

Florida Springs and Aquifer Dilemma



Howard T. Odum
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SPRINGS
INSTITUTE**



John Moran Photo

Florida's Freshwater Comes From Rain

From Georgia and Alabama

Rain

Evapotranspiration

Outflow

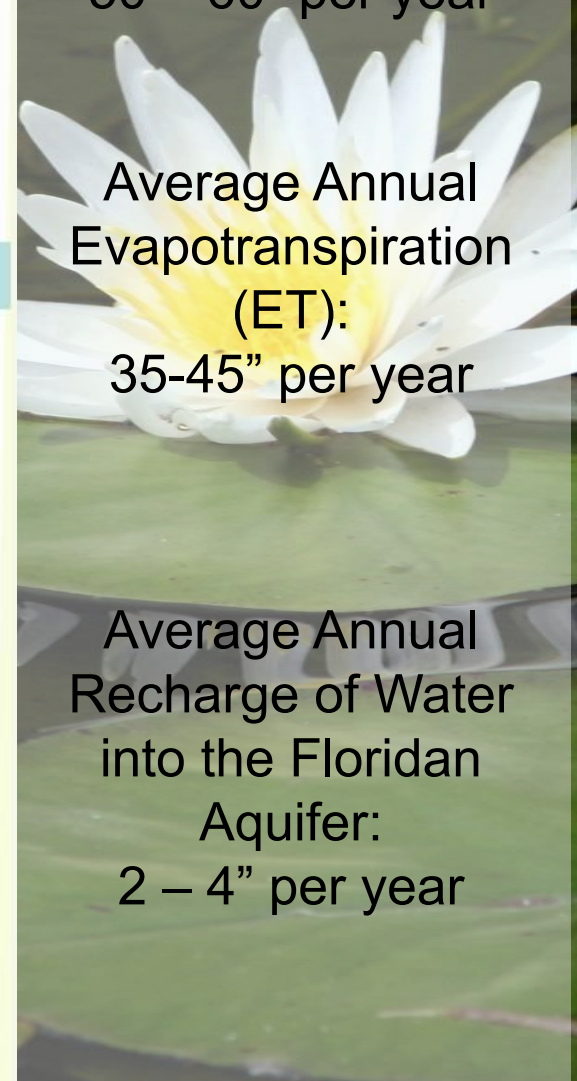
Fernald and Patton 1984

Water Budget

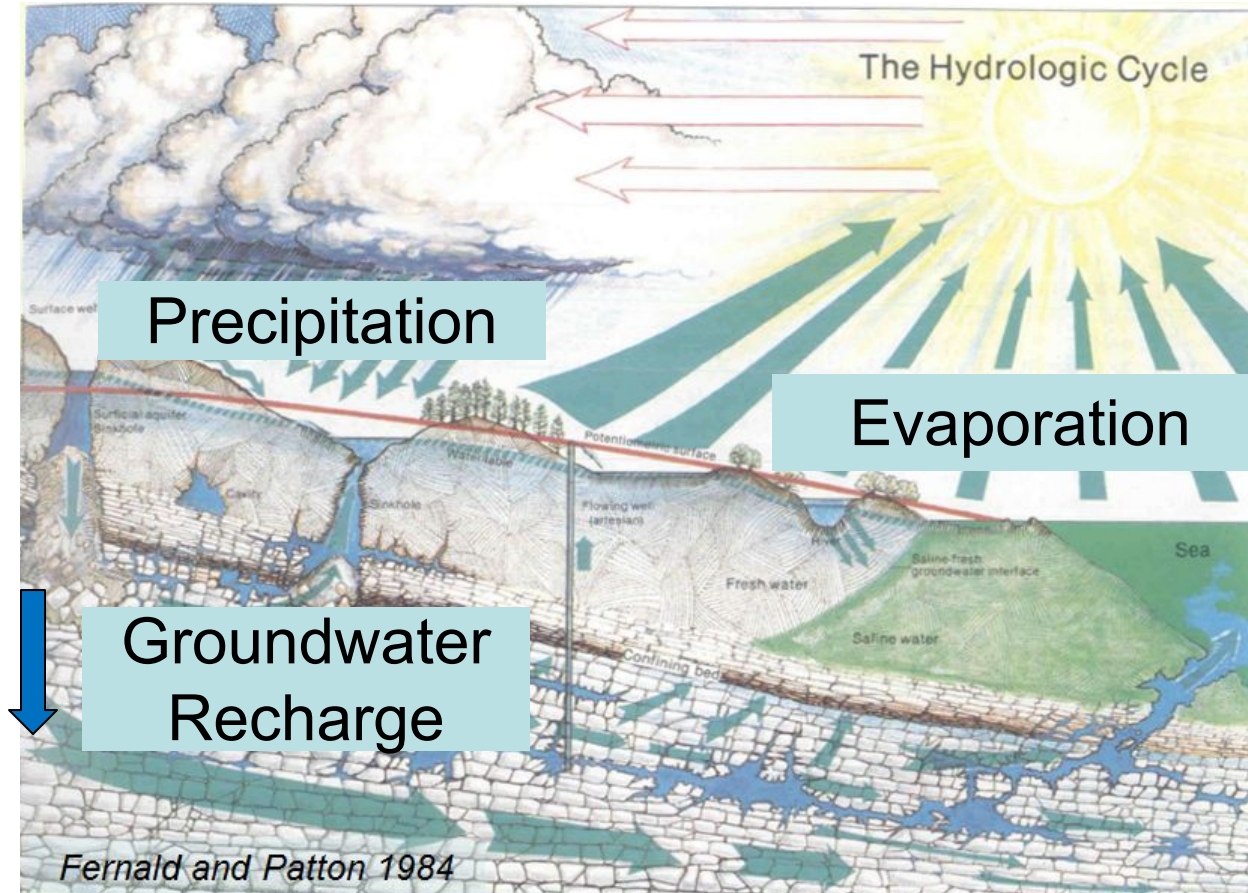
Average Annual
Rainfall:
50 – 60" per year

Average Annual
Evapotranspiration
(ET):
35-45" per year

Average Annual
Recharge of Water
into the Floridan
Aquifer:
2 – 4" per year



Floridan Aquifer Recharge = 6% of Rainfall or about 10.5 BGD to Florida's springs

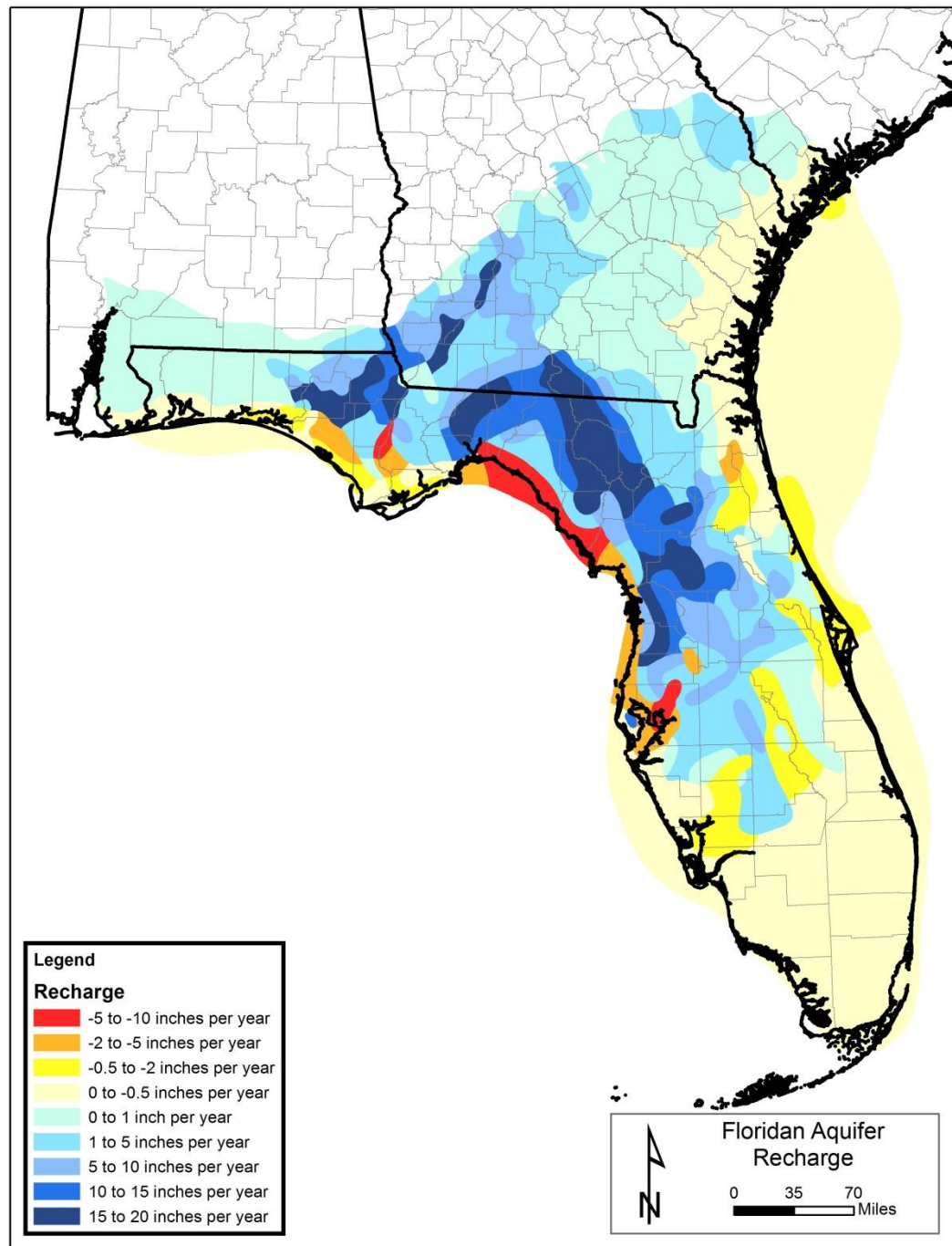


BGD = billion gallons per day; MGD = million gallons per day

Average Recharge to the Floridan Aquifer

-10 to **+20**
inches per
year

(USGS data)



Floridan Aquifer Water Balance

Summary of Pre-development Conditions:

- Total groundwater discharge estimated as **14 BGD** (88% springs and 12% diffuse flow)
- Regional spring flow **12 BGD**
- Florida spring flow **10.5 BGD**

