

# 2008 North Carolina Agricultural Water Use Survey

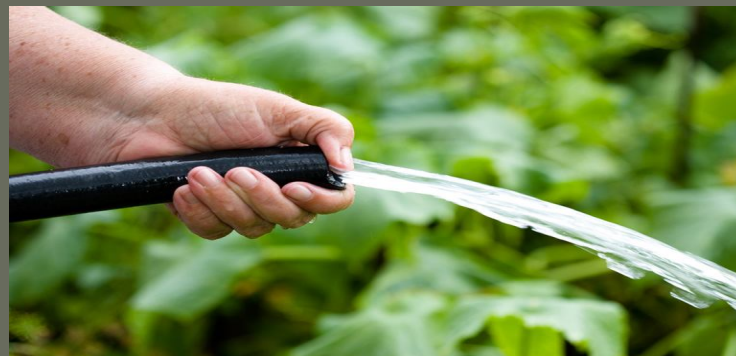


*Agricultural Statistics Division*  
*North Carolina Department of*  
*Agriculture & Consumer Services*

# Background



- Drought in 2007-08 raises awareness of water supplies in North Carolina
- Legislation is discussed to better manage the state's water resources
- Information for agricultural water use is available for the CCPCUA (15 counties) but not statewide (except over 1 mil GPD)
- SL2008-0143 is passed in 2008 – Section 2 outlines collection of agricultural water use data



# Legislation Requirements

- Annually collect water use data from operations using 10,000 GPD or more
- Collaborate with DENR in design of form
- Publish results by July 1
- Voluntary and Confidential



# Survey Promotion

- Statewide WebCast September 2008
  - Commissioner Troxler, NCDA
  - Larry Wooten, NC Farm Bureau
  - All Commodity & Ag Organizations invited
- Commodity meetings
- County meetings
- Extension Offices



# Survey Basics

- Population selected from 2007 Census of Agriculture - > 5,000 GPD, yes/no
- Additionally, operation characteristics considered from regular survey contacts
- 9,000 forms mailed out Jan-Feb 2009
- Telephone follow-up
- 89% total response, 86% usable responses





# Survey Basics (cont'd)

- Survey Form – 1 page, legal size, front & back
- Withdrawal capacity in 1 day
- Total withdrawal
- Maximum any 1 day
- Ground and Surface breakout
- Type of Operation
  - Livestock, Irrigation, Aquaculture



# Survey Results





# Agriculture Uses Irrigation to Supplement Rainfall

- Largest water use in agriculture is irrigation, primarily from surface sources
- Irrigation use is infrequent and seasonal
- On average, irrigation is used on farms only 12-16 days of the month, even in the hottest/driest times of the year
- 2008 was a continuation of a drought period that began in 2007

# Withdrawals versus Consumptive Use

- Results from the 2002 -2008 CCPCUA and the 2008 Statewide Ag Water Use Survey collected **withdrawal** data
- DENR assumes agriculture water use is 100% consumptive
- While we don't have survey data on agricultural consumptive use, we know it is less than 100%

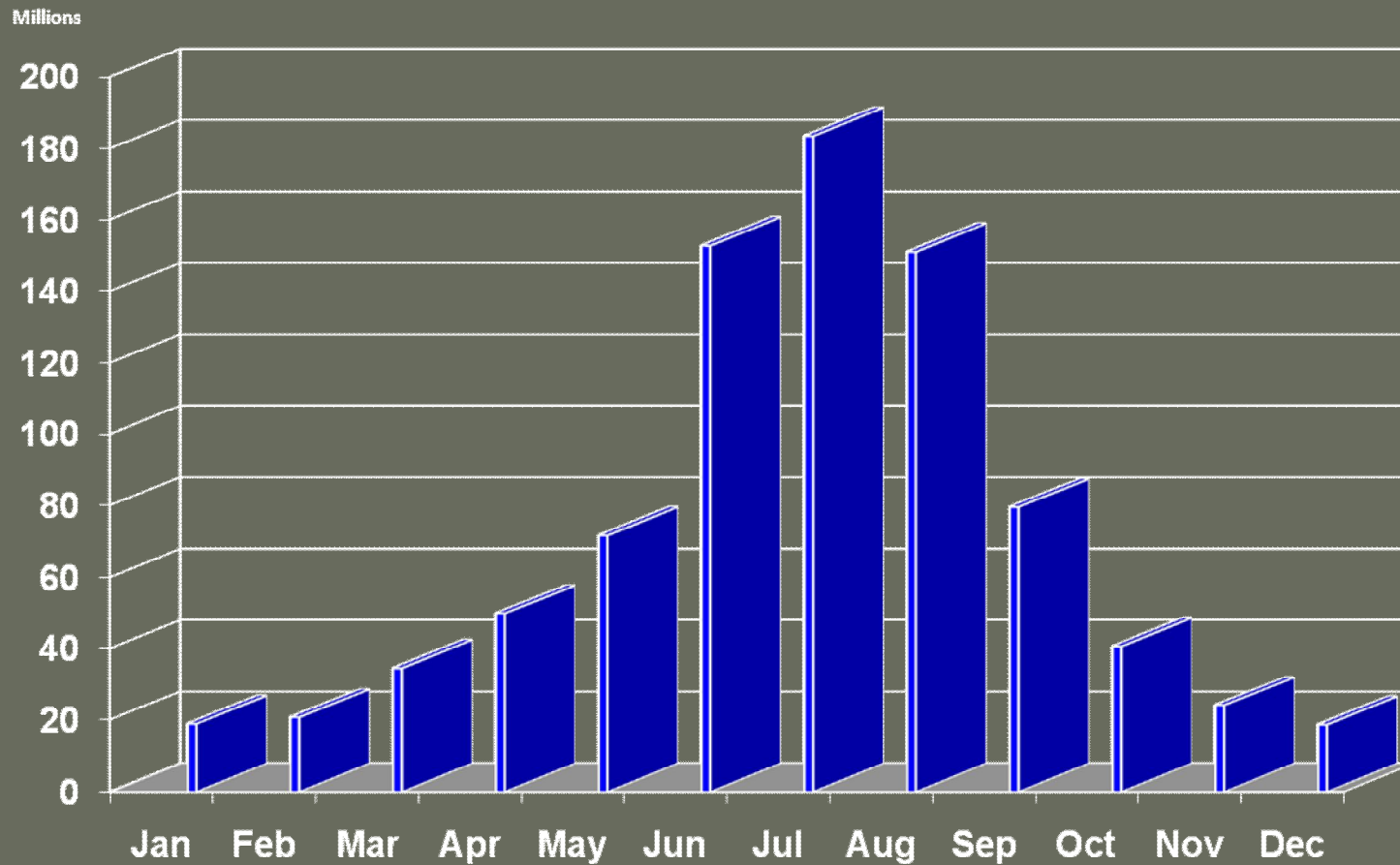
## 2008 North Carolina Water Use by Month <sup>1</sup>

