

DRAFT ENVIRONMENTAL LANDS SUB-ELEMENT

Nov 14, 2005

This Draft contains revisions from both Blanche Hardy, Director of Environmental Services and LPA member Keith Schue which were sent to Comprehensive Planning on Nov 14, 2005.

**ENV 1.1, ENV1.2 Sanitary Sewer
ENV 1.3 Aquifer Recharge
ENV1.4 Stormwater**

GOAL ENV 1 WEKIVA STUDY AREA

Lake County shall protect groundwater and surface water resources within the Wekiva Study Area (WSA), including but not limited to springs, springsheds, karst features, and surficial and Floridan aquifers. The following objectives and policies have been developed pursuant to Chapter 369, Part III Florida Statutes, the Wekiva Parkway and Protection Act, and are intended to compliment other provisions of the Public Facilities Element and this Comprehensive Plan.

OBJECTIVE ENV 1.1: CENTRAL SEWER SERVICE IN THE WEKIVA STUDY AREA

Lake County shall require the implementation of advanced wastewater treatment and disposal facilities where central services exist within the Wekiva Study Area to minimize impact on surface and groundwater resources, consistent with state agency rules.

Policy ENV 1.1-1: Provision of Central Sewer Services

In order to reduce nutrient loading within the Wekiva Springshed, the County will encourage the central sewerage of areas with a high septic tank density.

Policy ENV 1.1-2: Wastewater Discharge

The County shall ensure that wastewater discharge from facilities within Wekiva Study Area is treated to comply with all FDEP regulations for enhanced wastewater treatment. The County shall prohibit the construction of Rapid Infiltration Basins within identified primary and secondary springshed protection zones.

Policy ENV 1.1-3: Coordination with Wastewater Providers

The County shall cooperate with wastewater service providers to jointly address ground and surface water nutrient loading issues within the Wekiva Study Area. Such efforts should address water quality throughout the entire basin comprehensively, not only on a site specific basis, and should aim to leverage limited resources and take advantage of economies of scale.

Policy ENV 1.1-4: Disposal of Sludge and Residual Wastewater

The County shall prohibit land application of sludge or wastewater residuals within the Wekiva Study Area.

OBJECTIVE ENV 1.2: ONSITE SEWAGE DISPOSAL SYSTEMS IN THE WEKIVA STUDY AREA

Lake County shall encourage upgraded, modified, and new septic systems to use the latest treatment technologies, performance standards, and operational procedures to maximize nutrient removal and minimize ground and surface water contamination.

Policy ENV 1.2-1 Enhanced Treatment

The County will evaluate various systems to maximize nutrient removal and to provide appropriate, cost effective solutions for new and retrofitted onsite systems. The County may adopt standards in the Land Development Code which require new or modified septic systems within the Wekiva Study Area, and existing systems to be designed to provide specific levels of nutrient removal sufficient to achieve a target discharge limit. The County shall cooperate with the Florida Department of Health, Florida Department of Environmental Protection, and St. Johns River Water Management District regarding the adoption of rules relating to the use of onsite treatment and disposal systems within the Wekiva Study Area. The county shall consider incentives to encourage the use of more efficient nitrogen-removing technologies for onsite systems as they become available.

Policy ENV 1.2-2: Septic Tank Monitoring Program

The County shall encourage the Florida Department of Health to evaluate the expansion of its Septic Tank Monitoring Program or the creation of a new program to ensure that septic systems within the Wekiva Study Area (WSA) meet their design discharge limits. All new systems within the WSA shall be required to meet standards established by the Department of Health for the WSA, as well as any systems being modified or replaced.

Policy ENV 1.2-3: Replacement of Septic Systems in the Wekiva Study Area

The County will coordinate with the Florida Department of Health and the Florida Department of Environmental Protection to establish a program for a phased-in approach to replace the existing, underperforming septic systems within the Wekiva Study Area beginning by 2008. The program

should be developed after opportunity for citizen and local government input.

Policy ENV 1.2-4: Onsite Disposal Maintenance Program

By 2008, the County, with the assistance of state agencies, shall investigate establishment of a program to provide that on-site disposal systems are properly maintained to ensure water quality standards within the Wekiva Study Area are met.

