Disturbance_Productivity_Hypothesis

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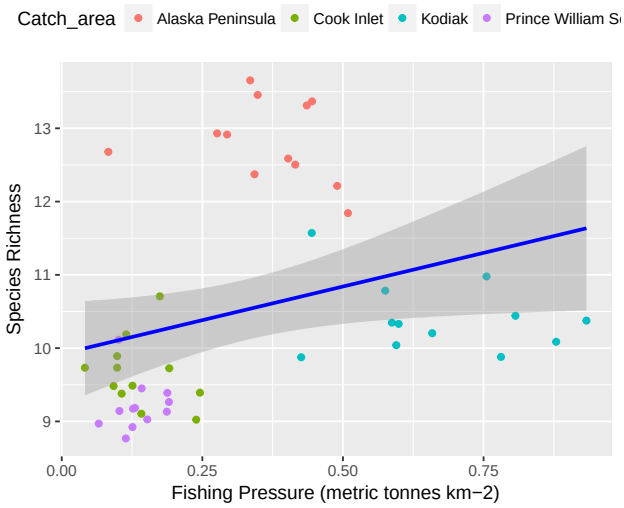
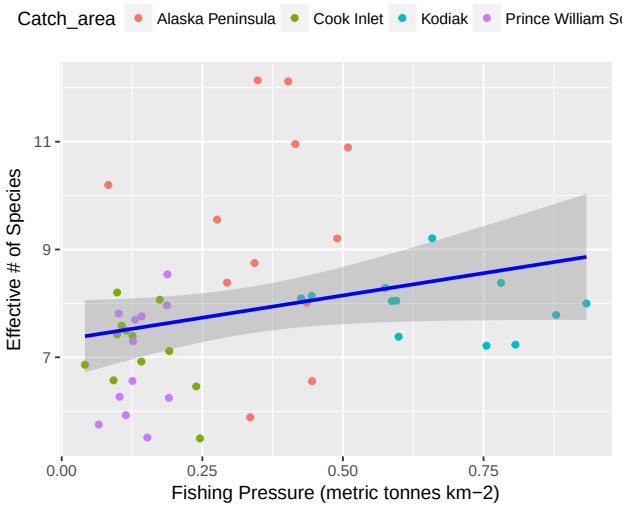
Fishing Pressure effects on Diversity Metrics