Month	# Operations (count)	Total Gallons Used ground	Total Gallons Used surface	Average Daily Volume – 365 ground	Average Daily Volume – 365 surface	Average for Demand Days ground	Average for Demand Days surface
January	844	366,976,523	219,751,635	11,837,952	7,088,762	15,437,944	18,486,355
February	858	362,172,499	218,688,050	12,934,732	7,810,288	17,311,332	20,899,000
March	907	451,170,758	621,280,327	14,553,895	20,041,301	26,278,661	65,908,847
April	1,060	588,388,467	908,445,100	19,612,949	30,281,503	36,143,817	92,745,073
May	1,165	768,218,651	1,453,611,599	24,781,247	46,890,697	49,639,222	131,254,942
June	1,397	1,270,987,469	3,314,635,093	42,366,249	110,487,836	76,938,479	241,306,416
July	1,513	1,343,510,973	4,345,408,077	43,339,064	140,174,454	79,529,803	285,904,645
August	1,349	1,089,035,392	3,595,927,024	35,130,174	115,997,646	64,109,829	228,946,521
September	1,055	683,525,032	1,704,887,616	22,784,168	56,829,587	44,301,488	113,466,308
October	950	598,282,869	661,769,166	19,299,447	21,347,392	38,302,748	55,607,710
November	858	398,253,417	326,007,153	13,275,114	10,866,905	22,028,747	23,629,452
December	797	361,739,277	217,956,778	11,669,009	7,030,864	19,103,207	18,612,536
<b>Annual Average</b>		<b>690,188,444</b>	<b>1,465,697,302</b>	<b>22,632,000</b>	<b>47,903,936</b>	<b>40,760,440</b>	<b>108,063,984</b>
<b>Operations <sup>2</sup>:</b>		<b>Daily Withdrawal Capacity (incl. ground &amp; surface):</b>					
1,498 Total Operations		1,162,654,576 (gallons)					
751 Livestock							
801 Irrigation							
54 Aquaculture							

<sup>1</sup> Users of 10,000 gallons or more per day. Does not include farms that have reported their withdrawals directly to DENR by July 1, 2009. <sup>2</sup> The type and monthly number of operations will not add to the total. Some operations reported multiple types and others reported both surface and ground water.

# Seasonal Water Use

(Average Daily Gallons - 365)



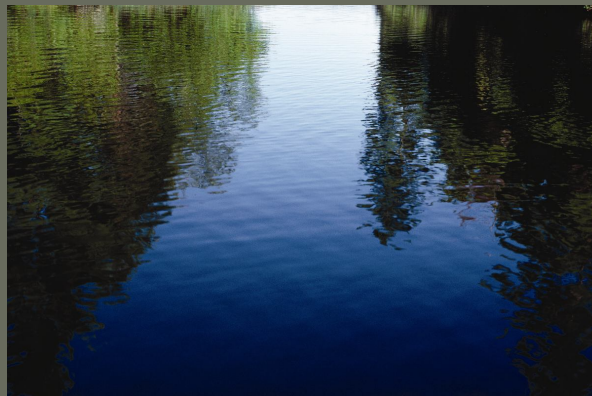
# Comparisons to Other Sectors

- While the 2008 Statewide study is the first benchmark agricultural water use data, caution should be used when comparing the results to other data sources of non-agricultural water use
- 10,000 versus 100,000 threshold
- Total volume of water used versus demand days
- Withdrawals versus consumptive use



# Benefits

- Statewide agricultural water use data
  - Survey based
  - Defensible
  - Confidential
- Public/private collaboration
- Farmer awareness of use
- Document individual farm water needs



# Appreciation

- NCDA&CS
- Farm Bureau
- Commodity Associations
- NC Cooperative Extension
- NCSU
- NC Foundation for Soil and Water Conservation

