

Exercise 7: GPS Field Exercise

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1. Intro-fossgis-umass

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1.2. Module Licensing Information

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1.3. Reviewed by

Quentin Lewis 04/09/07

2. GPS Field exercise (for people with a GPS)

2.1. From Intro-fossgis-umass

This exercise really isn't like any of our other exercises. It is really more of statement of encouragement, to any students in the class who have access to a GPS, to go out and try and use it to either record a location or navigate to a known location.

If we were together, I would give you a "geocaching" exercise. For those who don't know geocaching, it is something that is becoming a hobby for many people in the United States (and elsewhere, I'm sure) where they find locations to hidden "caches". These caches typically contain a log book where you can sign that you found it. Sometimes there are little toys or other things for children to find. For me and my children, this is a really fun way to get outside and search for "treasure"! If you are interested in this and want to see if there are geocaches in your area, visit the geocaching website at <http://www.geocaching.com/>. (I noticed when I wrote this up that there are two geocaches in Nigeria, for example. So this hobby is expanding world-wide).

Geocaching simulates what you might want to do for real work-related needs, particularly in natural resource management, but in other fields as well. For example, if you are in natural resource management, you might want to work in the field and record the GPS location of where you left your vehicle (this is called a waypoint in GPS). Then when out in the deep forest, you can set your GPS to navigate back to the vehicle waypoint to help you find your way back.

Another aspect of GPS, obviously, is taking it to mark locations of features of interest that you would like mapped. Sometimes these will be point locations, or you might want to inventory a trail or map something as a polygon representation.

In the next exercise, we'll show you how to map GPS locations using QGIS (using a Massachusetts, USA example). But for this exercise, take your GPS, and spend an afternoon marking a waypoint location, and then try and navigate back to it. Or go out and record a location of some area of interest.

One exercise I like to do is actually take my GPS to a known location that has been surveyed. If you have any information on the location of a survey marker and know generally where it is located, it is an interesting exercise to navigate and find this survey location. If you find it, and stand over it with your GPS, you can get a sense about your GPS' accuracy for that particular moment in time.

To start this exercise, first, take a good look at the manual for your GPS if you have one. There are a couple important things to remember. First, the default datum used in GPS machines is WGS84. It is important to know what datum your GPS is set to. Second, you need to decide what type of location data you want your GPS to collect. The default usually is Longitude/Latitude. But often you can specify a projection coordinate system (e.g., UTM, for example) that you want to work with in your GIS. It is often useful to set the GPS to use the datum and coordinate system that matches what you are using in the GIS you are building.

So grab your GPS, and try it out!