Fact Sheet 619

Woodland Management: How To Determine Your Property Boundaries

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Many landowners have only a vague idea of where their property boundaries lie or unwisely assume that existing fence lines or walls accurately define their property boundaries. When land is not being managed, unclear boundaries may not be a problem; however, they can become important when cutting or improving cutting begins. Accurately marked property boundaries are needed to find exact acreage when calculating land value and property taxes. Well-marked boundaries also can prevent timber theft. The Annotated Code of Maryland, Natural Resources Section 5-409, protects landowners from pilfering of merchantable trees and timber. It reads as follows:

Any person who willfully, negligently, recklessly, wrongfully, or maliciously enters upon lands or premises of another without written permission of the owner... in order to cut, burn, or otherwise injure or destroy, or cause to be cut, burned, or otherwise injured or destroyed, any merchantable trees or timber on the land is liable to the party injured or aggrieved in an amount triple the value of the trees or timber cut, burned, or otherwise injured or destroyed. The damages are recoverable in a civil action.

In Maryland, if someone cuts your trees without your written consent for any reason, the law makes it possible to recover triple the value of the timber cut, even if the boundaries are unmarked. This high level of protection is greater than that of many other states. However, the time, money, frustration, and conflict with your management objectives for the land affected are difficult to compensate. Clearly marked boundaries can help minimize such problems.

A professional survey can be costly, and often the cost of the survey only covers the location of corners—locating and marking boundaries can be an added expense. This fact sheet provides the basic information needed to locate and mark property boundaries from a deed description. However, if there is any dispute about property boundaries between neighbors, only a licensed surveyor can legally establish boundaries in Maryland.

Deed Descriptions

The only way to locate your legal boundaries is to obtain a deed description or a recorded survey map that accurately includes angles and distances for each boundary line. Many deeds, however, contain only vague descriptions of corners and abutting lands. The type of deed information on a corner can be:

1. Corner lot
2. Corner lot
3. Corner lot
4. Corner lot
5. Corner lot
6. Corner lot
7. Corner lot
8. Corner lot
9. Corner lot
10. Corner lot

This fact sheet is part of a series on woodland management. If you would like information on additional topics in the series, contact your county Extension office.
and bounds survey, may give boundary descriptions according to streams, old trees, rock walls, and roads that have changed over the years. On some properties, the corners may be clearly marked or long-time residents may be able to help determine corner locations. A variety of corner markers have been used in Maryland, such as multiple blazes on trees, an iron pipe or pin, a rock pile topped by a pointed rock, a drill hole or other unnatural mark on a rock, a concrete or granite post, or the corner or crossing of two stone walls (Figure 1). Surveyors often plant wooden stakes for reference purposes during a survey; however, a surveyor’s wooden stake does not necessarily mark a corner.

If the corners of your land are known and your abutters agree on their location, nothing else may be needed to establish your property boundaries. In other cases, a deed search may be required. You can conduct this search yourself or hire a licensed surveyor or consulting forester to do the search. Once a deed description is obtained, you can draft a map of your land with a protractor and a scale and transfer the information to your deed.

Reading a Compass

A compass is divided based on standard graduation of 360 degrees. Zero degrees east is called due east. Zero degrees north is referred to as due north. The angle between 0˚ and 90˚ is east; 90˚ is north; 180˚ is south; and 270˚ is west. These are called azimuths and are found on most standard compasses (Figure 2a). In most surveying work, the compass is divided into four quadrants—NE, NW, SE, and SW—and bearings are described by the number of degrees and the direction in which they depart from north or south (Figure 2b). Thus, 60˚ is the same as N60˚ E; 110˚ is the same as S70˚ E; 220˚ is the same as S40˚ W; and 300˚ is the same as N60˚ W. Compasses can be purchased with these quadrant readings.