Bush and Johnston 1988

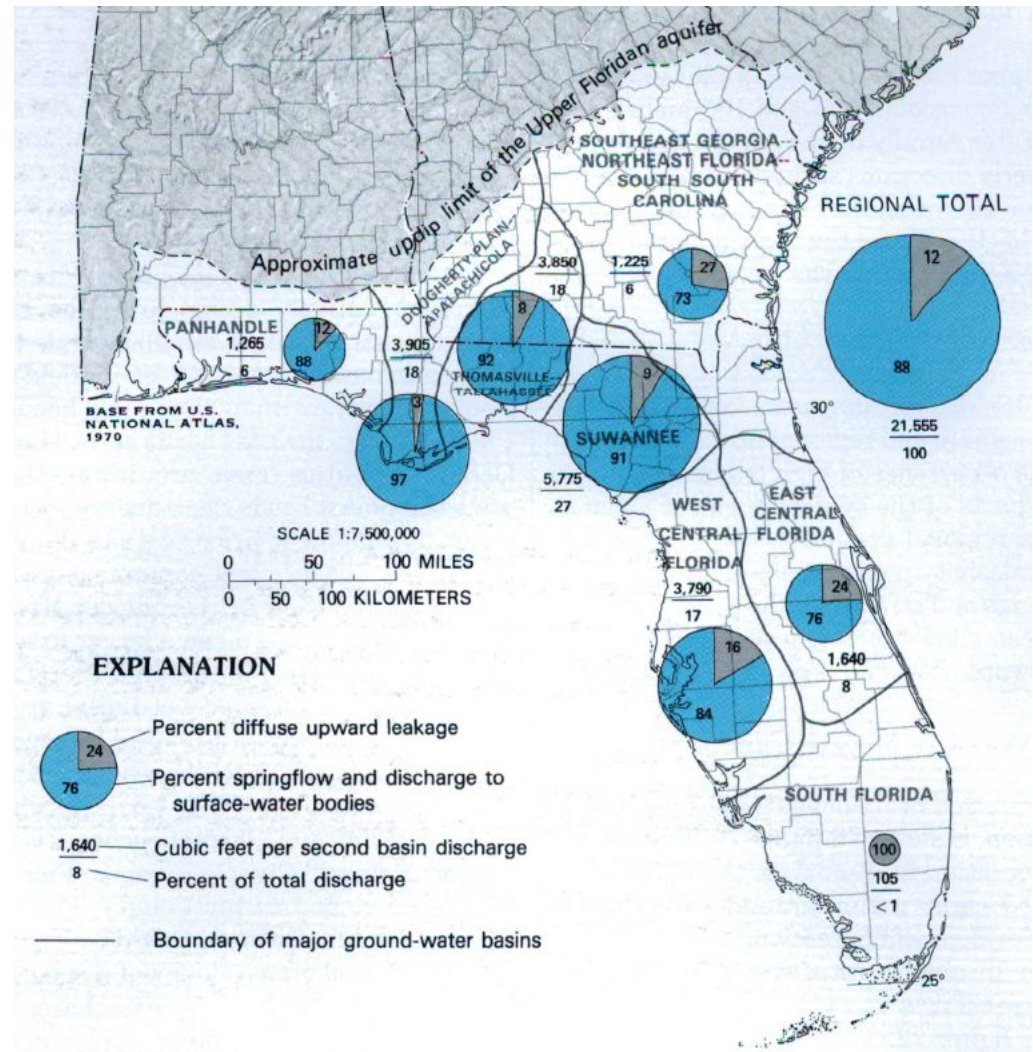


FIGURE 22.—Estimated predevelopment discharge from major ground-water basins of the Upper Floridan aquifer.

Florida Spring Historic Flows and Declines by Water Management District (WMD) (1930-2009)

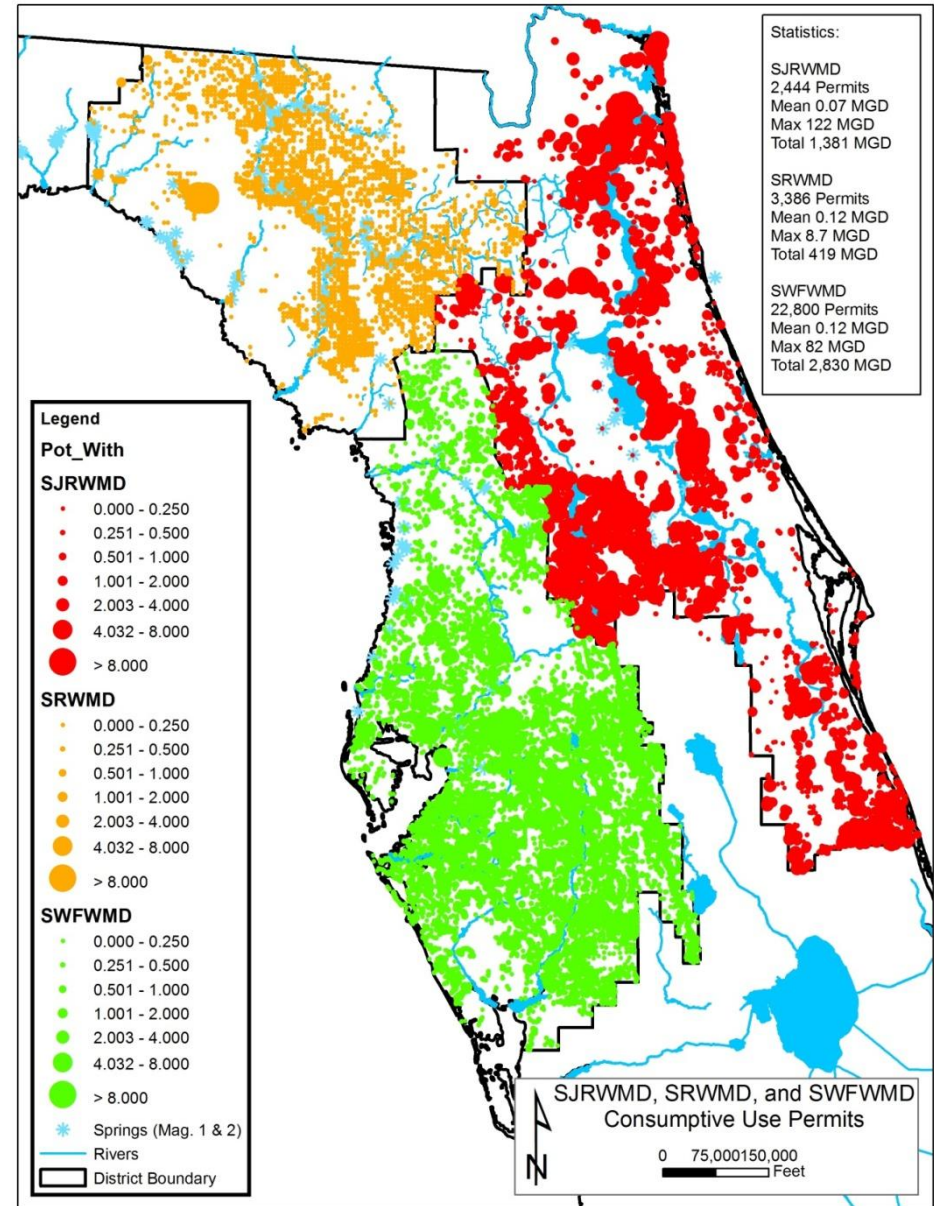
WMD	# Springs	Est. Historic Flow (MGD)	Current Avg. Flow (MGD)	Change Flow (MGD)	% Change
NWF	318	2,397	2,013	-385	-16
SJR	151	1,277	1,000	-276	-22
SR	314	4,745	2,449	-2,296	-48
SWF	238	2,070	1,691	-379	-18
Total	1,021	10,489	7,153	-3,336	-32

NWF = Northwest Florida, SJR = St. Johns River, SR = Suwannee River, SWF = Southwest Florida. Data from Robert L. Knight and Ronald A. Clarke. 2016. **Florida Springs—A Water-Budget Approach to Estimating Water Availability.** Journal of Earth Science and Engineering 6 : 59-72.

Florida's Springs Dilemma

Regional Groundwater Permits - 2025

- Suwannee River WMD 1,205 permits for up to 520 MGD from 4,550 wells
- St. Johns River WMD 2,109 permits for up to 1,306 MGD from 9,171 wells
- Southwest Florida WMD 1,279 permits for up to 980 MGD from 4,298 wells
- Northwest Florida WMD has 413 permits for up to 316 MGD from 2,256 wells



WMD 2010 data

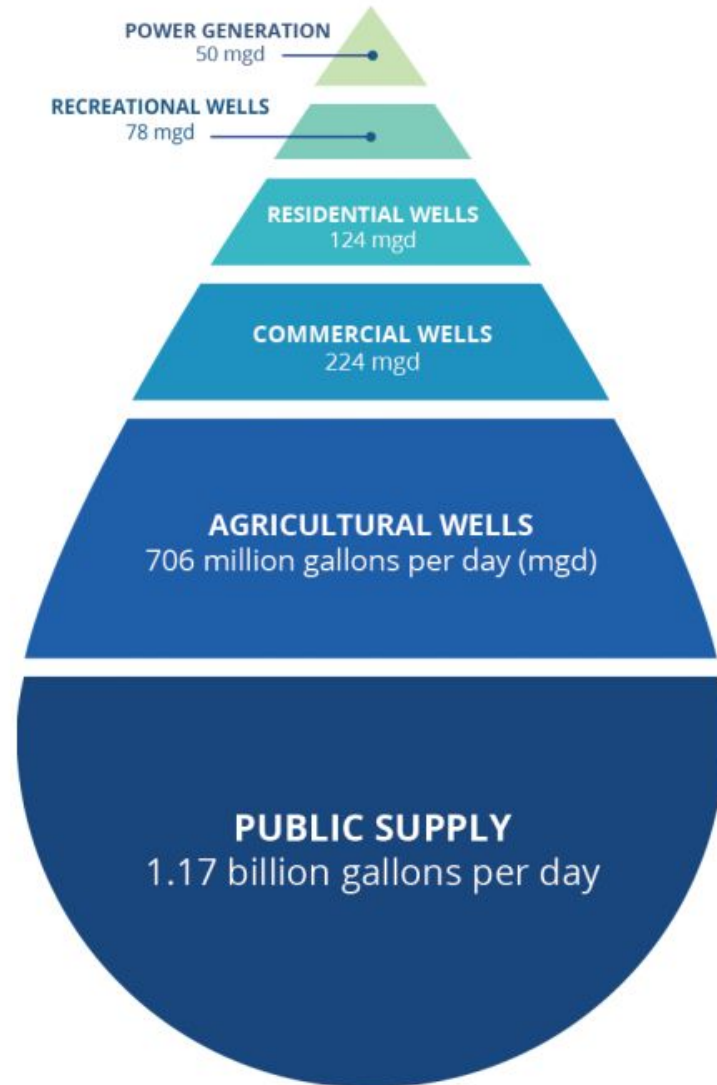
Florida Springs Region Domestic Self-Supply and Landscape Irrigation Wells

