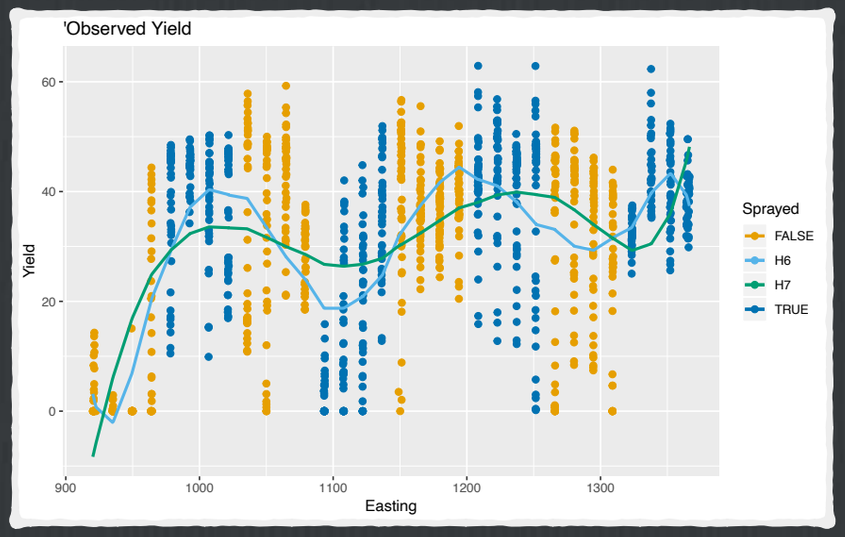
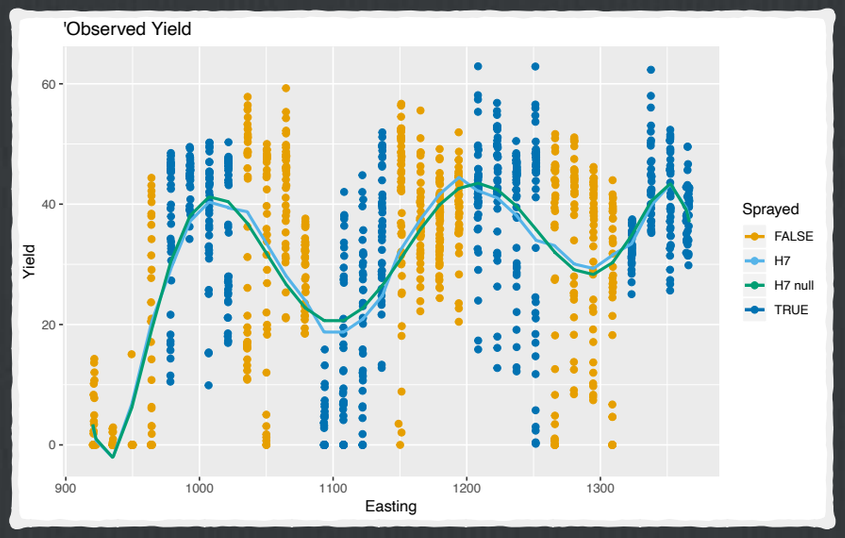
Model Comparison





☐ Likelihood test to compare H_6 and H_7

```
☐ Likelihood ratio test
  Model 1: Yield ~ poly(Easting, 6) + Sprayed
  Model 2: Yield ~ poly(Easting, 7) + Sprayed
    #Df  LogLik Df  Chisq Pr(>Chisq)
  1   9 -4983.0
  2  10 -4861.9  1 242.29  < 2.2e-16 ***
```

☐ Likelihood test to compare H_7 with and without treatment effect

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☐ Likelihood ratio test
  Model 1: Yield ~ poly(Easting, 7)
  Model 2: Yield ~ poly(Easting, 7) + Sprayed
    #Df  LogLik Df  Chisq Pr(>Chisq)
  1   9 -4869.0
  2  10 -4861.9  1 14.276  0.0001579 ***
```

☐ But,

$$H_6 : \tau = -0.86$$

$$H_7 : \tau = -3.02$$

Model in Two Dimensions

- We extend the model by including position in two-dimensions

$$H_1 : y_{ij} = \beta_0 + \beta_1 E_{ij} + \beta_2 N_{ij} + \tau_i + e_{ij}$$

$$H_2 : y_{ij} = \beta_0 + \beta_1 E_{ij} + \beta_2 N_{ij} + \beta_3 E_{ij}^2 + \beta_2 N_{ij}^2 + \beta_5 E_{ij} \times N_{ij} + \tau_i + e_{ij}$$

$\ldots$

- We can expand our area to be analyzed to include more of the treated strips.

- Since I'm no longer analyzing as pairs, I can exclude part of the untreated area that avoids a wetland.