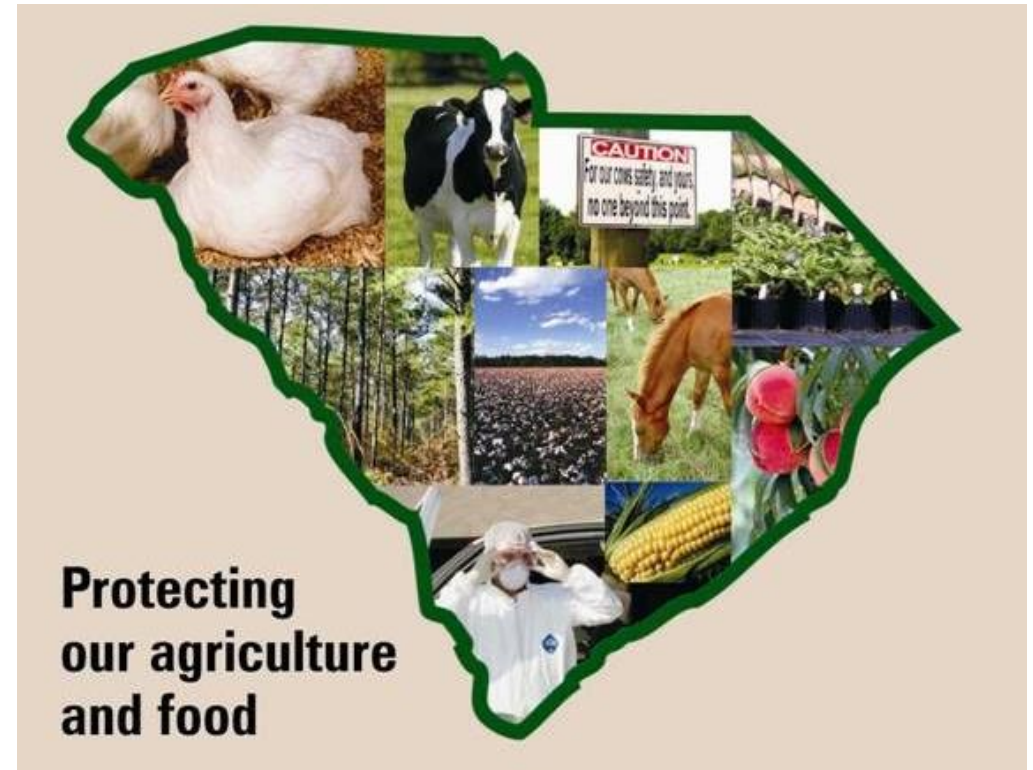




COOPERATIVE EXTENSION
College of Agriculture, Forestry and Life Sciences

SALUDA RIVER BASIN AGRICULTURE OVERVIEW

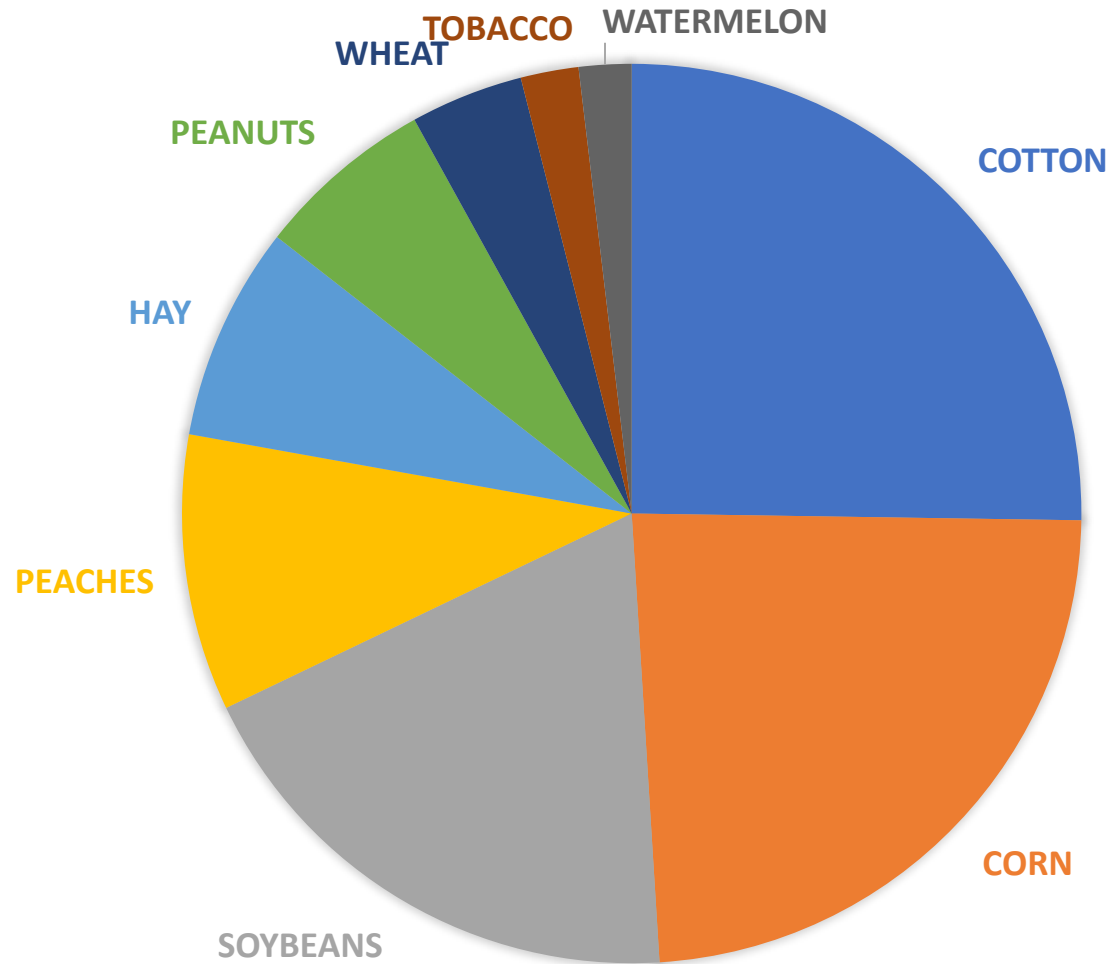
Dr. Nathan Smith & Trey Buckelew



South Carolina Agriculture

- 2017 Ag Census counted 24,600 farms on 4.8 million acres of farmland.
- Poultry is the top commodity in cash value, chickens, eggs and turkey totaling over billion in production value. Beef, dairy, swine, horses, aquaculture, goats, bees, and specialty animals are all vitally important to South Carolina agriculture.
- The state's fruits and vegetables are a big part of the state's agricultural production with leafy greens, tomatoes and watermelon leading rankings and South Carolina peaches ranked 2nd nationally. The diversity of the state's produce revenues is growing.
- Field crops including corn, cotton, soybeans, peanuts, tobacco and wheat are grown on over 1.3 million acres.
- The state's green industry including ornamental horticulture, floriculture, nursery, and turf grass ranks 2nd as South Carolina's second largest agricultural industry cluster in cash value.

SC MAJOR CROPS BY VALUE OF PRODUCTION, 2022



| | |
|-------------------|----------------------|
| COTTON | \$285,639,000 |
| CORN | \$269,010,000 |
| SOYBEANS | \$213,564,000 |
| PEACHES | \$98,480,000 |
| HAY | \$87,318,000 |
| PEANUTS | \$72,828,000 |
| WHEAT | \$45,885,000 |
| TOBACCO | \$23,548,000 |
| WATERMELON | \$21,376,000 |

Source: USDA National Agricultural Statistics Service, (Peaches Value estimated using previous 2 years price)



SC FARM & LIVESTOCK OVERVIEW

Farms Operations†

| | |
|--|-----------|
| Farm Operations - Area Operated, Measured in Acres / Operation | 195 |
| Farm Operations - Number of Operations | 24,600 |
| Farm Operations - Acres Operated | 4,800,000 |

Livestock Inventory †

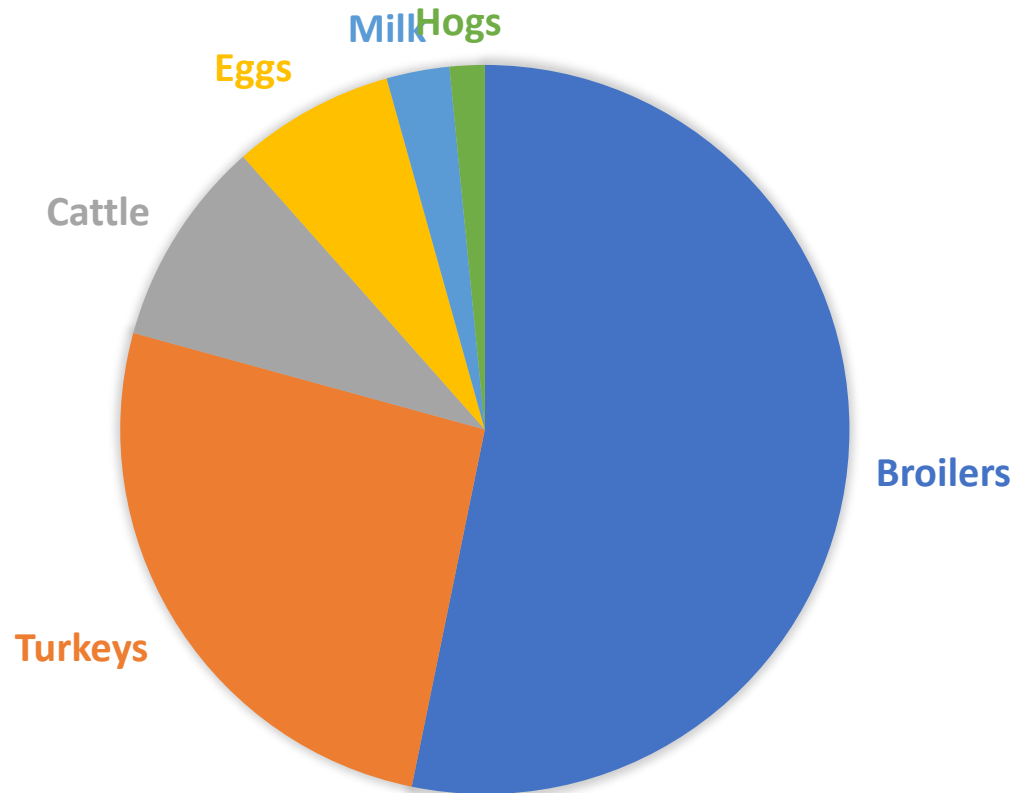
| | |
|--|-------------|
| Cattle, Cows, Beef - Inventory (First of Jan. 2023) | 159,000 |
| Cattle, Cows, Milk - Inventory (First of Jan. 2023) | 9,000 |
| Cattle, Incl Calves - Inventory (First of Jan. 2023) | 315,000 |
| Goats, Meat & Other - Inventory (First of Jan. 2023) | 33,000 |
| Goats, Milk - Inventory (First of Jan. 2023) | 3,200 |
| Hogs - Inventory (First of Dec. 2022) | 158,000 |
| Chickens, Broilers - Production, Measured in Head (2020) | 243,500,000 |
| Turkeys - Production, Measured in Head* (2020) | 11,000,000 |

