South Atlantic Blueline Tilefish (*Caulolatilus microps*) Length Compositions for Commercial Longline Landings North of Cape Hatteras

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South Atlantic Blueline Tilefish (*Caulolatilus microps*) Length Compositions for Commercial Longline Landings North of Cape Hatteras

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Introduction

This document outlines the data and methodologies used to estimate length compositions of commercial longline landings north of Cape Hatteras for the SEDAR 92 South Atlantic Blueline Tilefish Assessment. These compositions were estimated using data sources approved in SEDAR 50. Annual nominal length compositions were estimated for use in a data-limited model for landings north of Cape Hatteras.

Data Description

SEDAR 92 assesses all Atlantic Blueline Tilefish in federal waters along the east coast of the United States from the East Coast of Florida northward through New York. The assessment is split into two spatial strata with separate models being used based on the available data in each region, with the split occurring at Cape Hatteras, NC. The commercial data source utilized to generate length compositions for the Cape Hatteras-North portion of the landings consists of length samples from the Trip Interview Program (Beggerly *et al.* 2022). It should be noted that this only includes data caught between Cape Hatteras and the North Carolina-Virginia border. The decision to use only data from Cape Hatteras to the NC/VA border in is accordance with what was done in SEDAR 50.

A single fleet was considered for this analysis, commercial longline (LL), and it was assumed to be most representative of the landings. These data were compiled using length bins of 30 millimeters (mm) with the midpoint of the bin being labeled to match SEDAR 50. Natural total length ($NatTL$), maximum total length (MaxTL), and standard length (SL) were converted to fork length (FL) using the following conversion equations:

$$FL = 3.15 + 0.94 * NatTL$$

$$FL = -2.44 + 0.95 * MaxTL$$

$$FL = 26.98 + 1.1 * SL$$

Following SEDAR 50, a minimum length bin of 190 mm was used, and a maximum length bin of 940 mm was used, with fish falling outside of this range being pooled in the smallest or largest bin. Any fish lengths greater than 1500 mm TL were deleted and assumed to be errors.

Commercial Length Compositions of Landings

Length Samples

Length samples of commercial landings were obtained from the TIP database maintained by the NMFS Southeast Fisheries Science Center (SEFSC) and were filtered to remove biases that include samples from pooled trips. Samples from the longline fishery north of Cape Hatteras were available from 2008 onward.

Length Compositions

Nominal length compositions for the commercial longline fleet (LL) were estimated for Cape Hatteras north to the NC/VA border. Annual compositions are shown in Figure 1. Annual sample sizes of commercial lengths and trips are shown in Table 1. Years with fewer than 30 length samples or fewer than 10 trips are recommended to be dropped from further analyses, although as this fishery is data limited, the trip filter may need to be disregarded. As such, all data are presented in table 1, regardless of the recommendation to drop.

Annual nominal length compositions were estimated using length bins of 30 mm, where for each year i, and length bin j,

$$LC_{i,j} = \frac{n_{i,j}}{n_i}$$

$n_{i,j}$ is the number of samples in year i, and length bin j; n_i is the number of samples in year i (i.e., summed across length bins); and $LC_{i,j}$ is the proportion of the total number of sampled fish in each year i within each length bin j.

Changes from SEDAR 50

Sample sizes and trip sizes for commercial longline lengths north of Cape Hatteras do not match those provided for SEDAR 50 (Table 2). This is the result of updates to the TIP data extraction process, where trips reporting multiple gears are assigned a predominant gear using a different data field than was used in previous extractions. As a result, some trips have changed from being considered a vertical line trip to being a longline trip and vice versa. The current gear assignment procedure is considered to be the most accurate and is the new standard going forward, therefore, for this analysis length compositions will differ slightly from what was previously provided in SEDAR 50 (Figure 2).

References

Beggerly, S., M. Stevens, H. Baertlein. 2022. Trip Interview Program Metadata. SEDAR74-DW14. 12pp.