Policy ENV 1.2-5: Onsite Disposal Management Entity

The County will evaluate the establishment of a management entity to oversee the maintenance of all wastewater discharged from onsite sewage treatment and disposal systems in the Wekiva Study Area. The management entity may be a part of local governments, a regional entity, or a special taxing district. Maintenance of nitrogen-removing systems is critical to assure that design performance is met.

Policy ENV 1.2-6 Disposal of Septage

The County shall prohibit land application of septage within the Wekiva Study Area.

OBJECTIVE ENV 1.3: PROTECTION OF SPRINGSHED AND AQUIFER RESOURCES IN THE WEKIVA STUDY AREA

Lake County shall protect and maintain, to the greatest extent possible, the natural functions of the Wekiva Study Area and the springshed, which contributes ground water to the springs of the Wekiva River system.

Policy ENV 1.3-1 “Most Effective Recharge” Criteria

Notwithstanding other provisions of this Comprehensive Plan, within the Wekiva Study Area Lake County shall utilize a “Most Effective Recharge” criteria to evaluate recharge potential. This criteria shall be used to describe “protected recharge” as that term is used in the Aquifer Recharge Sub-Element. Unless otherwise provided for by rule of the St Johns River Water Management District, “Most Effective Recharge” shall be defined as Type “A” Soils, pursuant to Section 11.3.1 of the *Applicant’s Handbook: Management and Storage of Surface Waters*.

Policy ENV 1.3-2: Use of Best Available Information

Lake County shall utilize best available data from state agencies to identify and map areas of “Most Effective Recharge” as defined by the St Johns River Water Management District, areas of aquifer vulnerability, springshed boundaries, and karst sensitive features. The County will rely on the data generated by the Water Management Districts, the Florida Geological Service, and other sources, including but not limited to aquifer vulnerability data provided in the Florida Geological Survey Report of *Investigation 104: Wekiva Aquifer Vulnerability Assessment (WAVA)*.

Policy ENV 1.3-3: Inappropriate Development

Lake County shall avoid inappropriate development within Most Effective Recharge Areas. Within undeveloped parts of the Wekiva Study Area that exhibiting Most Effective Recharge, are located within areas vulnerability, or contain karst sensitive features, low intensity land uses shall be preferentially maintained as the best option for protecting the quality and quantity and groundwater resources.

Policy ENV 1.3-4: Incompatible Land Uses

Lake County shall direct incompatible land uses away from Most Effective Recharge areas, including high intensity agriculture, heavy commercial, industrial, golf courses, urban uses with extensive impervious surfaces, and uses which may contaminate the underlying aquifer with hazardous or toxic materials or waste.

Policy ENV 1.3-5: Best Management Practices

Lake County shall use best management practices and performance standards to maximize open space, limit impervious surfaces, promote protection of natural vegetation, buffer karst sensitive areas, maximize recharge volumes, and treat recharge stormwater to protect groundwater quality within the Wekiva Study Area. The County shall utilize the DCA/DEP publication “*Protecting Florida Springs: Land Use Planning Strategies and Best Management Practices*”. Such practices and standards shall be included in the Land Development Regulations.

Policy ENV 1.3-6 Springshed Protection Zones

Lake County shall develop and implement zones of protection ordinances and land development regulations to protect the Wekiva system springshed, areas of aquifer vulnerability, and karst features. Regulations shall be developed in coordination with and using best available information from state agencies and shall be based upon criteria including but not limited to:

- Aquifer geology within the springshed
- The potential to contaminate or contribute nutrient loading to groundwater and spring systems
- The capacity to contain or eliminate the hazard of contamination or nutrient loading to groundwater and spring systems
- The objective maintaining pre-development recharge volumes

Policy ENV 1.3-6: Geologic Analysis

Lake County will continue to work with state agencies to evaluate potential projects that would provide greater recharge within the Wekiva Study Area to replace losses from the aquifer. The County shall seek to partner with the water management districts and other agencies and jurisdictions for funding, technical assistance, and implementation of recharge projects. Based upon the results of analysis, the County may implement additional recharge projects in suitable locations.

