MAthesis

Table 1: Time bins with age range, epoch name, mean age and corresponding sample sizes (on individual, species and genus level)

bin	EpochBins	MeanBins	nIndividuals	nSpecies	nGenera
(0,0.0117]	Modern	0.00585	252	64	18
(0.0117,0.126]	Upper Pleistocene	0.06885	47	16	8
(0.126,0.781]	Middle Pleistocene	0.45350	48	11	6
(0.781,2.59]	Lower Pleistocene	1.68450	73	27	11
(2.59,3.6]	Upper Pliocene	3.09400	23	15	9
(3.6,5.33]	Lower Pliocene	4.46600	29	17	8
(5.33,11.6]	Upper Miocene	8.47000	52	23	9
(11.6,16]	Middle Miocene	13.78900	38	17	11
(16,23]	Lower Miocene	19.50000	25	13	9
(23,50]	Oligocene and Eocene	36.51500	7	5	5

```
## `stat_bin()` using `bins = 30`. Pick better value with `binwidth`.

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```

1 Boxplots (continental (n) vs. Island (y) species)

```
## Warning: Removed 9 rows containing missing values (geom_pointrange).
```
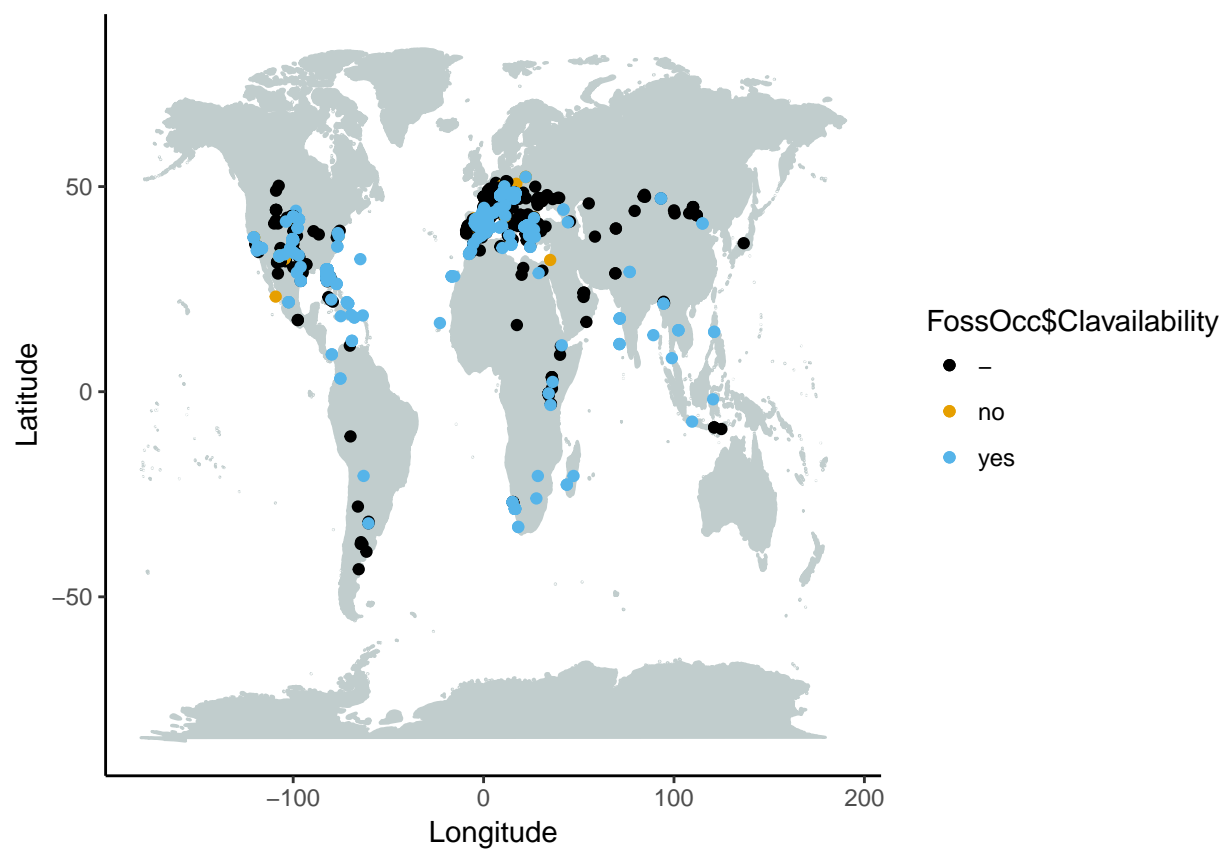
Figure 1: Map displaying all fossil occurrences of testudinids, with color indicating whether relevant literature was available (black if not) and if it was, whether body size data was available or not (yes and no, respectively).
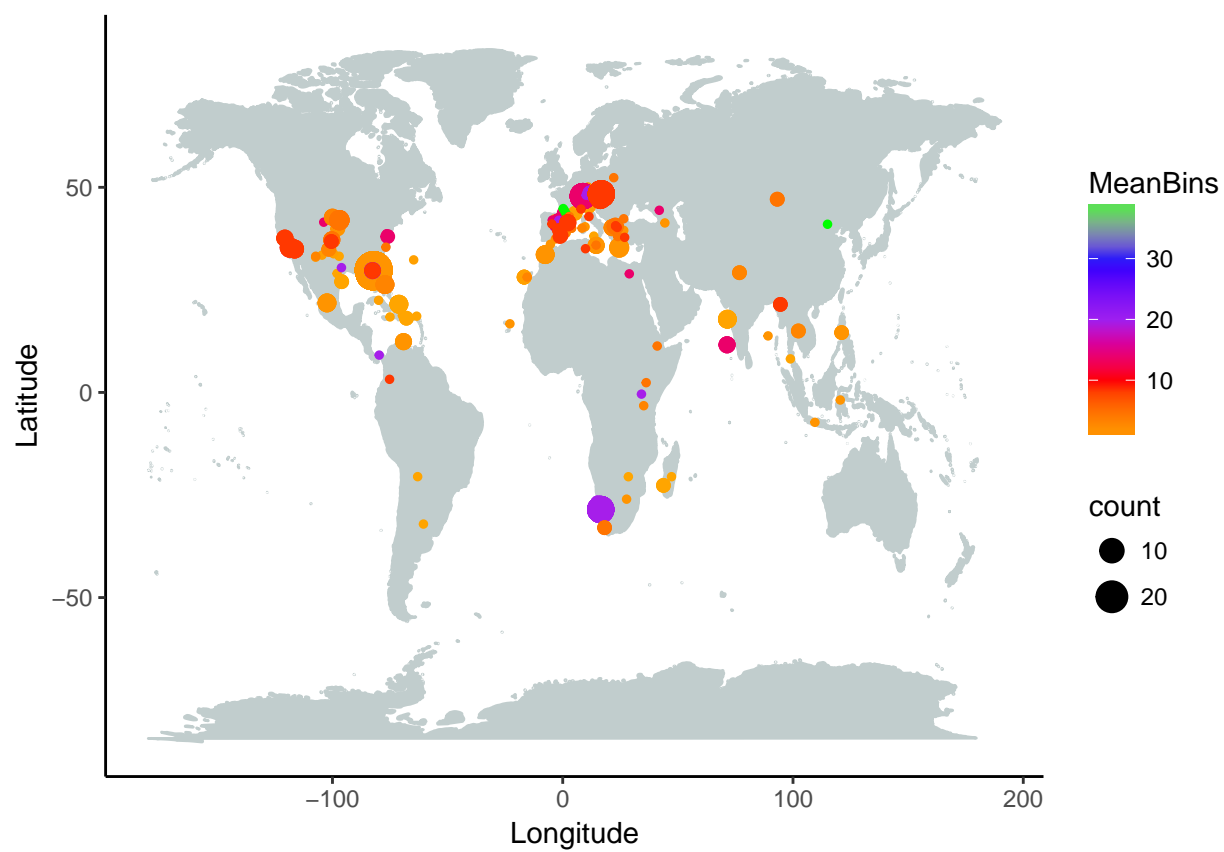
Figure 2: Map displaying all localities for which body size data for testudinids was available in the literature. Size of points denotes sample size, color denotes approximate age.
