Southeast Region Headboat Survey data for the June 2025 South Atlantic Fisheries Management Council Meeting

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1 Description

The South Atlantic Fishery Management Council (SAFMC) requested several data summaries and evaluations of vessel, trip, and catch/discard data from the Southeast Region Headboat Survey (SRHS) for the June 2025 meeting. Each section below fulfills the requests with a brief explanation of the request and associated caveats to be considered.

Several of the data requests require splitting the Atlantic at Cape Canaveral, FL. Vessels are assigned to a headboat area based on vessel location. Trip level location data collected on logbook forms is not validated and historically the data is suspect. The area definitions for SRHS were modified in 2013 primarily to remove the inshore - offshore component for the Carolinas and collapsed the Florida Keys and the Tortugas into one area (Figures 1 and 2). For this evaluation, headboat areas are collapsed to create north and south regions with Cape Canaveral, FL as the definition for the split. Headboat area 8 encompasses Cape Canaveral and was assigned to the north area:

- Areas 1:9,10 - north
- Areas 11,12,17 - south

Trip types were collapsed into 4 categories. The trip duration is based on a 12 hour day rather than 24 (e.g. typically a full day trip leaves the dock in the morning and returns approximately 8 to 12 hours later). Half-day trips are the shortest and some vessels routinely run 3 half-day trips in a single day in seasons with longer daylight hours and in areas with shorter distances to fishing grounds. Day and night trips were not separated for this evaluation.

2 Percent Full

SAFMC request: Evaluate changes in potential capacity on vessels to compare with number anglers onboard for areas north and south of Cape Canaveral (region).

SRHS evaluation: Vessel passenger capacity is available for vessels in the survey since about 2010. The vessel information is not collected annually but the current information can be extended backward in time to when the same vessels entered the survey. This creates a trend of an increasing percent of vessels with capacity information up to about 2010 after which nearly all vessels have capacity defined (Table 1). The comparison of passenger capacity to the maximum number of anglers reported for a vessel shows a pattern of some smaller vessels reporting maximum angler values greater than the capacity and larger vessels reporting maximum angler values less than the capacity (Figure 3). It is not clear how smaller vessels could exceed the capacity. However, the number of anglers with the minimal space required to fish is expected to be less than a vessels capacity. There is also an indication that the reported anglers may have outliers (Figure

3). For these reasons, the 95th percentile of the reported anglers was used as denominator (max anglers) to determine the "percent full" for each trip (Figure 4). The trends in the percent full are shown by year, area (north/south), and trip type (Figures 6 - 9). Boxplots were chosen for this evaluation to show the median (horizontal line) and distribution (box: 25th to 75th percentile, whisker: 1.5*interquartile range, IQR) of vessel fullness. Outliers (>1.5*IQR) were not plotted in order to maintain a y axis scale focused on the majority of the data. The comparison across all trip types as well as the half and full-day trips does not show any discernible trends. The northern region shows slightly higher overall 'percent full' but are not significantly different. The three-quarter and multi-day patterns may be due to the limited number of vessels running these types of trips and changes in individual operators behavior.

3 Vessel size

SAFMC request: Evaluate changes in size of vessels over time north and south of Cape Canaveral, FL.

SRHS evaluation: The vessel length data shares the same issue as the capacity data with decreasing information available progressing back to the early years of the survey (Table 1). The percent of vessels with length information is greater than 90 percent starting in 2007 and increases to 100 percent shortly thereafter. The trends for vessel length for years where most vessels have length data are shown in Figures 10 to 14. We also compared the 95th percentile of maximum anglers reported by vessel as a proxy for vessel length to take the comparison back to 1981. The comparisons of 95th percentile of maximum angler per vessel by year, region, and trip type are shown in Figures 15 to 19. For both analyses the vessel was assigned a single value across all trips. Therefore, the boxplots are vessel attributes weighted by the number of trips. The vessel length in the northern region is fairly consistent since 2007 while the southern region shows a slight increase in the number of relatively smaller vessels starting in 2018 (Figure 10). The comparison of vessel size using maximum anglers as a proxy back to 1981 shows a gradual trend of the addition of smaller vessels over the entire time series in the northern region. The southern region trend in maximum anglers was fairly constant with the addition of relatively smaller vessels starting in 2018 (Figure 15). The three-quarter and multi-day vessel size evaluations are limited by the small number of vessels.

The decrease in vessel size in the southern region since about 2017 is related to several relatively large vessels in area 11 dropping out of the survey based on the criteria that they were fishing in state waters. Approximately 4 vessels came into the survey around 2017 that had relatively lower maximum values of 10 to 15 passengers.

4 Mimimum anglers to run a headboat trip

SAFMC Request: Estimate the minimum number of anglers for a trip to occur by trip type and region.

SRHS Evaluation: Vessel size and capacity will confound evaluation of changes in the minimum of anglers required to run a trip if only the number of anglers is evaluated. There are some very small values for the number of anglers per trip and there is anecdotal information that occasionally a headboat will go out with just the crew or a small number of VIP customers. For these reasons, we used the 5th percentile of the number of anglers reported as the minimum anglers. We calculated the minimum percent full to run a trip as the minimum anglers for each vessel and year divided by the 95th percentile of maximum anglers by vessel (proxy for capacity). The minimum percent full overall and by trip type are shown in Figures 20 to 24. As with the analyses of the vessel size, there were no apparent trends in the minimum 'percent full' over time with most vessels still running trips at about 20 to 30 percent full (Figure 20).

5 Trip Summary

SAFMC Request: Summarize the number of trips by trip type, region, and month from 2015 to 2023.

SRHS Evaluation: The summary of the number of vessel trips by year and trip type is shown in Figure 25. The summary of half-day, three-quarter-day, and full day trips by year and month are shown in Figures 26 to 28. The multi-day trip summary by month was confidential for several year and month combinations but the number of trips were generally small with no apparent patterns.

6 Total catch by depth

SAFMC Request: Evaluate total catch related to depth fished by trip type (i.e. depth with most fish, minimum, and maximum).

SRHS Evaluation: The SRHS began collecting depth information in 2013. The primary depths fished by year, trip type, and region are shown in Figure 29. The y axis in the figure is truncated to 500 feet. There were 639 trips with depth reported as greater than 500 feet. Depth bins were created at 30 foot intervals with a maximum bin greater than 121 feet as in other SAFMC evaluations. The total fish associated with the depth bins by trip type and region are shown in Figures 30 -33.

7 Regulation impacts on trips and catch rates

SAFMC Request: Evaluate the number of vessel and angler trips by week pre and post closures for species that have had recreational closures **(black sea bass (ACL closure twice in 2011)**, blueline tilefish (seasonal and ACL closure in 2015, 2022), deepwater complex (2019), **gag (seasonal and ACL closure in 2023)**, golden tilefish (ACL closure 2011, 2013 to 2016, 2018, 2019, 2021, 2023), greater amberjack (ACL closure 2016, 2017), hogfish (FLK/EFH seasonal), jacks (ACL 2018, 2019), **red grouper (ACL closure 2018, 2019)**, red porgy (seasonal), **shallow water grouper (seasonal)**, and snowy grouper (seasonal)). Bolded species are of primary interest to analyze catch rates to understand impact of closure on catch rates (landings and discards).

SRHS Evaluation: The landings and effort are expanded for missing trips in the SRHS estimation process. The unit of effort output from the expansion for missing trips is angler days instead of vessel or angler trips. However, the reported logbooks can be used to summarize vessel and angler trips for years with good compliance rates (reported trips/estimated trips). Estimated trips for headboats are determined from port agent reports of vessel activity. The compliance rate in the Atlantic jumped from just under 50% in 2007 to 82% in 2008 when selection letters were mailed to vessels. Compliance has been above 95% since 2010 and above 99% since 2017. However, there is no database of closure dates and for some species the ACL closures were not based on a calendar year. The monthly number of vessel trips by trip type starting in 2008 are shown in Figures 34 - 39. The monthly number of angler trips by trip type starting in 2008 are shown in Figures 40 - 45. Multi-day trips were confidential at the region and month level and these vessel and angler trip plots were excluded. The monthly effort can be used to evaluate impacts of closures on headboat activity.

Nominal catch and discard rates for the species requested by the SAFMC were calculated over the same years (2008-2024) by month to evaluate collateral impacts on catch rates of species other than the ones targeted by management measures. Typically the trip duration is included in the denominator. However, since these are broken out by trip type the catch rate was calculated as catch/anglers or discard/anglers per trip. There were several issues with this analysis that prevented the presentation of requested information and limiteded the usefulness of the comparisons. Catch and discard rates at the monthly level were confidential for many species in off-season months. The small sample sizes in these months also increased the chance of single large catch or discard rates. In addtion to confidentiality issues this also changed the scale of the y axis so that any trends in typical catch and discard rates were difficult to distinguish. Grouping several species onto a single plot to save pages and aid comparisons exacerbated the issue. Each of the 2008 - 2024 monthly plots by region required 3 pages. The species- and complex-specific plots by trip type for catch and discards would have required 288 pages for the catch and discard rates. In addition, the shallow water complex closure early

in the year and ACL closures typically late in the year are confounded by seasonal trends in effort in the northern region making it difficult to discern the source of changes in catch rates. Monthly catch rates were not provided for these reasons. However, a research project on the impacts of management measures on collateral species might provide insight. This is outside the scope of this data request.

8 Top 5 species by month averaged over the recent time period

Landings in number from 2020 to 2025 were summed by month and region. The five species with the largest catch in the northern region are shown by rank in table 2 and for the southern region in table 3.

9 Tables

Table 1: Total vessels in the Atlantic (vessels), vessels with vessel length information (ves.length), and vessels with passenger capacity information (ves.capacity).

year	vessels	ves.length	ves.capacity
1981	82	16	14
1982	75	18	16
1983	80	18	16
1984	75	19	17
1985	71	20	18
1986	85	25	23
1987	76	23	21
1988	68	22	20
1989	65	23	21
1990	54	22	20
1991	59	23	21
1992	97	36	34
1993	92	37	35
1994	91	41	39
1995	86	39	37
1996	84	39	37
1997	89	50	48
1998	84	46	45
1999	65	42	42
2000	75	48	46
2001	63	41	41
2002	57	43	43
2003	58	46	45
2004	67	48	48
2005	62	48	46
2006	58	49	49
2007	58	53	53
2008	80	74	72
2009	83	80	78
2010	80	78	76
2011	77	77	75
2012	78	77	75
2013	76	76	74
2014	76	76	74
2015	73	73	71
2016	75	75	73
2017	66	66	66
2018	65	65	65
2019	65	65	65
2020	66	66	66
2021	62	62	62
2022	62	62	62
2023	61	61	61
2024	62	62	62

Table 2: Top five species from 2020 to 2025 by month for the northern region in order of number of fish landed.

Month	1st	2nd	3rd	4th	5th
Jan	VERMILION SNAPPER	LANE SNAPPER	BLACK SEA BASS	GRAY SNAPPER	TOMTATE
Feb	VERMILION SNAPPER	LANE SNAPPER	BLACK SEA BASS	GRAY SNAPPER	TOMTATE
Mar	VERMILION SNAPPER	BLACK SEA BASS	LANE SNAPPER	SPOTTAIL PINFISH	TOMTATE
Apr	VERMILION SNAPPER	BLACK SEA BASS	SPOTTAIL PINFISH	GRAY TRIGGERFISH	TOMTATE
May	VERMILION SNAPPER	WHITE GRUNT	BLACK SEA BASS	GRAY TRIGGERFISH	SPOTTAIL PINFISH
Jun	VERMILION SNAPPER	SPOTTAIL PINFISH	WHITE GRUNT	BLACK SEA BASS	GRAY TRIGGERFISH
Jul	VERMILION SNAPPER	SPOTTAIL PINFISH	TOMTATE	WHITE GRUNT	BLACK SEA BASS
Aug	VERMILION SNAPPER	SPOTTAIL PINFISH	TOMTATE	WHITE GRUNT	GRAY TRIGGERFISH
Sep	VERMILION SNAPPER	TOMTATE	SPOTTAIL PINFISH	WHITE GRUNT	GRAY TRIGGERFISH
Oct	VERMILION SNAPPER	GRAY TRIGGERFISH	SPOTTAIL PINFISH	TOMTATE	WHITE GRUNT
Nov	VERMILION SNAPPER	SCUP	GRAY TRIGGERFISH	BLACK SEA BASS	SPOTTAIL PINFISH
Dec	VERMILION SNAPPER	BLACK SEA BASS	LANE SNAPPER	TOMTATE	GRAY SNAPPER

Table 3: Top five species from 2020 to 2025 by month for the southern region in order of number of fish landed.

Month	1st	2nd	3rd	4th	5th
Jan	WHITE GRUNT	YELLOWTAIL SNAPPER	LANE SNAPPER	LITTLEHEAD PORGY	GRAY SNAPPER
Feb	WHITE GRUNT	YELLOWTAIL SNAPPER	LANE SNAPPER	LITTLEHEAD PORGY	TOMTATE
Mar	WHITE GRUNT	YELLOWTAIL SNAPPER	LANE SNAPPER	LITTLEHEAD PORGY	TOMTATE
Apr	WHITE GRUNT	YELLOWTAIL SNAPPER	LANE SNAPPER	TOMTATE	LITTLEHEAD PORGY
May	YELLOWTAIL SNAPPER	WHITE GRUNT	LANE SNAPPER	TOMTATE	GRAY SNAPPER
Jun	YELLOWTAIL SNAPPER	WHITE GRUNT	GRAY SNAPPER	LANE SNAPPER	TOMTATE
Jul	GRAY SNAPPER	YELLOWTAIL SNAPPER	WHITE GRUNT	TOMTATE	LANE SNAPPER
Aug	YELLOWTAIL SNAPPER	GRAY SNAPPER	WHITE GRUNT	LANE SNAPPER	TOMTATE
Sep	YELLOWTAIL SNAPPER	WHITE GRUNT	GRAY SNAPPER	LANE SNAPPER	VERMILION SNAPPER
Oct	YELLOWTAIL SNAPPER	WHITE GRUNT	LANE SNAPPER	GRAY SNAPPER	BLUE RUNNER
Nov	YELLOWTAIL SNAPPER	WHITE GRUNT	LANE SNAPPER	GRAY SNAPPER	BLUE RUNNER
Dec	WHITE GRUNT	YELLOWTAIL SNAPPER	LANE SNAPPER	GRAY SNAPPER	LITTLEHEAD PORGY

10 Figures

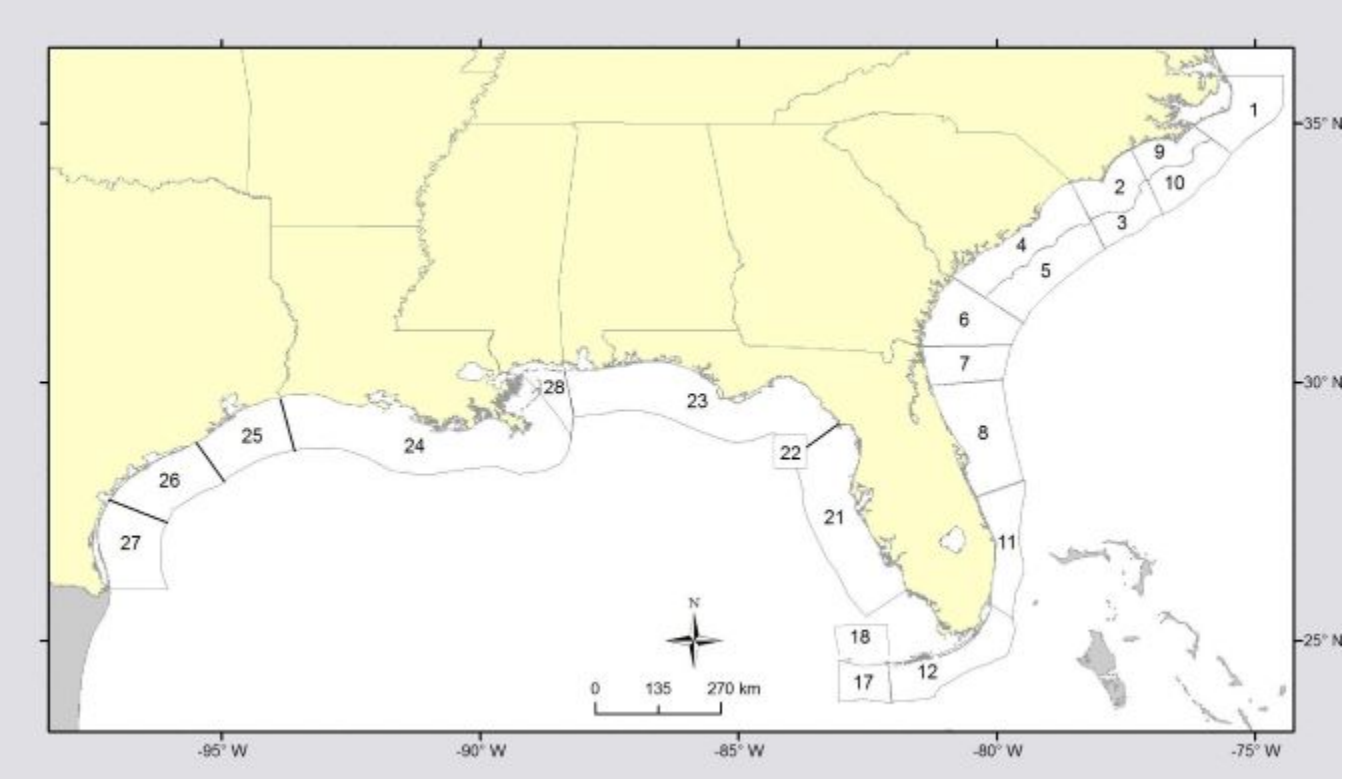

Figure 1: Headboat sampling areas prior to 2013.

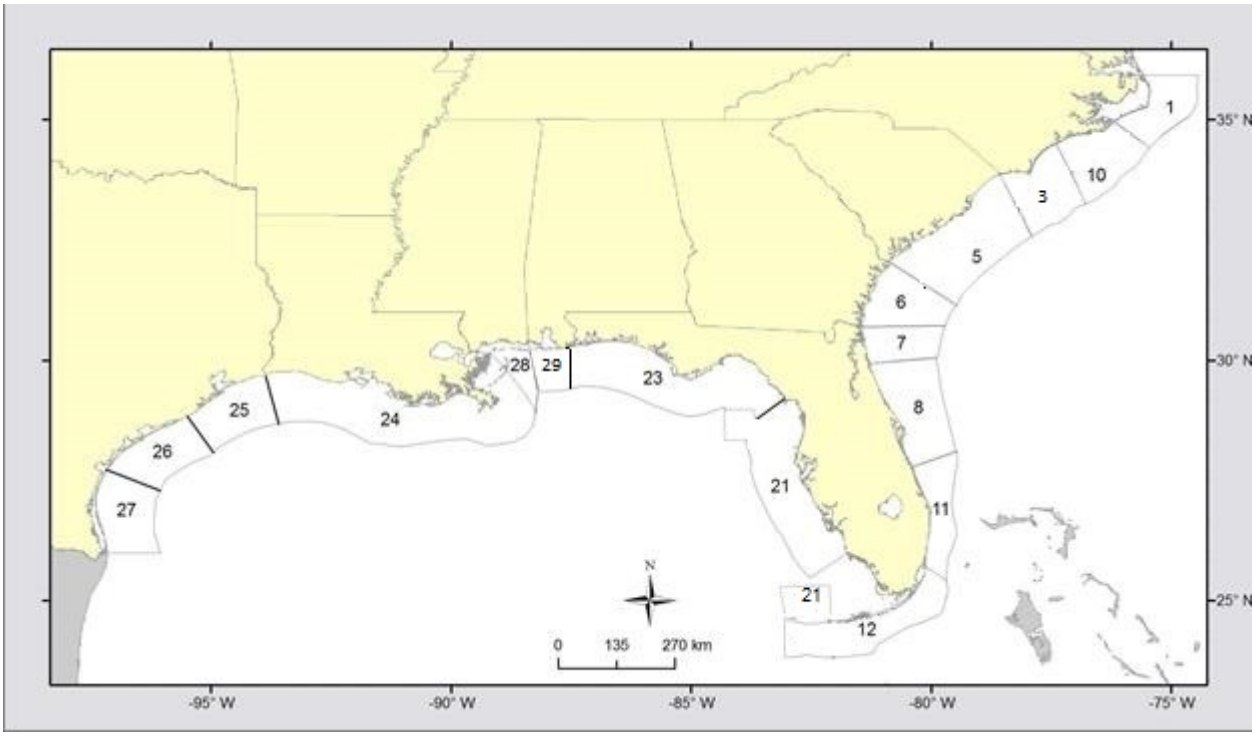

Figure 2: Headboat sampling areas 2013 - present.

