Chapter 12
Residual Land Valuation

Class 5 – Undeveloped Land

Statutory Changes

Wisconsin Act 33 renamed the Swamp or waste class of real property to Undeveloped under sec. 70.32(2)(a)5, Wis. Stats. "Undeveloped land" retained the definition of Swamp or waste under sec. 70.32(2)(c)4, Wis. Stats.

Wisconsin Act 33 also specified how "Undeveloped land" is valued for assessment purposes under sec. 70.32(4), Wis. Stats. Sec. 70.32(4), Wis. Stats. states, "Beginning with the assessments as of January 1, 2004, agricultural forest shall be assessed at 50% of its full value, as determined under sub. (1), and undeveloped land shall be assessed at 50% of its full value, as determined under sub. (1)."

After determining the full value of the "Undeveloped land" in accordance with sec. 70.32(1), Wis. Stats., state case law, and professionally accepted appraisal practices, the value is reduced by 50% under sec. 70.32(4), Wis. Stats.

Classification of Undeveloped Land

Undeveloped land is defined under sec. 70.32(2)(c)4, Wis. Stats., to include bog, marsh, lowland brush, uncultivated land zoned as shore-land under sec. 59.692, Wis. Stats., and shown as a wetland on a final map under sec. 23.32, Wis. Stats., or other non-productive lands not elsewhere classified. Land with buildings or improvements cannot be classified as undeveloped sec. 70.32(2)(a), Wis. Stats.

This class includes areas commonly called marshes, swamps, thickets, bogs, or wet meadows; areas with soils of the type identified on soil maps as histosols (peat and muck) or as mineral soils that are "somewhat poorly drained," "poorly drained," or "very poorly drained," or "water," and areas where aquatic or semi-aquatic vegetation is dominant. This class also includes land that, because of soil or site conditions, is not producing or capable of producing commercial forest products.

Impounded surface water areas (flooded land behind dams) used for storage within defined project boundaries are not to be included in this classification. These impoundments along with their associated buildings and structures are to be separately described and classified as commercial.

In a few areas of central Wisconsin certain swamplands produce a species of moss that grows in a wild state, is harvested, and has a commercial use. This crop is very slow growing, is not cultivated, and is not regarded as an agricultural pursuit. Assessors should classify such lands as Undeveloped.

A small amount of land in the state is regarded as truly waste. Such lands are barren, inaccessible, totally non-productive, or not useable for any present purpose or need.

Some lands formerly classified agricultural will need reclassification to undeveloped. The laws governing the preferential assessment of agricultural land (use-value) require that agricultural lands be "devoted primarily to agricultural use." "Land devoted primarily to agricultural use," means land in an agricultural use for the production season of the prior year, and not in a use that is incompatible with agricultural use on January 1 of the assessment year (Chapter Tax 18.05(4)). Farmland that has been abandoned or converted to recreational use no longer qualifies as agricultural land and should be classified undeveloped, as it cannot be classified elsewhere. In addition, road right-of-way fronting agricultural land should be classified undeveloped if it is not in an agricultural use. Due to its restricted use, right-of-way should be given a nominal value. Right-of-way fronting any other class of land should remain in that class.

Valuation of Undeveloped Lands

The wide variety prices paid for undeveloped lands may require that the assessor set several different unit values depending on the use and location of the property. The sales comparison approach is generally the preferred method to value class 5 lands.

Undeveloped lands command a wide range of prices because of the varied uses being made of this class of property. When such lands serve as a useful adjunct to a commercial cranberry bog, for example, they are much more valuable than similar lands not so located. Undeveloped lands throughout the state harbor wildlife. State and federal conservation agencies recognize the recreational potential of these lands and have acquired much of this type of acreage in recent years. Although sales to these agencies do not necessarily reflect ordinary market value, they should alert the local assessor to the potential value of similar lands.

