Method workflow: application
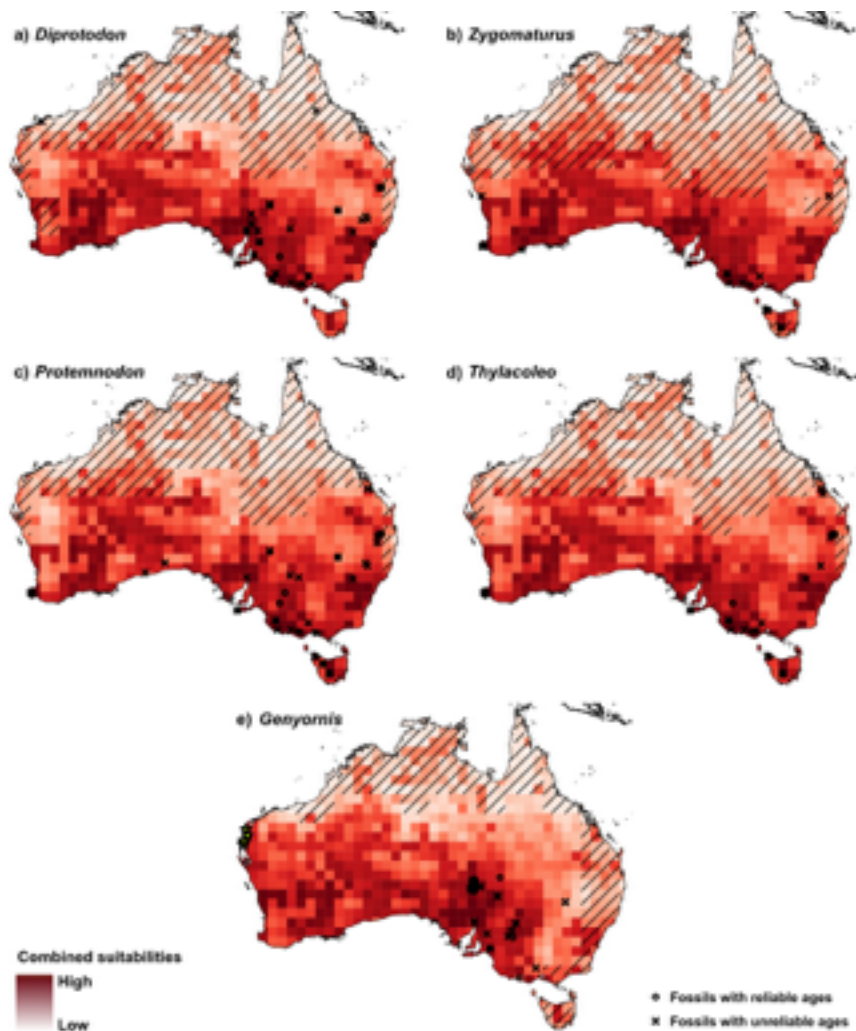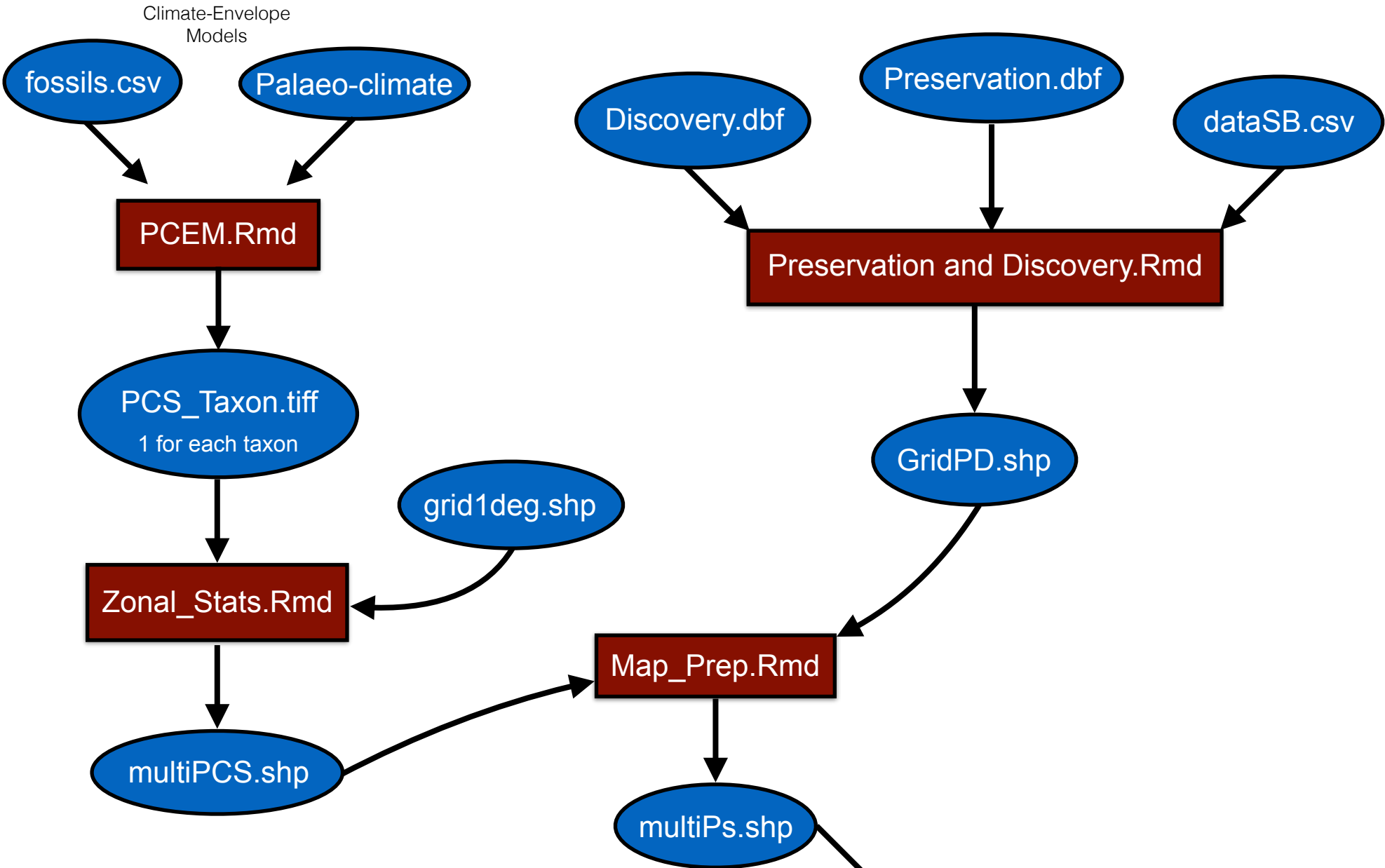
Climate-Envelope
Models

