



California Landscape Conservation Cooperative



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USDA Forest Service
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Outline

- **Overview of LCC System & Climate Change Context**
- **Climate Science Centers**
- **The California LCC**
- **CA LCC Science Delivery**
- **Looking forward**



Sacramento National Wildlife Refuge



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What are LCCs?

- Self-directed public-private partnerships that inform management actions
- **Develop jointly established conservation objectives**
- Provide science and technology support on a landscape scale
- *Links science with conservation delivery*



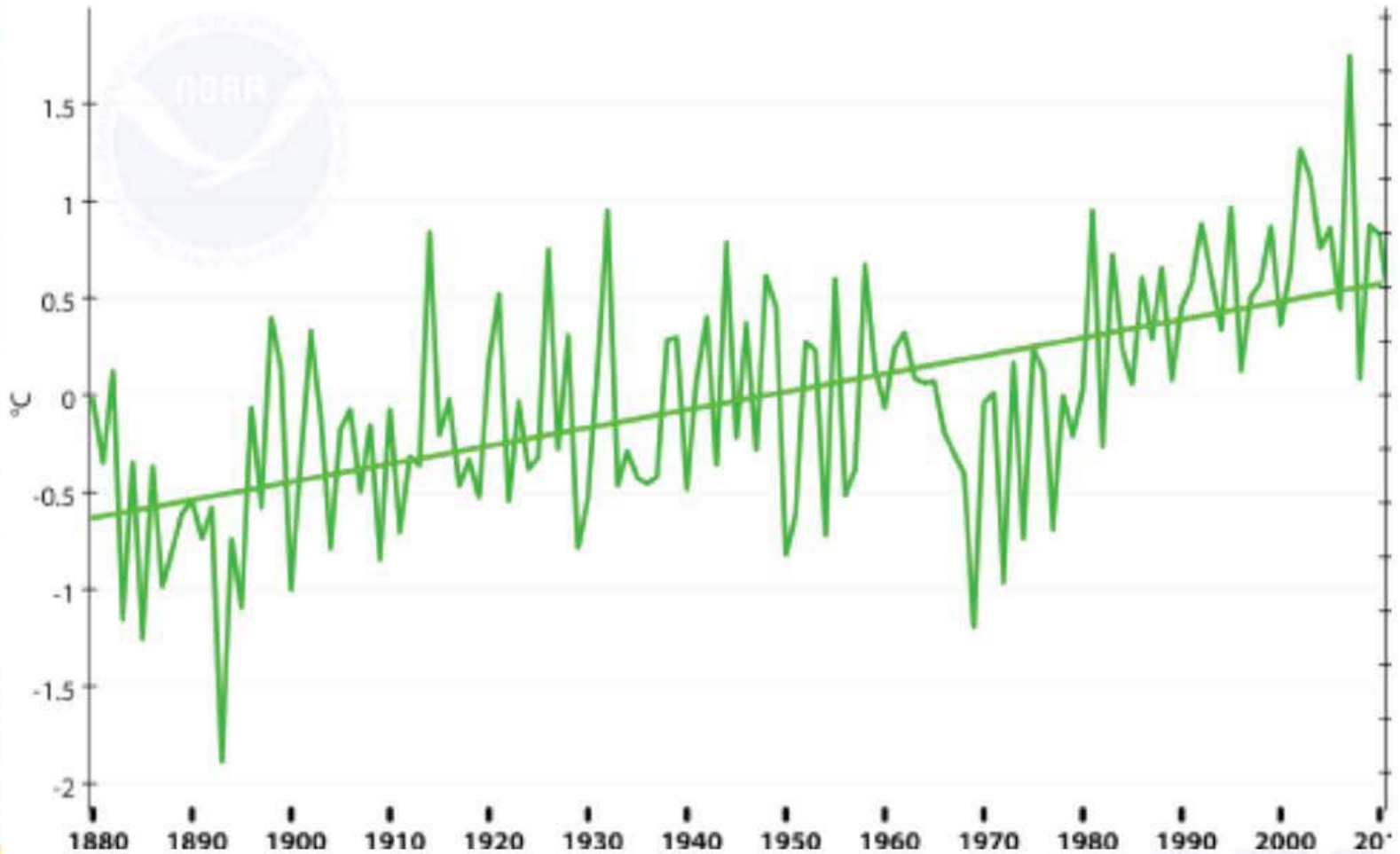
Sacramento National Wildlife Refuge



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Global AVG Jan Temp

NOAA 2009



Warmest: 2005 & 2010



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Increased Catastrophic Events



IPCC 4th Assessment Final Report Nov. 2007

**Global warming is 'unequivocal'... [and]
human activity is largely responsible**



Alpine Species – Nowhere To Go

Pika

Elevation at Yosemite:

