

Bluefish ESP indicator figures

Abigail Tyrell

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This document contains in-progress bluefish ESP figures. Recompile the .Rmd to view the most recent figures.

Background

Socioeconomic background

Figure 1

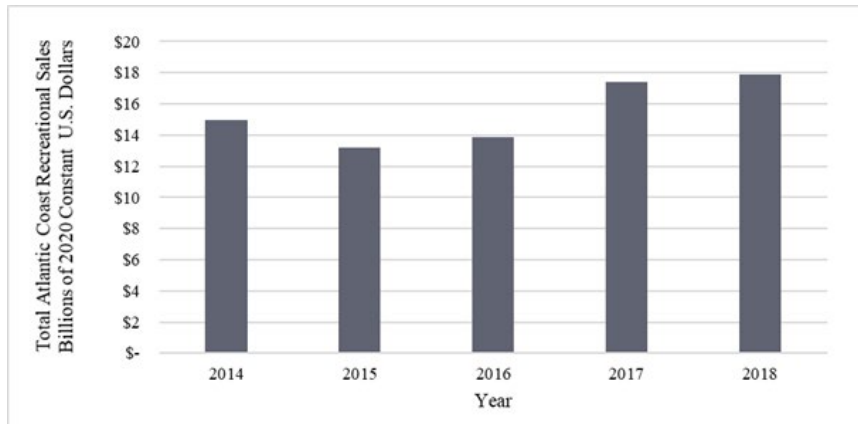


Figure 1. Figure aa. Total annual recreational sales from Atlantic coastal states over 2014-2018 in billions of 2020 constant U.S. Dollars. Data obtained from the Fisheries Economics of the United States Reports (2014-2018). Values were adjusted using the Gross Domestic Product Implicit Price Deflator.

Figure 2

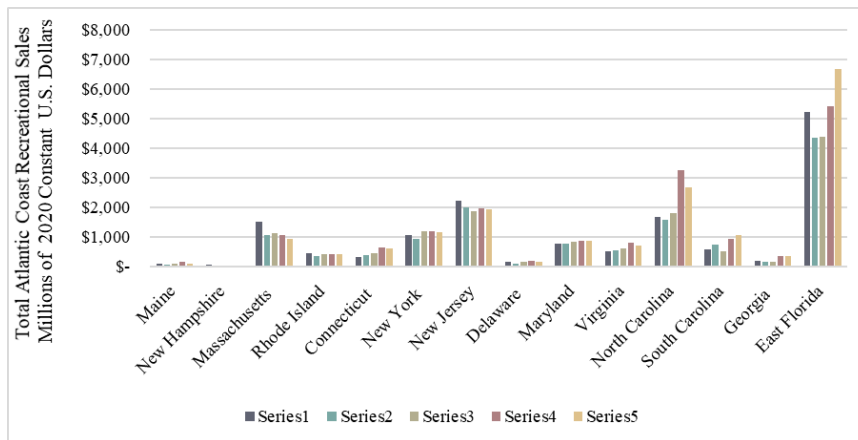


Figure 2. Figure bb. Total annual recreational sales by Atlantic Coastal state from 2014-2018 in millions of 2020 constant U.S. Dollars. Data obtained from the Fisheries Economics of the United States. Values were adjusted using the Gross Domestic Product Implicit Price Deflator.

Figure 3

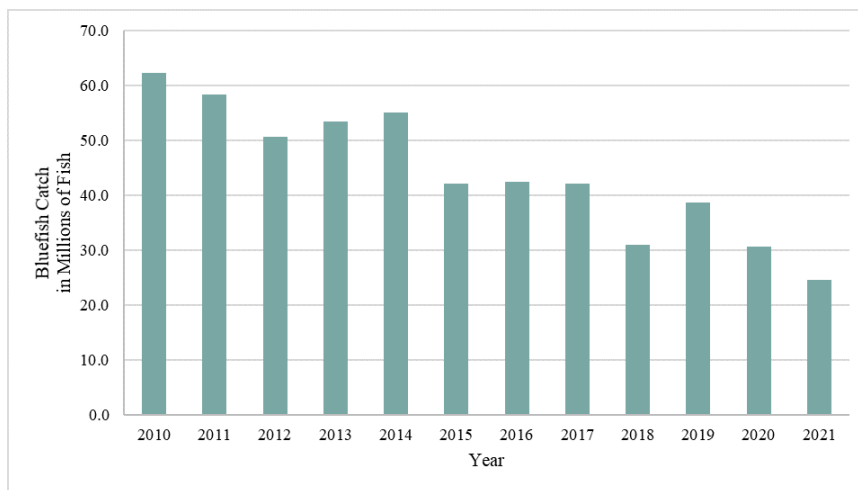


Figure 3. Figure cc Figure 3. Recreational bluefish catch from Atlantic Coastal states over 2010-2021. Data acquired from the Marine Recreational Information Program (MRIP) query tool in January 2022.

Figure 4

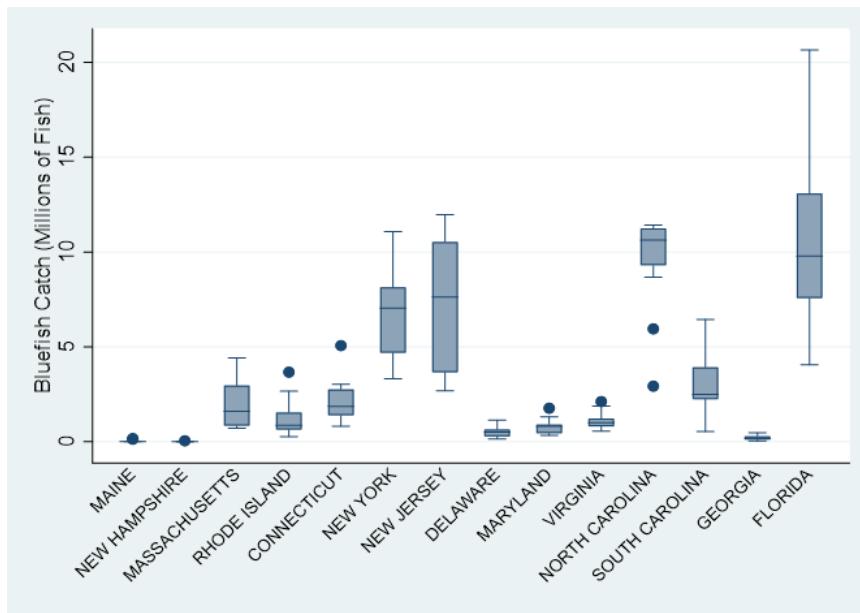


Figure 4. Figure dd. Recreational bluefish catch box plots from 2010-2021 by Atlantic coastal states. Data retrieved from the Marine Recreational Information Program (MRIP) query tool in January 2022.

Figure 5

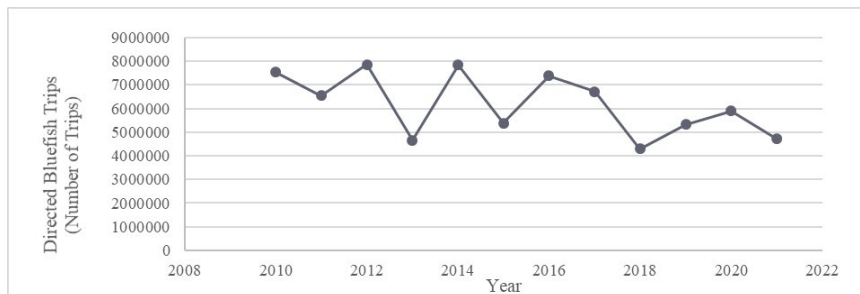


Figure 5. Figure ee. Number of directed recreational bluefish trips from Atlantic coastal states (2010-2021). Data retrieved from the Marine Recreational Information Program (MRIP) query tool in January 2022.

Figure 6

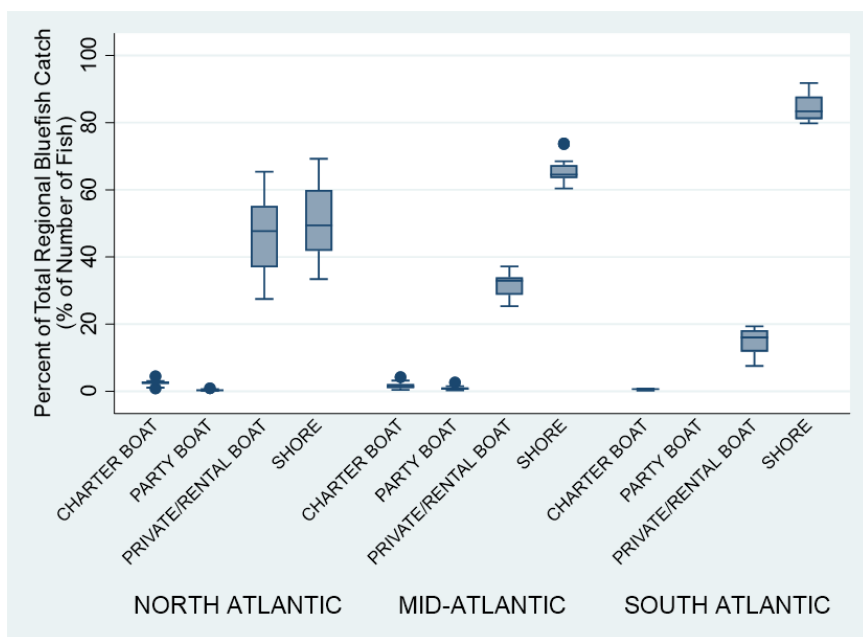


Figure 6. Figure ff. Proportion of regional recreational bluefish catch in number of fish by fishing mode (2010-2021). Data retrieved from the Marine Recreational Information Program (MRIP) query tool in January 2022.

Figure 7

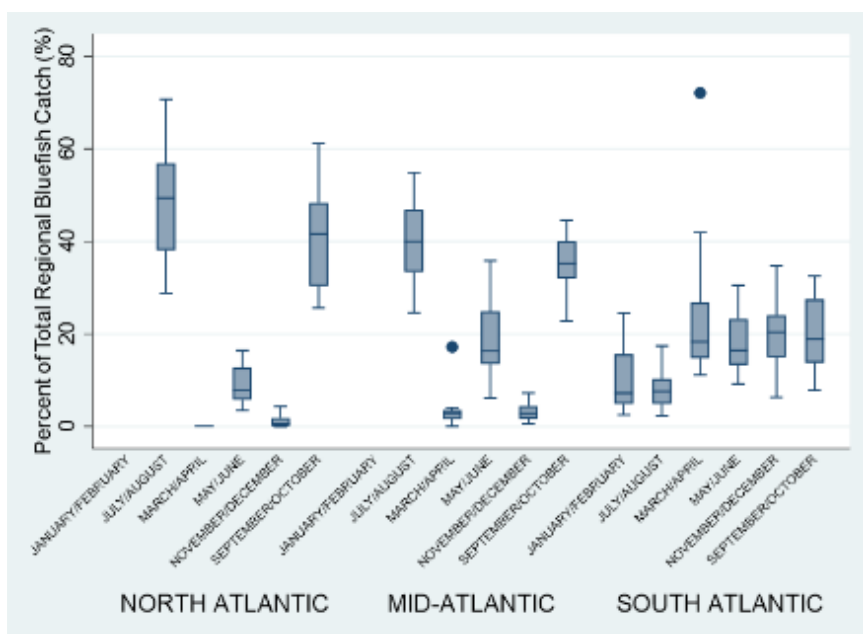


Figure 7. Figure gg. Proportion of total recreational bluefish catch by month grouping and region (2010-2021). Data retrieved from the Marine Recreational Information Program (MRIP) query tool in January 2022

Figure 8

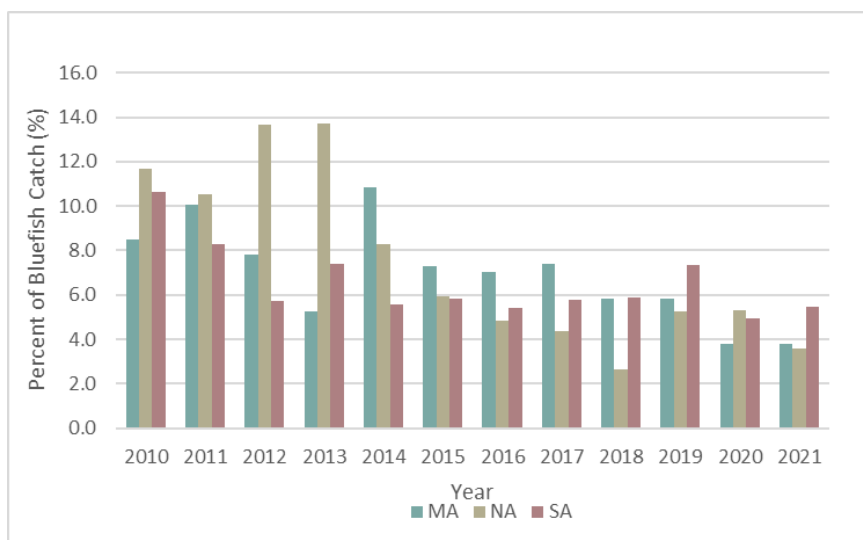


Figure 8. Figure hh. Recreational bluefish catch as a percent of total recreational catch by region over 2010-2021. Data retrieved from the Marine Recreational Information Program (MRIP) query tool in January 2022.

