

## **Sources of Nitrate Contamination in Fanning Springs, Florida**

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### **ABSTRACT**

Fanning Springs is a first magnitude spring and the centerpiece of Fanning Springs State Park which is located on the Suwannee River in Levy County, Florida. Since the 1990s nitrate-nitrogen concentration in the spring's discharge have steadily increased and frequently exceed 6.0 mg/l or parts per million. This is the highest concentration of nitrate discharging from any of the first magnitude springs in Florida. Concerned by the potential ecological impacts, the Division of Recreation and Parks requested the Florida Geological Survey investigate the sources and loading of the nitrate contamination in the springs.

The Florida Geological Survey has delineated the springshed, modeled ground water nitrate-nitrogen loading utilizing the Watershed Assessment Model (WAM), spatially plotted the permitted consumptive use within the springshed, and estimated ground water nitrate loading within the springshed. The WAM results indicate that fertilizer leaching from row crops, improved pasture, and coniferous plantations are the major sources of the ground water nitrate in the springshed. The ground water nitrogen loading ranges from a low of less than 0.01 g/ha/yr to a high of 197,005 g/ha/yr (175.8 lbs/ac/yr).

### **Keywords**

Springshed delineation, nitrate-nitrogen, fertilizer