Montana Department of REVENUE

2015-2020

Montana Agricultural Land Classification Manual

Property Assessment Division

Published October 10, 2014

DEPARTMENT OF REVENUE

2015-2020
MONTANA AGRICULTURAL LAND CLASSIFICATION MANUAL
January 1, 2015 – December 31, 2020

STATE OF MONTANA

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The Department of Revenue prepared the Montana Agricultural Land Classification Manual pursuant to ARM 42.20.605 - Agricultural Lands. The manual is available to the general public.

Please direct questions pertaining to this document to the Department of Revenue Property Assessment Division at **http://revenue.mt.gov/home/property.aspx**

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INTRODUCTION

Agriculture is the science, art, or occupation of cultivating land, raising crops, and feeding, breeding, and raising livestock. It is also referred to as farming. Agricultural is defined as the production of food, feed, and fiber commodities, livestock and poultry, bees, biological control insects, fruits and vegetables, and sod, ornamental, nursery, and horticultural crops that are raised, grown, or produced for commercial purposes. It includes the raising of domestic animals and wildlife in domestication or a captive environment, as defined in 15-7-101, MCA.

Agricultural productivity has increased as techniques and machinery have improved. Agricultural farming practices such as crop rotation, fertilization, irrigation, pesticides, and herbicides have also increased productivity. Along with improved techniques and machinery came a shift to world commodity markets.

Valuation of agricultural land in Montana is based on use value. This value is based on the capability of the land to raise a specific crop.

APPRAISER CERTIFICATION

The Department will offer an Agricultural Land Classification/Appraisal (ALCA) class to provide employees with appraisal training for valuing agricultural properties within the state of Montana. Authority and responsibility for this task is set out in the Montana Code Annotated (MCA). Administrative rules further define the process for certification criteria. The prerequisite for the position of an agricultural appraiser includes department certification as a residential appraiser, as set in ARM 42.18.207. Further certification requirements include:

1) Attend and complete ALCA training;
2) Pass the corresponding ALCA exam; and
3) Complete one year of agricultural appraisal duties on the job.

Upon appointment to an ALCA position, the appraiser must complete a one year on-the-job internship. All work during this time period must be reviewed by an assigned department agricultural certified employee. Employees new to state government will have their probationary period run concurrent with this internship. Failure to perform satisfactorily during the internship will result in termination or demotion to a residential appraisal position, if such a position is available.

After beginning the ALCA position, the employee shall enroll in the next available ALCA training class.

References to these items are found in 15-1-201, MCA; ARM 42.18.205, 42.18.207, and 42.18.210.

HISTORY

Early taxation of property in Montana began before statehood. In 1919, a separate tax class was developed to classify various lands including irrigated, non-irrigated tillable, grazing, timber, cutover and mineral lands.

The Constitution of the State of Montana

In 1972, Montana passed a constitution that abolished the Board of Equalization and turned the responsibility of assessing property over to the Department of Revenue (DOR or department). Article XII, Section 1 of the Montana Constitution makes indirect reference to legislative authority to tax agricultural land.

> (1) The legislature shall provide for a Department of Agriculture and enact laws and provide appropriations to protect, enhance, and develop all agriculture.
>
> (2) Special levies may be made on livestock and on agricultural commodities for disease control and indemnification, predator control, and livestock and commodity inspection, protection, research, and promotion. Revenue derived shall be used solely for the purposes of the levies.

In 1973, the department adopted guidelines for assigning grades to agricultural land. The department promulgated more than 50 pages of rules based on fractional assessment of “full cash value”. Some of these rules were enacted into law by the 1973 legislature.

> All taxable property must be assessed at its full cash value except the assessment of agricultural lands shall be based upon the productive capacity of the lands when valued for agricultural purposes and shall be so valued unless a different use is demonstrated.

In September 1990, Governor Stephens appointed the first Agricultural Advisory Committee. The committee reviewed their legislative mandate, evaluated income and expense data and recommended new valuation schedules for assessing agricultural

land. This committee is appointed by the Governor at the beginning of each term. The makeup and duties of the Agricultural Advisory Committee are spelled out in MCA, 15-7-201.

2009 Reappraisal

For the 2009 reappraisal cycle, the department conducted a comprehensive classification project to value agricultural lands. This statewide revaluation project was endorsed by the 2006 through 2008 agricultural advisory committee and the 2005 and 2007 Legislatures. Extensive use of Geographic Information System (GIS) technology was used to link aerial imagery with cadastral (ownership) data. This information was further refined by linking it with agricultural uses obtained from the USDA Farm Services Agency. This information was then linked with soils productivity estimates for each agricultural land use based upon statewide soil survey information. The soil survey information was made available by the USDA Natural Resources Conservation Service as another digitized information layer in the GIS application.

To verify this agricultural data, the department mailed out individual parcel maps to agricultural landowners in the state and requested feedback and corrections from the landowners. Maps depicting current agricultural land uses as well as the land's productivity information and ownership became the means used to maintain appraisal data and to equalize valuation statewide.

GIS

Reappraisal activities associated with agricultural and forest lands include the use of the most recent aerial photography along with older imagery to discover change in agriculture classification. The imagery used is from the nationwide National Agriculture Imagery Program (NAIP) administered by the Department of Agriculture Farm Service Agency (FSA) Aerial Photography Field Office in Salt Lake City. FSA has collected NAIP imagery in Montana every 2 years since 2005. Infrared imagery is collected as well. These NAIP imagery datasets are made available for agricultural appraisal activities via PAD ag/forest ArcReader maps. Each county has their own specific ArcReader map and the map is updated every year after assessments are completed. To improve ArcReader performance, only the most current version of NAIP and the previous two NAIP collections are available in the map.

LEGISLATIVE AUTHORITY

The department classifies and values more than 50 million acres of privately owned agricultural land in Montana. The statutes governing the appraisal and classification of agricultural land are located in Title 15 of the Montana Code Annotated.

Montana law requires the department to value all agricultural property once every six years. The department values agricultural property based on its productivity using a productivity valuation formula. This formula will be discussed in detail later in the manual. All agricultural land is placed in one of five classes:

1. Non-irrigated summer fallow farmland
2. Non-irrigated continuously cropped farmland
3. Irrigated land
4. Grazing land
5. Continuously cropped hay land

The department is charged with the general administration and supervision of assessment laws:. "…relating to taxation to the end that all assessments of property are made relatively just and equal, at true value, and in substantial compliance with law." § 15-1-201(1)(a), MCA.

The department must keep current the classification of all taxable lands. Section15-7-101(4), MCA.

The department is also required to set and maintain uniform and equitable procedures for reclassification under 15-7-103, MCA.

The equalization of the assessment process is dictated in 15-7-112, MCA:

> The same method of appraisal and assessment shall be used in each county of the state to the end that comparable property with similar true market values and subject to taxation in Montana shall have substantially equal taxable values at the end of each cyclical revaluation program hereinbefore provided. (Emphasis provided).

Pursuant to 15-7-111(5) MCA, agricultural land is reappraised every six years. Reappraisal values that increase from the previous reappraisal cycle are phased-in incrementally over the length of the reappraisal cycle. Reappraisal values that decrease from the previous reappraisal cycle are phased-down in their entirety the first year of the new reappraisal cycle.

APPLICABLE LAW

Below are the statutes and administrative rules that the DOR follows in appraising agricultural properties:

Applicable Agricultural Property Valuation Laws

15-1-101	Definitions[1]
15-1-201	Administration of revenue laws
15-6-133	Class three property – description – taxable percentage
15-6-201	Exempt categories[2]
15-7-101	Classification and appraisal – duties of the department of revenue
15-7-102	Notice of classification and appraisal to owners - appeals
15-7-103	Classification and appraisal – general and uniform methods
15-7-107	Certification required
15-7-108	Land split
15-7-111	Periodic revaluation of certain taxable property
15-7-112	Equalization of valuations
15-7-138	Notice of classification and appraisal to single address for owners of undivided interest
15-7-201	Legislative intent – value of agricultural property
15-7-202	Eligibility of land for valuation as agricultural
15-7-203	Agricultural uses only considered in valuation
15-7-206	Improvements on agricultural land
15-7-207	Continuance of valuation as agricultural land
15-7-208	Reclassification by department
15-7-209	Reclassification by owner - lien
15-7-210	Tax on change of use of part of tract
15-7-212	Tract crossing county line - whole
15-8-111	Assessment – market value standard - exceptions[3]
15-8-201	General assessment day
15-8-307	Land assessment
70-1-101	Property defined - ownership
70-1-106	Real property defined
70-1-302	Ownership – absolute or qualified
85-7-2136	Collection of taxes or assessment[4]
87-1-603	Payments to counties for department-owned land – exceptions

[1] Section 1(a)(i) defines agriculture and section 1(d)(ii) defines agriculture as "not commercial".
[2] Section 1(a)(B)(iii) refers to irrigation districts and section 2(h)(B)(ii) refers to agricultural property owned by a purely public charity
[3] Section 6(c) refers to the assessment of nonqualified agricultural land
[4] This statute pertains the assessment and collection of taxes for irrigation districts

Agricultural Property Valuation Administrative Rules

42.20.156	Agricultural and forestland land use change criteria
42.20.301	Application for classification as nonproductive, patented mining claim
42.20.302	Definitions (*mining claims*)
42.20.303	Criteria for valuation as mining claim
42.20.305	Valuation of acreage beneath improvements on eligible mining claims
42.20.502[5]	Determination of Value Before Reappraisal (VBR), Excluding Industrial Properties
42.20.601	Agricultural Definitions
42.20.603	Steps Necessary to Value Agricultural Land That Does Not Have a Published Soil Survey
42.20.605	Agricultural lands
42.20.610	Classification and appraisal of easements on agricultural land
42.20.615	Application for agricultural classification of land
42.20.620	Criteria for agricultural land valuation for land totaling less than 20 acres in size
42.20.625	Criteria for agricultural land valuation for land totaling 20 to 160 acres in size
42.20.630	Production failures
42.20.635	Marketing delay for economic advantage
42.20.640	Valuation of Land Ownerships 160 acres or Larger in Size
42.20.645	Classification and Assessment of Those Portions of Any Agricultural, Nonqualified Agricultural, or Forest Land Parcels That are Residential, Commercial, or Industrial Sites
42.20.650	Valuation of nonqualified agricultural land from 20 to 160 acres
42.20.655	Valuation of one-acre beneath improvements on agricultural and nonqualified agricultural land
42.20.660	Nonirrigated summer fallow farmland
42.20.665	Nonirrigated, continuously cropped farm land
42.20.670	Nonirrigated continuously cropped hay land
42.20.675	Tillable, irrigated farmland
42.20.680	Grazing land

[5] H:\PAD Specialist-Modeler\Agricultural Land Class 3 Property\Ag Manuals\2009 Ag Manual 2010 amd\Section 26 2010 addenda\2010 New Rules\2010 ARM 42_20_502, VBR RULE

OWNERSHIPS

Easements

An easement is the creation of an interest in land owned by another that entitles its holder to a specific limited use or enjoyment[6]. An easement may be created and held by either private or public entities. The easement may be temporary or held in perpetuity.

Roads, irrigation ditches, or power line easements that do not transfer title of such rights-of-way are taxable and will be classified and valued according to the productivity of the underlying soils. The term "easements" is not listed in 15-7-206, MCA; however, the term "like facilities", includes amenities such as easements on agricultural land.

> (1) In determining the total area of land actively devoted to agricultural use, there is included the area of all land under barns, sheds, silos, cribs, greenhouses, and like structures, lakes, dams, ponds, streams, irrigation ditches, **and like facilities**.
> (2) One acre of land beneath agricultural improvements on agricultural land, as described in 15-7-202(1) (c) (ii), is valued at the class with the highest productive value and production capacity of agricultural land. Section 15-7-206, MCA.

The department promulgated ARM 42.20.610 to clarify the classification and valuation of an easement on agricultural land. That rule states that easements that do not transfer rights-of-way are taxable and they are classified and valued in the same manner as the adjoining land.

Deeded Right of Ways

A deeded right-of-way is conveyed through a deed or other instrument and a record of the conveyance is available. The right-of-way acreage is deducted from the ownership in which it's located. If the deeded right-of-way splits two ownerships (bisects the ownerships), such as along a deeded county road, the department shall deduct equal amounts of acreage from both ownerships.

> . .
> (2) A deeded right-of-way that is conveyed through a deed or other instrument, from a private owner to a government agency or other tax exempt entity is not taxable and is deducted from the ownership in which it is located. If the deeded right-of-way splits two or more ownerships, such as

[6] Webster's Ninth New Collegiate Dictionary

> along a deeded county road, the department will deduct proportional amounts of acreage from each ownership. A record of the conveyance must be available in the local county clerk and recorder's office.
> (3) To determine the total acreage of land devoted to the easement or deeded right-of-way, the department shall determine the square footage and convert the square footage to acres by dividing the square footage by 43,560. ARM 42.20.610.

Water Boundaries

Private ownership boundaries that follow a non-navigable stream, river, lake, or pond go to the midpoint of the stream[7]. Private ownership boundaries that follow a navigable stream, river, lake, or pond go to the high water mark of the bed of the stream, river, or lake. Private ownership boundaries that follow an easement such as a road also go to the centerline of the easement, unless stated differently in the deed.

In some cases, the centerline or midline of a river or stream denotes a county boundary. If the river or stream channel meanders from year to year, the county boundary does not change with a change in the centerline or midline.

> **Section 70-18-201, MCA. Alluvion or accretion -- increase of bank.**
> Where from natural causes land forms by imperceptible degrees upon the bank of a river or stream, navigable or not navigable, either by accumulation of material or by the recession of the stream, such land belongs to the owner of the bank, subject to any existing right-of-way over the bank.

Ownership boundaries may change due to alterations in a stream or riverbed. When rivers deposit silts and soils, a slow, imperceptible growth called accretion takes place. Under Montana law, accreted land belongs to the owner of the property benefiting from the accretion. However, the department cannot arbitrarily change ownership boundaries. In order to ensure that any boundary change is valid and to avoid litigation regarding the ownership boundaries, only a valid court order will require the department to change ownership boundaries

When rivers erode the banks of their channel and carry away the soils, a slow, imperceptible loss occurs, called reliction.

[7] The centerline of a non-navigable river or stream is called the thread of the stream.

> Sudden removal of bank -- right of owner to reclaim. If a river or stream, navigable or not navigable, carries away by sudden violence a considerable and distinguishable part of a bank and bears it to the opposite bank or to another part of the same bank, the owner of the part carried away may reclaim it within a year after the owner of the land to which it has been united takes possession thereof. 70-18-202, MCA.

Similar to the department's position on accretion, ownership of the rights to the original bank remains in effect until a court determines otherwise

A shift of the ownership boundary may occur if there is a sudden change in the course of a river or stream. This action is called avulsion. Avulsion is usually caused by spring floods. In general, courts do not adjust ownership boundaries due to avulsion.

Under any of the three circumstances; reliction, accretion or avulsion, the department will not adjust ownership boundaries or taxable acreage without validation from a court.

Island Ownership in Rivers

Following are guidelines to be used in determining the ownership of islands in rivers and streams.

> Island formed in navigable stream. Islands and accumulations of land formed in the beds of streams which are navigable belong to the state if there is no title or prescription to the contrary.
> Section 70-18-203, MCA.
>
> Ownership of certain islands and abandoned riverbeds.
> The following lands belong to the state of Montana to be held in trust for the benefit of the public schools of the state:
> (a) all lands lying and being in and forming a part of the abandoned bed of any navigable stream or lake in this state and lying between the meandered lines of the stream or lake as shown by the United States survey of the stream or lake;
> (b) all islands existing in the navigable streams or lakes in this state that have not been surveyed by the government of the United States; and
> (c) all lands that at any time in the past constituted an island or part of an island in a navigable stream or lake, except those lands that are occupied by and belong to the adjacent landowners as accretions.
> (2) State-owned riverbeds are public lands of the state that are held in

> trust for the people as provided in Article X, section 11, of the Montana constitution.
> Section 77-1-102, MCA.

If an island existed in the river prior to the time of statehood, the island belongs to the State.

> An island or accumulation of land formed in a stream which is not navigable belongs to the owner of the shore on that side where the island or accumulation is formed or, if not formed on one side only, to the owners of the shore on the two sides, divided by an imaginary line drawn through the middle of the river.
> Section 70-18-204, MCA.
>
> If a stream navigable or not navigable, in forming itself a new arm, divides itself and surrounds land belonging to the owner of the shore and thereby forms an island, the island belongs to such owner.
> Section 70-18-205, MCA**.**

The State of Montana will not assert ownership of an island which is created by the action of a river changing its channel to thereby isolate, as an island, a portion of a government meander line lot owned by a taxpayer. An island created in this manner will continue in the same ownership as it was in before the river channel change created the island.

The State of Montana may assert ownership on in-stream islands which are created by in-stream accretion (i.e. arise from the original channel of the stream). In this instance the state will only claim ownership through a quiet title action, and only if the court places such an island under state ownership.

Conservation Easements

A conservation easement is a voluntary conveyance of legal interests, benefits, and rights inherent in ownership of real estate to a governmental agency or a private non-profit conservation organization. Its purpose is to limit certain development rights or other rights of use. A conservation easement is typically imposed by a deed used to convey title to the land and circumscribes the rights of subsequent owners. In Montana, the easement may be in perpetuity or for terms of not less than 15 years.

The Montana Open-Space Land and Voluntary Conservation Easement Act was passed by the 1975 legislature. The statutes governing conservation easements can be found in Title 76, Chapter 6. There is no property tax advantage granted by the establishment of a conservation easement on Class 3 property.

> Taxation of property subject to conservation easement.
>
> (1) Assessments made for taxation on property subject to a conservation easement either in perpetuity or for a term of years, where a public body or a qualifying private organization holds the conservation easement, shall be determined on the basis of the restricted purposes for which the property may be used. The minimum assessed value for land subject to an easement conveyed under this chapter may not be less than the actual assessed value of such land in calendar year 1973. Any land subject to such easement <u>may not be classified into a class affording a lesser-assessed valuation</u> solely by reason of the creation of the easement. The value of the interest held by a public body or qualifying private organization shall be exempt from property taxation.
>
> (2) Expiration of an easement granted for a term of years shall not result in a reassessment of the land for property tax purposes if the easement is renewed and the granting instrument reflecting the renewed easement is executed and properly filed not later than 15 days after the date of expiration.
>
> Section 76-6-208, MCA.

The stipulation in Section 76-6-208, MCA, that land subject to such easement may not be classified into a class affording a lesser-assessed valuation means that property in Class 4 cannot be reclassified to Class 3 or Class10 due solely to the creation of the easement. For example, a landowner that places a conservation easement on a 10-acre parcel of land that has agricultural uses cannot request reclassification to Class 3 - agricultural land, merely because of the easement. The property must still meet agricultural eligibility requirements.

In the previous example, the easement may impact the property's Class 4 market value. The loss of development rights may reduce the value of the property and the department must recognize this reduction in value. The department does not appraise property rights. Therefore, the landowner must provide the department with a fee appraisal that meets USPAP standards from a certified private appraiser.

