

## Supplemental Materials

This document details the data used to calculate the direct economic impacts of taking a standard 150-acre irrigated farm out of production in each county of the study area ( $EI_{Ag\ Direct, c, t}$ ).

### S.1 Calculating $EI_{Ag\ Direct, c, t}$

The components of  $EI_{Ag\ Direct, c, t}$  are restated in equations S1, S2, and S3.

$$S_{c,y} = \frac{HA_{c,y}}{\sum_Y HA_{c,y}} \quad (S1)$$

$$EI_{Ag\ Direct, c, y, t} = S_{c,y} \times 150 \times P_{y,t} \times Q_{y,t} \quad (S2)$$

$$EI_{Ag\ Direct, c, t} = \sum_Y EI_{Ag\ Direct, c, y, t} \quad (S3)$$

Where  $HA_{c,y}$ : Harvested irrigated acres of crop  $y$  in county  $c$

$S_{c,y}$ : Share of harvested irrigated acres of crop  $y$  in county  $c$

$P_{y,t}$ : Price of crop  $y$  in year  $t$

$Q_{y,t}$ : Yield per acre of crop  $y$  in year  $t$

In 2009, 2016, and 2020, researchers from University of Georgia and Albany State University were contracted by the Georgia Department of Natural Resources (GADNR) to map irrigated agricultural fields in ArcGIS using aerial images. Those maps are proprietary data owned by the GADNR. The 2020 map of irrigated fields was overlaid with 2020 data from CropScape (available at <https://nassgeodata.gmu.edu/CropScape/>) and county boundaries to identify the acreage of crops grown on irrigated fields in each county of the state. Those data were used to estimate the harvested irrigated acres of each crop in each county ( $HA_{c,y}$ ) and are presented in Table S1.

Table S1: 2020 Harvested Irrigated Acres, by Crop and County

County	Corn	Cotton	Peanut	Soybean	TOTAL
Baker	9,645	12,399	16,143	6	38,193
Calhoun	8,383	5,843	9,843	77	24,146
Decatur	12,502	21,810	27,622	487	62,421
Dougherty	2,026	3,734	2,184	6	7,950
Early	7,978	15,971	17,169	75	41,193
Lee	11,095	14,529	7,943	131	33,698
Miller	14,196	16,840	23,494	65	54,595
Mitchell	12,557	30,903	27,981	50	71,491
Randolph	8,130	6,466	9,483	875	24,954
Terrell	10,257	10,029	6,898	492	27,676
Worth	5,050	27,236	17,013	34	49,333

The crop acreage shares ( $S_{c,y}$ ) are calculated via equation S3 using the data in Table S1. The resulting shares are presented in Table S2.

Table S2: 2020 Share of Irrigated Acreage, by Crop and County

County	Corn	Cotton	Peanut	Soybean	TOTAL
Baker	0.253	0.325	0.423	0.000	1
Calhoun	0.347	0.242	0.408	0.003	1
Decatur	0.200	0.349	0.443	0.008	1
Dougherty	0.255	0.470	0.275	0.001	1
Early	0.194	0.388	0.417	0.002	1
Lee	0.329	0.431	0.236	0.004	1
Miller	0.260	0.308	0.430	0.001	1
Mitchell	0.176	0.432	0.391	0.001	1
Randolph	0.326	0.259	0.380	0.035	1
Terrell	0.371	0.362	0.249	0.018	1
Worth	0.102	0.552	0.345	0.001	1

Price and yield information for each crop and county are taken from the Georgia Farm Gate Value Report 2020 (available at <https://caed.uga.edu/publications/farm-gate-value.html>) and used in equation S2 to calculate  $EI_{Ag\ Direct, c, y}$ . The price and yield data are reported in Table S3.

