**Supplementary Tables**

**Table S1.** Sampling effort for the study of nesting *Chelonia mydas* on Trindade Island. Monitoring season, months, and total days, number of measured turtles, and number of turtles with CCL ≤ 108 cm.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Monitoring Season  | Monitoring Months  | Days Monitored  | No. Females Measured | No. marked turtles w/ CCL ≤ 108 cm  |
| 1985/1986 | Feb-Apr | 53 | 379 | 58 |
| 1989/1990 | Mar | 4 | 61 | 9 |
| 1991/1992 | Jan-May | 128 | 449 | 56 |
| 1993/1994 | Apr-Jul | 197 | 74 | 20 |
| 1994/1995 | Oct-Oct | 344 | 416 | 80 |
| 1995/1996 | Oct-Jun | 247 | 448 | 82 |
| 1996/1997 | Feb-Feb | 61 | 228 | 34 |
| 1997/1998 | Jan-Feb | 40 | 20 | 3 |
| 1998/1999 | Dec-Feb | 60 | 355 | 64 |
| 1999/2000 | Dec-Apr | 121 | 284 | 55 |
| 2001/2002 | Feb-Mar | 13 | 61 | 13 |
| 2002/2003 | Feb | 3 | 30 | 3 |
| 2006/2007 | Dec-Jul | 189 | 257 | 111 |
| 2007/2008 | No Data | No Data | 10 | 0 |
| 2008/2009 | Dec-Jun | 210 | 312 | 96 |
| 2009/2010 | Dec-Jun | 213 | 343 | 154 |
| 2010/2011 | Dec-May | 60 | 458 | 181 |
| 2011/2012 | Nov-Jun | 180 | 251 | 86 |
| 2012/2013 | Nov-May | 183 | 516 | 238 |
| 2013/2014 | Apr-Jul | 105 | 20 | 5 |
| 2014/2015 | Dec-Jun | 182 | 381 | 202 |
| 2015/2016 | Dec-Apr | 180 | 152 | 58 |
| 2016/2017 | Dec-Apr | 181 | 625 | 325 |
|   |   |   |  |  |

**Table S2.** Mean, minimum, and maximum CCL of turtles that laid eggs in Trindade for each breeding season.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Year** | **Mean CCL** | **SD** | **Min. CCL** | **Max. CCL** |
| 1985/1986 | 115.8 | 5.4 | 100 | 134 |
| 1989/1990 | 115.0 | 5.6 | 103 | 130 |
| 1991/1992 | 116.9 | 5.7 | 101 | 143 |
| 1993/1994 | 113.0 | 4.4 | 103 | 128 |
| 1994/1995 | 114.9 | 5.2 | 95 | 142 |
| 1995/1996 | 115.7 | 5.6 | 102 | 132 |
| 1996/1997 | 116.5 | 6.0 | 102 | 143 |
| 1997/1998 | 116.0 | 4.7 | 105 | 124 |
| 1998/1999 | 115.6 | 5.5 | 99 | 137 |
| 1999/2000 | 115.7 | 5.9 | 101 | 141 |
| 2001/2002 | 114.3 | 5.7 | 99 | 132 |
| 2002/2003 | 116.2 | 5.6 | 104 | 127 |
| 2006/2007 | 112.3 | 6.7 | 98 | 133 |
| 2007/2008 | 115.7 | 4.8 | 109 | 124 |
| 2008/2009 | 113.5 | 5.8 | 97 | 131 |
| 2009/2010 | 111.9 | 6.4 | 94 | 129 |
| 2010/2011 | 112.2 | 6.2 | 96 | 132 |
| 2011/2012 | 112.7 | 5.9 | 98 | 134 |
| 2012/2013 | 111.0 | 6.1 | 92 | 132 |
| 2013/2014 | 112.4 | 4.6 | 99 | 119 |
| 2014/2015 | 110.6 | 6.1 | 94 | 132 |
| 2015/2016 | 111.5 | 5.9 | 96 | 126 |
| 2016/2017 | 110.3 | 6.5 | 89 | 130 |

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**Figure S1.** Chronology of anthropogenic influences and impacts on Trindade Island fauna. Timeline entries indicate the most relevant events of occupation, use, and introduction of invasive species at Trindade Island.

**Script CCL ~ Year**

**#Packages**

library(mgcv)

library(ggplot2)

library(ggthemes)

**#Females**

data=read.csv2("recrut.csv", dec=",")

head(data)

View(data)

**#Constuction in GAM**

gam\_j = gam(ccl ~ s(ano, k=10),

 family=scat(link="identity"),

 method = "REML", data=data)

**#Construction of predicted values**

x\_new = seq(0, max(data$ano), length.out = 100)

y\_pred = predict(gam\_j, data.frame(ano = x\_new))

**#Construction of predicted values**

par(mfrow = c(2,2))

gam.check(gam\_j)

**#Model evaluation**

anova.gam(gam\_j)

summary(gam\_j)

**#Graphic**

ggplot(data, aes(ano, ccl)) + theme\_base()+ geom\_point() +

 labs(y = 'CCL mean (cm)',x = 'Years') +

 geom\_smooth(method= 'gam', formula = y ~s(x)) +

 geom\_point(data = data, aes(y = ccl),

 colour = 'black', size = 3)

**Script Annual Somatic Growth Rate**

dados=read.csv2("crescimento.csv", dec=".")

head(dados)

View(dados)

**#Models**

mnull=glm(rate~1, family = quasipoisson, data = dados)

model1=glm(rate~ccl+time, family = quasipoisson, data=dados)

model2=glm(rate~ccl, family = quasipoisson, data=dados)

model3=glm(rate~time, family = quasipoisson, data=dados)

**#Testing**

Anova (mnull, model1,model2, model3, test="F")

mnull=glm(rate~1, family = quasipoisson, data = dados)

anova(mnull, test="F")

**#Summary**

summary(mnull)

**#** **Effect size**

-exp()