SUMMARY OF REPORTED AGRICULTURE
AND IRRIGATION WATER USE IN
CLAY COUNTY, ARKANSAS, 1991

By Terrance W. Holland and Carolyn A. Manning

Water is one of Arkansas' most valuable resources. Site-
specific water-use data for several categories are collected
and compiled annually by the Arkansas Soil and Water
Conservation Commission (ASWCC) in cooperation with the
U.S. Geological Survey. Data for the agriculture (non-
irrigation) and irrigation categories are reported through the
Conservation District Offices in each county.

This report summarizes the 1991 water-use reporting
through the Conservation District Office in Clay County,
Arkansas. The number of withdrawal registrations for Clay
County was 2,025 (1,965 ground water and 60 surface water).
Water withdrawals reported during the registration process
total 2.07 million gallons per day (Mgal/d) (2.01 Mgal/d
ground water and 0.06 Mgal/d surface water) for agriculture
and 164.46 Mgal/d (159.91 Mgal/d ground water and 4.55
Mgal/d surface water) for irrigation.

Of the total amount of water withdrawn (166.53 Mgal/d),
185,891 acre-feet per year (165.97 Mgal/d) can be accounted
for by application type (table 1). The registration reports for
1991 indicate that this water was applied to 95,436 acres of
land to irrigate rice, corn, soybeans, milo, cotton, vegetables,
and unknown crops as well as for the agricultural uses of
animal aquaculture. There is a difference between total
amount of water withdrawn and the reported quantity of
water applied for agriculture and irrigation (0.56 Mgal/d)
because some water is diverted to holding reservoirs, and
because crop type or acreage delineation are incomplete on
some reporting forms.

Water-use data collected in Clay County are used in various
State/Federal/Cooperative projects. The objectives of these
projects are to enhance the water-resources knowledge base
and to provide water managers with the best possible
information to help ensure that water of suitable quality
continues to be available in sufficient quantities to meet water
demands. Current projects include: the Eastern Arkansas
Optimization modeling project and the National Water Use
Information Program.
Ground- and surface-water withdrawal locations in Clay County, Arkansas, 1991

Ground-water withdrawal locations are represented by a “+”.

Surface-water withdrawal locations are represented by a “Δ”.
Percentage of ground- (GW) and surface-water (SW) withdrawals for the agriculture (non-irrigation) water-use category in Clay County, Arkansas, 1991 (in million gallons per day)

Percentage of ground- (GW) and surface-water (SW) withdrawals for the irrigation water-use category in Clay County, Arkansas, 1991 (in million gallons per day)
Table 1.--Application statistics for agriculture (non-irrigation) and irrigation in Clay County, Arkansas, 1991

[Application rate statistics are displayed in acre-feet; ***, cannot be calculated]

