a)

non−piscivory
piscivory

Ambloplites cavifrons
Ambloplites rupestris
Ambloplites ariommus
Archolites interruptus
Pomoxis nigromaculatus
Pomoxis annularis
Enneacantus obesus
Centrarchus macropterus
Micropterus dolomieu
Micropterus punctulatus
Micropterus floridanus
Micropterus salmoides
Micropterus treculi
Micropterus notius
Micropterus coosae
Lepomis cyanellus
Lepomis symmetricus
Lepomis gulosus
Lepomis macrochirus
Lepomis humilis
Lepomis megalotis
Lepomis marginatus
Lepomis auritus
Lepomis miniatus
Lepomis punctatus
Lepomis microlophus
Lepomis gibbosus
Acantharchus pomotis

b)

relative buccal length

relative gape width
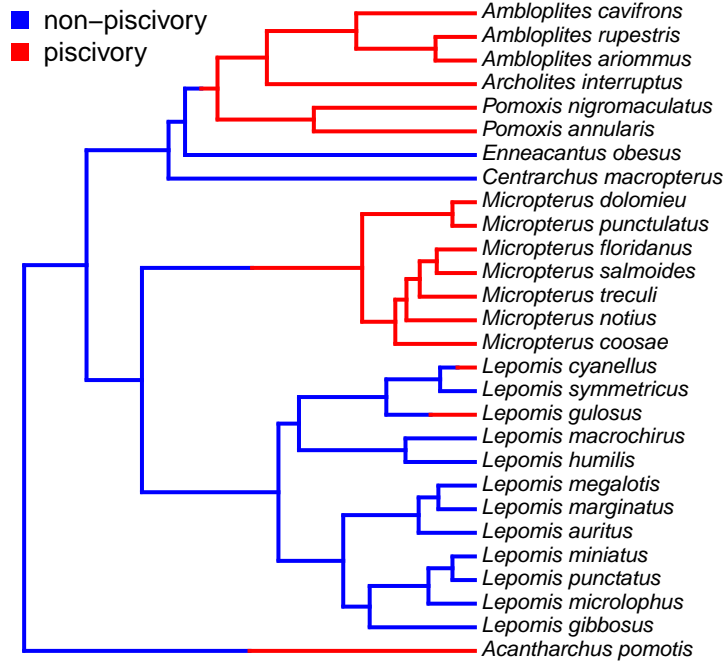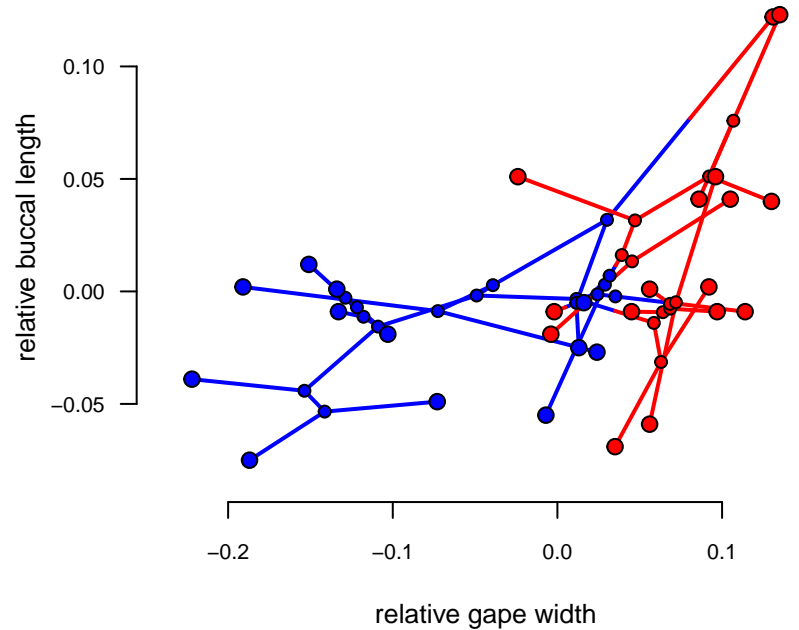
c)

Fitted one−matrix model:

$$R = \begin{bmatrix} 0.114 & 0.033 \\ 0.033 & 0.056 \end{bmatrix}, \qquad \log(L) = 72.19$$

Fitted two−matrix model:

$$R_{\text{non−piscivorous}} = \begin{bmatrix} 0.139 & -0.002 \\ -0.002 & 0.012 \end{bmatrix}, \qquad R_{\text{piscivorous}} = \begin{bmatrix} 0.076 & 0.080 \\ 0.080 & 0.129 \end{bmatrix}, \qquad \log(L) = 81.24$$