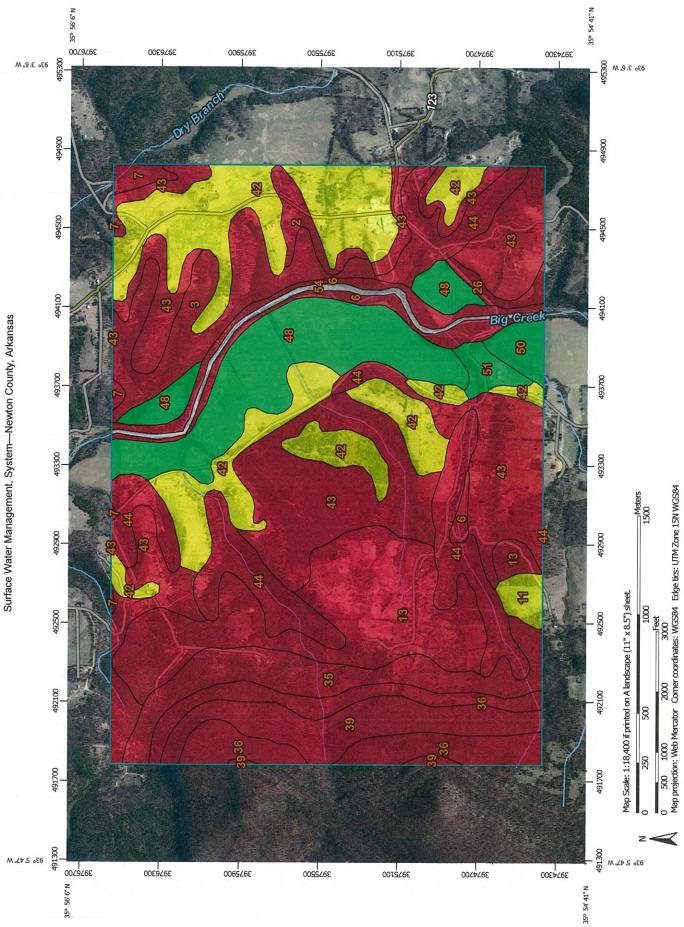


Natural Resources Conservation Service

NSDA



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### MAP LEGEND

Area of Interest (AOI)

Background

Area of Interest (AOI)

Aerial Photography

Soil Rating Polygons Very limited Somewhat limited

Not limited

Not rated or not available

Soil Rating Lines

Somewhat limited Very limited 1

Not rated or not available \*

Not limited

Soil Rating Points

Very limited

Somewhat limited

Not limited

Not rated or not available

Water Features

Streams and Canals

Transportation

Rails

‡

Interstate Highways

US Routes

Local Roads

Major Roads

# **MAP INFORMATION**

The soil surveys that comprise your AOI were mapped at 1:20,000.

Please rely on the bar scale on each map sheet for map measurements.

Web Soil Survey URL: http://websoilsurvey.nrcs.usda.gov Coordinate System: Web Mercator (EPSG:3857) Source of Map: Natural Resources Conservation Service

Albers equal-area conic projection, should be used if more accurate Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the calculations of distance or area are required. This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Newton County, Arkansas

Survey Area Data: Version 13, Sep 22, 2014

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Sep 20, 2010-Nov Date(s) aerial images were photographed:

imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident. The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background

### **Surface Water Management, System**

| Sur                | face Water Manage                               | ment, System— | Summary by Map I                  | Unit — Newton Coເ                     | ınty, Arkansas (A                 | R101)          |  |
|--------------------|---|---------------|-----------------------------------|---------------------------------------|-----------------------------------|----------------|--|
| Map unit<br>symbol | Map unit name                                   | Rating        | Component name (percent)          | Rating reasons<br>(numeric<br>values) | Acres in AOI                      | Percent of AOI |  |
| 2                  | Arkana-Moko                                     | Very limited  | Arkana (50%)                      | Slope (1.00)                          | 16.7                              | 1.0%           |  |
|                    | complex, 8 to<br>20 percent<br>slopes           |               |                                   | Slow water<br>movement<br>(0.99)      |                                   |                |  |
|                    |   |               |                                   | Large rock<br>fragments<br>(0.21)     |                                   |                |  |
|                    |   |               |                                   | Water Erosion<br>(0.08)               |                                   |                |  |
|                    |   |               | Moko (35%)                        | Depth to bedrock<br>(1.00)            |                                   |                |  |
|                    |   |               |                                   | Slope (1.00)                          | :                                 |                |  |
|                    |   |               |                                   |                                       | Large rock<br>fragments<br>(1.00) |                |  |
|                    |   |               |                                   | Water Erosion<br>(0.08)               |                                   |                |  |
| 3                  | Arkana-Moko<br>complex, 20 to                   |               | Moko (45%)                        | Depth to bedrock (1.00)               | 87.5                              | 5.3%           |  |
|                    |   |               |                                   | Slope (1.00)                          |                                   |                |  |
|                    |   | :             | Large rock<br>fragments<br>(1.00) |                                       |                                   |                |  |
|                    |   |               |                                   | Water Erosion<br>(1.00)               |                                   |                |  |
|                    |   |               | Arkana (45%)                      | Slope (1.00)                          |                                   |                |  |
|                    |   |               |                                   | Water Erosion<br>(1.00)               |                                   |                |  |
|                    |   |               |                                   | Slow water<br>movement<br>(0.99)      |                                   |                |  |
|                    |   |               |                                   | Large rock<br>fragments<br>(0.21)     |                                   |                |  |
| 3                  | Ceda-Kenn<br>complex,<br>frequently             | Very limited  | Ceda (55%)                        | Large rock<br>fragments<br>(1.00)     | 56.6                              | 3.5%           |  |
|                    | flooded   |               |                                   | Flooding (0.40)                       |                                   |                |  |
|                    | Clarksville very                                | Very limited  | Clarksville                       | Slope (1.00)                          | 10.7                              | 0.7%           |  |
|                    | cherty silt<br>loam, 20 to 50<br>percent slopes |               | (100%)                            | Water Erosion<br>(1.00)               |                                   |                |  |