Table S3: 2020 Crop Price and Yield, by County

County	Corn		Cotton		Peanut		Soybean	
	\$/bu	Bu/acre	\$/lb	Lb/acre	\$/lb	Lb/acre	\$/bu	Bu/acre
Baker	\$4.25	180	\$0.70	900	\$0.22	4300	\$10.00	60
Calhoun	\$4.90	200	\$0.65	1000	\$0.22	4600	\$8.35	52
Decatur	\$4.30	216	\$0.65	869	\$0.20	4533	\$10.40	41
Dougherty	\$4.30	180	\$0.65	887	\$0.20	5200	\$10.40	41
Early	\$4.30	190	\$0.70	880	\$0.20	4250	\$10.40	45
Lee	\$3.90	186	\$0.65	1000	\$0.19	4100	\$10.40	41
Miller	\$4.30	190	\$0.70	915	\$0.23	4700	\$12.00	45
Mitchell	\$4.30	202	\$0.65	900	\$0.20	4245	\$10.40	41
Randolph	\$4.90	190	\$0.65	900	\$0.20	4400	\$11.00	47
Terrell	\$4.25	190	\$0.75	1100	\$0.22	4000	\$11.00	50
Worth	\$4.30	205	\$0.65	930	\$0.20	4300	\$10.40	45

## S.2 Calculating County-level Fixed Costs of Source Switching ( $FC_c$ )

The fixed costs from source switching are calculated using equation 12 in the main text, shown here as equation S4.  $FC_c$  depends on the costs per foot of drilling, lining, and capping the well ( $C_{Drilling,c,t}$ ) in county  $c$  in year  $t$ , and the well depth ( $Depth_c$ ).  $Depth_c$  is the average depth (feet) to the aquifer in county  $c$ .

$$FC_{c,t} = C_{Drilling,c,t} \times Depth_c \quad (S4)$$

To estimate  $C_{Drilling,c,t}$ , four irrigation well drilling companies located in the lower Flint River Basin were interviewed by phone in March of 2021. The drilling companies all emphasized that actual costs would vary by location, depending on geological conditions encountered at the well site. Nonetheless, from those interviews, the average cost per foot for a

new well in the study area was \$240/foot in 2021. We used the US Bureau of Labor Statistics inflation calculator (available at [https://www.bls.gov/data/inflation\\_calculator.htm](https://www.bls.gov/data/inflation_calculator.htm)) to convert the 2021 cost estimate to 2020 dollars (\$233.88/foot).

Average well depth to the Claiborne aquifer by county was used to estimate  $Depth_c$ . The data used to calculate  $Depth_c$  are reported in Table S4. Those data come from the USGS website <http://doi.org/waterdata.usgs.gov/nwis/>.

### S.3 Calculating County-level Extra Pumping Costs of Source Switching ( $VC_c$ )

The extra pumping costs of source switching were calculated using equations S5-S8.

$$\Delta TDH_c = psi \times 2.31 + \Delta Depth_c \quad (S5)$$

$$Water_{ESS,c,t} = \sum_{y=1}^4 WD_{ESS,c,y,t} \times S_{c,y} \times 150 \quad (S6)$$

$$\Delta Total \text{ fuel consumed}_{ESS,c,t} = Fuel \text{ usage} \times \Delta TDH_c \times Water_{ESS,c,t} \quad (S7)$$

$$VC_{ESS,c,t} = \Delta Total \text{ fuel consumed}_{ESS,c,t} \times P_{Electricity,t} \quad (S8)$$

In equation S5, the average well depth in the Claiborne aquifer reported in Table S4 is used as an estimate for  $\Delta Depth_c$  when switching from a surface water source to the Claiborne. When switching for a Floridan aquifer well to a well in the Claiborne, the difference between a county's average well depth in the two aquifers is used.

In equation S6, the acreage shares for each crop reported in Table S2 are used for  $S_{c,t}$ .  $WD_{ESS,c,y,t}$  is the water application rate (acre-feet/acre) for crop  $y$  in county  $c$  in year  $t$  during a drought year or an average year. The Decision Support System for Agrotechnology Transfer (DSSAT) was used to model irrigation application rates in the study area under historical weather conditions from 1950-2020. DSSAT is available for download at <https://dssat.net/data>. The 90th

percentile water application rate from the DSSAT runs for each crop and county was used as the estimate of  $WD_{ESS,c,y,t}$  during drought. The 50th percentile water application rate was used as the estimate of  $WD_{SSS,c,y,t}$ . Those values are presented in Table S5.

We use the electricity fuel requirement of 1.55 kwh/acre-foot/foot reported in Roger (1999) as our estimate of Fuel Usage. The price of electricity is from Georgia Power, the electricity provider in the study area. We used a weighted average of the “Off-Peak” Irrigation Rate (<https://www.georgiapower.com/content/dam/georgia-power/pdfs/electric-service-tariff-pdfs/IOP-15.pdf>) and the “On-Peak” Farm Service Schedule rate (<https://www.georgiapower.com/content/dam/georgia-power/pdfs/electric-service-tariff-pdfs/FS-11.pdf>), assuming 1/3 of irrigation water is applied on-peak (between noon and 8:00 pm) and the other 2/3 is applied off-peak.

