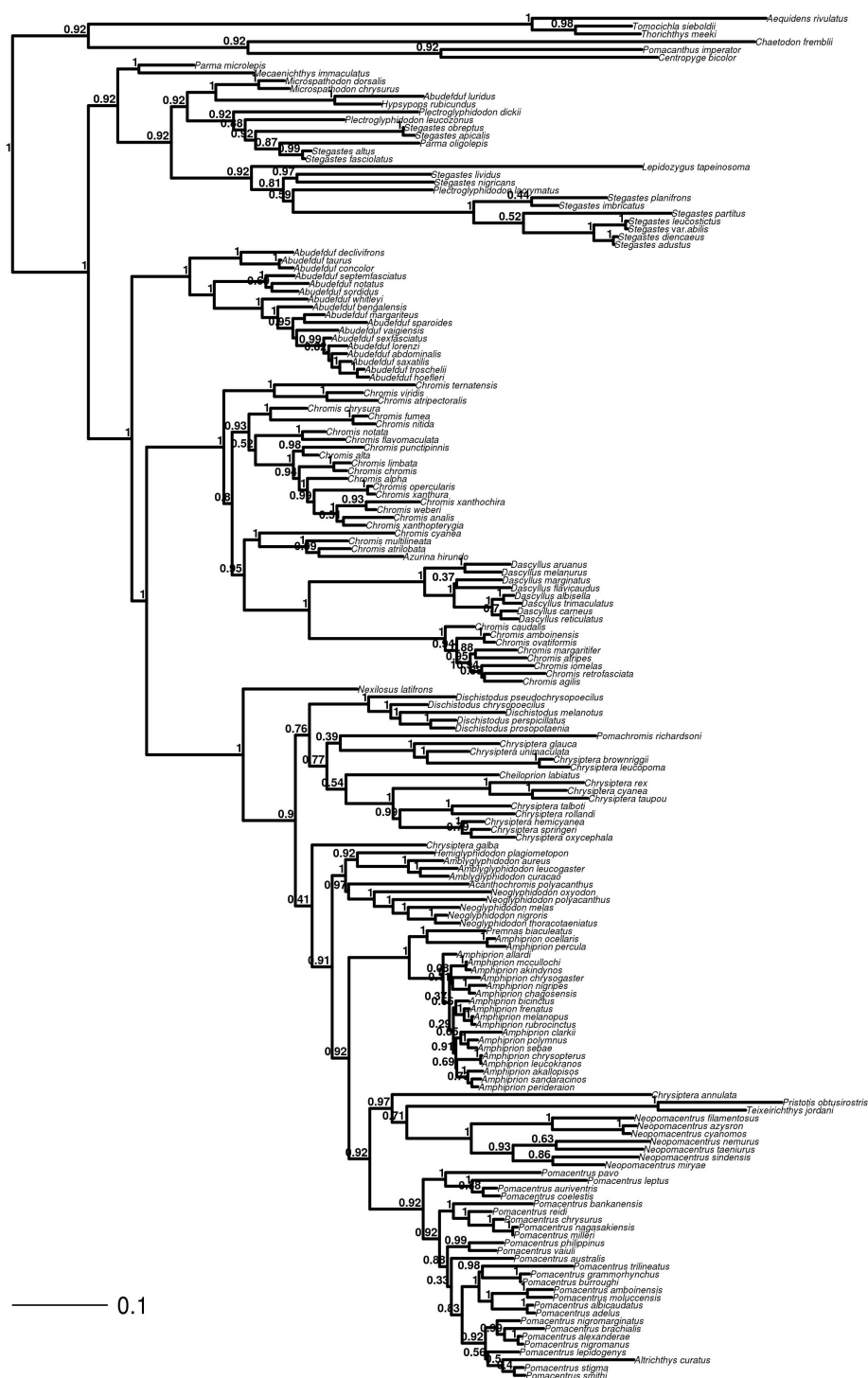
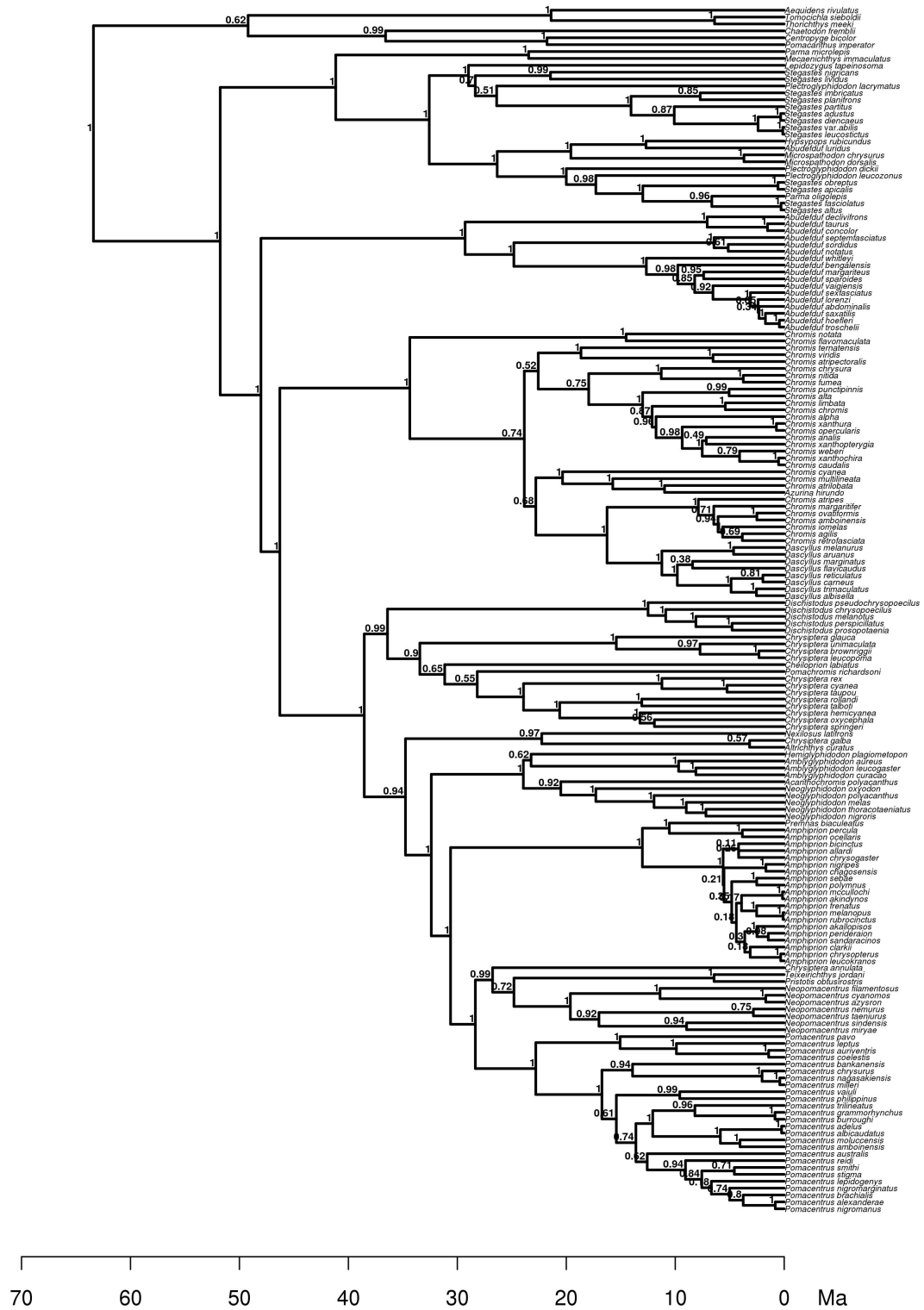