<table>
<thead>
<tr>
<th>Crop</th>
<th>Number of reported applications</th>
<th>Sum of acres</th>
<th>Average</th>
<th>Minimum</th>
<th>25th percentile</th>
<th>50th percentile</th>
<th>75th percentile</th>
<th>Maximum</th>
<th>Variance</th>
<th>Standard deviation</th>
<th>Total-water applied (acre-feet)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rice</td>
<td>788</td>
<td>48,690.00</td>
<td>3.04</td>
<td>0.03</td>
<td>3.00</td>
<td>3.00</td>
<td>3.00</td>
<td>31.00</td>
<td>1.06</td>
<td>1.03</td>
<td>147,392.28</td>
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<tr>
<td>Corn</td>
<td>164</td>
<td>8,744.00</td>
<td>1.19</td>
<td>.00</td>
<td>1.00</td>
<td>1.00</td>
<td>1.00</td>
<td>4.00</td>
<td>.22</td>
<td>.47</td>
<td>10,436.59</td>
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<tr>
<td>Soybeans</td>
<td>521</td>
<td>29,732.00</td>
<td>.65</td>
<td>.00</td>
<td>.00</td>
<td>.00</td>
<td>.00</td>
<td>.00</td>
<td>.11</td>
<td>.33</td>
<td>19,776.71</td>
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<tr>
<td>Milo</td>
<td>86</td>
<td>3,440.00</td>
<td>.57</td>
<td>.00</td>
<td>.00</td>
<td>.00</td>
<td>.00</td>
<td>.50</td>
<td>.10</td>
<td>.31</td>
<td>1,944.63</td>
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<tr>
<td>Cotton</td>
<td>68</td>
<td>4,103.00</td>
<td>1.14</td>
<td>.00</td>
<td>.80</td>
<td>1.00</td>
<td>1.20</td>
<td>2.00</td>
<td>.25</td>
<td>.50</td>
<td>4,929.07</td>
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<tr>
<td>Vegetables</td>
<td>3</td>
<td>230.00</td>
<td>.58</td>
<td>.49</td>
<td>***</td>
<td>.50</td>
<td>***</td>
<td>.76</td>
<td>.02</td>
<td>.15</td>
<td>125.10</td>
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<tr>
<td>Animal aquaculture</td>
<td>6</td>
<td>284.50</td>
<td>3.98</td>
<td>1.00</td>
<td>3.00</td>
<td>3.00</td>
<td>5.00</td>
<td>10.00</td>
<td>6.08</td>
<td>2.47</td>
<td>871.50</td>
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<tr>
<td>Unknown crop</td>
<td>1</td>
<td>212.00</td>
<td>2.43</td>
<td>1.50</td>
<td>***</td>
<td>3.00</td>
<td>***</td>
<td>3.00</td>
<td>.96</td>
<td>.98</td>
<td>415.00</td>
</tr>
<tr>
<td>Totals</td>
<td>1,652</td>
<td>95,435.50</td>
<td>***</td>
<td>***</td>
<td>***</td>
<td>***</td>
<td>***</td>
<td>***</td>
<td>***</td>
<td>***</td>
<td>185,890.88</td>
</tr>
</tbody>
</table>
Water-Use Reporting

Act 81 of 1957, as amended, requires all diverters of water from streams, lakes, or ponds to register their diversion of surface water by quantity, location, type of use, and name of user on an annual basis with the ASWCC. The ASWCC is required to furnish each registrant a Certificate of Registration. The ASWCC utilizes these registrations for the allocation of water and as a basis for determining the State's overall water usage and water needs for inclusion in the Arkansas Water Plan.

Act 1051 of 1985 requires all users of ground water, excluding domestic use and wells having a maximum potential flow of less than 50,000 gallons per day, to register their withdrawal of ground water. The quantity, location, type of use, and name of user must be registered on an annual basis with the ASWCC or their local conservation district.

Act 154 of 1991 provides the ASWCC the authority to develop a comprehensive ground-water protection program, designate critical ground-water areas, cost-share on installation of water conservation practices, establish ground-water rights within critical areas, establish fees for ground- and surface-water withdrawals, develop an education and information program, and delegate management powers to regional water districts and conservation districts. The intent of this program is to protect ground water for the future. The act also establishes as State policy, that if reductions in well pumpage are necessary, it is most desirable that the reductions come from conservation programs and the utilization of surface water. However, if necessary, the ASWCC may limit ground-water withdrawals through the issuance of water rights in critical ground-water areas.
There are several important facts that should be noted in reference to Act 154 of 1991:

1. The effective date of this act is October 1, 1992.
2. The act provides for the assessment of annual water-use fees in the amount of $10 per registered surface-water diversion and $10 per registered well, which is payable at the time of water-use reporting.
3. Fees collected will be utilized for cost-sharing on water-conservation practices, administration, and education programs.
4. The period for registration and reporting extends annually from October 1 through March 31.
For additional information write to:

District Chief
U.S. Geological Survey
2301 Federal Office Building
700 West Capitol Avenue
Little Rock, Arkansas 72201

Executive Director
Arkansas Soil and Water
Conservation Commission
101 East Capitol Avenue, Suite 350
Little Rock, Arkansas 72201

Copies of this report can be purchased from:

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