Table S4: Well Depth Data

County	Aquifer	Site Code	Interval (Year)	Well depth (ft)	Average Well Depth
Baker*	Floridan	12K014*	1989 - 2019	137	153.32
		09J008*	1977 - 2000	157	
		10H009*	1998 - 2021	200	
		09H014	1983 - 1999	200	
		10H007	1995 - 2015	169	
		09H004	1979 - 1982	180	
		09J007	1964	158	
		09J011	1969	165	
		09J016	1969	120	
		08J018	1977 - 2010	170	
		09J004	1977 - 2010	245	
		09J018	1977	250	
		10J004	1977 - 1998	140	
		10J009	1995 - 2019	100	
		09J003	1977 - 1998	120	
		10J010	2010	80	
		09J015	2010	102	
		09J001	1979 - 1981	115	
		11J020	1985 - 1999	196	
		10K010	1985	160	
		10K008	2002	120	
		12K008	1977 - 1999	195	
		12K009	1977 - 2011	160	

		10K006	1990 - 1999	100	
		12K130	1987 - 1999	94	
	Claiborne	11J023	1995 - 2015	560	430.2
		11J024	1995	560	
		09J014	1974	401	
		10J012	1987	390	
		11J014	1977 - 1999	240	
Calhoun*	Floridan	10K005*	1987 - 2021	138	150.07692
		08K023	2010	135	
		08K021	-	130	
		08K019	2009	130	
		10K005	1983 - 2021	138	
		09K012	2010 - 2011	225	
		09L031	2010	250	
		09L029	2010 - 2011	107	
		08L019	-	170	
		09L030	2010 - 2011	143	
		07L005	1979 - 2011	140	
		09L006	1979 - 1994	140	
		10L002	1959 - 1998	105	
	Claiborne	09K003	1969 - 2012	545	372.25
		07L004	1979 - 2009	140	
		07L005	1979 - 2011	157	
		07L001	1979 - 2011	647	
Decatur*	Floridan	08E038*	2004 - 2021	148	204.82927
		09E009*	1999 - 2021	360	

	08E039*	2002 - 2021	65	
	09E005*	1999 - 2021	80	
	09F520*	1982 - 2021	251	
	10G001*	1982 - 2021	160	
	09G001*	1982 - 2021	255	
	08D006	2000 - 2016	380	
	07D006	1991 - 2006	340	
	07D004	1999 - 2010	120	
	08D003	1999 - 2011	300	
	08D002	2000 - 2012	340	
	08D090	2000 - 2016	340	
	08D007	2000 - 2012	300	
	08E023	1999 - 2000	280	
	07E009	1999 - 2011	320	
	07E062	1999 - 2011	300	
	08E024	1999 - 2011	216	
	07E001	1999 - 2011	154	
	07E008	1999 - 2011	145	
	08E040	2002 - 2004	285	
	09E521	2000 - 2011	294	
	08E019	1999 - 2011	147	
	08E022	1999 - 2011	85	



		08E021	1999-2011	125	
		08E020	1999 - 2000	88	
		09E383	1954	244	
		09E003	1999 - 2011	75	
		08E031	2000 - 2001	240	
		09E008	1999 - 2000	320	
		08E035	2000	115	
		10G229	1962	160	
		10G184	1962	142	
		10G002	1977	116	
		10G005	1979 - 1986	190	
		08G009	2002	100	
		08G002	1978	170	
		09F006	1979	250	
		10F004	1979 - 2011	120	
		08F513	2010 - 2011	195	
		08F004	1961	83	
	Claiborne	08F515	2015	800	821.66667
		09G020	2010	760	
		10D002	1960	905	
Dougherty*	Floridan	11K027	1972 - 1998	100	147.15029
		12K132*	1966 - 2021	110	
		12K037*	1996 - 2021	200	
		13K014*	1982 - 2021	131	
		11K015*	1982 - 2021	177	
		12K124*	1987 - 2021	182	
		12K117*	1987 - 2021	190	

