SC DEPARTMENT of ENVIRONMENTAL SERVICES

Water Use in the Santee Basin

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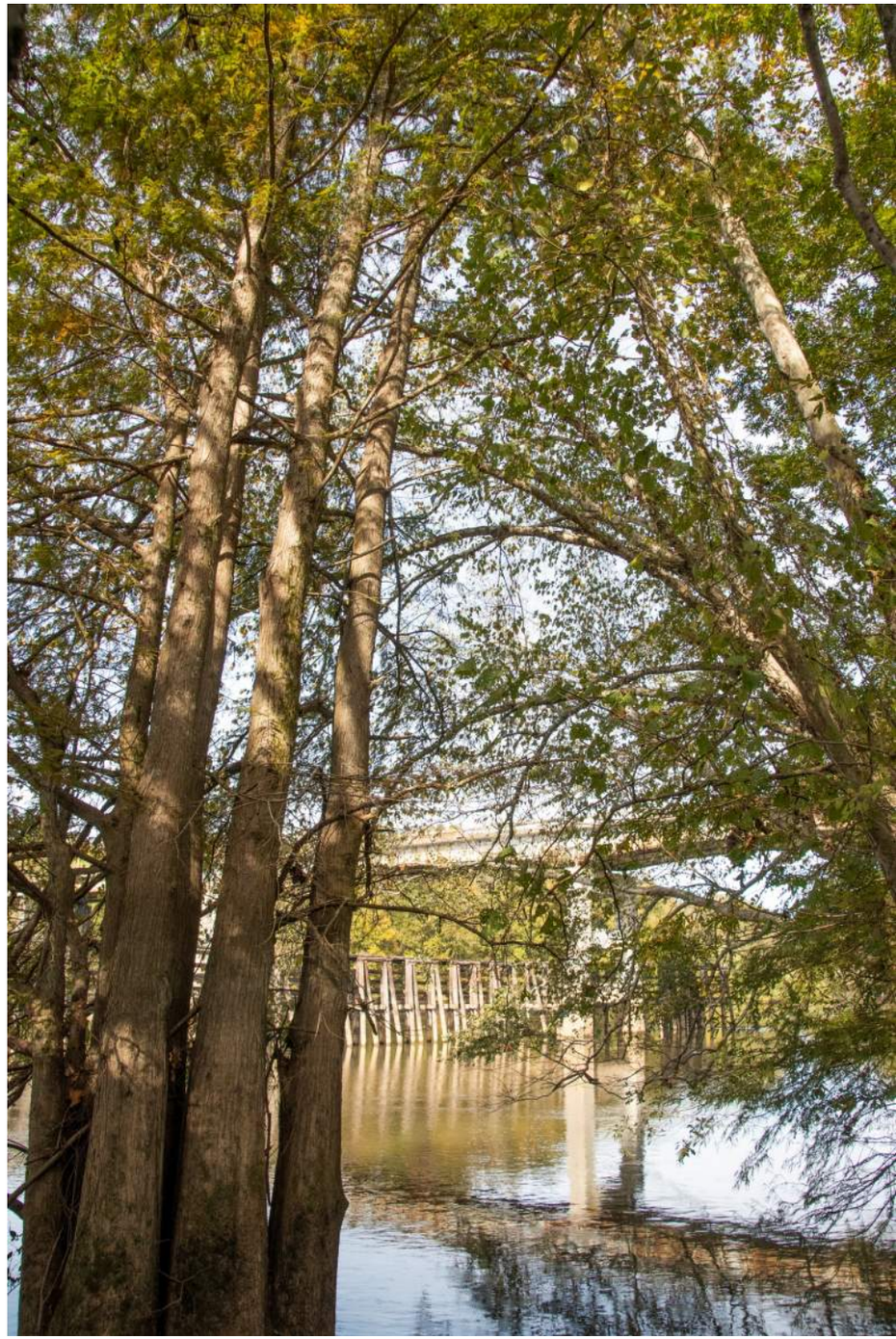
Bureau of Water, South Carolina Department of Environmental Services

February 11, 2025

Santee River Basin Council

Meeting #3, Moncks Corner, SC

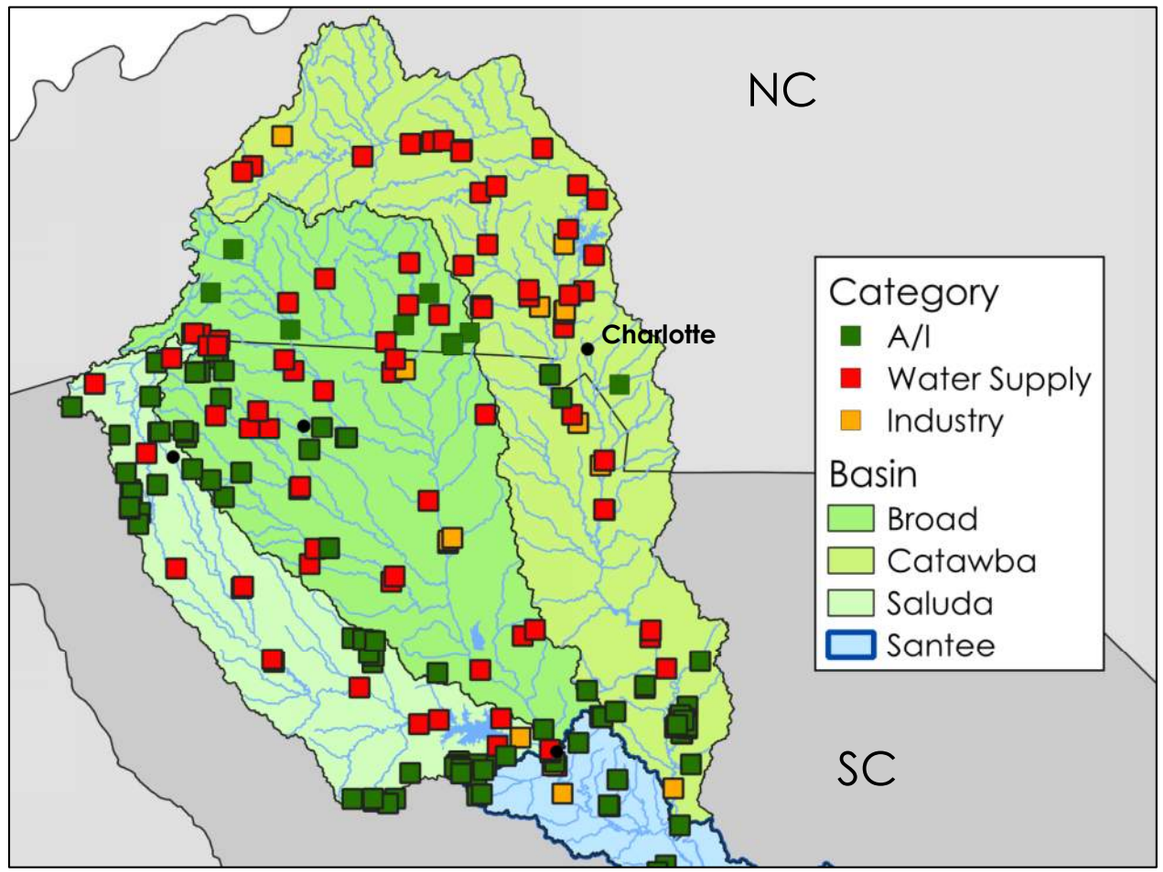


South Carolina Water Withdrawal Reporting

- The South Carolina Department of Environmental Services (SCDES) tracks water use through the South Carolina Surface Water Withdrawal, Permitting, Use and Reporting Act and the South Carolina Groundwater Use and Reporting Act.
  - Regulations require water users that withdraw three (3) million gallons or greater in any month to register with and report their use annually to SCDES.
  - Exemptions include farm ponds, ponds filled only with surface water runoff, and wildlife habitat management (typically duck ponds).

North Carolina Water Withdrawal Data

- **Broad Basin**
  - North Carolina Department of Environmental Quality.
- **Catawba Basin**:
  - Integrated Water Resources Plan – Water Demand Projection Updates (March 2023).
  - 2022 Catawba-Wateree Annual Water Use Report, Catawba-Wateree Drought Management Advisory Group (June 2023).
  - SCDES Water Use Database.



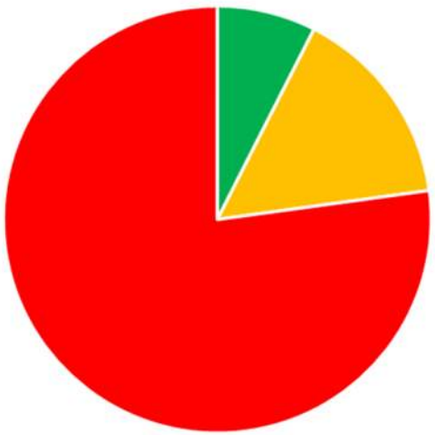
Historical Water Use – Limitations and Challenges

- Withdrawals from private domestic wells, small surface water irrigation ponds, and any other water withdrawals less than the reporting threshold of 3 MGM are excluded from water reporting.
- Increasing trends in reported water withdrawals for some categories (agriculture, for example) may in part be due to increased reporting compliance over the analysis period.
- Errors in reported water withdrawals.
  - Withdrawals are self-reported.