1 Appendix A: Supplementary tables and figures

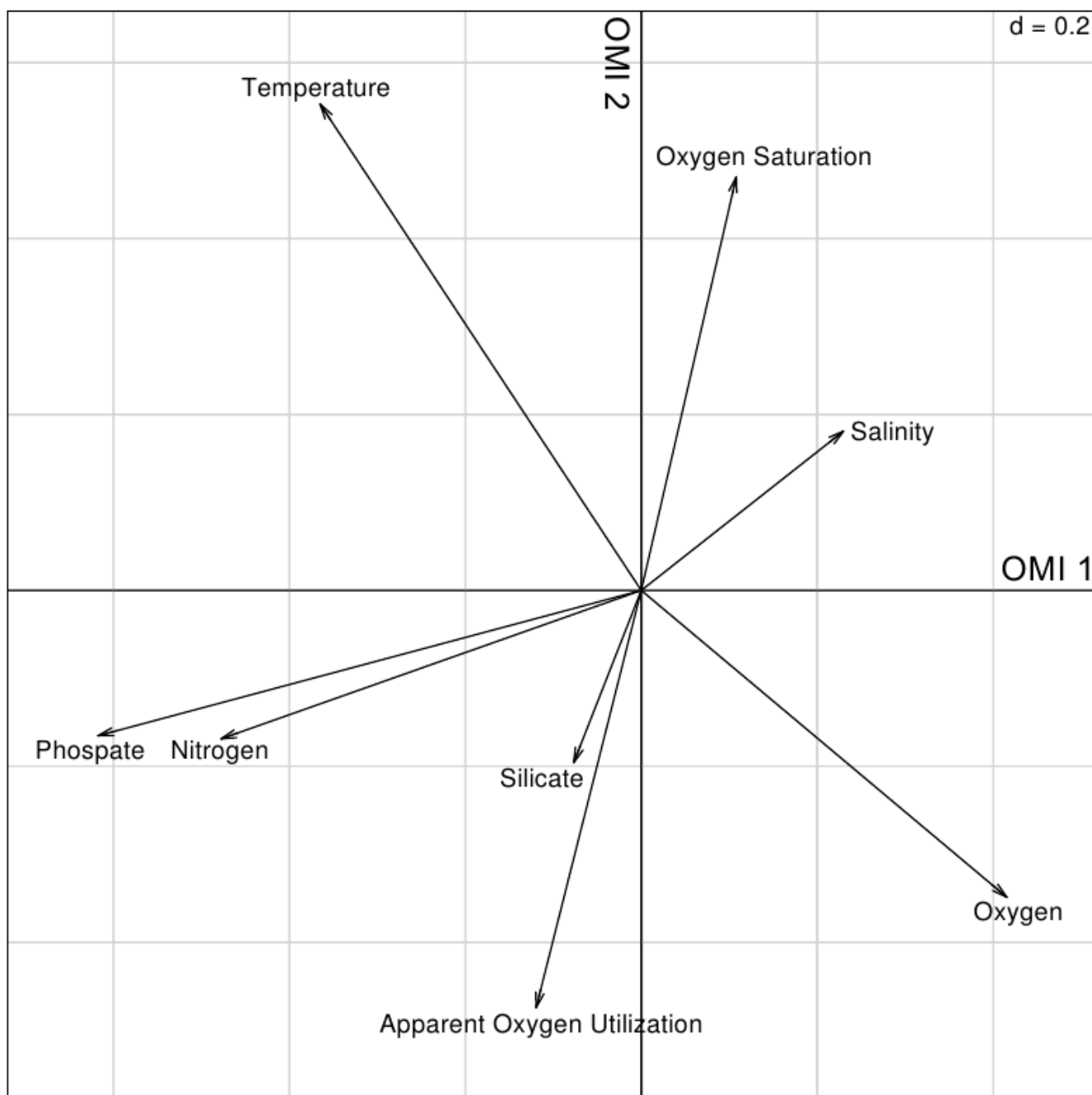


3 **Figure A1.** Consensus phylogram obtained with MrBayes. Node labels are Bayesian posterior
4 probabilities.