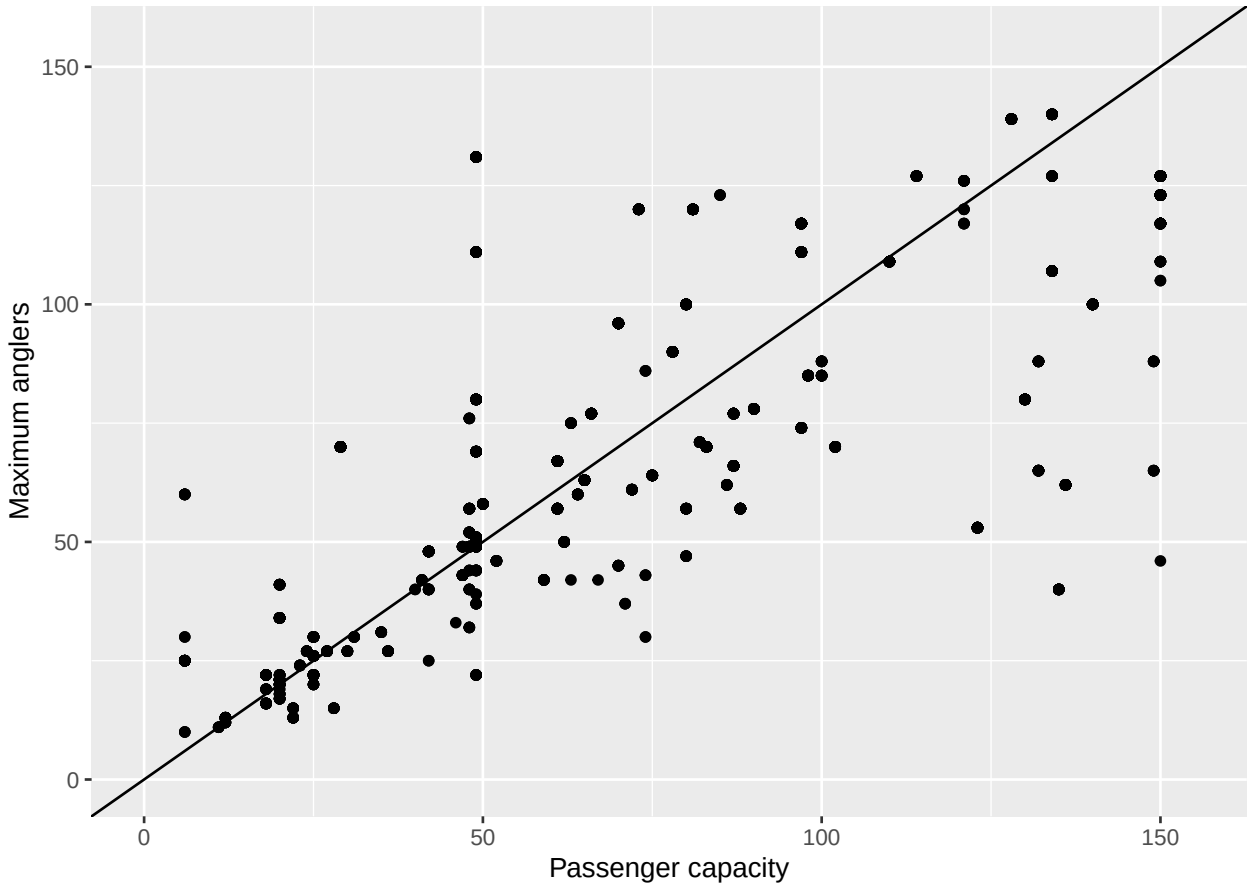

Figure 3: Comparison of the maximum number of anglers reported (Maximimum anglers) to the passenger capacity for vessels with passenger capacity information (Passenger capacity).

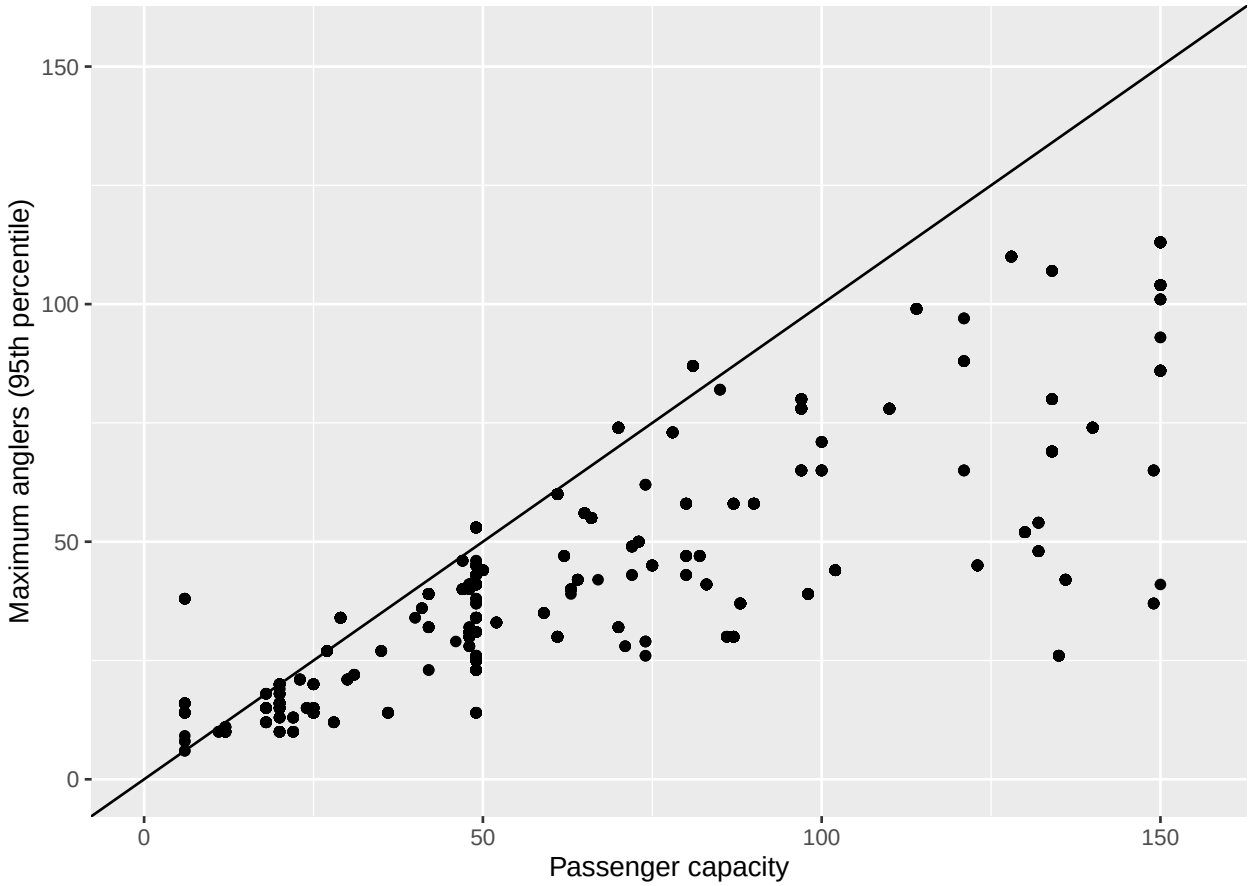

Figure 4: Comparison of the 95th percentile of the maximum number of anglers reported (Maximimum anglers) to the passenger capacity for vessels with passenger capacity information (Passenger capacity).

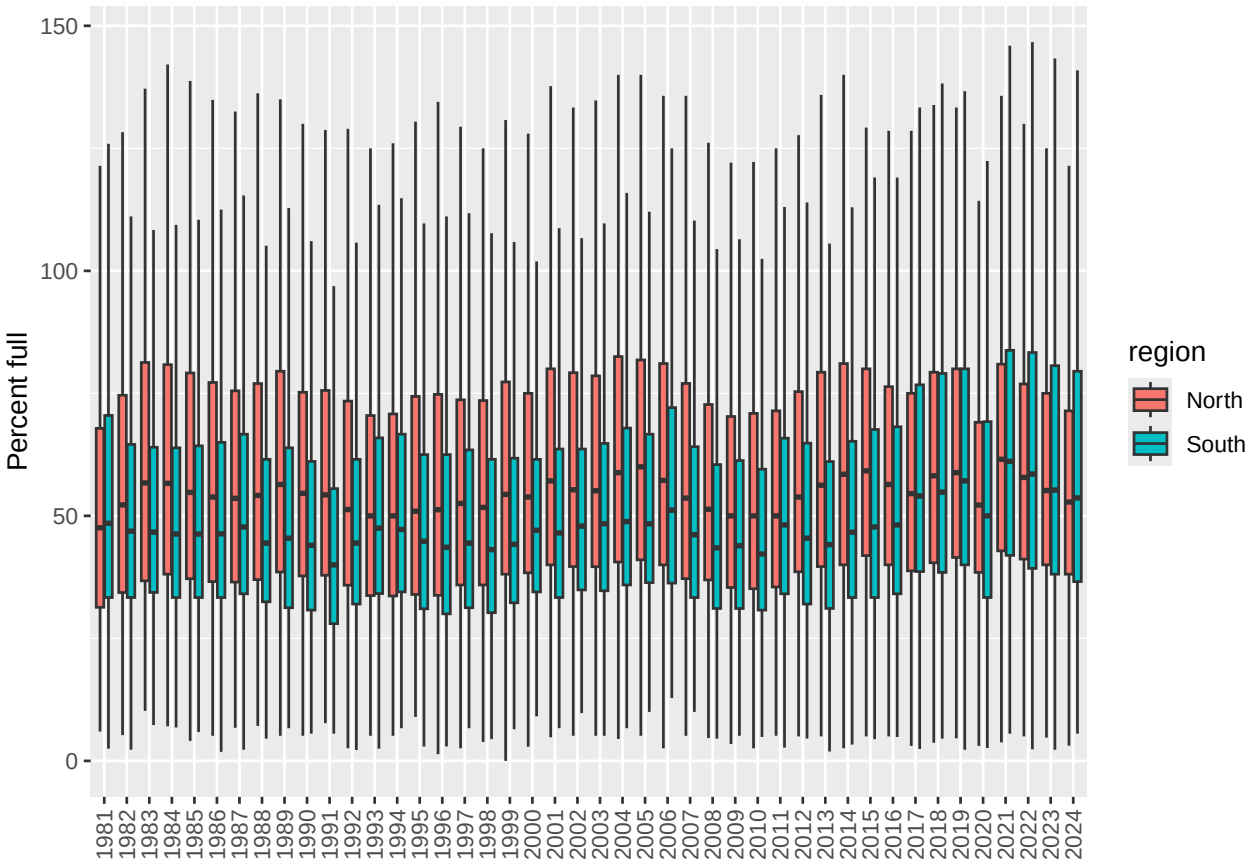

Figure 5: Comparison of anglers relative to capacity for trips in the Southeast US Atlantic by region (outliers not plotted).

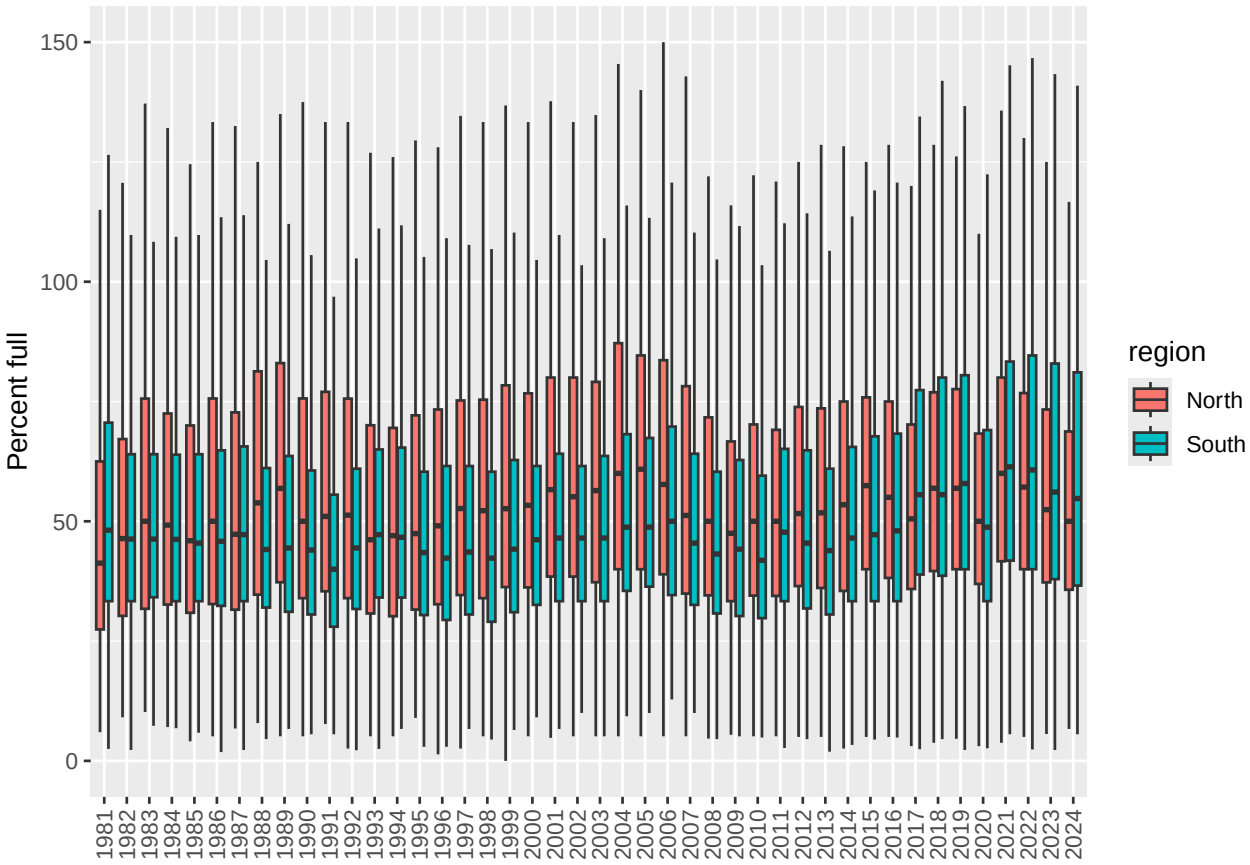

Figure 6: Comparison of anglers relative to capacity for trips in the Southeast US Atlantic by region for half day trips (approx. 5 hours, day or night,outliers not plotted).

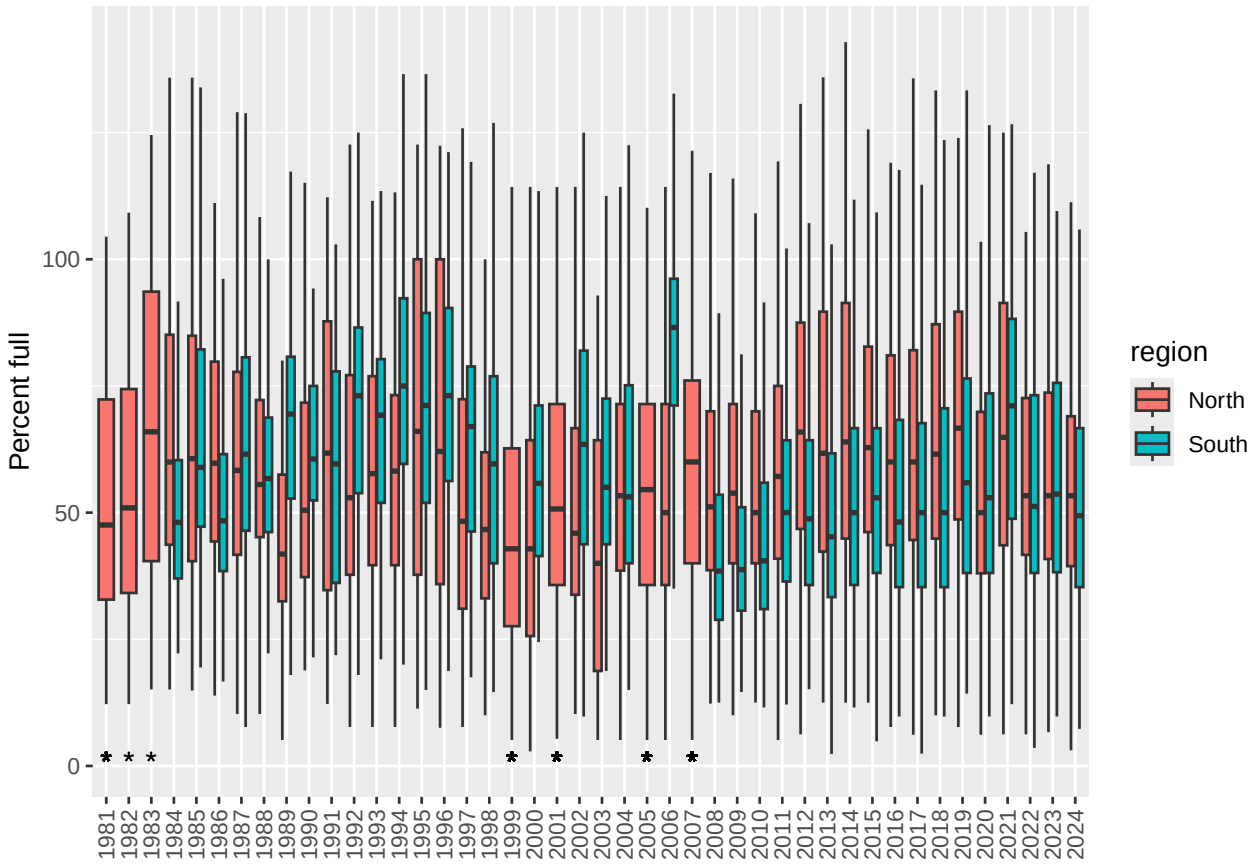

Figure 7: Comparison of anglers relative to capacity for trips in the Southeast US Atlantic by region for three-quarter day trips (approx. 7 hours, day or night,outliers not plotted). Years where data are confidential are denoted with and asterisk.

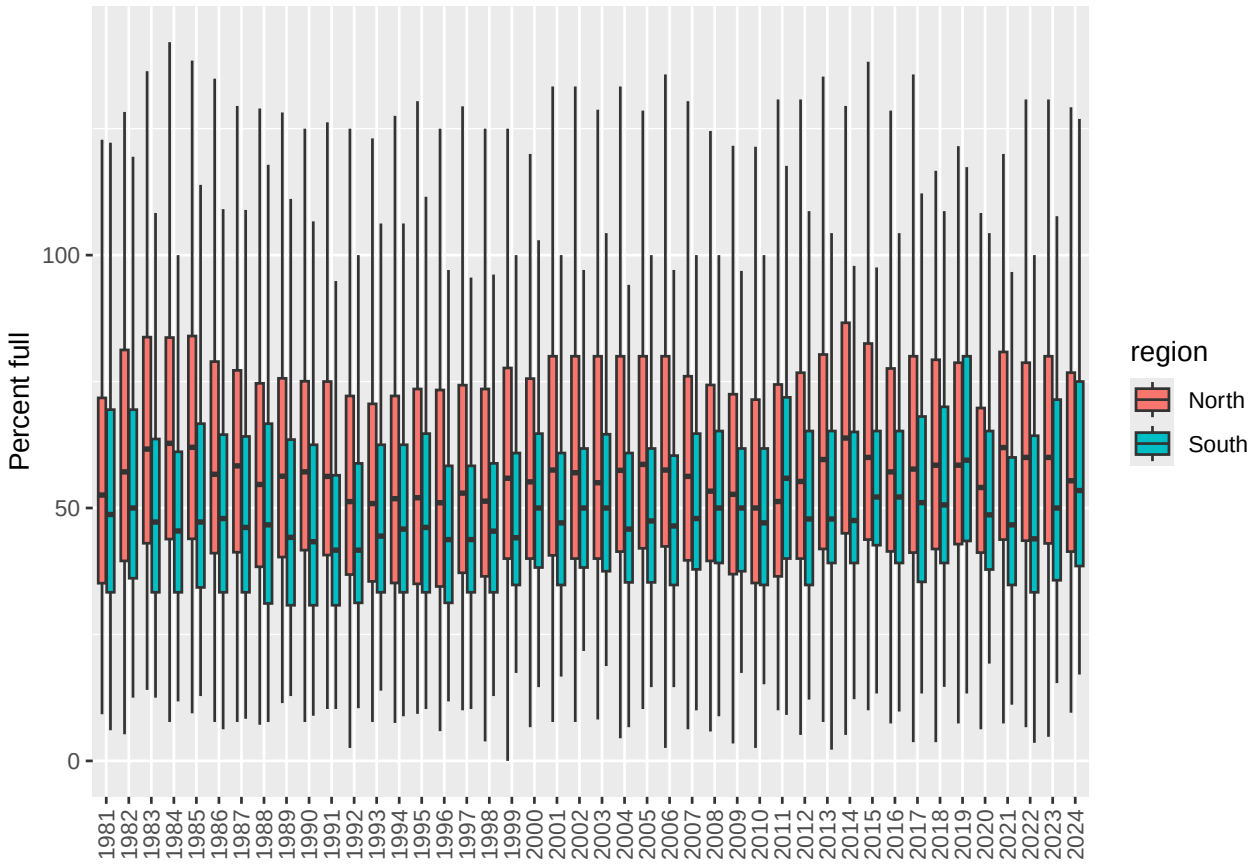

Figure 8: Comparison of anglers relative to capacity for trips in the Southeast US Atlantic by region for full day trips (approx. 10 hours, day or night,outliers not plotted).

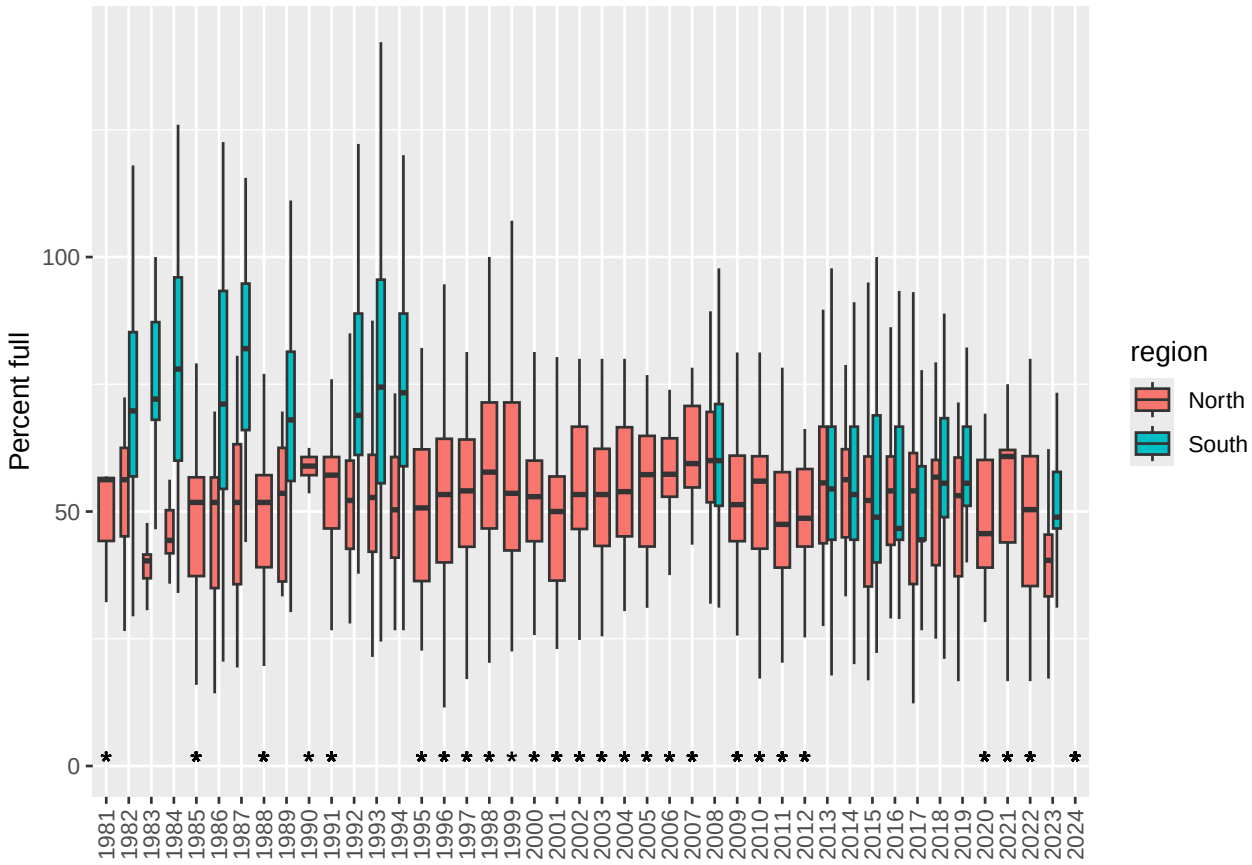

Figure 9: Comparison of anglers relative to capacity for trips in the Southeast US Atlantic by region for multi-day day trips (approx. 12 to 144 hours,outliers not plotted). Years where data are confidential are denoted with and asterisk.