with Linear fits

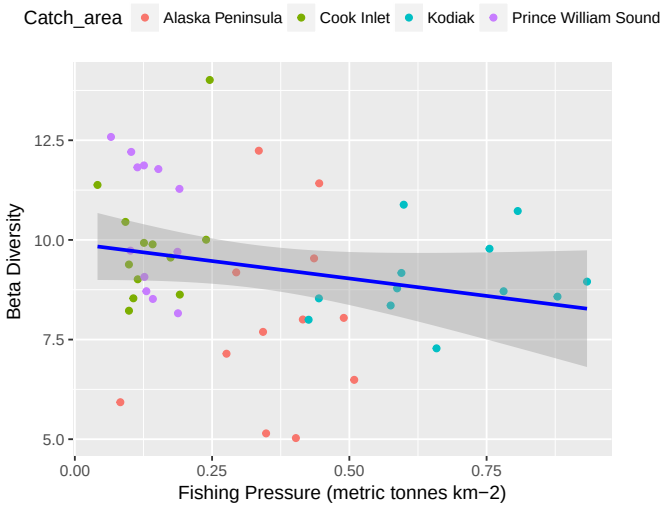
Adj R^2 = 0.071574 p = 0.036831



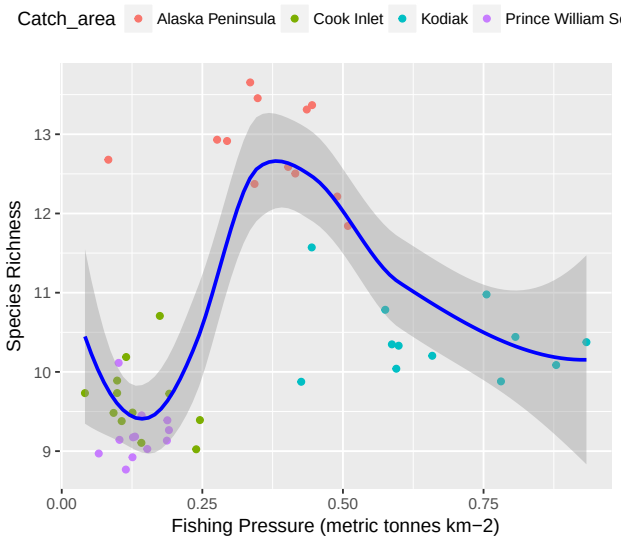
Adj R^2 = 0.0492 p = 0.070365

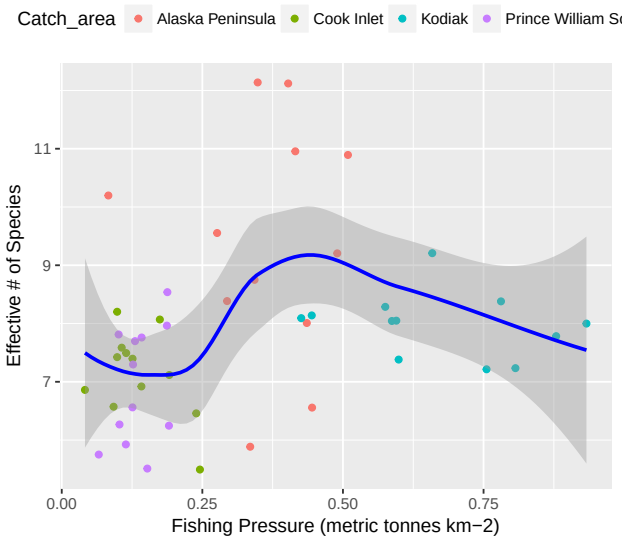


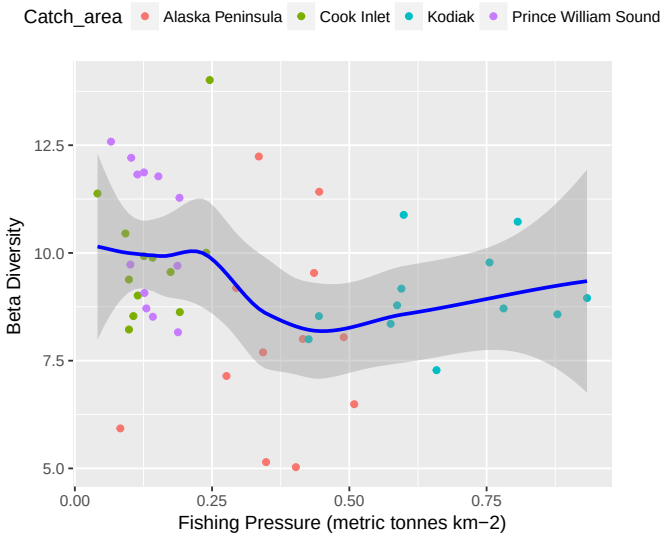
Adj R^2 = 0.030095 p = 0.12375



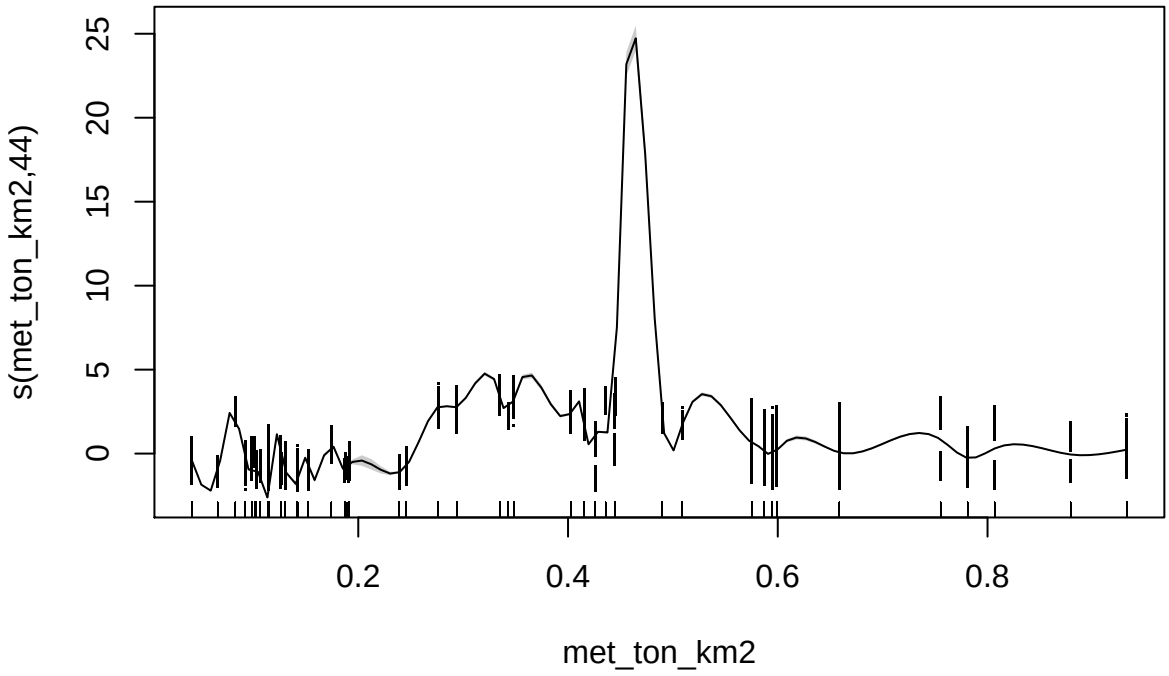
with Loess fits







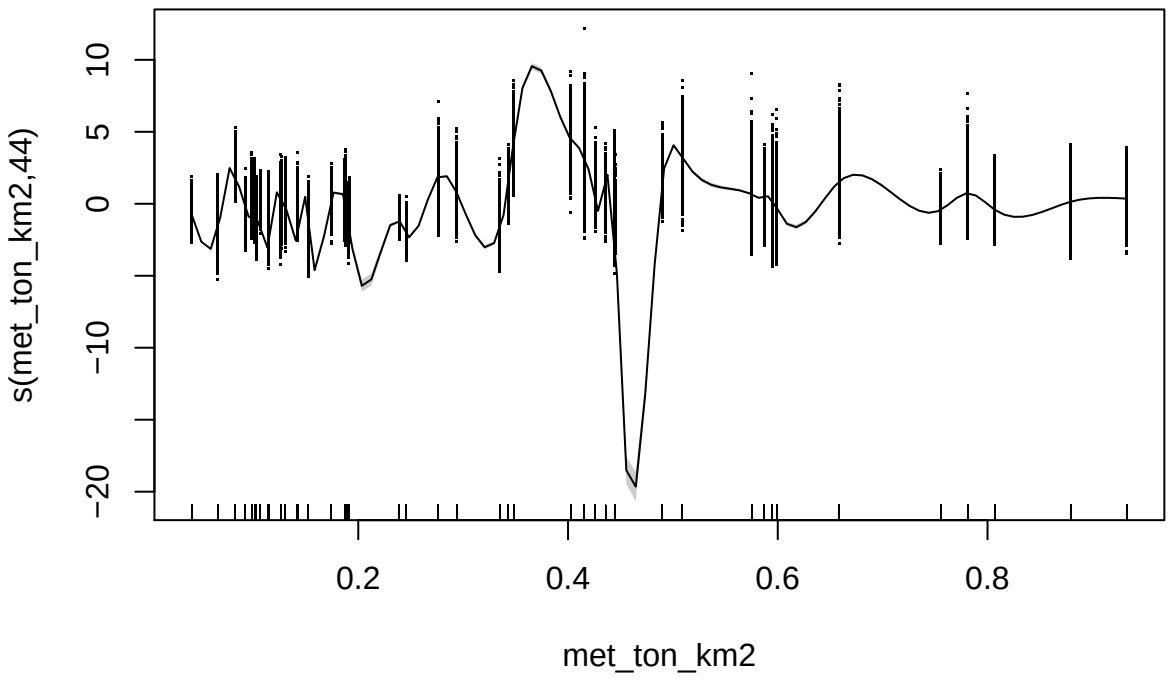
With GAM fits




```
##             df      AIC
## gam1   3.00000 410202.6
## gam1a  3.99991 392244.4
## gam1b 40.99896 307930.3
## gam1c 45.99909 299626.7
```

```
# Alpha Diversity
gam2 <- gam(Eff_Num_Sp~met_ton_km2, data=dist_df, family=gaussian)  # essentially equal to glm()
gam2a <- gam(Eff_Num_Sp~s(met_ton_km2, k=45), data=dist_df, family=gaussian)

plot(gam2a, pages=1, residuals=TRUE, shade=T)
```

