Florida Federation of Garden Clubs, Inc.

PROTECT FLORIDA SPRINGS

Position Statement

Adopted January 14, 2016

Florida Federation of Garden Clubs, Inc. is committed to the preservation and restoration of Florida springs.

Scattered across central and northern Florida is possibly the largest concentration of freshwater springs in the world. The Florida Geological Survey has documented more than 1,000 springs and more are reported each year. The abundance of springs in the Florida landscape is a result of naturally occurring karst processes (dissolution of rock layers by water) over eons of time. Much of Florida is a karst terrain formed by the dissolution of the limestone bedrock that underlies the entire state. Limestone is dissolved by slightly acidic water (such as in carbonated beverages). Rainwater is normally slightly acidic because it absorbs carbon dioxide in the atmosphere and decaying organic matter in the soil. When rainwater percolates downward and infiltrates underlying porous rock layers, it dissolves components of the rocks, and slowly enlarges small fissures and crevices to form honeycombs and conduits. As the underlying rock layers become saturated with water, the groundwater moves quickly through underground channels and further erodes large voids, eventually creating caverns that interconnect as extended, complex systems of subterranean rivers, underwater caves, sinkholes and springs. Springs are natural openings at the surface where groundwater discharges directly from the aquifer and feeds into streams, rivers, lakes or the ocean.

Florida springs are generally of two different types, seeps (water trickles to the surface where ground level dips below the surrounding water table) or karst springs (water flows to the surface under artesian pressure) and are usually classified based upon the average discharge of water. Florida is unique in having the greatest number of the largest or "first-magnitude" springs (springs with flows greater than 100 cubic feet per second) in the world. The majority of springs arise from the vast subterranean reservoir of the Floridan Aquifer System, the principal source of fresh water in Florida. The aquifer is recharged by rain and surface water that seeps into the aquifer through direct karst-feature conduits such as sinkholes. Karst terrains are extremely susceptible to groundwater pollution. Natural filtration is nearly nonexistent where water recharges the aquifer through thin layers of permeable soil or directly through karst conduits. Surface contaminants enter the aquifer together with infiltrating water. Additionally, the rapid speed at which groundwater water moves in the aquifer (hundreds of times greater than non-karst aquifers) does not allow sufficient time for groundwater self-purification. Pollution in karst aquifers is mostly irreversible. Due to the unique characteristics of its karst hydrogeology, the natural beauty and ecological heath of Florida's springs is directly and irrevocably influenced by activities and land use within the recharge basin.

The waters of Florida springs are world-famous for their clarity and purity, but over the past few decades, many springs have been seriously endangered by reduced flows and declining water quality. Recent studies have concluded that drought and excessive pumping for domestic, industrial and agricultural use has depleted the Floridan Aquifer System, causing spring flow to decline by about 30% and that residential and commercial use of fertilizers and agricultural runoff have increased the concentrations of nitrate in groundwater by as much as 4,000%. Findings also suggest wastewater infiltration from the use of reclaimed water to irrigate crops, and effluence from municipal treatment plants and septic tanks to be the source of fecal coliform levels that exceed allowable levels for drinking in over 30% of the first-magnitude springs. The results of these studies serve to alert and encourage state governmental agencies, local water management districts and the general public to take substantial steps and actions to conserve water and protect water quality.

Florida Federation of Garden Clubs, Inc. recognizes that springs are natural resources of immeasurable ecological, aesthetic, recreational and economic value. To protect Florida's imperiled springs, we endorse the following:

To Preserve and Restore Florida Springs

- Significantly reduce allocated groundwater pumping to protect groundwater levels and spring flow
- Expedite the implementation of applicable best management practices to reduce nitrogen inputs and other pollutant loading
- Advance scientific understanding and modeling of the hydrogeological characteristics of karst aquifers and groundwater flow
- Continuously monitor spring discharge and water quality to establish historical benchmarks and enable long-term trend analysis
- Adequately fund the acquisition of conservation land within spring basins as intended by voters who passed Amendment 1 to protect plant and animal communities dependant on spring systems for habitat
- Develop and implement sustainable groundwater resource planning and management
- Develop and implement comprehensive land use planning strategies and enforce ordinances that protect spring recharge basins
- Promote public awareness and appreciation of the value of Florida spring water and the vulnerability of karst aquifers
- Encourage all Floridians to conscientiously participate in reducing water consumption and groundwater pollution, by such practices as using Florida-friendly landscaping methods and properly disposing of hazardous household chemicals

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