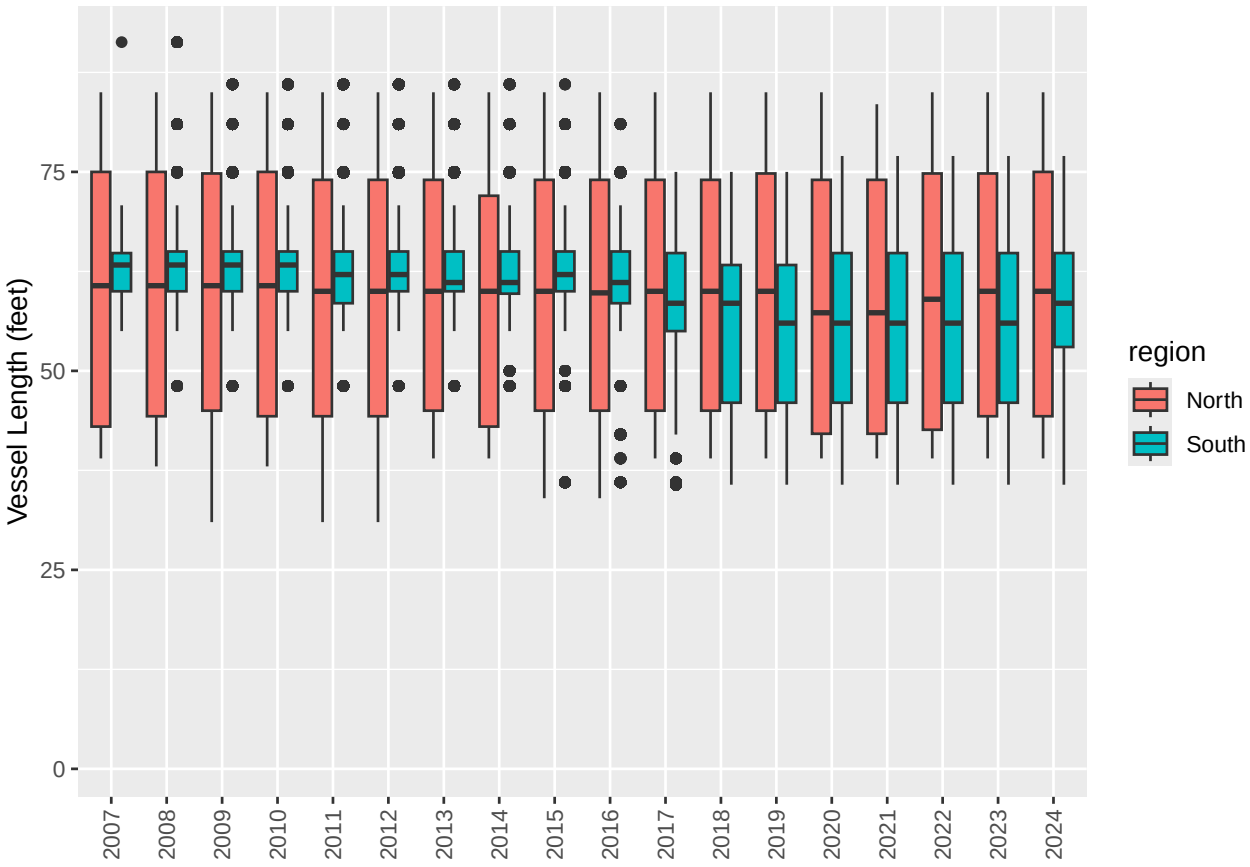

Figure 10: Comparison of vessel length in the Southeast US Atlantic by region.

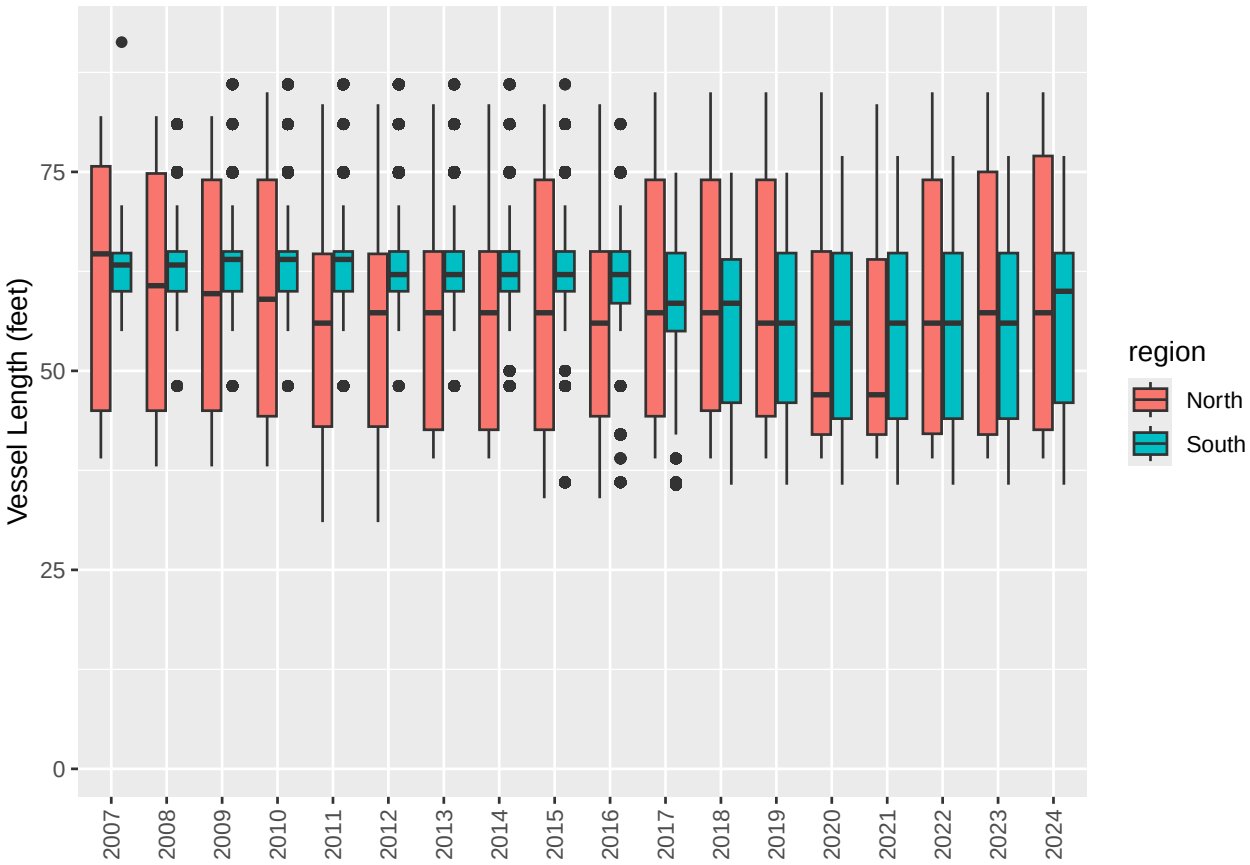

Figure 11: Comparison of vessel length in the Southeast US Atlantic by region for half-day trips.

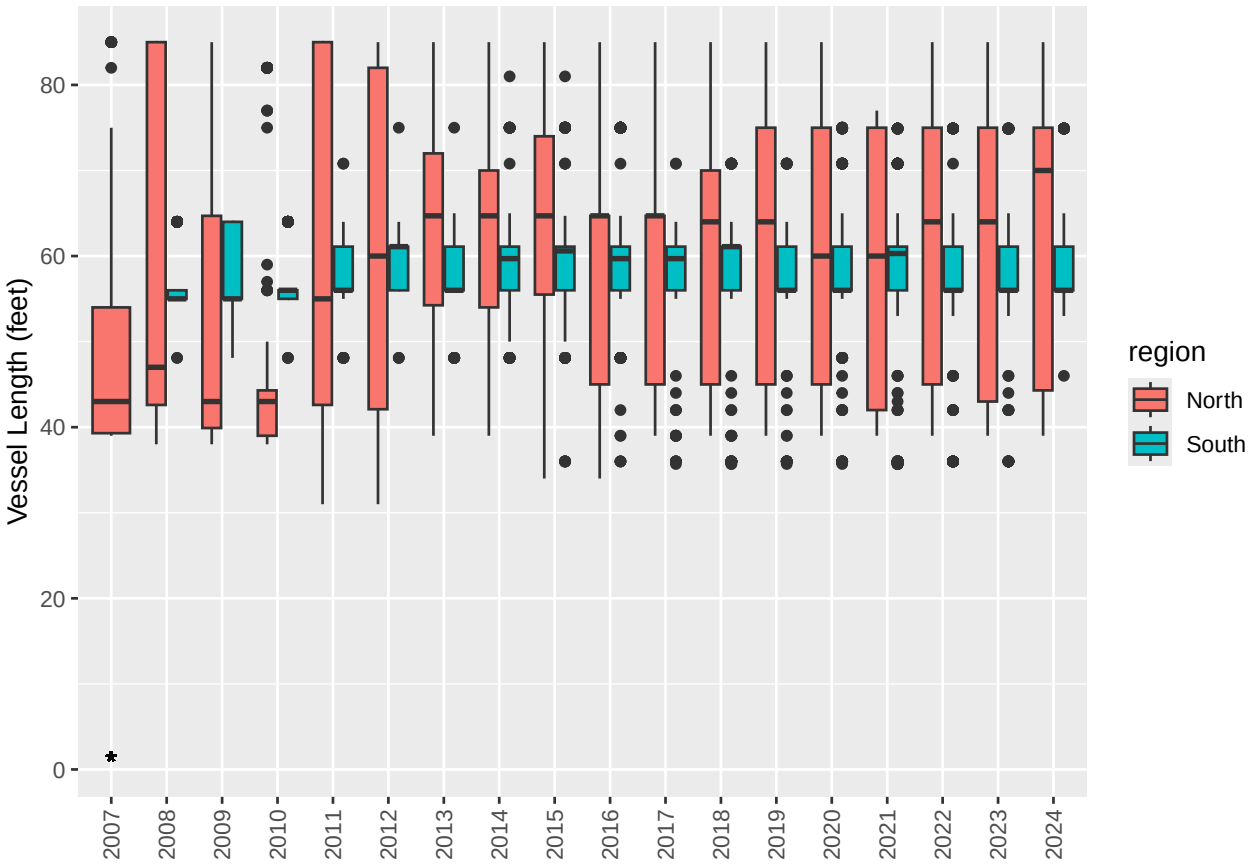

Figure 12: Comparison of vessel length in the Southeast US Atlantic by region for three-quarter day trips. Years where data are confidential are denoted with and asterisk.

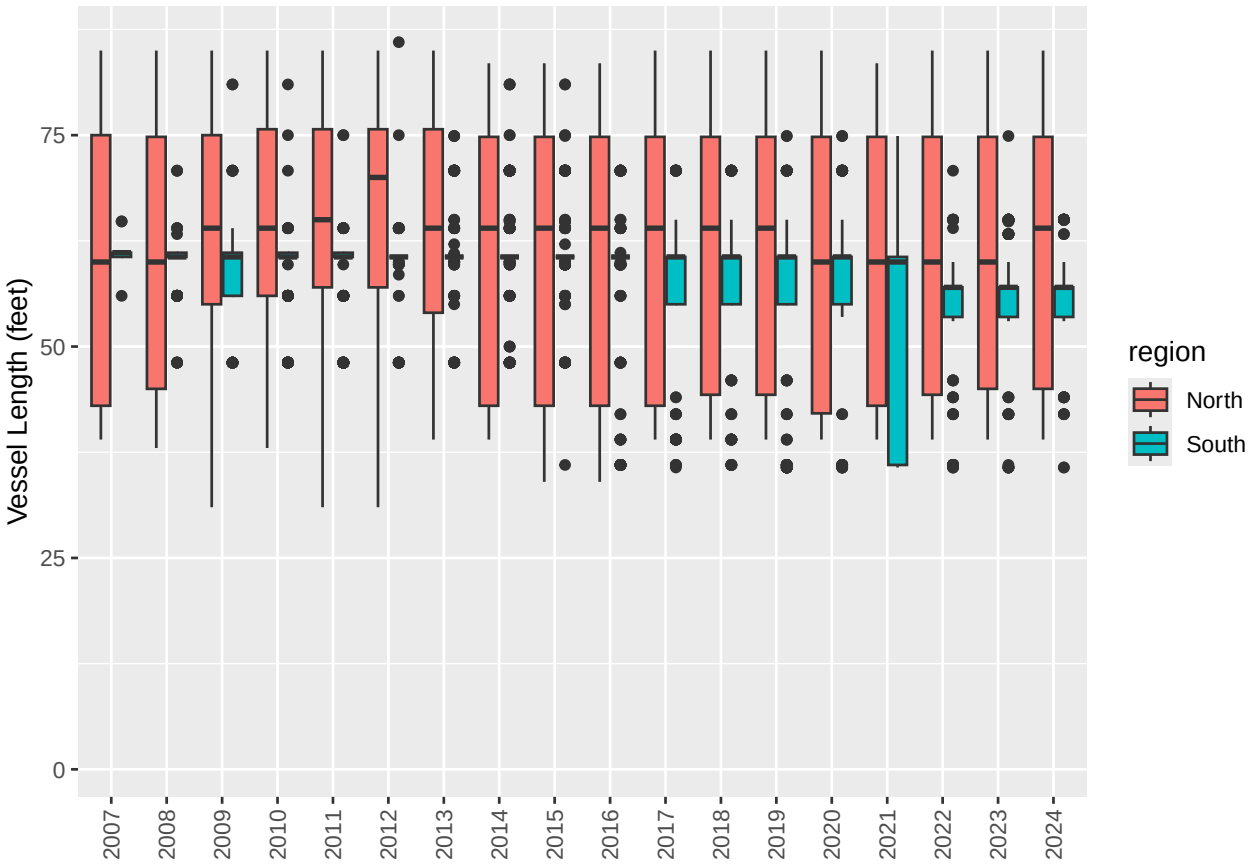

Figure 13: Comparison of vessel length in the Southeast US Atlantic by region for full-day trips.

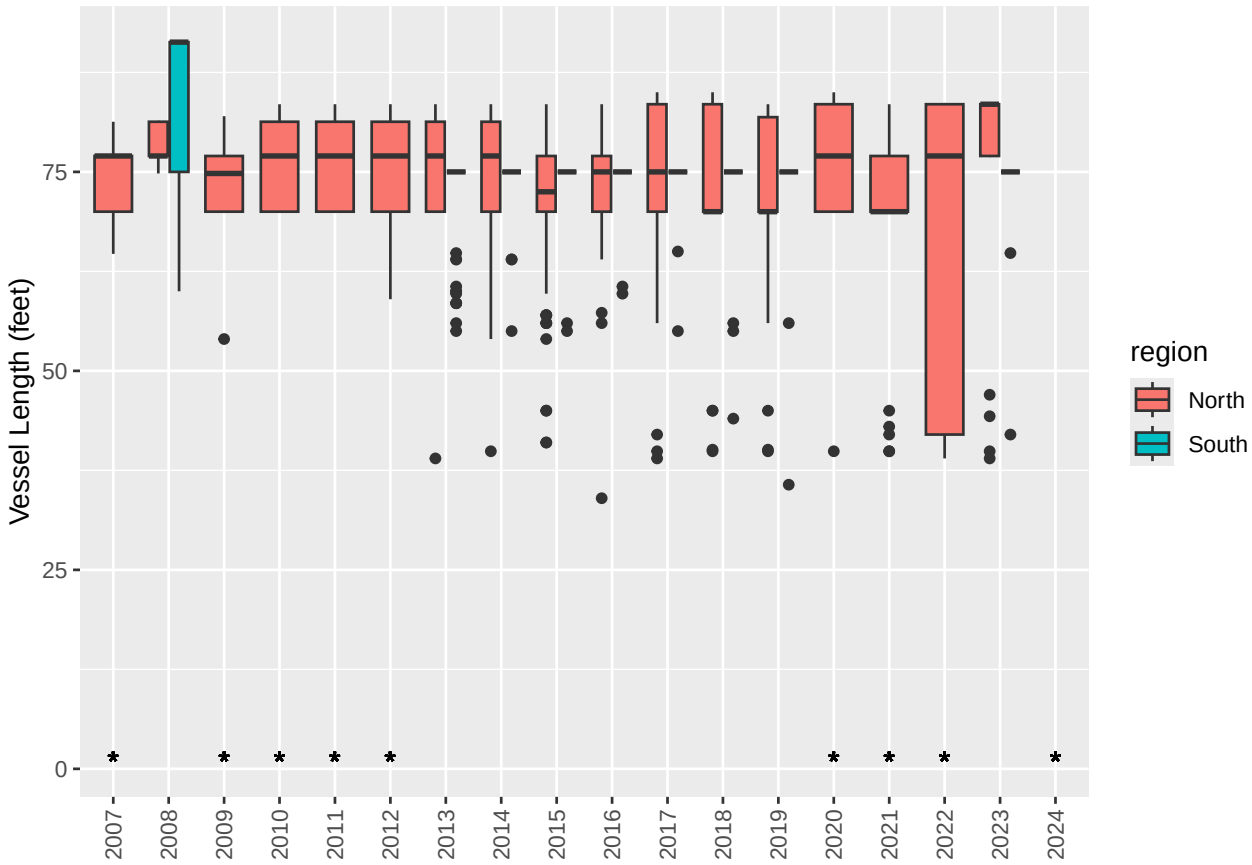

Figure 14: Comparison of vessel length in the Southeast US Atlantic by region for multi-day trips. Years where data are confidential are denoted with and asterisk.

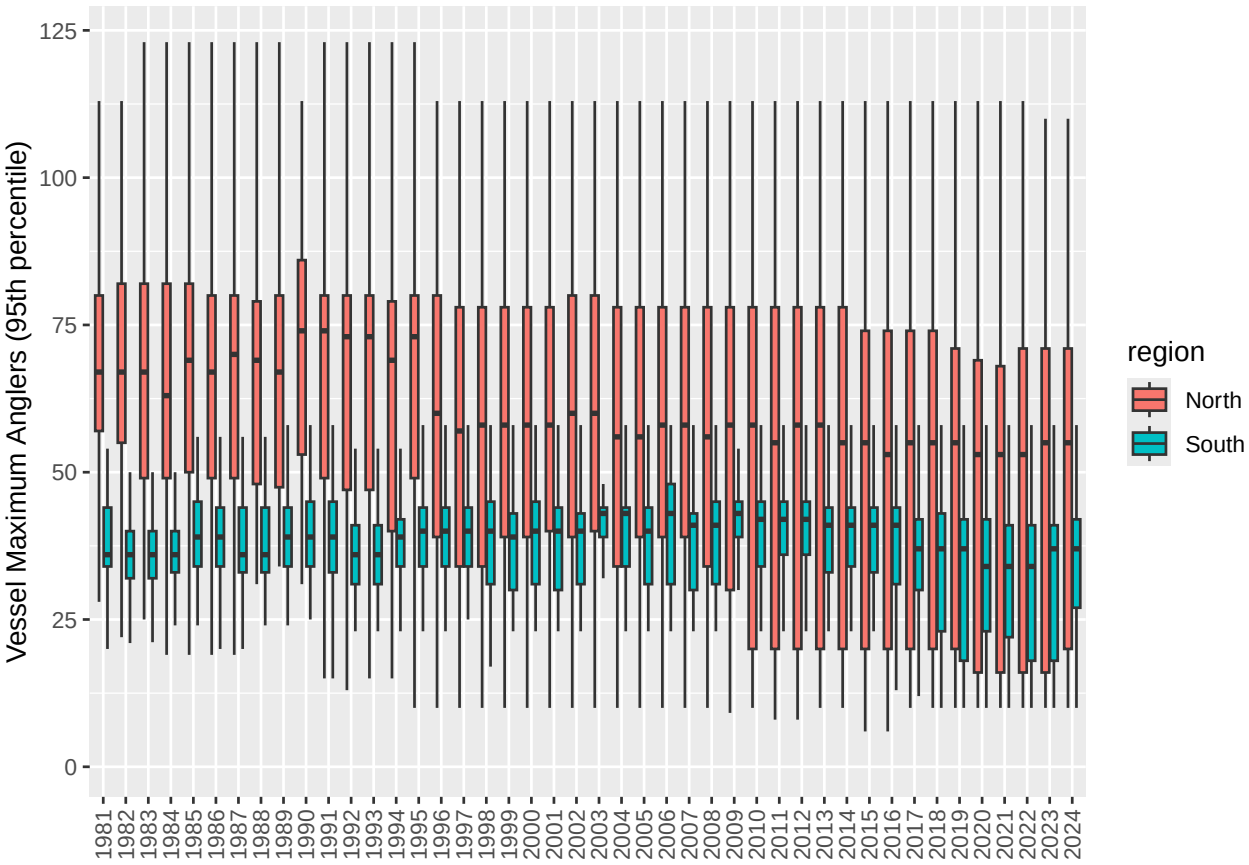

Figure 15: Comparison of the 95th percentile of the reported anglers per vessel as a proxy for vessel size in the Southeast US Atlantic by region (outliers not plotted).

