



SOUTHERN CALIFORNIA  
ASSOCIATION OF GOVERNMENTS  
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REMOTE PARTICIPATION ONLY

RESILIENCE AND  
CONSERVATION  
SUBCOMMITTEE

Monday, November 21, 2022  
9:00 a.m. – 11:00 a.m.

**To Attend and Participate on Your Computer:**

**<https://scag.zoom.us/j/82486482030>**

**To Attend and Participate by Phone:**

**Call-in Number: 1-669-900-6833**

**Meeting ID: 824 8648 2030**

***Please see next page for detailed  
instructions on how to participate in the meeting.***

**PUBLIC ADVISORY**

Given the declared state of emergency (pursuant to State of Emergency Proclamation dated March 4, 2020) and local public health directives imposing and recommending social distancing measures due to the threat of COVID-19, and pursuant to Government Code Section 54953(e)(1)(A), the meeting will be held telephonically and electronically.

If members of the public wish to review the attachments or have any questions on any of the agenda items, please contact Maggie Aguilar at (213) 630-1420 or via email at [aguilarm@scag.ca.gov](mailto:aguilarm@scag.ca.gov). Agendas & Minutes are also available at: [www.scag.ca.gov/committees](http://www.scag.ca.gov/committees).

SCAG, in accordance with the Americans with Disabilities Act (ADA), will accommodate persons who require a modification of accommodation in order to participate in this meeting. SCAG is also committed to helping people with limited proficiency in the English language access the agency's essential public information and services. You can request such assistance by calling (213) 630-1420. We request at least 72 hours (three days) notice to provide reasonable accommodations and will make every effort to arrange for assistance as soon as possible.



## Instructions for Public Comments

*You may submit public comments in two (2) ways:*

1. **In Writing:** Submit written comments via email to: [ePublicComment@scag.ca.gov](mailto:ePublicComment@scag.ca.gov) by **5pm on Friday, November 18, 2022**. You are **not** required to submit public comments in writing or in advance of the meeting; this option is offered as a convenience should you desire not to provide comments in real time as described below.

All written comments received after 5pm on Friday, November 18, 2022, will be announced and included as part of the official record of the meeting.

2. **In Real Time:** If participating in real time via Zoom or phone, during the Public Comment Period (Matters Not on the Agenda) or at the time the item on the agenda for which you wish to speak is called, use the “raise hand” function on your computer or \*9 by phone and wait for SCAG staff to announce your name/phone number. SCAG staff will unmute your line when it is your turn to speak. Limit oral comments to 3 minutes, or as otherwise directed by the presiding officer. For purpose of providing public comment for items listed on the Consent Calendar, please indicate that you wish to speak when the Consent Calendar is called; items listed on the Consent Calendar will be acted on with one motion and there will be no separate discussion of these items unless a member of the legislative body so requests, in which event, the item will be considered separately.

If unable to connect by Zoom or phone and you wish to make a comment, you may submit written comments via email to: [ePublicComment@scag.ca.gov](mailto:ePublicComment@scag.ca.gov).

***In accordance with SCAG’s Regional Council Policy, Article VI, Section H and California Government Code Section 54957.9, if a SCAG meeting is “willfully interrupted” and the “orderly conduct of the meeting” becomes unfeasible, the presiding officer or the Chair of the legislative body may order the removal of the individuals who are disrupting the meeting.***

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### OUR MISSION

To foster innovative regional solutions that improve the lives of Southern Californians through inclusive collaboration, visionary planning, regional advocacy, information sharing, and promoting best practices.

### OUR VISION

Southern California’s Catalyst for a Brighter Future

### OUR CORE VALUES

Be Open | Lead by Example | Make an Impact | Be Courageous



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## Instructions for Participating in the Meeting

SCAG is providing multiple options to view or participate in the meeting:

### To Participate and Provide Verbal Comments on Your Computer

1. Click the following link: <https://scag.zoom.us/j/82486482030>
2. If Zoom is not already installed on your computer, click “Download & Run Zoom” on the launch page and press “Run” when prompted by your browser. If Zoom has previously been installed on your computer, please allow a few moments for the application to launch automatically.
3. Select “Join Audio via Computer.”
4. The virtual conference room will open. If you receive a message reading, “Please wait for the host to start this meeting,” simply remain in the room until the meeting begins.
5. During the Public Comment Period, use the “raise hand” function located in the participants’ window and wait for SCAG staff to announce your name. SCAG staff will unmute your line when it is your turn to speak. Limit oral comments to 3 minutes, or as otherwise directed by the presiding officer.

### To Listen and Provide Verbal Comments by Phone

1. Call **(669) 900-6833** to access the conference room. Given high call volumes recently experienced by Zoom, please continue dialing until you connect successfully.
2. Enter the **Meeting ID: 824 8648 2030**, followed by #.
3. Indicate that you are a participant by pressing # to continue.
4. You will hear audio of the meeting in progress. Remain on the line if the meeting has not yet started.
5. During the Public Comment Period, press \*9 to add yourself to the queue and wait for SCAG staff to announce your name/phone number. SCAG staff will unmute your line when it is your turn to speak. Limit oral comments to 3 minutes, or as otherwise directed by the presiding officer.

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**Resilience and Conservation Subcommittee**  
***Members – November 2022***

- 1. Hon. Kathleen Kelly**  
Chair, Palm Desert, RC District 2
- 2. Hon. Cindy Allen**  
Long Beach, RC District 30
- 3. Hon. David Avila**  
Yucaipa, SBCTA
- 4. Hon. Lorrie Brown**  
Ventura, RC District 47
- 5. Hon. Margaret Clark**  
Rosemead, RC District 32
- 6. Hon. Peggy Huang**  
TCA Representative
- 7. Hon. Trish Kelley**  
Mission Viejo, OCCOG
- 8. Hon. Anni Marshall**  
Avalon, GCCOG
- 9. Hon. Cynthia Moran**  
Chino Hills, SBCTA
- 10. Hon. Oscar Ortiz**  
Indio, CVAG
- 11. Hon. Nicholas Schultz**  
Burbank, AVCJPA
- 12. Hon. Wes Speake**  
Corona, WRCOG

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## RESILIENCE AND CONSERVATION SUBCOMMITTEE AGENDA

Southern California Association of Governments  
Remote Participation Only  
**Monday, November 21, 2022**  
**9:00 AM**

The Resilience and Conservation Subcommittee may consider and act upon any of the items on the agenda regardless of whether they are listed as Information or Action items.

### **CALL TO ORDER AND PLEDGE OF ALLEGIANCE** *(The Honorable Kathleen Kelly, Chair)*

### **PUBLIC COMMENT PERIOD (Matters Not on the Agenda)**

This is the time for persons to comment on any matter pertinent to SCAG's jurisdiction that is **not** listed on the agenda. Although the committee may briefly respond to statements or questions, under state law, matters presented under this item cannot be discussed or acted upon at this time. Public comment for items listed on the agenda will be taken separately as further described below.

**General information for all public comments:** Members of the public are encouraged, but not required, to submit written comments by sending an email to: [ePublicComment@scag.ca.gov](mailto:ePublicComment@scag.ca.gov) by 5pm on Friday, November 18, 2022. Such comments will be transmitted to members of the legislative body and posted on SCAG's website prior to the meeting. Any writings or documents provided to a majority of the Resilience and Conservation Subcommittee regarding any item on this agenda (other than writings legally exempt from public disclosure) are available at the Office of the Clerk, located at 900 Wilshire Blvd., Suite 1700, Los Angeles, CA 90017 during normal business hours and/or by contacting the office by phone, (213) 630-1420, or email to [aguilarm@scag.ca.gov](mailto:aguilarm@scag.ca.gov). Written comments received after 5pm on Friday, November 18, 2022, will be announced and included as part of the official record of the meeting. Members of the public wishing to verbally address the Resilience and Conservation Subcommittee in real time during the meeting will be allowed up to a total of 3 minutes to speak on items on the agenda, with the presiding officer retaining discretion to adjust time limits as necessary to ensure efficient and orderly conduct of the meeting. The presiding officer has the discretion to equally reduce the time limit of all speakers based upon the number of comments received. If you desire to speak on an item listed on the agenda, please wait for the chair to call the item and then indicate your interest in offering public comment by either using the "raise hand" function on your computer or pressing \*9 on your telephone. For purpose of providing public comment for items listed on the Consent Calendar (if there is a Consent Calendar), please indicate that you wish to speak when the Consent Calendar is called; items listed on the Consent Calendar will be acted upon with one motion and there will be no separate discussion of these items unless a member of the legislative body so requests, in which event, the item will be considered separately.



**REVIEW AND PRIORITIZE AGENDA ITEMS**

**CONSENT CALENDAR**

1. Minutes of the Meeting – October 17, 2022 PPG. 5

**INFORMATION ITEMS**

2. Climate Change Impacts for Natural and Working Lands in Southern California 25 Mins. PPG. 11  
*(Dr. Megan Jennings, Conservation Ecologist & Co-Director, SDSU Institute for Ecological Monitoring and Management)*
3. Regional Resilience Framework Update 30 Mins. PPG. 23  
*(Lorianne Esturas, Assistant Regional Planner, SCAG)*
4. Proposed Resilience and Conservation Subcommittee Policies and Strategies 60 Mins. PPG. 33  
*(Kim Clark, Program Manager, SCAG)*

**ADJOURNMENT**



Southern California Association of Governments  
Remote Participation Only  
**November 21, 2022**

**MINUTES OF THE MEETING**  
**RESILIENCE AND CONSERVATION SUBCOMMITTEE (RCS)**  
**MONDAY, OCTOBER 17, 2022**

THE FOLLOWING MINUTES IS A SUMMARY OF ACTIONS TAKEN BY THE RESILIENCE AND CONSERVATION SUBCOMMITTEE (RCS). AN AUDIO RECORDING OF THE ACTUAL MEETING IS AVAILABLE AT: <http://scag.ig2.com/Citizens/>.

The Resilience and Conservation Subcommittee (RCS) of the Southern California Association of Governments (SCAG) held its meeting virtually (telephonically and electronically), given the declared state of emergency (pursuant to State of Emergency Proclamation dated March 4, 2020) and local public health directives imposing and recommending social distancing measures due to the threat of COVID-19, and pursuant to Government Code Section 54953(e)(1)(A). A quorum was present.

