

CHANGING THE LANDSCAPE

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CHATHAM COUNTY MOSQUITO CONTROL

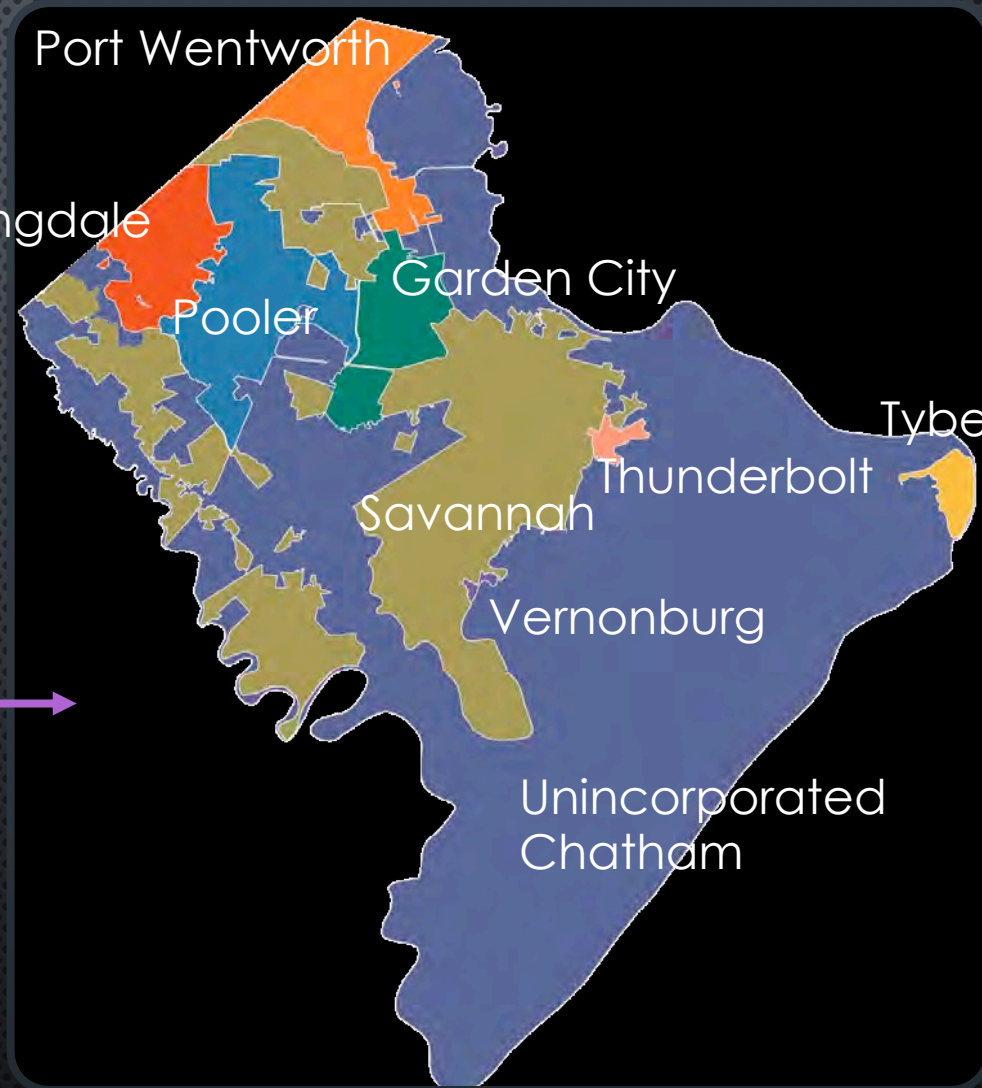