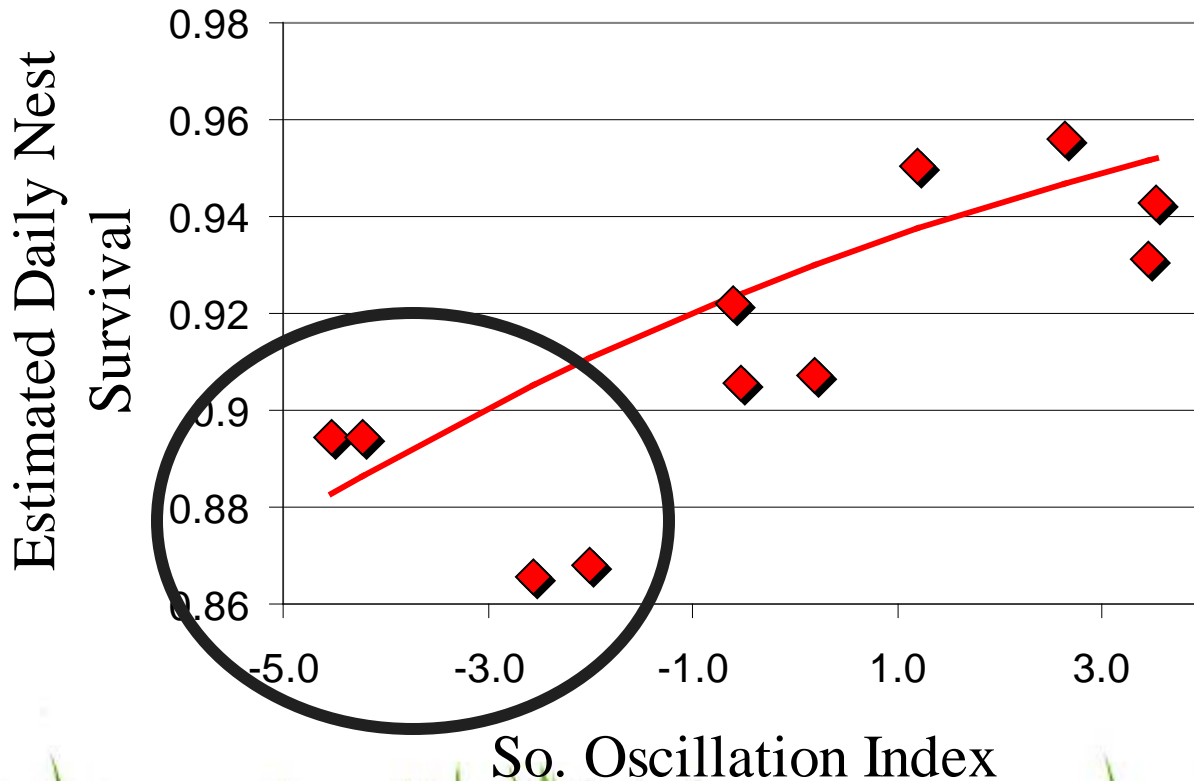
- 1900- 7,800 ft
- 2004- 9,500 ft
- Functionally extinct



El Nino =  Breeding Success



Annual Variation in Nest Survival and SOI

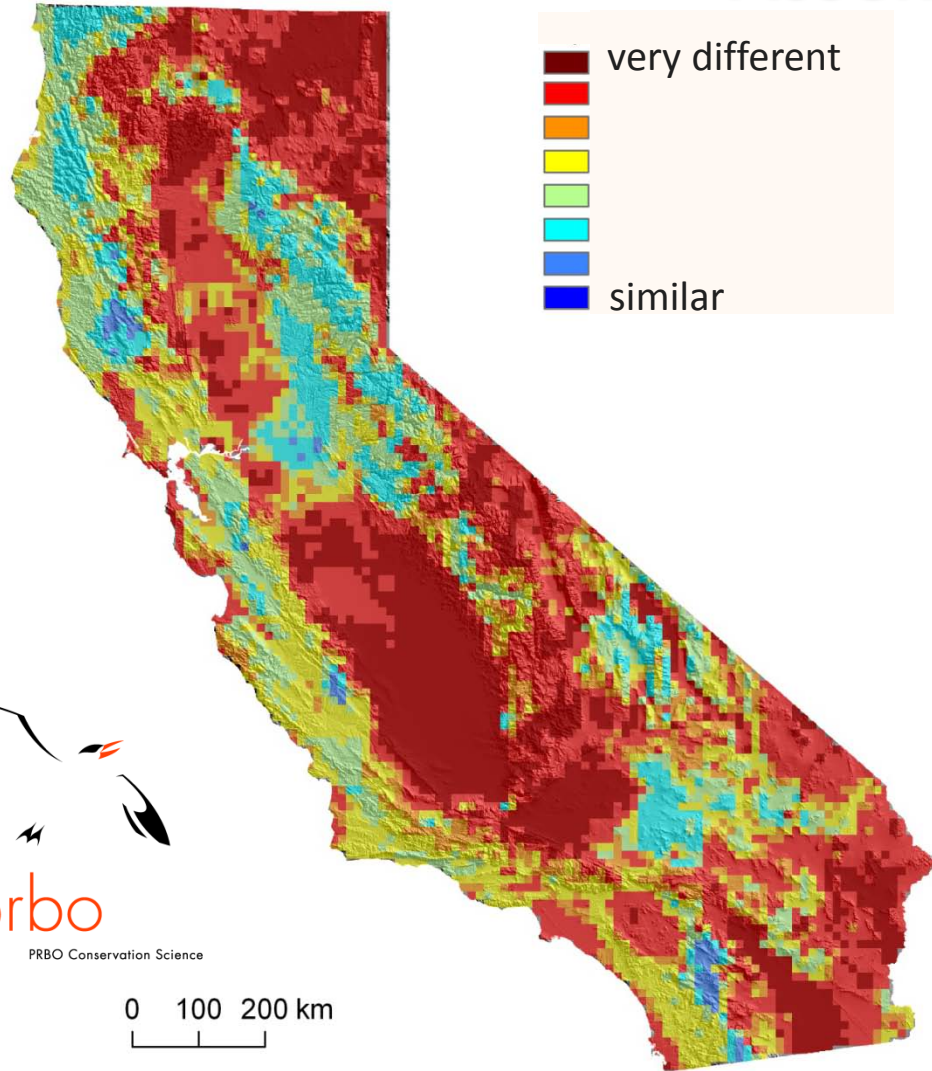


Song Sparrows-
Cosumnes River

(Howell et al.)