Figure 9

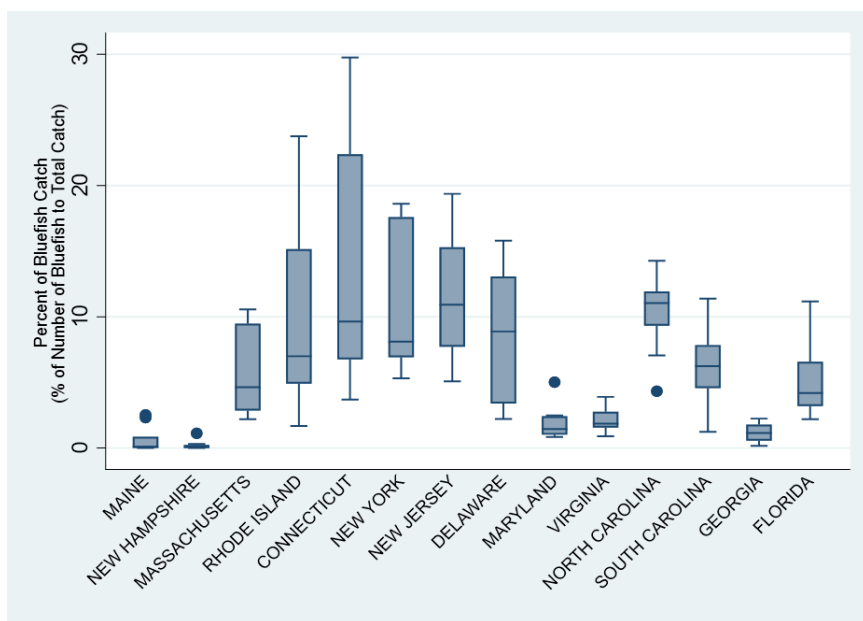


Figure 9. Figure ii. Box plots of recreational bluefish catch as a percent of total recreational catch by state over 2010-2021. Data source: Data retrieved from the Marine Recreational Information Program (MRIP) query tool in January 2022. Connecticut has the highest percent of bluefish catch relative to other species and New Hampshire the lowest.

Environment and distribution

Federal surveys

EcoMon/MARMAP

Eggs

Figure 10

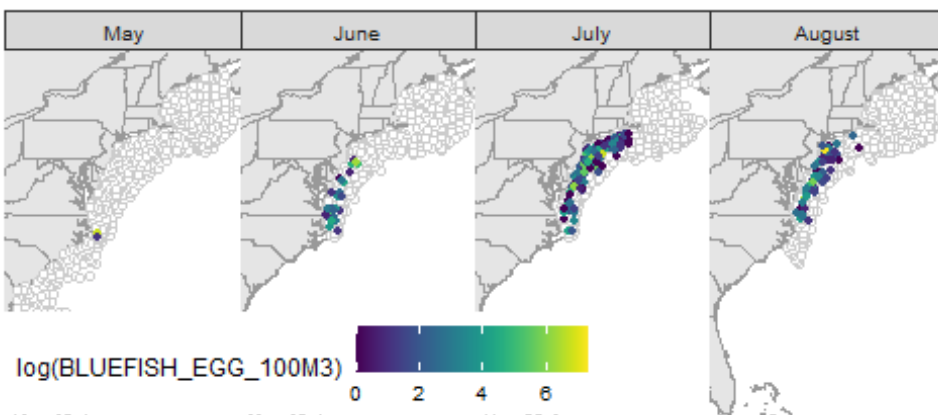


Figure 10. you haven't written this yet!

Summary table

MONTH

n_tows

n_positive_tow

total_n

n_per_tow

n_years

n_positive_years

mean_surface_temp

n_temp

mean_surface_sal

n_sal

5

1681

2

876.0

0.5

12

2

19.9

876.0

35.3

2.5

6

996

28

1636.4

1.6

10

4

20.4

1636.4

31.6

551.3

7

966

132

10321.3

10.7

11

8

21.5

10321.3

31.0

3016.7

8

1183

53

3095.6

2.6

11

8

24.4

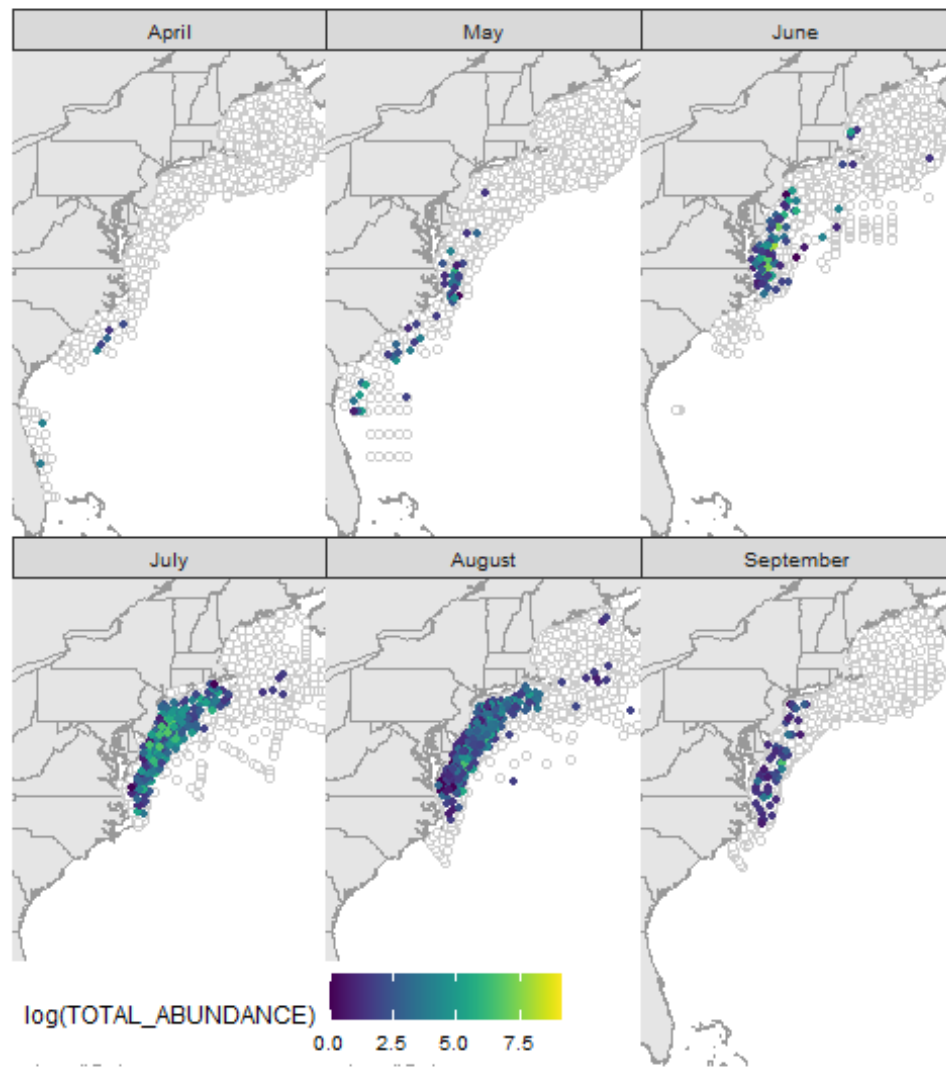
3095.6

32.6

32.3

Larvae

Figure 11



Summary table

MONTH

n_tows

n_positive_tow
total_n
n_per_tow
n_years
n_positive_years
mean_surface_temp
n_temp
mean_surface_sal
n_sal
1
1789
1
2.2
0.0
26
1
NA
NA
NA
NA
4
3266
13
260.3
0.1
44
1
NA

NA

NA

NA

5

3477

105

11913.1

3.4

38

11

21.9

10285.5

31.1

10285.5

6

3083

218

15961.1

5.2

34

17

22.3

9463.1

31.0

9919.8

7

1430

1010

46984.9

32.9

21

17

23.3

5376.5

31.7

5376.5

8

3011

915

18413.0

6.1

31

27

24.5

7522.9

31.6

7520.7

9

2210

96

631.5

0.3

43

19

23.8

564.1

32.2

564.1

NMFS bottom trawl

Figure 12

Small fish ($\leq 32.1\text{cm}$)

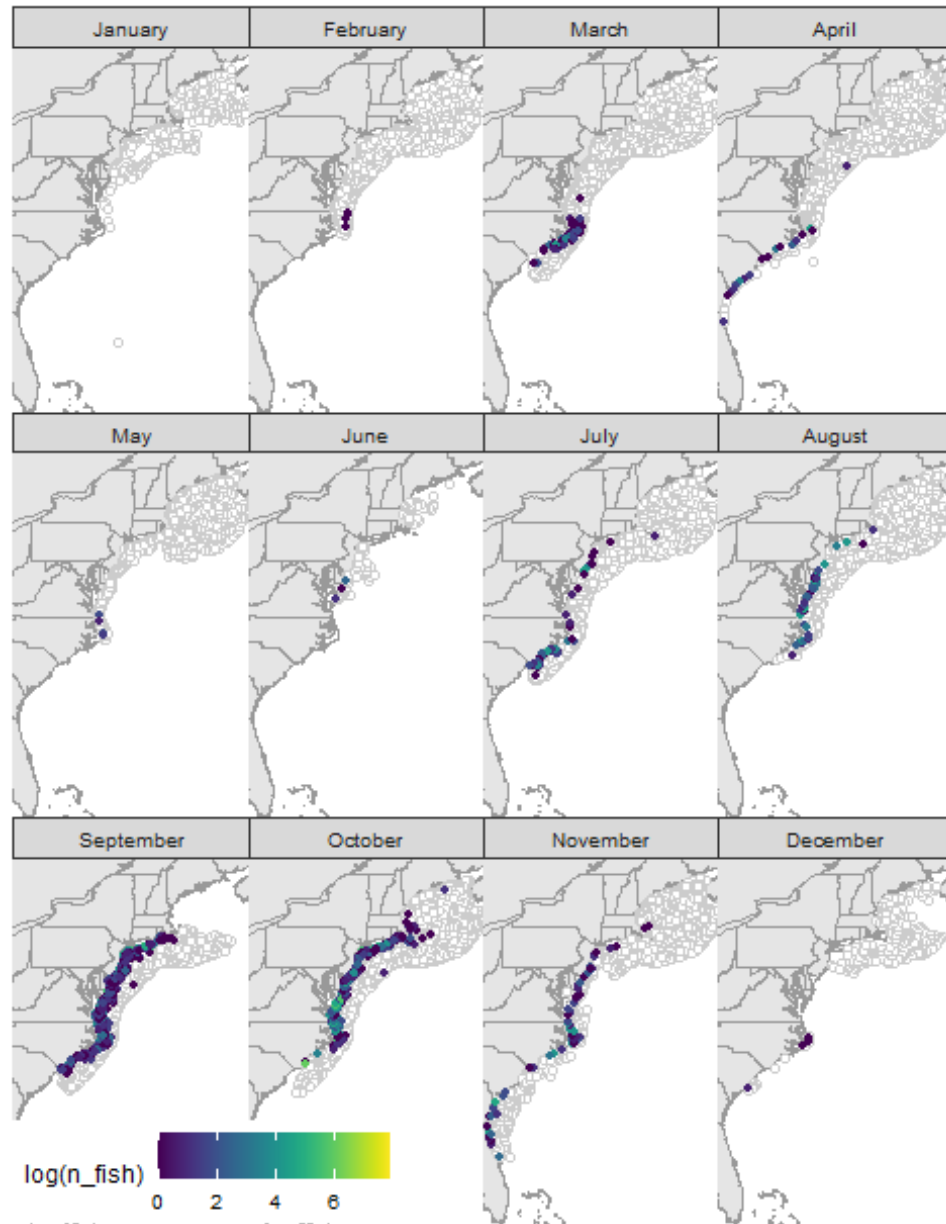


Figure 12. you haven't written this yet!

