piecewise

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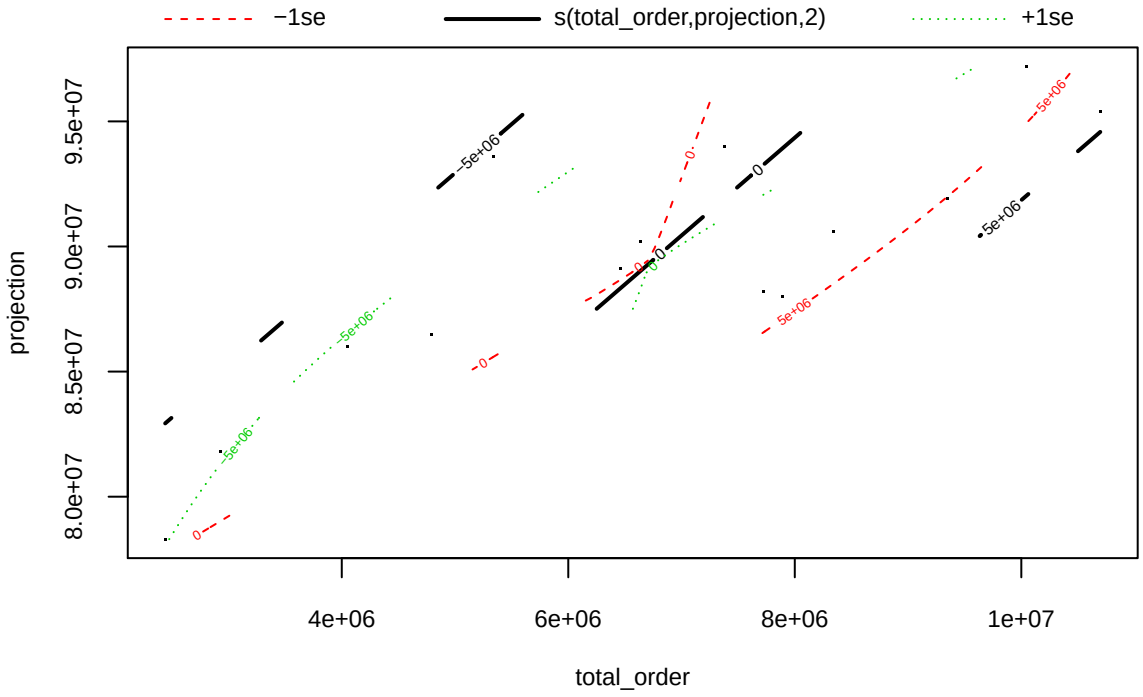
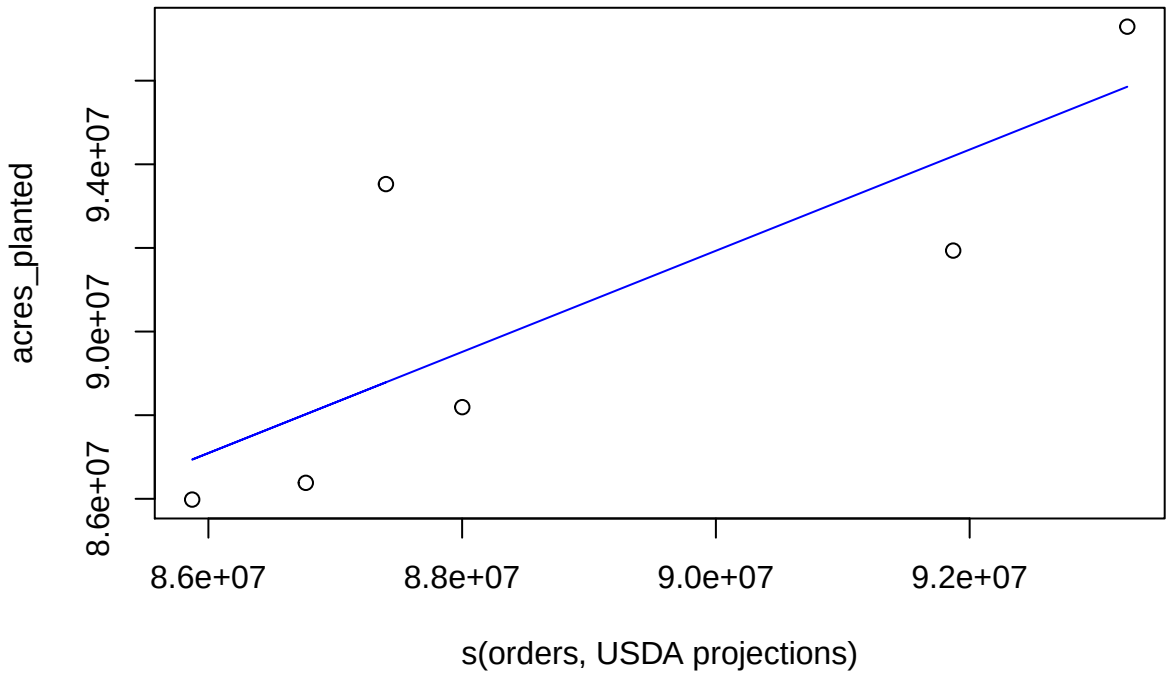
9/14/2020

	acres ~ gam(s(projection, sales))
MAE (Million Acres)	2.19
MAPE (%)	2.36
RMSE (Million Acres)	2.83

	acres ~ gam(s(projection, sales))
MAE (Million Acres)	1.82
MAPE (%)	1.93
RMSE (Million Acres)	3.00