- Nest survival predicted by SOI
- ◆ Model-adjusted estimates by year

“No-analog” Future Bird Assemblages



Changes In California's Bird Communities Due To Climate Change, Study Finds

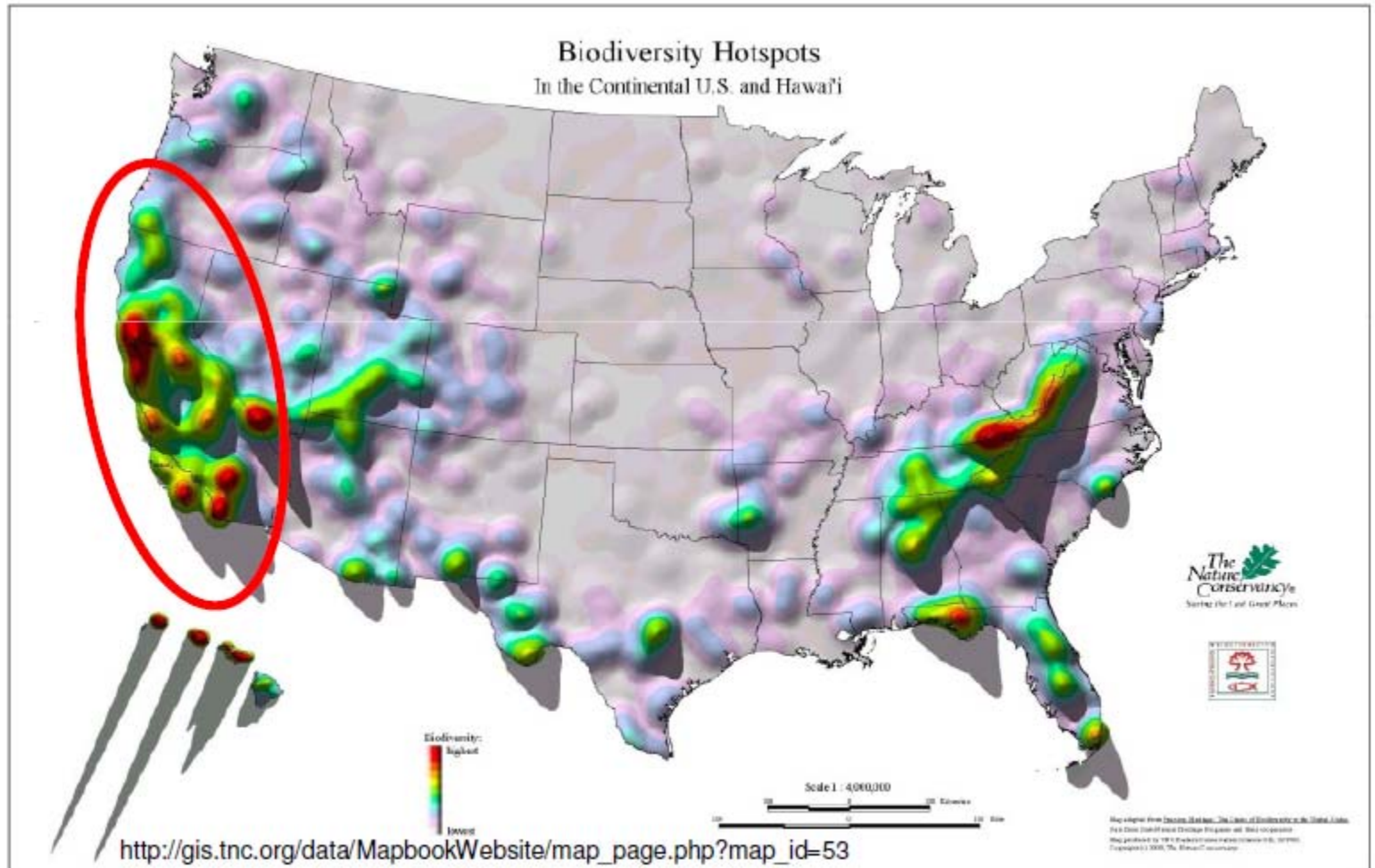
ScienceDaily (Sep. 2, 2009) — As much as half of California could be occupied by new bird communities by 2070 according to a new study by PRBO Conservation Science (PRBO) and partners. The publication entitled "Reshuffling of species with climate disruption: A no-analog future for California birds?" was released in the open access peer reviewed journal *PLoS ONE* on September 2nd, 2009.

Source: PRBO, Stralberg et al. 2009. PLoS ONE



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California Biodiversity





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Why LCCs?

Shifting patterns will require broader geographic perspective

Most management actions are local – but require landscape context

Need to work across political and geographic boundaries

Landscape Conservation Cooperatives!

