# Guidelines For The Mass Appraisal Of Cropland, Timberland, and Pastureland In The State Of Arkansas

Developed By The State Of Arkansas Assessment Coordination Department 1996 in compliance with Arkansas Code 26-26-407

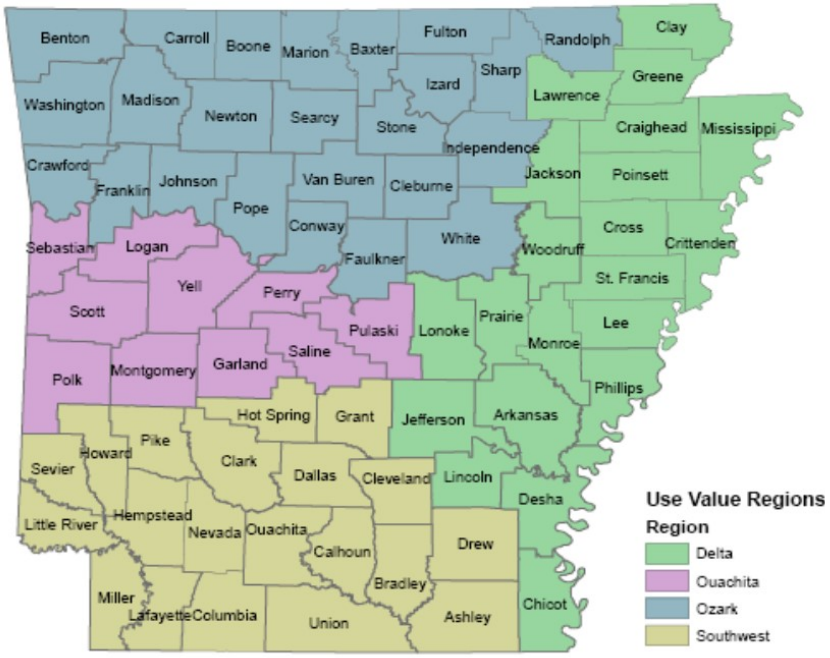
Revised 2015

**Overview**

All agricultural lands in the state including cropland, pastureland, and timberland are given special classification by the state constitution (Amendment 59). Such land is to be valued based on its use. It is not based on its market value. This use valuation, as it is called, is designed to protect and preserve such land. The state in rendering this classification recognizes the importance of crops and farming, the production of livestock, and a managed forest for the betterment of all the people of the state.

The Agricultural Land mass appraisal program launched in 1981 developed seventy-five individual county land values based on published information by the USDA National Agricultural Statistics Service (NASS-USDA) and the Natural Resource and Conservation Service (NRCS).

In an effort to eliminate some of the variables and inconsistencies, in 1996 the introduction of Regional Land Values for the state of Arkansas was implemented. The land regions are based on those set by the U.S. Forest Service. There are four regions:




In 2007, clarifying language was added to statute as to how often the Assessment Coordination Department will calculate agricultural values (annually), that counties must use those values at the end of their reappraisal cycle, basic parameters for the formulas used to calculate the capitalization rate used, and added oversight by requiring a report be filed annually with Legislative Council.

**Statute Highlights**

The following consists of highlights from Arkansas Code 26-26-407. Please see the full statute for complete information regarding agricultural valuation.

(b)(1)(A) Agricultural land, pasture land, and timber land valuation shall be based on the productivity of the agricultural land, pasture land, or timber land soil.

(B) Agricultural land, pasture land, and timber land guidelines shall be developed based on the typical or most probable use of the soils for agricultural land, pasture land, and timber land in the region.

**Statute Highlights cont.**

(f)(1) In devising and developing methods of assessing and levying the ad valorem property tax on real property, the Assessment Coordination Department shall annually develop and publish valuation tables and other data which shall be used by county Assessors for assessing lands qualifying under the provisions of this subchapter.

(2)(A) Effective for assessment years beginning January 1, 2008, and every year thereafter, the Assessment Coordination Department shall update the valuation tables for assessing lands qualifying as agricultural land, pasture land, and timber land in time for counties to use the updated tables when they finish their countywide appraisals.

(B) Beginning January 1, 2008, when there is a countywide reappraisal, a county shall assess agricultural land, pasture land, and timber land based upon the updated land values in the valuation tables issued for the assessment year.

(3)(A) Effective for assessment years beginning January 1, 2008, the Assessment Coordination Department by rule shall develop appropriate formulas reflecting the productivity valuation of the land based upon income capability attributable to agricultural land, pasture land, and timber land soils.

(B) Beginning January 1, 2008, and every year thereafter, the Assessment Coordination Department shall develop and calculate capitalization rates by using appropriate long-term federal security rates, risk rates, management rates, and other appropriate financial rates.

