



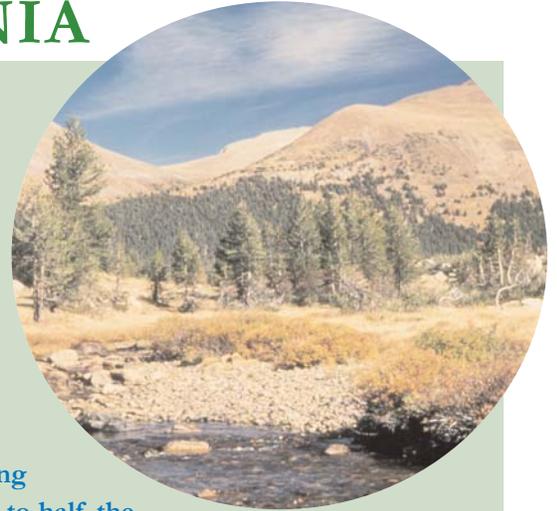
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**CHANGE THE FORECAST FOR WILDLIFE**  
SOLUTIONS TO GLOBAL WARMING

## 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 Environmental Protection Agency estimates average temperatures in California could rise about 5 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 25-40 percent decline in spring snowpack in the Sierra Nevadas, 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. For example, declines in herring, anchovies and sardines off the Pacific Coast during the 1997-98 El Niño event led to 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?

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 and more as global warming continues. These destructive weather events are just one way warmer conditions could touch the lives of Californians, as global warming resonates through the state.

- Sea level in California has risen 3-8 inches over the last century and could continue to rise another 13-19 inches by 2100, forcing sand replenishment on beaches stretching from Santa Barbara to San Diego. 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.
- Loss of wildlife and habitat could mean a loss of tourism dollars. In 2001, more than 7.2 million people spent nearly \$5.7 billion on wildlife viewing, hunting and fishing, which in turn supported 113,422 jobs in California.

**“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*

## THE CLIMATE STEWARDSHIP ACT:

The Climate Stewardship Act is a bipartisan plan of action in Congress that sets achievable goals for reducing global warming pollution in the United States. The bill requires power plants, oil companies and other major sources to collectively reduce emissions of carbon dioxide and other greenhouse gases to what they emitted in the year 2000. The bill also allows businesses to implement their own solutions, using a flexible emissions trading system that has successfully reduced air pollution under the Clean Air Act at a fraction of the anticipated costs. The Act will:

- Create more than 74,000 new energy technology jobs in California by the year 2020.
- Provide California with at least \$24.2 million each year in additional wildlife conservation funding to help protect the state's wildlife from the impacts of global warming.
- Provide new income to California's farmers by rewarding environmentally friendly farming and forestry practices.

Visit [www.nwf.org/globalwarming](http://www.nwf.org/globalwarming) or [www.climatenetwork.org/csa](http://www.climatenetwork.org/csa) for more information.



## California's solutions to global warming

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

- The 2002 passage of California's Vehicle Global Warming Law made the Golden State's government the first in the world to require limits on global warming pollution from passenger vehicles.
- State law requires utilities to provide 20 percent of the state's power from renewable sources by 2017, one of the most aggressive "renewable portfolio standards" in the nation.
- 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.

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 its next burned out 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.
- **Become a Green Tag subscriber:** Many states now offer options for homeowners to buy electricity from clean, renewable sources such as wind, solar and biomass that produce little or no global warming pollution. Green energy can also be purchased through the National Wildlife Federation by visiting [www.nwf.org/energy](http://www.nwf.org/energy).
- **Act locally:** Contact your mayor and ask that (s)he sign the U.S. Mayors Climate Protection Agreement, committing your city or town to meet or beat the global warming pollution reductions outlined in the Kyoto Protocol.

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