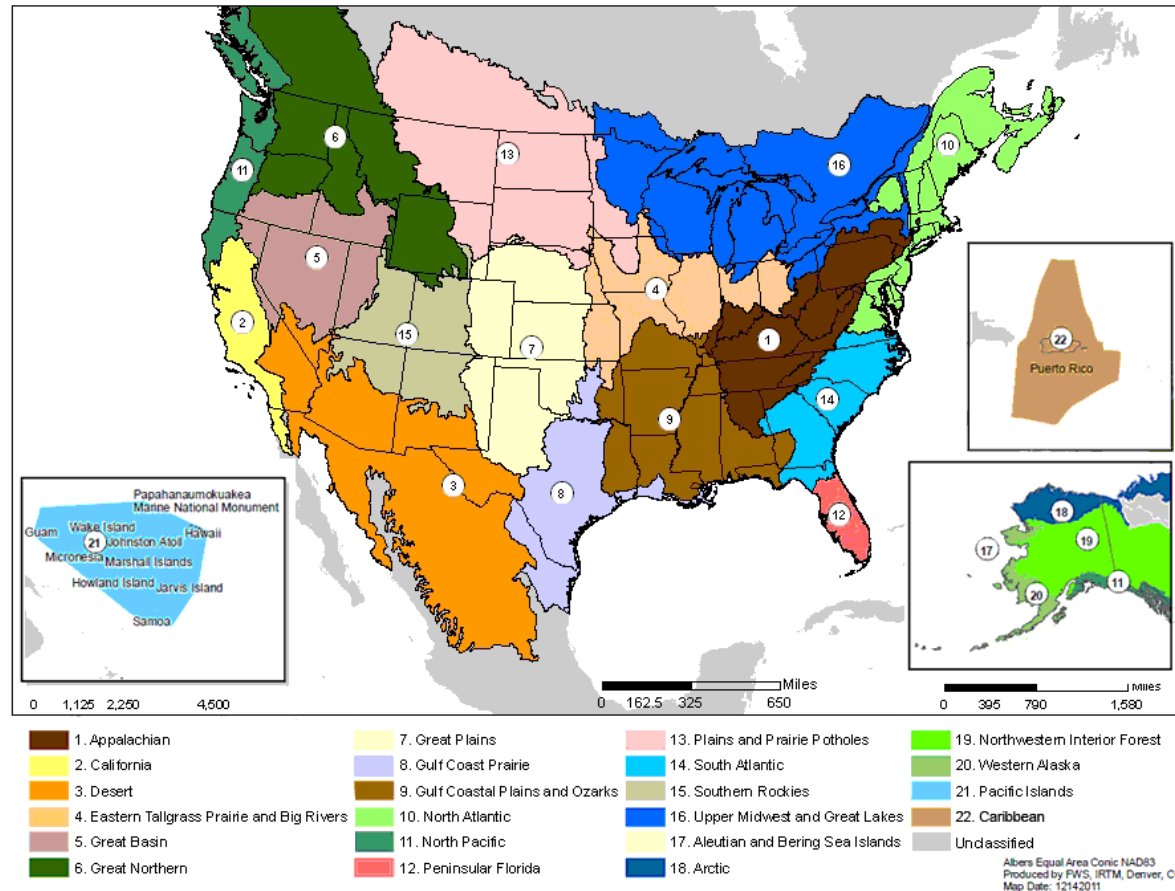




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There are 22 LCCs covering the U.S. and parts of Mexico