**Members Present**

**Hon. Kathleen Kelly, Chair**  
**Hon. Margaret Clark, Vice Chair**  
Hon. Cindy Allen  
Hon. Peggy Huang  
Hon. Trish Kelley  
Hon. Anni Marshall  
Hon. Cynthia Moran  
Hon. Oscar Ortiz  
Hon. Wes Speake

***Palm Desert***  
***Rosemead***  
***Long Beach***  
  
***Mission Viejo***  
***Avalon***  
***Chino Hills***  
***Indio***  
***Corona***

**District 2**  
**District 32**  
District 30  
TCA  
OCCOG  
GCCOG  
SBCTA  
CVAG  
WRCOG

**Members Not Present**

Hon. David Avila  
Hon. Lorrie Brown  
Hon. Nicholas Schultz

***Yucaipa***  
***Ventura***  
***Burbank***

SBCTA  
District 47  
AVCJPA

**CALL TO ORDER AND PLEDGE OF ALLEGIANCE**

The Honorable Kathleen Kelly called the meeting to order at 9:01 a.m. Chair Kelly asked Honorable Oscar Ortiz, Indio, CVAG, to lead the Pledge of Allegiance.

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**PUBLIC COMMENT PERIOD**

Chair Kelly opened the Public Comment Period and outlined instructions for public comments. She noted this was the time for persons to comment on any matter pertinent to SCAG’s jurisdiction that were not listed on the agenda. She reminded the public to submit comments via email to [ePublicComment@scag.ca.gov](mailto:ePublicComment@scag.ca.gov).

The Clerk acknowledged there were no written public comments for items not listed on the agenda.

Seeing no public comment speakers, Chair Kelly closed the Public Comment Period.

**REVIEW AND PRIORITIZE AGENDA ITEMS**

There was no prioritization of agenda items.

**CONSENT CALENDAR**

1. Minutes of the Meeting – September 19, 2022

Chair Kelly opened the Public Comment Period.

Seeing no public comment speakers, Chair Kelly closed the Public Comment Period.

A MOTION was made (Ortiz) to approve the Consent Calendar. Motion was SECONDED (Kelley) and passed by the following votes:

**AYES:** Allen, M. Clark, Kelley, Kelly, Marshall, Moran, Ortiz and Speake (8)

**NOES:** None (0)

**ABSTAIN:** Huang (1)

**INFORMATION ITEMS**

2. Southern California Jurisdictions’ Climate Resilience Landscape Analysis

Chair Kelly opened the Public Comment Period.

Seeing no public comment speakers, Chair Kelly closed the Public Comment Period.

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Lorianne Esturas, Assistant Regional Planner, introduced Kristopher Eclarino, Technical Project Manager at Climate Resolve, whose work involves review of municipal climate adaptation strategies and analysis of climate datasets. She also introduced Michelle Baron, a consultant for Climate Resolve, and who has had previous experience as a co-facilitator of the Inland Southern California Climate Collaborative.

Mr. Eclarino's presentation included an update on the work Climate Resolve did along with Estolano Advisors on the Climate Resilience Landscape Analysis, which was to assist SCAG in understanding the status of resilience planning across SCAG, to identify commonalities between resilience focus areas, and to assist SCAG with exploring opportunities to engage and ground truth the climate resilience landscape findings with community partners. He briefly outlined the goals of the project which were to identify resilience focus areas across the SCAG region, to conduct the gap analysis on resilience planning, and provide recommendations on how SCAG can utilize this research to further define the regional resilience framework. The key deliverables that were provided to SCAG was a matrix spreadsheet of resilience focus areas and potential shocks and stressors, a gap analysis of resilience planning efforts report, and a next step summary report. He provided a brief overview of the data on the matrix spreadsheet which included information on each municipality, county, and tribal nations within SCAG region along with their planning efforts to comply with SB 379 and SB 1000. His presentation also included a brief explanation on the methodology they used to identify the resilience focus areas and how the SCAG region was doing as a whole to comply with SB 379. He also noted in his presentation that they identified a set of 35 shocks and stressors for the region based on the resilience focus area analysis. Lastly, SCAG was provided with some key takeaways and recommended next steps on how to utilize this research moving forward.

Ms. Baron's presentation included information on how they used this research as the foundation for a deeper dive into the specific resilience focus areas impacting the inland Southern California region. This included an overview of the region (Imperial, Riverside, and San Bernardino Counties), the climate impacts and climate preparedness planning. Her presentation also briefly covered funding and financing climate preparedness which consisted of planning and implementation programs, best practices for grant writing, and grant writing assistance programs within the region.

The presenters responded to comments and questions expressed by the Subcommittee members related to workforce development in the Inland Empire region and future research on funding versus economic development areas.

The comprehensive staff report and PowerPoint presentation were included in the agenda packet.

### 3. Updated Resilience Definition and Expert Panel

Chair Kelly opened the Public Comment Period.

Seeing no public comment speakers, Chair Kelly closed the Public Comment Period.

Kim Clark, Program Manager II, provided a brief update on the resilience definition. She noted that as part of the discussions at this meeting would be to look at examples to improve regional resilience for our built economic and natural systems so that they can help formulate policy guidance for Connect SoCal. She indicated that the speakers for this meeting would cover topics on transportation, real estate, water demand and supply, and the natural systems that connect water, energy, and agriculture. Ms. Clark proceeded to introduce Charles Wilson, Executive Director and CEO of the Southern California Water Coalition.

Mr. Wilson's presentation included information on projected total water demand in the SCAG region. He also reported that for the State Water Project they rely on roughly 30% of the base load for Southern California and they were seeing that it could be lessened by some 25% by the year 2035. His presentation also indicated that they were seeing a potential reduction in the Colorado River runoff, that's Lake Powell and Lake Mead inflows, and some increased evaporation totaling up to 30%. Essentially, the two primary sources of imported water for Southern California were seen as having the potential for a significant degradation and that puts pressure on them for additional local project development and implementation over the next 10 to 15 years. He also noted the current drought as a challenging scenario and indicated that they were working with their partners like Metropolitan, San Bernardino Valley, Santa Clarita, and Mojave, the imported water agencies, to embark on a one water implementation process to identify specific actions that would address these risks. His presentation also included information on large scale recycling projects which is an important part of water.

Mr. Wilson responded to comments and questions expressed by the Subcommittee members related to projected growth and total demand on water, reductions from the Bay Delta and Colorado River, the timeline for desalination project in Dana Point and storm water recapture.

Ms. Clark introduced Ms. Leah Fisher, Office Chief for Air Quality and Climate Change at Caltrans (CA DOT).

Ms. Fisher's presentation included an overview on climate adaptation at Caltrans. She provided an overview of who they are, tools and guidance they have produced, information on an adaptation case study and upcoming funding opportunities. She noted in her presentation that Caltrans has shown leadership on adaptation planning by addressing the foundational climate data needs that are required to begin the planning work. She noted that 2019 they wrapped up the climate change vulnerability assessments which looked at six climate stressors to the state highway system. As a result, there were 12 District reports that were put out and can be accessed in GIS format. She explained that using the results of the vulnerability assessments the team then put out asset

specific adaptation priority reports in which they took those identified climate vulnerabilities within each district and evaluated exposure and consequence metrics for the vulnerabilities exposures. She further explained that they were now focused on a gap, specifically how they take this technical information and the identified vulnerabilities and actually move it into project planning and project development. She indicated that her team had been working on creating guidance for every stage of the pre project planning process at Caltrans. She noted that they were working on early project planning which would make consideration of climate risk a requirement and that this was really critical to ensure that risks in the associated adaptation strategies are identified early on so that they're built into the ultimate design and cost. As noted above, her presentation included a case study on the Pacific Coast Highway Corridor Planning which focused on three main areas: adaptation, complete streets, and comprehensive adaptation strategies for the region. The purpose of the plan was to develop a comprehensive multimodal corridor plan for SR-1 that provides an assessment of the current climate change challenges and vulnerabilities and outlines potential short-, medium- and long-term adaptation strategies that can be implemented in the future. Lastly, her presentation included a brief overview of the Promoting Resilient Operations for Transformative, Efficient, Cost-saving Transportation (PROTECT) Formula Funding Program and SB 198: Transportation Climate Adaptation Programs.

Ms. Clark introduced Rutger de Koning and Robert Mens from Bouwinvest Real Estate Investors, which manage real estate portfolios in the Netherlands and have several holdings abroad including in Southern California. She noted that Bouwinvest has been an international leader in assessing how their real estate investments are impacted by climate change and identifying mitigation strategies that can help the private sector adapt to climate hazards and reduce uncertainty in real estate investments.

The presentation from Bouwinvest Real Estate Investors included an overview of the investment company, which invests money from pension funds and other institutional investors from the Netherlands, the use of GIS, and how they deal with climate risk. They also shared a company video that highlighted their focus on livable metropolitan areas, affordability, senior housing, climate neutral portfolios and climate adaptation. They provided an overview of where they have most of their investments and focused their presentation on sustainability and climate adaptation with an emphasis on climate risks they look at when investing. They indicated that for each investment they consider they create a climate scan to give a general overview of the types of risks and assets it has. Additionally, they provided a brief overview of the Bouwinvest policy related climate risks which was an integral part of their risk management process.

Chair Kelly asked if the kind of climate risk analysis that Bouwinvest was doing was becoming an industry standard and if they were ahead of pack. Mr. de Koning addressed the question and stated they were somewhat ahead of the pack and were one of the first private real estate investors in the Netherlands who had done a complete formal climate scan.

Ms. Clark introduced Dr. Qinqin Liu, an interdisciplinary artist and scientist who studies the connection between water, energy, and agriculture with climate change, and has published several peer reviewed international articles examining these issues in California. She noted that Dr. Liu has spent 20 years of her career at the State of California's Natural Resources Agency, both in the Department of Water Resources and the Department of Fish and Wildlife.

Dr. Liu provided a presentation on connecting energy, water, food, ecosystems and climate change for regional implication which was based on her own research at the DWR climate change program. She noted that increased temperatures, loss of snowpack, fire and air quality, extreme events with flood and drought, rising sea levels and changes in species and habitats had climate change effects on ecosystem services like water, energy, food, and transportation. She provided a brief overview on greenhouse gas emissions related to each sector like industrial, agricultural and transportation. She highlighted energy usage in the water sector as having a lot of GHG emissions. She also provided a brief overview of the Conceptual Model Framework she developed that was based on the life cycle in water, energy, and food from supply to end use. Her presentation also included an example of the connection between water and energy and an overview of the challenges and opportunities in climate actions with mitigation and adaptation.

The comprehensive staff report and PowerPoint presentation were included in the agenda packet and posted on the SCAG website.

#### **ANNOUNCEMENTS**

There were no announcements.

#### **ADJOURNMENT**

There being no further business, Chair Kelly adjourned the Meeting of the Resilience and Conservation Subcommittee at 11:03 a.m.

[MINUTES ARE UNOFFICIAL UNTIL APPROVED BY THE RCS]

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**AGENDA ITEM 2**  
**REPORT**

Southern California Association of Governments  
Remote Participation Only  
**November 21, 2022**

**To:** Resilience and Conservation Subcommittee (RCS)

**EXECUTIVE DIRECTOR'S  
APPROVAL**

**From:** India Brookover, Senior Planner  
(213) 236-1919, brookover@scag.ca.gov

**Subject:** Climate Change Impacts for Natural and Working Lands in Southern California

**RECOMMENDED ACTION:**

Information Only - No Action Required

**STRATEGIC PLAN:**

This item supports the following Strategic Plan Goal 1: Produce innovative solutions that improve the quality of life for Southern Californians.