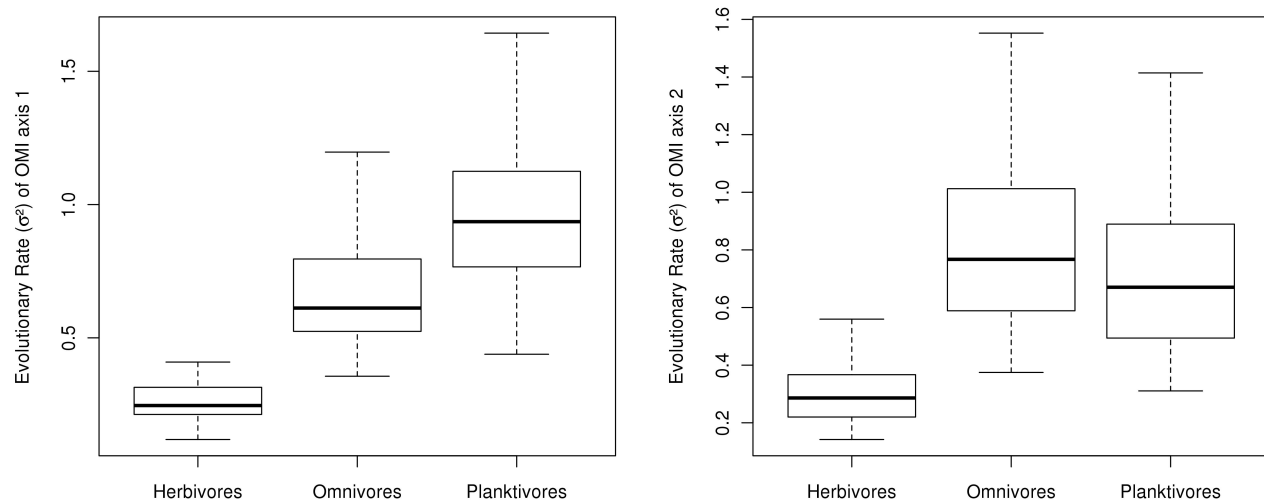
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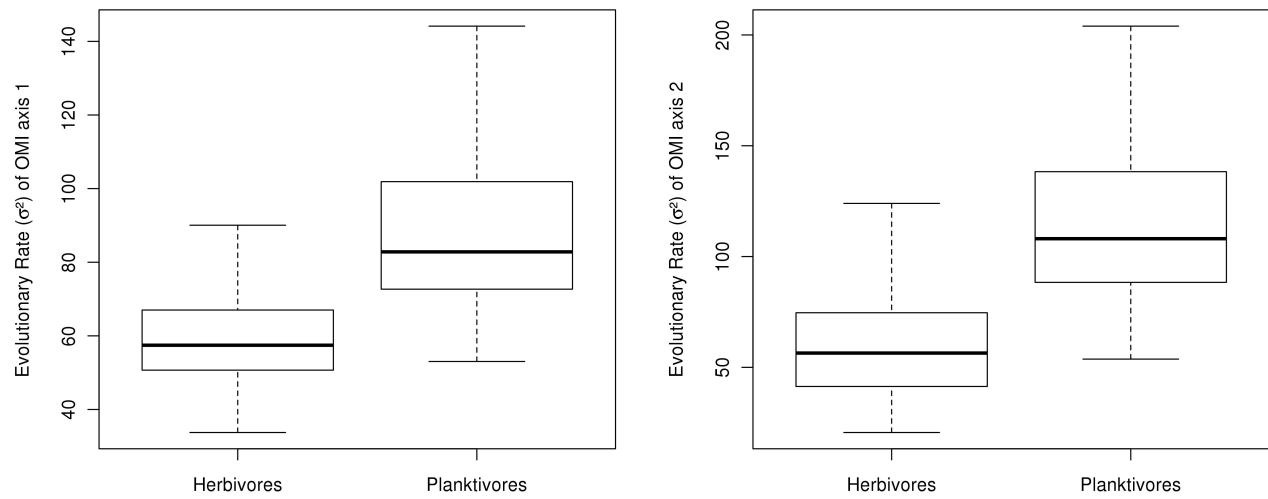
10 **Figure A3.** Maximum credibility chronogram obtained with BEAST with Bayesian posterior
 11 probabilities at each node.



