1   **Supplementary Information**

2   **BONE LOSS FROM CARCASSES IN MEDITERRANEAN ECOSYSTEMS**

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6   **TABLE S1. -** Workflow and output of the Generalized Linear Mixed Models (GLMMs) analyses.

7   The initial model (Model 1) incorporates all the possible explanatory variables studied. We

8   dropped out one variable with a non-significant effect over SCI at a time in successive models.

9   First, we dropped out "Species" in Model 2. That made that "Locality" showed a significant effect,

10   although its effect was not significant in Model 1. That pointed out that some variability of the data

11   due to "Species" was also explained by "Locality". The rationale behind that could be that all

12   carcasses monitored in SNS corresponded to *C. elaphus*. We excluded "Start" from Model 3 and

13   kept "Locality", because it had showed to be significant in Model 2. "Age" was excluded from

14   Model 4 (the Minimmum Adequate Model), which showed the significance of all the variables

15   included in it. *** = p-value $\leq$ 0.001; ** = p-value $\leq$ 0.01; * = p-value $\leq$0.05; . = p-value $\leq$ 0.1.

Model 1:
glmmadmb(SCI ~ Class + eTime + Treecoverage + Locality + Sps + Start + Age + (1 | ID),
data = d, family = "beta")

AIC: -213.6
Coefficients:

	Estimate	Std. Error	z value	p-value
(Intercept)	-2.877	1.524	-1.89	0.0590 .
ClassI	3.072	1.472	2.09	0.0369 *
ClassII	3.967	0.997	3.98	7.0×10^{-5} ***
eTime	5.845	0.827	7.07	1.5e-12 ***
Treecoverage1	-0.926	0.340	-2.72	0.0065 **
LocalitySNS	-0.362	0.572	-0.63	0.5268
SpsCelaphus	-1.011	1.154	-0.88	0.3812
SpsDdama	0.450	1.139	0.39	0.6931
SpsEcaballus	-0.131	0.863	-0.15	0.8797
SpsSscrofa	-1.818	1.216	-1.50	0.1349
SpsVvulpes	2.181	1.638	1.33	0.1829
StartWST	-0.553	0.378	-1.46	0.1434
AgeJ	-0.121	0.379	-0.32	0.7489

Number of observations: total=101, ID=29
Random effect variance(s):
Group=ID

	Variance	StdDev
(Intercept)	3.132×10^{-7}	0.0005596

Beta dispersion parameter: 1.8265 (std. err.: 0.26306)
Log-likelihood: 121.783

Model 2:
glmmadmb(SCI ~ Class + eTime + Treecoverage + Locality + Start + Age + (1 | ID), data = d, family = "beta")

AIC: -211
Coefficients:

	Estimate	Std. Error	z value	p-value
(Intercept)	-1.469	0.524	-2.80	0.0051**
ClassI	1.621	0.601	2.70	0.0070**
ClassII	2.155	0.512	4.21	2.6×10^{-5} ***
eTime	5.752	0.803	7.17	7.8×10^{-13}***
Treecoverage1	-0.871	0.329	-2.64	0.0082**
LocalitySNS	-1.001	0.311	-3.21	0.0013**
StartWST	-0.478	0.385	-1.24	0.2137
AgeJ	-0.111	0.314	-0.35	0.7241

Number of observations: total=101, ID=29
Random effect variance(s):
Group=ID

	Variance	StdDev
(Intercept)	6.012×10^{-7}	0.0007754

Beta dispersion parameter: 1.599 (std. err.: 0.2256)
Log-likelihood: 115.477

Model 3:
glmmadmb(SCI ~ Class + eTime + Treecoverage + Locality + Age + (1 | ID), data = d, family = "beta")

AIC: -211.4
Coefficients:

	Estimate	Std. Error	z value	p-value
(Intercept)	-1.6588	0.5043	-3.29	0.00100**
ClassI	1.7910	0.5895	3.04	0.00238**
ClassII	2.1806	0.5157	4.23	2.4×10^{-5}***
eTime	5.8205	0.7928	7.34	2.1×10^{-13}***
Treecoverage1	-0.6466	0.2772	-2.33	0.01966*
LocalitySNS	-1.1342	0.2943	-3.85	0.00012***
AgeJ	0.0639	0.2814	0.23	0.82045

Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

Number of observations: total=101, ID=29
Random effect variance(s):
Group=ID

	Variance	StdDev
(Intercept)	3.413×10^{-7}	0.0005842

Beta dispersion parameter: 1.5545 (std. err.: 0.21584)
Log-likelihood: 114.715

Final model:
glmmadmb(SCI ~ Class + eTime + Treecoverage + Locality + (1 | ID),
data = d, family = "beta")

AIC: -213.4
Coefficients:

	Estimate	Std. Error	z value	p-value
(Intercept)	-1.619	0.473	-3.42	0.00062 ***
ClassI	1.755	0.568	3.09	0.00200 **
ClassII	2.176	0.515	4.22	2.4×10^{-5} ***
eTime	5.843	0.788	7.41	1.2×10^{-13} ***
Treecoverage1	-0.664	0.266	-2.49	0.01263 *
LocalitySNS	-1.154	0.280	-4.12	3.8×10^{-5} ***