(C) However, the capitalization rate developed under subdivision (f) (3) (B) of this section shall not be less than eight percent (8%) nor more than twelve percent (12%).

(4) By October 15 of each year, the Assessment Coordination Department shall report to the Legislative Council any changes to any part of the formula used to determine the value or the capitalization rate.

**Soils**

The Assessment Coordination Department utilizes the NRCS Soil Survey for each county in the state of Arkansas in its valuation process and for its soil classification. The Soil Survey contains the Land Capability Classification System. This system measures the limitations of soils using eight classes with subclasses. The soil groupings are based on the NRCS Class I being the least limited and VIII being the most restrictive. The sub class describes the type of limitation be it W-water, E-erosion, and S-shallow or unstable soils. NRCS has published a soil survey for each county in Arkansas. These are available online at http://websoilsurvey.sc.egov.usda.gov/App/HomePage.htm

Within these surveys each soil is described and is designated a capability class, and a subclass. The survey also provides productivity rates for crop soils and pasture soils. It also provides growth indices for timber soils . The NRCS also produces a soil map for each county which is utilized in the valuation process.

Below is a brief summary of each of the Land Capability Classification System groupings. Please see the Web Soil Survey for a complete description.

ACD Numbers and NRCS LCC Interpretations (The ACD numbers are provided for easy conversion of the LCC scientific classification nomenclature.)

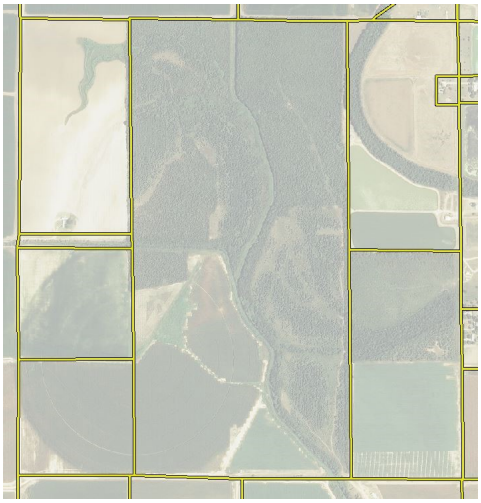
| ACD# | LAND CAPABILITY CLASSIFICATION | |
|---|---|---|
| 1 | I- | Soils have few limitations that restrict use. |
| 2 | IIw - | Soils have moderate water limitations that reduce the choice of plants or require moderate conservation practices. |
| 3 | IIIs- | Soils are very swallow and suffer from severe limitations that reduce the choice of plants or that require special conservation practices, or both. |
| 4 | IIIw- | Soils have severe water limitations that reduce the choice of plants or that require special conservation practices, or both. |
| 5 | IIs - | Soils are shallow and have moderate limitations that reduce the choice of plants or require moderate conservation practices. |
| 6 | IVs - | Soils are shallow and have severe limitations that reduce the choice of plants or that require careful management, or both. |
| 7 | IVw- | Soils have severe water limitations that reduce the choice of plants or that require very careful management, or both. |
| 8 | Vw - | Soils are not likely to erode, but have water limitations, impractical to remove and limits the use. |
| 9 | VIs - | Soils have severe shallow limitations that make them generally unsuitable for cultivation. |
| 10 | VIw- | Soils have severe water limitations that make them generally unsuitable for cultivation. |
| 11 | VIIs- | Soils are shallow and have very severe limitations that make them unsuitable for cultivation. |
| 12 | IIe - | Soils have moderate limitations to erosion that reduces the choice of plants or that require moderate conservation practices. |
| 13 | IIIe- | Soils have severe limitations to erosion that reduces the choice of plants or that require special conservation practices, or both. |
| 14 | IVe - | Soils have very severe limitations to erosion that reduces the choice of plants or that require very careful management, or both. |
| 15 | VIe - | Soils have very severe limitations to erosion that make them generally unsuitable for cultivation. |
| 16 | VIIe- | Soils have very severe limitations to erosion that make them unsuitable for cultivation. |
| 17 | VIII- | (ROCK OUTCROPS ECT) - Soils and miscellaneous areas that have limitations that nearly preclude their use for commercial crop production. |
| 18 | NO CLASS OR MISC. LAND | |

LETTERS INDICATE LIMITATIONS (PROBLEMS) ASSOCIATED WITH THOSE SOILS.

