**ReadMe Install Python**

The following ReadMe provides a brief overview of how to install and run Python *in the context of this project*. This ReadMe is certainly not exhaustive and there are many far better sources of information on installing and running Python. This is also far from the only way to set up Python, it is just what worked for me and what I found useful. This ReadMe is meant only to provide a basic set of instructions for installing Python for anyone who is interested in running the population model (DDE population dynamics.py). I run Python using Spyder (v. 5.0.2). Because standalone Spyder installers do not yet support installing third-party Spyder plugins not already bundled with them, I use Anaconda (v. 4.10.1) to install and run Spyder.

Please note that the population model (DDE population dynamics.py) used in the manuscript was written in Python v. 3.8.8 on MacOS, which may not be compatible with later MacOS such as Monterrey (v. 12.5). I suggest installing the latest version of Python and then checking if the population model script runs. If the script does not run, then one could attempt to install the previous version of Python.

**Installing Anaconda, Spyder, and Python**

1. Download Anaconda: <https://www.anaconda.com/products/distribution> (for more help see: <https://towardsdatascience.com/how-to-successfully-install-anaconda-on-a-mac-and-actually-get-it-to-work-53ce18025f97>)
2. Update Python
   1. Go to terminal
   2. Check Python version: conda list python
   3. Update Python: conda update python
3. Open Anaconda-Navigator in Launchpad
4. Click on Launch in Spyder box on Anaconda

**Downloading “cdsapi” Python module for accessing climate data from the KNMI Climate Explorer (climexp.knmi.nl).** Detailed instructions from KNMI can also be found here: <https://confluence.ecmwf.int/display/CKB/How+to+install+and+use+CDS+API+on+macOS>

1. [Login to CDS](https://cds.climate.copernicus.eu/user/login)
2. Go to <https://cds.climate.copernicus.eu/api-how-to> and copy the 2 line code displayed in the black box in the "Install the CDS API key" section
3. Create your key file in your home directory in your Terminal window: touch ~/.cdsapirc
4. Edit your key file and paste the two lines you copied in Step 2 above to your .cdsapirc key file
5. Install the CDS API client by running the following command in your Terminal window: conda install cdsapi

pip install cdsapi

~~Edit PythonPath using this website:~~ [~~https://bic-berkeley.github.io/psych-214-fall-2016/using\_pythonpath.html~~](https://bic-berkeley.github.io/psych-214-fall-2016/using_pythonpath.html)

~~Install Python using this website:~~ [~~https://opensource.com/article/19/5/python-3-default-mac~~](https://opensource.com/article/19/5/python-3-default-mac)

~~Install pyenv: brew~~**~~install~~**~~pyenv~~

* 1. ~~Install Python (v. 3.11.1 at the time this ReadMe was written): pyenv~~**~~install~~**~~3.11.1~~
  2. ~~Set Python 3 as global default: pyenv global 3.11.1~~
  3. ~~Verify that it worked: pyenv version~~
  4. ~~Update configuration file: echo -e 'if command -v pyenv 1>/dev/null 2>&1; then\n  eval "$(pyenv init -)"\nfi' >> ~/.zshrc~~
  5. ~~Check configuration file: open .zshrc (if using zsh) or open .bash\_profile (if using bash)~~
  6. ~~The configuration file should include:~~

**~~if~~****~~command~~**~~-v pyenv 1~~**~~>/~~**~~dev~~**~~/~~**~~null 2~~**~~>&~~**~~1;~~**~~then~~****~~eval~~**~~"$(pyenv init -)"~~**~~fi~~**