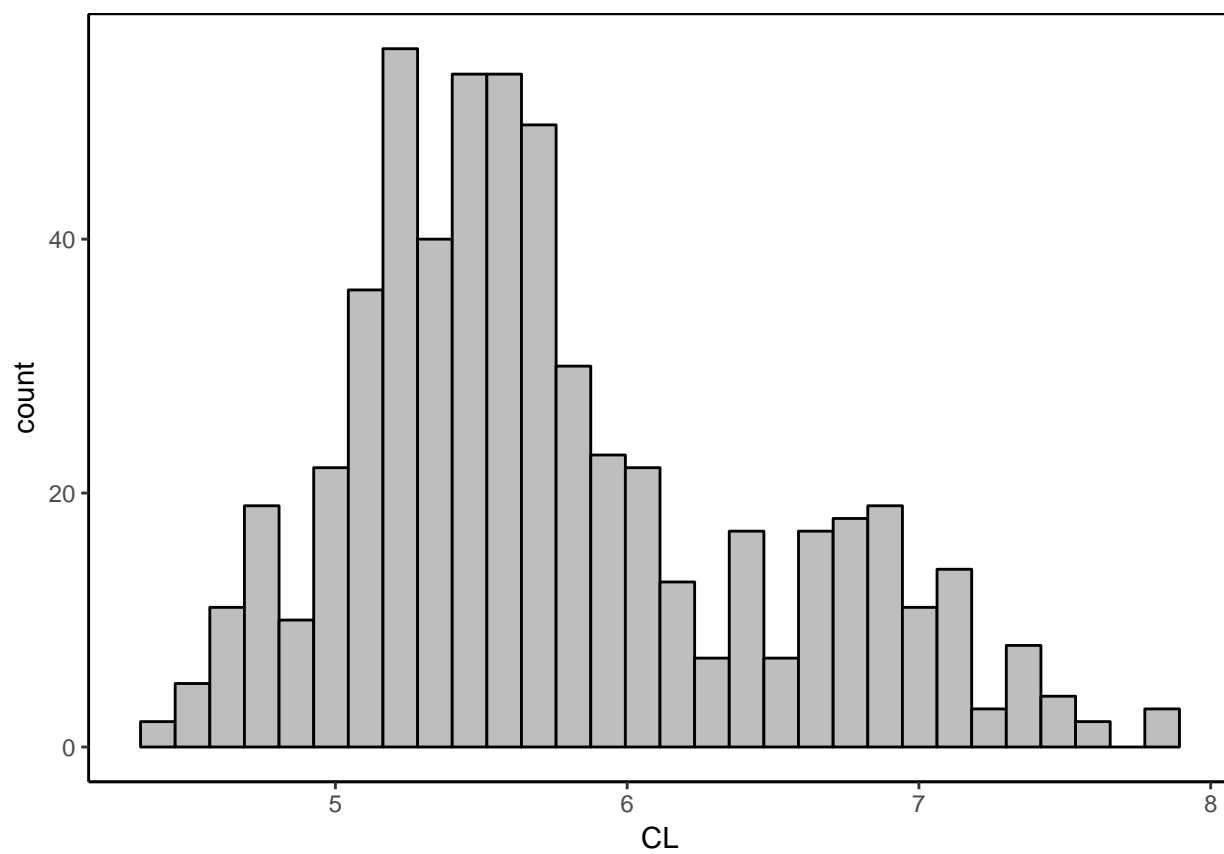
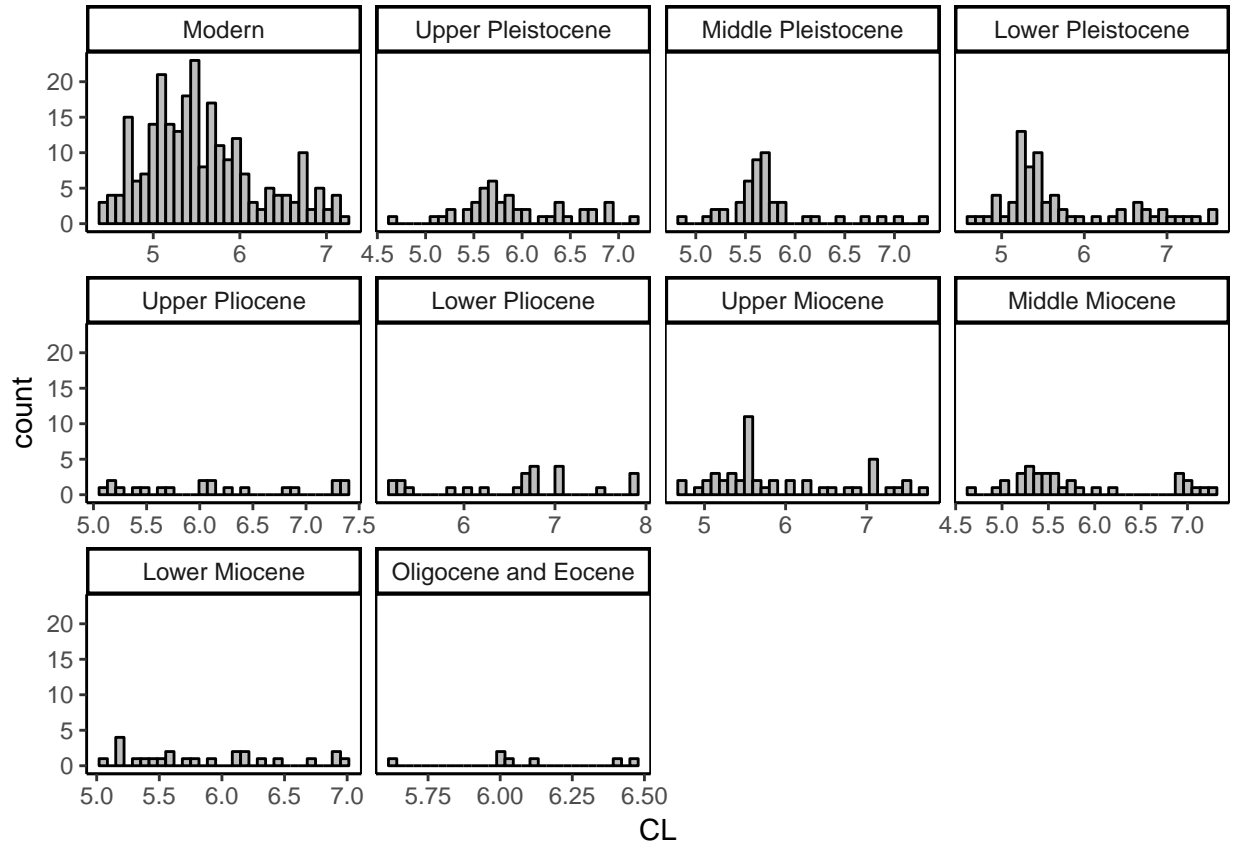Figure 3: Distribution of body size data, logtransformed, all data.