	12K173*	1998 - 2021	180	
	11K003	2007 - 2021	150	
	12K168*	1997 - 2021	180	
	12K175*	1998 - 2021	187	
	12K063*	1998 - 2021	-	
	12K180*	2007 - 2021	170	
	12K170*	1997 - 2021	180	
	12L373*	2002 - 2021	170	
	12L348*	1997 - 2021	180	
	12L340*	1997 - 2021	178	
	12L405	2015 - 2021	180	
	12L277*	2007 - 2021	203	
	12L356*	1998 - 2021	160	
	12L346*	1989 - 2021	160	
	12L273*	1987 - 2021	120	
	12L344*	1997 - 2021	160	
	12L375*	2001 - 2021	105	
	12L268*	1987 - 2021	-	
	13L180*	2007 - 2021	310	
	12L269*	1987 - 2021	164	
	12L028*	1982 - 2021	100	

	12L029*	1982 - 2021	178	
	13L049*	2007 - 2021	170	
	13K017	1984 - 2011	132	
	12K136	1993 - 1995	215	
	12K137	1993 - 1994	85	
	11K033	1982 - 2011	77	
	12K126	1988 - 1989	224	
	12K016	1982 - 2012	131	
	12K053	1970 - 2007	85	
	13K011	1977 - 2008	430	
	12K101	1985 - 2018	120	
	12K171	1998 - 2016	140	
	11K004	1979 - 1998	150	
	11K043	1992 - 2011	170	
	12K129	1988 - 2016	211	
	11K003	1979 - 2021	150	
	12K169	1977	180	
	11K046	1995 - 1997	115	
	12K167	1996 - 1998	57	
	12K151	1995	200	
	12K152	1995	80	
	12K154	1995	200	
	12K155	1995	80	

	12K123	1988 - 2019	242	
	12K148	1995 - 2000	200	
	12K150	1995	30	
	12K147	1995 - 2003	185	
	11K044	1992 - 1998	200	
	11K028	1975 - 2008	155	
	12K166	1996 - 1998	93	
	12K144	1995 - 1998	200	
	12K145	1995 - 1998	80	
	12K146	1995 - 1998	30	
	12K122	1988 - 2001	98	
	12K172	1998 - 2018	125	
	12K162	1965	247	
	12K141	1996 - 2016	200	
	12K142	1995 - 2011	80	
	12K143	1995 - 2014	30	
	12K160	-	233	
	12K163	1966	245	
	12K015	1984 - 1985	114	
	12K161	1961	207	
	12K094	1979 - 2003	115	
	12K165	1969	265	
	12K007	1951 - 1953	79	
	12K164	1969	260	

		13K092	1996 - 1997	144	
		12K174	-	180	
		12K006	1951 - 1961	247	
		12K182	-	200	
		12L338	1996 - 1998	57	
		12L349	1997	165	
		12L339	1997 - 2017	187	
		12L347	1997 - 2021	160	
		11L078	1974 - 1994	100	
		12L377	1997	170	
		12L370	2000 - 2017	172	
		12L372	2000 - 2017	58	
		12L380	2000	158	
		12L381	1999	165	
		12L352	1998 - 2015	100	
		12L378	2000	179	
		12L061	1971 - 2013	195	
		12L405	2015 - 2021	195	
		12L350	2012 - 2013	92	
		13L048	1982 - 2005	345	
		12L341	1997 - 2000	153	
		12L363	-	59	
		12L382	1999	168	
		12L342	1997 - 2018	100	
		12L357	1998 - 2008	160	

	12L343	1997 - 2016	200	
	12L368	-	59	
	13L012	1978 - 2019	218	
	12L351	1998 - 2018	165	
	12L367	-	39	
	12L030	1982 - 2017	180	
	12L050	1983 - 2011	22	
	12L310	1991 - 2018	250	
	13L031	1978 - 1998	290	
	12L345	1997 - 2021	160	
	12L312	1991 - 1998	110	
	12L311	1991 - 2010	100	
	13L032	1978 - 1998	285	
	12L326	1994 - 2015	115	
	13L202	1994 - 1997	98	
	12L328	-	43	
	12L309	1991 - 2011	29	
	11L114	1992 - 1998	180	
	12L305	1994 - 2011	22	
	13L182	1996 - 1998	270	
	13L179	1996 - 1998	120	
	13L191	1996 - 1997	130	