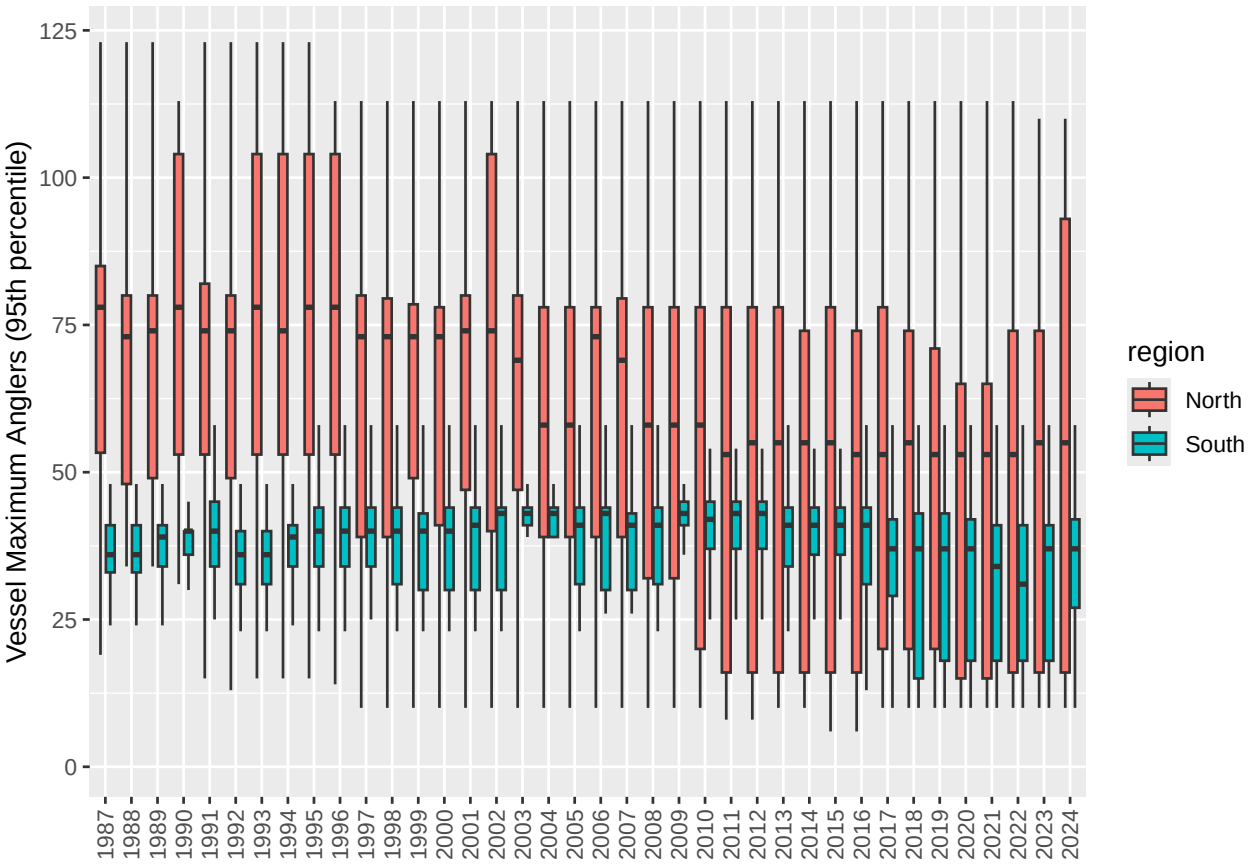

Figure 16: Comparison of the 95th percentile of the reported anglers per vessel as a proxy for vessel size in the Southeast US Atlantic by region for half-day trips (outliers not plotted).

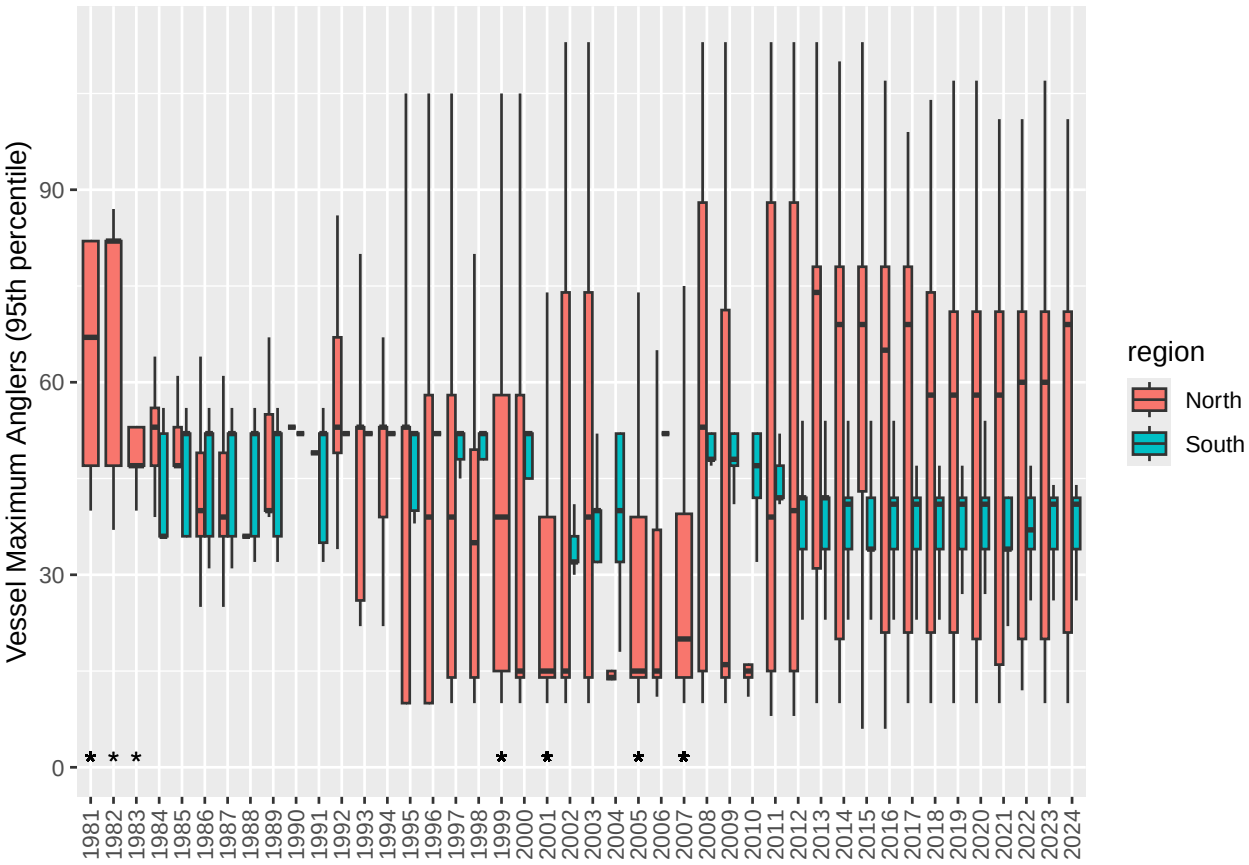

Figure 17: Comparison of the 95th percentile of the reported anglers per vessel as a proxy for vessel size in the Southeast US Atlantic by region for three-quarter day trips (outliers not plotted). Years where data are confidential are denoted with and asterisk.

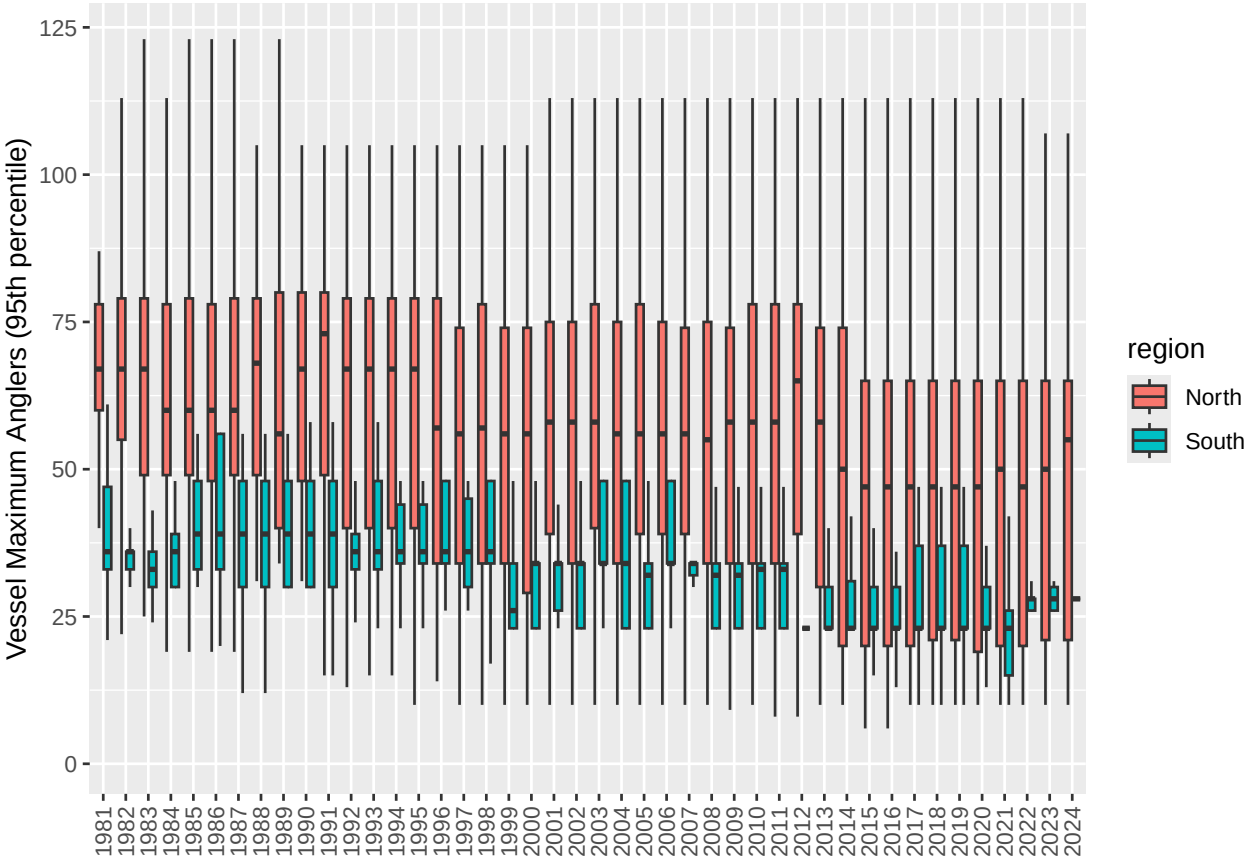

Figure 18: Comparison of the 95th percentile of the reported anglers per vessel as a proxy for vessel size in the Southeast US Atlantic by region for full-day trips (outliers not plotted).

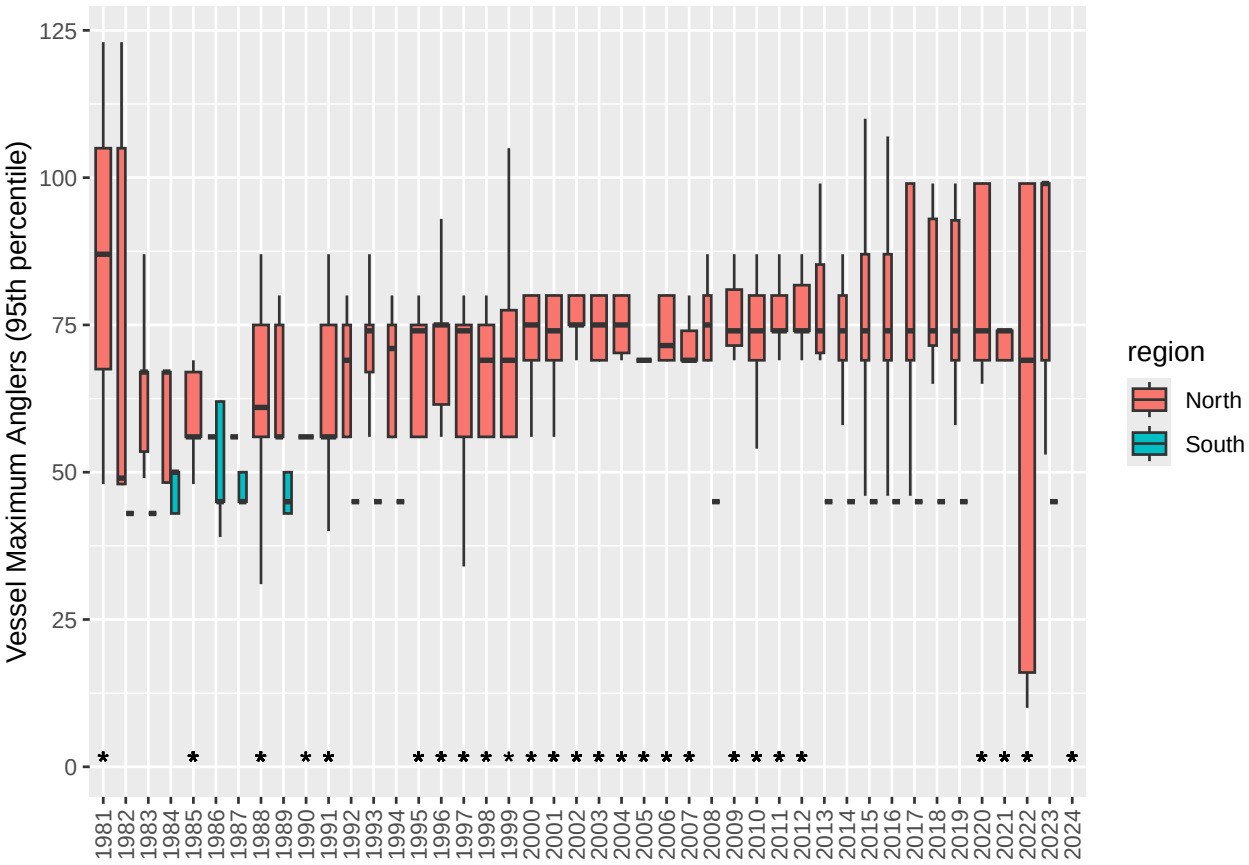

Figure 19: Comparison of the 95th percentile of the reported anglers per vessel as a proxy for vessel size in the Southeast US Atlantic by region for multi-day trips (outliers not plotted). Years where data are confidential are denoted with and asterisk.

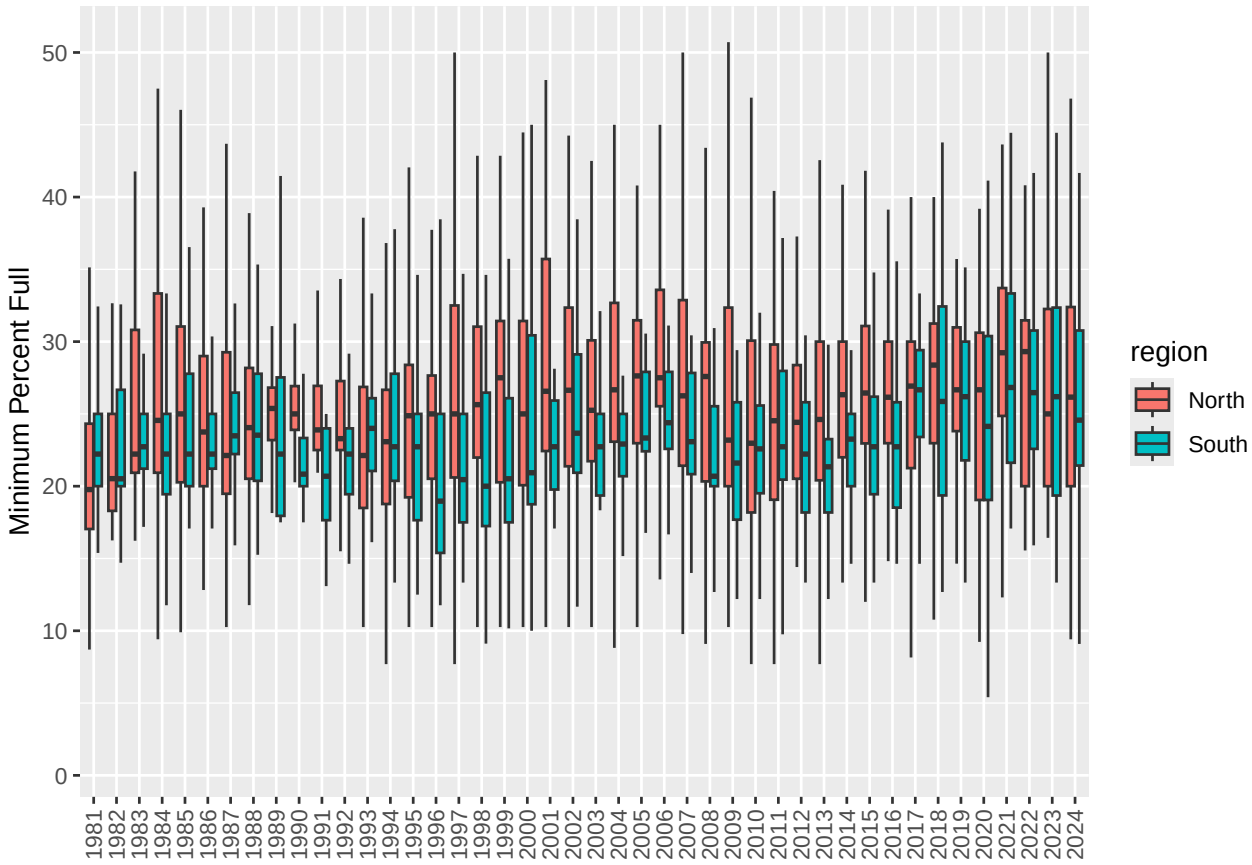

Figure 20: Comparison of minimum anglers relative to capacity for trips in the Southeast US Atlantic by region (outliers not plotted).

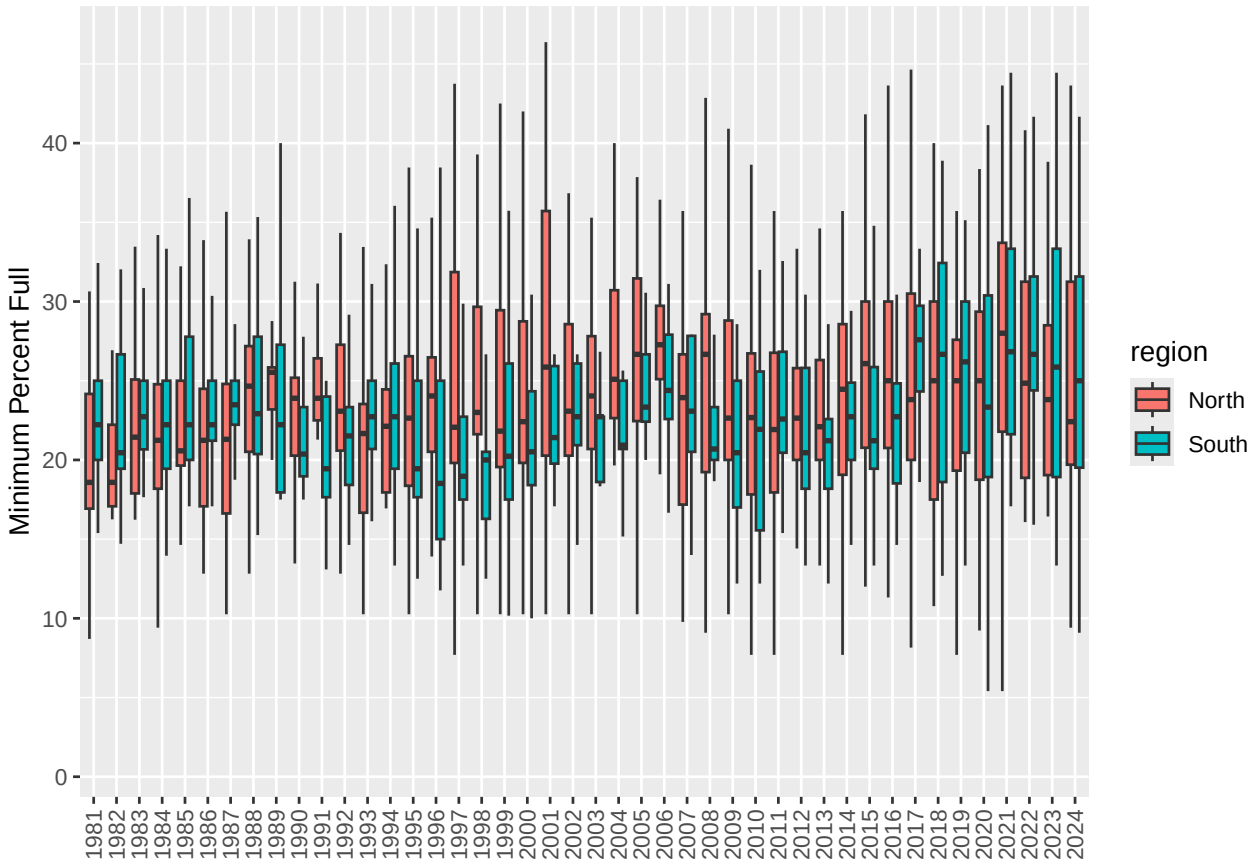

Figure 21: Comparison of the minimum anglers relative to capacity for trips in the Southeast US Atlantic by region for half-day trips (outliers not plotted).