A conservation easement may cause a property to change property tax classes if the easement prohibits agricultural use. An example would be a conservation easement

that precludes agricultural activities on an ownership greater than 160 acres in size. In this example, the property is placed in Class 4 and the change will result in a property tax increase.[8]

Land taken for a Public Use

Section 15-7-202, MCA, states that land classified as agricultural land that has been reduced in size for a public use will not lose its agricultural classification due to the reduction. An example would be a 20 acre parcel of land classified as nonqualified agricultural land that has been reduced to 18 acres to allow the widening of a state highway. This parcel would continue to be classified as nonqualified agricultural land. Public uses are described in 70-30-102, MCA.

Ownership

The definition of an ownership is important when multiple parcels of land are involved in agricultural land eligibility decisions. The owner of a piece of property is the person or people who own the fee simple title to the property and have the right to dispose of the property, the person or people who have possessory right to land, or the person occupying or cultivating it. ARM 42.20.601 defined "owner" as the applicant and owner of record are the same individual, corporation, partnership, sole proprietorship, or trust. The equitable owner or equitable joint owners (also termed the beneficial owner) and not the legal owner or nominal owner, possess the ownership for the purposes of classification and taxation. The definition of an ownership doesn't change as the size of the ownership changes. Only the agricultural eligibility criteria change with changes in ownership size. A single ownership exists in two or more parcels of land when all three of the following conditions are met.[9]

1. The parcels are owned by the same party (ies) and titled identically in their name or names.
2. The parties have received title to the parcels by a transferring instrument such as a deed, contract for deed, or judgment.
3. The parties have the present right to possess and use the parcels.

[8] See section 19 of this manual for a further discussion on how conservation easements may affect agricultural eligibility.
[9] Taken from ARM 42.20.615 - Application for Agricultural Classification of Land

Examples of a single ownership:

- John Doe owns parcel A
- John Doe owns parcel B

- John Doe owns parcel A
- William Smith, in-care-of John Doe, owns parcel B

A party who owns two or more parcels with title in non-identical names may file an affidavit with the local department office to prove single ownership in the parcels. Examples of a party with title to multiple parcels of land in non-identical names that may file an affidavit to prove single ownership include, but are not limited to:

- John Doe is the same person as John G. Doe; or
- James Cole Smith is the same person as James C. Smith; and
- William Perry Jr. is the same person as William Perry.

If all three ownership criteria list above are not met, then the inherent bundle of rights associated with the property are different. For example, the legal property rights for an individual owning a property are different than if the individual co-owned the property with their spouse.

Examples of different ownerships:

- John Doe owns parcel A
  Mary Doe owns parcel B

- John Doe owns parcel A
  John & Mary Doe own parcel B

- John Doe owns parcel A
  John Doe Inc. owns parcel B

- John Doe owns parcel A
  John Doe, Trustee owns parcel B

- John Doe Ranch Company owns parcel A
  John Doe owns parcel B

Contiguous vs. Noncontiguous Parcels

A key to defining ownership size begins with understanding the concepts of “contiguous” and “noncontiguous”. All land in the same legally defined parcel is contiguous in ownership. In other words, a parcel may include man-made features such as easements and county boundaries, or natural features such as streams, and still be contiguous. .

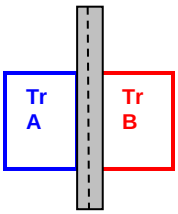
Legally defined parcels in the same ownership are either contiguous or noncontiguous. The terms contiguous or noncontiguous are described in ARM 42.20.601.

> Contiguous parcels of land" means separately described parcels of land under one ownership that physically touch one another or would have touched one another were the acreages not separated by deeded roads and highways, navigable rivers and streams, railroad lines, or federal or state land that is leased from the federal or state government by the taxpayer whose land ownership is physically touching the federal or state land.
>
> Noncontiguous parcels of land" means parcels of land under one ownership that are physically separated from one another by land in a different ownership other than deeded roads and highways, navigable rivers and streams, railroad lines, or federal or state land that is leased from the federal or state government by the taxpayer whose land ownership is physically touching the federal or state land.

The following examples demonstrate how the terms “contiguous and noncontiguous parcels” apply to single ownerships with multiple parcels.

Example 1

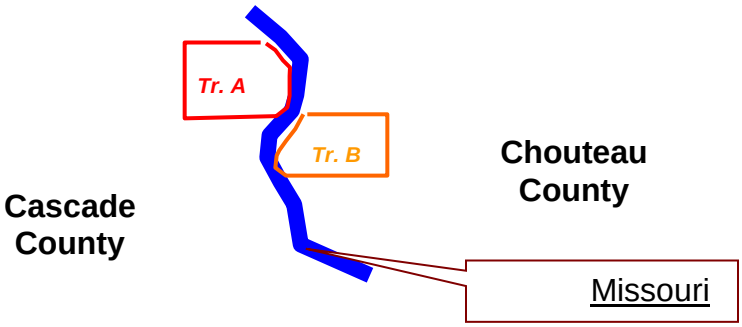
A landowner owns two, 10-acre tracts of land. A highway bisects the two tracts in the same ownership.



- Both parcels are in the same ownership.
  - Both parcels would have touched each other if the parcels were not bisected by the highway.
  - Both parcels are contiguous to each other and the landowner's contiguous ownership is 20 acres in size.

Example 2

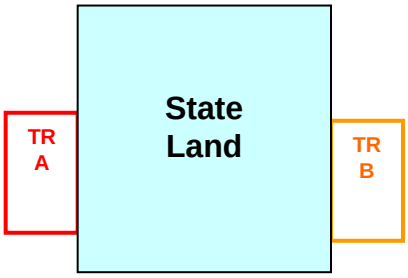
A landowner owns two, 10-acre tracts of land. The Missouri River bisects the two tracts in the same ownership. One tract is in Cascade County and the other tract is in Chouteau County.



- Both parcels are in the same ownership.
  - Both parcels would have touched each other if the parcels were not bisected by the river.
  - Both parcels are contiguous to each other and the landowners contiguous ownership is 20 acres in size.

Example 3

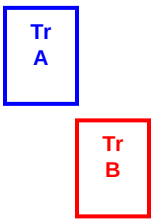
A landowner owns two, 80-acre parcels of land. The parcels are separated from each other by a state section of land. The landowner leases the section of land from the State of Montana.



- Both parcels are in the same ownership.
    - Both parcels would have touched each other if the parcels were not bisected by the state section that is leased by the landowner of Tracts A and B.
    - Tracts A and B are contiguous to each other and the landowner's contiguous ownership is 160 acres in size.

Example 4

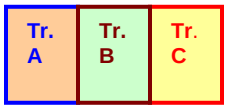
A landowner owns two, 10-acre tracts of land. The tracts touch each other at one corner.



- Both parcels are in the same ownership.
    - Both parcels touch each other.
    - Both parcels are contiguous and the landowner's contiguous ownership is 20 acres in size.

Example 5

John Doe owns Tract A and Tract C. John Doe's wife, Mary Doe owns Tract B.



- Joe Doe is an ownership.
- Mary Doe is a different ownership.

Tract A and Tract C, owned by John Doe, are noncontiguous to each other in the same ownership

APPRAISAL PROCESS

Maintenance of the classification and productivity information on agricultural land will be an on-going process involving appraiser input and review as well as the Department's GIS.

For land use changes, appraisers will delineate the field boundaries and land use by review of aerial photo. The photo can be a copy of the subject property or one that displays multiple properties on the same photo/map. Scale is not important but the clear delineation of the parcel boundaries and field boundaries is needed.

The appraiser will identify the agricultural classifications on the photo:

F for non-irrigated summer fallow farmland;
C for non-irrigated continuously cropped farmland;
I for irrigated land;
G for grazing land; and
H for continuously cropped hay land.

Appraisers will compare the field boundaries with the boundaries shown on Farm Service Agency (FSA) photos. The FSA office also maintains usage and field boundaries. However, it should be noted that only fields enrolled in federal farm programs are delineated by the county Farm Service Agency. Additionally, some FSA field boundaries will differ from department field boundaries due to different classification criteria. Appraiser judgment will be necessary to determine the proper

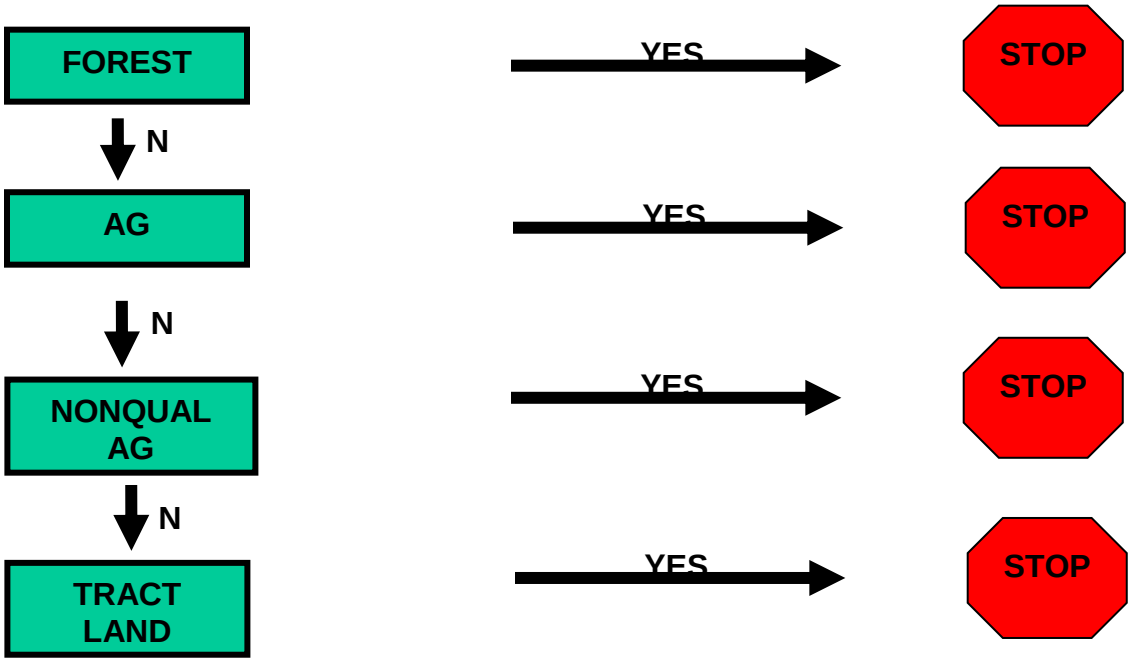
land classification. Questionable agricultural classifications will be field checked to ensure accuracy.

Field Work

Determination of the productive level of the land will be determined during the GIS review and update of the current field boundaries.

When the record is updated, the information can be entered into Orion, the department's computer assisted mass appraisal system (CAMA). A new tax assessment will be sent to the landowner when his/her land is reclassified. The taxpayer has thirty calendar days from the mailing of a tax assessment or the first Monday in June, whichever is later, to request a review of the new classifications and productivities.

Does Land meet Classification Requirements?



PRODUCTIVITY

Productive Capacity means the ability of a soil to produce forage under the environment where it occurs and under a specified system of management. The productive capacity can change over time due to changes in soil fertility, more efficient farming practices, and better equipment.

Prior to the 2009 reappraisal, productivity of agricultural land was displayed using a "grade". A grade represented a range of productivity for a particular agricultural use. A statewide comprehensive review of productivity "grades" had not occurred since at least the mid 1970's. The reasons for a lack of systematic productivity review are numerous - the labor-intensive nature of determining soil productivity and producing hand-drawn maps, staff reductions within the department, and a greater reappraisal emphasis on residential, commercial and industrial property.

Beginning with the 2009 reappraisal, the Legislature ordered the department to determine the productivity of all agricultural land. This was accomplished using the United States Department of Agriculture Natural Resource Conservation Service (NRCS) soil survey. Guidelines for the development, analysis and implementation of a soil survey are published in the NRCS Soil Survey Manual.[10] Determining the soil's capacity to produce a crop or support livestock is a very labor-intensive activity and requires vast knowledge of farm and ranch production and practices. A soil survey is a scientifically-based detailed analysis and report of the characteristics and properties of the different components of the soils within a given area. A uniform and consistent system for determining soil productivity requires a strict set of procedures. Those procedures are defined and detailed in the NRCS Land Capability Classification System.

The other aspects of the soil survey associated with an agricultural use of the land include yield potential, susceptibility to erosion, depth to layers that restrict roots, available water capacity, saturated hydraulic conductivity, the annual pattern of soil-water states (including soil drainage class, inundation, and free water occurrence), qualities that describe the condition of tilled soil, limitations to use of equipment (including slope gradient and complexity, rock fragments, outcrops of bedrock, and extremes in consistence), salinity and sodium adsorption ratio, presence of toxic substances, deficiency of plant nutrients, capacity to retain and release plant nutrients, capacity to retain soluble substances that may cause pollution of ground water, capacity to absorb or deactivate pesticides, and pH as related to plant growth and the need for liming.

[10] Many USDA Soil Conservation Service (SCS) staffers made significant contributions to the information published in the Soil Survey Manual. Work on the Manual was started by Marlin G. Cline, Professor Emiratis, Cornell University, Ithaca, New York. It was completed at the National Soil Survey Center (NSSC), Lincoln, Nebraska, by Richard W. Fenwick, retired soil scientist, and Robert B. Grossman, research soil scientist. Robert J. Ahrens and Robert J. Engel, soil scientists at the National Soil Survey Center, updated this edition of the Manual in 1993

General technology in the farming industry has shown increased yields on farmland over the last 30 to 40 years. More efficient farm machinery, improved farming techniques, the accepted use of fertilizer, and a better-educated farming sector has contributed to higher production levels. Today's farming practices have a marked effect on some soils. Lands that were previously considered poor for grain production by soil experts are now producing some of the better yields.

The greatest production improvements have occurred in the light or sandy soils and heavy or clay soils. The medium texture or loam type soils have responded to the better farming practices, but generally not as dramatic as soils with extreme texture characteristics.

Different soil types don't necessarily exhibit different levels of production. Farming techniques may vary from one soil to another resulting in a similar yield response even though the soils are different in many aspects.

A change in the production history on a farm or group of farms may be due to either a change in farming methods or a change in management. Similar soils in an area generally show similar responses in production due to a change in farming methods. A change in management can usually be detected by comparison with other farms in the locality that have similar soils.

Soil depth may impact crop and livestock production. A few inches difference in depth of one soil type won't have much effect, but six inches to a foot difference in depth can significantly impact average yields. Shallow soils have lower moisture retention, which in dry years has a large effect on the yield. Deeper soils retain more moisture and show greater production during dry years.

Soil Synopsis

- Soils are a product of climate, living organisms and parent material.
- Soil material is arranged into layers called soil horizons.
- The collective sequence of soil horizons is called a soil profile.
- The A horizon is typically referred to as the surface soil.
- The B horizon is typically referred to as the subsoil.
- The C horizon is typically referred to as the parent material.
- Other key horizons are O (un-decayed organic layer) and the R (bedrock).
- Soils consist of water, air, and solid material.
- The mineral portion of the soil consists of sand, silts and clays.
- Soil texture refers to the proportion of sand, silts and clays.

- Soil consistence refers to the ability of the soil aggregates to retain their shape under pressure.
- Soil structure refers to arrangement of the primary soil particles (sand, silts & clays).
- Topography (slope and aspect) influences soil characteristics and soil moisture. Thus, topography greatly influences soil productivity.
- Soils high in soluble salts (sodium chloride, magnesium sulfate & calcium chloride) are referred to as “saline”.
- Soils high in sodium are referred to as “sodic” soils.
- Saline and sodic soils have poor physical condition, high pH and are difficult to manage.
- Soil productivity can be modified though farming practices (irrigation, fertilization, cropping sequence, altering soil pH, etcetera).

General Productivity Determination Information

Determining the productivity of agricultural land is the process of using the soil survey information and assigning a production (yield/acre) value that represents the long-term average agricultural production capacity for a given acre of land. To determine the productivity of agricultural land, the department reviews landowner information and soil survey information. When applicable for an area, an adjustment to the soil survey productivity estimate is determined and applied throughout the area. Adjustments may also be made when producers within a general area provide sufficient evidence that the productivity estimate as determined in the soil survey does not accurately reflect production levels for the area.

Soil surveys in agricultural areas identify the soil characteristics that determine the suitability and potential of soils for farming. Interpretations involve placement of the soils into a land capability system and identification of the important soil properties that pertain to crop production, application of conservation practices, and other aspects of agriculture.

The identification of critical soil properties as related to resource management systems is crucial in the wise use of the land. The Land Capability Classification System used by the NRCS shows the suitability of soils for agricultural uses. The system classifies soils for mechanized production of the more commonly cultivated field crops—corn, small grains, cotton, hay, potatoes, and field-grown vegetables. It does not apply directly to farming systems that produce crops, such as some fruits and nuts that require little

cultivation, or to crops that are flooded, such as rice and cranberries. It also cannot be used for farming systems that depend on primitive implements and extensive hand labor.

Soil productivity is the output of a specified plant or group of plants under a defined set of management practices. It is the single most important evaluation for farming. In general, if irrigation is an optional practice, yields are given with and without irrigation. Productivity can be expressed in quantity of a product per unit land area, such as kilograms or metric tons per hectare. For pasture, productivity can be expressed as the carrying capacity of standard animal units (AUM) per unit area per season or year—or as live-weight gain. The soil survey productivity may also be expressed as a rating or index related to either optimum or minimum yields, or it may be indexed to a set of soil qualities (properties) that relate to potential productivity. Productivity indices have the advantage of being less vulnerable to changes in technology than are expressions of productivity based on yields. The determination of productivity is based upon the production information contained in the NRCS soil survey.

The department attempts to indicate productivity based upon soil survey yield data under typical management practices. As a result the productivity for certain agricultural uses have been adjusted to reflect long-term average dry land production or the long-term availability of water for irrigation. Good managers are not penalized with above average productivity levels and poor managers are not rewarded with below average productivity levels. For instance, if the majority of farms in an area are achieving similar yield responses on a particular soil type and they are using accepted management practices, the productivity determination fits the production received by the majority.

Within each agricultural use classification, the productivity of the land is determined based upon the soil's ability to produce the crops or sustain livestock on the land. The number of productivity levels varies among each use classification and spans the ranges of productivity levels for each use category found throughout the state. Productivity is determined on a soils-by-soils basis.

Any acreage of reasonable size is delineated if a measurable variance in productive capacity is determined. Generally, five acres is the minimum resolution for productivity differences within a use class.

Land under farm buildings, irrigation ditches, road easements, water bodies, and brush-lined creeks are valued based upon the same productivity determined for adjacent or surrounding land. Land under farm buildings and other man-made developments **are not** assigned a low grazing productivity. Water bodies and their brush-lined banks are

critical to livestock and are not assigned arbitrary low productivity levels.

