



# California: Safeguarding Wildlife From Global Warming

Global warming is the single greatest threat to wildlife and natural resources across the world and in the United States. California is already experiencing higher average temperatures, rising sea levels, more-severe droughts, and loss of important Sierra Nevada snow pack. Millions of acres of western forest have fallen victim to beetle infestations exacerbated by climate change. In addition, higher ocean temperatures and increased carbon dioxide are affecting marine systems in multiple ways, including shifts in species ranges, more-intense storms, and acidification of ocean waters. Globally, the Intergovernmental Panel on Climate Change has concluded that thousands of species will be committed to extinction within our children's lifetime if we continue on a "business as usual" trajectory of greenhouse gas emissions.

Fortunately, we still have a chance to avert disaster. Citizens and governments worldwide are rallying to support strong climate legislation. In the United

States, President Obama and leaders in Congress are calling for a cap-and-trade system to limit global warming pollution and shift the U.S. toward a clean energy economy.

However, the global warming pollution already in our atmosphere will continue to alter the climate for centuries. By developing strategies to assess and address local climate impacts, we can still prevent the worst damage to our natural systems.

Regional groups and agencies across the country are already at work on these strategies. Incorporating climate science into their projects, they are showcasing a fresh approach to conservation. But to protect wildlife and natural resources from global warming, these strategies and projects will need to be implemented at an unprecedented scale. This will take a new dedicated funding stream to allow for long-term planning. Cap and trade legislation must invest in protecting wildlife and natural resources for our children's future.



San Francisco Bay at sunset—Michael Marfell

## Salt Marsh Restoration in San Francisco Bay



The South Bay restoration site

The San Francisco Bay, hailed by John Muir and Jack Kerouac, framed by the Golden Gate Bridge and the Marin Hills, is one of the most famous and beautiful places in the country. It is a vital piece of California's natural heritage and one of the most important wildlife habitats in the state. Harbor seals, salmon, halibut, Dungeness crab, and endangered species like the clapper rail all make their homes there, jockeying for space with seven million Americans.

Natural areas, like the San Francisco Bay, provide Californians with clean air and water, flood mitigation and absorb huge amounts of greenhouse gases. Before the gold rush and wide-scale settlement in the 1800's, the Bay featured an array of wild habitat including tidal flats, salt marshes, forests, streams, and grasslands. Industrial development has paved over much of the coastal region and many critical natural processes are hindered as a result. Development in the Bay area has reduced wetlands by over 85%. Global warming and sea-

level rise add a new element of risk to the equation, jeopardizing not just coastal wildlife but human communities as well.

In 2003, the state of California began the largest tidal wetland restoration project on the west coast. The South Bay Salt Pond Restoration (SBSP) Project was initiated with the purchase of 15,100 acres of industrial salt ponds from Cargill, Inc. A joint effort of state and local agencies, the project aims to re-establish valuable wildlife habitat and the natural processes that sustain humans and animals alike. Researchers used the latest climate science in their projections, incorporating cutting-edge mapping and assessment models to determine potential impacts. The project calls for replanting native grasses, sedges, and other flora, creating habitat for millions of shorebirds and waterfowl, fish, mammals and invertebrates, while providing green jobs to the local community. Levees will be designed with climate impacts in mind, and managers will control for pollution and invasive species, all important steps toward sustainability. The project is long-term and ambitious, but critically important to the Bay's future.



Climate change will continue to impact ecosystems, but efforts like the South Bay project help to limit the damage. Sea levels will rise, but the Bay's high sediment levels should facilitate accretion of new tidal wetland. Natural buffers like these wetlands help to shelter the land from extreme weather events, a pressing concern in a warming world. "It is so important to be open to adaptive management strategies," says SBSP Director Steve Ritchie. "We probably haven't even thought of the biggest problems that will come with global warming, and we need to be responsive to changing conditions."

## Natural Resources: An Economic Driver in California

Fortunately, protecting natural resources is good business, too. **Wildlife-related recreation supports 126,000 California jobs, and consumers spend almost \$8 billion annually on hunting, angling, birding, and related activities in the state.** This doesn't even account for the foresters, commercial fishermen, and thousands of others who rely on healthy ecosystems for their livelihood. The direct relationship between habitat health and economic health is great news: it means we can boost our economy while protecting wildlife, two things everyone can agree on. Federal cap and trade global warming legislation recently debated in Congress would have allocated around \$163 million annually to protect natural resources and the communities that depend on them from global warming in California. Congress should pass legislation this year that reduces the global warming causing emissions as much as possible as soon as possible and invests in safeguarding natural resources from the impacts of global warming.



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