predicted_model_fits

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3/8/2021

```
library(here)
library(tidyverse)
library(pscl)
```

Load libraries

Import data

```
dat <- read.csv(here("hook_and_line_data", "CPUE_data_for_model.csv"), row.names = 1)
dat$month <- as.character(dat$month)
```

```
# Angler hours not as offset
yelloweye_zip_effort_depth <- zeroinfl(yelloweye_catch ~
                            angler_hours|
                            # Predictors of detection
                            mean_depth, data = dat)
summary(yelloweye_zip_effort_depth)
```

```
##
## Call:
## zeroinfl(formula = yelloweye_catch ~ angler_hours | mean_depth, data = dat)
##
## Pearson residuals:
##     Min      1Q  Median      3Q     Max
## -0.5580 -0.2434 -0.2145 -0.1925 11.1309
##
## Count model coefficients (poisson with log link):
##              Estimate Std. Error z value Pr(>|z|)
## (Intercept)  -0.14941    0.26771  -0.558  0.57677
## angler_hours  0.07932    0.02332   3.402  0.00067 ***
##
## Zero-inflation model coefficients (binomial with logit link):
##              Estimate Std. Error z value Pr(>|z|)
## (Intercept)  2.927968   0.315057   9.293  < 2e-16 ***
## mean_depth  -0.011045   0.003725  -2.965  0.00303 **
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
```

```
##
## Number of iterations in BFGS optimization: 9
## Log-likelihood: -216.8 on 4 Df
```

```
AIC(yelloweye_zip_effort_depth)
```

```
## [1] 441.6204
```

```
mm <- model.matrix(yelloweye_zip_effort_depth)

# Plot predicted
newdata <- data.frame(cbind(rep(mean(dat$angler_hours), 200), c(1:200)))
colnames(newdata) <- c("angler_hours", "mean_depth")
yelloweye_predicts <- data.frame(c(1:200), predict(yelloweye_zip_effort_depth, newdata = newdata))
colnames(yelloweye_predicts) <- c("mean_depth", "predicted_yelloweye")
ggplot(yelloweye_predicts, aes(x = mean_depth, y = predicted_yelloweye)) +
  geom_point()
```