

What's the Catch? Recreational Fishing Trends in North Carolina (1990-2019)

https://github.com/ardathdixon/Data_FinalProject

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1 Rationale and Research Questions

- Are there trends in the amount of these fish caught over time?
- Do these trends differ for bluefish, black sea bass, and all species combined?
- What could these trends look like in the future?

2 Dataset Information

Data retrieved from NOAA Marine Recreational Information Program download query tool

- Bimonthly recreational fisheries catch totals for NC, 1990-2019
- All species, bluefish (*Pomatomus saltatrix*), and black sea bass (*Centropristis striata*)
- Multiple areas and modes of fishing

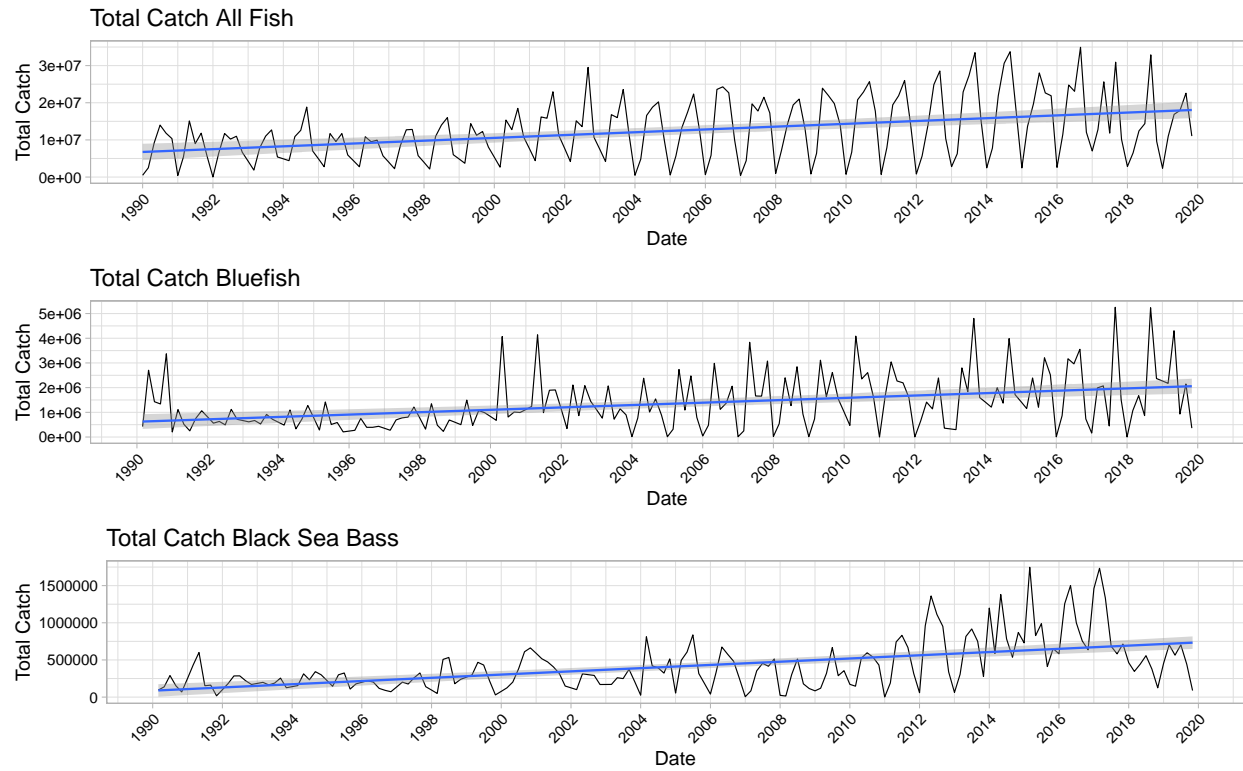