**EXECUTIVE SUMMARY:**

*In preparation for the 2024 Connect SoCal Plan, Dr. Megan Jennings will speak on natural lands in the region, how they are affected by climate change and development, and their co-benefits. Conservation of natural and farm lands is one of 2020 Connect SoCal's strategies for greenhouse gas emissions reduction. In addition to their many co-benefits, conservation actions and policies incentivize infill development, reduce greenhouse gas pollutants, and provide important groundwater capture opportunities to improve the region's resilience.*

**BACKGROUND:**

The diverse natural and agricultural landscapes of Southern California are an invaluable asset to the millions of people that call the SCAG region home. These resources ensure a robust economy, provide clean drinking water, improve air quality, and host countless recreation activities. In addition to desert, mountain and coastal habitats, some of the highest concentrations of native plant and animal species on the planet are found within our region. Additionally, much of the SCAG region has a rich agricultural history, and crop sales continue to bring billions of dollars into our local economy.

In addition to protecting their environmental, health, and economic benefits, conservation of natural and farm lands is one of 2020 Connect SoCal's strategies for greenhouse gas emissions reduction. Development on farm and natural lands distant from job centers and transit infrastructure results in increased greenhouse gas emissions and an associated increase in per-

capita Vehicle Miles Travelled (VMT). Conservation incentives and policies incentivize infill development and the concentration of different land uses, making it easier to travel shorter distances, which reduces greenhouse gas emissions.

The 2024 Connect SoCal Plan is anticipated to build upon the recommended policies listed in the 2020 Connect SoCal Natural and Farm Lands Conservation Technical Report:

- Promote best practices in advanced mitigation;
- Facilitate partnerships and collaboration;
- Provide incentives for jurisdictions to work across county lines;
- Expand data sharing amongst partner agencies;
- Align support for local actors with funding opportunities;
- Support innovative land use policies;
- Improve natural corridor connectivity;
- Encourage urban greening and green infrastructure; and
- Connect the benefits of natural lands to public health – including air quality, recreation, and carbon sequestration.<sup>1</sup>

Dr. Megan Jennings will speak on natural lands in the region, how they are affected by climate change and development, and their co-benefits. She will also speak on the Connecting Wildlands and Communities project, which is a project funded by the California Strategic Growth Council that uses an interdisciplinary approach to explore how connected landscapes can support adaptation and resilience to climate change for both ecosystems and local communities in Southern California.

**FISCAL IMPACT:**

None.

**ATTACHMENT(S):**

1. PowerPoint Presentation - Climate Impacts and Adaptation in Southern California's Natural Landscapes

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<sup>1</sup> Connect SoCal Natural and Farm Lands Conservation Technical Report pp. 21-22.

**SDSU**

San Diego State  
University

# *Climate Impacts and Adaptation in Southern California's Natural Landscapes*

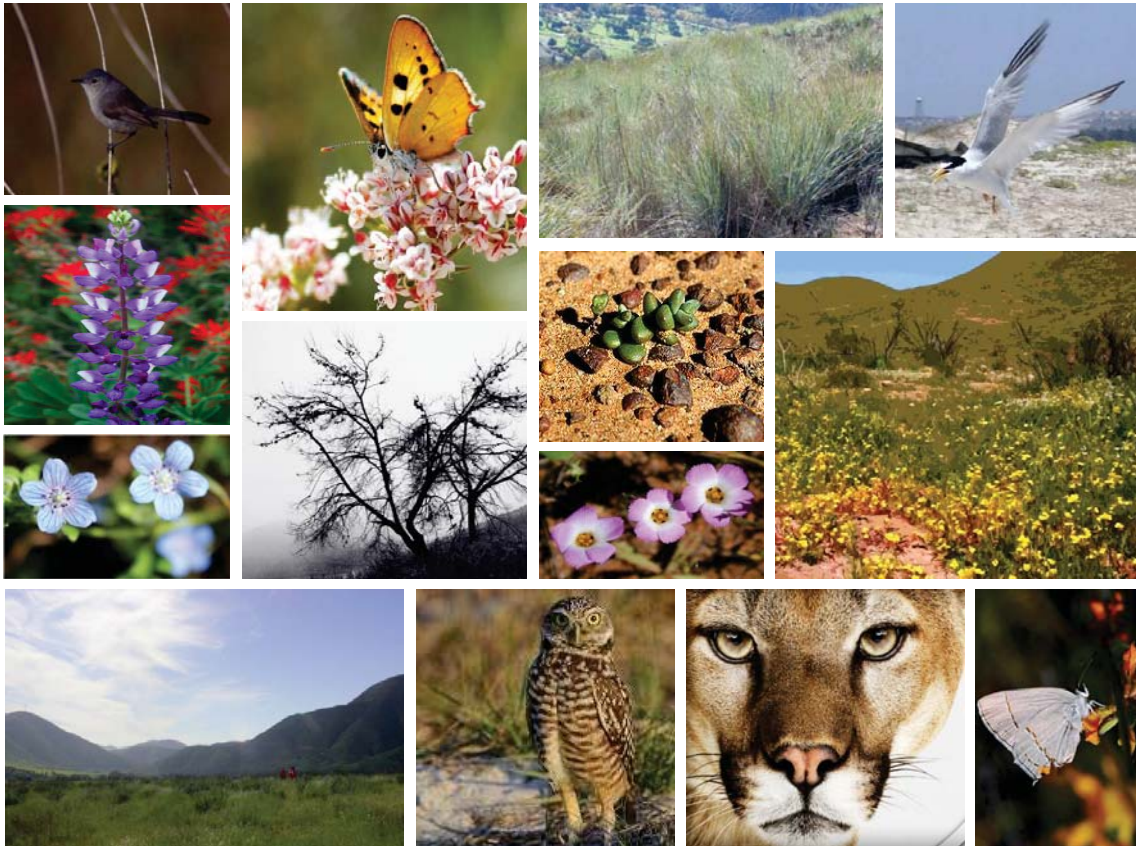
IE  
M  
M Institute for Ecological  
Monitoring and  
Management

Megan Jennings, Ph.D.

21 November 2022

[rlwison@sdsu.edu](mailto:rlwison@sdsu.edu), [mjennings@sdsu.edu](mailto:mjennings@sdsu.edu)

Photo by Joanna Gilkeson



Attachment: PowerPoint Presentation - Climate Impacts and Adaptation in Southern California's Natural Landscapes (Climate Change Impacts



<p><b>Rapid Warming</b></p>	<p><b>Persistent, Long-Term Droughts</b></p>
<p><b>Variable Precipitation Regimes</b></p>	<p><b>Ozone Pollution</b></p>
<p><b>Increasingly Large &amp; Severe Wildfires</b></p>	
<p><b>Habitat Loss &amp; Fragmentation</b></p>	<p><b>Invasive Species</b></p>

## THREATS and CHALLENGES:

- Rapidly intensifying stressors and disturbances
- Many with strong climate connections



Carbon Sequestration

Biodiversity & Habitat Conservation

Erosion & Sedimentation Reduction

Plant/Wildlife Habitat & Migration Corridors

Shading & Cooling of Surface Waters

Recreational Opportunities

Aesthetic & Spiritual Connections

Watershed Protection

## SHARED VALUES and SERVICES

- Watershed protection and important ecosystem services
- Recreational opportunities
- Cultural connections

# Resilience for Ecosystems & Communities

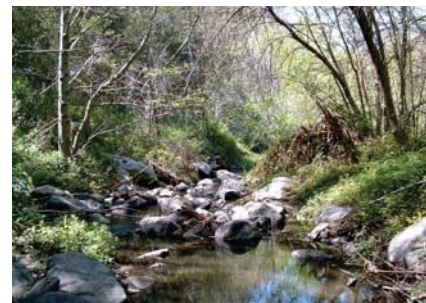
**SDSU**

San Diego State University

IE  
M  
M Institute for Ecological Monitoring and Management

CLIMATE SCIENCE ALLIANCE

**SANDAG**



WCB  
State of California  
Wildlife Conservation Board

SCAG  
INNOVATING FOR A BETTER TOMORROW

[www.climatesciencealliance.org/resilient-connectivity-project](http://www.climatesciencealliance.org/resilient-connectivity-project)



# Climate Resilient Connectivity

## Climate Resilient Connectivity

Climate Resilient Connectivity Project



### Climate Resilient Connectivity - The Full Network

Working in the south coast ecoregion of California, we created a connectivity plan by:

- Working collaboratively and iteratively with stakeholders and species experts, we gathered information, feedback, and key input to generate a connectivity plan and conservation tool
- Developing species distribution models for five target focal species under historic and four future climate scenarios to assess a range of potential changes in habitat availability and location over time.
- Using a foundation of historic conditions to develop a linkage strategy using empirical data while considering potential future conditions using scenarios and a consensus-based approach
- Linking dynamic meta-population models to the connectivity network to assess the biological importance of corridors in the network
- Assembling a regional multispecies linkage network for connectivity under climate change using a suite of focal species complemented by a landscape-focused geodiversity land facet analysis
- Combined a suite of connectivity modeling methods with a robust prioritization approach to support decision making under the uncertainty of climate change
- Developed two prioritization strategies for identification of key acquisitions within the linkage network and management targets for enhancing connectivity using an approach that can be updated based on stakeholder feedback or implemented by stakeholders themselves to meet management and decision needs over time

Zoom to the network in each county:

Monterey County

Tulare County

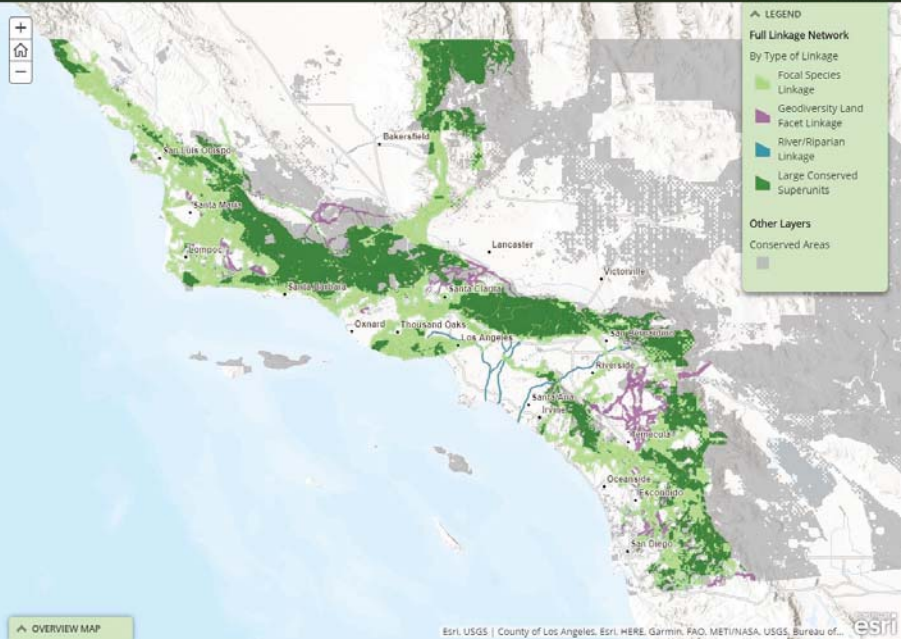
San Luis Obispo County

Kern County

### Climate Resilient Connectivity Network by Zone

### Acquisition Priority Model

### Management Target Priority Model



Attachment: PowerPoint Presentation - Climate Impacts and Adaptation in Southern California's Natural Landscapes (Climate Change Impacts