Milk Production †

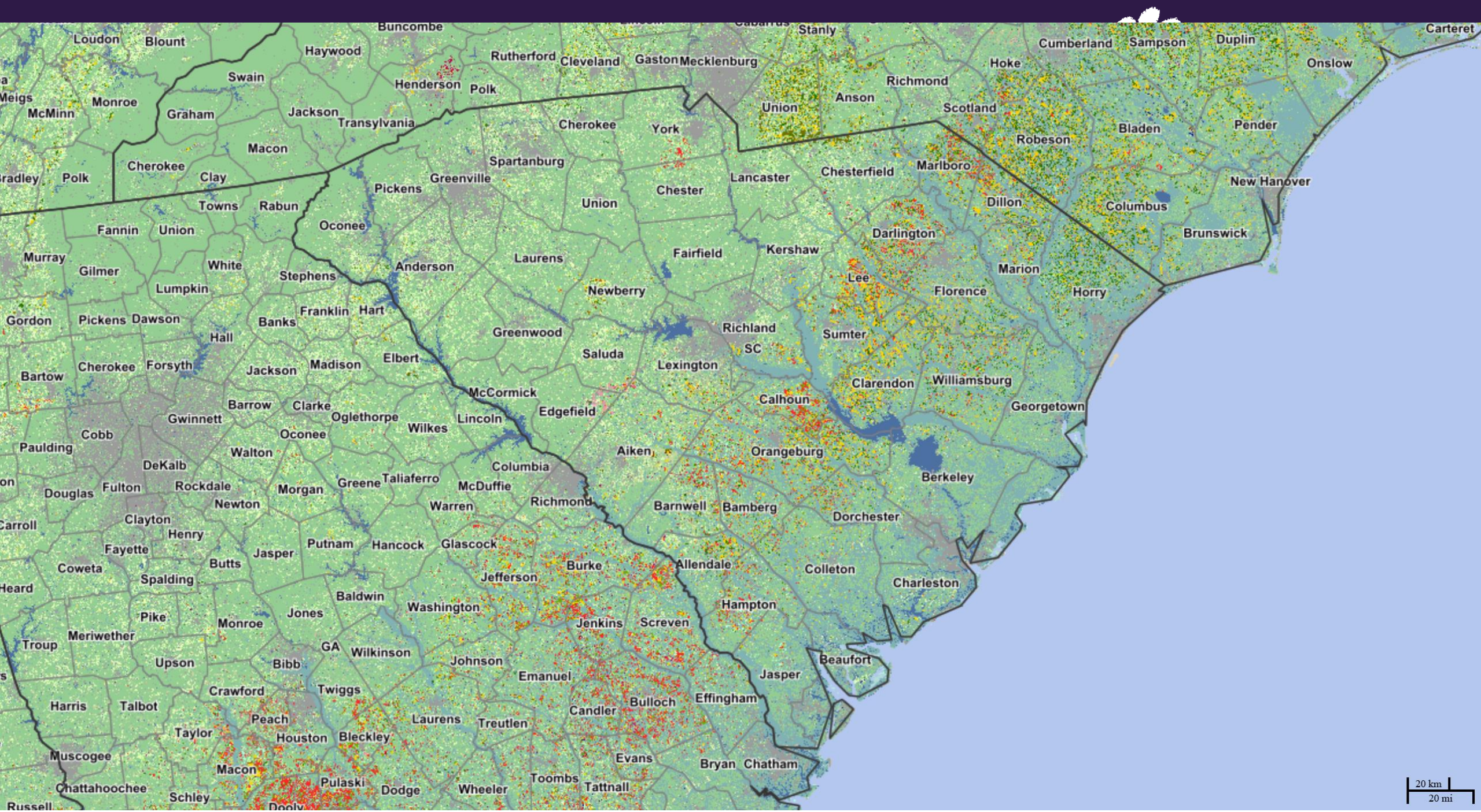
| | |
|--|-------------|
| Milk - Production, Measured in Lb / Head | 17,8890 |
| Milk - Production, Measured in Lb | 161,000,000 |

NASS estimates, *Non-NASS estimate

SC LIVESTOCK BY VALUE, 2021



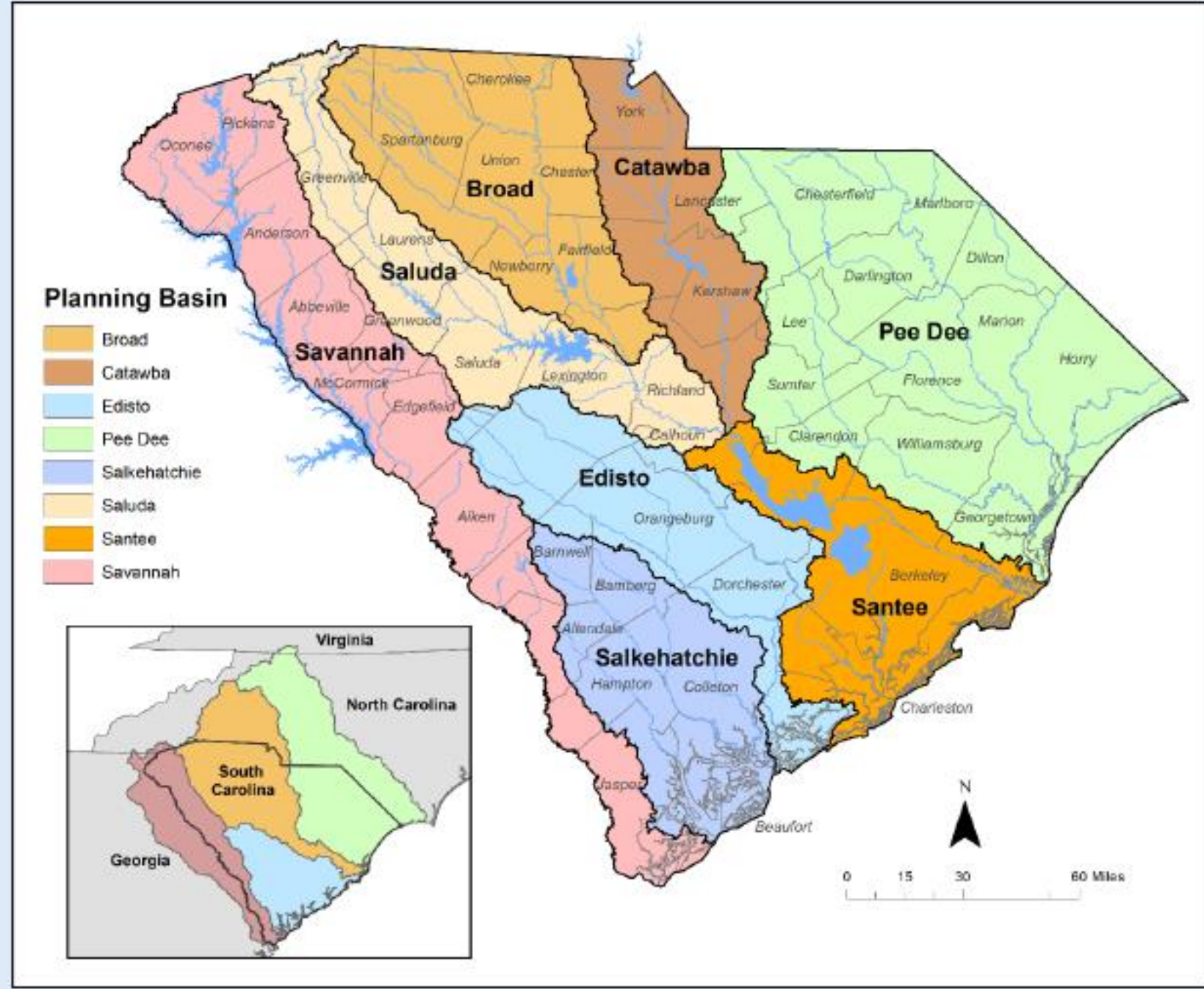
| | |
|-----------------|------------------------|
| Broilers | \$1,008,353,000 |
| Turkeys | \$500,000,000 |
| Cattle | \$123,954,000 |
| Eggs | \$92,559,000 |
| Milk | \$35,512,000 |
| Hogs | \$23,128,000 |



20 km
20 mi

Forestry

- Forestland makes up nearly 70% of the state's total land area.
- Private owners hold a combined 88% of the state's timberland area with private individuals controlling over half of those acres.
- Forestry is #1 among manufacturing industries in the state with a total economic impact of around \$17 billion annually.
- South Carolina exports \$1.4 billion in forest products each year. Timber is the state's #1 renewable commodity at \$759 million annually.





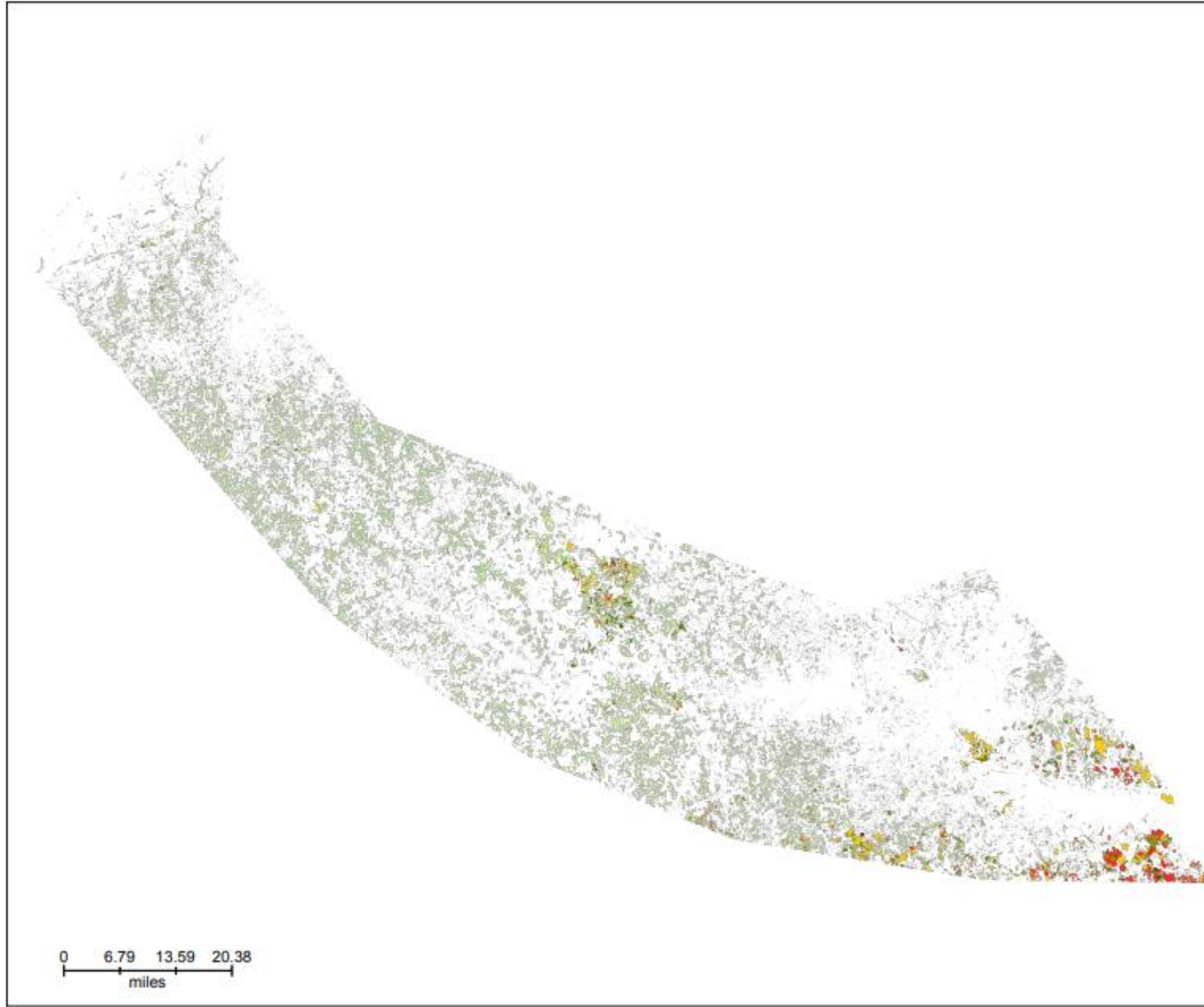
2022 Saluda River Basin Area of Interest



Land Cover Categories
(by decreasing acreage)

AGRICULTURE*

-  Grass/Pasture
-  Other Hay/Non Alfalfa
-  Corn
-  Cotton
-  Soybeans
-  Dbl Crop WinWht/Soybeans
-  Peanuts
-  Winter Wheat
-  Dbl Crop WinWht/Sorghum
-  Millet
-  Peaches
-  Oats
-  Dbl Crop WinWht/Corn
-  Sod/Grass Seed
-  Dbl Crop Soybeans/Oats
-  Rye



