

Protecting Florida's Economy, Communities and Environment from Global Warming

Global warming is already affecting Florida, 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 Florida:

- Rising sea level
- Damage to local economy
- Increasing storms and hurricanes
- Increased health risks

Is Global Warming Affecting Natural Resources in Florida?

Yes. Florida is warming. Since 1950, temperatures across the state have **risen approximately 1°F¹, and are expected to rise an additional 5°F by 2050.²** Since the early 1900s, much of the state has experienced up to a 10% decline in precipitation during most seasons.³ Projected rainfall is expected to become more sporadic and intense, with worse storms and longer droughts affecting communities across the state.⁴ These changes are significant, and the impacts are already being felt.

Across the U.S., 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.⁵ The Intergovernmental Panel on Climate Change predicts warming could result in **up to 30% of known species becoming extinct**, and the disappearance of more than one-fifth of the world's ecosystems.⁶

Locally, sea level rise and coastal erosion are likely to have large impacts on natural resources and communities across Florida. **A projected sea level rise of 27 inches by 2060 would submerge 55% of Florida's beaches.⁷** In the Everglades, the ocean is expected to encroach 12 to 24 miles, leaving the lower Everglades completely submerged.⁸ Across the state, the social, cultural and economic impacts of failing to address climate change are extreme.

Natural Resources Adaptation Funding Will:

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



Protecting Florida's natural areas such as Everglades National Park—and the valuable services they provide, such as cleaning air and water—protects communities across the state.

What is at Stake?

Changes brought on by global warming are disrupting the balance of natural resources and having significant impacts on communities and businesses across the state.

- **Communities:** Sea level rise and increasing hurricane intensity pose a serious threat to communities along Florida's 1200-mile coastline.⁹ Hurricane damage alone is projected to cost \$25 billion per year by 2050.¹⁰ By 2060, \$130 billion worth of residential real estate could be flooded, affecting more than 1.5 million people as rising sea levels submerge communities across the state.¹¹ Most dramatically, up to 99.6% of Monroe County and 70% of Miami-Dade County may be inundated.¹²
- **Tourism and Local Businesses:** Florida's natural areas are critical to the state's tourism and recreation industries. Researchers predict increasing temperatures and storm intensity will cause Florida's tourism industry to lose \$9 billion by 2025 and \$167 billion by the end of the century.¹³ Coral reefs, responsible for more than \$5.5 billion in annual economic activity¹⁴ are already dying off and will continue to be threatened as temperatures rise, leading to mass bleaching and higher rates of diseases.¹⁵ In addition, related impacts to local businesses, including the fishing industry, could be very costly for Florida. In 2006, fishing-related expenditures alone generated \$4.3 billion across the state.¹⁶
- **Agriculture:** Rising temperatures and drought greatly threaten agriculture across Florida. Two of the state's key agriculture sectors will be hit hard by the effects of global warming: the \$1.5 billion orange industry, which accounts for more than 70% of the country's orange crop value;¹⁷ and greenhouse/ nursery businesses, the largest in the U.S. with \$1.8 billion in annual sales.¹⁸ Higher temperatures also threaten Florida's \$1.3 billion livestock industry,¹⁹ as low water availability and higher temperatures threaten to decrease production.²⁰
- **Health:** Increasingly severe heat waves caused by global warming will likely lead to more heat-related deaths and diseases, such as malaria and West Nile Virus.²¹ The number of days per year with temperatures over 90°F is expected to increase to more than 165 days annually by the end of the century.²² Placed at risk are those most vulnerable to extreme heat, including Florida's significant retiree population.²³

Economy at Risk:

\$167 Billion

*Projected loss to the state's
tourism economy*



National Parks such as Biscayne Bay—which generates close to \$24 million a year for local economies—are threatened by 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 will 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, at least 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 Florida'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 Florida:

- Repairing damaged watersheds to ensure clean water for communities by 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, 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 buffer strips along river corridors, 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 revitalize rural economies.

Investing in Solutions for Families, Businesses and the Planet

Restoring river habitats protects ecosystems, jobs, and drinking water

The risks to Florida and the nation from global warming are significant—and require an extensive and sustained commitment to reducing heat-trapping pollution, and to 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 at least 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 natural services and safeguarding communities.
- **Offset increased energy costs for at-risk consumers** by allocating a percentage of allowance auction revenues to consumers through existing mechanisms.²⁴
- **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.

