

Agricultural Water Usage in North Carolina





2008 North Carolina Agricultural Water Use Survey

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2008 Water Usage Survey

- ▶ 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, President, 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



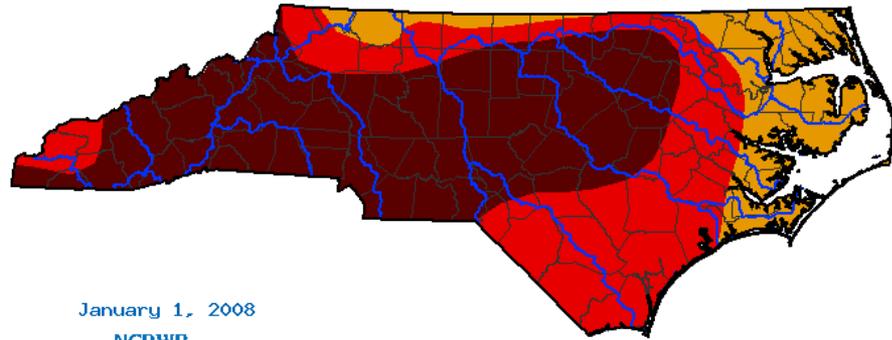
Survey Results



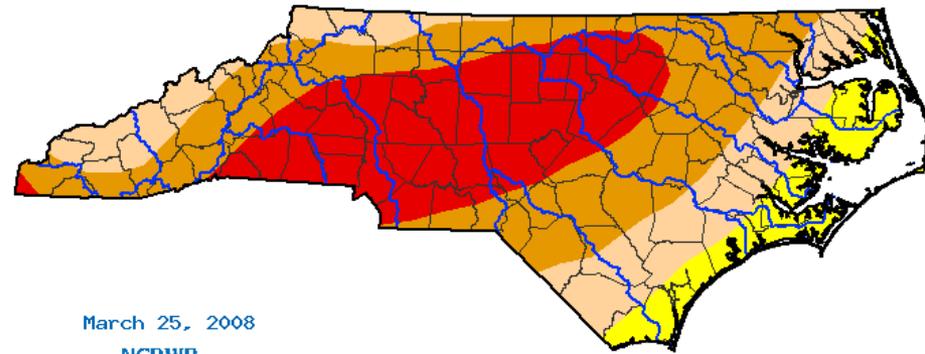
Agriculture Uses Irrigation to Supplement Rainfall

- ▶ 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
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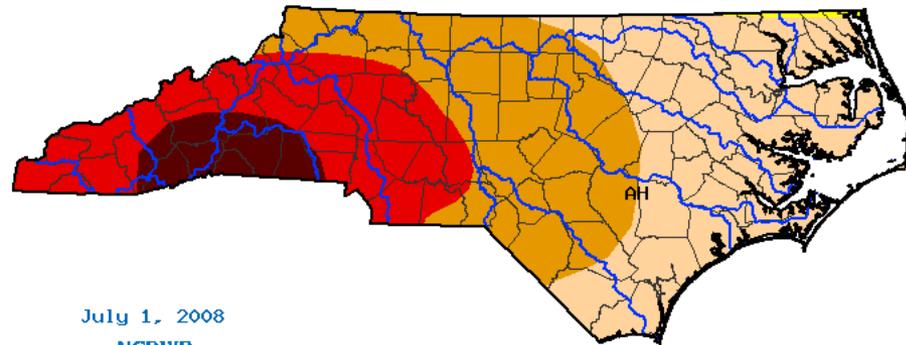
2008 Drought Conditions



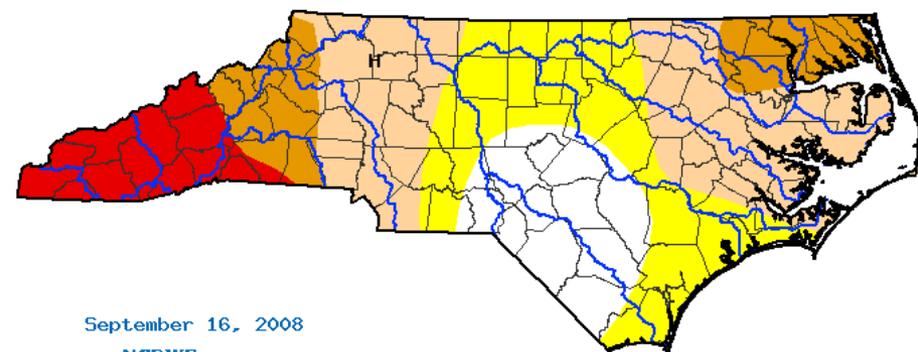
January 1, 2008
[NCDWR](#)