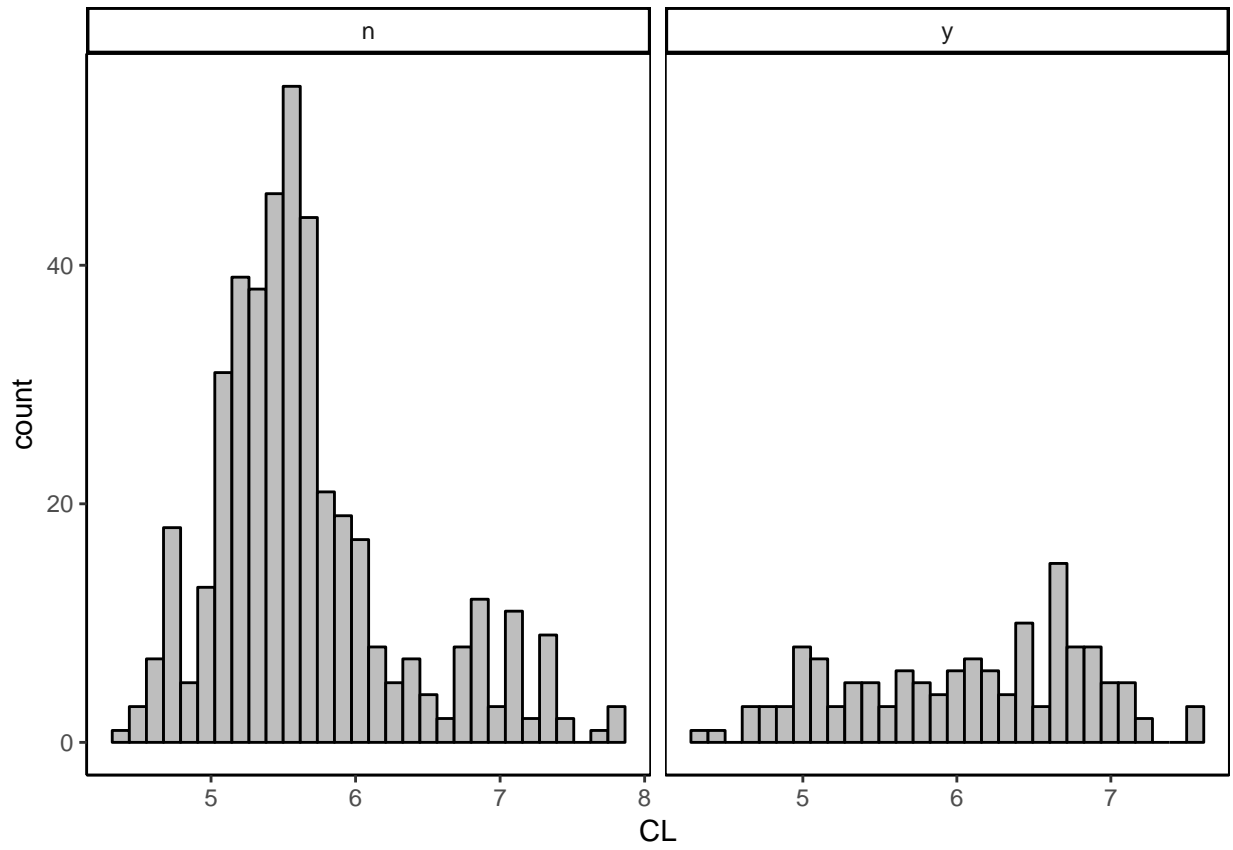Figure 4: Distribution of body size data per time bin, logtransformed.

Figure 5: Distribution of body site data of continental (n) and insular(y) species, logtransformed.

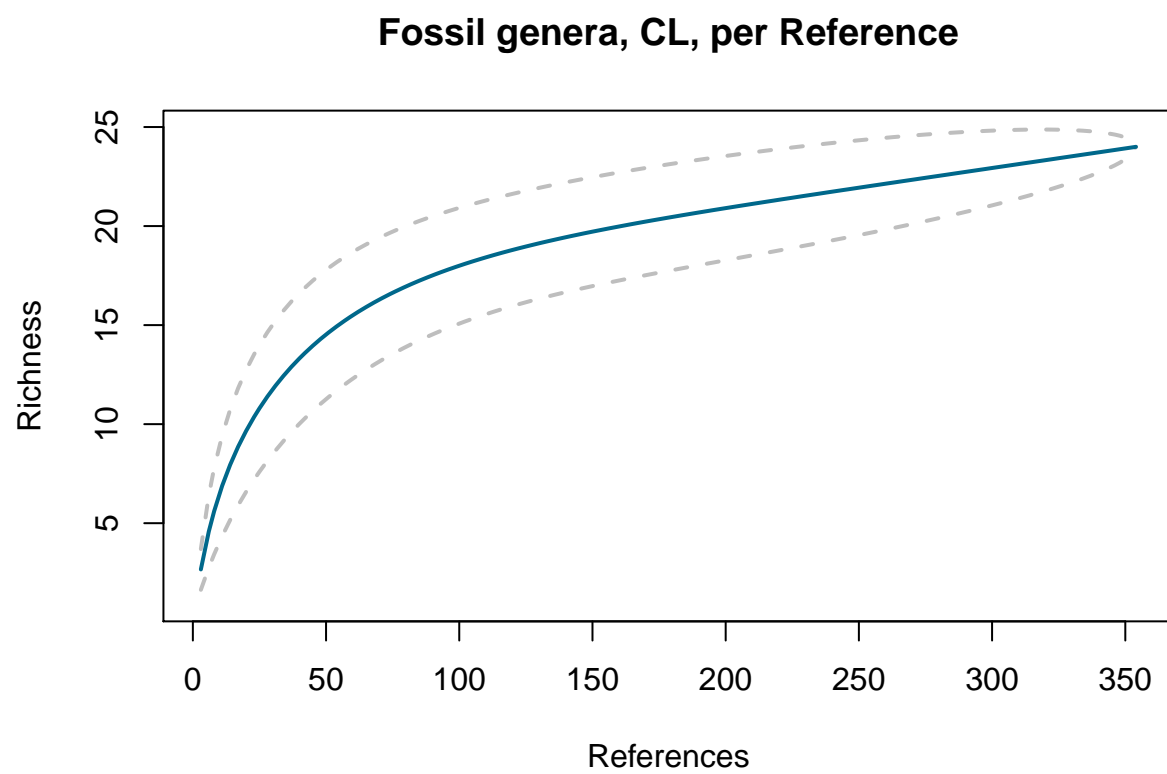**Fossil genera, CL, per Reference**

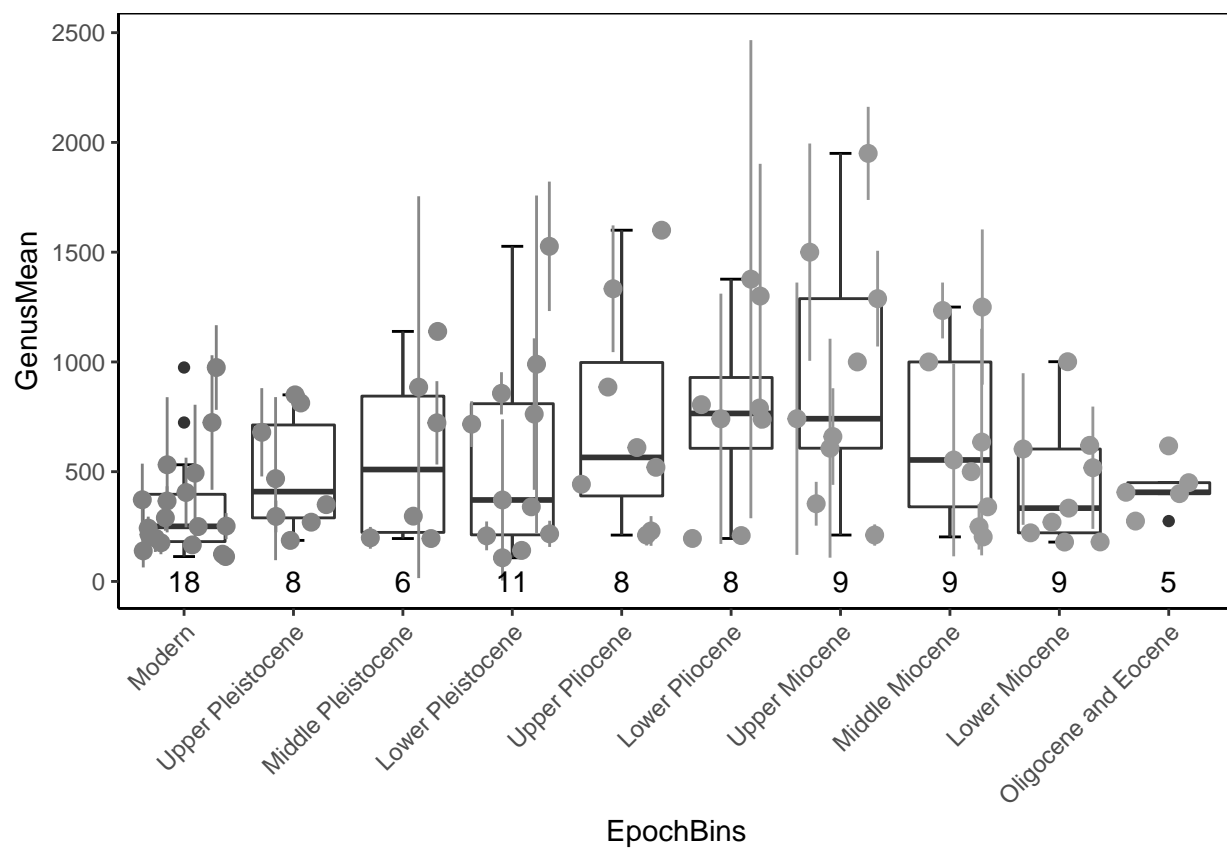Figure 6: Sampling Accumulation Curve of fossil genera per reference

Figure 7: Boxplots of generic mean CL per time bin, including mean and sd CL for each genus (as pointrange).