## Connecting Wildlands & Communities

Planning for climate-ready landscapes in SoCal



**SDSU**

San Diego State University



[www.climatesciencealliance.org/cwc](http://www.climatesciencealliance.org/cwc) | #Connect4Wildlands



# Regional Planning Survey

# 73% OF PLANNERS IN OUR REGION ARE INTERESTED IN INCORPORATING NEW TOOLS & DATA IN THEIR PLANNING PRACTICES

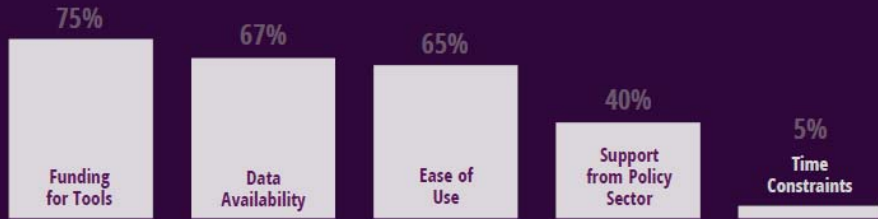
We asked Planners\*:

WITHIN YOUR PLANNING PROCESS

\*112 Planners participated



## WHICH ISSUES DO YOU CONSIDER?



## WHAT BARRIERS PREVENT YOU FROM INTEGRATING NEW DATA OR TOOLS?



# Temperature Change & Extremes

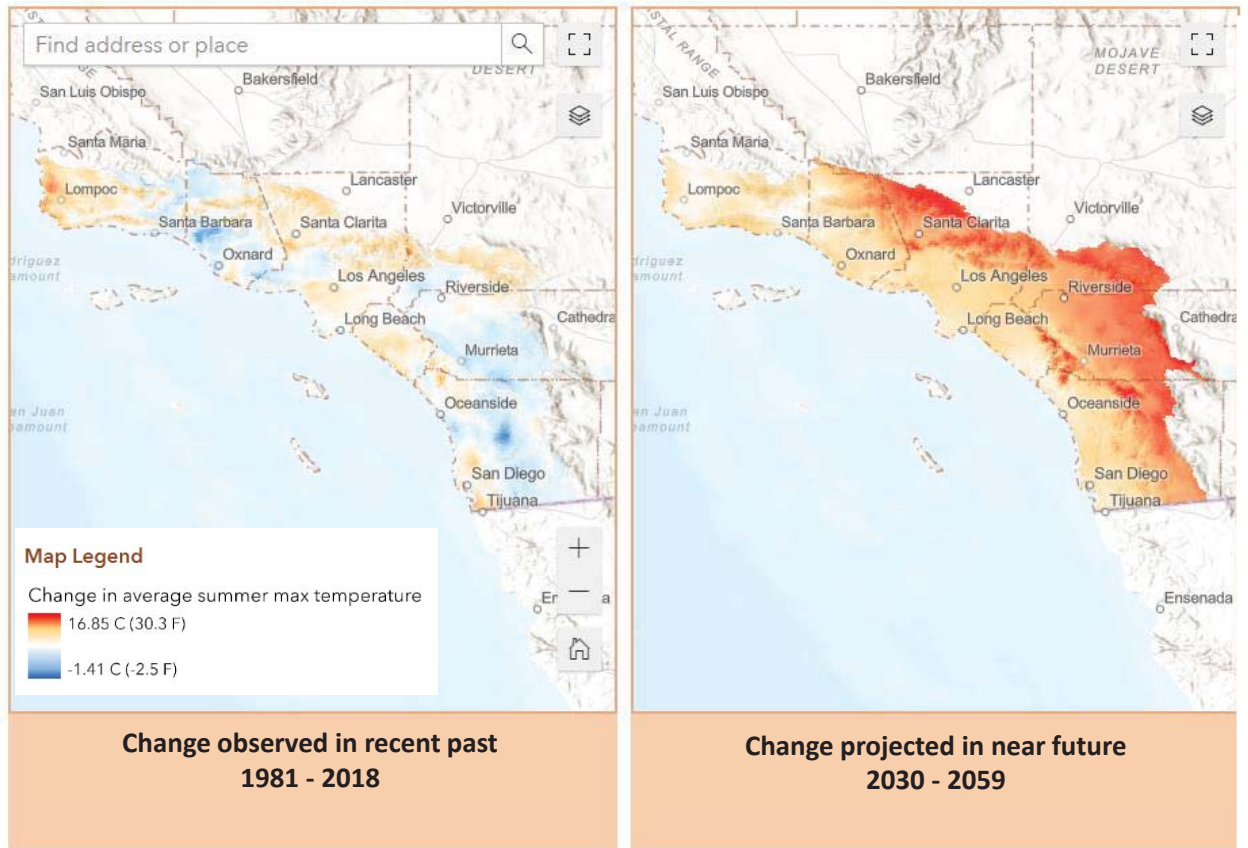


Photo by Laura Walsh

Attachment: PowerPoint Presentation - Climate Impacts and Adaptation in Southern California's Natural Landscapes (Climate Change Impacts)

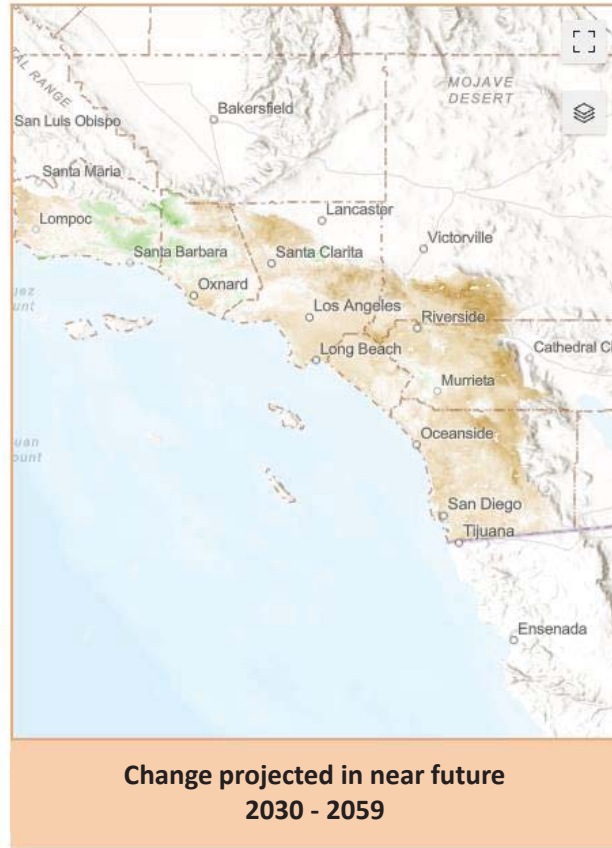
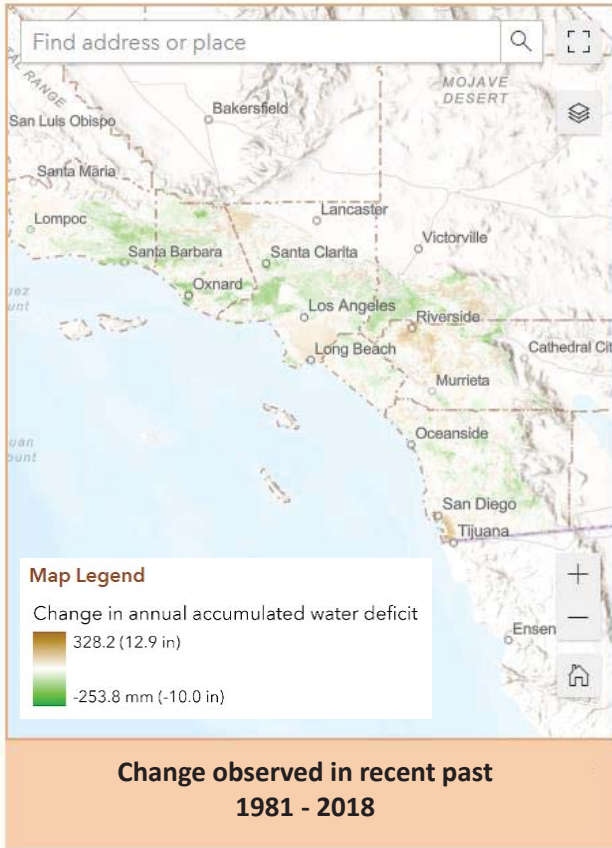
## Change in maximum temperatures relative to historic period 1950 – 1980