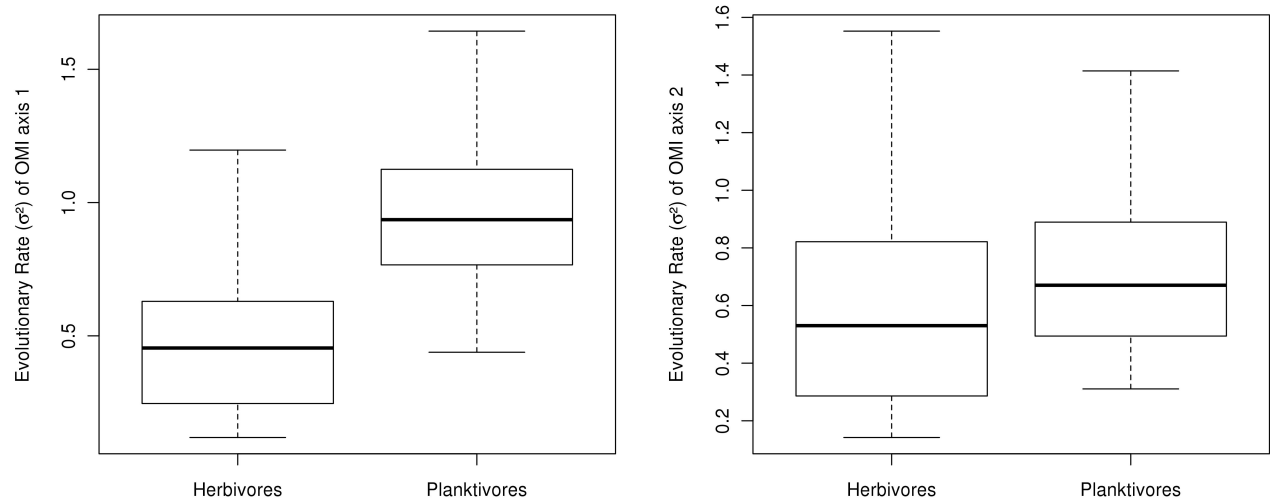
12 **Figure A4.** Factorial map of the OMI axis 1 and 2.



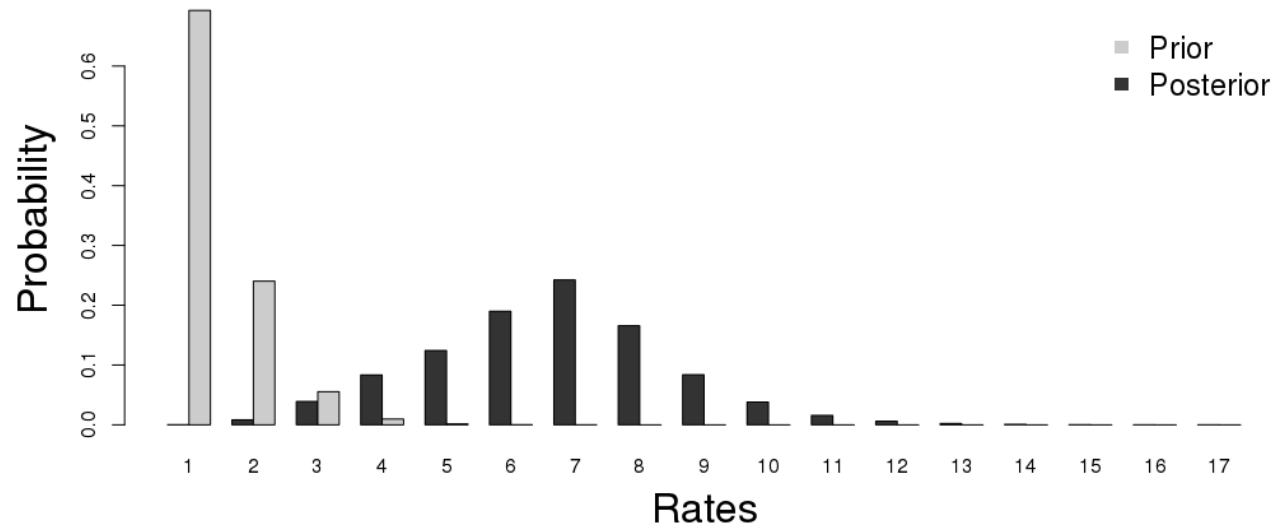
13 **Figure A5.** Relative rates of environmental niche evolution of the three trophic groups for the first and
 14 second OMI axis when inferred on the posterior distribution of chronograms.



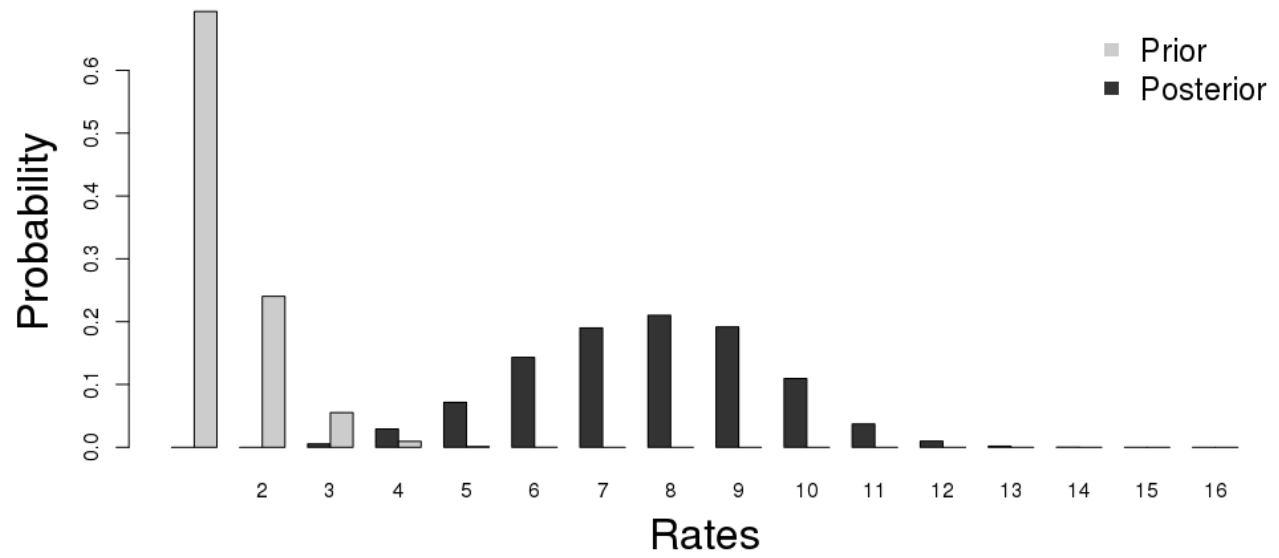
15 **Figure A6.** Relative rates of environmental niche evolution with only two trophic states (omnivores are
16 merged with herbivores) for the first and second OMI axis when inferred on the posterior distribution
17 of phylograms.