Produced by CropScape - <http://nas.usgsdata.gov/usa/CropScape>

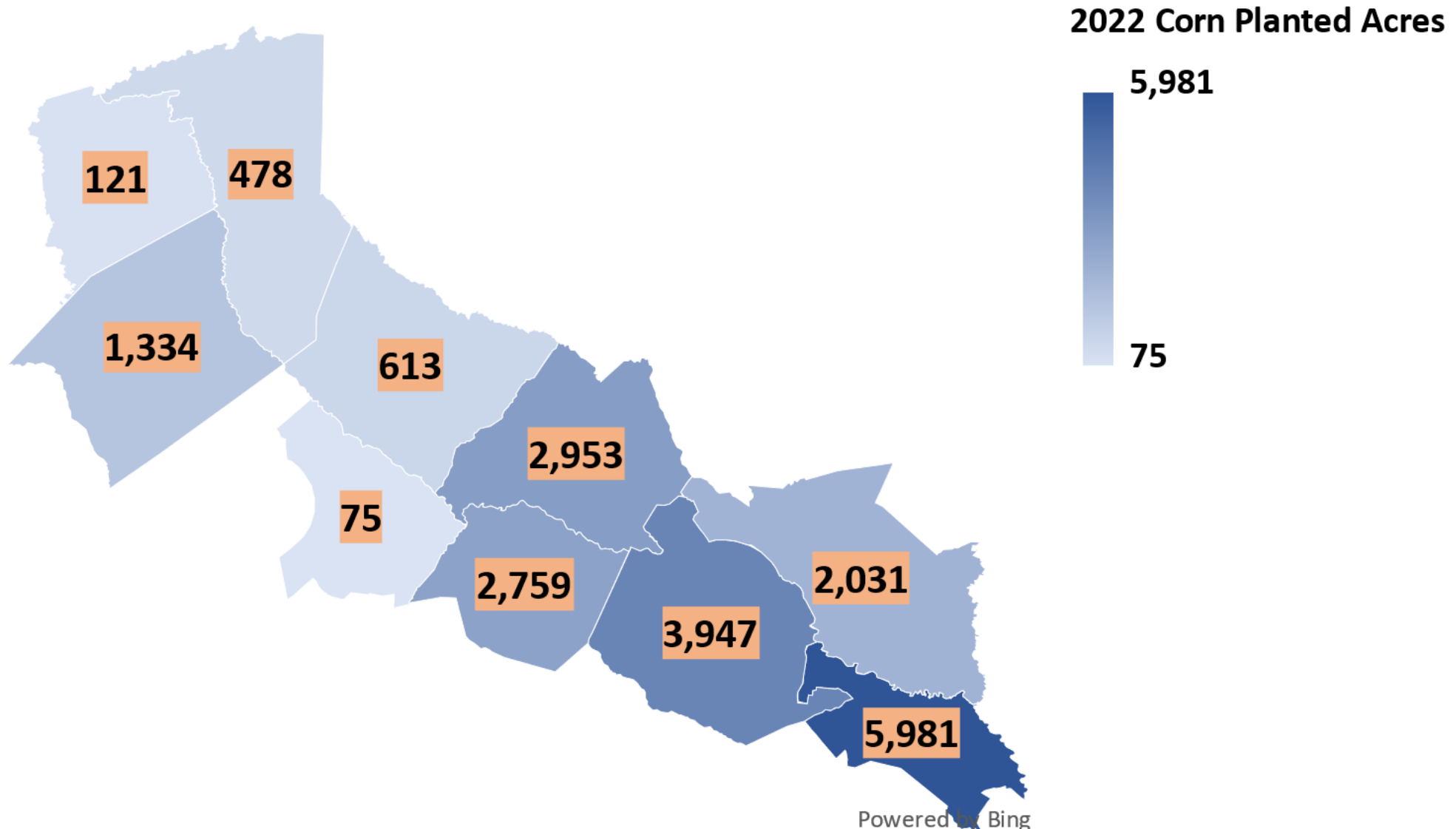
* Only top 16 agriculture categories are listed.

USDA NASS CropScape – Rough Map of Saluda River Basin

| Crop | 2017 Ag Census | 2021 NASS Survey | 2022 CropScape Acreage |
|-----------------------|----------------------|------------------------|------------------------------|
| Corn | 30,935 | 17,300 | 24,458 |
| Grass/Pasture | | | 327,553 |
| Other Hay/Non Alfalfa | | | 53,679 |
| Cotton | 32,356 | 22,200 | 17,627 |
| Soybeans | 17,921 | 6,900 | 7,981 |
| Peanuts | 18,285 | 10,100 | 3,977 |
| Fallow/Idle Cropland | | | 7,321 |
| Sod/Grass Seed | | | 397 |
| Dbl Crop Wht/Soybeans | | | 5,156 |
| Sorghum | 1,550 | | 307 |
| Peaches | 5,229 | | 854 |
| Millet | | | 1,026 |
| Winter Wheat | 9,162 | | 1,694 |