Production data from various information sources is “normalized” based on soil types. Actual production for the same soil types may vary among different landowners in the same area. This production variance is analyzed and productivity levels are assigned to dominant soil types to produce a consistent and uniform valuation scheme. Certain soil types dominate crop and livestock production. Therefore, changes in productivity are largely aligned along dominant soil type boundaries.

Soil Surveys

Section 15-7-201, MCA states “Within each class, land must be subclassified by productive capacity. Productive capacity is determined based on yield.” The Department uses the Natural Resource Conservation Service (NRCS) Soil Survey as the basis for determining productivity on agricultural land. Use of the soil survey was a recommendation of the 2006 Agricultural Advisory Committee and was adopted into rule by the department beginning with the 2009 reappraisal. ARM 42.20.604 specifies “Productivity is determined using the Natural Resource Conservation Service (NRCS) soil surveys. The productivity determination is specific to the agricultural land use classification under average management practices.”

A soil survey describes the characteristics of the soils in a given area, classifies the soils according to a standard system of classification, plots the boundaries of the soils on a map (soil polygons), and makes predictions about the behavior of soils. The different uses of the soils and how the response of management affects them are considered. In addition to the department’s use of the survey, the information in a soil survey helps in the development of land-use plans and evaluates and predicts the effects of land use on the environment.

Each survey contains vast amounts of soil information. The critical survey information for the purpose of determining agricultural land productivity are the soil map and the tabular data that contains estimated irrigated and non-irrigated crop yields (grain and alfalfa hay), estimated domestic pasture carrying capacity for irrigated and non-irrigated pastures, and dry land forage production on native, non-irrigated rangeland.

The Soil Survey publishes productivity information which is based on a high level of management and/or ideal climatic or environmental conditions. Since the department is required to value agricultural land based on what the average Montana farmer or rancher could attain, most productivity estimates from the Soil Survey receive a productivity adjustment.

Surveys are generally based on county boundaries and each survey has been produced during differing timeframes. In Montana, many of the initial soil surveys were completed between 1950 and the 1970s. However, soil survey information is regularly updated and posted to the Web Soil Survey, which is the official source for current soil survey information. The Web Soil Survey is located on-line at http://websoilsurvey.sc.egov.usda.gov/App/WebSoilSurvey.aspx.

NON-IRRIGATED FARMLAND

Non-irrigated farmland includes two (2) classes of land per the department's standards. Those classes of land are non-irrigated farmland, summer fallow basis and non-irrigated farmland, continuously cropped basis. These land classifications are discussed in more detail in Section 7 of this manual.

The base crop used in determining the productivity of non-irrigated farmland is the quantity of spring wheat that can be produced per acre (bushels/acre or bu/acre). The spring wheat productivity used by the department is determined from the NRCS soil survey.

Spring wheat is the most common small grain crop grown in Montana in both the number of acres planted to a crop and the number of bushels produced from the crop. Another rationale for using spring wheat as the base crop for non-irrigated farmland is that spring wheat can be grown in all locations of the state whereas other small grains have limitations as to their suitability. Even though spring wheat can be grown in all locations, that doesn't mean that it is grown in all locations.

The second most common small grain grown on non-irrigated farmland is winter wheat. For department purposes, there is no valuation adjustment made between spring wheat and winter wheat. Barley is often grown as an alternative to typical spring wheat or winter wheat crops. It is included in the cropping sequence of many farming operations. Barley production needs to be converted to an estimate of spring wheat production for analysis purposes. When a crop other than spring wheat is raised, the productivity needs to be converted to a "spring wheat basis."

Barley production is approximately one third higher per acre than wheat production. Therefore, barley production can be converted to wheat production.

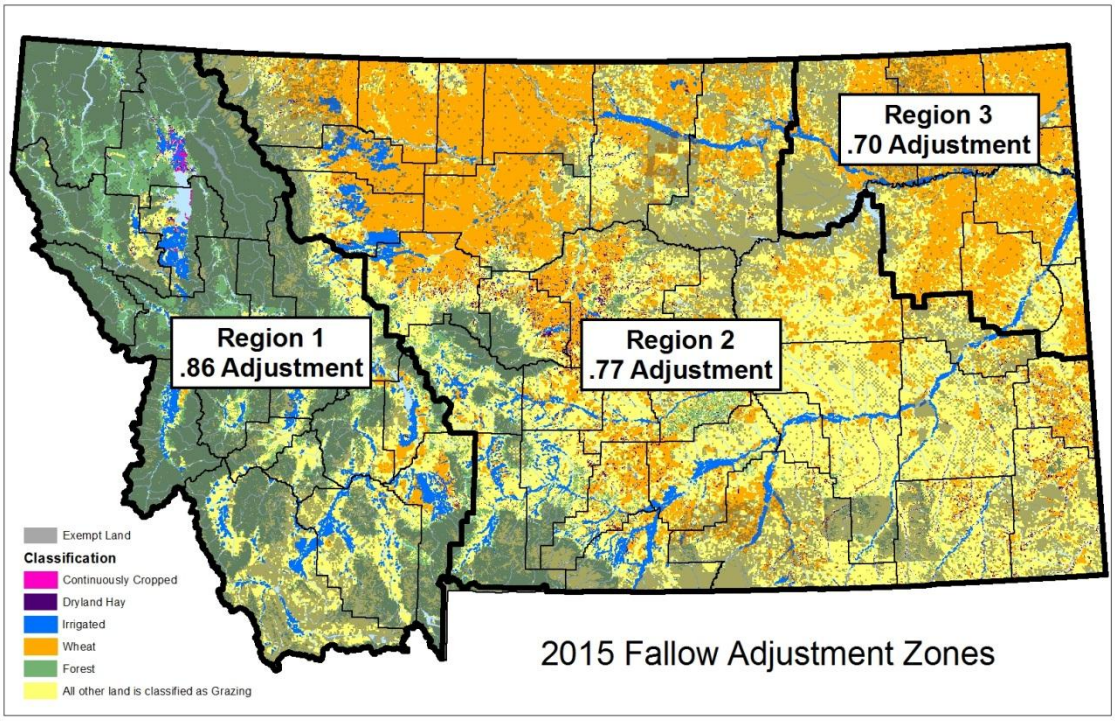
Barley bu/acre X .75 = Wheat production estimate

or

Barley bu/acre ÷ 1.333 = Wheat production estimate

For example, if a soil's productive capacity is 40 bushels of barley per acre, then the spring wheat production is 30 bushels per acre (40 bu/acre of barley X .75 = 30 bu/acre of spring wheat or 40 bu/acre of barley ÷ 1.333 = 30 bu/acre of spring wheat).

Productivity of non-irrigated farm land is based on the NRCS soil survey. The spring wheat productivity information from the soil survey has been adjusted to provide a more accurate estimate of "average management". The adjustment factor for spring wheat is based on three regional growing areas. This adjustment factor was determined using the soil survey average and comparing that to the 12 year weighted average of spring wheat production for the counties in each region as reported to Montana Agricultural Statistical Services and calculating what factor needs to be applied to the soil survey information to approximate the long-term average production. This factor is applied to the soil survey information to estimate an average management figure. The following map shows the current regional nonirrigated farm land adjustments.



To determine whether the information from the soil survey might be in error, individual producer information can be used. The operator's average crop production can be calculated by averaging the years the land is in production and comparing that figure to the soils information. In determining the average production from producer information

the department's practice is to include only the years of actual crop production. If crops are planted, but partially destroyed by climatic conditions such as hail, then that growing season is included in the production average. If crops are not planted for a growing season, then that year is not used in production average. Barley production must be converted to a spring wheat production basis.

The following examples demonstrate how long-term operator production is calculated for non-irrigated farmland.

Example of Productivity Estimate

Non-irrigated farmland, Summer Fallow basis

Year	Production and Crop	Wheat Yield
2002	50 bu/acre Barley	37.5 bu.
2001	35 bu/acre Winter Wheat	35.0 bu.
2000	Summer Fallow	0
1999	27 bu/acre Winter Wheat	27.0 bu.
1998	Summer Fallow	0
1997	6 bu/acre Winter Wheat (80% Hail Damage)	6.0 bu.
1996	Summer Fallow	0
1995	45 bu/acre Barley	33.8 bu.
1994	Summer Fallow	0
1993	32 bu/acre Winter Wheat	32.0 bu.
1992	Summer Fallow	0
1991	0 bu/acre Winter Wheat (100% Hail Damage)	0 bu.
1990	Summer Fallow	0
Total Production	:	171.25 bu.

Calculation:
Total 12-Year Production = 171.25 bushels (wheat production)
Production Years = 7 years (includes 1991)
Average Production = 171.25 bu ÷ 7 years = 24.46 bu/ac/yr
24.46 bu/ac/yr = Estimated Productivity

Example of Productivity Estimate

Non-irrigated farmland, Continuously Cropped basis

Year	Production and Crop	Converted Yield Wheat

2002	80 bu/acre Barley (1)	60 bu.
2001	65 bu/acre Barley (2)	48.8 bu.
2000	65 bu/acre Winter Wheat (3)	65 bu.
1999	Summer Fallow	0
1998	40 bu/acre Winter Wheat (4)	40 bu.
1997	55 bu/acre Barley (5)	41.2 bu.
1996	65 bu/acre Barley (6)	48.8 bu.
1995	Summer Fallow	0
1994	45 bu/acre Winter Wheat (7)	45 bu.
1993	75 bu/acre Barley (8)	56.2 bu.
1992	65 bu/acre Barley (9)	48.8 bu.
1991	40 bu/acre Winter Wheat (10)	40 bu.
1990	Summer Fallow	0
Total Production		493.8 bu.

Calculation:
Total 12-Year Production = 493.8 bushels
Production Years = 10 years
Average Production = 493.8 ÷ 10 years = 49.4 bu/ac/yr
49.4 bu/ac/yr = Estimated Productivity

If this analysis indicates a potential problem with the NRCS soil survey information, an effort is made to identify the individual soils that may have a potential problem. By identifying the soils, the NRCS can compare their estimate of production to actual production information. If the NRCS review indicates an adjustment is needed to the soil survey productivity information, it is incorporated into the Web Soil Survey, and the department will apply the new productivity information to all properties in the affected areas when the department's soil survey information is updated. .

NON-IRRIGATED CONTINUOUSLY CROPPED HAY LAND

For a more complete description of the department's criteria for classifying land as non-irrigated continuously cropped hay land please see the classification section of this manual. Non-irrigated continuously cropped hay land is also called "dry hay", "dry land hay", or "wild hay".

The base crop used to determine the productivity of non-irrigated continuously cropped hay land total air dry herbage as determined in the NRCS soil survey. The soil survey publishes data for total air dry herbage for each soil under favorable, normal and unfavorable conditions. The department recommended, and the 2012 Agricultural

Advisory Committee concurred, that the air dry herbage produced at the midpoint of normal and unfavorable conditions should be used when determining the productivity of dryland hay. This amount is divided by 2,000 to arrive at tons/acre.

Non-irrigated hay fields located along creeks, rivers, and low lying areas may experience natural sub-irrigation. Sub-irrigation occurs when there is a naturally high water table present. Sub-irrigated land may achieve higher levels of productivity which may or may not be reflected in the soil survey. However, sub-irrigated fields from natural sources are classified as non-irrigated hay land, and not irrigated land..

In general, non-irrigated hay land typically receives one cutting per year. Sub-irrigated hay land may receive two cuttings per year.

Operators will often open hay fields to livestock grazing after the final cutting of the year. This practice is called aftermath grazing and allows the operator to more fully utilize forage production that occurs after haying is complete.

Typically, aftermath grazing will increase the productivity between one-quarter to one-third. If grazing occurs for a very short time in the fall, the increase in the productivity estimate is 25 percent. If grazing occurs from midsummer to late fall, the productivity increases the estimate up to 33 percent. The soil survey does not reflect aftermath grazing in its productivity estimate. When discussing yield issues with a producer, the aftermath grazing (if any) should be included with the producer's estimate of productivity.

The following two examples demonstrate how operator production data may be identical, but different management practices produce different production estimates from the producer.

Example 1 (Includes aftermath grazing from July 20 – January 1)

10-acre hay field
One cutting of non-irrigated hay per year
285 hay bales produced, 80-pound hay bales

Total production: 285 bales * 80 pounds per bale = 22,800 pounds of hay
Production/acre: 22,800 pounds per ton ÷ 10 acres = 2,280 pounds per acre
Tons/acre: 2,280 pounds per acre ÷ 2000 pounds per ton = 1.14 tons
Aftermath grazing: 1.14 tons per acre * 1.333 = 1.52 tons per acre
Producers estimate of Productivity: 1.52 tons per acre

Example 2 (No livestock aftermath grazing)

10-acre hay field
One cutting application per year
285 hay bales produced, 80-pound hay bales

Total production: 285 bales * 80 pounds per bale = 22,800 pounds of hay
Production/acre: 22,800 pounds per ton ÷ 10 acres = 2,280 pounds per acre
Tons/acre: 2,280 pounds per acre ÷ 2000 pounds per ton = 1.14 tons
Producers estimate of Productivity: 1.14 tons per acre

The practice of using aftermath grazing in Example 1 produced a productivity estimate increase over the practice of not using grazing aftermath in Example 2.

TILLABLE IRRIGATED LAND

The base crop used to determine the productivity of tillable irrigated farmland is alfalfa (tons/acre) as provided by the NRCS soil survey. Irrigated alfalfa is the predominant irrigated crop grown in Montana. Most operators will include alfalfa hay production in their cropping sequence at some point and will have some knowledge of the irrigated alfalfa hay productivity.

A change in the irrigation system does not warrant a productivity change. NRCS irrigated productivity estimates include a high level of water management and changing to a more efficient method of irrigation won't affect the determination of productivity.

Generally, productivity trends follow soil survey trends – poorer soils will have lower productivity than more-productive soils. A key to remember is that management has a larger potential impact on poorer soils than on more productive soils.
One final note of importance is that soils become less important to irrigated alfalfa hay production as the amount, quality, and consistency of water application increases.

Irrigated land is generally more productive than nonirrigated land for a variety of reasons. Irrigated hay land typically receives two to three cuttings per year, whereas dryland hay land generally receives only one cutting per year. Fertilization can increase productivity and is considered an average management practice on irrigated land.

Operators may allow grazing on irrigated fields after the final cutting of the year. This practice is called aftermath grazing and allows the operator to more fully utilize forage production that occurs after haying is completed. As is the case with nonirrigated hay land, the productivity estimates that are provided by the soil survey include aftermath grazing. Aftermath grazing is discussed in detail in the preceding section on Non-irrigated Continuously Cropped Hay Land.

The NRCS estimate is for the optimum production during the peak middle years of the life cycle of an alfalfa plant, not the average production for the entire life cycle of the plant. In order to adjust the NRCS estimate to an average productivity the department relied on producer input during the 2009 reappraisal to calculate an appropriate adjustment factor. Producers were asked for information related to the amount of water they regularly applied to the land and for an estimate of their average productivity. With that information, the department adjusted the NRCS soil survey productivity for irrigated land within the county. The adjustment was based on the percent of difference detected between the soil survey productivity and the reported productivity. While the adjustment factor was determined based on the soils for the properties that were reported to the department, it was applied among several producers in a growing area. These adjustment factors are reviewed for each reappraisal cycle, and adjusted when appropriate.

GRAZING LAND

General Discussion on grazing land

The majority of agricultural land in Montana is native rangeland. Most operators know how many animal units a pasture can support. They will use their judgment and ability to maximize income to arrive at the number of livestock grazed and the length of grazing time on a given field.

Different soils may have different carrying capacities and thus different grazing productivity levels. Overgrazing occurs when an operator's stocking rate is greater than the carrying capacity of the land. Under grazing occurs when an operator's stocking rate is less than the carrying capacity of the land. Thus, stocking rate is not always reflective of carrying capacity.

Livestock roam over poor and good rangeland. Creeks and sheltered bottomlands receive the most use while steep hillsides, sites with poor forage, and rangeland located long distances from water receive less use. Brush and shrub land along creeks and

bottomlands do not receive a lower grazing productivity simply because the vegetation on these sites provides shelter for livestock and, therefore, are an asset on the range.

Land management practices such as dragging, fertilization, and livestock rotations will influence carrying capacity. Fertilization, spraying and mechanical treatments to rangeland are considered above-average management practice. These are tools used by the good manager to improve rangeland carrying capacity but the operator is not penalized with higher productivity estimates.

Climatic factors that impact carrying capacity from year to year are temperature and moisture. Temperature extremes decrease carrying capacity. Obviously, a lack of moisture decreases carrying capacity. While high elevations may receive more moisture, colder temperatures and a shorter grazing season will work against the positive influence of higher moisture levels.

Many acres in Montana receive the benefits of intermittent irrigation from spreader dikes. This usually occurs in years with high spring run-off. Since a constant supply of water is not available and irrigation does not take place a majority of years, these fields are classified as grazing land with a higher assigned productivity that reflects the higher long-term carrying capacity.

Grazing land productivity is based upon the soil capacity to produce palatable plants for consumption by livestock. There are three general plant categories: decreasers, increasers, and invaders.

- Decreaser grass species are generally the most palatable plants to livestock, but the most sensitive to disturbance. With increasing use, decreaser species may disappear from a site. Bunch grasses are a good example of decreaser species.
- Increasers are generally woody plants and forbs. They generally have good nutritional value, but are not as palatable as decreaser species. Increaser species may increase in existence with light to moderate disturbance. However, increaser species will decrease in existence with very heavy use or overuse.
- Invader species are typically undesirable weed species such as knapweed, thistles, leafy spurge, etc. These plant species thrive on disturbance and generally contain little nutritional value for most livestock.

Grazing preference can change depending on plant palatability, nutritive value, stage of plant growth, stocking rate, season of use, relative abundance, availability, and animal species and range site. In a few instances, a plant may respond as a decreaser on one

site and as an increaser on another site.[11]

Annual plants and weeds may indicate overgrazing, depending upon the percentage in which they exist in the plant population. Poor management, which results in overgrazing, is not rewarded with a lower productivity assignment.

Overgrazed land does not have the ability to support higher carrying capacities under normal accepted management practices. Overuse decreases the number of palatable species that are normally present, creates bare areas and encourages the establishment of undesirable invader species.

The two expressions of carrying capacity, acres per AUM (Ac/AUM) and AUM's per acre (AUM/Ac) are reciprocals of one another. If one expression is known, the other expression can be determined by dividing the known figure into 1 as shown in the following examples.

The basis for determining the productivity of grazing land is the "carrying capacity" of the land. Carrying capacity should reflect the ability of the land to support grazing activity without injurious effect to the vegetation. In the determination of grazing land productivity the Natural Resources Conservation Service (NRCS) soil survey information is used.

Definitions Pertaining to Carrying Capacity

"Productive capacity or productivity" means the ability of a soil to produce crops or forage under the environment where it occurs and under a specified system of management. The productive capacity can change over time due to changes in soil fertility or more efficient farming practices and equipment (ARM 42.20.601).