18 **Figure A7.** Relative rates of environmental niche evolution with only two trophic states (omnivores are
 19 merged with herbivores) for the first and second OMI axis when inferred on the posterior distribution
 20 of chronograms.



22 **Figure A8.** Prior and posterior probabilities of the number of rates for the 100 analysis done for the
 23 OMI1 in AUTEUR, showing a high support for the multiple-rate model.



25 **Figure A9.** Prior and posterior probabilities of the number of rates for the 100 analysis done for the
 26 OMI2 in AUTEUR, showing a high support for the multiple-rate model.

27 **Table A1.** List of Taxa included in this study with genbank accession numbers for the five genes used.
28

	12S	16S	RAG1	Cytb	RAG2
<i>Abudefduf abdominalis</i>	-	-	-	AY208546	-
<i>Abudefduf bengalensis</i>	FJ616289	FJ616397	FJ616617	AY208547	FJ616729
<i>Abudefduf concolor</i>	-	-	-	AY208548	-
<i>Abudefduf declivifrons</i>	-	-	-	AY208549	-
<i>Abudefduf hoefleri</i>	FJ616290	FJ616398	FJ616618	-	FJ616730
<i>Abudefduf lorenzi</i>	-	-	-	AY208550	-
<i>Abudefduf luridus</i>	FJ616291	FJ616399	FJ616619	EF439185	FJ616731
<i>Abudefduf margariteus</i>	-	-	AY208618	AY208551	-
<i>Abudefduf notatus</i>	FJ616292	FJ616400	FJ616620	AY208552	FJ616732
<i>Abudefduf saxatilis</i>	FJ616293	FJ616401	AY208624	AY208553	AY279879
<i>Abudefduf septemfasciatus</i>	FJ616294	FJ616402	AY208619	AY208554	FJ616734
<i>Abudefduf sexfasciatus</i>	FJ616295	FJ616403	AY208620	AY208555	FJ616735
<i>Abudefduf sordidus</i>	FJ616296	FJ616404	AY208621	AY208556	FJ616736
<i>Abudefduf sparoides</i>	-	-	-	AY208558	-
<i>Abudefduf taurus</i>	FJ616297	FJ616405	AY208622	AY208559	FJ616737
<i>Abudefduf troschelii</i>	-	-	AY208623	AY208560	-
<i>Abudefduf vaigiensis</i>	AF436880	AY365120	-	AY208561	-
<i>Abudefduf whitleyi</i>	FJ616298	FJ616406	FJ616626	AY208562	FJ616738
<i>Acanthochromis polyacanthus</i>	FJ616299	FJ616407	AY208625	AY208521	FJ616739
<i>Aequidens rivulatus</i>	-	EF432885	EU706380	EF432935	GU736833
<i>Altrichthys curatus</i>	FJ616300	FJ616408	-	-	-
<i>Amblyglyphidodon aureus</i>	FJ616301	EF419265	AY208627	AY208563	FJ616741
<i>Amblyglyphidodon curacao</i>	FJ616302	EF419264	FJ616629	AY208564	FJ616742
<i>Amblyglyphidodon leucogaster</i>	FJ616303	EF419267	AY208626	AY208565	AY279877
<i>Amphiprion akallopisos</i>	-	-	-	AY208508	-
<i>Amphiprion akindynos</i>	-	-	AY208628	AY208509	-
<i>Amphiprion allardi</i>	-	-	AY208629	AY208510	-
<i>Amphiprion bicinctus</i>	-	-	-	DQ343946	-
<i>Amphiprion chagosensis</i>	-	-	-	DQ343947	-
<i>Amphiprion chrysogaster</i>	-	-	-	AY208511	-
<i>Amphiprion chrysopterus</i>	-	-	-	AY208512	-
<i>Amphiprion clarkii</i>	FJ616305	FJ616413	FJ616632	AY208513	FJ616745
<i>Amphiprion frenatus</i>	FJ616306	FJ616414	FJ616633	AF097930	FJ616746
<i>Amphiprion leucokranos</i>	-	-	-	DQ343953	-
<i>Amphiprion mccullochi</i>	-	-	-	DQ343954	-
<i>Amphiprion melanopus</i>	FJ616307	FJ616415	FJ616634	AY208514	FJ616747
<i>Amphiprion nigripes</i>	-	-	-	AY208515	-
<i>Amphiprion ocellaris</i>	FJ616308	FJ616416	AY208631	AY208516	FJ616748
<i>Amphiprion percula</i>	AF285924	AF285946	-	DQ343958	-
<i>Amphiprion perideraion</i>	FJ616309	FJ616417	AY208630	AY208518	FJ616749
<i>Amphiprion polymnus</i>	-	AY666170	-	AF097928	-
<i>Amphiprion rubrocinctus</i>	-	-	-	DQ343961	-
<i>Amphiprion sandaracinos</i>	FJ616310	FJ616418	FJ616637	AF097929	FJ616750
<i>Amphiprion sebae</i>	-	-	-	AY208519	-
<i>Azurina hirundo</i>	FJ616311	FJ616419	FJ616638	-	FJ616751
<i>Centropyge bicolor</i>	FJ616393	FJ616501	-	AF108626	-
<i>Chaetodon fremblii</i>	EF616841	DQ278888	-	FJ973248	EF617089
<i>Cheiloprion labiatus</i>	FJ616312	FJ616420	FJ616639	-	FJ616752
<i>Chromis agilis</i>	-	-	AY208641	AY208522	-