	11L113	1992 - 2012	98	
	12L048	1987 - 1998	85	
	11L120	1993	50	
	11L020	1984 - 2011	150	
	13L209	1996 - 1997	110	
	12L047	1987 - 1991	169	
	13L205	1996 - 1997	70	
	13L190	1996 - 1997	100	
	13L204	1996 - 1997	78	
	13L206	1996 - 1997	79	
	13L208	1996 - 1997	108	
	11L023	1985 - 1994	109	
	13L207	1996 - 1997	110	
	13L189	1996 - 1997	125	
	13L186	1994 - 1997	195	
	13L185	1996 - 1997	173	
	13L184	1996 - 1997	192	
	13L184	1996 - 1997	201	
	13L056	1984 - 1994	199	
	14L048	1996 - 2008	135	
	13L188	1996 - 1997	192	
	13L187	-	190	

	13L181	1996 - 1998	225	
	11L111	1992 - 2011	125	
	13L057	1982 - 2008	150	
	11L077	1974 - 2008	130	
	11L070	1973 - 1998	135	
	11L116	1993 - 2008	150	
	11L117	1993 - 2019	64	
	12L298	1991	34	
	12L297	1990 - 1991	68	
	12L300	1991	52	
	12L267	1989 - 1994	187	
	12L299	1991	38	
	11L092	1980 - 2011	125	
	11L022	1982 - 1987	110	
	12L292	1990 - 1994	74	
	12L293	1990 - 1991	69	
	12L294	1990 - 2011	30	
	12L307	1991 - 1992	130	
	11L003	1977 - 2008	86	
	13L014	1979 - 1994	99	
	11L115	1992 - 2008	150	
	13L058	1985 - 1998	173	



		12L044	1982 - 1988	91	
		11L021	1982 - 1998	82	
		11L017	1983 - 1988	144	
		13L052	1982 - 2008	105	
		11L110	1991	280	
		11L112	1992 - 2011	180	
		11L103	1986	140	
		13L047	1977 - 2011	256	
		13L003	1963 - 2000	243	
	Claiborne	11L001*	1978 - 2021	251	642.03226
		12L019*	2007 - 2021	257	
		13L015*	1979 - 2021	351	
		11K002	1979 - 2005	320	
		13K002	1979 - 1992	340	
		12L402	-	452	
		13L011	1977 - 2014	418	
		13L018	1957	900	
		13L240	-	614	
		12L013	1975	900	
		11L109	1989	370	
		12L008	1952	800	
		12L003	1939 - 1957	768	
		12L005	1975	868	
		12L398	-	850	
		11L107	1989	360	
		13L026	1978	942	

		13L027	1978 - 1980	942	
		12L007	1953	725	
		13L016	1979 - 1980	560	
		12L399	-	475	
		13L021	1979	560	
		13L004	1954	700	
		13L244	-	830	
		12L010	1955 - 1976	895	
		13L017	1979 - 1980	550	
		13L002	1979	550	
		12L017	1975	820	
		12L012	1975	855	
		11L024	-	840	
		12L015	1975	840	
Early*	Floridan	06G006*	1982 - 2021	123	158.86486
		08K001*	1981 - 2021	125	
		06H007	1977 - 1990	165	
		06H013	1977 - 2011	150	
		06H019	-	140	
		06H017	2002 - 2019	245	
		06H005	1977 - 1998	140	
		06H009	1977 - 2011	160	
		06H012	1977 - 2008	205	
		05H002	-	200	
		05H008	1977 - 2011	145	
		05H021	2010 - 2011	110	

		06H011	1980 - 1990	120	
		05J007	1980 - 2011	100	
		05J002	1962	276	
		05J006	1971 - 1985	93	
		06J010	2010 - 2012	275	
		06J007	-	130	
		06J004	2002	75	
		06J002	1971 - 1990	145	
		08J016	-	132	
		08J015	1978 - 2008	160	
		08J001	1953 - 1976	131	
		08J019	-	140	
		06J009	2010 - 2011	160	
		06J011	-	200	
		05J009	-	165	
		08J020	-	131	
		08J005	1977 - 2000	100	
		08J013	1977 - 1982	243	
		07K015	2010 - 2011	200	
		06K020	2010	72	
		08K024	-	103	
		08K016	1969 - 1999	260	
		08K013	1977 - 2008	155	
		07K016	-	160	
		08K015	1977 - 1998	244	
	Claiborne	08K025*	2017 - 2021	290	313.58333