"Carrying capacity" means the amount of grazing that a pasture will sustain without injurious effect to vegetative growth, due to the qualities of the soil and the environment where it occurs (ARM 42.20.601).

"Stocking rate" means the number of specific kinds and classes of animals grazing or utilizing a unit of land for a specific period of time. May be expressed as animals per acre, hectare, or section, or the reciprocal (area of land/animal). When dual use is practiced (e.g., cattle and sheep), stocking rate is often expressed as animal units per unit of land or the reciprocal. NRCS Range and Pasture Handbook

[11] SCS technical guide for determining range condition and stocking rates.

“Animal unit” means a cow/calf pair, including a mature cow of approximately 1,200 pounds and a calf as old as six months, or their equivalent (ARM 42.20.601 and NRCS Range and Pasture Handbook).

“Animal Unit Month” means the amount of forage required by an animal unit for 1 month (ARM 42.20.601and NRCS Range and Pasture Handbook).

“Acres per animal unit month” means a way of expressing carrying capacity as the number of acres required to graze one animal unit for one month. Acres per animal unit month (Ac/AUM’s) are determined by dividing the number of grazing acres by the animal unit months (ARM 42.20.601 and NDSU, North Dakota Agricultural Experiment Station, 2006 Annual Report, Doing the Math: Calculating a Sustainable Stocking Rate).

“Animal unit months per acre” means a way of expressing carrying capacity as the number of months that an animal unit can graze on one acre of land. Animal unit months per acre (AUM’s/Ac) are determined by dividing the animal unit months by the number of grazing acres that are grazed (ARM 42.20.601 and NDSU, North Dakota Agricultural Experiment Station, 2006 Annual Report, Doing the Math: Calculating a Sustainable Stocking Rate).

“Historic climax plant community” means The plant community that was best adapted to the unique combination of factors associated with the ecological site. It was in a natural dynamic equilibrium with the historic biotic, abiotic, climatic factors on its ecological site in North America at the time of European immigration and settlement (NRCS Range and Pasture Handbook).

Carrying Capacity Calculation

The basic unit to calculate carrying capacity is the animal unit. Although there are several definitions, the department defines an animal unit as a cow/calf pair, including a mature cow of approximately 1,200 pounds and a calf as old as six months, or their equivalent (ARM 42.20.601). The equivalent could be represented by a two-year old steer, a bull, or five adult sheep, which in total weigh approximately 1200 pounds. When determining the number of animal units on a property, the numbers of cow/calf pairs, bulls, etc., are added to determine the total animal units. For example, if an operator owns 25 cow/ calf pairs, 2 bulls, 5 two-year old steers and 100 sheep, then he has 52 animal units {(100 sheep ÷ 5 sheep per AU = the equivalent of 20 AU); 20 AU + 25 AU + 2 AU + 5 AU = 52 AU}.

The department uses 36 pounds of air-dry forage per day as the standard forage demand for a 1,200-pound cow and her calf (one animal unit.) This consumption requirement is equal to 3.0 percent of body weight. Research has validated animal intake rates for beef cows as low as 1.5 percent of body weight to a high of 3.5 percent. No single rate is always correct. Forage consumption and animal feed requirements change based on many factors. Some factors include:

- forage quality (crude protein and digestibility)
- standing crop
- age of animal
- physiological stage of animal (dry; pregnant; lactating)
- mature animal body weight
- animal breed type
- supplementation
- topography
- weather factors
- watering facilities

Calculated on an air-dry basis, 36 pounds of forage per day (3.0 percent of body weight) equates to a monthly requirement of 1,098 pounds of dry forage for each animal unit: One AUM = (30 pounds per day) x (30.5 days per month) = 1,098 pounds.

To determine the carrying capacity, a 25% grazing efficiency factor is used. This is the same efficiency factor that the NRCS uses in its carrying capacity calculations. It is based on allocated forage to account for loss of edible forage due to trampling, insect use/damage, wildlife use, etc., AND a “take half – leave half” philosophy for grazing utilization levels during the growing season.

The expression of carrying capacity used by the department is AUM/Ac. The department determines carrying capacity on a “per-acre” basis. By determining the productivity on a per-acre basis, the department complies with the statutory requirement specifying how the value of agricultural land is determined.

The department uses the NRCS soil survey estimate for the pounds of air-dry forage in its determination of the carrying capacity for all grazing land. Use of the air-dry forage as a means of calculating productivity for grazing land is based on a recommendation from the Governor’s Agricultural Land Advisory Committee.

The soil survey publishes air-dry forage estimates for “favorable”, “normal” and “unfavorable” growing conditions. For the 2015 reappraisal the department

recommended, and the Agriculture Advisory Committee approved, using the "unfavorable" conditions estimate for air dry forage. Using the "unfavorable" conditions estimate helps account for "non-palatable" herbage which may be included in the soil survey estimate and the below climax ecological conditions that exist on most privately owned Montana rangelands (Dr. Jeff Mosley, Montana State University, Department of Animal and Range Sciences, Memorandum to the Montana Department of Revenue, July 3, 2014, pg. 2)

Example calculation of native rangeland to determine AUMs/Acre

> Given: Annual air-dry forage production (unfavorable) = 900 pounds per acre.
> One AUM = 1,098 pounds.
> 25% grazing efficiency factor
>
> AUM per acre =
> 900 pounds per acre x 25 percent grazing efficiency = 225 pounds per acre consumption
>
> 225 pounds consumed per acre / 1098 pounds per AUM = 0.20 AUMs per acre
>
> This expression means that one acre of land will support one animal unit for 1/5 (20%) of a month. It would take 5 acres of this land to support one animal unit for one month (.25 AUM/Ac X 5 acres = 1 AUM). The expression as presented in the example is the method used by the department in the determination of the carrying capacity of all grazing land.

Per a recommendation of the 2006 Governor's Agricultural Advisory Committee, the lowest productivity that the department places on grazing land is .043 AUM/Ac.

The length of the grazing season (the amount of time that the animals are allowed to graze on the land) impacts the number of animal units that a given piece of land can support.

Grazing seasons are based on the average period that livestock can graze without causing injurious effect to the overall health of the vegetation. This period is actually longer than the spring green-up and the fall frost that ends summer growth. It also means that for other months of the year, the operator must provide feed for the livestock.

The department makes no determination on the length of time that an operator can

graze livestock on the land. Generally, the total carrying capacity determined through use of the soil survey and the stocking rate identified by the producer has a close correlation. Typically, the longer the grazing season used by the producer the fewer number of animal units (AU) that can be grazed. When those two factors are used to determine the producer's stocking rate there will be a close correlation to the department's estimate of carrying capacity.

The number of animal units (AU's) and the number of months the animal units can graze a field combine to produce the total number of animal unit months the field can support. When the number of AU are known and the length of the time they are allowed to graze on the land is known, simple multiplication of the two will produce the expression of AUM. For example, 20 AU grazed for 5 months = 100 AUM (20 AU X 5 months = 100 AUM). This information is useful when discussing carrying capacity with the operator.

When discussing AUM, the operator decides the best methods for using that carrying capacity. From the above example of 100 AUM, the operator may choose to graze 25 AU for 4 months (100 AUM), 20 AU for 5 months (100 AUM), 10 AU for 10 months (100 AUM), etc.

On-site inspection of range sites to estimate carrying capacity is extremely difficult for individuals that lack a range background. Department staff correlates operator-stocking rates with information compiled from the United States Natural Resource and Conservation Service (NRCS) soil surveys. Most soil surveys estimate the production of forage for each soil-mapping unit[12]. The following describes the methodology for converting a forage estimate to an expression of carrying capacity.

- Use the herbage production estimate for the unfavorable precipitation year estimates.
- Assume that livestock will only consume 25 percent of the annual forage production.
  - Proper grazing management utilizes 50 percent of the annual plant production.
  - Grazing utilization is 50 percent. The remainder is lost due to livestock, trampling, insect destruction and other factors such as wildlife use.
- Assume that a 1200-pound animal unit with a calf up top six months old will consume 36 pounds of air-dry forage per day.
- Assume a 30.5-day month to calculate the AUM's/Ac.

[12] A typical 1200-pound animal will consume 3 percent of their weight per day or approximately 36 pounds.

Example

The major soil type on a pasture produces 1,000 pounds of dry weight forage at the midpoint between the normal and unfavorable precipitation year estimates. The pasture is 30 acres.

- The amount of forage livestock annually consume is 25 percent of the annual production (50% x 50% = 25%).

- A mature cow with a calf up to six months old will consume 1,098 pounds of air-dry forage per month (36 lbs/day x 30.5 days/month = 1,098 lbs/mo).

Therefore,

1,000 lbs/acre X .25 consumption = 250 pounds/acre (actual consumption)
250 lbs/ acre consumed ÷ 1098 lbs/month = .23 AUM's/Ac

.23 AUM's/acre x 30 acres = 6.9 AUM's

Determination of Acres per AUM and AUMs per Acre

While the department uses the term AUM/Ac when determining the productivity of grazing land, using the same calculations along with a known number of acres will allow the department to determine the other common expressions of carrying capacity, AUMs per acre (AUM/Ac) and acres per AUM (Ac/AUM).

When the expression AUM is divided by the number of acres in the pasture, the expression AUM/Ac is the result. For example, 20 AU X 5 months = 100 AUM then if the pasture used to graze the livestock is 300 acres, then to calculate the expression Ac/AUM, simply divide the acreage by the AUM (300 Acres ÷ 100 AUM = 3 Ac/AUM).

We can also determine expression of AUM/Ac by dividing 100 AUM by 300 acres. This method will yield the expression of carrying capacity. (100 AUM ÷ 300 acres = .33 AUM/Ac).

The following examples demonstrate how AUM per acre or Acre per AUM carrying capacities are calculated.

Example 1

An operator can graze 25 animal units for 2 months on 200 acres without

injurious effect to the vegetation.

$$\text{Animal unit months per acre (AUM's/Ac)} = \frac{\text{50 AUM's}}{\text{200 acres}} = \text{.25 AUM's/Ac}$$

Or

$$\text{Acres per animal unit month (Ac/AUM's)} = \frac{\text{200 acres}}{\text{50 AUM's}} = \text{4 Ac/AUM's}$$

There is a strong relationship between the terms AUM/Ac and Ac/AUM. The terms are reciprocals of one another. With a reciprocal relationship, if one of the expressions is known the other can be determined by dividing the known expression into one (1). The reciprocals of the above examples are as follows:

$$\frac{1}{\text{.25 AUM's per acre}} = \text{4 Ac/AUM's}$$

Or

$$\frac{1}{\text{4.0 acres per AUM}} = \text{.25 AUM's/Ac}$$

Intuitively this relationship makes sense. Consider that an animal unit can graze on one acre of land for ¼ of a month. In order to graze than same AU for one full month we would multiply by 4 (4 X ¼ = 1) to arrive at one full month. As a result we can see that it would take 4 acres of land to support the AU for one month. Conversely if it takes 4 acres to support that AU for one month, one acre will support the AU for ¼ month (1 month ÷ 4 acres = ¼ month).

Example 2

An operator grazes 25 cows with calves (cow/calf pairs) and one bull on a 180-acre pasture. The livestock spend a total of four months of the grazing season in the pasture to avoid overgrazing the native vegetation.

There are 26 animal units.
25 cows/calves pairs + 1 bull = 26 AU

There are 104 animal unit months.
26 animal units x 4 months = 104 AUM's.

There are .58 animal unit months per acre

$$\frac{\text{104 animal unit months}}{\text{180 grazing acres}} = \text{.58 AUM's/Ac}$$

There are 1.73 acres per animal unit month

$$\frac{\text{180 grazing acres}}{\text{104 animal unit months}} = \text{1.73 Ac/AUM}$$

One animal unit can be supported for one month on 1.73 acres

Example 3

A 100-acre pasture has a carrying capacity of 2.0 Ac/AUM. The operator grazes 12 mature horses. The grazing season is 10 months.

There are 15 animal units.
12 horses X 1.25 AU equivalent = 15 AU

There are 50 animal unit months.

$$\frac{\text{100 acre pasture}}{\text{2.0 Ac/AUM}} = \text{50 AUM's}$$

There are .50 animal unit months per acre

$$\frac{\text{50 animal unit months}}{\text{100 grazing acres}} = \text{.50 AUM's/Ac} = \text{Productivity Estimate}$$

The operator can graze each acre 15 days of the month
30 days/month X .50 AUM's/Ac = 15 days

12 horses can graze for 3.33 months of the grazing season on this pasture.

$$\frac{\text{50 AUM's}}{\text{15 AU}} = \text{3.33 months}$$

Example 4

A pasture has a carrying capacity of 3.0 Ac/AUM. This pasture requires 90 acres to support 30 animal unit months of total carrying capacity.

$$\frac{X}{3.0 \text{ Ac/AUM}} = 30 \text{ AUM's}$$

X = 30 AUM's X 3.0 Ac/AUM
X = 90 Acres

Example 5

A 30-acre pasture has a carrying capacity of 2.5 Ac/AUM.

$$\frac{30 \text{ acres}}{2.5 \text{ Ac/AUM}} = 12 \text{ AUM's}$$

The field supports 12 animal unit months, **or:**

12 animals for 1 month
4 animals for 3 months
3 animals for 4 months
1 animal for 12 months

REVIEW DATES

Classification Eligibility Review Dates

The department must annually review land for Class 3 eligibility and address changes to use classifications and productivity determinations. The department, pursuant to 15-8-111, MCA and ARM 42.20.171 uses January 1 of each year as the review date to ascertain the correct land classification for each parcel subject to taxation. The eligibility of land for Class 3 tax assessment is based on the land's use the preceding year.

The following statutes and administrative rules govern the department's notice to the taxpayer, notice deadlines and appeal dates.

Section 15-7-102, MCA, notice of classification and appraisal to owners-appeals, states in part that:

> (a) . . . the department shall mail to each owner or purchaser under contract for deed a notice of the classification of the land owned or being purchased and the appraisal of the improvements on the land only if one or more of the following changes pertaining to the land or improvements have been made since the last notice:
>
> (i) change in ownership;
> (ii) change in classification;
> (iii) except as provided in subsection (1)(b), change in valuation; or
> (iv) addition or subtraction of personal property . . . .

Section15-8-201 MCA, General assessment day, in part states that:

> (1) The department shall, between January 1 and the second Monday of August in each year, ascertain the names of all taxable inhabitants and assess all property subject to taxation in each county.
> (2) The department shall assess property to:
> (a) the person by whom it was owned or claimed or in whose possession or control it was at midnight of the preceding January 1; or
> (b) except in the case of land splits, the new owner if the provisions of 15-7-304 have been met and the transfer certificate has been received and processed prior to determining the taxes that are due as provided in 15-10-305(2).

Section 15-15-102, MCA, application for reduction in valuation, states in part that:

> The application must be submitted on or before the first Monday in June or 30 days after receiving either a notice of classification and appraisal or determination after review under 15-7-102(3) from the department, whichever is later.

Pursuant to ARM 42.20.171, the department shall determine land classification based on type of use, agricultural income (if applicable) and property size as of January 1 of the year the determination is made. If on January 1, the property meets eligibility requirements for one or more property tax classifications, the department shall assign the land to the correct property tax class. The owner or the owner's agent must file a request for review by the first Monday in June or 30 days from the receipt of an assessment notice whichever is later.

Example 1

A landowner owns a 15-acre parcel of land that is assessed as residential land and valued at market value on January 1 of the current year. He purchases a contiguous 5-acre parcel in February. In March, he files a property review form (AB-26) requesting both parcels be classified and assessed as nonqualified agricultural land.

a. The taxpayer met the deadline for the current year to file the property review form pursuant to 15-7-102, MCA.

b. The taxpayer owned a single, 15-acre parcel on January 1 of the year the AB-26 is filed. The adjacent 5-acre parcel was in a different ownership on January 1. The property does not meet nonqualified agricultural eligibility requirements pursuant to 15-6-133, MCA for the current year.

c. The taxpayer's request for a change in property classification is denied and both parcels are assessed and valued as Class 4 property.

d. Both parcels will be eligible for Class 3 assessment as nonqualified agricultural land the following tax year because the taxpayer owns two contiguous parcels totaling 20 acres in size on January 1 of the following year.

Example 2

A landowner owns a 40-acre parcel that is classified and assessed as agricultural land on January 1 of the current year. In February, he purchases a contiguous 20-acre parcel of land. In March, he files a property review form (AB-26) requesting the newly acquired parcel also be assessed and valued as agricultural land.

a. The taxpayer met the deadline for the current year to file the property review form pursuant to 15-7-102, MCA.

b. The taxpayer owns a single 40-acre parcel on January 1, of the year the AB-26 is filed. The adjacent 20-acre parcel is in a different ownership on January 1 of the current year.

c. The 40-acre parcel owned by the taxpayer on January 1 is classified and assessed as Class 3 - agricultural land for the current year. The 20-acre parcel is classified and assessed as Class 3 - nonqualified agricultural land for the current year.

d. Both parcels will be eligible for Class 3 assessment as agricultural land the following tax year because the taxpayer owns 60 contiguous acres that meet agricultural eligibility pursuant to 15-7-202, MCA**,** on January 1 of the following year.

Example 3

A landowner owns a 30-acre parcel that is assessed and valued as forest land on January 1 of the current year. In December of the same year, he purchases a contiguous 10-acre parcel of forested land. In March of the following year he files a property review form (AB-26) requesting that the 10-acre parcel be assessed and valued as forest land.

a The taxpayer met the deadline for the current year to file the property review form pursuant to 15-7-102, MCA.

b On January 1, of the year the AB-26 is filed, the taxpayer owns two contiguous parcels that total 40 acres in size that meet forest land eligibility requirements.

c. Both parcels are assessed and valued as Class 10 - Forest land for the year the AB-26 is filed.

Land Use and Land Productivity Determination Dates

Pursuant to ARM 42.20.171, the department shall determine use classification and productivity as of January 1 of the year the determination is made. The department shall assign the productivity level or levels based on the land's use or uses that were present on January 1 of the current year. The owner(s) of record that receives the tax assessment, or their agent, may request a review of the property's use classification and productivity. The owner or the owner's agent must file a request for review by the first Monday in June or 30 days from the receipt of an assessment notice whichever is later.

