

Florida's Freshwater Issue

By Kendal Westphal

Florida is in a water crisis. Florida has lost almost half of its historic wetland coverage due primarily to water supply for agriculture (National Water Summary, 1997). In 2012, agriculture accounted for 39 percent of freshwater withdraws, followed by 36 percent toward public supply for a total of 6,383 million gallons of freshwater withdrawn each day (Marella, 2015). Water is commonly viewed as a renewable resource, but excessive drainage of surface water and groundwater is depleting the water volume in Florida's aquifer and springs. The flow rate of Silver Springs had dropped by one-third since 2000, and other famous springs in North and Central Florida have exhibited decreased flows and increased algae (Alvarez, 2012). Combined with another environmental issue of nutrient runoff, slow-flowing springs have increased algal growth, reducing the oxygen available to aquatic organisms and resulting in a decline in wildlife and biodiversity. Florida's springs are among the most unique habitats in the world. The biodiversity supported by freshwater provides opportunity for scientific research, in addition to boosting tourism, an industry that generates over \$89 billion a year in Florida (The Nature Conservancy, 2016). Declining freshwater is not only bad for the springs, but also for all other popular tourist attractions that demand clean water, such as golf courses and beaches. Ignoring the depletion of freshwater will cost the state of Florida its natural, social and economic resources.

To preserve Florida's remaining freshwater resources, methods of obtaining freshwater from sources other than surface and groundwater need to be adopted in conjunction with water conservation policy and public education. There are currently over 120 desalination plants in Florida which are aiding in conserving groundwater, but the process is harmful to marine life and

uses fossil fuels (Scientific American, 2017). An alternative method for obtaining freshwater is fog harvesting. Fog water is collected as it passes through mesh nets – a process that is traditionally associated with developing countries, but has the potential to provide drinking water to small developed communities. Although an analysis of fog collection potential in northern California showed its water yield was too low to meet demand, Florida has a large coastal perimeter and more humid climate which may be more suitable (Domen et al, 2013). Under ideal conditions, the best fog-harvesting nets can collect up to 1,500 gallons of water each day. This amount may seem insignificant compared to the millions of gallons demanded, but installing nets on every farm in the state would relieve some of strain on the aquifer. The most important step Florida needs to take is updating the water conservation policy by applying strict policies to the agricultural industry to ensure sustainable practices are in place before permits are issued. More emphasis must be put on public education of the freshwater crisis, and funding informational campaigns about subtropical landscaping in which sprinklers are no longer needed. Bringing public awareness to the water issue will help people conserve water naturally, invest in water-efficient technologies, and push industries to adopt sustainable water collection practices.

Biography: Originally from Pennsylvania, I came to University of South Florida in 2015 to pursue a degree in Environmental Science & Policy. As president of Environmental Policy Advocates at USF, I passed the Electric Bus Initiative through the Student Green Energy Fund, and an electric bus will replace a diesel bus within the year to decrease carbon emissions. I work at USF Outdoor Recreation as an Adventure Trip Leader. I hope to build a community at this school - and everywhere in the future - that is inspired to connect with nature and seek ways to make our lifestyles sustainable.

References

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