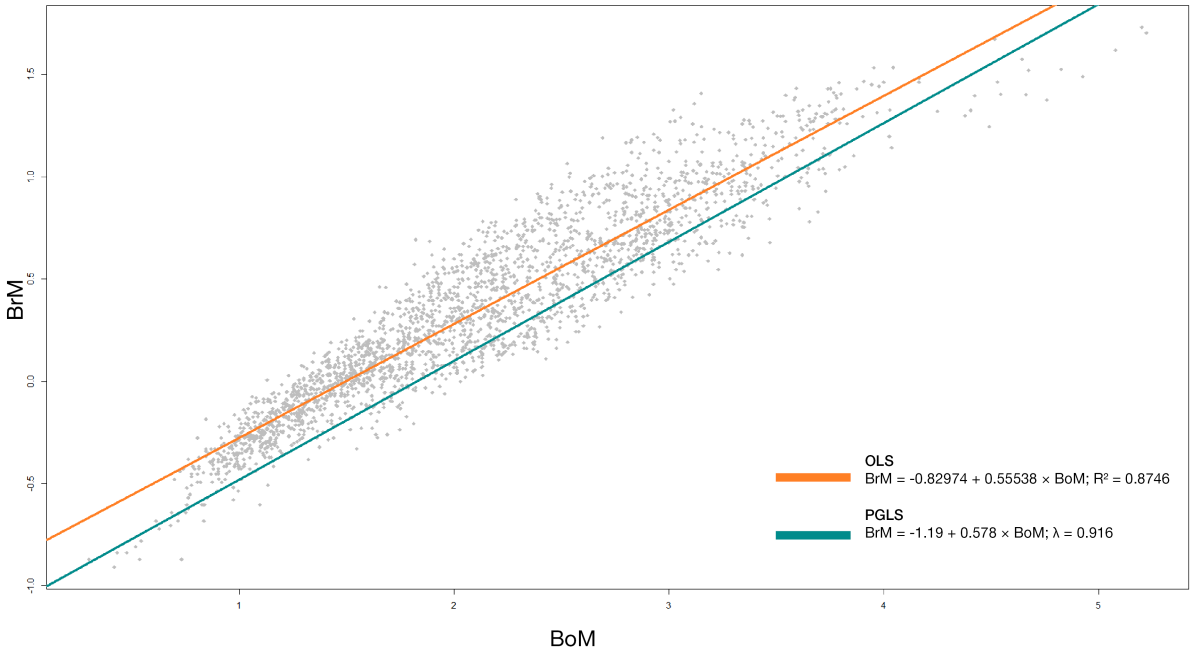
8. Přílohy

Příloha 1. Srovnání regresního vztahu bez (OLS) a s použitím fylogenetické korekce (PGLS)

Porovnání regresních vztahů s použitím OLS vs. PGLS



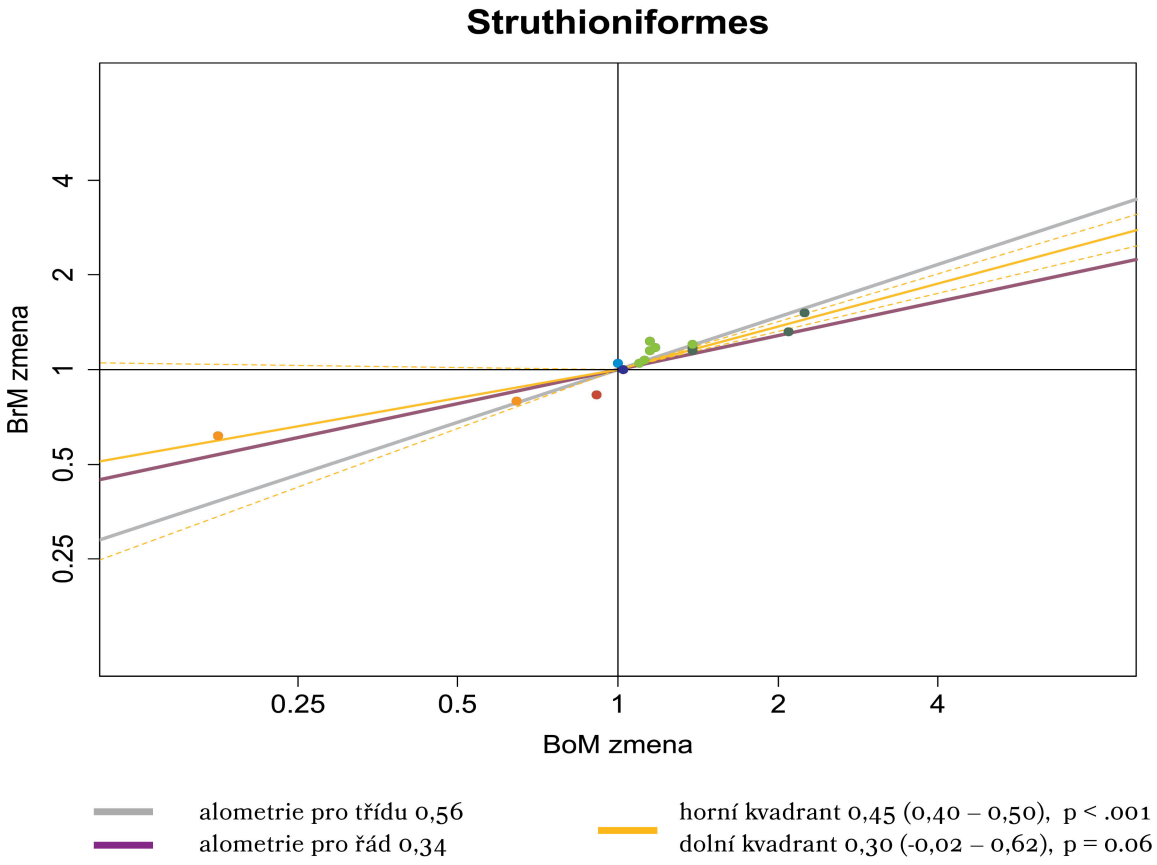
Příloha 2. Zobrazení regresních vztahů pro jednotlivé řády

řád	Intercept	p.hodnota	sklon přímky	p.hodnota	R^2
ACCIPITRIFORMES (99)	-0,60	0,00	0,51	0,00	87 %
ANSERIFORMES (130)	-0,79	0,00	0,51	0,00	89 %
APODIFORMES (37)	-1,12	0,00	0,62	0,00	96 %
BUCEROTIFORMES (29)	-0,88	0,00	0,63	0,00	93 %
CAPRIMULGIFORMES (19)	-1,14	0,00	0,63	0,00	80 %
CHARADRIIFORMES (213)	-1,13	0,00	0,64	0,00	94 %
CICONIIFORMES (14)	-0,85	0,00	0,59	0,00	83 %
COLUMBIFORMES (122)	-1,02	0,00	0,54	0,00	94 %
CORACIIFORMES (37)	-0,98	0,00	0,62	0,00	95 %
CUCULIFORMES (71)	-1,14	0,00	0,72	0,00	93 %
DINORNITHIFORMES (6)	-1,00	0,06	0,52	0,00	84 %
FALCONIFORMES (29)	-0,75	0,00	0,56	0,00	97 %
GALLIFORMES (72)	-1,03	0,00	0,54	0,00	91 %
GRUIFORMES (51)	-1,06	0,00	0,60	0,00	96 %
MUSOPHAGIFORMES (9)	-0,69	0,01	0,50	0,00	79 %
OTIDIFORMES (7)	-0,76	0,02	0,47	0,00	85 %
PASSERIFORMES (873)	-1,02	0,00	0,71	0,00	94 %
PELECANIFORMES (58)	-1,11	0,00	0,65	0,00	92 %
PICIFORMES (105)	-1,07	0,00	0,72	0,00	84 %
PODICIPEDIFORMES (11)	-0,84	0,00	0,47	0,00	89 %
PROCELLARIIFORMES (37)	-1,14	0,00	0,68	0,00	98 %
PSITTACIFORMES (193)	-0,87	0,00	0,70	0,00	94 %
PTEROCLIDIFORMES (5)	-1,07	0,02	0,52	0,01	75 %
SPHENISCIFORMES (10)	-0,58	0,00	0,50	0,00	96 %
STRIGIFORMES (50)	-0,58	0,00	0,55	0,00	92 %
STRUTHIONIFORMES (7)	-0,19	0,24	0,36	0,00	94 %
SULIFORMES (19)	-0,90	0,11	0,56	0,00	37 %
TINAMIFORMES (7)	-0,88	0,03	0,47	0,01	69 %
TROGONIFORMES (11)	-0,67	0,00	0,47	0,00	77 %

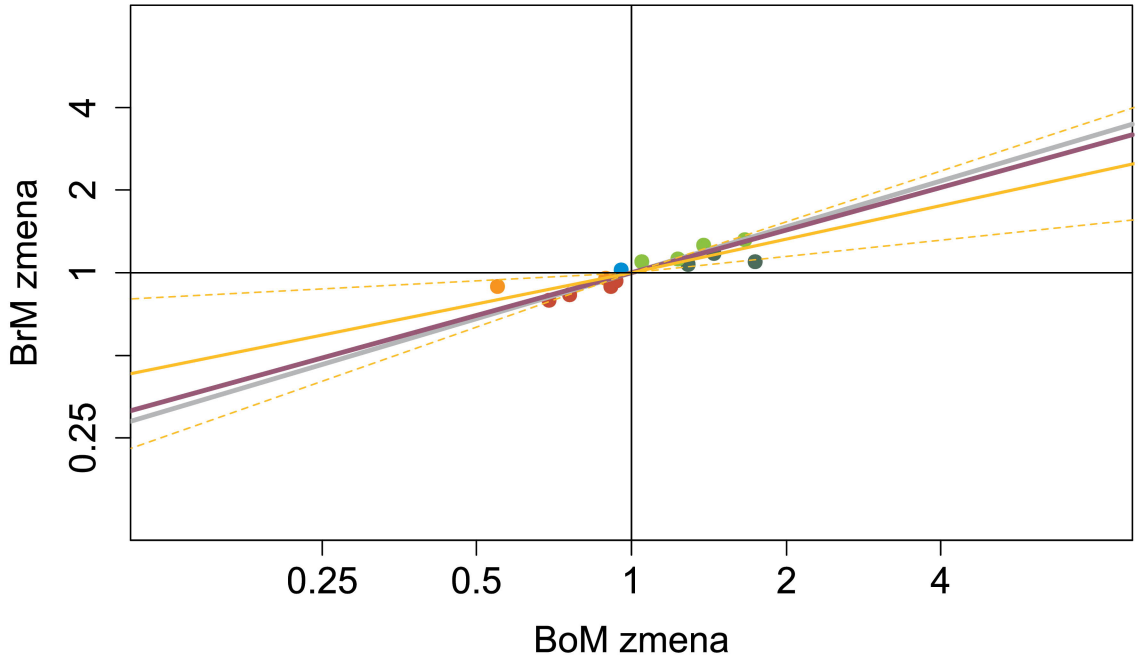
Příloha 3. Kompletní soubor grafů analýzy změn ve velikosti těla a mozku pro jednotlivé řády

Změna ve velikosti těla (osa x) a velikosti mozku (osa y). Šedá linie reprezentuje alometrický vztah odvozený z regresní přímky pro logaritmované hmotnosti těla a mozku pro recentní druhy ptáků, fialová linie reprezentuje alometrický vztah odvozený jen na úrovni řádu, žluté linie reprezentují regresní přímky pro kvadranty spolu s konfidenčními intervaly (šrafovaně). Barvy odpovídají šesti různým scénářům evoluce obou znaků „zrychlené zvětšení mozku, RV"; „zpomalené zvětšení mozku, PV"; „nezávislé zvětšení mozku, NV"; „zpomalené zmenšení, PM"; „zrychlené zmenšení, RM" a „nezávislému zmenšení, NM".

Paleognathae



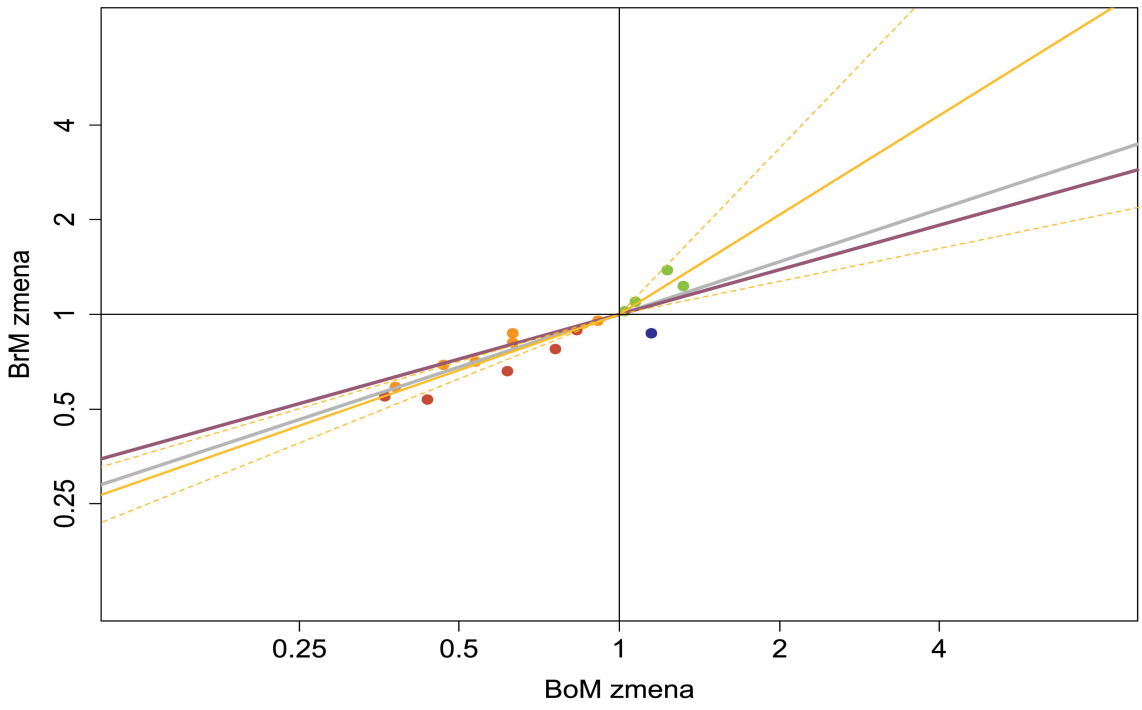
Dinornithiformes



alometrie pro třídu 0,56
alometrie pro řád 0,52

horní kvadrant 0.41 (0,20 – 0,62), p < .01
dolní kvadrant 0,38 (0,01 – 0,66), p = .02

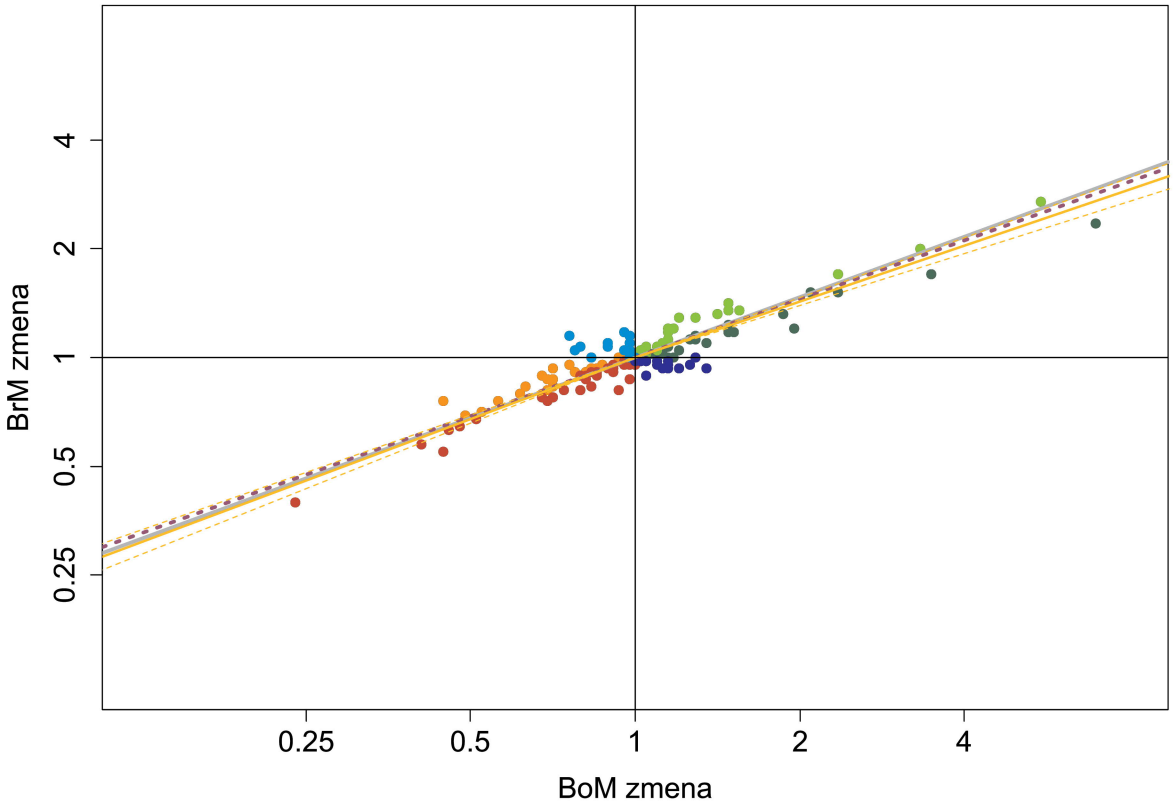
Tinamiformes



alometrie pro třídu 0,56
alometrie pro řád 0,47

horní kvadrant 1,05 (0,35 – 1,75), p = .02
dolní kvadrant 0,59 (0,50 – 0,68), p < .001

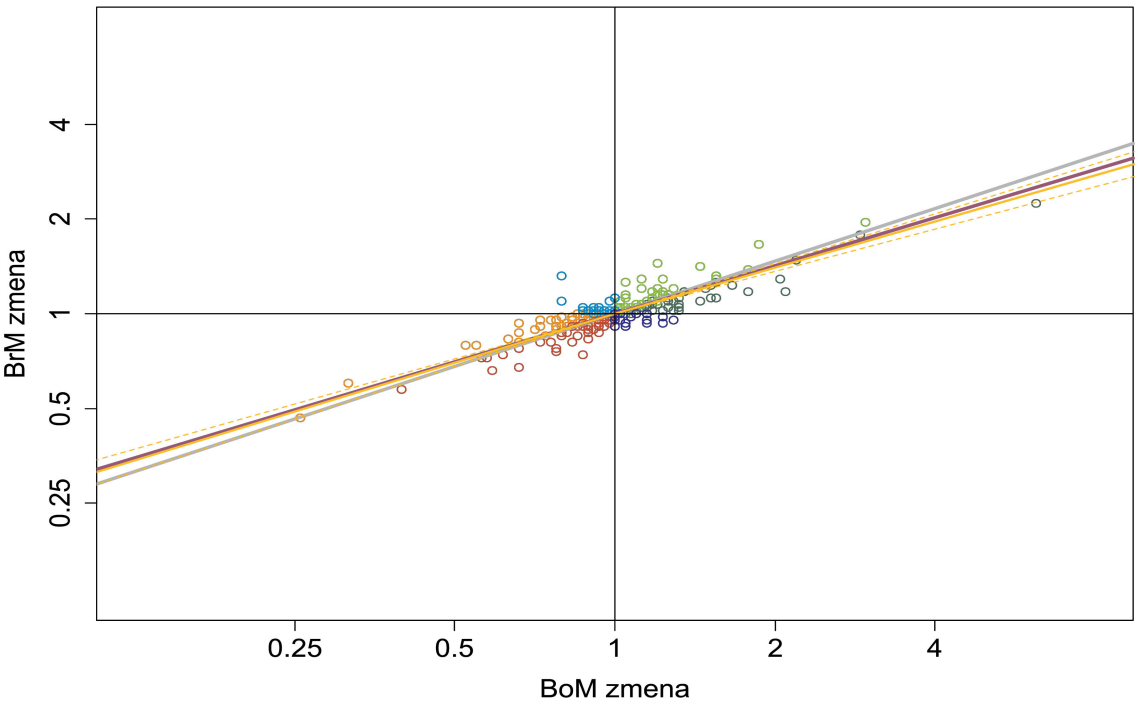
Galliformes



alometrie pro třídu 0,56
alometrie pro řád 0,54

horní kvadrant 0,51 (0,48 – 0,55), p < .001
dolní kvadrant 0,57 (0,53 – 0,60), p < .001