Water Use in the Broad, Catawba, and Saluda Basins

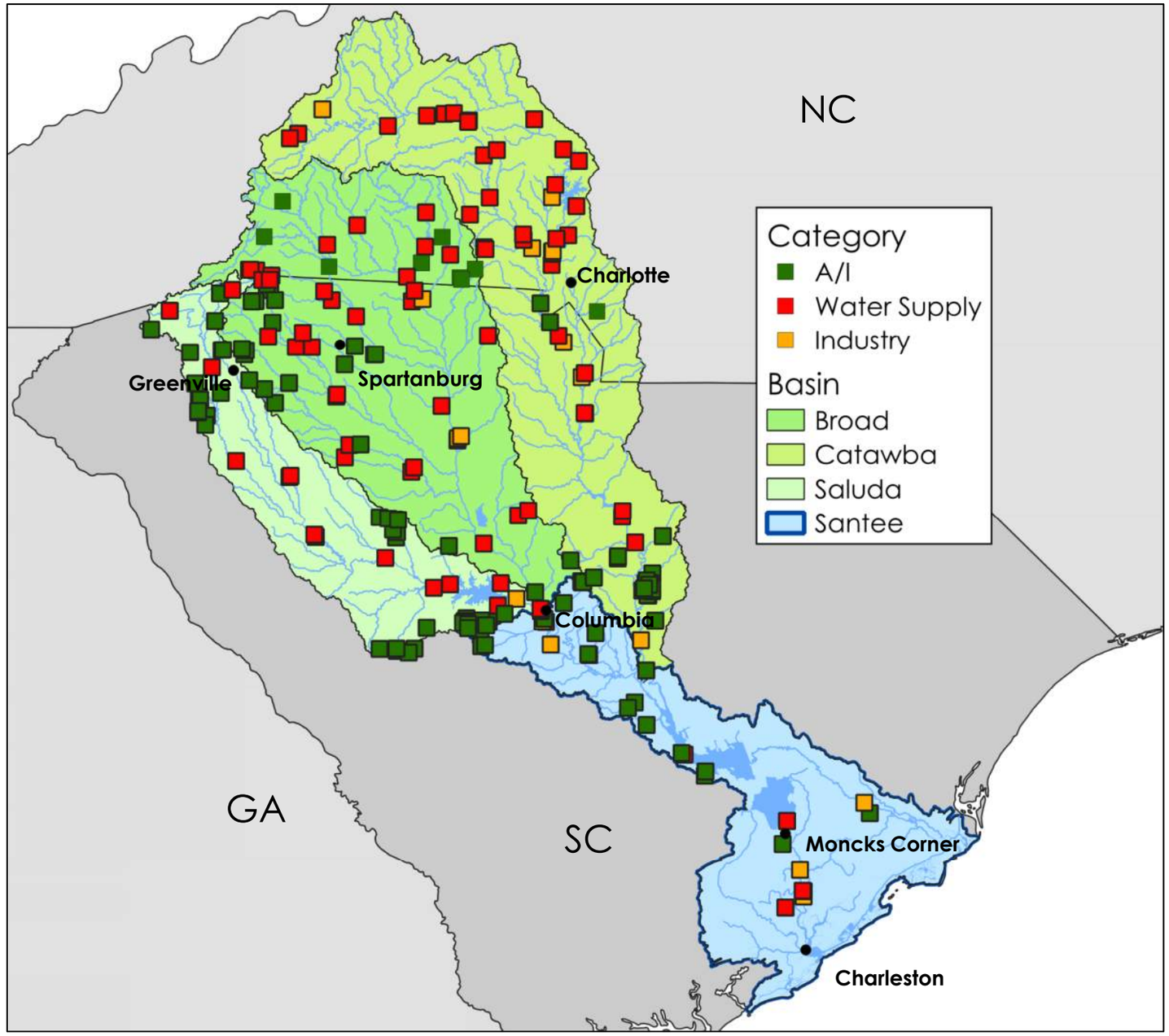
2022 Total Upstream Water Withdrawals (Excluding Power)

- Water Supply 77% (508 mgd)
- Industry 15% (96 mgd)
- A/I, 8% (52 mgd)



Total = 656 mgd

A/I Includes Golf Course Irrigation, Agricultural Irrigation, Mining, Aquaculture, Livestock Irrigation, Lakeside Irrigation.

