



**CHANGE THE FORECAST FOR WILDLIFE**  
SOLUTIONS TO GLOBAL WARMING

## Global Warming and CALIFORNIA

California's growing population and expanding agriculture are putting pressure on the state's water resources like never before. Global warming may well make California's water woes even more troubling in the decades to come. The California Energy Commission estimates average temperatures in California could rise 8-10 degrees Fahrenheit by 2100 if global warming continues unabated. This will likely bring hotter, drier summers to an already parched state. Wildfires may increase, droughts could get worse and rains—when they do come—will likely come in more severe downpours that may cause more flash flooding. Warmer temperatures could also contribute to a 70-90 percent decline in spring snowpack in the Sierra Nevada, a natural reservoir that provides up to half the state's water supply during spring and summer.



### Global warming effects on California wildlife

California is home to an incredible diversity of native wildlife species, including 415 birds, 195 mammals, 86 reptiles, 62 fish and 57 amphibians. Rising temperatures and sea level in the state will likely change the makeup of entire ecosystems, forcing wildlife to shift their ranges and adapt.

- California's Central Valley historically supported the greatest concentration of winter waterfowl on the continent. Hotter, drier conditions in the state could reduce what's left of these important wetlands.
- The state bird, the California quail, may disappear from many parts of the state in summer due to changes in climate forcing the bird to migrate to more suitable breeding habitat.



Rolf Ream (NMML)

- Global warming could contribute to more frequent and intense El Niño events, which may encourage toxic algae blooms in bays and estuaries and depress ocean productivity offshore, affecting wildlife throughout the food web. California will likely see a surge in catastrophes like the 1997-98 El Niño event which led to declines in herring, anchovies and sardines off the Pacific Coast and the starvation and death of hundreds of California sea lions and northern fur seals.

### What is Global Warming?

When coal, gas and oil are burned, they produce carbon dioxide that builds up in the atmosphere and traps the sun's heat. Much of this greenhouse gas released today remains in the atmosphere after even 100 years, trapping more and more heat.

Since the mid-1800s, emissions of carbon dioxide have skyrocketed, and subsequently global temperatures have risen by about 1 degree Fahrenheit in the last century. Earth has not experienced such a rapid change in temperature in thousands of years.

Unless we reduce the pollution that causes global warming, temperatures could climb between 2-10 degrees Fahrenheit this century. Such a rapid rise in temperature would fundamentally reshape the planet's climate, forever changing the landscape and water resources people and wildlife depend upon.



Warren Gretz (NREL)

## What's at stake for Californians?

**D**uring one week of the 2006 North American heat wave, over 160 fatalities were reported. In January, 2005, Southern California experienced intense rainstorms that led to extreme flooding and mudslides, the severity of which is consistent with what scientists expect will occur more often as global warming continues. These destructive weather events are some of the ways warmer conditions could impact Californians.

- Sea level in California has risen 3-8 inches over the last century and could continue to rise another 22-35 inches by 2100, requiring large scale beach restoration efforts from San Diego to Crescent City. The EPA estimates protecting the state's coasts from a 20-inch sea level rise could cost between \$174 million-\$3.5 billion.
- Wine grapes are a \$3.2 billion industry in California. Warmer temperatures could cause grapes to ripen earlier, causing a decline in quality throughout the state's famous Napa and Sonoma Valleys.
- Two of California's most abundant crops, cotton and wheat, are mostly irrigated. Hotter, drier weather and reduced stream flows could reduce cotton yields by 9-17 percent and wheat yields by 48-66 percent.
- In 2006, more than 8.3 million people spent more than \$7.4 billion on wildlife viewing, hunting and fishing. This industry supported 114,866 jobs in California.\* Loss of wildlife and habitat could lead to a sizeable loss in tourism dollars. (*Jobs are an average from 2001 and 2006 data.*)

**“Global warming poses an overriding challenge to our responsibility to protect wildlife for our children's future. We must advance balanced solutions that work for people, wildlife and the economy to overcome this challenge.”**

**Larry Schweiger**  
President, CEO  
National Wildlife Federation

### GLOBAL WARMING NATIONAL POLICY

#### SOLUTION:

A federal legislative solution can drive American ingenuity, create a new generation of American jobs, and meet our moral responsibility to confront global warming. And it only takes a 2% reduction per year.

### A NATIONAL GLOBAL WARMING BILL

#### SHOULD:

Reduce U.S. global warming pollution 2% per year (roughly 80% by 2050). Scientists say the United States must cut our pollution at least this much to avoid the most catastrophic impacts of global warming.

\* Encourage innovation and prevent facilities from being built that lock us into decades of outdated, polluting technology.

\* Provide funding to protect wildlife and their habitat. Global warming has already strained our ability to effectively manage wildlife in California. Funding is needed to preserve our long tradition of fish and wildlife associated recreation.

For more information, visit: [www.nwf.org/globalwarming](http://www.nwf.org/globalwarming).



## California's solutions to global warming

California has been an international leader in developing solutions to global warming and reducing carbon dioxide emissions.

- In 2006, California demonstrated its commitment to responsible and innovative policy by passing Amendment Bill 32, the California Global Warming Solutions Act of 2006. The bill requires a reduction of global warming pollution to 1990 levels by 2020. Additional legislation restricts emissions from power generated out-of-state but consumed in California.
- The state is ranked 17th in the nation in wind energy potential and leads the nation in wind energy production, with the prospect of powering 75 percent of the households in the state.

### The Western Climate Initiative

The Western Climate Initiative is a collaboration between seven states (Arizona, California, New Mexico, Oregon, Washington, Utah, and Montana) and three Canadian provinces (British Columbia, Manitoba, and Quebec) to develop regional strategies to address climate change. The Partners set an overall regional goal to reduce greenhouse gas emissions 15% below 2005 levels by 2020 using a combination of regional market-based strategies and state policies to meet this goal. In September 2008 the Partners released the final set of design recommendations for the WCI Regional Cap-and-Trade Program. More information is available at [www.nwf.org/westernclimateinitiative](http://www.nwf.org/westernclimateinitiative).

Following some simple guidelines, you can cut your global warming pollution, become more energy efficient and give something back to nature.

- **Convert to compact fluorescent bulbs:** If every household in America replaced one light bulb with a compact fluorescent, we would prevent more than 13 billion pounds of carbon dioxide from being emitted. That's the same as taking 1.2 million cars off the road for an entire year.
- **Visit the National Wildlife Federation website at [www.nwf.org/globalwarming](http://www.nwf.org/globalwarming) for more information.**

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