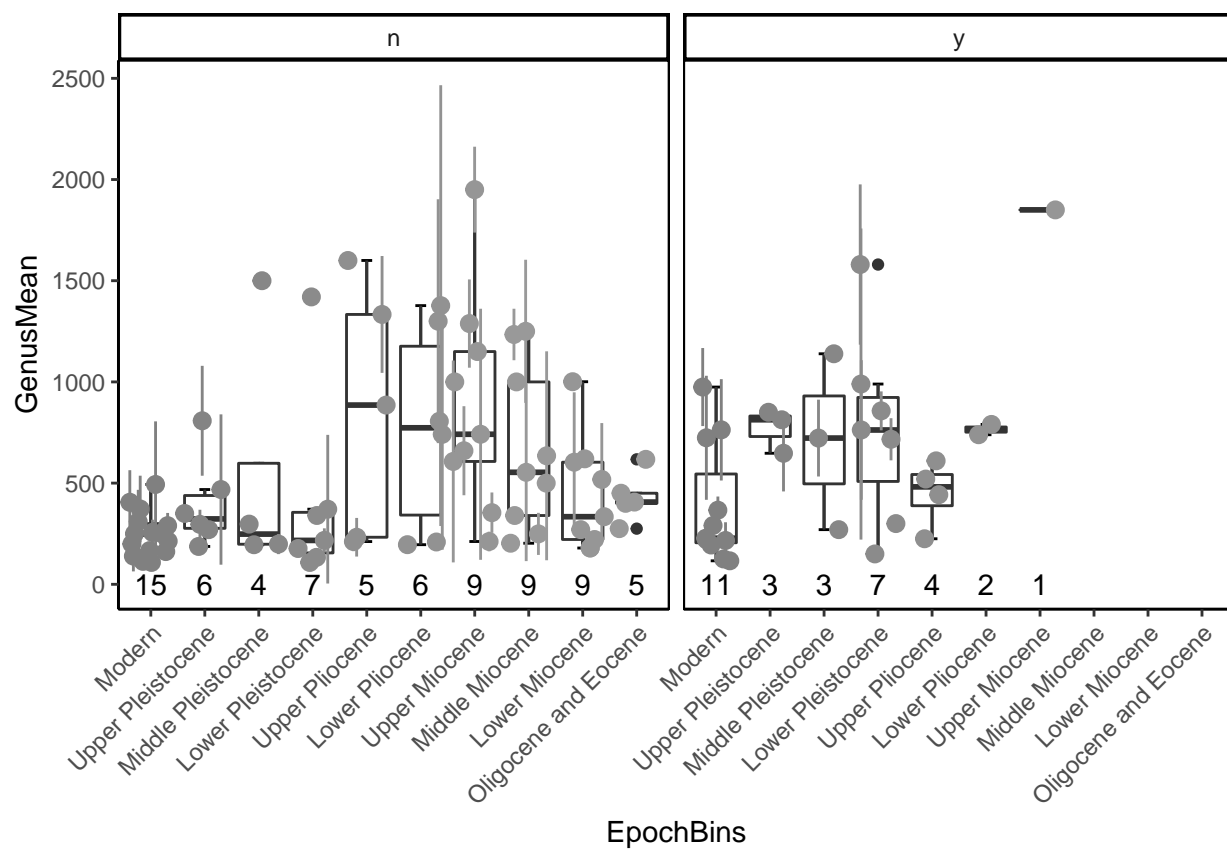
Figure 8: Boxplots of each genus per time bin, continental vs. insular species.
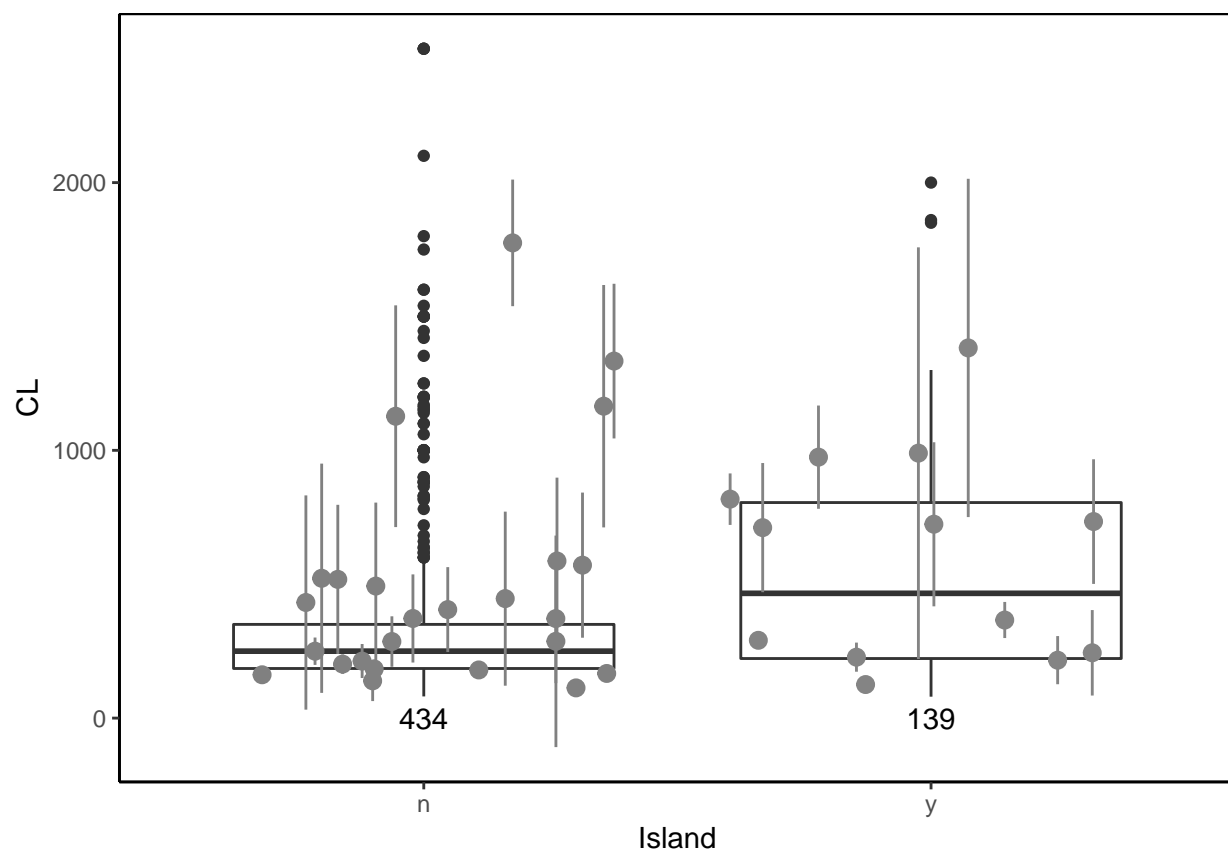
Figure 9: Boxplot continental vs. insular, genera summarised
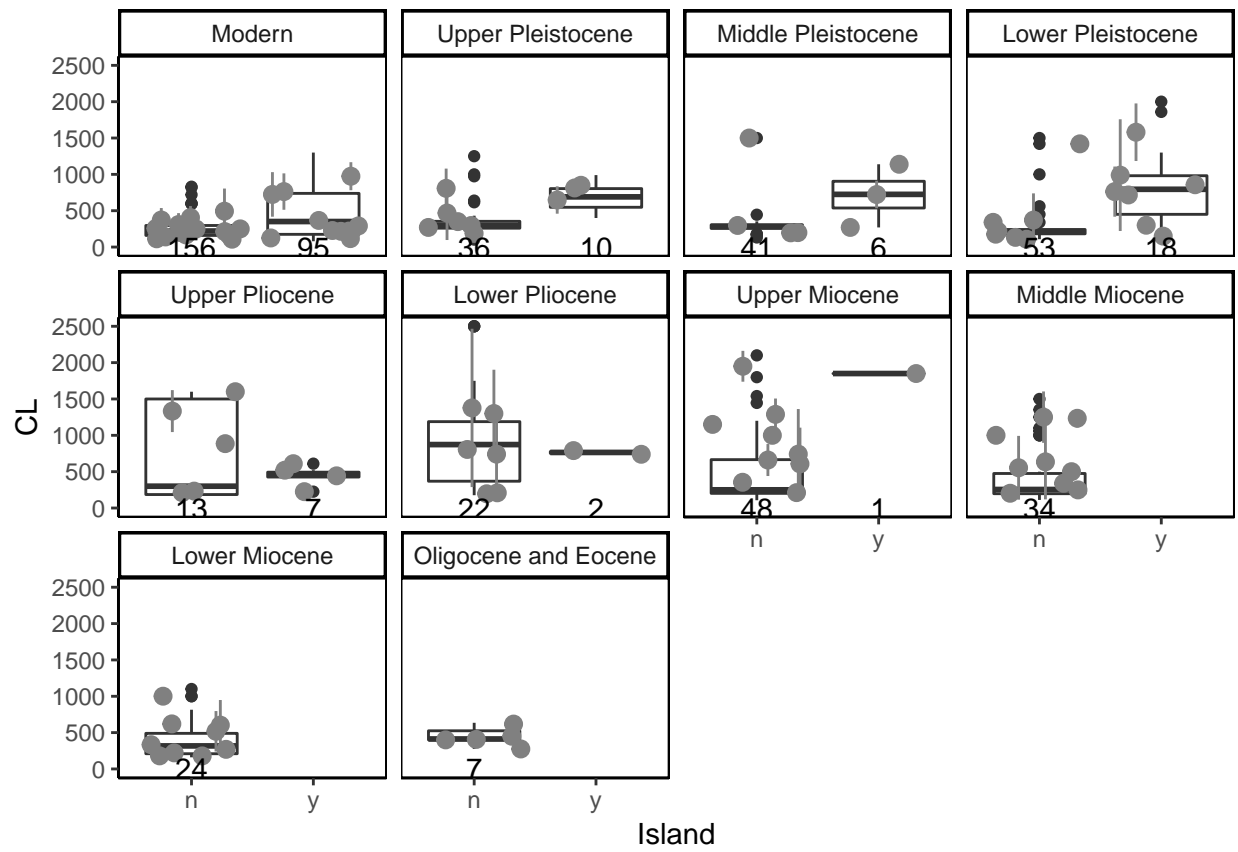
Figure 10: Boxplot continental vs. insular, genera summarised

2 paleoTS analysis

2.1 all (continental and insular)

2.1.1 individuals (all)

Testudinidae body size evolution mode, Holocene–Upper Miocene, CL, including Island species

Figure 11: individuals, including island species

Table 2: Model-fitting results for testudinidae, individuals, including island species

	logL	K	AICc	Akaike.wt
GRW	-68.07841	2	141.8711	0.008
URW	-68.07845	1	138.6569	0.040
Stasis	-63.29025	2	132.2948	0.952

2.1.2 species (all)