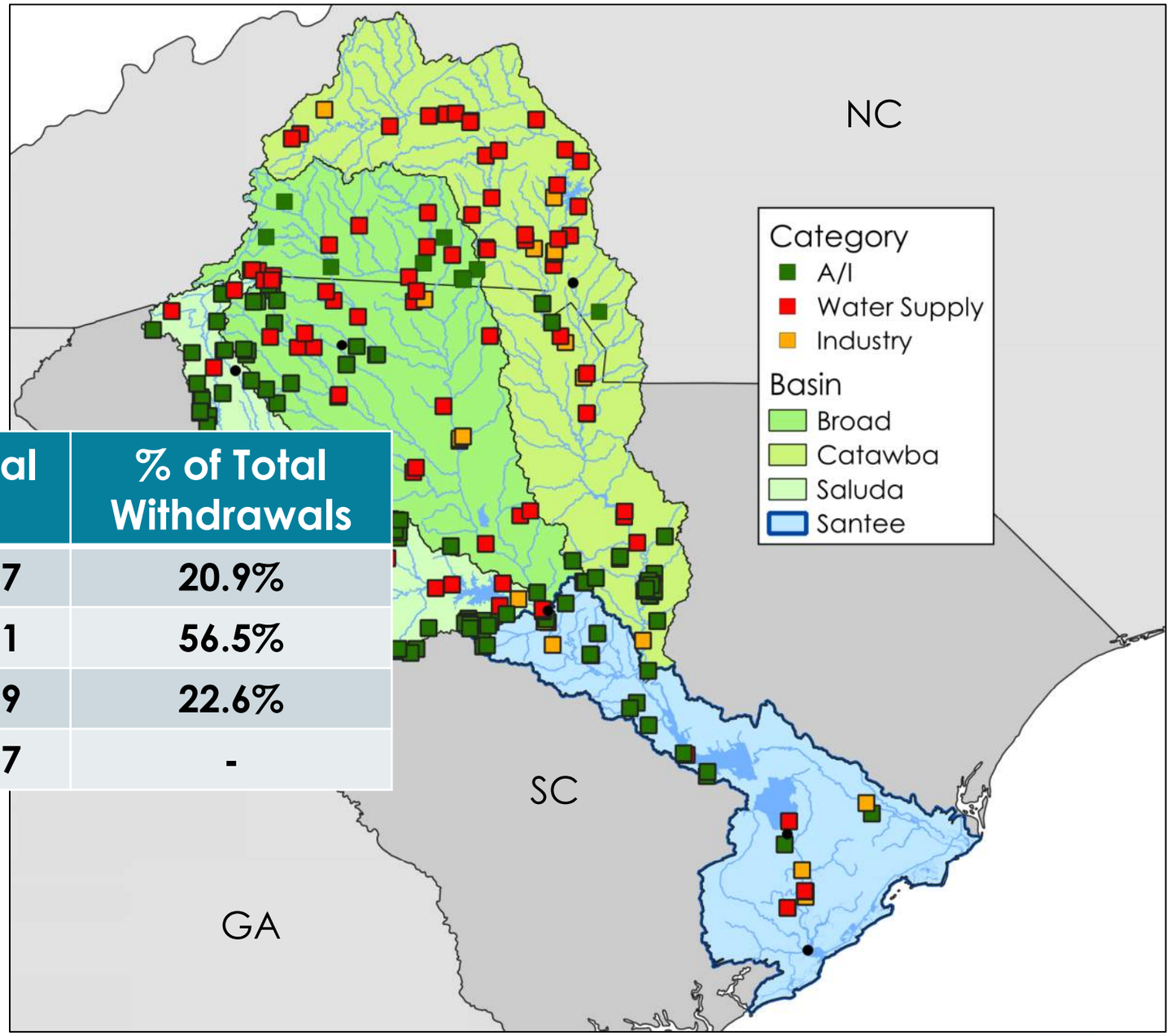


2022 Upstream Water Withdrawals by Basin (Excluding Power)

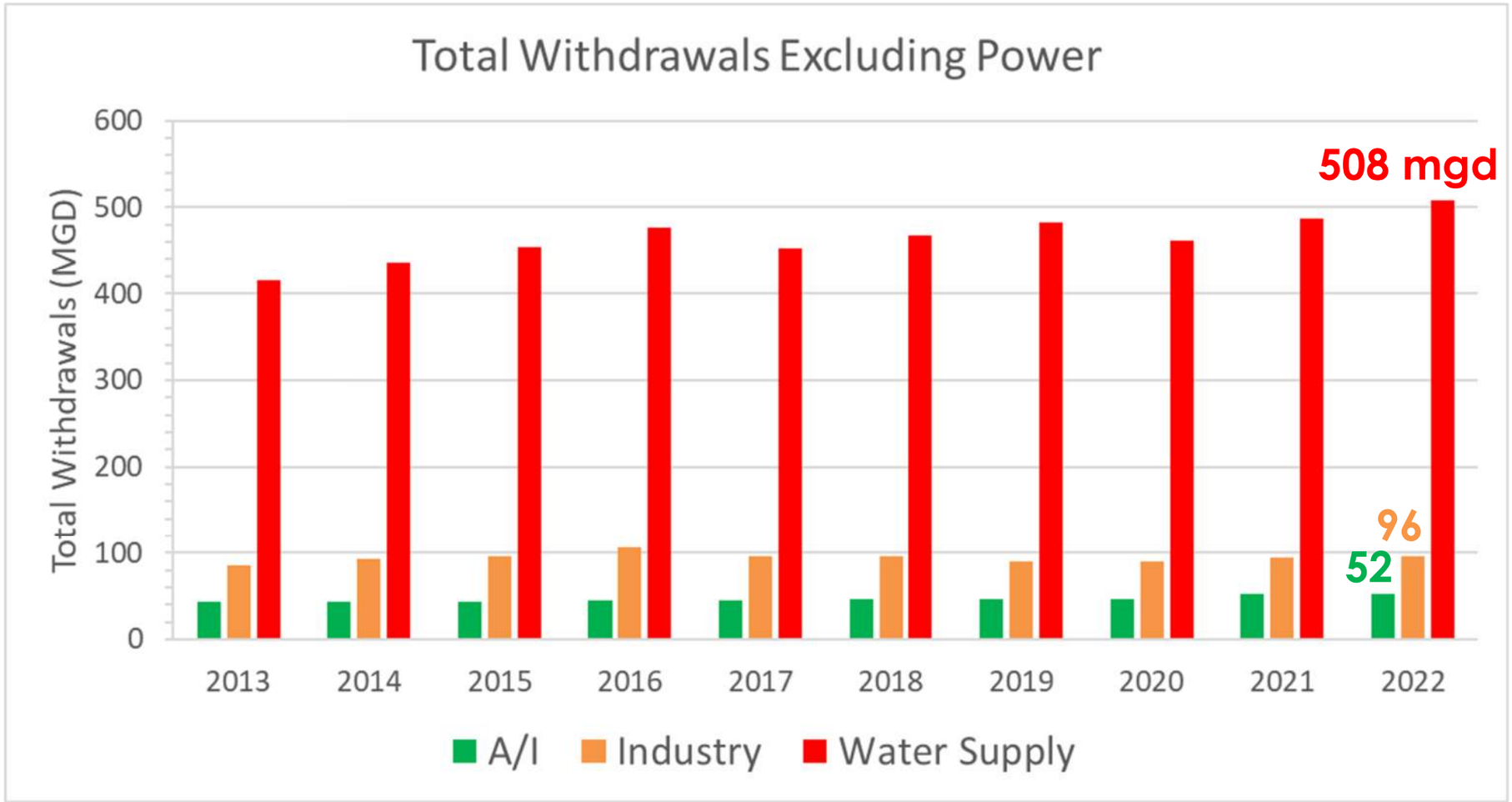
Basin	A/I	Industry	Water Supply	Total	% of Total Withdrawals
Broad	6.3	3.1	128	137	20.9%
Catawba	43.4	64.1	264	371	56.5%
Saluda	2.5	29.2	117	149	22.6%
Total	52.2	96.4	508	657	-

* All values in mgd

A/I Includes Golf Course Irrigation, Agricultural Irrigation, Mining, Aquaculture, Livestock Irrigation, Lakeside Irrigation.



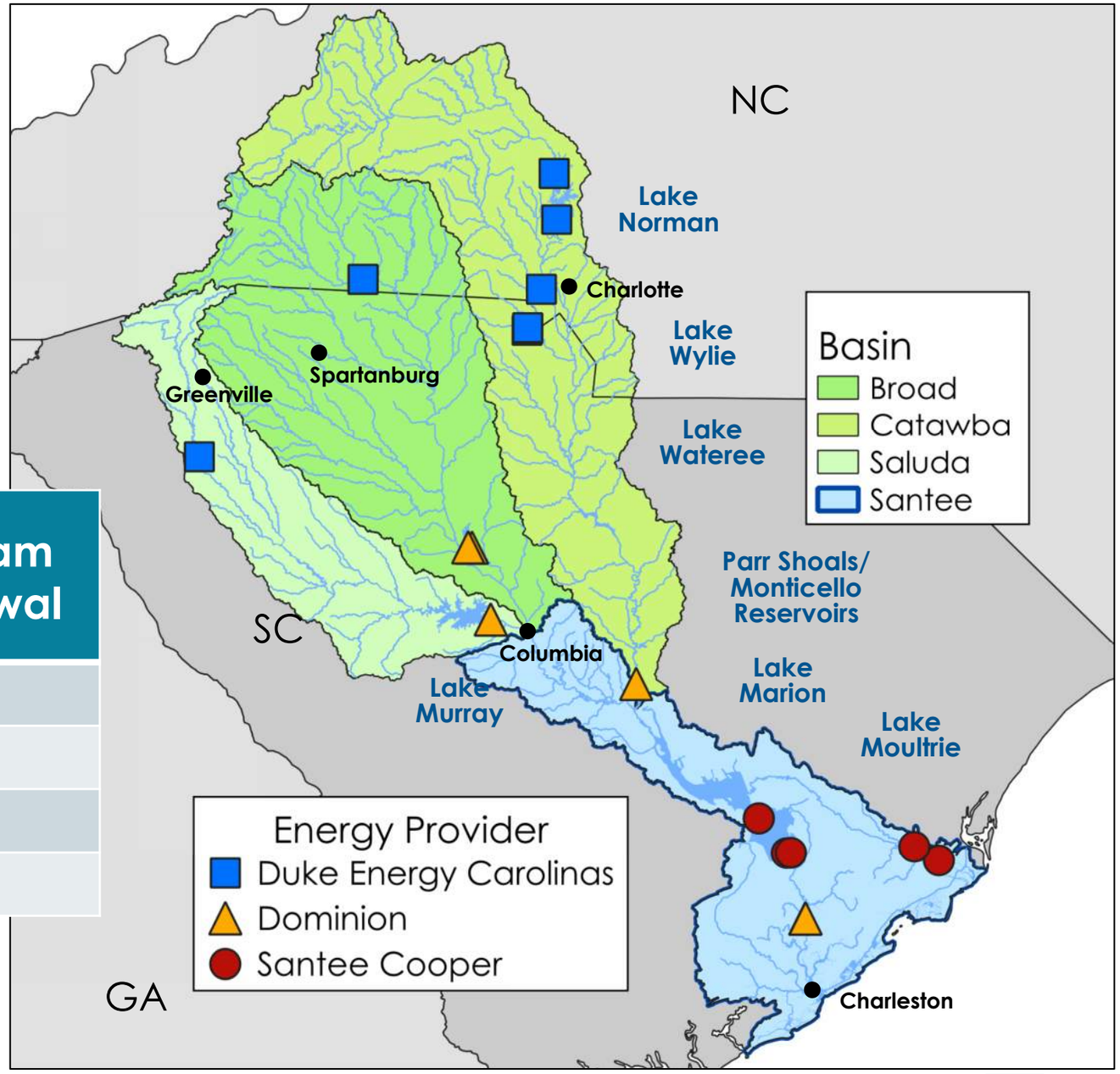
2013-2022 Upstream Withdrawals (Excluding Power)