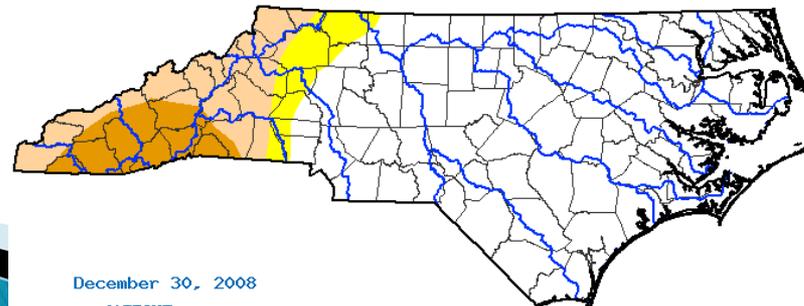
March 25, 2008
[NCDWR](#)



July 1, 2008
[NCDWR](#)



September 16, 2008
[NCDWR](#)



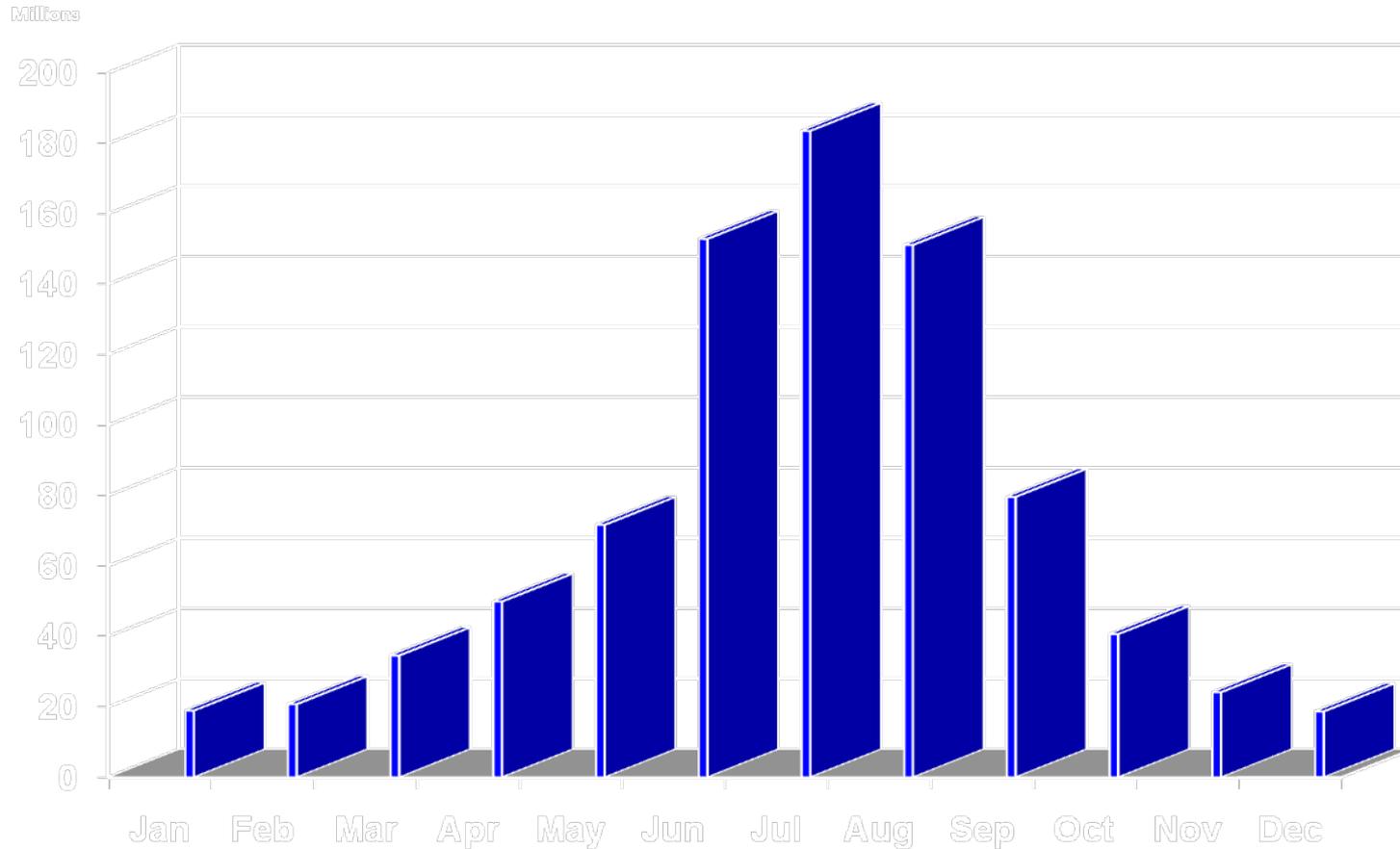
December 30, 2008
[NCDWR](#)

