The following supplement accompanies the article

Expanding the coastal forager paradigm: long-term pelagic habitat use by green turtles *Chelonia mydas* in the eastern Pacific Ocean

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Marine Ecology Progress Series 587: 217–234 (2018)

Supplement: additional remarks to Materials and methods, Results and Discussion of the main article

MATERIALS AND METHODS

Age adjustments for partial-year growth

Depending on the date (month) a turtle stranded relative to their hatching date (month), turtles we sampled were likely in the middle of their growth for the year. Thus, their final growth layer would reflect only a partial year and the age estimates required adjustments to account for this (Avens et al. 2012). We did this by applying population-specific peak hatching months to 1) the estimated time of LAG formation and 2) the stranding month for each individual turtle, and is fully described in the Supplemental Material (Avens et al. 2012, Turner Tomaszewicz et al. 2015). For EP green turtles, peak nesting months at the two primary rookeries are December and January (Marquez 1990, Delgado-Trejo & Alvarado-Figueroa 2012, Seminoff et al. 2015). Snover et al. (2011) and Goshe et al. (2016) showed winter/spring as the time of year in which cooler water temperatures result in periods of slower growth for ectotherms (green turtles in Hawaii), and we assumed similar timing for LAG formation within the bones of EP green turtles (winter: December/January/February). Because this winter LAG formation corresponds to hatching season (also winter), no age adjustment was required with regard to LAG formation. However, age correction was still necessary to account for the stranding month of individual turtles that stranded in seasons other than winter (Snover & Hohn 2004, Avens et al. 2012), so we applied an approach similar to that used for loggerhead turtles dead-stranded and foraging at the same PSL location (Turner Tomaszewicz et al. 2015). For turtles stranded in the spring (March/April/May), we adjusted ages by +0.25 year. For summer strandings (June/July/August), we adjusted ages by +0.5 year if growth was observed beyond the outermost LAG, or -0.5 year if no growth was observed. Similarly, we adjusted ages by +0.75 year or -0.25 year if growth was or was not observed beyond the outermost LAG for turtles stranded in fall (September/October/November). We rounded all ages to the nearest whole number (as per Avens et al. 2012 and Turner Tomaszewicz et al. 2015). Following these adjustments, we assigned the final estimated age-at-stranding to the outer-most growth layer for each turtle, then assigned sequential preceding ages to each sequential interior growth layer.

RESULTS

Age-at-maturation

We omitted data from the largest turtle for an age-at-maturity estimation because the point at which this turtle likely started reproducing, where its growth slowed and size plateaued, was not retained in the visible portion of the bone (e.g., all retained LAGs corresponded with estimated CCL of ~95 cm; Fig. 4). This was the largest turtle in our study and it exhibited near-consistent CCL throughout its entire visible bone record. Therefore, it may be older than we estimated and the growth observed in its bone layers may reflect only its mature, reproductive, adult stage.

DISCUSSION

Age estimations

Estimating the age of some of the oldest turtles can be limited, when using skeletochronology, due to bone remodeling and compression of LAGs at the bone periphery, a phenomenon termed "rapprochement" (Francillon-Vieillot et al. 1990). For large bones, like marine turtle humeri, compressed LAGs from large mature turtles are typically still identifiable (Snover & Hohn 2004), but the correction factors applied might not be as accurate for these largest turtles. This may be the case if the innermost retained LAGs are not visible enough to permit accurate diameter measurements, and if the spacing of these non-measurable LAGs is markedly different from the LAG spacing within other bone samples used to generate the correction factor equations. Specifically, retained but non-measurable LAGs are not included in the "retained LAG" count and are therefore omitted from the final age estimation and are not used when applying the correction factor equation, resulting in a potential underestimation of the final estimated age.

In the current study, we applied our second-order correction factor to seven turtles, including the two largest turtles in our sample, both estimated at age ~32 years (Fig. 4). This age estimate is reasonable given that the CCL of each of the two large turtles was similar (94 and 95 cm), as was the measured LAG and humerus diameters (HD) of each bone (both 37 mm). However, the proportion of the bone where LAGs were visible, and could therefore be reliably measured, differed dramatically between these two turtles (Fig. 6a). In one bone, 22 retained LAGs were visible, measured, and spanned most of the cortical bone. The 22 measured LAG diameters ranged from 23 to 37 mm, were widely spaced, and provided a long time series of estimated CCL and growth (from ~65 to 94 cm CCL) over this 22-year period (Fig. 6b). The other large turtle's bone had a very different morphology with highly compressed external LAGs (Fig. 6a), only 12 of which were complete enough to permit measurement of LAG diameters, which ranged from 36 to 37 mm, spanning a body size range of 94 to 95 cm, over a 12-year period (Fig. 6c). Yet additional lines were visible in one small portion of the bone (Fig. 6c), and could be additional LAGs. However, since they were not more complete, they could not be reliably identified as LAGs, nor their diameters reliably measured (Snover & Hohn 2004, Goshe et al. 2010, Snover et al. 2011). As a result, these additional possible LAGs could not be used in the correction factor analysis, resulting in an estimated age of ~32 years for this turtle.

However, if we assumed these additional lines were true LAGs, and the innermost of these potential LAGs were extrapolated through the rest of the bone (Fig. 6d), such that a diameter could be estimated and used in the second-order correction factor equation, we would obtain a new estimate of the number of LAGs lost. In this case, use of the hypothetical diameter in the second-order correction factor equation leads to an estimation of 16 LAGs lost. When summed with the 18 potential LAGs retained, plus the 12 confirmed LAGs retained, the new age estimate for this individual would be ~46 years. Estimated age-at-maturation for marine turtles is typically ~25 to 35 years, but estimates range from 10 to 50 years (reviewed in Avens & Snover 2013, Seminoff et al. 2015), and turtles can then breed for 20 to 40 years (Chaloupka & Limpus 2005, Humburg & Balazs 2014, Avens et al. 2015, Seminoff et al. 2015), making a life expectancy of 50 to 60 years likely, in the absence of anthropogenic pressures.