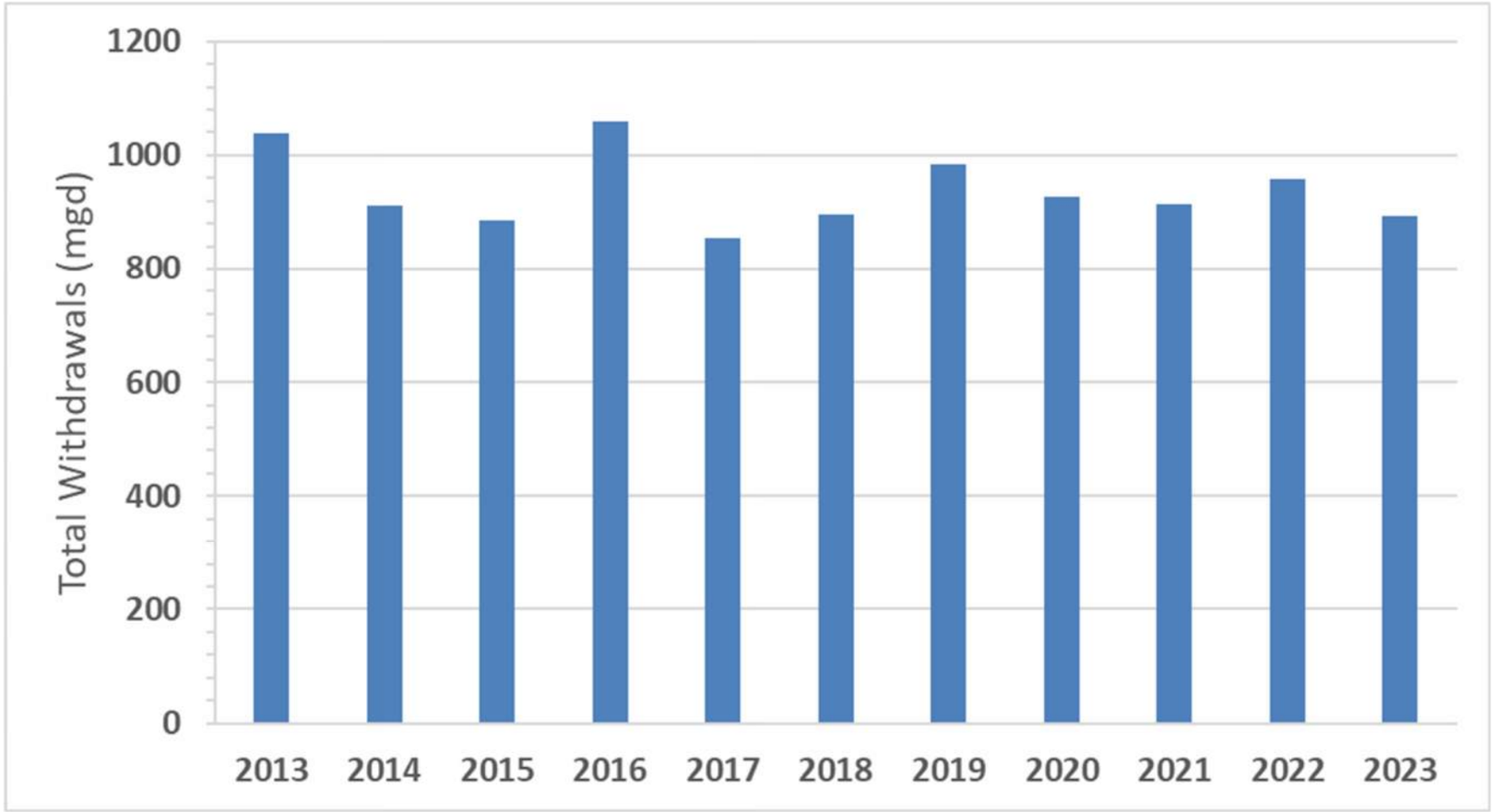
A/I Includes Golf Course Irrigation, Agricultural Irrigation, Mining, Aquaculture, Livestock Irrigation, Lakeside Irrigation.

2022 Upstream Net Water Withdrawals for Power Generation

Basin	2022 Net Withdrawal (mgd)	% of Upstream Net Withdrawal
Broad	60.2	46.9%
Catawba	63.0	49.1%
Saluda	5.1	4.0%
Total	128.3	-



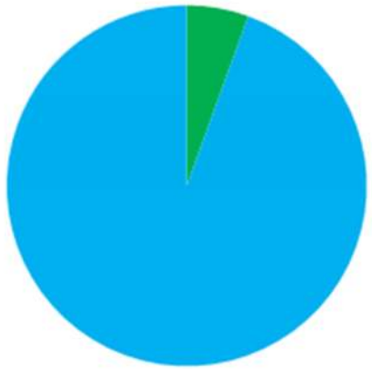
2013-2023 Water Withdrawals for Energy Production (Saluda, Broad, and Catawba basins – SC only)



Water Use in the Lower Santee Basin

2023 Lower Santee Water Use

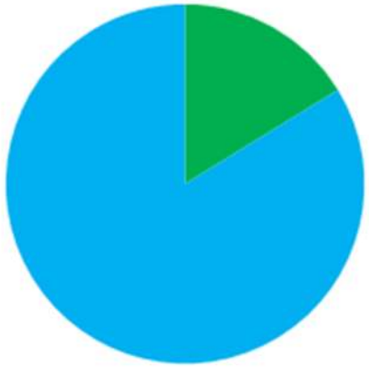
- Both surface water and groundwater are important resources in the basin.



Including Energy

SW : 94% (438 MGD)

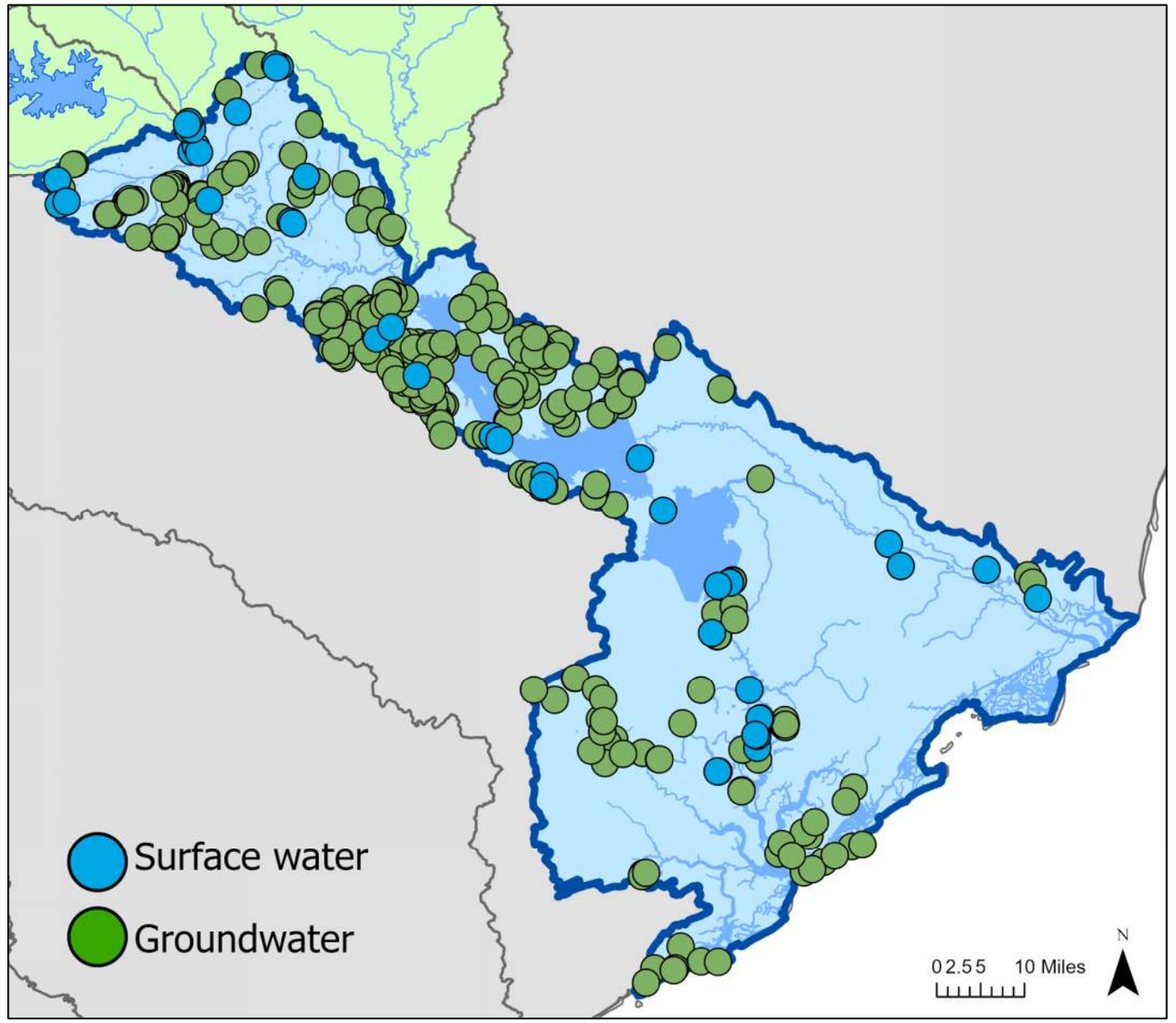
GW: 6% (27 MGD)



Excluding Energy

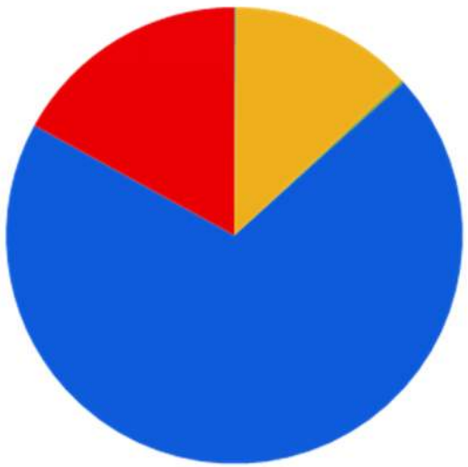
SW : 83% (133 MGD)

GW: 17% (27 MGD)