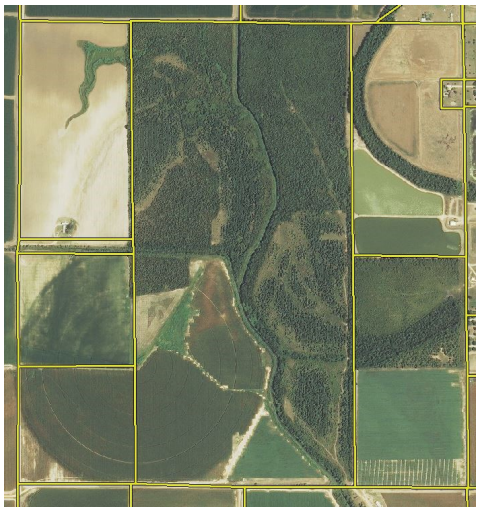
w = WATER PROBLEMS (flooding), e = EROSION PROBLEMS, s = SHALLOW SOILS (limited root zone, or stony soils)

**Determining Use**

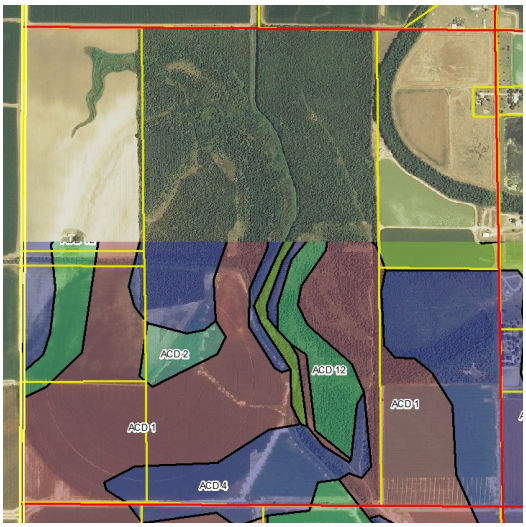
The county or its contractor uses many tools in its valuation process. First it determines the use of the property by identifying and visiting the property. A visual inspection helps determine whether it is crop, pasture, timber or as in many cases a mix of these uses. Sometimes aerial photography and/ or satellite imagery is used for difficult or unusual terrain.



Identifying the property



Determining Use




Applying the soil map to the property to calculate the acreage of each soil by each use on each piece of property

An example of a 40 acre parcel.

| Acres | ACD# | Use |
|---|---|---|
| 20 | 4 | Pasture |
| 10 | 6 | Timber |
| 5 | 6 | Pasture |
| 5 | 11 | Timber |

**Valuation**

According to code 26-26-407 there is a land value developed for each land capability class. In some cases values have been filled into some classes where there has been agricultural activity but productivity data is non-documented. Arkansas Code 26-26-407 clearly indicates that the use valuation of land should be used for agricultural lands. This method is otherwise known as the income approach to value. The basic formula for this is:

Income - Cost = Net Income / Capitalization Rate = Land Value

Each of our categories, Crop, Pasture, and Timber are calculated using their own representative productive output. Crop uses soybeans which can be grown in all four agricultural regions as its base. Pasture uses a mixture of warm and cool season grasses that are traditionally grown for grazing in all four regions as its base. Timber uses a mixture of pine and hardwoods as its base. Each soil has a bushel, AUM (animal unit per month), or a board foot per year productive capability.

In determining values we use ten year rolling averages of crop prices, rental rates, costs, stumpage pricing, and financial securities to help level out large swings that could be the result of a single year of high or low numbers due to outside influences. All values are calculated with a one year delay due to the need for data that is calculated by various federal agencies and industry resources that is not released until the third quarter of each year. This means that the 2015 values are based on data that was captured through the end of 2013, compiled and then published in the third quarter of 2014, applied to our formulas in 2014 and released for use in the reappraisal cycles ending in 2015.

The capitalization rate, or cap rate, is the rate at which you discount future income to determine its present value. Another way of looking at it is the capitalization rate expresses what percentage rate a property's net operating income is to its value.

**Valuation—Crop**

Crop Income is based on a ten year market price average for soybeans which for this report was $9.71. This amount is multiplied by the NRCS average bushel per acre of soybeans for each soil type. To adjust for operating costs a 25/75 rental rate split is assumed with the 25 percent applied as net income. It is then divided by the capitalization rate.

| | AVERAGE SOYBEAN BUSHEL PER ACRE | 10 YEAR AVERAGE OF PRICES RECEIVED BY FARMERS | SUM | 75/25 SPLIT | APPLIED CAPITALIZATION RATE | ROUNDED TO THE NEAREST $5 |
|---|---|---|---|---|---|---|
| | | | | | 9.56% | |
| ACD 1 | 39 | $10.20 | $397.80 | $99.45 | $1,040.27 | **$1,040** |
| ACD 2 | 35 | $10.20 | $357.00 | $89.25 | $933.58 | **$935** |
| ACD 3 | 18 | $10.20 | $183.60 | $45.90 | $480.13 | **$480** |

