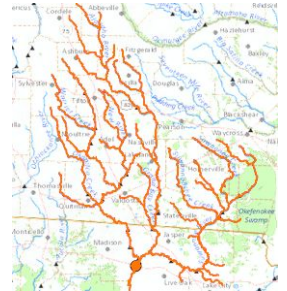


WWALS Watershed Coalition, Inc.
the WATERKEEPER® Alliance Affiliate for the upper
Suwannee, Withlacoochee, and Alapaha Rivers
a 501(c)(3) nonprofit charity
PO Box 88, Hahira, GA 31632
850-290-2350
wwalswatershed@gmail.com
www.wwals.net



August 14, 2016

Dear WWALS Board and Committees,

Here are some context maps to illustrate where WWALS is in the world of Waterkeepers, some of the variety of useful map types from both external sources and generated by WWALS, and a very few illustrations of applications of maps to watershed issues.

For many more maps, see <http://www.wwals.net/maps/> and many other pages and blog posts.

There is no end of maps needed: maps illustrate everything.

For the rivers and the aquifer,

[/s]

John S. Quarterman, President

WWALS Watershed Coalition advocates for conservation and stewardship
of the Withlacoochee, Willacoochee, Alapaha, Little, and Upper Suwannee River watersheds
in south Georgia and north Florida
through awareness, environmental monitoring, and citizen activities