Number of observations: total=101, ID=29
Random effect variance(s):
Group=ID

	Variance	StdDev
(Intercept)	5.21×10^{-4}	0.0007216

Beta dispersion parameter: 1.5549 (std. err.: 0.21596)
Log-likelihood: 114.689

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Model 1:
betareg(SCIprop ~ Class + Locality, data = InfPoint1)

Standardized weighted residuals 2:

Min	1Q	Median	3Q	Max
-1.2066	-0.4251	0.0000	0.6033	0.9385

Coefficients (mean model with logit link):

	Estimate	Std. Error	z value	p-value
(Intercept)	5.2364	0.7948	6.588	4.45×10^{-11} ***
ClassII	0.4004	0.7024	0.570	0.569
ClassIII	0.4004	0.9079	0.441	0.659
LocalitySNS	-0.6319	0.5378	-1.175	0.240

Phi coefficients (precision model with identity link):

	Estimate	Std. Error	z value	p-value
(phi)	27.92	17.97	1.554	0.12

Type of estimator: ML (maximum likelihood)
Log-likelihood: 154.8 on 5 Df
Pseudo R-squared: 0.2708
Number of iterations: 300 (BFGS) + 2 (Fisher scoring)

Model 2:
betareg(SCIprop ~ Class + Treecoverage, data = InfPoint1)

Standardized weighted residuals 2:

Min	1Q	Median	3Q	Max
-1.1942	-0.5267	0.3017	0.4494	0.6010

Coefficients (mean model with logit link):

	Estimate	Std. Error	z value	p-value
(Intercept)	5.1742	0.8057	6.422	1.35×10^{-10} ***
ClassII	0.1465	0.6573	0.223	0.824
ClassIII	0.4931	0.9444	0.522	0.602
Treecoverage	-0.1835	0.5150	-0.356	0.722

Phi coefficients (precision model with identity link):

	Estimate	Std. Error	z value	p-value
(phi)	25.97	17.15	1.515	0.13

Type of estimator: ML (maximum likelihood)
Log-likelihood: 154.1 on 5 Df
Pseudo R-squared: 0.06346
Number of iterations: 291 (BFGS) + 3 (Fisher scoring)

Final model:
betareg(SCIprop ~ Class, data = InfPoint1)

Standardized weighted residuals 2:

Min	1Q	Median	3Q	Max
-1.1930	-0.4427	0.3791	0.3791	0.5965

Coefficients (mean model with logit link):

	Estimate	Std. Error	z value	p-value
(Intercept)	5.16795	0.80687	6.405	1.5×10^{-10} ***
ClassII	0.08565	0.63077	0.136	0.892
ClassIII	0.39675	0.90832	0.437	0.662

Phi coefficients (precision model with identity link):

	Estimate	Std. Error	z value	p-value
(phi)	25.78	17.07	1.511	0.131

Type of estimator: ML (maximum likelihood)
Log-likelihood: 154.1 on 4 Df
Pseudo R-squared: 0.04448
Number of iterations: 563 (BFGS) + 3 (Fisher scoring)

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TABLE S3. - Workflow and output of the Generalized Linear Models (GLMs) run to test for

differences in SCI at Inflection point 2 (IP2). We compared SCI in the second inflection point over

size classes ("Class"), controlled by locality ("Locality") and presence or absence of tree coverage

("Tree coverage"). We used overall data first (Models 1 and 2). Since tree coverage had not a

significant effect over SCI (Model 1), we excluded it from the final model (Model 2). In a second

approximation, we tested SCI only over data from RBD (Models 3 and 4). Since tree coverage

effect was not significant (Model 3), we dropped it out from the final model (Model 4). *** = p-

value ≤ 0.001; ** = p-value ≤ 0.01; * = p-value ≤ 0.05; . = p-value ≤ 0.1.

Model 1:
betareg(SCIprop ~ Class + Locality + Treecoverage, data = InfPoint2)

Standardized weighted residuals 2:

Min	1Q	Median	3Q	Max
-2.3005	-0.9684	0.0637	0.7230	2.4855

Coefficients (mean model with logit link):

	Estimate	Std. Error	z value	p-value
(Intercept)	-1.7426	0.3912	-4.454	8.43×10^{-6} ***
ClassI	1.9225	0.4430	4.340	1.43×10^{-5} ***
ClassII	1.3479	0.4681	2.880	0.00398 **
LocalitySNS	-0.8885	0.3812	-2.331	0.01976 *
Treecoverage	-0.1834	0.3469	-0.529	0.59701

Phi coefficients (precision model with identity link):

	Estimate	Std. Error	z value	p-value
(phi)	30.21	12.20	2.476	0.0133 *

Type of estimator: ML (maximum likelihood)
Log-likelihood: 14.1 on 6 Df
Pseudo R-squared: 0.7428
Number of iterations: 31 (BFGS) + 4 (Fisher scoring)