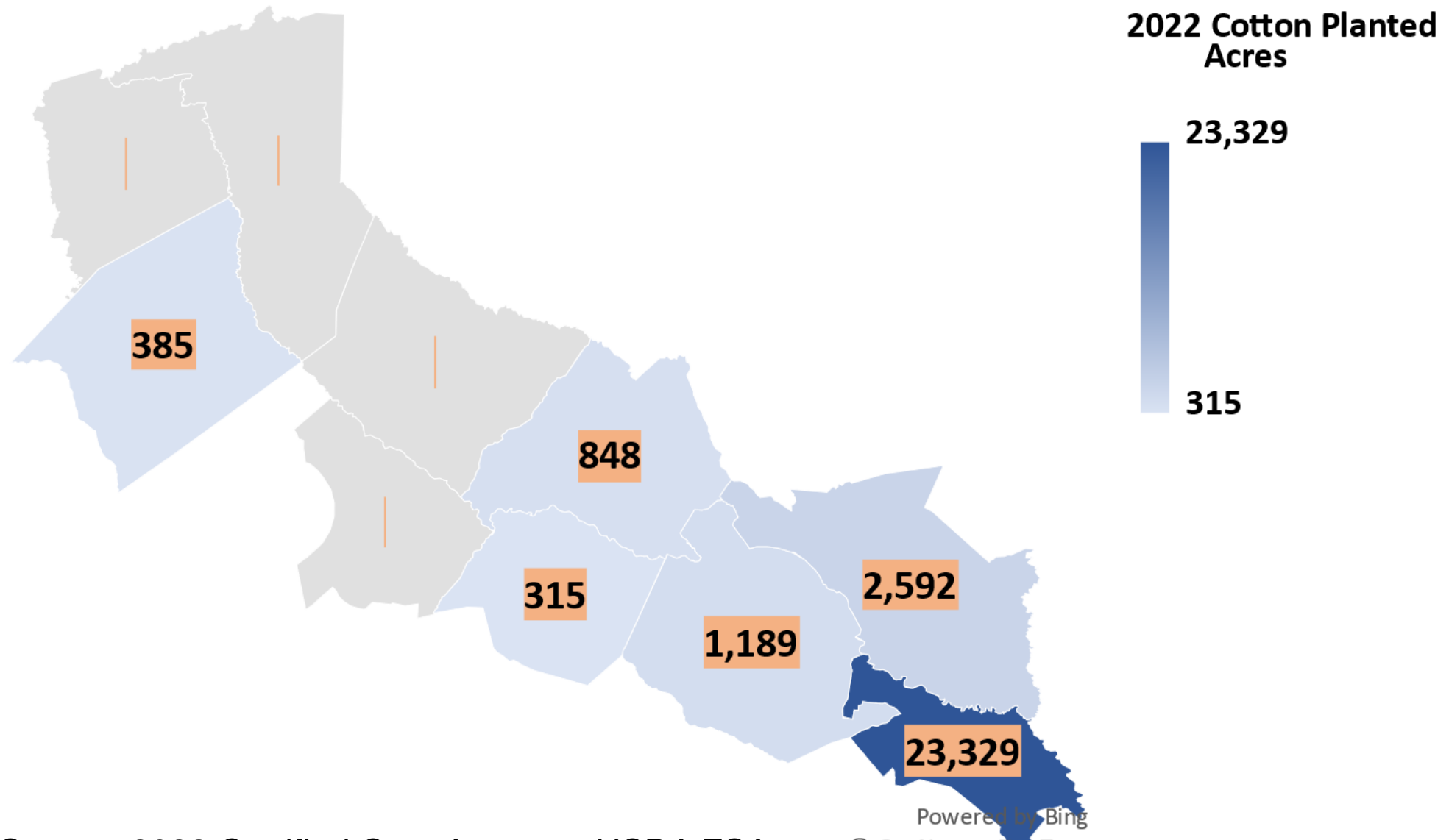


2022 Corn Planted Acres from FSA



Source: 2022 Certified Crop Acreage, USDA FSA © GeoNames, TomTom

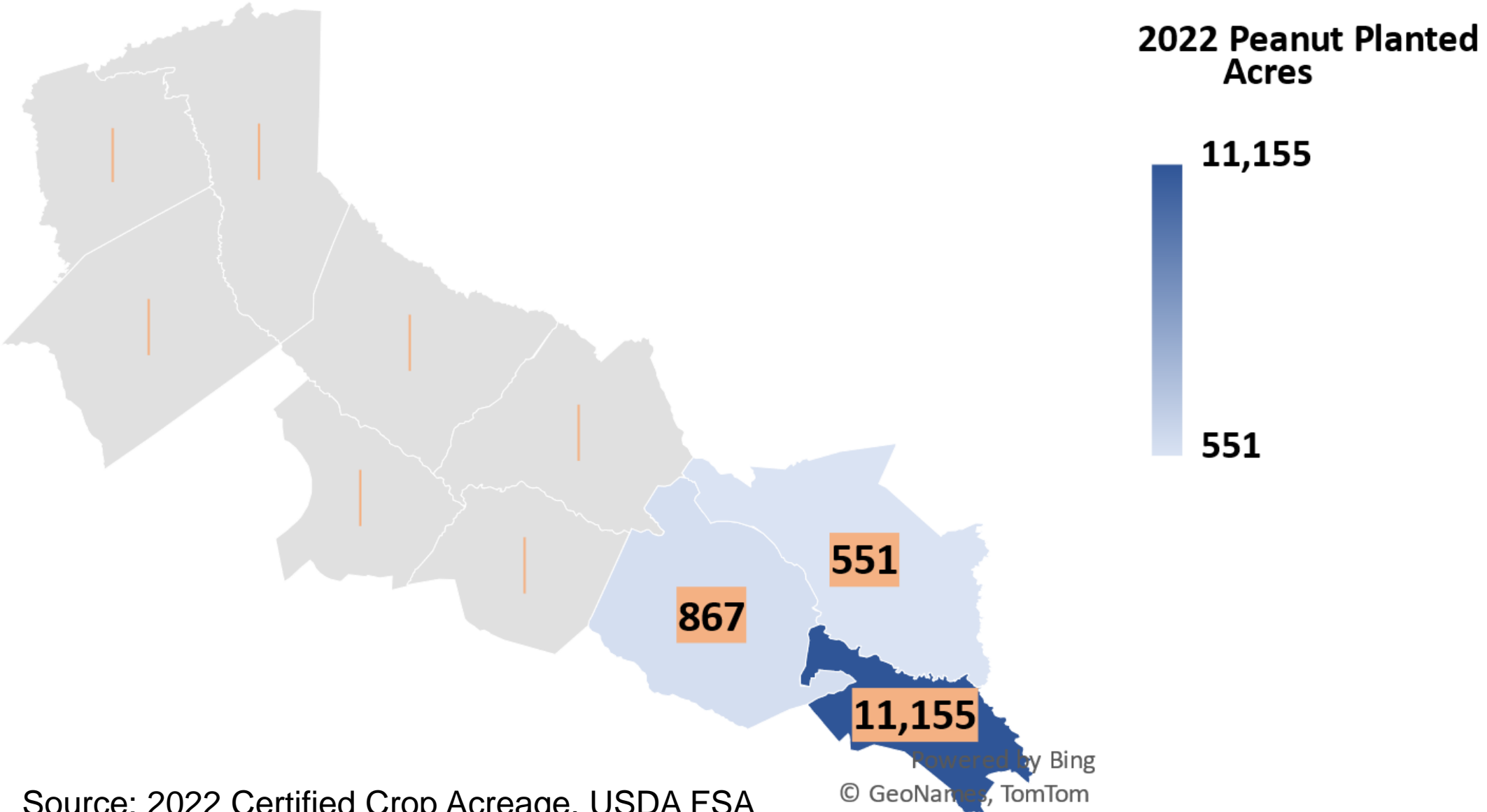
2022 Cotton Planted Acres from FSA



Source: 2022 Certified Crop Acreage, USDA FSA

Powered by Bing
© GeoNames, TomTom

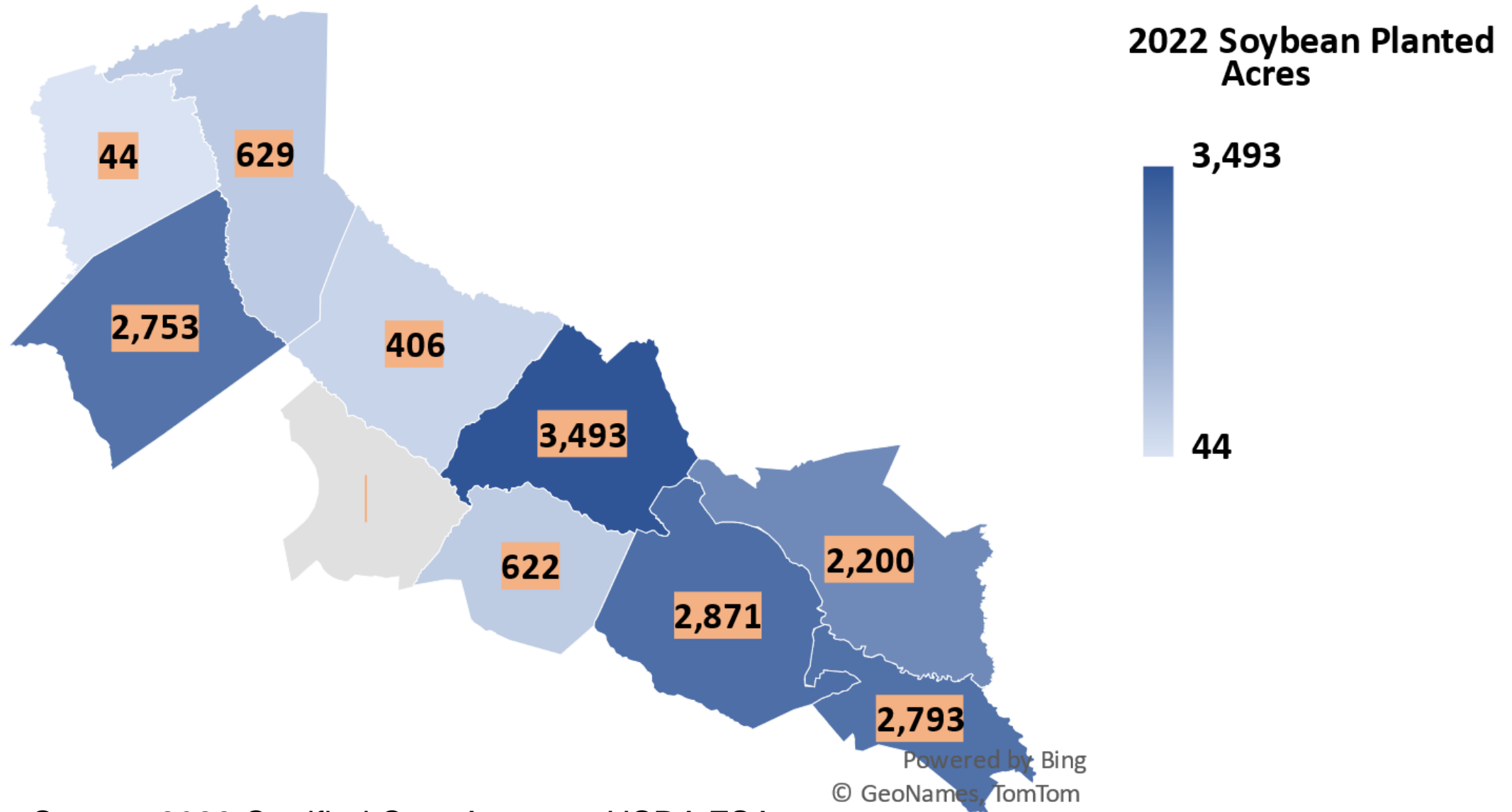
2022 Peanut Planted Acres from FSA



Source: 2022 Certified Crop Acreage, USDA FSA

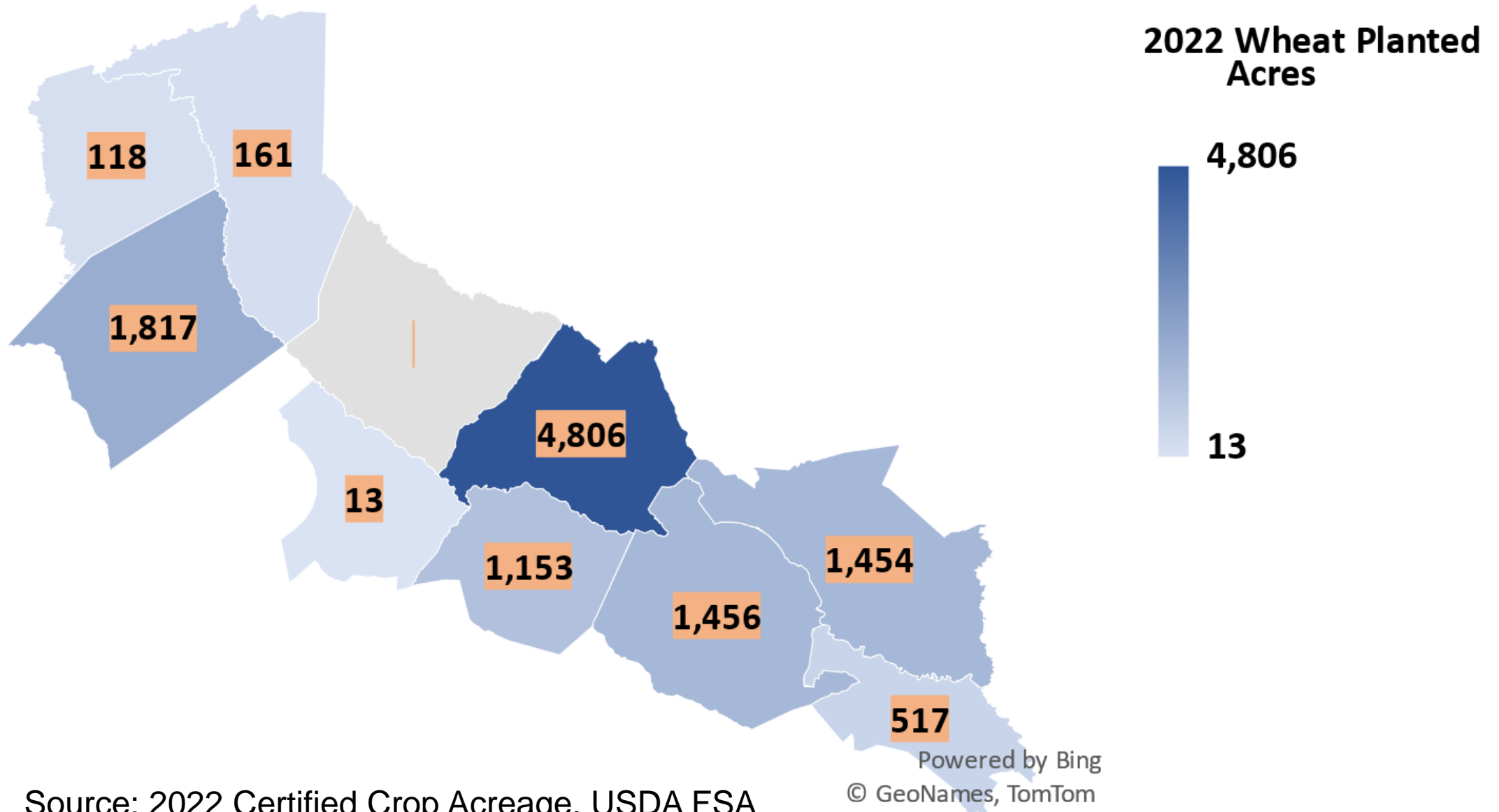
Powered by Bing
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2022 Soybean Planted Acres from FSA



