

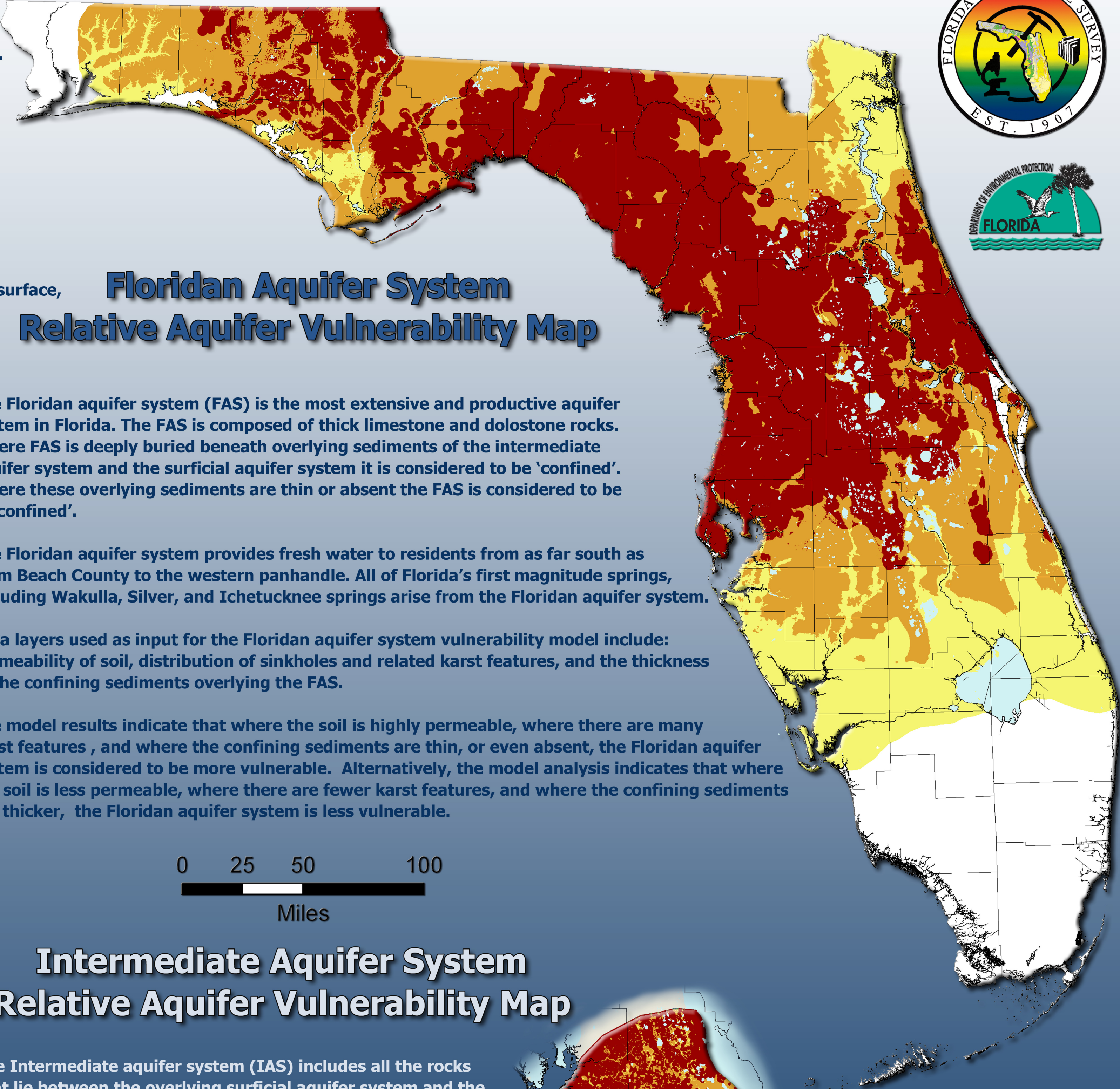
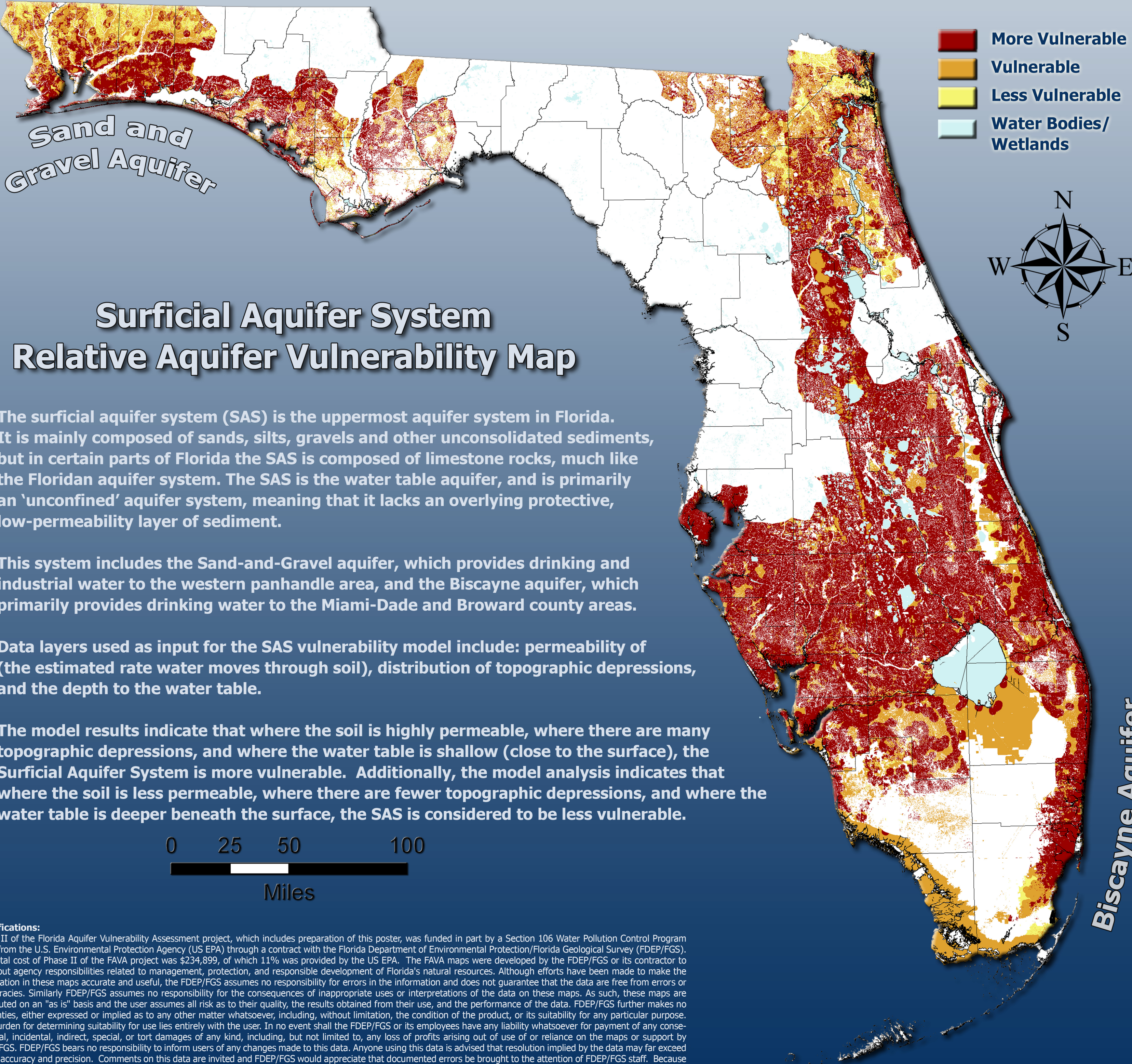
Florida Aquifer Vulnerability Assessment (FAVA) - A Tool for Protecting Florida's Ground-Water Resources