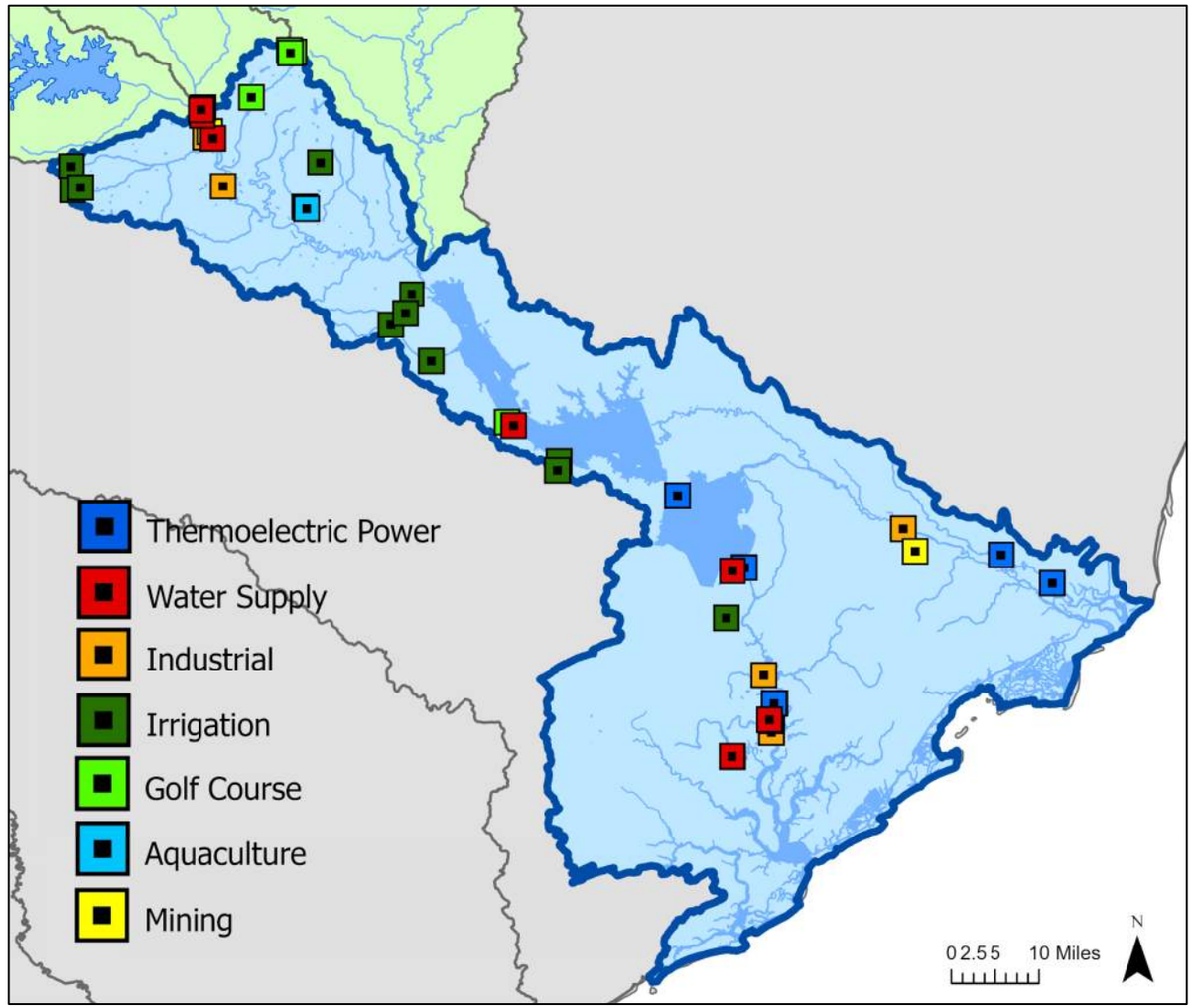


2023 Reported Santee Surface Water Withdrawals

- Thermoelectric Power, 70% (305 MGD)
- Water Supply, 17% (74 MGD)
- Industry, 13% (57 MGD)
- Mining, < 1% (1.0 MGD)
- Agr. Irrigation, < 1% (0.4 MGD)
- Golf Course, < 1% (0.3 MGD)
- Aquaculture, < 1% (0.1 MGD)

