



# BRANCHING OUT

Maryland's Forest Stewardship Educator

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## GPS: A Tool for All Landowners (yes, even You!)

Do you think the Global Positioning System (GPS) is a tool just for the military and surveyors? While that may have been true at one time, GPS is now being used for many everyday activities, and it has a lot to offer forest landowners.

### How GPS Works

GPS is a system of satellites, ground stations, and receivers sending information back and forth. There are approximately 24 satellites orbiting the Earth 11,000 miles overhead at any one time. The ground stations know precisely where in space the satellites are located and make corrections to the satellites' measurements as needed.

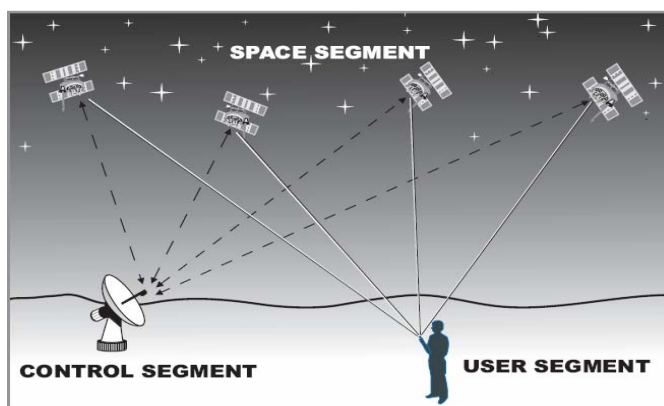
Satellites are constantly sending out radio signals to be picked up by the GPS receivers on Earth. The signals include information about the satellite it was sent from, the exact location of the satellite, and the exact time the signal was sent. Each satellite has an atomic clock, so time-stamped information is precise down to the nanosecond. The quartz clock in the hand-held GPS receiver is constantly updated by the satellites. The time the signal was sent is important for calculating your distance from that satellite.

To find out your location, your hand-held receiver picks up radio signals sent out by satellites. The receiver figures out how far it is from each satellite by multiplying the radio signal speed (186,000 miles per second) by the time it took to reach the receiver ( $distance = speed \times time$ ). Once the receiver has picked up at least 3-4 satellites, a fairly accurate location can be determined. At this point, your position can be identified with an accuracy of about 15 feet on most units. The more satellite signals your receiver picks up, the greater the accuracy of your position.

### GPS and You

You may be wondering at this point what GPS has to do with forest landowners and natural resource stewardship. There are three basic functions of a GPS receiver: marking waypoints, tracking, and routing—all of which can be useful to foresters and landowners.

When you want to mark the location of something like a corner of your property, you would create a waypoint.



There are three segments of the Global Positioning System: Space, Control, and User.

A waypoint is like a global address. It records the latitude and longitude coordinates of a particular spot so that it can be found on a map or used in a computer program. By marking a waypoint at your favorite hunting location, you'll easily find your way back to that spot from your vehicle or home—just tell the GPS unit you want to go to that waypoint and follow the arrow on the unit.

Routes help you go to multiple waypoints by programming them all at one time. If you have a number of hunting locations to visit, you can create a route to take you from your home to the various locations without having to enter each waypoint separately. You may want to create waypoints for the corners of your property, then make a route using those waypoints.

Tracks record your movements. Every couple of seconds, the GPS unit records a point, so by the time you are at the end of your walk, there is a breadcrumb-

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like record of your path. By recording tracks as you walk around your property or elsewhere, you can find out the length of the perimeter, the distance traveled, changes in elevation, and even the acreage of the area you walked around. More importantly, you won't get lost because you can always backtrack along the tracks you saved and find your way back out of the woods.



The Garmin GPSmap 76Cx is a good unit with a color screen and mapping capability.

In case of emergency, keeping a GPS unit with you while out in the woods could greatly speed up rescue efforts. If you are able to tell a dispatcher your coordinates or those of an injured friend, rescue crews would know exactly where to look. And if you don't have a cell phone or can't get a signal, a GPS unit with mapping software like MapSource ([www.garmin.com/cartography/mapSource/topo.jsp](http://www.garmin.com/cartography/mapSource/topo.jsp)) could guide you to the nearest road or hospital.