WMD	Domestic Wells	Landscape Wells	Totals
St. Johns	98,345	78,975	177,320
Southwest	61,419	24,065	85,484
Suwannee	98,312	980	107,148
Totals	258,076	104,020	369,952

WMD data

Withdrawals from the Floridan Aquifer in 2015

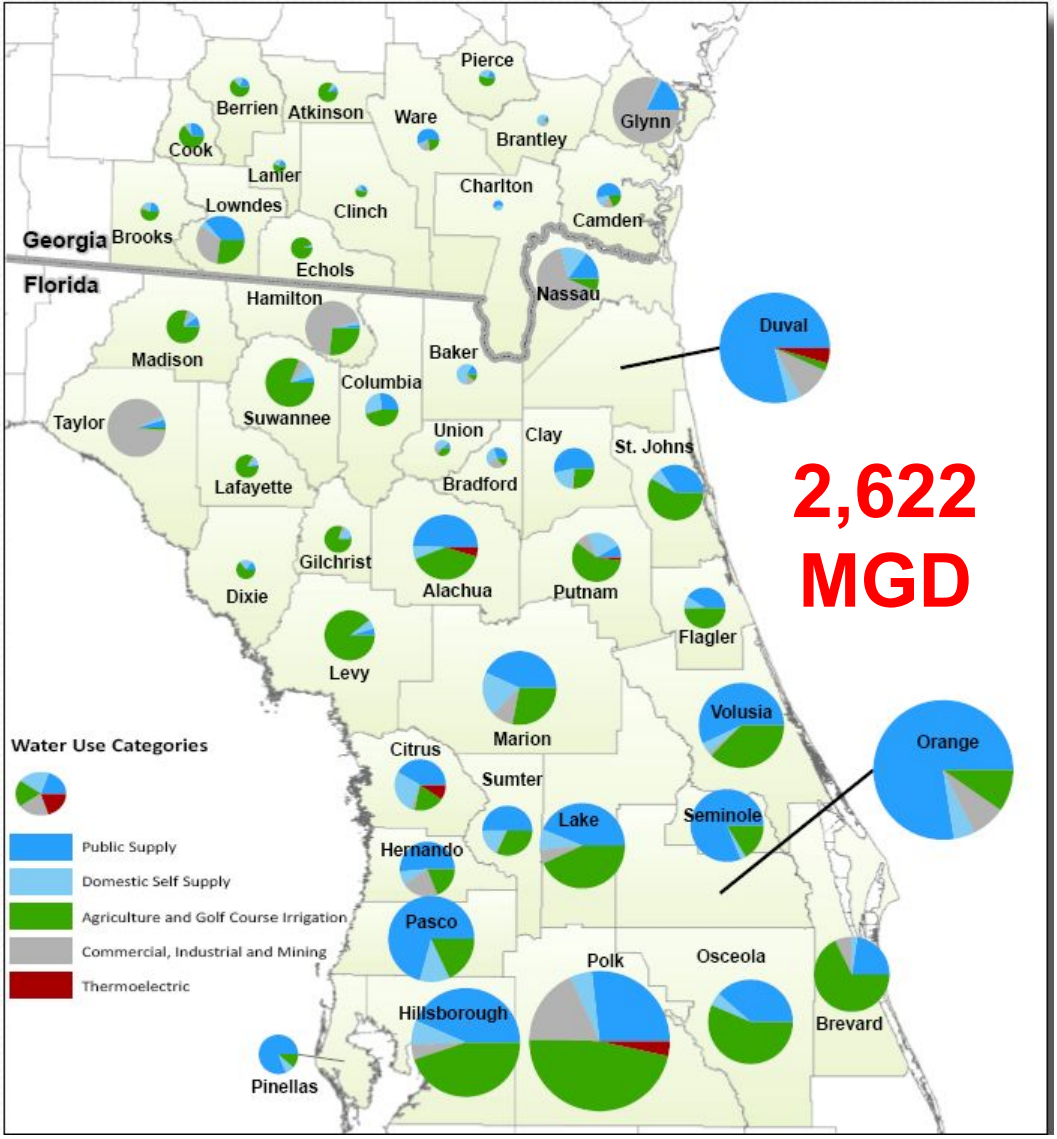
- Total estimated groundwater use from the Floridan Aquifer in 2015 was 2.3 billion gallons per day
- Public water supply accounted for 1.2 BGD
- Agriculture accounted for 0.7 BGD (USGS 2015)



North Florida Groundwater Pumping (2010)

Pumping is concentrated in urban and industrial population centers:

- Polk – 251 MGD
- Orange – 249 MGD
- Hillsborough – 151 MGD
- Pasco – 94 MGD
- Lake, Volusia, Osceola > 90 MGD each