Certain undeveloped lands have a potential value for muck farming where the muck is of sufficient depth and the area can be successfully drained. If they are put into agricultural production they should be reclassified agricultural.

In some areas of the state, smaller, unprofitable farms are often sold and used for private recreation. By definition, these lands are no longer "agricultural." If they cannot be classified elsewhere, they are considered undeveloped. The prices paid for these lands may be considerably more than that of other less desirable undeveloped land.

After determining the full value of the "Undeveloped land" in accordance with sec. 70.32(1), Wis. Stats., state case law, and professionally accepted appraisal practices, the value is reduced by 50% under sec. 70.32(4), Wis. Stats.

Lakebeds of Natural Navigable Waterways

Lakebeds should be classified as undeveloped land. Valuation of the lakebed will depend on whether the lakebed is owned by the State. The value of the parcel will be determined, not by the lakebed itself, but by the value accruing to the land surrounding and/or abutting the lakebed.

Section 30.10 Wis. Stats., as well as the Supreme Court case *State v. Bleck*, 114 Wis. 2d 454, 338 N.W.2d 492 (1983), states that if a natural lake is navigable ("...any lake, stream, or river capable of floating a canoe or boat") the State of Wisconsin owns title to the lakebed to the high water mark. The State owns the bed in trust for the people and cannot sell this right. Since the State owns title to the bed of all natural navigable lakes, there is no need for the assessor to value the bed of the lake. The assessor should treat lake bottom of a natural navigable lake as exempt property, assigning zero value (or a nominal $100 value) to the portion of the parcel that is lakebed.

Only that portion of the parcel that is actually lakebed should be classified as undeveloped. The remainder of the parcel should be classified as residential, commercial, undeveloped, or forest lands, depending on its use or probable use, based on the criteria for that class. In cases where the parcel contains a lakebed surrounded by land that meets other criteria for undeveloped land (swamp or wetlands, etc) the acreage for all undeveloped lands, including the lakebed, are identified as undeveloped in the assessment roll with an assessment that reflects zero value for the portion that is state-owned lakebed. The assessor's files should contain the details of which portion of undeveloped lands is lakebed and which portion is other undeveloped lands.

Class 6 – Productive Forest Land

Statutory Changes

Since the classification of land as “agricultural forest land” versus productive forest land will affect value, the assessor will need to verify ownership and location to determine which forest class is appropriate. “Agricultural forest land” classification and valuation is discussed in WPAM Chapter 11, *Agricultural Valuation*.

Classification of Forest Lands

Forest lands are identified in the assessment roll as productive forest land (6). All non-productive lands should be classed as undeveloped. Forested land with buildings or improvements cannot be classified in Class 6 (sec. 70.32(2)(a), Wis. Stats.).

Productive forest lands and related services in this classification are determined primarily by the use of the land. Forested areas used for hunting, fishing, recreation, or in the operation of a game preserve, should be classified as forest unless clearly operated as a commercial enterprise or are exempt.

Forest lands include those forested areas, not on farms or ranches, which are being managed or set aside to grow tree crops for "industrial wood" or to obtain tree products such as bark or seeds. Forested areas on farms, ranches, or estates, with no commercial use made of the trees are to be included in this classification, including cutover. Cherry orchards, apple orchards, and Christmas tree plantations are classified as agricultural property.

Lands designated "Forest Crop Land," "Woodland Tax Land," and "Managed Forest Land" by entry order of the Department of Natural Resources are entered separately in the assessment roll (See WPAM Chapter 6).

Establishments primarily engaged in performing services related to timber production, wood technology, forest economics and marketing, and other forestry services such as cruising timber, fire fighting, pest control, and reforestation, should be classified as commercial.

Valuation of Forest Lands

The valuation of forest lands requires as much care and knowledge as the other classes of property. To cope with this challenge the assessor should be equipped with knowledge of tree species and kinds of forest products harvested in the taxing jurisdiction. The Department of Natural Resources has a forester assigned to each county who may be able to provide the assessor with help and information.