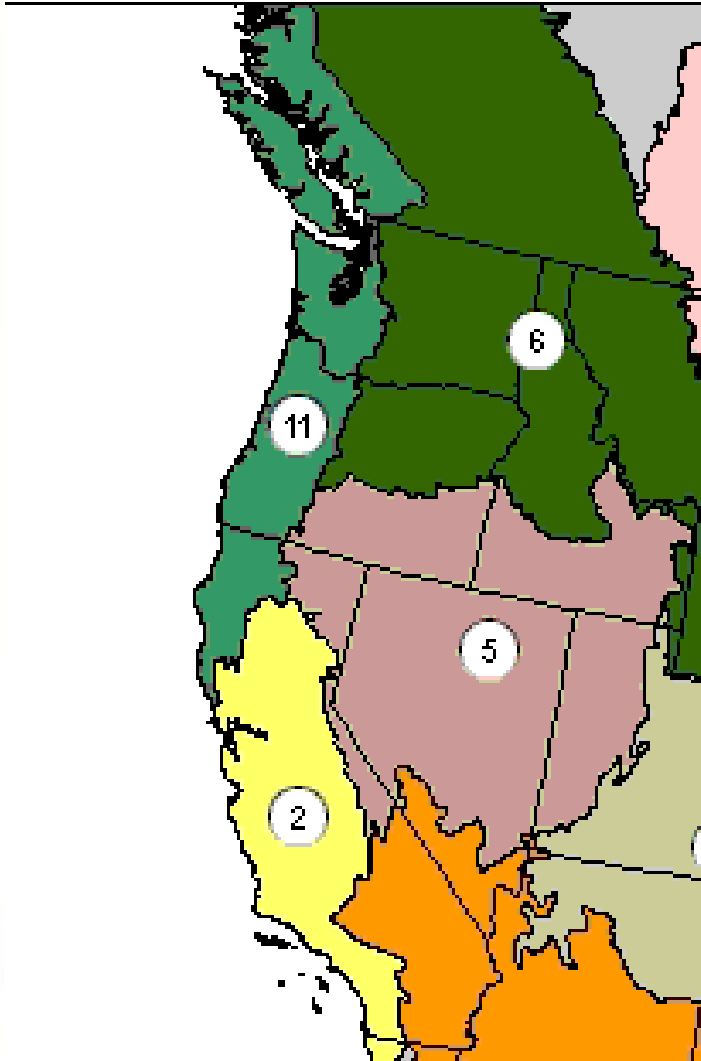
LCC Map





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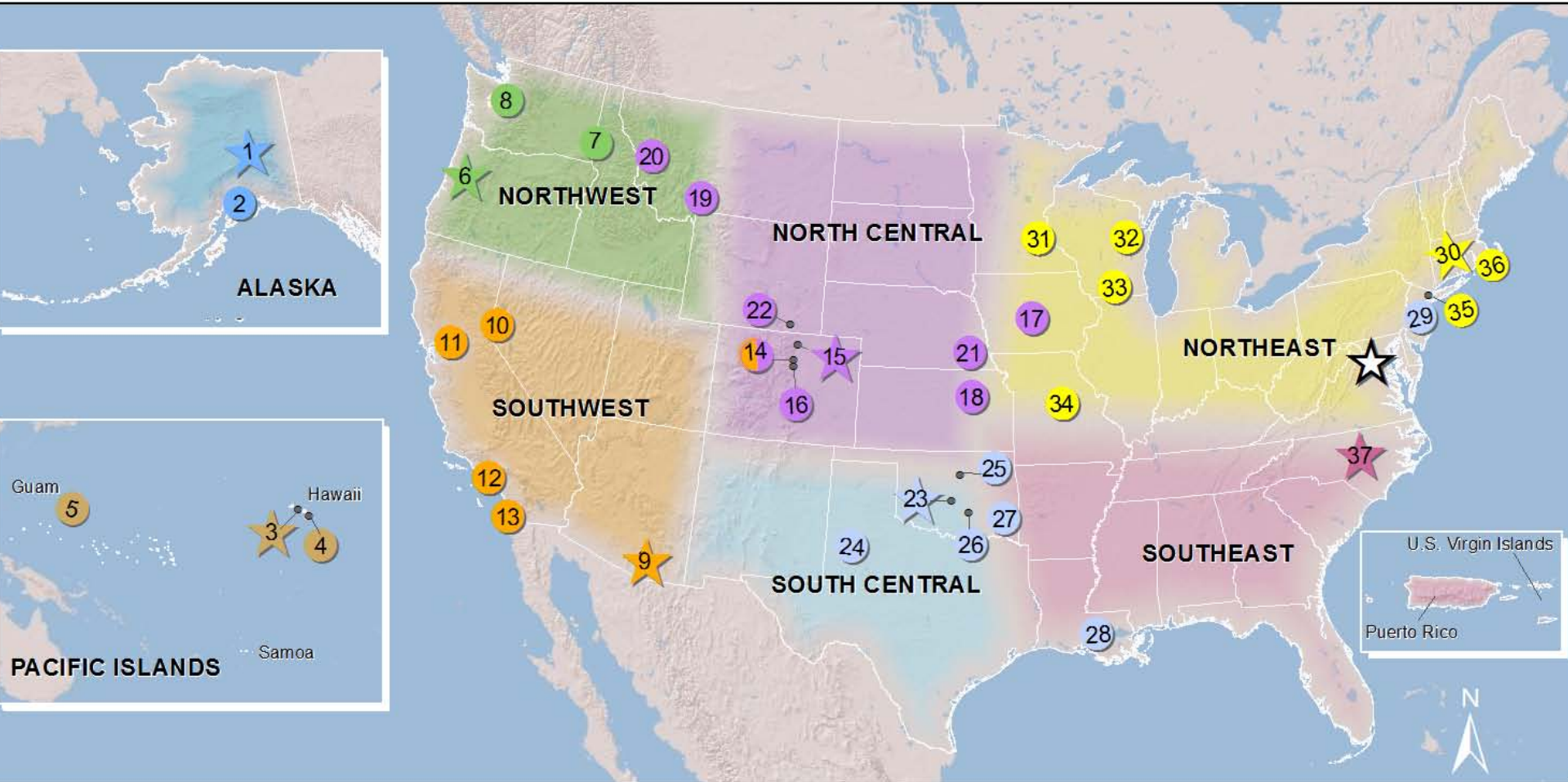
LCC Map



In California:

- ❖ California LCC
- ❖ Desert LCC
- ❖ Great Basin LCC
- ❖ North Pacific LCC
(also projects across boundaries)

Climate Science Centers (8)



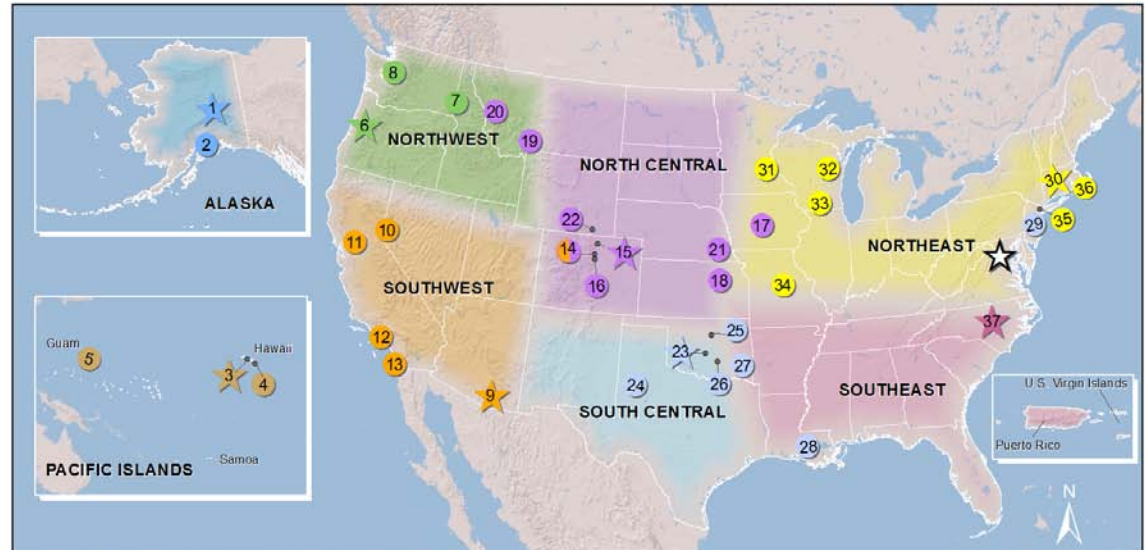
from ESRI, 2009, Albers Equal Area Conic Projection, North American Datum of 1983