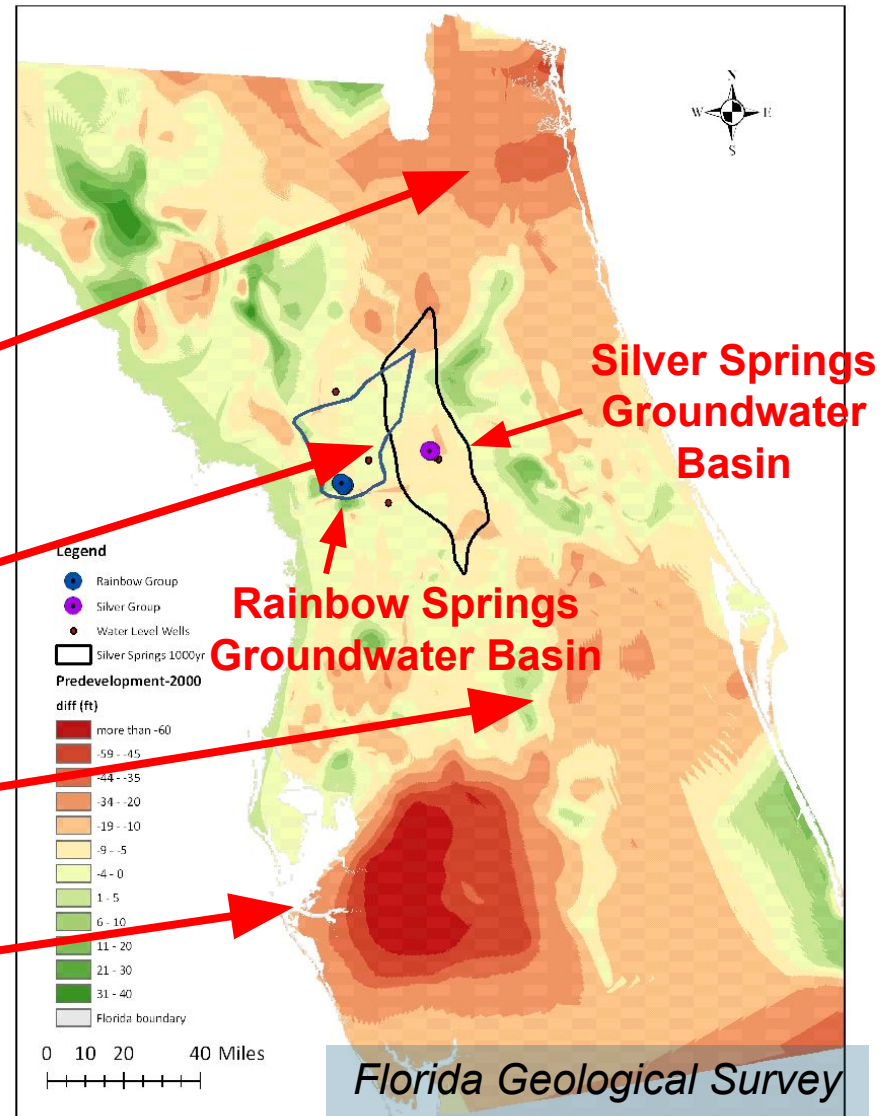


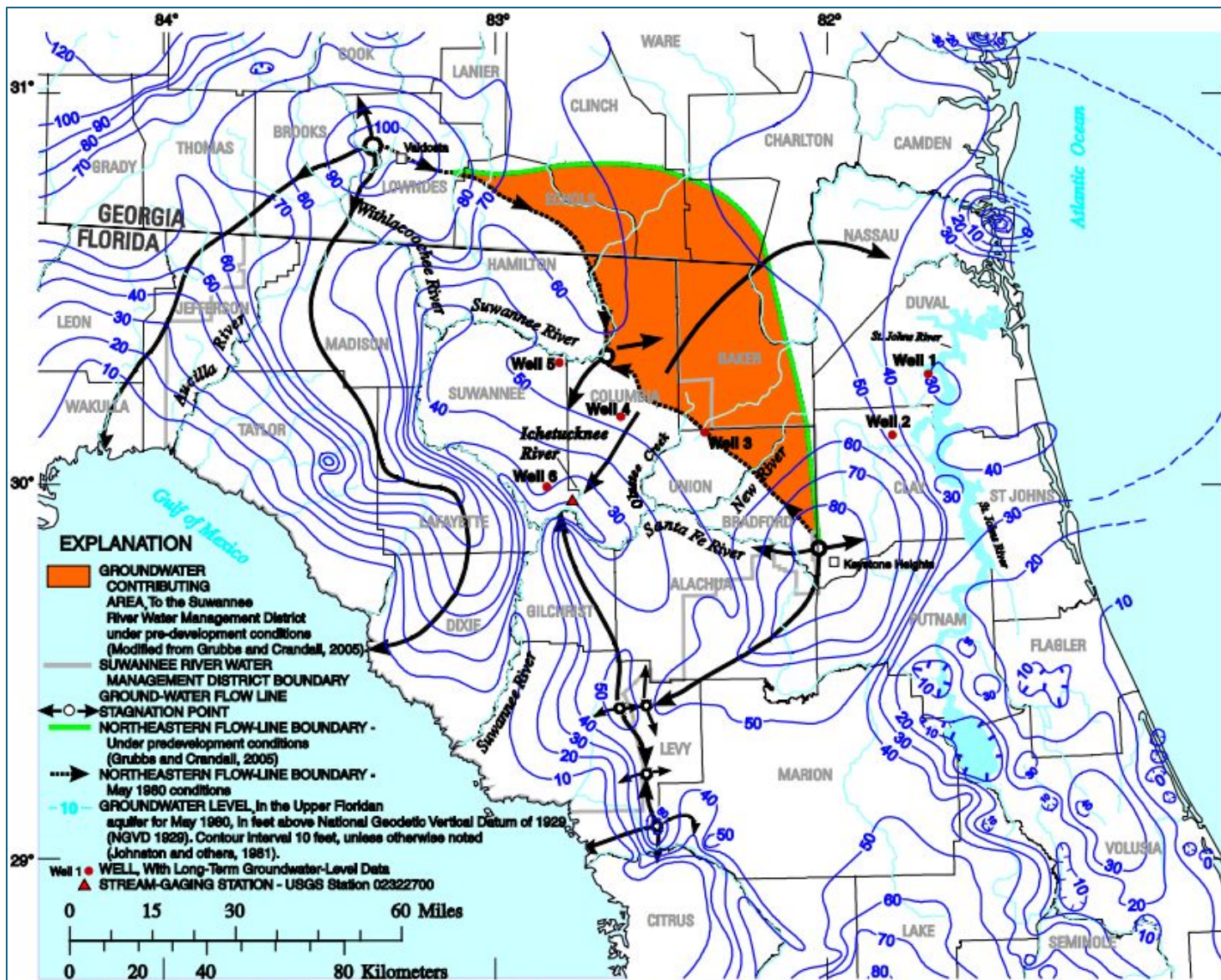
USGS Data

Floridan Aquifer Levels are Falling

Decline in the water levels of the Floridan Aquifer:

- Northeast FL: 20 to 60 ft
- Marion County: 4 to 20 ft
- Orlando area: 10 to 34 ft
- Southwest FL: 20 to >60 ft





Potentiometric surface of the Upper Floridan aquifer during May 1980 showing: (1) key groundwater flow lines, (2) the northeastern flow-line boundary, and (3) the estimated area where groundwater flow has been diverted to the east away from the Suwannee, Ichetucknee, and Santa Fe Rivers (USGS 2011)

The Drawdown Problem is Projected to Get Worse

Projected changes in the elevation of the potentiometric surface of the Floridan aquifer system (1995-2030)

SJRWMD 2009

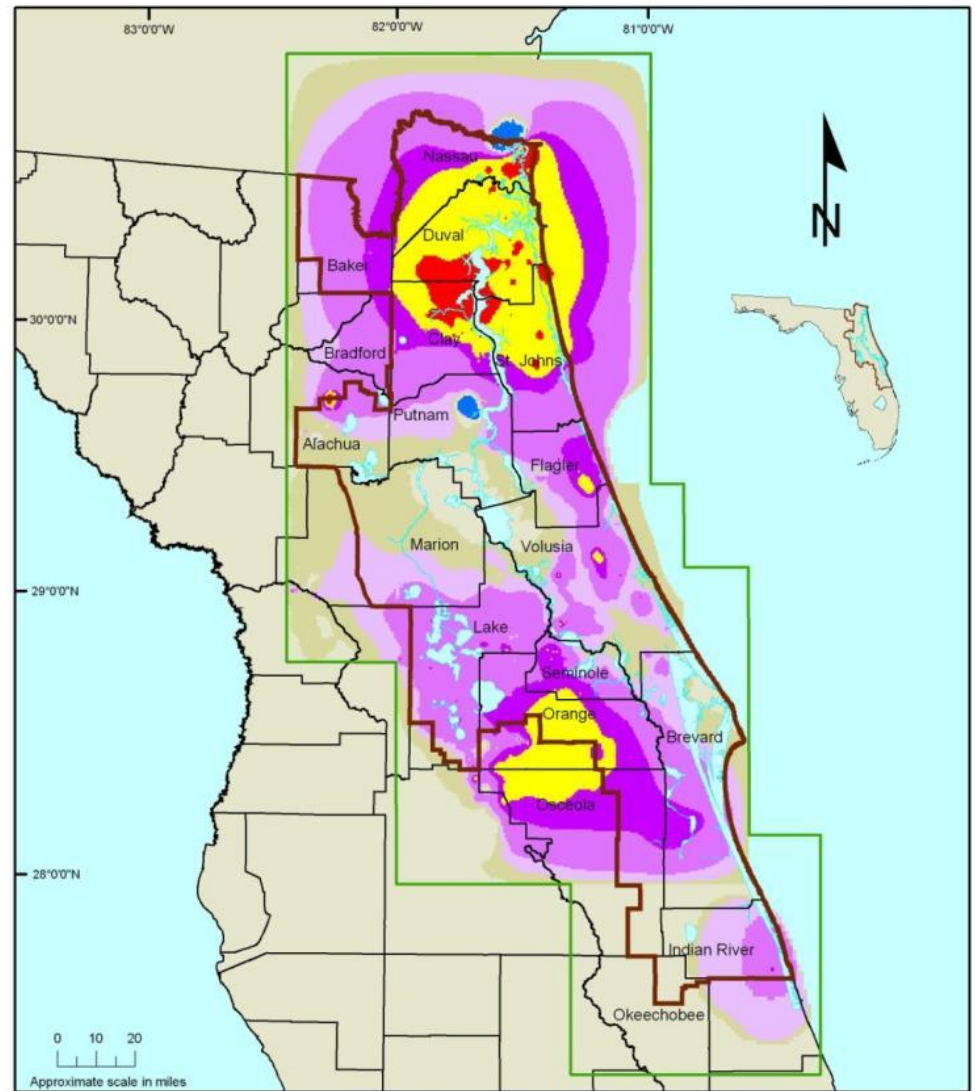


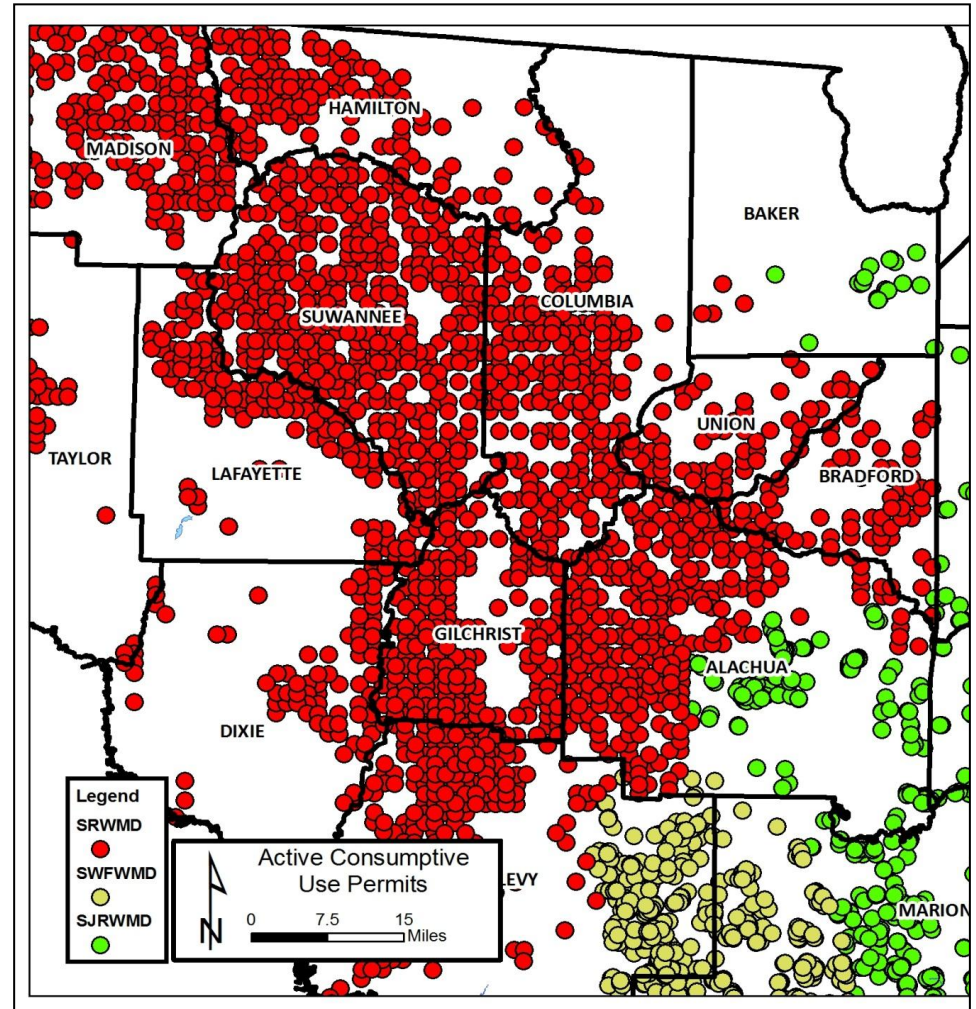
Figure 7. Projected changes in the elevation of the potentiometric surface of the Floridan aquifer system in response to projected increases in groundwater withdrawals, 1995 - 2030



Florida's Springs Dilemma

Suwannee River Water Management District

- All wells in the Floridan Aquifer
 - 3,386 wells (419 MGD) in 2010
 - 4,550 large wells (520 MGD) in 2024
 - Domestic and landscape irrigation wells 107,148 in 2025
- Pumping
 - 2015 USGS est. pumping 223 MGD
- Flow reduction in Suwannee River Basin
 - -1,750 MGD in 2020 (Wilcox Gauge)
 - Springs -48% (-2,296 MGD) by 2010