Chromis alpha	FJ616313	FJ616421	FJ616640	-	FJ616753
Chromis alta	-	AY958642	-	-	-
Chromis amboinensis	FJ616314	FJ616422	FJ616641	AY208523	FJ616754
Chromis analis	FJ616315	FJ616423	FJ616642	-	FJ616755
Chromis atrilobata	-	EF489730	AY208637	AY208524	-
Chromis atripectoralis	FJ616316	FJ616424	FJ616643	AY208525	FJ616756
Chromis atripes	-	-	AY208633	AY208526	-
Chromis caudalis	-	-	-	AY289557	-
Chromis chromis	FJ616317	FJ616425	AY208640	AY208527	FJ616757
Chromis chrysur	-	-	-	AY208528	-
Chromis cyanea	AF285925	AF285947	AY208639	AY208529	-
Chromis flavomaculata	-	-	-	AY208530	-
Chromis fumea	AF081224	AY365121	-	EU267219	-
Chromis iomelas	AF285926	AF285948	-	AY208531	-
Chromis limbata	-	EF489738	-	EF439193	-
Chromis margaritifer	FJ616318	FJ616426	FJ616645	AY208532	FJ616758
Chromis multilineata	FJ616319	FJ616427	AY208636	AY208533	FJ616759
Chromis nitida	-	-	AY208638	AY208534	-
Chromis notata	-	-	-	EU267220	-
Chromis opercularis	FJ616320	FJ616428	FJ616647	-	FJ616760
Chromis ovatiformis	FJ616321	FJ616429	FJ616648	-	FJ616761
Chromis punctipinnis	FJ616322	FJ616430	FJ616649	AY289559	FJ616762
Chromis retrofasciata	FJ616323	FJ616431	AY208634	AY208535	FJ616763
Chromis ternatensis	FJ616324	FJ616432	FJ616651	-	FJ616764
Chromis viridis	FJ616325	FJ616433	AY208635	AY208536	FJ616765
Chromis weberi	FJ616326	FJ616434	AY208642	AY208537	FJ616766
Chromis xanthochira	FJ616327	FJ616435	FJ616654	AY289561	FJ616767
Chromis xanthopterygia	-	-	-	AY208538	-
Chromis xanthura	FJ616328	FJ616436	FJ616655	-	FJ616768
Chrysiptera annulata	-	-	AY208645	AY208566	-
Chrysiptera brownriggii	FJ616329	FJ616437	FJ616656	-	FJ616769
Chrysiptera cyanea	FJ616330	FJ616438	AY208643	AB018992	FJ616770
Chrysiptera galba	-	-	-	AY208568	-
Chrysiptera glauca	-	-	AY208647	AY208569	-
Chrysiptera hemicyanea	-	-	AY208644	AY208570	-
Chrysiptera leucopoma	AF081226	-	AY208648	AY208571	-
Chrysiptera oxycephala	FJ616331	FJ616439	FJ616658	-	FJ616771
Chrysiptera rex	FJ616332	FJ616440	FJ616659	AY208572	FJ616772
Chrysiptera rollandi	FJ616333	EF419269	AY208646	AY208573	FJ616773
Chrysiptera springeri	FJ616334	FJ616442	FJ616661	-	FJ616774
Chrysiptera talboti	FJ616335	FJ616443	FJ616662	AY208574	FJ616775
Chrysiptera taupou	-	-	-	AY208575	-
Chrysiptera unimaculata	FJ616337	FJ616445	FJ616664	-	FJ616777
Dascyllus albisella	-	-	-	AF119396	-
Dascyllus aruanus	FJ616338	FJ616446	AY208649	AY208539	FJ616778
Dascyllus carneus	-	-	AY208652	AY208540	-
Dascyllus flavicaudus	-	-	AY208650	AY208541	-
Dascyllus marginatus	-	-	AY208651	AY208542	-
Dascyllus melanurus	FJ616339	FJ616447	AY208653	AY208543	FJ616779
Dascyllus reticulatus	FJ616340	FJ616448	AY208654	AY208544	FJ616780
Dascyllus trimaculatus	FJ616341	FJ616449	AY208655	AY208545	AY279878
Dischistodus chrysopoecilus	FJ616342	FJ616450	FJ616669	-	AY279876
Dischistodus melanotus	FJ616343	FJ616451	AY208656	AY208576	FJ616783