Despite these limitations, skeletochronology is one of the best tools currently available to age and estimate life history parameters for marine turtles. Resolution of the types of challenges described here require future studies using larger sample sizes of big, mature turtles, and analysis of wild and captive known-age turtles will help refine the process and likely add a third correction factor specific to mature adults.

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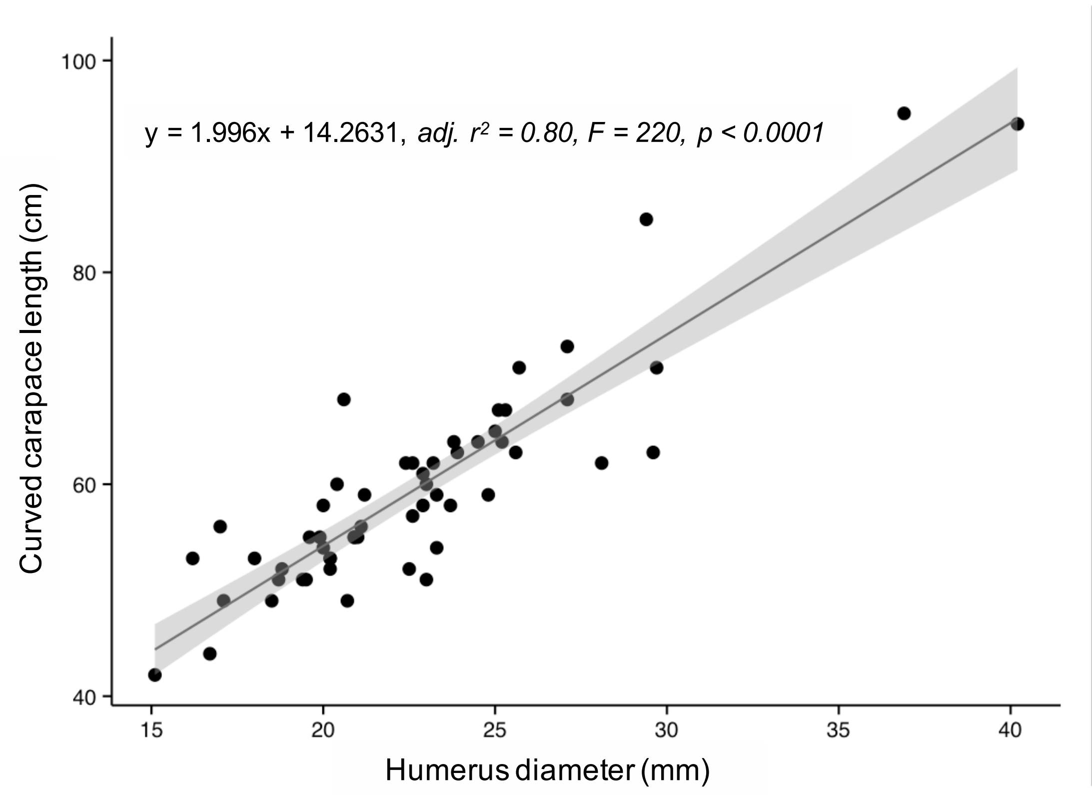

Fig. S1 – Humerus diameter vs. CCL (cm) measured from stranded turtles (*n* = 59). The equation from this relationship was used to estimate CCL at stranding for bones that were collected from turtles with no CCL measurement (*n* = 3) and the shading shows the 95% confidence intervals.

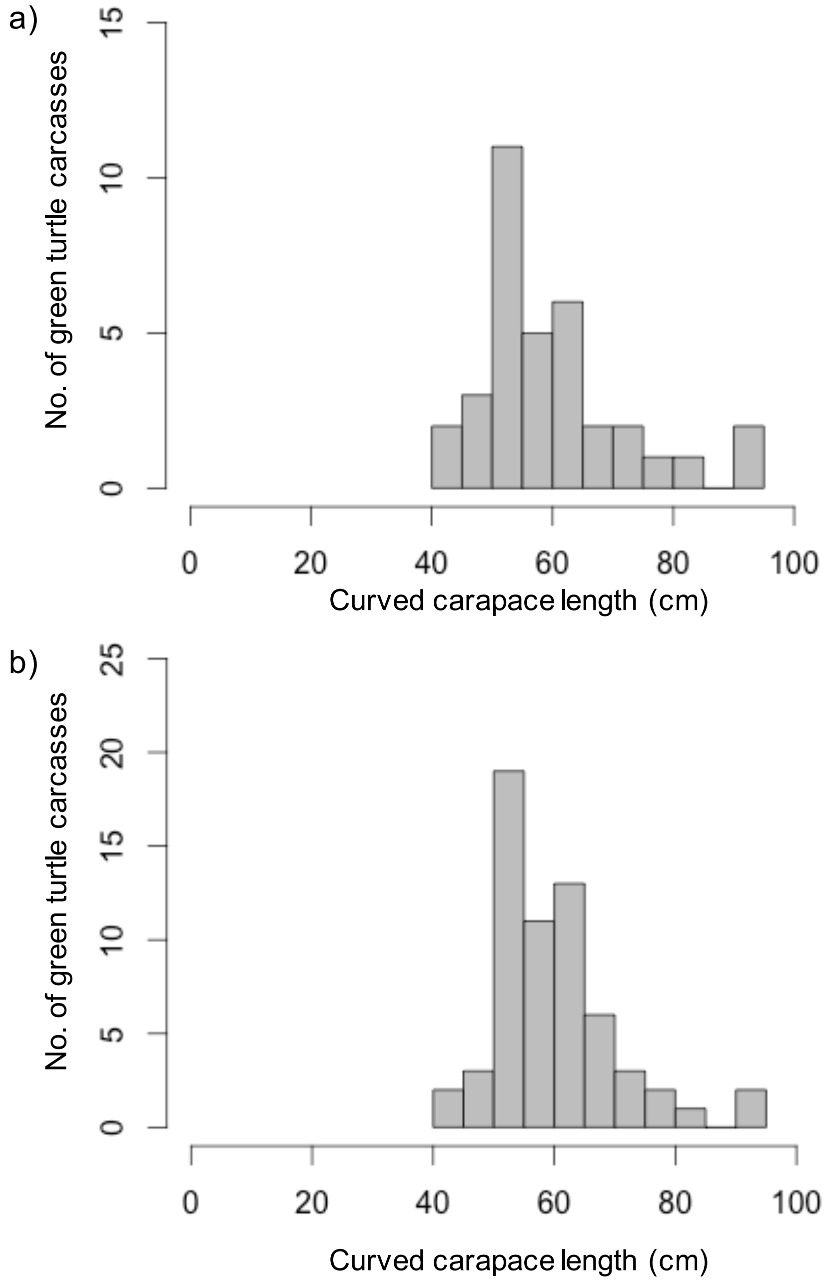

Fig. S2 – Size distribution of green turtle carcasses collected from Playa San Lázaro, Baja California Sur, Mexico. a) The bones recovered, measured and processed for skeletochronology and sequentially sampled for stable isotope analysis (*n* = 35), and b) the total bones (*n* = 62) recovered and measured.