Florida's Springs Dilemma



Suwannee River Water Management District

Non-agricultural groundwater permits

Permit Holder	Allocation (MGD)	Permit Holder	Allocation (MGD)
White Springs Agricultural Chemicals, Inc.	64.162	Board of the Internal Improvement Trust Fund	0.323
Duke Energy Florida, LLC	51.342	Florida Forest Service	0.316
Foley Cellulose LLC	40.500	Cedar Key Sp Water & Sewer District	0.303
City of Lake City	4.401	The Episcopal Church In The Diocese Of Florida, Inc.	0.284
Columbia County B.O.C.C.	2.160	City of Archer	0.257
Pilgrim's Pride Corporation	1.950	City Of Lawtey	0.222
Florida Power & Light Company	1.876	Town of Jennings	0.208
City of Alachua	1.784	University Of Florida	0.204
BlueTriton Brands, Inc	1.613	Liberty Health Sciences	0.200
Florida Department of Corrections	1.401	Suwannee Water and Sewer District	0.189
Lee Cemetery LLC	1.317	City of Waldo	0.172
City of Starke	1.303	University of Florida Foundation	0.169
Town of Cross City	1.220	City of Lake Butler	0.130
City of High Springs	1.118	Board of Internal Improvement Trust Fund	0.128
City of Madison	1.054	Suwannee Country Club, Inc.	0.104
Wray Spring Land Trust, LLC;BlueTriton Brands, Inc.	0.984	Town of Horseshoe Beach	0.100
City of Newberry	0.890	City of Hampton	0.093
Suwannee County Commission	0.718	Wellborn Water System	0.088
City of Chiefland	0.716	Town of Brooker	0.050
Suwannee American Cement Company, LLC	0.699	Suwannee County	0.039
City of Trenton	0.653	Madison County School Board	0.027
Advent Christian Village, Inc.	0.482	Suwannee County Airport	0.003
City of Lake Butler	0.381		

Florida's Springs Dilemma



Suwannee River Water Management District

Largest groundwater permits

Permit Holder	Allocation (MGD)	Permit Holder	Allocation (MGD)
White Springs Agricultural Chemicals, Inc.	64.162	Wayne Moseley Farm	1.999
Duke Energy Florida, LLC	51.342	Pilgrim's Pride Corporation	1.950
Foley Cellulose LLC	40.500	Pilgrim's Pride Corporation	1.950
Lakeland Sands, LLC (Bill Gates)	10.105	Florida Power & Light Company	1.876
Lee Peanut Farms, LLC	9.945	T.W. Byrd's Sons, Inc.	1.875
Suwannee River Terra, LLC (Bill Gates)	9.035	Rodney Land;Land Dairy, Incorporated	1.800
Alliance Dairies LLP	8.364	Piedmont Farms, Inc.	1.799
Herman Sanchez, Jr;HTK Farms LLC	7.931	City of Alachua	1.784
NKC Southeast, LLC	5.374	Damascus Peanut;Full Circle Dairy, LLC	1.768
City of Lake City	4.401	Suwannee River Terra, LLC	1.747
Sleepy Creek Lands, LLC (Frank Stronach)	4.070	Alliance Branford, LLC	1.706
Hilltop Dairy Holdings, LLC	3.360	TAG Southern Properties, LLC	1.619
Shenandoah Dairy, Inc	3.062	BlueTriton Brands, Inc	1.613
Southpoint Dairy Holdings, LLC	3.044	Southern Cross Dairy, LLC	1.502
Norfleet Construction Company	2.806	Providence Manor, LLC	1.440
Farmland Reserve, Inc.	2.778	Harold Land	1.433
White Holding Company, LLC	2.597	Florida Department of Corrections	1.401
Bass Farms, Inc.	2.453	White Oak Dairy, Inc;Edwards Farms Inc	1.320
Partridge Pea Farms, LLC	2.337	Lee Cemetery LLC	1.317
North Florida Holsteins LC	2.245	City of Starke	1.303
Columbia County B.O.C.C.	2.160	Westwood Lee, LLC	1.285
Tiera Cielo, LLC	2.158	Jeffco Dairy, LLC	1.271
Grimmway Enterprises, Inc.	2.036	Town of Cross City	1.220
Pinnacle Atlantic Coast Operating Company, LLC	2.027	Frank S Quincey	1.139

Florida's Springs Dilemma



Suwannee River Water Management District

Largest agricultural groundwater permits

Permit Holder	Allocation (MGD)	Permit Holder	Allocation (MGD)
Lakeland Sands, LLC (Bill Gates)	10.105	Piedmont Farms, Inc.	1.799
Lee Peanut Farms, LLC	9.945	Damascus Peanut;Full Circle Dairy, LLC	1.768
Suwannee River Terra, LLC (Bill Gates)	9.035	Suwannee River Terra, LLC	1.747
Alliance Dairies LLP	8.364	Alliance Branford, LLC	1.706
Herman Sanchez, Jr;HTK Farms LLC	7.931	TAG Southern Properties, LLC	1.619
NKC Southeast, LLC	5.374	Southern Cross Dairy, LLC	1.502
Sleepy Creek Lands, LLC (Frank Stronach)	4.070	Providence Manor, LLC	1.440
Hilltop Dairy Holdings, LLC	3.360	Harold Land	1.433
Shenandoah Dairy, Inc	3.062	White Oak Dairy, Inc;Edwards Farms Inc	1.320
Southpoint Dairy Holdings, LLC	3.044	Westwood Lee, LLC	1.285
Norfleet Construction Company	2.806	Jeffco Dairy, LLC	1.271
Farmland Reserve, Inc.	2.778	Frank S Quincey	1.139
White Holding Company, LLC	2.597	Piedmont Farms Inc.	1.108
Bass Farms, Inc.	2.453	Shade Tree Nursery, LLC	1.095
Partridge Pea Farms, LLC	2.337	Williams Heritage, LLLP	1.064
North Florida Holsteins LC	2.245	Kevin Folk;Lylestanley Trace, LLC	1.053
Tiera Cielo, LLC	2.158	Thomas Williams, Jr.	1.050
Grimmway Enterprises, Inc.	2.036	Oak Grove Dairy, Inc.	1.039
Pinnacle Atlantic Coast Operating Company, LLC	2.027	Damon Deas	1.032
Wayne Moseley Farm	1.999	Florida Farms, Inc.	0.992
T.W. Byrd's Sons, Inc.	1.875		
Rodney Land;Land Dairy, Incorporated	1.800		

Florida's Springs Dilemma

Suwannee River Water Management District

Largest non-agricultural groundwater users
(>500,000 gallons per day for 2019 – 2023)

Permittee	Reported Annual Groundwater Pumping (MGD)					5-Year Average
	2019	2020	2021	2022	2023	
Foley Cellulose	34.359	30.049	36.119	39.032	28.511	33.614
Nutrien - White Springs	27.241	32.676	31.393	26.127	23.059	28.099
City of Lake City	3.387	3.385	3.317	3.512	3.863	3.493
City Of Perry	1.573	1.555	1.451	1.572	1.574	1.545
City of Alachua	1.249	1.303	1.296	1.376	1.519	1.349
Pilgrim's Pride	1.411	1.379	1.283	1.322	0.883	1.256
Gainesville Regional Utilities - Deerhaven	1.240	1.030	1.170	0.958	1.256	1.131
City Of Live Oak	0.918	0.877	1.052	1.094	1.159	1.020
Fl. Dept Of Corrections-Raiford	0.908	1.031	0.896	0.802	0.771	0.882
City of Madison	0.883	0.814	0.849	0.811	0.839	0.839
BlueTriton Madison	0.701	0.630	0.658	0.750	0.746	0.697
City of Newberry	0.665	0.677	0.653	0.675	0.680	0.670
City of Starke	0.666	0.637	0.640	0.651	0.672	0.653
Gainesville Renewable Energy Center	0.578	0.558	0.884	0.801	0.368	0.638
City of High Springs	0.615	0.619	0.594	0.611	0.640	0.616
Town Of Cross City	0.655	0.668	0.646	0.520	0.558	0.609
City of Jasper	0.729	0.639	0.528	0.503	0.574	0.595



Note: The Buckeye/Foley pulp and paper mill closed operations in 2023

Florida's Springs Dilemma

Suwannee River Water Management District

Largest for-profit, non-ag corporations that benefitted from free groundwater (2019 – 2023)

Permittee	Reported Annual Groundwater Pumping (MGD)					
	2019	2020	2021	2022	2023	5-Year Average
Foley Cellulose	34.359	30.049	36.119	39.032	28.511	33.614
Nutrien - White Springs	27.241	32.676	31.393	26.127	23.059	28.099
Buckeye Florida	4.900	4.284	0.000	0.000	0.000	1.837
Pilgrim's Pride	1.411	1.379	1.283	1.322	0.883	1.256
BlueTriton Madison	0.701	0.630	0.658	0.750	0.746	0.697
Suwannee American Cement	0.588	0.506	0.318	0.413	0.289	0.423
Seven Springs Water Company	0.118	0.228	0.297	0.288	0.340	0.254
Sandlin Race Track	0.145	0.153	0.157	0.161	0.161	0.155

