



Pocket PC HGIS Tutorial

(last updated February 2006)

The following tutorial is designed to familiarize users of the basic functions of Handheld Geographic Information System (HGIS) by StarPal™. All other topics not discussed in the tutorial can be found in the HGIS User’s Manual in the download section for the HGIS software located at on the StarPal™ website (http://www.starpal.com/Documents/HGIS_Manual.pdf).

Opening Layers

To start HGIS on the Pocket PC, select it from the Start menu (or look for it under “Programs” on the Start Menu (Figure 1). The opening screen allows you to immediately initiate data communications with a GPS receiver. For this exercise, however, select “Not using GPS.”



Figure 1. Opening HGIS (GPS PLUS version).

Opening an image file

As illustrated in Figure 2, tap File...Layer...Open Layer...and under file type, choose Image: JPG+JGC as the file type and select an image from images folder (in this example, we have an image from Kingman, Arizona – file name: King1m_photo97). You may have to scroll up or down to find the right file. HGIS can display jpeg (.jpg) format if there is world file associated with it using exactly the same file name, but a different extension (.jgw). Another menu will appear where the lat/long, or UTM and zone, must be specified. For this image, the coordinate system is UTM and the zone is 11. Then zone usually defaults to 31 – which is over Africa! If this happens, highlight the 31 box and type in the correct zone (in this example we have an image from zone 11). Click on OK. The image will appear as shown in Figure 2.



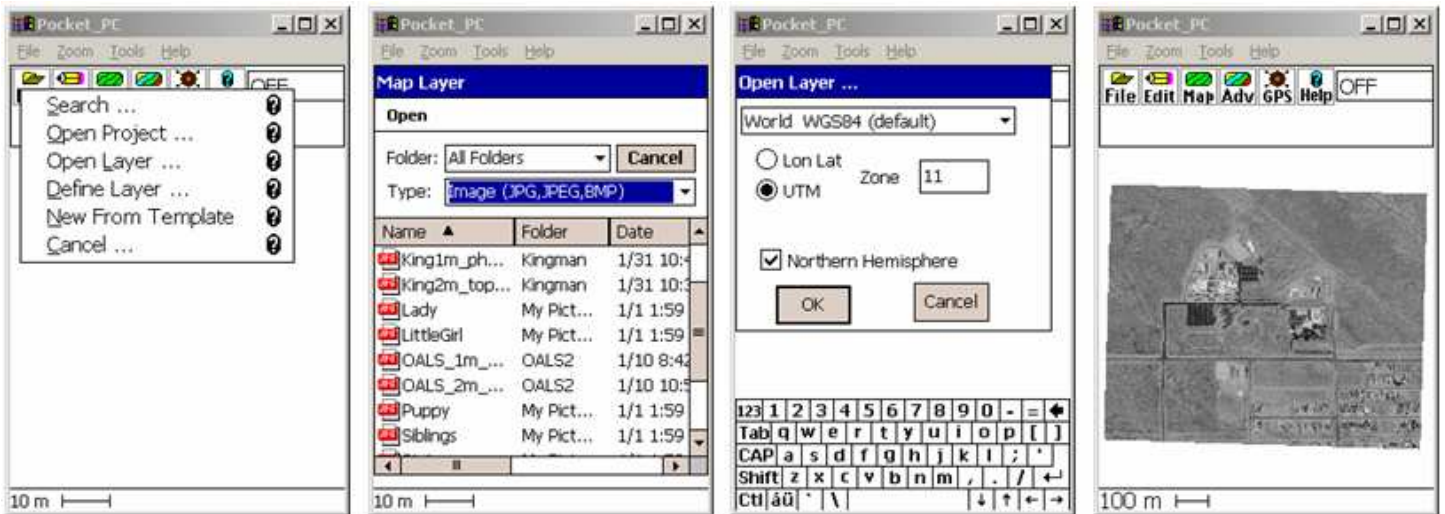


Figure 2. Opening an image file (jpeg with a “world file” -- .jgw).

Opening a map file (the specific format commonly used is a shape file)

This begins in the same way that you opened the image file, as illustrated in Figure 3.

Tap File...Layer...Open Layer...and under file type, this time choose Map: SHP+SHX+DBF (you may have to scroll up) as the file type and choose the shape file you are looking for (in this example, the map is of the Mohave Community College parking lot – filename: mcc_park.shp & .shx & .dbf). Select UTM and type Zone 11 in the File Coordinate System menu. Map color and label options appear on a Boundary Draw Style screen – if you are happy with these, tap on OK. Border style options appear next, and if you are happy with these, tap OK again in the Border Style menu, and then your map will appear on the screen (in this case a map of the parking lot over the Mohave Community College aerial photo).