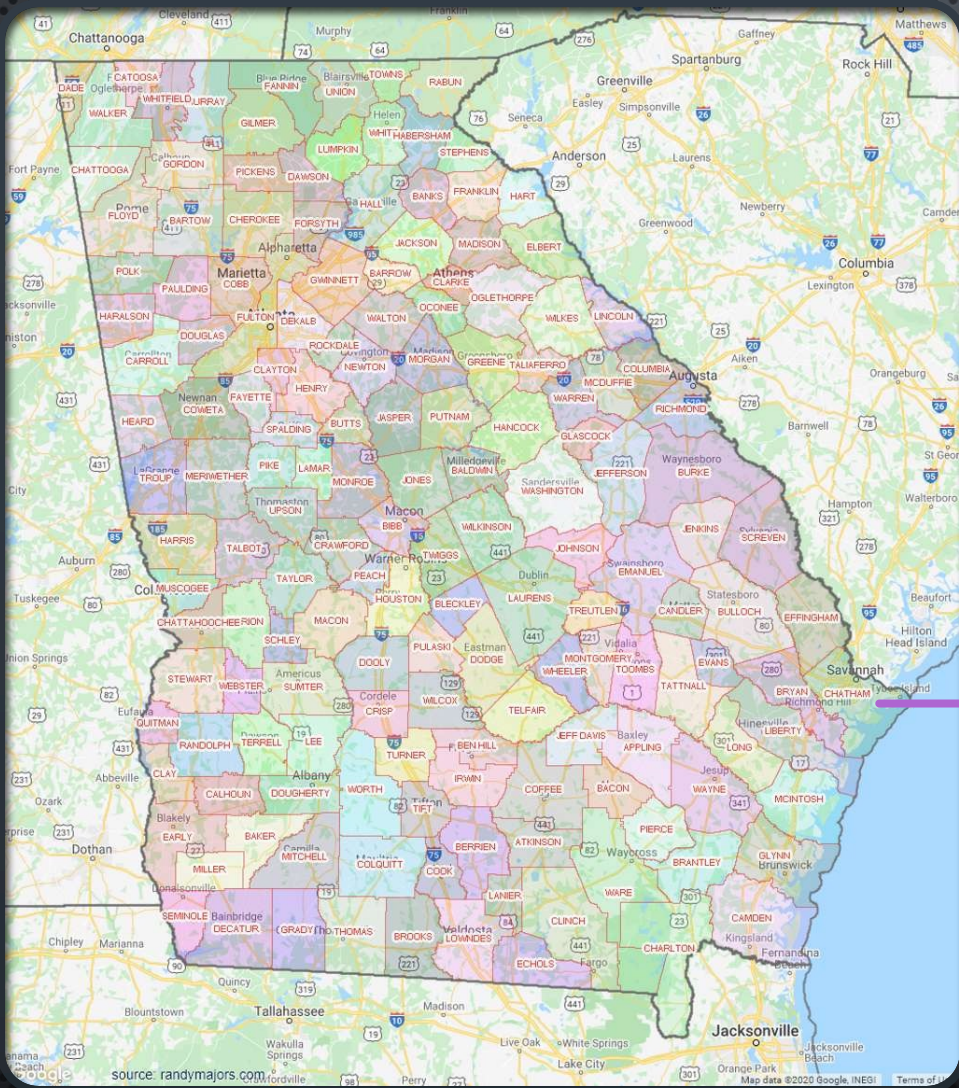
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Take
flight
with
us!