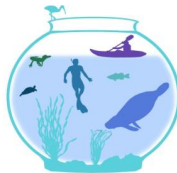


Note: The Buckeye/Foley pulp and paper mill closed operations in 2023

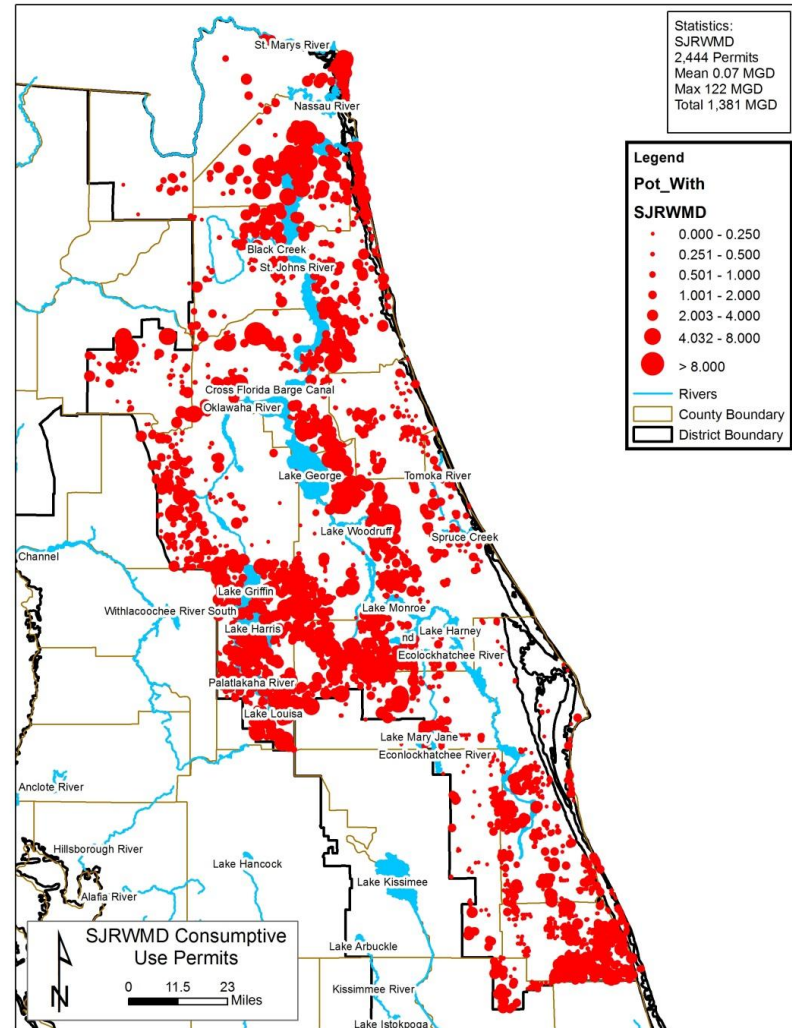
Florida's Springs Dilemma

St. Johns River Water Management District

- All wells in the Floridan Aquifer
 - 2,109 permits, 9,171 large wells (1,306 MGD) in 2025
 - Domestic and landscape irrigation wells 177,320
- 2015 USGS est. total pumping 868 MGD
- 2020-2025 reported pumping permitted wells 780 MGD
- Flow reduction in St. Johns River Basin 1950-2020
 - Springs -26% (-255 MGD)
 - River -22% (-1,128 MGD)



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Florida's Springs Dilemma

St. Johns River Water Management District

Largest groundwater users
(>6 MGD for 2020 – 2024)



Permitee	Reported Annual Groundwater Pumping (MGD)					
	2020	2021	2022	2023	2024	5-Year Average
JA- Total Consolidation	118.126	118.915	124.805	125.205	128.606	123.131
Orlando Utilities Commission	81.920	83.287	84.671	88.382	86.665	84.985
OCU Water Service Areas	41.434	44.793	47.715	47.323	43.335	44.920
Murphree WTP - GRU	22.415	21.881	23.203	23.699	25.406	23.321
City of Cocoa	18.529	18.284	19.161	18.909	17.792	18.535
Seminole County: NE, NW, SE, SW	15.719	16.401	15.974	16.904	17.318	16.463
WestRock CP, LLC - Fernandina Beach Mill	16.179	15.634	15.781	16.061	17.754	16.282
City of Daytona Beach	13.012	13.213	13.580	13.734	14.209	13.550
Rayonier Performance Fibers, LLC	12.215	13.092	13.150	13.072	15.168	13.339
Indian River County - Hobart Park and Oslo WTP	12.579	13.032	13.039	13.507	13.406	13.113
City of Ocala	11.691	12.086	12.618	13.366	13.823	12.717
Clay County Utility Authority	11.670	11.685	12.343	13.442	13.578	12.544
City of Winter Park	10.398	10.669	10.454	11.189	11.389	10.820
City of Apopka	9.136	9.523	9.388	10.320	10.615	9.796
S.CUD Mainland System	8.529	9.028	10.084	10.289	10.803	9.747
Deseret Ranches North Tract	5.165	6.281	12.310	7.651	15.782	9.438
Palm Coast	7.903	8.468	8.659	8.921	9.353	8.661
Palm Bay Public Water Supply	7.898	8.222	7.975	8.528	9.550	8.435
City of Clermont	6.875	7.584	7.974	9.018	9.208	8.132
Wekiva Falls RV Resort, LLC	8.483	7.866	8.527	7.469	8.230	8.115
City of Sanford	7.042	7.814	7.793	8.275	8.032	7.791
City of Deltona	7.537	7.606	7.463	7.800	7.858	7.653

Florida's Springs Dilemma



St. Johns River Water Management District

Largest for-profit, non-agricultural corporations
benefiting from free groundwater

Permittee	Reported Annual Groundwater Pumping (MGD)					
	2020	2021	2022	2023	2024	5-Year Average
WestRock CP, LLC - Fernandina Beach Mill	16.179	15.634	15.781	16.061	17.754	16.282
Rayonier Performance Fibers, LLC	12.215	13.092	13.150	13.072	15.168	13.339
Wekiva Falls RV Resort, LLC	8.483	7.866	8.527	7.469	8.230	8.115
FPL Okeechobee Clean Energy Center Project	6.164	5.840	5.719	6.422	7.096	6.248
WestRock - Jacksonville Mill	4.452	4.218	4.159	3.916	4.083	4.166
FJV, Egan & Fellsmere Estates	3.466	4.156	4.162	3.885	3.556	3.845
Center Sand Mine	2.920	3.917	3.825	3.283	2.421	3.273
Six Mile (Trade Property)	2.080	2.663	3.294	1.870	4.796	2.941
Grandin Sand Plant	2.607	2.590	2.283	2.184	2.522	2.437
Anheuser-Busch Jacksonville Brewery	2.332	2.344	2.311	2.123	2.162	2.255
Niagara Bottling	0.786	0.837	1.028	0.719	0.801	0.834
Harbor Waterworks, Inc.	0.782	0.852	0.854	0.904	0.747	0.828
ACME Water Supply & Management Company	0.364	0.836	0.769	0.846	0.771	0.717
Deseret Ranch Landfill	0.793	0.417	0.782	0.178	1.229	0.680
Mission Inn Resort & Club	0.824	0.755	0.696	0.555	0.477	0.661
Sevorg Trading Company, LLC	0.488	0.448	0.512	0.540	0.485	0.494
St. Augustine Alligator Farm	0.507	0.449	0.417	0.391	0.587	0.470
Keuka Sand Mine	0.501	0.468	0.364	0.214	0.206	0.351
Liner Source Inc	0.634	0.562	0.162	0.192	0.149	0.340
CertainTeed Gypsum Palatka, LLC	0.370	0.335	0.389	0.420	0.185	0.340
AmeriTerpenes, LLC	0.351	0.345	0.354	0.254	0.276	0.316
Chemours - Maxville Mine	0.281	0.341	0.268	0.312	0.312	0.303

Florida's Springs Dilemma



St. Johns River Water Management District

Largest agricultural groundwater users (2020-2024)

Permitee	2020	2021	2022	2023	2024	5-Year Average
Deseret Ranches North Tract	5.165	6.281	12.310	7.651	15.782	9.438
Platt Ranch	3.625	3.746	3.923	3.023	1.222	3.108
Deer Park Ranch	1.448	3.792	2.208	4.047	2.592	2.817
Deseret Ranch - South Tract	1.810	2.705	0.517	3.126	4.866	2.605
Graves Brothers Farm Grove	1.548	1.790	1.757	1.600	1.532	1.645
Corrigan Ranch	2.716	1.862	1.849	0.564	1.133	1.625
Sunshiners Inc	1.300	1.300	1.300	1.300	1.300	1.300
Long and Scott Farms	1.145	1.209	1.439	1.634	0.758	1.237
Cherrylake Inc.	0.911	1.060	1.235	1.396	1.389	1.198
US Row Farmland Okeechobee	1.401	0.872	0.855	1.261	1.279	1.133
Burrell Family Farm	0.308	1.316	1.332	1.108	1.369	1.087
Marian Gardens	1.324	1.396	0.939	0.613	0.855	1.025
Tilton Farms	0.641	0.910	0.704	1.014	1.483	0.950
C.P. & Wesley Smith	0.803	0.750	0.946	0.794	1.085	0.876
Jbn's Nursery	0.906	0.835	0.755	0.910	0.899	0.861
Willowbrook Farms	1.247	0.837	0.400	0.453	1.321	0.852
Yu An Farms - Fortner Farm	0.808	0.803	0.965	0.635	0.709	0.784
Dewar Nursery Inc	0.757	0.755	0.827	0.830	0.699	0.774
Northstar Farms LLC	0.617	0.838	0.716	0.656	0.938	0.753

Florida's Springs Dilemma



St. Johns River Water Management District

Largest agricultural groundwater permits

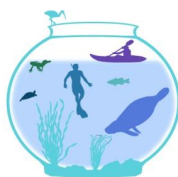
Permit Holder	Allocation (MGD)
Deseret Ranches North Tract	22.460
Deer Park Ranch	9.468
Deseret Ranch - South Tract	4.624
Marian Gardens	3.524
Platt Ranch	3.426
Graves Brothers Farm Grove	2.937
US Row Farmland Okeechobee	2.409
C.P. & Wesley Smith	2.269
Cherrylake Inc.	2.125
Willowbrook Farms	1.945
Greene Farms, Inc.	1.867
Daniel Johns - Blue Sky Farms	1.860
Tilton Farms	1.557
Pressley Ranch	1.449
Barnes Farms LLLP	1.443
Sunshiners Inc	1.332
Long and Scott Farms	1.316
Northstar Farms LLC	1.178
Burrell Family Farm	1.159
Johnston Brothers Farm	1.150
William Revels Farm	1.129

Permit Holder	Allocation (MGD)
Yu An Farms - Fortner Farm	1.061
485 Acre Farm	1.036
First Farm #3	1.014
Picolata Produce Farms	0.997
Pine Acres	0.970
John's Nursery	0.960
Smith Properties	0.944
Riverdale Potato Farm	0.837
H & A Farms	0.830
Old Dixie Cattle Company A&B	0.786
Cutrale Citrus Juices USA, Inc.	0.781
Dewar Nursery Inc	0.777
Tater Farms	0.763
Ox Creek Ranch	0.748
Herschel King	0.733
Corrigan Ranch	0.657
Sykes and Cooper Farms	0.616
Rolling Greens MHP-LP	0.608
Dewar Floral LLC	0.590
Scott Parker Farms	0.544
Silver Springs Citrus	0.484