\*Hotter climate model HadGEM-ES under RCP 8.5 emissions



## Precipitation & Drought





**Change in annual  
water deficit  
relative to  
historic period  
1950 – 1980**

\*Drier climate model  
MIROC5 under RCP  
8.5 emissions

# Wildfires



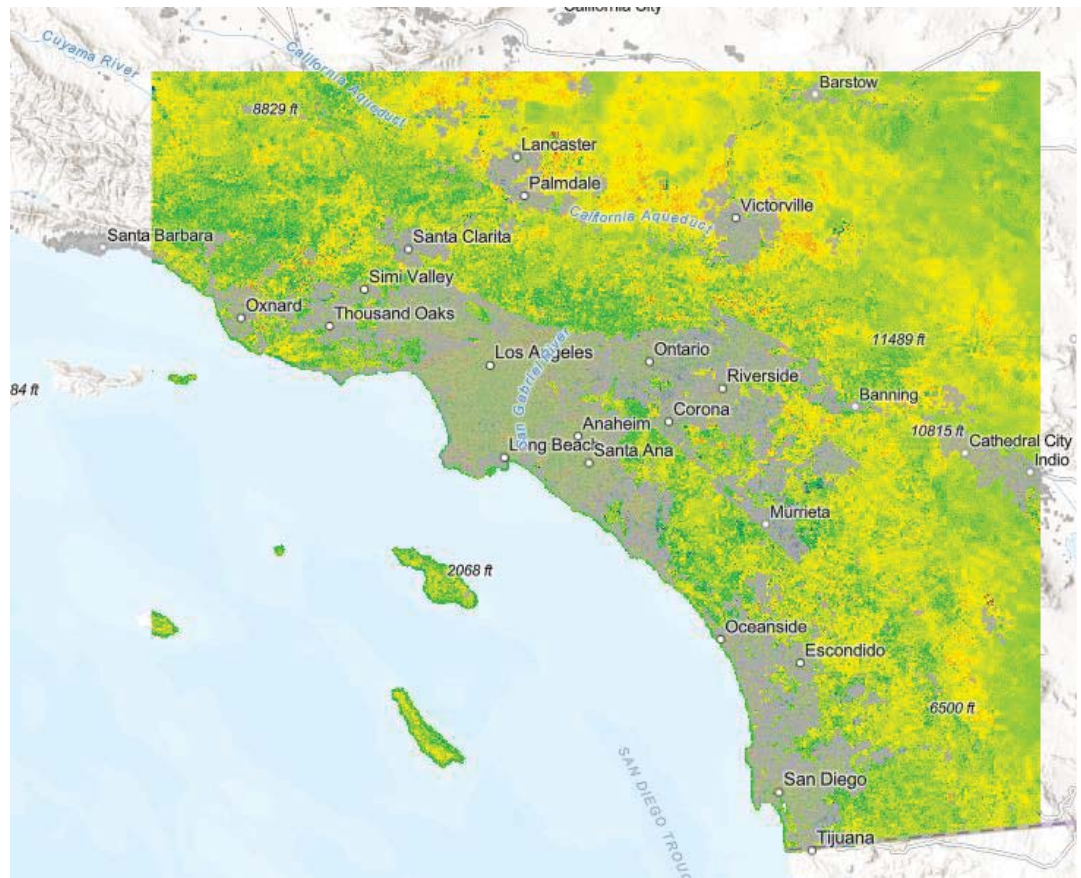
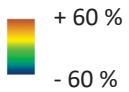
## Change in herbaceous cover

2016 - 2020  
relative to  
1986 - 1990

Urban



Absolute Change in Herbaceous Cover

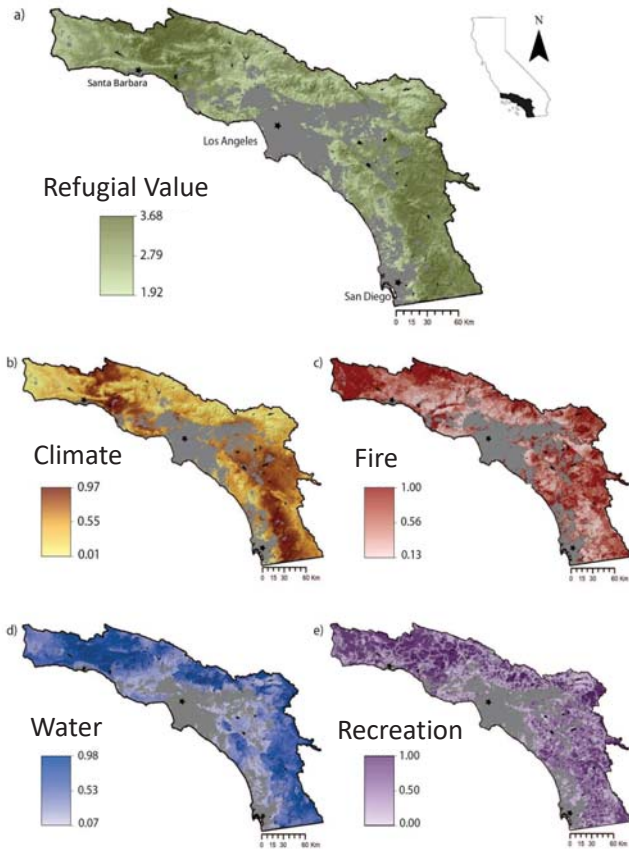


## Natural Lands & Resource Management *for Southern California's Changing Climate*



Photo by Lisa Cox/USFWS

# Identifying refuges from climate impacts

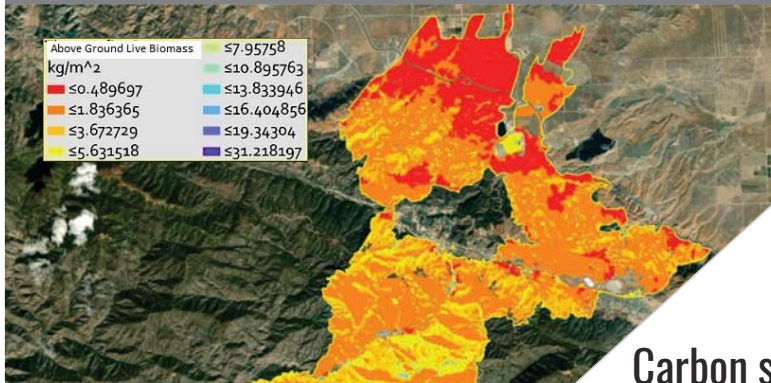


Having assessed climate and wildfire-resilience, we looked at a robust group of stressors identify *super-refugia* that are resilient to:

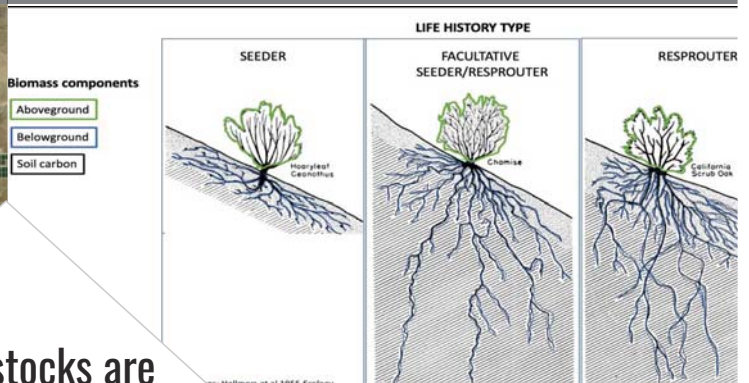
- **Climate**: mean maximum and extreme monthly temperature
- **Wildfire**: Total # and back-to-back
- **Water**: Change in water deficit and stream naturalness
- **Recreation pressure**: trail density

Rojas et al. 2021  
Conservation Biolog

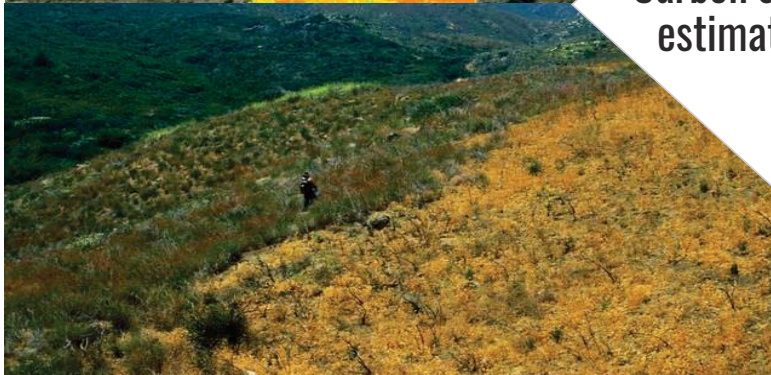
## Remote Sensing



## Literature Biomass Dataset



Carbon stocks are estimated with



Fire-driven Vegetation Conversion



Vegetation Maps



**How to Use the Dashboard**

Hello, planners! This resource was created to help you integrate adaptation actions into your planning goals. **Navigating the dashboard is easy as 1 - 2 - 3.**



- 1 Choose an Area of Interest**  
A type of plan or planning area
- 2 Pick your Policy Documents**  
One or more plans
- 3 View your Adaptation Actions!**

Actions are grouped by category so it's easy to find what you're looking for



**1 Choose an Area of Interest**

- Climate
- Codes and Ordinances
- General Plan
- Hazard Plans
- Land Use
- Land/Natural Resource Management
- Mobility and Infrastructure
- Water

**2 Pick 1 or More Policy Documents**

- GP - Circulation element
- GP - Conservation Element
- GP - Environmental Justice
- GP - Land Use element
- GP - Open Space element
- GP - Public health element
- GP - Safety element

**3 Adaptation Actions**

For this type of planning document, **GP - Conservation Element**, consider including these Adaptation Actions:

- OVERARCHING**
- Participate in relevant land use decision making in the region.
- BIODIVERSITY**
- Use connectivity value to prioritize areas for conservation.
  - Consider wildlife corridors when planning recreational land uses.
  - Perform assessments of existing and proposed connectivity locations given data about climate change, fire hazards, carbon storage, and other factors that can affect conditions.
- WATER**
- Buffer water from impacts from recreation.
  - Encourage use of Greywater systems for outside irrigation.
  - Promote wetland conservation and restoration.
  - Develop and adopt a groundwater protection overlay zone.

**Adaptation Resources**

For this area of interest, **General Plan**, consider referencing these adaptation resources

- SCAG: General Plan Model Policies-Climate Adaptation Framework (2020)
- APA: Health Impact Assessment Can Inform Planning to Promote Public Health (2016)
- APA: Health Impact Assessment Toolkit (2016)
- State of California: General Plan Guidelines (2017)

**Funding Resources**

- State Funding Wizard for Sustainability Programs
- California Natural Resources Grant Program
- Federal Grant Opportunities



San Diego State University

# Climate Impacts and Adaptation in Southern California's Natural Landscapes



Megan Jennings, Ph.D.  
21 November 2022  
[mjennings@sdsu.edu](mailto:mjennings@sdsu.edu)

Photo by Joanna Gilkeson





**AGENDA ITEM 3**  
**REPORT**

Southern California Association of Governments  
Remote Participation Only  
**November 21, 2022**

**To:** Resilience and Conservation Subcommittee (RCS)

**EXECUTIVE DIRECTOR'S  
APPROVAL**

**From:** Lorianne Esturas, Assistant Planner  
(213) 236-1853, esturas@scag.ca.gov

**Subject:** Regional Resilience Framework Update

**RECOMMENDED ACTION:**

Information Only – No Action Required

**STRATEGIC PLAN:**

This item supports the following Strategic Plan Goal

**EXECUTIVE SUMMARY:**

*In January 2021, SCAG’s Regional Council unanimously adopted Resolution 21-628-1 to promote climate adaptation, mitigation and resilience across Southern California’s six-county region that is home to nearly 19 million people. The Regional Council resolved to develop a Regional Resilience Framework (RRF) to help the region plan and prepare for a changing climate, as well as potential near- and long-term disruptions to Southern California, such as earthquakes, extreme weather, drought, wildfires, pandemics and economic shocks. The RRF aims to help SCAG better anticipate a wide range of potential futures and strengthen the resilience and preparedness of the region. Work on the RRF kicked off in June 2022 and is in the early stages of outreach and engagement with local stakeholders, such as community-based organizations (CBO) and tribal partners. This report provides an overview of the RRF, key deliverables, preliminary feedback from CBO and tribal engagement, and alignment with the Connect SoCal 2024 Resilience & Conservation Special Subcommittee.*

**BACKGROUND:**

As part of Connect SoCal, SCAG committed to exploring new challenges in the region to help move Southern California towards a more sustainable future. One of these challenges involves understanding how disruptions, such as acute shocks and chronic stressors, could impact the resilience of the SCAG region. Furthermore, SCAG’s unanimously adopted Climate Change Action Resolution (Resolution 21-628-1), calls on SCAG to pursue a number of activities to address climate change in order to strengthen regional resilience, such as development of a Regional Resilience Framework (RRF) to “help the region plan and prepare for a changing climate, as well as potential near- and long-term disruptions to Southern California.”