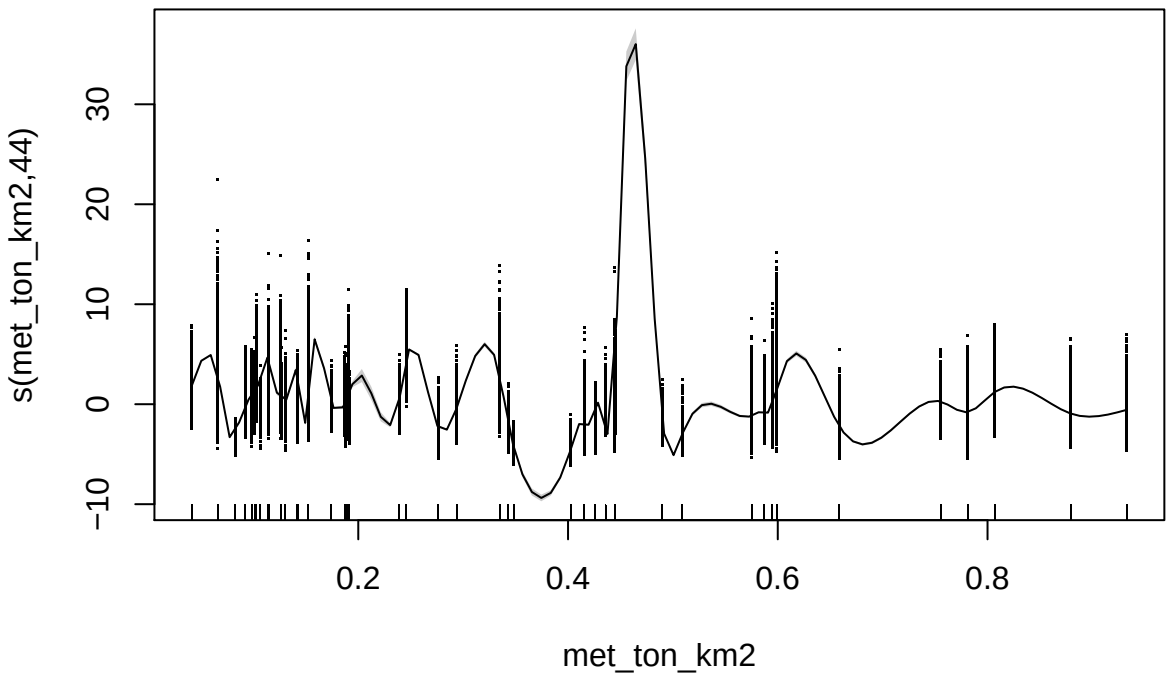



```
#summary(gam2) ; summary(gam2a)
AIC(gam2, gam2a)
```

```
##             df      AIC
## gam2   3.00000 451355.8
## gam2a 45.99906 370901.7
```

```
# Beta Diversity
gam3 <- gam(Exp_B_Div~met_ton_km2, data=dist_df, family=gaussian)  # essentially equal to glm()
gam3a <- gam(Exp_B_Div~s(met_ton_km2, k=45), data=dist_df, family=gaussian)

plot(gam3a, pages=1, residuals=TRUE, shade=T)
```




```
#summary(gam3) ; summary(gam3a)
AIC(gam3, gam3a)
```

```
##             df      AIC
## gam3   3.00000 543408.7
## gam3a 45.99928 476753.7
```