3 Exploratory Analysis

```
## # A tibble: 6 x 8
##   YEAR  WAVE SUB_REG  ST   SP_CODE MODE_FX AREA_X TOT_CAT
##   <dbl> <dbl>   <dbl> <dbl>   <dbl>   <dbl>   <dbl>   <dbl>
## 1  1990     1     6    37 8710010201     3     1 203578.
## 2  1990     1     6    37 8713040113     3     1  9693.
## 3  1990     1     6    37 8713040115     3     1  3987.
## 4  1990     1     6    37 8777020101     7     5 153212.
## 5  1990     1     6    37 8835440102     7     1  82510.
## 6  1990     1     6    37 8835440601     7     1 25388.

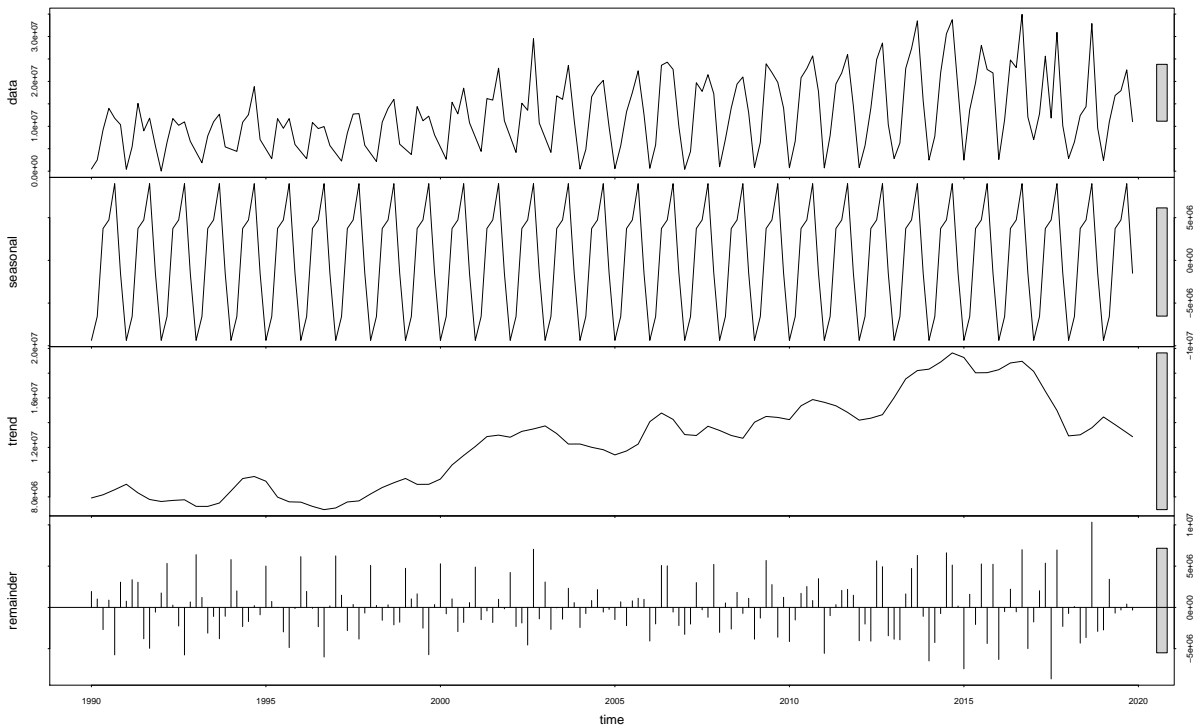
##           DATE TOT_CAT_ALL
## 1 1990-01-01    484714.5
## 2 1990-03-01    2485857.2
## 3 1990-05-01    9215674.2
## 4 1990-07-01   13992342.3
## 5 1990-09-01   11808541.6
## 6 1990-11-01   10354163.5
```