		06K010*	1981 - 2021	140	
		06G011	1977 - 1994	200	
		05H006	1965 - 1994	494	
		05H007	1975 - 2011	455	
		05H015	1982 - 1992	380	
		05H001	1961 - 1979	380	
		05H009	1979 - 1986	460	
		05H010	1977 - 2011	326	
		07K009	1973 - 2011	198	
		08K026	-	295	
		06K004	1951	145	
Lee**	Floridan	12M017*	1985 - 2021	181	165.73171
		12M026	1985 - 1998	220	
		13P016	-	130	
		11M039	-	175	
		12M057	-	159	
		11M018	1984	160	
		12M021	1982 - 1998	180	
		12M059	-	190	
		13M081	1983 - 1998	150	
		12M022	1982 - 2000	164	
		13M013	1985 - 1999	170	
		13M064	1983 - 1998	250	
		13M003	1983 - 1990	163	

	12M003	1979 - 1998	140	
	11M010	1977 - 2008	120	
	12M015	1976 - 1985	105	
	13M083	1983 - 1994	165	
	13M088	207		
	12M035	1996	165	
	13M063	1983 - 1994	160	
	13M008	1983 - 1998	143	
	12M060	2010	125	
	13M082	1983 - 1998	160	
	12M013	1967 - 2000	158	
	13M055	1983 - 1990	150	
	13M057	1983 - 1998	163	
	12M010	1978 - 1999	185	
	13M072	-	125	
	13M069	1985	135	
	13M048	1985 - 1998	135	
	13M073	-	100	
	13M043	-	420	
	13M010	1982 - 1994	215	
	13M011	1983 - 2000	160	
	13M049	1985 - 2000	110	
	11M015	1979 - 2011	213	
	13M014	1983 - 1993	185	

	13M019	1984 - 1988	20	
	13M012	1983 - 1994	46	
	13M080	1983 - 2000	160	
	13M046	1983 - 2017	105	
	12M034	1993 - 2002	43	
	13M058	1983 - 1994	175	
	13M004	1977 - 1998	140	
	13M056	1983 - 2011	173	
	13M065	1983 - 2008	140	
	12M012	1978 - 2000	135	
	13M059	1983 - 1998	160	
	12M020	1980 - 1984	156	
	13M074	1986 - 1986	150	
	12M004	1979 - 1990	190	
	12M011	1958 - 2010	197	
	13M079	1983 - 1998	155	
	13M075	1981	173	
	13M077	1983 - 1994	140	
	13M078	1983 - 1994	155	
	13M071	1985	160	
	13M066	1983 - 2011	120	
	13M060	1983 - 2000	165	

	13M084	1987 - 2000	110	
	13M009	1977 - 1986	160	
	13M067	1983	115	
	13M085	1987 - 1994	120	
	13M086	1987 - 2011	160	
	12N006	-	280	
	12N003	1978 - 1990	240	
	12N005	1985 - 1990	98	
	13N003	1977 - 2011	160	
	13N014	2010 - 2011	165	
	13N004	1978 - 1987	300	
	13N009	1980 - 2010	115	
	13N007	1978 - 2011	160	
	12N004	1978 - 2012	200	
	13P005	1982 - 2008	240	
	13P012	-	200	
	11P006	1978 - 2008	319	
	12P012	1978 - 1998	175	
	12N007	-	343	
	13P004	1978 - 1990	140	
	13P014	-	113	
	13P015	1999	300	
	12P011	1978 - 1998	105	
	12P010	1978 - 2008	185	

	Claiborne	11P015*	1984 - 2021	151	299.69231
		06K010*	1981 - 2021	140	
		12M001*	1978 - 2021	385	
		12M058	-	420	
		11M038	-	360	
		13M087	-	445	
		12M056	-	395	
		12M019	1979 - 2010	300	
		12M014	1965	380	
		11P003	1969 - 2011	195	
		11P020	-	185	
		11P001	1950	180	
		13P018	2010	360	
Miller*	Floridan	08G001*	2007 - 2021	225	160.90323
		07H002	1980 - 2015	75	
		08G014	-	210	
		07G027	2010 - 2011	145	
		07G029	-	120	
		07G022	-	290	
		07G020	1993	55	
		08G008	1993 - 2019	69	
		09G011	1993 - 2019	36	
		09G006	1977 - 2008	220	
		07H027	2010	140	
		09H013	1978 - 1986	165	
		07H018	1992 - 2019	75	
		06H003	1977 - 2000	180	