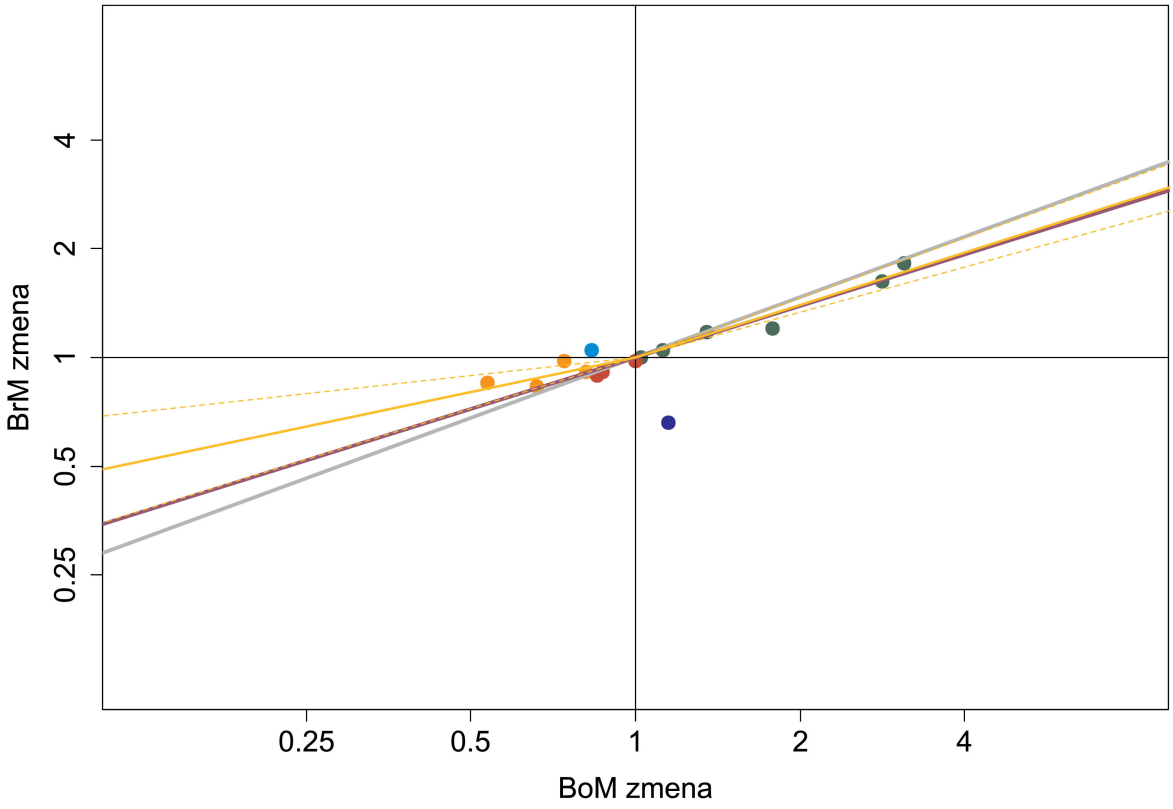
Anseriformes



alometrie pro třídu 0,56
alometrie pro řád 0,51

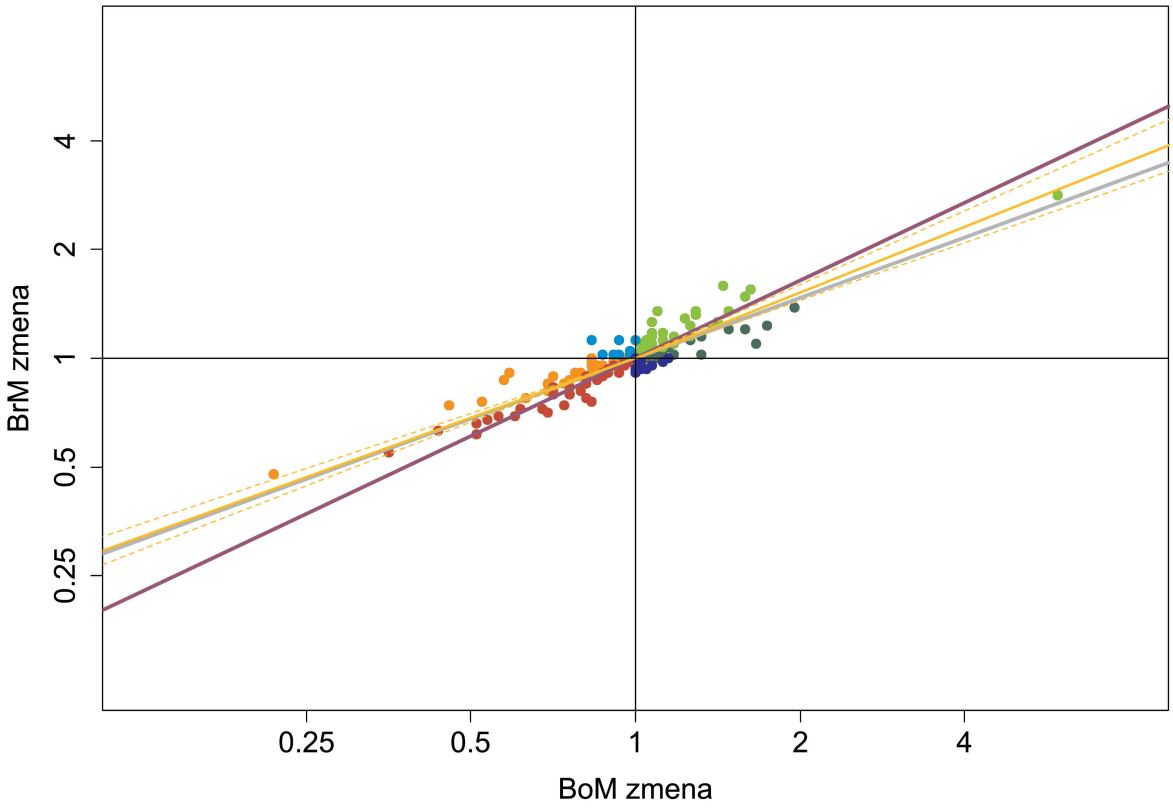
horní kvadrant 0,49 (0,45 – 0,53), p < .001
dolní kvadrant 0,52 (0,48 – 0,56), p < .001

Otidiformes

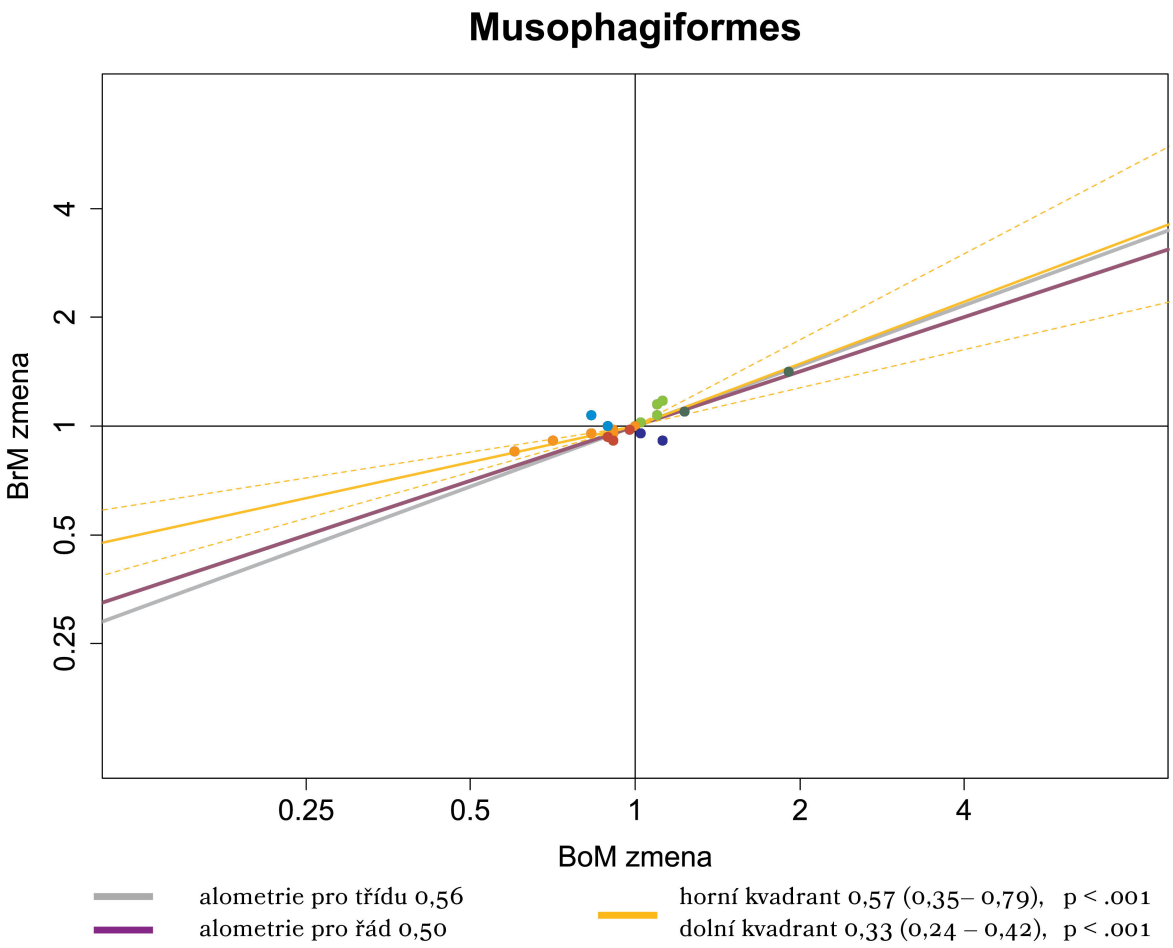


alometrie pro třídu 0,56
alometrie pro řád 0,47
horní kvadrant 0,48 (0,42 – 0,55), p < .001
dolní kvadrant 0,32 (0,17 – 0,47), p < .001

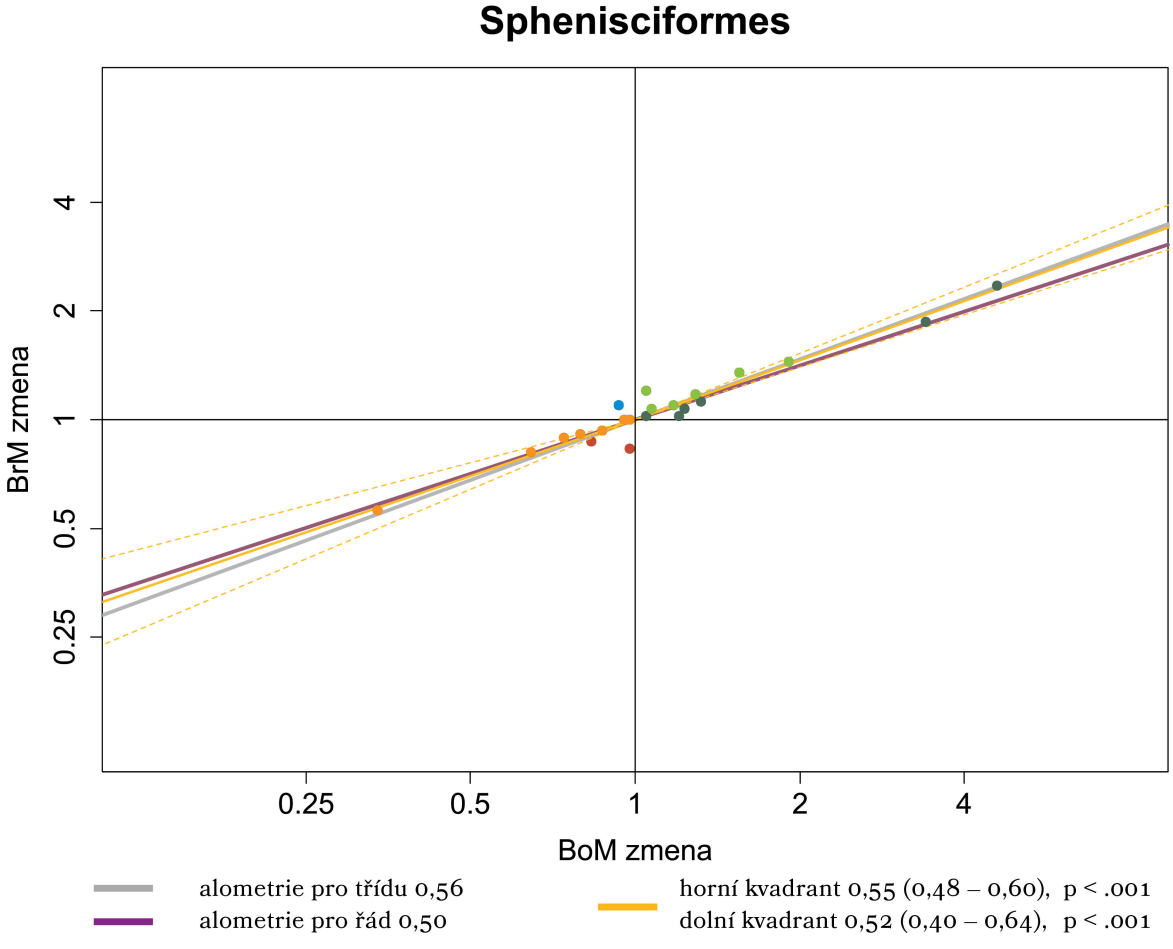
Cuculiformes



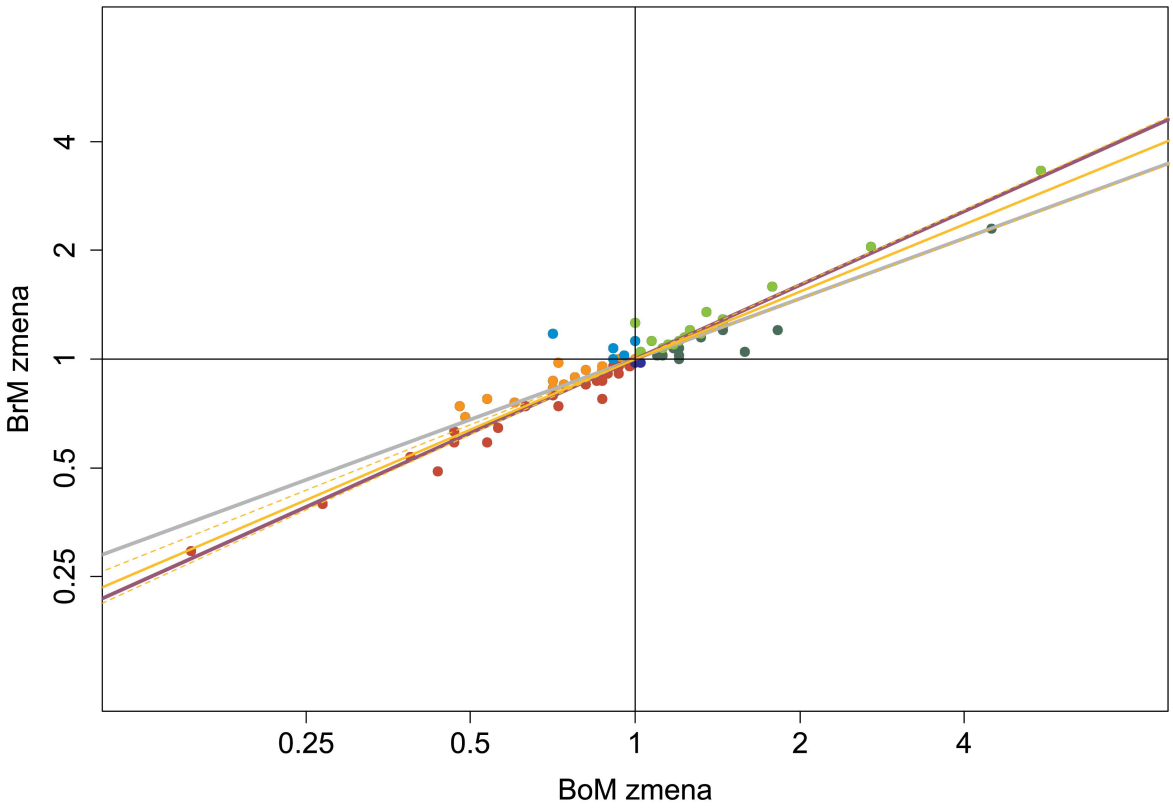
alometrie pro třídu 0,56
alometrie pro řád 0,72
horní kvadrant 0,60 (0,53 – 0,59), p < .001
dolní kvadrant 0,55 (0,51 – 0,59), p < .001



Aequornithes



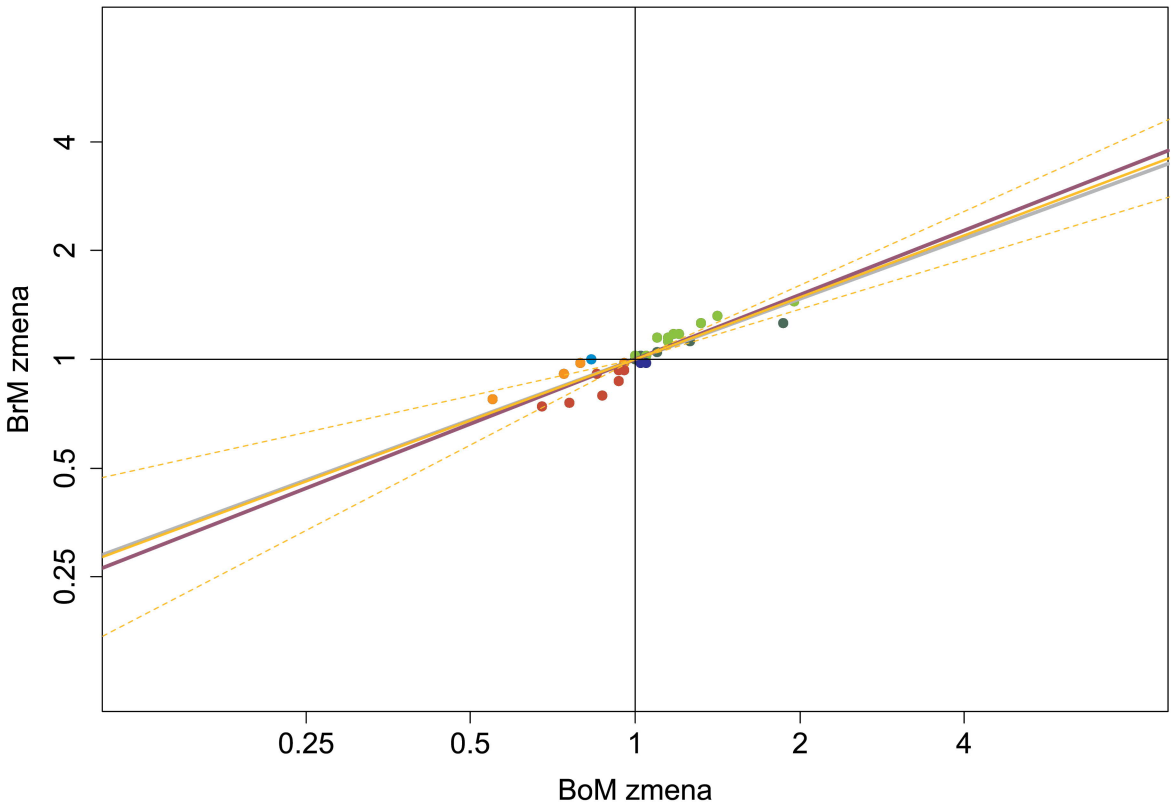
Procellariiformes



alometrie pro třídu 0,56
alometrie pro řád 0,68

horní kvadrant 0,62 (0,55 – 0,69), p < .001
dolní kvadrant 0,65 (0,60 – 0,69), p < .001

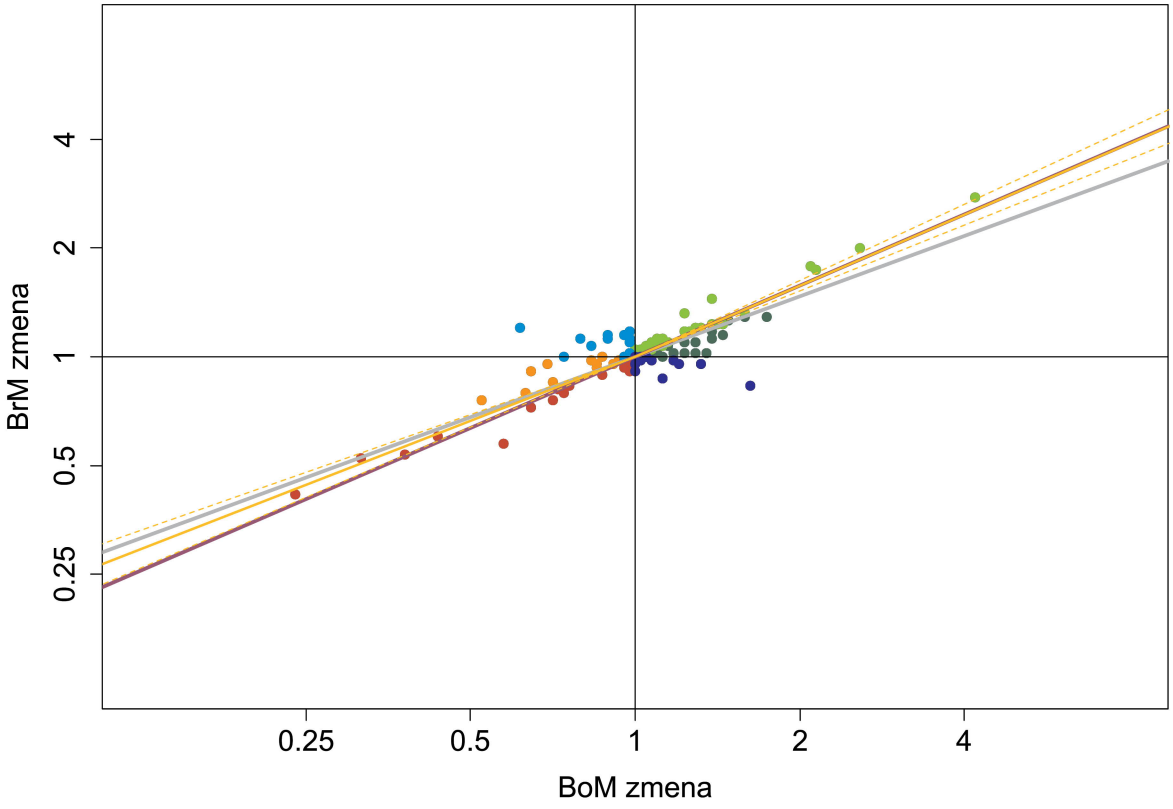
Ciconiiformes



alometrie pro třídu 0,56
alometrie pro řád 0,59

horní kvadrant 0,57 (0,46 – 0,68), p < .001
dolní kvadrant 0,56 (0,34 – 0,79), p < .001

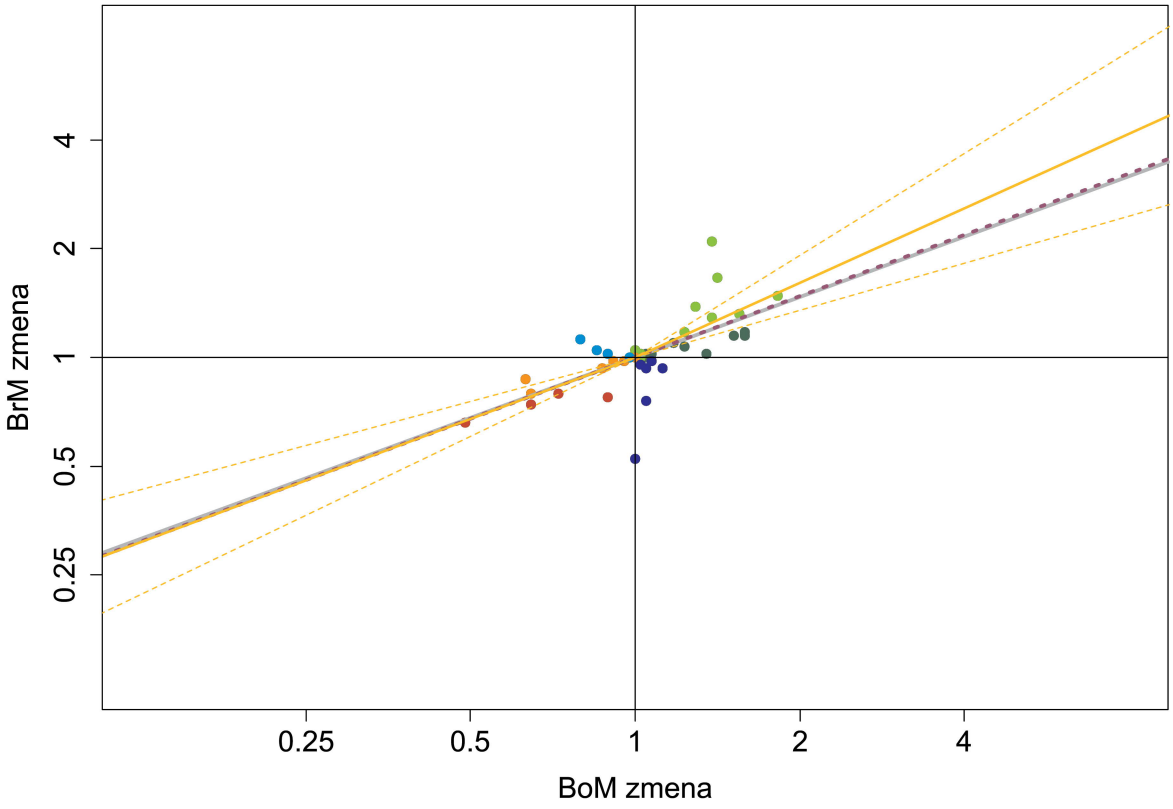
Pelecaniformes



alometrie pro třídu 0,56
alometrie pro řád 0,65

horní kvadrant 0,65 (0,61 – 0,70), p < .001
dolní kvadrant 0,59 (0,53 – 0,65), p < .001