Figure 13

Medium fish (31.2-49.6cm)

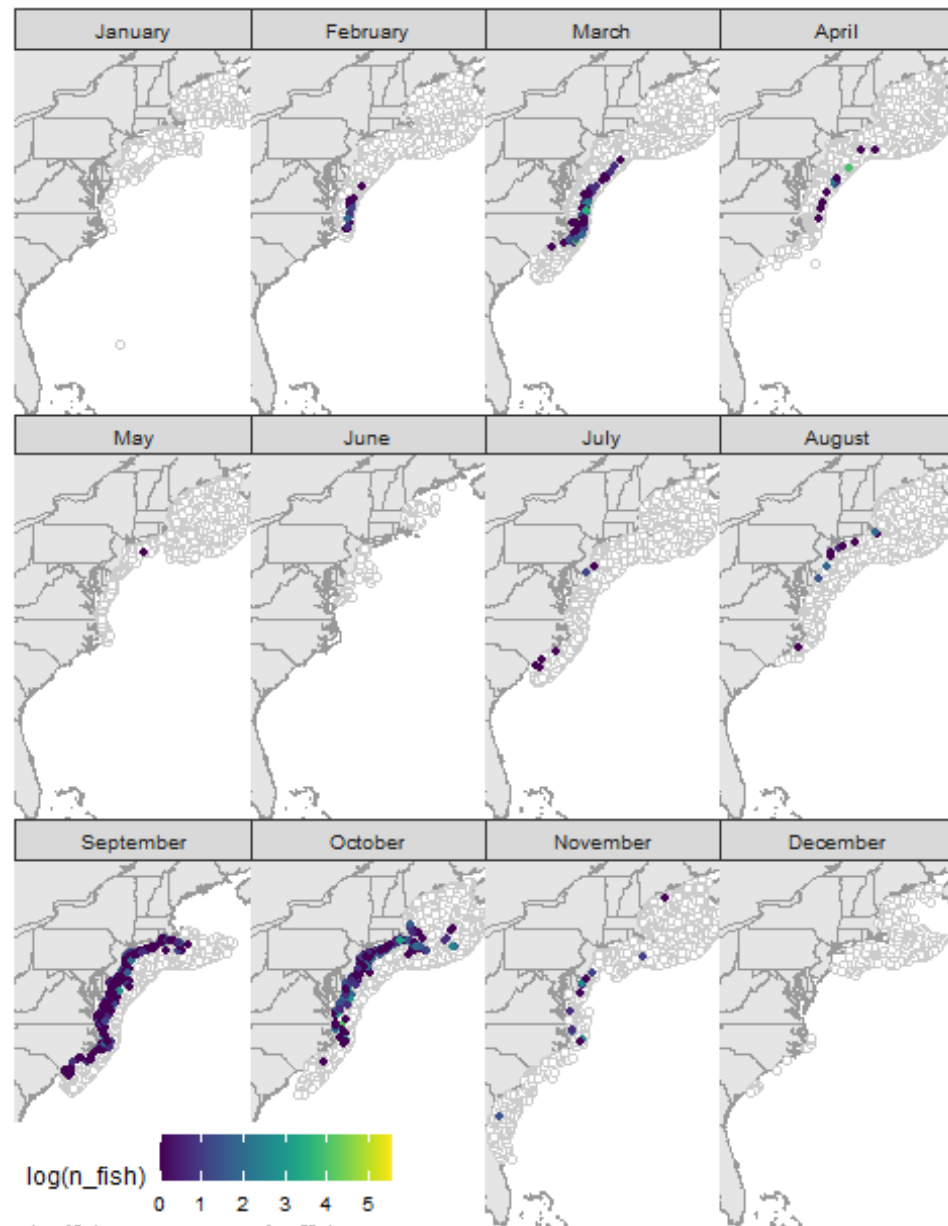


Figure 13. you haven't written this yet!

Figure 14

Large fish ($\geq 49.6\text{cm}$)

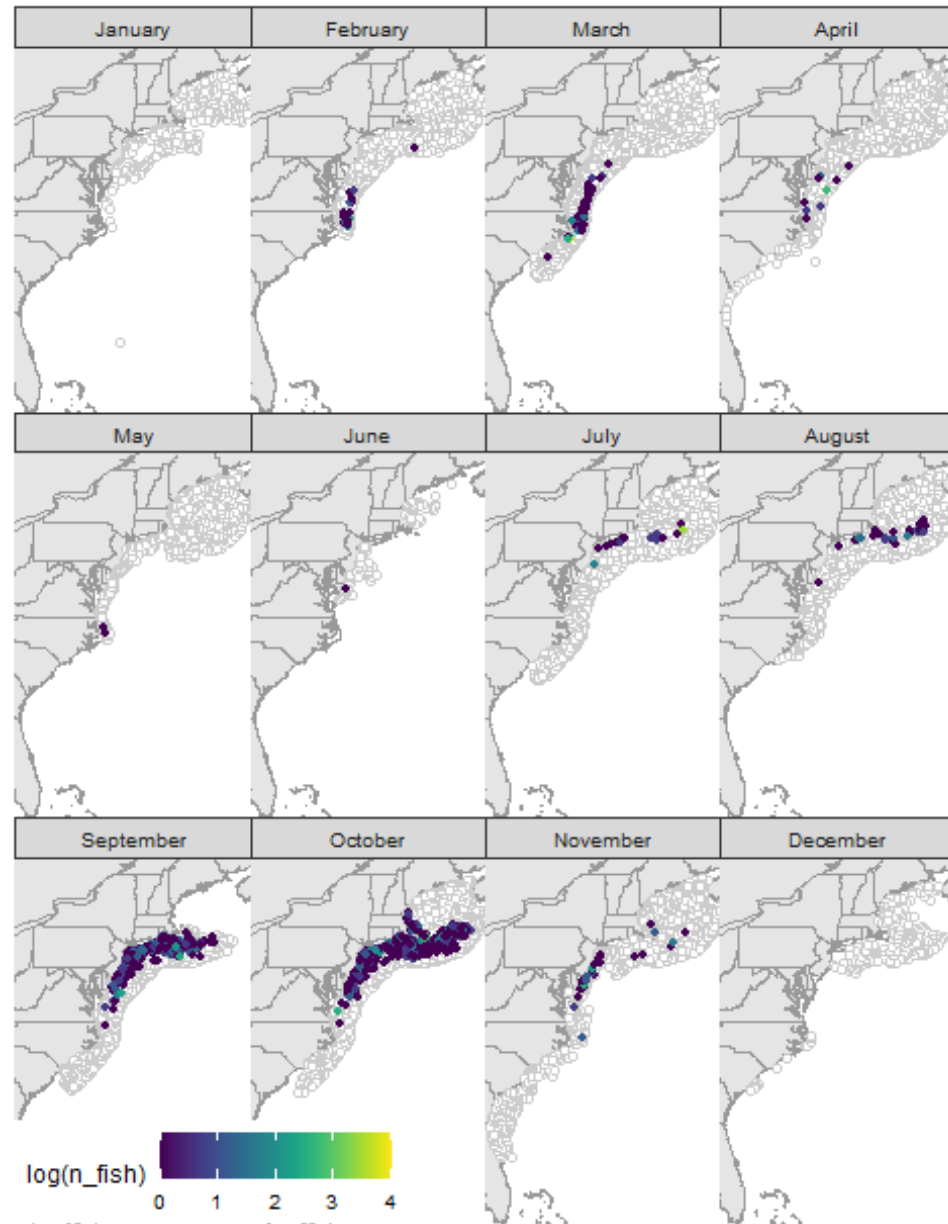


Figure 14. you haven't written this yet!

Summary table

Small bluefish

MONTH

n_tows

total_n

n_per_tow

mean_surface_temp

n_temp

mean_surface_sal

n_sal

2

2381

4

0.0

12.2

3

34.5

3

3

8746

1004

0.1

11.7

993

32.9

526

4

8252

201

0.0

16.9

199

35.1

95

5

1803

18

0.0

18.6

18

NA

NA

6

123

18

0.1

19.9

18

NA

NA

7

959

855

0.9

26.4

737

NA

NA

8

1366

1428

1.0

24.0

1353

NA

NA

9

7066

63043

8.9

21.5

51742

30.9

26324

10

8974

15737

1.8

18.8

12928

30.8

3676

11

3512
813
0.2
18.5
812
31.9
2
12
243
6
0.0
14.4
6
NA
NA
Medium bluefish
MONTH
n_tows
total_n
n_per_tow
mean_surface_temp
n_temp
mean_surface_sal
n_sal
2
2381
84
0.0

10.3

78

33.9

77

3

8746

625

0.1

11.6

480

34.3

378

4

8252

75

0.0

8.5

74

33.7

74

5

1803

1

0.0

8.4

1

32.7

1

7
959
8
0.0
24.6
8
NA
NA
8
1366
24
0.0
21.7
20
NA
NA
9
7066
1814
0.3
20.8
1584
31.1
1095
10
8974
742
0.1

17.8
645
31.7
197
11
3512
50
0.0
17.4
50
NA
NA
Large bluefish
MONTH
n_tows
total_n
n_per_tow
mean_surface_temp
n_temp
mean_surface_sal
n_sal
2
2381
62
0.0
10.2
61
33.7

59

3

8746

264

0.0

11.3

184

34.6

137

4

8252

29

0.0

10.3

27

33.8

23

5

1803

2

0.0

18.8

2

NA

NA

6

123

1

0.0
21.5
1
NA
NA
7
959
59
0.1
17.6
58
NA
NA
8
1366
70
0.1
17.2
70
NA
NA
9
7066
908
0.1
18.8
703
31.9

496

10

8974

1733

0.2

15.6

1507

32.2

718

11

3512

66

0.0

15.4

62

NA

NA

MRIP catch and CPUE

Figure 15

Northeast

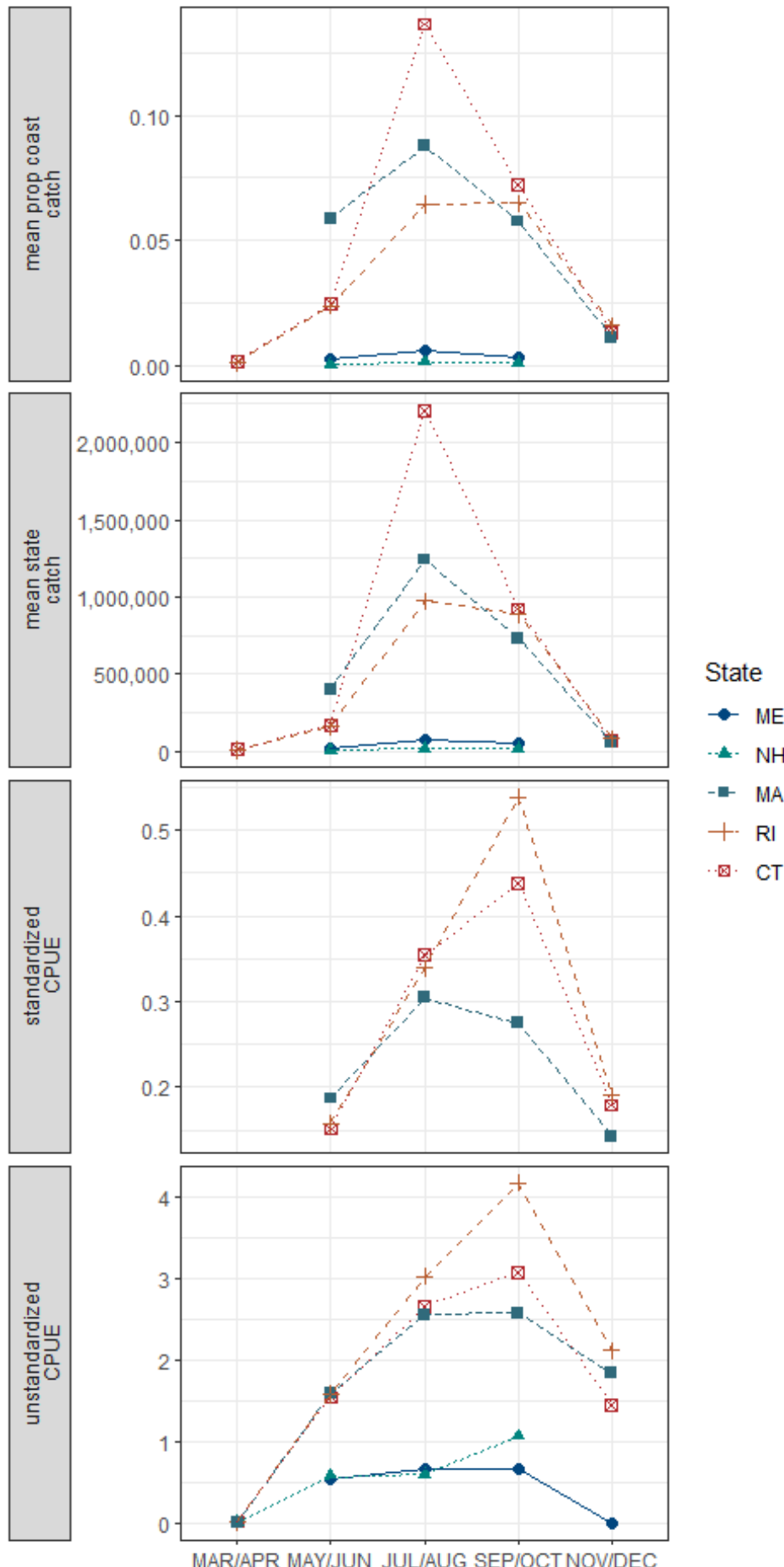


Figure 15. you haven't written this yet!

