

GIS in R Command Cheat Sheet

Raster Data

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Installation of Relevant Packages

Packages:

- raster: tools for raster datasets

Building and Managing Raster Objects

Creating Rasters From Scratch

RasterLayer (the skeleton):

```
newRL <- raster(ncol=10, nrow=20, xmn=0, xmx=10, ymn=-10, ymx=10)
```

RasterLayer w/ Data (skeleton + data):

```
values(newRL) <- [vector]
```

- Length of vector should match total number of cells in Raster Layer obj
- vector entries associated with raster cells in order, with top left cell as 1, increasing left to right, then top to bottom, ending with bottom right cell.

Loading Spatial Objects from Files

```
dem <- raster("file name.fileextension")
```

- Pass the entire filename – path, filename, and extension – unlike in readOGR().

Interrogating Raster and Setting Values

Quick summary: just type name of raster object

Check if has values: `hasValues(Raster obj)`

Viewing or Setting Values: In general, raster commands will return a value if just typed, and will set a value if an assignment is made. So `nrow(Raster obj)` gets number of rows, `nrow(Raster obj)<-5` sets number of rows to 5. Among these:

- **Number of rows, columns, resolution:** `nrow(Raster obj), ncol(Raster obj), res(Raster obj)`
- **Values:** `values(Raster obj)`

Managing Projections

Note: similar to vector data, but without the intermediate CRS() step – just pass the proj4 string.

Projection code database

Assigning projection by EPSG code: `projection([Raster obj]) <- "+init=EPSG:4326"`

Get projection from Spatial obj: `projection([Raster obj])`

Re-project:

```
reprojectedRaster <- projectRaster([raster obj], crs=[proj4 string for new projection])
```