Model 2 (final, with overall data):
betareg(SCIprop ~ Class + Locality, data = InfPoint2)

Standardized weighted residuals 2:

Min	1Q	Median	3Q	Max
-2.3443	-0.8210	0.2292	0.6484	2.1825

Coefficients (mean model with logit link):

	Estimate	Std. Error	z value	p-value
(Intercept)	-1.8081	0.3567	-5.069	4.00×10^{-7} ***
ClassI	1.9879	0.4141	4.801	1.58×10^{-6} ***
ClassII	1.4137	0.4413	3.203	0.00136 **
LocalitySNS	-1.0038	0.3286	-3.055	0.00225 **

Phi coefficients (precision model with identity link):

	Estimate	Std. Error	z value	p-value
(phi)	29.50	11.91	2.476	0.0133 *

Type of estimator: ML (maximum likelihood)
Log-likelihood: 13.97 on 5 Df
Pseudo R-squared: 0.7404
Number of iterations: 33 (BFGS) + 2 (Fisher scoring)

Model 3:
betareg(SCIprop ~ Class + Treecoverage, data = InfPoint2RBD)

Standardized weighted residuals 2:

Min	1Q	Median	3Q	Max
-2.4563	-0.4451	0.0000	0.8961	1.5544

Coefficients (mean model with logit link):

	Estimate	Std. Error	z value	p-value
(Intercept)	0.18509	0.08423	2.197	0.0280 *
ClassII	-0.59130	0.13449	-4.397	1.1×10^{-5} ***
ClassIII	-2.38096	0.25441	-9.359	$< 2 \times 10^{-16}$ ***
Treecoverage	0.60144	0.30789	1.953	0.0508 .

Phi coefficients (precision model with identity link):

	Estimate	Std. Error	z value	p-value
(phi)	188.5	100.6	1.874	0.0609 .

Type of estimator: ML (maximum likelihood)
Log-likelihood: 14.15 on 5 Df
Pseudo R-squared: 0.9737
Number of iterations: 163 (BFGS) + 3 (Fisher scoring)

Model 4 (final, with RBD data):
betareg(SCIprop ~ Class, data = InfPoint2RBD)

Standardized weighted residuals 2:

Min	1Q	Median	3Q	Max
-1.9606	-1.1479	0.7106	0.9803	1.5852

Coefficients (mean model with logit link):

	Estimate	Std. Error	z value	p-value
(Intercept)	0.1845	0.1052	1.754	0.079437 .
ClassII	-0.5895	0.1680	-3.510	0.000449 ***
ClassIII	-2.0708	0.2158	-9.594	$< 2 \times 10^{-16}$***

Phi coefficients (precision model with identity link):

	Estimate	Std. Error	z value	p-value
(phi)	120.5	64.2	1.877	0.0606 .

Type of estimator: ML (maximum likelihood)
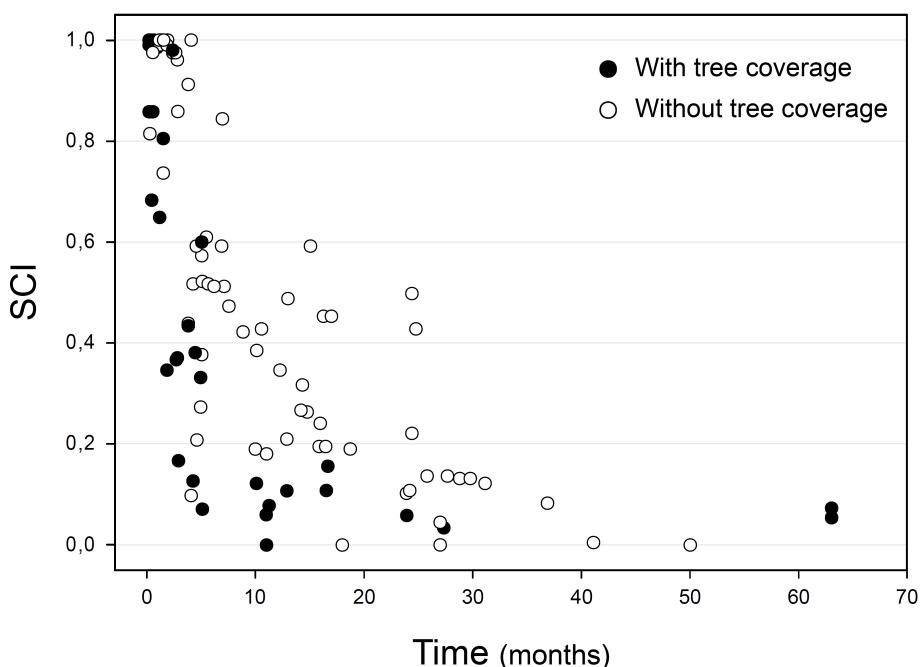Log-likelihood: 12.58 on 4 Df
Pseudo R-squared: 0.9408
Number of iterations: 528 (BFGS) + 3 (Fisher scoring)

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