Figure 16

Mid Atlantic

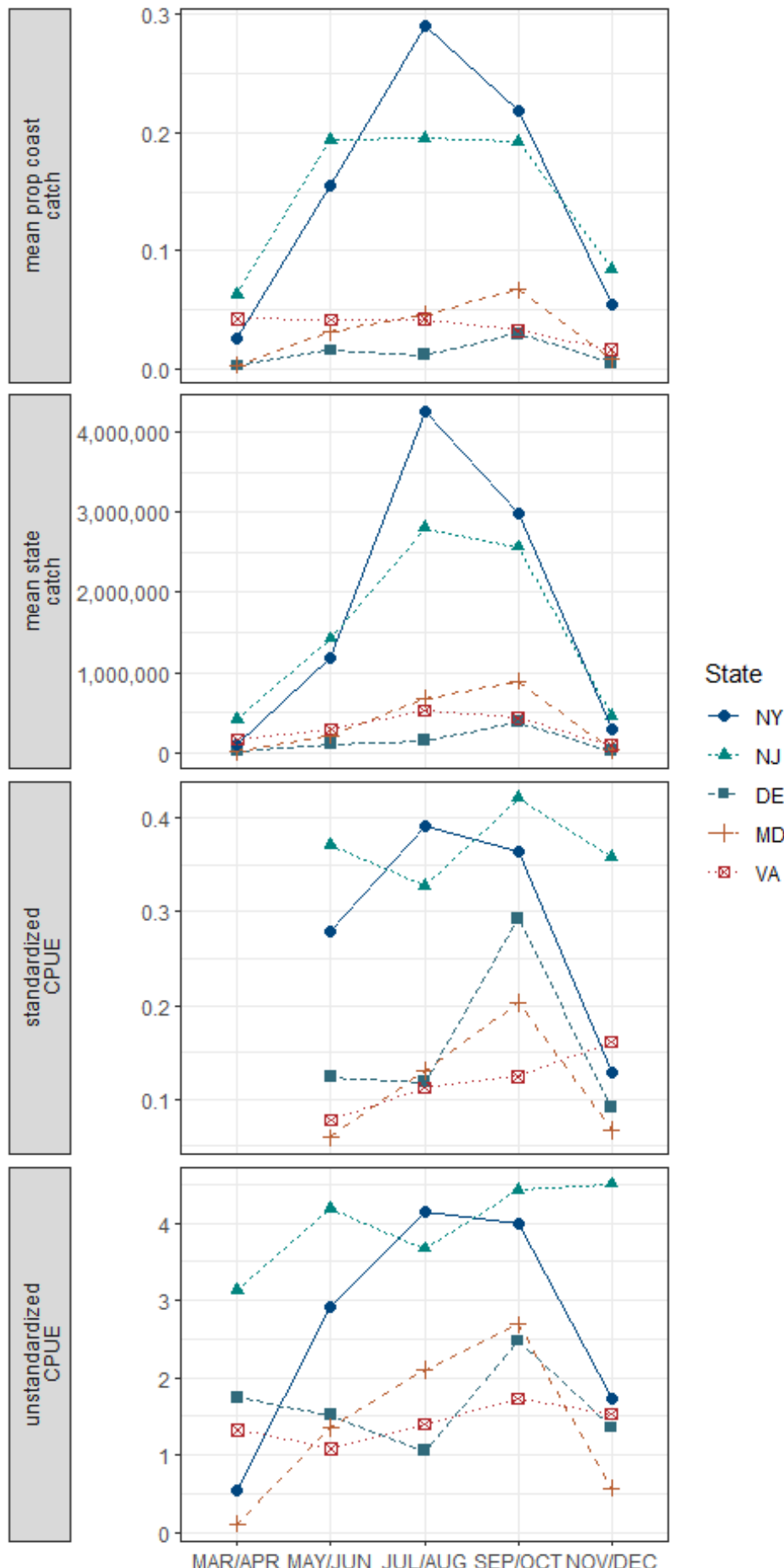


Figure 16. you haven't written this yet!

Figure 17

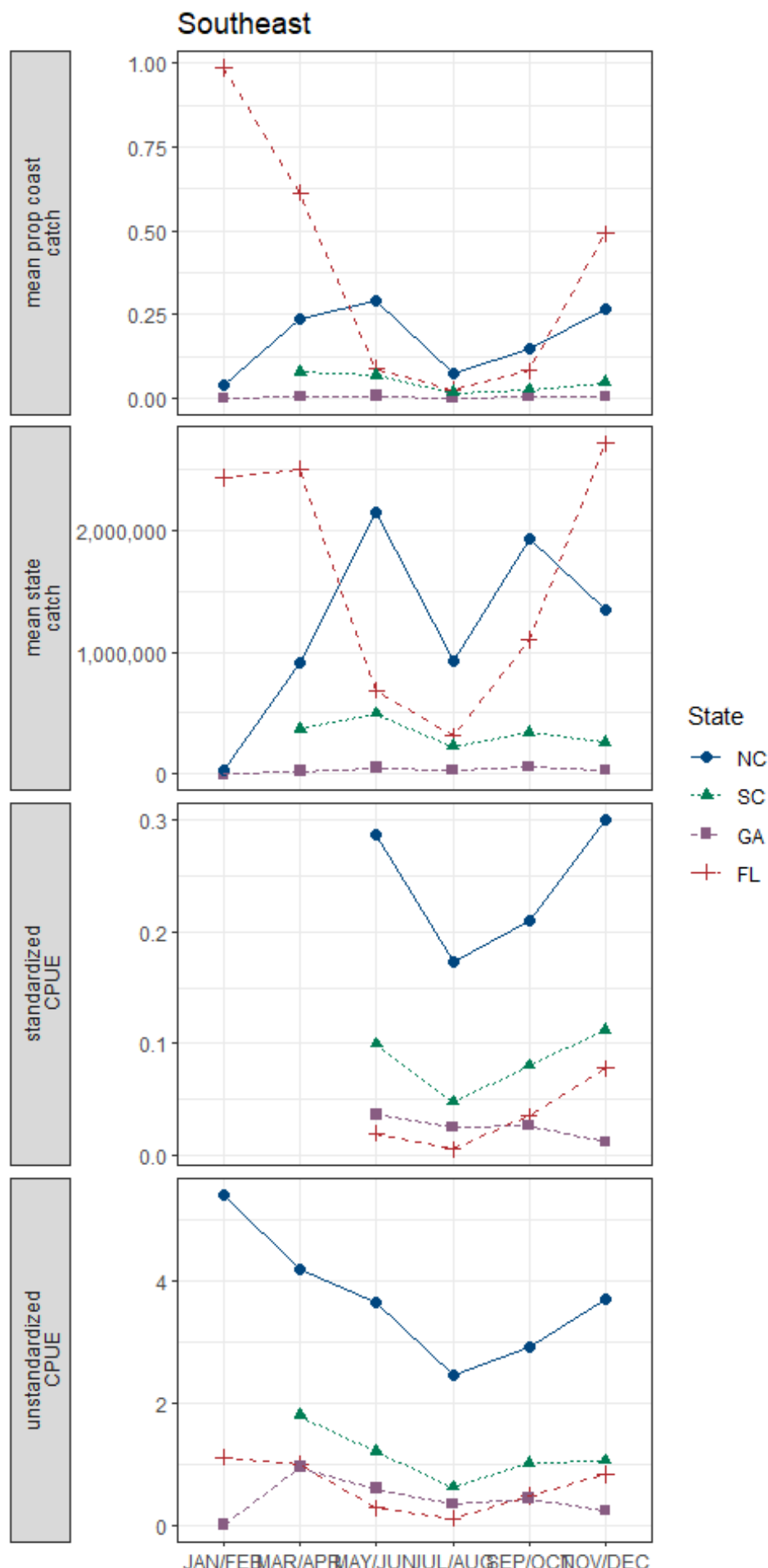


Figure 17. you haven't written this yet!

State surveys

Observations by month

Figure 18

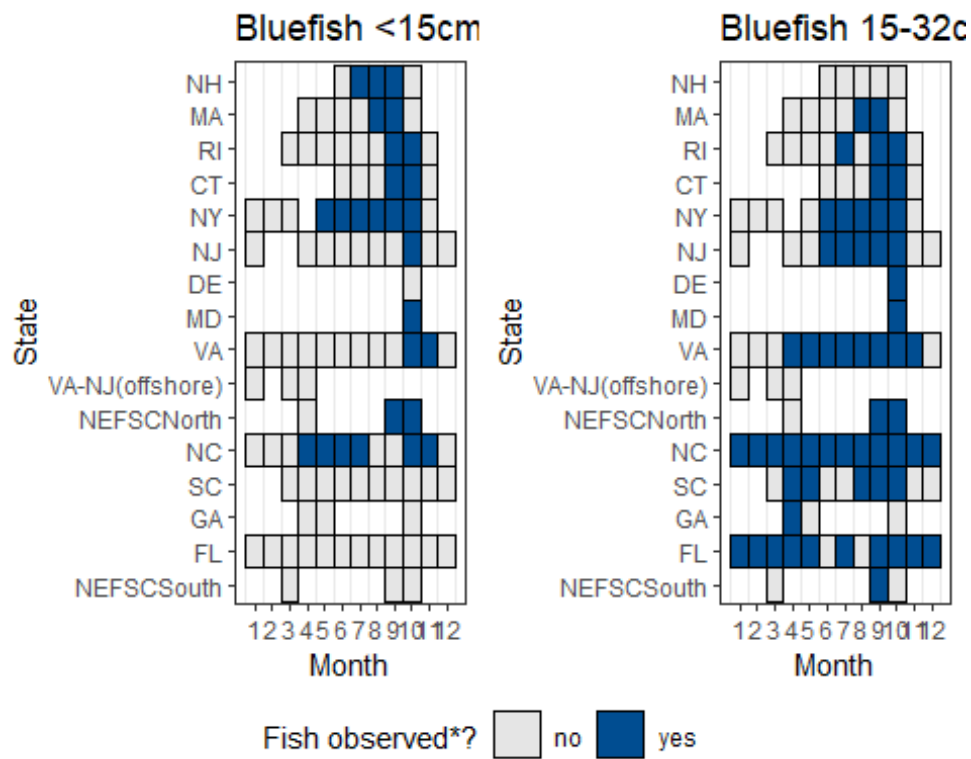


Figure 18. you haven't written this yet!

