

Protecting Southern California's Economy, Communities and Environment from Global Warming

Global warming is already affecting Southern California, and will continue to do so for decades to come. A successful comprehensive climate and energy bill will invest significant new revenue in protecting communities and local economies across America by creating jobs that protect wildlife and landscapes from the effects of global warming. The American Clean Energy and Security Act takes a critical first step, however, given the scale and duration of the threat, more funding will be needed.

Critical Issues for Southern California:

- Decreasing water availability
- Damage to the local economy
- Increasing temperatures
- Changing precipitation patterns

Is Global Warming Affecting Natural Resources in California?

Yes. California is both warming and getting drier. Since mid-century, temperatures across the state have **risen approximately 1.5°F,¹ and are expected to rise an additional 5°F by 2060.** Precipitation is expected to fall across most of the state—in Southern California, predictions show that the region may **become more than 15% drier within this century.**² These changes are significant, and the impacts are already being felt.

Across the US, more than 80% of plant and animal species studied are shifting their ranges in reaction to less than 1°F of warming in the last century.³ The Intergovernmental Panel on Climate Change predicts warming could result in **up to 30% of known species becoming extinct,** and the disappearance of over a fifth of the world's ecosystems.⁴

Lands such as the Santa Rosa and San Jacinto Mountains National Monuments and the San Bernardino National Forest are important tourist destinations and provide recreation for residents as well as crucial ecosystem services for the area. Unfortunately, these iconic areas are already feeling the effects of global warming. For example, **Joshua Tree National Park is in danger of losing its namesake⁵** and endangered species such as Bighorn Sheep must find suitable habitat as climates change.

Natural Resources Adaptation Funding Will:

- Create and protect jobs
- Preserve treasured landscapes
- Revive the rural economy
- Provide clean air and water for future generations



Land management agencies need additional resources to protect ecosystems like the Santa Rosa and San Jacinto Mountains National Monument from the effects of global warming.

What's at Stake?

Changes brought on by global warming are disrupting the natural balance of wildland ecosystems and having significant impacts on communities and businesses across in California.

- **Water Availability:** Critical water sources for Southern California, such as the Colorado River, receive around 85% of annual runoff from high elevation winter snow pack. As temperatures rise and precipitation falls, California will have less snowpack throughout the fall and winter, leading to less water available in critical late summer months for agriculture and residential use. Estimates point to a decrease of 36% in water storage behind dams, and up to a 56% reduction in hydropower between 2010 and 2039.⁶ As water availability declines, agricultural and residential needs will be in increasing competition, especially in late summer when agriculture production is at its highest. California could experience a \$3 billion loss in agriculture revenues due to climate change in 2050 alone.⁷
- **Local Economy:** California's outdoor recreation industry is dependent upon healthy ecosystems. Businesses that support skiing, fishing, rafting, and camping are being threatened by the effects of global warming, putting at risk the stability of California's \$46 billion outdoor recreation economy.⁸ The Salton Sea, a critical habitat for many endangered and threatened birds, contributes between \$50 and \$65 million to local economies from fishing alone.⁹ Visitors to wildlands in Riverside County annually support 882 jobs, and generate \$31.9 million in personal income as well as an additional \$50.2 million in outputs such as sales revenue.¹⁰
- **Quality of Life:** The economic arguments for investing in natural resource protection are compelling, but do not tell the whole story. The true value of Southern California's wildlands is priceless. Joshua Tree National Park and the San Jacinto Mountains are just two examples of threatened places that, once gone, are impossible to replace. Our children and grandchildren are counting on us to protect these uniquely American landscapes, and the opportunity to enjoy them, from the effects of global warming.

Economy at Risk:

\$46 Billion

Annual contribution of outdoor recreation to the state's economy



Dedicated funding for natural resource adaptation will help protect endangered species like the Bighorn Sheep from the effects of global warming.