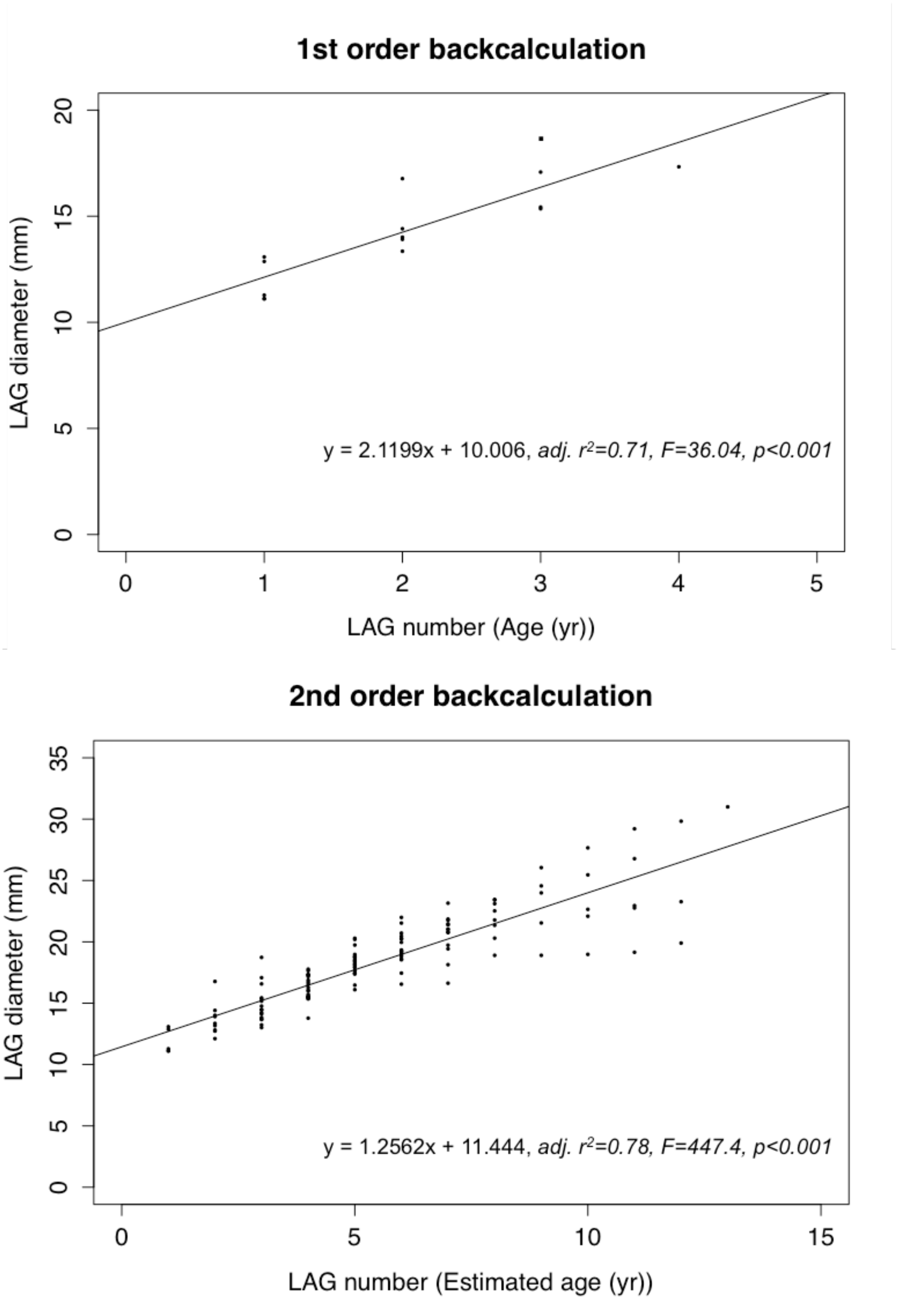

Fig. S3 – Correction factor equations used to estimate number of layers of arrested growth (LAGs) lost due to resorption of bone interior. See Methods and Results for details.

```
Code:
bam <- gamm(Est_CCL~s(Est_Age), random=list(Turtle_ID=~1), family = gaussian,
        data = q) # link function: identity
summary(bam$gam) # R-sq.(adj) =  0.827  Scale est. = 7.082     n = 275
plot(bam$gam, seWithMean=TRUE)

Output:
Parametric coefficients:
            Estimate Std. Error    t value  Pr(>|t|)
(Intercept)  59.0646     0.9296   63.54   <2e-16 ***
Approximate significance of smooth terms:
              edf    Ref.  df      F p-value
s(Est_Age) 6.74   6.74    199.5  <2e-16 ***
```