/newline



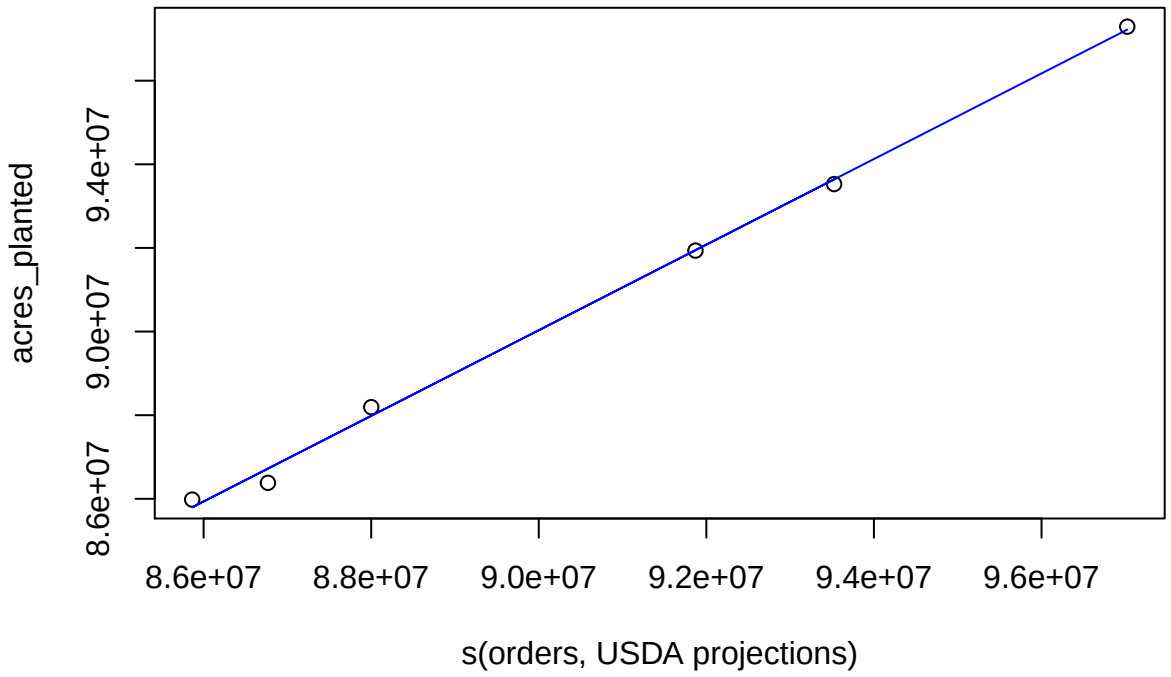

```
##
## Family: gaussian
## Link function: identity
##
## Formula:
## acres_corn_US ~ s(total_order, projection, k = 8)
##
## Estimated degrees of freedom:
## 2  total = 3
##
## REML score: 185.8684
```

```
##
## Family: gaussian
## Link function: identity
##
## Formula:
## acres_corn_US ~ s(total_order, projection, k = 8)
##
## Parametric coefficients:
##             Estimate Std. Error t value Pr(>|t|)
## (Intercept) 89882857    1038607   86.54   <2e-16 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Approximate significance of smooth terms:
##                            edf Ref.df     F p-value
## s(total_order,projection)   2  2.001 4.047  0.0476 *
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## R-sq.(adj) =  0.319   Deviance explained = 42.4%
## -REML = 185.87  Scale est. = 1.5102e+13  n = 14
```

	acres ~ gam(s(projection, sales), k=8, method = GCV.Cp)
MAE (Million Acres)	0.17
MAPE (%)	0.19
RMSE (Million Acres)	0.21

```
##
## Family: gaussian
## Link function: identity
##
## Formula:
## acres_corn_US ~ s(total_order, projection, k = 8)
##
## Estimated degrees of freedom:
## 5.77  total = 6.77
##
## GCV score: 1.839927e+13
```

```
##
## Family: gaussian
## Link function: identity
##
## Formula:
## acres_corn_US ~ s(total_order, projection, k = 8)
##
## Parametric coefficients:
##             Estimate Std. Error t value Pr(>|t|)
## (Intercept) 89882857     823634   109.1 6.81e-13 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Approximate significance of smooth terms:
##                              edf Ref.df     F p-value
## s(total_order,projection) 5.774  6.588 2.923  0.0778 .
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## R-sq.(adj) =  0.572   Deviance explained = 76.2%
## GCV = 1.8399e+13  Scale est. = 9.4972e+12  n = 14
```


acres_planted
8.6e+07
9.0e+07
9.4e+07
8.6e+07
8.8e+07
9.0e+07
9.2e+07
9.4e+07
9.6e+07
s(orders, USDA projections)