

SOUTHERN COASTAL PLAIN

# Water Use Survey



2004

***The Southern Coastal Plain Water Use Area*** survey was conducted to document water use for the agricultural sector in Bladen, Columbus, Hoke, Richmond, Robeson, Sampson, and Scotland counties. The study was commissioned by the Lumber River Council of Governments (LRCOG) and is part of a larger effort to develop an updated regional water budget and water resources plan. The project was funded through a grant from the North Carolina Rural Economic Development Center.

Of the farms surveyed in the seven county area, 231 withdrew more than 10,000 gallons of water in any one day. April through July of 2004 was drier than the end of the year when five hurricanes and a tropical storm resulted in overall wet conditions. July was the largest water use month in 2004, averaging 54.9 million gallons daily, with a maximum daily withdrawal of 64.0 million gallons.

A questionnaire was mailed in early March 2005 to 1866 operations which had potential for large water usage in the seven county area. Operations that did not respond by mail were contacted by telephone. Data collection was finalized in May 2005. The table below quantifies the responses of the 1866 farms.

672	mail
974	phone
188	non-response
32	refusal

For each county, the total number of operations by type with total and average daily withdrawal capacity was summarized by month. The type of operations will not add to the total in all counties, because some operations had irrigated cropland and livestock. The daily withdrawal capacity is the potential amount of ground and/or surface water that could be utilized in a 24-hour period. In nearly all cases, this capacity was never met. Data was not disclosed if there were less than three operations in any category or if one report comprised more than 60 percent of the total. Non-published data for the seven individual counties were combined and summarized in the Other County table to avoid disclosure of individual data.

# REGION

Month	# Operations	Total Avg. Daily-Ground <i>(gallons)</i>	Total Avg. Daily-Surface <i>(gallons)</i>	Total Max Daily-Ground <i>(gallons)</i>	Total Max Daily-Surface <i>(gallons)</i>
Jan	185	3,638,734	*	3,829,375	*
Feb	185	3,415,309	*	3,608,080	*
March	194	5,162,504	8,230,673	5,395,949	8,230,673
April	207	9,049,858	17,442,121	9,225,388	27,560,503
May	214	13,490,102	18,825,009	14,577,109	25,104,007
June	215	18,367,696	25,055,357	21,463,200	32,040,486
July	227	18,648,689	36,244,965	21,011,562	43,010,188
Aug	206	14,186,721	25,185,371	16,107,339	31,786,678
Sept	189	10,080,783	*	11,303,435	*
Oct	173	7,286,356	*	8,686,504	*
Nov	169	5,235,147	*	5,432,907	*
Dec	169	3,694,638	*	3,896,992	*

**Operations:**

231 total operations  
183 livestock  
52 irrigation

**Daily Withdrawal Capacity (incl. ground and surface):**

116,227,656 *(gallons)*

\* disclosure - one operation is greater than 60% of total OR less than 3 operations

# BLADEN

Month	# Operations	Avg. # Days Ground	Avg. # Days Surface	Total Avg. Daily-Ground <i>(gallons)</i>	Total Avg. Daily-Surface <i>(gallons)</i>	Total Max Daily-Ground <i>(gallons)</i>	Total Max Daily-Surface <i>(gallons)</i>
Jan	51	31	*	801,939	*	802,639	*
Feb	51	28	*	748,557	*	749,292	*
March	54	29	*	1,606,064	*	1,613,432	*
April	54	29	*	1,600,420	*	1,603,930	*
May	54	30	*	1,719,963	*	1,720,675	*
June	53	29	*	1,732,485	*	1,738,795	*
July	53	30	*	1,750,120	*	1,752,877	*
Aug	53	30	*	1,650,083	*	1,650,130	*
Sept	53	29	*	1,705,936	*	1,712,646	*
Oct	51	31	*	844,592	*	847,617	*
Nov	51	30	*	795,459	*	796,159	*
Dec	51	31	*	802,510	*	810,642	*

**Operations:**

54 total operations  
51 livestock  
3 irrigation

**Daily Withdrawal Capacity (incl. ground and surface):**

2,358,500 *(gallons)*

\* disclosure - one operation is greater than 60% of total OR less than 3 operations