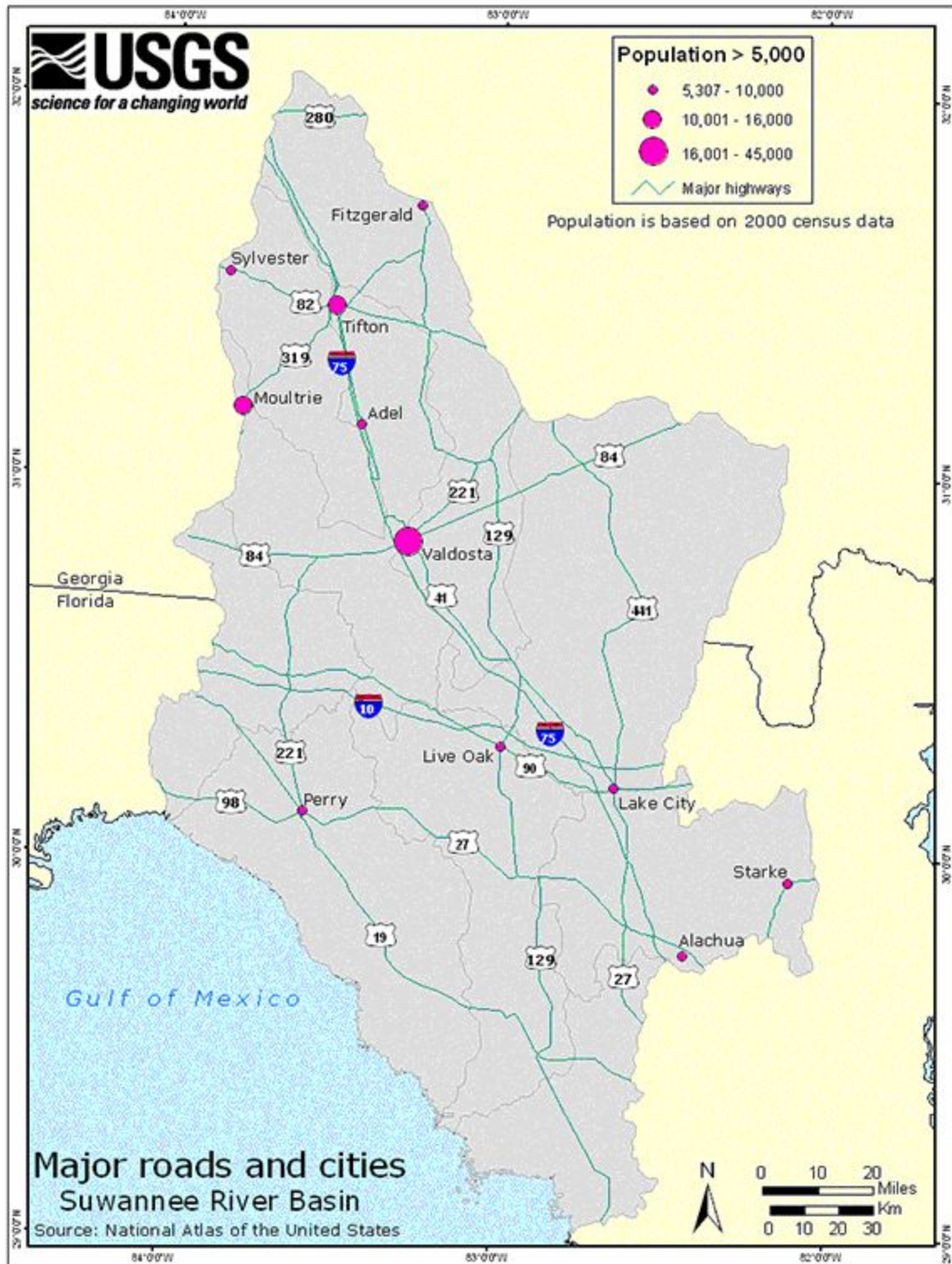
Suwannee River Basin



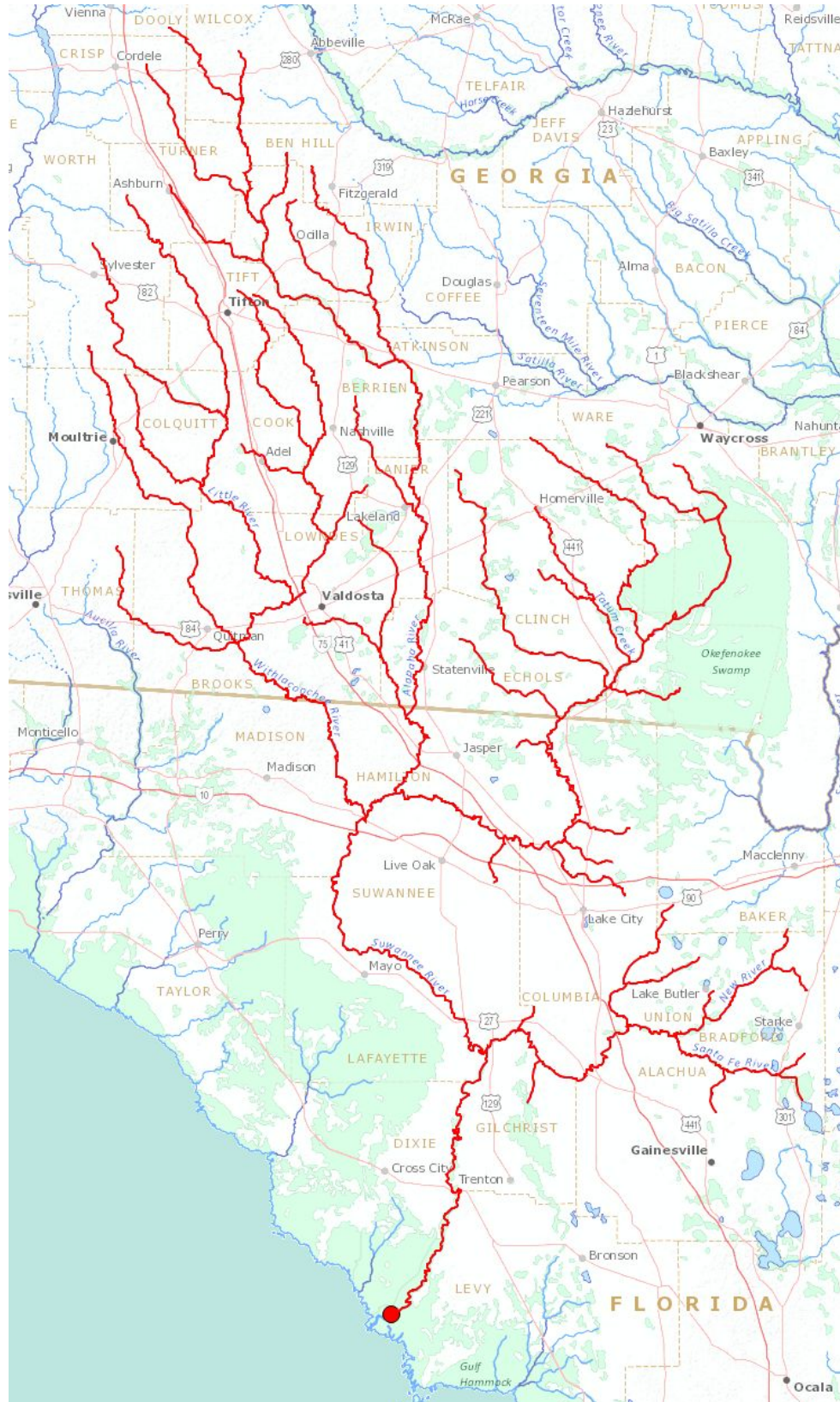
USGS Suwannee Subregion 0311



Major Roads and Cities



Suwannee River and all its tributaries: USGS Streamer

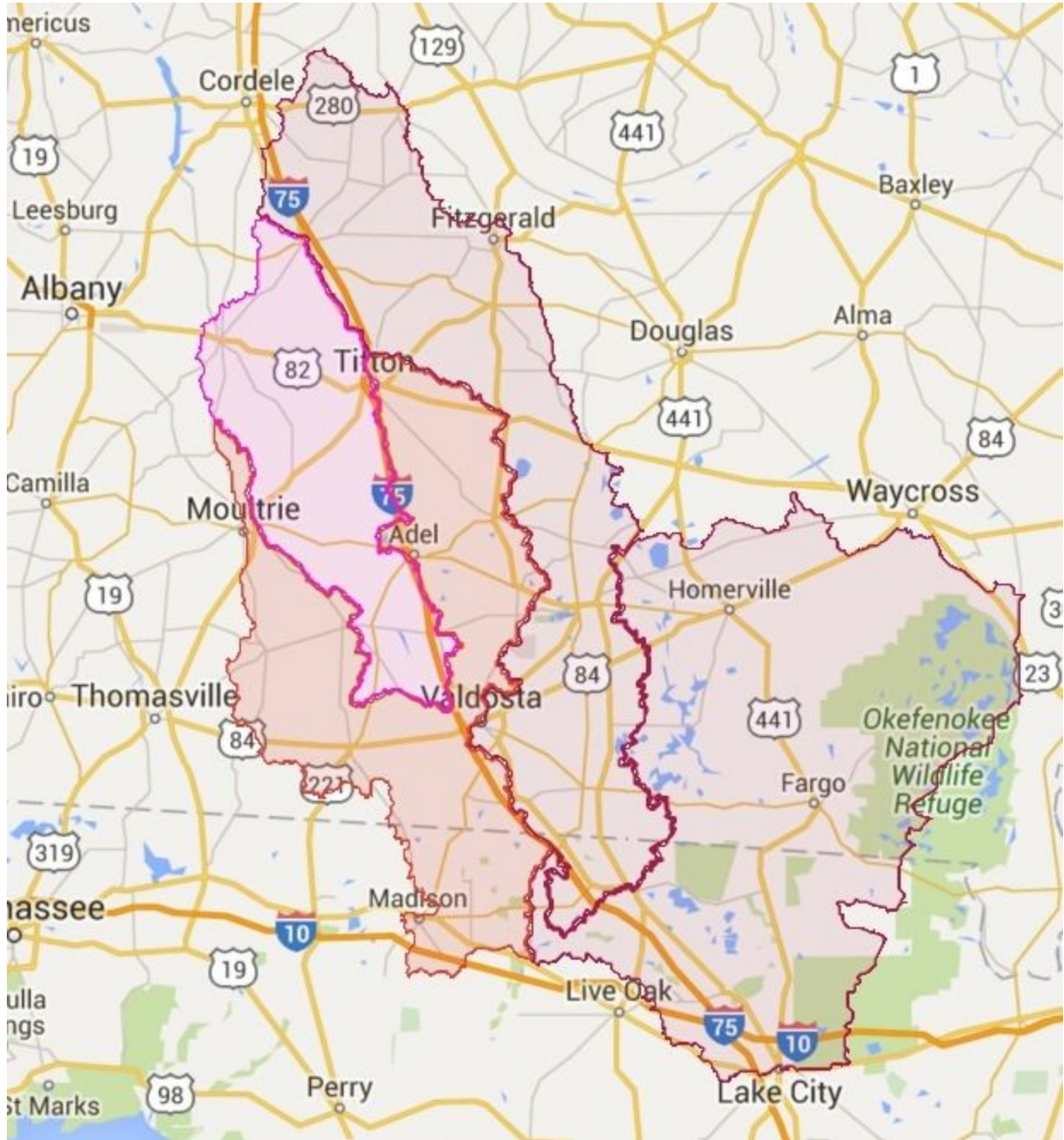


Suwannee River Hydrologic Unit Codes (HUCs)



USGS HUC Finder <http://water.usgs.gov/wsc/acc/031102.html>

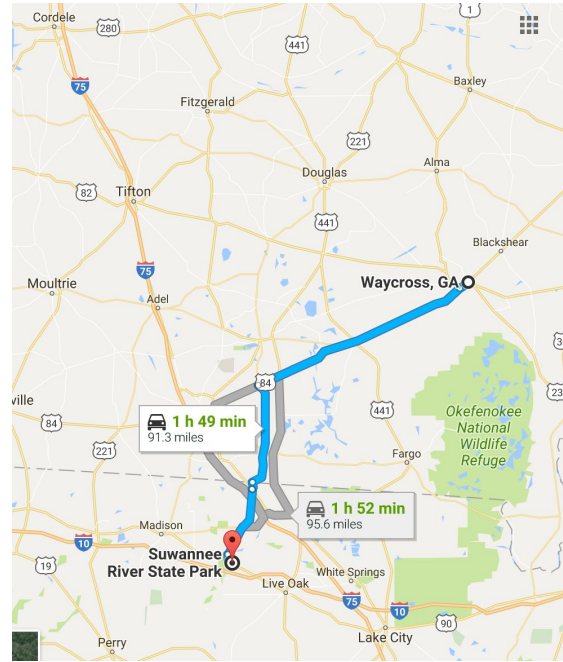
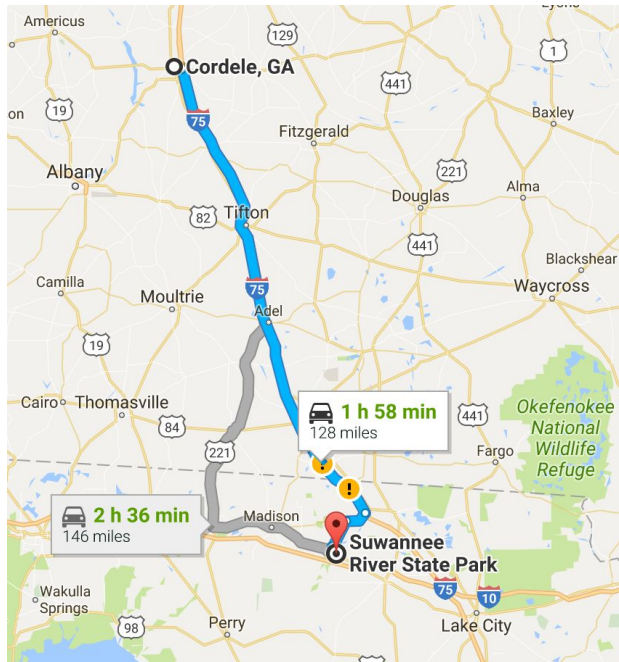
WWALS Watershed Outlines: Upper Suwannee



