Exercise 20: Site Selection 2 - Vector Analysis

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1. Intro-fossgis-umass

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1.2. Module Licensing Information

Version 1.0.

1.3. Reviewed by

Quentin Lewis 04/09/07

2. Site selection 2: Vector Analysis

2.1. Introduction

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Note: this module is a continuation of "Site Selection 1: Raster analysis".
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This module is the second part of the "site selection" problem that we already presented in the previous module: Imagine that you work for a company that is considering setting up a retail store in the area of Hadley, Massachusetts (US). They have asked you to produce a map with potential areas for their consideration. The areas of interest should be flat (less than 3 degrees slope), close to roads for ease of access (less?than 150 m from roads) and should fall in the zones allocated by the government to business/industrial areas in the town of Hadley.

We will extract the comercial areas from a zoning dataset, we will create a 150 m road buffer and find the intersection of these two layers with with the flat areas layer ($<$ 3 degrees slope) that we created in the raster analysis module [http://linuxlab.sbs.umass.edu/introFossgisUmass/index.php?title=Site_selection_1:_Raster_Analysis].

2.2. Set up

The data was already described in the raster module [http://linuxlab.sbs.umass.edu/beginning-fossgis-umass/index.php?title=Site_selection_1:_Raster_Analysis#Set_up]. Click here [http://linuxlab.sbs.umass.edu/beginning-fossgis-umass/datasets/lab_siteselection/siteselectiondata.zip] to download the dataset if you don't have it already. If you worked on the raster module, you should also have a "flat areas" GRASS vector (otherwise, download it from here -quentin, i will add it later). Make sure to extract them both.
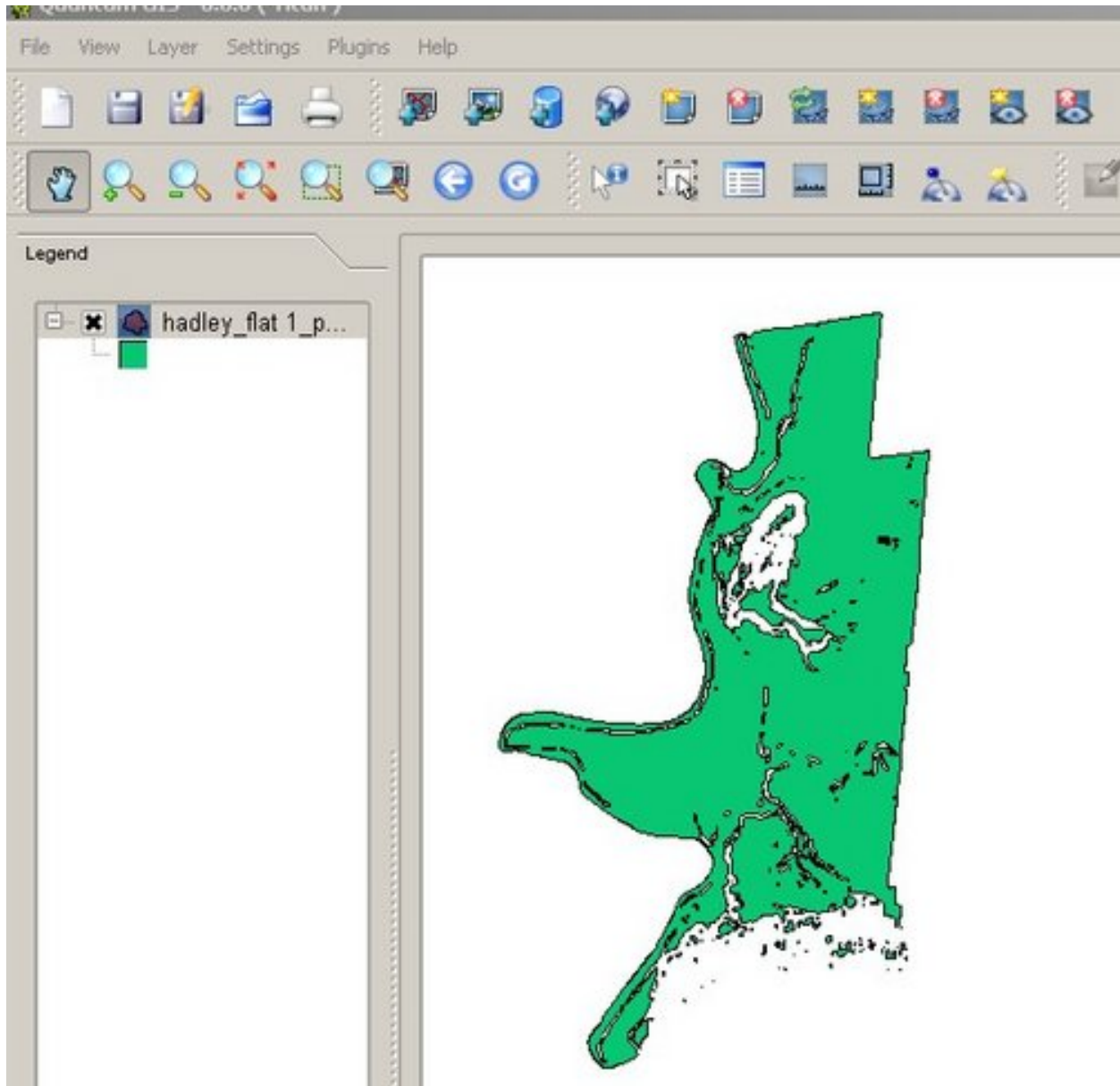
2.3. Process