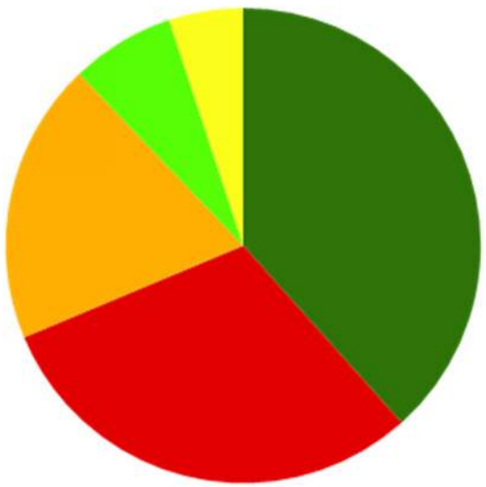


Total reported SW withdrawals – 438 MGD

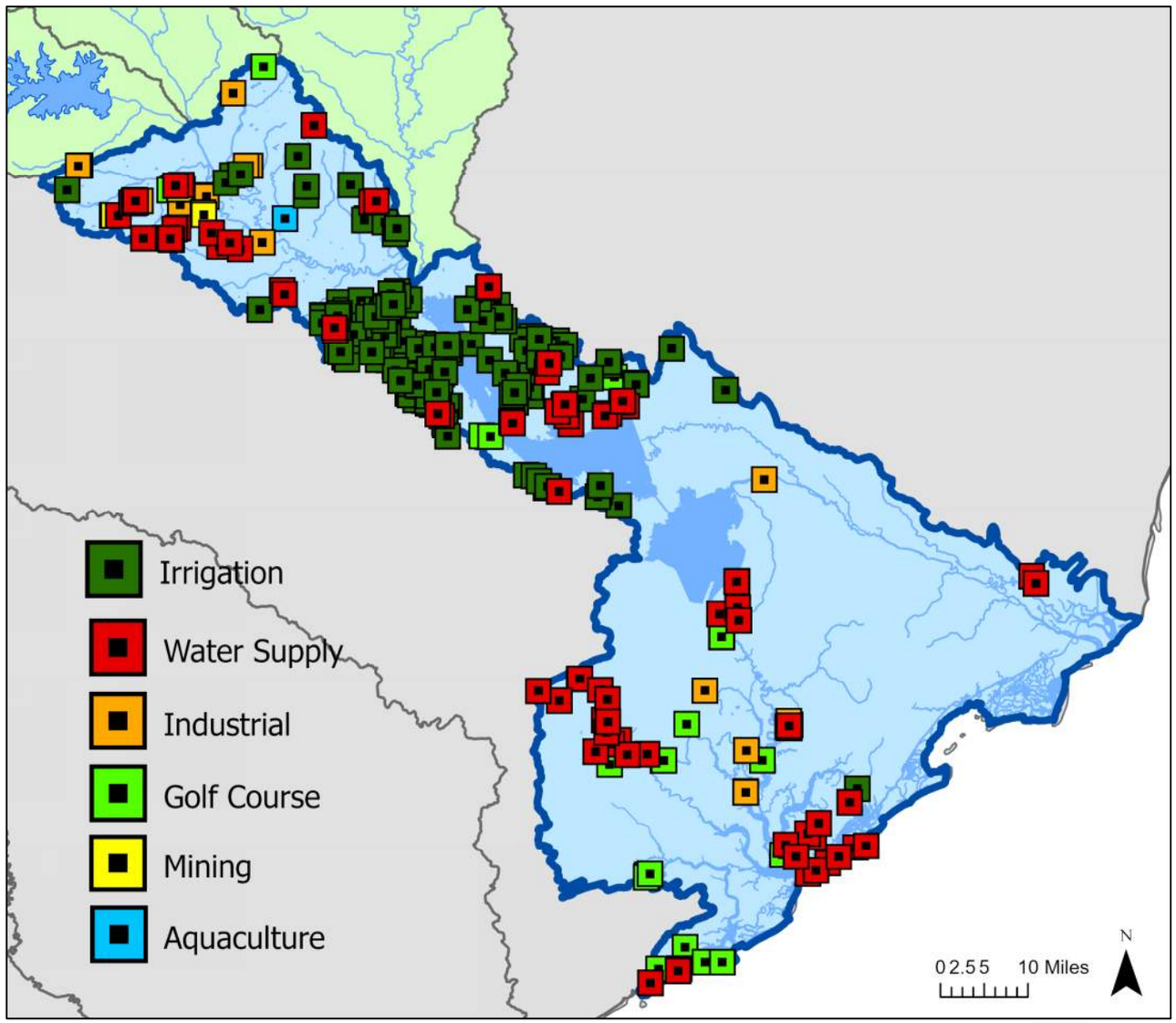


2023 Reported Santee Groundwater Withdrawals

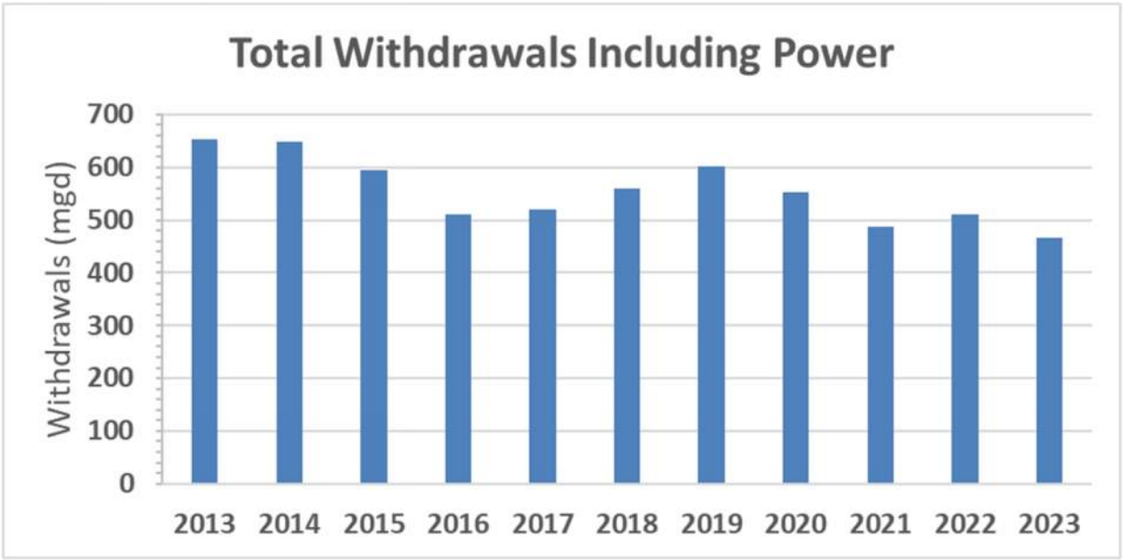
- Agr. Irrigation, 41% (11 MGD)
- Water Supply, 29% (8 MGD)
- Industry, 18% (5 MGD)
- Golf Course, 8% (2 MGD)
- Mining, 5% (1.3 MGD)
- Aquaculture, < 1% (0.02 MGD)



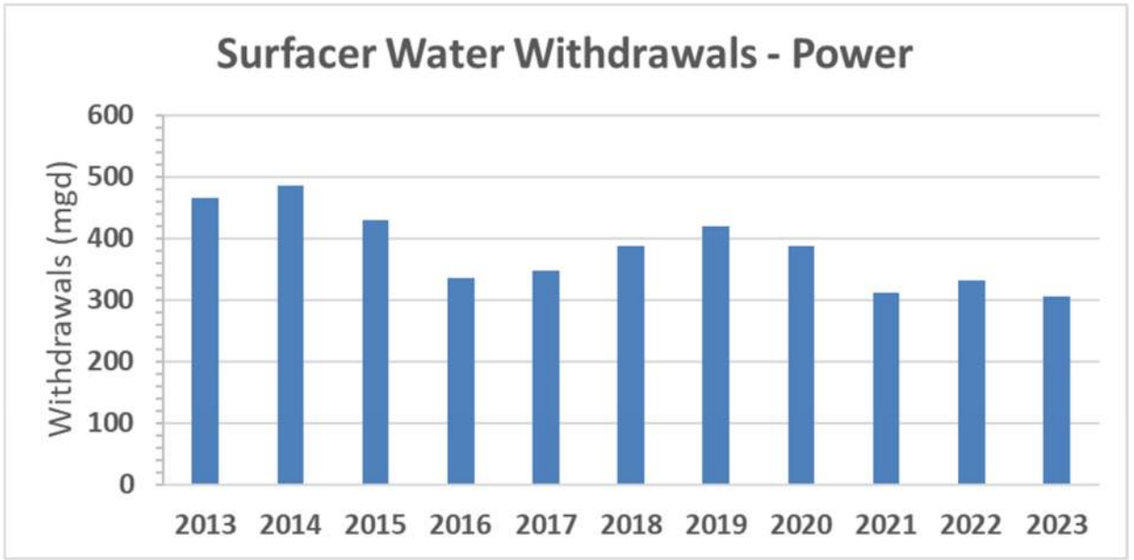
Total reported GW withdrawals – 27 MGD

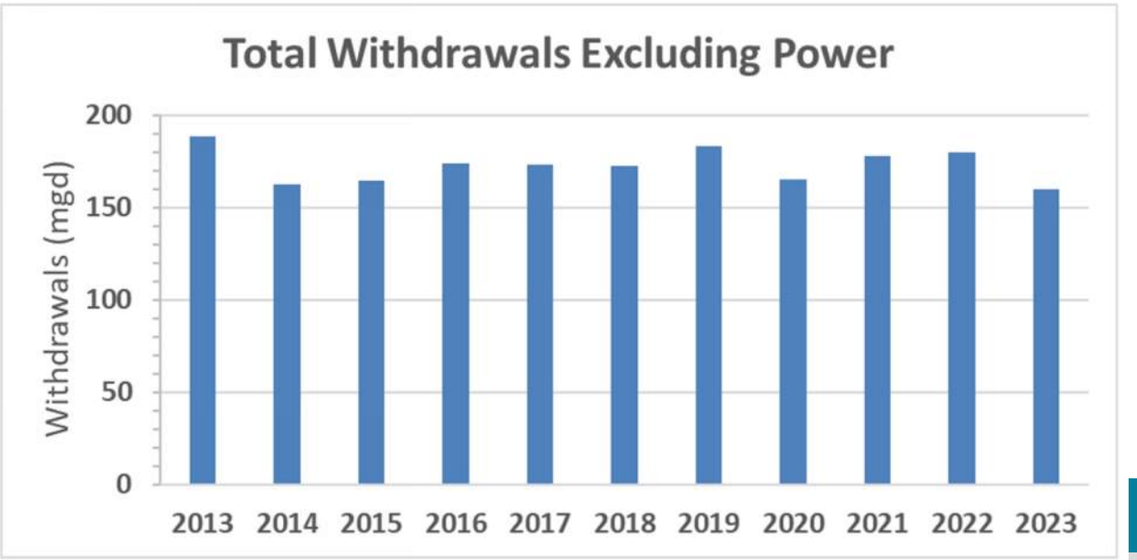


Total Water Demands, 2013-2023 (Surface Water and Groundwater Combined)