Policy ENV 1.3-7: Stormwater Design to Maintain Recharge

The County shall require that the design of stormwater management systems within the Wekiva Study Area be based upon a site specific, yearly volume water budget whereby post-development infiltration and discharge water volumes approximate pre-development volumes. The County shall require compliance with all state agency rules pertaining to the design of stormwater management systems in Most Effective Recharge areas located wholly or partially within the Wekiva Study Area.

OBJECTIVE ENV 1.4: STORMWATER MANAGEMENT IN THE WEKIVA STUDY AREA

Lake County shall improve its ability to manage stormwater so as to minimize the degradation of surface and ground water. This objective shall be made measurable by implementing the following policies.

Policy ENV 1.4-1: Regional Master Stormwater Management Plan

Lake County shall cooperate and consult with the Water Management District, the Florida Department of Environmental Protection and adjoining local governments and municipalities for the development and implementation of the Wekiva Study Area regional master stormwater management plan. This may include the establishment of a regional stormwater environmental utility to fund needed improvements and projects. Once the regional stormwater master plan is completed and approved by the BCC, the County will incorporate its data and

recommendations into the Comprehensive plan and Land Development Regulations.

Policy ENV 1.4-2

Stormwater Management within the Springshed

Lake County shall adopt Land Development Regulations that protect the quality and quantity of water entering the aquifer within the Wekiva Study Area and springshed. These regulations shall assure adequate treatment of stormwater before it enters the aquifer, prevent the formation of solution pipe sinkholes, reduce erosion and sedimentation, and optimize stormwater retention to facilitate recharge. The County shall utilize information contained within the publication "*Protecting Florida Springs: Land Use Planning Strategies and Best Management Practices*" by the Department of Community Affairs and Department of Environmental Protection.

Policy ENV 1.4-3:

Stormwater Run-off

No stormwater runoff shall be allowed to drain directly through any sinkhole or other karst feature. All runoff recharging the Floridan Aquifer shall be pre-treated to remove nutrients and other contaminants so that post-development water quality equals pre-development recharge water quality to the greatest extent feasible.

Policy ENV 1.4-4:

Drainage Retention Areas

All stormwater management and drainage systems proposed to be constructed in karst sensitive areas, areas with known sinkholes, and areas with shallow depth to limestone bedrock, shall be evaluated for the presence of sinkholes through appropriate geotechnical testing. All proposed Drainage Retention Areas (DRAs) shall be tested for the presence of cavities and voids beneath them. No DRAs or other stormwater facilities, excluding conveyance facilities, shall be located over unfilled voids.

Policy ENV 1.4-5:

Sinkholes

If there is an existing sinkhole within or adjacent to a development site, or any indication that a sinkhole may develop in the future, then a detailed geological/geotechnical investigation shall be required. This investigation must be conducted by a professional geologist or engineer experienced in geohydrology and a report submitted to the County for consideration. The geologic investigation shall be comprehensive enough that recommendations for site planning, engineering design and construction techniques may be made. The County shall approve, approve with conditions, or deny development

proposals based upon the scale of the development and the hazards revealed within the investigation.

Policy ENV 1.4-6: Karst Sensitive Areas

The County shall cooperate with the Water Management District and will adopt in the Land Development Code appropriate, specific requirements for stormwater structures or facilities located within karst sensitive areas. Such requirements shall include evaluations by certified geologists or professional engineers experienced in geohydrology that the area is safe and that there is no subsurface connection that may cause contamination or damage to the groundwater.

Policy ENV 1.4-7: Best Management Practices

The County will evaluate and adopt, as appropriate and feasible, Best Management Practices (BMPs) for all stormwater management systems located in the Wekiva Study Area. Systems in areas of Most Effective Recharge as defined by the St Johns River Water Management District and karst sensitive areas should be designed to address maintenance of water quality. Such BMPs may include design standards for stormwater ponds, use of biological treatment trains for nutrient and contaminant removal, incorporation of stormwater management systems into landscaping and irrigation, and minimizing directly connected impervious surface areas.

