2: Support regional groundwater management for drought resiliency.

- W-2.1.** DWR will provide water budget and climate change datasets, tools and guidance to support groundwater sustainability agencies in their evaluation of potential climate change impacts in groundwater sustainability plans by the January 2020 or 2022 deadlines.

- W-2.3.** DWR will provide technical and financial assistance from Proposition 1 to local agencies to support groundwater sustainability plan development.
- W-2.5.** DWR will evaluate the groundwater sustainability plans and alternative plans according to adopted regulations, and will coordinate with the Water Board to ensure state intervention is effective and appropriate.

Recommendation W-3: Diversify local supplies and increase water use efficiency.

- W-3.7.** The Water Board will work to address knowledge gaps and conduct additional research related to the protection of public health and direct potable reuse of recycled water, and to draft regulations for direct potable reuse of recycled water.

Recommendation W-5: Prepare California for hotter and drier conditions and improve water storage capacity.

- W-5.7.** DWR will support urban water suppliers in the development of more consistent and substantive water shortage contingency plans that include a five-year drought risk assessment and annual water budget forecasts, and work with communities to develop drought response actions.

Recommendation W-6: Address water-related impacts of climate change on vulnerable and disadvantaged populations and cultural resources.

- W-6.1.** The State will ensure disadvantaged communities receive an equitable distribution of benefits from State processes and technical and financial assistance programs, and assist with climate change information about communities where climate change might pose undue burden.
- W-6.2.** DWR will award grants to small communities protected by facilities of the State Plan of Flood Control to complete feasibility studies that have the goal of increasing small community flood protection to the 100-year level. Improving the level of flood protection should include climate change projections.
- W-6.3.** The Water Board will develop funding guidelines for a new \$9.5 million grant program that will improve access to clean drinking water in public schools and prioritize funding small disadvantaged communities.
- W-6.4.** The Water Board and the Office of Environmental Health Hazard Assessment will identify communities most vulnerable to climate change impacts to ensure access to information and technical assistance.
- W-6.5.** The Water Board will work to provide technical assistance and financial support to protect drinking water systems that are highly vulnerable to climate change impacts, with emphasis on disadvantaged communities and vulnerable populations as directed by the March 2017 resolution.
- W-6.6.** The Water Board will work to develop and provide information and public outreach on potential climate change impacts to water quality, and options and funding opportunities for adapting to those impacts, including protecting source watersheds, drinking water and wastewater treatment infrastructure.

W-6.7. The Water Board will increase outreach to environmental justice and disadvantaged communities and Native American tribes in collaboration with non-governmental organizations.