The assessor may be able to use the sales comparison approach in valuing forestland, if there are sales of forestland with the same type, size, volume, and stocking of tree. The highest and best use of both the subject and the sale must be forestland. The assessor analyzes the sale in the same manner as the sales of other types of property in order to determine its comparability to the subject. If the assessor finds enough sales that are comparable to the subject, they can then be used to value the subject property. However, if there are no comparable sales, the assessor can resort to the following method.

In using this method of estimating the value of forest land, the first step is to estimate the value of the bare land. Bare land values are best found by analyzing sales of recently clear cut or cutover land sold for forest plantation purposes. The second step is to estimate the market value of the standing forest crop. The information needed for this is:

1. Kind and amount of merchantable forest products found on the land.
2. Respective unit market prices of the forest products (The Department of Natural Resources makes available annual estimates of stumpage value of forest products in section NR 46.09(2) of the Wisconsin Administrative Code).

Multiplying the amount of merchantable forest products times the unit price produces the market value of the forest crop (also called the stumpage value). This figure is added to the value of the bare land to yield the value of the forestland.

The kind and amount of merchantable forest products is most accurately determined from reports of skilled timber cruisers, who are experts in this process. Satisfactory results are also obtained through the interpretation of special aerial photographs by specialists. Lacking this information, the assessor must establish the kind and amount of merchantable forest products by visual inspection and use of a volume table.

Size Classes – Definitions

Seedlings and Saplings. Trees less than 5 inches in diameter at breast height (d.b.h.), and capable of developing into pole-timber trees.

Pole-Timber Trees. Live merchantable trees of softwood species 5.0-8.9 inches (d.b.h.), and hardwood species (including aspen) 5.0-10.9 inches (d.b.h).

Saw Timber Trees. Live merchantable trees of softwood species 9.0 inches or larger (d.b.h.) and in hardwood species (including aspen) 11.0 inches or larger (d.b.h.) Saw timber trees are divided into two classes:

1. Small saw timber-softwood (9-15 inches d.b.h.) and hardwoods (11-15 inches d.b.h.).
2. Large saw timber-all trees 15 inches or larger (d.b.h.).

Stocking Density

The stocking density is the number of trees per acre for the various tree classes. Figures 12-1 and 12-2 are provided as guidelines for the assessor.

It will usually be necessary to view or sample several areas within a forty-acre tract in order to determine whether the stand is uniform. If the stand is not uniform, an average estimate for the entire forty acres can be made by using the following method:

1. Count the number of trees within a circle with a radius of 1 rod (16 ½ feet). This count multiplied by 50 will provide an estimate of the number of trees per acre.
2. Repeat this procedure in a number of strategically selected test circles.
3. Take the average of the several counts and apply it to the 40 acre tract.

A more rapid method for obtaining the information on volume is the Bitterlich System, devised in 1948, and also referred to as the point sampling method of measuring basal area. Basal area is the area in square feet of the cross section of a tree at breast height (4 1/2 feet). This method requires the use of an angle-gauge or a wedge prism. In using an angle-gauge, the cruiser counts the number of trees around a sampling point whose diameters at breast height appear larger than the cross-arm of the angle-gauge. When using a wedge prism, the cruiser counts the number of trees whose stem sections at breast height when viewed through the prism do not appear to be detached from the main stem. The tree count is obtained around a given point. There is a definite correlation between tree basal area and tree volume. An expert can use this technique to estimate the volume of merchantable timber in a tract. Further information on this method may be obtained from the technical bulletins provided by the Department of Natural Resources.

