

raster

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## outline

ps4 comments

intuition; why bother

raster

Later/Explore at home: More Rasters

Later/Explore at home: Semi-Automatic Classification Plugin

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## commenting

- ◇ for most of you i put comments into your sakai's dropbox
- ◇ read ps directions—some did not use or did not say which tools they used
- ◇ pretty much everybody did a great job!
  - keep up the good work, the goal is everyone gets an A
  - just one more ps to go—those of you who are missing the mark for an A:
  - critical that you do a great job on ps5!!
- ◇ and remember about having histogram, at least for the key var!

# Stamen

- ◇ many of you are using OSM, a decent default
  - but check out Stamen! 21st century!
- ◇ QuickMapServices-Settings-More Services-Get contributed pack
- ◇ and really really nice are Stamen maps, say:
  - Terrain
  - Toner

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## GIS area of its own

- ◇ can do a lot here
  - eg remote sensing—say figure out roads from pixels
  - another example is study of vegetation
- ◇ we will take it easy and just eyeball pictures
  - especially, i think, exploration of past is fruitful

## past matters!

- ◇ much of present can be explained with past!
  - eg city growth, suburban sprawl, quality of housing
- ◇ it's also fun to look back into past
  - just like you look at your old pictures, look at the place
- ◇ aging <http://twisteddsifter.com/2013/10/animations-show-how-faces-age-over-time/>
- ◇ satellite images
  - <http://www.wired.com/2012/07/landsat-city-change/>
- ◇ Landsat website <http://landsat.gsfc.nasa.gov/?cat=4>



## actual application

- ◇ i think about research all the time
- ◇ including on the airplane
- ◇ and it struck me that there is so much concrete in TX
- ◇ can easily show it with satellite images [p 43]
- ◇ [https://drive.google.com/open?id=1Coj3CuwvzyoF2Rm\\_a0Fg5sS0XkTzuZ1V](https://drive.google.com/open?id=1Coj3CuwvzyoF2Rm_a0Fg5sS0XkTzuZ1V)

## often can actually see better!

- ◇ with satellite images or from an airplane
  - can actually see better
- ◇ eg: most buildings and roads are build to trick you on the ground
  - nice look, but cheap, etc
  - it's interesting to see how it actually looks like
  - from a different perspective, on satellite image

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## got raster?

- ◇ we've done only vector data in this class
  - mostly shapefiles and kml
- ◇ there's also raster data
- ◇ raster=picture (+ coord to fit it on the map)
- ◇ we've skipped it because you can just use google maps
  - or OpenStreet map, etc (also within qgis)
- ◇ but sometimes pictures are better
  - higher resolution and/or over-time (old v new)

## nj example

- ◇ start with our favorite
- ◇ `https://docs.google.com/uc?id=1xJDhcRCkgv7k4tNCa720og5bohV6dTB2&export=download`
- ◇ load to qgis; and then see our favorite nj data website
- ◇ `https://njgin.state.nj.us/NJ_NJGINExplorer/DataDownloads.jsp`
- ◇ at the bottom, it has raster data that links to
- ◇ `https://njgin.state.nj.us/NJ_NJGINExplorer/IW.jsp`

## nj example

- ◇ 'Select Dataset to Download': NJ 1995 DOQQs
- ◇ zoom in to evesham township
- ◇ on the left check 'Select by Point'
- ◇ and it should show on the right this picture selected:  
CLEMENTON NJ NE #1162
- ◇ check it
- ◇ and at bottom-right click 'Add Items to Cart'
- ◇ then click checkout cart; click JPEG (just picture format)
- ◇ it should save; extract zipped folder

## load raster to qgis

- ◇ first, make sure counties vector is loaded; then:
  - use a checkerboard icon on the left, below vector squiggle,
  - to load our raster: navigate to unzipped JPEG file
- ◇ note that when you extracted zipped folder with JPEG,
  - there are also other files, like in shapefile case
  - these other files tell qgis where to put the picture on a map

## load google satellite

- ◇ say we want to compare mid 90s to now
- ◇ could get newer (and better resolution) images
- ◇ but can just load goog satellite to get more current image
- ◇ QuickMapServices-Settings-More Services-Get contributed pack
  - and load Google Satellite
- ◇ and zoom in to Evesham township, have raster on top of google
  - and turn on/off raster to see past/present



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## more rasters

- ◇ <http://glcfapp.glcf.umd.edu:8080/esdi/>
- ◇ <https://search.earthdata.nasa.gov>
- ◇ <https://earthexplorer.usgs.gov/>
- seems comprehensive and powerful
- need to signup and login
- Search Criteria: just 'Coordinates' and 'Use Map' to select full map extent
- under Data Sets, probably most useful is Aerial Imagery
- say for NJ there is "High Resolution Orthoimagery"
- and then Results:
- Show Browse Overlay: will show img on map
- and 'Download options' to download

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## the plugin

- ◇ it has good reviews
- ◇ give it a try if you are into raster
- ◇ <https://plugins.qgis.org/plugins/SemiAutomaticClassificationPlugin/>

## next week is the last qgis class

- ◇ what would you like to cover ?
  - anything new ?
  - cover anything again?
- ◇ maybe use some new data for examples?
  - I have an impression that we should go to lower level
  - title of this class is also (cross-listed) “urban mapping”
  - maybe do tracts/blocks in Philly or Camden ?
  - maybe zoning or public transportation?
  - other ideas?