Select length cohort plots

New Hampshire

Figure 19

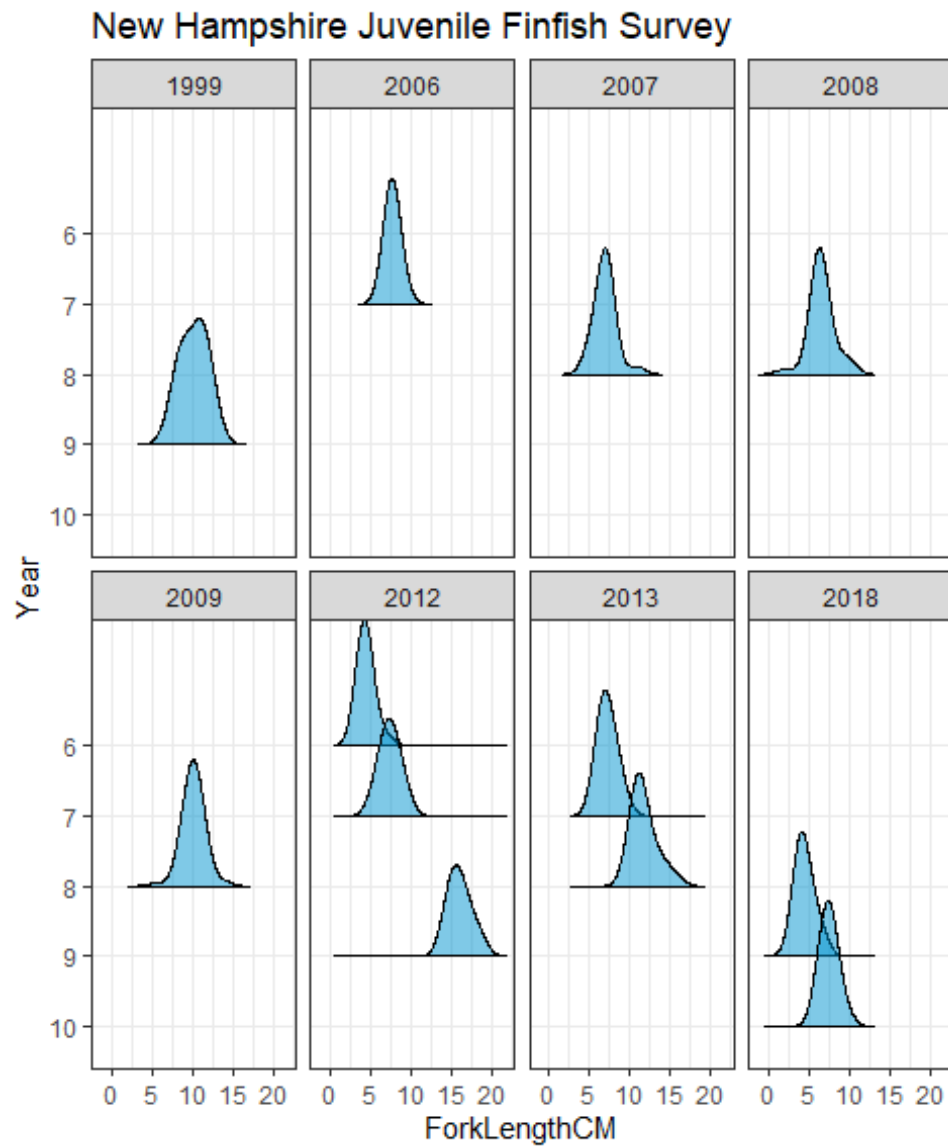


Figure 19. you haven't written this yet!

New York (select years only)

Figure 20

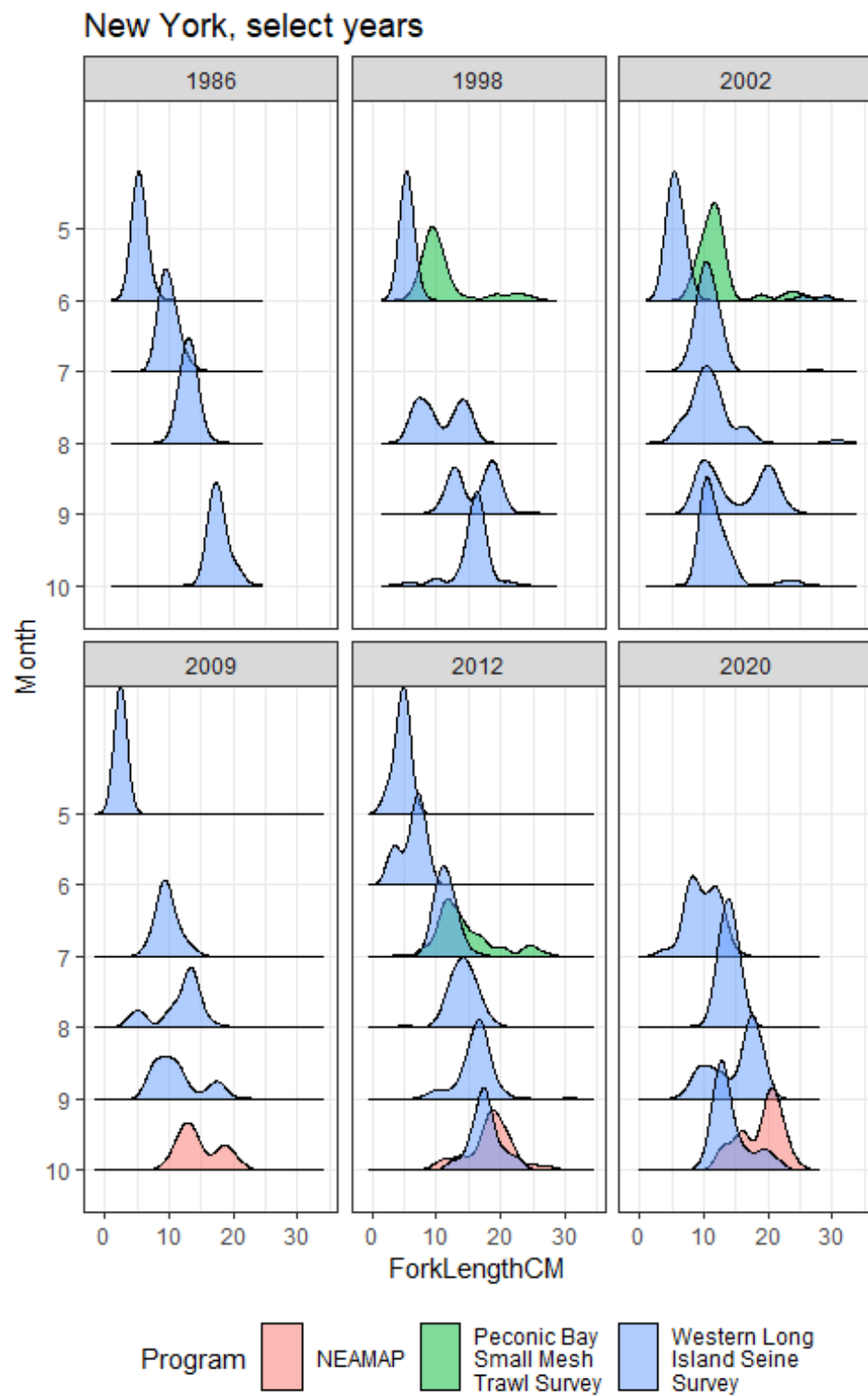


Figure 20. you haven't written this yet!

North Carolina (select years only)

Figure 21

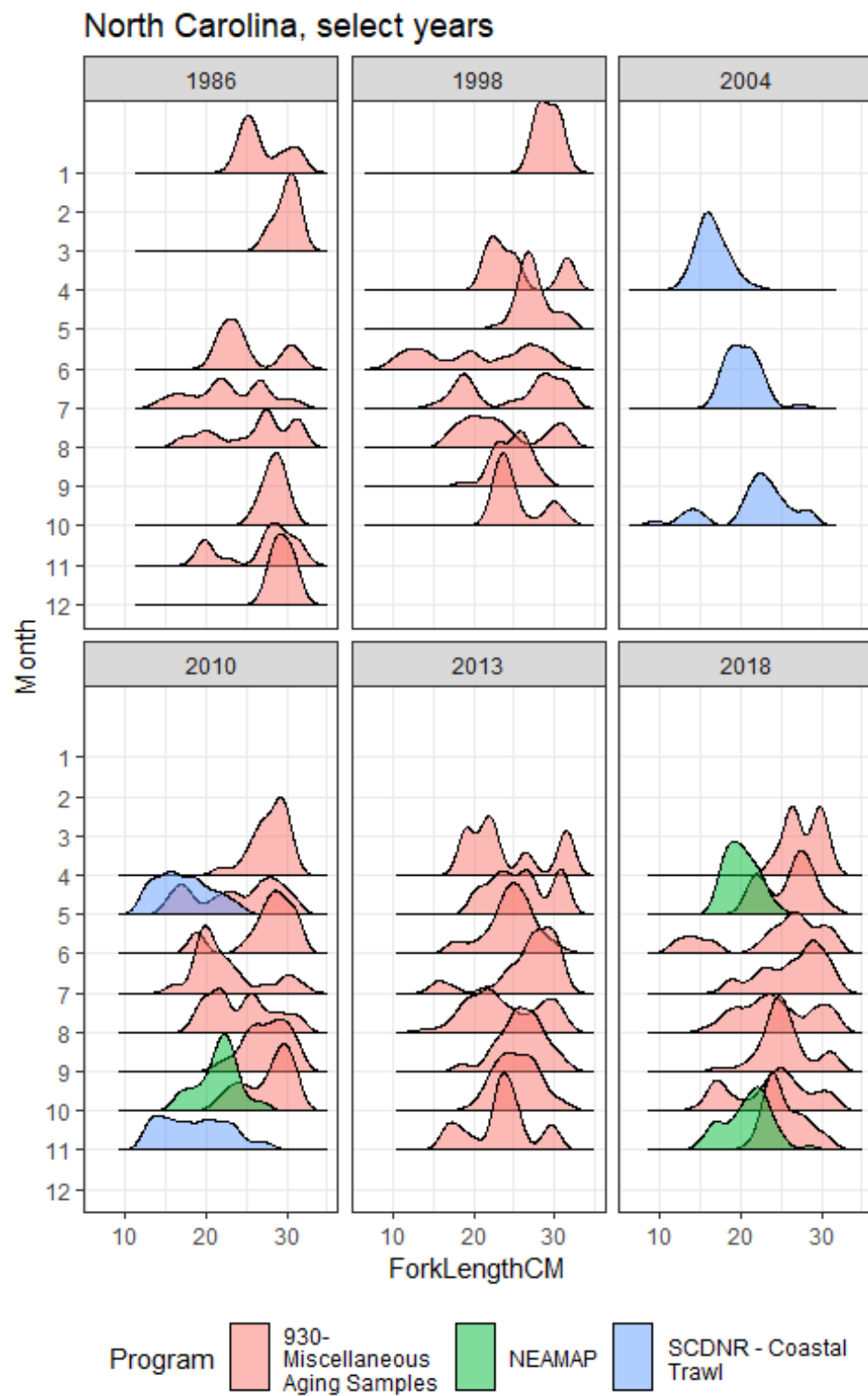


Figure 21. you haven't written this yet!

Indicator methods

Map of geogrpahy used for climate calculations

Figure 22

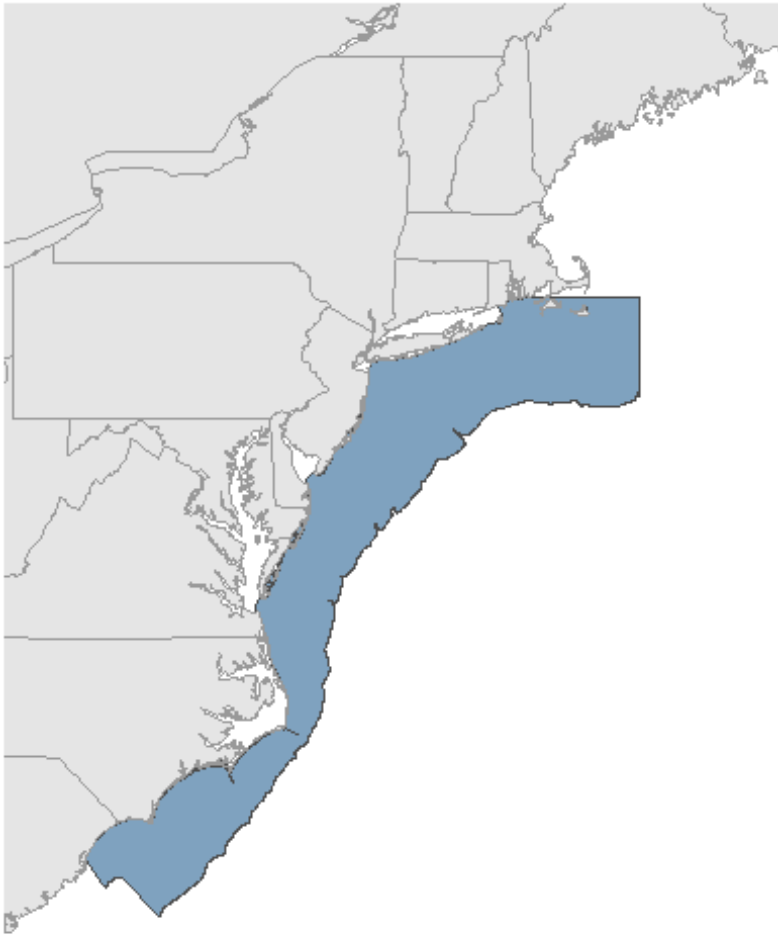


Figure 22. you haven't written this yet!