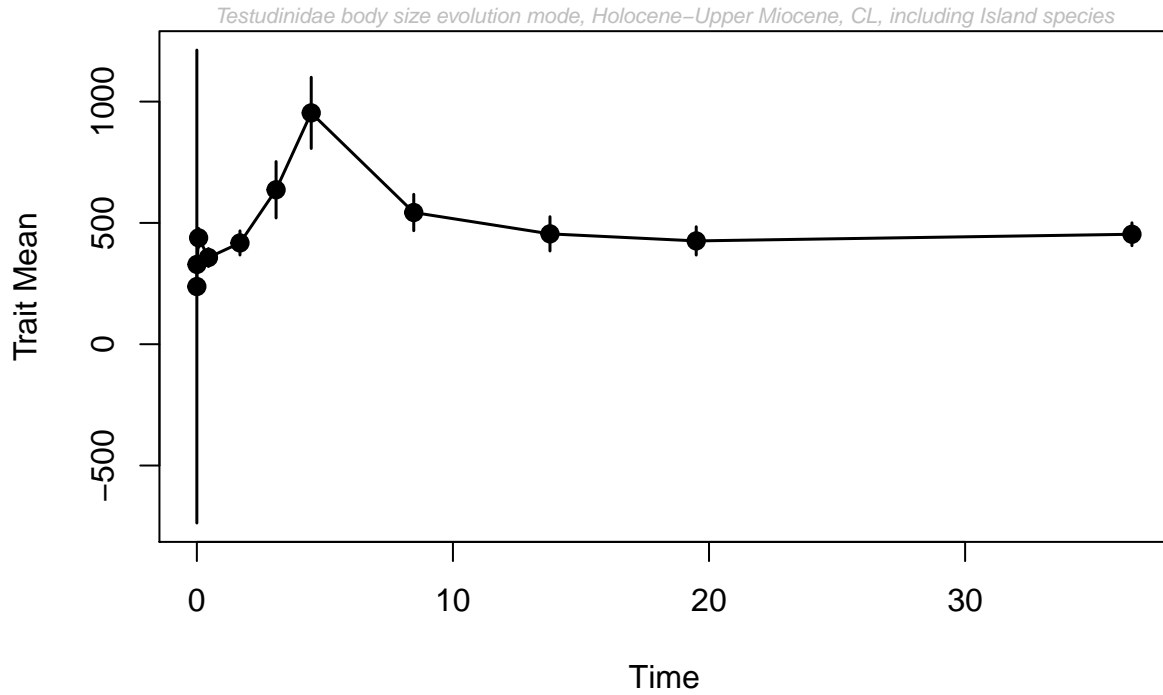Figure 12: paleoTS plot with species mean, including island species

Table 3: Model-fitting results for testudinidae, species, including island species

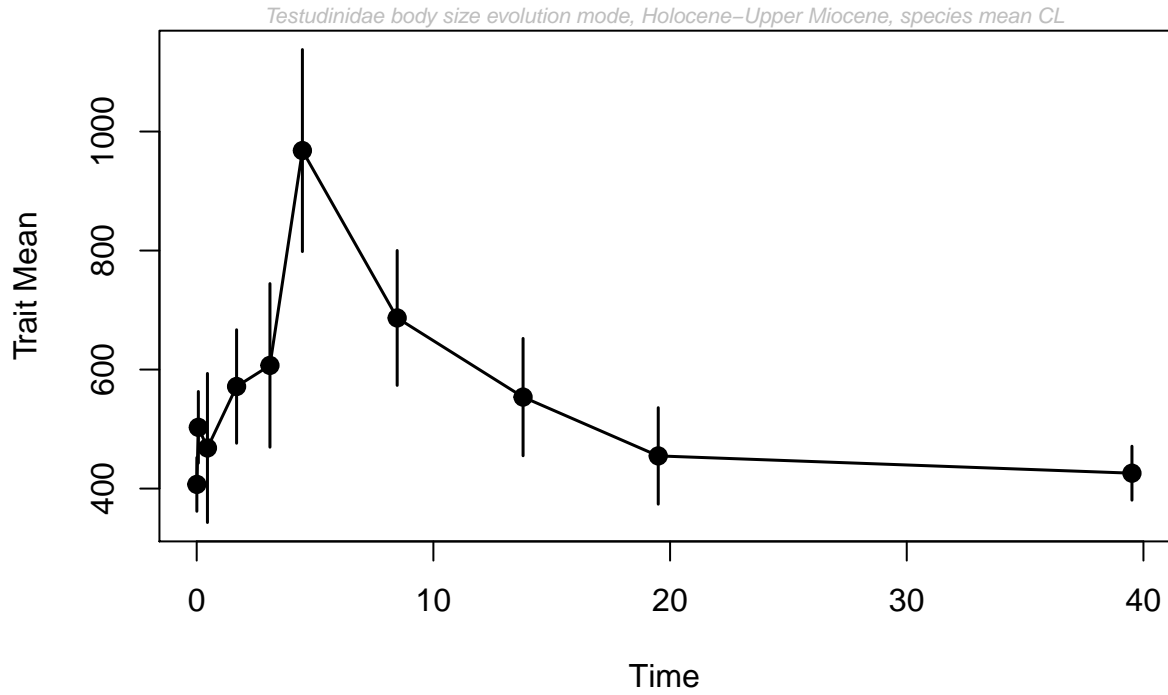|	logL	K	AICc	Akaike.wt
GRW	-56.73574	2	119.4715	0.145
URW	-56.93847	1	116.4484	0.656
Stasis	-56.41523	2	118.8305	0.199

13

2.1.3 genera (all)

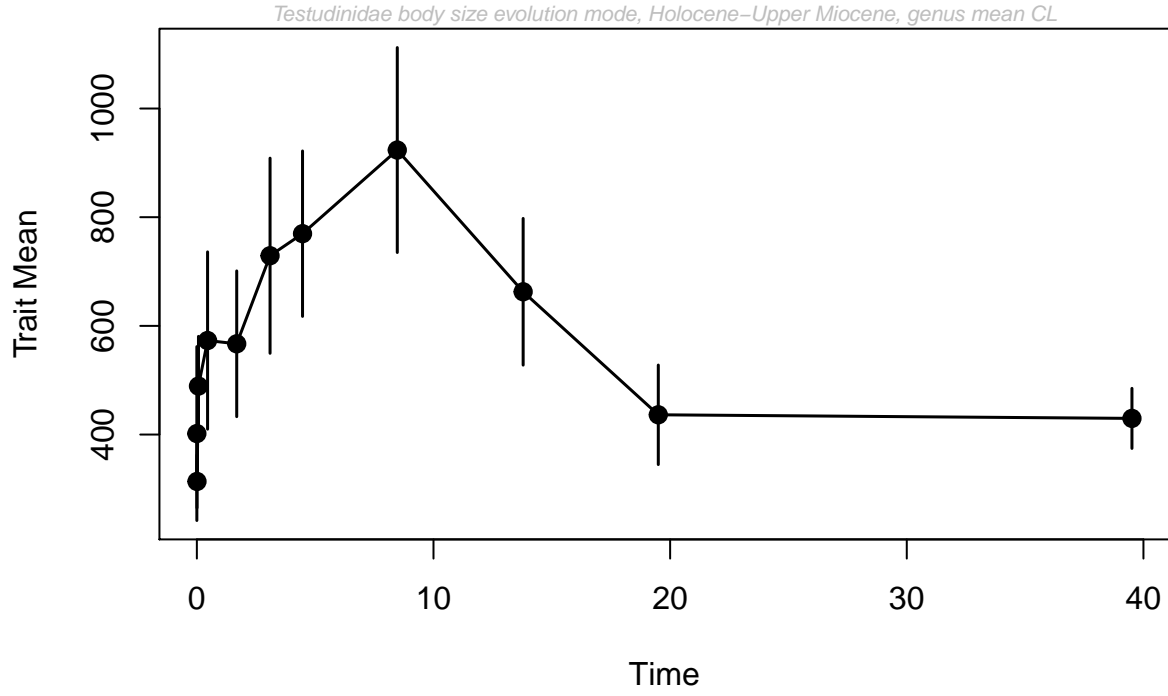Figure 13: paleoTS plot with genus mean, including island species

Table 4: Model-fitting results for testudinidae, genera, including island species

	logL	K	AICc	Akaike.wt
GRW	-64.79973	2	135.3137	0.164
URW	-64.86224	1	132.2245	0.768
Stasis	-65.68705	2	137.0884	0.068

2.2 continental (excluding insular species)

2.2.1 individuals (continental)

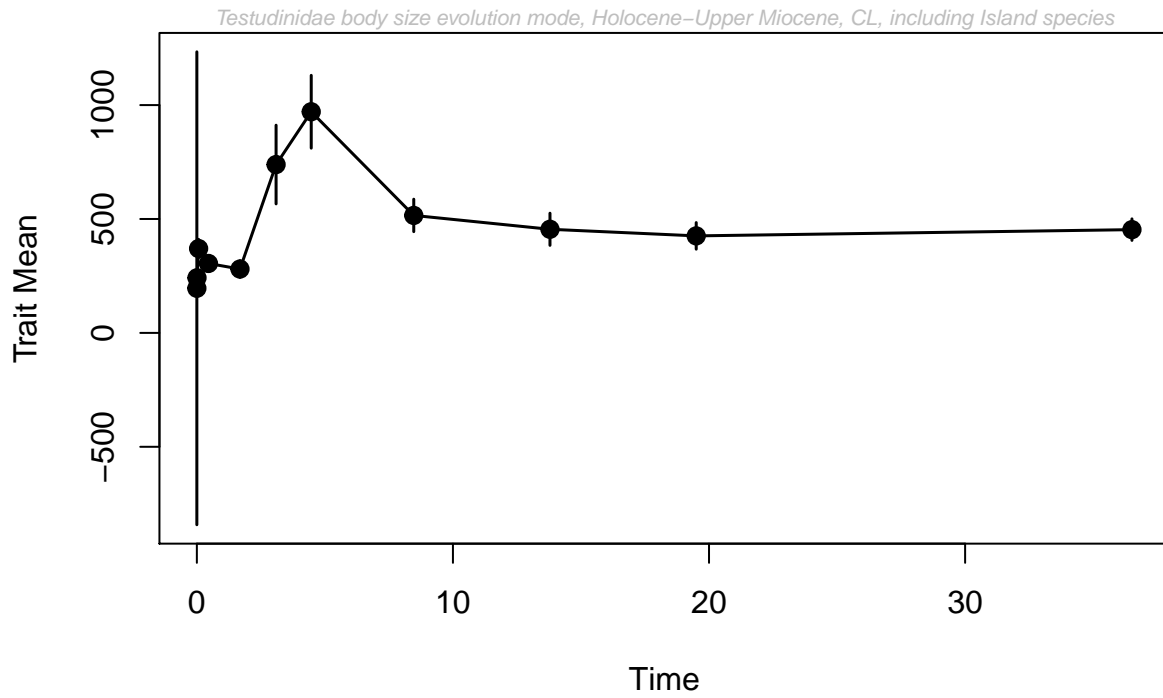*Testudinidae body size evolution mode, Holocene–Upper Miocene, CL, including Island species*