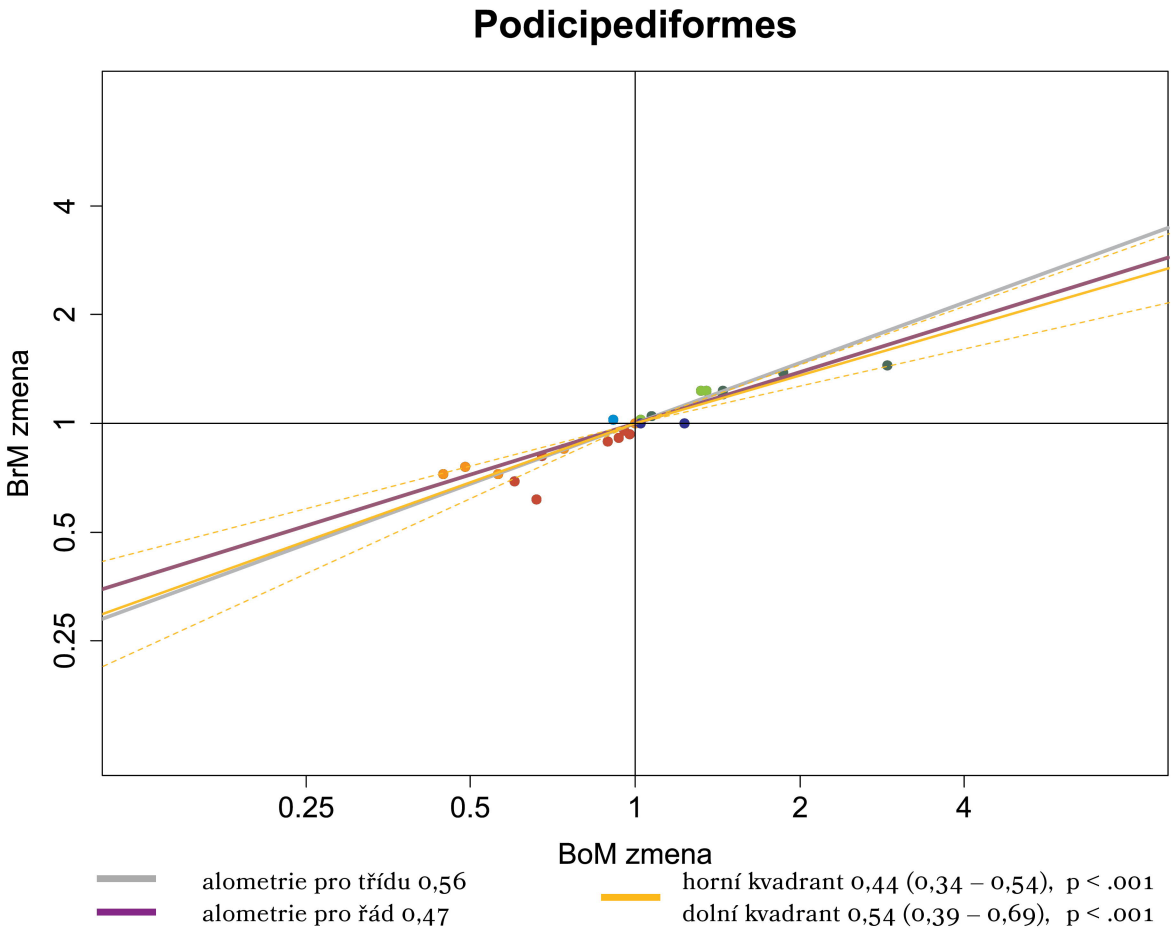
Suliformes



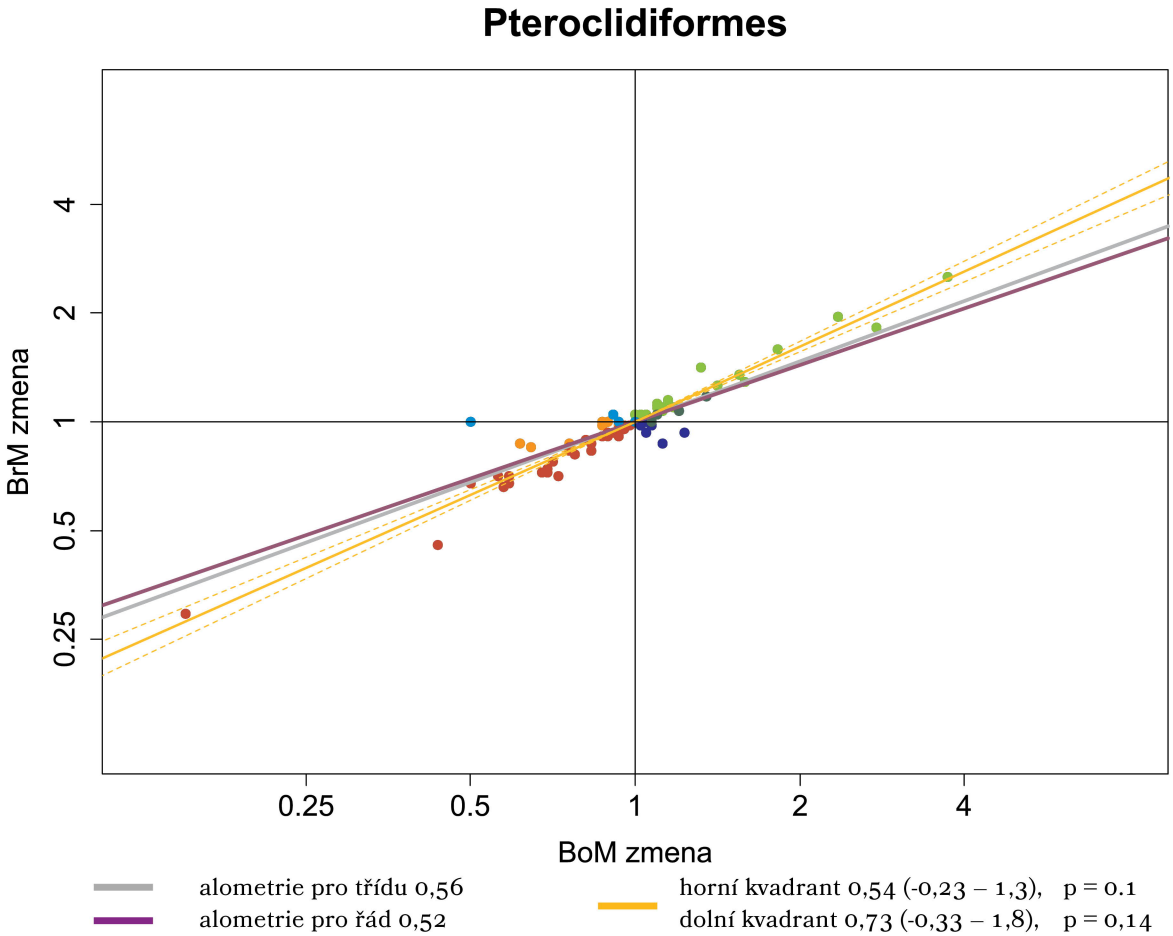
alometrie pro třídu 0,56
alometrie pro řád 0,56

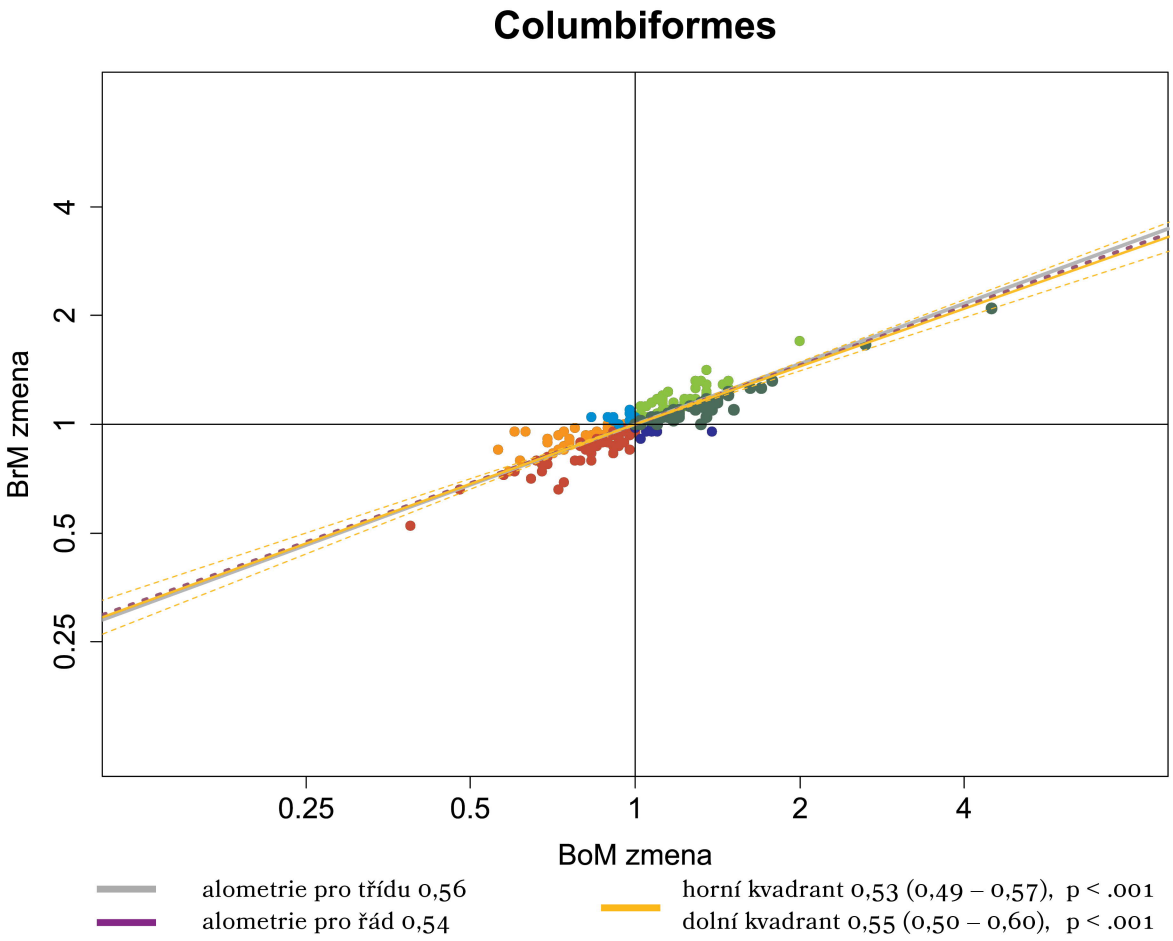
horní kvadrant 0,69 (0,43 – 0,94), p < .001
dolní kvadrant 0,57 (0,40 – 0,73), p < .001

Mirandornithes

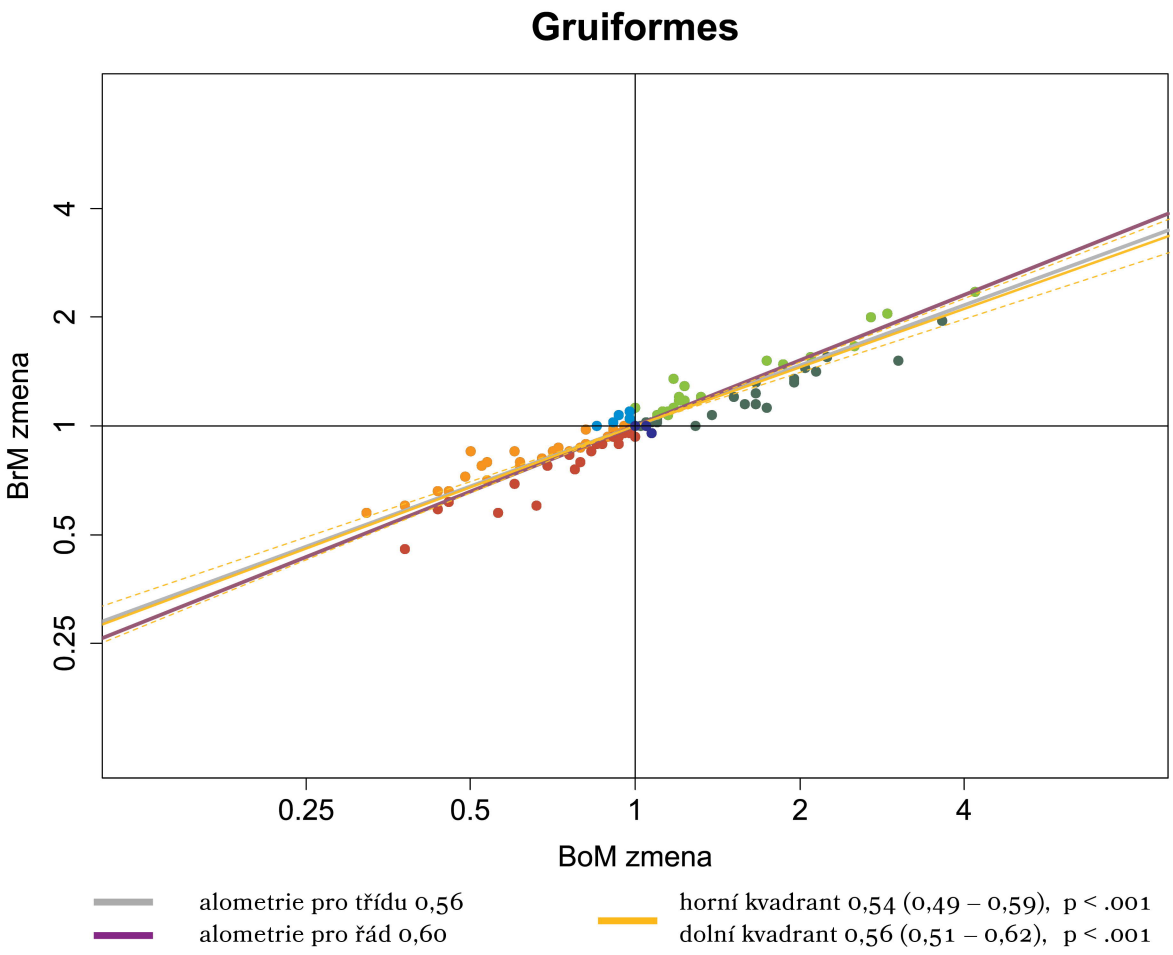


Columbimorphae

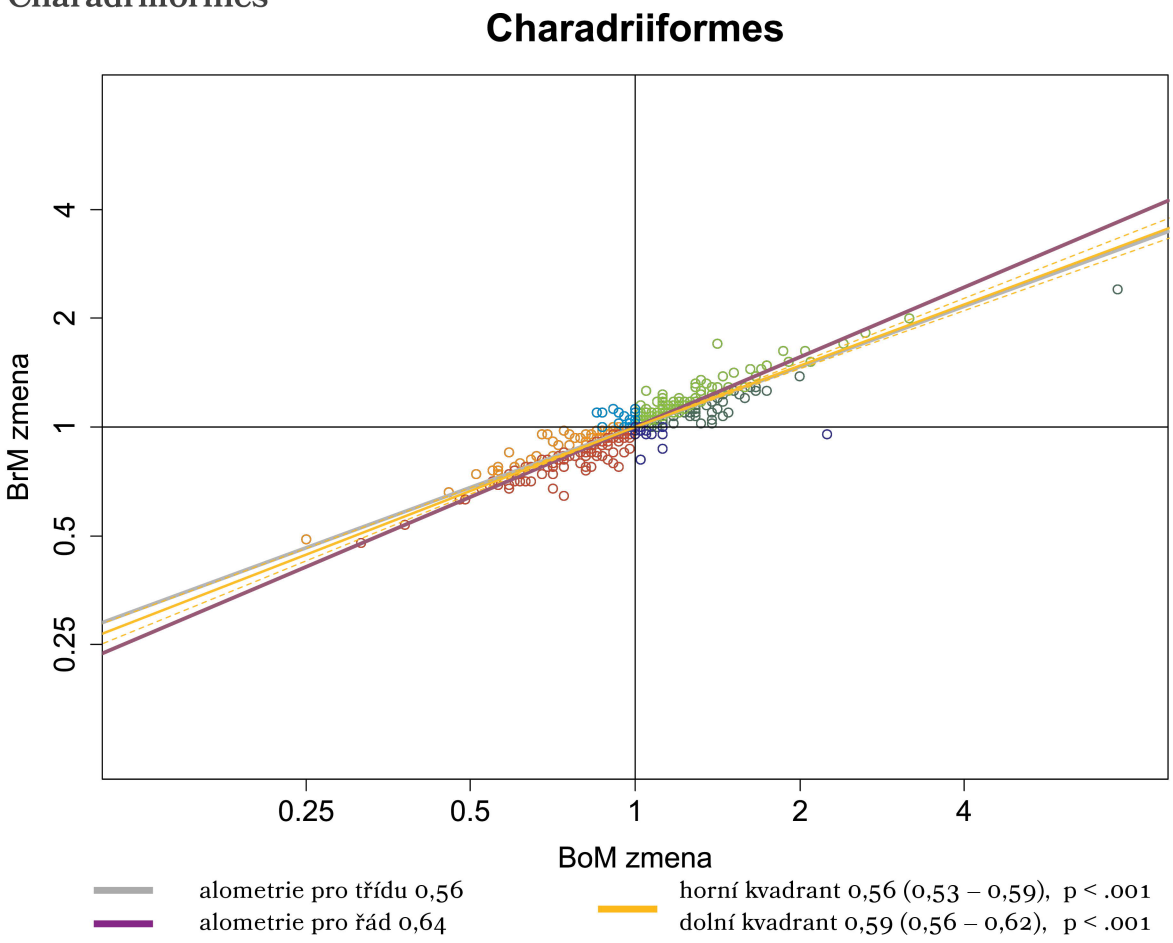



Columbiformes
BrM zmena
0.25
0.5
1
2
4
BoM zmena
alometrie pro třídu 0,56
alometrie pro řád 0,54
horní kvadrant 0,53 (0,49 – 0,57), p < .001
dolní kvadrant 0,55 (0,50 – 0,60), p < .001

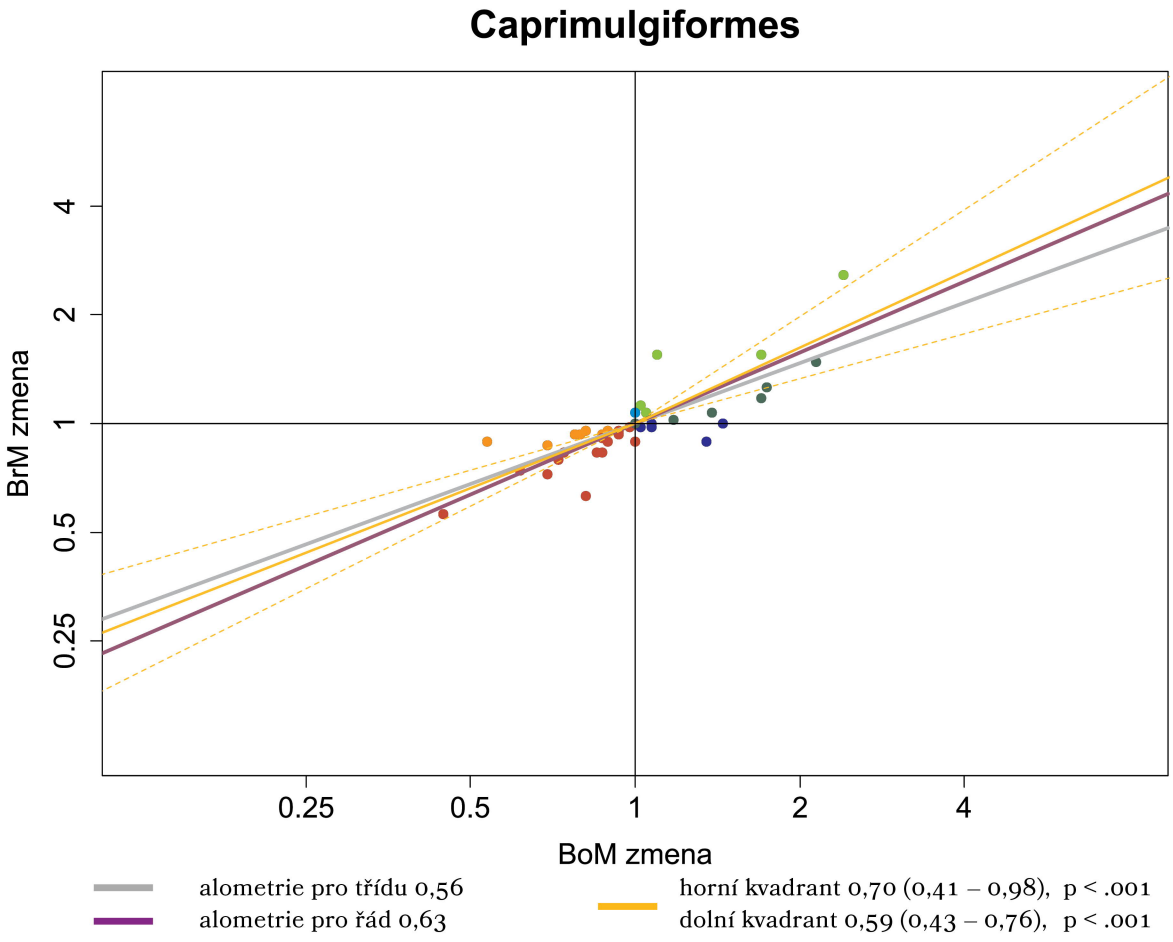
Gruiformes

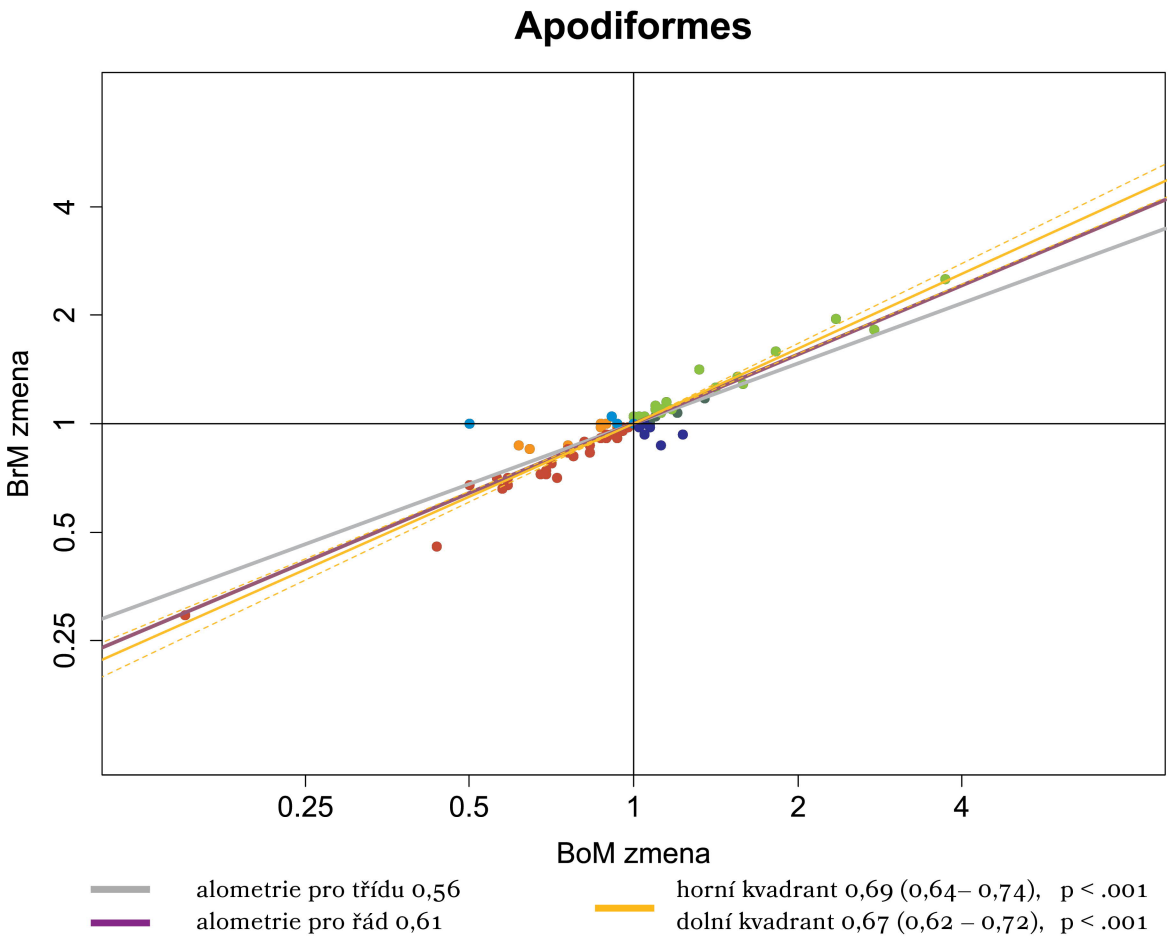

Gruiformes
BrM zmena
0.25
0.5
1
2
4
BoM zmena
alometrie pro třídu 0,56
alometrie pro řád 0,60
horní kvadrant 0,54 (0,49 – 0,59), p < .001
dolní kvadrant 0,56 (0,51 – 0,62), p < .001