# COLUMBUS

Month	# Operations	Avg. # Days Ground	Avg. # Days Surface	Total Avg. Daily-Ground (gallons)	Total Avg. Daily-Surface (gallons)	Total Max Daily-Ground (gallons)	Total Max Daily-Surface (gallons)
Jan	8	28	*	148,362	*	148,872	*
Feb	8	25	*	146,529	*	146,529	*
March	8	25	*	158,919	*	164,429	*
April	8	25	*	164,605	*	169,605	*
May	8	27	*	189,708	*	206,218	*
June	*	*	*	*	*	*	*
July	*	*	*	*	*	*	*
Aug	*	*	*	*	*	*	*
Sept	8	26	*	191,930	*	191,930	*
Oct	8	28	*	149,493	*	150,003	*
Nov	8	27	*	157,317	*	157,317	*
Dec	8	28	*	156,595	*	157,105	*

**Operations:**

8 total operations  
8 livestock and irrigation

**Daily Withdrawal Capacity (incl. ground and surface):**

2,222,856 (gallons)

\* disclosure - one operation is greater than 60% of total OR less than 3 operations

# HOKE

Month	# Operations	Avg. # Days Ground	Avg. # Days Surface	Total Avg. Daily-Ground (gallons)	Total Avg. Daily-Surface (gallons)	Total Max Daily-Ground (gallons)	Total Max Daily-Surface (gallons)
Jan	4	31	*	46,294	*	46,294	*
Feb	4	28	*	44,314	*	44,314	*
March	4	31	*	46,068	*	46,068	*
April	4	30	*	46,663	*	46,663	*
May	4	31	*	50,484	*	50,484	*
June	4	30	*	46,143	*	46,143	*
July	4	31	*	50,174	*	50,174	*
Aug	4	31	*	42,012	*	42,012	*
Sept	4	30	*	51,493	*	51,493	*
Oct	4	31	*	46,355	*	46,355	*
Nov	4	30	*	47,037	*	47,037	*
Dec	4	31	*	48,813	*	48,813	*

**Operations:**

4 total operations  
4 livestock

**Daily Withdrawal Capacity (incl. ground and surface):**

55,000 (gallons)

\* disclosure - one operation is greater than 60% of total OR less than 3 operations

# ***RICHMOND***

<b>Month</b>	<b># Operations</b>	<b>Avg. # Days Ground</b>	<b>Avg. # Days Surface</b>	<b>Total Avg. Daily-Ground</b>	<b>Total Avg. Daily-Surface</b>	<b>Total Max Daily-Ground</b>	<b>Total Max Daily-Surface</b>
				<i>(gallons)</i>	<i>(gallons)</i>	<i>(gallons)</i>	<i>(gallons)</i>
Jan	9	29	*	70,855	*	243,952	*
Feb	9	27	*	66,133	*	243,198	*
March	9	28	*	68,609	*	246,706	*
April	8	28	*	87,162	*	183,715	*
May	8	31	*	107,016	*	212,626	*
June	8	29	*	190,337	*	683,050	*
July	8	30	*	192,771	*	685,971	*
Aug	9	31	*	196,344	*	281,193	*
Sept	9	28	*	111,743	*	296,875	*
Oct	9	30	*	85,120	*	264,358	*
Nov	9	30	*	69,037	*	248,617	*
Dec	9	27	*	77,697	*	250,461	*

**Operations:**

9 total operations  
9 livestock and irrigation

**Daily Withdrawal Capacity (incl. ground and surface):**

1,233,200 *(gallons)*

\* disclosure - one operation is greater than 60% of total OR less than 3 operations

# ***ROBESON***

<b>Month</b>	<b># Operations</b>	<b>Avg. # Days Ground</b>	<b>Avg. # Days Surface</b>	<b>Total Avg. Daily-Ground</b>	<b>Total Avg. Daily-Surface</b>	<b>Total Max Daily-Ground</b>	<b>Total Max Daily-Surface</b>
				<i>(gallons)</i>	<i>(gallons)</i>	<i>(gallons)</i>	<i>(gallons)</i>
Jan	29	31	*	457,924	*	474,198	*
Feb	29	28	*	390,896	*	405,763	*
March	30	30	*	504,287	*	535,338	*
April	32	28	*	3,287,535	*	3,317,784	*
May	33	29	*	4,137,154	*	4,208,398	*
June	33	29	*	4,330,764	*	5,504,030	*
July	32	29	*	5,907,901	*	5,932,081	*
Aug	31	30	*	2,657,424	*	2,672,432	*
Sept	30	29	*	484,639	*	904,618	*
Oct	*	*	*	*	*	*	*
Nov	*	*	*	*	*	*	*
Dec	30	30	*	611,691	*	627,965	*