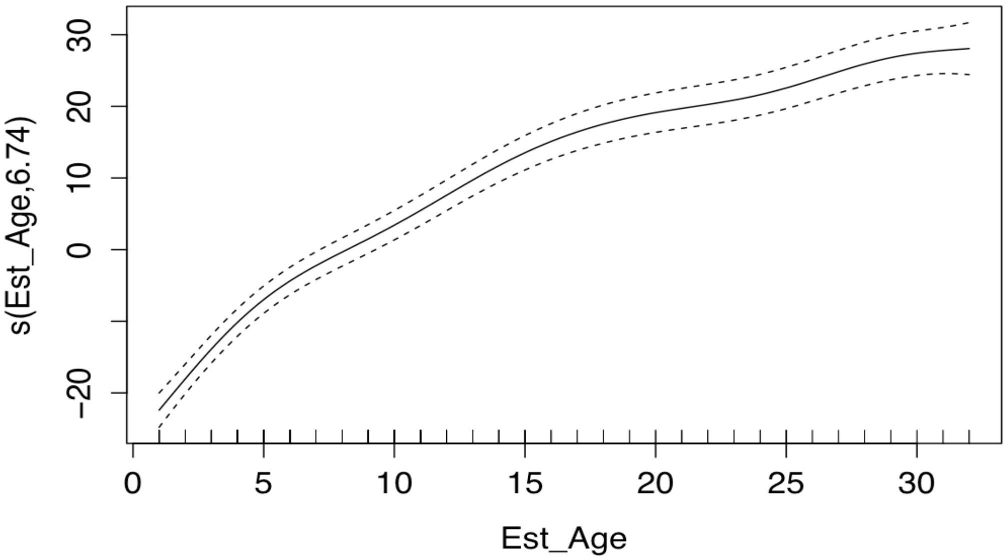

Fig. S4 – Details for GAMM model applied to length-at-age Data. R package: *mgcv*.

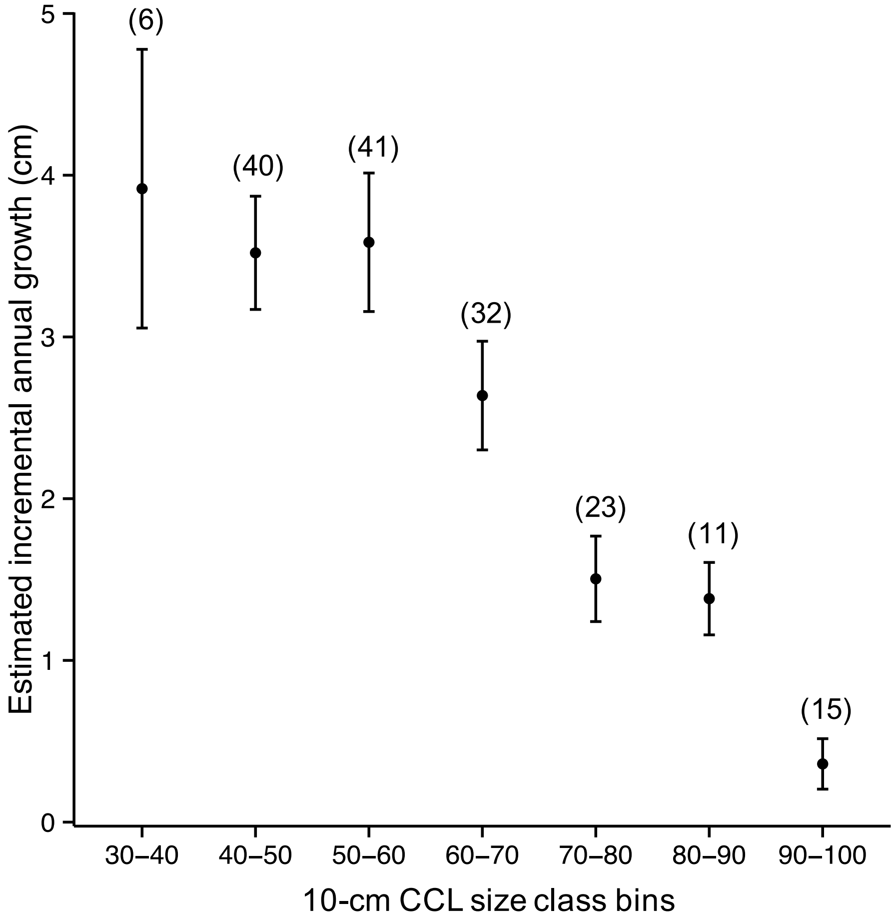

Fig. S5 - Mean (± SE) estimated incremental annual growth as measured between adjacent pairs of annual layers of arrested growth (LAGs) from individual turtles and grouped into 10-cm size class bins. Sample sizes of LAG pairs shown in parentheses above each value.