Charadriiformes

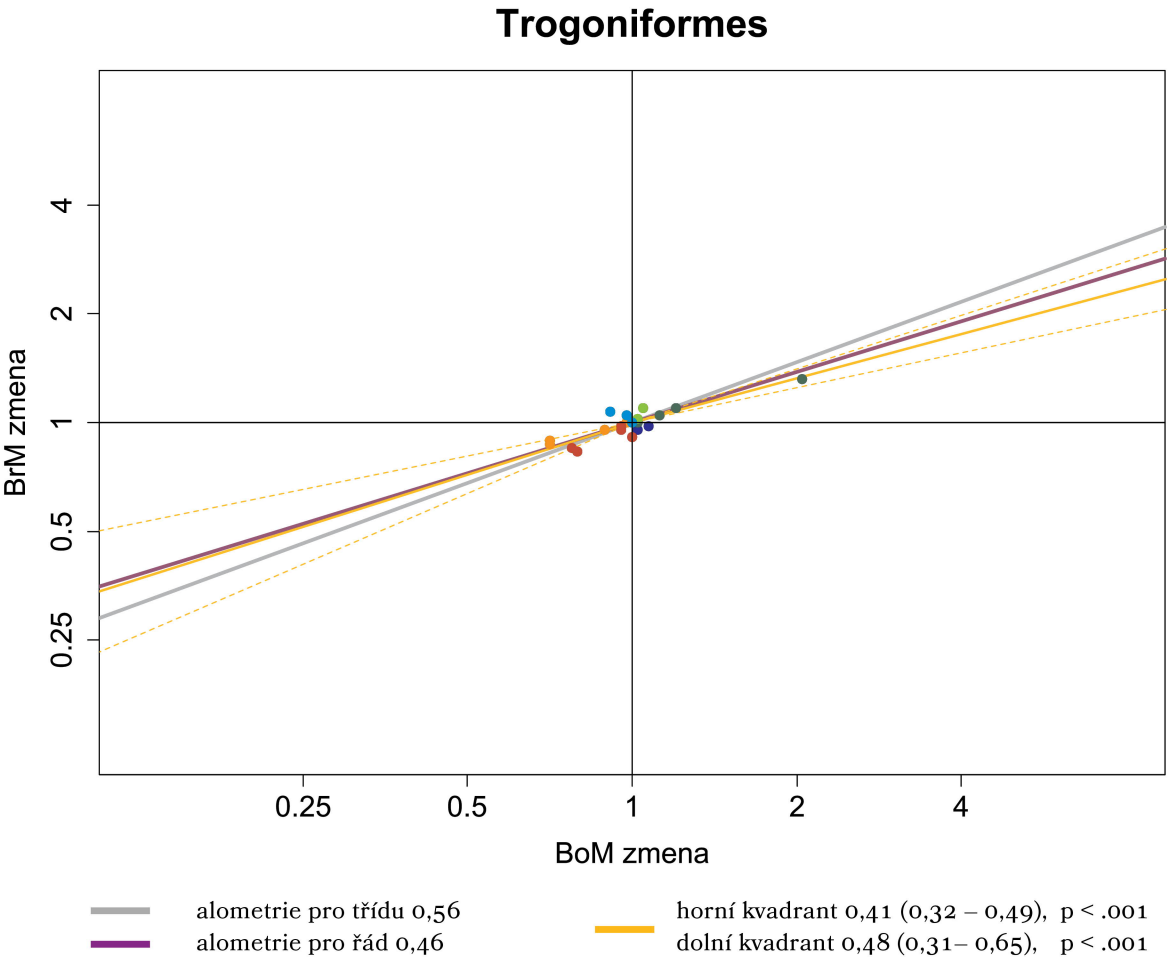


Strisores

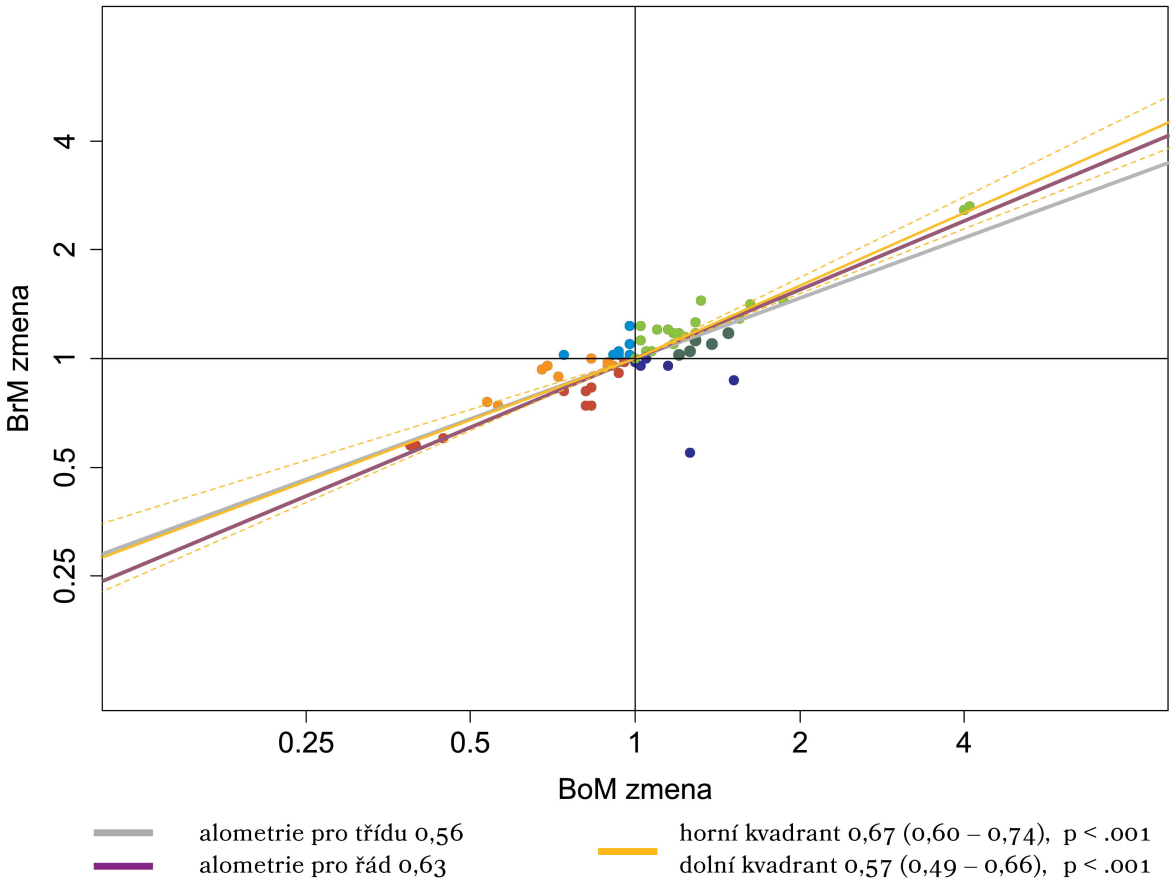



Apodiformes
BrM zmena
0.25
0.5
1
2
4
BoM zmena
alometrie pro třídu 0,56
alometrie pro řád 0,61
horní kvadrant 0,69 (0,64– 0,74), p < .001
dolní kvadrant 0,67 (0,62 – 0,72), p < .001

Afroaves

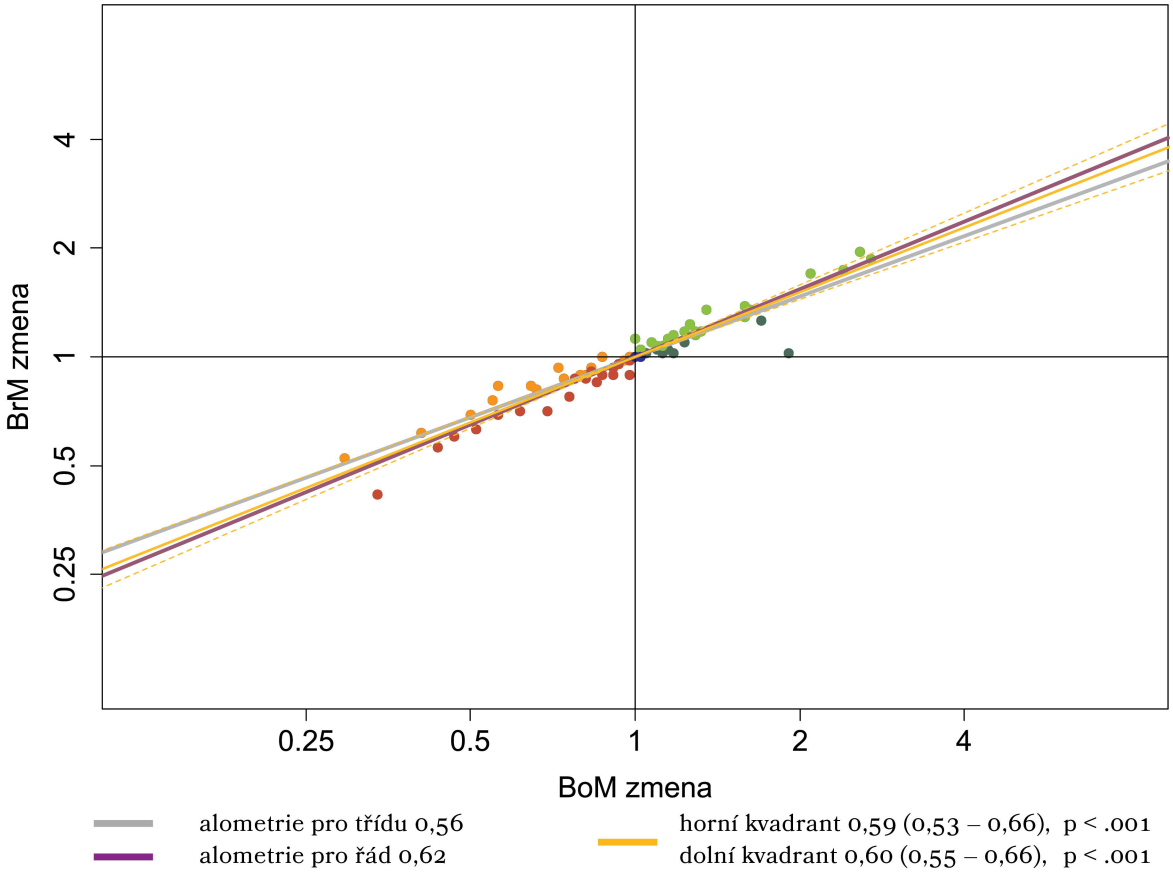

Trogoniformes
BrM zmena
0.25
0.5
1
2
4
BoM zmena
alometrie pro třídu 0,56
alometrie pro řád 0,46
horní kvadrant 0,41 (0,32 – 0,49), p < .001
dolní kvadrant 0,48 (0,31– 0,65), p < .001

Bucerotiformes



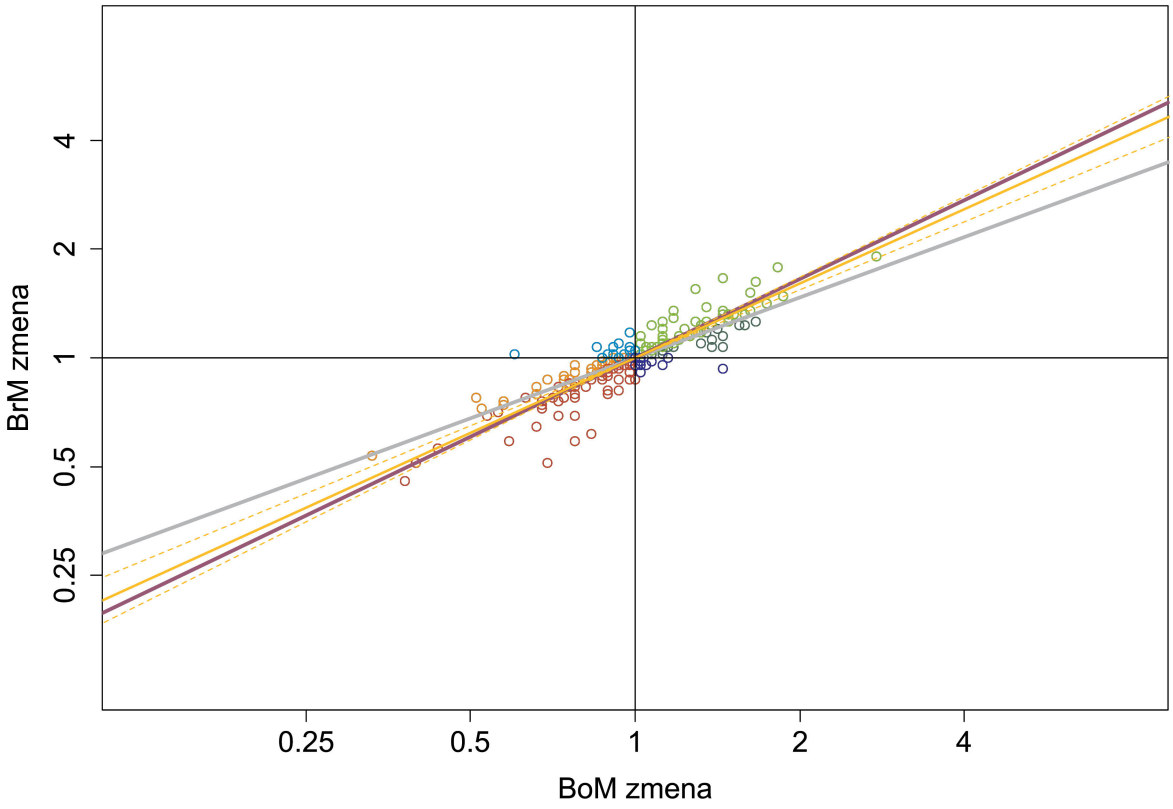
alometrie pro třídu 0,56
alometrie pro řád 0,63
horní kvadrant 0,67 (0,60 – 0,74), p < .001
dolní kvadrant 0,57 (0,49 – 0,66), p < .001

Coraciiformes



alometrie pro třídu 0,56
alometrie pro řád 0,62
horní kvadrant 0,59 (0,53 – 0,66), p < .001
dolní kvadrant 0,60 (0,55 – 0,66), p < .001

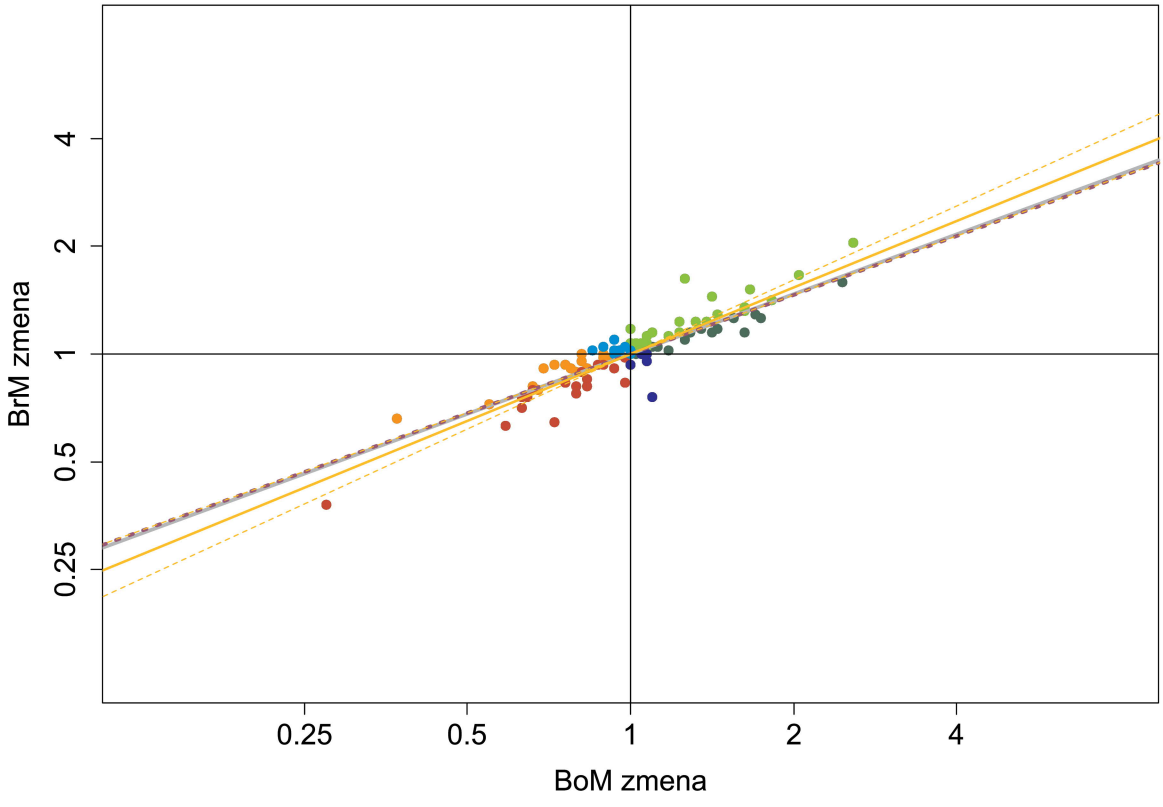
Piciformes



alometrie pro třídu 0,56
alometrie pro řád 0,73

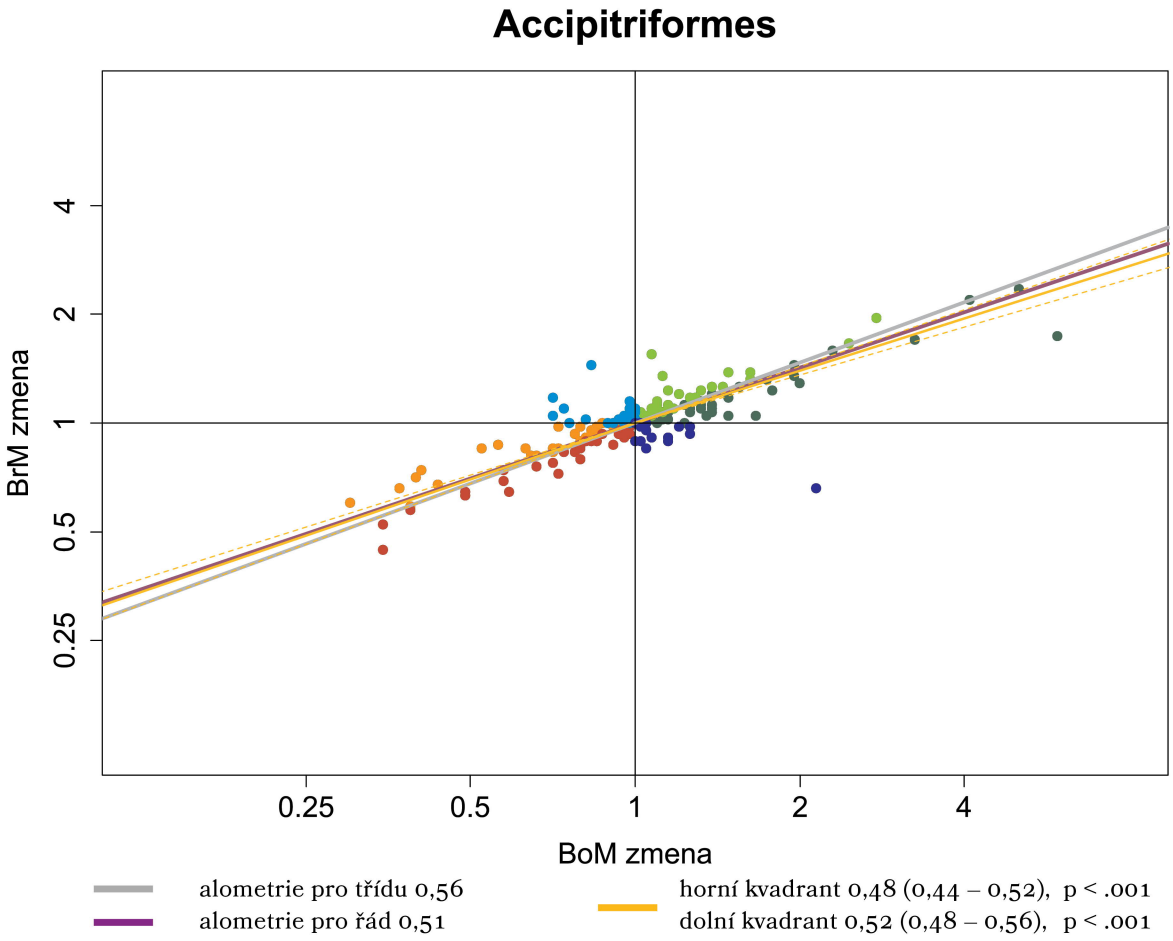
horní kvadrant 0,68 (0,63 – 0,74), p < .001
dolní kvadrant 0,69 (0,62 – 0,75), p < .001

