**BEES1041 Exploring the Natural World**

**Computing Exercises: Coding with Jupyter notebooks though Anaconda**

An alternative to using Cloudstor SWAN is to install Anaconda on your computer, and run your own version of Jupyter Lab. The following instructions show how to do this.

- Download and install Anaconda (Python 3) from https://www.anaconda.com/distribution/

- During installation, accept all the default options.

- Once it is installed, start the program called "Anaconda Prompt (anaconda3)".

- In the command prompt, type the following commands to install Jupyter and R.
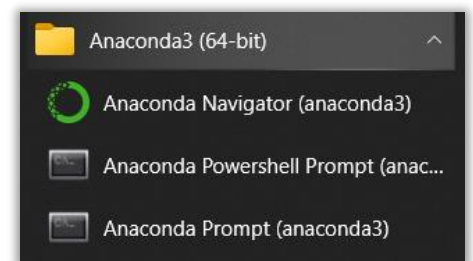
conda update conda

conda config --add channels conda-forge

conda install jupyterlab

conda install -c r r-irkernel

conda install r-essentials

conda update r-caret
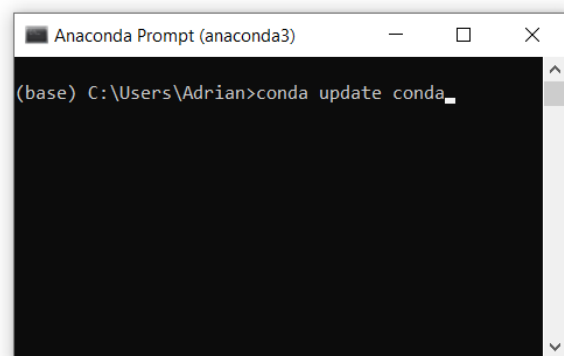
- Now you need to install the R libraries that we use in the exercises, by typing the following at the command prompt. When typing the following lines, you will get asked to select a mirror. Choose the closest location, such as Canberra.

R

```
install.packages("SCI")

install.packages("cowplot")
```

- Close the Anaconda Prompt, and run the "Anaconda Navigator (anaconda3)".
- Click "Launch" on the Jupyter Lab button, which should start a browser with Jupyter Lab.
- This looks like Couldstor SWAN but is just running on your own computer. Follow the usual exercise instructions.
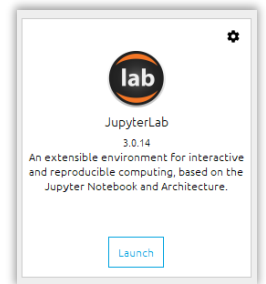


## Installing spatial packages

To install the python packages to do spatial analysis it is best to use a new Anaconda environment. You can do this by opening an Anaconda prompt, and typing the following line:

```
conda create -n spatial rios jupyterlab matplotlib cartopy
```

To use this environment with a Jupyter notebook:

- Open Anaconda navigator
- Change the environment to "spatial"



- Launch Jupyter lab as normal
- You can now run Python notebooks that use cartopy, matplotlib and GDAL to do spatial analysis and create maps.