Dischistodus perspicillatus	FJ616344	FJ616452	FJ616671	-	FJ616784
Dischistodus prosopotaenia	FJ616345	FJ616453	FJ616672	-	FJ616785
Dischistodus pseudochrysopoecilus	FJ616346	FJ616454	FJ616673	-	FJ616786
Hemiglyphidodon plagiometopon	FJ616347	FJ616455	FJ616674	AY208577	FJ616787
Hypsypops rubicundus	FJ616348	FJ616456	FJ616675	-	FJ616788
Lepidozygus tapeinosoma	FJ616349	FJ616457	-	-	FJ616789
Mecaenichthys immaculatus	FJ616350	FJ616458	FJ616677	-	FJ616790
Microspathodon chrysurus	FJ616351	FJ616459	AY208657	AY208578	FJ616791
Microspathodon dorsalis	FJ616352	FJ616460	FJ616679	-	FJ616792
Neoglyphidodon melas	FJ616353	FJ616461	FJ616680	AY208579	FJ616793
Neoglyphidodon nigroris	FJ616354	FJ616462	AY208658	AY208580	FJ616794
Neoglyphidodon oxyodon	FJ616355	FJ616463	AY208659	AY208581	FJ616795
Neoglyphidodon polyacanthus	AF285931	AF285953	-	AY208582	-
Neoglyphidodon thoracotaeniatus	FJ616356	FJ616464	FJ616683	-	FJ616796
Neopomacentrus azysron	FJ616357	FJ616465	FJ616684	-	FJ616797
Neopomacentrus cyanomos	AY098626	AY098631	-	AY208583	-
Neopomacentrus filamentosus	-	-	AY208661	AY208584	-
Neopomacentrus miryae	-	-	-	AY208585	-
Neopomacentrus nemurus	-	-	-	AY208586	-
Neopomacentrus sindensis	-	-	AY208660	AY208587	-
Neopomacentrus taeniurus	FJ616358	FJ616466	FJ616685	-	FJ616798
Nexilosus latifrons	FJ616359	FJ616467	-	-	-
Parma microlepis	FJ616360	FJ616468	FJ616686	-	FJ616799
Parma oligolepis	AF285932	AF285954	AY208662	AY208588	-
Plectroglyphidodon dickii	FJ616361	FJ616469	AY208663	AY208589	FJ616800
Plectroglyphidodon lacrymatus	FJ616362	FJ616470	FJ616688	-	FJ616801
Plectroglyphidodon leucozonus	FJ616363	FJ616471	FJ616689	AY208590	FJ616802
Pomacanthus imperator	AF108572	-	-	FJ424073	-
Pomacentrus adelus	-	-	AY208664	AY208591	-
Pomacentrus albicaudatus	FJ616364	FJ616472	FJ616690	-	FJ616803
Pomacentrus alexanderae	FJ616365	FJ616473	FJ616691	-	FJ616804
Pomacentrus amboinensis	FJ616366	FJ616474	FJ616692	-	FJ616805
Pomacentrus auriventris	AF081235	-	-	-	-
Pomacentrus australis	-	-	AY208668	AY208592	-
Pomacentrus bankanensis	FJ616367	AY365122	AY208665	AY208593	FJ616806
Pomacentrus brachialis	FJ616368	FJ616476	FJ616694	AY208594	FJ616807
Pomacentrus burroughi	FJ616369	FJ616477	FJ616695	-	FJ616808
Pomacentrus chrysurus	FJ616370	FJ616478	FJ616696	AY208595	FJ616809
Pomacentrus coelestis	FJ616371	AY365123	FJ616697	AY208596	FJ616810
Pomacentrus grammorhynchus	FJ616372	FJ616480	FJ616698	AY208597	FJ616811
Pomacentrus lepidogenys	FJ616373	FJ616481	FJ616699	AY208598	FJ616812
Pomacentrus leptus	-	-	-	AY208599	-
Pomacentrus milleri	-	-	-	AY208600	-
Pomacentrus moluccensis	FJ616374	EF419268	AY208669	AY208601	EU256722
Pomacentrus nagasakiensis	-	-	-	AY208602	-
Pomacentrus nigromanus	FJ616375	FJ616483	AY208671	AY208603	FJ616814
Pomacentrus nigromarginatus	FJ616376	FJ616484	FJ616702	-	FJ616815
Pomacentrus pavo	-	-	AY208666	AY208604	-
Pomacentrus philippinus	FJ616377	FJ616485	AY208667	AY208605	FJ616816
Pomacentrus reidi	-	-	AY208672	AY208606	-
Pomacentrus smithi	-	-	AY208670	AY208607	-
Pomacentrus stigma	FJ616378	FJ616486	FJ616704	-	FJ616817
Pomacentrus trilineatus	-	-	-	AY208608	-

Pomacentrus vaiuli	FJ616379	FJ616487	FJ616705	AY208609	FJ616818
Pomachromis richardsoni	FJ616380	FJ616488	FJ616706	-	FJ616819
Premnas biaculeatus	FJ616381	FJ616489	AY208632	AY208520	FJ616820
Pristotis obtusirostris	FJ616382	FJ616490	FJ616708	-	FJ616821
Similiparma hermani	FJ616383	FJ616491	FJ616709	-	FJ616822
Stegastes altus	AF081243	-	-	-	-
Stegastes apicalis	FJ616384	FJ616492	FJ616710	-	FJ616823
Stegastes dienciaeus	FJ616385	FJ616493	FJ616711	-	FJ616824
Stegastes fasciolatus	FJ616386	FJ616494	FJ616712	-	FJ616825
Stegastes imbricatus	FJ616387	FJ616495	FJ616713	-	FJ616826
Stegastes leucostictus	FJ616388	FJ616496	FJ616714	-	FJ616827
Stegastes lividus	AF081245	-	-	-	-
Stegastes nigricans	FJ616389	FJ616497	FJ616715	-	FJ616828
Stegastes obreptus	FJ616390	FJ616498	FJ616716	-	FJ616829
Stegastes partitus	FJ616391	FJ616499	FJ616717	-	FJ616830
Stegastes planifrons	-	-	AY208673	AY208611	-
Stegastes variabilis	-	AF285960	-	-	-
Teixeirichthys jordani	FJ616392	FJ616500	FJ616718	-	FJ616831
Thorichthys meeki	AY279566	-	EF362590	U88860	AY279875
Tomocichla sieboldii	-	-	-	AY843430	-

30 **Table A2.** List of Taxa included in this study with number of distributional records available.