Tables

Table 1. *Annual number of Blueline Tilefish commercial longline (LL) length samples and associated trips from Cape Hatteras to the North Carolina-Virginia border. Years not meeting the recommended 10 trip minimum filter are denoted with an (*).*

Year	Number of Fish	Number of Trips
2008	288	8*
2009	747	49
2010	787	48
2011	596	38
2012	990	43
2013	571	25
2014	171	7*
2015	83	3*
2016	134	8*
2017	45	3*
2018	147	7*
2019	75	3*
2022	116	5*
2023	162	6*

Table 2. *Annual difference in number of Blueline Tilefish commercial longline (LL) length samples and associated trips from Cape Hatteras to the North Carolina-Virginia border from SEDAR 50 to SEDAR 92.*

Year	Δ Number of Fish	Δ Number of Trips
2008	- 11	0
2009	- 68	0
2010	- 63	- 1
2011	0	0
2012	+ 15	+ 1
2013	- 11	0
2014	+ 16	+ 1
2015	+ 10	+ 1

Figures

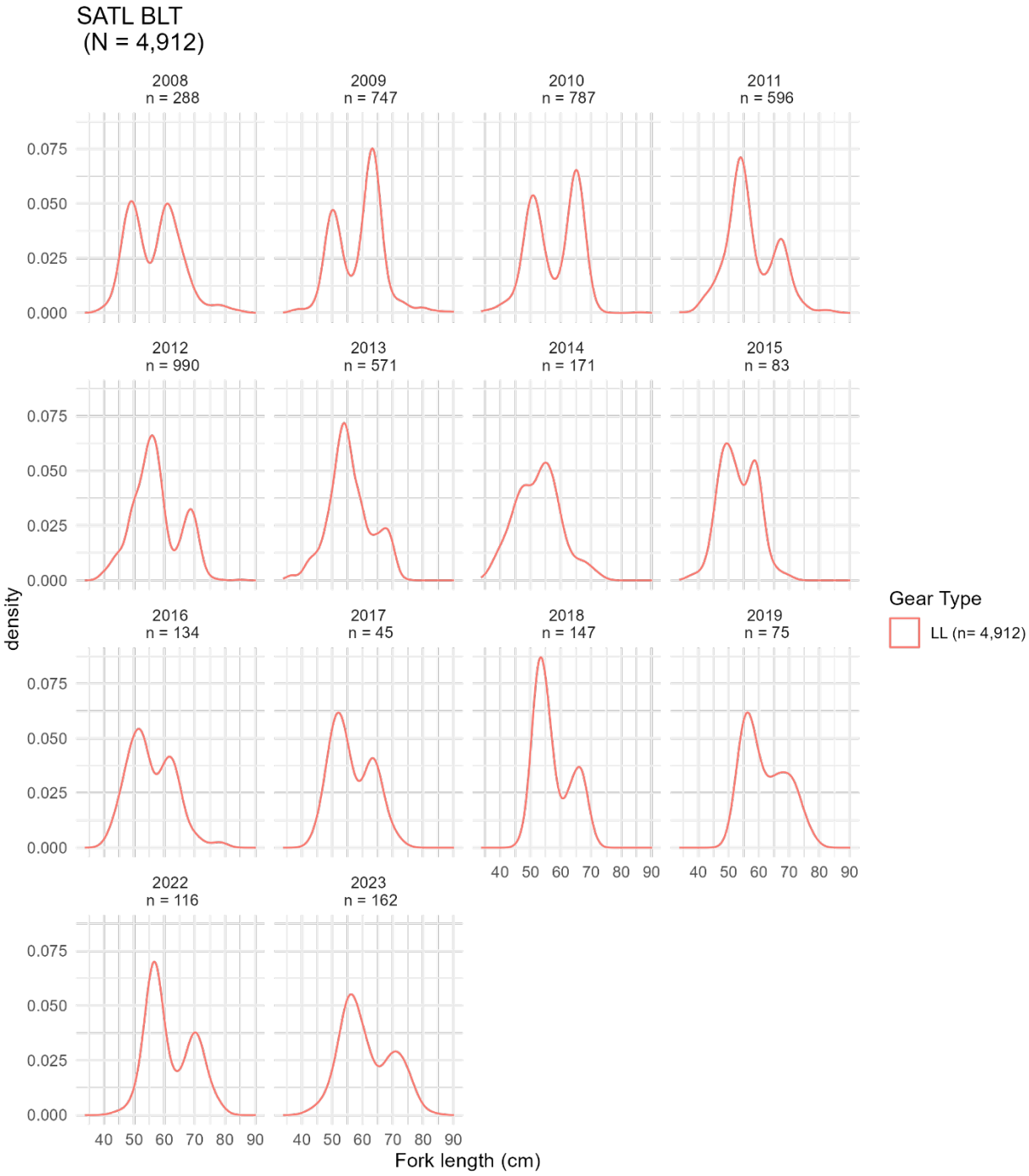

Figure 1. *Annual length distributions for the commercial longline fishery from Cape Hatteras north to the North Carolina-Virginia border.*