Strigiformes

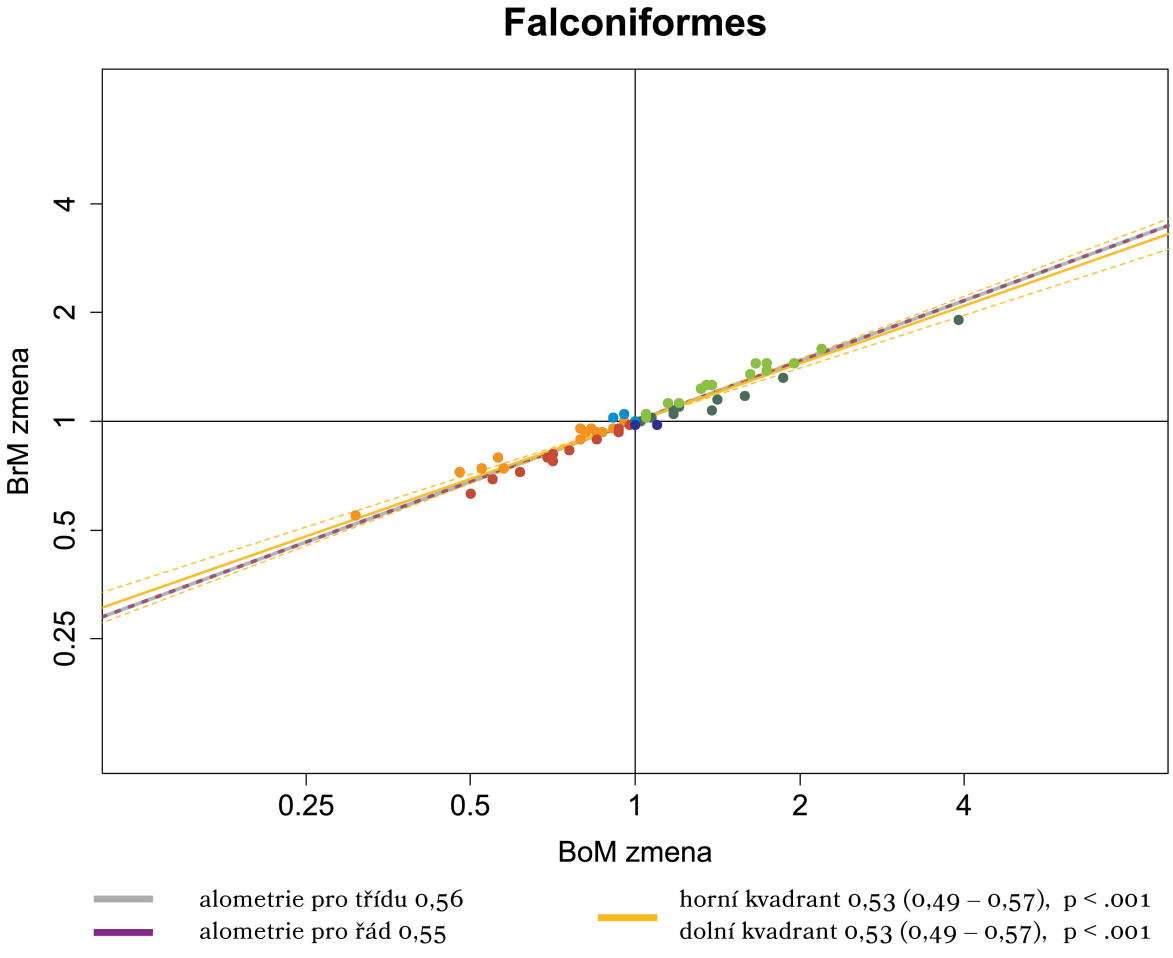


alometrie pro třídu 0,56
alometrie pro řád 0,55

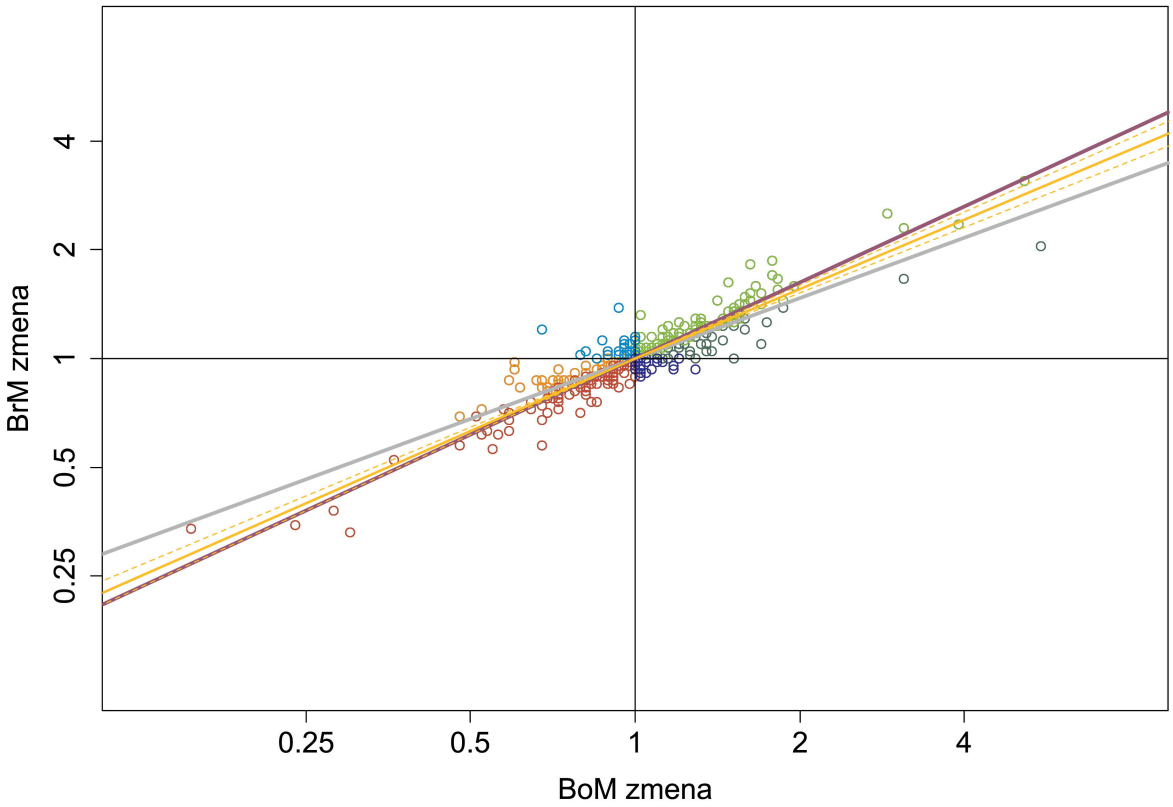
horní kvadrant 0,62 (0,55 – 0,69), p < .001
dolní kvadrant 0,62 (0,55 – 0,70), p < .001



Australaves



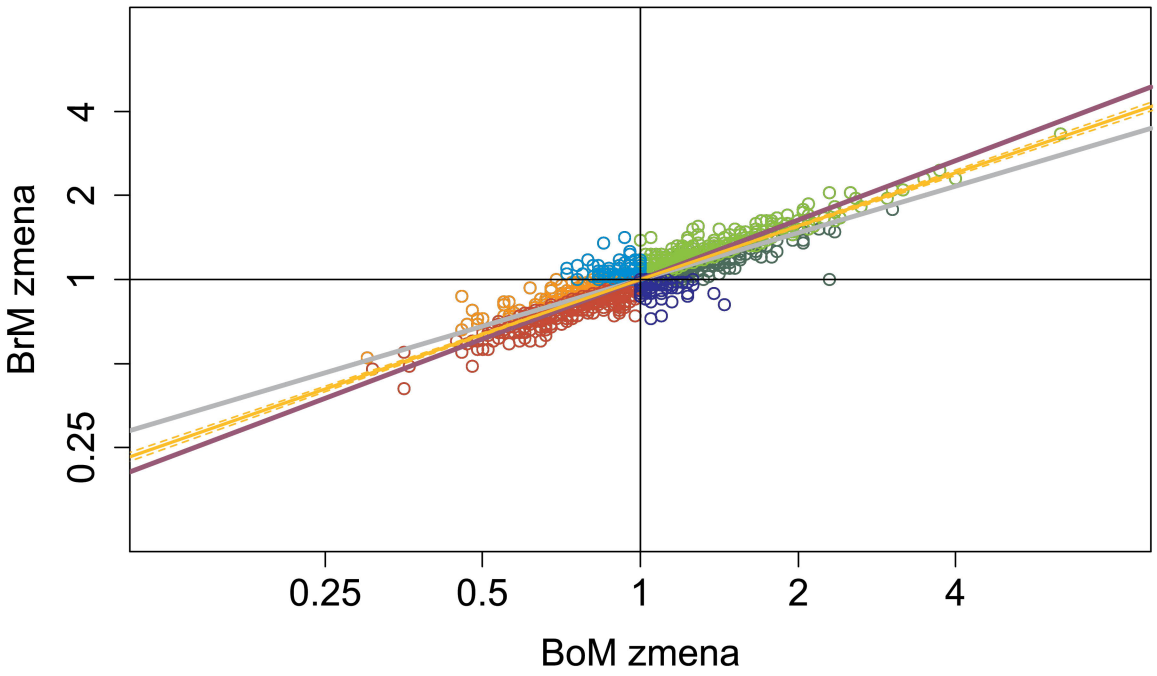
Psittaciformes



alometrie pro třídu 0,56
alometrie pro řád 0,70

horní kvadrant 0,64 (0,60 – 0,67), $p < .001$
dolní kvadrant 0,67 (0,63 – 0,70), $p < .001$

Passeriformes



alometrie pro třídu 0,56
alometrie pro řád 0,71

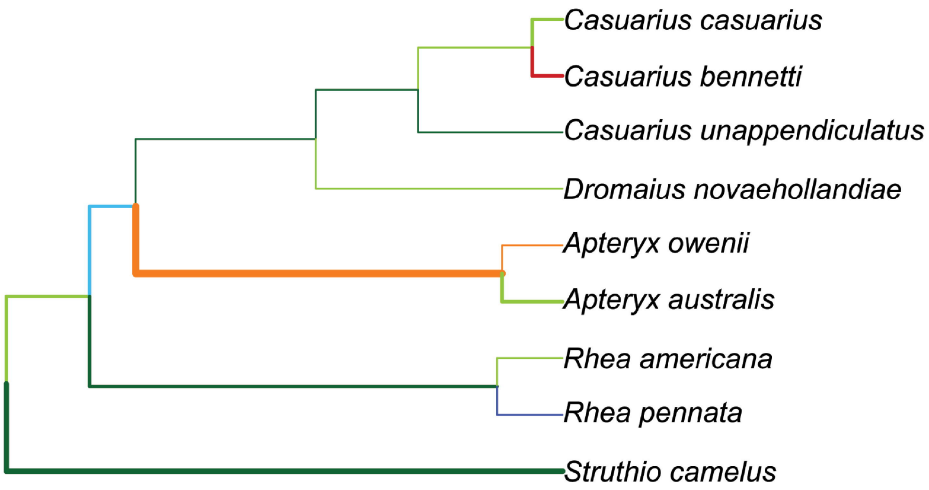
horní kvadrant 0,64 (0,62 – 0,65), $p < .001$
dolní kvadrant 0,65 (0,64 – 0,67), $p < .001$

Příloha 4. Kompletní soubor fylogenetických stromů s vynesenými změnami ve velikosti těla a mozku pro jednotlivé řády

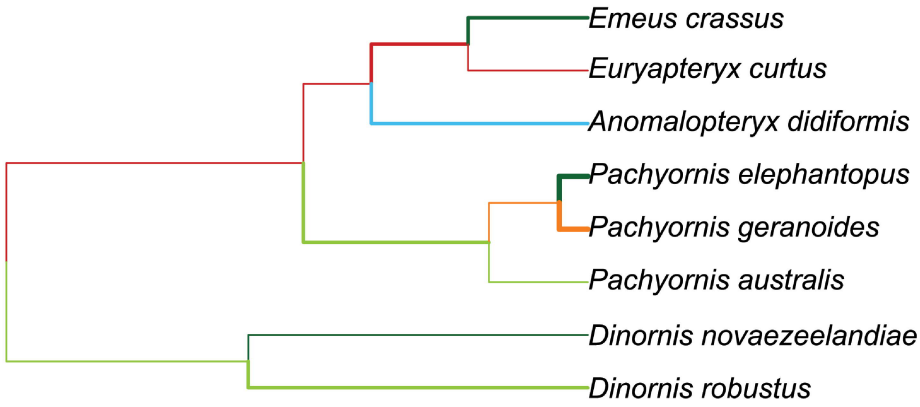
Barvy odpovídají šesti různým scénářům evoluce obou znaků „zrychlené zvětšení mozku, RV"; „zpomalené zvětšení mozku, PV"; „nezávislé zvětšení mozku, NV"; „zpomalené zmenšení, PM"; „zrychlené zmenšení, RM" a „nezávislému zmenšení, NM".