| Map unit<br>symbol | Map unit name                                     | Rating                                  | Component name (percent)          | Rating reasons<br>(numeric<br>values) | Acres in AOI | Percent of AOI |
|--------------------|---|---|-----------------------------------|---------------------------------------|--------------|----------------|
|                    |   |   |                                   | Large rock<br>fragments<br>(1.00)     |              |                |
| 11                 | Enders gravelly<br>loam, 3 to 8<br>percent slopes | Somewhat limited                        | Enders (80%)                      | Slow water<br>movement<br>(0.99)      | 12,2         | 0.7%           |
|                    |   |   |                                   | Slope (0.78)                          |              |                |
|                    |   |   |                                   | Large rock<br>fragments<br>(0.32)     |              |                |
| 13                 | Enders stony<br>loam, 3 to 15<br>percent slopes   | Very limited                            | Enders (85%)                      | Large rock<br>fragments<br>(1.00)     | 188.3        | 11.5%          |
|                    |   |   |                                   | Slope (1.00)                          |              |                |
|                    |   |   | Slow water<br>movement<br>(0.99)  |                                       |              |                |
|                    |   |   |                                   | Water Erosion<br>(0.32)               |              |                |
| 26                 | Moko-Rock<br>outcrop                              | outcrop<br>complex, 15 to<br>50 percent | Moko (50%)                        | Depth to bedrock (1.00)               | 9.4          | 0.6%           |
|                    | 50 percent  |   |                                   | Slope (1.00)                          |              |                |
|                    | slopes  |   | Large rock<br>fragments<br>(1.00) |                                       |              |                |
|                    |   |   |                                   | Water Erosion<br>(1.00)               |              |                |
| 35                 | Nella-Enders<br>stony loams, 8                    | Very limited                            | Nella (45%)                       | Slope (1.00)                          | 88.7         | 5.4%           |
|                    | to 20 percent<br>slopes                           |   |                                   | Large rock<br>fragments<br>(1.00)     |              |                |
|                    |   |   |                                   | Water Erosion<br>(0.60)               |              |                |
|                    |   |   | Enders (40%)                      | Slope (1.00)                          |              |                |
|                    |   |   |                                   | Large rock<br>fragments<br>(1.00)     |              |                |
|                    |   |   |                                   | Slow water<br>movement<br>(0.99)      |              |                |
|                    |   |   |                                   | Water Erosion<br>(0.60)               |              |                |
| 36                 | Nella-Enders                                      | Very limited                            | Nella (50%)                       | Slope (1.00)                          | 98.9         | 6.0%           |
|                    | stony loams,<br>20 to 40<br>percent slopes        |   |                                   | Water Erosion<br>(1.00)               |              |                |

| Map unit<br>symbol | Map unit name  | Rating       | Component name (percent) | Rating reasons<br>(numeric<br>values) | Acres in AOI | Percent of AOI |
|--------------------|--|--------------|--------------------------|---------------------------------------|--------------|----------------|
|                    |  |              |                          | Large rock<br>fragments<br>(1.00)     |              |                |
|                    |  | :            | Enders (35%)             | Slope (1.00)                          |              |                |
|                    |  | :            |                          | Water Erosion<br>(1.00)               |              |                |
|                    |  |              |                          | Large rock<br>fragments<br>(1.00)     |              |                |
|                    |  |              |                          | Slow water<br>movement<br>(0.99)      |              |                |
| 39                 | Nella-Steprock-  | Very limited | Nella (45%)              | Slope (1.00)                          | 81.1         | 4.9%           |
|                    | Mountainburg very stony loams, 40 to 60 percent slopes |              |                          | Water Erosion<br>(1.00)               |              |                |
|                    |  |              |                          | Large rock<br>fragments<br>(1.00)     |              |                |
|                    |  |              | Steprock (20%)           | Slope (1.00)                          |              |                |
|                    |  |              |                          | Water Erosion<br>(1.00)               | i            |                |
|                    |  |              |                          | Large rock<br>fragments<br>(1.00)     |              |                |
|                    |  |              | Mountainburg<br>(10%)    | Depth to bedrock<br>(1.00)            |              |                |
|                    |  |              |                          | Slope (1.00)                          |              |                |
|                    |  |              |                          | Large rock<br>fragments<br>(1.00)     |              |                |
|                    |  |              |                          | Water Erosion<br>(1.00)               |              |                |
| 42                 | Noark very cherty                                      |              | Noark (100%)             | Slope (0.78)                          | 263.9        | 16.1%          |
|                    | silt loam, 3 to 8 percent slopes                       | limited      |                          | Large rock<br>fragments<br>(0.18)     |              |                |
| 43                 | Noark very cherty Very limited                         | Very limited | Noark (100%)             | Slope (1.00)                          | 349.6        | 21.3%          |
|                    | silt loam, 8 to<br>20 percent<br>slopes                |              |                          | Water Erosion<br>(0.60)               |              |                |
|                    |  | ·            |                          | Large rock<br>fragments<br>(0.18)     |              |                |
| 44                 | Noark very cherty                                      | Very limited | Noark (100%)             | Slope (1.00)                          | 168.5        | 10.3%          |
|                    | silt loam, 20 to<br>40 percent<br>slopes               |              |                          | Water Erosion<br>(1.00)               | 7            |                |