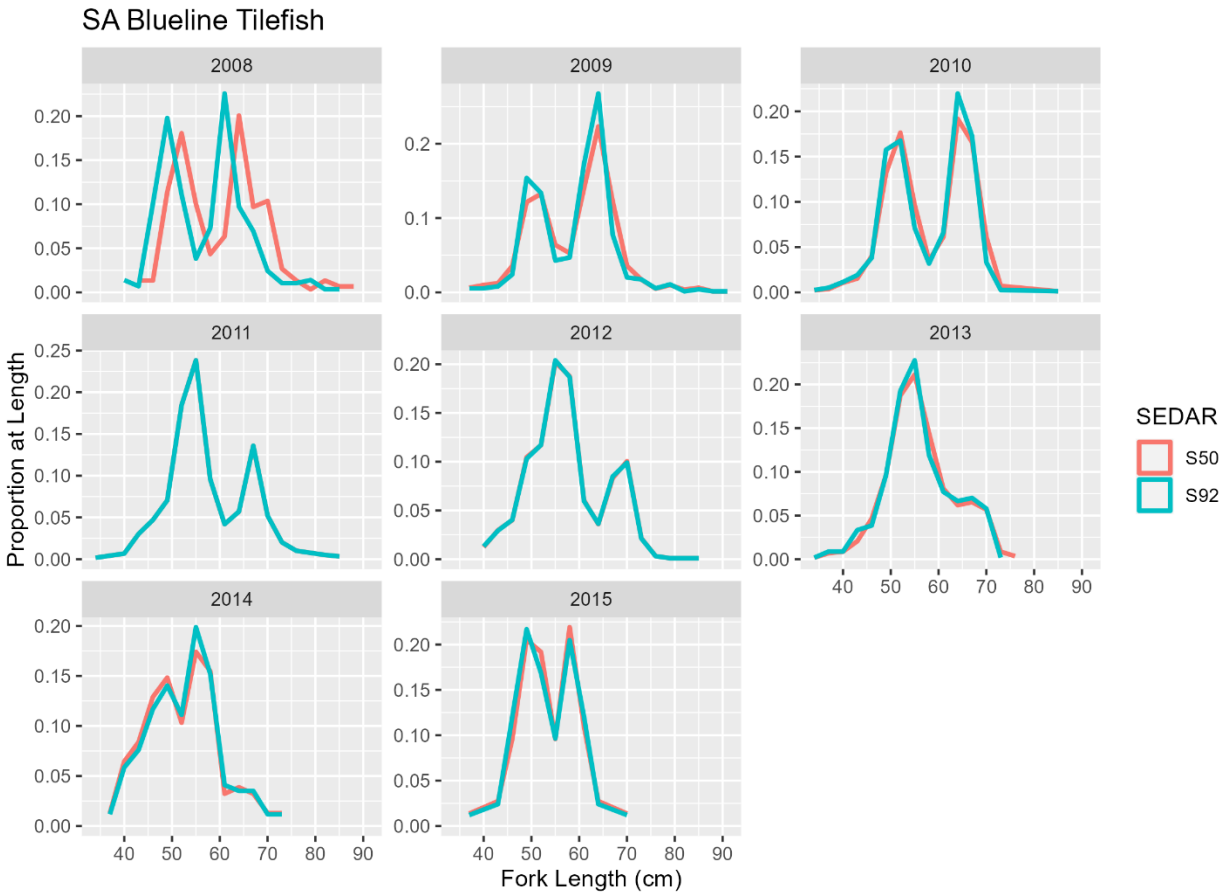

Figure 2. *Comparison of annual length distributions for the commercial longline fishery from Cape Hatteras north to the North Carolina-Virginia border for SEDAR 50 and SEDAR 92.*