Start QGIS and open the mapset where you had the flat areas GRASS vector layer: Go to Plugins>GRASS>Open mapset.

Add a grass vector layer

- Click on the button "add a GRASS vector layer" to open the "Hadley_flat" layer. This layer represents the areas under 3 degrees of slope (the GRASS vector is divided into two layers, a "0 polygon" and a "1 polygon". This last one we should use).
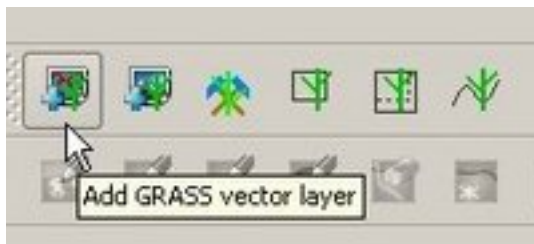
• This is how the layer looks:

Convert shapefiles to GRASS vector layers

• Add the zoning (zn117p1.shp) and roads (EOTROADS_ARC_117.shp) SHAPEFILES. Convert them to GRASS vector layers and, in that process, name them "zoning" and "roads". (Go to this module [http://linuxlab.sbs.umass.edu/beginning-fossgis-umass/index.php?title=Analysis_using_the_QGIS_GRASS_plug-in._Plug-in_basic if you don't remember how to do this step). Also note that for displaying purposes, we will use the "hadley_perim" layer (that we also used in the raster module) that represents the perimeter of the town of Hadley.

Displaying the zoning layer by an attribute

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- Right click the zoning layer to bring up the properties. See the image below to help you set up the symbology options.

- 1. Select "Unique Value" as legend type.

- 2. Select "ZONECODE" as the classification field (this field has the zoning codes, defining the zoning for each polygon: comercial, residential, industrial, etc. We know this after reading the metadata for the layer).