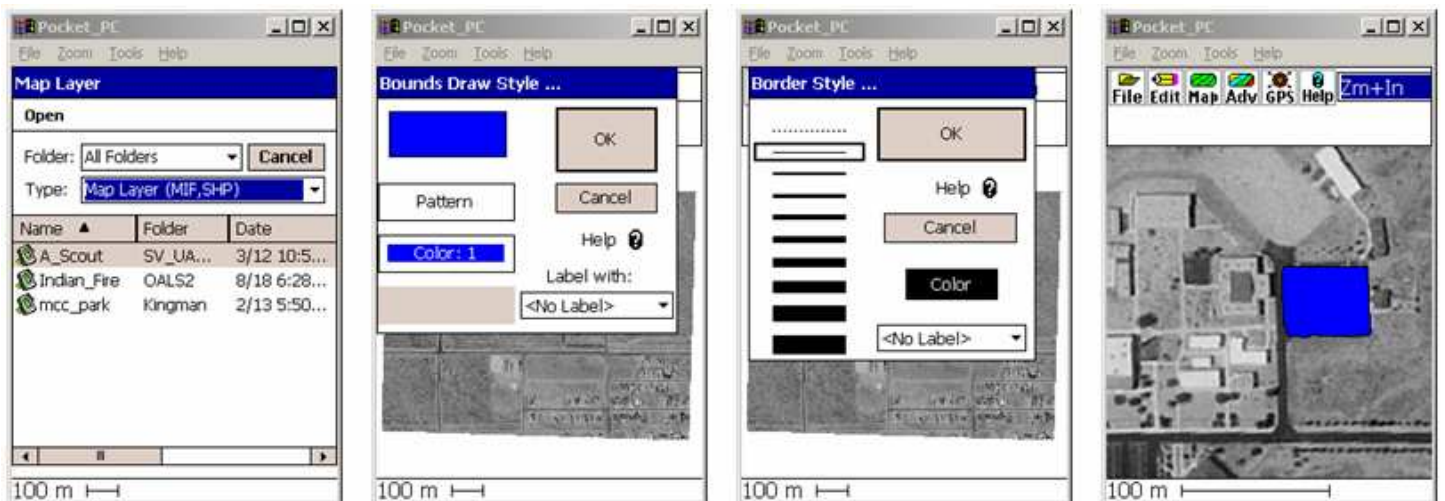


Figure 3. Opening a shape file (.shp + .shx + .dbf) – a map file.

Tool Menu

Many of the most commonly used tools in HGIS are located in the column (on the far right at the top) (Figure 4). We call this the “Tool Column” or “Tool Menu” – however this is a bit confusing when you are actually using HGIS. Rather than seeing the word “Tools”, HGIS displays whichever tool you are currently using. Thus, if no tool is currently activated, it will display “OFF”.

When you first begin, the Tool Menu on the far right will default with OFF. If you tap the word OFF, your tool options will appear in a drop down menu. Your options include SelectOne, MultiSelect, Draw, GPS Draw, Zm+In, Zm+Out, Pan, Ruler and Area Calc tools. Whatever tool you choose will become active and will appear at the top of this menu to indicate it is in use. Hint: When you are finished using a tool, tap the word describing the tool (e.g., Zm_In), and switch the tools to “OFF”. This will prevent inadvertent changes to your screen display or your map layer.



Figure 4. The “Tool Menu”

Select (One or Many)

Figure 5 illustrates how to select a feature that has been map and view its attributes. Under the Tool Menu (on the far right at the top), Select is used to identify items such as points, lines, and polygons to calculate lat/long, acreage, to obtain object attributes and to navigate to points. If you want to select a specific mapped feature, use SelectOne. If you want information about several, use MultiSelect. In this example, to find the area of the parking lot in front of MCC, make sure you have opened mcc_park.SHP map layer (see instructions above on opening a shape file). Next make SelectOne active on your tools menu, and select the map feature (in this case a polygon of the parking lot) by tapping it (here it is displayed as a blue square). You will see diagonal hash marks appear to signify that it is successfully selected. To get basic information about the mapped area, you can tap the “Info” icon. If you want full attribute information (or if you want to add attribute information) about this mapped area, either tap the icon “Attrib” or simply double tap (much like a double click with a mouse on a desktop computer). To return to the main screen, click on the X on the upper right side of the dialogue box.