On June 15, 2022, SCAG kicked off the RRF to explore pressing issues and potential near- and long-term disruptions to Southern California, such as extreme weather, drought, wildfires, pandemics, earthquakes and economic shocks. The RRF will consider the potential degree of disruption to the region that could result from land based, atmospheric, public health and geologic natural hazards. The project will feature:

- Focus groups with community-based organizations and tribal nations to understand concerns related to resilience in local communities
- Resilience Advisory Committee consisting of practitioners from local jurisdictions, subregional and regional partners, county transportation commissions, utilities, etc.
- Resilience Toolkit for local agencies to integrate best practices in day-to-day and long-range planning activities
- Matrix of regional pinch-points (i.e., “shocks” and “stressors”, as defined below) that may impact the current and future resilience of local communities
- Exploratory scenario analysis to examine potential futures for Southern California
- Engagement with SCAG subregional and regional stakeholders, such as council of governments, SCAG policy committees, Regional Council, etc.

Currently, SCAG is in the process of conducting focus groups with community-based organizations and one tribal nation, targeting representation of at least one community group from each of the six counties within the region. Outreach and engagement efforts under the RRF have begun with local community partners to build upon and ground-truth SCAG’s previous efforts under the Climate Resilience Landscape Analysis<sup>1</sup> and gain insight into perceived shocks, stressors, and vulnerabilities local communities within the region are currently, and anticipate, facing.

The following CBOs and tribal nation have participated in RRF focus groups as of November 11, 2022:

- Comite Civico del Valley
- LAC+USC Medical Center Foundation
- People for Housing
- Soboba Band of Luiseno Indians
- Central Coast Alliance United for a Sustainable Economy (CAUSE)

The following preliminary themes have emerged from focus group discussions thus far:

- Social and community connections are important part of resilience.
- Social isolation, distrust of government, frayed ties within communities leading to “Fatigue Compassion” has increased vulnerability.
- Most CBOs report communities are not prepared for a major (future) disruption.



Focus groups are anticipated to conclude by the end of calendar year 2022, with the entirety of the RRF anticipated to be completed by late 2023.

**FISCAL IMPACT:**

Work for this effort is funded in SCAG's Fiscal Year 2022-2023 Overall Work Program (OWP) under project 290.4896.01 (Regional Resiliency Analysis).

**ATTACHMENT(S):**

1. PowerPoint Presentation - Regional Resilience Framework Update



# Regional Resilience Framework

Resilience & Conservation Subcommittee Meeting #3  
November 21, 2022

WWW.SCAG.CA.GOV

## Building a More Resilient Region



## Resilience Work-to-Date

### Resilience Policy Lab

- Define "resilience"
- Conduct a resilience assessment
- Support RRF Scope of Work Development
- Integrate resilience into Connect SoCal 2024

### Resilience Landscape Analysis

- Gap analysis of climate resilience planning
- Matrix of climate resilience shocks & stressors
- Explore next steps for stakeholder engagement to ground-truth resilience findings

3

## Resilience Work-to-Date: Resilience Definition

*The capacity of the SCAG region's **built, social, economic and natural systems** to **anticipate and effectively respond** to **changing conditions, acute shocks, and chronic stressors** by creating multiple opportunities for a **sustainable, thriving and equitable** future.*

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# Regional Resilience Framework: Project Overview



[Connect SoCal: Chapter 6  
Regional Resilience Framework](#)

## Project Timeline

- 18-month timeline
- June 15, 2022 (kick-off) – Dec 31, 2023 (anticipated)

## Project Goals

- Define "regional resilience"
- Understand the impacts of disruptions (shocks/stressors) across the region
- Conduct an exploratory scenario planning process
- Identify strategies to reduce vulnerabilities & increase regional resilience
- Conduct meaningful outreach & engagement
- Support implementation of Connect SoCal strategies

# Regional Resilience Framework: Project Overview

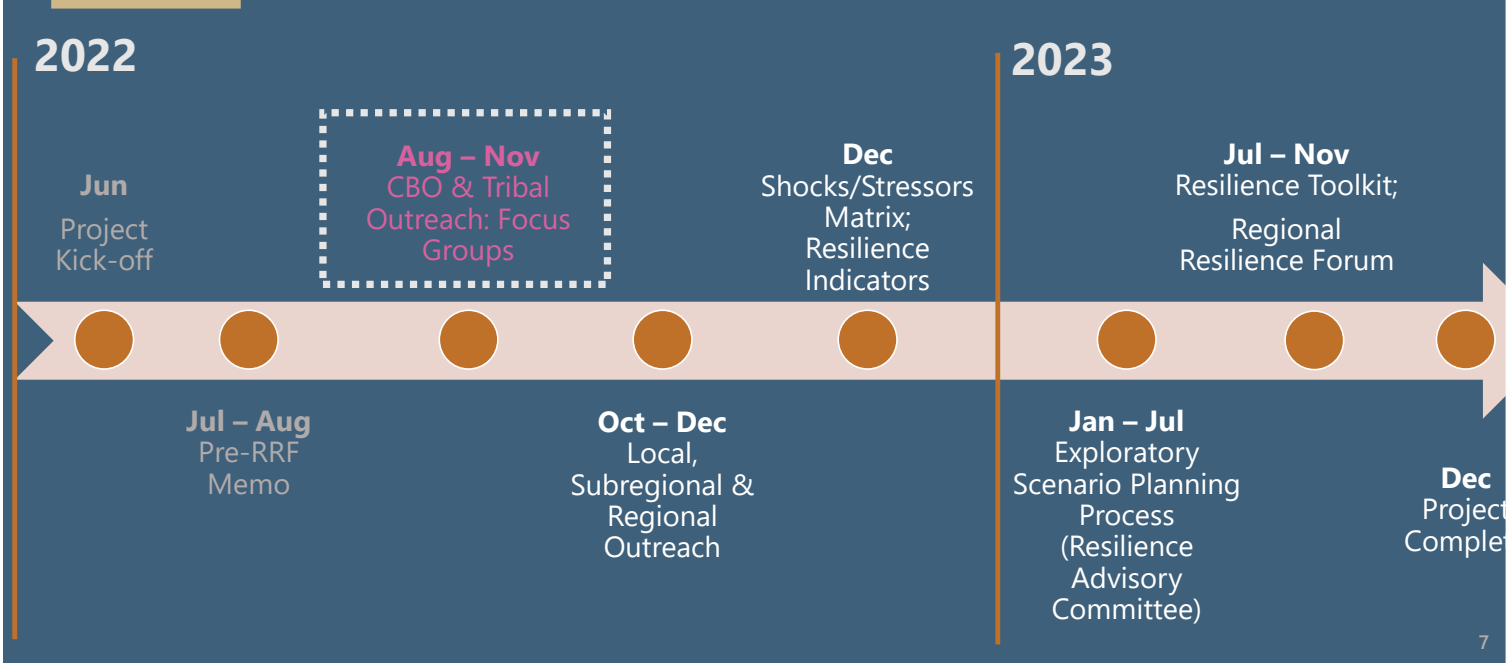


[Connect SoCal: Chapter 6  
Regional Resilience Framework](#)

## Project Outcomes

- **Building on previous efforts:** Expand resilience planning to include natural, built, social and economic resilience to multiple shocks and stressors
- **Building regional capacity through outreach and engagement:** Create consensus across diverse stakeholders
- **Exploratory scenario planning (XSP) process:** Understand a range of potential futures
- **Resilience Toolkit:** Create a toolkit to help jurisdictions integrate resilience into planning processes

# Timeline & Key Deliverables



Attachment: PowerPoint Presentation - Regional Resilience Framework Update (Regional Resilience Framework Update)

# CBO & Tribal Outreach: Focus Groups

- **Selection criteria:**
  - At least 1 CBO from each county
  - At least 1 tribal organization
  - At least 1 CBO from each SB375 topic area (AH, transportation, business, neighborhood group)
  - *\*\*Based on a \$16,000 honorarium budget (\$100/hr of participation)*
- **Role of the CBOs:**
  - Provide input & advice to RRF project team
  - Ground-truth findings from Landscape Analysis
  - Share perceived shocks, stressors, and vulnerabilities communities are currently and anticipate experiencing

## Focus Group Participation (as of 11/10/22)

CBO/Tribe	County	Expertise
Comite Civico del Valley	IM	Social justice, health
LAC+USC Medical Center Foundation	LA	Health
People for Housing	OC	Housing
Center for Community Action and Environmental Justice (CCA EJ)*	RV/SB	Env. justice
Soboba Band of Luiseno Indians	RV/SB	Tribal nation
Rolling Start*	SB	Accessibility, health
Central Coast Alliance United for a Sustainable Economy (CAUSE)	VN	Economic development

\*Focus group participation pending

## Key Discussion Topics

### Understanding Risk & Resilience

- How would you define/identify communities at higher risk/vulnerable to disruptions (hazards, recessions, etc.)?

### Community Response

- How did community members/and you cope (during pandemic or another recent stressor)? What services/programs did they seem to access most? Able to access?

### Communicating with the Community

- What do you feel are the most effective ways to reach people in your community? (Email, social media, text messaging, through trusted partners like schools and churches, etc.)



## Preliminary Feedback

- Social and community connections are an important part of resilience
- Factors noted as increasing vulnerability/risk:
  - *Social isolation*
  - *Distrust of government*
  - *Frayed ties within communities, leading to “Fatigue Compassion”*
- Most communities are not prepared for a major disruption
- Greater information and communication on how/where to seek resources
- Connecting CBOs with schools + public agencies/institutions to create stronger networks of communication to help build resiliency

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## Next Steps & Alignment with Connect SoCal 2024

- Feedback from the CBO/Tribal Engagement to help inform the Connect SoCal 2024 Resilience & Conservation Special Subcommittee
- Guide resilience framing for Connect SoCal 2024 topic areas
- Integrate resilience policies and strategies into Connect SoCal 2024
- Expand on resilience mitigation measures



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# THANK YOU!