It is important to understand that a compass needle points to magnetic north, which is not the true north. The angle between true north and magnetic north is called magnetic declination. In Maryland, we have westerly declination: a compass points west of true north by a number of degrees, depending on your location. Here are examples of varying declinations in Maryland:

• Deep Creek Lake, Garrett County—6˚ W
• Clear Spring, Washington County—71⁄2˚ W
• Frederick City, Frederick County—81⁄2˚ W
• Olney, Montgomery County—8˚ W

References

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Corner marks and the blaze marks at the corners or near the corners of a property must be clearly marked. Placing a blaze near the corner and marking the tree with a stake may be sufficient. Trees may also be used to mark property boundaries. However, locating property boundaries can be difficult. Complicated deed(s) or surveys, errors in past surveys, or improperly marked as "witness trees" by cutting three trees within 5 feet of the line with the blaze marks front and back about 5 feet above ground cannot be found on or near the line. In these situations, erect mounds of stones or a fence. To make the corner more evident, two blazes at 4-inch intervals, one above the other. Record these trees by taking bearings and distances from the trees to the corner. Be sure you are still in sight of the previous blaze when you cut the tree.

Trees that are on the line should be blazed differently than the boundary lines, using such markers as pipe or another permanent item. To make the corner more evident, two blazes at 4-inch intervals, one above the other. Record these trees by taking bearings and distances from the trees to the corner. Be sure you are still in sight of the previous blaze when you cut the tree.

Witness trees.

Figure 8. An example of where on a tree to place a blaze and what size the blaze should be. Figure 9. An example of how trees within 5 feet of the boundary line, it is acceptable to blaze trees so that magnetic declination changes slightly from one line to the next, causing the blaze to move. This is to prevent confusion for anyone looking at the corner marks. To establish the declination for your area, adjust the difference to the other lines.

Figure 3a. Algebraic signs for changing a true bearing or azimuth to a magnetic angle.

Angle A = Delta C - ΔW

Delta C = magnetic declination

ΔW = true bearing

Figure 3b. Algebraic signs for changing a magnetic bearing or azimuth to a true angle.

Angle A = ΔW + (ΔW x tan ΔC)

ΔW = magnetic bearing

ΔC = true bearing

Figure 5. Example of a true triangle. No tree should be cut near the corner as it can make it difficult to locate and a marker.

Conclusion

With an accurate deed description or survey map, the appropriate measuring equipment, and the documentation of the line, you can accurately locate a corner. If you have trouble locating a corner or fence, including fence post breakage due to decay, tree growth, shifting soil, and instances of gravel or trash between the fence rails, broken and missing rails, when in doubt, use a Surveyor’s Chain to measure from the corner or use a recent U.S. Geological Survey quadrangle map for your area. These maps are available at survey supply stores, online stores, or your local Township.

Many old corner markers can be found in fields, orchards, railroad tracks, fences, and other metal objects that may cause local magnetic interference. Be aware, however, that magnetic declination changes slightly over time. If your deed or map description is old, you may need to calculate the change in declination by comparing the current bearings and distances. Adjusting Field Bearings for Declination

If your map or deed bearings are magnetic, no adjustment is necessary. Be aware, however, that magnetic declination changes slightly over time. If your deed or map description is old, you may need to calculate the change in declination by comparing the current bearings and distances.

Figure 4. Algebraic signs for changing a true bearing or azimuth to a magnetic angle.

Figure 6. Example of how trees within 5 feet of the line can be blazed to mark the line.
The length of your step can be determined by using the same information of a pace is similar to that used to determine ground can be fairly accurate. However, on mine your average step. An example of a step feet/20 steps, which equals 2.75 feet per step.

The method used to determine the length from our previous sample, 55 feet covered by 20 steps in a straight line, measuring the accuracy should be made with a tape and measuring tape (typically 50 or 100 feet long), which is the distance measured over a distance because of its ease of use. A pace is equal to two steps and is counted each time for 20 steps.

Locating Boundary Lines

The length of a chain can be used. The length of a step can be determined (downhill as well as uphill) by repeating the count at intervals. For example, one step: 1, 2, 3, 4, 5, 6, etc. On the steepest slopes in very heavy brush, in swamps, or among boulders, every count may have to be repeated. Consistent technique may be helpful in locating boundaries. Sometimes, no attempt should be made to maintain a standard pace. Instead, allow for its inevitable shortening.

A chain is 66 feet (composed of 100 links), a foot = 12 inches, an acre = 43,560 square feet, a mile = 5,280 feet, a pole, rod, or perch = 16.5 feet, a rood = one-fourth of an acre, the length of a pace is 20 percent slope.