| Map unit<br>symbol          | Map unit name                            | Rating      | Component name (percent) | Rating reasons<br>(numeric<br>values) | Acres in AOI | Percent of AOI |
|-----------------------------|--|-------------|--------------------------|---------------------------------------|--------------|----------------|
|                             |  |             |                          | Large rock<br>fragments<br>(0.18)     |              |                |
| 48                          | Razort loam,<br>occasionally<br>flooded  | Not limited | Razort (95%)             |                                       | 163.0        | 9.9%           |
| 50                          | Spadra loam,<br>occasionally<br>flooded  | Not limited | Spadra (95%)             |                                       | 16.2         | 1.0%           |
| 51                          | Spadra loam, 2 to<br>5 percent<br>slopes | Not limited | Spadra (95%)             |                                       | 13.8         | 0.8%           |
| 54                          | Water                                    | Not Rated   | Water (100%)             |                                       | 16.2         | 1.0%           |
| Totals for Area of Interest |  |             |                          |                                       | 1,641.4      | 100.0%         |

| Surface Water Management, System— Summary by Rating Value |              |                |  |  |  |  |
|---|--------------|----------------|--|--|--|--|
| Rating  | Acres in AOI | Percent of AOI |  |  |  |  |
| Very limited  | 1,156.1      | 70.4%          |  |  |  |  |
| Somewhat limited  | 276.1        | 16.8%          |  |  |  |  |
| Not limited   | 193.0        | 11.8%          |  |  |  |  |
| Not Rated   | 16.2         | 1.0%           |  |  |  |  |
| Null or Not Rated   | 16.2         | 1.0%           |  |  |  |  |
| Totals for Area of Interest                               | 1,641.4      | 100.0%         |  |  |  |  |

#### **Description**

The application of manure and food-processing waste not only disposes of waste material but also can improve crop production by increasing the supply of nutrients in the soils where the material is applied. Manure is the excrement of livestock and poultry, and food-processing waste is damaged fruit and vegetables and the peelings, stems, leaves, pits, and soil particles removed in food preparation. The manure and food-processing waste are solid, slurry, or liquid. Their nitrogen content varies. A high content of nitrogen limits the application rate. Toxic or otherwise dangerous wastes, such as those mixed with the lye used in food processing, are not considered in the ratings.

The ratings are based on the soil properties that affect absorption, plant growth, microbial activity, erodibility, the rate at which the waste is applied, and the method by which the waste is applied. The properties that affect absorption include saturated hydraulic conductivity (Ksat), depth to a water table, ponding, the sodium adsorption ratio, depth to bedrock or a cemented pan, and available water capacity. The properties that affect plant growth and microbial activity include reaction, the sodium adsorption ratio, salinity, and bulk density. The wind erodibility group, soil erosion factor K, and slope are considered in estimating the likelihood that wind erosion or water erosion will transport the waste material from the application site. Stones, cobbles, a water table, ponding, and flooding can hinder the application of waste. Permanently frozen soils are unsuitable for waste treatment.

The ratings are both verbal and numerical. Rating class terms indicate the extent to which the soils are limited by all of the soil features that affect agricultural waste management. "Not limited" indicates that the soil has features that are very favorable for the specified use. Good performance and very low maintenance can be expected. "Somewhat limited" indicates that the soil has features that are moderately favorable for the specified use. The limitations can be overcome or minimized by special planning, design, or installation. Fair performance and moderate maintenance can be expected. "Very limited" indicates that the soil has one or more features that are unfavorable for the specified use. The limitations generally cannot be overcome without major soil reclamation, special design, or expensive installation procedures. Poor performance and high maintenance can be expected.

Numerical ratings indicate the severity of individual limitations. The ratings are shown as decimal fractions ranging from 0.01 to 1.00. They indicate gradations between the point at which a soil feature has the greatest negative impact on the use (1.00) and the point at which the soil feature is not a limitation (0.00).