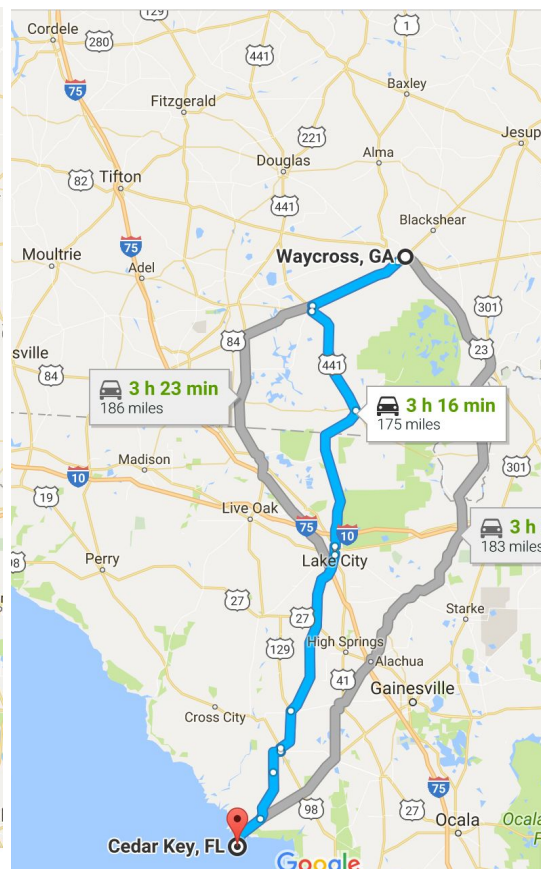
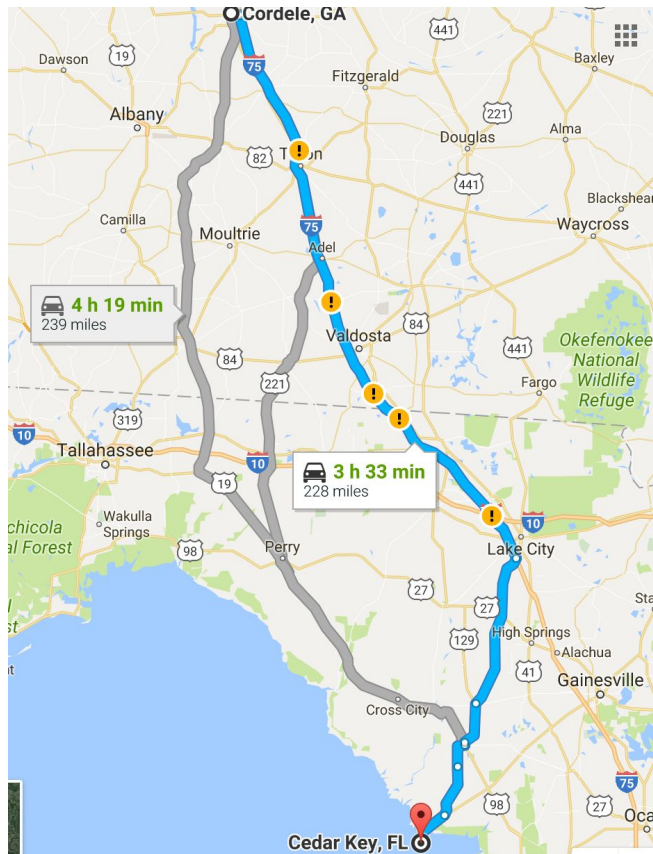
WWALS Watershed Outlines: Upper and Lower Suwannee



