



## U.S. Fish and Wildlife Service

### *Okefenokee National Wildlife Refuge*

## **Okefenokee Swamp's Peatlands: A Hidden Resource**

#### **Okefenokee's Peatlands**

Each year within the Okefenokee Swamp, leaves and plants die and fall to the ground. If exposed to the air and oxygen decomposition happens quickly, but if fallen vegetation lands in an oxygen-poor environment such as swamp water, decomposition is slowed. Plant material has been building up like this in the Okefenokee for over 6,500 years! The wet volume of peat within Okefenokee is estimated to be 401 million cubic meters. It compresses as more weight from more plant material is added, creating peat beds up to 15 ft deep. It takes about 53 years to create one inch of peat in the Okefenokee.

The climate and vegetation history of the area is recorded within these peat layers. The Okefenokee Swamp preserves the changes between water lily "prairies" and forested wetlands, past wildfire events and even holds a record of atmospheric deposition of nuclear testing that occurred far from the swamp in the 1960s. Beyond the obvious benefits of wetlands for biodiversity, water availability and quality, and flood, storm, and fire control, Okefenokee's associated peatlands are extremely important in storing carbon in efforts to reduce greenhouse gases and combat climate change.

#### **Global Peatlands**

Peatlands are amazing places and can be found around the world. They exist in over 175 countries but are globally rare, covering only 3% of the world's land area. Because of cooler temperatures, peatlands are mostly found in northern latitudes such as Canada, Europe, and Russia. Significant peat deposits also occur within the tropics where there is prolific growth of vegetation along with moist conditions. Expanses of peatlands like the ones found in the Okefenokee are even rarer because they sit in the temperate/subtropic climate zone where rapid decomposition is expected. The high water table within the swamp keeps dead plant material waterlogged in anaerobic conditions and the low topographic relief of the area results in water moving slowly through the system, creating an ideal environment for peat development.

Many of the world's peatlands have been or are being degraded by draining, agriculture, erosion, and deforestation especially within the highly populated subtropical zone. As people around the globe become more aware of the benefits peatlands provide, preserving the hydrology of peatlands like the Okefenokee is growing in importance.

#### **Carbon Storage**

Peatlands store more than twice as much carbon as the world's forests, making it extremely important to preserve remaining peat deposits. When peatlands dry, carbon dioxide is released into the atmosphere, so it is critical for these areas to remain waterlogged. The carbon stored within the Okefenokee peat is equivalent to over 95 million tons of carbon dioxide alone representing 65% of the total carbon stored within the swamp. Additional carbon is stored within the living plants.

Fortunately, peat disturbance in the Okefenokee have primarily been limited to the construction of the Suwannee Canal and peat harvesting of approximately 18 acres prior to the area becoming a refuge. Wildfires, which are beneficial to the Okefenokee Swamp to maintain habitat diversity, often sweep across the landscape with the water saturated peat protecting the deeper peat deposits.

#### **Significance of Okefenokee's Peatland**

Okefenokee's peatland is significant as the largest remaining undisturbed peat deposit on the North American Coastal Plain (NACP) that stretches from Massachusetts to Mexico and within the northern hemisphere's subtropical zone around the globe. The NACP and the subtropical zone are the some of the most populated areas of the world with a long history of resource manipulation and exploitation. This amazing hidden resource of the Okefenokee is worthy of protection.