The map unit components listed for each map unit in the accompanying Summary by Map Unit table in Web Soil Survey or the Aggregation Report in Soil Data Viewer are determined by the aggregation method chosen. An aggregated rating class is shown for each map unit. The components listed for each map unit are only those that have the same rating class as listed for the map unit. The percent composition of each component in a particular map unit is presented to help the user better understand the percentage of each map unit that has the rating presented.

Other components with different ratings may be present in each map unit. The ratings for all components, regardless of the map unit aggregated rating, can be viewed by generating the equivalent report from the Soil Reports tab in Web Soil Survey or from the Soil Data Mart site. Onsite investigation may be needed to validate these interpretations and to confirm the identity of the soil on a given site.

#### **Rating Options**

Aggregation Method: Dominant Condition

Aggregation is the process by which a set of component attribute values is reduced to a single value that represents the map unit as a whole.

A map unit is typically composed of one or more "components". A component is either some type of soil or some nonsoil entity, e.g., rock outcrop. For the attribute being aggregated, the first step of the aggregation process is to derive one attribute value for each of a map unit's components. From this set of component attributes, the next step of the aggregation process derives a single value that represents the map unit as a whole. Once a single value for each map unit is derived, a thematic map for soil map units can be rendered. Aggregation must be done because, on any soil map, map units are delineated but components are not.

For each of a map unit's components, a corresponding percent composition is recorded. A percent composition of 60 indicates that the corresponding component typically makes up approximately 60% of the map unit. Percent composition is a critical factor in some, but not all, aggregation methods.

The aggregation method "Dominant Condition" first groups like attribute values for the components in a map unit. For each group, percent composition is set to the sum of the percent composition of all components participating in that group. These groups now represent "conditions" rather than components. The attribute value associated with the group with the highest cumulative percent composition is returned. If more than one group shares the highest cumulative percent composition, the corresponding "tie-break" rule determines which value should be returned. The "tie-break" rule indicates whether the lower or higher group value should be returned in the case of a percent composition tie. The result returned by this aggregation method represents the dominant condition throughout the map unit only when no tie has occurred.

Component Percent Cutoff: None Specified

Components whose percent composition is below the cutoff value will not be considered. If no cutoff value is specified, all components in the database will be considered. The data for some contrasting soils of minor extent may not be in the database, and therefore are not considered.

Tie-break Rule: Higher

The tie-break rule indicates which value should be selected from a set of multiple candidate values, or which value should be selected in the event of a percent composition tie.





Natural Resources
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#### This product is generated from the USDA-NRCS certified data as of the version date(s) listed below. The soil surveys that comprise your AOI were mapped at 1:20,000. Albers equal-area conic projection, should be used if more accurate Soil map units are labeled (as space allows) for map scales 1:50,000 compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting Date(s) aerial images were photographed: Sep 20, 2010—Nov Maps from the Web Soil Survey are based on the Web Mercator distance and area. A projection that preserves area, such as the The orthophoto or other base map on which the soil lines were Web Soil Survey URL: http://websoilsurvey.nrcs.usda.gov projection, which preserves direction and shape but distorts Source of Map: Natural Resources Conservation Service Please rely on the bar scale on each map sheet for map Coordinate System: Web Mercator (EPSG:3857) MAP INFORMATION Survey Area Data: Version 13, Sep 22, 2014 Soil Survey Area: Newton County, Arkansas calculations of distance or area are required. of map unit boundaries may be evident. measurements. Aerial Photography Background MAP LEGEND Not rated or not available Not rated or not available Not rated or not available Area of Interest (AOI) Streams and Canals Interstate Highways Somewhat limited Somewhat limited Somewhat limited Soil Rating Polygons Very limited Very limited Very limited Not limited Not limited US Routes Not limited Area of Interest (AOI) Soil Rating Points Soil Rating Lines Rails Water Features **Transportation** ‡