Paleognatha

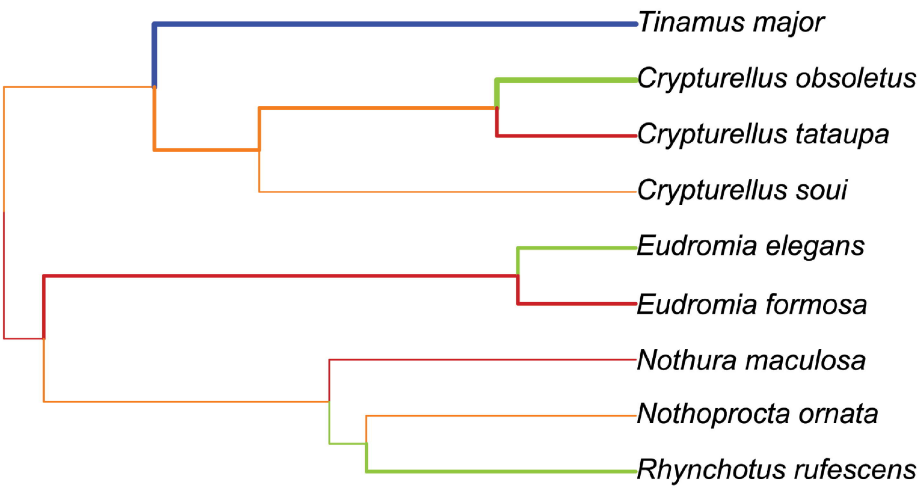
Struthioniformes



Dinornithiformes

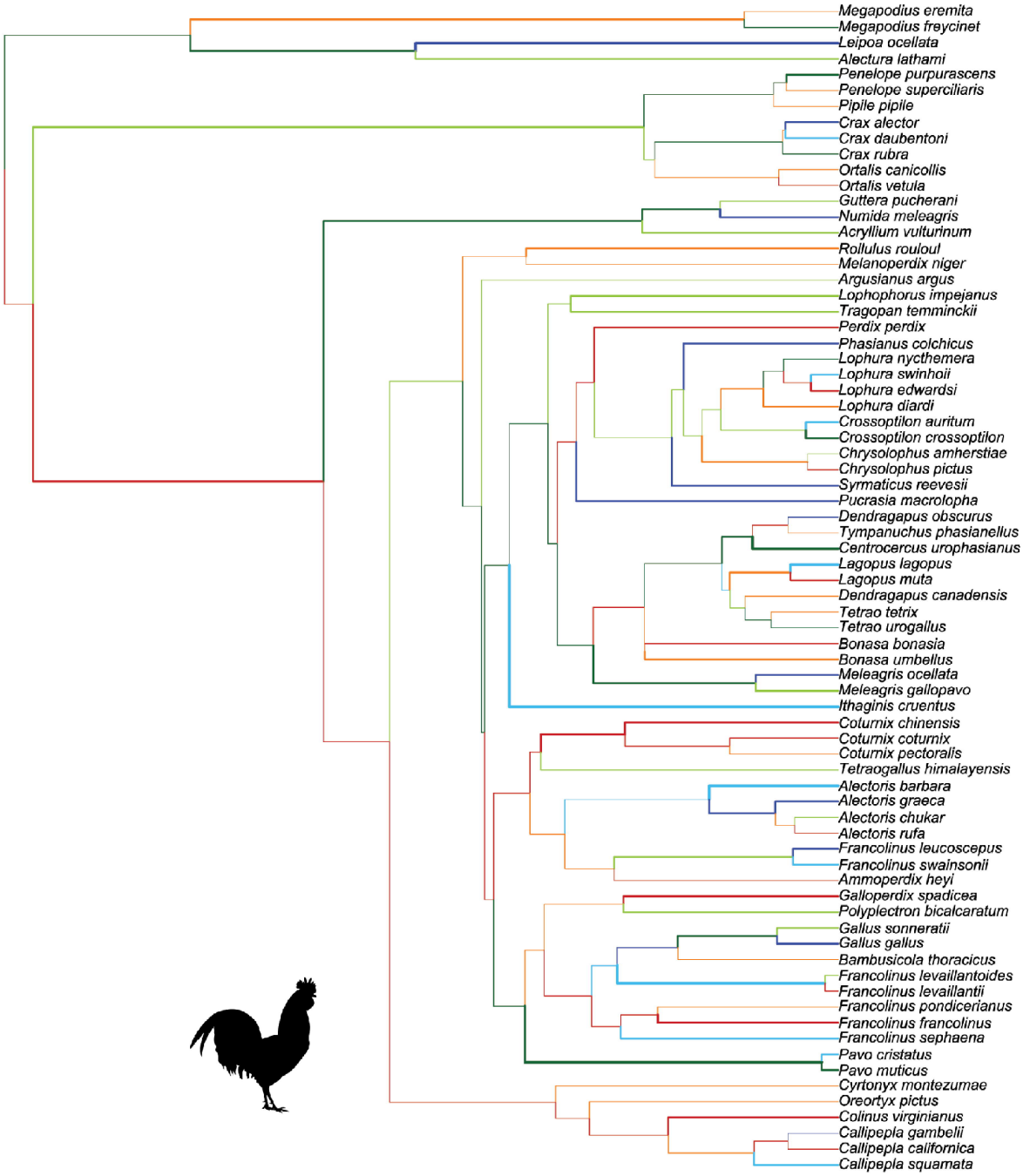


Tinamiformes

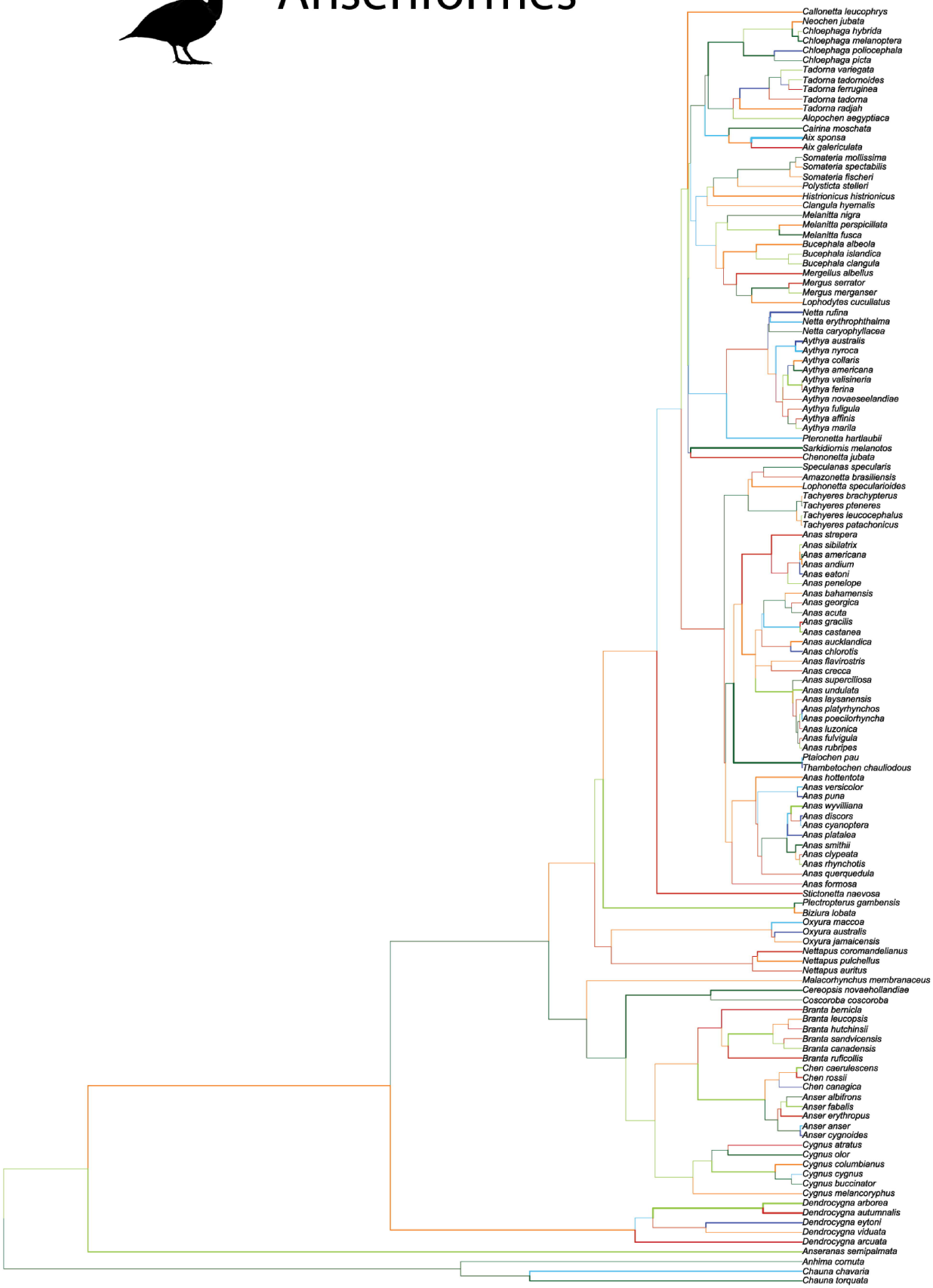


Galloanserae

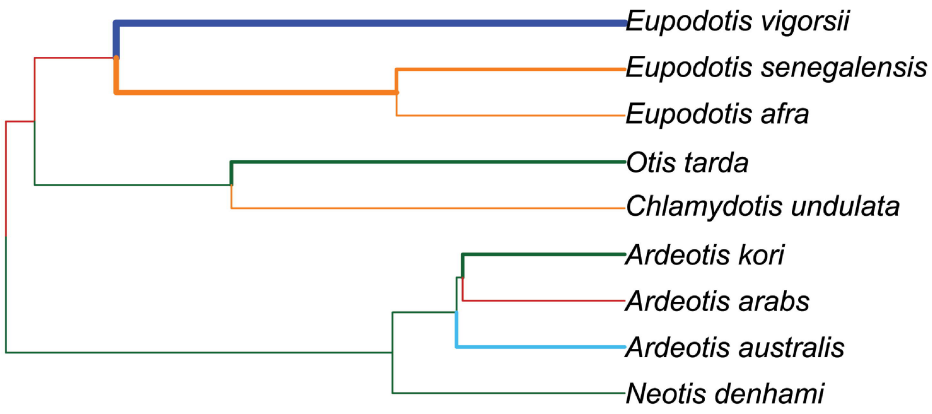
Galliformes



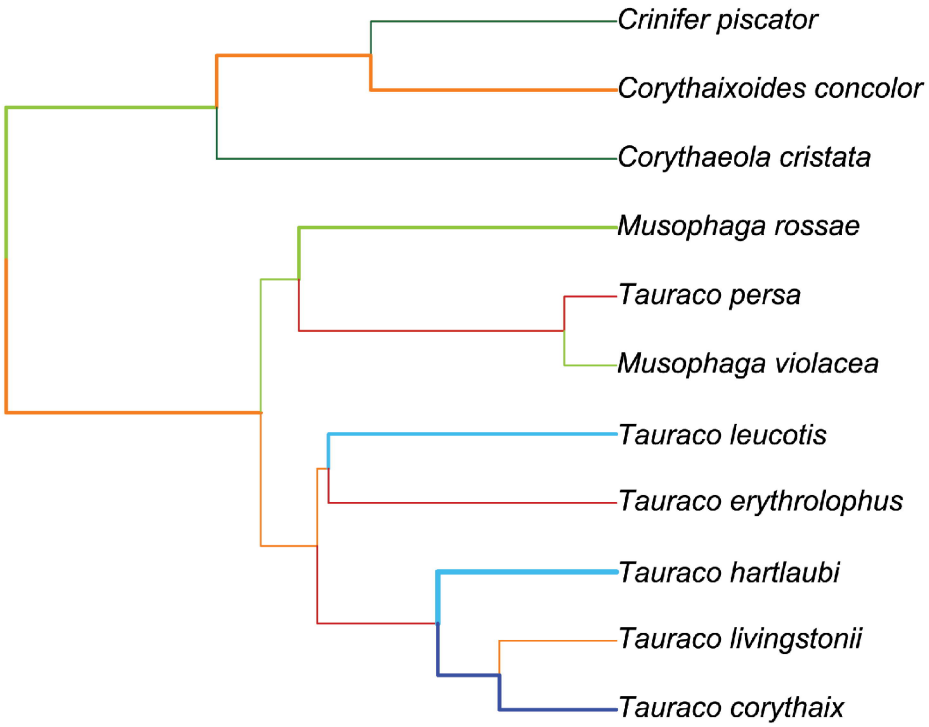
Anseriformes



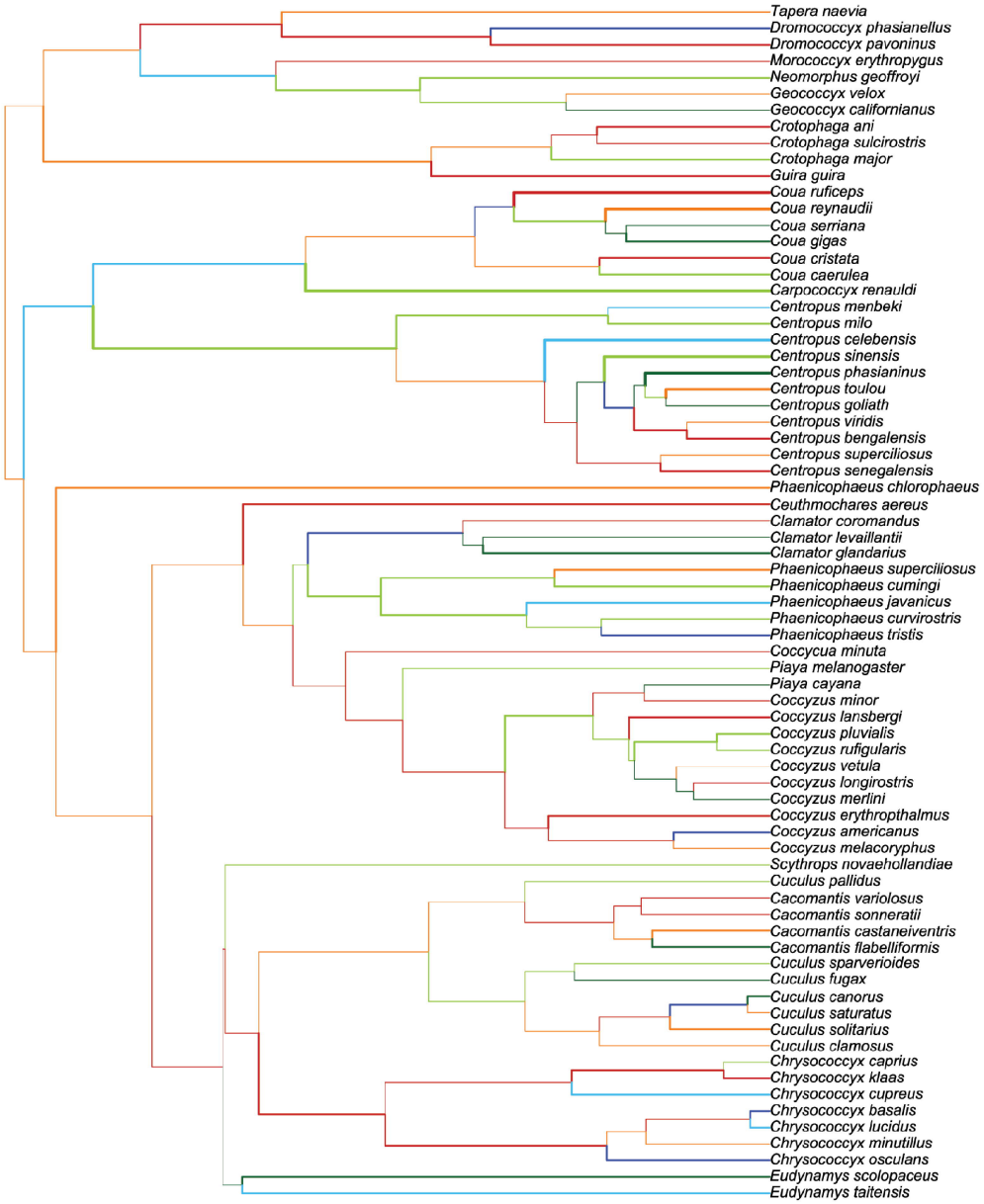
Otidiformes



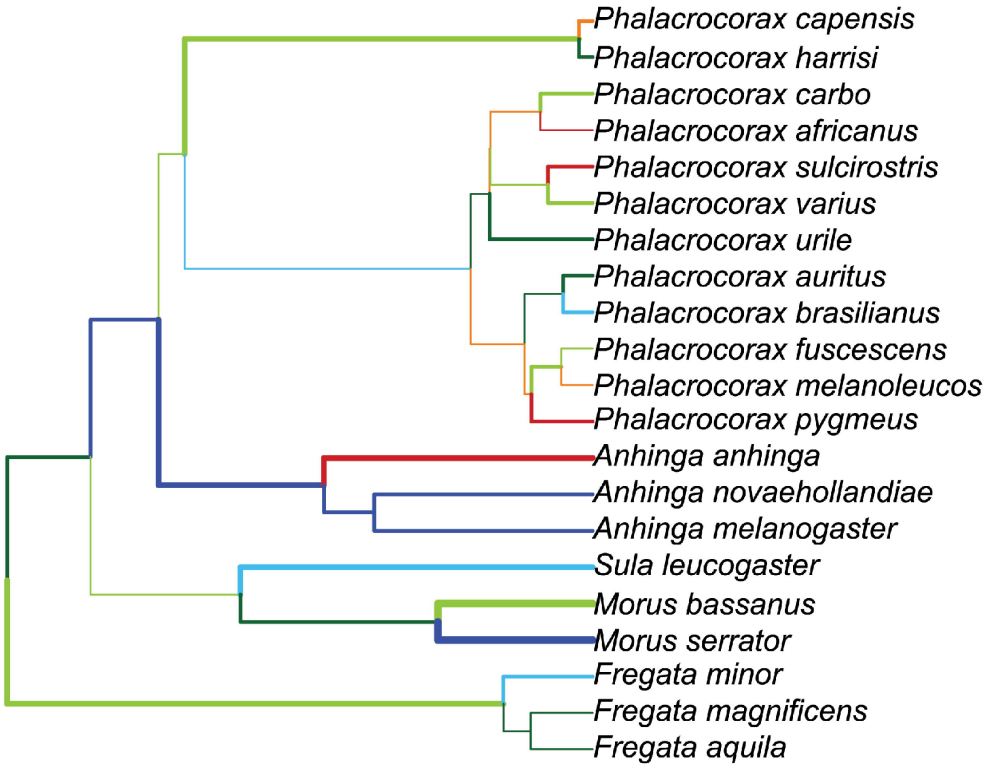
Musophagiformes



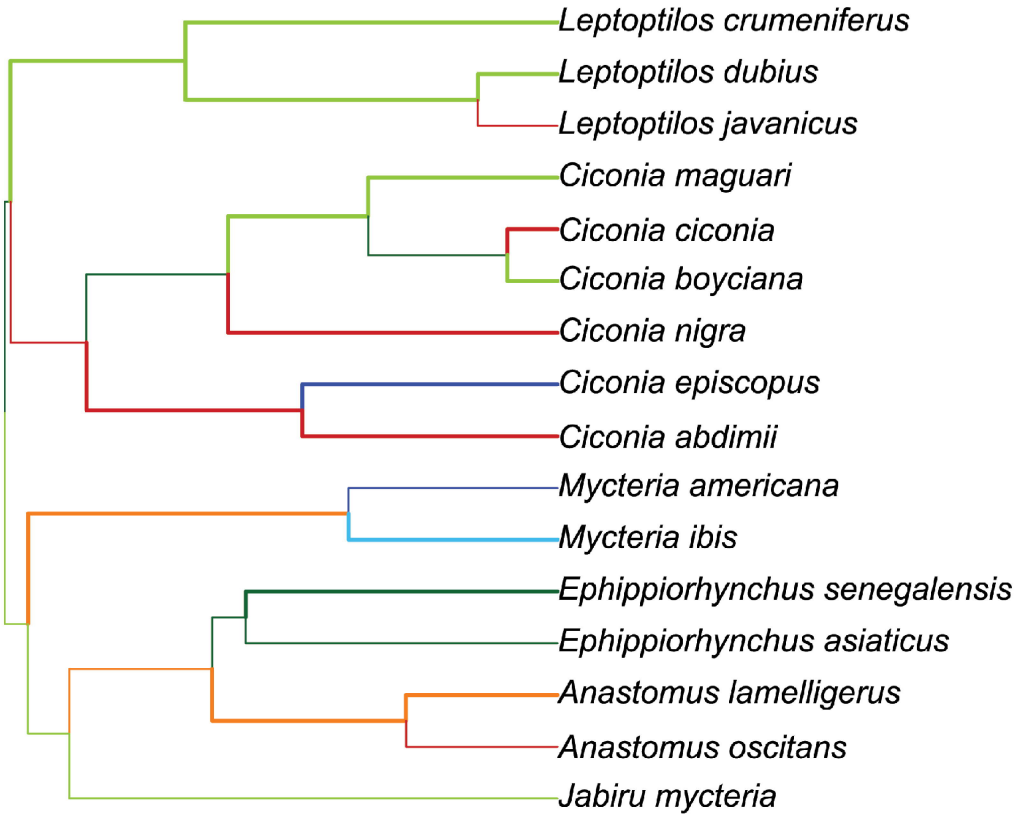
Cuculiformes



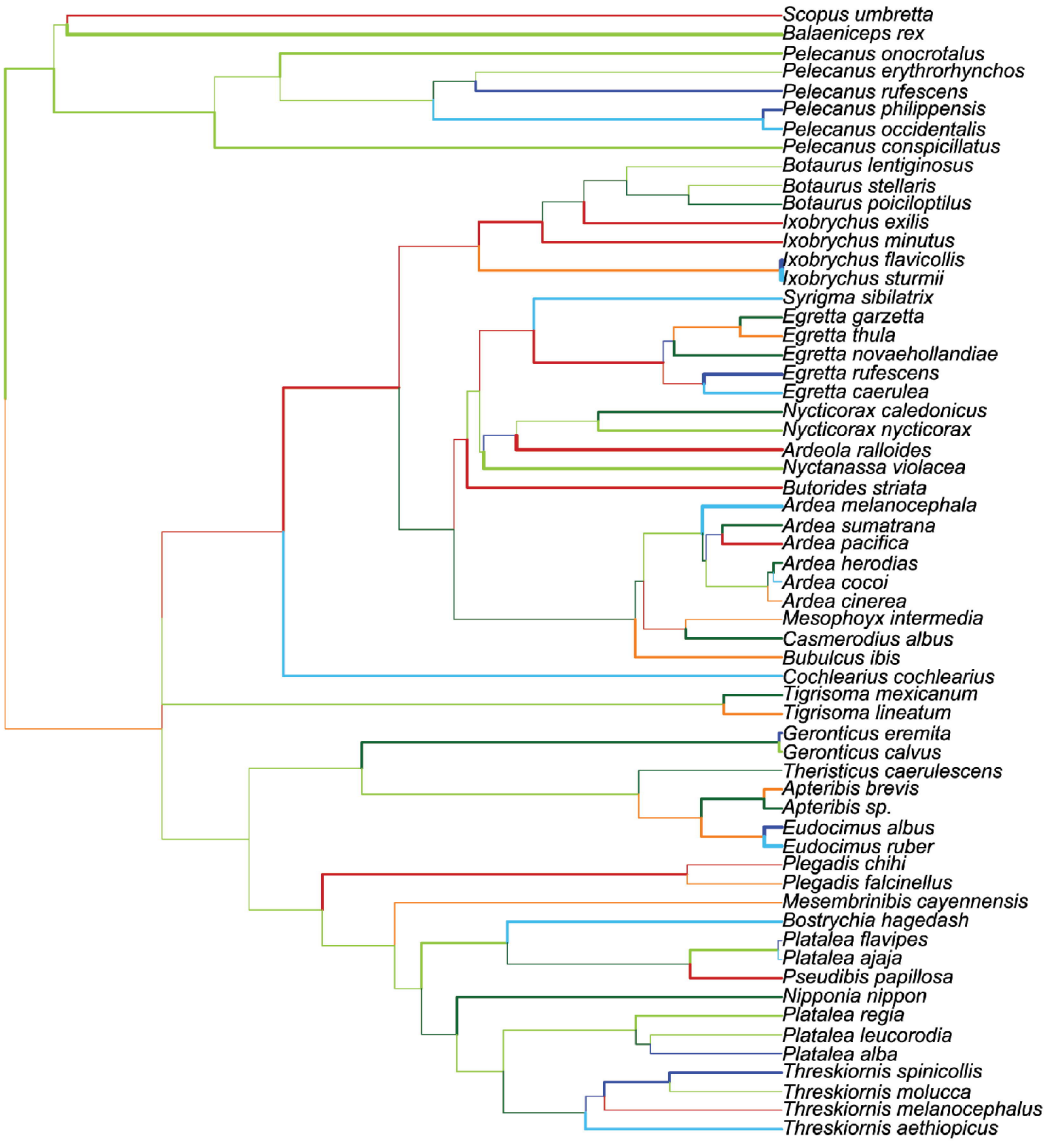
Suliformes



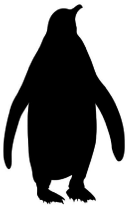
Ciconiiformes

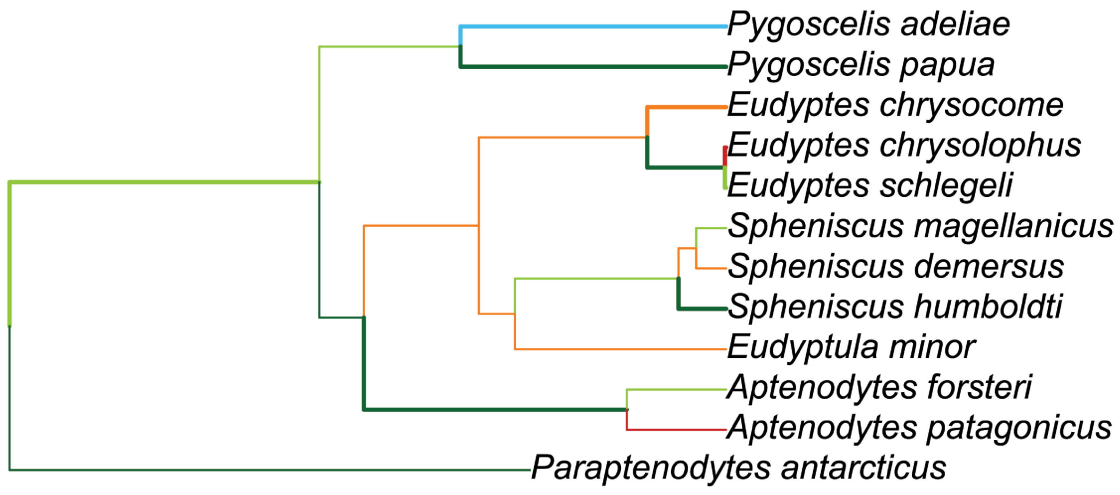


Pelecaniformes

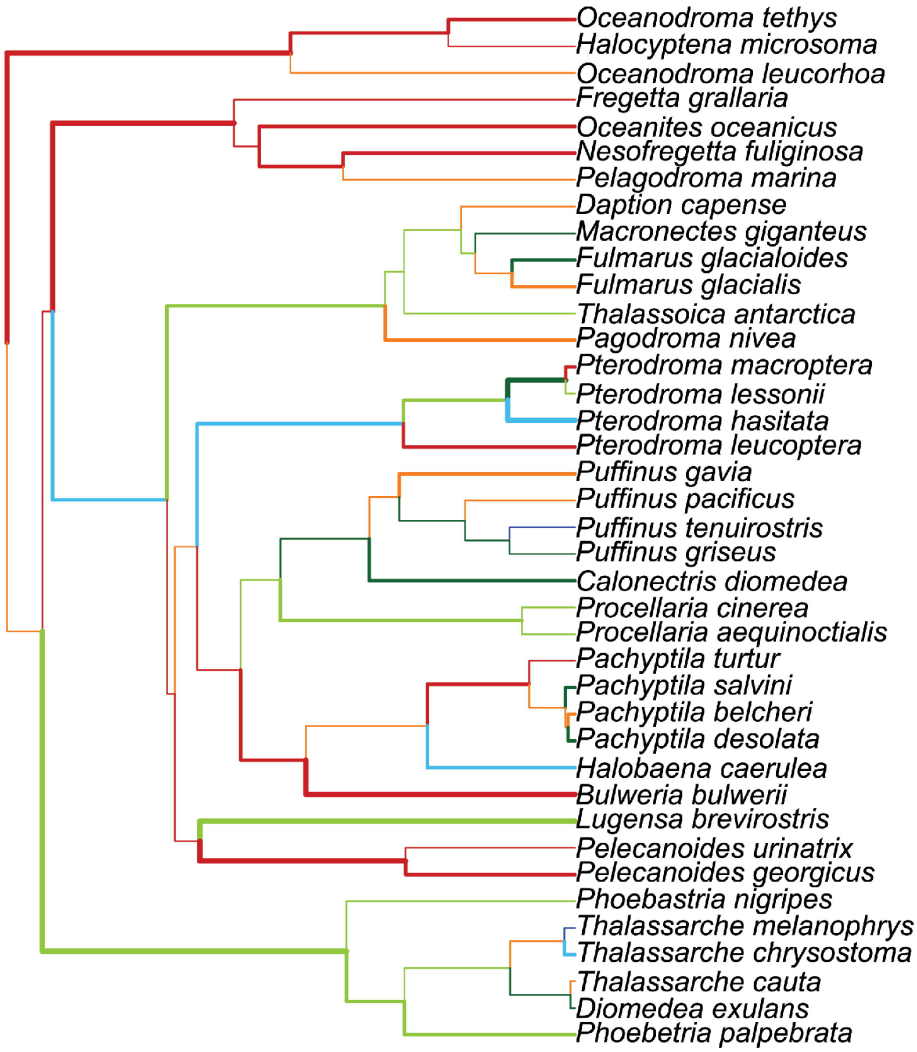


Sphenisciformes



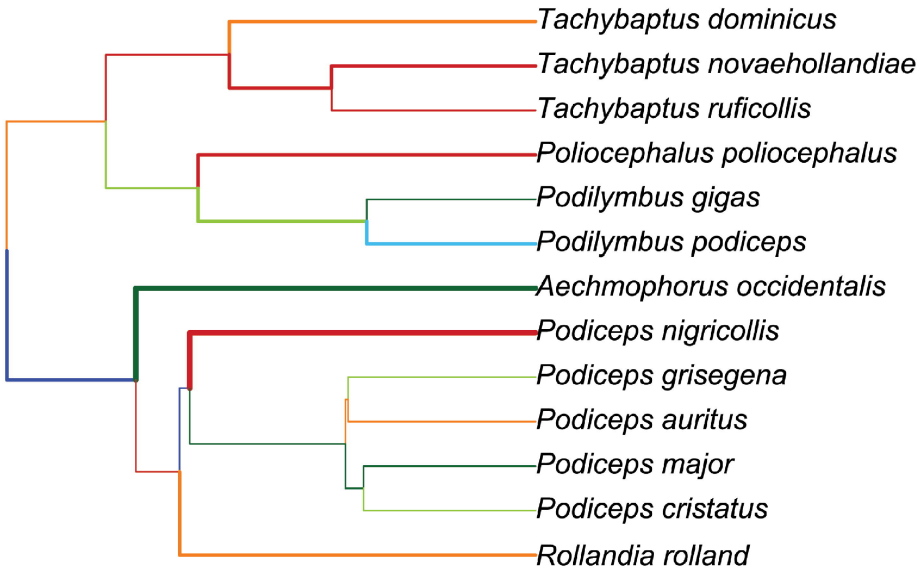


Procellariiformes



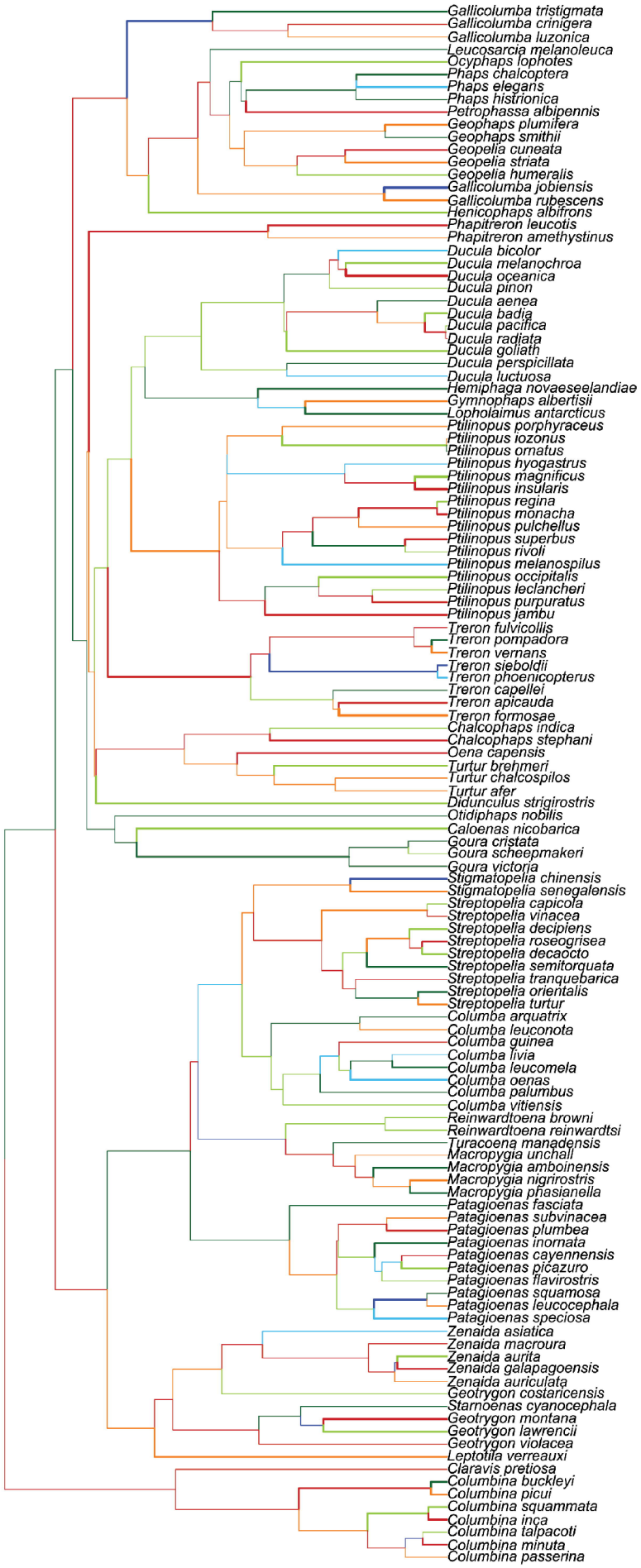
Mirandornithes

Podicipediformes

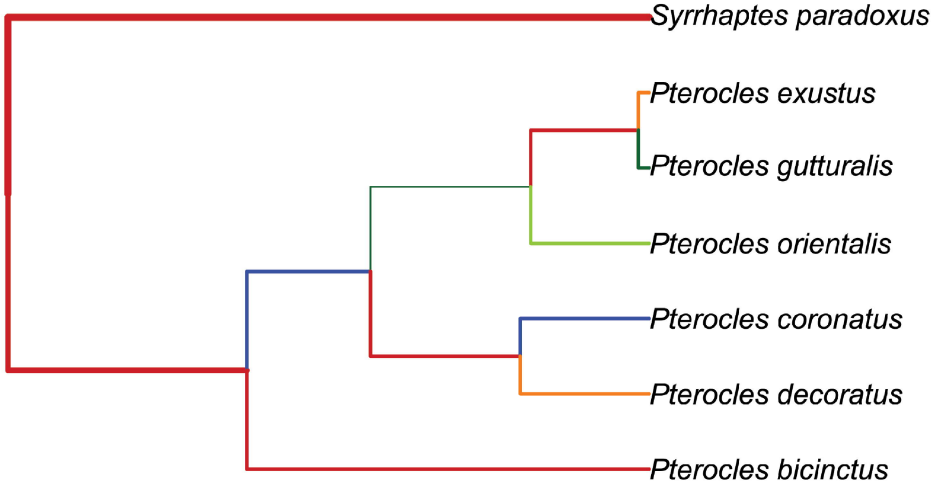


Columbimorphae

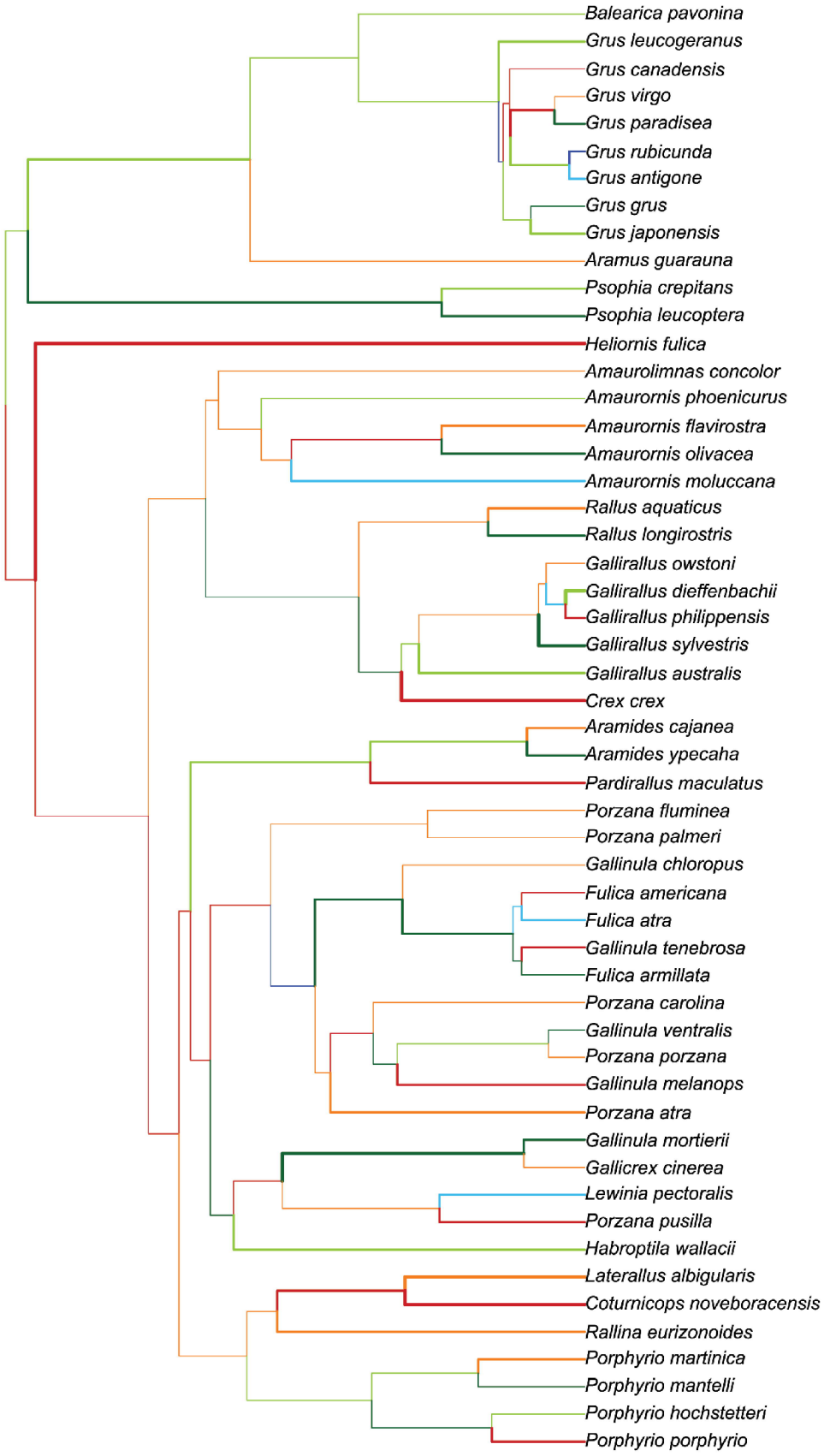
Columbiformes



Pteroclidiformes

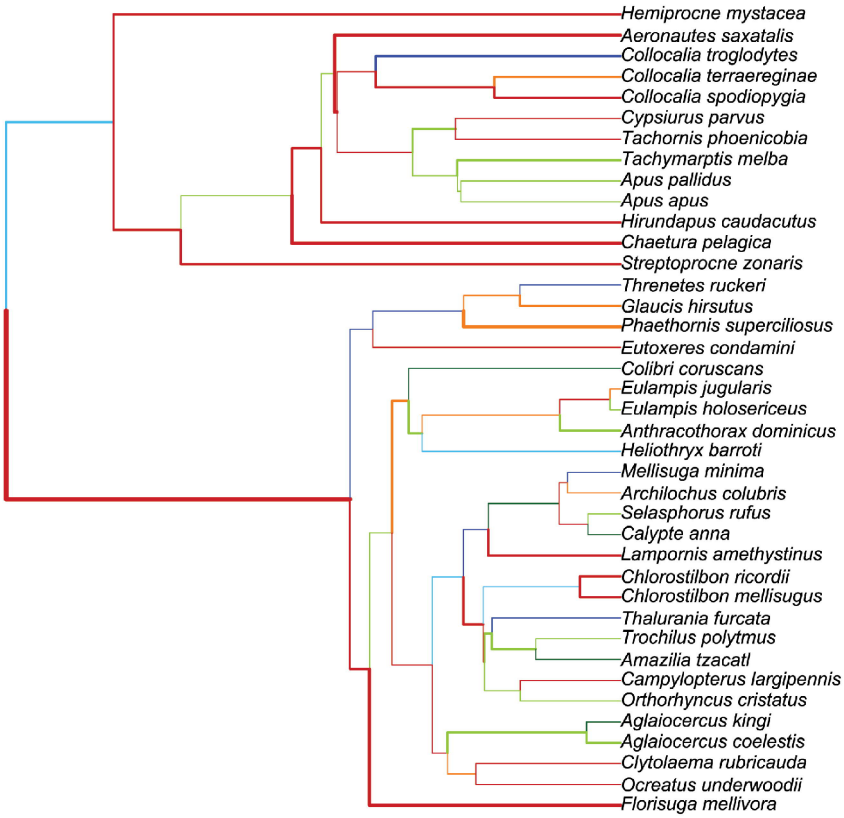


