```
> mEngland<-gamm(sqrt(sqrt(relativeOC))~s(WEEK,k=8)+Year+s(log(Time.Effort+1))+s(log(Distance.Effort+1)),random=list(County=~1,Species=~1),data=na.omit(England1))
> summary(mEngland$gam)

Family: gaussian
Link function: identity

Formula:
sqrt(sqrt(relativeOC)) ~ s(WEEK, k = 8) + Year + s(log(Time.Effort +
    1)) + s(log(Distance.Effort + 1))

Parametric coefficients:
            Estimate Std. Error t value Pr(>|t|)
(Intercept) 0.558493   0.003620 154.274  < 2e-16 ***
Year2020    0.005028   0.001155   4.354 1.34e-05 ***
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

Approximate significance of smooth terms:
                             edf Ref.df      F  p-value
s(WEEK)                    4.492  4.492 219.11  < 2e-16 ***
s(log(Time.Effort + 1))    3.906  3.906  20.45 3.58e-16 ***
s(log(Distance.Effort + 1)) 5.328  5.328  52.38  < 2e-16 ***
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

R-sq.(adj) =  0.0331
  Scale est. = 0.0058622  n = 18106
> round(((4^(summary(mEngland$gam)$p.coeff[1]+summary(mEngland$gam)$p.coeff[2])- 4^(summary(mEngland$gam)$p.coeff[1])) / 4^(summary(mEngland$gam)$p.coeff[1]))*100)
(Intercept)
          1
```

```
> mScotland<-gamm(sqrt(sqrt(relativeOC))~s(WEEK,k=8)+Year+s(log(Time.Effort+1))+s(log(Distance.Effort+1)),random=list(County=~1,Species=~1),data=na.omit(Scotland1))
> summary(mScotland$gam)

Family: gaussian
Link function: identity

Formula:
sqrt(sqrt(relativeOC)) ~ s(WEEK, k = 8) + Year + s(log(Time.Effort +
    1)) + s(log(Distance.Effort + 1))

Parametric coefficients:
             Estimate Std. Error t value Pr(>|t|)
(Intercept)  0.566717   0.006674  84.917   <2e-16 ***
Year2020    -0.001729   0.003128  -0.553     0.58
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

Approximate significance of smooth terms:
                            edf Ref.df     F  p-value
s(WEEK)                   3.349  3.349 44.81  < 2e-16 ***
s(log(Time.Effort + 1))   5.338  5.338 10.35 2.42e-10 ***
s(log(Distance.Effort + 1)) 2.944  2.944 16.92 1.29e-10 ***
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

R-sq.(adj) =  0.0509
  Scale est. = 0.009063  n = 3866
> round(((4^(summary(mScotland$gam)$p.coeff[1]+summary(mScotland$gam)$p.coeff[2])- 4^(summary(mScotland$gam)$p.coeff[1])) / 4^(summary(mScotland$gam)$p.coeff[1]))*100)
(Intercept)
          0
```

```
> mWales<-gamm(sqrt(sqrt(relativeOC))~s(WEEK,k=8)+Year+s(log(Time.Effort+1))+s(log(Distance.Effort+1)),random=list(County=~1,Species=~1),data=na.omit(Wales1))
> summary(mWales$gam)

Family: gaussian
Link function: identity

Formula:
sqrt(sqrt(relativeOC)) ~ s(WEEK, k = 8) + Year + s(log(Time.Effort +
    1)) + s(log(Distance.Effort + 1))

Parametric coefficients:
            Estimate Std. Error t value Pr(>|t|)
(Intercept)  0.625554   0.008383  74.620   <2e-16 ***
Year2020    -0.003507   0.005572  -0.629    0.529
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

Approximate significance of smooth terms:
                           edf Ref.df     F  p-value
s(WEEK)                  3.208  3.208 16.13 7.76e-11 ***
s(log(Time.Effort + 1))  1.000  1.000  0.11     0.74
s(log(Distance.Effort + 1)) 3.122  3.122 11.33 1.62e-07 ***
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

R-sq.(adj) =  0.0547
  Scale est. = 0.011395  n = 1486
> round(((4^(summary(mWales$gam)$p.coeff[1]+summary(mWales$gam)$p.coeff[2])- 4^(summary(mWales$gam)$p.coeff[1])) / 4^(summary(mWales$gam)$p.coeff[1]))*100)
(Intercept)
          0
```

```
> mNIreland<-gamm(sqrt(sqrt(relativeOC))~s(WEEK,k=8)+Year+s(log(Time.Effort+1))+s(log(Distance.Effort+1)),random=list(County=~1,Species=~1),data=na.omit(NIreland1))
> summary(mNIreland$gam)

Family: gaussian
Link function: identity

Formula:
sqrt(sqrt(relativeOC)) ~ s(WEEK, k = 8) + Year + s(log(Time.Effort +
    1)) + s(log(Distance.Effort + 1))

Parametric coefficients:
            Estimate Std. Error t value Pr(>|t|)
(Intercept)  0.74412    0.02548  29.201   <2e-16 ***
Year2020    -0.01306    0.01019  -1.282    0.201
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

Approximate significance of smooth terms:
                           edf Ref.df     F  p-value
s(WEEK)                  1.000  1.000 9.207 0.002567 **
s(log(Time.Effort + 1))  5.618  5.618 4.192 0.000833 ***
s(log(Distance.Effort + 1)) 1.000  1.000 1.552 0.213631
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

R-sq.(adj) =  0.0885
  Scale est. = 0.0099895  n = 404
> round(((4^(summary(mNIreland$gam)$p.coeff[1]+summary(mNIreland$gam)$p.coeff[2])- 4^(summary(mNIreland$gam)$p.coeff[1])) / 4^(summary(mNIreland$gam)$p.coeff[1]))*100)
(Intercept)
         -2
```