4 Analysis

```
## `geom_smooth()` using formula 'y ~ x'  
## `geom_smooth()` using formula 'y ~ x'  
## `geom_smooth()` using formula 'y ~ x'
```

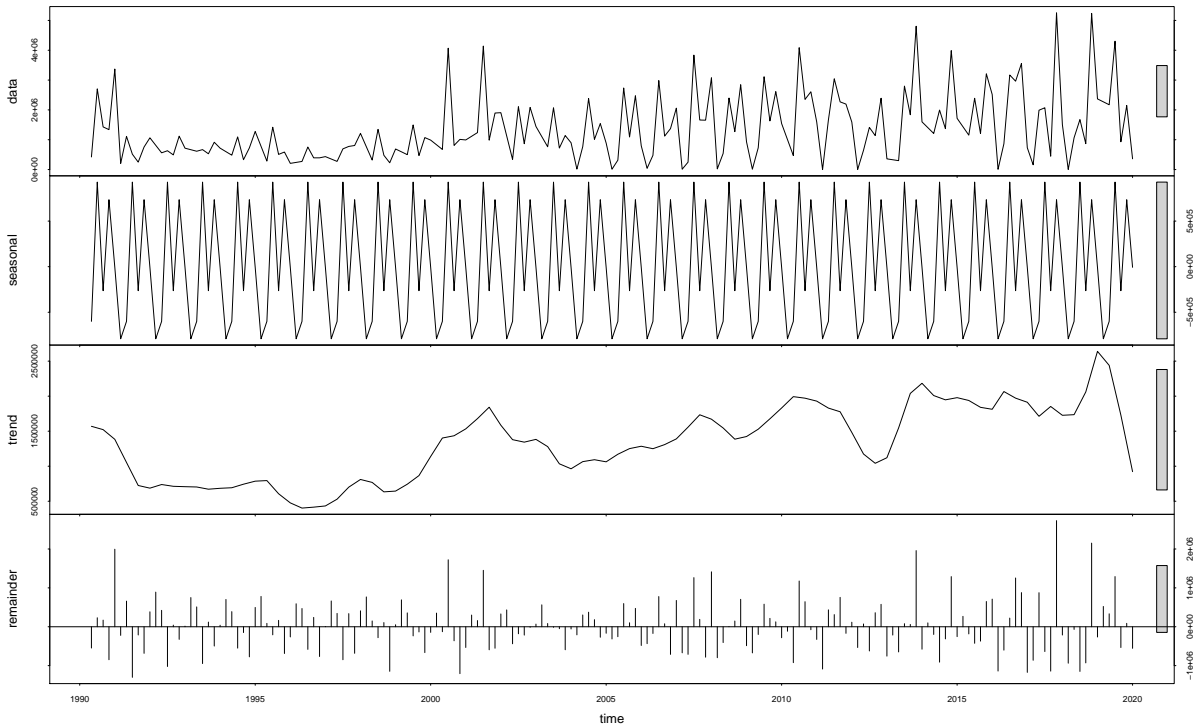


4.1 Question 1: Are there trends in the amount of these fish caught over time?

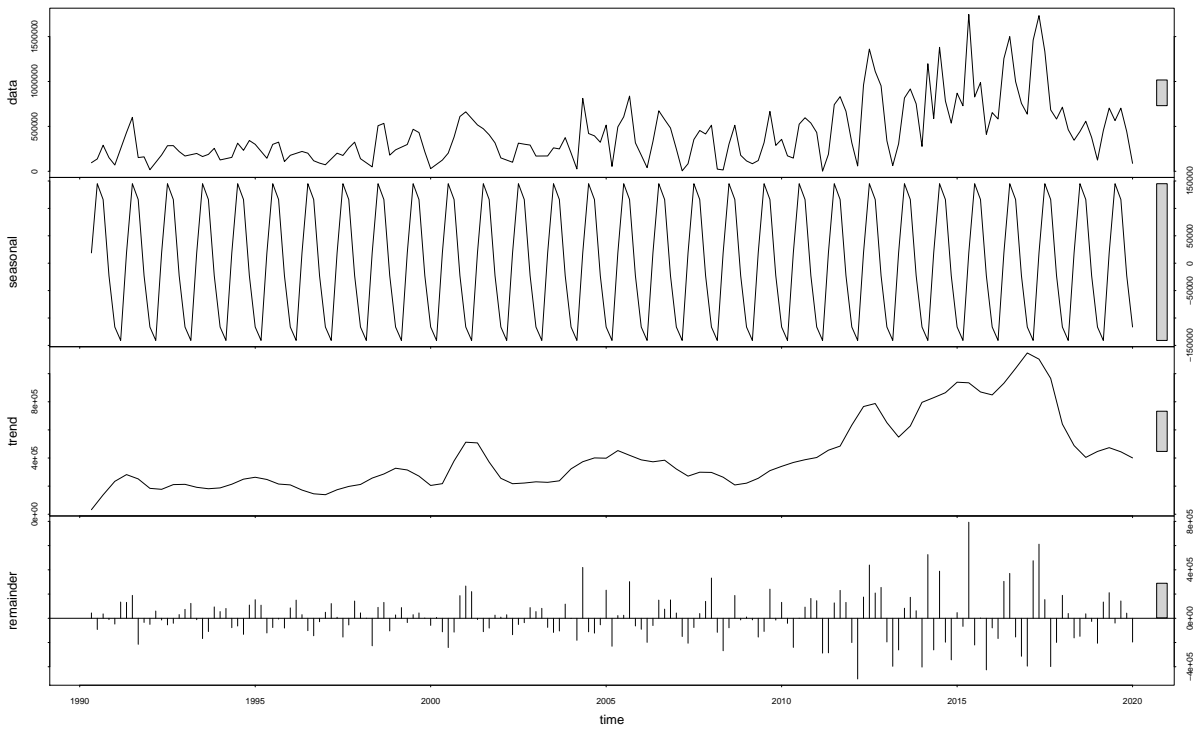


tau = 0.49, 2-sided pvalue =< 2.22e-16

4.2 Question 2: Do these trends differ for bluefish, black sea bass, and all species combined?



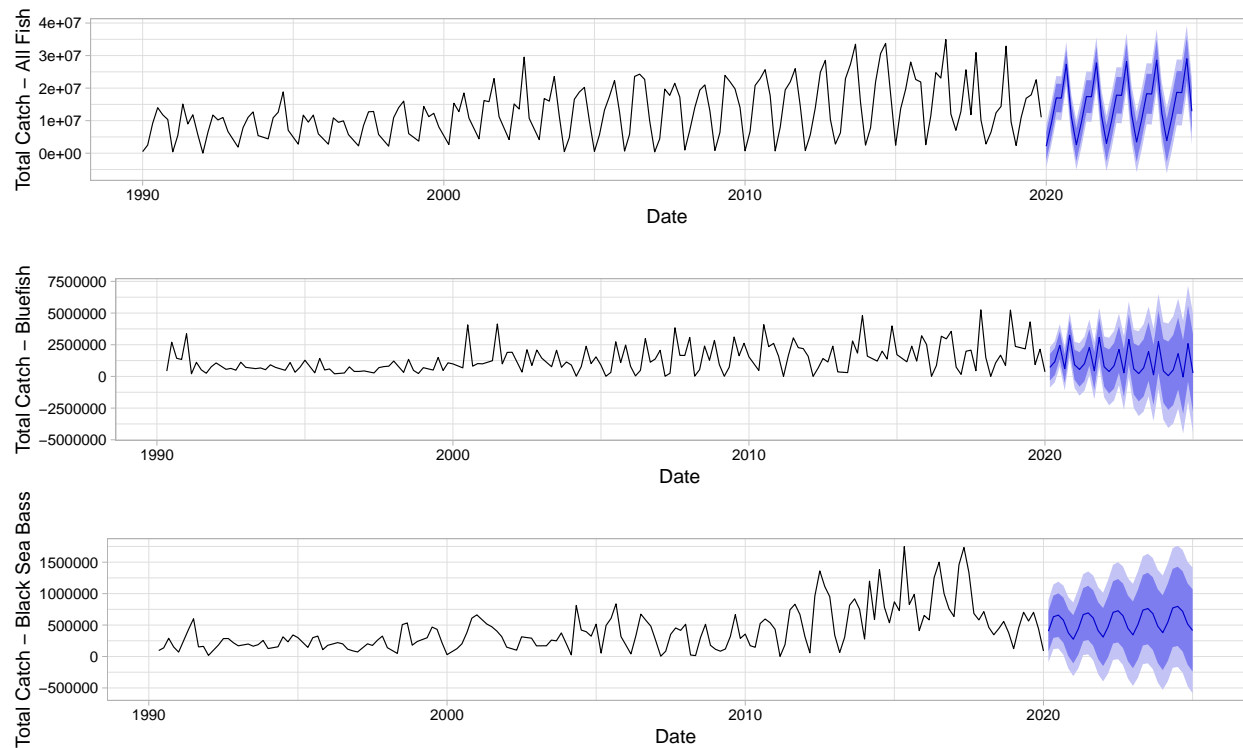
tau = 0.324, 2-sided pvalue =8.7489e-10



`## tau = 0.41, 2-sided pvalue =8.4377e-15`

For both individual species and all species combined, **reject the null hypothesis** that there is no trend.

4.3 Question 3: What could these trends look like in the future?



5 Summary and Conclusions

5.1 Strong seasonal trends

- Bimodal peaks for bluefish
- Possibly due to effort, fish abundance

5.2 Overall positive trend

- Increase in recreational fishing
- Variation from changing regulations, behavior

5.3 Limitations

- Data collection: Estimates based on surveys of fishers
- Interpolation
- Uncertainty in forecasting

5.4 Future recommendations

- Comparisons of other species or other states
- Catch per unit effort
- Include earlier data

6 References

<add references here if relevant, otherwise delete this section>