Tools for Leveraging Source Water Protection Funding

Darcia Routh, P.G.
Source Water Protection Engineering Section

Middle Fork Little Red, Clinton’s Watershed; photo by R. Hutto
### Characteristics of Arkansas's Water Systems

<table>
<thead>
<tr>
<th>Description</th>
<th>Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>Population of Arkansas (2018 U. S. Census Bureau Estimate)</td>
<td>3,013,825</td>
</tr>
<tr>
<td>Population served by public water systems</td>
<td>2,929,458</td>
</tr>
<tr>
<td>Population served by surface water systems</td>
<td>1,905,997</td>
</tr>
<tr>
<td>Population served by ground water systems</td>
<td>852,239</td>
</tr>
<tr>
<td>Population served by ground &amp; surface systems</td>
<td>171,222</td>
</tr>
<tr>
<td>% population served by community public water systems</td>
<td>97.2%</td>
</tr>
<tr>
<td>% population served by individual private wells or other source</td>
<td>2.8%</td>
</tr>
<tr>
<td>Total number of public water systems active during 2018</td>
<td>1071</td>
</tr>
<tr>
<td>Number of community public water systems</td>
<td>690</td>
</tr>
<tr>
<td>Number of transient non-community public water systems</td>
<td>346</td>
</tr>
<tr>
<td>Number of non-transient non-community public water systems</td>
<td>35</td>
</tr>
<tr>
<td>Number of systems using surface water</td>
<td>439</td>
</tr>
<tr>
<td>Number of systems using ground water</td>
<td>596</td>
</tr>
<tr>
<td>Number of systems using ground &amp; surface</td>
<td>36</td>
</tr>
<tr>
<td>Total average daily water used by public water systems (estimate MGD)</td>
<td>561</td>
</tr>
</tbody>
</table>
The Opportunity

Arkansans Support Clean Water

- 98% think it is important to protect drinking water sources
- 96% think it is important to conserve fish and wildlife habitats
- 90% likely will vote for candidates supporting conservation
- 87% support efforts to reduce pollution in our streams, rivers, and lakes
- 80% have a favorable view of the Arkansas Game and Fish Commission
- 62% regularly participate in outdoor activities
NRCS Groundwater Funding

2 M NRCS EQIP released
Critical GW shortage areas
Move to surface sources for AG
Improve water management
3rd Statewide Forum

FOCUS ON ACTION

ARKANSAS FORESTS & DRINKING WATER COLLABORATIVE

Arkansas’ 3rd Forum on Forests and Drinking Water

Public · Hosted by Arkansas Forests and Drinking Water Collaboration

Nov 4

Arkansas’ 3rd Forum on Forests and Drinking Water

Nov 4 at 1 PM – Nov 5 at 4 PM

The Lodge At Mount Magazine
577 Lodge Drive, Paris, Arkansas 72855

Tickets
events.r20.constantcontact.com

About

Discussion

6 Going · 31 Interested
Watershed Prioritization by Rank

- **1 - 10** (Highest Priority)
- **11 - 30**
- **31 - 50**
- **51 - 70**
- **71 - 111** (Lowest Priority)
Collaboration@ADH

- Tireless (usually) effort to connect with stakeholders:
- Notebook!
https://sourcewatercollaborative.org

THE SOURCE WATER COLLABORATIVE CAN HELP YOU.

- Assess & Protect Drinking Water Sources
- Connect With Others
- Respond To An Emergency
- Learn About Source Water Collaborative
Arkansas Watershed Stewards
SWPP GIS Staff

Ben Gilley, Tyler Couch, & Richard Norwood
Source Water Protection Program
Do/did the heavy lifting for watershed protection
& SWAP GIS Model

Allie Cumnock & Evelyn Kort—camera-shy geologists
SWAP Reports

Delineation for each surface and groundwater source in AR
USGS developed SWAP Esri toolbox

- A) Update tables and relationships in SWAP.gdb from ArkPWS
- B) Add new source
- C) Move source
- D) Delete source
- E) Make Radial Buffer
- F) Select Streams or Lakes by Radius
- G) Make Streams and Lakes Buffer
- H) Compile and Append Assessment Area
- I) Flag Unused Data Fields
- J) Update Assessment Area from GIS Data
- K) Update Assessment Area from ArkPWS table within SWAP.gdb
- L) Calculate Susceptibility
- M) Assign Susceptibility Class
- N) Run Vulnerability and Generate Report
- Z) Clean up
ARKANSAS DEPARTMENT OF HEALTH

SWAP Reports

Vulnerability Assessment: Susceptibility analysis combined with PSOC inventory

Table 1: Susceptibility Analysis:
Beaver Water District PWS ID - 038

<table>
<thead>
<tr>
<th>PWS Source</th>
<th>High</th>
<th>Medium</th>
<th>Low</th>
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<tbody>
<tr>
<td>Beaver Lake - 038101</td>
<td></td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>Beaver Lake - 038201</td>
<td></td>
<td></td>
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</tbody>
</table>

Table 3: Vulnerability Assessment:
Beaver Water District - Beaver Lake - 038201

<table>
<thead>
<tr>
<th>PSOC Health Risk Category</th>
<th>0-1mi</th>
<th>1-2mi</th>
<th>2-3mi</th>
<th>3-4mi</th>
<th>4-5mi</th>
<th>Total</th>
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<td></td>
<td>4</td>
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<td>8</td>
<td>6</td>
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<tr>
<td>Total</td>
<td>0</td>
<td>23</td>
<td>112</td>
<td>36</td>
<td>27</td>
<td>198</td>
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What Next?

- ADH & NRCS cooperate on source water protection plan documentation
- 3rd AR Forestry & Drinking Water Forum November 4-5, 2019
- ADH issues all remaining updated SWAP Reports for GW PWS
- Everybody enjoys AR’s fantastic water resources
Questions?

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Photo by R. Hutto