



Our National Parks in the Face of Climate Change

Spotlight on Florida's Everglades National Park

The Florida Everglades are a rare and beautiful place known to the world as the “River of Grass”—once considered a “useless swamp,” and now viewed as priceless, as one of the most endangered parks in the world. In 1947, the Everglades National Park became a reality to aid in the conservation of this invaluable ecosystem, to prevent further diminishment at the hands of human development and construction. Now there’s another threat to Florida’s ‘Glades—climate change.

What are the Everglades?

The Everglades National Park contains only 1/7 of the entire Everglades ecosystem. Historically, the ‘Glades were an ecosystem that covered 1/3 of Florida, starting at Lake Okeechobee, and moving south to Florida Bay, reaching 50 miles wide in some places, and 3 feet deep in the center. Today, the ‘Glades are half of their former size, and are regulated by the seasonal flow of water, and distinct wet and dry seasons. Thus, water management is the crucial issue for this freshwater ecosystem.



The extent of the Everglades at present (green). The map shows Lake Okeechobee to the North, what used to be the headwaters of the Florida Everglades. ©GORP.com

What does climate change have to do with the Everglades?

Attempts at draining the ‘Glades have reduced the flow of freshwater into the ecosystem, allowing an inflow of salt water. There exist many concerns that restoration of the freshwater flow to the system is merely a short-term solution. Why? Climate change, that’s why.

Climate change is causing effects that span the globe. Among them, temperature rise, sea-level rise, and the alteration of local weather patterns will have the most significant impact on the ‘Glades.

Climate change will not merely alter the ecosystem, but because it is an ecosystem dependent on its freshwater flow, an infiltration of sea water will be the end of the greater ‘Glades.

Sea-Level Rising

Since 1846, the seas surrounding Florida have risen about 12 inches, and the EPA estimates a further 5-ft. rise over the next century. This will not only increase coast-line erosion, but it will flood the 'Glades freshwater ecosystem with saltwater.



These mangrove trees provide a natural barrier between the salty water of Florida Bay and the freshwater 'Glades, maintaining the low salinity characteristic of the ecosystem. ©<http://www.worldadventure.pe>

- *Why is freshwater so crucial to the 'Glades?*
- Freshwater is a defining characteristic that supports plant, animal, and human life.
- This one-of-a-kind ecosystem is the only place on the planet that supports an environment in which alligators and crocodiles co-exist.
- The flow of freshwater that maintains the connection between this mosaic of unique ecosystems.
- The freshwater of the Everglades provides drinking water to the surrounding population.

Spotlight on the endangered Wood Stork

The Wood Stork is native to South Florida and is supported by the freshwater Everglades. This species depends on seasonal dry periods in which small pools of water are formed with high concentrations of fish. Wood Storks feed by touch, and not by sight. Because Wood Storks are so large, and require nearly 220 pounds of food during a mating season, these pools are virtually the only source of food able to sustain these birds. As the seas rise, and precipitation increases, the seasonal dry periods will be eliminated, and thus so will the feeding pools.

For more information, check these out!

- National Park Service Website, Everglades
 - www.nps.gov
- Environmental Protection Agency: Global Warming
 - <http://yosemite.epa.gov/OAR/globalwarming>

• *Sea-level rise and flora/fauna*

- Species will have to migrate further inland to new habitats that may not be able to support the needs of the species (i.e. like highly urbanized areas)

Temperature Increasing

Many of the animals and plants in the 'Glades have adapted specifically to wet and dry seasons. The natural cycles of feeding and nesting depend on the timing of these seasons. Furthermore, the 'Glades are home to more than 60 endangered/threatened species who will be effected by these changes.

- Higher water temperature and pollution are making inhabitable the home of both the endangered West Indian Manatee and Florida Bobcat.

• Aquatic species with narrow temperature tolerances will suffer as water temperatures change.

• Because the temperature during the period of incubation determines the sex of some reptiles, warmer temperatures will limit reproductive capacity in the future.

• Plants will suffer due to changes in atmospheric temperature, as well as soil temperature.

"The Everglades is a test. If we pass, we get to keep the planet." -Joe Podgor, Former Executive Director, Friends of the Everglades