Abudefduf_abdominalis	445
Abudefduf_bengalensis	74
Abudefduf_concolor	22
Abudefduf_declivifrons	17
Abudefduf_lorenzi	4
Abudefduf_luridus	14
Abudefduf_margariteus	2
Abudefduf_notatus	23
Abudefduf_saxatilis	547
Abudefduf_septemfasciatus	47
Abudefduf_sexfasciatus	200
Abudefduf_sordidus	216
Abudefduf_sparoides	27
Abudefduf_taurus	32
Abudefduf_troscheli	227
Abudefduf_vaigiensis	279
Abudefduf_whitleyi	26
Acanthochromis_polyacanthus	604
Altrichthys_curatus	4
Amblyglyphidodon_aureus	45
Amblyglyphidodon_curacao	603
Amblyglyphidodon_leucogaster	330
Amphiprion_akallopis	52
Amphiprion_akindynos	284
Amphiprion_allardi	6
Amphiprion_bicinctus	5
Amphiprion_chagosensis	4
Amphiprion_chrysogaster	11
Amphiprion_chrysopterus	162
Amphiprion_clarkii	170
Amphiprion_frenatus	42
Amphiprion_mccullochi	31
Amphiprion_melanopus	212
Amphiprion_nigripes	5
Amphiprion_ocellaris	41
Amphiprion_percula	29
Amphiprion_perideraion	101
Amphiprion_polymnus	12
Amphiprion_rubrocinctus	4
Amphiprion_sandaracinos	2
Amphiprion_sebae	4
Azurina_hirundo	11
Cheiloprion_labiatus	26
Chromis_agilis	2399
Chromis_alpha	21
Chromis_alta	32
Chromis_amboinensis	230
Chromis_analis	6

Chromis_atrilobata	127
Chromis_atripectoralis	466
Chromis_atripes	276
Chromis_caudalis	6
Chromis_chromis	178
Chromis_chrysura	77
Chromis_cyanea	956
Chromis_flavomaculata	18
Chromis_fumea	59
Chromis_iomelas	1060
Chromis_limbata	8
Chromis_margaritifer	4490
Chromis_multilineata	458
Chromis_nitida	200
Chromis_notata	3
Chromis_opercularis	37
Chromis_ovatiformis	20
Chromis_retrofasciata	128
Chromis_ternatensis	499
Chromis_viridis	188
Chromis_weberi	303
Chromis_xanthochira	20
Chromis_xanthura	1559
Chrysiptera_annulata	13
Chrysiptera_brownriggii	786
Chrysiptera_cyanea	189
Chrysiptera_galba	8
Chrysiptera_glauca	252
Chrysiptera_hemicyanea	12
Chrysiptera_leucopoma	70
Chrysiptera_oxycephala	10
Chrysiptera_rex	312
Chrysiptera_rollandi	379
Chrysiptera_springeri	4
Chrysiptera_talboti	315
Chrysiptera_taupou	565
Chrysiptera_unimaculata	63
Dascyllus_albisella	957
Dascyllus_aruanus	519
Dascyllus_carneus	77
Dascyllus_flavicaudus	13
Dascyllus_marginatus	15
Dascyllus_melanurus	29
Dascyllus_reticulatus	1185
Dascyllus_trimaculatus	389
Dischistodus_chrysopoecilus	19
Dischistodus_melanotus	117
Dischistodus_perspicillatus	61
Dischistodus_prosopotaenia	87

Dischistodus_pseudochrysopoecilus	60
Hemiglyphidodon_plagiometopon	42
Hypsypops_rubicundus	11
Lepidozygus_tapeinosoma	568
Mecaenichthys_immaculatus	1
Microspathodon_chrysurus	2677
Microspathodon_dorsalis	148
Neoglyphidodon_melas	342
Neoglyphidodon_nigroris	323
Neoglyphidodon_oxyodon	8
Neoglyphidodon_polyacanthus	43
Neoglyphidodon_thoracotaeniatus	1
Neopomacentrus_azysron	516
Neopomacentrus_cyanomos	97
Neopomacentrus_filamentosus	3
Neopomacentrus_miryae	2
Neopomacentrus_nemurus	5
Neopomacentrus_sindensis	2
Neopomacentrus_taeniurus	20
Nexilosus_latifrons	10
Parma_microlepis	8
Parma_oligolepis	8
Plectroglyphidodon_dickii	3218
Plectroglyphidodon_lacrymatus	2339
Plectroglyphidodon_leucozonus	167
Pomacentrus_adelus	147
Pomacentrus_albicaudatus	3
Pomacentrus_alexanderae	40
Pomacentrusamboinensis	408
Pomacentrus_australis	106
Pomacentrus_bankanensis	511
Pomacentrus_brachialis	626
Pomacentrus_burroughi	9
Pomacentrus_chrysurus	117
Pomacentrus_coelestis	1092
Pomacentrus_grammorhynchus	151
Pomacentrus_lepidogenys	556
Pomacentrus_leptus	2
Pomacentrus_milleri	16
Pomacentrus_moluccensis	558
Pomacentrus_nagasakiensis	241
Pomacentrus_nigromanus	21
Pomacentrus_nigromarginatus	27
Pomacentrus_pavo	130
Pomacentrus_philippinus	437
Pomacentrus_reidi	45
Pomacentrus_smithi	6
Pomacentrus_trilineatus	32
Pomacentrus_vaiuli	4600

Pomachromis_richardsoni	147
Premnas_biaculeatus	60
Pristotis_obtusirostris	682
Stegastes_adustus	639
Stegastes_altus	6
Stegastes_apicalis	223
Stegastes_diencaeus	702
Stegastes_fasciolatus	7978
Stegastes_imbricatus	1
Stegastes_leucostictus	1304
Stegastes_lividus	45
Stegastes_nigricans	411
Stegastes_obreptus	6
Stegastes_partitus	2538
Stegastes_planifrons	899
Stegastes_variabilis	954
Teixeirichthys_jordani	13