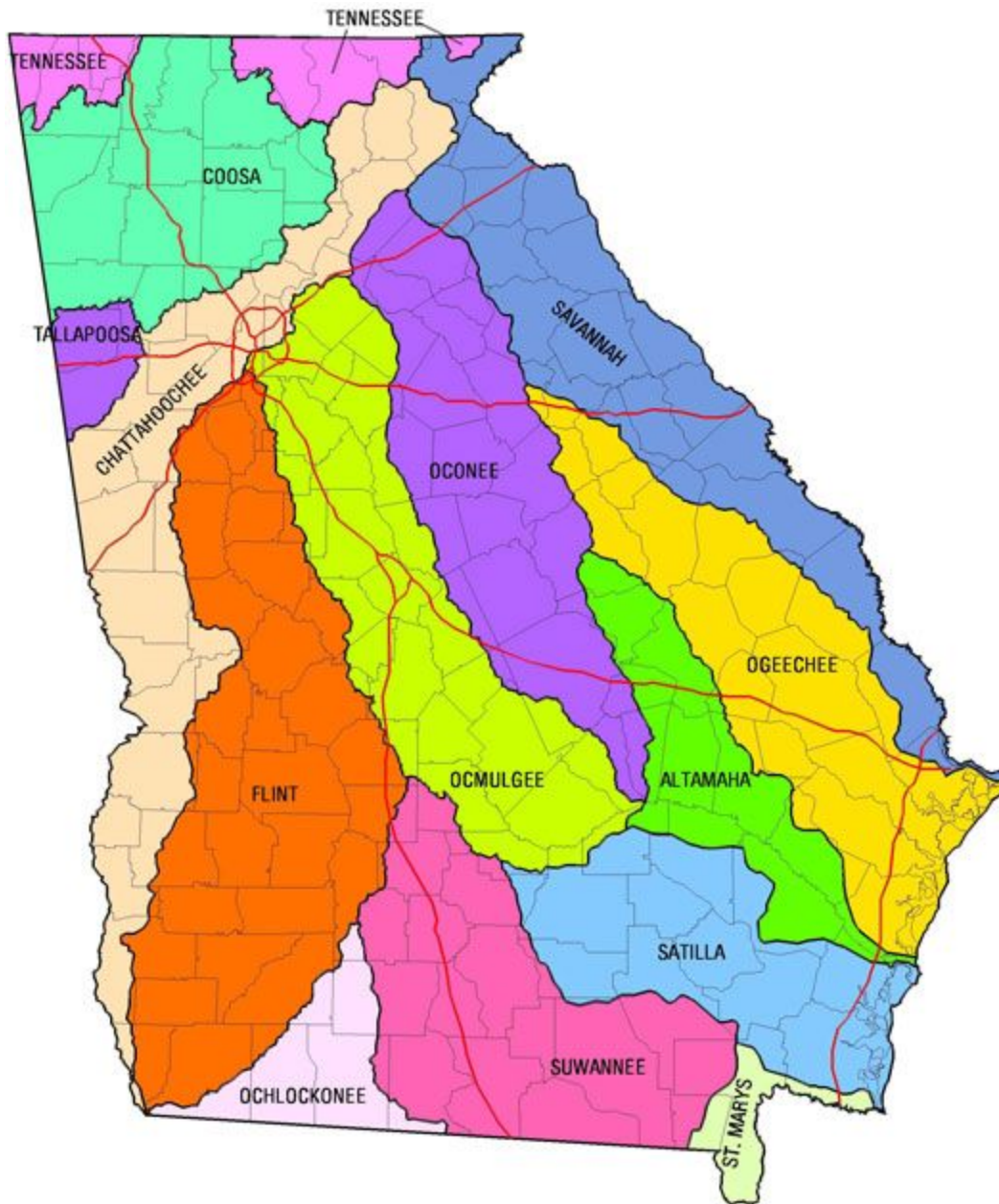
Maximum Distance Across Watershed



Maximum Distance Across Watershed with Lower Suwannee



Watersheds of Georgia: Georgia River Network

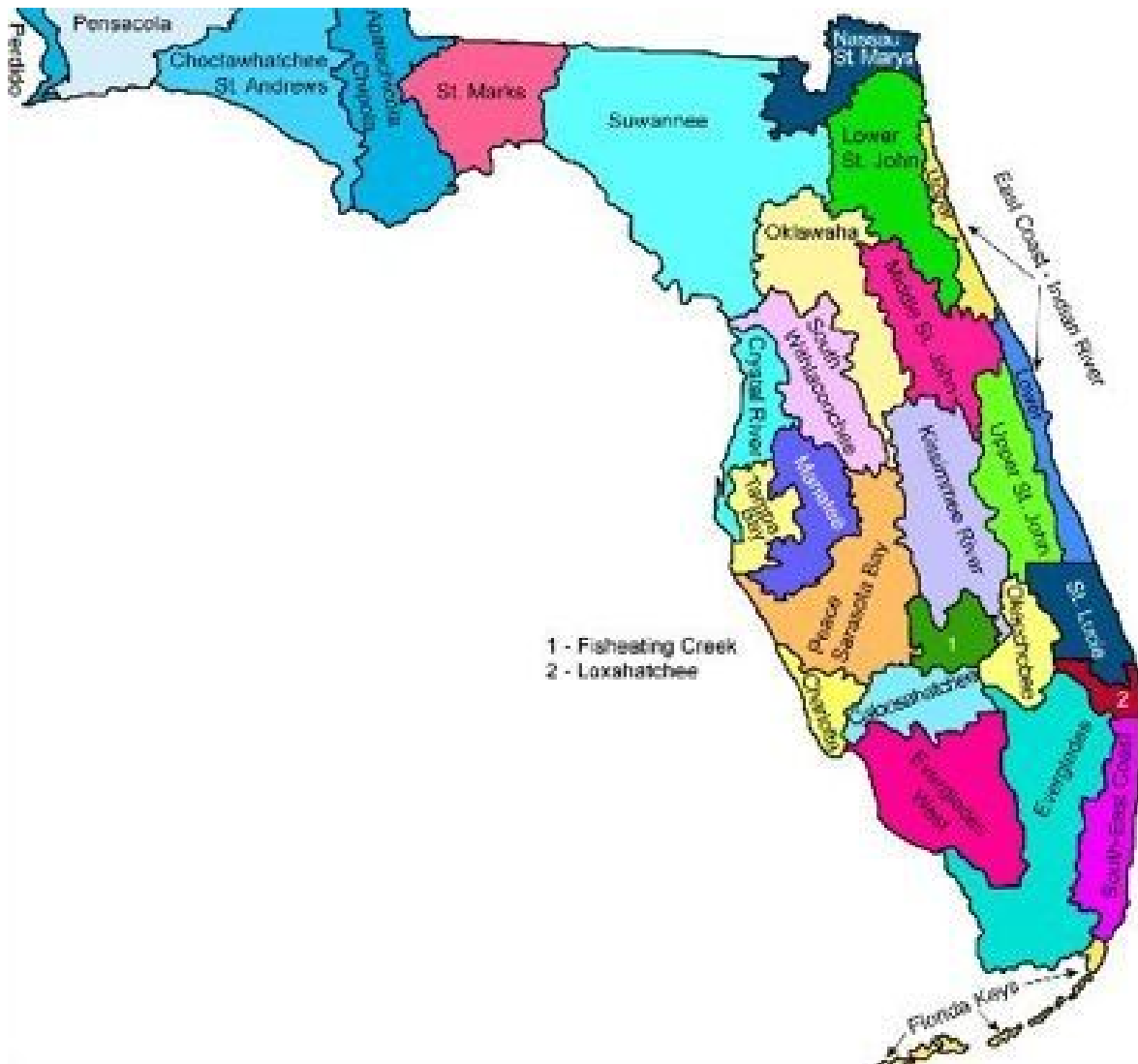


Georgia Waterkeeper Watershed Size Comparisons

- 1,300 square miles: St Marys River (765 in Georgia; 535 in Florida)
- 4,000 square miles: Satilla River
- 5,540 square miles: Ogeechee River
- 6,920 square miles: WWALS (5,720 in Georgia; 1,200 in Florida)
- 8,510 square miles: WWALS with lower Suwannee (5,720 in Georgia; 2,790 in Florida)
- 8,460 square miles: Flint River
- 8,770 square miles: Chattahoochee River (5,940 in Georgia and 2,830 in Alabama)
- 10,577 square miles: Savannah River (5,821 in Georgia; 4,756 in South Carolina)
- 13,600 square miles: Altamaha River (including Ocmulgee and Oconee)

River	HUC	Georgia	Florida	Total
Withlacoochee	(including Little)	2,090	270	2,360
Withlacoochee River	HUC 03110203	(1,206)	(270)	(1,510)
Little River	HUC 03110204	(860)	(0)	(860)
Alapaha River	HUC 03110202	1,726	114	1,840
Willacoochee River	Within Alapaha HUC	(233)	(0)	(233)
Upper Suwannee River	HUC 03110201	1,904	816	2,720
WWALS Upper Suwannee	All of the above	5,720	1,200	6,920
Lower Suwannee River	HUC 03110205	0	1,590	1,590
WWALS Upper and Lower	All of the above	5,720	2,790	8,510