Source: 2022 Certified Crop Acreage, USDA FSA

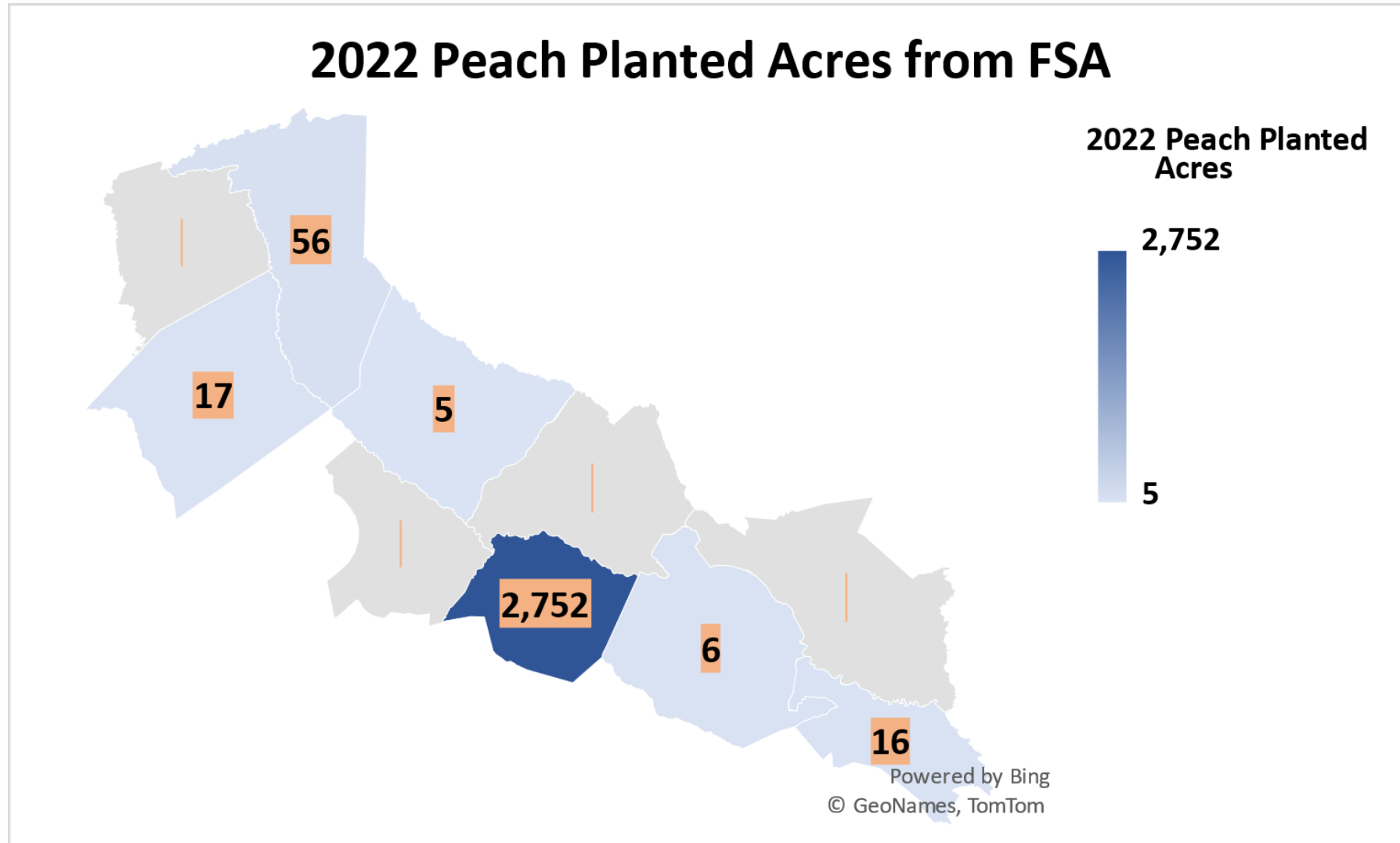
2022 Wheat Planted Acres from FSA



Source: 2022 Certified Crop Acreage, USDA FSA

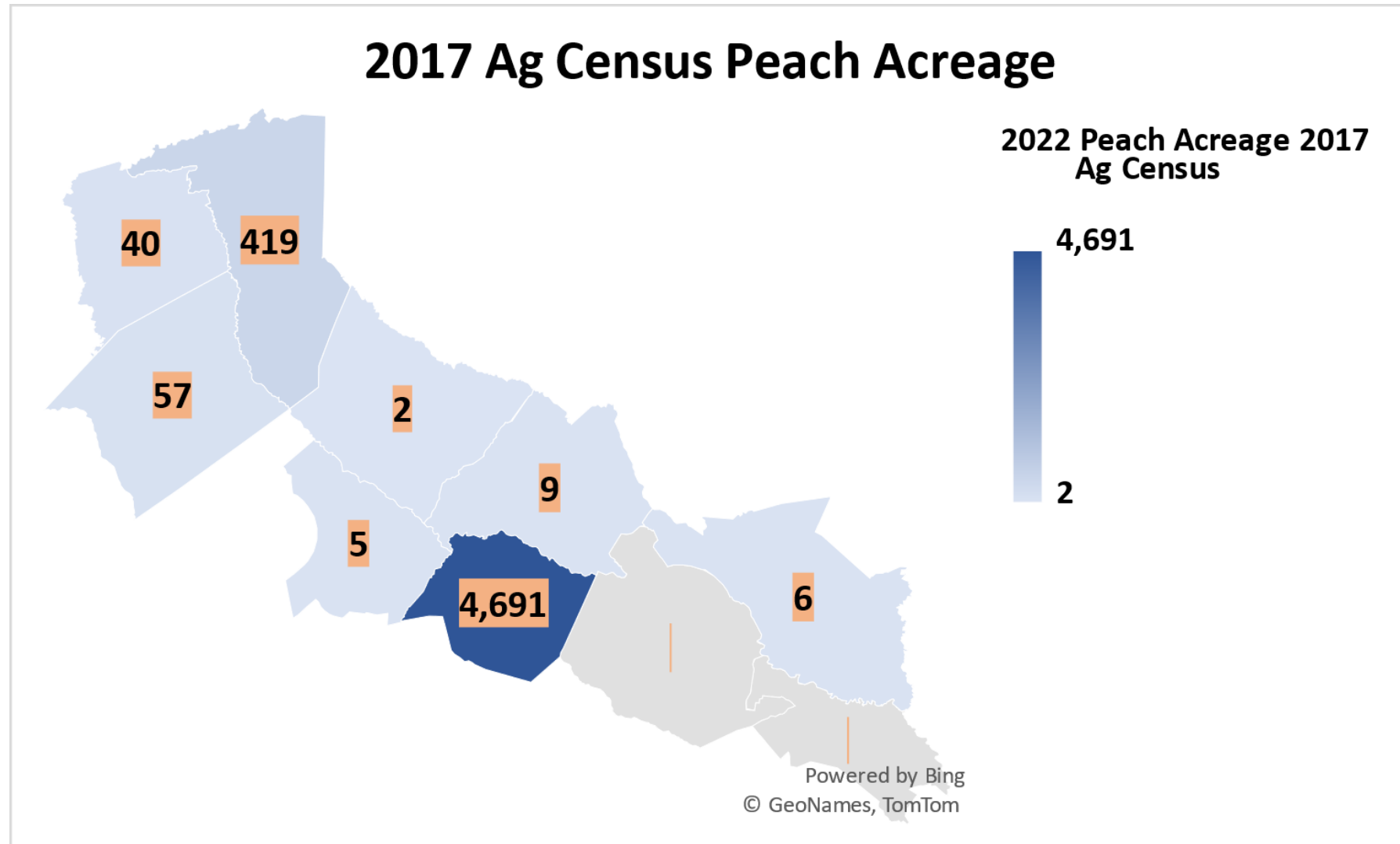
Powered by Bing
© GeoNames, TomTom

2022 Peach Planted Acres from FSA



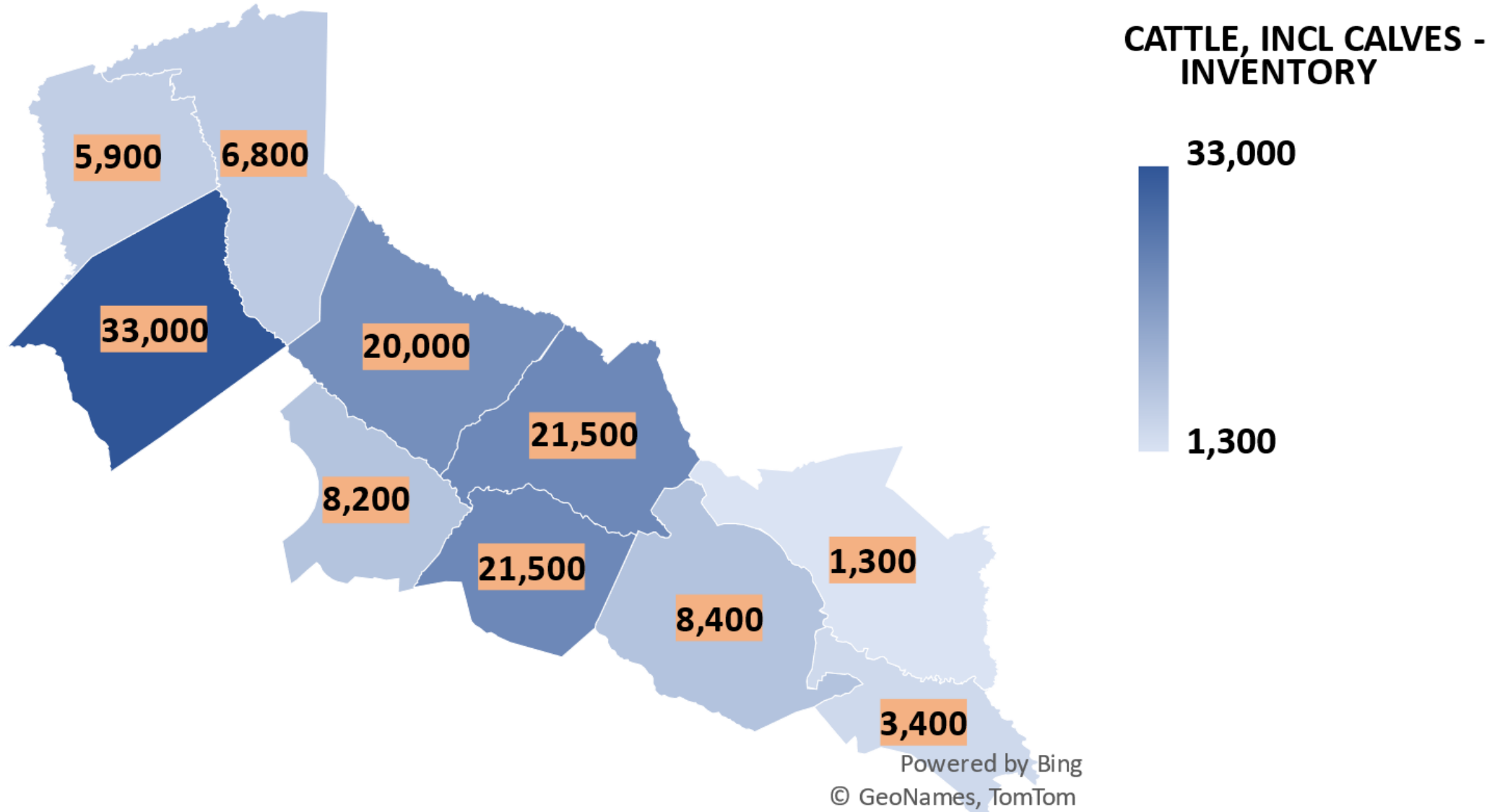
Source: 2022 Certified Crop Acreage, USDA FSA

2017 Ag Census Peach Acreage



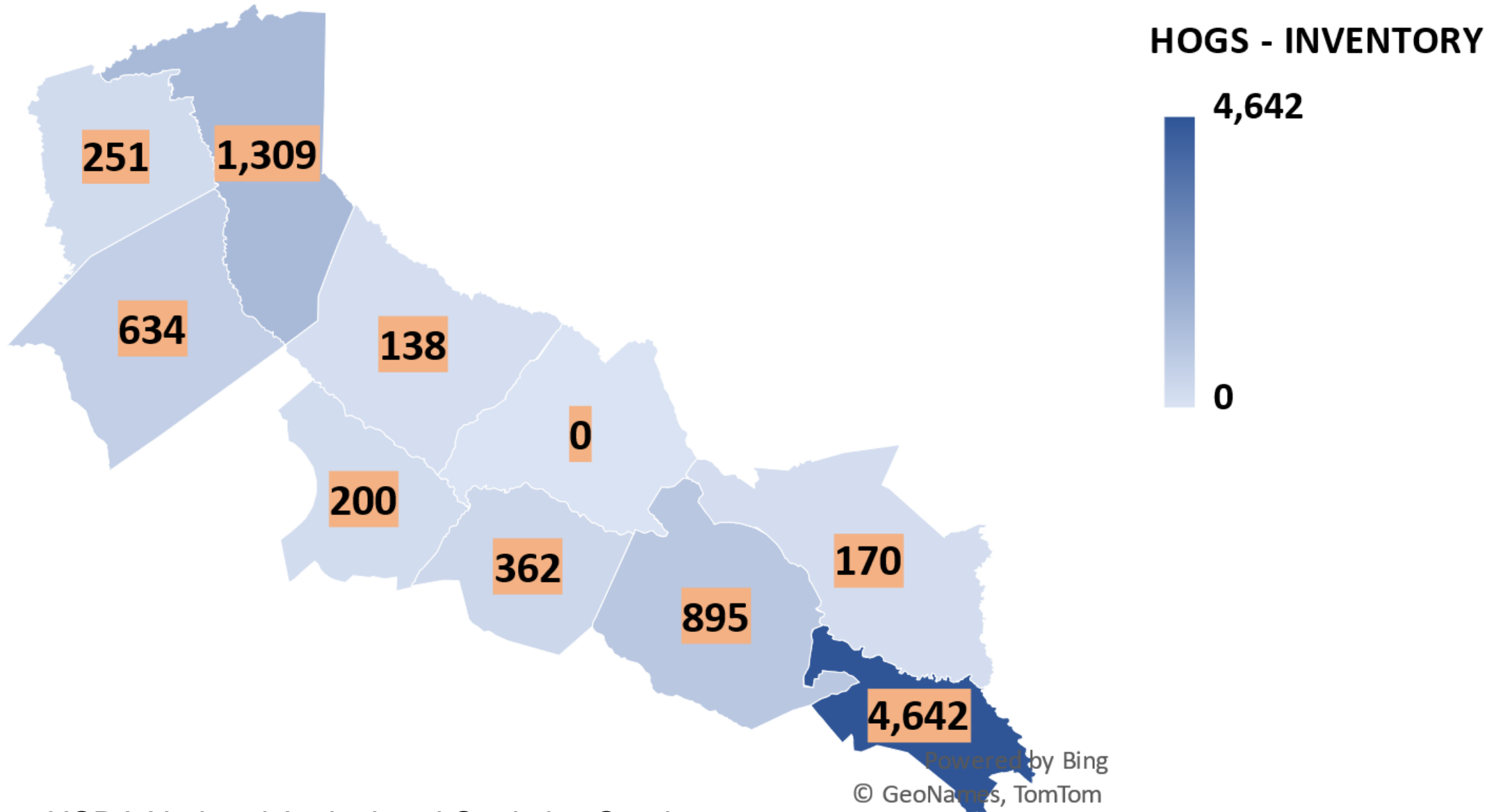
Source: USDA National Agricultural Statistics Service