What is an aquifer vulnerability assessment?

Aquifer vulnerability assessments are used to produce maps of ground water vulnerability and are designed to assist community planners, environmental regulators, resource managers, local governments, and other professionals in meeting their objectives for improving water-resource protection. Florida's aquifer systems are of the most prolific sources of ground water in the United States. These aquifer systems provide drinking water to over 90% of Florida's residents and visitors, and give rise to hundreds of unique springs across the state. It's important to remember that although these sources of water occur underground, they are all, to some degree, vulnerable to contamination from land surface, and there is no such thing as an invulnerable aquifer. The FAVA model results provide ways for us to identify relative vulnerability zones within a study area and are developed using science-based, statistical techniques.

The FAVA project represents a major regional modeling effort and involves development of vulnerability maps for all three major aquifer systems in Florida: the Floridan aquifer system, the intermediate aquifer system and the surficial aquifer system. The models are focused on areas where the aquifers are major sources of fresh water.

Some factors affecting aquifer vulnerability in Florida include: the rate water moves through soil, how deeply buried aquifer systems are beneath land surface, number and density of sinkholes and other karst features, and water levels of the aquifers. Data layers representing these factors are created using geographic information systems (GIS) and are used along with water-quality information to develop aquifer vulnerability maps displayed here.



Intermediate Aquifer System Relative Aquifer Vulnerability Map

The Intermediate aquifer system (IAS) includes all the rocks that lie between the overlying surficial aquifer system and the underlying Floridan aquifer system. Throughout most of Florida the IAS acts as a confining unit which protects the underlying FAS from contamination. In parts of Florida, this system also acts as a viable source of drinking water. The most significant area served by the IAS is southwestern Florida as shown by the model extent.

Data layers used as input for the Intermediate aquifer system model includes permeability of soil, distribution of sinkholes and other karst features and thickness of the material overlying the IAS, known as overburden.

Model results indicate that where the soil is highly permeable, where there are many karst features present, and where overburden is thin to absent the IAS is more vulnerable. Alternatively, the model analysis indicates that where the soil is less permeable, where there are fewer karst features, and where the overburden is thicker, the Intermediate Aquifer System is considered to be less vulnerable.