Watersheds of Florida



UFL IFAS Extension

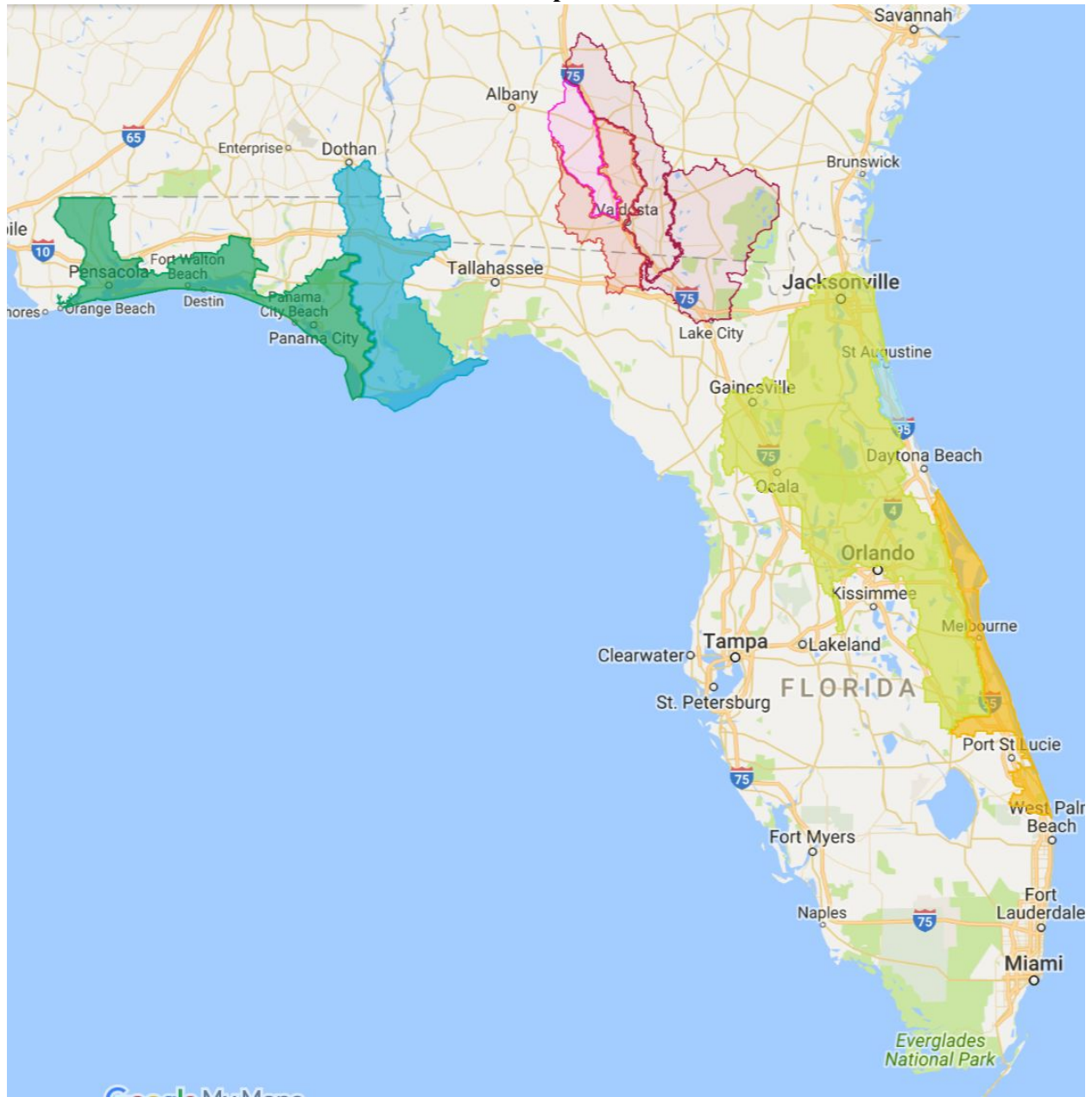
http://edis.ifas.ufl.edu/LyraEDISServlet?command=getImageDetail&image_soid=FIGURE%204&document_soid=AE265&document_version=83670