USDA

Major Roads Local Roads

### **Manure and Food-Processing Waste**

| Map unit<br>symbol   | Map unit name                          | Rating       | Component name (percent) | Rating reasons<br>(numeric<br>values)    | Acres in AOI | Percent of AOI |
|--|--|--------------|--------------------------|--|--------------|----------------|
| 2  | Arkana-Moko                            | Somewhat     | Arkana (50%)             | Droughty (1.00)                          | 16.7         | 1.0%           |
|  | complex, 8 to<br>20 percent            | limited      |                          | Slope (0.96)                             |              |                |
|  | slopes                                 |              |                          | Depth to bedrock<br>(0.42)               |              |                |
|  |  |              | Runoff (0.40)            |  |              |                |
| THE THE PARTY AND THE PARTY AN |  |              |                          | Cobble content (0.13)                    |              |                |
| 3  | Arkana-Moko                            | Very limited | Moko (45%)               | Slope (1.00)                             | 87.5         | 5.3%           |
|  | complex, 20 to<br>40 percent<br>slopes |              |                          | Large stones on<br>the surface<br>(1.00) |              |                |
|  |  |              |                          | Droughty (1.00)                          |              |                |
|  |  |              |                          | Depth to bedrock<br>(1.00)               |              |                |
|  |  |              |                          | Runoff (0.40)                            |              |                |
|  |  |              | Arkana (45%)             | Slope (1.00)                             |              |                |
|  |  |              |                          | Droughty (1.00)                          |              |                |
|  |  |              |                          | Depth to bedrock (0.42)                  |              |                |
|  |  |              |                          | Runoff (0.40)                            |              |                |
|  |  |              |                          | Cobble content (0.13)                    |              |                |
| 6  | Ceda-Kenn<br>complex,                  | Very limited | Ceda (55%)               | Filtering capacity (1.00)                | 56.6         | 3.5%           |
|  | frequently<br>flooded                  |              |                          | Flooding (1.00)                          |              |                |
|  |  |              |                          | Leaching (0.45)                          |              |                |
|  |  |              |                          | Cobble content (0.05)                    |              |                |
|  |  |              |                          | Large stones on<br>the surface<br>(0.04) |              |                |
|  |  | Ken          | Kenn (30%)               | Flooding (1.00)                          |              |                |
|  |  |              |                          | Droughty (0.18)                          |              |                |
|  |  |              |                          | Too acid (0.11)                          |              |                |
| 7  | Clarksville very cherty silt           | Very limited | Clarksville              | Slope (1.00)                             | 10.7         | 0.7%           |
|  | loam, 20 to 50                         |              | (100%)                   | Too acid (0.62)                          |              |                |
|  | percent slopes                         |              |                          | Leaching (0.45)                          | ļ            |                |

| Map unit<br>symbol | Map unit name                                     | Rating                     | Component name (percent)                 | Rating reasons<br>(numeric<br>values)    | Acres in AOI | Percent of AOI |
|--------------------|---|----------------------------|--|--|--------------|----------------|
|                    |   |                            |  | Cobble content (0.05)                    |              |                |
| 11                 | Enders gravelly<br>loam, 3 to 8<br>percent slopes | Very limited               | Enders (80%)                             | Slow water<br>movement<br>(1.00)         | 12.2         | 0.7%           |
|                    |   | ;                          |  | Too acid (0.73)                          |              |                |
|                    |   |                            |  | Large stones on<br>the surface<br>(0.49) |              |                |
|                    |   |                            |  | Runoff (0.40)                            |              |                |
| 13                 | Enders stony<br>loam, 3 to 15<br>percent slopes   | Very limited               | Enders (85%)                             | Slow water<br>movement<br>(1.00)         | 188.3        | 11.5%          |
|                    |   |                            | Large stones on<br>the surface<br>(1.00) |  |              |                |
|                    |   |                            |  | Too acid (0.73)                          |              |                |
|                    |   |                            |  | Slope (0.63)                             |              |                |
|                    |   |                            |  | Runoff (0.40)                            |              |                |
| 26                 | Moko-Rock   | Very limited               | Moko (50%)                               | Slope (1.00)                             | 9.4          | 0.6%           |
|                    | outcrop<br>complex, 15 to<br>50 percent<br>slopes | omplex, 15 to<br>0 percent |  | Large stones on<br>the surface<br>(1.00) |              |                |
|                    |   |                            |  | Droughty (1.00)                          |              |                |
|                    |   |                            | Depth to bedrock<br>(1.00)               |  |              |                |
| ····               |   |                            |  | Runoff (0.40)                            |              |                |
| 35                 | Nella-Enders<br>stony loams, 8                    | Somewhat limited           | Nella (45%)                              | Slope (0.96)                             | 88.7         | 5.4%           |
|                    | to 20 percent                                     | annica                     |  | Too acid (0.50)                          |              |                |
|                    | slopes  |                            |  | Cobble content<br>(0.13)                 |              |                |
|                    |   |                            |  | Large stones on<br>the surface<br>(0.03) |              |                |
| 36                 | Nella-Enders                                      | Very limited               | Nella (50%)                              | Slope (1.00)                             | 98.9         | 6.0%           |
|                    | stony loams,<br>20 to 40                          |                            |  | Too acid (0.50)                          |              |                |
|                    | percent slopes                                    |                            |  | Cobble content (0.13)                    |              |                |
|                    |   |                            |  | Large stones on<br>the surface<br>(0.03) |              |                |
|                    |   |                            | Enders (35%)                             | Slope (1.00)                             |              |                |
|                    |   |                            |  | Slow water<br>movement<br>(1.00)         |              |                |