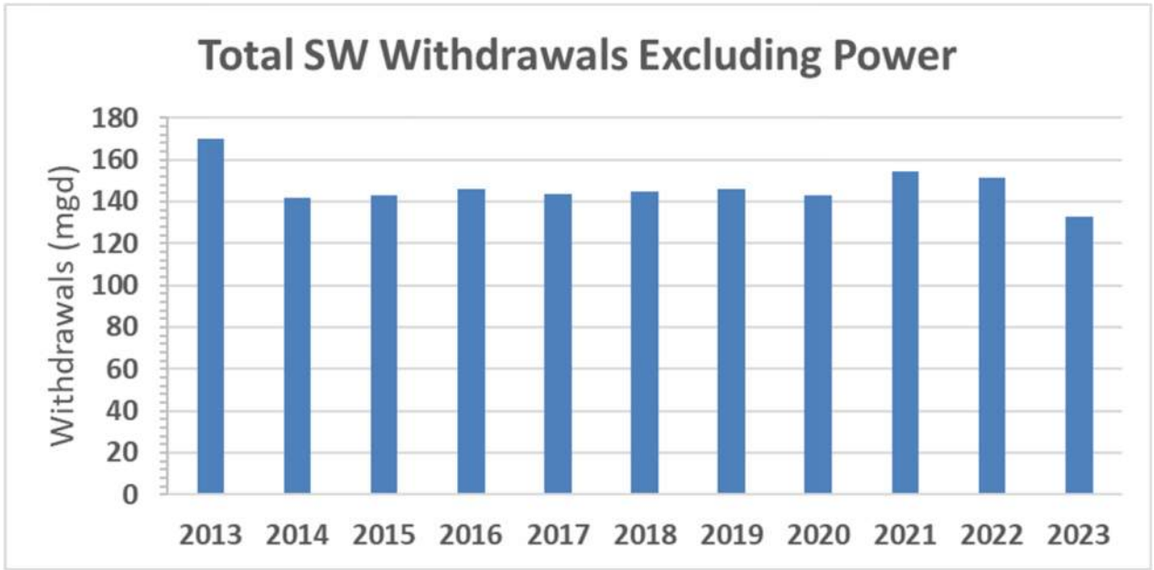


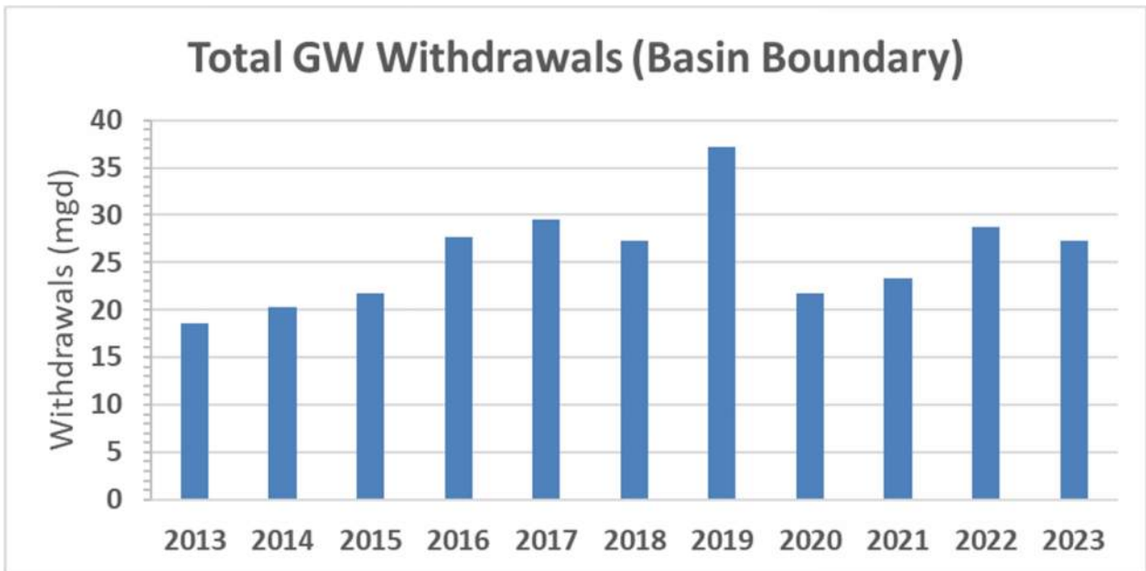
- Withdrawals for thermoelectric power generation are typically large.
- Vast majority of withdrawals are returned close to the point of withdrawals.
- Often remove power withdrawals to improve understanding of historical water use in other sectors.





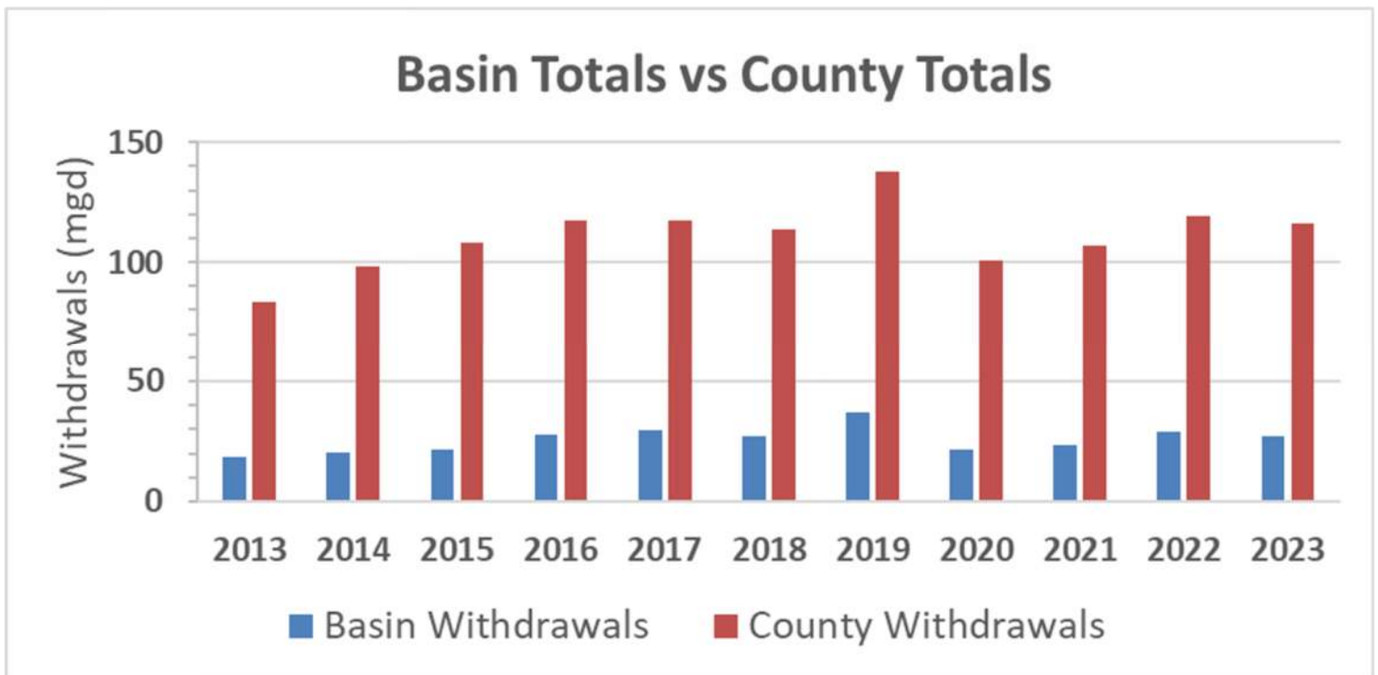
Surface Water and Groundwater Reported Withdrawals, 2013-2023