ESP time series

Ecosystem Indicators

Distribution

Figure 23

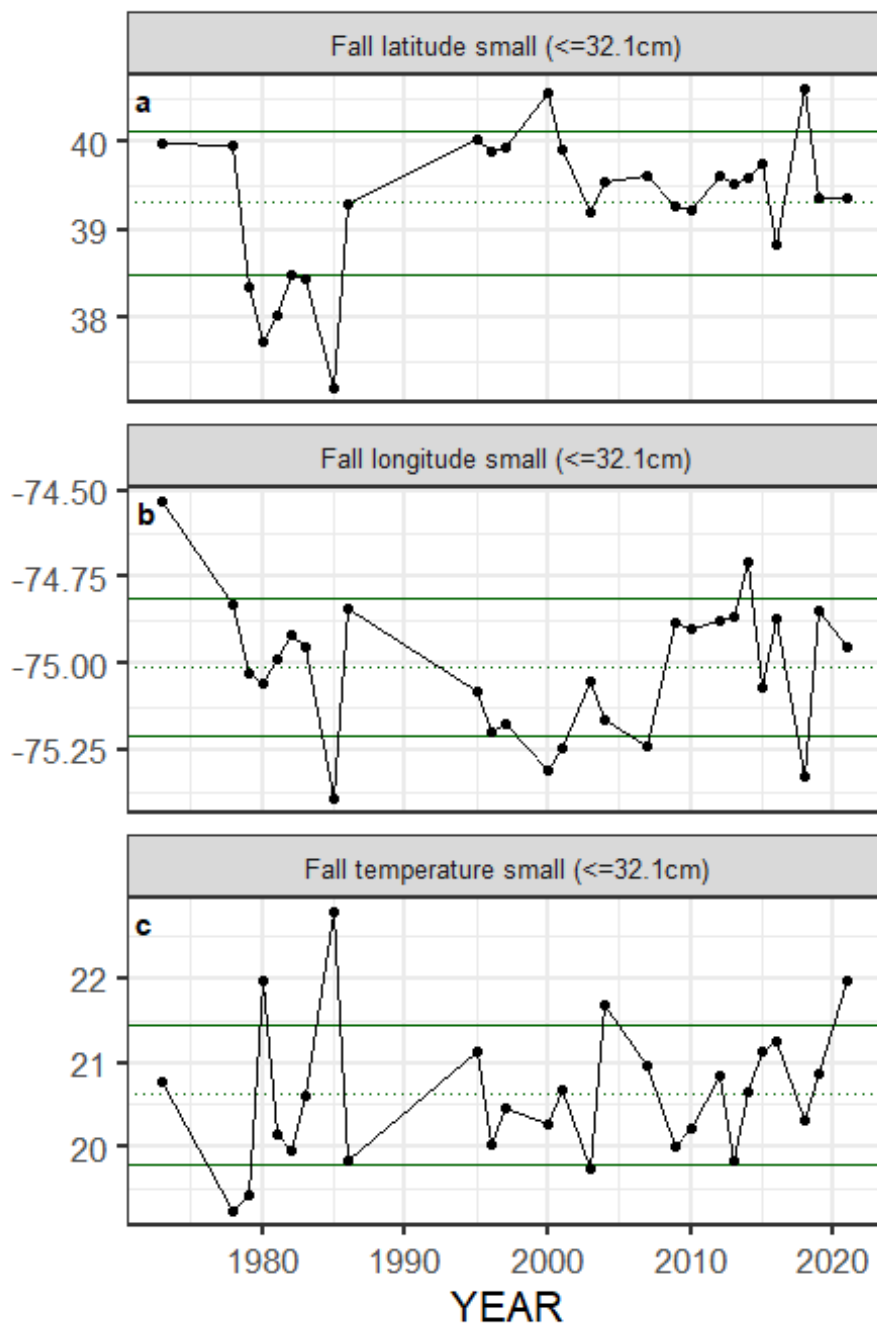


Figure @ref(fig:traffic).

Figure 23. you haven't written this yet!

Figure 24

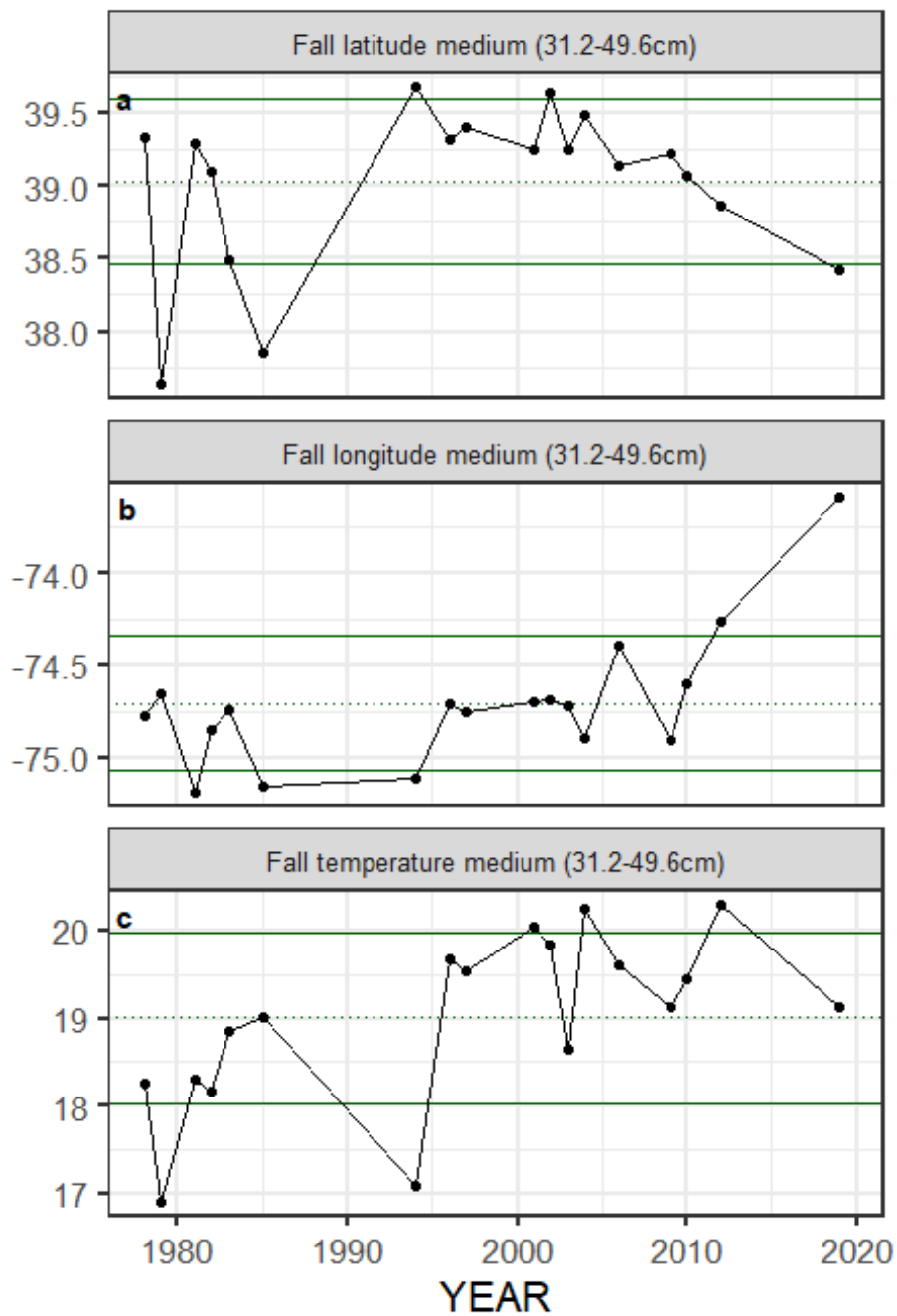


Figure @ref(fig:traffic).

Figure 24. you haven't written this yet!

Figure 25

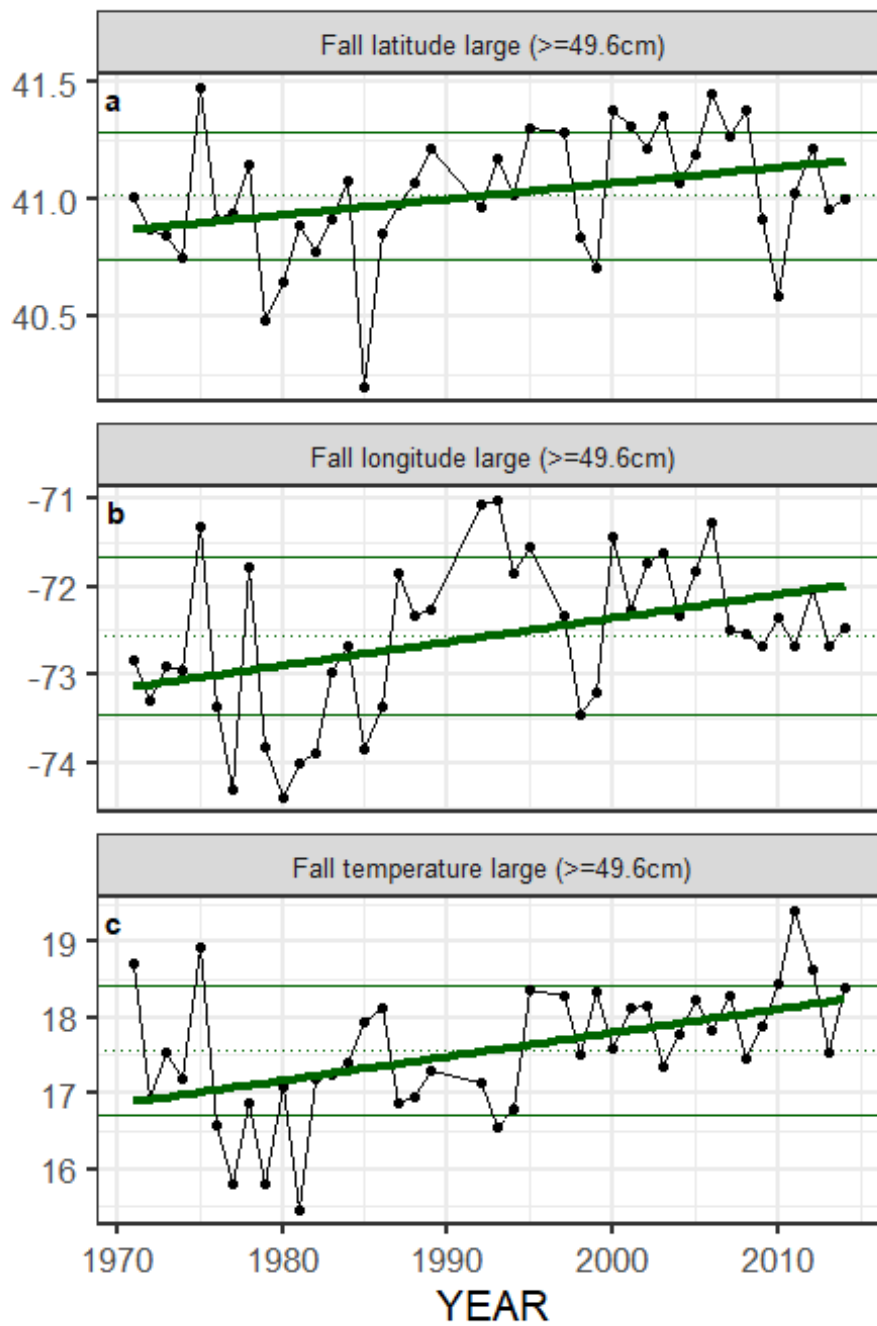


Figure @ref(fig:traffic).

Figure 25. you haven't written this yet!