Port Wentworth

Bloomingdale

Pooler

Garden City

Tybee

Thunderbolt

Savannah

Vernonburg

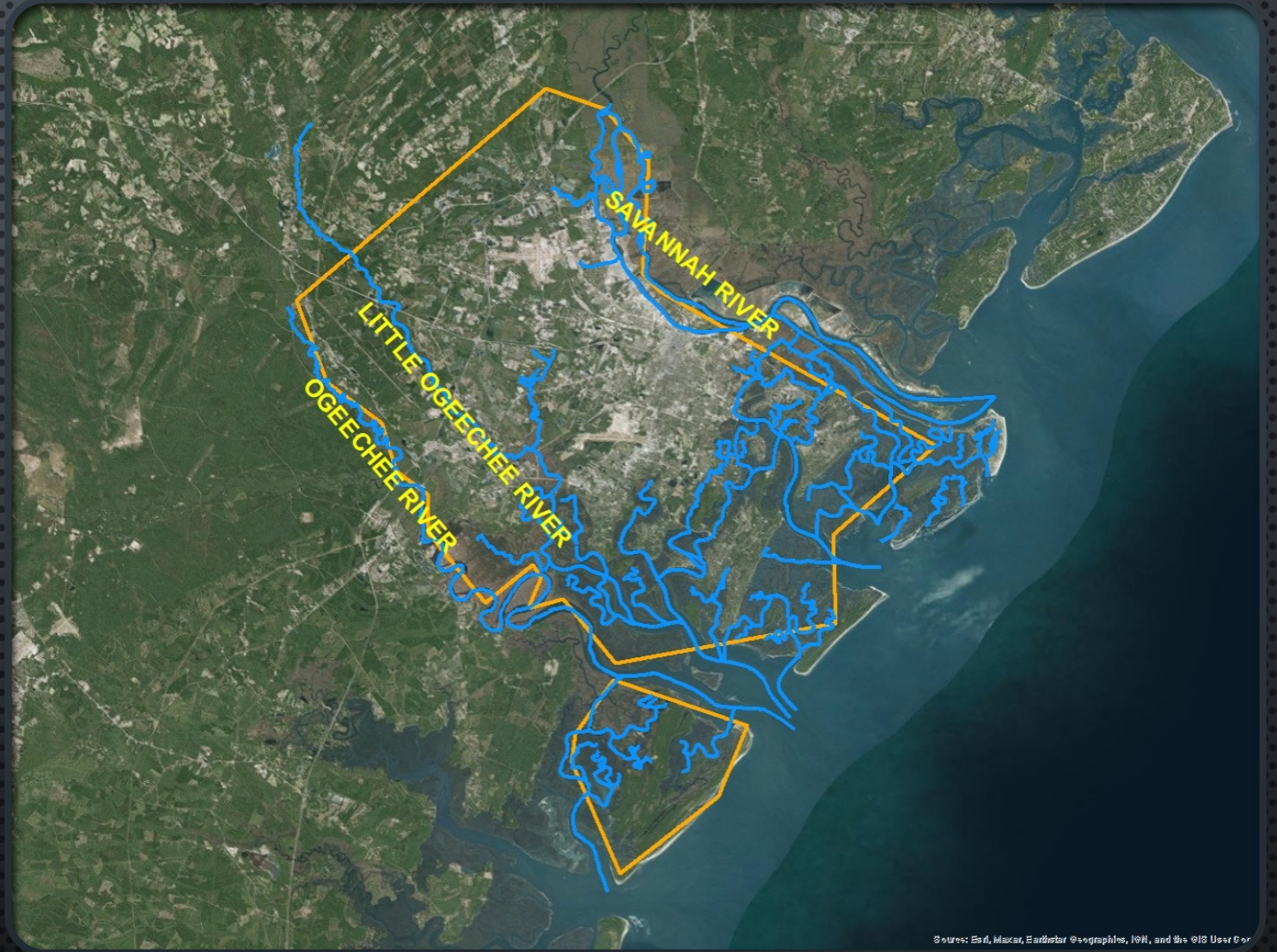
Unincorporated Chatham

RIVERS

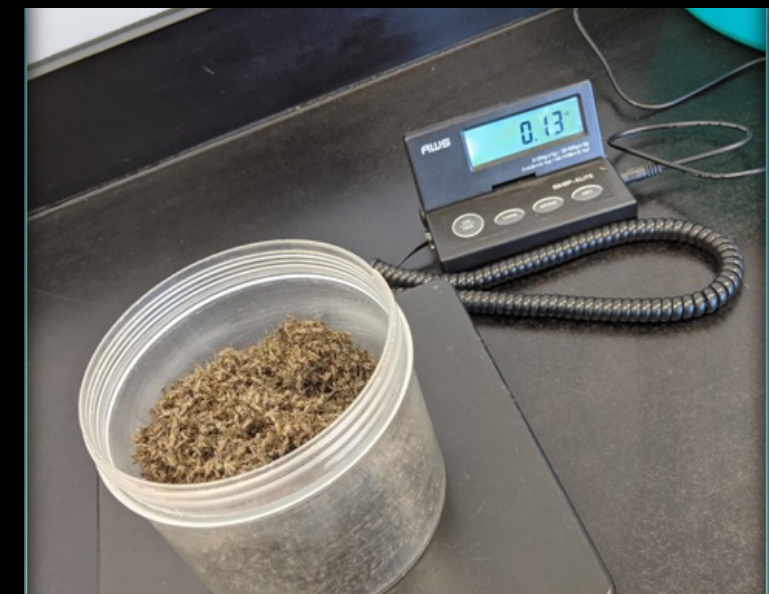
- SAVANNAH RIVER
- LITTLE OGEECHEE
- OGEECHEE

WATERSHED

- ~618.04 SQ MI FOR THE ENTIRE COUNTY
- CC STORMWATER SYSTEM SEA-LEVEL RISE VULNERABILITY ASSESSMENT :
COASTAL WATERSHED MANAGEMENT PLAN 2020



