

# README

## Structure of repository

- Report
  - Figures
    - \* contains all figures found in `Main Report.Rmd` and `Supplementary Figures.Rmd`. PNG format.
  - Tables
    - \* contains all information shown in the tables of `Main Report.Rmd`. `.rda` format.
  - \*.Rmds and associated \*pdfs for the main report and supplementary figures
- Analysis
  - Data
    - \* `Labelled.Data`
      - data in original format (`.xlsx`) and intermediary format (`Long.Lat.Class.csv`). Refer to `Analysis/Processing.R` for the derivation of the latter.
    - \* `Spatial.Data`
      - clipped `.TIF` files for the remote sensing derived features. Additionally, *TPI*, *Aspect* and *Slope* were derived through QGIS and are found here.
    - \* `Sun.Data`
      - measurements of solar elevation and azimuth. Refer to `Analysis/Feature.Engineering.R` for *PRR* calculation which uses this data.
    - \* three `.rda` files used to transfer data between the `.R` files in `Analysis`.
  - Internals
    - \* two `.R` files contain internally built functions and package dependencies
  - Metrics
    - \* metrics objects of all eight models (best seven models by type plus the final model). `.rda` files.
  - Four `.R` scripts used for all analysis, model building and visualisations.

## Reproducibility

To reproduce, work through `.R` files in `Analysis` in the order:

```
Feature.Engineering.R->Processing.R->Unsupervised.Analysis.R->Supervised.Analysis.R
```

Ensure you set your working directory to where-ever the `C:/...P. cinnamomi ML Mapping/Analysis` folder is located at the start of each script. Large parts of `Supervised.Analysis.R` are commented out. This script loads previously generated output (5-fold, 100-repeat) rather than running RCV method as it can take a lot of time. Methods used to produce this output is commented out but can easily be rerun by uncommenting these sections.