Example 1

A landowner purchases a 40-acre tract in February of the current year. The property was assessed as agricultural land on January 1 of the current year. The landowner files an agricultural application (AB-3) and a property review form (AB-26) in March of the current year. The landowner claims that he will continue operating an agriculture operation. The landowner states that the productivity level is too high for his irrigated land. The landowner requests that the productivity levels be adjusted downward. The landowner states that he will convert a nonirrigated hay field to irrigated land. He believes the entire property should be classified as irrigated land.

a. The landowner met the deadline to file the property review form pursuant to 15-7-102(3), MCA.

b. The property was classified as agricultural land the preceding year. Agricultural classification is based on agricultural income marketed or agricultural products consumed from the preceding year.

c. The landowner indicates that he intends to <u>continue</u> agricultural activities but has not owned the property during a growing season to produce agricultural income. In this situation, the department grants temporary agricultural status to the property for one year. The landowner is required to file another agricultural application the following year to demonstrate that he meets the income requirement.

d. Although the landowner purchased the property after January 1 of the year he files an AB-26, the department must consider the merits of the landowner's concerns about land productivity. Land productivity does not change with a change in ownership. The inherent capability of that land to produce at a given level was the same the previous year as it is during the current year. If the productivity level was incorrect under the previous owner, the department cannot ignore the error simply because the new owner did not own the land on January 1. The land productivity can be adjusted for the <u>current year</u> if the change is appropriate and is supported by information from the NRCS soil survey.

e. The landowner indicated that he would convert an agricultural use (hay land) to a different agricultural use (irrigated land) during the current year. The department assigns land classifications based on the land use practices that are present on January 1 of the year the review is done. In this situation, hay land is the actual agricultural use on January 1 of the year the AB-26 is filed. The hay land

classification remains in effect for the current year. The department will review the agricultural operation the year the use change occurs and make the use classification change effective for the following year (hay land changed to irrigated land).

Example 2

A landowner purchases a 20-acre tract in February that was assessed as nonqualified agricultural land under the previous ownership. The new landowner decides to convert the property into an agricultural operation that spring. The new landowner receives a property tax assessment on June 1 that informs him that the property is classified and assessed as Class 3 – nonqualified agricultural land for the current year. The property produces agricultural products during the summer months. The landowner files an agricultural application (AB-3) in September of the same year. The landowner claims that the property produced agricultural products and he requests agricultural classification and assessment for the current year. The landowner states that he waited to file the application until he marketed the agricultural products, which were produced by the property during the current year.

a. The landowner did not meet the deadline to file the property review form pursuant to 15-7-102(3), MCA, for the current year.

b. The property was classified and assessed as Class 3 - nonqualified agricultural land on January 1 of the year the agricultural application was filed. The property did not produce agricultural products the preceding year.

c. The land does not meet agricultural income requirements for the year the landowner filed an agricultural application. The agricultural application (AB-3) is denied and the property is classified and assessed as Class 3 - nonqualified agricultural land for the current year.

d. The property is eligible for agricultural classification and assessment the following year. The department may ask the taxpayer to file a new agricultural application for the following year or approve the existing application and apply that decision to the following year.

e. If approval is granted, the department shall clearly indicate on the agricultural application and the AB26 that the approval applies to the following year, but not the current year.

Example 3

A landowner purchases a 19-acre tract in March. The property was classified as 15 acres of Class 10 forest land and 4 acres of Class 4 - tract land on January 1 of the current year. The new landowner files an AB26 one week after he receives his assessment in June. The landowner states that the forest land productivity is too high and the property is completely forested. The landowner requests that the productivity be adjusted downward and all 19 acres of the property be classified as Class 10 - forest land.

a. The landowner met the deadline to file the property review form pursuant to 15-7-102(3), MCA**,** for the current year.

b. The property was classified as Class 10 - Forest land and Class 4 – tract land on January 1 of the current year.

c. Although the landowner purchased the property after January 1 of the year that he files an AB-26, the department must consider the merits of the landowner's concerns about land productivity <u>and</u> use classification. Land productivity and in this situation, use classification, do not change with a change in ownership. The inherent capability of that land to produce at a given level was the same the previous year as it is during the current year. If the productivity level was incorrect under the previous owner, the department <u>cannot</u> ignore the error simply because the new owner did not own the land on January 1. The productivity level can be adjusted for the <u>current year</u> if the change is appropriate.

d. If the area classified as forest land was incorrect under the previous owner, the department <u>cannot</u> ignore the error simply because the new owner did not own the land on January 1 of the current year. The acreage classified as forest land is adjusted for the <u>current year</u> if the change is appropriate.

ARM 42.20.171, LAND CLASSIFICATION DETERMINATION DATE FOR CLASS THREE, FOUR, AND TEN PROPERTY
(1) On January 1 of each year, the department shall ascertain the correct land classification for each parcel of land subject to taxation.
(2) Land classifications are:
(a) class four land that is valued at market;
(b) class three patented nonproductive mining claims;
(c) class three nonqualified agricultural land;

(d) class three agricultural land; and
(e) class ten forest land.
(3) The appropriate land classification will be determined for the purpose of tax assessment based on the land's use as of January 1 of the current year. The following examples are intended to demonstrate how the correct land classifications are established for the current year:

(a) Example 1 - A taxpayer with a contiguous ownership less than 160 acres in size files an application for agricultural land classification on May 1. The department's decision is based on the property's agricultural income for the preceding year and the property's ability to meet the agricultural eligibility rules pursuant to ARM 42.20.620 or ARM 42.20.625.

(b) Example 2 - A taxpayer files an application for forest land classification on May 1. The department's decision is based on the property's use on January 1 of the current year and the property's ability to meet the forest land eligibility rules pursuant to ARM 42.20.705, 42.20.710, and 42.20.735.

(c) Example 3 - A taxpayer owns a 10-acre parcel on January 1 of the current year that is valued at market and placed in class four property. The taxpayer has purchased a contiguous 10-acre parcel on May 1 of the current year, which is also appraised at market and placed in class four property. Both parcels were in different ownerships on January 1 and the department considers the land to be class four property for the current year and appraised at market value. If the land is not residential, commercial, or industrial land, the parcels are considered a 20-acre contiguous ownership by the department and appraised as either class three or class ten land for the following year.

(d) Example 4 - A taxpayer purchases a parcel of land on May 1 of the current year. The parcel was classified as forest land on January 1 of the current year. The taxpayer files an AB-26 within 30 days of receipt of the assessment notice requesting that the department review the forest land productivity for the property. If the department determines that a change in productivity is appropriate, the change is effective for the current year because the basis for the property's productivity existed on January 1 of the current year.

(e) Example 5 - A taxpayer purchases a property on December 31 of the previous year. The property was classified as agricultural land under the previous owner. The new taxpayer files a timely application for agricultural land classification with the local department office. The new taxpayer states that the property will continue to be managed as an agricultural operation for the current year. The property met the agricultural eligibility requirements on January 1 of the current year for the previous owner. The property is classified and assessed as agricultural land by the department for the current year, even though the current taxpayer has not owned the property long enough to market agricultural products or consume agricultural products produced by the property. The department may ask the new taxpayer to file another application for agricultural land classification the following year to demonstrate that the property continues to meet the agricultural land eligibility requirements pursuant to ARM 42.20.620 or 42.20.625.

AGRICULTURAL ELIGIBILITY

Agricultural classification is based on eligibility criteria as specified in Section15-7-202, MCA. Land may be used in an agricultural manner, but unless it meets specific criteria, the department may not classify it as agricultural land for the purposes of property taxation. The department has also adopted rules to assist in the administration of this law. The criterion used depends on the size of the parcel of land.

The parcel size is important as the sources of income allowed to meet the qualifications agricultural land classification vary by parcel size category. In general the different parcel size categories are described as:

1. Parcels of land **160 acres or more** that are under one ownership are automatically classified and taxed as agricultural land, as long as the land does not have restrictions that prohibit its use for agricultural purposes. Land in this size do not need to apply for agricultural classification and do not have a proof of income requirement.

2. Parcels of land containing **20 acres or more but less than 160** acres under one ownership are classified and taxed as agricultural land if the land is used primarily for raising and marketing agricultural products. The agricultural use test presumes that land is agricultural if $1,500 in annual gross income is produced and marketed from the land by the owner, owner's immediate family, agent, employee or lessee.

3. Parcels of land containing **20 acres or more but less than 160 acres** that do not qualify under these criteria are considered nonqualified agricultural land. Non-qualified agricultural land is valued at the average statewide grazing productivity. The taxable value of the nonqualified parcel of land is then computed by multiplying the assessed value by seven times the tax rate percentage for agricultural land.

4. Parcels of land **less than 20 acres**, under one ownership, are classified and taxed as agricultural land if the owner produces and markets $1,500 in annual gross income from the raising of livestock, poultry, field crops, fruit, and other animal or vegetable matter for food or fiber from the land. If a parcel of land that is less than 20 acres in size fails to meet the agricultural income and production requirements, it is most often classified and taxed as Class 4 tract land at a market value.

5. Parcels of land containing less than 160 acres must apply for agricultural classification. Application for agricultural status based on livestock production requires that the parcel(s), less than 160 acres and in one ownership, be capable of supporting 31 animal unit months of carrying capacity (31). The 31 AUM requirement has been determined by the School of Economics and Agricultural Economics at Montana State University per the requirements of law. More information about the development of the 31 AUM requirement is contained in the grazing land portion of the manual.

Agricultural Income and Ownership Size

Agricultural classification is based on the land's ability to produce and market not less than $1,500 in annual agricultural income or consume the equivalent in agricultural products produced by the land.

Statute deals directly with agricultural land eligibility. Section15-7-202, MCA details the requirements of the different land sizes to be eligible as agricultural land including the income requirements, eligible sources of income, as well as other details regarding agricultural eligibility. The department has implemented administrative rules in Title 42, Chapter 20, Part 6, to address the administration of agricultural land eligibility. These rules are listed below.

ARM 42.20.620 addresses ownerships under 20 acres in size,
ARM 42.20.625 addresses ownerships between 20 and 160 acres in size
ARM 42.20.640 addresses ownerships 160 acres and greater in size.

Six critical factors affect agricultural land eligibility.

1. The definition of “agricultural”.
2. The definition of “ownership”.
3. The size of the ownership.
4. The agricultural income from the marketing of, or consumption of, agricultural products.
5. The carrying capacity of grazing land for livestock operations.
6. The relationship of the parcel to a family-operated agricultural entity.

Gross agricultural income is the cornerstone of Montana’s agricultural eligibility law pertaining to contiguous ownerships less than 160 acres in size. The legislature, through Section 15-7-202, MCA, mandates that the land for all ownerships that are less than 160 acres in size must produce a minimum of $1,500 in annual gross agricultural income to be considered for agricultural classification. Examples of acceptable forms of proof include:

(a) sales receipts;
(b) canceled checks;
(c) copy of income tax statements; or
(d) other written evidence of sales transactions

Ownership size plays a role in the restrictions that apply to income sources that applicants can use when applying for agricultural classification eligibility.
Parcels of land consisting of 20 to less than 160 acre **may use** annual rental or lease payments of at least $1,500 provided there is demonstrated proof of agricultural activity on the land and the land is capable of sustaining that activity; or annual rental payments of at least $1,500 made under the federal conservation reserve program (CRP), or a similar program that reimburses the landowner to remove the land from the current agricultural use and place it in a different agricultural use.

Parcels of land consisting of less than 20 acres **may not use** annual rental payments, government payments, or lease payments.

In 15-7-202 MCA, subsection (1) (a) addresses eligibility criteria for contiguous ownerships that are 160 acres in size and larger. Subsection (1)(b) addresses contiguous ownerships 20 acres in size but less than 160 acres in size and subsection (2) addresses contiguous or noncontiguous ownerships less than 20 acres in size.

The Legislature has provided a great deal of guidance to assist the department in making the decision regarding agricultural land classification. Classification begins with a description of the lands that are eligible for agricultural classification.

Eligibility of land for agricultural classification and assessment is provided for under 15-7-202, MCA. Agricultural land eligibility must be reviewed annually by the department to insure that all agricultural land meets this section of law. In general, there are three facets to agricultural land assessment in Montana.

1. The Department must determine which lands are eligible for agricultural classification and assessment. Agricultural land eligibility is described in**:**

   - Section 15-7-202, MCA - Eligibility Of Land For Valuation As Agricultural
   - ARM 42.20.620 – Criteria For Agricultural Land Valuation For Land Totaling Less Than 20 Acres
   - ARM 42.20.625 - Criteria For Agricultural Land Valuation For Land Totaling 20 to 160 Acres in Size, and
   - ARM 42.20.640 - Valuation of Agricultural Land Exceeding 160 Acres [13].

2. Land is classified based on its agricultural use. The use is then graded on the soil's ability to produce the crops or livestock that are grown on the land. Two key statutes address land classification based on use:
   - 15-7-103 MCA, Classification and appraisal – general and uniform methods and 15-7-201 MCA, Legislative intent – value of agricultural property.

3. Agricultural land is valued for the purpose of property taxation, on the land's productive capacity. Agricultural land valuation is described in 15-7-201, MCA. The department provides the current agricultural reappraisal valuation formulas in
   - ARM 42.20.660 – Non-irrigated summer fallow farmland
   - ARM 42.20.665 – Non-irrigated continuously cropped farmland
   - ARM 42.20.670 – Non-irrigated continuously cropped hay land
   - ARM 42.20.675 - Tillable, irrigated farm land and
   - ARM 42.20.680 - Grazing land.

Sources of Income

Ownerships less than 20 acres in size

- To be eligible for agricultural classification, ownerships less than 20 acres in size

[13] The definition of "agricultural" is described in 15-1-101 MCA, Definitions.

must show income through sources such as:

- Sales receipts
- Cancelled checks
- Copy of income tax statements; or
- Other written evidence of sales transactions

The sources of agricultural income discussed in 15-7-202(1)(b and (1)(c), MCA, for contiguous ownerships totaling 20 to 160 acres in size, <u>are not</u> provided for in 15-7-202(2), MCA, for contiguous ownerships totaling less than 20 acres in size. However, agricultural eligibility for ownerships totaling less than 20 acres is based on an ownership's agricultural production and income. Section 15-7-202, MCA reads, in part:

> (2) Contiguous or noncontiguous parcels of land totaling less than 20 acres under one ownership that are actively devoted to agricultural use are eligible for valuation, assessment, and taxation as agricultural each year that the parcels meet any of the following qualifications:
>
> (a) the **parcels produce** and the owner or the owner's agent, employee, or **lessee markets** not less than $1,500 in annual gross income from the raising of agricultural products as defined in 15-1-101; or
>
> (b) the parcels would have met the qualification set out in subsection (2)(a) were it not for independent, intervening causes of production failure beyond the control of the producer or marketing delay for economic advantage, in which case proof of qualification in a prior year will suffice.

The individual or individuals who produce the crops or livestock on an ownership are irrelevant. Therefore, agricultural production or income produced on an ownership by another family member that is not part of that ownership can be used by the landowner to meet the agricultural income requirement.

Contiguous land less than 20 acres in size, <u>cannot</u> use rental, lease or government payments from programs such as the Conservation Reserve Program (CRP) or a similar program that reimburses the landowner to remove his/her land from the current agricultural use and place it in another use.

Although lease payments are not allowable sources of income, the agricultural production produced by a lessee on an ownership, can be used by the landowner (lessor) to meet the agricultural income requirement. Generally, the market value of the agricultural crops produced on leased land is higher than the lease payment the lessor (landowner) receives from a lease agreement.

Ownerships of At Least 20 Acres, But Less Than 160 Acres in Size

Contiguous ownerships at least 20 acres but less than 160 acres in size may be eligible for agricultural classification based on:

- Sales receipts
- Cancelled checks
- Copy of income tax statements; or
- Other written evidence of sales transactions
- Annual rental or lease payments;[14] or

- Government payments under the Conservation Reserve Program or any similar program that reimburses the landowner to leave their land in a particular agricultural use.

Subsection 15-7-202, MCA, allows agricultural income by the owner's immediate family members for contiguous land in the same ownership that totals at least 20 acres in size.

> A parcel of land is presumed to be used primarily for raising agricultural products if the owner or the **owner's immediate family members**, agent, employee, or lessee markets not less than $1,500 in annual gross income from the raising of agricultural products **produced by the land**.

An applicant for agricultural land classification may use the agricultural production or income that is produced from the applicant's ownership by a family member. However, agricultural eligibility is based on agricultural production or income produced from an ownership. Family members <u>cannot</u> share agricultural production or income from different family ownerships.

Subsection 15-7-202(1)(c)(i)(A) and (1)(c)(i)(B), MCA, allow agricultural income from rental, lease, or government payments for contiguous land in the same ownership that totals at least 20 acres or greater in size:(A) rental or lease of the land as long as the land is actively used for grazing livestock or for other agricultural purposes; and(B) rental payments made under the federal conservation reserve program or a successor to that program."

[14] Provided there is demonstrated proof of agricultural activity on the land and the land is capable of sustaining that activity.

Single parcels and contiguous and certain noncontiguous parcels of land in ownerships 20 acres in size but less than 160 acres in size which are not capable of meeting the $1,500 annual gross income requirement include:

The association that an individual property owner has with a family farming or ranching business can be considered when determining agricultural eligibility for parcels of land between 20 and 160 acres in size. Enumerated in 15-7-202(1) (b) (iii), MCA, it is stated:

(iii) Parcels of land of 20 acres or more but less than 160 acres that do not meet the income requirement of subsection (1)(b)(i) may also be valued, assessed, and taxed as agricultural land if the owner:
(A) applies to the department requesting classification of the parcel as agricultural.
(B) verifies that the parcel of land is greater than 20 acres but less than 160 acres and that the parcel is located within 15 air miles of the family-operated farming entity referred to in subsection (1)(b)(iii)(C); and subsection
(C) verifies that:
(I) the owner of the parcel is involved in agricultural production by submitting proof that 51% or more of the owner's Montana annual gross income is derived from agricultural production; and
(II) property taxes on the property are paid by a family corporation, family partnership, sole proprietorship, or family trust that is involved in Montana agricultural production and 51% of the entity's Montana annual gross income is derived from agricultural production; or
(III) the owner is a shareholder, partner, owner, or member of the family corporation, family partnership, sole proprietorship, or family trust that is involved in Montana agricultural production and 51% of the person's or entity's Montana annual gross income is derived from agricultural production.

Eligibility Differences between < 20 Acre and 20 to 160 Acre Ownerships

Four sources of income are allowed for contiguous ownerships totaling 20 to 160 acres in size that <u>are not</u> allowed for contiguous ownerships totaling less than 20 acres in size.

- agricultural income from owner's immediate family members[15]
- income from a family-operated agricultural entity from rentals
- income from a family-operated agricultural entity from leases
- income from governmental payments

[15] In actual practice, this income restriction has little to no bearing on agricultural eligibility.

Contiguous Ownerships 160 Acres or Greater In Size
Section 15-7-202, MCA, stipulates that owners of contiguous land totaling 160 acres or more under one ownership, are not required to produce agricultural income to be eligible for classification as agricultural land.

Noncontiguous Parcels in the Same Ownership

- Size of the total of the noncontiguous parcels is irrelevant
- All noncontiguous parcels must be part of the same ownership
- All noncontiguous parcels must be actively devoted to a bona fide agricultural operation

Exceptions

If an application for agricultural classification does not include proof of at least $1,500 in agricultural income, the agricultural application should be denied except in very specific cases, as outlined below.

Consumption Equivalents

For ownerships less than 160 acres in size, where agricultural products are consumed rather than marketed, the department provides guidelines in ARM 42.20.620 and 42.20.625 that allow the applicants for agricultural classification to demonstrate that the land produces the equivalent of at least $1,500 in annual gross agricultural income.