fossils.csv → PCEM.Rmd

Palaeo-climate → PCEM.Rmd

PCEM.Rmd → PCS_Taxon.tiff (1 for each taxon)

PCS_Taxon.tiff → Zonal_Stats.Rmd

grid1deg.shp → Zonal_Stats.Rmd

Zonal_Stats.Rmd → multiPCS.shp

Discovery.dbf → Preservation and Discovery.Rmd

Preservation.dbf → Preservation and Discovery.Rmd

dataSB.csv → Preservation and Discovery.Rmd

Preservation and Discovery.Rmd → GridPD.shp

GridPD.shp → Map_Prep.Rmd

multiPCS.shp → Map_Prep.Rmd

Map_Prep.Rmd → multiPs.shp

multiPs.shp → Map making (QGIS)

Map making (QGIS) → Fig. 3, 4, S5

a) *Diprotodon*   b) *Zygomaturus*
c) *Protemnodon*   d) *Thylacoleo*
e) *Genyornis*

Combined suitabilities
High
Low

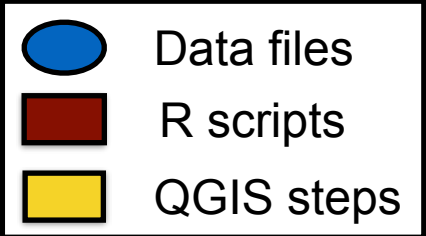• Fossils with reliable ages
× Fossils with unreliable ages

Data files
R scripts
QGIS steps

Method Workflow: Validations

Climate-Envelope Models

fossils.csv

Palaeo-climate

Discovery.dbf

Preservation.dbf

dataSB.csv

PCEM.Rmd

CE-CV.Rmd

P & D val.Rmd

Table 1

PCS_Taxon.tiff
1 for each taxon

grid1deg.shp

GridPD_val.shp

taxaPA.shp

Zonal_Stats.Rmd

Val_Prep.Rmd

Overlaps.Rmd

multiPCS.shp

valPs.shp

3P.shp

S4 Fig

Validations.Rmd

Barplot_Overlaps.Rmd

Table 2
S4 Table

Probability of finding fossils (relative to random)

Climate Envelope
Preservation & Discovery
All combined

Diprotodon Zygomaturus Protemnodon Thylacoleo Genyornis

Data files

R scripts

QGIS steps