Climate Science Centers (8)

Encompass larger area

Climate science needs for the LCCs

Many based at Universities



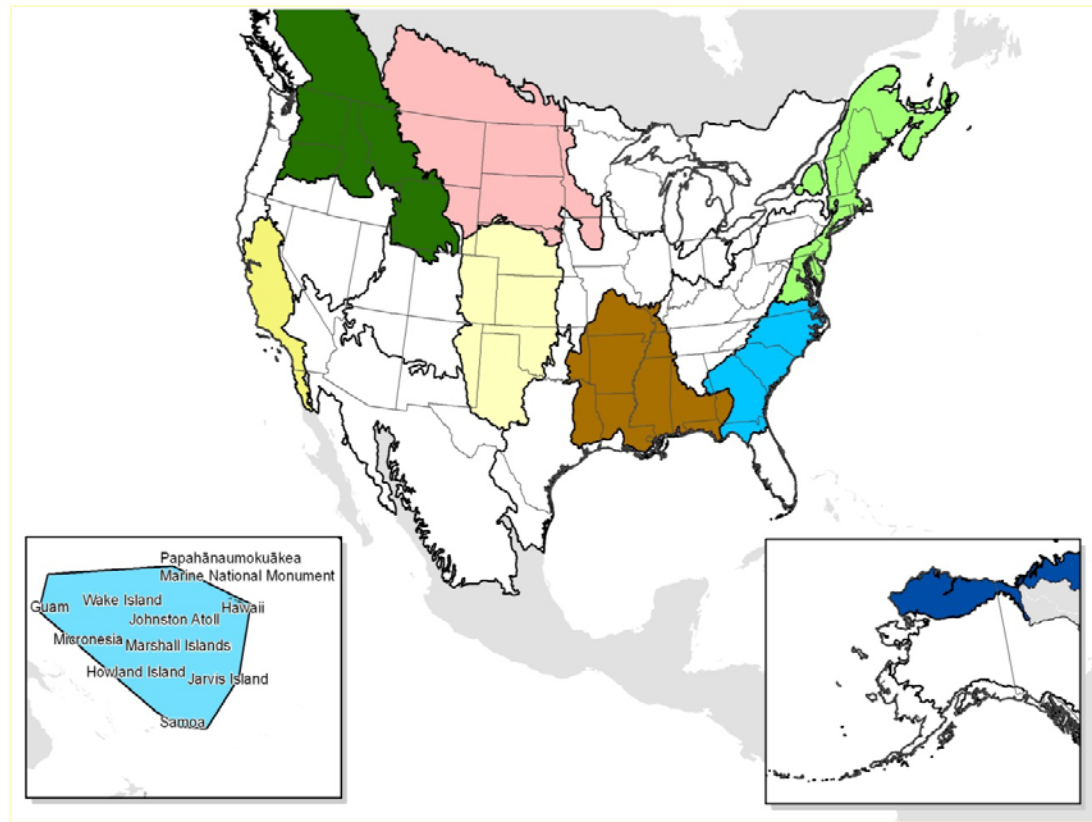
Base from ESRI, 2009, Albers Equal Area Conic Projection, North American Datum of 1983



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Nine LCCs received funding in 2010

LCC Map





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What is the CA LCC?

- A public-private partnership bringing together scientists and natural resource managers
- Provides relevant information to support sustainable ecosystems
- Crosses jurisdictional, political and management boundaries
- Serves as a link between existing climate initiatives





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What the
CALCC is not

- Does not supplant existing conservation partnerships. It builds on and fosters existing partnerships.
- Does not purchase property or fund restoration. It provides enhanced scientific tools for smart decision-making.
- It is non-regulatory. Partners participate on a volunteer basis.



Delta tidal marsh



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CA LCC Goals

- **Foster collaboration and integration of science and management.**
- **Support development of technical products for natural resource management.**
- **Facilitate information acquisition, interpretation, translation, exchange, and availability.**
- **Communicate information within and outside the LCC Community.**