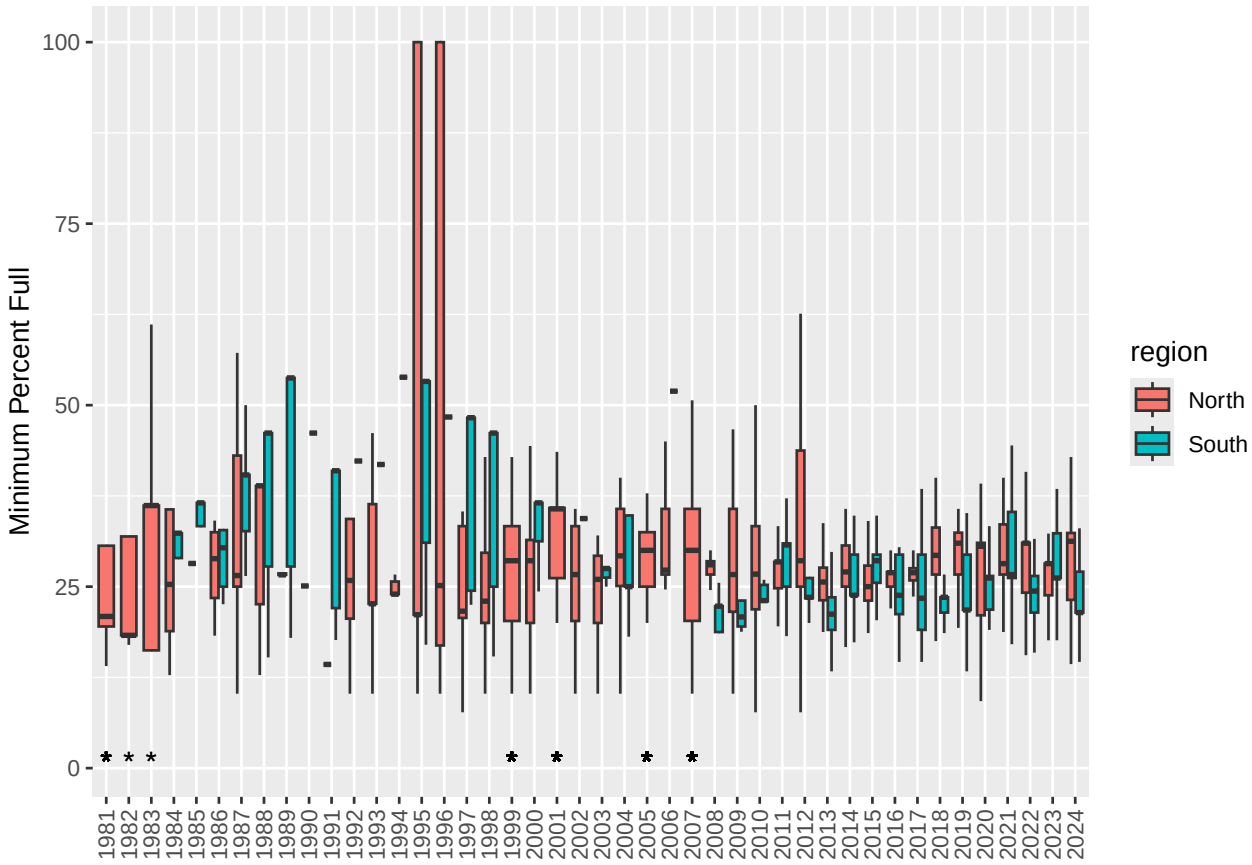

Figure 22: Comparison of the minimum anglers relative to capacity for trips in the Southeast US Atlantic by region for three-quarter day trips (outliers not plotted). Years where data are confidential are denoted with and asterisk.

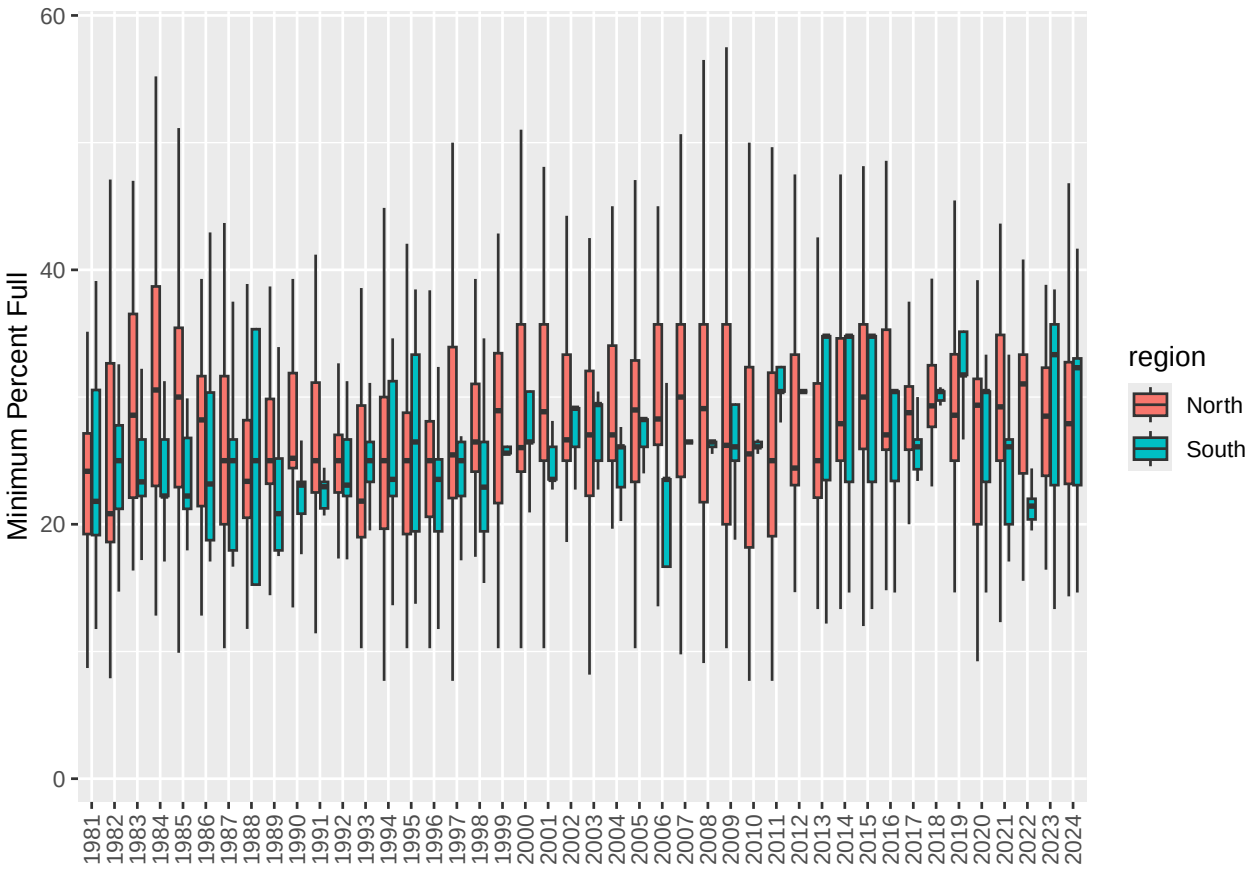

Figure 23: Comparison of the minimum anglers relative to capacity for trips in the Southeast US Atlantic by region for full-day trips (outliers not plotted).

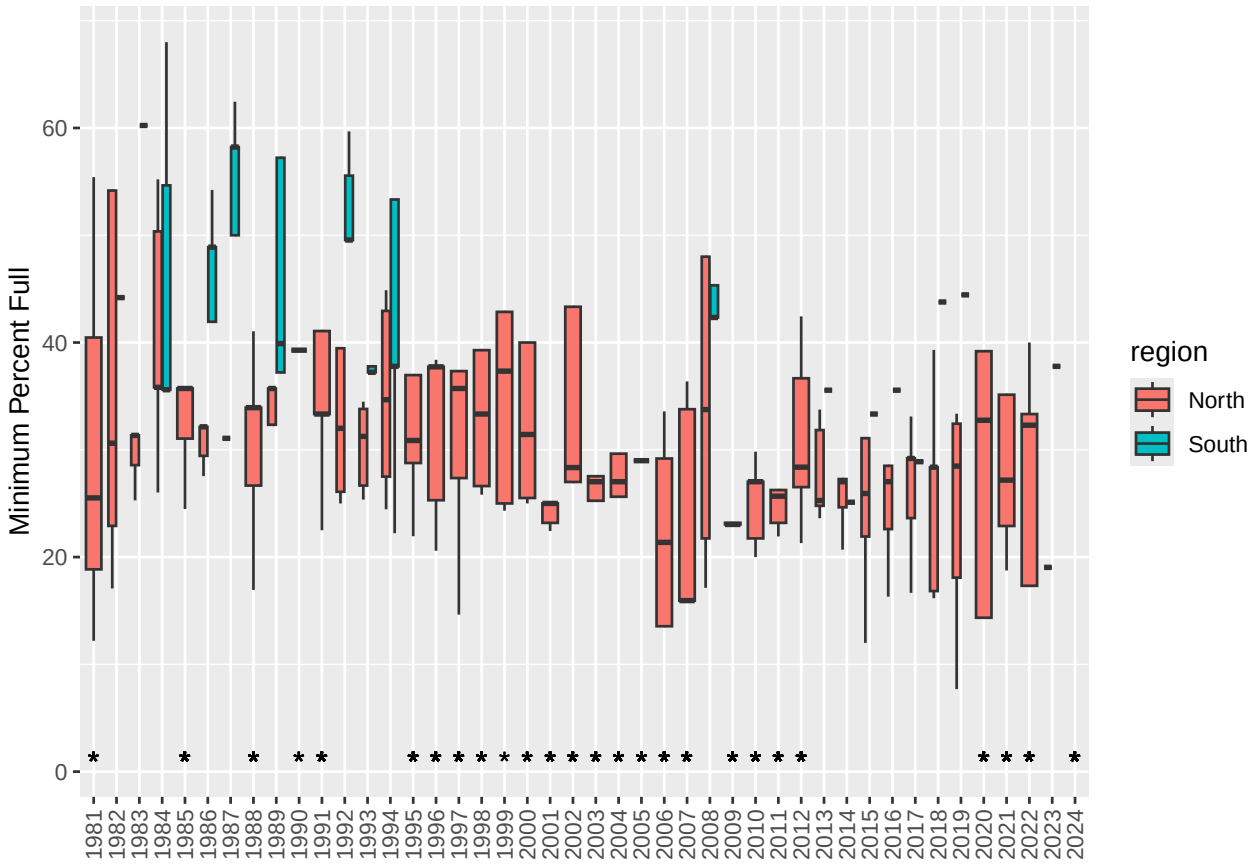

Figure 24: Comparison of the minimum anglers relative to capacity for trips in the Southeast US Atlantic by region for multi-day trips (outliers not plotted). Years where data are confidential are denoted with and asterisk.

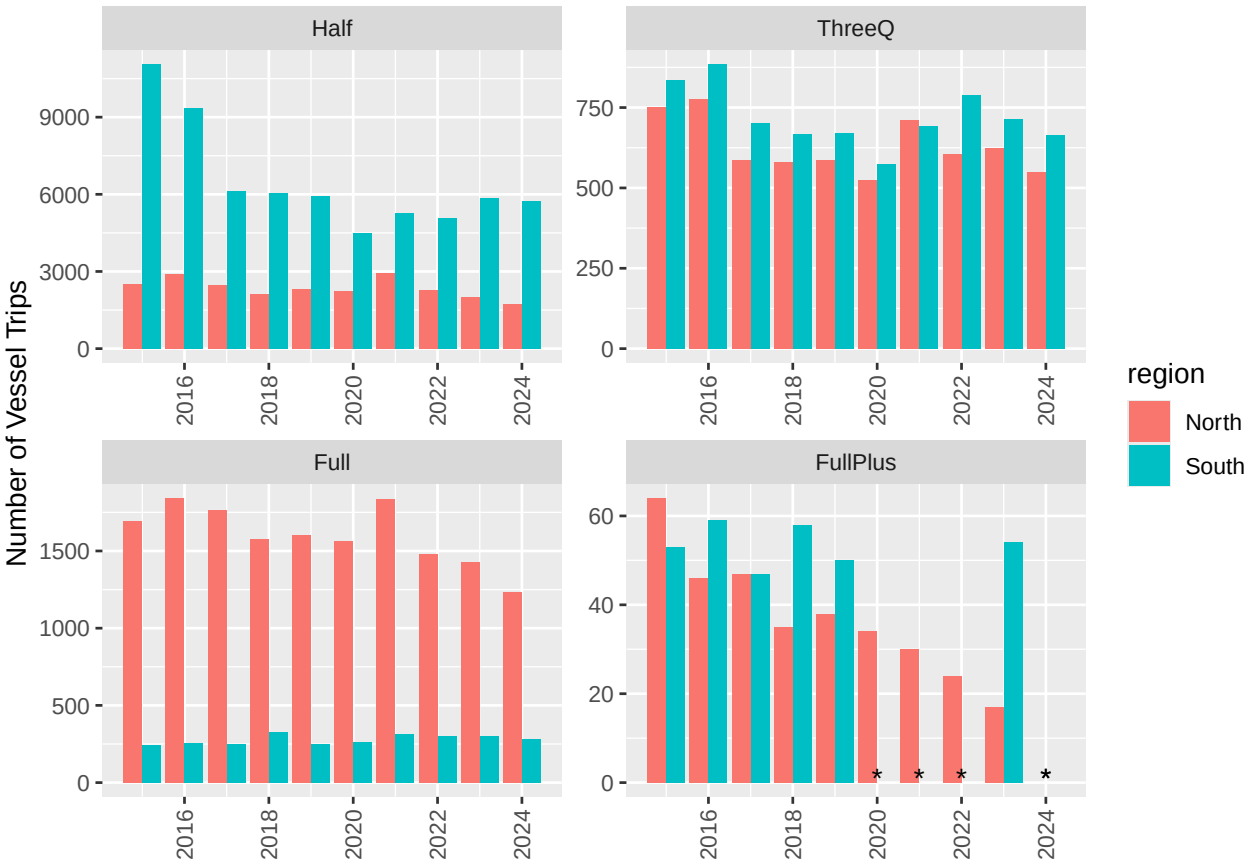

Figure 25: Comparison of the number of trips in the Southeast US Atlantic by region and trip type. Years where data are confidential are denoted with and asterisk.

Figure 26: Comparison of the number of trips in the Southeast US Atlantic by month and region for half-day trips. Year and month combinations where data are confidential are denoted with and asterisk.

Figure 27: Comparison of the number of trips in the Southeast US Atlantic by month and region for three-quarter-day trips. Year and month combinations where data are confidential are denoted with and asterisk.

Figure 28: Comparison of the number of trips in the Southeast US Atlantic by month and region for full-day trips. Year and month combinations where data are confidential are denoted with and asterisk.

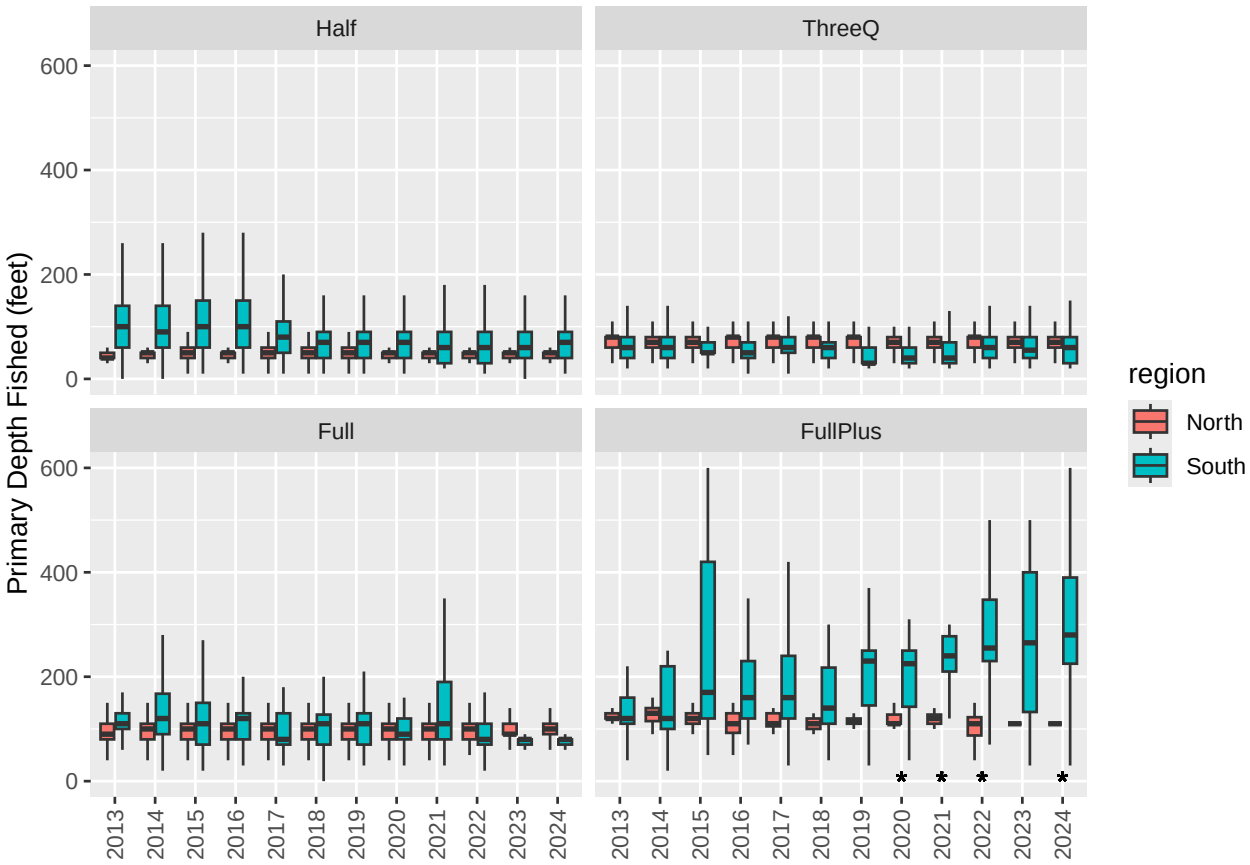

Figure 29: Comparison of primary depth fished in the Southeast US Atlantic by region and trip type (outliers not plotted).

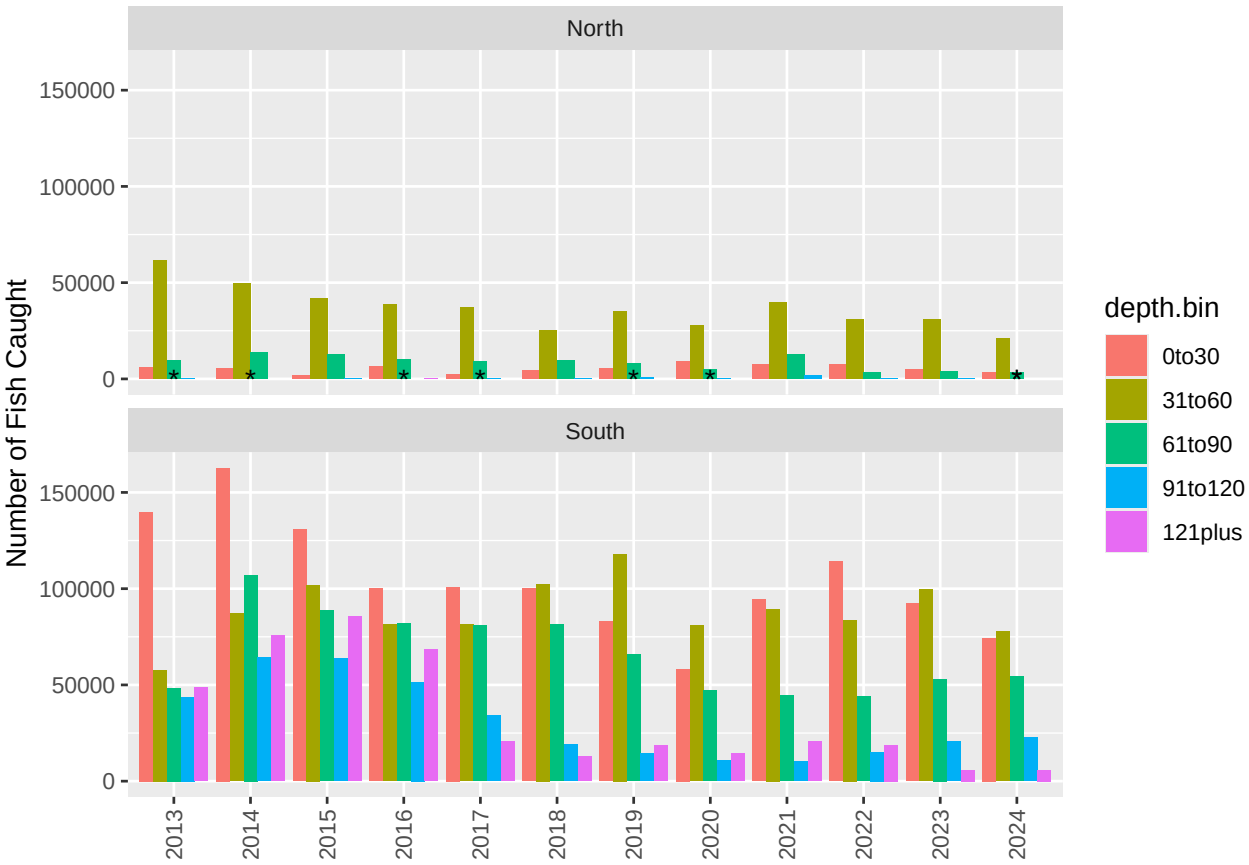

Figure 30: Comparison of the total catch in the Southeast US Atlantic by year and region for half-day trips. Year and depth bin combinations where data are confidential are denoted with and asterisk.