**Operations:**

33 total operations  
29 livestock  
4 irrigation

**Daily Withdrawal Capacity (incl. ground and surface):**

13,492,200 *(gallons)*

\* disclosure - one operation is greater than 60% of total OR less than 3 operations

# SAMPSON

Month	# Operations	Avg. # Days Ground	Avg. # Days Surface	Total Avg. Daily-Ground (gallons)	Total Avg. Daily-Surface (gallons)	Total Max Daily-Ground (gallons)	Total Max Daily-Surface (gallons)
Jan	72	31	*	1,901,120	*	1,901,180	*
Feb	72	28	*	1,853,264	*	1,853,369	*
March	73	31	*	2,568,948	*	2,580,367	*
April	77	29	*	3,678,932	*	3,719,150	*
May	79	30	*	7,041,679	*	7,934,610	*
June	80	29	*	9,913,783	*	11,320,998	*
July	78	30	*	8,534,760	*	10,361,496	*
Aug	78	30	*	7,378,948	*	8,955,583	*
Sept	76	30	*	7,388,310	*	7,999,141	*
Oct	74	31	*	5,631,793	*	5,711,724	*
Nov	72	30	*	2,514,085	*	2,515,726	*
Dec	72	31	*	1,909,725	*	1,914,399	*

**Operations:**

82 total operations  
70 livestock  
13 irrigation

**Daily Withdrawal Capacity (incl. ground and surface):**

22,078,400 (gallons)

\* disclosure - one operation is greater than 60% of total OR less than 3 operations

# SCOTLAND

Month	# Operations	Avg. # Days Ground	Avg. # Days Surface	Total Avg. Daily-Ground (gallons)	Total Avg. Daily-Surface (gallons)	Total Max Daily-Ground (gallons)	Total Max Daily-Surface (gallons)
Jan	13	31	*	212,240	*	212,240	*
Feb	13	28	*	165,616	*	165,616	*
March	13	31	*	209,609	*	209,609	*
April	13	30	*	184,541	*	184,541	*
May	13	31	*	244,098	*	244,098	*
June	12	30	*	207,946	*	207,946	*
July	13	29	*	285,092	*	285,092	*
Aug	*	*	*	*	*	*	*
Sept	8	30	*	146,732	*	146,732	*
Oct	6	31	*	94,346	*	94,346	*
Nov	6	30	*	88,817	*	88,817	*
Dec	6	31	*	87,607	*	87,607	*

**Operations:**

14 total operations  
14 livestock and irrigation

**Daily Withdrawal Capacity (incl. ground and surface):**

929,200 (gallons)

\* disclosure - one operation is greater than 60% of total OR less than 3 operations

# OTHER <sup>1 2</sup>

Month	# Operations	Avg. # Days Ground	Avg. # Days Surface	Total Avg. Daily-Ground (gallons)	Total Avg. Daily-Surface (gallons)	Total Max Daily-Ground (gallons)	Total Max Daily-Surface (gallons)
Jan	*	*	*	*	*	*	*
Feb	*	*	*	*	*	*	*
March	3	*	17	*	8,230,673	*	8,230,673
April	10	*	14	*	17,442,121	*	23,528,104
May	14	*	14	*	18,825,009	*	25,104,008
June	17	*	17	*	25,055,357	*	32,040,487
July	26	*	15	*	36,244,965	*	43,010,189
Aug	17	*	16	*	25,766,398	*	31,786,679
Sept	*	*	*	*	*	*	*
Oct	*	*	*	*	*	*	*
Nov	*	*	*	*	*	*	*
Dec	*	*	*	*	*	*	*

**Operations:**

27 total operations  
 27 irrigation and livestock

**Daily Withdrawal Capacity (incl. ground and surface):**

73,858,300 (gallons)

\* disclosure - one operation is greater than 60% of total OR less than 3 operations

<sup>1</sup> Other Counties includes non-disclosed data from the published counties.

<sup>2</sup> Counts represent only unique operations which have not already been represented in earlier tables.





