**Install Anaconda**

**Create a connectivity environment**

conda create --name kernconn

Install Packages

conda install -c conda-forge networkit geopandas seaborn rasterio h5py networkx

Install spyder kernels

conda install -c conda-forge spyder-kernels

Copy python location and keep for next step

python -c "import sys; print(sys.executable)"

C:\Users\pj276\Anaconda3\envs\kernconn\python.exe

**Create a spyder environment**

conda create -c conda-forge -n spyder-env spyder numpy scipy pandas matplotlib sympy cython

Activate the spyder environment and run spyder.

Change the python location to that of the desired environment e.g. kernconn

**Processing Steps**

-Pre-process rasters as needed (resample, rescale, etc.). Identify target raster values.

-Specify raster cell size (m), median movement/dispersal distance (m), maximum dispersal distance (m), window overlap (cells), window width and height (cells), and number of sources to process at a time. The values specified for these should be a function of availability of RAM, number of CPUs, and time. In general, it’s probably better to use smaller windows (in terms of rows and columns, not necessarily geographic distance) than larger ones. Use res\_kernel\_summarize\_sources.py to get an idea of how these parameters will affect resources required and the number of jobs to submit.

-Run reskernel\_ecuador.py (not the final name). Re-run any unfinished jobs.

-Run reskernel\_sum\_kernels.py.

Interpretation

The maps show how well connected a given high integrity forest pixel is to nearby high integrity forest pixels (i.e. 150km). We assume potential movement is easier the higher the integrity value and harder the lower the integrity value. The approach will give the highest weight to areas with high numbers of high integrity pixels that are clustered together. The farther apart or smaller the patches get, the lower the connectivity value will be. The sum of connectivity values for all pixels in a given area (e.g. country) provides a cumulative indicator of magnitude of connectivity in that area.

In these maps, resistance increases rapidly when FSII drops below 5, median movement probability is set at 50 km and maximum movement is thresholded at 150 km.

**References**

<https://github.com/spyder-ide/spyder/wiki/Working-with-packages-and-environments-in-Spyder>

<https://docs.spyder-ide.org/current/installation.html>