		09H012	1979 - 2011	205	
		08H011	1979 - 1990	121	
		08H010	1981 - 2011	210	
		08H001	1963	234	
		08H002	1963	135	
		08H015	-	210	
		06H001	1964	135	
		08H012	1990 - 2000	80	
		08H018	-	180	
		06H022	2010 - 2011	180	
		09H011	1977 - 2008	195	
		08H017	-	200	
		06H016	1993 - 2001	38	
		07H001	1964	390	
		07H026	2010 - 2011	150	
		08H007	1977 - 2008	200	
		07H025	2007 - 2011	120	
	Claiborne	08H016	-	740	
		07H024	1993 - 2019	140	
				440	
Mitchell*	Floridan	10G313*	1976 - 2021	206	351.89091
		11J030*	2018 - 2021	236	
		13J004*	1978 - 2021	208	
		12K001*	1976 - 2021	270	
		13K013	1976 - 1986	2010	
		13K008	1976	295	

	12J003	1979 - 1994	82	
	12G046	2004	740	
	10G317	2007 - 2010	175	
	13G009	-	387	
	10G314	2002 - 2019	370	
	12G039	1972	822	
	12G041	-	577	
	12G001	1942	720	
	10H012	2010	225	
	12H015	-	351	
	10H006	1979 - 2011	200	
	11H005	1977 - 1990	185	
	13H011	-	700	
	11H001	1966	110	
	12H023	-	200	
	13H006	1960	305	
	13H004	-	316	
	13H009	1967	345	
	12H012	-	221	
	10H003	1980 - 2000	84	
	12H011	1960	287	
	13H012	2010	455	
	12H019	2009	98	
	12H020	2009	133	
	12H014	-	350	
	12H008	1976 - 2019	341	
	12H024	-	320	
	12H004	1941	396	
	12H003	1989	207	
	13H005	-	380	
	13H007	1976 - 1990	320	

		12J004	-	220	
		11J001	1979 - 2013	190	
		11J018	1977 - 2008	200	
		12J005	-	300	
		11J019	1977 - 1999	225	
		13J015	2010	560	
		13J001	1976 - 2011	431	
		11J012	1982 - 2018	225	
		11J016	1979 - 2008	206	
		13J007	1990 - 1991	150	
		12J002	1979 - 2010	200	
		13J009	-	497	
		12J001	1942	460	
		13J014	2010 - 2012	500	
		13K023	1985 - 2008	386	
		13K007	1978 - 1978	285	
		13K001	1963 - 1989	382	
		13K021	1985 - 2006	310	
	Claiborne	11J011*	1981 - 2021	417	689.4
		11J025*	2018 - 2021	710	
		10H013	-	820	
		11J029	-	700	
		11H016	-	800	
Randolph*	Floridan	07M004	1992	75	65
		07M003	1979 - 2011	60	

		08M004	1992	70	101.875
		08P003	1992	55	
	Claiborne	09M009*	2007 - 2021	94	
		07L014	1984 - 2011	124	
		07M003	1972 - 2011	50	
		09N003	1949	135	
		09N002	1978 - 1994	134	
		07N007	1979 - 2011	68	
		09N006	1979 - 2011	90	
		08P001	-	120	
Terrell	Floridan	10M003	1980 - 2008	176	158.10526
		10M020	-	200	
		11M025	1992 - 2012	120	
		11M006	1980 - 1991	120	
		10M016	-	95	
		11M007	1980 - 2008	95	
		11M031	-	150	
		11M032	-	160	
		11M034	2002	90	
		10M019	2010	190	
		11M041	2010 - 2011	165	
		10M021	-	250	
		10N013	1980 - 1990	140	
		10N012	1980 - 2000	103	
		10N024	2010 - 2012	90	
		11N011	2010	150	
		11N013	-	300	