Rivers Running Into Florida



EPA Surf Your Watershed <https://cfpub.epa.gov/surf/state.cfm?statepostal=FL>

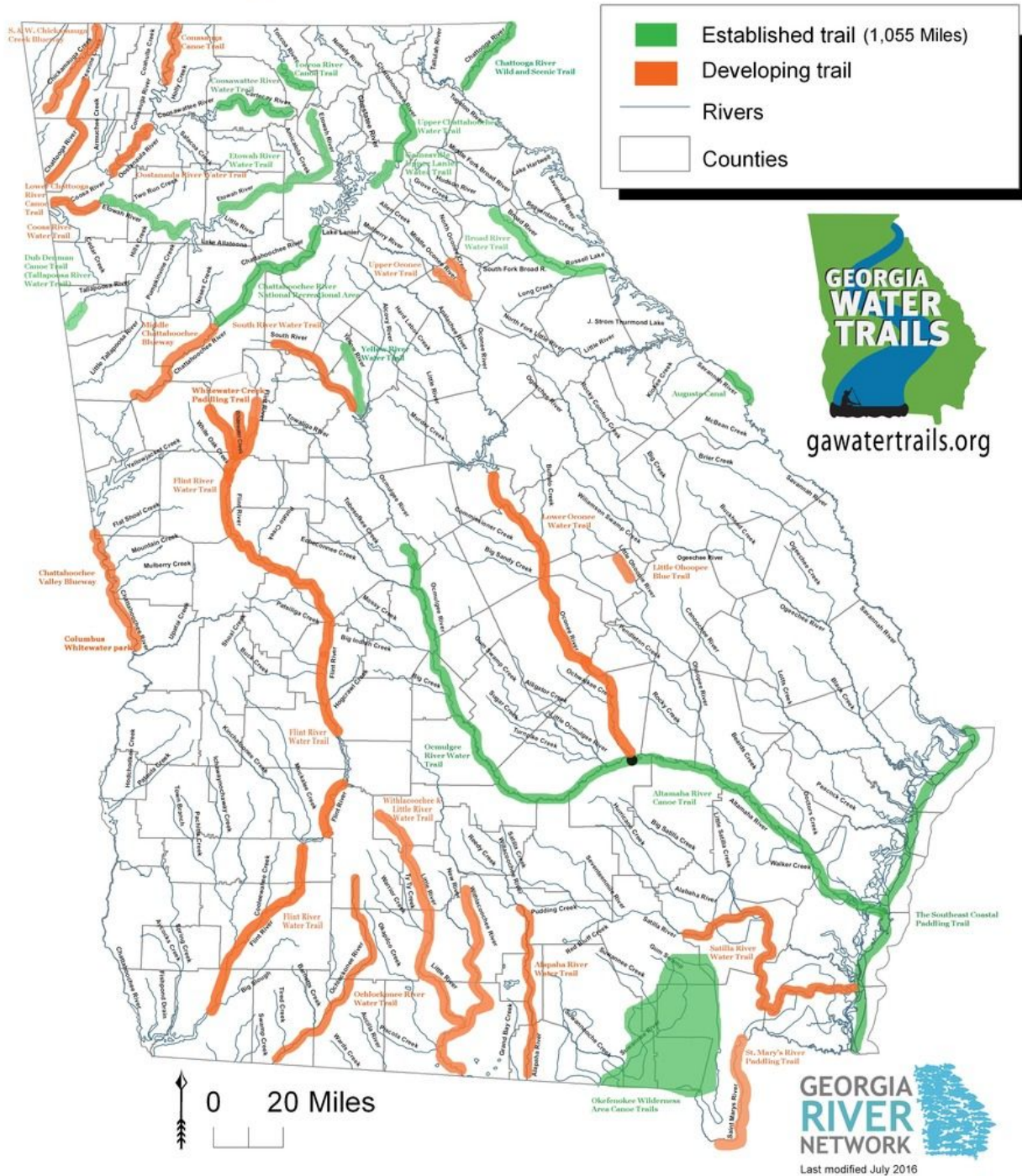
Florida Waterkeeper Watersheds



Not shown: St. Marys, Miami, Caloosahatchee

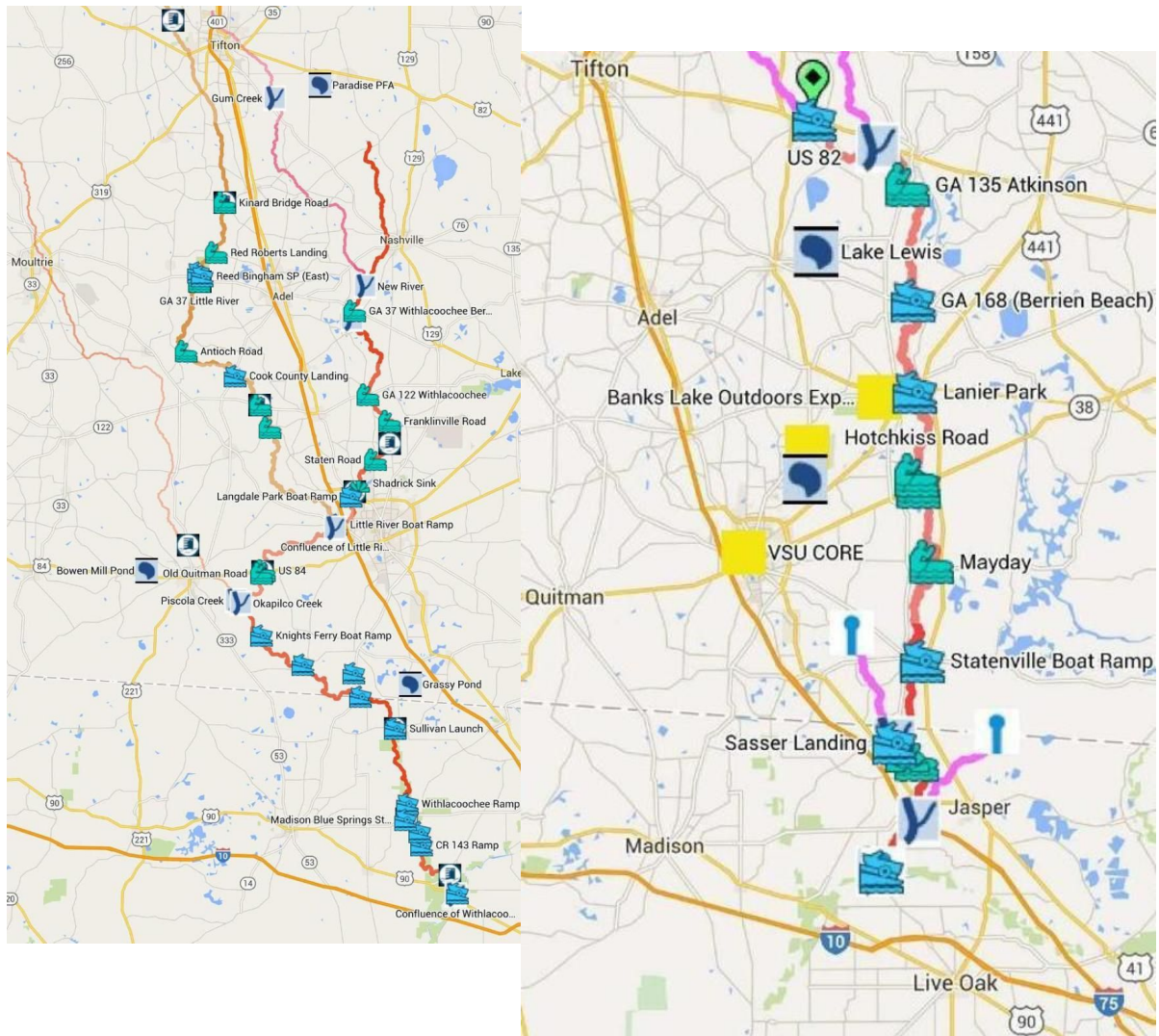
Georgia Water Trails: Georgia River Network

Georgia Water Trails Network



<http://www.garivers.org/gwtc/georgia-water-trails.html>

WWALS Water Trails



Water Trail maps are drawn from spreadsheets

Display:

- Select layers
- Zoom and Pan
- Generate access tables with distances to next landing

Spreadsheet records related information such as:

- High and low water levels
- Pictures
- Tax Assessor parcels

Need:

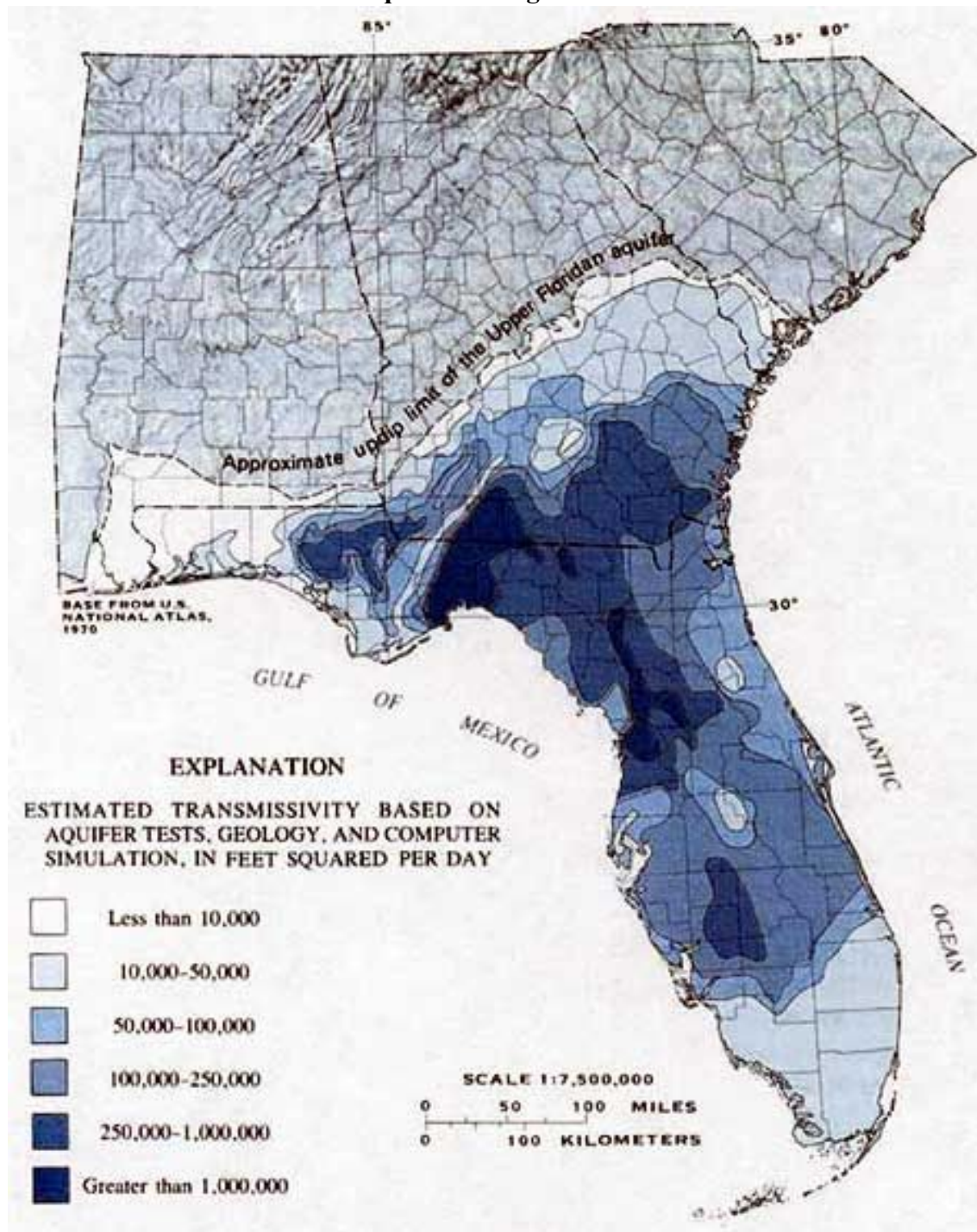
- More automated conversion from spreadsheet to map
- More layers, more datapoints
- Better way for public to enter map data