Figure 14: individuals, excluding island species

Table 5: Model-fitting results for testudinidae, individuals, excluding island species

	logL	K	AICc	Akaike.wt
GRW	-70.13728	2	145.9888	0.018
URW	-70.14070	1	142.7814	0.090
Stasis	-66.24073	2	138.1957	0.892

2.2.2 species (continental)

Testudinidae body size evolution mode, Holocene–Upper Miocene, species mean CL, continental
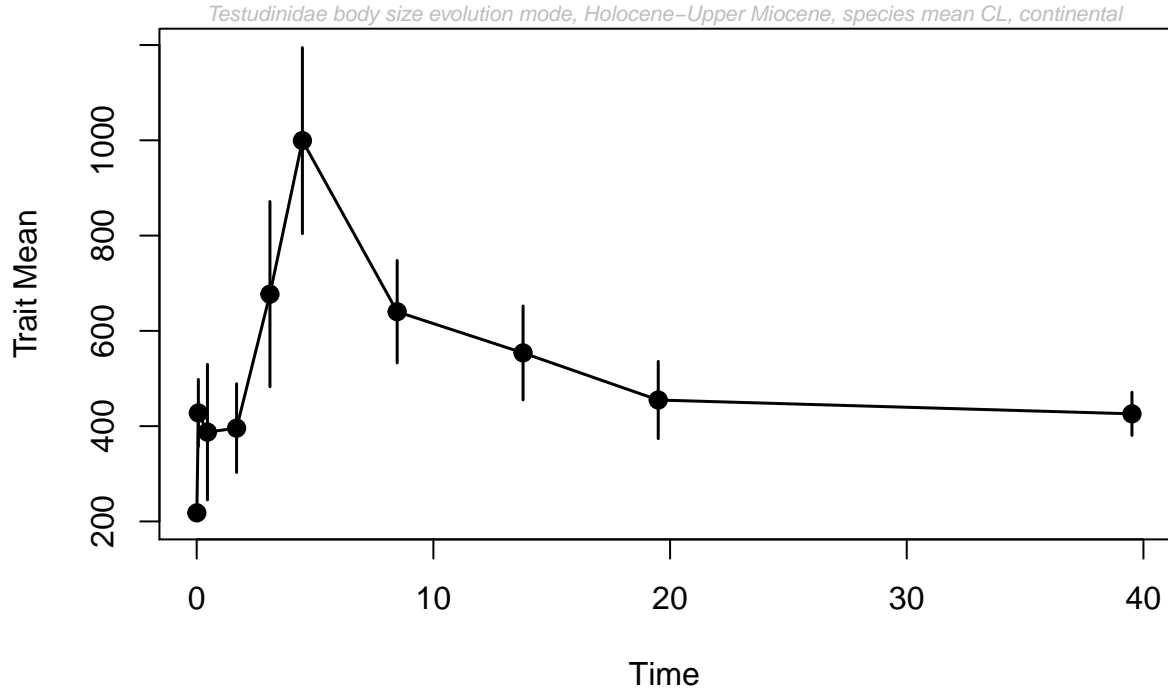
Figure 15: paleoTS plot with species mean, excluding island species

Table 6: Model-fitting results for testudinidae, species, excluding island species

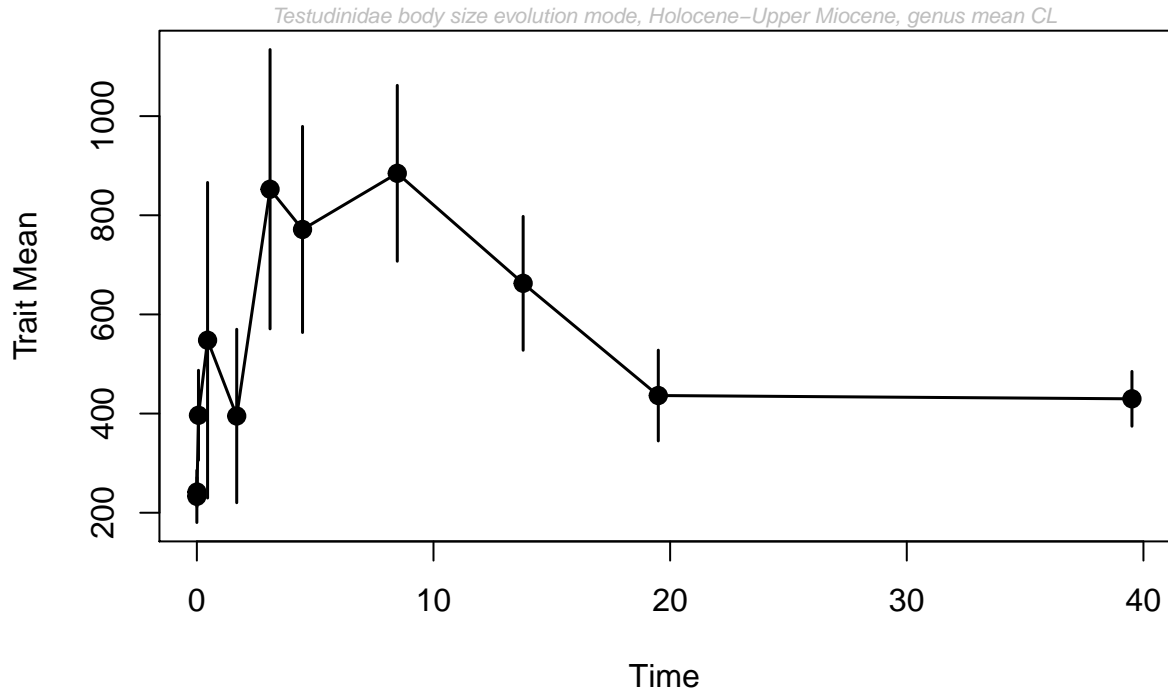|	logL	K	AICc	Akaike.wt
GRW	-60.94204	2	127.8841	0.019
URW	-62.39001	1	127.3515	0.025
Stasis	-57.04727	2	120.0945	0.955

2.2.3 genera (continental)