Climate

Figure 26

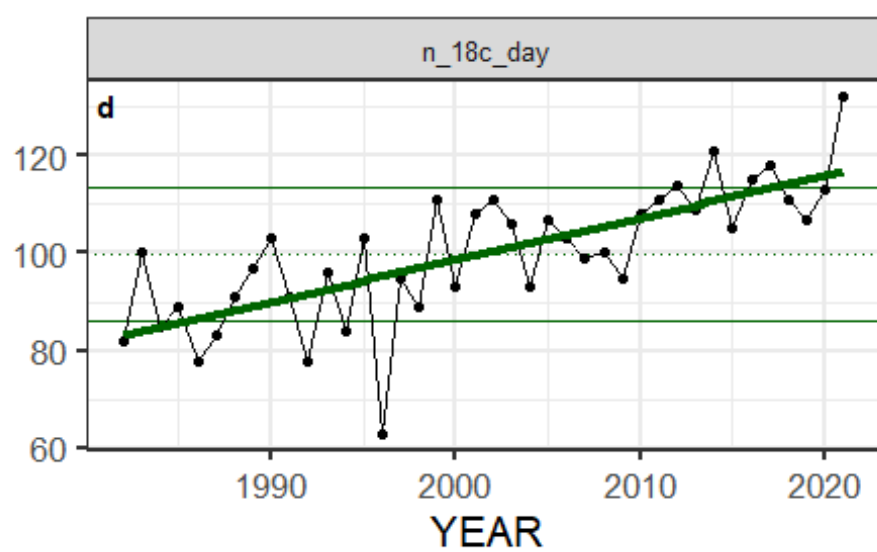
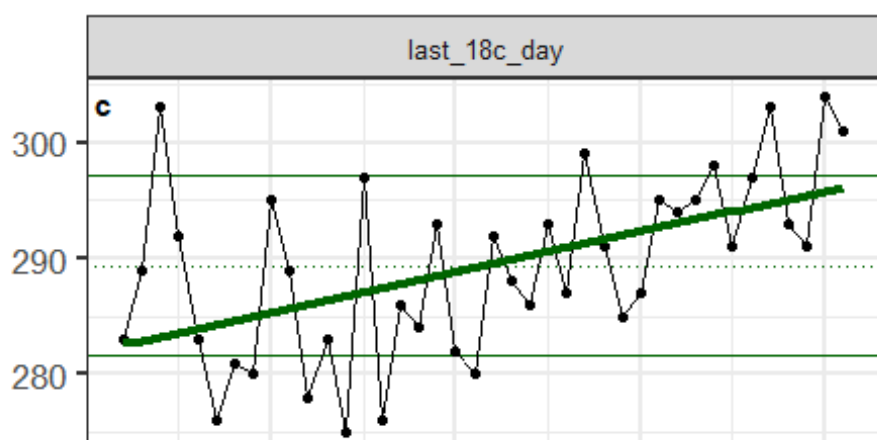
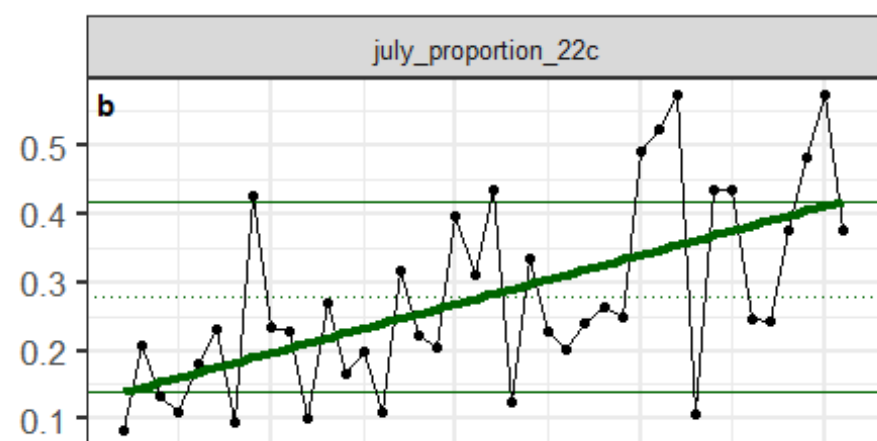
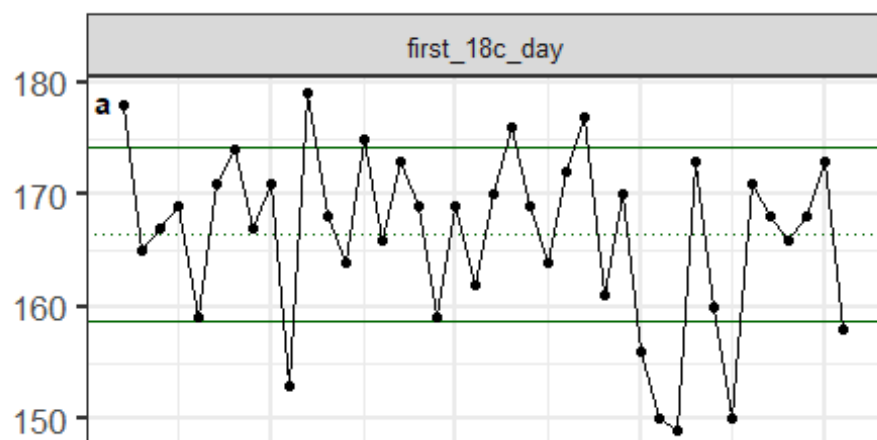


Figure @ref(fig:traffic).

Figure 26. you haven't written this yet!

Figure 27

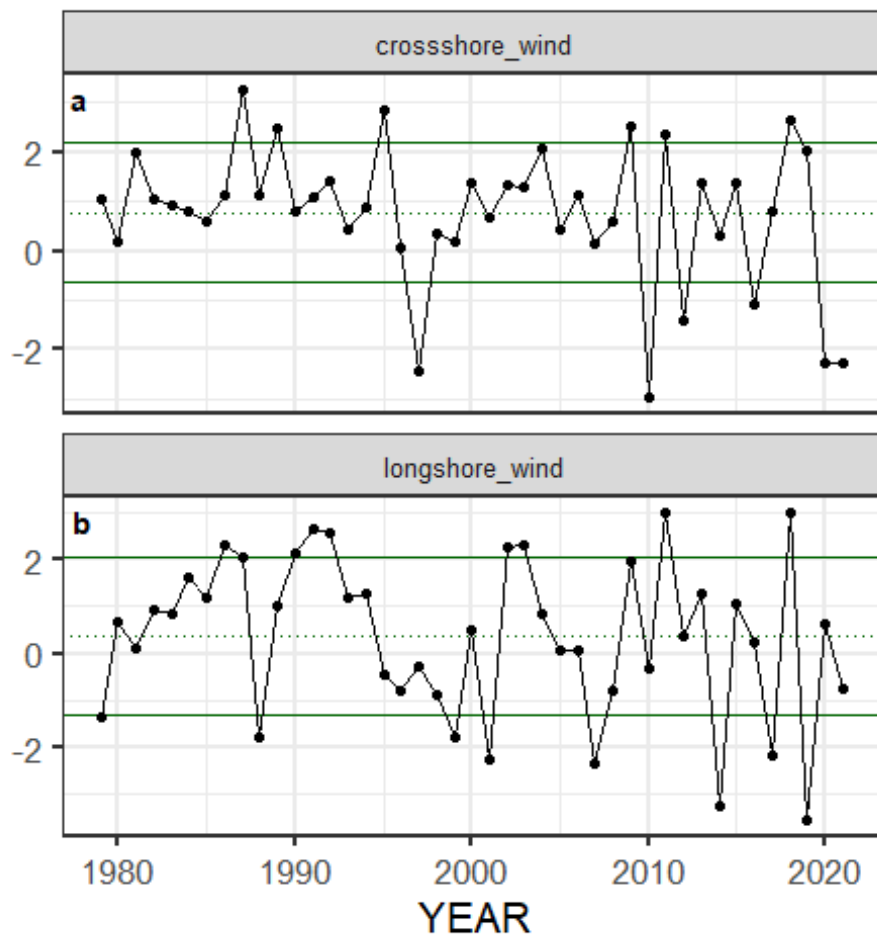


Figure @ref(fig:traffic).

Figure 27. you haven't written this yet!

Natural mortality

Figure 28

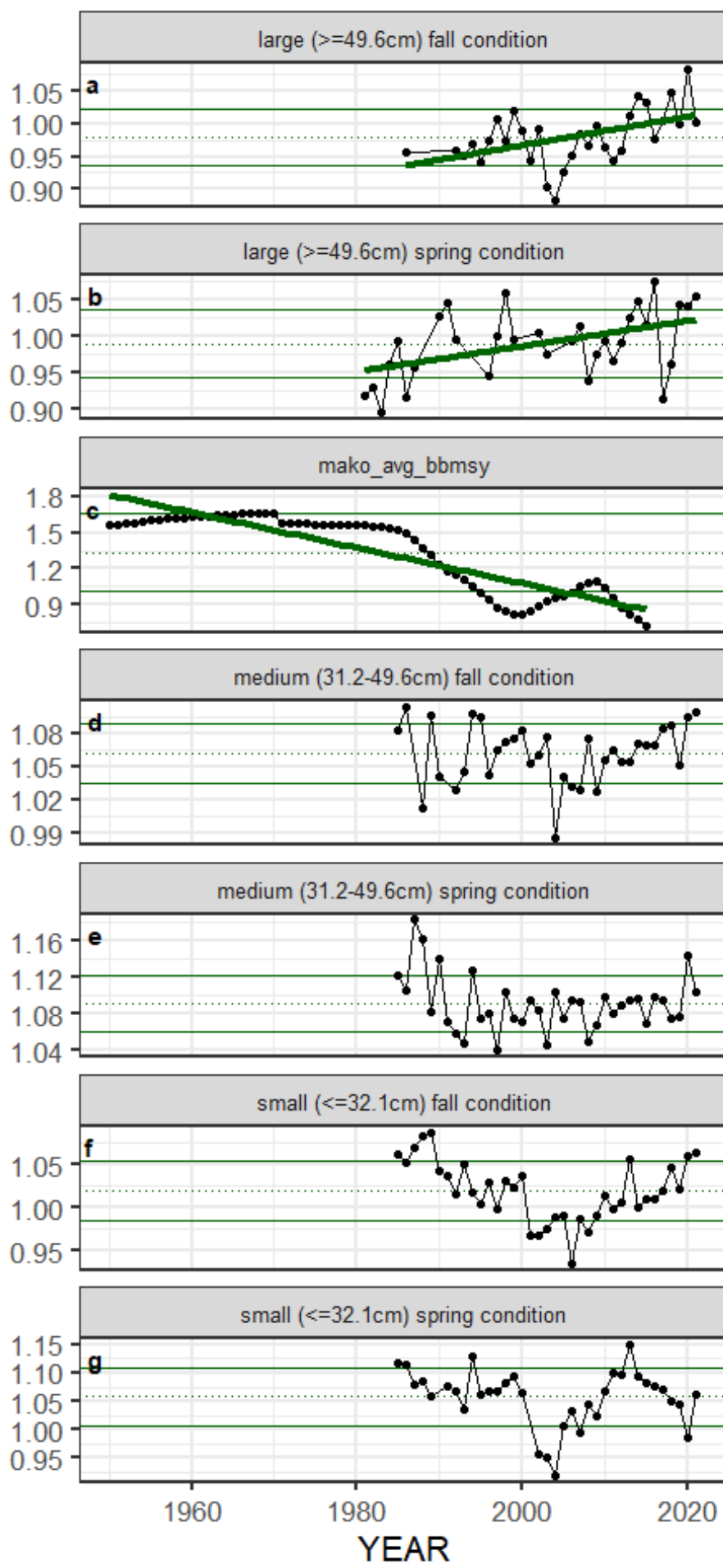


Figure @ref(fig:traffic).

Figure 28. you haven't written this yet!