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

For more information, please contact:

David Moulton – Director, Climate Change Policy (202) 429-2681

JP Leous – Climate Change Policy Advisor (202) 429-2676

Text Box Citation: Hardner and McKenney, 2006. "The U.S. National Park System: An Economic Asset at Risk." National Parks Conservation Association. Retrieved July 23, 2009. Available from: http://www.npca.org/park_assets/NPCA_Economic_Significance_Report.pdf

Photo Credits: National Park Service for the picture of the Everglades and the picture of the Biscayne Bay and the State of Massachusetts for the river restoration picture.

¹ NOAA National Climatic Data Center. 2009. "U.S. Climate at a Glance – Statewide." Retrieved June 24, 2009. Available from: <http://www.ncdc.noaa.gov/oa/climate/research/cag3/state.html>

² The University of Washington and The Nature Conservancy. 2009. Climate Wizard. Retrieved June 24, 2009. Available from: <http://www.climatewizard.org/index.html>

³ U.S. Global Change Research Program. January 2009. "Global Climate Change Impacts on the United States." Retrieved June 24, 2009. Available from: <http://downloads.globalchange.gov/usimpacts/pdfs/climate-impacts-report.pdf>

⁴ NRDC. 2001. "Feeling the Heat in Florida. Global Warming on the Local Level." Retrieved July 21, 2009. Available from: <http://www.nrdc.org/globalwarming/florida/florida.pdf>

⁵ 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.

⁶ 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.

⁷ Stanton, Elizabeth A. and Frank Ackerman. "Florida and Climate Change: The Costs of Inaction." Tufts University. November 2007. Retrieved June 24, 2009. Available from: http://www.ase.tufts.edu/gdae/Pubs/rp/Florida_hr.pdf

⁸ Ibid.

⁹ Ibid.

¹⁰ Ibid.

¹¹ Ibid.

¹² Ibid.

¹³ Stanton, Elizabeth A. and Frank Ackerman. "Florida and Climate Change: The Costs of Inaction." Tufts University. November 2007. Retrieved June 24, 2009. Available from: http://www.ase.tufts.edu/gdae/Pubs/rp/Florida_hr.pdf

¹⁴ Hazen and Sawyer, 2004. Socioeconomic Study of Reefs in Martin County, Florida—Final Report, NOAA. Retrieved June 24, 2009. Available from: <http://marineeconomics.noaa.gov/reefs/martincounty2004.pdf>

¹⁵ Donner, S.D., W.J. Skirving, C.M. Little, M. Oppenheimer, and O. Hoegh-Guldberg, 2005. "Global assessment of coral bleaching and required rates of adaptation under climate change." *Global Change Biology*, **11**(12), 2251-2265. Retrieved July 21, 2009. Available from: <http://www.princeton.edu/step/people/faculty/michael-oppenheimer/recent-publications/Global-assessment-of-coral-bleaching-and-required-rates.pdf>

¹⁶ U.S. Fish and Wildlife Service. 2008. "2006 National Survey of Fishing, Hunting, and Wildlife-Associated Recreation. Florida." U.S. Department of the Interior. Retrieved June 24, 2009. Available from: <http://www.census.gov/prod/2008pubs/fhw06-fl.pdf>

¹⁷ Florida Department of Agriculture and Consumer Services. "Florida Agriculture Statistical Directory 2008." Tallahassee, Florida. Retrieved June 24, 2009. Available from: http://www.florida-agriculture.com/pubs/pubform/pdf/Florida_Agricultural_Statistical_Directory.pdf

¹⁸ Ibid.

¹⁹ Ibid.

²⁰ Boyles, Stephen. 2008. "Heat Stress and Beef Cattle." Ohio State University Extension Service. Retrieved July 21, 2009. Available from: <http://beef.osu.edu/library/heat.html>

²¹ Environmental Entrepreneurs. May 2005. "Effects of Global Warming on The State of Florida." Retrieved June 24, 2009. Available from: http://www.e2.org/ext/doc/e2_florida.pdf

²² U.S. Global Change Research Program. January 2009. "Global Climate Change Impacts on the United States." Retrieved June 24, 2009. Available from: <http://downloads.globalchange.gov/usimpacts/pdfs/climate-impacts-report.pdf>

²³ U.S. Climate Change Science Program. 2008. Analyses of the Effects of Global Change on Human Health and Welfare and Human Systems (SAP 4.6). U.S. Environmental Protection Agency, Washington, D.C. Retrieved July 21, 2009. Available from: <http://cfpub.epa.gov/ncea/cfm/recorddisplay.cfm?deid=197244>

²⁴ Stone, Chad and Hannah Shaw. 2009. "Extending "Climate Rebates" to Include Middle-Income Consumers." *Center on Budget and Policy Priorities*.