Floridan Aquifer

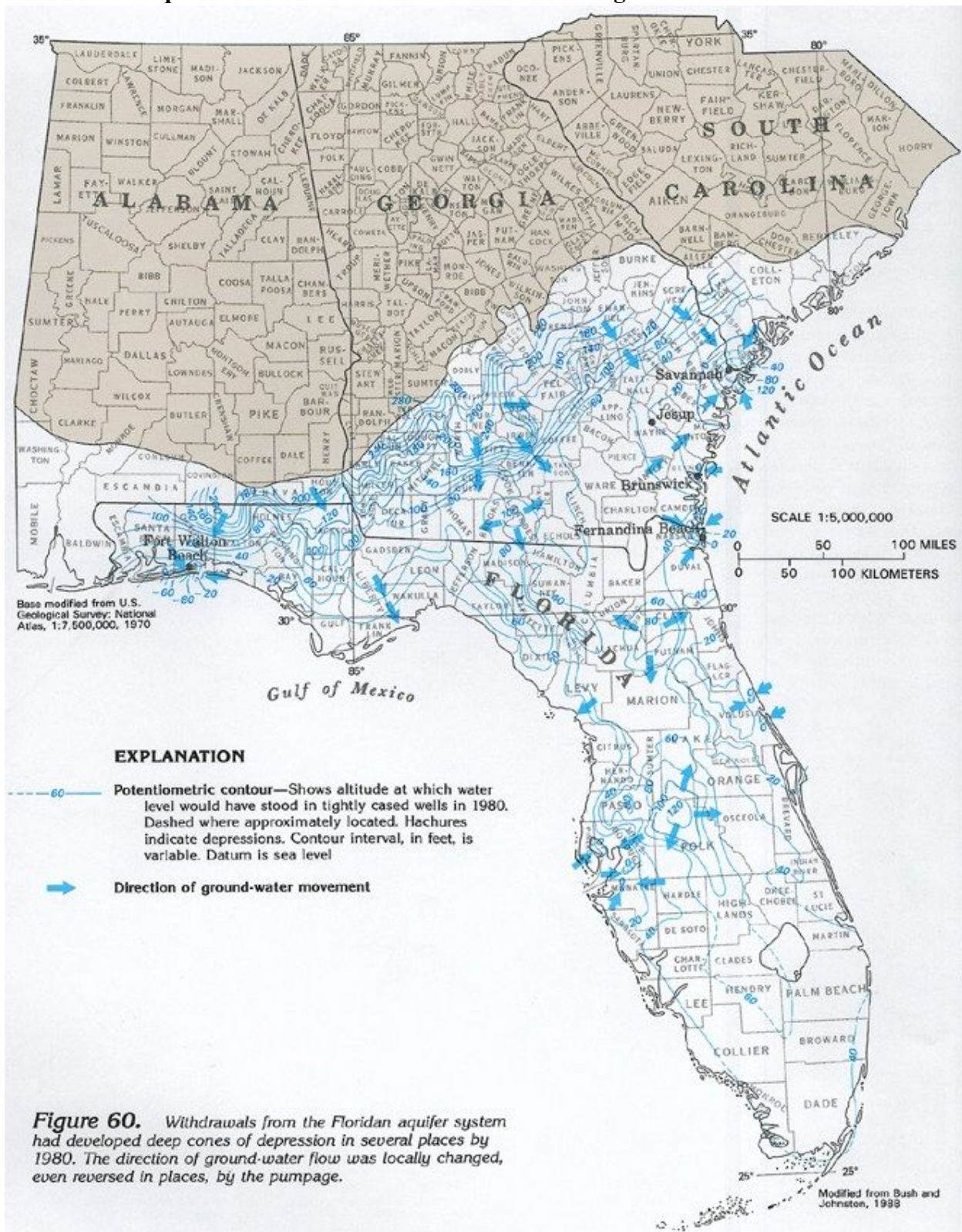


The Floridan aquifer system is one of the most productive aquifers in the world. This aquifer system underlies an area of about 100,000 square miles, and it provides water for several large cities, including Savannah and Brunswick in Georgia and Jacksonville, Tallahassee, Orlando, and St. Petersburg in Florida.