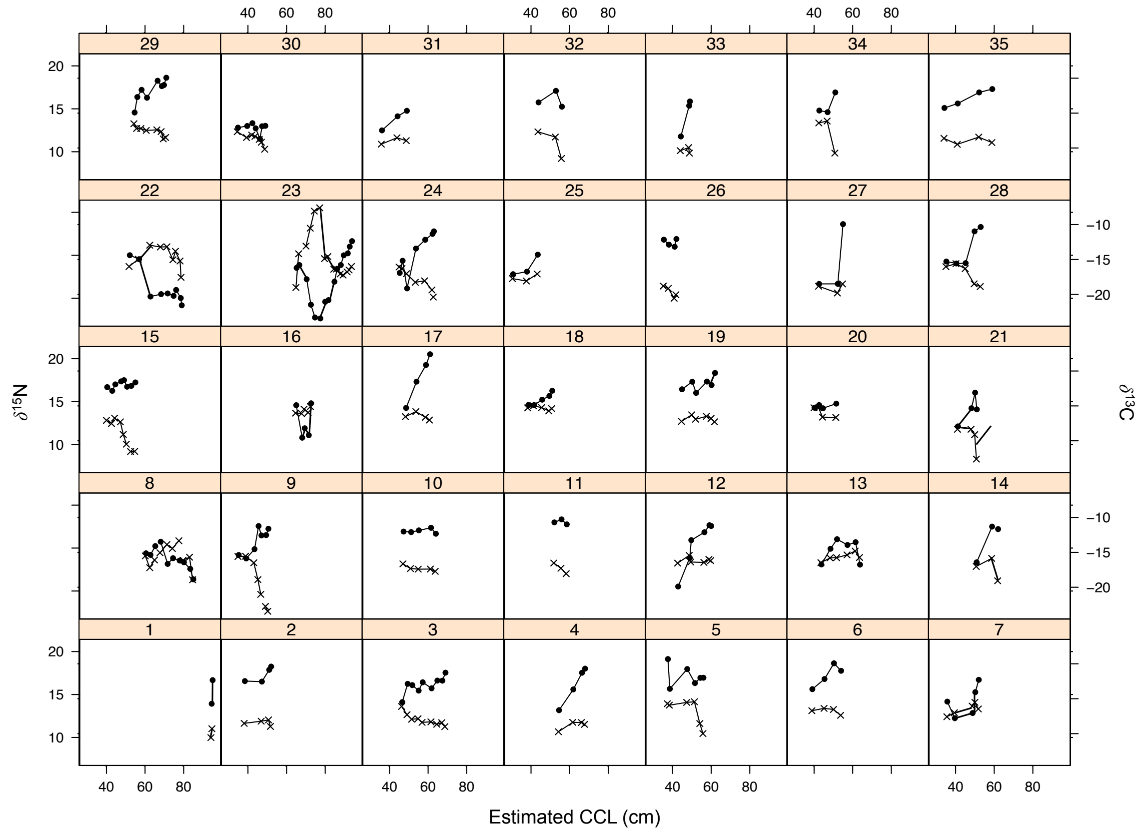

Fig. S6 – Multi-year record of stable nitrogen (δ^{15}N, solid dots, left axis) and carbon (δ^{13}C, *x*'s, right axis) isotope values (‰) from annual bone growth layers from *n* = 35 individual turtles, aligned to corresponding body size (curved carapace length, CCL, cm).

Table S1 – All data for individual turtles (*n*=35) sampled for skeletochronology and sequential stable isotope analysis. See Materials and methods for details.

Turtle Number	**LAG**	**Estimated Age (yrs)**	**Estimate CCL (cm)**	**$\delta^{13}C$ (‰)**	**$\delta^{13}C$ corrected (‰)**	**$\delta^{13}C$ corrected bone-to-skin (‰)**	**Range $\delta^{13}C$ corrected bone-to-skin (‰)**	**$\delta^{15}N$ (‰)**	**$\delta^{15}N$ bone-to-skin (‰)**	**Range $\delta^{15}N$ bone-to-skin (‰)**
1	A	20	93.8	NA	NA	NA		NA	NA	
1	B	21	93.8	NA	NA	NA		NA	NA	
1	C	22	93.8	NA	NA	NA		NA	NA	
1	D	23	93.8	NA	NA	NA		NA	NA	
1	E	24	94	NA	NA	NA		NA	NA	
1	F	25	94.1	NA	NA	NA		NA	NA	
1	G	26	94.4	NA	NA	NA		NA	NA	
1	H	27	94.5	-18.89	-20.57	-19.42		13.92	14.94	
1	I	28	94.5	NA	NA	NA		NA	NA	
1	J	29	94.7	NA	NA	NA		NA	NA	
1	K	30	94.7	NA	NA	NA		NA	NA	
1	L	31	94.8	NA	NA	NA		NA	NA	
1	M	32	95	-17.83	-19.30	-18.73		16.67	17.39	
1	Outer edge	32	95	NA	NA	NA	0.69	NA	NA	2.45
2	A	3	38.4	-17.19	-18.53	-18.32		16.56	17.29	
2	B	4	47.2	-16.93	-18.22	-18.15		16.50	17.24	
2	C	5	51	-16.78	-18.04	-18.05		17.87	18.45	
2	D	6	52	-17.56	-18.97	-18.55		18.25	18.79	
2	Outer edge	6	52	NA	NA	NA		NA	NA	
3	A	3	46.6	-15.17	-16.10	-17.01		14.11	15.11	
3	B	4	49.4	-16.16	-17.29	-17.65		16.24	17.00	
3	C	5	51.8	-16.70	-17.94	-18.00		16.09	16.87	
3	D	6	55.1	-16.64	-17.87	-17.96		15.45	16.30	
3	E	7	57.2	-17.07	-18.38	-18.24		16.42	17.16	

3	F	8	61.8	-17.01	-18.31	-18.20		15.72	16.54	
3	G	9	64.8	-17.30	-18.66	-18.39		16.62	17.34	
3	H	10	67.4	-17.11	-18.43	-18.26		16.61	17.33	
3	I	11	69	-17.58	-19.00	-18.57		17.54	18.16	
3	Outer edge	11	69	NA	NA	NA	1.56	NA	NA	3.05
4	A	3	54.5	-18.19	-19.73	-18.96		13.17	14.27	
4	B	4	61.9	-17.07	-18.38	-18.24		15.59	16.43	
4	C	5	66.4	-17.09	-18.41	-18.25		17.53	18.15	
4	D	6	67.8	NA	NA	NA		NA	NA	
4	E	7	68	-17.31	-18.67	-18.39		18.01	18.58	
4	Outer edge	7	68	NA	NA	NA	0.73	NA	NA	4.31
5	A	2	37.6	-14.84	-15.71	-16.79		19.12	19.57	
5	B	3	38.6	-15.02	-15.92	-16.91		15.66	16.49	
5	C	4	47.6	-14.69	-15.53	-16.70		17.96	18.53	
5	D	5	51.6	-14.61	-15.43	-16.64		16.33	17.08	
5	E	6	54.4	-17.21	-18.55	-18.33		16.94	17.63	
5	F	7	56	-18.41	-19.99	-19.11		16.95	17.64	
5	Outer edge	7	56	NA	NA	NA	2.46	NA	NA	3.08
6	A	3	39.1	-15.68	-16.72	-17.34		15.62	16.45	
6	B	4	45.4	-15.40	-16.38	-17.16		16.80	17.50	
6	C	5	50.3	-15.53	-16.54	-17.24		18.63	19.13	
6	D	6	54	-16.23	-17.38	-17.69		17.76	18.36	
6	Outer edge	6	54	NA	NA	NA	0.54	NA	NA	2.68
7	A	1	35.7	-16.40	-17.58	-17.80		14.17	15.16	
7	B	2	39.6	-15.92	-17.00	-17.49		12.24	13.44	
7	C	3	NA	-15.92	-17.00	-17.49		13.62	14.67	
7	D	4	48.8	-15.13	-16.06	-16.98		12.84	13.98	
7	E	5	49.7	NA	NA	NA		NA	NA	
7	F	6	50.2	-14.68	-15.52	-16.69		15.27	16.14	
7	G	7	52	-15.47	-16.46	-17.20		16.71	17.42	
7	H	NA	52	NA	NA	NA		NA	NA	