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Lorianne Esturas, [esturas@scag.ca.gov](mailto:esturas@scag.ca.gov)



**AGENDA ITEM 4**  
**REPORT**

Southern California Association of Governments  
Remote Participation Only  
**November 21, 2022**

**To:** Resilience and Conservation Subcommittee (RCS)

**EXECUTIVE DIRECTOR'S  
APPROVAL**

**From:** Lorianne Esturas, Assistant Planner  
(213) 236-1853, esturas@scag.ca.gov

**Subject:** Proposed Resilience & Conservation Subcommittee Policies and Strategies

**RECOMMENDED ACTION:**

Information Only – No Action Required

**STRATEGIC PLAN:**

This item supports the following Strategic Plan Goal

**EXECUTIVE SUMMARY:**

*SCAG's Regional Council unanimously adopted a Climate Action Resolution in January 2021 to promote climate adaptation, mitigation and resilience in Southern California's six-county region. Featured in the Resolution is a commitment to include climate adaptation and mitigation analysis and strategies in Connect SoCal 2024. As a means of implementing this Resolution and integrating the priorities of SCAG's Board, the Connect SoCal 2024 Special Subcommittee on Resilience and Resource Conservation will develop recommended policies and strategies for potential inclusion in the Plan. The following report provides an overview of the information shared during Meeting #1 and Meeting #2 of the Resilience and Conservation Subcommittee and proposes broad principles around resilience and conservation for discussion.*

**BACKGROUND:**

The Connect SoCal 2024 Special Subcommittee on Resilience and Resource Conservation will focus on hazard mitigation and climate adaptation, including early action to support Southern California's growth. It is anticipated that by 2050 the region will grow by an additional 1.7 million people, with a significant 15% increase in employment. Our region is also expected to experience shocks and stressors related to climate change, such as increased wildfire, extreme heat, drought, and rising sea levels, as well as seismic events that will negatively impact the region's public health, welfare, and the greater economy. Our region's household and economic growth could be significantly affected from these hazards as well as the associated constraint on essential resources, with particularly acute and disproportionate impacts for vulnerable communities. Significant regional

public health and economic benefits could accrue if targeted strategies and investments are prioritized now to address potential impacts of climate and seismic related shocks and stressors.

***POLICY QUESTION:** How can Connect SoCal mitigate and adapt to the impacts of climate and seismic-related hazards on our built and natural systems and increase our region's resilience?*

**SUBCOMMITTEE GOALS:**

- *Advance the direction set in the SCAG Regional Council Resolution on Climate Change Action to consider opportunities for enhanced resilience and resource conservation*
- *Develop recommendations on how Connect SoCal can support our communities in adapting to changing conditions or mitigating risks to become more resilient*

Meeting #1 of the Resilience and Conservation Subcommittee provided the group with an overview of the Subcommittee's purpose and proposed outlook, SCAG's proposed definition of "resilience", as well as resilience and conservation principles, goals, and strategies embedded in Connect SoCal 2020 and the Connect SoCal 2020 Programmatic Environmental Impact Report (PEIR).

Meeting #2 of the Resilience and Conservation Subcommittee provided an overview of SCAG's landscape analysis of resilience planning efforts across the SCAG region, as well as a more detailed analysis of resilience planning within the Inland Southern California Region. Following feedback from the Subcommittee, SCAG finalized the resilience definition to the following:

*"The capacity of the SCAG region's built, social, economic and natural systems to anticipate and effectively respond to changing conditions, acute shocks, and chronic stressors by creating multiple opportunities for a sustainable, thriving and equitable future."*

Further, Meeting #2 included presentations from resilience experts within the region as a means of exploring resilience in the context of the region's built, social, economic, and natural systems.

As part of Meeting #3 of the Resilience and Conservation Subcommittee, staff will provide an update on SCAG's Regional Resilience Framework and facilitate a discussion on the following proposed resilience and conservation principles and policy areas to be included in Connect SoCal 2024:

- **Prioritize the most vulnerable populations and communities subject to climate hazards:** Help the people, places, and infrastructure that are most at risk for climate change impacts, recognizing that disadvantaged communities are often overburdened
- **Build strong partnerships:** Coordinate across multiple sectors, scales, and stakeholders to ensure all people have access to the fundamental physical, health, and social benefits of our natural and built systems

- **Apply ecosystem-based approaches:** Incorporate ecosystem resilience, protection of ecosystem services, and sustainable resource management
- **Maximize mutual benefits:** Support resilience and conservation initiatives across built, social, economic, and natural systems, such as disaster preparedness, to ensure synergies across systems and reduce/avoid impacts of maladaptation.

**FISCAL IMPACT:**

Work for this effort is funded in SCAG's Fiscal Year 2022-2023 Overall Work Program (OWP) under project 290.4896.01 (Regional Resiliency Analysis).

**ATTACHMENT(S):**

1. PowerPoint Presentation - Proposed Resilience & Conservation Subcommittee Policies and Strategies



# Proposed Resilience & Conservation Subcommittee Policies and Strategies

November 21, 2022

[WWW.SCAG.CA.GOV](http://WWW.SCAG.CA.GOV)

## Refresher: Resilience & Conservation Subcommittee

#	DATE	TOPIC
1	<b>September 19</b>	Where We Are <i>Level Setting &amp; Work Plan Prioritization</i>
2	<b>October 17</b>	How Can SCAG Have an Impact <i>Policy Areas of Focus &amp; Implementation Tools</i>
3	<b>November 21</b>	What SCAG Should Do to Strengthen Resilience <i>Resilience Policy Discussion</i>
4	<b>January 23</b>	Resilience & Conservation Subcommittee Recommendations <i>Final White Paper</i>

## Resilience & Conservation Policy Question



*How can Connect SoCal mitigate and adapt to the impacts of climate and seismic-related hazards on our built and natural systems and increase our region's resilience?*

## Resilience & Conservation Subcommittee Goals

Advance the direction set in the SCAG Regional Council Resolution on Climate Change Action to consider opportunities for enhanced resilience & resource conservation

Develop recommendations on how Connect SoCal can support our communities in adapting to changing conditions or mitigating risks to become more resilient

## Realizing Connect SoCal 2020

**Resilience and conservation** are key parts of the vision outlined in Connect SoCal to advance the region's economic vitality, improve mobility options, and grow in a sustainable way that builds healthy and vibrant communities



## Connect SoCal Resilience & Conservation Principles

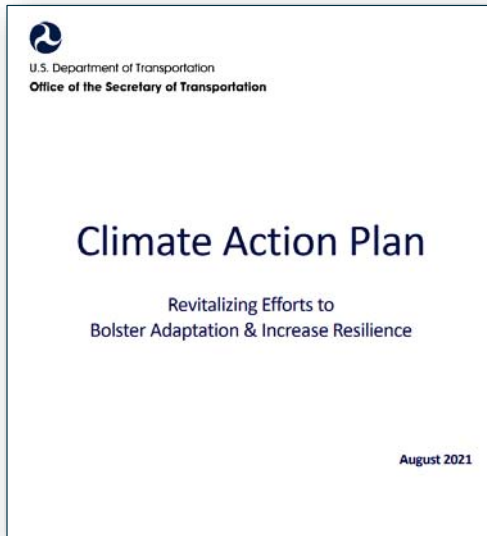
The following Connect SoCal Guiding Principles aim to advance resilience and resource conservation efforts throughout the region:

- *Assure that land use and growth strategies recognize local input, promote sustainable transportation options, and support equitable and adaptable communities*
- *Encourage transportation investments that will result in improved air quality and public health, and reduced greenhouse gas emissions*
- *Regionally, transportation investments should reflect best-known science regarding climate change vulnerability, in order to design for long term resilience*



# Examples of Resilience Policies

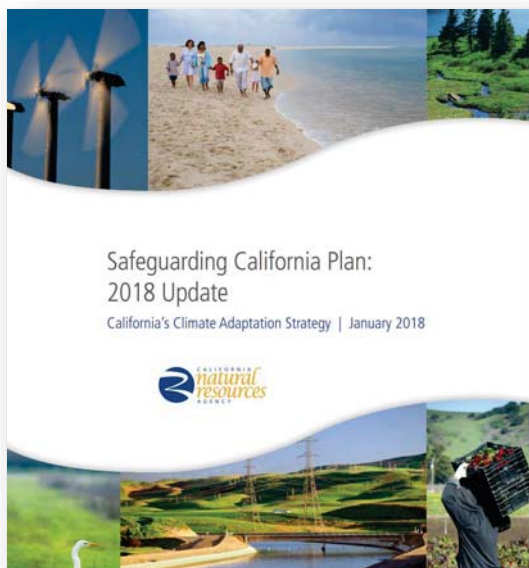
## *U.S. DOT – Climate Action Plan*



- **Use Best-available Science.** Adaptation and resilience strategies will be grounded in the best available scientific understanding of climate change risks, impacts, and vulnerabilities. Our adaptive actions will not be delayed—all plans and actions will be continuously reevaluated as our understanding of climate impacts evolves.
- **Prioritize the Most Vulnerable.** Adaptation and resilience plans will prioritize helping people, communities, and infrastructure that are most vulnerable to climate impacts—this includes underrepresented groups, low-income communities, communities of color, limited English proficient communities, and individuals with disabilities. These plans will be designed and implemented through a transparent process with meaningful involvement in decision making from all parts of society. Issues of inequality and environmental justice associated with climate change impacts and adaptation will be addressed.
- **Preserve Ecosystems.** Protecting biodiversity and ecosystem services through adaptation strategies will increase resilience of human and natural systems to climate change and other risks, providing benefits to society and the environment (e.g. in a coastal setting, wetlands serve as buffers to transportation assets and can minimize the impacts of storm surge).
- **Build Community Relationships.** Adaptation and resilience require coordination across multiple sectors, geographical scales, and units of government. Our actions will build on existing efforts, knowledge, and meaningful engagement of communities that are impacted. Because impacts, vulnerabilities, priorities and needs vary by region and locale, adaptation will be most effective when driven by local and regional risks and needs.
- **Engage Globally.** The transformation of the global transport sector offers some of the most significant opportunities for deep greenhouse gas emissions cuts, healthier cities, and a 'once-in-a-generation' opportunity to build resilient infrastructure. DOT is committed to working with other nations, multilateral organizations, industry, and non-governmental organizations to lead a global transformation that addresses climate change mitigation, adaptation, and resilience.