Source: Esri, Maxar, Earthstar @satellite, IGN, and the GIS User Group



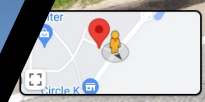


FROM TREES TO WAREHOUSES



May 2019 See more dates

Apr 2022 See more dates



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"In unincorporated Chatham County, the transportation and warehousing, and utilities industry was about 1.5 times more concentrated than the national average in 2014–2018. The 3,417 jobs in this sector made up 7.7% of the area’s workforce. The same year, Savannah’s most concentrated industry was arts, entertainment, recreation, accommodation, and food services, which accounted for nearly twice the share of employment in the city as it did nationally. The 11,093 jobs in this sector made up 16.8% of the city’s workforce.” – Comprehensive Plan Summary 2040

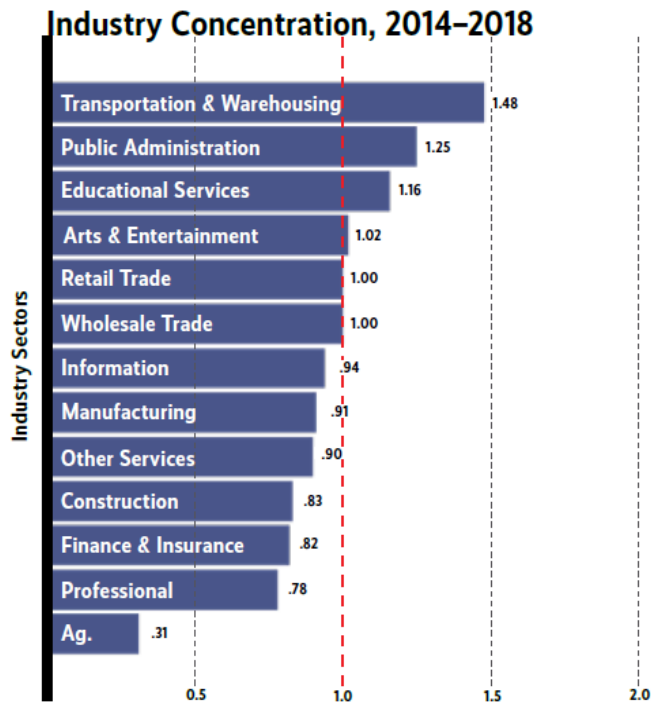


Figure 1.13–Industry Location Quotient, Unincorporated Chatham
 U.S. Census Bureau: 2018 American Community Survey 5-Year Estimates

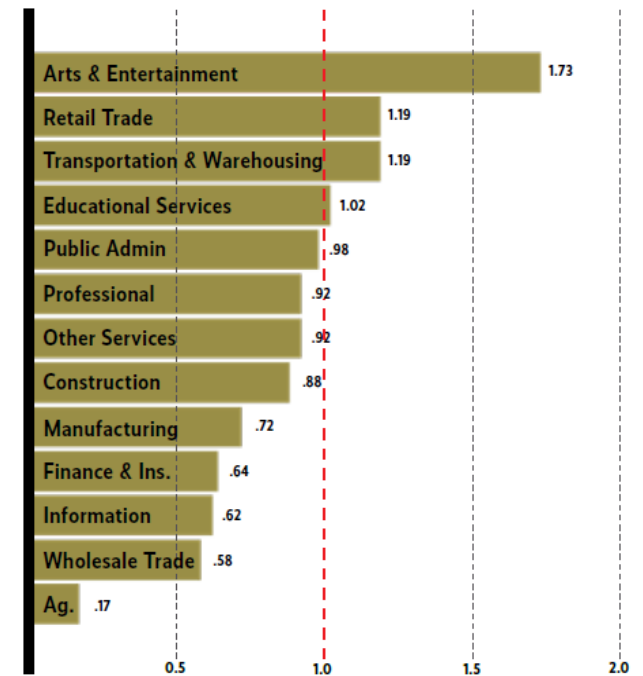


Figure 1.14–Industry Location Quotient, Savannah

5 YEARS AGO....

Existing Land Use Classifications, 2018

LAND USE CLASS	ACRES	PERCENT (%)
Single Family	15,093	7.11
Multi-Family	209	.10
Commercial (Includes Office)	2,100	.99
Industrial	8,469	3.99
Unimproved Properties	7,176	3.38
Open Space (Undeveloped, Wetlands, Marsh, Parks, Conservation Lands)	127,603	60.07
Water	51,739	24.36
Total	212,389	100
Total Excluding Water	160,650	75.64