Using a GPS receiver and free software, you can make detailed topographic maps of your property, print out aerial photographs with your property lines marked out, and accurately record changes in

your land.

### Available Software

When choosing software to use alongside your GPS unit, consider your personal needs. There are many free programs available online that allow you to store, manipulate, and work with your GPS data.

USA PhotoMaps (<http://jdmcox.com>) is a free program that is tremendously useful. With an internet connection, you can access aerial photos (not always current) and topographic maps of almost anywhere in the country! You can download waypoints you created in your travels onto aerial photographs or topographic maps. You can also create waypoints by clicking on the map or photo, then transfer these points to your GPS unit for field verification.

Programs such as EasyGPS ([www.easyGPS.com](http://www.easyGPS.com)) allow you to store and transfer waypoints, tracks, and routes between your GPS receiver and computer. This is very helpful for backing up GPS information and entering information about GPS data. (We've found that it is a lot quicker to type on your home computer than punch buttons on the GPS unit while out in the field.)

Terrain Navigator software is not free, but if you want to be able to print high-quality topo maps or obtain accurate topographic information, it's worth the price. There is even a feature that allows you to view three-dimensional topographic maps (3-D glasses included)!

### Receiver Features

GPS receivers available to the public run the gamut from the wristwatch-style for under \$100 to GPS surveying equipment costing over \$25,000. Most people will find their GPS needs met with a unit costing between \$200 and \$500.

Features vary, but if you plan on using your GPS receiver unit under any cover such as in a stand of trees, it is important that the unit has a SiRF chip. This allows the unit to pick up more satellites under cover, and will provide your location more quickly than units without the chip. Another thing to consider is whether there is a color mapping function—black & white displays can be more difficult to use. Having a mapping function on your unit is important if you plan on using it while traveling or for finding roads, waterways, or terrain features. Consider a unit that has a memory card for storage of maps which increase its usefulness.

Find out more about what GPS can do for you at [www.naturalresources.umd.edu/GPS.cfm](http://www.naturalresources.umd.edu/GPS.cfm).

## GPS Training Materials Available Online

Instructional materials about GPS and how to use GPS receivers are now available for free online. The materials were created for a course recently offered to foresters and loggers, but the instructions are of value to anyone wishing to learn about using GPS. The materials include presentations on the workings of

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Published four times a year and distributed to forest landowners, resource professionals, and other interested in forest stewardship. Issues are posted online at [www.naturalresources.umd.edu/Branching\\_Out.cfm](http://www.naturalresources.umd.edu/Branching_Out.cfm). To sign up for online updates, email [listserv@listserv.umd.edu](mailto:listserv@listserv.umd.edu). In the body of the message, type SUB branchingout your name (ex: SUB branchingout John Doe). For a hardcopy subscription (\$10 per year, payable to University of Maryland at the address below) or to send news items, email [heh@umd.edu](mailto:heh@umd.edu); call 301-432-2767x338; or mail *Branching Out*, Maryland Cooperative Extension, 18330 Keedysville Road, Keedysville, MD 21756-1104.

The sponsoring agencies' programs are open to all citizens without regard to race, color, gender, disability, religion, age, sexual orientation, marital or parental status, or national origin.

GPS, what to look for when shopping for a GPS unit, and how to use the unit for a variety of applications. Instructions are based on using the Garmin GPSmap 76Cx, which can be purchased from a number of online vendors for about \$350.

To find out more about future training sessions, and to access training materials and free software, go to [www.naturalresources.umd.edu/GPS.cfm](http://www.naturalresources.umd.edu/GPS.cfm).

## Don't Travel with Firewood!

The emerald ash borer - an insect that was recently found in Prince George's County - is a major threat to millions of ash trees in Maryland forests and neighborhoods. The emerald ash borer can be moved to new areas on infested firewood. For these reasons, there is a quarantine making it illegal to take ash products and any firewood out of Prince George's Co.