2023 Cattle Inventory, Including Calves, from NASS



Source: USDA National Agricultural Statistics Service

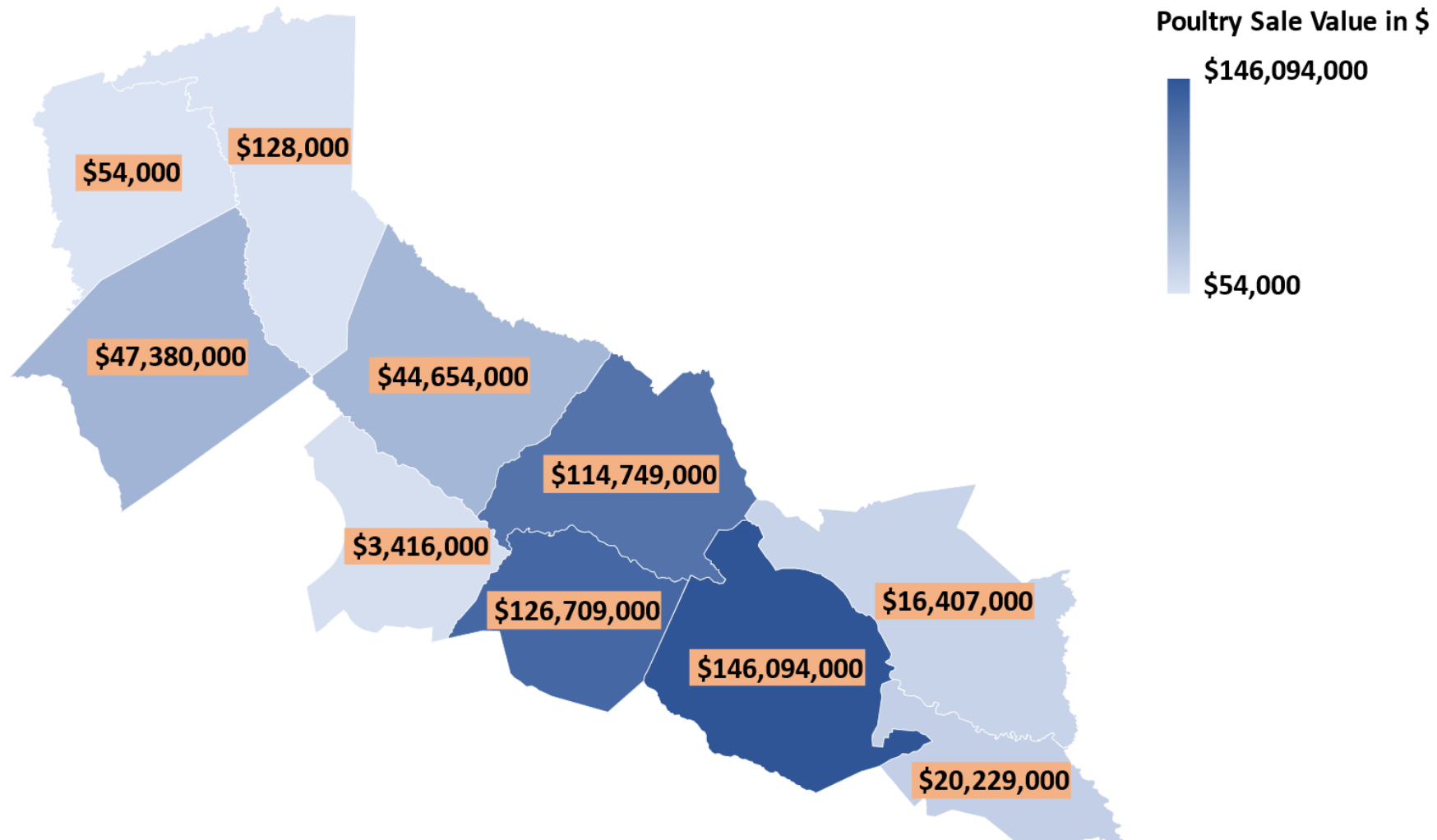
2017 Hog Inventory from NASS



Source: USDA National Agricultural Statistics Service

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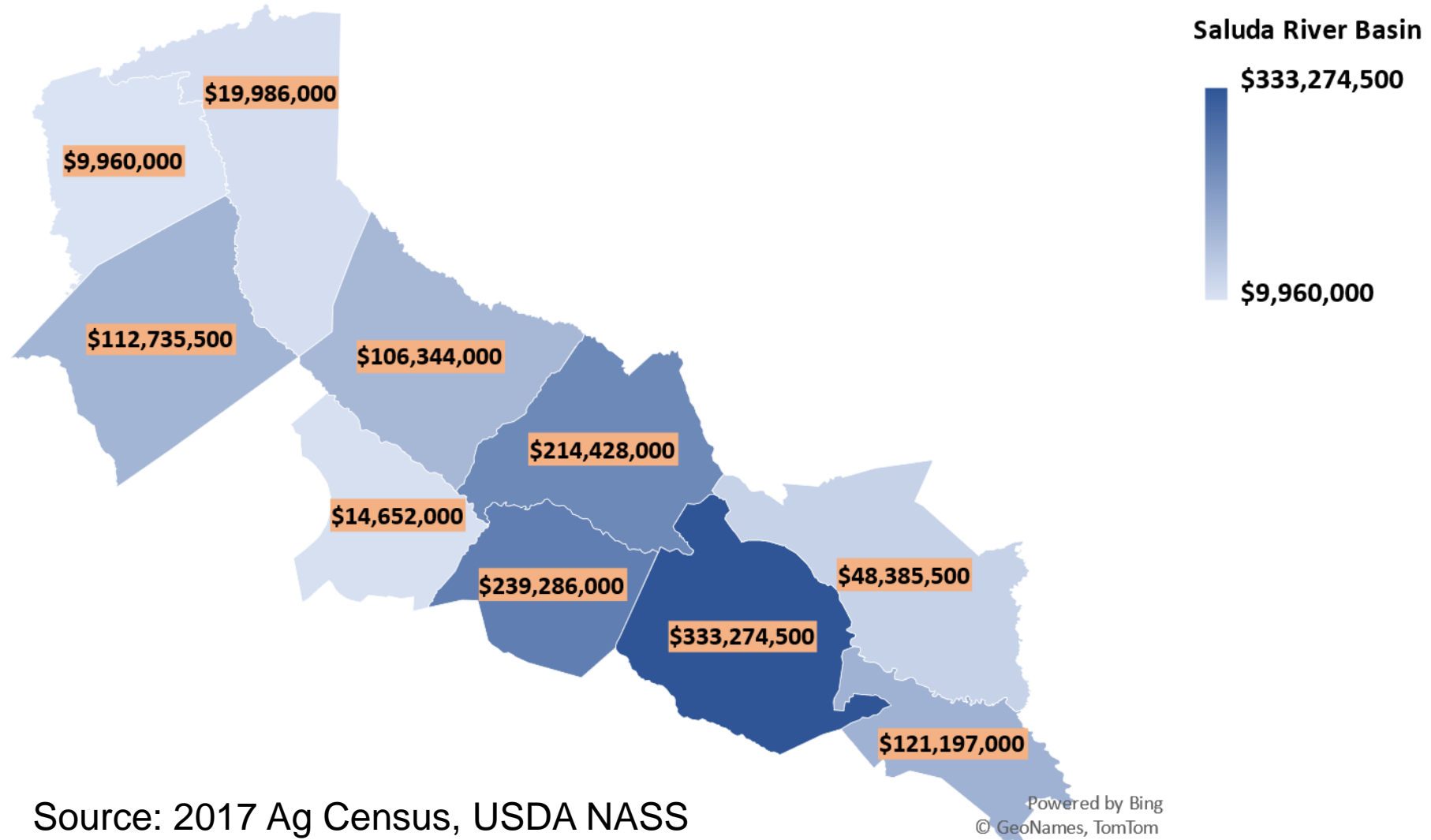
2017 Poultry Sales, Including Eggs, in \$ from NASS



Source: USDA National Agricultural Statistics Service

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Saluda River Basin 2017 Market Value of Products Sold by County Total Value X 1.5 Multiplier: \$1,220,248,500

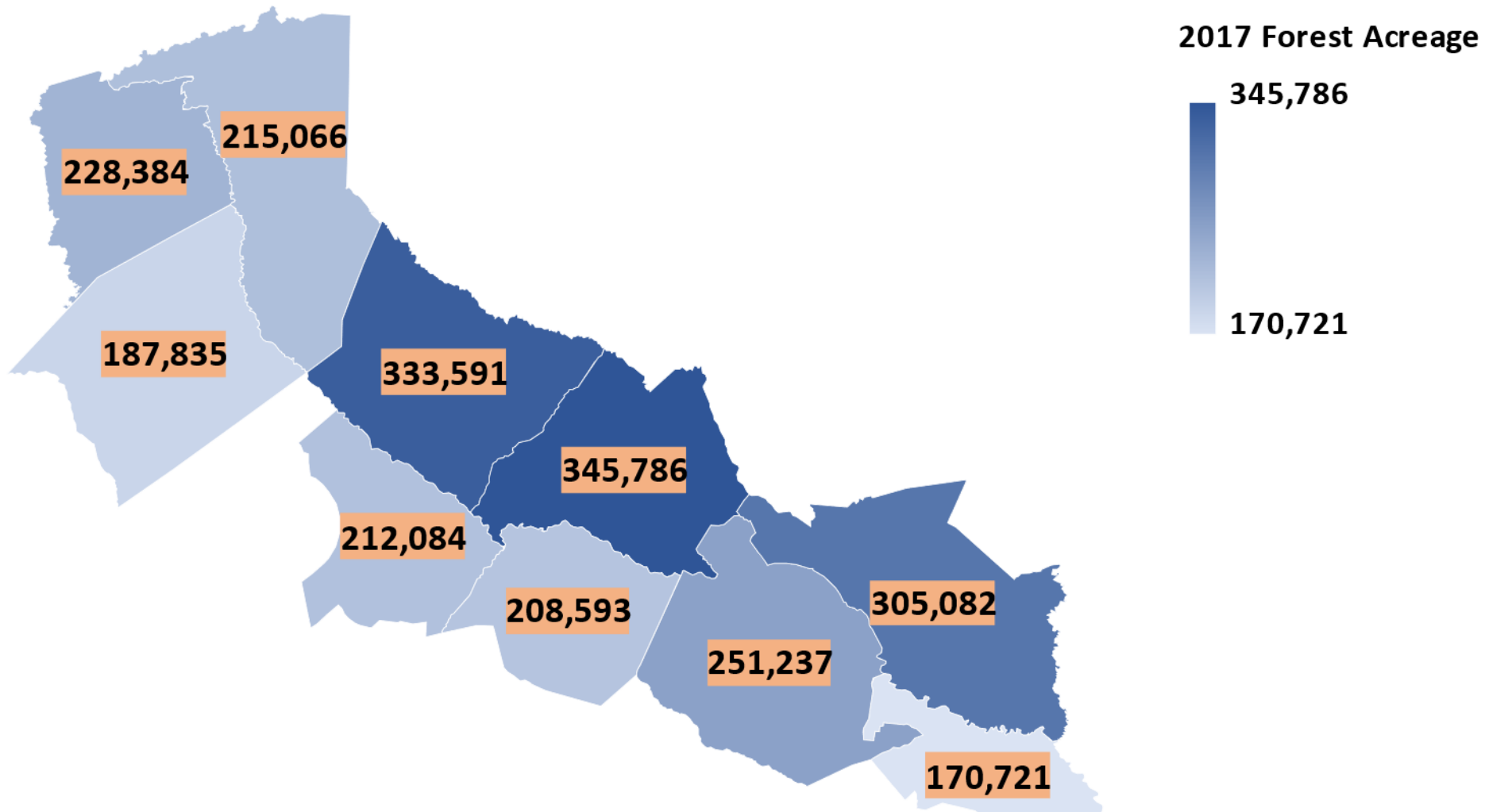


Source: 2017 Ag Census, USDA NASS

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2017 Forestry Acreage in the Saluda River Basin