> If the land is primarily used to grow crops that are not marketed but consumed by humans, livestock, poultry, or other animals in the agricultural operation, the applicant must prove that the land on the application produced the equivalent of $1,500 in gross agricultural income each year from the crops or animals that were consumed. A written estimate of the weight or quantity of food or animal fiber produced must be made by the applicant. The written estimate must include all proof set forth in this section. The weight or quantity estimate will be multiplied by the current commodity price to determine whether the $1,500 annual gross income test has been met.
>
> There is a carrying capacity exception in Section 15-7-202(3), MCA.
>
> (3) For grazing land to be eligible for classification as agricultural land under subsections (1) (b) and (2), the land must be capable of sustaining a minimum

> number of animal unit months of carrying capacity. The minimum number of animal unit months of carrying capacity must equate to $1,500 in annual gross income as determined by the Montana state university-Bozeman department of agricultural economics and economics.

The DOR has provided further clarification in ARM 42.20.620 and 42.20.625.These rules require grazing land to meet a minimum number of animal units of carrying capacity in order to be eligible and classified as agricultural land.

CLASSIFICATION

Agricultural lands are placed in a separate property tax class, Class 3, per statute 15-6-133, MCA. This section of law stipulates that Class 3 property is taxed at the taxable percentage rate applicable to Class 4 property. Class 3 property includes:

- Agricultural land
- Parcels of land under one ownership, 20 acres in size but less than 160 acres in size, that are not eligible for classification and assessment as agricultural land under 15-7-202(1). This class of land is commonly called “nonqualified agricultural land”.
- Nonproductive patented mining claims
  Section 15-6-133, MCA.

The classification of agricultural land is dictated by statute – “Agricultural land must be classified according to its use” 15-7-201 (2), MCA.

The valuation of agricultural land is governed directly by 15-7-201, MCA. Specifically, subsection (5) indicates that “All agricultural land must be classified and appraised as agricultural land without regard to the best and highest value use of adjacent or neighboring lands.”

Section 15-7-201(1) MCA requires the department to value agricultural land at its productive capacity, not its highest and best use.

> Because the market value of many agricultural properties is based upon speculative purchases that do not reflect the productive capability of agricultural land, it is the legislative intent that bona fide agricultural properties be classified and assessed at a value that is exclusive of values attributed to urban influences or speculative purposes.

Classification may be based on historic or current use, depending on the situation. Typically, current use is the guiding principle to determining classification. If an operator converts an agricultural use to a different use, the change is reflected on the following year's assessment.

However, agricultural classification is sometimes based on the operator's long-term management objectives. When crops are grown in a cropping sequence, the long-term management practices dictate the land classification. For example, land may historically be used as summer fallow farmland. As such, the operator will rotate small grain production with alfalfa to restore soil nutrients, soil structure and reduce the chance of certain diseases. Unless the operator's intention is to change his long-term management objectives, the land classification continues to be summer fallow farmland. It is not unusual for operators to practice multiple agricultural uses on the same acreage. The same land may be irrigated, hayed, and grazed in the same season. Specific rules apply depending on the use. [16]

Agricultural land is classified based on the land's agricultural use as set in of 15-7-201(1) through (3), MCA, and of 15-7-103(2) through (4), MCA.

It is the legislature's intent that bona fide agricultural properties be classified and assessed at a value that is exclusive of values attributed to urban influences or speculative purposes. ARM 42.20.601 defines a bona fide agricultural operation as an agricultural enterprise in which the land actually produces agricultural crops defined in 15-1-101, MCA, that directly contribute agricultural income to a functional agricultural business. By this definition properties that are involved in an actual agricultural enterprise are classified as agricultural. Criteria for agricultural eligibility, discussed later in the manual, are set to determine if the property is a bona fide agricultural operation. Section 15-7-201, MCA.

Section 15-7-201 states, in part: "(2) Agricultural land must be **classified according to its use**, which classifications include but are not limited to irrigated use, non-irrigated use, and grazing use. (3) Within each class, land must be subclassified by productive capacity. Productive capacity is determined based on yield."

The agricultural assessed values are determined by the department with the assistance of policy recommendations from an Agricultural Advisory Committee on Land Valuation. New committee members are chosen by the Governor each reappraisal cycle. Agricultural values are based on the productive capacity of the land, i.e., the ability of

[16] These rules are discussed in the depth in the section dealing with land use classification

the land to produce income from cash crops and livestock (spring wheat, alfalfa, and private grazing fees).

Section 15-7-201(2) MCA**,** indicates the department must classify agricultural land according to its use, including irrigated, non-irrigated, and grazing land. By rule, the department currently utilizes the following agricultural land use categories.

1. Non-irrigated summer fallow farmland (ARM 42.20.660)
2. Non-irrigated continuously cropped hay land (ARM 42.20.665)
3. Tillable irrigated land (ARM 42.20.675)
4. Non-irrigated continuously cropped farmland (ARM 42.20.665)
5. Grazing land (ARM 42.20.680)

Non-irrigated Summer Fallow Farmland

Crops grown on summer fallow land will include, but are not limited to, small grains such as wheat, oats, barley, safflower, and sunflower. Summer fallow is the farming practice of leaving land idle with no vegetative growth. Typically, summer fallow farmland is cropped every other year. This management practice is generally done for two major reasons:

- build up soil moisture
- control weeds and disease

The practice of double or triple cropping land is called re-crop. Re-crop is the practice of producing a crop two or three successive years on land that is typically cropped every other year. Re-cropping is generally done for economic reasons or to control excess moisture conditions that may be leading to high saline levels in the soil. The summer fallow farmland classification includes the practice of double or triple cropping the land.

Operators often rotate different crops in a cropping sequence. For example, land that is used as summer fallow may be planted to alfalfa for several years to restore certain nutrients to the soil. Land that is typically in summer fallow management should remain in summer fallow farmland classification, even when the land is rotated into another crop such as alfalfa for a short time period.

Understanding the following definitions and farming practices is useful when classifying farmland.

“Cropping Sequence” is a management decision to plant alternate crops for varying

time-periods to rebuild soil nutrients or retain soil moisture.

“Block farming” is a farming practice found in areas where wind erosion is not a particular problem. This practice consists of leaving entire fields either in crop production or in summer fallow. This is in direct contrast to strip cropping.

“Strip cropping” is a farming practice where crop strips of varying width are planted alternately every year. The alternating strips between the crop strips containing crops are left idle, or in summer fallow. The summer fallow strips are cultivated during the growing season to control weeds and retain moisture in the soil. Strip cropping is normally done perpendicular to prevailing winds in areas where wind erosion is a problem.

“Chemical Fallow” is the practice of using chemicals in place of cultivation to control weed growth. The chemicals are applied after the crop is harvested to eliminate weed growth during the fall and spring seasons. This practice is used in conjunction with “no-till” or “minimum-till” farming practices.

“No-till Farming” is the practice of using chemical weed control in place of cultivating acreages from which the crops have been harvested. This practice is used to minimize the soil moisture loss and the fuel and machinery expenses that are typically incurred via the traditional practice of summer fallowing. There is no cultivation of the land after the crop is harvested. The next crop is planted into the stubble remaining on the land. The cropping may occur every other year as with summer fallowing, or it may occur as re-crop.

“Minimum-till Farming” is the practice of using chemical weed control in place of cultivating acreages from which the crops have been harvested. This practice is also used to reduce the soil moisture loss as well as the fuel and machinery expenses that are typically incurred via the traditional practice of summer fallowing. In contrast to “no-till” farming, the only tilling or cultivating of the land under this practice is done just prior to re-seeding the land. The stubble is worked down once, just prior to the re-seeding. The cropping may occur every other year as with summer fallowing, or it may occur as re-crop.

Non-irrigated Continuously Cropped Farmland

Continuously cropped farmland is found exclusively in the northwestern section of the state. This farming practice crops the land at least 75 percent of the years over the long term. Non-irrigated farmland that is allowed to lay fallow more than 25 percent of the

time over the long term is classified as summer fallow land.

Re-cropped farmland should not be confused with continuously cropped farmland. Continuous cropping must be the accepted long-term practice. Re-cropping is the occasional practice of double or triple cropping land to optimize profits or address specific management problems. Re-cropped land that is typically managed as summer fallow is classified as summer fallow farmland, not continuously cropped farmland.

Nonirrigated Continuously Cropped Hay Land

Non-irrigated continuously cropped hay land is land that is hayed a majority of the years. A majority of the years would be more than 50 percent over the long term (11 years out of the past 20 years). Hay land includes native vegetation, domestic grasses and non-irrigated alfalfa. Native or domestic grassland that is hayed occasionally when there is above average precipitation is classified as grazing land, not hay land.

Hay land that is intermittently irrigated is classified as hay land, not tillable irrigated farmland. This situation commonly occurs on land in arid to semi-arid regions of the state in which the owner installs spreader irrigation dikes. Infrequent or light rainfall may mean the land only receives one water application every few years.

Hay fields located along creeks and rivers may experience natural sub-irrigation. Sub-irrigated hay land that receives water from natural sources is classified as hay land. Land must receive water from man-made irrigation delivery systems to be classified as tillable irrigated land.

A cropping sequence that temporarily takes land out of hay production and places the land into a different crop remains in the hay land classification. Alfalfa has a productive life of 7 to 10 years. After that, the plant begins to die out and is replaced by other plant species. At the end of alfalfa's productive life, the operator often plants small grains for several years before replanting a new alfalfa stand.

Tillable Irrigated Farmland

Farmland that is irrigated a majority of the years is classified as tillable irrigated farmland.[17] Irrigated grazing land is classified as grazing land if the land is used solely by foraging livestock. If an irrigated crop is harvested from the land followed by livestock aftermath grazing, the land is classified as irrigated land.

[17] A majority of the years would be more than 50 percent over the long term (11 years out of the past 20 years).

The land must have reasonable amounts of water available for periodic applications over the long-term and the water must actually be applied to the land. Short-term drought is not a basis for removing land from the irrigated classification unless it is the intent of the operator to discontinue irrigation over the long-term. Land that receives intermittent water applications less than 50 percent of the years is not classified as irrigated land. For example, infrequent or light rainfall may mean land with spreader dikes only receives one water application every few years.

Grazing Land

Rangeland used for grazing livestock is classified as grazing land. Grazing land includes native or domestic grassland that is not hayed a majority of the years. Native or domestic grassland that is hayed occasionally when there is above average precipitation is classified as grazing land, not hay land. Irrigated pastures are also classified as grazing land.

Land under water bodies, road easements, irrigation ditches, barns and other farm structures is classified as grazing at the productive rating of land under these structures. Section 15-7-206, MCA.

VALUATION

Early Montana laws mandated that the assessment value for agricultural land be set at its “full cash value”. Assessment at “full cash value” was ineffective since elected county officials chose to assess agricultural land at fractional levels. In time the legislature adopted other methodology for agricultural valuations.

Section 15-7-201(1) MCA, states the legislature’s position on the valuation of agricultural lands.

> Because the market value of many agricultural properties is based upon speculative purchases that do not reflect the productive capability of agricultural land, it is the legislative intent that bona fide agricultural properties be classified and assessed at a value that is exclusive of values attributed to urban influences or speculative purposes.

Agricultural values are based on the productive capacity of the land, i.e., the ability of the land to produce income from cash crops and livestock (spring wheat, alfalfa, and private grazing fees).

Statute mandates the valuation process for Class 3 properties in 15-7-201, MCA. It describes how the valuation will be computed, the valuation formula to be used, the types and sources of the data used in the formula, and the creation of a Governor's Advisory Committee on Land Valuation to provide recommendations on agricultural valuation policy to the department.

Under 15-7-201 MCA**,** the agricultural assessed values are determined by the department with the assistance of policy recommendations from an Agricultural Advisory Committee on Land Valuation. A new committee is chosen by the Governor each reappraisal cycle.

The statutory formula for determining productive capacity value is:

$$V = I/R$$

Where:

V = value of each type of agricultural land
I = net income of each type of agricultural land
R = capitalization rate

Example of Calculation:

Net Income per Acre= $50
Capitalization Rate = 6.4%
Value per Acre = $781.25 ($50 ÷ 6.4% = $781.25)

Section 15-7-201, MCA.

Commodity Price information

Commodity price data and cost of production data for the base period must be obtained from the Montana Agricultural Statistics, the Montana crop and livestock reporting service, and other sources of publicly available information if considered appropriate by the advisory committee. Section15-7-201(5) (b) (i), MCA.

An arithmetic average of agricultural commodity prices over a legislatively specified base period is used to represent gross income for the multi-year appraisal cycles. The base period is a ten-year Olympic average that is designed to smooth price volatility. The ten-year Olympic average is calculated by using data from ten consecutive years, dropping the highest and lowest figures, then averaging the remaining eight years.

Whereas a 7 year Olympic average has been used in the past, a 10 year base period

was recommended by the 2012 Agricultural Advisory Committee for the 2015 reappraisal cycle as provided by 15-7-201, MCA.

The legislature has determined that the most consistent source of commodity price information is Montana Agricultural Statistics (Montana Ag Statistics), under § 15-7-201, MCA.

Base Crops

Many different types of crops and livestock are produced in Montana. However, only three commodity prices are used to calculate gross income for assessment purposes. The source for these prices is the Montana Agricultural Statistics Reporting Service. The basis for the unit price is set as follows:

> The base crop for valuation of irrigated land is alfalfa hay, adjusted to 80% of sales price, and the base crop for valuation of nonirrigated land is spring wheat. The base unit for valuation of grazing lands is animal unit months (AUM), defined as the average monthly requirement of pasture forage to support a 1,200-pound cow with a calf or its equivalent. 15-7-201, MCA

These base crops are used in the valuation of agricultural lands in the following land use types.

1. **Bushels of Spring wheat**
   a. continuously cropped farmland
   b. summer fallow farmland

2. **Tons of Alfalfa hay**
   a. irrigated land
   b. continuously cropped hay land

3. **Private Lease Fee for Animal Unit Month's (AUM)**
   a. grazing land

Gross income is calculated by multiplying the per-unit price for the base crop by the quantity produced on an acre of land. For example, if the average commodity price for alfalfa is $76.50 and the productivity of the hay land is 1.2 tons per acre, then the per-acre gross income is $91.80 ($76.50/ton x 1.2 tons/ac = $91.80).

Net per-acre income is calculated by deducting agricultural costs from the gross income. The net to gross returns for farmland can be measured by examining the rental value of land. Farmland can be rented under a crop share agreement where the landowner receives a certain percentage of the crop produced by the land's tenant. This measure of the return to the landlord represents the land's net income. For instance, a ¼ crop share rental agreement represents a 25 percent net of gross return to the landlord. If the gross income is $91.80 per acre, a ¼ crop share yields a net income to the landlord of $22.95/acre ($91.80/acre x .25 = $22.95).

Crop Share

The crop share rental percentages used in the valuation of agricultural lands are as follows:

Agricultural Land Classification	Landlord's Crop Share Rental Percentage
Continuously cropped farmland	*¼ (25 percent)*
Summer fallow farmland[18]	*⅛ (12.5 percent)*
Continuously cropped hay land	*¼ (25 percent)*
Irrigated land	*¼ (25 percent)*
Grazing Land	*25% management fee*

Capitalization Rate

The capitalization rate is a rate that turns an income stream into present value. This process estimates a property value by converting the future financial benefits of ownership into an expression of present worth. Value equals net operating income divided by the capitalization rate. The use of capitalization rates is an accepted appraisal practice to estimate the value of income producing properties.

Section 15-7-201, MCA sets a capitalization rate of 6.4 percent unless the advisory committee recommends a different rate and the department adopts the rate by rule.

Within each agricultural use classification, the productivity of the land is determined based upon the soil's ability to produce the crops or sustain livestock on the land. Agricultural land is valued for the purpose of property taxation based on the land's productive capacity, i.e., the ability of the land to produce income from cash crops and

[18] Summer fallow farmland crop share is ½ of the continuously cropped farmland crop share because historically summer fallow farmland only produces a crop every other year.

livestock (spring wheat, alfalfa, and private grazing fees). The assessed values for agricultural lands are calculated by capitalizing *net* agricultural income for each specific land according to its use.

Irrigated Land Valuation

The assessed values for irrigated land are calculated by capitalizing *net* agricultural income for irrigated lands. One of the components that is deducted from gross irrigated land income is the water cost. Water costs are the allowable costs specified in 15-7-201(5)(b)(iii), MCA, attributed to getting water from the point of source to the irrigated field. There are three allowable cost components identified in 15-7-201 MCA, which combined, represent the total water cost. They are:

1.	Base cost	$15.00
2.	Labor Cost	
	Flood Irrigation	$ 15.00
	Sprinkler Irrigation	$ 10.00
	Pivot Irrigation	$ 5.00
4.	Energy Cost (Operator Specific)	

The maximum water cost allowed is $50.00/acre.

Flood irrigation systems include water delivered to the field through a system of dikes, canals, furrows, or hand-moved irrigation pipe. Sprinkler irrigation systems include tow lines (Big Guns), side roll and lateral sprinkler irrigation systems.
Each reappraisal cycle, the Department must solicit new energy costs from all irrigated landowners. Energy costs can vary depending on the irrigation type, energy source, pump size, volume of water applied, number of water applications, and surface versus underground water source (lift height).

The department does not update the energy cost on an annual basis. The energy cost is based on the per-acre energy cost incurred in the energy cost base year and does not change during the reappraisal cycle. The energy cost base year is the calendar year immediately *preceding* the year specified by the department through administrative rules mandated in 15-7-103(5), MCA. For the 2015 reappraisal of agricultural land the energy cost base year is calendar year 2013.

In order to determine the allowable water cost deduction prior to the determination of per-acre value, all allowable water costs are added together. Based on recommendations from earlier agricultural land advisory committees, the Department

has created tables for the allowable water cost deductions. The tables allow for deductions based on $5 increments. There are 7 water cost deduction categories.

The taxpayer's total actual water cost is not deducted directly from net agricultural income. Instead, water cost categories are created to represent a range of water costs. The midpoint of each water cost category is used as a cost deduction from gross agricultural income. The process creates multiple valuations based on productivity and water cost information. Each property could have a wide variety of per-acre values.

TILLABLE IRRIGATED LAND (I)						
Water Cost Deduction Class						
1	2	3	4	5	6 (new for 2009)	7 (new for 2009)
<$19.99 ($17.50 mdpt)	$20.00 - $24.99 ($22.50 mdpt)	$25.00 - $29.99 ($27.50 mdpt)	$30.00 - $34.99 ($32.50 mdpt)	$35.00 - $39.99 ($37.50 mdpt)	$40.00 - $44.99 ($42.50 mdpt)	> $45.00 ($47.50 mdpt)

NOTE: The Water Cost Deduction Class 1 (<$19.99) will no longer be used for 2009 and beyond. With the increase in allowable base cost and allowable labor costs, the minimum water cost deduction is $20, even without an energy cost component. (Pivot irrigation: $15 base cost + $5 labor cost = $20 water cost)

In the determination of value for irrigated land, the midpoint of the water cost deduction class is subtracted from net income before determining the per-acre value.

