

raster

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outline

intuition; why bother

raster

planet.com

Later/Explore at home: More Rasters

Later/Explore at home: Semi-Automatic Classification Plugin

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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
- eg redlining and contaminations: <https://theaok.github.io/gis/gisGoodExampleOfFinalProject.pdf>
- 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>

google street view has time too!

- https://www.google.com/maps/place/401+Cooper+St,+Camden,+NJ+08102/@39.9471578,-75.1218999,3a,75y,14.87h,90t/data=!3m7!1e1!3m5!1sITXQj8a5aM3Xj91Q0fu4Fw!2e0!6s%2F%2Fgeo0.ggpht.com%2Fcbk%3Fpanoid%3DITXQj8a5aM3Xj91Q0fu4Fw%26output%3Dthumbnail%26cb_client%3Dsearch.gws-prod%2Fmaps%2Flocal-details-getcard.gps%26thumb%3D2%26w%3D86%26h%3D86%26yaw%3D14.87242%26pitch%3D0%26thumbfov%3D100!7i13312!8i6656!4m5!3m4!1s0x89c6c8f0e64a7e77:0xb5b160dc340e83ec!8m2!3d39.9473113!4d-75.121837

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_a0Fg5sSOXkTzuZ1V

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

other applications

- infamous presentation by collin powell at UN at the wake of Iraq attack
- he claimed satellite images showed chemical weapons
- we have rasters for all of the world, and we dont have good “tradional” or “regular” data for all of the world, so we often use raster say satellite images to proxy economic activity

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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

- ta have a frame of ref, start with our fav NJ counties
- <https://docs.google.com/uc?id=1xJDhcRCkgv7k4tNCa720og5bohV6dTB2&export=download>
- (may actually have to start with well-behaved vec, otherwise raster may get messed up projection/CRS)
- load to qgis; and then
- <https://newjersey.maps.arcgis.com/apps/webappviewer/index.html?id=d13ac68c0d0f46139673824bbf19ad66>
- just keep sel 1930 (deselect others) and pick 145 on camden
- load to qgis: checkerboard, below vector squiggle

compare

- load from quickMapServices goog sat, and turn on and off to compare
 - no housing east of Cooper River
 - and development on Delaware river, guess a huge shipyard
 - and check out all the boat ramps on Philly side
- then raster for 2007: D13C14, geoTIFF 250mb hi-res!
 - and compare 2007 to now from goog sat

print composer/layout

- can then put raster into print layout, just like vector
- note can draw ellipse to point to something, just make style no brush or have it transparent
- use arrows, to start it: left-click; to end: left-click AND right-click

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more rasters

- <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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Semi-Automatic Classification Plugin

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

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planet.com looks useful

- `https://www.planet.com/pulse/
planet-releases-arcgis-add-in-qgis-plugin-v2-0/`

Georeferencer Plugin

- sometimes want to put on an image that is just an image
 - not a proper raster, ie without coords
- then have to load a satellite basemap
- and fit on the top of it an image
- use Georeferencer plugin
 - like use 3 pts on say intersections etc to match it up
- let's do an example...

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we're almost through

- 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?