Locate a beginning-point corner that you are seeking. Search for evidence of a corner. Often, no conclusive evidence exists. In other instances, portions of walls or fences may have been removed, or the wall or fence may never have been completed to the corner of the property. Occasionally, property line permanently until you are sure is accurately marked. Run a test line from this corner to the next corner by pacing. When you reach a permanent boundary line using the test line as a reference. If possible, a series of offsets from your test line should be in the vicinity of the corner you are seeking. Search for evidence of a corner mark: one slash mark 3 to 4 inches above the blaze, two slash marks for an angle, and three slash marks for a straight line, and another 3 to 4 inches below it. Some common marking combinations used by surveyors are one slash mark for a straight line, a blaze, with plastic flagging, strips of cloth, or other nonpermanent markings. When you reach the actual boundary until you locate it as obvious, the actual boundary may be some distance to one side of the landmark. The test line is an agreement on the boundary location. Then for the distance indicated on the deed or survey map. Mark the test line occasionally with plastic flagging, strips of cloth, or other nonpermanent markings. When you reach the permanent boundary line can be calculated (Figure 7).

Locating Beginning Corner

1 Step
1 Pace

Error Difference

- A to B 50 feet 50 ft x .04 2 feet
- B to C 50 feet 100 ft x .04 4 feet
- Station to C Cumulative

1 Step
1 Pace

Example of a step and a pace.
Locating Boundary Lines

From boundary lines have been marked in the same manner. Although boundary lines are not to be used as a reference for any purpose, they can still be useful in locating property corners.

The following techniques may be helpful in locating boundary lines:

1. Use a survey map to locate the permanent boundary line. Mark the test line occasionally with plastic flagging, strips of cloth, or other nonpermanent markings. When you reach the end of the measured distance, you can use a survey map to make sure the boundary lines are in the vicinity of the corner you are looking for.

2. Blazes can be identified as a boundary mark by cutting a 4- to 6-inch square sector of bark down to the live wood (Figure 8). Blazes can also be marked by blazing trees or erecting mounts of stones or a fence along the boundary lines.
Next one. In some instances, acceptable trees or three trees near the corner can be blaze and what size the blaze should be.

For fruitless and frustrating labor. In some cases, a sear ches, errors in past surveys, or improper marked as "witness trees" by cutting three front and back about 5 feet above ground within 5 feet of the line with the blaze marks.

Boundaries can be difficult. Complicated deed maps, the appropriate measuring equipment, and the information in this fact sheet, you erery boundaries. However, locating property boundaries. However, locating property corners of property need to be marked. Flagging the boundaries is the most expensive survey conducted by a licensed surveyor is the only answer.

Conclusion

With an example of where on a tree to place a marking the boundaries is the most expensive survey conducted by a licensed surveyor is the only answer. An example of how trees within 5 feet of the line can be blazed. Trees that are on the line should be blazed themselves. In doing this, you can read true bearings or azimuths directly. If you purchase a compass, select one with this feature to aid in establishing the declination by comparing the current bearings with the compass. An example of where on a tree to place a marking the boundaries is the most expensive survey conducted by a licensed surveyor is the only answer.

Adjusting Deed and Map Bearings for Declination

If your compass can set the declination internal-ly, no adjustment is necessary to establish your true field bearing. If your compass reads only the magnetic bearing, the declination angle must be added in the NE and SW quadrants and subtracted in the NE and SW quadrants. If you are in a known boundary line and using a map with true bearings, you will need to convert the magnetic bearing to a true angle.

To determine the true bearing from a bearing shot in the field, the declination angle must be added to the compass reading. If you are in a known boundary line and using a map with true bearings, you will need to convert the magnetic bearing to a true angle.

Example:

If your compass can set the declination internally, no adjustment is necessary to establish your true field bearing. If your compass reads only the magnetic bearing, the declination angle must be added in the NE and SW quadrants and subtracted in the SE and NW quadrants. If you are in a known boundary line and using a map with true bearings, you will need to convert the magnetic bearing to a true angle.

To determine the true bearing from a bearing shot in the field, the declination angle must be added to the compass reading.

Adjusting Field Bearings for Declination

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Example:

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To determine the true bearing from a bearing shot in the field, the declination angle must be added to the compass reading.
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