Section 15-7-201(7)(f), MCA, states: "With respect to irrigated land, the recommended value of irrigated land may not be below the value that the land would have if it were not irrigated." For the 2015 appraisal cycle, the minimum value of irrigated land is $571.41. The minimum value of irrigated land is calculated based on the statewide average summer fallow farmland production of 23 bushels of spring wheat per acre. Because the income from irrigated land is received every year, the crop share used to determine the net income is the continuously cropped farmland crop share of 25%. To calculate the value:

Statewide Avg. summer fallow spring wheat production per acre = 23 bushels
10 Year Olympic Avg. commodity price/spring wheat/bushel $6.36
Gross Income per acre = $146.28 (23 bu. acre X $6.36)
Net Income = $146.28 X .25 (25% continuously cropped farmland crop share)
= $36.57
Capitalization Rate = 6.40%
$36.57/.064 = **$571.41** (Minimum Value/Irrigated Land)

Energy Costs

The energy cost is the electrical or fossil fuel cost to apply water to the irrigated field. Energy costs also include the seasonal customer charge, the fee that is charged to "turn on" the system each year.

Energy costs do not include the following:

- upfront investment fees to install an irrigation system or power lines
- annual amortization costs for the installation of an irrigation system
- annual maintenance and depreciation costs

A flood-irrigated field often has no energy cost because the water is delivered by a gravity flow system of canals and dikes. Additionally, if pumping is necessary on a flood-irrigated field, the point-of- source is usually done from surface water. Irrigated fields that require significant "lifting" or vast amounts of water have the largest energy costs.

Pivot systems provide more efficient water application than other sprinkler systems. Therefore, pivot systems consume less energy per water application than comparable sprinkler systems. As a rule of thumb, wheel lines require twice the energy as pivot systems. Big gun sprinklers require vast amounts of water pressure and thus they consume more energy of other comparable sprinkler systems.

Taxpayers should provide the appropriate energy cost documentation. Documentation includes electrical, diesel, natural gas, or propane receipts for their energy cost base year. If the pumps use fossil fuel and the taxpayer is unable to break out their pump cost from their over-all fuel bill, they can supply field staff with a letter explaining how they calculated the pumping cost If the taxpayer does not submit the appropriate documentation, the irrigated land is placed in water cost category 2 (WC2).

In certain situations, the taxpayer will repay the power company a yearly amount for the installation of electrical power to a pump site[19]. The repayment charge may be included in their power bill, but the department staff should exclude this as part of the energy cost. Most power companies charge the taxpayer an initial set-up fee the year power is installed to the pump site. This is a separate charge for installation and should not be included as part of their energy cost.

Electric irrigation pumps require special wiring and a separate meter. A taxpayer that

[19] The payback period is for a fixed number of years.

uses electric pumps should be able to provide the department with separate power bills that reflect only the irrigation electrical needs. The fee an electrical company charges to switch power on each spring at the pump sight is also part of the legitimate energy cost. The switching fee should be included in the taxpayer's energy cost.

If the taxpayer is using different energy sources for different pumps (i.e., a diesel pump to irrigate one field and an electric pump to irrigate a different field), the department must identify the acres under irrigation for each irrigation type. If the taxpayer doesn't attach a letter of explanation to the questionnaire, staff must contact the taxpayer for clarification.

The Department does not automatically assume that an energy bill for a sprinkler or pivot system also applies to a flood irrigated field. This typically is not the case unless the irrigation system is hand-moved pipe.[20] Documentation from the taxpayer is necessary to determine which energy cost applies to each irrigated field. If department staff is unable to contact the taxpayer to receive clarification, the appraiser's judgment and personal knowledge of the property will be used to calculate the per-acre energy cost.

It is possible to have multiple irrigated fields with the same irrigation type but have different energy sources. For example, a diesel pump can serve one flood-irrigated field and an electric pump can serve another flood-irrigated field.

Irrigation districts may use pumps to place massive amounts of water into main distribution canals. This water is then delivered to their members who in turn, pump the water from the canal to their fields or use a gravity flow system to flood irrigate. The district's pumping energy cost is an allowable deduction.

Documented energy costs must also be received from each member in the irrigation district. Irrigation district fees may many costs ranging from energy and maintenance to amortization of debts. Taxpayers in irrigation districts may incorrectly provide all these expenses on the energy cost questionnaire. If a taxpayer's only energy cost is the district's pumping charge, the department will use the energy cost supplied by the irrigation district. If a taxpayer has additional pumping costs, the department adds the district's energy cost to the taxpayer's other energy costs. Taxpayers are contacted by the Department to verify information that appears incorrect.

The Department may discover an existing irrigated parcel that was incorrectly classified as a different agricultural classification (i.e. nonirrigated continuously cropped hay when

[20] Hand-moved pipe irrigation systems are coded as "F" flood irrigated

it should have been irrigated land) at some point during the reappraisal cycle. In these situations, the taxpayer should be asked to supply their energy costs from the energy cost base year.

Energy costs on irrigated leased land are treated like any other irrigated parcel. Generally, the landowner is responsible for the property tax. However, the lessee may pay the energy bills. The landowner should get copies of these receipts from the lessee and provide the department with the appropriate energy cost documentation.
A change in ownership alone is not a basis to change the energy cost. An energy cost base year that is established by one owner will be transferred to a new owner during any year of the reappraisal cycle.

The energy cost is not a required entry in ORION. If the irrigated parcel has multiple lines of irrigated data in ORION for the same irrigation type, each line of irrigated data typically has the same energy cost. Multiple lines of irrigated data occur when an irrigated field has more than one soil and, thus, more than one estimate of productivity. The energy cost is not prorated, based on multiple data lines for the same irrigation system.

Allowable energy cost deductions are based on the energy cost base year receipts, with several specific exceptions listed below. Taxpayers cannot use energy costs from years prior to the energy cost base year even if they claim they lost their energy receipts or had to reduce their water applications due to drought or other extenuating circumstances.[21]

There is no provision for collecting irrigation types and energy costs on the agricultural application form. If agricultural classification is granted to an irrigated property, the department sends the applicant a Form AB26 along with a letter requesting the irrigation type and the previous year's energy cost[22]. A copy of the letter is provided in this manual. If the applicant does not respond to this inquiry, the department will use its knowledge of the property to assign an irrigation delivery system. The applicant will not receive an energy cost allowance and a water cost category "2" (minimum) is assigned to the irrigated land.

Exceptions to the Energy Cost Base Year

If the taxpayer installs an irrigation system after the energy cost base year, the energy cost base year is the first year that an energy cost is incurred. The first year's energy

[21] State law specifically mandates that the energy cost deduction must be based on 2013 costs.
[22] A copy of the letter is displayed in the Water Cost chapter.

cost is used for each remaining year of the current reappraisal cycle. It is the taxpayer's responsibility to provide the energy cost and associated documentation to the department. The request is completed on a Form AB26.

A change in the irrigation system may be a basis to change the energy cost during the reappraisal cycle. For example, if an irrigator converts a flood irrigated field to a pivot irrigated field, the irrigator can submit new energy costs for the pivot system after the system's first year of operation.[23] The new energy costs apply for each remaining year of the current reappraisal cycle.

New agricultural properties that are created during a reappraisal cycle also use an energy cost other than the energy cost base year. The energy costs incurred in the first year of the operation is used for each remaining year of the current reappraisal cycle.

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[23] Department staff should explain the need for new energy costs with the taxpayer.

Valuation Formula Examples

Per 15-7-201, MCA the formula used to determine the per-acre value of agricultural land is V=I/R where:
V = productivity per-acre value of agricultural land
I = per-acre net income associated with ag use[24]
R =capitalization rate. The rate converts an on-going income stream into value; currently 6.4%

Summer Fallow Farmland
Avg. price for spring wheat = $6.36/bu.
Productivity = 23 bu/Ac
Gross Income/ac. = 23 bu/ac. * $6.36 = $146.28/Ac
Net Income = $146.28 *0.125 = $18.29
$18.29/.064 = $285.78 Productivity Value/Acre

Dryland Hayland
Avg. price for alfalfa = $76.50/ton
Productivity = .71 tons/Ac
Gross Income/ac. = $76.50 * .71 tons = $54.32/Ac
Net Income = $54.32 * .25 = $13.58/Ac
$13.58/.064 = $212.19 Productivity Value/Acre

Grazing Land
Avg. private grazing lease = $18.08/AUM
Operating Expense = $18.08 * .25 = $4.52/AUM
Adjusted Gross Income = $18.08 - $4.52 = $13.56/AUM
Statewide Average Productivity = .31 AUM/Ac
Net IncomeI/ac. = $13.56/AUM * .205 AUM/Ac = $2.78/Ac
$2.78/.064 = $43.44 Productivity Value/Acre

Irrigated Land
Avg. price for alfalfa = $76.50/ton
Productivity = 3 tons/Ac
Gross Income/ac. = 3 tons/ac.* $76.50 = $229.50/Ac
Net Income = $229.50 * .25 = $57.38/Ac
$57.38 – Water Cost 2 ($22.50) = $34.88/Ac
$34.88/.064 = $545.00[25] **Productivity Value/Acre**

CC Farmland
Avg. price for spring wheat = $6.36/bu
Productivity = 34.83 bu./Ac
Income/ac. = 34.83 bu/ac. * $6.36 = $221.52/Ac
Net Income = $221.52 * .25 = $55.38
$55.38/.064 = $865.31 Productivity Value/Acre

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[24] A crop share approach is used to determine the net income attributable to agricultural production. In a crop share approach, a percentage of the income from production (the share) is attributed to the landlord (owner) of the land. The remaining percentage is considered the tenant's share and includes expenses of production.

[25] Based on 15-7-201 MCA, irrigated land may not have a value below the value that the land would have if it were not irrigated. The minimum value of irrigated land is established at $571.41 per acre. In the example the value of the irrigated land would be $571.41 and not the calculated value.

MULTI-YEAR CROPS

Most agricultural crops and forage are produced on an annual basis. All crops and forage that produce annual income must meet minimum income requirements the same year the crop or forage species are planted.[26] However, certain crops require multiple years of growth before they can generate agricultural income.

The Governor's Advisory Committee on Land Valuation recommended, and the department implemented, ARM 42.20.620 and ARM 42.20.625 that provides that Christmas tree plantations and fruit tree orchards are eligible for agricultural classification the year after the trees are planted in the ground.[27] The period between establishment of the trees and the production of income is referred to as the start-up period. Once the initial crop of trees produces income, the property must meet the minimum income requirement on an annual basis.

All cultivated Christmas tree plantations and fruit orchards are classified and valued at the highest productivity level of nonirrigated continuously cropped farmland. There are no exceptions to this classification and productivity determination, even if the land is irrigated, whether in an irrigation district or not.

Cultivated Christmas Tree Plantations

Land, upon which trees are grown, cultivated, sheared, and sold as Christmas trees is eligible for consideration as agricultural land. The land is generally cultivated each year just like other types of farmland to reduce weed competition and promote better soil conditions. Typical species grown in Montana as cultivated Christmas trees are Scotch pine, several species of spruce, and Grand fir.

The minimum agricultural eligibility requirements for land used as a cultivated Christmas tree plantation are as follows.

- A minimum of 2,000 live trees must exist at all times on the property[28]
- The land containing the trees must be cultivated; or under accepted husbandry practices
- The trees must be sheared on a regular basis, which is typically four or more

[26] Certain exceptions exist such as marketing delays and disaster loss.
[27] The trees or plants must be in the ground and alive on January 1 of the year the land is eligible for agricultural classification.
[28] The owner/operator generally plant an average of 1,000 trees per acre. On average 70% to 80% will be eventually harvested

times during the rotation
- The Christmas tree operation must produce at least $1,500 in annual gross income once the initial crop of trees reaches saleable maturity

The applicant applying for agricultural classification of land that is growing Christmas trees can initially gain agricultural classification with 2,000 planted trees. If the applicant plants the bare minimum number of trees and normal mortality reduces the number of trees below 2,000 trees during the start-up period, the land is removed from agricultural classification.

If the applicant discontinues annual cultivation, or other accepted Christmas tree husbandry practices, the land is removed from agricultural classification. Most plantations are cultivated, but some operators will grow grass between the trees. The grass must be mowed on a regular basis during the growing season.

If the applicant discontinues shearing the lateral leaders on a tree, the tree will lose its desirability as a cultured Christmas tree and revert to a "wild tree". Once this occurs, the tree can never regain is original form. If an applicant fails to shear the trees, this is a sure sign that cultivated Christmas tree operations have been discontinued and the land is removed from agricultural classification.

Once the initial crop reaches saleable maturity, the land must maintain a sustained yield that produces the minimum annual agricultural income. Therefore, the applicant must continue to plant additional Christmas trees to sustain the minimum annual income requirements.

The land is removed from agricultural classification if the applicant does not continue to meet the annual income requirements once the initial crop reaches saleable maturity. There are two exceptions to this rule.

- Marketing delay
- Catastrophic loss due to factors such as weather, insects, fire or disease

Marketing delay can only be claimed for one year before the trees must be marketed[29]. Normal mortality that occurs during the crop's rotation is not catastrophic loss. Black's Law Dictionary defines catastrophe as "a notable disaster, a more serious calamity than might ordinarily be understood from the term casualty."

[29] ARM 42.20.635

Apple and Cherry Tree Orchards

Land on which apple or cherry trees are grown and the fruit is sold or consumed is eligible for consideration as agricultural land. Montana has very few apple tree orchards; therefore the criteria for apple trees are grouped together with cherry tree orchards. Cherry trees begin producing fruit within five years of planting and mature to full production in approximately 10 years.

Under ideal conditions, a mature tree will produce approximately 140 pounds of fruit. However, due to the fragile nature of the tree, most producers will have a variety of ages of trees in their orchards. On average, a cherry tree orchard should produce approximately 100 pounds of fruit per tree. The land may be cultivated, or planted with grass between the trees. Measures to control insect and rodent damage are typical husbandry practices. The minimum agricultural eligibility requirements for land used for producing apples or cherries are as follows.

- a minimum of 100 trees; and
- a minimum of one acre[30]
- the owner of a newly planted orchard must re-apply for agricultural classification when the orchard begins producing fruit in approximately five years

An applicant applying for agricultural classification for land growing fruit trees can initially gain agricultural classification with 100 planted trees. The applicant must continue to plant additional trees to replace those that are lost through normal mortality. If the applicant does not maintain 100 trees during the start-up period, the land is removed from agricultural classification.

Once the land produces marketable fruit, if normal mortality reduces the number of trees below the point where the applicant can market the minimum annual income, the land is removed from agricultural classification. There are two exceptions to this rule.

- marketing delay
- catastrophic loss due to factors such as weather, insects, fire or disease

Marketing delay can only be claimed for one year before the trees must be marketed.[31] Normal mortality that occurs during the crop's rotation is not catastrophic loss.

[30] 100 productive trees (5 to 10 years old) can meet the minimum agricultural income qualifications.
[31] ARM 42.20.625

Classification and Productivity for Multi-Year Crops

All agricultural land that is producing cultivated Christmas tree plantations or fruit tree orchards are automatically assigned the highest productivity level of nonirrigated continuously cropped farmland. This productivity designation is based on a policy decision by the Governor's Advisory Committee on Land Valuation.

Christmas tree plantations and fruit tree orchards are classified as nonirrigated continuously cropped farmland even if the land is irrigated, regardless whether the land is within an irrigation district. Any residual land on the parcel that is not used to produce these crops is classified and valued based on its use and productive capacity.

NONQUALIFIED AGRICULTURAL LAND

The 1993 Legislature created a class of land for contiguous ownerships that are at least 20 acres in size, but less than 160 acres in size. The legislature describes this class of property but does not provide a name for it. The department defines this class of property in ARM 42.20.650 as "nonqualified agricultural land"[32].

Nonqualified agricultural land is placed in property tax Class 3, the same tax class as agricultural land and nonproductive patented mining claims. The legislature mandates through 15-6-133, MCA that the assessed value for nonqualified agricultural land is the average value of grazing land, and the taxable percentage is seven times the taxable percentage for agricultural land. The department has determined that the average value of grazing land is determined based upon the statewide average productivity of grazing land.

Certain criteria that will disallow a parcel of land from meeting agricultural land eligibility requirements may have no bearing on the same parcel meeting nonqualified agricultural land eligibility requirements.

Nonqualified Agricultural Requirements

1. land must be in the same ownership
2. land must be between 20 and 160 acres in size
3. land cannot be used for residential, commercial or industrial purposes
4. land cannot have covenants or other stated restrictions that effectively prohibit its use for agricultural purposes[33]

[32] National literature defines this as Green Belt legislation.
[33] This is new for tax year 2006, due to changes in wording of 15-7-202(4) created with the enactment of SB74

NONPRODUCTIVE PATENTED MINING CLAIMS

Montana law requires that land, which is part of a nonproductive patented mining claim, shall be eligible for class 3 classification and assessment. Section 15-6-133, MCA**,** states that the land in a nonproductive patented mining claim is classified as grazing land. The department implemented ARM 42.20.307 that states that land in a nonproductive patented mining claim shall be classified and valued at the statewide average productivity value of grazing land.

> Class three property -- description -- taxable percentage.
> Class three property includes:
> (a) agricultural land as defined in 15-7-202;
> (b) nonproductive patented mining claims outside the limits of an incorporated city or town held by an owner for the ultimate purpose of developing the mineral interests on the property. For the purposes of this subsection (1)(b), the following provisions apply:
> (i) The claim may not include any property that is used for residential purposes, recreational purposes as described in 70-16-301, or commercial purposes as defined in 15-1-101 or any property the surface of which is being used for other than mining purposes or has a separate and independent value for other purposes.
> (ii) Improvements to the property that would not disqualify the parcel are taxed as otherwise provided in this title, including that portion of the land upon which the improvements are located and that is reasonably required for the use of the improvements.
> (iii) Nonproductive patented mining claim property must be valued as if the land were devoted to agricultural grazing use. Section 15-6-133, MCA.
>
> Valuation of eligible mining claim land
> All land contained in an eligible mining claim except land described in ARM 42.21.205 shall be valued as class three grazing land. The appropriate grazing land productivity and valuation determination will be based on the statewide average productivity value of grazing land.[34] ARM 42.20.307

Two key terms pertaining to nonproductive patented mining claim are defined in ARM 42.20.302, Definitions.

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passed by the Legislature during the 2005 Session.

[34] ARM 42.21.205 refers to the valuation of land under improvements on nonproductive patented mining claims.

"Nonproductive land" means non-fertile land that is incapable of supporting animals or producing plant matter in commercially salable quantities.