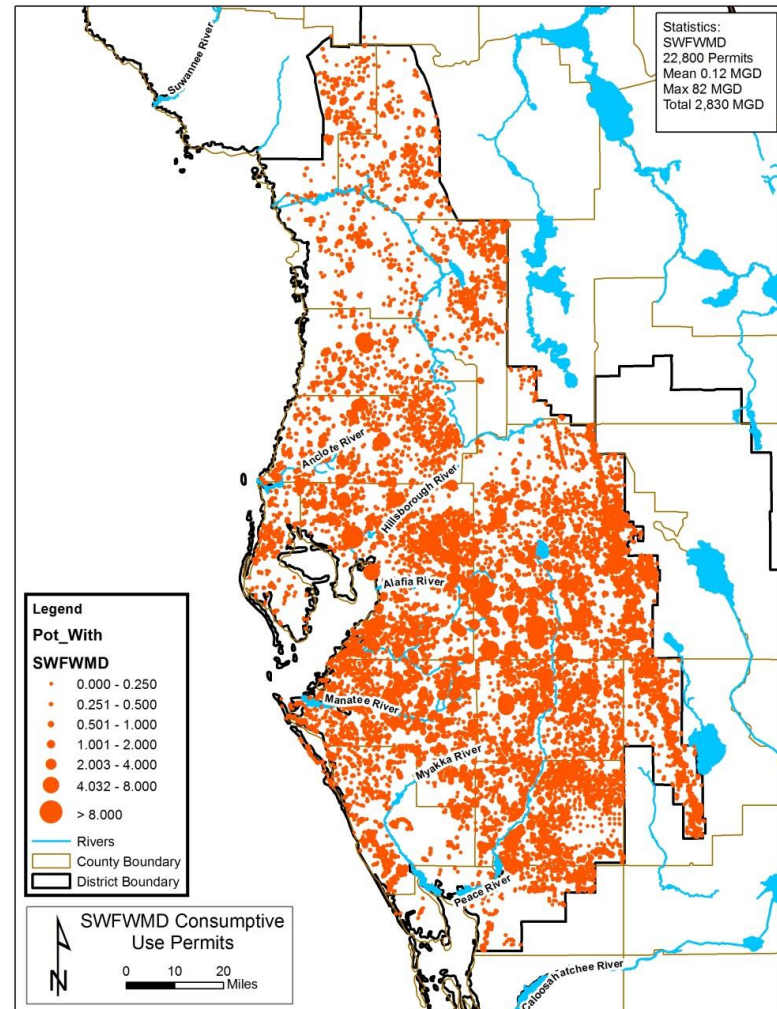
Florida's Springs Dilemma

Southwest Florida Water Management District

- All wells in the Floridan Aquifer
 - 4,298 permitted large wells (1,279 for 980 MGD) in 2025
 - Domestic and landscape irrigation wells 85,484
- Flow reduction in Nature Coast Basin
 - Springs -18% (-379 MGD) by 2010
 - 2015 USGS est. total pumping 773 MGD
 - 2020-2025 reported pumping large wells 593 MGD



Howard T. Odum
**FLORIDA
SPRINGS
INSTITUTE**



Florida's Springs Dilemma

Southwest Florida Water Management District

Largest Groundwater Permits

Permit Holder	Allocation (MGD)	Permit Holder	Allocation (MGD)
Tampa Bay Water	90.000	Riverview Plant/Lithia & Buckhorn Spring	5.985
Peace River/Manasota WSA	80.000	John Falkner, LLC-Rye Bridge Road Farm	5.838
Mosaic Fertilizer	69.600	Blue Goose Utility Company, LLC	5.837
Manatee Co Utilities	55.042	U.S. Agri Chemicals Fort Meade Plant	5.700
South Central Hillsborough Regional Wellfield	26.821	Englewood Water District	5.360
Hernando County Water System	24.360	City of Dunedin Wellfield	5.243
Sarasota County Utilities Consolidated Permit	19.987	Alico Section 7 Grove	5.147
Braden River Utilities	19.696	City of Tarpon Springs	4.708
The Villages Combined Water Use Permit	19.346	City of Wildwood	4.583
Joshua Water Control District	14.132	City of Zephyrhills	4.494
City of Winter Haven	14.060	Hickory Grove	4.478
Northeast Regional Utility Service Area	10.919	GPWCA- MWCA	4.466
Marion County Utilities Consolidated WUP	9.366	Mosaic Fertilizer Alafia River Augmentation	4.250
City of Punta Gorda Shell Creek Water Treatment Plant	8.088	Mosaic Fertilizer Plant City Phosphate Complex	4.240
Bay Laurel Center Public Water Supply System	7.561	Gibson Place Utility	3.986
Charles A Black Water Supply System	7.182	Lake Alfred Preserve Tanler Water Co	3.514
City of North Port	7.100	Charlotte County Burnt Store Wellfield	3.172
Mosaic Fertilizer South Pasture Mine	6.392	FP&L Valencia Groves	3.109
Pasco County Utilities	6.265	Bethel Farms, LLLP / DeSoto County Farm	3.083
City of Sarasota Downtown Well Field	6.000	McClure - Myakka	3.078

Florida's Springs Dilemma

Southwest Florida Water Management District

Largest Multiple Groundwater Permits – Mosaic Fertilizer

Permit Holder	WUP Permit Number	Permit Expiration Date	Allocation (MGD)
Mosaic Fertilizer	11400	20-Oct-32	69.600
Mosaic Fertilizer South Pasture Mine	3669	28-Aug-37	6.392
Mosaic Fertilizer Riverview Plant	1532	14-Jun-31	5.985
Mosaic Fertilizer Alafia River Augmentation	13228	14-Jun-31	4.250
Mosaic Fertilizer Plant City Phosphate Complex	1415	18-Dec-27	4.240
Mosaic Fertilizer Agricultural WUP	2715	8-Mar-32	3.026
Mosaic Fertilizer Long Island Marsh Sod Farm	21012	16-Mar-42	2.977
Mosaic Fertilizer Pine Level Property	9741	18-Dec-37	1.940
Mosaic Fertilizer Bartow Phosphate Complex	610	30-Dec-35	1.665
Mosaic Fertilizer V & W Farms, Inc.	1912	28-Apr-29	1.298
Mosaic Fertilizer Badcock Ranch	12133	5-May-31	1.121
Mosaic Fertilizer Melear Barns 1 & 2	2158	28-Jan-34	1.075
Mosaic Fertilizer Redland Growers	8734	25-Mar-45	0.976
Mosaic Fertilizer County Line Grove	3135	8-Jan-35	0.483
Mosaic Fertilizer LLC	6670	6-May-34	0.425
Mosaic Fertilizer FG3 CSA Farm	21045	24-Aug-32	0.349
Mosaic Fertilizer Robert M & Betty Jo Moody	7649	11-Sep-30	0.336
Mosaic Fertilizer Blue Fields USA, LLC	8204	25-Jul-32	0.208
Mosaic Fertilizer Useppa Bee	2727	27-Jul-36	0.157
Mosaic Fertilizer Duncan Grove	1576	19-Aug-32	0.131
Mosaic Fertilizer Carlton Family	3796	12-Apr-37	0.085
Mosaic Fertilizer Lanier Property	1324	28-Apr-45	0.060
Mosaic Fertilizer VCH3	9838	16-Mar-42	0.014
		Total	106.791

Florida's Springs Dilemma

Southwest Florida Water Management District

Largest Multiple Groundwater Permits – Alico Groves

Permit Holder	WUP Permit Number	Permit Expiration Date	Allocation (MGD)
Alico, Inc. Section 7 Grove	10722	1-Jul-35	5.147
Alico, Inc. North Patrick Grove	5013	25-Feb-40	0.633
Alico, Inc. South Patrick Grove	9419	23-Jul-39	0.595
Alico, Inc. Pittsburg Grove	5015	29-Apr-35	0.524
Alico, Inc. Bereah Grove	5019	22-Nov-33	0.419
Alico, Inc. Lake Reedy	5011	27-Mar-35	0.320
Alico, Inc. Breezy Point	5635	26-Oct-32	0.315
Alico, Inc. Lake Ida Grove	5016	13-May-32	0.307
Alico, Inc. Babson Park Grove	5014	29-Apr-35	0.302
Alico, Inc. Saddlebag Block	5008	18-May-35	0.231
Alico, Inc. Church Plot Grove	2470	22-Apr-33	0.110
Alico, Inc. Livingston	5010	13-Apr-38	0.104
		Total	9.007

Florida's Springs Dilemma

Southwest Florida Water Management District

Largest Multiple Groundwater Permits – Ben Hill Griffin, Inc.

Permit Holder	WUP Permit Number	Permit Expiration Date	Allocation (MGD)
Ben Hill Griffin, Inc. - Peace River Ranch	2467	16-Apr-40	1.132
Ben Hill Griffin, Inc. - Sec. 33 - 35	4559	27-Aug-38	0.807
Ben Hill Griffin, Inc. - Lake Streey and Little Cuba Groves	4558	17-Nov-40	0.594
Ben Hill Griffin, Inc. - Ft. Meade Grove	2448	2-Jan-40	0.475
Ben Hill Griffin, Inc. - Wilson/Banks	4560	3-Sep-34	0.443
Ben Hill Griffin, Inc. - Briggs 1, 2 & 3	7668	2-Jun-31	0.300
Ben Hill Griffin, Inc. - Norris Grove	8934	2-Oct-33	0.181
Ben Hill Griffin, Inc. - Berkovitz and Greenberg Groves	4563	6-Oct-37	0.148
Ben Hill Griffin, Inc. - VDB Grove	3867	31-Mar-36	0.128
Ben Hill Griffin, Inc. - Ruby Grove	4093	24-Apr-35	0.122
Ben Hill Griffin, Inc. - Breezy Point	8305	2-Jul-33	0.117
Ben Hill Griffin, Inc. - County Line Grove	7698	10-Oct-32	0.117
Ben Hill Griffin, Inc. - Barr Grove	2438	13-Jul-35	0.115
Ben Hill Griffin, Inc. - Maxcy 1	7548	10-Jan-39	0.108
Ben Hill Griffin, Inc. - North Reedy Grove	4567	16-Apr-34	0.103
Ben Hill Griffin, Inc. - Calvert 40 Grove	5296	15-Oct-39	0.100
Ben Hill Griffin, Inc. - Flood & Ahern	7517	27-Aug-31	0.098
Ben Hill Griffin, Inc. - Wardlaw & Ahren Groves	5610	28-Sep-32	0.082
Ben Hill Griffin, Inc. - South Side 2&3 Grove	4341	4-Oct-33	0.081
Ben Hill Griffin, Inc. - Bassett Grove	3946	10-Nov-36	0.079
Ben Hill Griffin, Inc. - Bereah	21111	10-Mar-33	0.071
Ben Hill Griffin, Inc. Edwards Grove	10620	25-Apr-33	0.025
Ben Hill Griffin, Inc. - Holmes	21112	9-Mar-33	0.024
		Total	5.448