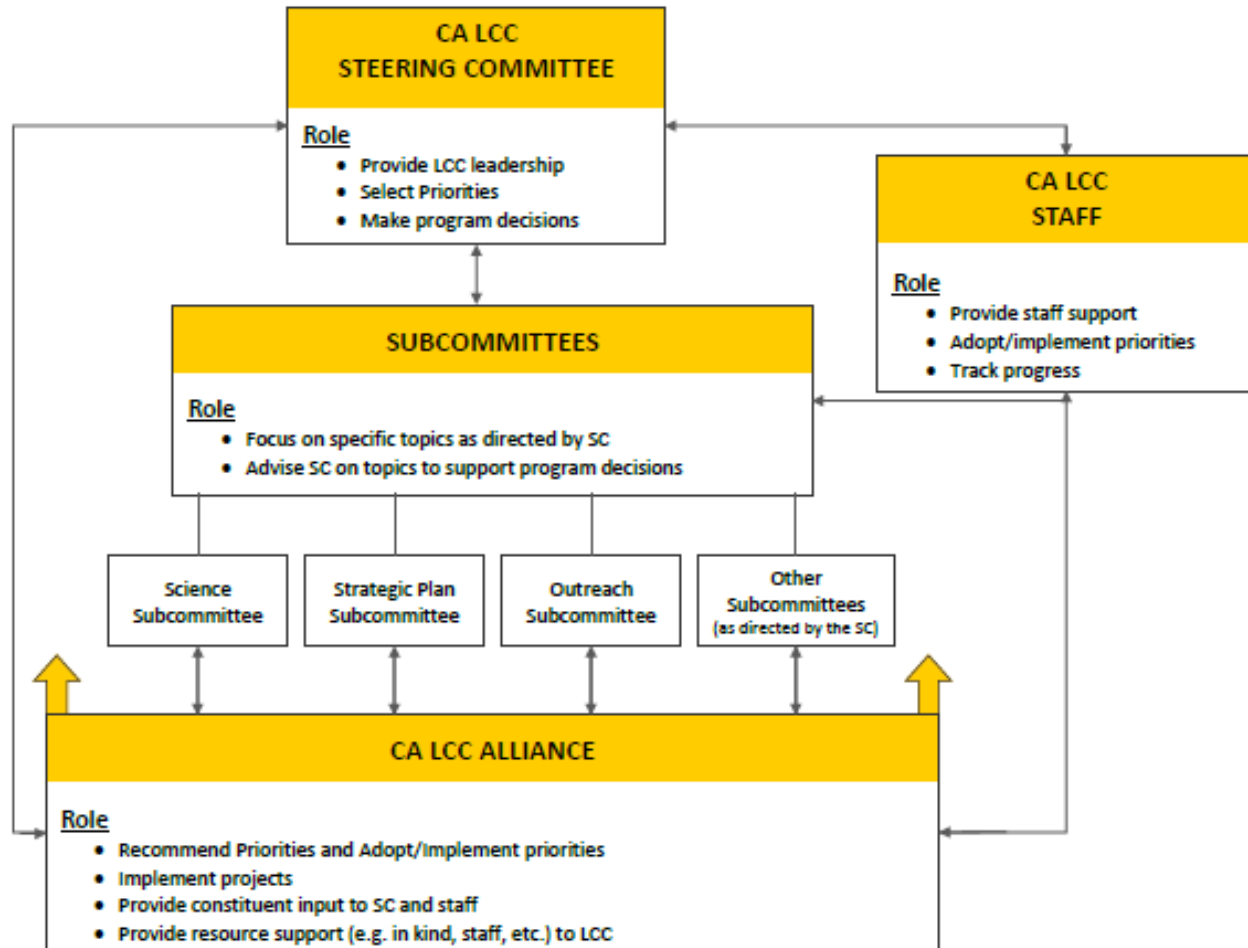
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Steering Committee





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Coordinator – Debra Schlafmann

Science Coordinator – Rebecca Fris

Research Ecologist (USGS) – Karen Thorne

Administrative Officer – Rita Howard

Data Management – Deanne DiPietro and Zhahai Stewart



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Accomplishments!

- **Developed a Charter, Purpose and Goals with an Interim Steering Committee**
- **Held and participated in numerous stakeholder workshops bringing scientists and managers together**
- **Presented project information at forums throughout the state.**
- **Monthly webinar series**
- **Launched CA Climate Commons**
- **New website and CA LCC project tracking system to be released soon**



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Science Delivery

- **Funded more than 25 collaborative science projects in last three years**
- **CA LCC funding totals almost \$2.8 million**
- **Partner contributions add an additional \$3.7 million for \$6.5 million invested in relevant science**



USFWS Bay Checkerspot Butterfly



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Examples of LCC supported projects:

- ❖ Risk assessment maps for invasive species
- ❖ Climate change effects on inland fishes
- ❖ Creation of critically needed coastal fog data sets
- ❖ Climate adaptation and fire management strategies



Jamacha fire in San Diego



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Examples of LCC supported projects:

- ❖ **Web-based tool to evaluate bird responses to different climate scenarios**
- ❖ **Monitoring protocols for shorebirds**
- ❖ **Tracking change of key habitats in the Central Valley**



Devereux Slough, Santa Barbara



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Science Delivery

Attributes of LCC Projects

- Management implications
- Multiple-species
- Working across the
landscape
- Broad impacts
- Climate or anthropogenic
link





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Science Delivery

On-line Risk Assessment Maps for Invasive Species; *DJohnson, Cal-IPC*

**Invasive species maps in
Sierra Nevada**

**Developed an on-line tool
for resource managers**

**Provides information for
developing priority areas
for management**





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Science Delivery

Climate Adaptation Commons; *D DiPeitro, Sonoma Ecology Center*

**On-line clearinghouse for data
sources and services**

**Access to tools – hosting and
download apps**

**Create an online environment
for communication**





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Science Delivery

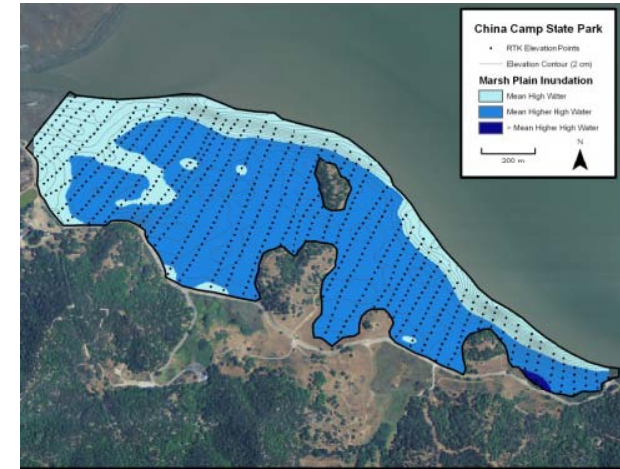
Pacific Coast Sea-Level Rise Research; JTakekawa, USGS