7	Outer edge	7	52	NA	NA	NA	1.11	NA	NA	3.98
8	A	7	60.5	-14.68	-15.52	-16.69		14.39	15.36	
8	B	8	62.8	-16.08	-17.20	-17.60		14.21	15.20	
8	C	9	65.3	-15.17	-16.10	-17.01		15.23	16.10	
8	D	10	66.8	NA	NA	NA		NA	NA	
8	E	11	68.1	-14.30	-15.06	-16.44		15.74	16.56	
8	F	12	71.7	-13.32	-13.88	-15.81		13.16	14.26	
8	G	13	74.5	-13.79	-14.45	-16.11		13.82	14.85	
8	H	14	77.9	-12.87	-13.34	-15.52		13.55	14.61	
8	I	15	79.2	NA	NA	NA		NA	NA	
8	J	16	80.1	-15.19	-16.13	-17.02		13.35	14.43	
8	K	17	83.4	-14.83	-15.70	-16.79		12.58	13.75	
8	L	18	85	-17.53	-18.94	-18.54		11.36	12.66	
8	Outer edge	18	85	NA	NA	NA	3.02	NA	NA	3.9
9	A	3	35.2	-14.75	-15.60	-16.73		14.19	15.18	
9	B	4	39.1	-14.71	-15.55	-16.71		13.79	14.82	
9	C	5	43.4	-15.50	-16.50	-17.22		14.87	15.78	
9	D	6	45.5	-17.51	-18.91	-18.52		17.56	18.18	
9	E	7	47	-19.27	-21.02	-19.66		16.47	17.21	
9	F	8	48	NA	NA	NA		NA	NA	
9	G	9	48.4	NA	NA	NA		NA	NA	
9	H	10	49.4	-20.71	-22.75	-20.60		16.51	17.24	
9	I	11	50.6	-21.29	-23.45	-20.97		17.25	17.90	
9	J	12	51	NA	NA	NA		NA	NA	
9	Outer edge	12	51	NA	NA	NA	4.26	NA	NA	3.36
10	A	3	47.3	-15.63	-16.66	-17.30		16.92	17.61	
10	B	4	51.2	-16.19	-17.33	-17.67		16.86	17.56	
10	C	5	55.2	-16.26	-17.41	-17.71		17.06	17.73	
10	D	6	61.5	-16.25	-17.40	-17.71		17.36	18.00	
10	E	7	64	-16.52	-17.72	-17.88		16.67	17.39	
10	Outer edge	7	64	NA	NA	NA	0.58	NA	NA	0.61

11	A	8	52.1	-15.53	-16.54	-17.24		17.99	18.56	
11	B	9	55.8	-16.15	-17.28	-17.64		18.34	18.87	
11	C	10	58.5	-16.80	-18.06	-18.06		17.76	18.36	
11	D	11	59	NA	NA	NA		NA	NA	
11	Outer edge	11	59	NA	NA	NA	0.82	NA	NA	0.52
12	A	3	42.9	-15.54	-16.55	-17.25		10.52	11.91	
12	B	4	48.9	-14.62	-15.44	-16.65		13.87	14.89	
12	C	5	49.7	-15.41	-16.39	-17.16		15.92	16.72	
12	D	6	56.5	-15.45	-16.44	-17.19		16.84	17.54	
12	E	7	59.1	-15.10	-16.02	-16.96		17.66	18.27	
12	F	8	60	-15.24	-16.19	-17.05		17.57	18.19	
12	Outer edge	8	60	NA	NA	NA	0.6	NA	NA	6.35
13	A	3	43.8	-15.49	-16.49	-17.21		13.09	14.20	
13	B	4	48.5	-14.92	-15.80	-16.84		14.92	15.83	
13	C	5	51.9	-14.89	-15.77	-16.82		16.03	16.82	
13	D	6	57.3	-14.56	-15.37	-16.61		15.36	16.22	
13	E	7	61.5	-14.10	-14.82	-16.31		15.68	16.51	
13	F	8	63.8	-14.86	-15.73	-16.81		13.07	14.18	
13	G	9	65	NA	NA	NA		NA	NA	
13	Outer edge	9	65	NA	NA	NA	0.9	NA	NA	2.63
14	A	4	50.9	-15.94	-17.03	-17.51		13.34	14.42	
14	B	5	58.9	-14.97	-15.86	-16.88		17.50	18.13	
14	C	6	59.4	NA	NA	NA		NA	NA	
14	D	7	62	-17.65	-19.08	-18.61		17.21	17.87	
14	Outer edge	7	62	NA	NA	NA	1.74	NA	NA	3.7
15	A	2	40.4	-15.98	-17.08	-17.53		16.69	17.40	
15	B	3	43	-16.35	-17.52	-17.77		16.26	17.02	
15	C	4	44.6	-15.71	-16.75	-17.36		17.01	17.69	
15	D	5	47.6	-16.16	-17.29	-17.65		17.36	18.00	
15	E	6	49.1	-17.66	-19.09	-18.62		17.50	18.13	
15	F	7	50.7	-18.82	-20.48	-19.37		16.74	17.45	