Florida's Springs Dilemma

Southwest Florida Water Management District

Largest Multiple Groundwater Permits – Astin Strawberry

Permit Holder	WUP Permit Number	Permit Expiration Date	Allocation (MGD)
Astin Strawberry M-Plus Farm 5	6059	23-Mar-41	1.004
Astin Strawberry H D Budd Farms, Inc.	12154	23-Jun-43	0.750
Astin Strawberry Willis Farm	7451	16-Feb-43	0.615
Astin Strawberry Blueberry Farm	7417	5-Dec-40	0.528
Astin Strawberry Farms	3712	19-Mar-36	0.375
Astin Strawberry Sam Astin	8173	5-Oct-36	0.228
Astin Strawberry Owens	5318	13-Mar-39	0.227
Astin Strawberry Jbann H. Crist	2565	25-Jun-41	0.177
Astin Strawberry Hopewell Land Partners, LLC	10999	24-Jun-35	0.147
Astin Strawberry Sam Astin, III and Buffy Astin	6809	22-Sep-41	0.130
Astin Strawberry Highsmith Farm	3615	28-Feb-41	0.106
Astin Strawberry Farms-Karpppe Road Site	20109	6-Oct-41	0.061
Astin Strawberry State Road 60 Strawberry Farm	8490	24-Feb-43	0.058
Astin Strawberry Shafii 1	989	10-Oct-32	0.057
Astin Strawberry Sam Astin III	571	14-Jan-41	0.039
Astin Strawberry Sam H. and Buffy Astin	7083	14-Apr-42	0.032
Astin Strawberry Michael Jbseph St. Martin	7007	20-Aug-41	0.031
		Total	4.564

Florida's Springs Dilemma

Southwest Florida Water Management District

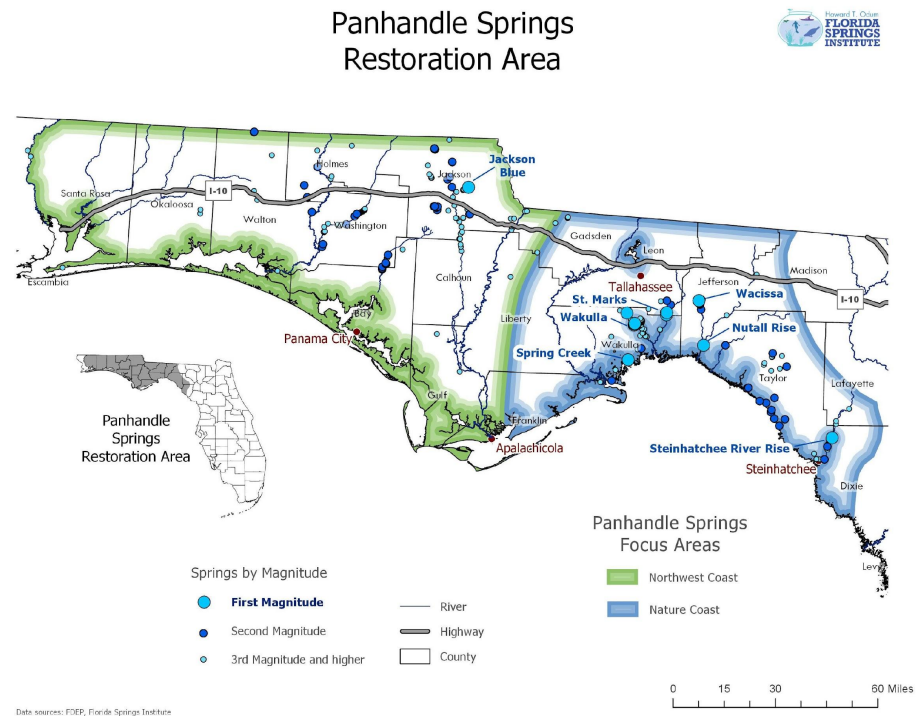
Largest groundwater users (2020-2025)

Permit Holder	Average MGD	Permit Holder	Average MGD
Tampa Bay Water combined	91.948295	QC Standby DeSoto Grove, LLC	3.961042
City of Lakeland	20.346278	Ben Hill Griffin, Inc. combined	3.901708
Sweet Life Farms, LLC combined	16.769626	U.S. Agri-Chemicals Corporation	3.815358
Hernando Co. BOCC	15.362502	City of Tarpon Springs	3.635514
Village Center Community Dev. District	11.653645	Lakewood Ranch Stewardship District	3.449551
Mosaic Fertilizer, LLC combined	10.745916	Englewood Water District	3.407459
Kelly Family Holdings, LLC	10.614046	City of Sebring	3.320903
Jbshua Water Control Districts	10.156922	Alico, Inc.	3.303304
Clear Springs Enterprises, LLC combined	9.827482	High Point Golf Club Inc	2.949051
City Of Winter Haven Utility Services	9.399348	City Of Bartow	2.928573
Polk County BOCC combined	8.239041	Florida Governmental Utility Authority	2.915047
City of Brooksville	7.922475	City of Sarasota	2.896549
Marion County Utilities	7.738722	Fort Family Partnership, LTD	2.832319
Brown Pelican Farms	7.440429	Citrosuco North America	2.803931
City of Plant City	7.084839	Manatee County BOCC	2.797299
Jbhn Falkner, LLC	6.948639	Eugene H. Turner, Jr. combined	2.725100
City of Haines City	6.651490	Citrus County Board of County Comm	2.684812
Sarasota County BOCC	6.439436	CEMEX Construction Materials Florida, LLC	2.655272
City of Clearwater	5.976433	Eugene H Turner Family Partnership, LTD	2.518636
City of Auburndale	5.360248	Hardee Power Partners	2.508780
CC of Sebring, LLC	5.011738	City of Lake Wales	2.471472
Citrus County Board of County Commissioners	4.561361	Turner Groves Citrus Limited Partnership	2.393178
City of Temple Terrace	4.507387	L3 Partnership LLP dba L3 Farms	2.351540
City of Venice	4.458012	Diaz Family Properties, LLC	2.341773
Bay Laurel Center Community Development District	4.398413	Duke Energy Florida	2.302785
Duke Energy Florida, LLC combined	4.009338	McClure Properties, LTD	2.298164
		City of Avon Park	2.231178

Florida's Springs Dilemma

Northwest Florida Water Management District

- Groundwater Wells
 - Large wells 2,256, 413 permits, 316 MGD in 2025
- 2015 USGS est. pumping 241 MGD
- 2020-2025 reported pumping 192 MGD
- Springs flow reduction in the Northwest Florida Basin by 2010
 - -16% (-385 MGD)



Florida's Springs Dilemma



Northwest Florida Water Management District

Largest Groundwater Permits

Permit Holder	Allocation (MGD)
Florida State University	37.964
City of Tallahassee	33.700
Florida A & M University	24.500
Okaloosa County Water and Sewer	9.120
South Walton Utility Company, Inc.	8.600
Florida Community Services of Walton Co.	8.590
Fairpoint Regional Utility System, Inc.	6.734
Pace Water System, Inc.	6.100
Florida DMS	5.840
City of Crestview	5.740
City of Port St. Joe	4.792
North American Farms Inc	3.614
City of Lynn Haven	3.290
City of Fort Walton Beach	3.182
City of Niceville	3.100
Auburn Water System, Inc.	3.080
Sunbird of Panama City Beach	3.000
Bascom Farms, LLC	2.880
City of Milton	2.530
Sandestin Owners Association, Inc.	2.517
City of Freeport	2.396

Permit Holder	Allocation (MGD)
Florida Department of Corrections	2.361
East Milton Water System	2.270
City of Marianna	2.260
Talquin Electric Cooperative, Inc.	2.220
Eglin Air Force Base	2.200
City of Quincy	2.050
Air Products and Chemicals, Inc.	2.000
Talquin Electric Cooperative, Inc.	1.950
Department of Corrections	1.900
North Florida Rock	1.896
City of DeFuniak Springs	1.810
Sterling Fibers, Inc.	1.800
Bigham Farms, Inc.	1.780
Destin Water Users, Inc.	1.770
The St. Joe Company of Delaware, LLC	1.769
Summerfield Trust	1.667
McCall Sod Farm	1.660
Florida Department of Corrections	1.600
Deseret Ranches of North Florida, LLC	1.576
Florida Department of Corrections	1.558
May Nursery, Inc.	1.540

Florida's Springs Dilemma

Northwest Florida Water Management District

Largest Groundwater Users
(>1,500,000 gallons per day for 2020 – 202)

Permit Holder	Reported Annual Average Pumping (Million Gallons)					Average MGD
	2020	2021	2022	2023	2024	
City of Tallahassee	9781.2	9556.8	9593.5	9677.9	9983.4	26.626
Emerald Coast Utilities Authority	7643.8	18.0	12050.2	12872.9	12681.0	24.803
International Paper Company	6335.0	6571.7				17.681
Ascend Performance Materials	2305.1	2619.8	2576.4	2479.4	2286.4	6.722
Florida Community Services of Walton Co. (dba Regional Utilities)	2036.2	2215.0	2333.9	2551.5	2645.1	6.456
Fairpoint Regional Utility System, Inc.	2224.5	2266.8	2338.2	2343.6	2185.6	6.224
SWUC Rockhill Inland Well Field	1948.2	2088.9	1982.7	2007.0	2227.6	5.619
Okaloosa County Water & Sewer	2317.2	2106.9	2388.3	2339.2	534.7	5.308
Pace Water System, Inc.	1694.1	1599.7	1339.6	1482.4		4.189
City of Fort Walton Beach	950.6	948.0	967.7	727.2		2.461
City of Crestview	925.8	852.6	852.3	908.7	907.4	2.437
Peoples Water Service Company of Florida	902.2	882.1	894.2	790.9	952.1	2.423
Auburn Water System, Inc.	836.7	801.7	837.3	877.1		2.296
City of Niceville	954.6	911.9	955.8	997.1	209.2	2.207
City of Milton	708.0	686.7				1.911
East Milton Water System	662.8	648.7	522.7	713.5	792.2	1.830
City of Lynn Haven	640.7	604.6	669.7			1.749
Navy Public Works Center	629.0	619.2	716.3	550.8	638.4	1.728
Talquin - Gadsden County Regional Water System	618.1	603.8	556.8	550.7	574.1	1.591
Destin Water Users, Inc.	477.0	623.2	628.9	589.2	501.3	1.545