Gruiformes

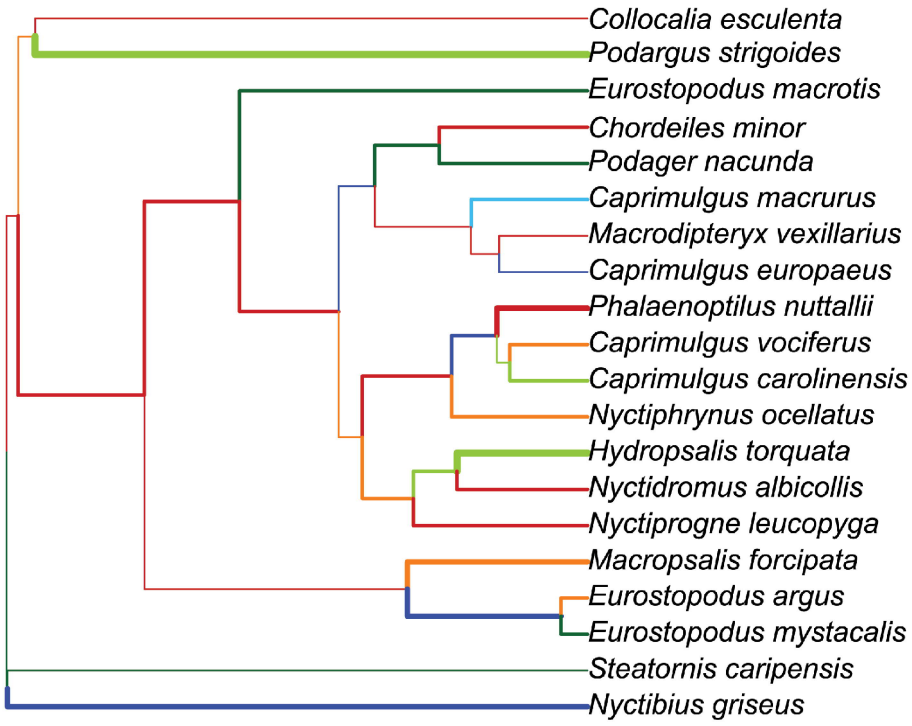

Balearica pavonina
Grus leucogeranus
Grus canadensis
Grus virgo
Grus paradisea
Grus rubicunda
Grus antigone
Grus grus
Grus japonensis
Aramus guarauna
Psophia crepitans
Psophia leucoptera
Heliornis fulica
Amaurolimnas concolor
Amaurornis phoenicurus
Amaurornis flavirostra
Amaurornis olivacea
Amaurornis moluccana
Rallus aquaticus
Rallus longirostris
Gallirallus owstoni
Gallirallus dieffenbachii
Gallirallus philippensis
Gallirallus sylvestris
Gallirallus australis
Crex crex
Aramides cajanea
Aramides ypecaha
Pardirallus maculatus
Porzana fluminea
Porzana palmeri
Gallinula chloropus
Fulica americana
Fulica atra
Gallinula tenebrosa
Fulica armillata
Porzana carolina
Gallinula ventralis
Porzana porzana
Gallinula melanops
Porzana atra
Gallinula mortierii
Gallicrex cinerea
Lewinia pectoralis
Porzana pusilla
Habroptila wallacii
Laterallus albigularis
Coturnicops noveboracensis
Rallina eurizonoides
Porphyrio martinica
Porphyrio mantelli
Porphyrio hochstetteri
Porphyrio porphyrio

