

```
> Halibut<-read.csv("Halibut Ocean Wise Contribution.csv")
> head(Halibut)
  Weeks Landings Year Covid
1    12   278502 2020   yes
2    13   366762 2020   yes
3    14   494141 2020   yes
4    15   658097 2020   yes
5    16   885083 2020   yes
6    17  1156056 2020   yes
> m2<-gam(Landings~Covid+s(Weeks),data=Halibut,family=quasipoisson)
> summary(m2)
```

Family: quasipoisson  
Link function: log

Formula:  
Landings ~ Covid + s(Weeks)

Parametric coefficients:

	Estimate	Std. Error	t value	Pr(> t )
(Intercept)	14.89147	0.01427	1043.53	<2e-16 ***
Covidyes	-0.31221	0.02070	-15.08	<2e-16 ***

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

Approximate significance of smooth terms:

	edf	Ref.df	F	p-value
s(Weeks)	7.373	8.292	359	<2e-16 ***

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

R-sq.(adj) = 0.991 Deviance explained = 98.4%  
GCV = 29159 Scale est. = 20243 n = 69

```
> ((exp(14.89147-0.31221)-exp(14.89147))/exp(14.89147))*100
[1] -26.81722
```

**Landings declined by 26%**