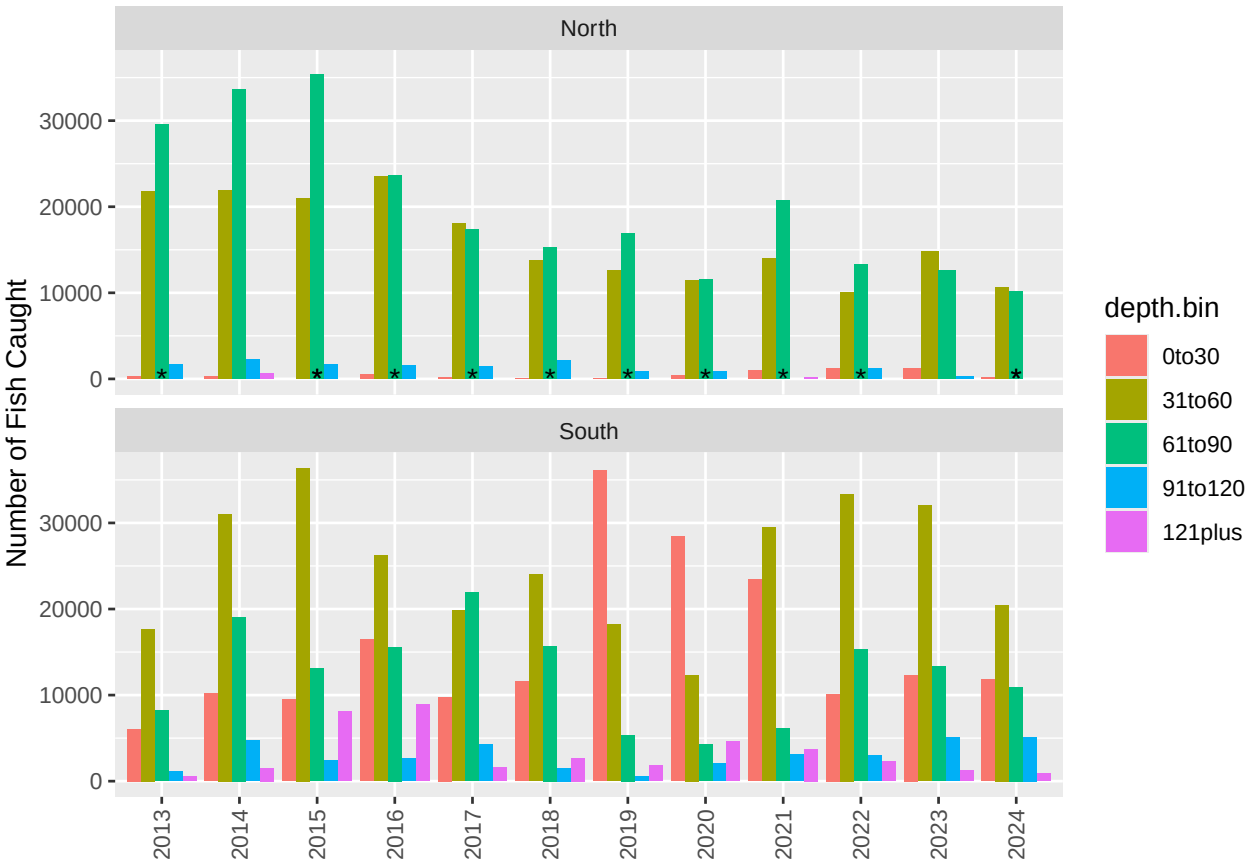

Figure 31: Comparison of the total catch in the Southeast US Atlantic by year and region for three-quarter-day trips. Year and depth bin combinations where data are confidential are denoted with and asterisk.

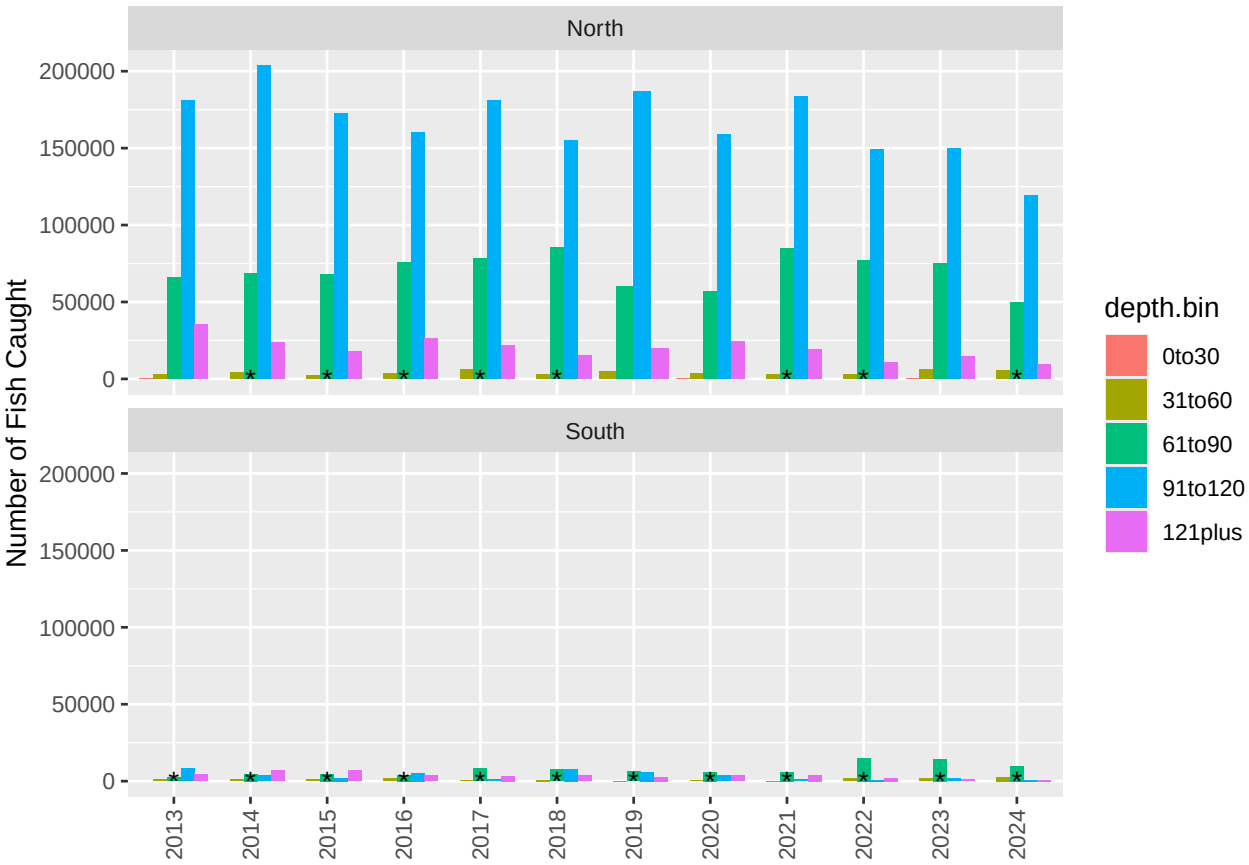

Figure 32: Comparison of the total catch in the Southeast US Atlantic by year and region for full-day trips. Year and depth bin combinations where data are confidential are denoted with and asterisk.

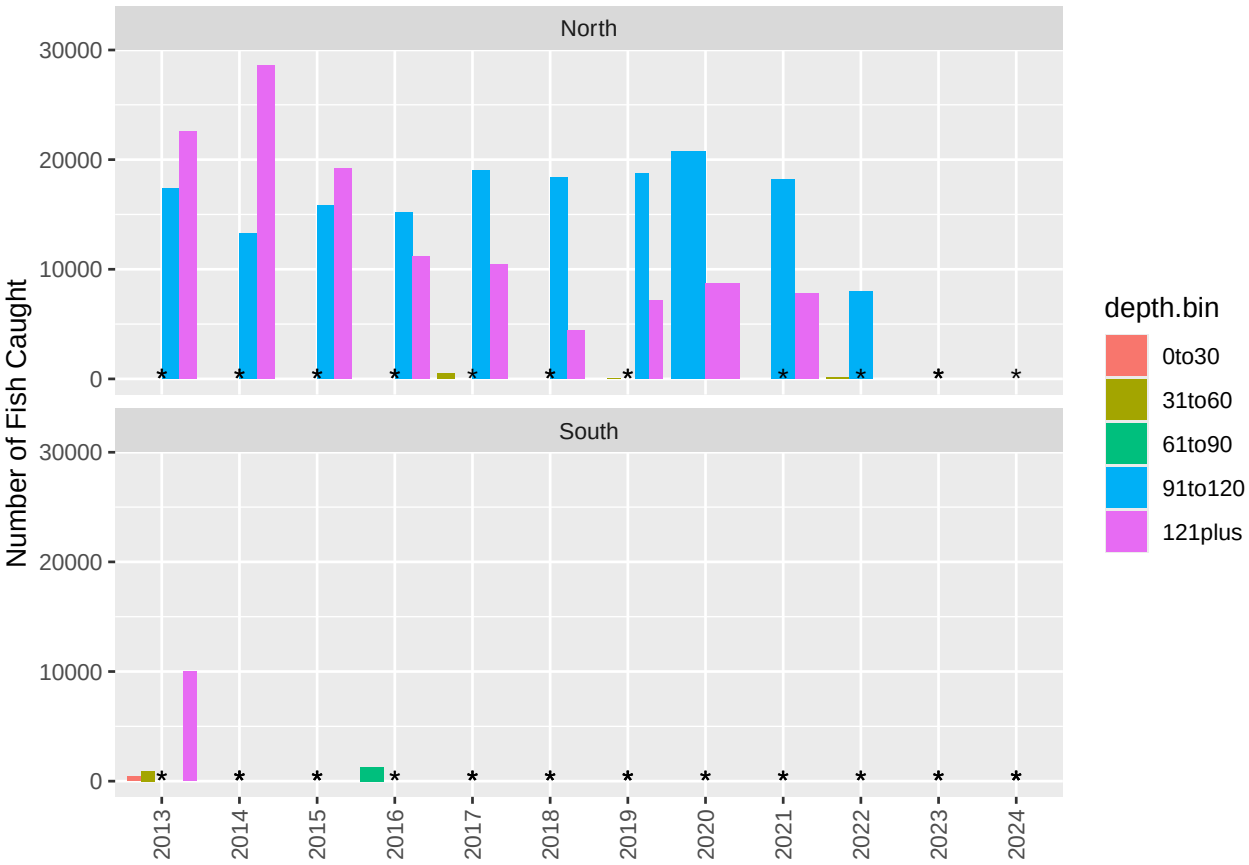

Figure 33: Comparison of the total catch in the Southeast US Atlantic by year and region for multi-day trips. Year and depth bin combinations where data are confidential are denoted with and asterisk.

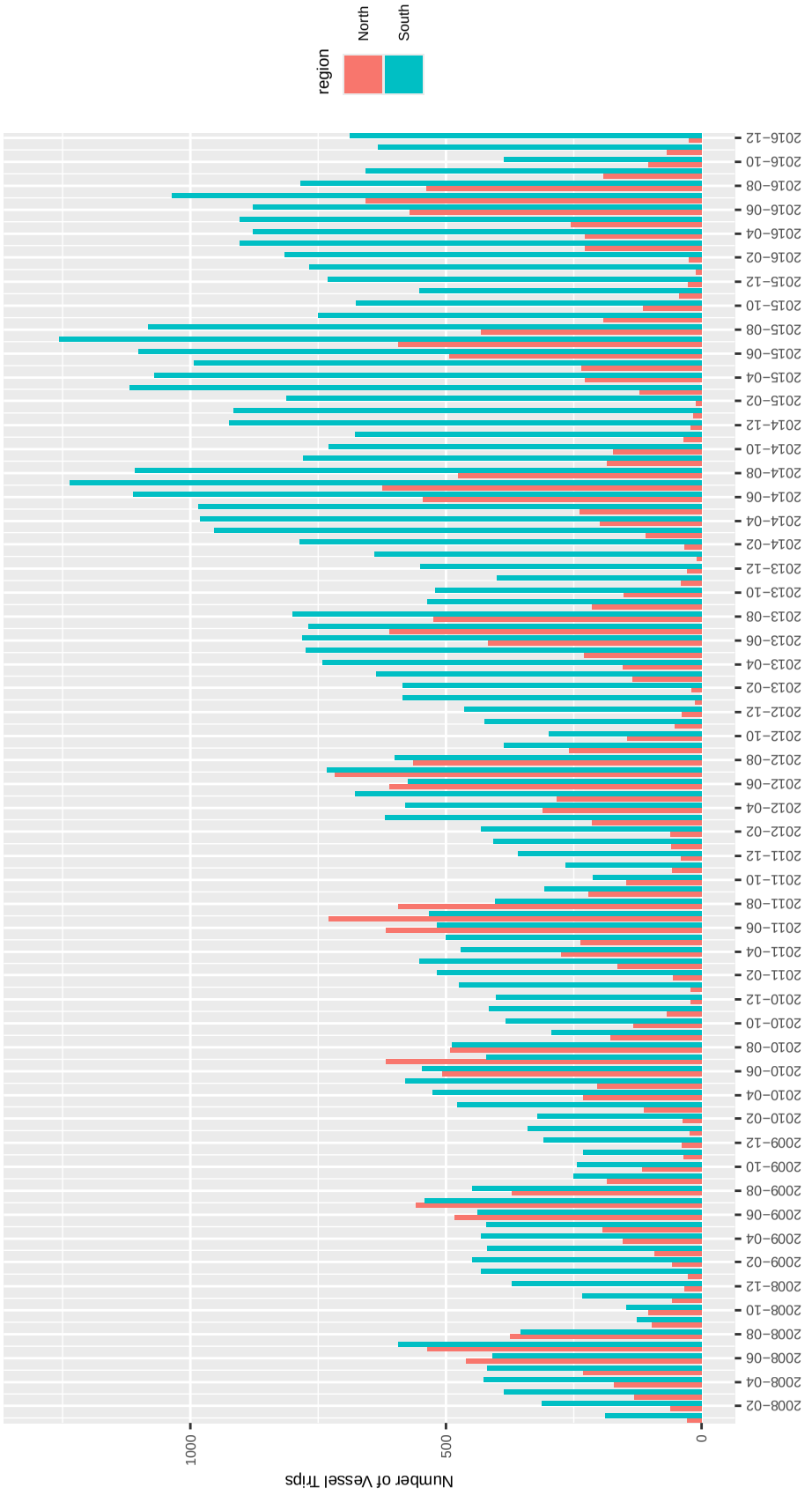

Figure 34: Comparison of the number of half-day vessel trips in the Southeast US Atlantic for 2008 - 2016 by month, trip type, and region.

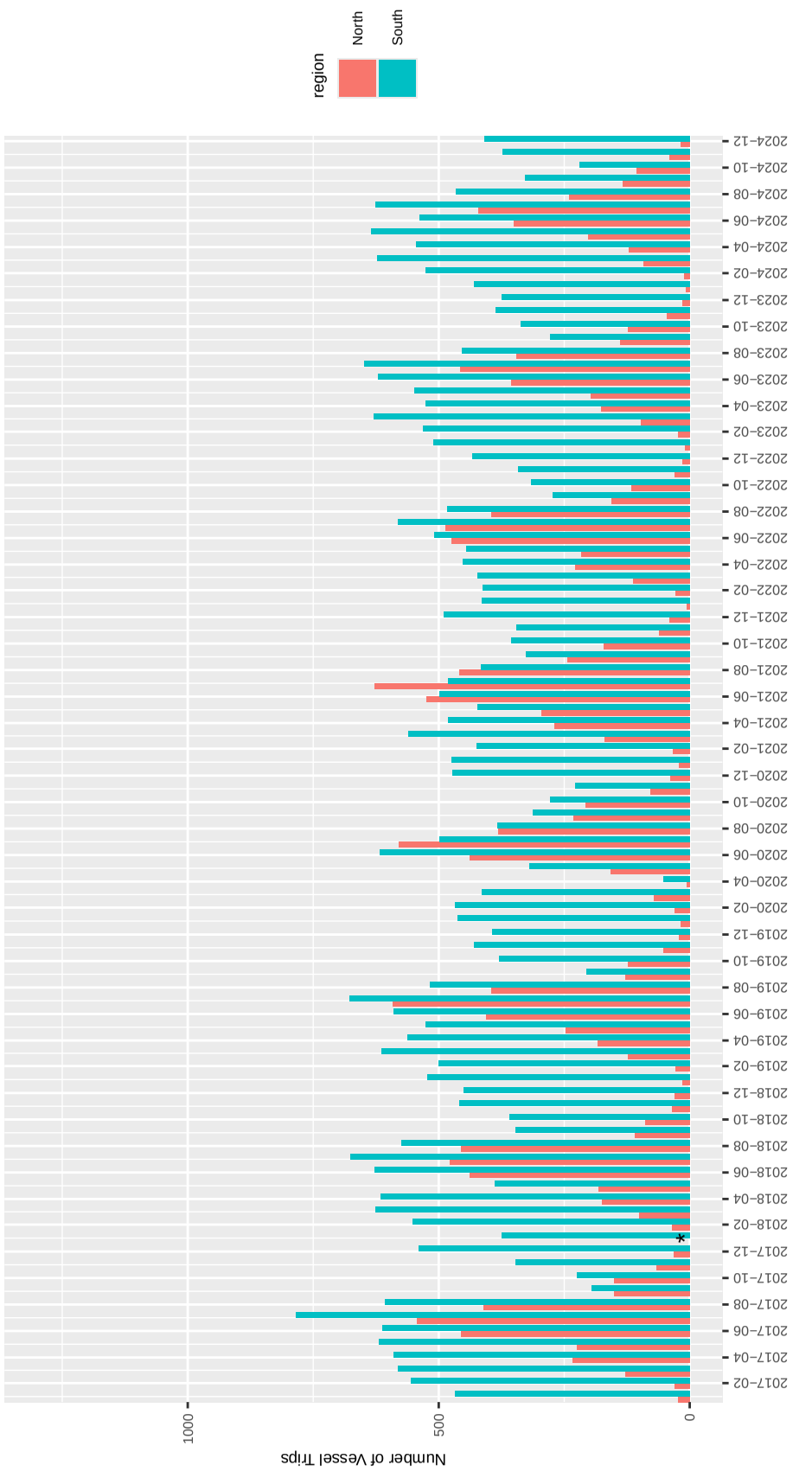

Figure 35: Comparison of the number of half-day vessel trips in the Southeast US Atlantic for 2017 - 2024 by month, trip type, and region. Year and month combinations where data are confidential are denoted with and asterisk.

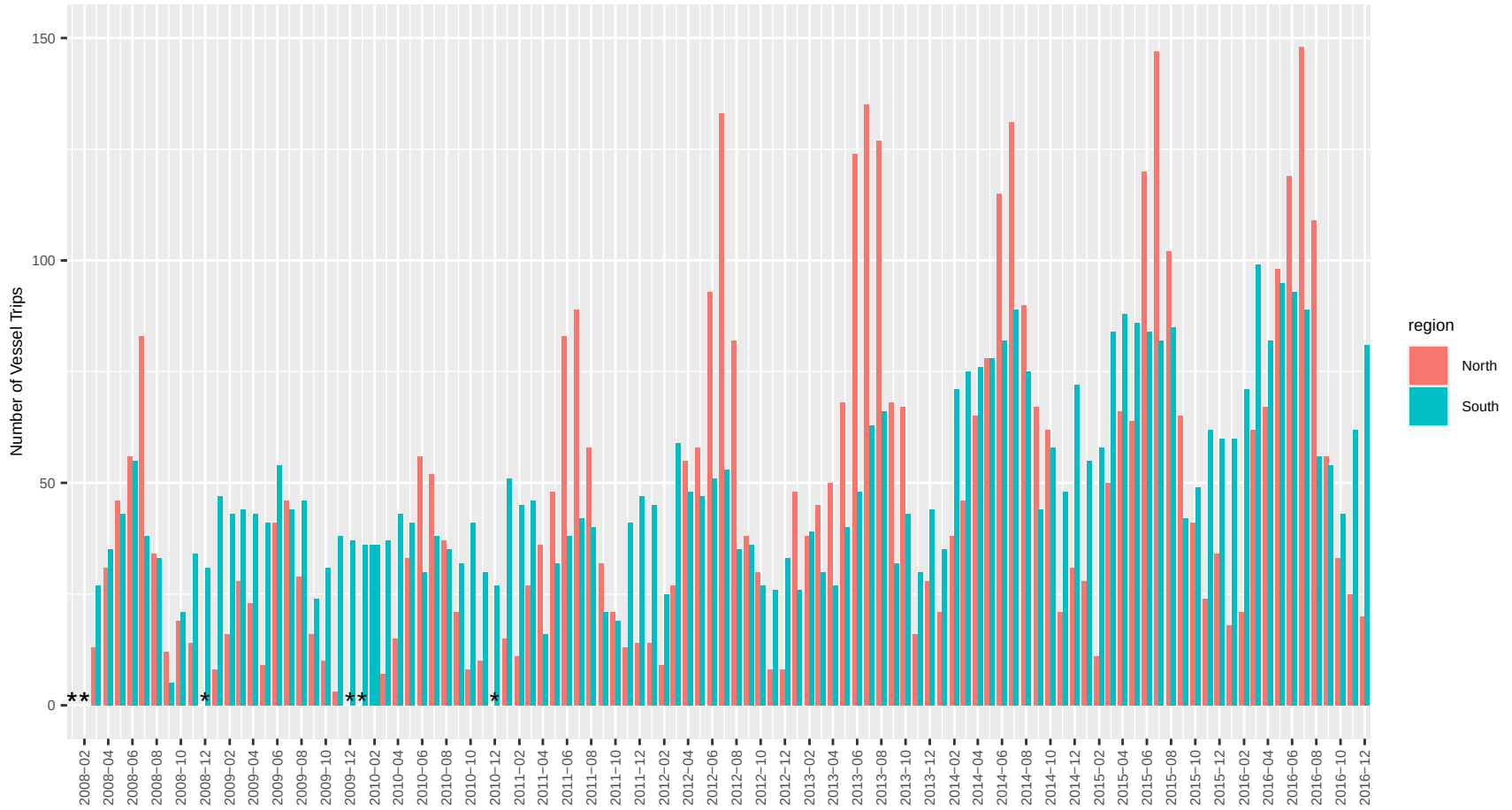

Figure 36: Comparison of the number of three-quarter-day vessel trips in the Southeast US Atlantic for 2008 - 2016 by month, trip type, and region. Year and month combinations where data are confidential are denoted with and asterisk.