"Patented" means land purchased from the federal government for the sole purpose of developing a mining operation

Patented mining claims used for recreational, commercial, industrial, agricultural or forest land use are not eligible for treatment as a nonproductive patented mining claim under 15-6-133, MCA. The department provides examples of these uses in ARM 42.20.302. They are:

- the filing of a certificate of survey that creates a division of the mining claim
- the growth of agricultural commodities on the mining claim
- the lease of any portion of the surface area for a recreational, commercial, residential, industrial, or agricultural use

Improvements on Nonproductive Patented Mining Claims

There can be no improvements upon the land that would change the use of the property to a recreational, residential, commercial, industrial, forest land, or agricultural use. The presence of any of the following improvements upon a patented mining claim will disqualify a patented mining claim from classification and valuation as a nonproductive patented mining claim.

- Residential structures, including cabins, houses, or
- Mobile homes and trailers regardless whether permanently attached to a foundation and/or water and/or septic improvements, or
- Any commercial or industrial structures that are used for the production of income.

The presence of any of the following improvements upon a patented mining claim will not disqualify a patented mining claim from classification and valuation as a nonproductive patented mining claim according to the provisions of 15-6-133, MCA, provided the application required in ARM 42.20.301 is approved by the property assessment division.

- Any structure, outbuilding or garage on a patented mining claim that is either vacant or is used strictly for the storage of machinery, equipment or materials that would be used in the mining process, should mining become an active process on the property.

Only the land under improvements listed in the immediately preceding paragraph, including the land necessary for the use of those improvements, shall be classified and valued as class 4 property as described in ARM 42.20.305. The remainder of the patented mining claim shall be classified and valued as a nonproductive patented mining claim.

RESIDENCE ON CLASS 3 LAND

The legislature requires a specific method of valuation for land under a residence on Class 3 property. The classification and valuation of one-acre building sites under residences or other improvements on class 3 properties are governed by four statutes.

- 15-7-206 (2), Improvements on agricultural land.
- 15-6-133(1)(c), Class three property -- description -- taxable percentage.
- 15-6-134(1)(e), Class four – description – taxable percentage.

The land under a residence on agricultural land shall be designated as a one-acre site and valued at the agricultural value of the highest class and productivity value of agricultural land in the state, 15-7-206(2),MCA.

Sections 15-6-133(1)(c), MCA, 15-6-134(1)(e), MCA, and ARM 42.20.655 mandate that land under a residence on nonqualified agricultural land shall be valued at market value.

Section15-6-134(1) indicated that "all improvements on land that is eligible for valuation, assessment, and taxation as agricultural land under 15-7-202, including 1 acre of real property beneath improvements on land described in 15-6-133(1)(c). <u>The 1-acre must be valued at market value."</u>

(Emphasis added).

The term "improvements" found in 15-6-134(1)(e), MCA, and 15-7-206(2), MCA, refers to residential improvements. Other statutes such as 15-7-202(1)(c) and 15-7-206(1), MCA, stipulate that land under other types of manmade improvements such as farm buildings and irrigation ditches must be classified as agricultural land. Only land under a residential improvement will receive a one-acre designation.

A residential improvement is any <u>fixed</u> dwelling that is constructed and used for human habitation. The structure must at a minimum, contain sleeping facilities. Any building that is used entirely for storage is not considered a residence. Unless a residential

improvement exists, outbuildings, garages and agricultural structures do not receive a one-acre building site designation to the land under the improvements.

A fixed dwelling does not have to contain water and sewer/septic amenities. Many summer homes and cabins on tax class 3 and 10 property do not have a septic system and/or a well. These buildings are appraised as a residential structure and the land under the improvement is assigned a one-acre building site designation.

Wells and septic systems are exempt from property valuation. Any site that contains just a well and septic system is not assigned a one-acre building site classification. A one-acre building site classification will be assigned to land that contains a well, septic system and a manufactured home. If the manufactured home is removed from the site, leaving the land without a residential improvement, then the one-acre building site designation will be removed from the land's assessment. A manufactured home or trailer, that is not permanently attached to a foundation, and does not contain water and/or septic improvements, is not assigned a one-acre building site designation.

CLASSIFICATION AND VALUATION OF LAND UNDER RESIDENTIAL, COMMERCIAL AND INDUSTRIAL IMPROVEMENTS

Section 15-7-206(2), MCA, states that one-acre of land beneath residential improvements on agricultural land is assigned an agricultural value. The value shall represent the class with the highest productive value and production capacity of agricultural land.

Section 15-6-134(1)(e), MCA, states that one-acre of land beneath improvements on nonqualified agricultural land (nonagricultural land between 20 and 160 acres in size) is valued at its market value. The treatment of one-acre of land beneath residential improvements on nonqualified agricultural land is described in ARM 42.20.655.

There is no statutory discussion of the treatment of one-acre under a residential improvement on Class 10 – Forest land. Section ARM 42.20.750 directs the department to appraise one-acre under residential improvements on Property Tax Class 10 – Forest land at its market value.

Parcels of land valued at market in class 4 do not receive a one-acre building site designation for land under residential improvements. The treatment of one-acre under residential improvements on agricultural land is described in ARM 42.20.655. Exactly one acre of land is assigned under residential improvements in class 3, even if the residential improvement physically occupies more or less than one acre.

If an agricultural parcel is less than one acre in size and contains a residence, the entire parcel is designated as land under a residential improvement on agricultural land. Example: A landowner may own contiguous agricultural parcels in the same ownership. The parcel occupied by the residence is less than one acre in size. If two or more residential improvements are located on the same acre, then a single one-acre designation is assigned to the parcel. For example, if the primary residence has a guesthouse adjacent to it, the parcel is assigned one “one-acre building site”, even though the parcel contains two residences.

For each residential improvement that is not located on the same acre, a separate one-acre building site designation is assigned to the parcel. For example, if a farm has several residential homes occupied by family members that are not located on the same acre, land under each residential improvement is assigned a one-acre building site.

Agricultural improvements such as barns, sheds, silos, cribs, and like structures are not considered residential improvements. The land under agricultural improvements is classified and valued according to the productivity of surrounding agricultural land.

Land under commercial and industrial improvements on Class 3 and Class 10 property is not assigned a one-acre designation. The department must determine the actual amount of land under the commercial or industrial improvements as well as the land that supports those improvements and place that land in property tax class 4. An example of a commercial improvement on a parcel containing agricultural land is a riding arena that is used to produce nonagricultural income. An example of an industrial improvement on a parcel containing forest land is a wood products plant.

When a one-acre building site under residential improvements is assigned to parcels in Class 3 or Class 10, the following valuation method applies for each land type.

> Agricultural land: One-acre of land under the residential improvement surrounded by agricultural land is valued at the agricultural class with the highest productive value and production capacity of agricultural land.
>
> Nonqualified agricultural land: One-acre of land under the residential improvement surrounded by nonqualified agricultural land is valued at market.
>
> Forest land: One-acre of land under the residential improvement surrounded by forest land is valued at market.

A parcel may contain multiple land use classifications (i.e. agricultural/forest land,

nonqualified agricultural land/forest land, agricultural land/Class 4 land, etc.), however a parcel can never receive agricultural and nonqualified agricultural land classification.

If a parcel contains multiple land uses, it will be determined which type of land use surrounds the residential improvements. Aerial photographs, notations on property record cards, or pictures of the residential improvement to identify the type of land use that surrounds the improvements will be considered. If the department is unable to make this determination in the office, a field inspection will be necessary.

It is extremely important to determine the correct land use surrounding residential sites on parcels containing agricultural and forest land. If the land under residential improvements is surrounded by forest land, the one-acre residential site is appraised at its market value. If the land under residential improvements is surrounded by agricultural land, the one-acre residential site is assessed at an agricultural value.

In rare instances, an ownership may be less than 20 acres in size and contain at least 15 acres of forest land and several acres of non-forest land. Unless the non-forest land meets agricultural eligibility requirements, the non-forest land is valued at market. If the residential improvements on these parcels are surrounded by nonagricultural land, the land under the residence is not assigned a “one-acre building site” designation. The non-forest land is designated as class 4 land and assessed at its market value.

VALUE BEFORE REAPPRAISAL (VBR)

Pursuant to 15-7-111(5), MCA, agricultural land is reappraised every six years. Reappraisal values that increase from the previous reappraisal cycle are phased-in incrementally over the length of the reappraisal cycle. Reappraisal values that decrease from the previous reappraisal cycle are phased-down in their entirety the first year of the new reappraisal cycle.

> The department of revenue shall administer and supervise a program for the revaluation of all taxable property within classes three, four, and ten. A comprehensive written reappraisal plan must be promulgated by the department. The reappraisal plan adopted must provide that all class three, four, and ten property in each county is revalued by January 1, 2015, effective for January 1, 2015, and each succeeding 6 years. The resulting valuation changes must be phased in for each year until the next reappraisal. If a percentage of change for each year is not established, then the percentage of phase in for each year is 16.66%.
> Section 15-7-111, MCA.

Class 3 property utilizes the same reappraisal cycle as Tax Class 4 and 10. For all three property tax classes, the increases in assessed values are phased-in incrementally over the six years of the reappraisal cycle for any value that increases from one reappraisal cycle to the next reappraisal cycle. The value of the property is the market value as of the end of the cycle, or 2020. That value is phased in from the 2014 market value in 1/6ths increments each year of the cycle. Any assessed value that decreases from one reappraisal cycle to the next reappraisal cycle is fully implemented the first year of the new reappraisal cycle. For the 2009 reappraisal of all agricultural land, the value before reappraisal was electronically recalculated so that the phase-in value was calculated. The following terminology is used in the discussion of value phase-in.

"Reappraisal (REAP) value" means the full 2015 value determined for the current reappraisal cycle pursuant to 15-7-111, MCA, adjusted annually for new construction or destruction. The 2015 reappraisal value reflects a market value of the property on January 1, 2014. A current year REAP value is the same as the 2015 reappraisal value of the property if there is no new construction, destruction, land splits, land use changes, land reclassifications, land productivity changes, improvement grade changes, or other changes made to the property during 2015 or subsequent tax years. ARM 42.20.501

Reappraisal occurs when changes to the land productivity are made within the current agricultural use classifications. For example, if 40 acres of grazing land with a productivity of .31 AUM/Ac is reclassified to 40 acres of grazing land with a productivity of .27 AUM/Ac, the change is a reappraisal activity.

“New Construction” means the construction, addition, or substitution of improvements, buildings, living areas, garages, and outbuildings; or the extensive remodeling of existing improvements, buildings, living areas, garages, outbuildings, land reclassification, and land use changes. ARM 42.20.501

New construction occurs when changes are made to current agricultural land use classifications.

> Example 1**:** if 40 acres of grazing land is changed to 40 acres of continuously cropped hay land, the change is a new construction/land use change activity. A new VBR **is** recalculated for new construction/land use changes.

Example 2: if 40 acres of grazing land is changed to 10 acres of grazing and 30 acres of continuously cropped hay land, the change is a new construction/land use change activity. A new VBR **is** recalculated for new construction/land use changes.

AGRICULTURAL DEFINITIONS

Agricultural

The term “agricultural” is defined in 15-1-101, MCA,

(1) Except as otherwise specifically provided, when terms mentioned in this section are used in connection with taxation, they are defined in the following manner:

(a) The term "agricultural" refers to:

(i) the production of food, feed, and fiber commodities, livestock and poultry, bees, biological control insects, fruits and vegetables, and sod, ornamental, nursery, and horticultural crops that are raised, grown, or produced for commercial purposes; and

(ii) the raising of domestic animals and wildlife in domestication or a captive environment.

The department further describes what is “agricultural” in ARM 42.20.620 and 42.20.625.

> An applicant for agricultural land classification must prove that the land indicated in the application actually produced the livestock, poultry, honey and other products from bees, biological control insects, field crops, fruit, or other animal and vegetable matter raised for food or fiber or sod, ornamental, nursery, and horticultural crops that are raised, grown, or produced for commercial purposes.

Bona fide Agricultural Operation

Section 15-7-202, MCA, allows noncontiguous land in the same ownership to combine agricultural income produced from each parcel to meet the agricultural income requirement, if “the land is an integral part of a bona fide agricultural operation”. Webster’s Ninth New Collegiate Dictionary defines “integral” as “essential to completeness or formed as a unit with another part.” The term “bona fide agricultural operation” is defined in ARM 42.20.601.

> "Bona fide agricultural operation" means an agricultural enterprise in which the land actually produces agricultural crops defined in 15-1-101, MCA that directly contribute agricultural income to a functional agricultural business.

Unless the noncontiguous parcel is enrolled in the Conservation Reserve Program (CRP) or a successor to that program, the land must be actively devoted to agricultural production and used in direct support of the agricultural operation. Land in the CRP or successor program that is at least 20 acres in size can utilize farm subsidy payments to meet the agricultural income requirement, even though CRP or successor program lands are actively removed from agricultural production. Land in the CRP or successor program that is not at least 20 acres in size, cannot allocate farm subsidy payments to the agricultural income requirement.

Livestock

The term “livestock” is included in the definition of “agricultural” contained in 15-1-101(1)(a), MCA, and described in 15-1-101(1)(k), MCA, which states: “The term "livestock" means cattle, sheep, swine, goats, horses, mules, asses, llamas, alpacas, bison, ostriches, rheas, emus, and domestic ungulates.”

The department further describes the term “livestock” in ARM 42.20.601. “Livestock” as defined in 15-1-101, MCA, means cattle, sheep, swine, goats, horses, mules, asses, llamas, alpacas, bison, ostriches, rheas, emus, and domestic ungulates.”

Other Agricultural Terms

The department defines several other agricultural terms in ARM 42.20.601 that are listed as “agricultural” in 15-1-101, MCA.

> “Biological control insects” mean an insect that is used to reduce or eliminate noxious weeds by interference with the weed’s ecology.
>
> “Poultry” means domesticated birds raised for eggs, meat, or other commercially marketable products, that are not included in the definition of livestock as described in 15-1-101, MCA.

SOURCES OF INFORMATION

Soils

1. United States Department of Agriculture - Natural Resource & Conservation Service (NRCS), Web Soil Survey

Crop & Livestock Statistics

1. United States Department of Agriculture - Montana Agricultural Statistics Service
2. Montana State University, College of Agriculture
3. Weather and Climate – Montana State Library
4. United States Department of Agriculture - Farm Services Agency (FSA)

SOIL SURVEYS

Soil surveys are produced by the United State Natural Resources Conservation Service (NRCS). Generally speaking, each survey is based on county boundaries and each survey was produced during differing timeframes. The surveys are edge matched so that soil classifications align with adjacent surveys. However, newer surveys contain larger databases and are generally more accurate in terms of yield estimates.

A soil survey describes the characteristics of the soils in a given area, classifies the soils according to a standard system of classification, plots the boundaries of the soils on a map, and makes predictions about the behavior of soils. The different uses of the soils and how the response of management affects them are considered. The information collected in a soil survey helps in the development of land-use plans and evaluates and predicts the effects of land use on the environment.

CADASTRAL INFORMATION

A cadastre (also spelled cadaster) is a comprehensive register of the metes and bounds real property of a country, and commonly includes details of the ownership, the tenure, the precise location (some can include GPS coordinates), the dimensions (and area), the cultivations if rural and the value of individual parcels of land. A cadastral map is a map showing the boundaries and ownership of land parcels. Some cadastral maps show additional details, such as survey district names, unique identifying numbers for parcels, certificate of title numbers, positions of existing structures, section and/or lot numbers and their respective areas, adjoining and adjacent street names, selected boundary dimensions and references to prior maps.

The initial source of ownership information is actually the Department's data. In most counties of Montana, the Department employs cartographers who create parcel boundary lines (a cadastre) and provide those digital parcel data to the Montana Department of Administration/Information Technology Services Division/GIS services (DOA/ITSD/GIS). In turn, GIS Service incorporates that prepared parcel boundary line work into their maintained cadastral database. With procurement of the proper GIS licenses, the Department gained access to its own line work. Other names for a cadastral map can include parcel map, ownership map or plat map.

LIVESTOCK EQUIVALENCY TABLE

The following table reflects the animal unit equivalency for horses and other ungulates

HOOFED ANIMALS

Livestock	Animal Unit Equivalent
Horses	
3 year old and over	1.25
2 year old	1.00
Yearling	.75
Sheep	
Ewe	.20
Buck	.25
Goats	
Mature	.15
Yearling	.10
Wildlife	
Bison Bull	1.30
Bison Cow	1.00
Bison Yearling	.60
Elk	.70
Mule Deer (mature)	.30
Whitetail Deer (mature)	.20
Antelope (mature)	.20
Bighorn Sheep (mature)	.20

GENERAL GUIDE TO GRAZING LAND CONDITIONS

Range Condition	General Description
Excellent	Tame Pasture, generally tillable, sub-irrigated, 0% slope, 100% ground cover, 85-100% desirable grass species, up to 25% annuals, forbs and/or shrub composition, deep loamy soil
Good	High precipitation zones, short growing seasons, 0-5% slope, 80-100% ground cover, 60-85% desirable grass species, up to 40% annuals, forbs and/or shrub composition, soils are variable, mountain meadows, foothill draws
Average	10-15 inch precipitation zones, average growing season, variable slopes, 30-60% desirable grass species, up to 40% annuals, forbs and/or shrub composition, soils are variable, foot hill mountain type, drainage to the plains, 50-75% ground cover
Fair	Low precipitation zones, average growing seasons, 10-30% slope, 30% or less desirable grass species, up to 60% annuals, forbs and/or shrub composition, soils are usually shallow, characterized by short grass plains, 50% or less ground cover
Poor	Waste land; no grazing available, characterized by hard pans, bare ridges, rock out crops, alkali, saline seeps

GEOGRAPHIC INFORMATION SYSTEM (GIS)

The 2005 Montana Legislature provided funding for the Department of Revenue/Property Assessment Division to develop a geographic information system (GIS). The GIS has been used for the 2009 reappraisal of Class Three Agricultural Lands and Class Ten Forest Lands. GIS is computer software that links geographic information (“where” things are) with descriptive information (“what” things are). A GIS integrates hardware, software, and data for capturing, managing, analyzing, and displaying all forms of geographically referenced information and is most often associated with a map.

A GIS is a set of intelligent maps and other views that show features and feature relationships on the earth's surface. Unlike a flat paper map, where "what you see is what you get," a GIS can present many layers of different information. State and local

governments are increasingly required to streamline business practices while adhering to complex political or regulatory requirements. GIS provides a flexible set of tools to perform the diverse functions of government by providing the data management tools needed and making it easier to share data among departments

The Department began the process of creating the GIS in the summer of 2005. The 2006 – 2008 Agricultural Land Advisory Committee reviewed the planned usage of the GIS, has developed an understanding the general concepts associated with using a GIS for agricultural land reappraisal and has concurred that it's the most efficient and accurate method for reappraisal purposes. The Committee has provided recommendations to the Department for areas that GIS technology will be more useful in the reappraisal of agricultural lands.

Maintain the GIS for agricultural and forest land changes
A unique feature of a GIS is the ability to update and maintain information. The Department will use GIS technology, aerial photos and other tools to maintain the agricultural and forest land systems. The Department has not been able to accomplish this statutory requirement until now.

Provide updated and current maps to counties on an on-going basis
As parcel boundaries and ownerships change, the Department will be able to provide current ownership and classification maps to each county as the need arises.