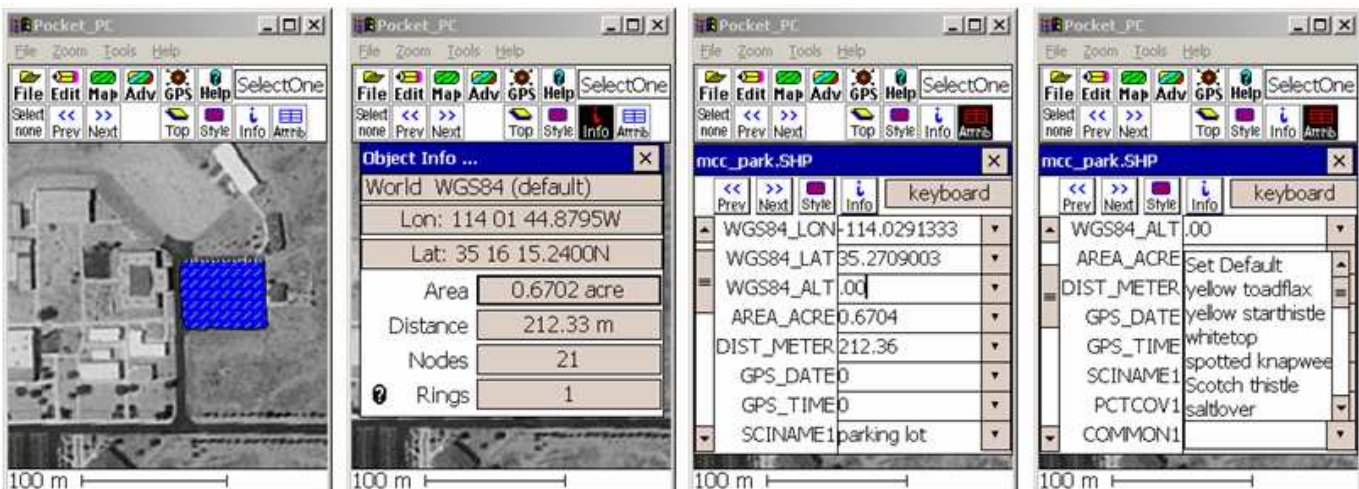


Figure 5. Using “SelectOne” to get basic information (Info) and more detailed attribute information (Attrib), which can be adjusted (adding fields, editing fields, adding attribute values to those fields).

Zm+In

Zoom In is used to zoom into a desired viewing area on a layer or image. On the Tools Menu (far right, top), select Zm+In and either tap the screen or tap and drag the stylus to form a box around the area of interest. This will zoom in on the desired viewing area.

Zm+Out

Zoom Out is used to zoom out to a desired viewing area on a layer or image. On the Tool Menu (far right, top), select Zm+Out. Tapping on the screen will zoom out to the desired viewing area.

Pan (drag)

Pan allows the image or layer to be moved up or down and left to right according to the user's desired viewing window. You will find this tool on the Tool Menu (far right, top).

Ruler

The Ruler tool is used to measure distances (Figure 6). When the Ruler tool is selected in the Tool Menu (far right, top), a box will appear under the main menu options. To measure distance, drag the stylus across the screen from one point to the other. When you lift the stylus, HGIS will compute the distance (in whatever units you have selected) and it will also calculate the bearing. In order to measure exact distances between nodes (more than one straight line, connected together by "nodes"), check the snap box in the ruler distance box.

Draw

Before starting this exercise, either remove from view the `mcc_park.SHP` file by selecting "Map...Layer Properties...", tapping the \surd off next to "view". Or, you can close the layer entirely by selecting "File...Layer...Close Layer", and selecting `mcc_park.SHP`. Now navigate to Mohave Community College (using Zm+In, Zm+Out and Pan in the Tools Menu on the far right, top).



Figure 6. The Rule tool.

Select Draw in the Tool Menu (far right, top) and you will see a new set of icons appear under the main menu icons at the top of the screen. Depending on the function desired, the tools may be selected to perform the various functions. If you want to map the entire area of, say, the parking lot, you would choose "Bound". If you want to map the road, you would choose "Line". Select the Lines icon and touch somewhere along one of the roads. A menu should appear as in the second screen in Figure 7. If you have a template file already created with the fields you wish to collect, you would choose "New Layer from Template," otherwise tap "Define Layer" and the menu in Figure 7 (third screen) should appear.