Figure 16: paleoTS plot with genus mean, excluding island species

Table 7: Model-fitting results for testudinidae, genera, excluding insular species

	logL	K	AICc	Akaike.wt
GRW	-65.96537	2	137.6450	0.172
URW	-66.03667	1	134.5733	0.799
Stasis	-67.73195	2	141.1782	0.029

2.3 insular (excluding continental)
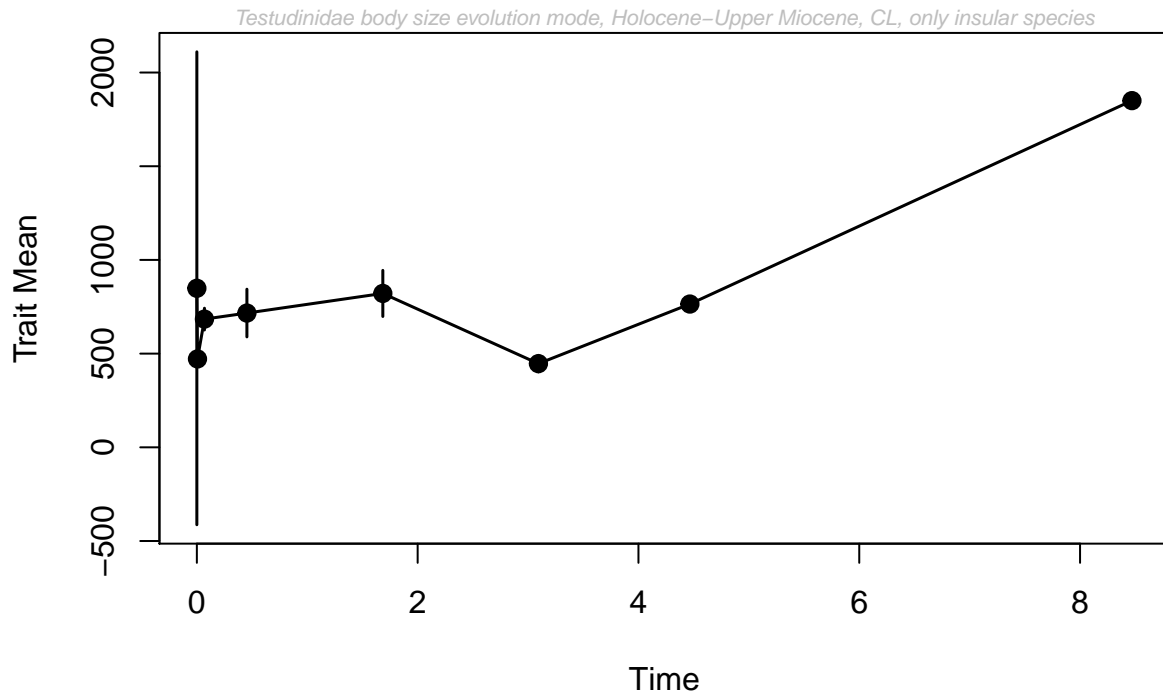
2.3.1 individuals (insular)

Figure 17: individuals, excluding continental species

Table 8: Model-fitting results for testudinidae, individuals, only insular species

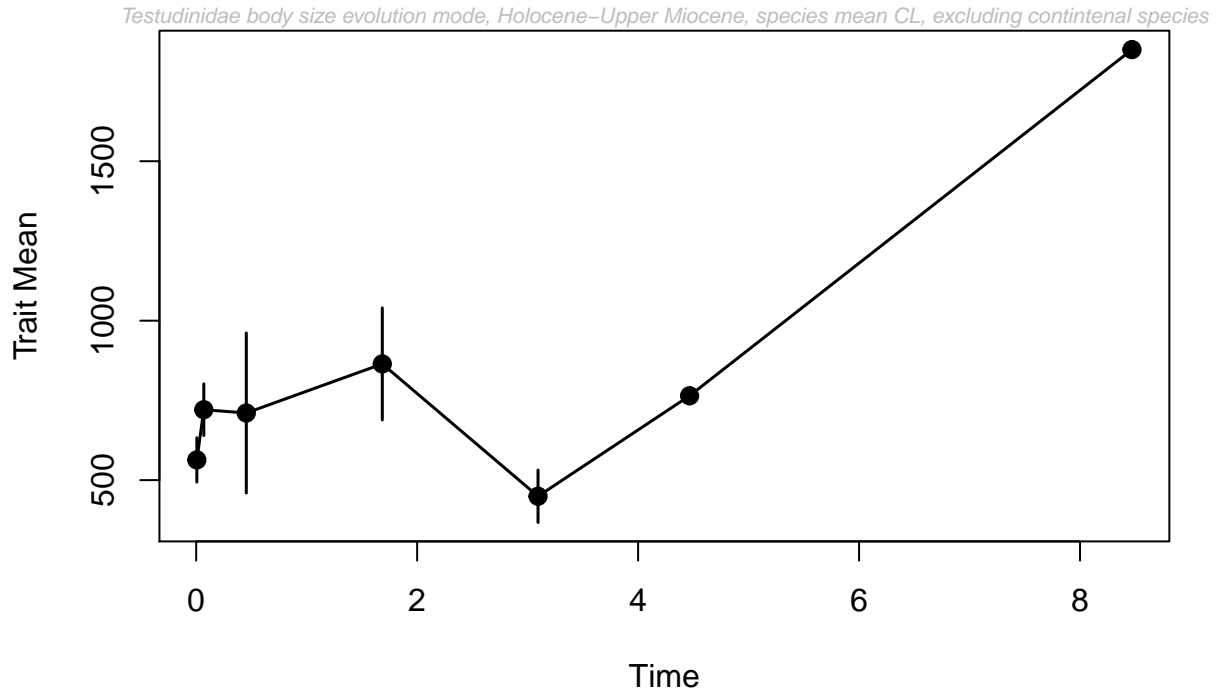|	logL	K	AICc	Akaike.wt
GRW	-62.23202	2	131.4640	0.000
URW	-52.89195	1	108.5839	0.999
Stasis	-58.14309	2	123.2862	0.001

2.3.2 species (insular)

Figure 18: paleoTS plot with species mean, only insular species