What can you do?

- Don't take firewood out of Prince George's County—use local firewood.
- Don't plant ash trees south of Route 4 in the county.
- Report signs of the emerald ash borer, and tell others to do the same.

For more information, go to [www.emeraldashborer.info](http://www.emeraldashborer.info) or call 800-342-2507 or 410-841-5920.

## General Forestry Correspondence Course

The General Forestry Correspondence Course is an excellent program for someone who knows little or nothing about their forest or forestry. There are no pre-requisites and all that is needed is access to a woodlot and a desire to learn. Individuals, particularly Maryland forest landowners, will increase their understanding of forests and forest management. Participants from across North America have benefited from the course. Since this non-credit course began in the spring of 2000, nearly 300 participants have enrolled.

More than a third of the landowners either benefited or expected to benefit financially from the course!

The General Forestry Correspondence Course is offered in both Spring and Fall. The next course will be held February 1– May 20. The registration fee is \$300 and all the materials are provided. Materials consist of the text, appendices, and supplemental readings. A wide array of subjects are covered, such as forest history, physiology and ecology, tree identification, silviculture, forest health and the use of fire, forest inventory, taxes, and the elements of a forest

management plan. Ultimately, you will design your own forest management plan. A certificate of completion is awarded when all assignments are completed. For those preferring to use the computer, an internet version of the course will be available in 2007. Based upon surveys, response to the forestry course has been overwhelmingly positive and participants have recommended this course to others. Additionally,

- nearly 3/4 of the management plans have been initiated or updated, potentially impacting over 5500 acres.
- more than half of the responding landowners changed or adopted new forestry practices.
- over three-quarters of the participants talked with their family about their forests and half sought the advice of a professional forester.

Furthermore, participants expressed a desire to continue in their pursuit of forestry knowledge or, as one forest landowner so eloquently stated, "The more I learned, the more I wanted to know."

Register by February 1! Contact Nancy Stewart at [nstewar1@umd.edu](mailto:nstewar1@umd.edu) or call 410-827-8056x112.

## Have Questions about Using Pesticides around the Home?

The National Pesticide Information Center (NPIC) is available to help people make informed decisions about pesticide handling and use. When you call NPIC, you will speak to pesticide specialists who can answer your questions and decipher confusing labels for you. They can also recommend possible alternatives if you are uncomfortable using certain chemicals.

So before you launch a chemical attack on the dandelions invading your lawn or the ants you found in the kitchen, call NPIC and be informed about how to safely fight those pests. NPIC specialists can be reached by phone at 1-800-858-7378 seven days a week, 9:30-7:30 (except holidays), or through their website: [npic.orst.edu](http://npic.orst.edu).

## Forestry Tax Tips for 2006

Are you unsure about whether to deduct timber management expenses or capitalize them? Did you know that you can deduct outright up to \$10,000 of reforestation expenses on your 2006 taxes?

Find out the answers to many of your questions through an easy-to-read, 2-page paper on tips for the 2006 tax year published by USDA. Read it at [www.naturalresources.umd.edu/Pages/TaxTips2006.pdf](http://www.naturalresources.umd.edu/Pages/TaxTips2006.pdf).

## Forestry 101 Lecture Series:

What you need to know if you own, are thinking of buying, or are just interested in woodland.

Everyone is invited to attend this new forestry lecture series sponsored by University of Maryland Cooperative Extension. Lecture classes will be held at the Frederick County Extension Office located at 330 Montevue Lane, Frederick, MD. The field exercises will be held at the Stronghold Property at Sugarloaf Mountain.

There will be a \$10 fee for each class or you can enroll into all classes with a fee of \$75. Pre-registration is required. Your fee will enable us to purchase quality handouts and provide some refreshments prior to the event. Dates are listed in Upcoming Events.

For more information, contact Terry Poole at [tepoole@umd.edu](mailto:tepoole@umd.edu) or call 301-631-3577.