Table 12-1

	Stocking Class or Density		
	Good	Medium	Poor
Area Covered by Growing Trees	70-100%	40-69%	10-39%

Table 12-2

	Stocking Class or Density		
Size Class	Good	Medium	Poor
	Number of trees per acre		
Seedling-Sapling	1400+	800-1400	200-800
Pole Timber	100-330	60-325	25-225
Small Saw Timber	50-175	30-170	15-85
Large Saw Timber	60-80	35-65	10-35

Figure 12-3
Photo Illustration of Stocking Classes for Various Tree Sizes – Conifers

	Seedling-Sapling	Pole Timber
Good		
Medium		
Poor		

Figure 12-4
Photo Illustration of Stocking Classes for Various Tree Sizes – Conifers

	Small Saw Timber	Large Saw Timber
Good		
Medium		
Poor		

Figure 12-5
Photo Illustration of Stocking Classes for Various Tree Sizes – Hardwoods

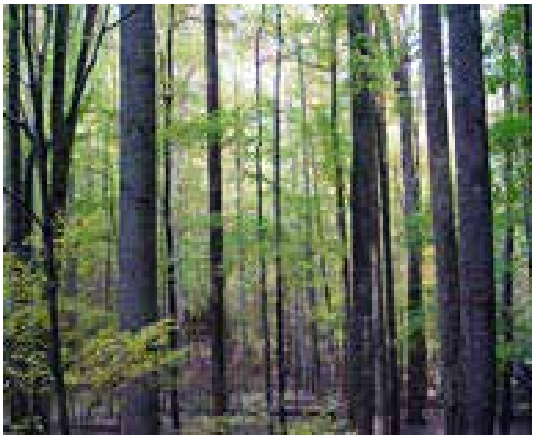
	Seedling –Sapling	Pole Timber
Good		
Medium		
Poor		

Figure 12-6
Photo Illustration of Stocking Classes for Various Tree Sizes – Hardwoods

	Small Saw Timber	Large Saw Timber
Good		
Medium		
Poor		

Volume Per Acre by Tree Size and Stocking Class

Size Class	Diameter Range	Volume Range	Stocking					
			Good		Medium		Poor	
	Inches		Bd. Ft.[1]	Cords	Bd. Ft.	Cords	Bd. Ft.	Cords
Seedlings	0-1		0	0	0	0	0	0
Saplings	1-5	Low		0		0		0
		Average		2.5		2.2		1.5
		High		2.9		2.8		2.0
Pole Timber	5-9	Low		13.0		7.0		3.0
		Average		20.0		12.1		5.2
		High		24.0		12.9		7.0
Small Saw Timber	9-15	Low	5,000		2,500		1,300	
		High			5,000		2,500	
Large Saw Timber	15+	Low	8,500		4,300		1,300	
		High			8,500		4,300	

[1] Board feet as measured by the Scribner Rule

Volume Tables

After the size class (diameter range) and the stocking class have been established the number of board feet or cords of the various forest products can be read from the volume table. The range in volume is caused by the variation in tree height and diameter within each size class. Generally, if the average diameter at breast height (4 1/2 feet) is at the lower end of the diameter range, the lower end of the volume range should be used. However, the height of the tree also affects the volume range and only experience will sharpen the assessor's judgment.

The number of cords or board feet of each forest product multiplied by the unit stumpage value yields the additional value that must be added to the bare land value. The following example illustrates how this method can be used:

The assessor is valuing a 40-acre tract of forestland. The land is not suitable for any other use. The land contains 30 acres of spruce trees with a diameter at breast height of 14 inches and good stocking. There is also 10 acres of aspen with a d.b.h. of 7 inches and good stocking. The assessor has found that bare land is selling for approximately $200 per acre. Using the volume table and stumpage values the following values are determined.

Value of land:

40 acres at $200 per acre	=	$ 8,000

Value of forest products:

spruce:
30 acres x 5,000 bd. ft. per acre =150,000 bd. ft. x $32 per 1,000 bd. ft.

	=	$ 4,800

aspen:

10 acres x 20 cords per acre = 200 cords x $5 per cord	=	$ 1,000
Value of forest land	=	$13,800