Results

- ▶ On average, 71 million gallons per day withdrawn from ground and surface sources for all days of the year
 - ▶ Withdrawals were very seasonal with only 3 months averaging above 80 million gallons per day
 - ▶ Demand withdrawals averaged about 149 million gallons per day for those days that water was applied
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Seasonal Water Use

(Average Daily Gallons – 365)



Withdrawals vs Consumptive Use

- ▶ Results from the 2002 –2008 CCPCUA and the 2008 Statewide Ag Water Use Survey collected **withdrawal** data
- ▶ DENR portrays agricultural water use 100% consumptive when comparing to non-ag sectors
- ▶ While actual data on agricultural consumptive use does not exist, we know it is less than 100%. USDA/ERS estimates around 61% consumptive use for irrigators nationally

Comparisons to Other Sectors

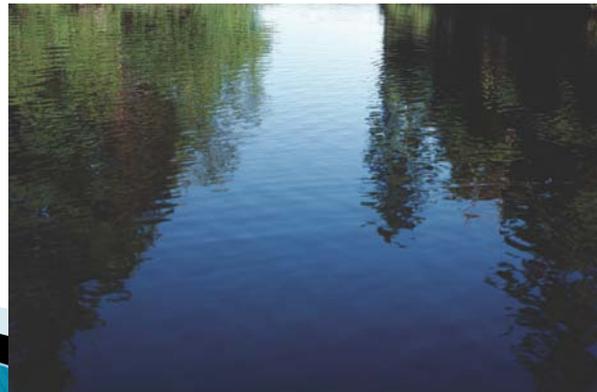
- ▶ While the 2008 Statewide study is the first benchmark agricultural water use data, there are differences between the NCDA data and the DENR data
 - ▶ 10,000 NCDA versus 100,000 DENR threshold
 - ▶ Total volume of water used versus demand days
 - ▶ Withdrawals versus consumptive use
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Comparisons to Other Sectors

- ▶ When comparing total withdrawals between sectors, agricultural withdrawals amount to less than 1% of the 15 billion gallons of water withdrawn every day statewide
 - ▶ Although consumptive use data are not available, it is reasonable to say that agricultural consumptive use in NC is between 60 and 90% of withdrawals
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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





ADFP Trust Fund “Farmland Protection”

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Overview of Drought Response Project By Using Cost Share Practices

Information Provided by David Williams, Chief, NPS Programs.
Div. of Soil and Water Conservation



Funding

- ▶ \$5.55 million grant from Rural Center/Tobacco Trust Fund
 - ▶ \$1.5 million legislative appropriation
 - ▶ \$1 million earmark from NC Ag. Cost Share Program (ACSP)
 - ▶ \$1.25 million diverted by districts from ACSP allocation
 - ▶ Delivery through ACSP via local Soil and Water Cons. Districts
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Progress to Date (Grant \$ Only)

Practice	Goal	Planned	Implemented
Pasture Ren.	9,000 ac.	10,994 ac.	8,962 ac.
Wells	350	557	396
Ponds	125	126	98
Cons. Irrigation		266,680 ft.	55,053 ft.
Contracts	1,000	1,316	978
Total \$	\$5,250,000	\$4,815,905	\$3,296,764

Progress to Date (All funding sources)

Practice	Goal	Planned	Implemented
Pasture Ren.	9,000 ac.	19,821 ac.	16,373 ac.
Wells	350	593	425
Ponds	125	144	110
Cons. Irrigation		569,880 ft.	351,053 ft.
Contracts		2,029	1,498
Total \$		\$8,256,166	\$5,687,780

