

**This article describes how to calibrate a scanned paper map into OziExplorer mapping and GPS software.**

Watch the video how-to and read the extra details that follow in the text. OziExplorer is a really powerful peice of GPS and mapping software. One of it's biggest strengths is the ability to read any map image, particulary scans of paper maps, and to georeference them. However, georeferencing, or calibrating a map is far from automated - its a process that you have to do. The video how-to on this page demonstrates the steps that you need to take, and the text that follows describes some of the more advanced topics. Watch the video, and read on!

### **The Grid System**

We have scanned many different maps of varying types - we've bought single large scale maps that have a whole country or state, and we've ripped apart detailed map books at small scales. In all cases, for the maps to be effectively calibrated, they all have some sort of grid system. This is either in the form of latitudes and longitudes, or in a UTM style grid. If you don't have a grid, then you need to have some other known points on the map (preferably a minimum of 4). For example you could go to the intersection of a road on the map, take a GPS reading, and use that as a known point.

### **A Clean Scan**

The first thing is to have a good scan of a map. This means that you want to minimize distortion by getting the map scanned with a large format scanner. Most copy stores will do this for you. Using a small home scanner is ok for small maps, but you'll find that they tend to skew the image quite a bit. If you have a skewed map, there is a process you can go through to stretch it back into place, using a piece of software called Global Mapper . I'll talk about using that in a future article.

### **Selecting the Map Projection**

The next thing is to choose the projection. The projection is a way of projecting the earths "non-sperical" sphere onto a flat plane (a piece of paper). If the map has it the written in the legend then you're laughing. If it doesn't you'll have to guess. You'll be able to verify your guess when you do the calibration check. Many projections have supporting data that you need to input. For example, some maps made in the southern hemisphere are based on the Lambert Conformal Conic projection. This projection needs to have the two bounding north and south latitudes, and a central meridian so that coordinates can be calculated correctly. OziExplorer has an exhaustive list of projections.

### **Selecting the Map Datum**

The datum is also extremely important. It should also be written in the map legend. Using the wrong datum will make the coordinate readings from your GPS incorrectly translate into coordinate points on the map.

### **Defining the Map Boundary**

OziExplorer doesn't know when a map has a border or legend around the perimeter. That's why we use the corner markers shown in the video to define that boundary. When you are using the moving map feature, OziExplorer will know when it reaches the edge of the useful map area, and look in its database for the next map to use.

**To watch the video, go to...**

<http://www.youtube.com/watch?v=VJ8zIfKasfk>