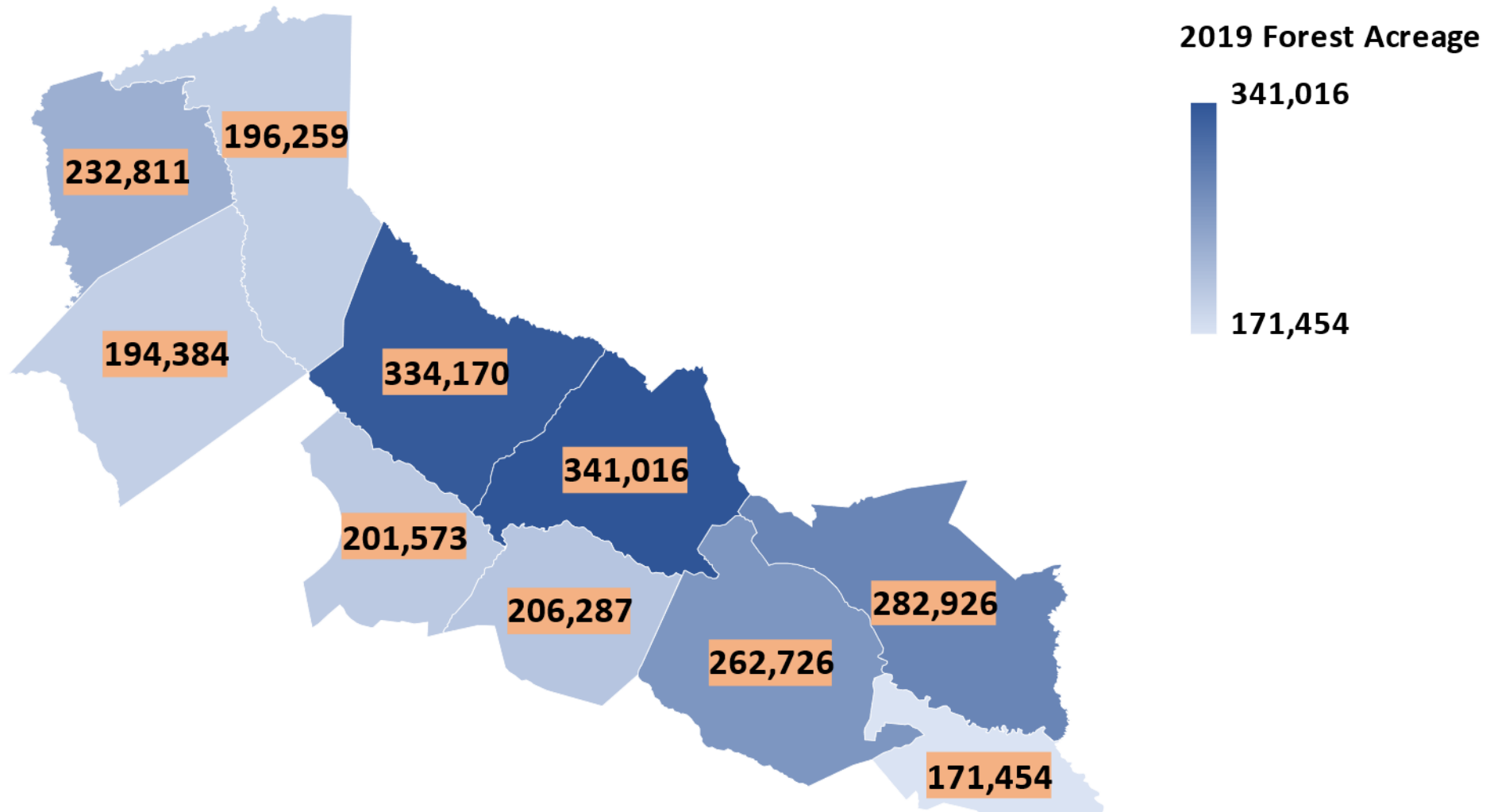


Source: 2017 Ag Census, USDA NASS

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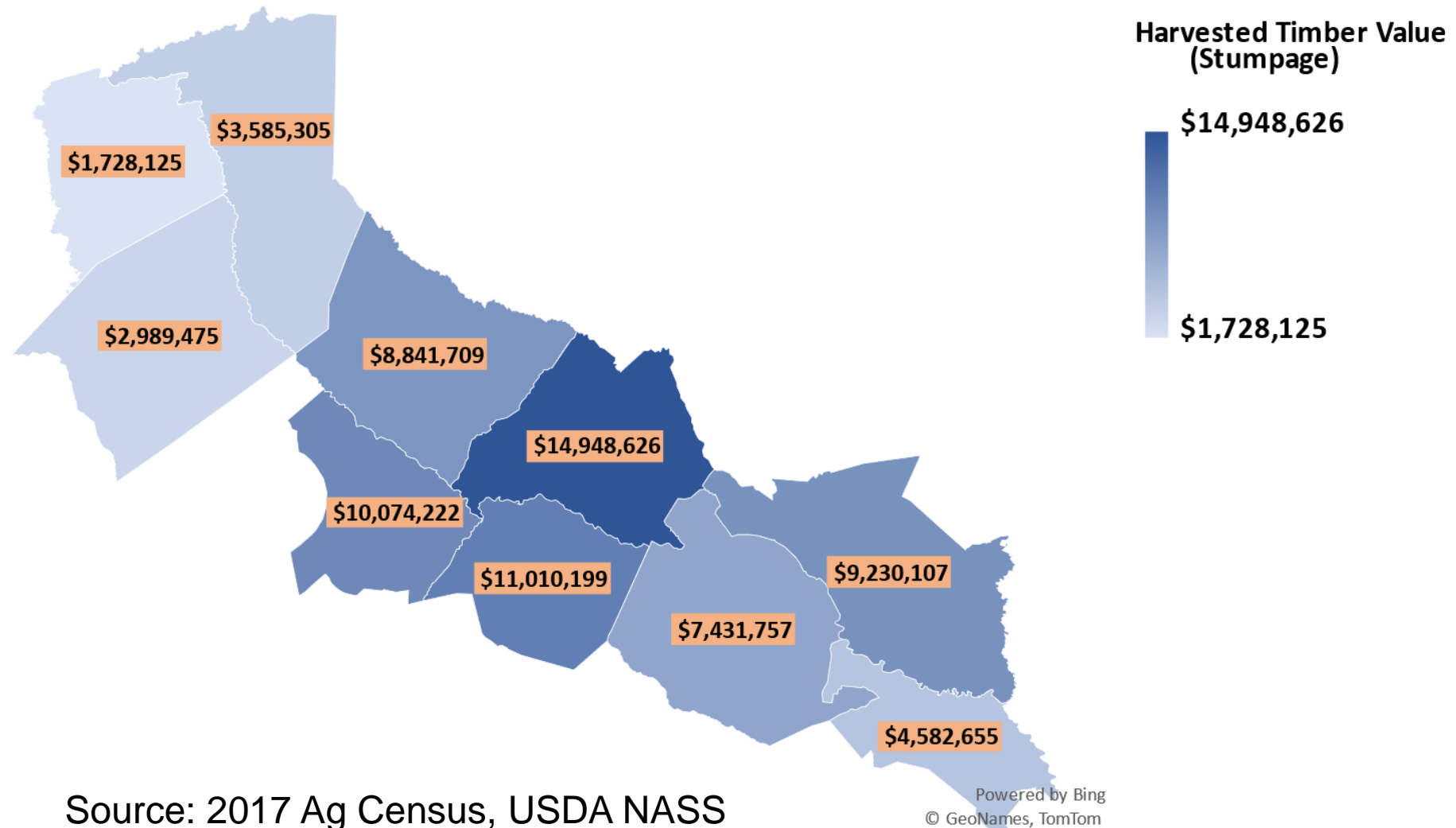
2019 Forestry Acreage in the Saluda River Basin



Source: 2017 Ag Census, USDA NASS

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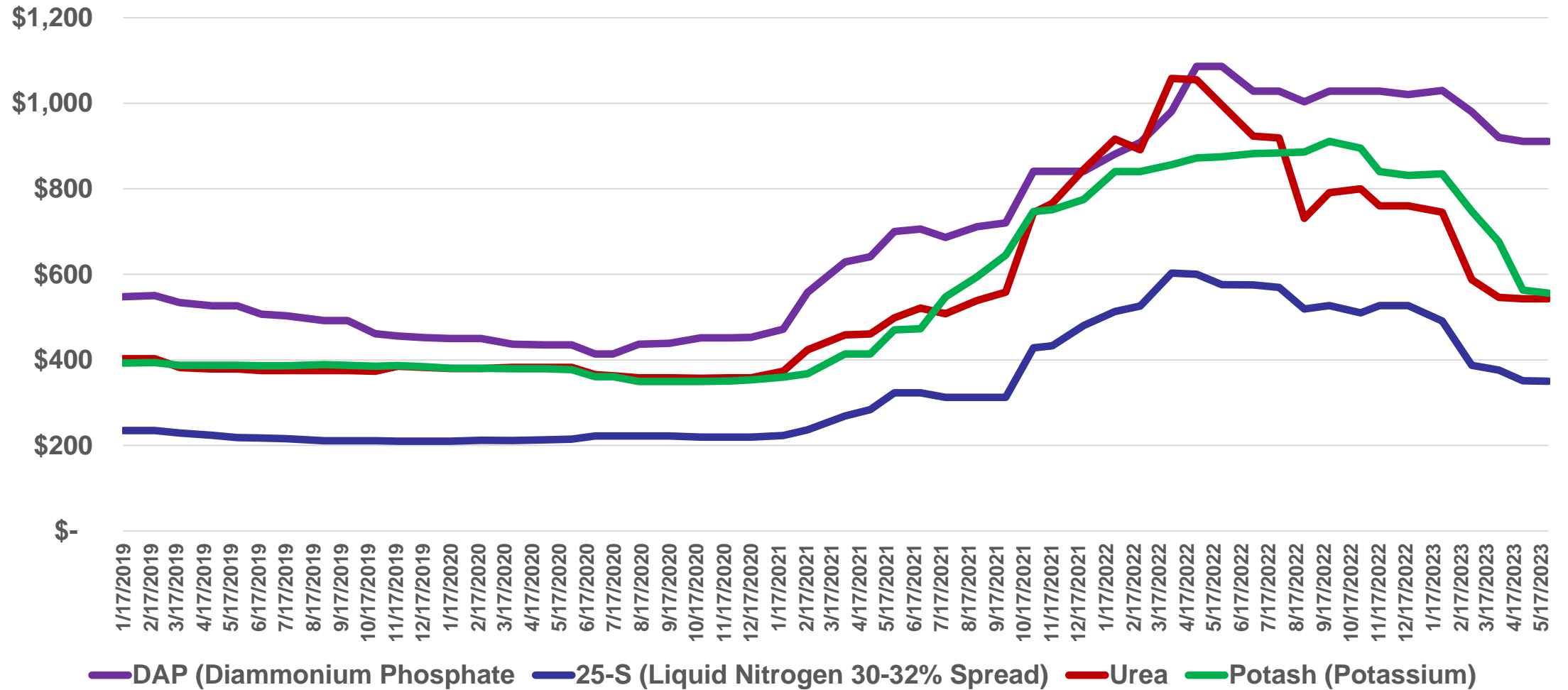
2017 Harvested Timber Value (Stumpage) in the Saluda River Basin





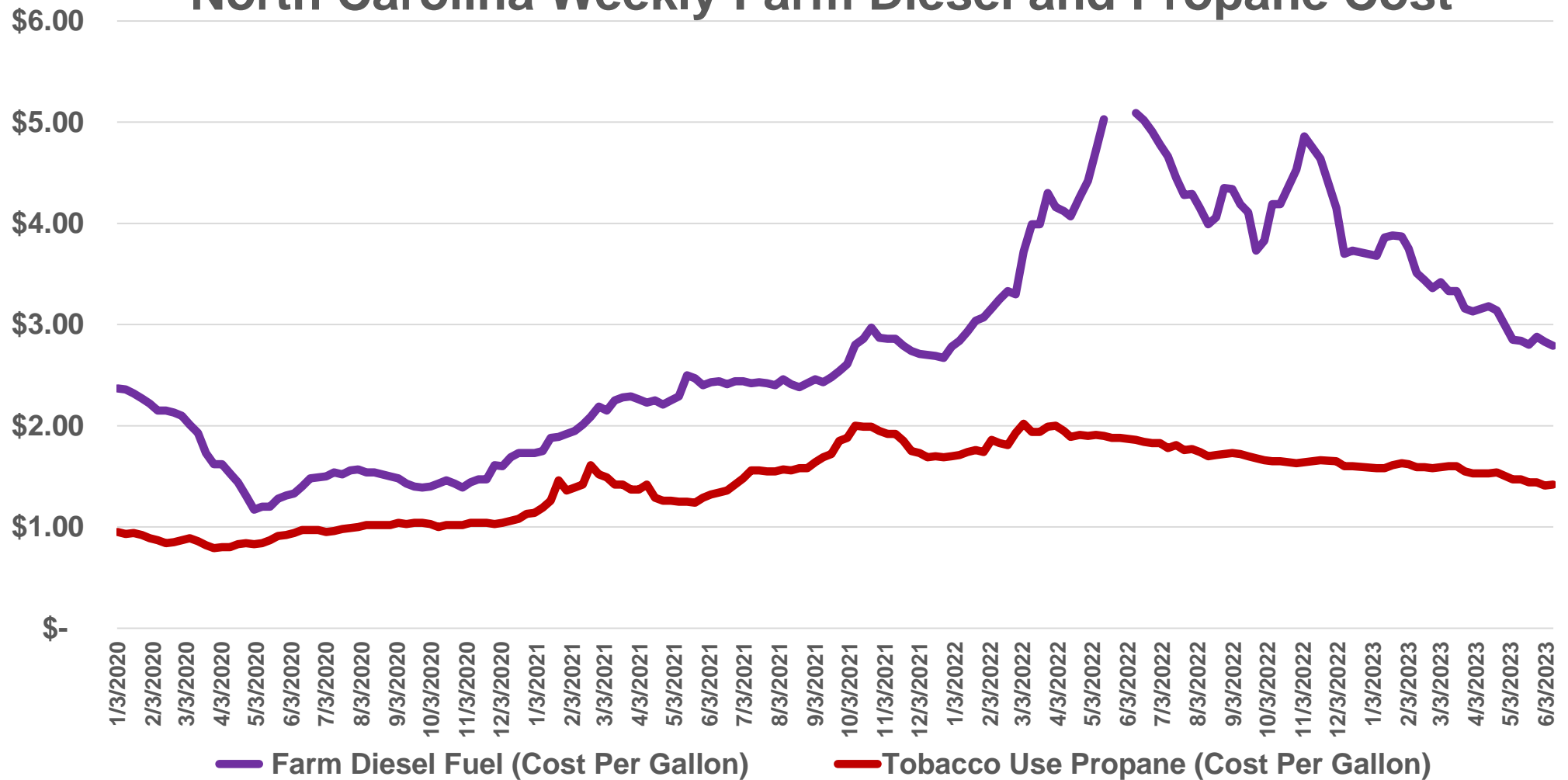
2023 CROP COST AND RETURNS

SC Fertilizer Prices Per Ton



Source: South Carolina Dept of Ag-USDA Market News, Columbia, SC
803-737-4491. www.ams.usda.gov/mnreports/CO_GR210.txt