Suggested Steps for Agricultural Pond Evaluations & Approval to Build



Pond Workgroup

▶ Federal Agencies

- USDA – FSA
- USDA – NRCS
- U.S. Army Corps of Engineers

▶ State Agencies:

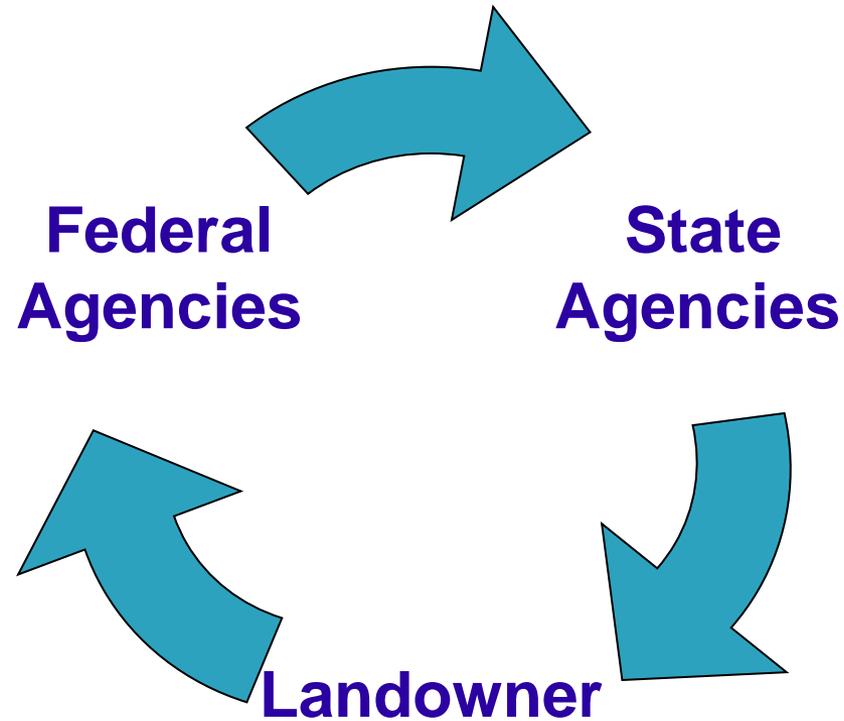
- NC DENR Division of Water Quality
- NC DENR Division of Soil & Water
- NC DENR Division of Land Resources
- NC Department of Agriculture & Consumer Services
- NC Extension Service

▶ Private Organizations:

- North Carolina Farm Bureau Federation
- North Carolina State Grange

▶ Private Citizens

Approval Partners



Steps

1. Landowner consultation with NRCS or Soil & Water
 2. Completion of Preliminary Site Assessment For New Ponds
 3. NRCS or Soil & Water Recommendation
 4. Development of Shared File
 5. Completion of Corps Farm Pond / Irrigation Exemption Request
 6. Landowner Education of Permitting Options if Not Seeking an Exemption
 7. Landowner's Compliance Responsibility of Other Federal, State, and Laws and Permits
- ▶ **Private Design & Engineering Resources**

Key Issue

- ▶ **Permit Exemption Based Upon Agricultural Water Use!**
- ▶ **Not Recreational Uses!**

Where To Find New Agricultural Pond Guidance Documents?

- ▶ www.ncagr.com/environmentalprograms/docs.htm
 - ▶ Soil & Water?
 - ▶ US Corps of Engineers?
 - ▶ USDA – NRCS?
 - ▶ Extension Service?
 - ▶ Farm Bureau?
 - ▶ NC State Grange?
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NC Soil & Water Foundation Funding From Altria

- ▶ Altria grant of \$100,000
 - ▶ For development of a North Carolina plan to protect agricultural water resources
 - ▶ Time Frame – 1 Year
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Agriculture Water Work Group Members

NC Department of Agriculture & Consumer Services

NC Farm Bureau

NC Foundation for Soil & Water Conservation

NC Association of Soil & Water Conservation Districts

Natural Resources Conservation Service

NC Division of Soil & Water Conservation

NC State University

NC A&T State University

NC State Grange

NC Green Industry Council

NC Pork Council

NC Poultry Federation

NC Irrigation Society

NC Cattlemen's Association

Project Leader For NC Agriculture Water Use Plan

*Dr. Ed Emory
The Eastern Leadership
Group, LLC*

▶ Questions?

- ▶ Karen Bryan, Agricultural Statistician
 - ▶ Dewitt Hardee, Environmental Programs Manager
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