15	G	8	50.8	NA	NA	NA		NA	NA	
15	H	9	50.9	NA	NA	NA		NA	NA	
15	I	10	51.3	NA	NA	NA		NA	NA	
15	J	11	52.9	-19.70	-21.54	-19.94		16.84	17.54	
15	K	12	55	-19.68	-21.52	-19.93		17.24	17.89	
15	Outer edge	12	55	NA	NA	NA	2.59	NA	NA	1.1
16	A	10	65	-15.11	-16.03	-16.97		14.59	15.54	
16	B	11	68.1	-15.17	-16.10	-17.01		10.80	12.16	
16	C	12	68.2	NA	NA	NA		NA	NA	
16	D	13	69.4	-14.64	-15.47	-16.66		11.90	13.14	
16	E	14	69.5	NA	NA	NA		NA	NA	
16	F	15	71	NA	NA	NA		NA	NA	
16	G	16	71.5	-15.04	-15.95	-16.92		11.09	12.42	
16	H	17	71.6	NA	NA	NA		NA	NA	
16	I	18	71.9	NA	NA	NA		NA	NA	
16	J	19	71.9	NA	NA	NA		NA	NA	
16	K	20	72.1	NA	NA	NA		NA	NA	
16	L	21	72.7	-14.33	-15.10	-16.46		14.81	15.73	
16	M	22	72.8	NA	NA	NA		NA	NA	
16	N	23	72.8	NA	NA	NA		NA	NA	
16	O	24	72.8	NA	NA	NA		NA	NA	
16	P	25	73	NA	NA	NA		NA	NA	
16	Outer edge	25	73	NA	NA	NA	0.54	NA	NA	3.57
17	A	4	48.6	-15.53	-16.54	-17.24		14.27	15.25	
17	B	5	54	-14.93	-15.82	-16.85		17.33	17.97	
17	C	6	58.9	-15.61	-16.63	-17.29		19.27	19.70	
17	D	7	61	-15.94	-17.03	-17.51		20.52	20.81	
17	Outer edge	7	61	NA	NA	NA	0.65	NA	NA	5.56
18	A	2	38.6	-14.49	-15.29	-16.57		14.61	15.55	
18	B	3	41.6	-14.24	-14.99	-16.40		14.60	15.54	
18	C	4	45.8	-14.45	-15.24	-16.54		15.23	16.10	

18	D	5	49.5	-14.85	-15.72	-16.80		15.67	16.50	
18	E	6	51	-14.57	-15.38	-16.62		16.27	17.03	
18	Outer edge	6	51	NA	NA	NA	0.4	NA	NA	1.49
19	A	3	44.9	-16.10	-17.22	-17.61		16.44	17.18	
19	B	4	50.2	-15.32	-16.28	-17.10		17.32	17.96	
19	C	5	52.2	-15.84	-16.91	-17.44		16.02	16.81	
19	D	6	57.8	-15.50	-16.50	-17.22		17.34	17.98	
19	E	7	60.2	-15.75	-16.80	-17.38		16.93	17.62	
19	F	8	NA	-15.61	-16.63	-17.29		17.58	18.20	
19	G	9	60.5	NA	NA	NA		NA	NA	
19	H	10	61.2	NA	NA	NA		NA	NA	
19	I	11	61.9	NA	NA	NA		NA	NA	
19	J	12	62	-16.15	-17.28	-17.64		18.34	18.87	
19	Outer edge	12	62	NA	NA	NA	0.54	NA	NA	2.06
20	A	1	40.2	-14.48	-15.28	-16.56		14.29	15.27	
20	B	2	42.6	-14.48	-15.28	-16.56		14.60	15.54	
20	C	3	44.6	-15.59	-16.61	-17.28		14.23	15.21	
20	D	4	51.5	-15.63	-16.66	-17.30		14.77	15.70	
20	E	5	51.7	NA	NA	NA		NA	NA	
20	F	6	51.9	NA	NA	NA		NA	NA	
20	G	7	53	NA	NA	NA		NA	NA	
20	Outer edge	7	53	NA	NA	NA	0.75	NA	NA	0.48
21	A	3	41.2	-17.04	-18.35	-18.22		12.12	13.34	
21	B	4	45.9	NA	NA	NA		NA	NA	
21	C	5	48.2	-17.04	-18.35	-18.22		14.23	15.21	
21	D	6	50.1	-17.68	-19.12	-18.63		16.05	16.83	
21	E	7	51	-20.60	-22.62	-20.52		14.10	15.10	
21	Outer edge	7	51	NA	NA	NA	2.31	NA	NA	3.5
22	A	4	52.1	-15.09	-16.01	-16.95		15.00	15.90	
22	B	5	56.9	-14.21	-14.95	-16.38		14.54	15.49	
22	C	6	57.6	NA	NA	NA		NA	NA	

22	D	7	62.8	-12.54	-12.95	-15.30		10.19	11.62	
22	E	8	68.3	-12.76	-13.21	-15.44		10.47	11.87	
22	F	9	71.7	-12.73	-13.18	-15.43		10.55	11.94	
22	G	10	74.8	-14.28	-15.04	-16.43		10.27	11.69	
22	H	11	76.1	-13.27	-13.82	-15.77		10.96	12.30	
22	I	12	78.5	-14.43	-15.22	-16.53		10.01	11.46	
22	J	13	79	-16.38	-17.56	-17.79		9.17	10.71	
22	Outer edge	13	79	NA	NA	NA	2.49	NA	NA	5.19
23	A	10	65.2	-17.59	-19.01	-18.57		13.53	14.59	
23	B	11	66.6	-13.57	-14.18	-15.97		13.86	14.89	
23	C	12	67.6	NA	NA	NA		NA	NA	
23	D	13	68.6	NA	NA	NA		NA	NA	
23	E	14	70.4	-12.65	-13.08	-15.37		12.21	13.41	
23	F	15	72.6	-10.51	-10.51	-13.99		9.24	10.77	
23	G	16	74.7	-8.47	-8.06	-12.66		7.75	9.45	
23	H	17	77.5	-8.08	-7.60	-12.41		7.64	9.35	
23	I	18	78.6	NA	NA	NA		NA	NA	
23	J	19	80	-14.15	-14.88	-16.35		9.58	11.08	
23	K	20	80.7	NA	NA	NA		NA	NA	
23	L	21	81.7	-13.90	-14.58	-16.18		9.77	11.25	
23	M	22	83	NA	NA	NA		NA	NA	
23	N	23	83.5	NA	NA	NA		NA	NA	
23	O	24	84.8	-15.41	-16.39	-17.16		11.92	13.16	
23	P	25	86.2	-15.39	-16.37	-17.15		13.41	14.48	
23	Q	26	88.1	-15.98	-17.08	-17.53		13.86	14.89	
23	R	27	89.6	-16.11	-17.23	-17.62		14.99	15.89	
23	S	28	91.7	-15.74	-16.79	-17.38		15.22	16.10	
23	T	29	92.7	-15.50	-16.50	-17.22		16.01	16.80	
23	U	30	93.9	-15.09	-16.01	-16.95		16.64	17.36	
23	V	31	94.1	NA	NA	NA		NA	NA	
23	Outer edge	32	94.1	NA	NA	NA	6.16	NA	NA	8.01