| Map unit<br>symbol | Map unit name  | Rating              | Component name (percent) | Rating reasons<br>(numeric<br>values)    | Acres in AOI | Percent of AOI |
|--------------------|--|---------------------|--------------------------|--|--------------|----------------|
|                    |  |                     |                          | Large stones on<br>the surface<br>(1.00) |              |                |
|                    |  |                     |                          | Too acid (0.73)                          |              |                |
|                    |  |                     | :                        | Runoff (0.40)                            |              |                |
| 39                 | Nella-Steprock-  | Very limited        | Nella (45%)              | Slope (1.00)                             | 81.1         | 4.9%           |
|                    | Mountainburg<br>very stony<br>loams, 40 to 60            |                     |                          | Cobble content (0.87)                    |              |                |
|                    | percent slopes   |                     |                          | Too acid (0.50)                          |              |                |
|                    |  |                     |                          | Large stones on<br>the surface<br>(0.18) | ;            |                |
|                    |  |                     | Steprock (20%)           | Slope (1.00)                             |              |                |
|                    |  |                     |                          | Droughty (1.00)                          |              |                |
|                    |  |                     |                          | Large stones on<br>the surface<br>(1.00) |              |                |
|                    |  |                     |                          | Too acid (0.50)                          |              |                |
|                    |  |                     |                          | Depth to bedrock (0.42)                  | :            |                |
|                    |  |                     | Mountainburg             | Slope (1.00)                             |              |                |
|                    |  |                     | (10%)                    | Large stones on<br>the surface<br>(1.00) |              |                |
|                    |  |                     |                          | Droughty (1.00)                          |              |                |
|                    |  |                     |                          | Depth to bedrock<br>(1.00)               |              |                |
|                    |  |                     |                          | Runoff (0.40)                            |              |                |
| 42                 | Noark very cherty<br>silt loam, 3 to 8<br>percent slopes | Somewhat<br>limited | Noark (100%)             | Too acid (0.22)                          | 263.9        | 16.1%          |
| 43                 | Noark very cherty  | Somewhat            | Noark (100%)             | Slope (0.96)                             | 349.6        | 21.3%          |
|                    | silt loam, 8 to<br>20 percent<br>slopes                  | limited             |                          | Too acid (0.22)                          |              |                |
| 44                 | Noark very cherty  | Very limited        | Noark (100%)             | Slope (1.00)                             | 168,5        | 10.3%          |
|                    | silt loam, 20 to<br>40 percent<br>slopes                 | ,                   |                          | Too acid (0.22)                          |              |                |
| 48                 | Razort loam,<br>occasionally<br>flooded                  | Somewhat<br>limited | Razort (95%)             | Flooding (0.60)                          | 163.0        | 9.9%           |
| 50                 | Spadra loam,   | Somewhat            | Spadra (95%)             | Flooding (0.60)                          | 16.2         | 1.0%           |
|                    | occasionally<br>flooded                                  | limited             |                          | Too acid (0.32)                          |              |                |

| Map unit<br>symbol | Map unit name                            | Rating              | Component name (percent) | Rating reasons<br>(numeric<br>values) | Acres in AOI | Percent of AOI |
|--------------------|--|---------------------|--------------------------|---------------------------------------|--------------|----------------|
| 51                 | Spadra loam, 2 to<br>5 percent<br>slopes | Somewhat<br>limited | Spadra (95%)             | Too acid (0.32)                       | 13.8         | 0.8%           |
| 54                 | Water                                    | Not rated           | Water (100%)             |                                       | 16.2         | 1.0%           |
| Totals for Area    | of Interest                              |                     |                          |                                       | 1,641.4      | 100.0%         |

| Manure and Food-Processing Waste— Summary by Rating Value |              |                |  |  |  |  |  |
|---|--------------|----------------|--|--|--|--|--|
| Rating  | Acres in AOI | Percent of AOI |  |  |  |  |  |
| Somewhat limited  | 911.9        | 55.6%          |  |  |  |  |  |
| Very limited  | 713.3        | 43.5%          |  |  |  |  |  |
| Null or Not Rated   | 16.2         | 1.0%           |  |  |  |  |  |
| Totals for Area of Interest                               | 1,641.4      | 100.0%         |  |  |  |  |  |

#### Description

Pond reservoir areas hold water behind a dam or embankment. Soils best suited to this use have low seepage potential in the upper 60 inches. The seepage potential is determined by the saturated hydraulic conductivity (Ksat) of the soil and the depth to fractured bedrock or other permeable material. Excessive slope can affect the storage capacity of the reservoir area.

The ratings are both verbal and numerical. Rating class terms indicate the extent to which the soils are limited by all of the soil features that affect the specified use. "Not limited" indicates that the soil has features that are very favorable for the specified use. Good performance and very low maintenance can be expected. "Somewhat limited" indicates that the soil has features that are moderately favorable for the specified use. The limitations can be overcome or minimized by special planning, design, or installation. Fair performance and moderate maintenance can be expected. "Very limited" indicates that the soil has one or more features that are unfavorable for the specified use. The limitations generally cannot be overcome without major soil reclamation, special design, or expensive installation procedures. Poor performance and high maintenance can be expected.

Numerical ratings indicate the severity of individual limitations. The ratings are shown as decimal fractions ranging from 0.01 to 1.00. They indicate gradations between the point at which a soil feature has the greatest negative impact on the use (1.00) and the point at which the soil feature is not a limitation (0.00).