- 3. Select a value in the right colum (those are all the different zoning codes) at a time and

- 4. assign a different color to each zoning code.
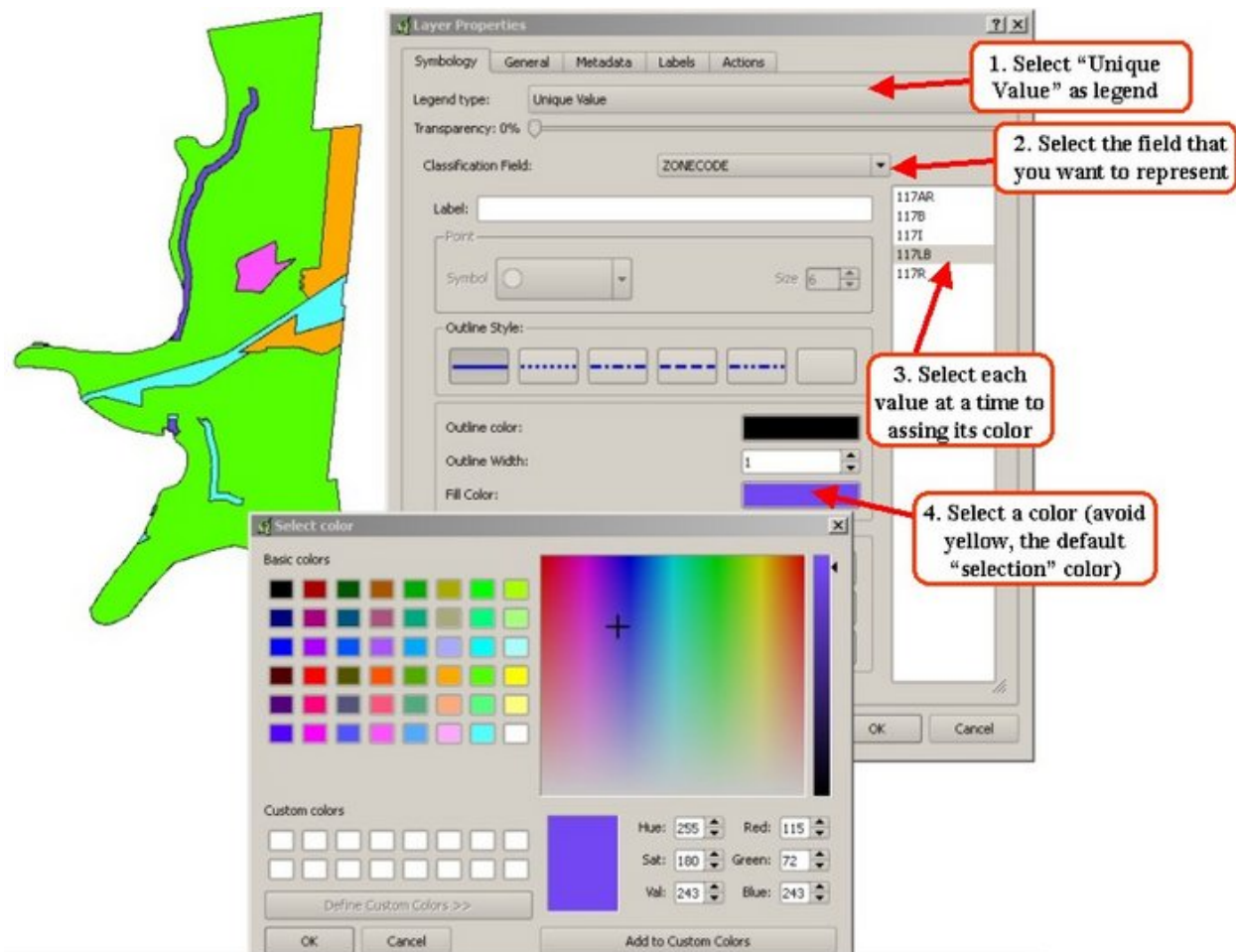

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Note: avoid the color yellow, as that is the default "selection" color in QGIS.
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Extracting the comercial polygons

Since we want only areas that are zoned for commercial (i.e. retail) areas, we need to find a way to select only that zone from our five possiblities. This is done by making a query.

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