Next, give the layer a name (e.g. `mcc_roads`). Then tap the icon of the type of feature you wish to map (in this example, we are going to map a road, so "Allow: Line") and tap OK. The "Enter Start Value" window lets you know you can begin drawing when you tap OK. Your point should appear where you first touched the screen a moment ago. Now tap again and again, each time a bit further along the road you are trying to map. When you are finished, tap the OFF icon on the top left (just below the File icon). If you wish to attribute this feature, tap the Attrb icon (or go to the Tools Menu --top, far right-- and activate SelectOne and tap the road you have just drawn).

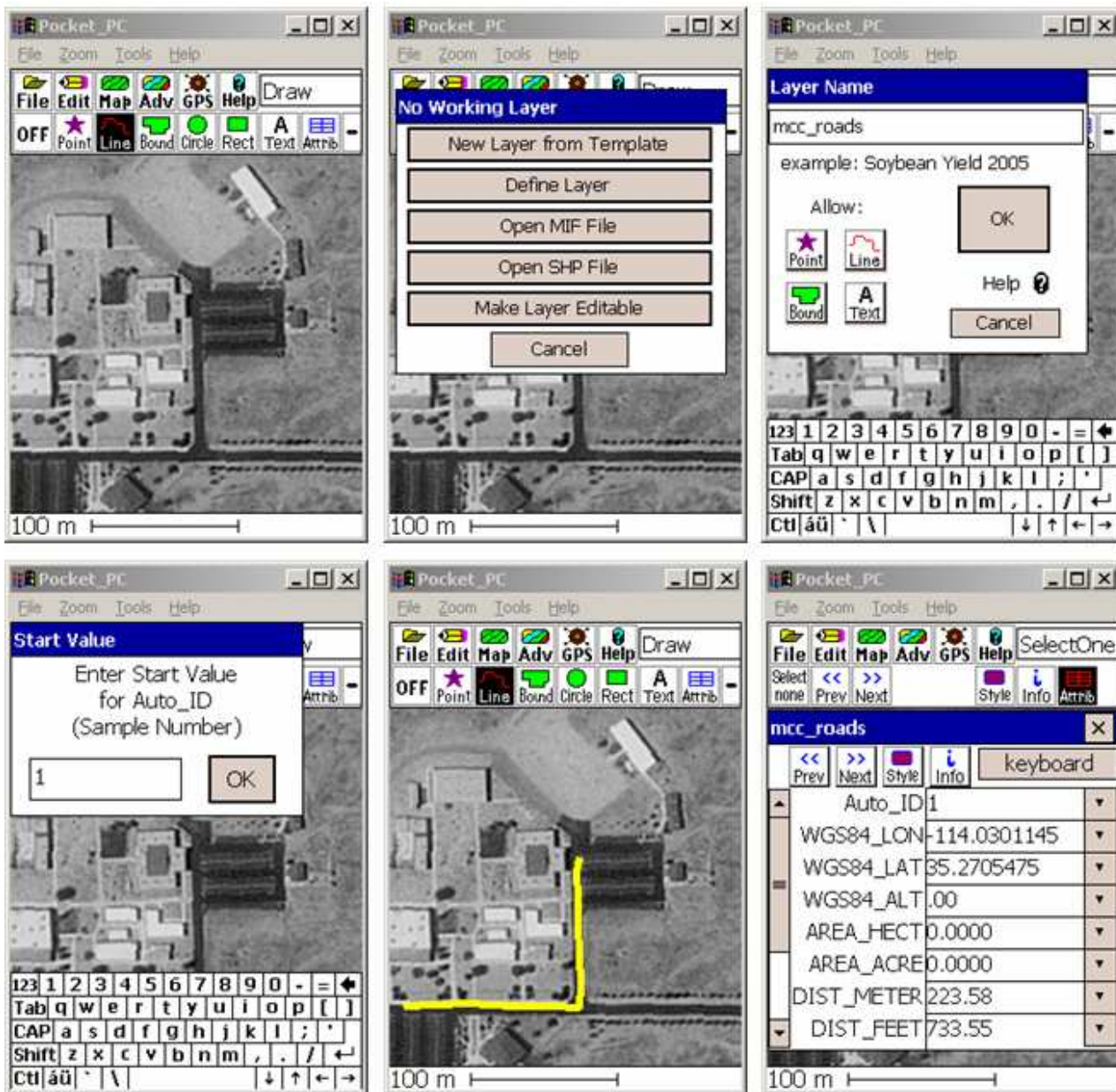


Figure 7. The sequence of screens associated with using the Draw tool to map a road.