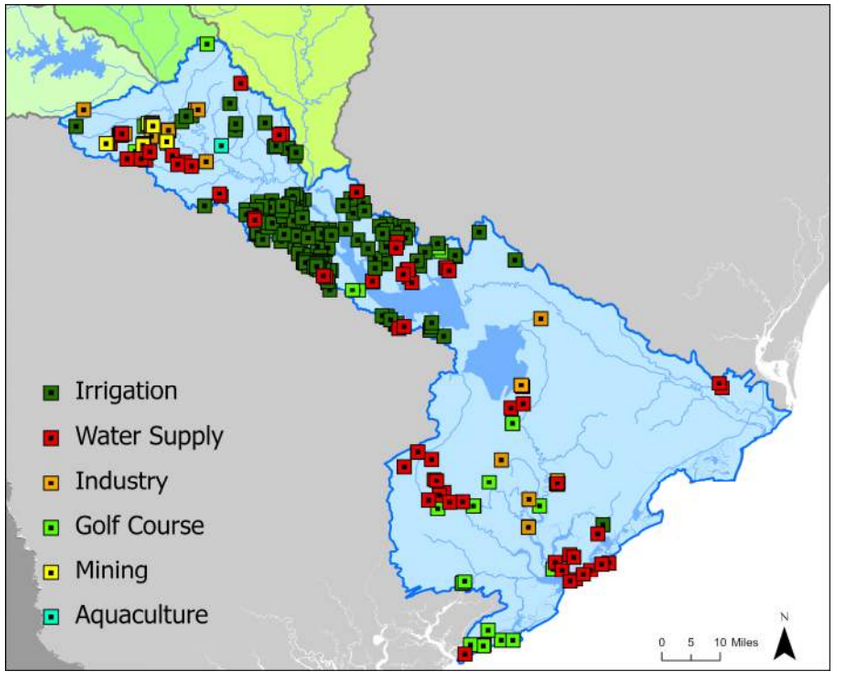


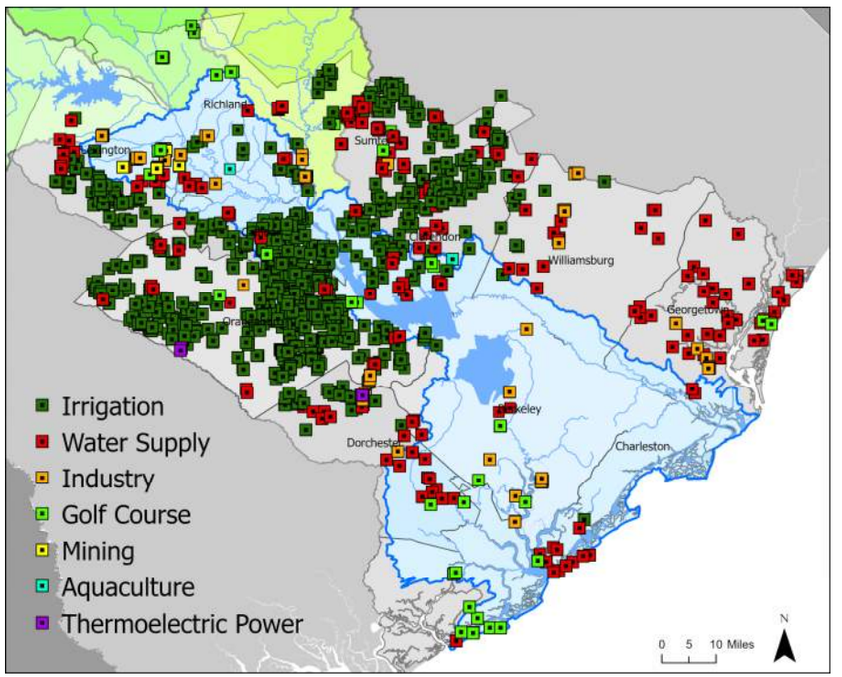


Reported Groundwater Withdrawals – Whole Counties

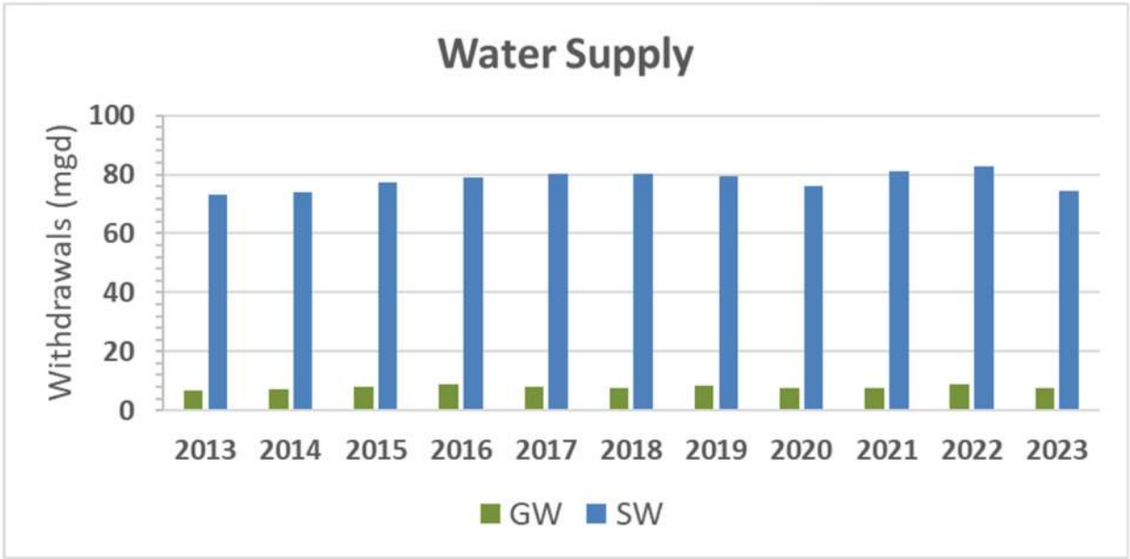
- Groundwater assessment must consider groundwater use outside of watershed boundaries.

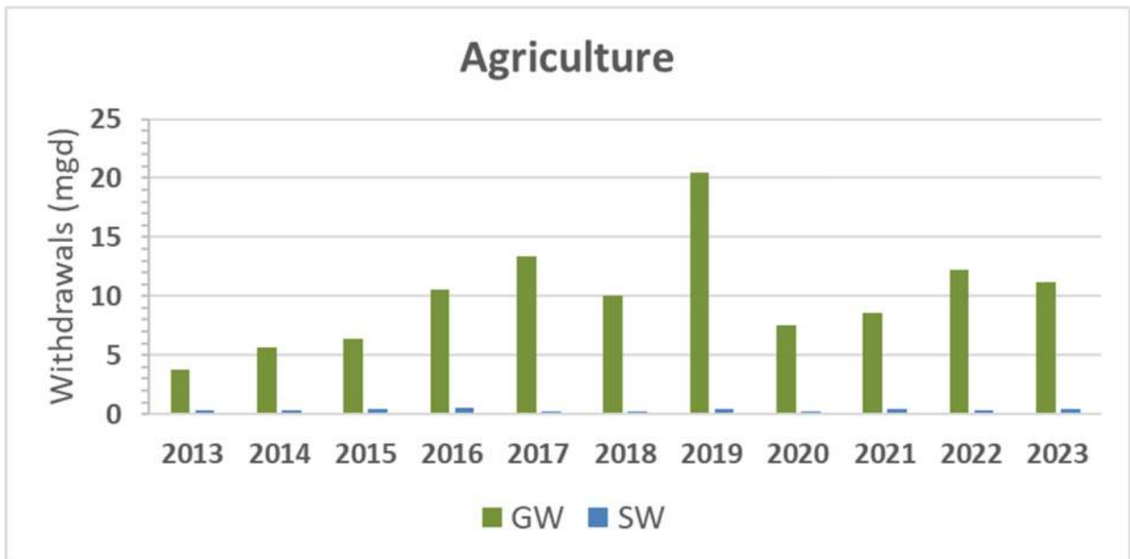






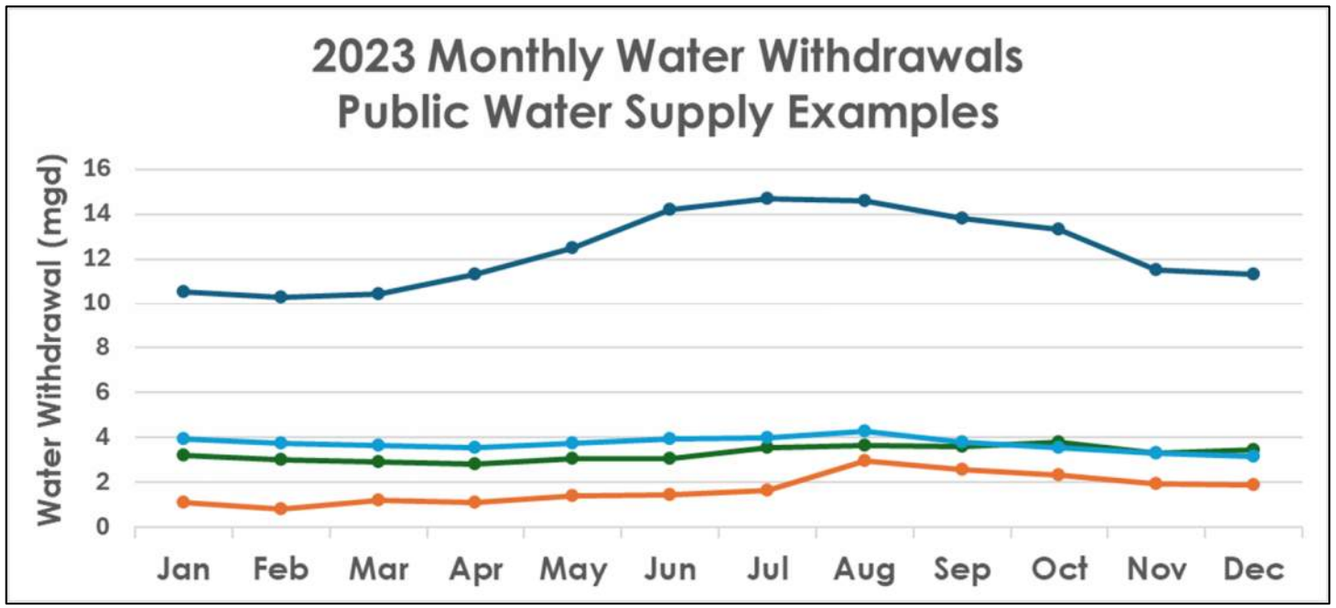
Reported Water Withdrawals by Sector, 2013-2023

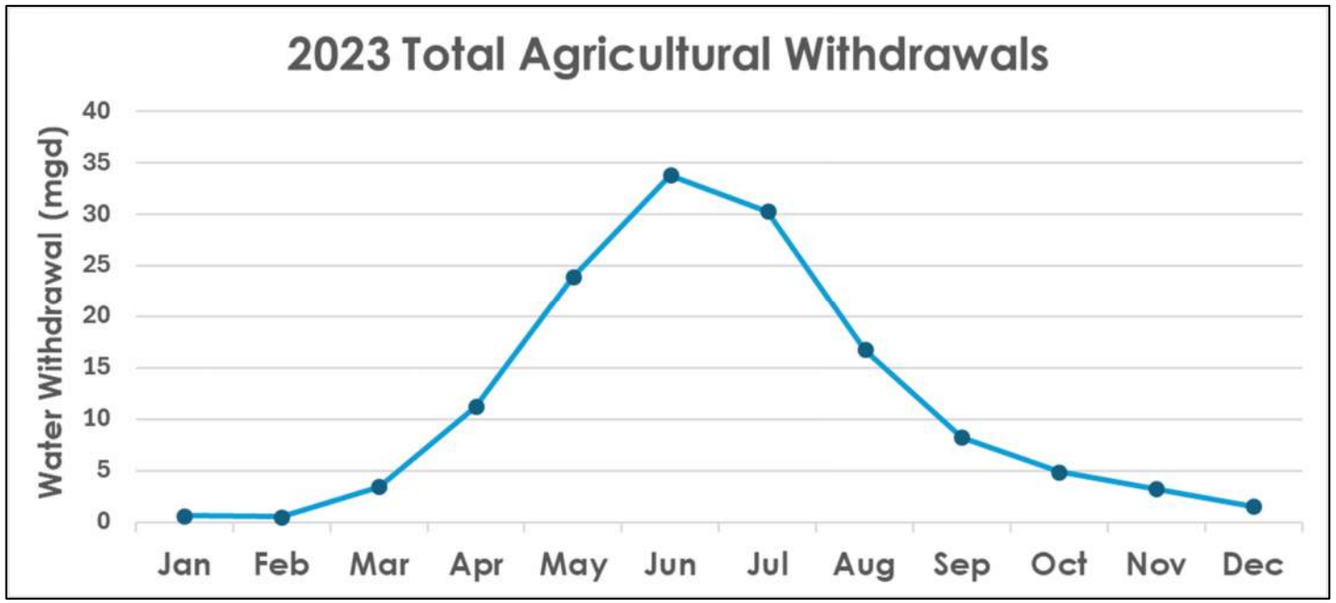




Seasonal Water Withdrawals

- Water withdrawals for some sectors have large seasonal variations.
- Season variations are accounted for in water assessments.





Questions?

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