Socioeconomic Indicators

Recreational

Figure 29

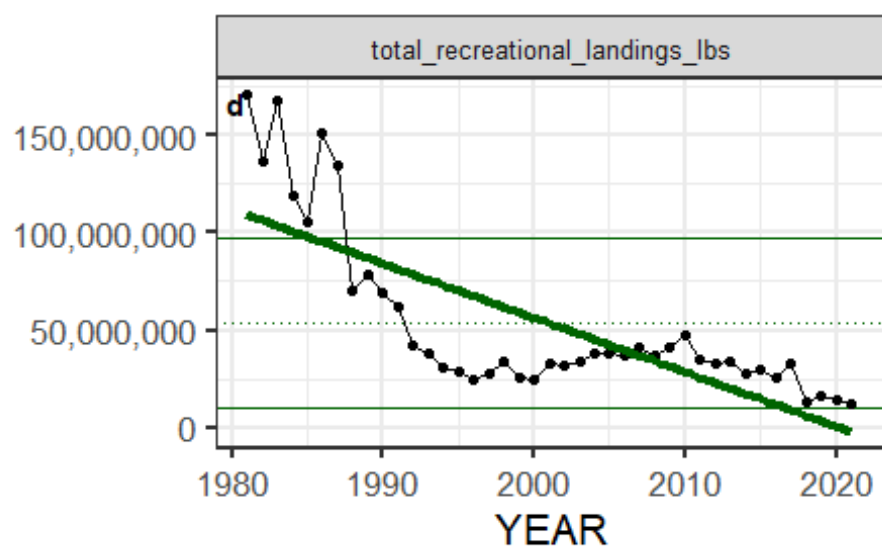
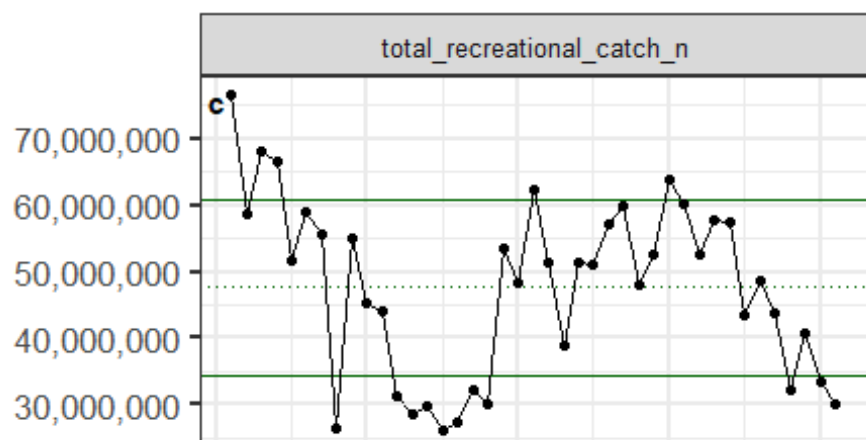
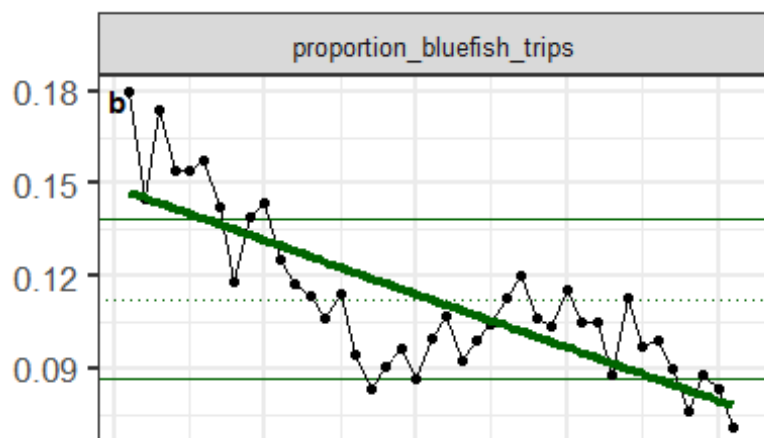
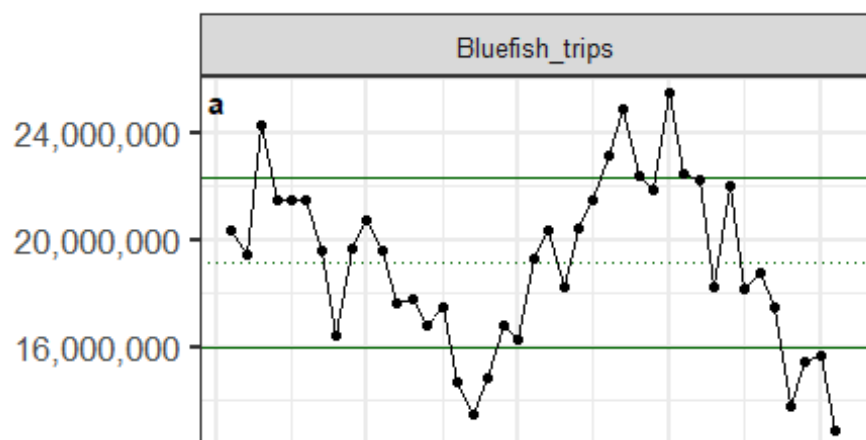


Figure @ref(fig:traffic).

Figure 29. Number of directed recreational bluefish trips from 1981-2021. The proportion of directed recreational bluefish trips relative to other directed trips from 1981-2021. Total recreational bluefish catch in number of fish from 1981-2021. Total recreational bluefish landings (lbs) from 1981-2021

Commercial

Figure 30

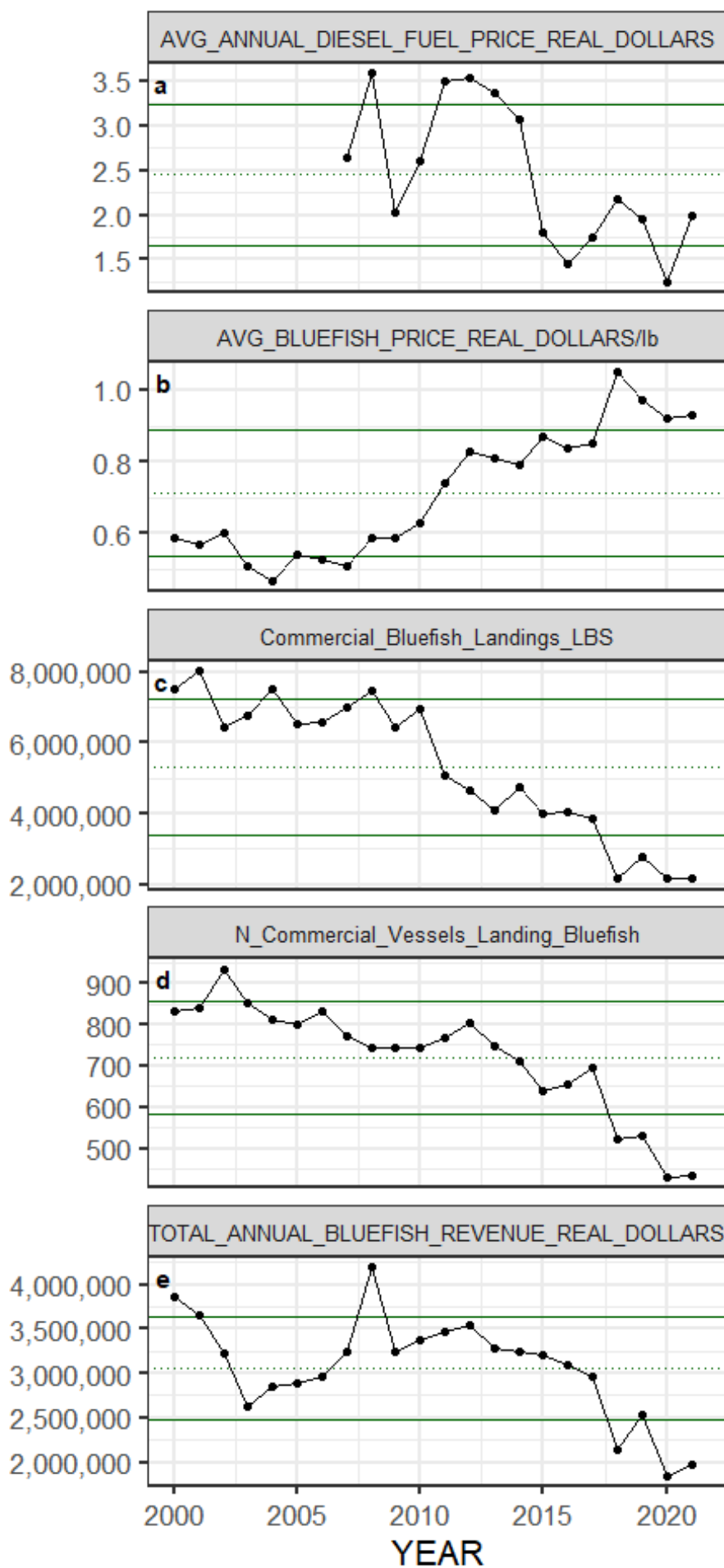


Figure @ref(fig:traffic).

Figure 30. Average annual ultra-low-sulfur number 2 diesel fuel prices in 2021 constant U.S. dollars from 2007-2021. Ex-vessel bluefish prices (/lb) from 2000 – 2021 in 2021 constant U.S. dollars. Ex – vessel bluefish prices (/lb) from 2000-2021 in 2021 constant U.S. dollars. Commercial bluefish landings (lbs.) from 2000-2021. Number of commercial vessels landing bluefish from 2000-2021. Total annual commercial bluefish revenue in 2021 constant U.S. dollars from 2000-2021.

Community

Figure 31

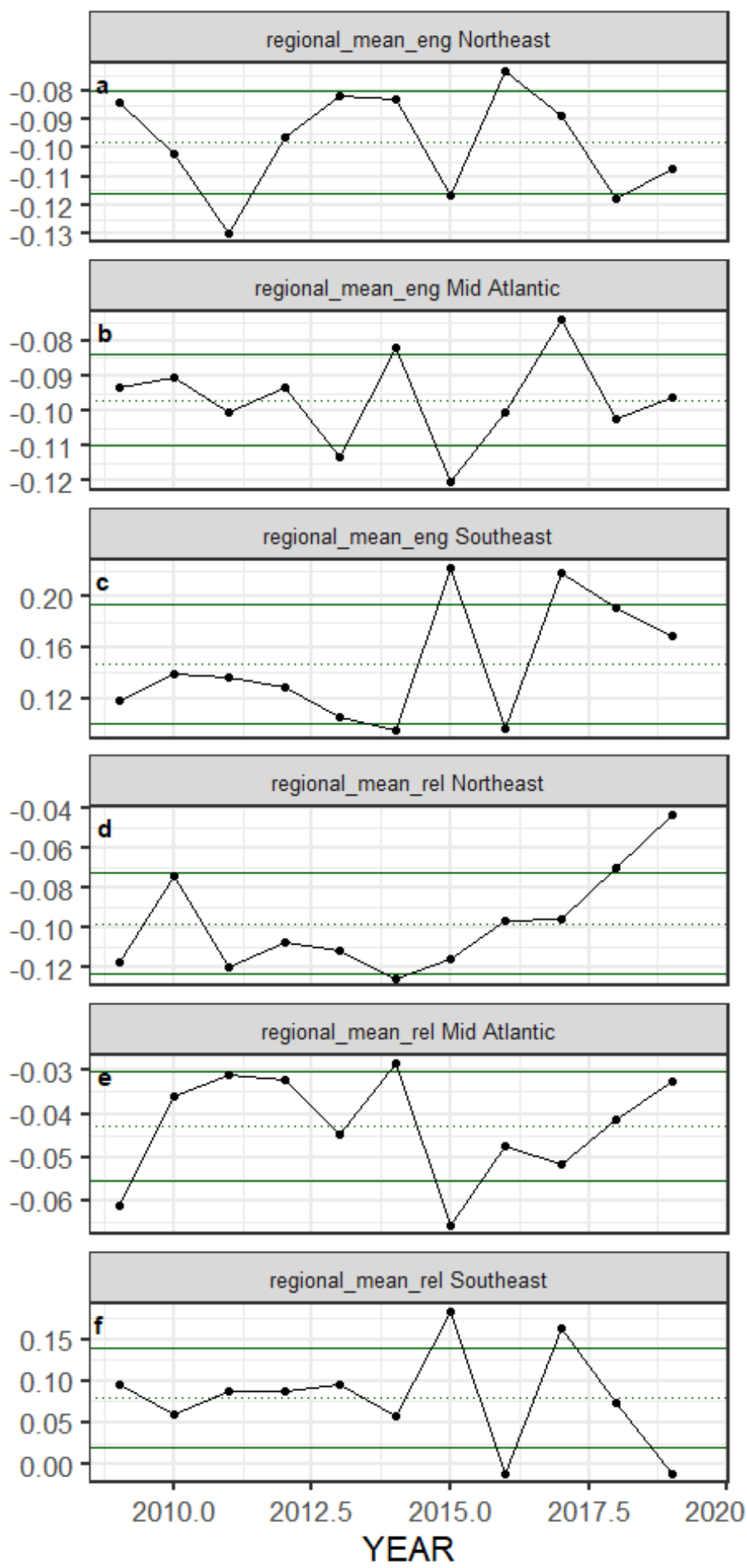


Figure @ref(fig:traffic).

Figure 31. Average annual recreational engagement scores for the Northeast region from 2009-2019. Average annual recreational engagement scores for the Mid-Atlantic region from 2009-2019. Average annual recreational engagement scores for the Southeast region from 2009-2019. Average annual recreational reliance scores for the Northeast region from 2009-2019. Average annual recreational reliance scores for the Mid-Atlantic region from 2009-2019. Average annual recreational reliance scores for the Southeast region from 2009-2019.