## The Woods in Your Backyard Materials and Training

Owners of 1-10 acres of land who are interested in making the most of their property can greatly benefit from using the newly published manual, *The Woods in Your Backyard: Learning to Create and Enhance Natural Areas Around Your Home*. The book helps you to identify your goals for your land, and walks you through the steps to achieve them. Whether you are interested in converting lawn to forest, enhancing an existing natural area, creating wildlife habitat, or providing a useful outdoor space for your family, this book is for you. To order, go to [www.nraes.org](http://www.nraes.org).

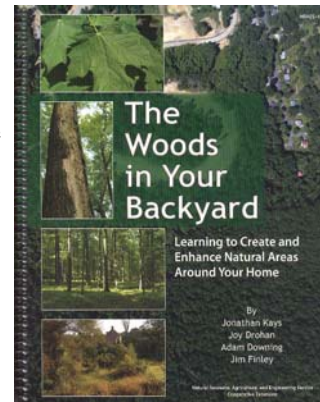
Two trainings for those who are interested in learning more about this resource or teaching others about it will be held in January and February. The two-hour evening class will include an overview of the manual and workbook, and tips on how to share this resource with others.

A training will be January 23rd from 7-9 pm at the Frederick County extension office 330 Montevue Lane, Frederick, MD 21702. To register, contact Wilma Holdway at [wholdway@umd.edu](mailto:wholdway@umd.edu) or 301-631-3576.

On February 6th from 7-9 pm, a training will be held at the Wye REC at 124 Wye Narrows Drive, Queenstown, MD 21658. Contact Nancy Stewart: [nstewar1@umd.edu](mailto:nstewar1@umd.edu) or 410-827-8056.

**Pre-registration is required to attend one of these training sessions.** The cost is \$15 per person or \$20 per couple, which includes a Woods in Your Backyard manual and CD (a \$25 value!).

*The Woods in Your Backyard* is a self-assessment manual that uses lessons, activities, and a case study to help the landowner identify their interests in the land, inventory the property, apply ecological principles, and put their knowledge into practice by choosing land management techniques that help them reach their objectives. A self-guided workbook enables landowners to assess their property and achieve their goals. Completed examples of each workbook activity are provided for additional guidance.



For more information about this resource, go to [www.naturalresources.umd.edu/Backyard.cfm](http://www.naturalresources.umd.edu/Backyard.cfm).

## New Publications and Videos

- *The State of Chesapeake Forests* full color report including histories and economics. Free online at [www.chesapeakebay.net/stateoftheforests.htm](http://www.chesapeakebay.net/stateoftheforests.htm)
- *The Woods in Your Backyard* manual for small-acreage landowners. Order from [www.nraes.org](http://www.nraes.org).
- *Forest Resource Management: A Landowner's Guide to Getting Started*. Order from [www.nraes.org](http://www.nraes.org).
- eXtension: a new website with info on wildlife damage management and much more. [www.extension.org](http://www.extension.org)

## Upcoming Stewardship Events

- January 18** *Forestry 101: Insects and Diseases that Affect Forested Areas*. See article for information.
- January 23** *The Woods in Your Backyard* training; Frederick County MCE office. See article.
- February 1-May 20** *General Forestry Correspondence Course*. Contact Nancy Stewart at [nstewar1@umd.edu](mailto:nstewar1@umd.edu) or 410-827-8056x112.
- February 6** *The Woods in Your Backyard* training; Wye REC. See article.
- February 15** *Forestry 101: Forestry Incentive Programs*.
- February 27** *Bay Area Fruit School*; Wye REC, Contact Mike Newell at [mnewell@umd.edu](mailto:mnewell@umd.edu) or 410-827-7388.
- March 15** *Forestry 101: Alternative Income Opportunities for Forest Landowners*. See article.
- April 21** *Forestry 101: Reforestation, Riparian Forest Buffers and Their Influence on the Health of our Waterways and the Chesapeake Bay*. See article.

**For more details on these and other events, click on the calendar of events link on [www.naturalresources.umd.edu](http://www.naturalresources.umd.edu)**

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Please send changes of address.