Table 9: Model-fitting results for testudinidae, species, only insular species

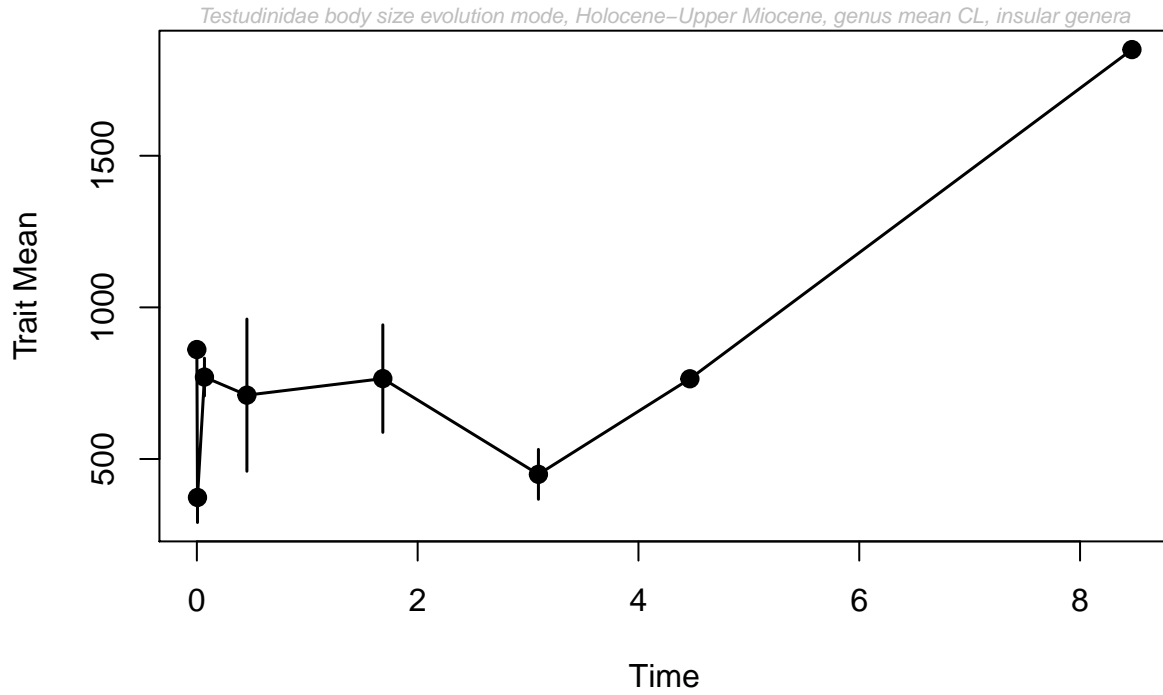|	logL	K	AICc	Akaike.wt
GRW	-60.94204	2	127.8841	0.019
URW	-62.39001	1	127.3515	0.025
Stasis	-57.04727	2	120.0945	0.955

2.3.3 genera (insular)

Figure 19: paleoTS plot with genus mean, only insular species

Table 10: Model-fitting results for testudinidae, genera, only insular species

	logL	K	AICc	Akaike.wt
GRW	-60.79557	2	128.5911	0
URW	-67.79820	1	138.3964	0
Stasis	-52.91882	2	112.8376	1

2.4 play with time bins

Testudinidae body size evolution mode, Holocene–Upper Miocene, genus mean CL
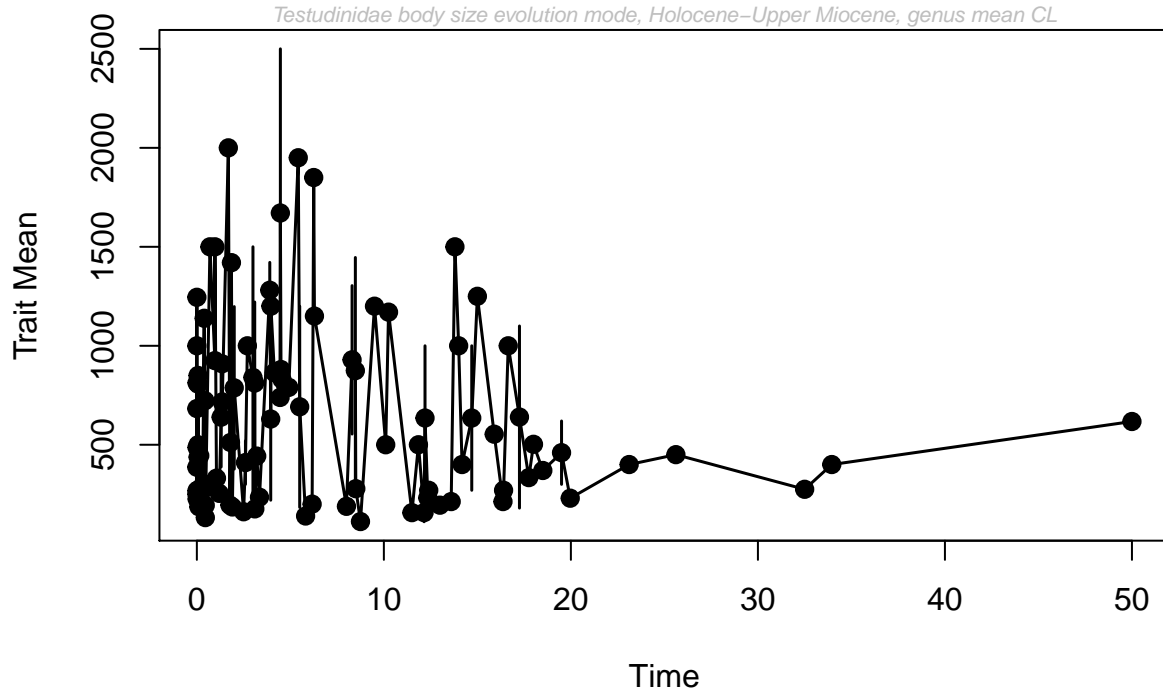
Table 11: Model-fitting results for testudinidae, genera, only insular species

	logL	K	AICc	Akaike.wt
GRW	-6491.7067	2	12987.54	0
URW	-6564.3336	1	13130.71	0
Stasis	-817.7247	2	1639.58	1