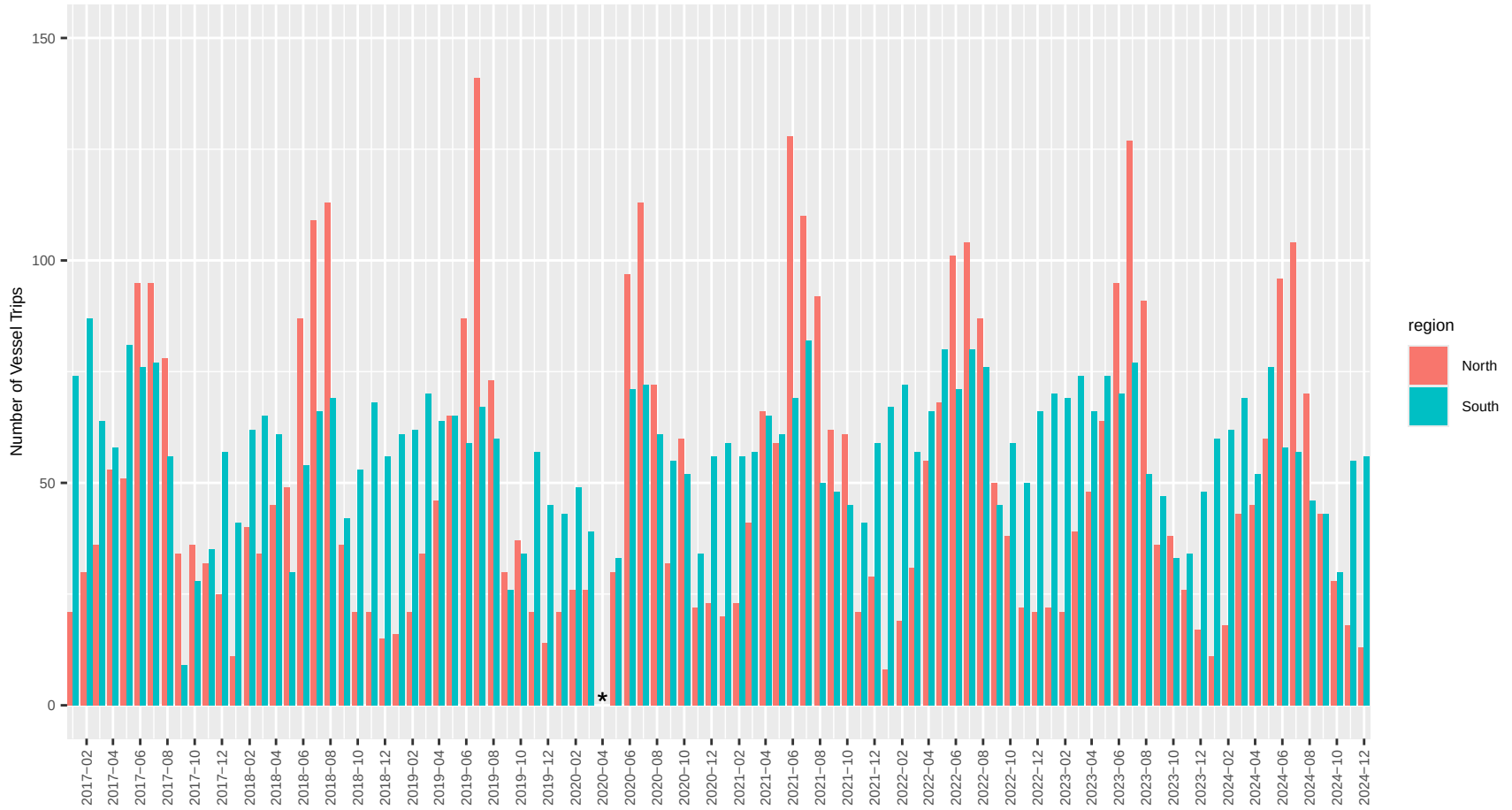

Figure 37: Comparison of the number of three-quarter-day vessel trips in the Southeast US Atlantic for 2017 - 2024 by month, trip type, and region. Year and month combinations where data are confidential are denoted with and asterisk.

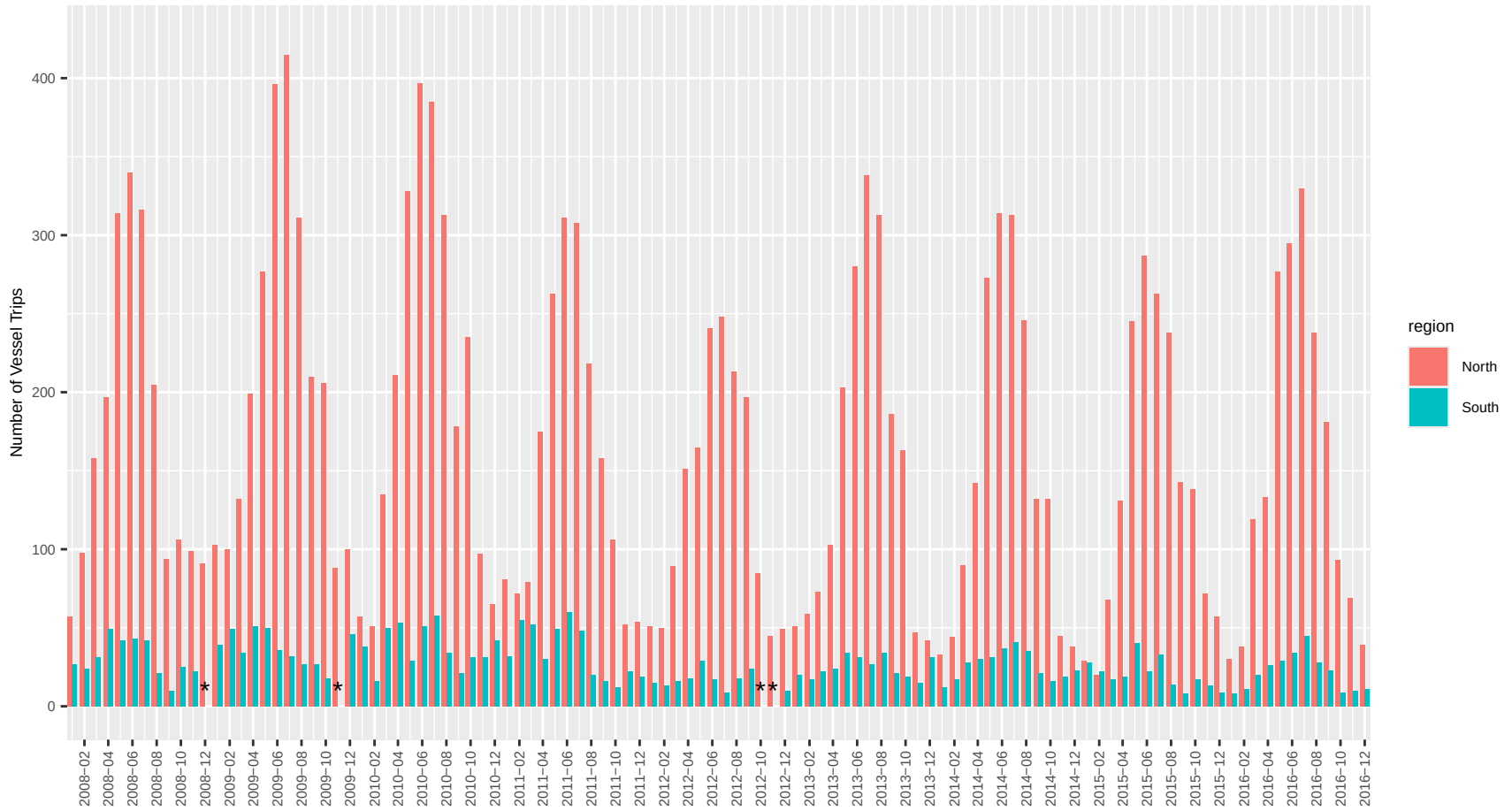

Figure 38: Comparison of the number of full-day vessel trips in the Southeast US Atlantic for 2008 - 2016 by month, trip type, and region. Year and month combinations where data are confidential are denoted with and asterisk.

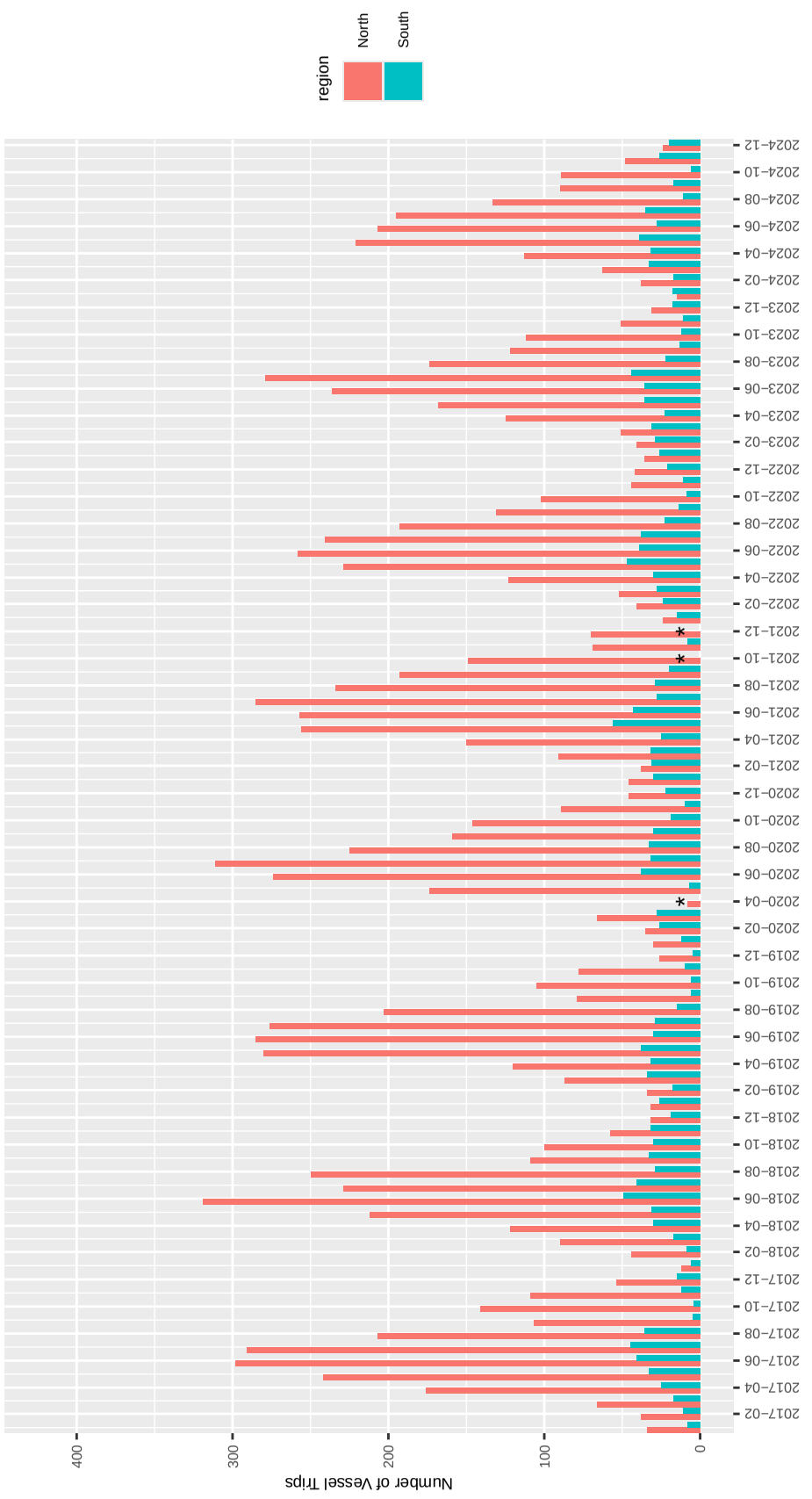

Figure 39: Comparison of the number of full-day vessel trips in the Southeast US Atlantic for 2017 - 2024 by month, trip type, and region. Year and month combinations where data are confidential are denoted with and asterisk.

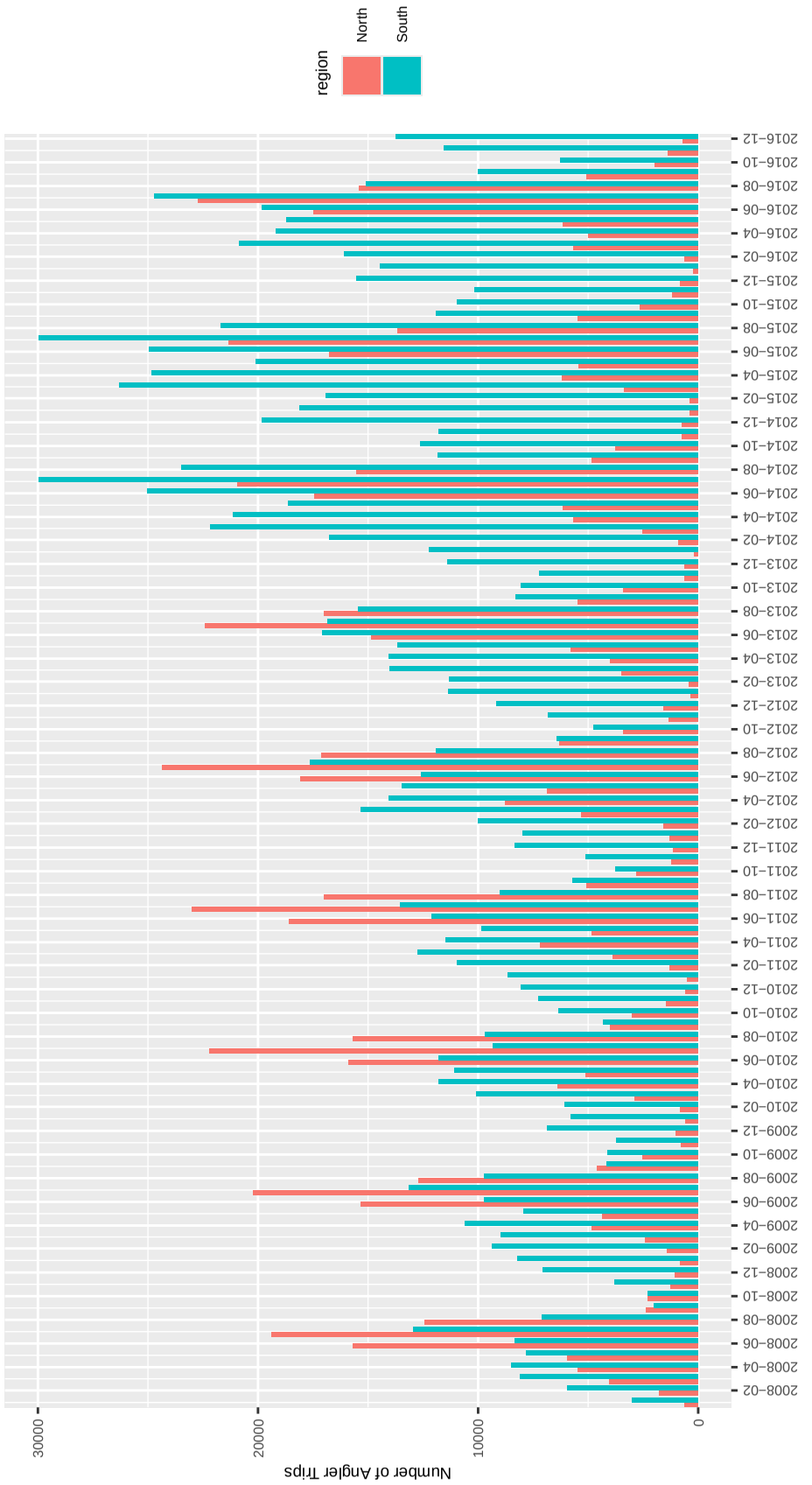

Figure 40: Comparison of the number of half-day angler trips in the Southeast US Atlantic for 2008 - 2016 by month, trip type, and region.

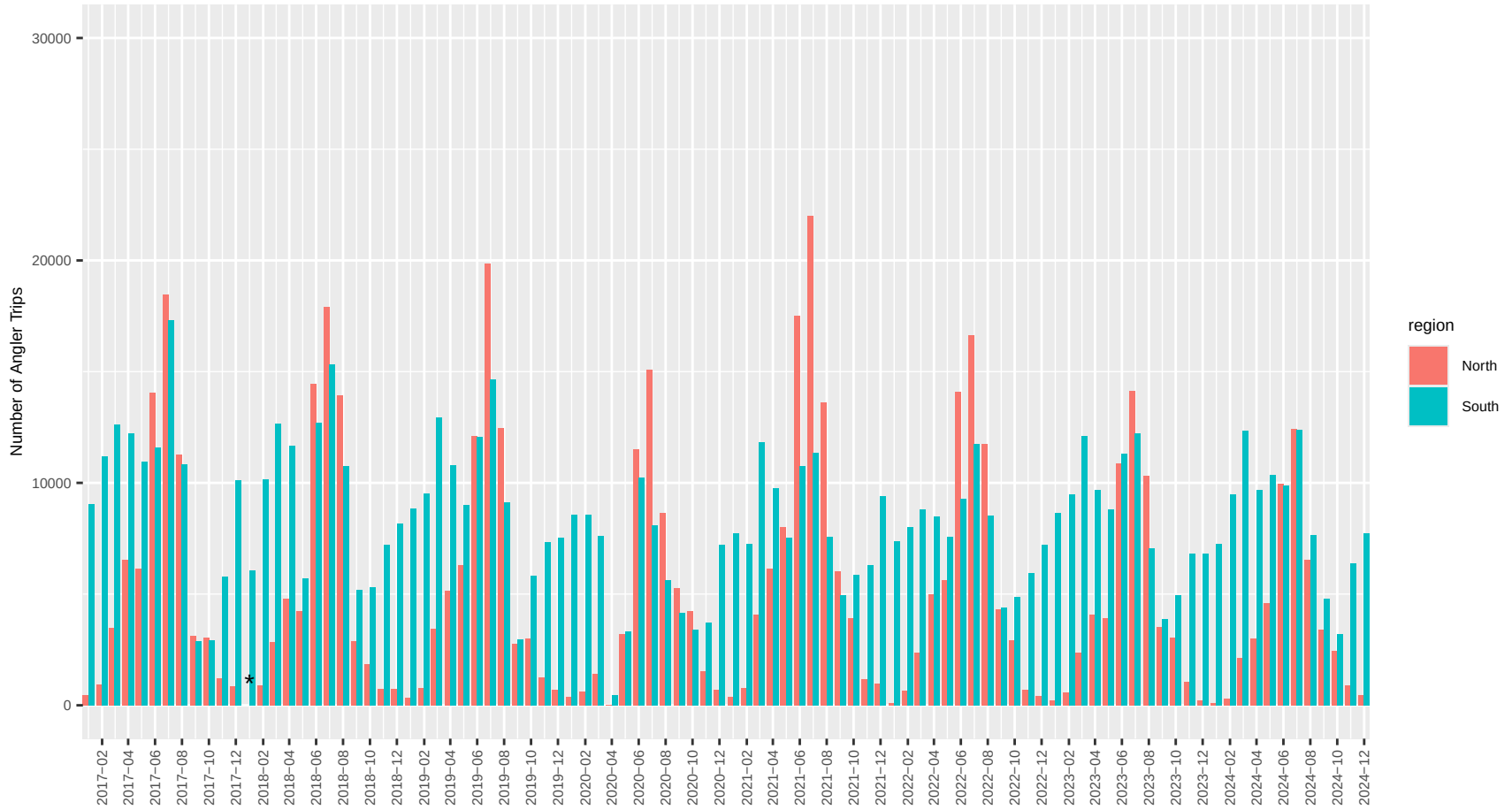

Figure 41: Comparison of the number of half-day angler trips in the Southeast US Atlantic for 2017 - 2024 by month and region. Year and month combinations where data are confidential are denoted with and asterisk.