North Carolina Weekly Farm Diesel and Propane Cost



SOURCE: North Carolina Dept of Ag-USA Market News Service, Raleigh NC
http://www.ncagr.gov/markets/mktnews/RA_GR210.TXT

| | CORN-NI | COTTON-NI | PEANUTS-RU-NI | SOYBEANS-NI |
|--|-----------------|-----------------|-----------------|-----------------|
| REVENUE | | | | |
| PROJECTED YIELD | 125 | 900 | 3,800 | 35 |
| FUTURES PRICE | \$5.70 | \$0.85 | \$0.2500 | \$13.45 |
| HARVEST BASIS | \$0.50 | -\$0.01 | \$0.00 | \$0.10 |
| EXPECTED CROP REVENUE | \$775.00 | \$756.00 | \$950.00 | \$474.25 |
| <i>COTTONSEED</i> | | 168.75 | | |
| MARKETING | \$0.00 | -\$23.06 | -\$5.70 | \$0.00 |
| CHECKOFF | \$0.00 | -\$1.88 | -\$3.80 | -\$2.37 |
| EXPECTED CROP REVENUE | \$775.00 | \$899.81 | \$940.50 | \$471.88 |
| DIRECT EXPENSE | | | | |
| SEED | \$71.50 | \$99.18 | \$130.50 | \$50.00 |
| FERTILIZER | \$261.70 | \$258.32 | \$85.19 | \$120.80 |
| CROP PROTECTION | \$92.35 | \$154.73 | \$257.38 | \$113.26 |
| CROP INSURANCE | \$11.07 | \$12.49 | \$6.73 | \$6.63 |
| DRYING OR GINNING | \$26.63 | \$108.00 | \$27.17 | \$1.49 |
| IRRIGATION ENERGY | | | | |
| CUSTOM HIRE | \$53.75 | \$10.00 | \$21.40 | \$22.25 |
| SUPPLIES | \$0.00 | \$17.81 | \$0.00 | \$0.00 |
| LABOR | \$6.08 | \$8.36 | \$17.67 | \$7.15 |
| MACHINERY OPERATING | 39.45 | \$83.07 | \$92.22 | \$43.43 |
| INTEREST ON OP. CAP. | \$19.39 | \$25.83 | \$21.52 | \$12.41 |
| TOTAL DIRECT EXPENSES | \$573.52 | \$763.72 | \$636.38 | \$367.12 |
| RETURN AVAILABLE FOR OVERHEAD, DEBT SERVICE, & MANAGEMENT | \$201.48 | \$136.09 | \$304.12 | \$104.76 |



FINANCIAL EFFICIENCY BY CROP

| | CORN-NI | COTTON-NI | PEANUTS-RU-NI | SOYBEANS-NI |
|--|------------------|------------------|------------------|------------------|
| EXPECTED CROP REVENUE | \$775.00 | \$899.81 | \$940.50 | \$471.88 |
| TOTAL DIRECT EXPENSES | \$573.52 | \$763.72 | \$636.38 | \$367.12 |
| RETURN AVAILABLE FOR OVERHEAD, DEBT SERVICE, & MANAGEMENT | \$ 201.48 | \$ 136.09 | \$ 304.12 | \$ 104.76 |
| DIRECT EXPENSE TO REVENUE RATIO | 74% | 85% | 68% | 78% |
| OPERATING PROFIT MARGIN | 26% | 15% | 32% | 22% |
| Futures Price Required for: | | | | |
| 40% Operating Profit Margin | \$6.57 | \$1.10 | \$0.27 | \$15.85 |
| 25% Operating Profit Margin | \$5.64 | \$0.95 | \$0.23 | \$13.83 |
| 10% Operating Profit Margin | \$4.71 | \$0.80 | \$0.19 | \$11.81 |

| | CORN-IRR | COTTON-IRR | PEANUTS-RU-IRR | SOYBEANS-IRR |
|--|-------------------|-------------------|-------------------|-----------------|
| REVENUE | | | | |
| PROJECTED YIELD | 210 | 1250 | 4,800 | 65 |
| FUTURES PRICE | \$5.70 | \$0.85 | \$0.25 | \$13.45 |
| HARVEST BASIS | \$0.50 | -\$0.01 | \$0.00 | \$0.10 |
| EXPECTED CROP REVENUE | \$1,302.00 | \$1,050.00 | \$1,200.00 | \$880.75 |
| <i>COTTONSEED</i> | | 168.75 | | |
| MARKETING | \$0.00 | -\$32.03 | -\$7.20 | \$0.00 |
| CHECKOFF | \$0.00 | -\$2.60 | -\$4.80 | -\$4.40 |
| EXPECTED CROP REVENUE | \$1,302.00 | \$1,184.11 | \$1,188.00 | \$876.35 |
| DIRECT EXPENSE | | | | |
| SEED | \$104.00 | \$99.18 | \$130.50 | \$55.00 |
| FERTILIZER | \$372.50 | \$239.17 | \$85.19 | \$146.00 |
| CROP PROTECTION | \$95.52 | \$154.73 | \$289.06 | \$128.22 |
| CROP INSURANCE | \$8.63 | \$8.57 | \$5.94 | \$6.76 |
| DRYING OR GINNING | \$44.73 | \$150.00 | \$34.32 | \$2.77 |
| IRRIGATION ENERGY | \$54.00 | \$27.00 | \$27.00 | \$27.00 |
| CUSTOM HIRE | \$83.50 | \$10.00 | \$24.40 | \$32.75 |
| SUPPLIES | \$0.00 | \$24.74 | \$0.00 | \$0.00 |
| LABOR | \$6.08 | \$8.36 | \$17.67 | \$7.15 |
| MACHINERY OPERATING | 39.45 | \$83.07 | \$92.22 | \$43.43 |
| INTEREST ON OP. CAP. | \$27.99 | \$27.68 | \$23.80 | \$15.31 |
| TOTAL DIRECT EXPENSES | \$827.72 | \$818.43 | \$703.82 | \$452.73 |
| RETURN AVAILABLE FOR OVERHEAD, DEBT SERVICE, & MANAGEMENT | \$474.28 | \$365.68 | \$484.18 | \$423.62 |

FINANCIAL EFFICIENCY BY CROP

| | CORN-IRR | COTTON-IRR | PEANUTS-RU-IRR | SOYBEANS-IRR |
|--|-------------------|-------------------|-------------------|------------------|
| EXPECTED CROP REVENUE | \$1,302.00 | \$1,184.11 | \$1,188.00 | \$876.35 |
| TOTAL DIRECT EXPENSES | \$827.72 | \$818.43 | \$703.82 | \$452.73 |
| RETURN AVAILABLE FOR OVERHEAD, DEBT SERVICE, & MANAGEMENT | \$ 474.28 | \$ 365.68 | \$ 484.18 | \$ 423.62 |
| DIRECT EXPENSE TO REVENUE RATIO | 64% | 69% | 59% | 52% |
| OPERATING PROFIT MARGIN | 36% | 31% | 41% | 48% |
| Futures Price Required for: | | | | |
| 40% Operating Profit Margin | \$6.42 | \$0.93 | \$0.2481 | \$12.43 |
| 25% Operating Profit Margin | \$5.49 | \$0.78 | \$0.2110 | \$10.40 |
| 10% Operating Profit Margin | \$4.56 | \$0.64 | \$0.1739 | \$8.38 |



South Carolina Major Row Crop Yields

Yield per Acre

| | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 |
|---------------------------|-------|-------|-------|-------|-------|-------|-------|
| Corn (Bushels) | 127 | 136 | 127 | 106 | 132 | 139 | 122 |
| Cotton (Pounds) | 656 | 910 | 747 | 809 | 802 | 986 | 960 |
| Peanuts (Pounds) | 3,200 | 4,000 | 3,400 | 3,800 | 3,700 | 4,200 | 4,200 |
| Soybeans (Bushels) | 31 | 38 | 29 | 26 | 35 | 38 | 37 |
| Tobacco (Pounds) | 1,900 | 2,100 | 1,800 | 1,900 | 1,200 | 1,800 | 2,000 |
| Wheat (Bushels) | 43 | 49 | 54 | 48 | 51 | 53 | 57 |

Compiled by Dr. Nathan Smith & Trey Buckelew, Clemson University

Source: NASS USDA, QuickStats & Southern Region News Release Annual Crop Production Report

South Carolina Major Row Crops Planted Acres

(1,000 Acres)

| | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 |
|----------------------|-------------|-------------|---------------|---------------|---------------|-------------|-------------|
| Corn | 375 | 350 | 340 | 380 | 390 | 400 | 320 |
| Cotton | 190 | 250 | 300 | 300 | 190 | 210 | 270 |
| Peanuts | 110 | 122 | 87 | 65 | 84 | 69 | 71 |
| Soybeans | 420 | 400 | 390 | 335 | 310 | 395 | 405 |
| Tobacco (harv | 13 | 12 | 12.3 | 8.3 | 5.5 | 7 | 6 |
| Wheat | 60 | 90 | 80 | 70 | 110 | 125 | 120 |
| Total | 1168 | 1224 | 1209.3 | 1158.3 | 1089.5 | 1206 | 1192 |

Compiled by Dr. Nathan Smith & Trey Buckelew, Clemson University

Source: NASS USDA, QuickStats & Southern Region News Release Annual Crop Production Report

Major Row Crop Water Use

Irrigation is used to supplement rainfall and produce optimal yields for major row crops and specialty crops.

The major row crops that are irrigated in SC are corn, cotton, soybean, and peanut.

A question that comes up when considering irrigation is how much water would a crop such as corn use or need on average?

Dr. Michael Plumblee assembled research-based information on water use for corn, cotton, soybean and peanut.

Annual Water Needed by Major Crop

| Crop | Inches/Acre/Season | Gallons/Acre Inch | Gallons/Acre/Season |
|---------|--------------------|-------------------|---------------------|
| Corn | 38 | 27,200 | 1,033,600 |
| Cotton | 16 | 27,200 | 435,200 |
| Peanut | 18.78 | 27,200 | 510,816 |
| Soybean | 18.5 | 27,200 | 503,200 |

Of the four major row crops, corn needs the most water per season followed by peanut, soybean, and cotton.

The crop water need may change due to yield goal, variety, and environment.

Saluda River Basin Counties FSA Certified Crop Acres

| | Non-Irr | Irr | Total | Non-Irr % | Irr% |
|-----------------|----------------|---------------|---------------|------------------|-------------|
| Corn | 14,461 | 10,983 | 25,444 | 57% | 43% |
| Cotton | 17,635 | 11,023 | 28,659 | 62% | 38% |
| Peanuts | 4,973 | 7,630 | 12,602 | 39% | 61% |
| Soybeans | 14,385 | 1,819 | 16,204 | 89% | 11% |
| Wheat | 10,842 | 683 | 11,525 | 94% | 6% |