Collect elevation,
sediment, vegetation &
wildlife information

Record tidal events

Modeling scenarios

Share results with
managers





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Activities & Expected Outcomes in 2012:

- Develop a strategic plan and science plan
- Vulnerability and adaptation planning training session in early November
- Support development of products
- Focus on Phase I findings – *sharing, translating & communicating climate science*





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Strategic Planning

LOOKING FORWARD.....

**What are the common conservation
needs across CA LCC?**



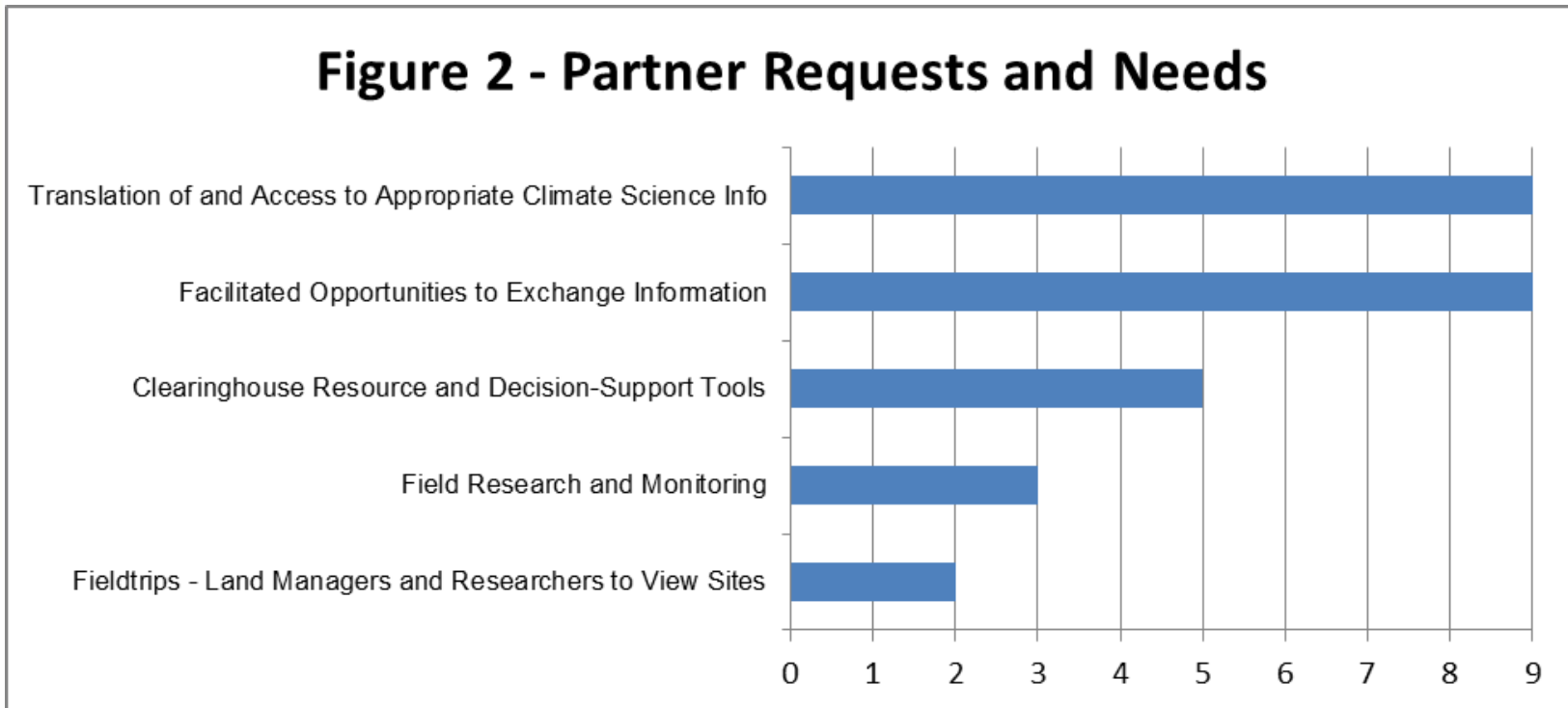
Collected data from:

- ✓ **Multi-group organizations (completed last fall) –
Phase I**
- ✓ **SC members and individual managers (just
completed) - Phase II**



Findings from Phase I

Figure 2 - Partner Requests and Needs





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How to Engage

- ✓ **Participation in Steering Committee and Subcommittees**
- ✓ **Partner on projects**
- ✓ **Sign up on our CA LCC listserve**
- ✓ **Watch our website for updates on tools and information**



Red fox in the Sierra Nevada



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Accessing Information

Questions?

cahowell@fs.fed.us

Website:

CaliforniaLCC.org

List serve:

Sign up on front page of website

Debra_Schlafmann@fws.gov

Rebecca_Fris@fws.gov