**Valuation—Pasture**

Pasture Income is based on AUM. Animal Unit Months are a measure of forage productivity in the soil surveys. The value of one animal unit month was developed by taking the state average AUM of 6.5 and dividing it by the 10 yr. Pasture Rent Average $17.85. This leads to a $2.77 per AUM value statewide which is the equivalent of the per bushel price for soybeans. The average AUM for each soil class is multiplied by price per AUM and then divided by the capitalization rate.

| | AUM | AVG $ PER AUM | TOTAL | APPLIED CAPITAL-IZATION RATE | ROUNDED TO NEAREST $5 |
|---|---|---|---|---|---|
| | | | | 8.56% | |
| ACD 1 | 9.9 | $2.80 | $27.72 | $323.83 | **$325** |
| ACD 2 | 8.4 | $2.80 | $23.52 | $274.77 | **$275** |
| ACD 3 | 5.2 | $2.80 | $14.56 | $170.09 | **$170** |

**Valuation—Timber**

Because of the thirty to forty year growth cycle of marketable timber and the variable growth volumes for each year a discount cash flow model was used to best represent the use value. This model takes into consideration the startup capital for tree planting, herbicidal and fire treatments, as well as income produced through various thinning's of the growth cycle. This results in culmination of information brought back to the present worth of the site.

The timber productivity of each soil is measured by the soils indicator species and site index, as assigned by The Natural Resource and Conservation Service (NRCS). Utilizing the indicator species and the site index as the determining factor for productivity, a discount cash flow determines value for:

Soils with a Site index greater than 90 is Very Productive = Pine High Site

Soils with a Site index of 89 to 70 is Productive = Medium Pine Site

Soils with a Site index of 69 to 50 is Marginal = Low Pine Site

Soils with a Site index 49 and below is Unproductive = Min. Land Value

All Hardwood lands = Hardwood Site Value

The basic formula for Timber is:

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| State average prices on board and pulp | X | Harvest volumes by soil type and species and board and or pulp | = | Income from thinning and final harvests | - | Expenses from planting thinning etc. | / | Capitalization rate | = | Value |

The soils value is then determined by multiplying total acres to determine total value and then calculating a weighted value by soil type for each region. For information regarding the discount cash flow formula for timber land please contact the Assessment Coordination Department, http://www.arkansas.gov/acd.

Please remember that the total values presented are then multiplied by the Assessment Rate (20%) as prescribed by law for all property in the state. That determines its Assessed Value. It then needs to be multiplied by your local millage rate to determine a tax amount. Please contact your local county Assessor for more information on this.

**FAQ's**

**Fire Protection Tax**

There is levied on all timberlands in this state an annual tax of twenty cents (20¢) per acre to be collected in the manner provided in under Arkansas Code 26-61-103 for deposit into the State Treasury for credit to the State Forestry Fund as special revenues to be used for the maintenance, operation, and improvement of the Arkansas Forestry Commission in its statewide program for the detection, prevention, and suppression of forest fires.

**If a taxpayer's agricultural land, pasture land or timber land goes up in value as a result of a reappraisal are his taxes based upon 20% of the total value of such property, including the increase? No**, such land, by Amd. 79 definition, could not qualify as homestead property, and therefore any increase in assessed value is limited (capped) to not increase annually more than ten percent (10%) of the assessed value of the property for the previous year, but it shall increase by an additional ten percent (10%) each year until it reaches that full assessed value, Ark. Constitution Amd. 79 Sec. 1(b)(1). This provision does not apply to newly discovered real property, new construction, or substantial improvement to real property, Ark. Constitution Amd. 79 Sec. 1(b)(2).

**Does the assessed value of a taxpayers agricultural land, pasture land or timber land cease to increase (freeze) over and above the amount it was immediately before he purchased the property or became disabled or sixty-five (65) years of age? No**, by Amd. 79 definition, agricultural land, pasture land or timber land is not homestead property and therefore the freeze does not apply, Ark. Constitution Amd. 79 Sec. 1(d)(1)(A).

**How do we value WRP – CRP lands?** WRP and CRP lands are classified as agricultural land for property tax purposes and receive no other consideration in value.

**What jurisdiction do the BOE and the county court have to hear appeals of taxpayers who disagree with the county assessor as to the assessment on their agricultural land, pasture land, or timber land?** The BOE may reclassify land upon proof of change in use of the land or upon proof that the land is not eligible for classification under this section. Neither the BOE nor the county court may change the value of such land because the value is established by the ACD, ACA 16-26-407. In almost all cases any dispute over use can be resolved by contacting your county Assessor.