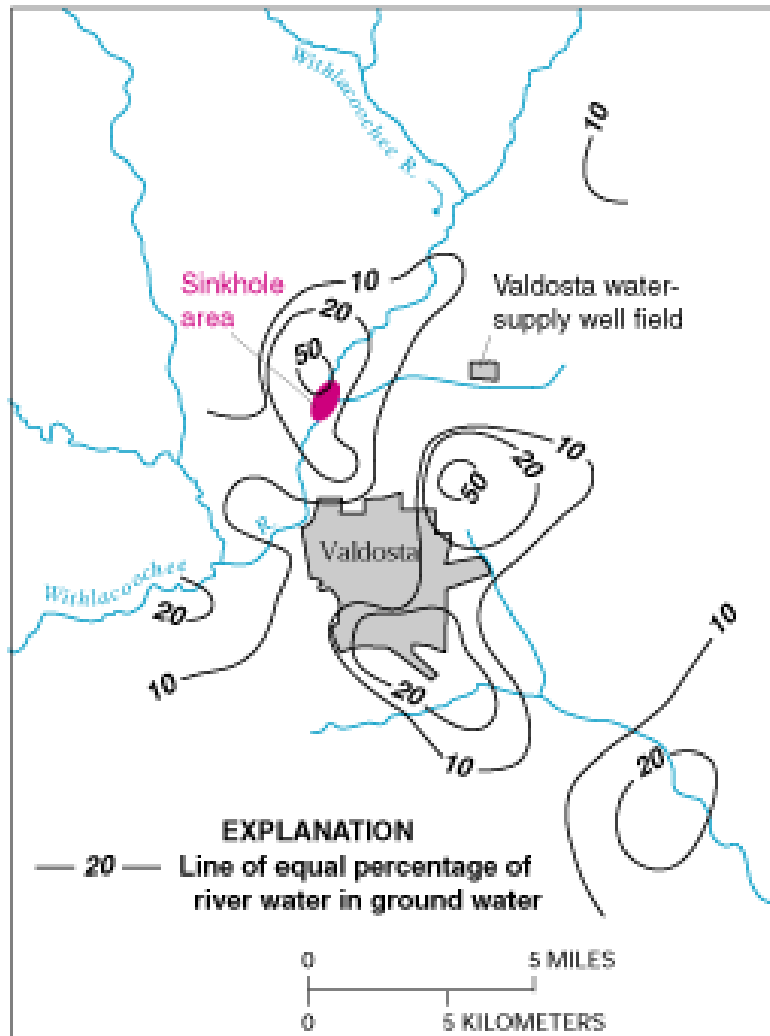
Floridan Aquifer underground water flow



Aquifer Water Withdrawal Effects on Underground Water Flow



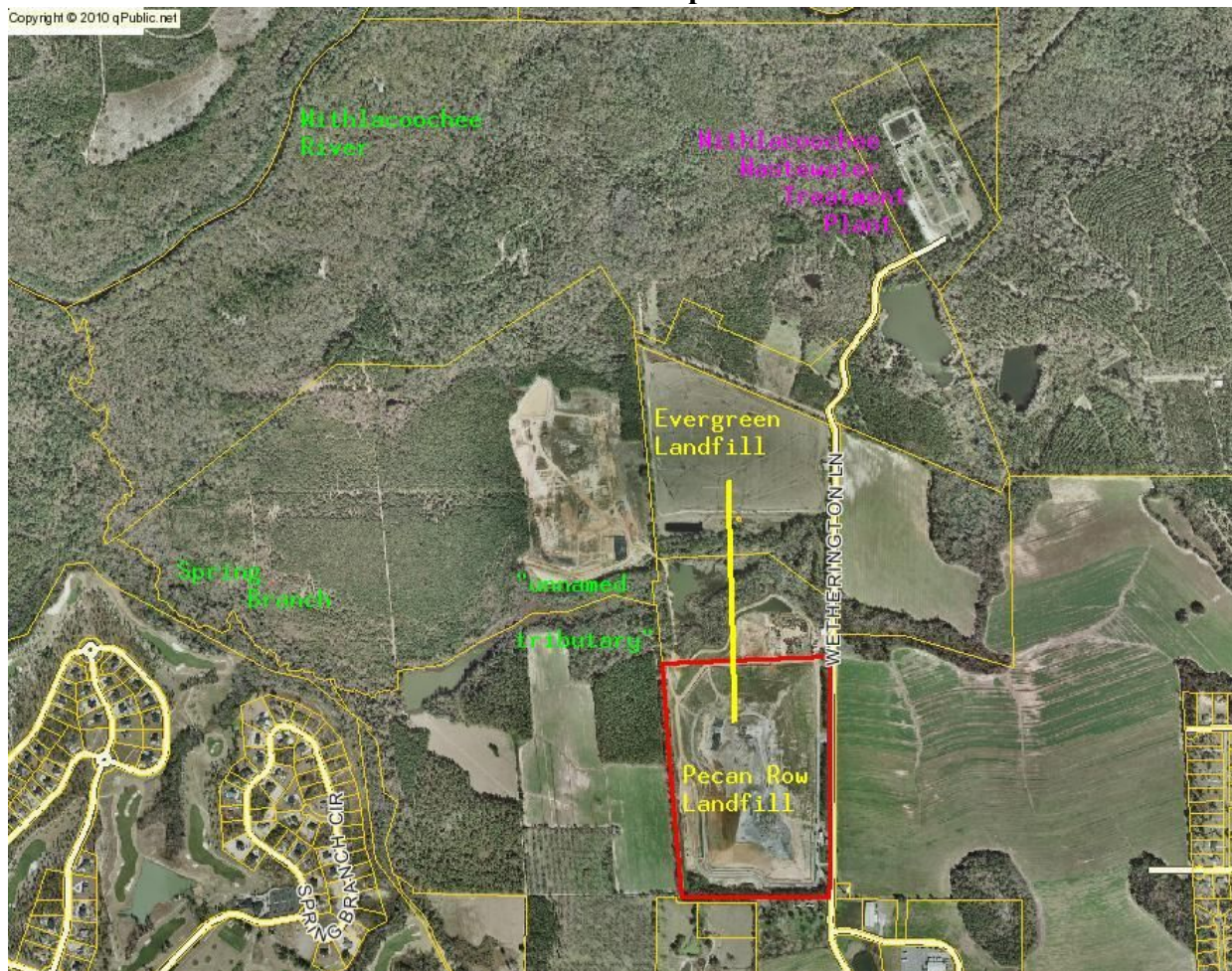
Withlacoochee River Water Flow to Valdosta Water Wells



<http://www.wwals.net/2014/09/01/usgs-warns-withlacoochee-river-already-leaks-floridan-aquifer/#G060>

Obvious application to pipeline opposition
But that's not all

Landfill Maps



Annotated by jsq

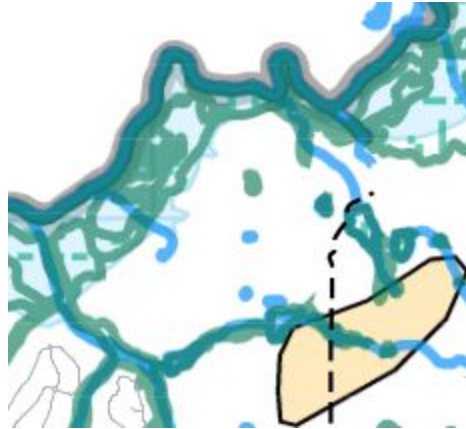
Many map sources:

- USGS HUC, Streamer
- EPA MyWaters Mapper
- Georgia: EDP, etc.
- Florida: DEP, SRWMD, etc.
- County Comprehensive Plans
- Tax Assessors (Georgia)
- Property Appraisers (Florida)
- VALORGIS (Valdosta and Lowndes County)
- LiDAR from Valdosta, SRWMD, etc.
- Google Maps, Google Earth

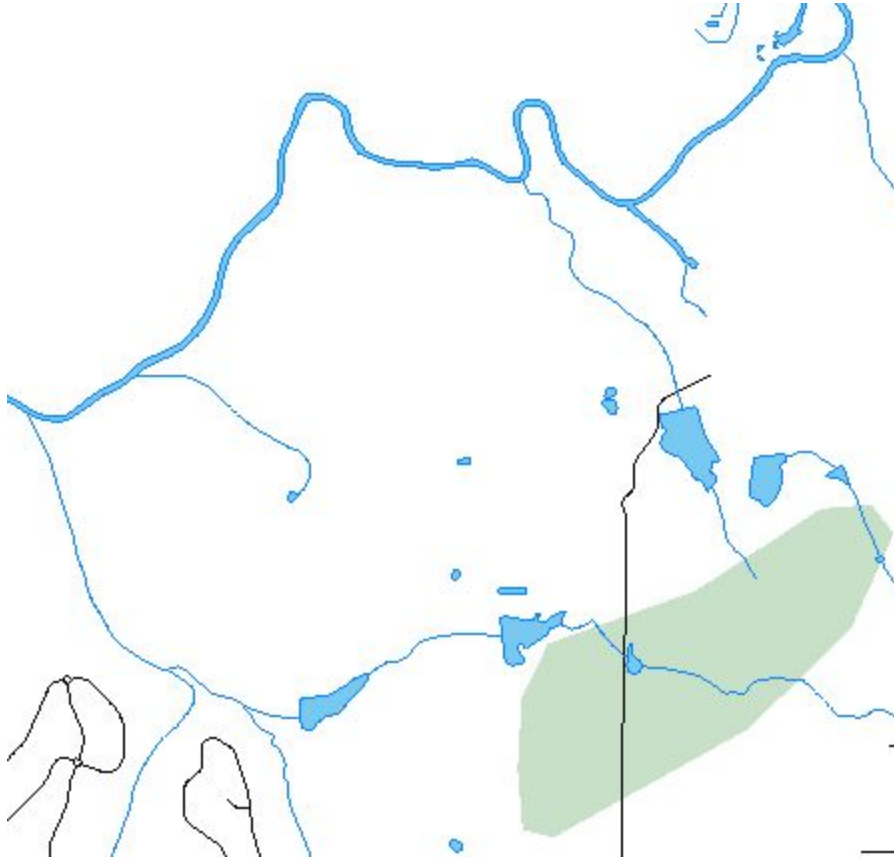
Construct maps from sources:

- USDA KML files with watershed boundaries and river traces
- River mile distances computed by WWALS members
- Or recorded by WWALS members on outings
- Shoals, springs, sinks, invasive species, water quality, etc.

Lowndes County Comprehensive Plan



VALORGIS



There is no end of maps needed:

- Context, detail, comparison, topo, aerial, road, rail, river, population, hydrology, etc.
- From external sources
- Generated by WWALS

Maps illustrate everything.