Figure 4.1–Land Use Classification, Unincorporated Chatham

LAND USE CLASS	ACRES	PERCENT (%)
Single Family	8,934	12.03
Multi-Family	583	.79
Commercial (Includes Office)	2,242	3.02
Industrial	13,726	18.48
Unimproved Properties	3,746	5.04
Open Space (Undeveloped, Wetlands, Marsh, Parks, Conservation Lands)	43,621	58.74
Water	1,415	1.91
Total	74,267	100
Total Excluding Water	72,854	98.10

Figure 4.2–Land Use Classification, Savannah

WHAT DOES THIS MEAN FOR MOSQUITO CONTROL

LOST AND ADDED SITES

- OVER THE PAST 4 YEARS WE HAVE REMOVED ~20 SITES DUE TO CONSTRUCTION.
 - WE MONITORED THE SITE FROM LEVELING THE TREES THROUGH CONSTRUCTION TO BUILDINGS
 - LARGE RETENTION PONDS CAPTURE THE RUNOFF
- WE HAVE ADDED ~10 NEW SITES DUE TO CONSTRUCTION
 - RUNOFF IS NOT SUFFICIENTLY CAPTURED OR NEW HOMES ARE BUILT IN/NEARBY SWAMPS
 - PLACES WE DID NOT HAVE TO THINK OF NUISANCE MOSQUITOES ARE NOW A MUCH LARGER PROBLEM

STORMWATER PRESSURE

- NEWLY BUILT PROPERTIES RARELY HAVE STORMWATER/CATCH BASIN ISSUES
 - WHAT ABOUT IN 10-15 YEARS? AT WHAT POINT DO THESE SYSTEMS AGE?
- TYING NEW BUILDS INTO OLD SYSTEMS WITHOUT AN UPGRADE
- WATER ROLLS DOWNHILL
 - WE ARE AT SEA LEVEL
 - THE ISLANDS ARE HAVING ISSUES WITH SEPTIC TANKS FAILING

Habersham Canal System

- Drains 1400 acres
- >1500 feet of perennial channel
- Fed largely by urban stormwater conveyance

Harmon Canal System

- Drains 2360 acres
- >22000 feet of perennial channel
- Two nearly equal main branches
- Not tide gated
- High pathogen concentrations historically

Wilshire Canal System

- Drains 1870 acres
- >21000 feet of perennial channel
- Two branches with one much larger than the other
- The larger is tide gated
- High pathogen concentrations historically

Minor Tributaries

- At least 3 more significant but many lesser along both sides of the estuary
- Largest drains 800 acres
- >3900ft of perennial channel
- Not tide gated

Casey Canal System

- Drains 6440 acres
- 25,880 feet of main channel in Casey Canal
- Fed largely by urban stormwater conveyance
- Highly managed and channelized
- Two large stormwater pump systems
- Tide gated
- High historic pathogen concentrations in the upstream portion

Vernon River Estuary

- Drains about 16,000 acres
- Tidal Range of 5 to 10 feet
- Extensive salt marsh platform morphology
- Main Channel Width: 100 to 1000ft
- Marsh Platform Width: 1000-5000ft
- Salinity of about 19ppt, very consistent in the lower portion
- High dilution rate versus freshwater inputs
- High historic pathogen concentrations in the upper portion

RIVER BASIN STUDIES

VERNON RIVER

MOSTLY RESIDENTIAL
SEWER LINES
FAILING PUMPS/TIDE GATES
CANAL BLOCKAGES

LITTLE OGEECHEE
- COMING SOON

Calculate Stormwater Runoff

First, calculate the square foot of all hard, impervious surfaces such as driveways, sidewalks, and other roofed or concrete areas that do not allow water to soak in by measuring in feet and the multiplying length times width.

Runoff from 1" rain = length x width x 0.623

a cubic foot of water is 7.48gal divided by the 12in in a foot

My house – not including my driveway, shed, or patio
2000 sq ft x 0.623 = 1,246 gallons

Know the Flow

First...
Calculate area of all impervious surfaces (Such as driveways, sidewalks, patios and concrete areas)

Area = length x width

Length = 25 feet
Width = 40 feet
25 ft x 40 ft = 1,000 sq.ft

Then...
Estimate the amount of water generated from a 1" rain:

Multiply roof area (in sq.ft.) by .623

1,000 sq.ft. x .623 = 623 gallons!
1,250 sq.ft. x .623 = 780 gallons!
3,000 sq.ft. x .623 = 1869 gallons!

<https://www.uaex.uada.edu/environment-nature/water/stormwater/nwastormwater/drainage-issues/calculate-runoff.aspx>





Thank You

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