The map unit components listed for each map unit in the accompanying Summary by Map Unit table in Web Soil Survey or the Aggregation Report in Soil Data Viewer are determined by the aggregation method chosen. An aggregated rating class is shown for each map unit. The components listed for each map unit are only those that have the same rating class as listed for the map unit. The percent composition of each component in a particular map unit is presented to help the user better understand the percentage of each map unit that has the rating presented.

Other components with different ratings may be present in each map unit. The ratings for all components, regardless of the map unit aggregated rating, can be viewed by generating the equivalent report from the Soil Reports tab in Web Soil Survey or from the Soil Data Mart site. Onsite investigation may be needed to validate these interpretations and to confirm the identity of the soil on a given site.

#### **Rating Options**

Aggregation Method: Dominant Condition

Aggregation is the process by which a set of component attribute values is reduced to a single value that represents the map unit as a whole.

A map unit is typically composed of one or more "components". A component is either some type of soil or some nonsoil entity, e.g., rock outcrop. For the attribute being aggregated, the first step of the aggregation process is to derive one attribute value for each of a map unit's components. From this set of component attributes, the next step of the aggregation process derives a single value that represents the map unit as a whole. Once a single value for each map unit is derived, a thematic map for soil map units can be rendered. Aggregation must be done because, on any soil map, map units are delineated but components are not.

For each of a map unit's components, a corresponding percent composition is recorded. A percent composition of 60 indicates that the corresponding component typically makes up approximately 60% of the map unit. Percent composition is a critical factor in some, but not all, aggregation methods.

The aggregation method "Dominant Condition" first groups like attribute values for the components in a map unit. For each group, percent composition is set to the sum of the percent composition of all components participating in that group. These groups now represent "conditions" rather than components. The attribute value associated with the group with the highest cumulative percent composition is returned. If more than one group shares the highest cumulative percent composition, the corresponding "tie-break" rule determines which value should be returned. The "tie-break" rule indicates whether the lower or higher group value should be returned in the case of a percent composition tie. The result returned by this aggregation method represents the dominant condition throughout the map unit only when no tie has occurred.

Component Percent Cutoff: None Specified

Components whose percent composition is below the cutoff value will not be considered. If no cutoff value is specified, all components in the database will be considered. The data for some contrasting soils of minor extent may not be in the database, and therefore are not considered.

Tie-break Rule: Higher

The tie-break rule indicates which value should be selected from a set of multiple candidate values, or which value should be selected in the event of a percent composition tie.

35° 54' 41" N

35° 56' 6" N

35° 54' 41" N

**MAP LEGEND** 

Area of Interest (AOI)

Area of Interest (AOI)

Aerial Photography

Background

Soil Rating Polygons

Somewhat limited

Very limited

Not limited

Not rated or not available

Somewhat limited Very limited Soil Rating Lines }

Not rated or not available -

Not limited

Soil Rating Points

Very limited

Somewhat limited

Not limited

Not rated or not available

Water Features

Streams and Canals

Rails **Transportation** ‡ Interstate Highways

Major Roads

US Routes

Local Roads

# MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:20,000.

Please rely on the bar scale on each map sheet for map measurements.

Web Soil Survey URL: http://websoilsurvey.nrcs.usda.gov Source of Map: Natural Resources Conservation Service Coordinate System: Web Mercator (EPSG:3857)

Albers equal-area conic projection, should be used if more accurate Maps from the Web Soil Survey are based on the Web Mercator distance and area. A projection that preserves area, such as the projection, which preserves direction and shape but distorts calculations of distance or area are required. This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Newton County, Arkansas Survey Area Data: Version 13, Sep 22, 2014

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Sep 20, 2010-Nov

compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident. The orthophoto or other base map on which the soil lines were