Policy ENV 1.4-8: Reuse

The County will continue to seek ways to expand its efforts in reusing stormwater for irrigation, aquifer recharge, and other non-potable uses. The County will evaluate and establish, as appropriate, a threshold wherein a project that generates sufficient quantities of runoff shall be required to reuse that stormwater.

Exhibit 1: Wekiva Study Area - Most Effective Recharge

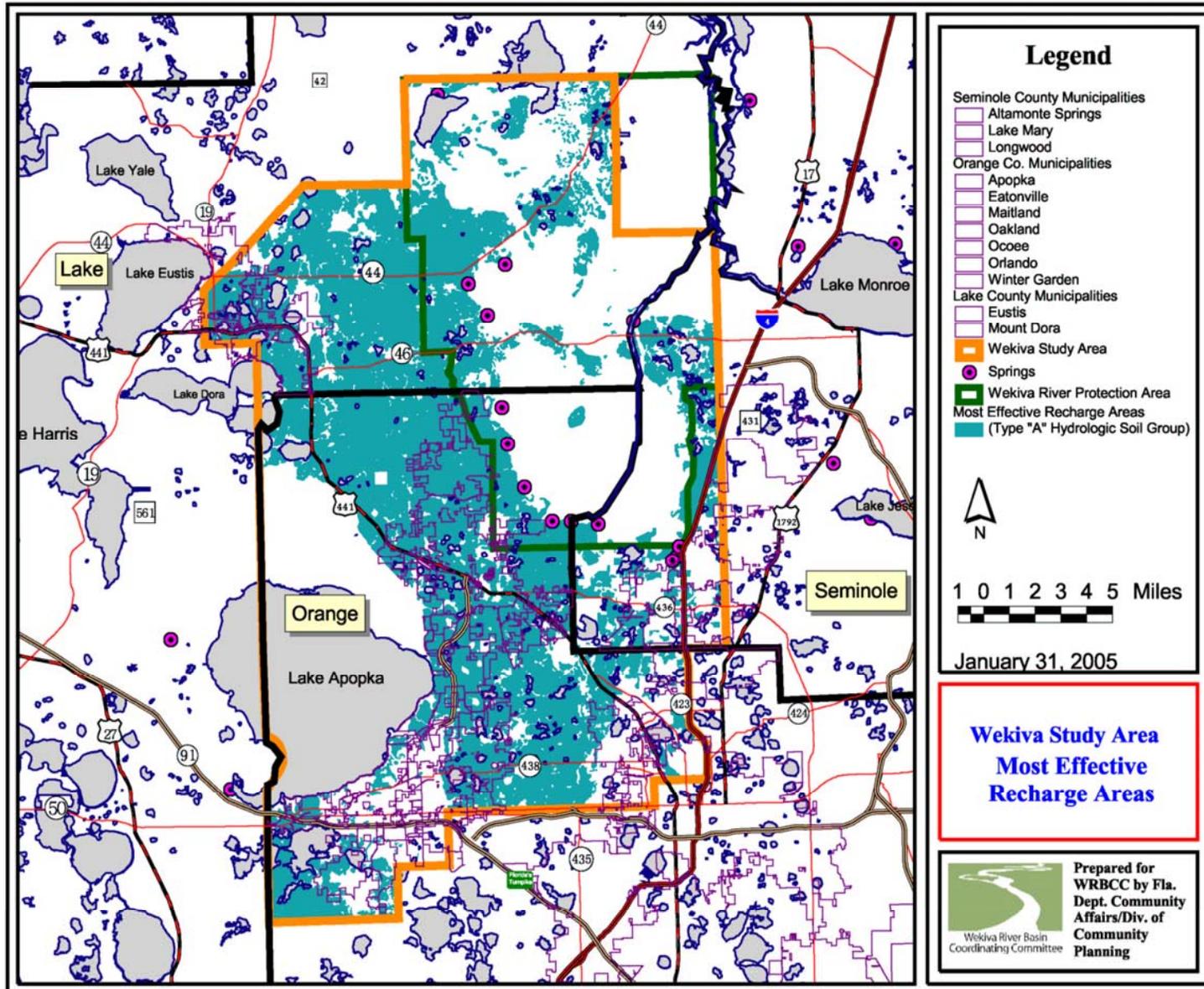


Exhibit 2: Wekiva Study Area – Karst Features