24	A	7	45.3	-15.15	-16.08	-16.99		12.94	14.07	
24	B	8	46.8	-15.33	-16.30	-17.11		14.36	15.33	
24	C	9	49.1	-15.95	-17.04	-17.51		11.14	12.46	
24	D	10	53.7	-16.97	-18.26	-18.17		15.78	16.59	
24	E	11	58.5	-16.80	-18.06	-18.06		16.80	17.50	
24	F	12	62.3	-17.89	-19.37	-18.77		17.49	18.12	
24	G	13	62.6	NA	NA	NA		NA	NA	
24	H	14	63	-18.74	-20.39	-19.32		17.78	18.37	
24	Outer edge	14	63	NA	NA	NA	2.33	NA	NA	5.91
25	A	1	30.7	-16.53	-17.74	-17.89		12.79	13.93	
25	B	2	37.9	-16.82	-18.08	-18.08		13.09	14.20	
25	C	3	43.5	-15.98	-17.08	-17.53		15.07	15.96	
25	D	4	44	NA	NA	NA		NA	NA	
25	Outer edge	4	44	NA	NA	NA	0.54	NA	NA	2.03
26	A	1	35.5	-17.42	-18.80	-18.46		16.81	17.51	
26	B	2	38.1	-17.70	-19.14	-18.65		16.23	16.99	
26	C	3	41.1	-18.88	-20.56	-19.41		15.99	16.78	
26	D	4	42	-18.46	-20.05	-19.14		16.89	17.58	
26	Outer edge	4	42	NA	NA	NA	0.95	NA	NA	0.80
27	A	2	42.6	-17.44	-18.83	-18.48		11.66	12.93	
27	B	3	52.3	-18.25	-19.80	-19.00		11.67	12.94	
27	C	4	55	-17.17	-18.50	-18.30		18.62	19.12	
27	Outer edge	4	55	NA	NA	NA	0.70	NA	NA	6.19
28	A	1	35.2	-15.10	-16.02	-16.96		14.27	15.25	
28	B	2	40.4	-14.75	-15.60	-16.73		14.04	15.05	
28	C	3	45.2	-15.34	-16.31	-17.12		14.08	15.08	
28	D	4	49.8	-17.16	-18.49	-18.30		17.78	18.37	
28	E	5	53	-17.48	-18.88	-18.50		18.29	18.83	
28	Outer edge	5	53	NA	NA	NA		NA	NA	
29	A	8	54.6	-15.52	-16.52	-17.23		14.57	15.52	
29	B	9	56	-16.09	-17.21	-17.60		16.37	17.12	

29	C	10	58.2	-16.09	-17.21	-17.60		17.21	17.87	
29	D	11	61	-16.32	-17.48	-17.75		16.29	17.05	
29	E	12	66.5	-16.25	-17.40	-17.71		18.27	18.81	
29	F	13	68.7	-16.46	-17.65	-17.84		17.64	18.25	
29	G	14	69.8	-17.33	-18.70	-18.41		17.77	18.37	
29	H	15	71	-17.17	-18.50	-18.30		18.62	19.12	
29	Outer edge	15	71	NA	NA	NA	1.17	NA	NA	3.60
30	A	2	34.8	-16.48	-17.68	-17.86		12.81	13.95	
30	B	3	39.6	-17.17	-18.50	-18.30		13.00	14.12	
30	C	4	42.3	-16.88	-18.16	-18.11		13.33	14.41	
30	D	5	44	-17.03	-18.34	-18.21		12.73	13.88	
30	E	6	46.2	-17.39	-18.77	-18.44		11.49	12.78	
30	F	7	47.3	-17.73	-19.18	-18.67		12.97	14.09	
30	G	8	49	-18.57	-20.18	-19.21		13.02	14.14	
30	Outer edge	8	49	NA	NA	NA	1.35	NA	NA	1.64
31	A	1	36.1	-17.96	-19.45	-18.81		12.49	13.67	
31	B	2	44.2	-17.20	-18.54	-18.32		14.13	15.13	
31	C	3	49	-17.54	-18.95	-18.54		14.77	15.70	
31	Outer edge	3	49	NA	NA	NA	0.49	NA	NA	2.03
32	A	2	43.9	-16.49	-17.69	-17.86		15.75	16.57	
32	B	3	52.9	-17.11	-18.43	-18.26		17.09	17.76	
32	C	4	56	-19.68	-21.52	-19.93		15.25	16.12	
32	Outer edge	4	56	NA	NA	NA	2.07	NA	NA	1.64
33	A	2	40	NA	NA	NA		NA	NA	
33	B	3	44.3	-18.74	-20.39	-19.32		11.78	13.03	
33	C	4	48.6	-18.37	-19.94	-19.08		15.36	16.22	
33	D	5	49	-19.03	-20.74	-19.51		15.86	16.67	
33	Outer edge	5	49	NA	NA	NA	0.43	NA	NA	3.63
34	A	3	42.7	-15.43	-16.42	-17.17		14.80	15.72	
34	B	4	47	-15.20	-16.14	-17.03		14.61	15.55	
34	C	5	51	-19.03	-20.74	-19.51		16.91	17.60	

34	Outer edge	5	51	NA	NA	NA	2.48	NA	NA	2.05
35	A	1	34.2	-17.27	-18.62	-18.36		15.10	15.99	
35	B	2	41.1	-17.98	-19.48	-18.83		15.62	16.45	
35	C	3	52.2	-17.12	-18.44	-18.27		16.91	17.60	
35	D	4	59	-17.77	-19.22	-18.69		17.30	17.95	
35	Outer edge	4	59	NA	NA	NA	0.56	NA	NA	1.96