Protecting Natural Resources, Creating Jobs

Restoring ecosystem health helps ensure species have the best possible chance to adapt to the effects of global warming. Ecosystem adaptation projects, such as establishing wildlife corridors for animals migrating in search of needed habitat, are critical to the survival of many species and create long-term American jobs. **Investing now in natural resources is the most cost-effective way to protect our treasured landscapes and the clean water, clean air and jobs they provide.**

Of the total allowance value generated from an energy and climate bill, 5% should be invested in protecting communities and local economies across America by protecting natural resources from the effects of global warming. This funding will allow California's wildlife and land management agencies, as well as the Land and Water Conservation Fund and the Forest Legacy Program, to ramp up important conservation projects.

This dedicated funding will allow scientists, engineers, construction crews, and others to be employed across California:

- Repairing damaged watersheds to ensure clean water for communities through removing impediments and deteriorating structures, restoring eroding river banks, and repairing in-stream habitat.
- Acquiring land and establishing migration corridors to increase species' survival as climates change.
- Monitoring wildlife, their habitat and local climate and developing appropriate adaptation responses.
- Restoring native landscapes to increase resiliency in a warming world by removing unnecessary roads and barriers, constructing riparian buffer strips, and removing invasive species.

This work will protect and create American jobs – providing new skills and income to workers and their families across the state and revitalizing rural economies.



Restoring river habitats protects ecosystems, jobs, and drinking water

Investing in Solutions for Families, Businesses and the Planet

The risks to California and the nation from global warming are significant—and require an extensive and sustained commitment to reducing heat-trapping pollution, protecting our natural resources, and the communities that rely on them. A cap-and-invest system that reduces pollution and auctions emission allowances will provide billions of dollars for combating the climate crisis.

Revenues from a cap-and-invest system must be directed to three primary solutions:

- **Invest 5% of the total allowance value generated in annual dedicated funding for natural resource protection** in order to create jobs while increasing resiliency across landscapes, protecting important ecosystem services and safeguarding communities.
- **Offset increased energy costs for at-risk consumers** by allocating roughly 14% of allowance auction revenues to consumers through existing mechanisms.¹¹
- **Invest in areas such as clean energy choices, job training, and business assistance**, which will aid businesses and communities in transitioning to a clean energy economy, while creating jobs and reducing heat-trapping pollution.

California and the country need your support for reducing carbon pollution and protecting communities by safeguarding our natural resources.

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¹ NOAA National Climatic Data Center. 2009. "U.S. Climate at a Glance – Statewide." Available from: <http://www.ncdc.noaa.gov/oa/climate/research/cag3/state.html>

² State of California Climate Action Team. 2009. "Biennial Report. March 2009 DRAFT." Available from: <http://www.energy.ca.gov/2009publications/CAT-1000-2009-003/CAT-1000-2009-003-D.PDF> Pg. 1.7

³ Sagarin, Raphael. 2002. "Historical Studies of Species' Responses to Climate Change." In: *Wildlife Responses to Climate Change: North American Case Studies*. Ed: Terry L. Root and Stephen H. Schneider. Island Press. Washington, DC.

⁴ Intergovernmental Panel on Climate Change. 2007. "Summary for Policy Makers." In: *Climate Change 2007: Impacts, Adaptation and Vulnerability: Working Group II Contribution to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change*. Pg 792.

⁵ Cole et al. 2008. "Transient Dynamics of Vegetation Response to Past and Future Climactic Changes in the Southwestern United States." USGS. Available from: http://www.climatescience.gov/workshop2005/posters/P-EC4.2_Cole.pdf

⁶ University of Colorado. 2005. "Colorado River Basin Climate. Paleo, Present, Future." Prepared for the Association of California Water Agencies and the Colorado River Water Users Association Conference. Available from:

http://wwa.colorado.edu/colorado_river/docs/Colorado_River_Basin_Climate.pdf pg. 38

⁷ State of California Climate Action Team. 2009. Pg. 2.7

⁸ Outdoor Industry Association. 2007.

⁹ Salton Sea Authority. "Economic Development and the Sea." State of California. Available from:

http://www.salttonsea.ca.gov/ltnav/why_economics.html

¹⁰ Phillips, Spencer. 2008. "Economics and Wilderness: Get the Benefit. Riverside County Wilderness Would Secure Economic Benefits for the Future." The Wilderness Society.

¹¹ Stone, Chad and Hannah Shaw. 2009. "Extending "Climate Rebates" to Include Middle-Income Consumers." *Center on Budget and Policy Priorities*.