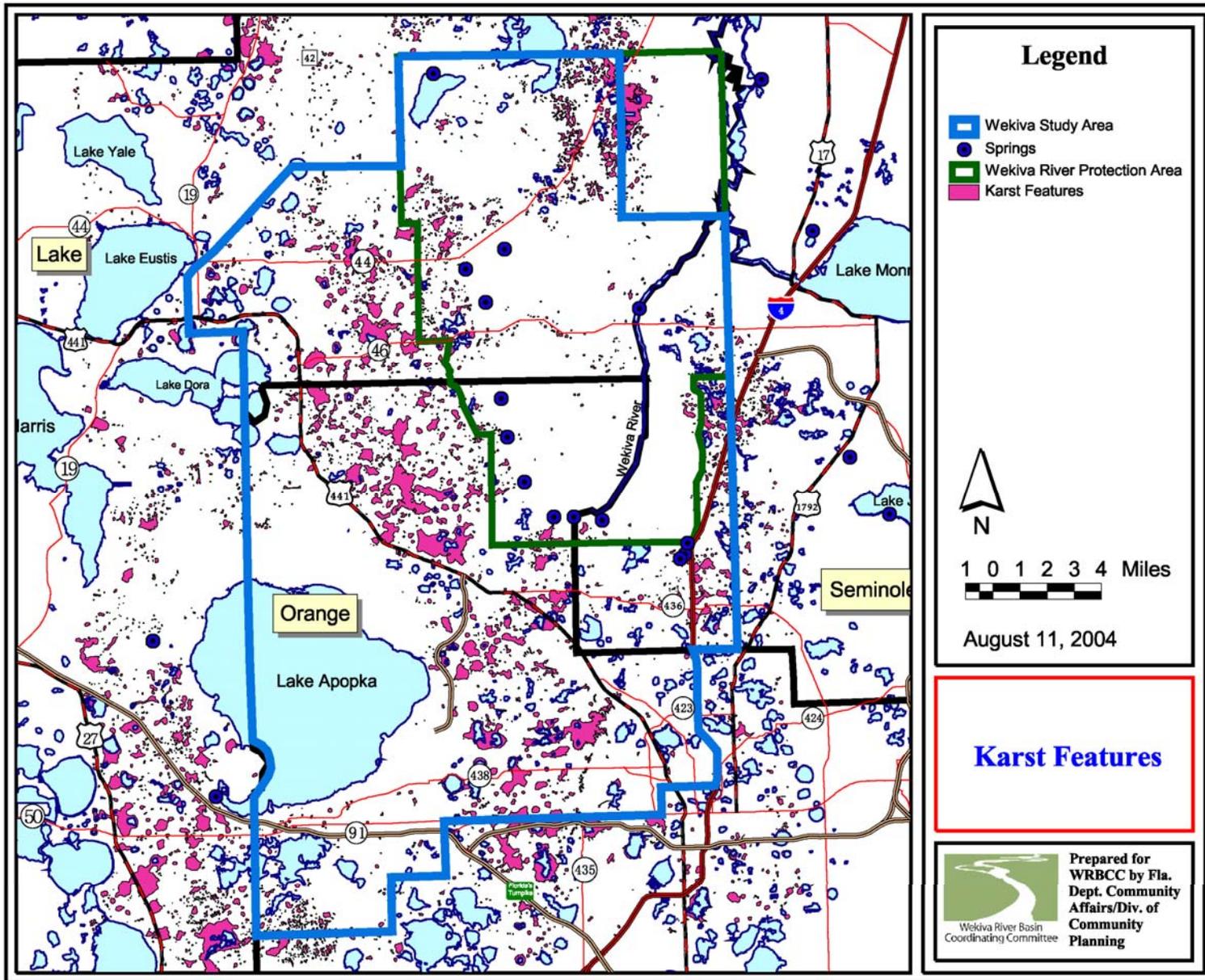
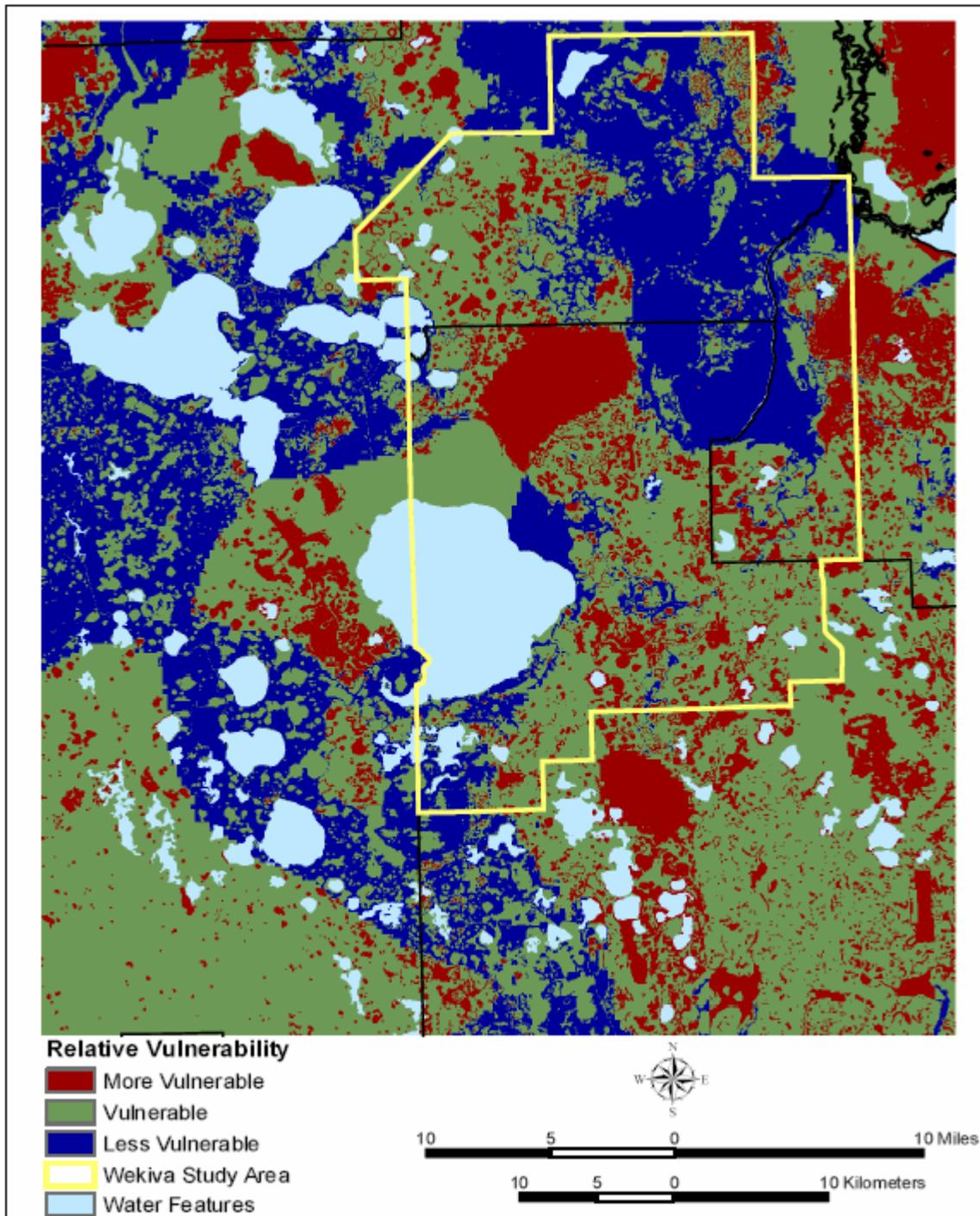


Exhibit 3: Wekiva Study Area – Relative Aquifer Vulnerability



Relative Vulnerability of the Floridan Aquifer System predicted by WAVA (Florida Geological Survey, Report of Investigation 104)