# Examples of Resilience Policies

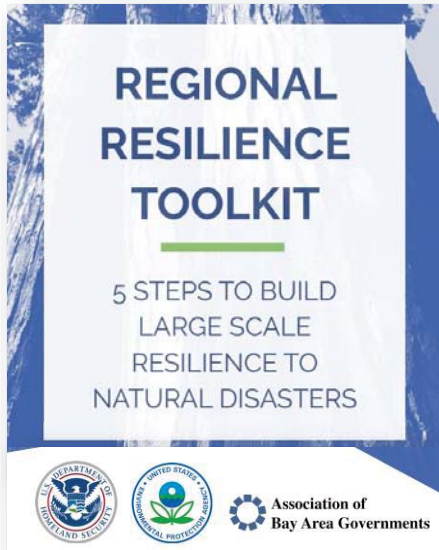
## *California Natural Resources Agency – Safeguarding California*



- **Consider climate change** in all functions of government
- **Partner with California's most vulnerable populations** to increase equity and resilience through investments, planning, research, and education
- **Support continued climate research** and data tools
- **Identify significant and sustainable funding sources** to reduce climate risks, harm to people, and disaster spending
- **Prioritize natural infrastructure solutions** that build climate preparedness, reduce greenhouse gas emissions, and product other multiple benefits
- **Promote collaborative adaptation processes** with federal, local, tribal, and regional government partners
- **Increase investment in climate change vulnerability assessments** of critical built infrastructure systems

## Examples of Resilience Policies

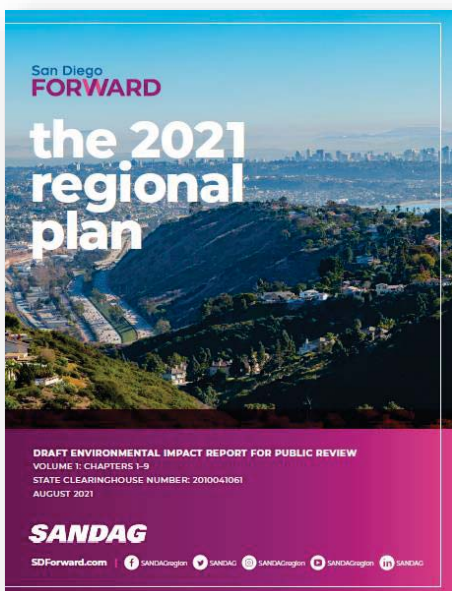
### *ABAG – 2021 Regional Resilience Toolkit*



- **Engage:** Build Trust in Partnerships and Relationships
- **Assess:** Conduct a Risk and Vulnerability Assessment & Connect Resilience with Sustainability and Equity
- **Act:** Identify and Prioritize Strategies
- **Fund:** Make the Business Case for Resilience. Develop a Resilience Capital Strategy
- **Measure:** Evaluate Results and Refine Methods

## Examples of Resilience Policies

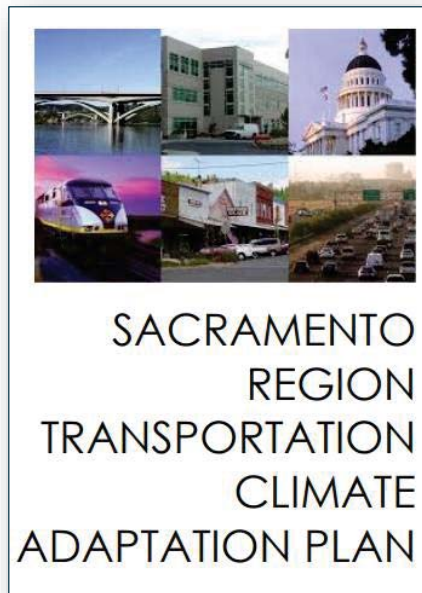
### *SANDAG – 2021 Regional Plan: San Diego Forward*



- **Develop a Regional Resilience Framework** for the San Diego region.
- **Prioritize resilience projects** in communities that are most vulnerable to climate impacts.
- **Develop innovative solutions** to address the need for evacuation and rapid mobility in transit corridors.
- **Address vulnerabilities** to the region’s transportation infrastructure.
- **Protect natural lands** to absorb carbon and protect communities from the impacts of climate change.
- **Serve as a resource for local agencies** and the general public on the impacts of climate change and how to best prepare.

# Examples of Resilience Policies

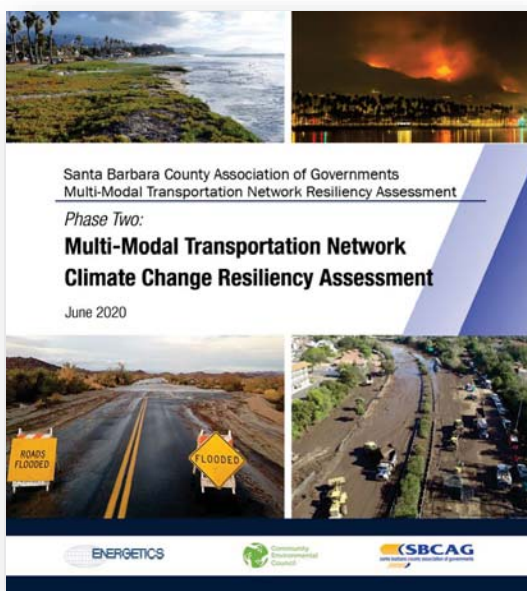
## *SACOG – Transportation Climate Adaptation Plan*



- **Adopt integrated approaches:** Incorporate climate change into existing processes and programs.
- **Prioritize the most vulnerable:** Help the people, places, and infrastructure that are most at risk.
- **Use best-available science:** Ground adaptation in scientific understanding.
- **Build strong partnerships:** Coordinate across multiple sectors, scales, and stakeholders.
- **Apply risk-management methods and tools:** Use risk-management tools to prioritize options for reducing vulnerability.
- **Apply ecosystem-based approaches:** Incorporate ecosystem resilience and protection of ecosystem services.
- **Maximize mutual benefits:** Support other initiatives where possible, such as disaster preparedness or sustainable resource management.
- **Continuously evaluate performance:** Determine quantifiable goals and metrics and track progress, adjusting strategies as needed.

# Examples of Resilience Policies

## *SBCAG – Multi-Modal Transportation Network Climate Change Resiliency Assessment*



- **Safeguard coastal infrastructure** from flooding and erosion
- **Create a long-term plan** for the airport
- **Ensure access and mobility** during emergencies
- **Conduct targeted hazard analyses** of critical threats
- **Engage in regional collaboration** to identify potential solutions

## Resilience Definition

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*The capacity of the SCAG region's **built, social, economic and natural systems** to **anticipate and effectively respond** to **changing conditions, acute shocks, and chronic stressors** by creating **multiple opportunities** for a **sustainable, thriving and equitable future**.*

## Resilience & Conservation Subcommittee Proposed Broad Principles

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- 1. Prioritize the most vulnerable populations and communities subject to climate hazards:** Help the people, places, and infrastructure that are most at risk for climate change impacts, recognizing that disadvantaged communities are often overburdened
- 2. Build strong partnerships:** Coordinate across multiple sectors, scales, and stakeholders to ensure all people have access to the fundamental physical, health, and social benefits of our natural and built systems
- 3. Apply ecosystem-based approaches:** Incorporate ecosystem resilience, protection of ecosystem services, and sustainable resource management
- 4. Maximize mutual benefits:** Support resilience and conservation initiatives across built, social, economic, and natural systems, such as disaster preparedness, to ensure synergies across systems and reduce/avoid impacts of maladaptation.

Image source: NBC News, of Fairview Fire currently burning in Riverside County

# Resilience & Conservation Subcommittee Proposed Broad Principle #1

***Prioritize the most vulnerable populations and communities subject to climate hazards***

*Help the people, places, and infrastructure that are most at risk for climate change impacts, recognizing that disadvantaged communities are often overburdened*



Image source: FormLA Landscaping, U.S. Green Business Council – Los Angeles

Image source: SCAG Go Human

# Resilience & Conservation Subcommittee Proposed Broad Principle #2

***Build strong partnerships***

*Coordinate across multiple sectors, scales, and stakeholders to ensure all people have access to the fundamental physical, health, and social benefits of our natural and built systems*



Image source: SCAG

Attachment: PowerPoint Presentation - Proposed Resilience & Conservation Subcommittee Policies and Strategies (Proposed Resilience &

Image source: Imperial Irrigation District

## Resilience & Conservation Subcommittee Proposed Broad Principle #3

### **Apply ecosystem-based approaches**

*Incorporate ecosystem resilience, protection of ecosystem services, and sustainable resource management*



Image source: Santa Ana Watershed Project Authority, 2016 Santa Ana Riverwalk

Image source: Imperial Irrigation District

## Resilience & Conservation Subcommittee Proposed Broad Principle #4

### **Maximize mutual benefit**

*Support resilience and conservation initiatives across built, social, economic, and natural systems, such as disaster preparedness, to ensure synergies across systems and reduce/avoid impacts of maladaptation.*

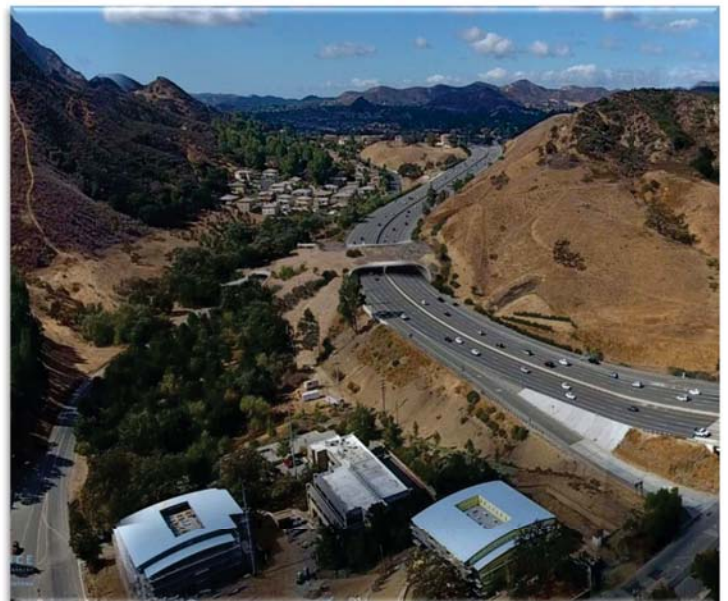


Image source: Resource Conservation District of the Santa Monica Mountains

# Discussion: Resilience & Conservation Subcommittee Proposed Broad Principles

- 1. Prioritize the most vulnerable populations and communities subject to climate hazards:** Help the people, places, and infrastructure that are most at risk for climate change impacts, recognizing that disadvantaged communities are often overburdened
- 2. Build strong partnerships:** Coordinate across multiple sectors, scales, and stakeholders to ensure all people have access to the fundamental physical, health, and social benefits of our natural and built systems
- 3. Apply ecosystem-based approaches:** Incorporate ecosystem resilience, protection of ecosystem services, and sustainable resource management
- 4. Maximize mutual benefits:** Support resilience and conservation initiatives across built, social, economic, and natural systems, such as disaster preparedness, to ensure synergies across systems and reduce/avoid impacts of maladaptation.



## THANK YOU!

For more information, please visit:

<https://scag.ca.gov/>