Charadriiformes

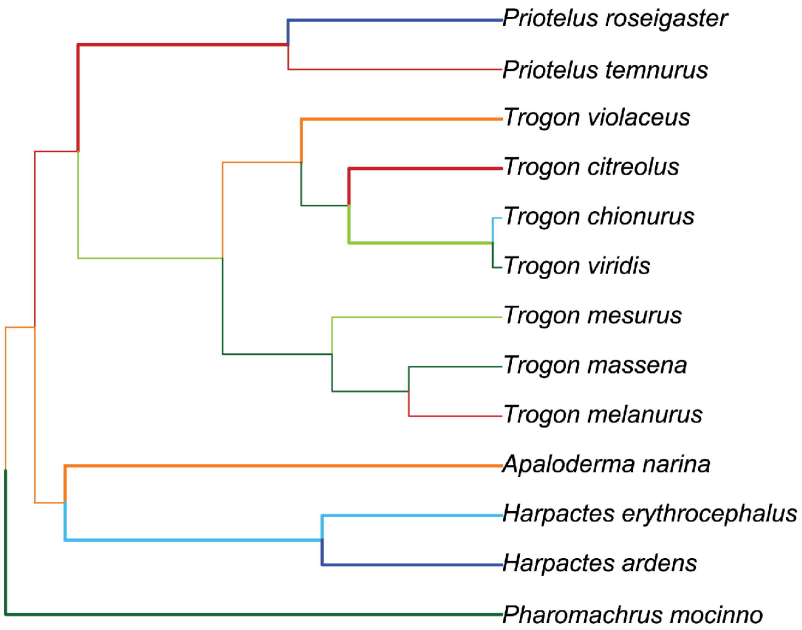
Apodiformes



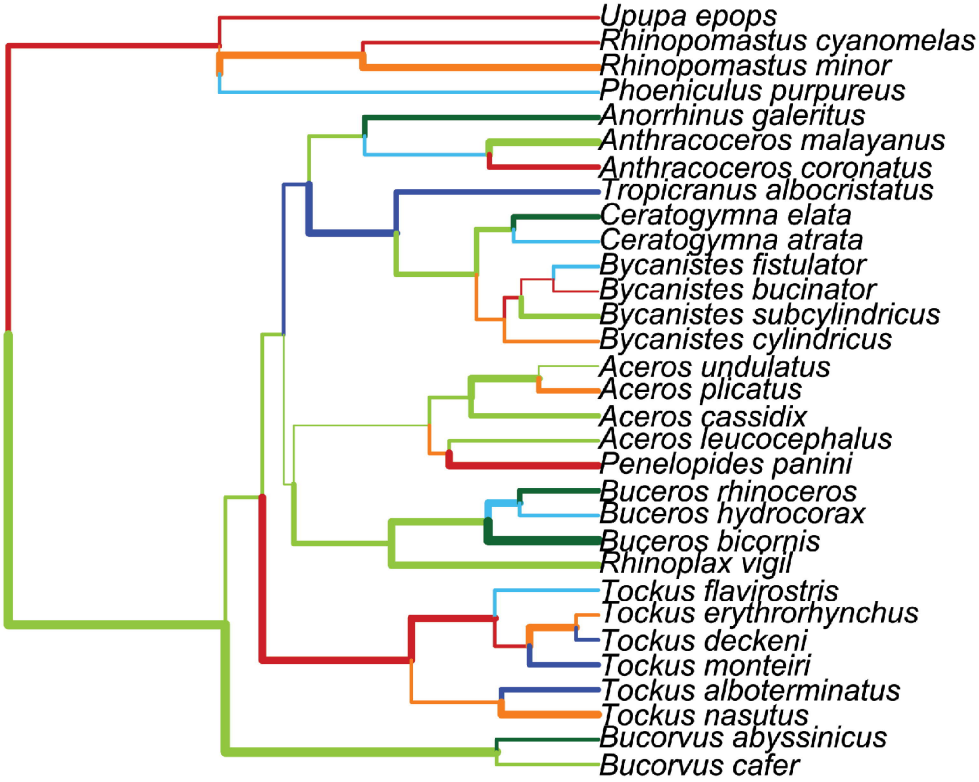
Caprimulgiformes



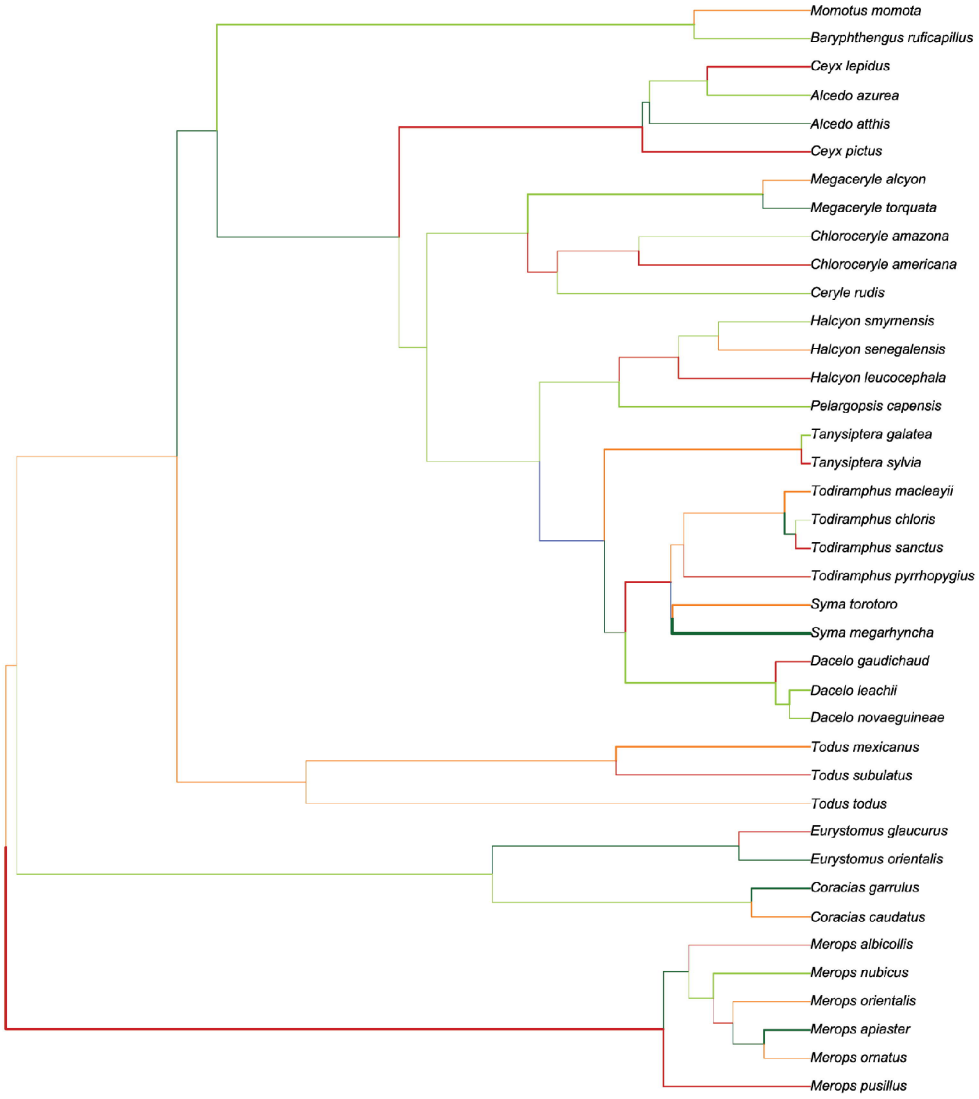
Trogoniformes



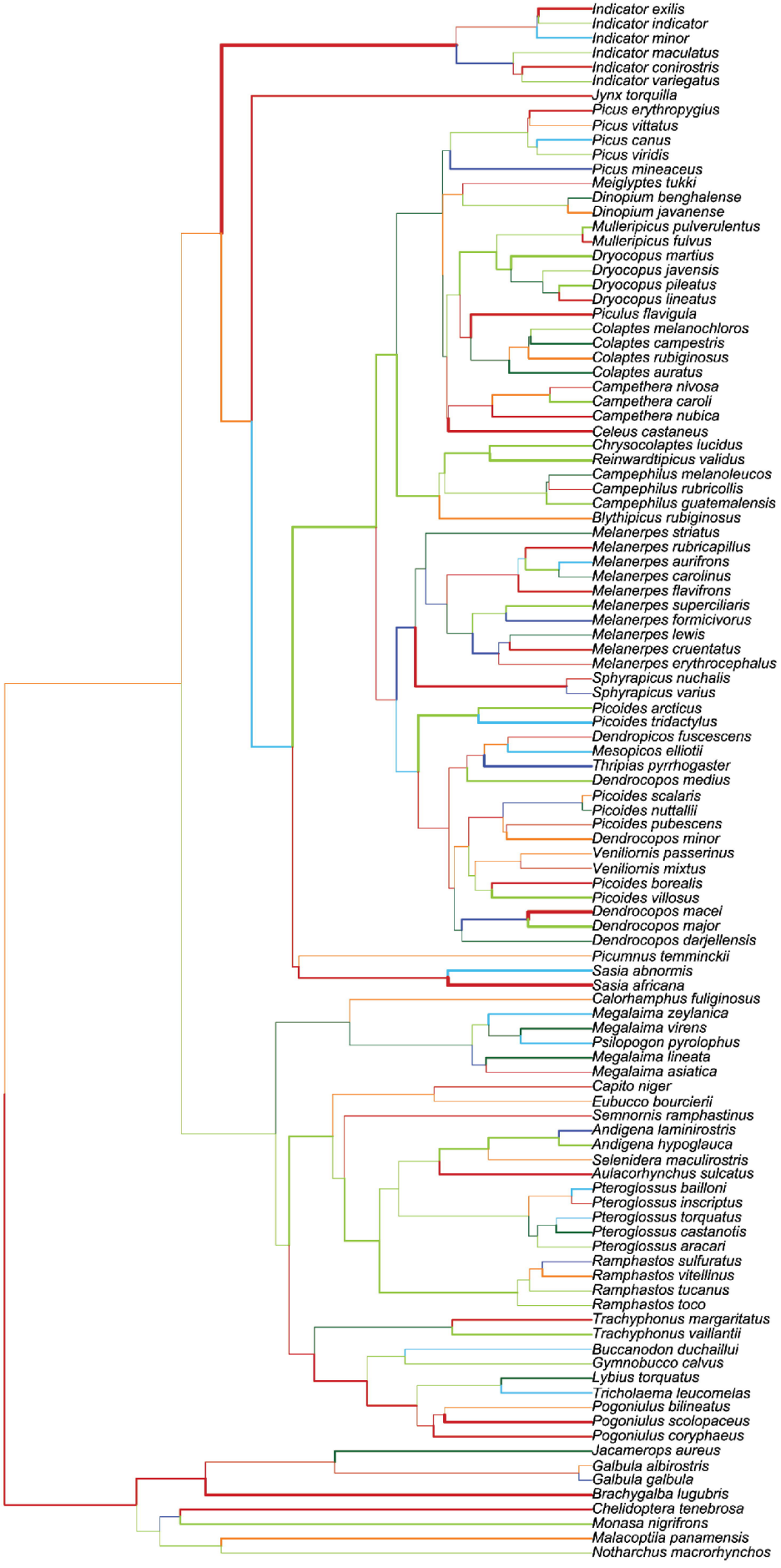
Bucerotiformes



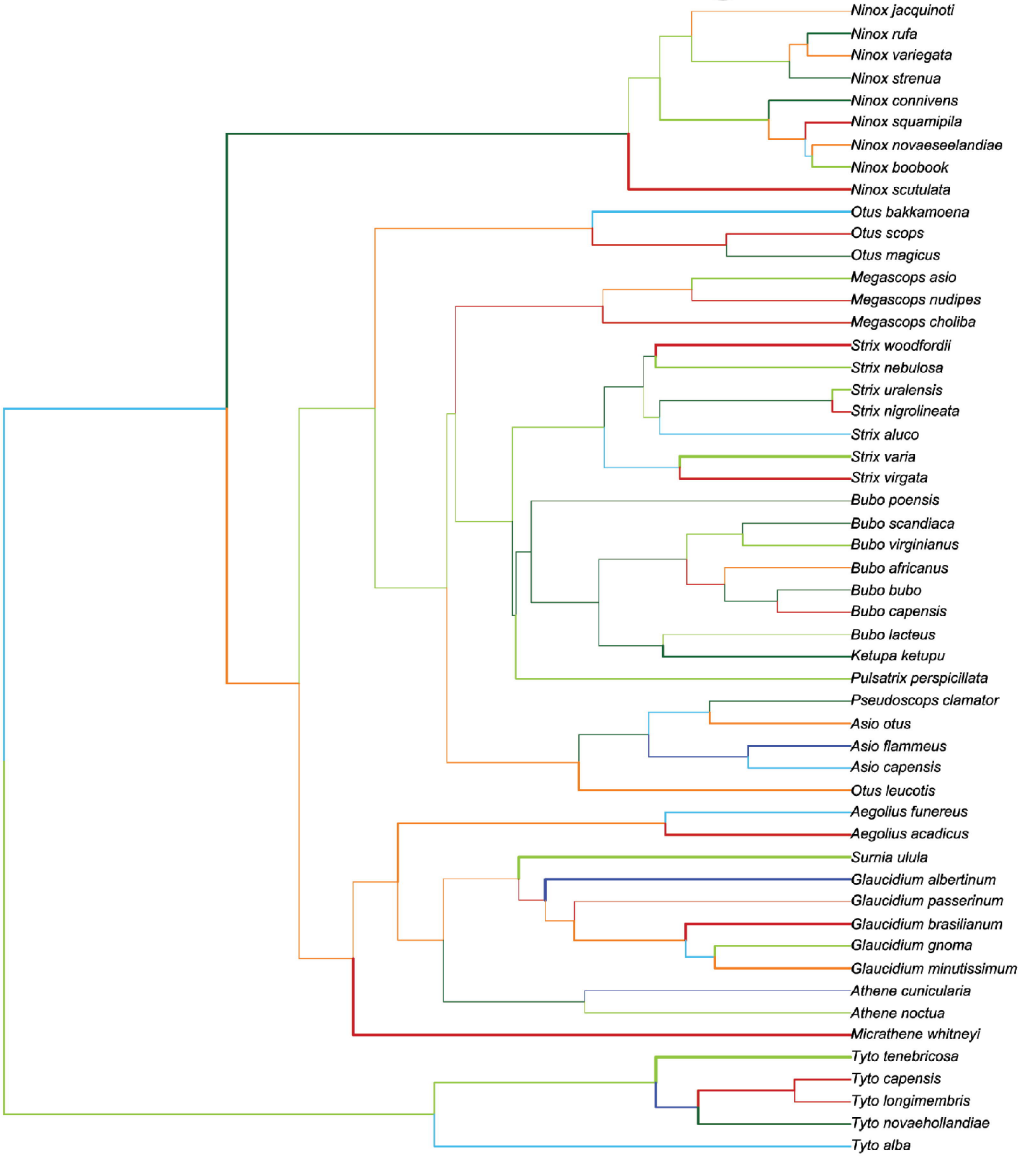
Coraciiformes



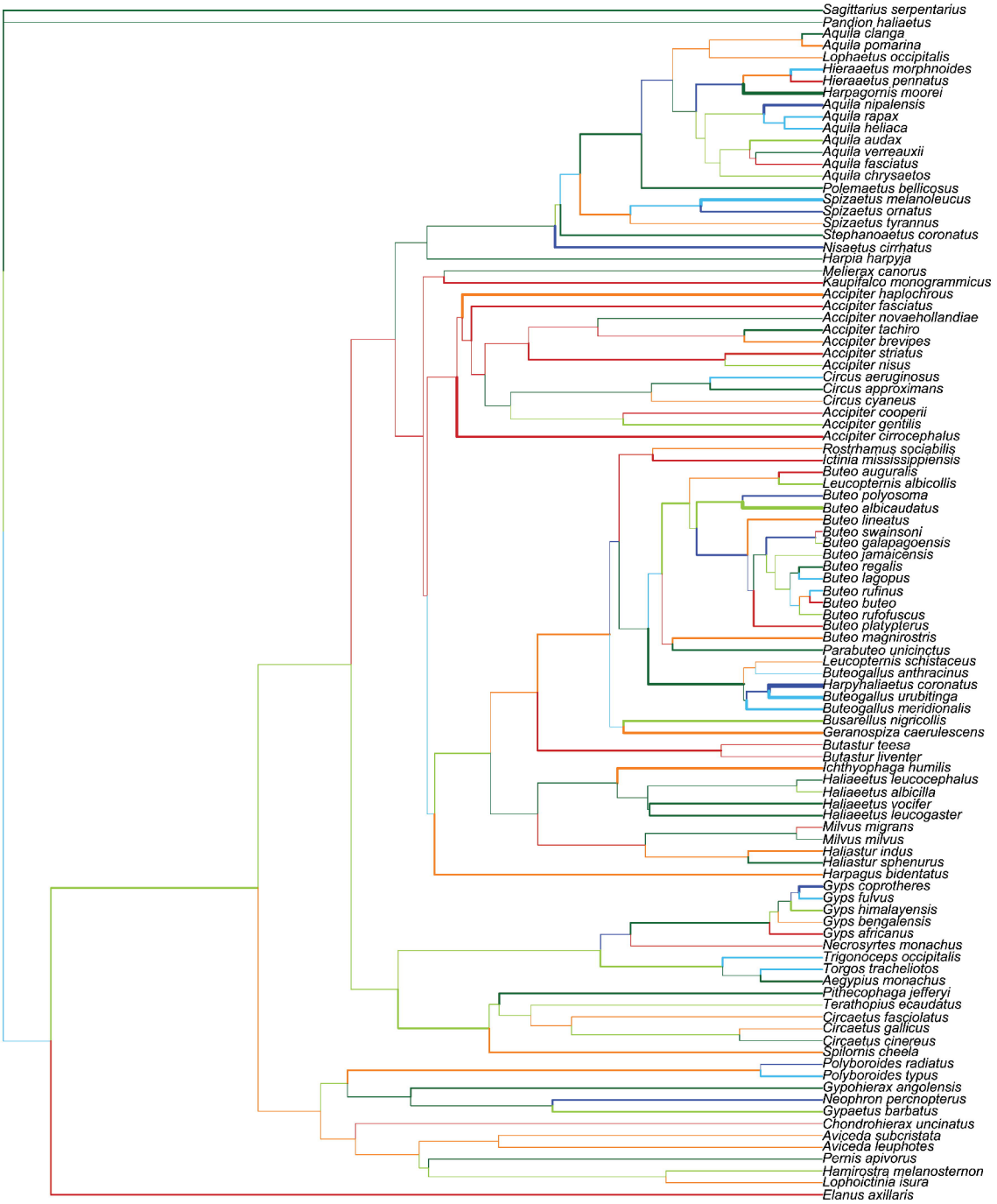
Piciformes


Indicator exilis
Indicator indicator
Indicator minor
Indicator maculatus
Indicator conirostris
Indicator variegatus
Jynx torquilla
Picus erythropygius
Picus vittatus
Picus canus
Picus viridis
Picus mineaceus
Meiglyptes tukki
Dinopium benghalense
Dinopium javanense
Mulleripicus pulverulentus
Mulleripicus fulvus
Dryocopus martius
Dryocopus javensis
Dryocopus pileatus
Dryocopus lineatus
Piculus flavigula
Colaptes melanochloros
Colaptes campestris
Colaptes rubiginosus
Colaptes auratus
Campethera nivosa
Campethera caroli
Campethera nubica
Celeus castaneus
Chrysocolaptes lucidus
Reinwardtipicus validus
Campephilus melanoleucos
Campephilus rubricollis
Campephilus guatemalensis
Blythipicus rubiginosus
Melanerpes striatus
Melanerpes rubricapillus
Melanerpes aurifrons
Melanerpes carolinus
Melanerpes flavifrons
Melanerpes superciliaris
Melanerpes formicivorus
Melanerpes lewis
Melanerpes cruentatus
Melanerpes erythrocephalus
Sphyrapicus nuchalis
Sphyrapicus varius
Picoides arcticus
Picoides tridactylus
Dendropicos fuscescens
Mesopicos elliotii
Thripias pyrrhogaster
Dendrocopos medius
Picoides scalaris
Picoides nuttallii
Picoides pubescens
Dendrocopos minor
Veniliornis passerinus
Veniliornis mixtus
Picoides borealis
Picoides villosus
Dendrocopos macei
Dendrocopos major
Dendrocopos darjellensis
Picumnus temminckii
Sasia abnormis
Sasia africana
Calorhamphus fuliginosus
Megalaima zeylanica
Megalaima virens
Psilopogon pyrolophus
Megalaima lineata
Megalaima asiatica
Capito niger
Eubucco bourcierii
Semnornis ramphastinus
Andigena laminirostris
Andigena hypoglauca
Selenidera maculirostris
Aulacorhynchus sulcatus
Pteroglossus bailloni
Pteroglossus inscriptus
Pteroglossus torquatus
Pteroglossus castanotis
Pteroglossus aracari
Ramphastos sulfuratus
Ramphastos vitellinus
Ramphastos tucanus
Ramphastos toco
Trachyphonus margaritatus
Trachyphonus vaillantii
Buccanodon duchaillui
Gymnobucco calvus
Lybius torquatus
Tricholaema leucomelas
Pogoniulus bilineatus
Pogoniulus scolopaceus
Pogoniulus coryphaeus
Jacamerops aureus
Galbula albirostris
Galbula galbula
Brachygalba lugubris
Chelidoptera tenebrosa
Monasa nigrifrons
Malacoptila panamensis
Notharchus macrorhynchos

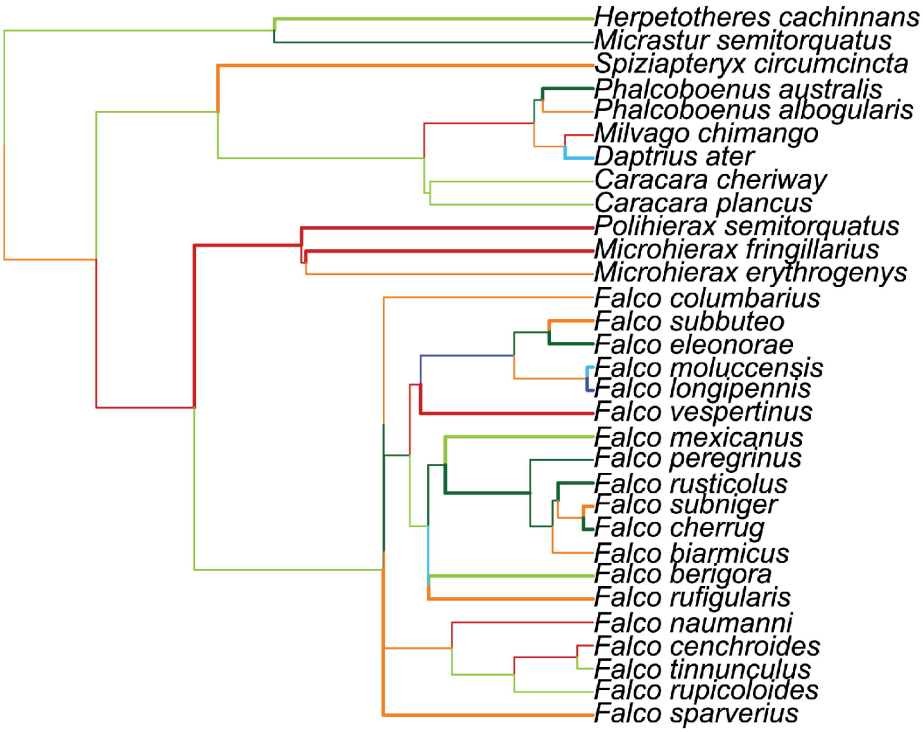
Strigiformes



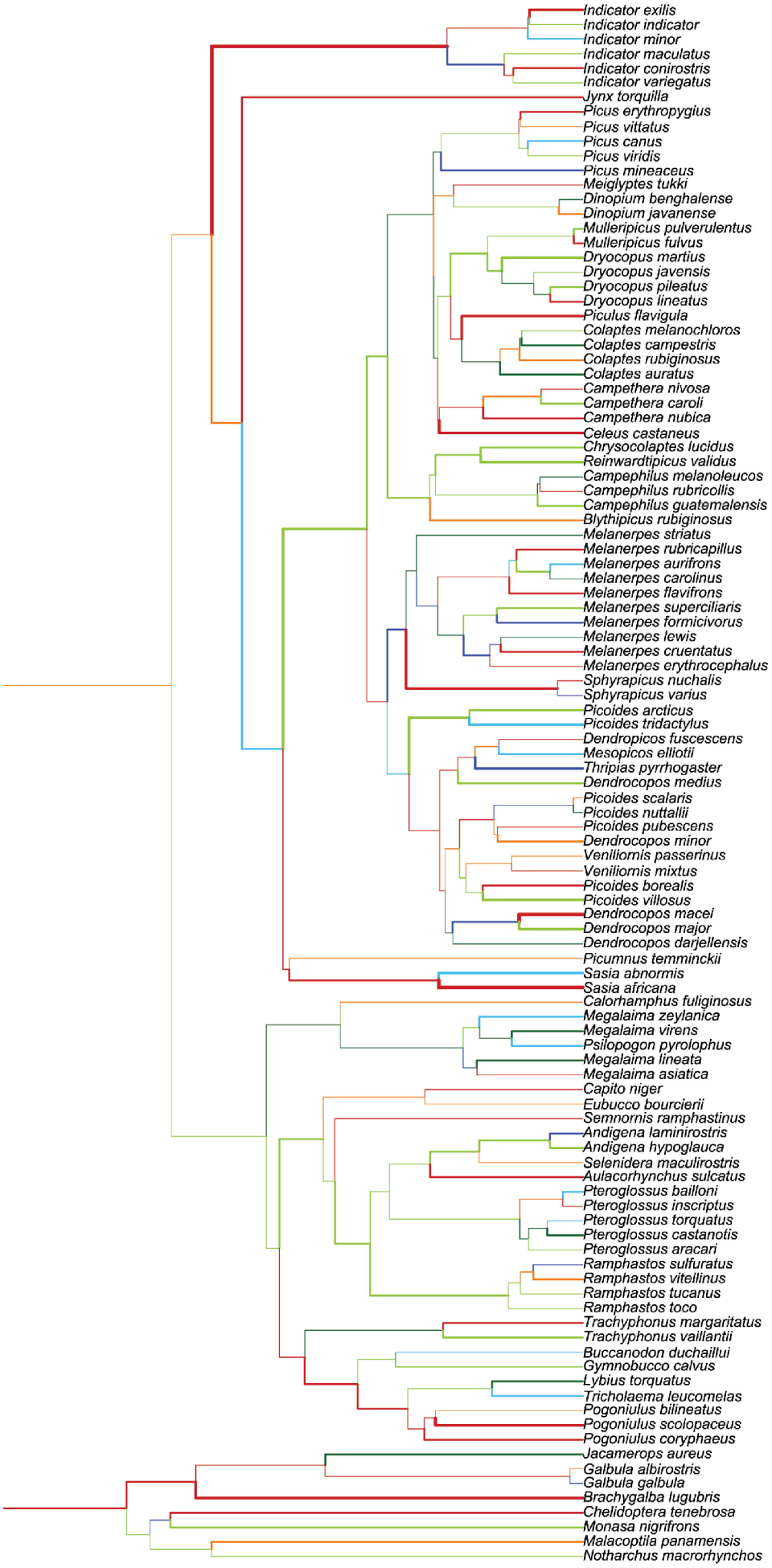
Accipitriformes



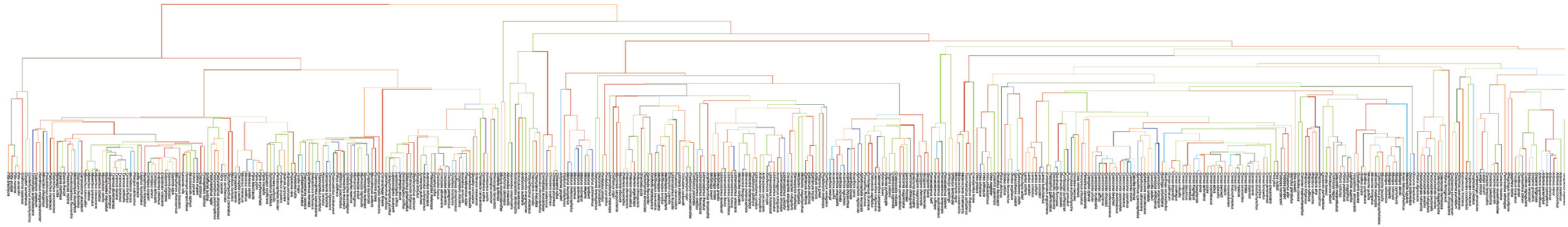
Falconiformes

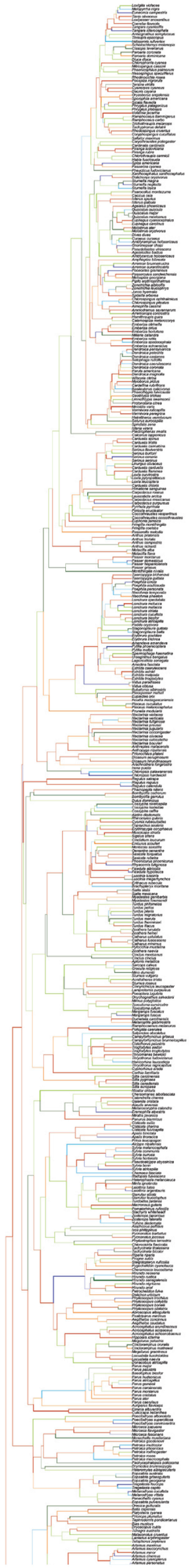


Piciformes


Indicator exilis
Indicator indicator
Indicator minor
Indicator maculatus
Indicator conirostris
Indicator variegatus
Jynx torquilla
Picus erythropygius
Picus vittatus
Picus canus
Picus viridis
Picus mineaceus
Meiglyptes tukki
Dinopium benghalense
Dinopium javanense
Mulleripicus pulverulentus
Mulleripicus fulvus
Dryocopus martius
Dryocopus javensis
Dryocopus pileatus
Dryocopus lineatus
Piculus flavigula
Colaptes melanochloros
Colaptes campestris
Colaptes rubiginosus
Colaptes auratus
Campethera nivosa
Campethera caroli
Campethera nubica
Celeus castaneus
Chrysocolaptes lucidus
Reinwardtipicus validus
Campephilus melanoleucos
Campephilus rubricollis
Campephilus guatemalensis
Blythipicus rubiginosus
Melanerpes striatus
Melanerpes rubricapillus
Melanerpes aurifrons
Melanerpes carolinus
Melanerpes flavifrons
Melanerpes superciliaris
Melanerpes formicivorus
Melanerpes lewis
Melanerpes cruentatus
Melanerpes erythrocephalus
Sphyrapicus nuchalis
Sphyrapicus varius
Picoides arcticus
Picoides tridactylus
Dendropicos fuscescens
Mesopicos elliotii
Thripias pyrrhogaster
Dendrocopos medius
Picoides scalaris
Picoides nuttallii
Picoides pubescens
Dendrocopos minor
Veniliornis passerinus
Veniliornis mixtus
Picoides borealis
Picoides villosus
Dendrocopos macei
Dendrocopos major
Dendrocopos darjellensis
Picumnus temminckii
Sasia abnormis
Sasia africana
Calorhamphus fuliginosus
Megalaima zeylanica
Megalaima virens
Psilopogon pyrolophus
Megalaima lineata
Megalaima asiatica
Capito niger
Eubucco bourcierii
Semnornis ramphastinus
Andigena laminirostris
Andigena hypoglauca
Selenidera maculirostris
Aulacorhynchus sulcatus
Pteroglossus bailloni
Pteroglossus inscriptus
Pteroglossus torquatus
Pteroglossus castanotis
Pteroglossus aracari
Ramphastos sulfuratus
Ramphastos vitellinus
Ramphastos tucanus
Ramphastos toco
Trachyphonus margaritatus
Trachyphonus vaillantii
Buccanodon duchaillui
Gymnobucco calvus
Lybius torquatus
Tricholaema leucomelas
Pogoniulus bilineatus
Pogoniulus scolopaceus
Pogoniulus coryphaeus
Jacamerops aureus
Galbula albirostris
Galbula galbula
Brachygalba lugubris
Chelidoptera tenebrosa
Monasa nigrifrons
Malacoptila panamensis
Notharchus macrorhynchos

Passeriformes

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Melopyrrha nigra
Melopyrrha portoricensis
Tersa violacea
Loxipasser anoxanthus
Cyanolyca dickeyi
Cyanolyca turcosa
Tangara cyanocephala
Amaurospiza semplicivulus
Thraupis episcopus
Thraupis palmarum
Schistochlamys melanopis
Cissopis leverianus
Pamparia coronata
Pamparia dominicana
Paroaria gularis
Chlorophonia cyanea
Mitrospingus cassini
Phaenicophilus palmarum
Haplospingus spectifrenis
Haplospingus nigriceps
Poospiza nigrorufa
Tersina viridis
Dacnis albiventer
Dacnis cayana
Oryzoborus angolensis
Sporophila americana
Sicalis flaveola
Sicalis luteocephalus
Phrygilus plebejus
Volatinia jacarina
Ramphocelus dimidiatus
Ramphocelus carbo
Tachyphonus cristatus
Tachyphonus delatri
Rhodospingus cruentus
Coryphospingus cucullatus
Saltator maximus
Saltator coerulescens
Cardinalis cardinalis
Piranga ludoviciana
Piranga rubra
Cherrieornis carmioli
Habia fuscicauda
Spiza americana
Passerina cyanea
Pheucticus ludovicianus
Xanthocephalus xanthocephalus
Dolichonyx oryzivorus
Sturnella magna
Sturnella neglecta
Icterus pectoralis
Psarocolius montezuma
Cacicus cela
Cacicus haemorrhous
Icterus galbula
Agelaius phoeniceus
Quiscalus quiscula
Quiscalus mexicanus
Euphagus cyanocephalus
Euphagus carolinus
Molothrus ater
Molothrus oryzivorus
Orpheus rufus
Oreoscoptes montanus
Arremonops conirostris
Atlapetes albinucha
Arremon aurantiirostris
Pipilo erythrophthalmus
Pipilo chlorurus
Melozone biarcuata
Aimophila cassinii
Amphispiza bilineata
Artemisiospiza nevadensis
Melospiza georgiana
Melospiza melodia melodia
Zonotrichia albicollis
Zonotrichia leucophrys
Junco hyemalis
Spizella arborea
Chlorospingus ophthalmicus
Chlorospingus pileatus
Aimophila cassinii
Arremonops rufivirgatus
Arremonops conirostris
Atlapetes albinucha
Caprimulgus rufigena
Eleothreptus candicans
Eleothreptus anomalus
Nyctidromus albicollis
Phalaenoptilus nuttallii
Antrostomus vociferus
Antrostomus noctitherus
Hydropsalis cayennensis
Hydropsalis forcipata
Hydropsalis nigrescens
Hydropsalis longirostris
Hydropsalis hirundinacea
Hydropsalis parvula
Hydropsalis torquata
Uropsalis segmentata
Uropsalis lyra
Macropsalis forcipata
Nyctiprogne leucopyga
Nyctiprogne vielliardi
Chordeiles minor
Chordeiles acutipennis
Chordeiles rupestris
Lurocalis semitorquatus
Nannochordeiles pusillus
Podager nacunda
Setopagis parvula
Setopagis heydeyi
Setopagis whitelyana
Setopagis aequatorialis
Setopagis maculicaudus
Setopagis caudacuta