		10N025	-	350	
		09P005	1979 - 1992	60	
	Claiborne	11M011	1978 - 2011	320	257.66667
		11M024	-	320	
		10M009	1979 - 1989	430	
		11M013	1978 - 2011	320	
		11M003	1953 - 1994	115	
		11M001	1953 - 2011	202	
		11M042	2010 - 2011	240	
		09N011	2008 - 2011	210	
		10N017	1978 - 2011	180	
		11N006	1979 - 2011	135	
		11N007	1979 - 2011	120	
		11N012	-	500	
Worth*	Floridan	13M006*	1982 - 2021	123	350.34615
		15L020*	1977 - 2021	450	
		16K034	2004 - 2008	354	
		16J037	2008	520	
		16J042	2005	490	
		15J018	1990 - 2008	460	
		14J003	1990	280	
		16J036	1998 - 2008	290	
		16J041	2008	440	
		16J011	1970 - 2006	570	
		16J047	1970	440	

	14J028	-	540
	16J043	2008	640
	14J027	1996 - 2008	460
	14J006	-	250
	15K014	2008	552
	15J006	-	305
	15K006	1976	305
	16K038	-	420
	16K050	2008	620
	14K060	-	460
	15K019	2000	400
	16K016	1968 - 2019	610
	16K025	-	540
	15K017	1995 - 2007	440
	14N012	2008 - 2010	200
	14N001	1943 - 1967	325
	14N004	1980 - 2019	250
	15N005	2003	260
	15N006	2002	210
	15N007	-	250
	14N013	1997 - 2008	270
	14M008	1982 - 1999	102
	14M020	1996	300
	13M051	1985 - 1999	245
	14M021	1996	210
	15M008	1998 - 2008	260
	15M021	2008	170
	14M019	1998	250
	15M007	1998 - 2008	260

		15M009	1996 - 2008	220
		15M019	2008	82
		14M018	1996 - 2008	205
		15M011	1997	220
		14M017	1995 - 2008	220
		15M012	1997	300
		14M001	1964 - 1965	215
		15M022	2008	122
		15M023	2008	170
		16L032	2008	575
		14L056	2007 - 2008	320
		14L046	1992 - 2009	162
		14L009	1985 - 1991	238
		16L023	1996 - 2007	500
		16L025	2007	490
		15L053	1993 - 2008	480
		14L006	1977 - 2011	235
		16L024	2008	400
		16L026	2007	460
		16L011	1969	210
		14L002	1965	460
		16L030	2006	460
		15L042	-	196
		16K024	2008	420
		14J600	1966	250
		16K035	1997	580
		14K003	165	370
		16K055	2008	340
		16K031	1998 - 2007	450

		16K029	2008	400	
		15K018	1997	460	
		14L057	1998 - 2008	480	
		16L027	2007	380	
		16L001	1965	410	
		15L042	-	196	
		16L011	1969	210	
		16L031	2006	460	
		16L028	2006 - 2007	460	
	Claiborne	15K016	1998 - 2008	740	534
		14K059	1997 - 2008	600	
		16K052	2008	725	
		13M005*	2007 - 2021	345	
		14N016	2009 - 2017	460	
		15N008	1990 - 2010	334	



Table S5: Water Application Rates (Acre-feet/acre) by County and Crop

County	Weather	Corn	Cotton	Peanut	Soybean
Baker	50%ile	0.8	0.7	0.8	0.5
	90%ile	1.3	1.2	1.2	0.9
Calhoun	50%ile	0.8	0.7	0.7	0.5
	90%ile	1.2	1.1	1.2	0.9
Decatur	50%ile	0.6	0.4	0.6	0.4
	90%ile	1.1	0.9	1.0	0.8
Dougherty	50%ile	0.7	0.6	0.6	0.5
	90%ile	1.1	1.0	1.1	0.8
Early	50%ile	0.7	0.5	0.5	0.4
	90%ile	1.1	1.0	1.0	0.7
Lee	50%ile	0.7	0.5	0.5	0.4
	90%ile	1.1	1.0	1.0	0.7
Miller	50%ile	0.9	0.6	0.5	0.3
	90%ile	1.3	1.1	0.9	0.5
Mitchell	50%ile	0.8	0.6	0.7	0.5
	90%ile	1.3	1.1	1.2	0.8
Randolph	50%ile	0.7	0.3	0.4	0.4
	90%ile	1.2	1.0	1.1	0.8
Terrell	50%ile	0.7	0.6	0.7	0.5
	90%ile	1.2	1.1	1.2	0.9
Worth	50%ile	0.6	0.4	0.4	0.2
	90%ile	1.1	0.9	0.8	0.5