disturbance.[243] The effects of 30 years of lighting, noise disturbances and human encroachment near the Refuge boundary may well affect the foraging and nesting habits of wood storks within the Okefenokee. Mine-related runoff, sedimentation, and potential chemical accidents may also cause a decline in the number and availability of native fishes (stork prey) and have a deleterious impact upon the aquatic vegetation upon which those fishes depend.

d. Gulf Sturgeon

Historically, the Gulf sturgeon subspecies occurred in most major Gulf rivers, from the Mississippi to Tampa Bay, Florida. Listed as Threatened under the ESA, major threats to the Gulf sturgeon include dams, loss of habitat, poor water quality and industrial runoff.

A significant number of Gulf sturgeon occur in the Suwannee river (182 river miles of Critical Habitat), the headwaters of which are formed by the Okefenokee Swamp. The Suwannee supports the most viable population of Gulf sturgeon remaining, with potentially upwards of 10,000 individuals. Gulf sturgeon are known to utilize much of the Suwannee River for spawning and nursery purposes and have been documented as far as 137 river miles upstream.[244] Like its counterparts, the Gulf sturgeon is sensitive to changes in water quality, dissolved oxygen levels, and temperature fluctuations.

The Suwannee River basin is pocketed by nearly 200 springs, all of which are fed by the Floridan aquifer. These springs partially influence water flow and temperature within the river and offer the Gulf sturgeon important cool water habitat. Unfortunately, decreased groundwater levels, caused by pumping, can reduce the spring flow that Gulf sturgeon rely upon in the summer months.[245]

Twin Pines intends to pump approximately 3000 gallons per minute from the Floridan aquifer for thirty years.[246] Though pumping is likely to occur closer to the St. Marys River than the Suwannee, the potential impacts of Twin Pines' water withdrawals on the Gulf sturgeon have not been examined. It is also unclear how an altered hydrological regime within the Refuge would affect spawning Gulf sturgeon.

3. Candidates for Listing under the ESA and other Key Species

a. Gopher Tortoise

Like many coastal plain species, the gopher tortoise was once common throughout upland habitats in the South. The species has lost 80 percent of its historical range and continues to suffer from habitat destruction caused by commercial and industrial development, urbanization, and agriculture. The gopher tortoise is now a candidate for listing under the ESA

[243] *Id.*

[244] U.S. Fish & Wildlife Serv. and Gulf States Marine Fisheries Commission. 1995. Gulf Sturgeon Recovery Plan. Atlanta, Georgia. 170, 14.

[245] *Id.* at 27.

[246] *See* Hutson at 5.