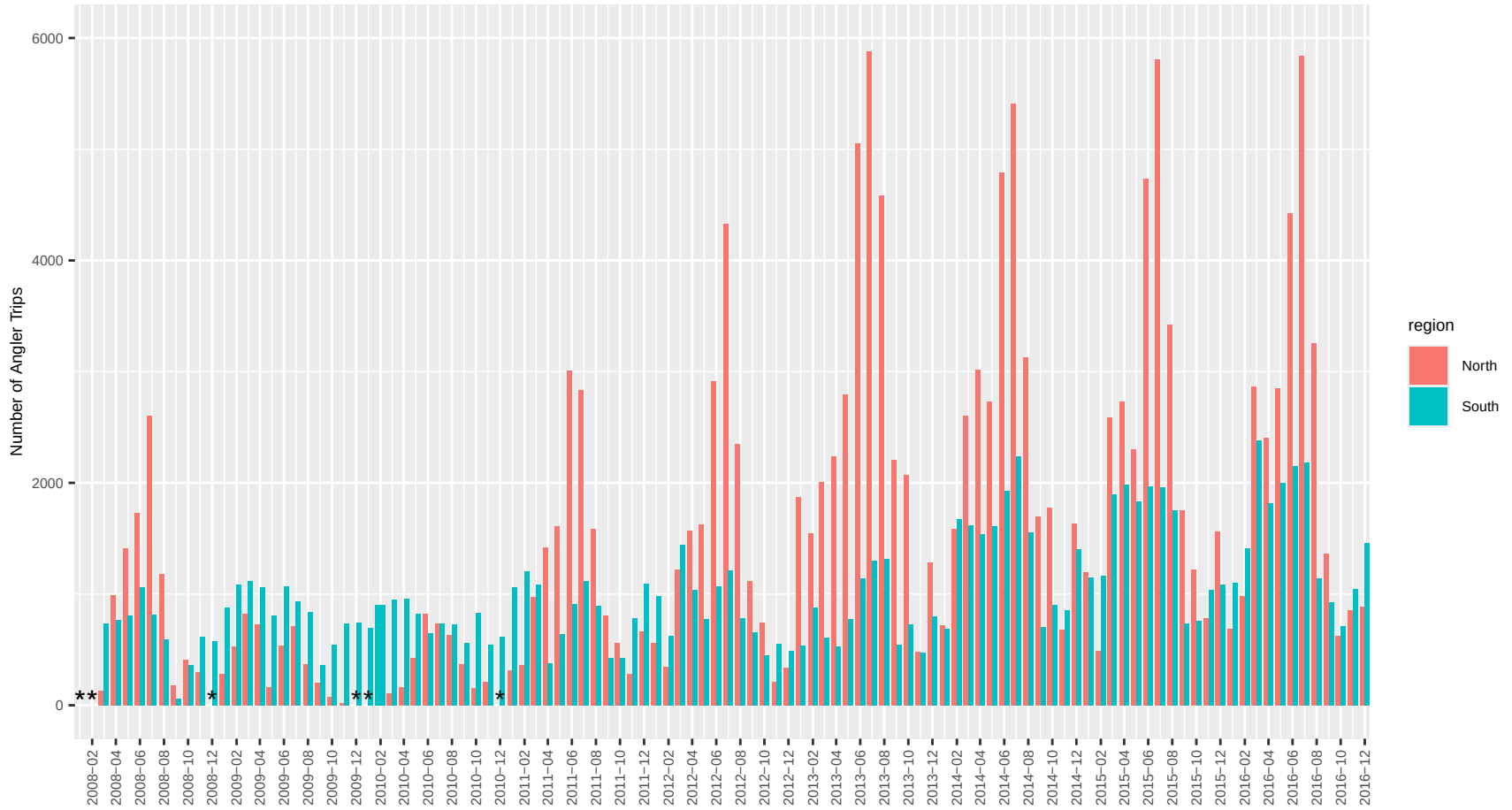

Figure 42: Comparison of the number of three-quarter-day angler trips in the Southeast US Atlantic for 2008 - 2016 by month, trip type, and region. Year and month combinations where data are confidential are denoted with and asterisk.

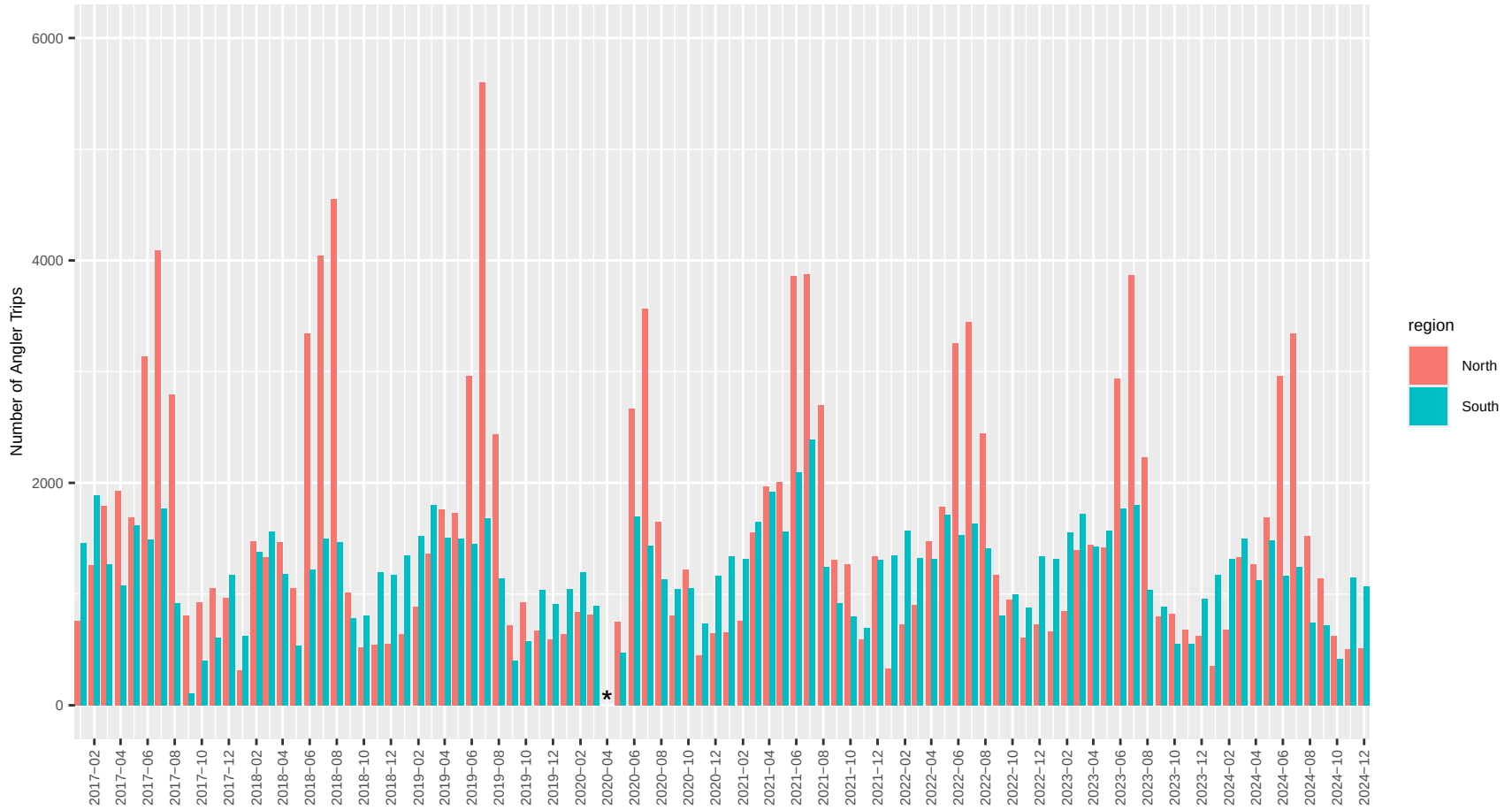

Figure 43: Comparison of the number of three-quarter-day angler trips in the Southeast US Atlantic for 2017 - 2024 by month, trip type, and region. Year and month combinations where data are confidential are denoted with and asterisk.

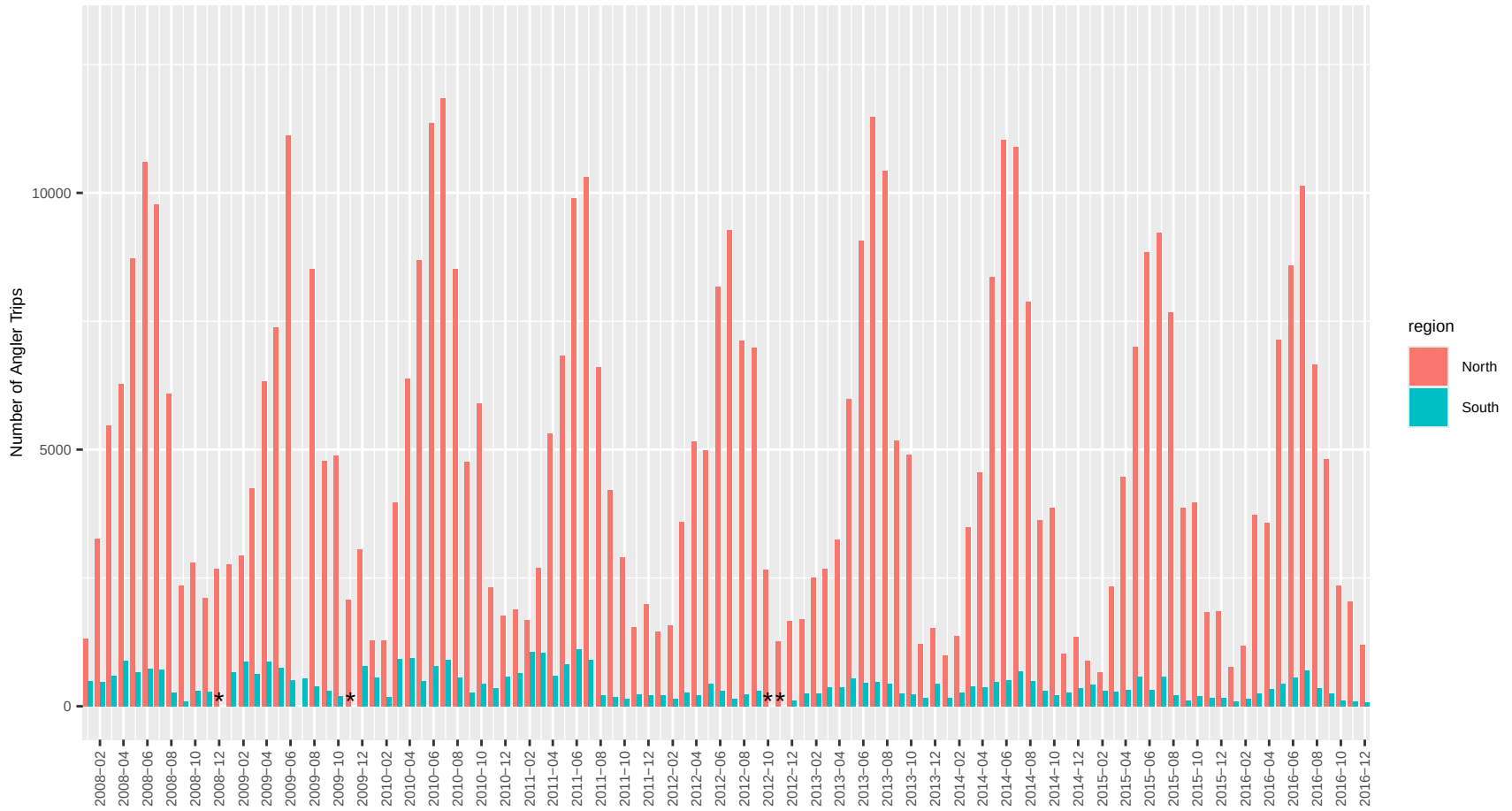

Figure 44: Comparison of the number of full-day angler trips in the Southeast US Atlantic for 2008 - 2016 by month, trip type, and region. Year and month combinations where data are confidential are denoted with and asterisk.

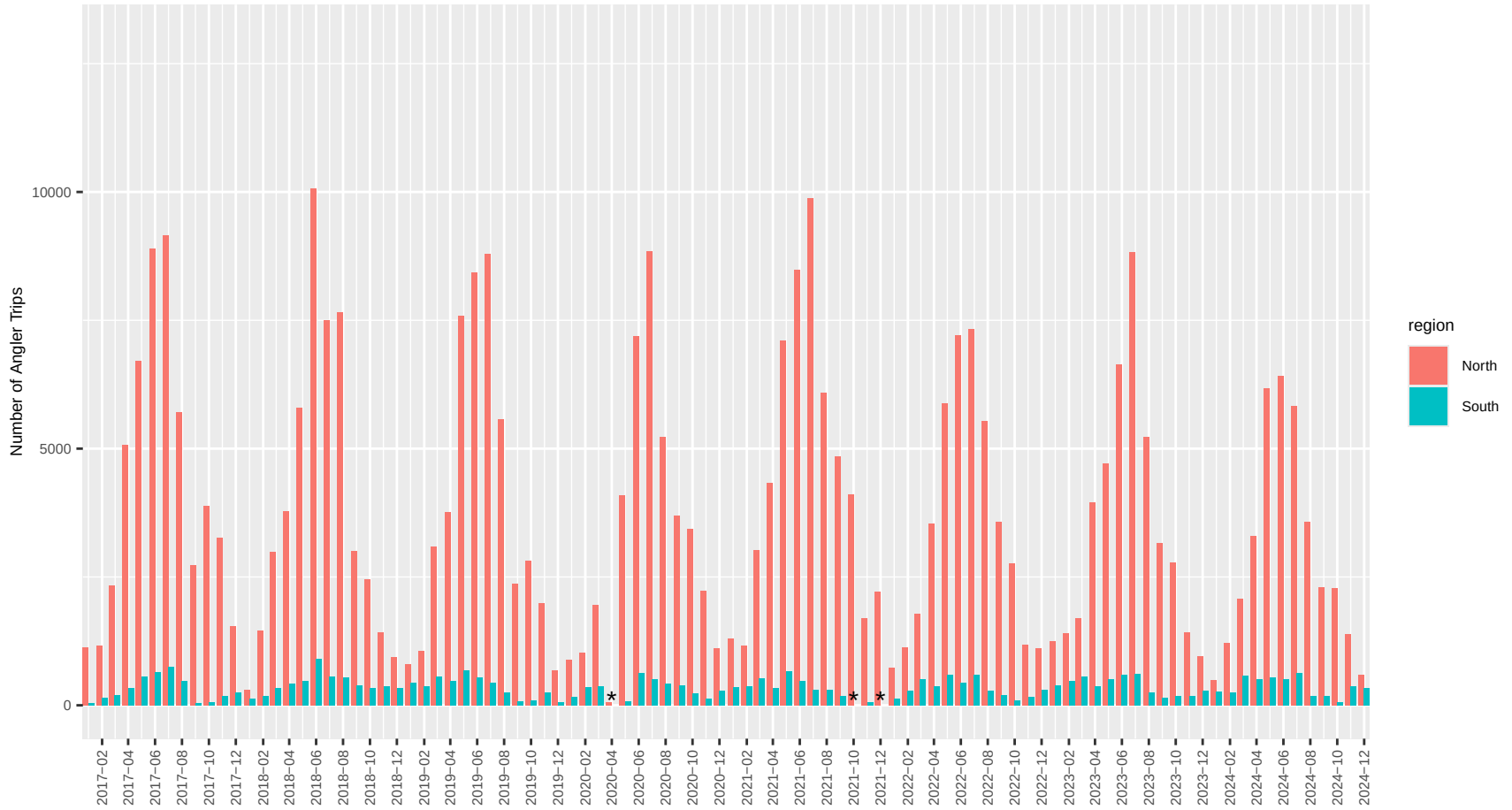

Figure 45: Comparison of the number of full-day angler trips in the Southeast US Atlantic for 2017 - 2024 by month, trip type, and region. Year and month combinations where data are confidential are denoted with and asterisk.

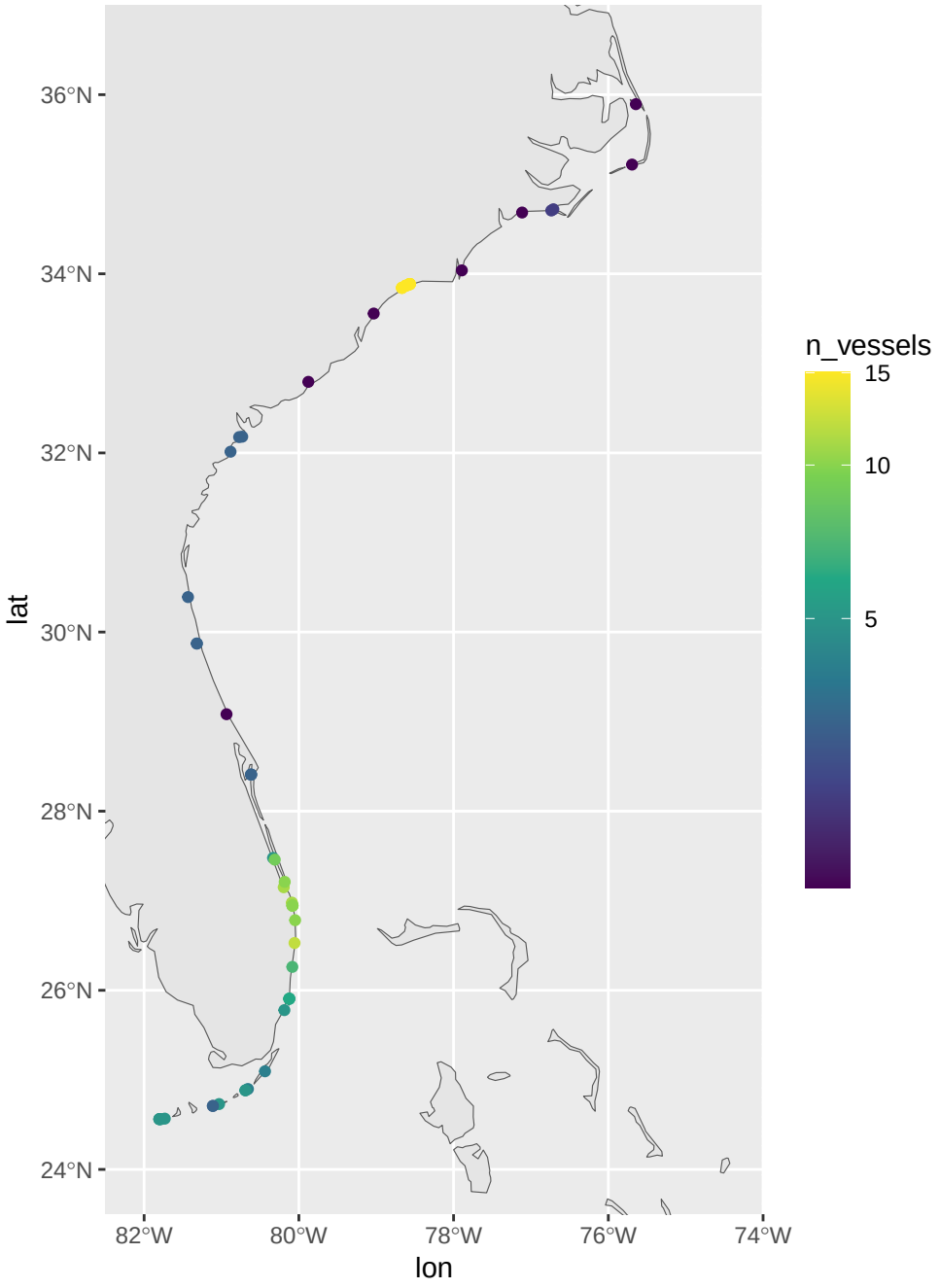

Figure 46: Location density of Atlantic Southeast Region Headboat Vessels.

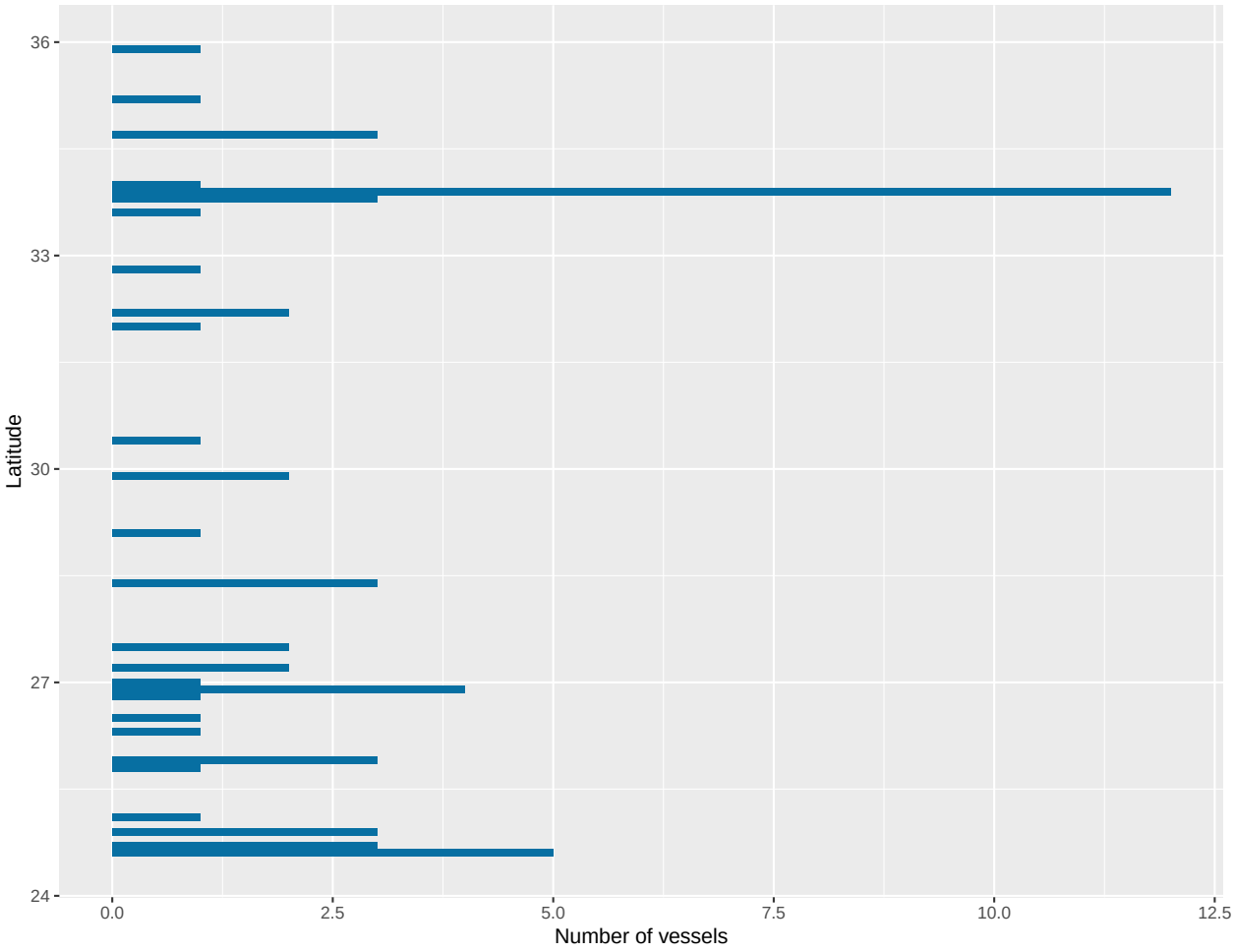

Figure 47: Latitude (rounded to 1 decimal) of Atlantic Southeast Region Headboat Vessels.