#### **Pond Reservoir Areas**

| Map unit<br>symbol | Map unit name                                     | Rating           | Component name (percent) | Rating reasons<br>(numeric<br>values) | Acres in AOI                            | Percent of AOI |  |
|--------------------|---|------------------|--------------------------|---------------------------------------|---|----------------|--|
| 2                  | Arkana-Moko                                       | Very limited     | Arkana (50%)             | Slope (1.00)                          | 16.7                                    | 1.0%           |  |
|                    | complex, 8 to<br>20 percent<br>slopes             |                  |                          | Depth to bedrock<br>(0.85)            |   |                |  |
|                    |   |                  | Moko (35%)               | Slope (1.00)                          |   |                |  |
|                    |   |                  |                          | Depth to bedrock<br>(1.00)            |   |                |  |
| 3                  | Arkana-Moko                                       | Very limited     | Moko (45%)               | Slope (1,00)                          | 87.5                                    | 5.3%           |  |
|                    | complex, 20 to<br>40 percent<br>slopes            |                  |                          | Depth to bedrock<br>(1.00)            |   |                |  |
|                    |   |                  | Arkana (45%)             | Slope (1.00)                          |   |                |  |
|                    |   |                  |                          | Depth to bedrock<br>(0.85)            |   |                |  |
| 6                  | Ceda-Kenn<br>complex,<br>frequently<br>flooded    | Very limited     | Ceda (55%)               | Seepage (1.00)                        | 56.6                                    | 3.5%           |  |
| 7                  | Clarksville very                                  | Very limited     | Clarksville              | Seepage (1.00)                        | 10.7                                    | 0.7%           |  |
|                    | cherty silt<br>loam, 20 to 50<br>percent slopes   | loam, 20 to 50   | loam, 20 to 50           | (100%)                                | Slope (1.00)                            |                |  |
| 11                 | Enders gravelly<br>loam, 3 to 8<br>percent slopes | Somewhat limited | Enders (80%)             | Slope (0.32)                          | 12,2                                    | 0.7%           |  |
| 13                 | Enders stony<br>loam, 3 to 15<br>percent slopes   | Very limited     | Enders (85%)             | Slope (1.00)                          | 188.3                                   | 11.5%          |  |
| 26                 | Moko-Rock   | Very limited     | Moko (50%)               | Slope (1.00)                          | 9.4                                     | 0.6%           |  |
|                    | outcrop<br>complex, 15 to<br>50 percent<br>slopes |                  |                          | Depth to bedrock<br>(1.00)            |   |                |  |
| 35                 | Nella-Enders                                      | Very limited     | Nella (45%)              | Slope (1.00)                          | 88.7                                    | 5.4%           |  |
|                    | stony loams, 8<br>to 20 percent                   |                  |                          | Seepage (0.70)                        |   |                |  |
|                    | slopes  |                  | Enders (40%)             | Slope (1.00)                          |   |                |  |
| 36                 | Nella-Enders                                      | Very limited     | Nella (50%)              | Slope (1.00)                          | 98.9                                    | 6.0%           |  |
|                    | stony loams,<br>20 to 40                          |                  |                          | Seepage (0.70)                        |   |                |  |
|                    | percent slopes                                    |                  | Enders (35%)             | Slope (1.00)                          |   |                |  |
| 39                 | Nella-Steprock-<br>Mountainburg                   | Very limited     | Nella (45%)              | Slope (1.00)                          | 81.1                                    | 4.9%           |  |
|                    | very stony  |                  |                          | Seepage (0.70)                        |   |                |  |
|                    | loams, 40 to 60 percent slopes                    |                  | Steprock (20%)           | Slope (1.00)                          | ALL |                |  |

|                    | Pond Reservoi                            | Areas— Sumn         | nary by Map Unit —       | Newton County, Ar                     | kansas (AR101) |                |
|--------------------|--|---------------------|--------------------------|---------------------------------------|----------------|----------------|
| Map unit<br>symbol | Map unit name                            | Rating              | Component name (percent) | Rating reasons<br>(numeric<br>values) | Acres in AOI   | Percent of AOI |
|                    |  |                     |                          | Seepage (0.70)                        |                |                |
|                    |  |                     |                          | Depth to bedrock<br>(0.11)            |                |                |
|                    |  |                     | Mountainburg             | Slope (1.00)                          |                |                |
|                    |  |                     | (10%)                    | Depth to bedrock<br>(1.00)            |                |                |
| 42                 | Noark very cherty                        |                     | Noark (100%)             | Seepage (0.70)                        | 263.9          | 16.1%          |
|                    | silt loam, 3 to 8 lir<br>percent slopes  | limited             |                          | Slope (0.32)                          |                |                |
| 43                 | Noark very cherty                        | Very limited        | Noark (100%)             | Slope (1.00)                          | 349.6          | 21.3%          |
|                    | silt loam, 8 to<br>20 percent<br>slopes  |                     |                          | Seepage (0.70)                        |                |                |
| 44                 | Noark very cherty                        | Very limited        | Noark (100%)             | Slope (1.00)                          | 168.5          | 10.3%          |
|                    | silt loam, 20 to<br>40 percent<br>slopes |                     |                          | Seepage (0.70)                        |                |                |
| 48                 | Razort loam,<br>occasionally<br>flooded  | Very limited        | Razort (95%)             | Seepage (1.00)                        | 163.0          | 9.9%           |
| 50                 | Spadra loam,<br>occasionally<br>flooded  | Somewhat<br>limited | Spadra (95%)             | Seepage (0.70)                        | 16.2           | 1.0%           |
| 51                 | Spadra loam, 2 to<br>5 percent<br>slopes | Somewhat<br>limited | Spadra (95%)             | Seepage (0.70)                        | 13.8           | 0.8%           |
| 54                 | Water                                    | Not rated           | Water (100%)             |                                       | 16.2           | 1.0%           |
| Totals for Area    | of Interest                              |                     |                          |                                       | 1,641.4        | 100.0%         |

| Pond Reservoir Areas— Summary by Rating Value |              |                |
|---|--------------|----------------|
| Rating  | Acres in AOI | Percent of AOI |
| Very limited                                  | 1,319.1      | 80.4%          |
| Somewhat limited                              | 306.2        | 18.7%          |
| Null or Not Rated                             | 16.2         | 1.0%           |
| Totals for Area of Interest                   | 1,641.4      | 100.0%         |



**NRCS** 

Natural Resources Conservation Service A product of the National Cooperative Soil Survey, a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local participants

## Custom Soil Resource Report for Newton County, Arkansas

