Gulf of America Red Snapper (*Lutjanus campechanus*) length and age compositions from the recreational fishery

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SEDAR98-DW-07

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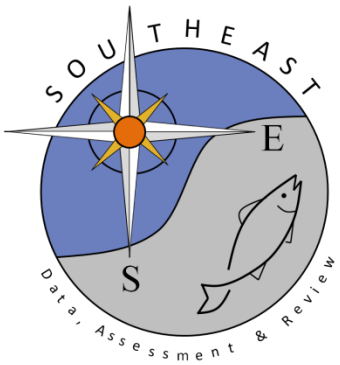

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Update to the Working Paper

An appendix has been added that provides the final nominal length and weight compositions, conditional age-at-length, and mean length-at-age that were presented during the data workshop and post data workshop webinar.

As of March 10, 2025, all efforts are made to use "Gulf of America" per E.O. 14172. However, previous NOAA reports (cited herein) may have referred to this water body as the "Gulf of Mexico".

Introduction

This document provides preliminary nominal length and age compositions of recreational landings for the SEDAR 98 Red Snapper (*Lutjanus campechanus*) assessment and a comparison to SEDAR 74 nominal length compositions. Sample sizes are also included in this document to help facilitate discussion at the Data Workshop about potential options for providing weighted compositions. Final length and age compositions will be provided in the SEDAR 98 Stock Assessment Report.

Data Description

SEDAR 98 assesses all Gulf of America (formally Gulf of Mexico) Red Snapper in federal waters extending from the Texas/Mexico border and eastward through West Florida. This boundary follows the Gulf of Mexico Fisheries Management Council (GMFMC) boundary, north of a line from Riley's Hump, the Tortugas and US 1. A total of 405,564 lengths from 14 sampling programs (Table 1) were included in the nominal length compositions and 105,745 ages from 14 programs (Table 2) were included in the nominal age compositions.

The sampling programs contributing the largest numbers of length and/or age samples are described below.

Marine Recreational Information Program (MRIP)

MRIP (formally known as the Marine Recreational Fishing Statistics Survey, MRFSS) began in March 1981. In the Gulf of America (GOA), the MRIP survey is conducted in FL, AL, and MS. MRIP was also conducted in LA from 1981-2013. The access point angler survey (APAIS) component of MRIP collects information on recreational catch and fishing trip characteristics, including fish lengths and weights, from anglers at public marine fishing access sites. In the GOA, APAIS samples recreational fishers from private, shore, and charterboat modes. From 1981-1984, MRIP also sampled headboats in the GOA. MRIP is not able to delineate between fish landed North of US 1 and South of US 1 in the Florida Keys. Therefore, all charter and private samples from Monroe County are assigned to the Gulf of America, and following Southeast Region Headboat Survey protocol, all headboat samples are assigned to the Atlantic. APAIS sampling was temporarily suspended during Wave 2 in 2020 because of the COVID pandemic. APAIS sampling resumed in all states by August 2020 (Wave 4), however, sampling of fish lengths and weights were reduced due to social distancing guidelines and field officer safety protocols (NMFS OST 2023). For intercepted angler trips where both fish length and weight are missing, MRIP uses hot and cold-deck imputation to impute lengths (NMFS OST 2023). Imputed lengths were excluded from length composition analyses. MRIP provided 103,147 Red Snapper lengths.

Texas Parks and Wildlife Department Sportfish Monitoring Program (TPWD)

TPWD is a dockside-intercept survey that samples private and charterboat anglers in TX marine waters and began in May 1983. The TX coast is stratified into eight bay systems (Sabine Lake, Galveston Bay, Matagorda Bay, San Antonio Bay, Aransas Bay, Corpus Christi Bay, Upper Laguna Madre, and Lower Laguna Madre) and five Gulf of America strata. Sites are selected randomly based on proportional probability of expected fishing pressure. Within sites, sampling assignments are assigned to ensure that the samples are distributed across seasons (e.g. high-use and low-use) and day type (e.g. weekend, weekday). During the dockside interview, the maximum total lengths from up to 6 individuals per species (from a priority list) are recorded (Nuttall and Matter 2020). TPWD provided lengths for 43,418 Red Snapper.

Alabama Department of Conservation and Natural Resources (ALDCNR) Snapper Check

Snapper Check began in 2014 and requires mandatory reporting, during the open season, of effort and catch of Red Snapper. In 2021, Gray Triggerfish (*Balistes capriscus*) and Greater Amberjack (*Seriola dumerili*) were also added to the regulation requiring mandatory reporting. Reports must be submitted online or through a smartphone app prior to landing the catch. Dockside interviews are conducted to validate the angler generated reports. Dockside sampling sites are randomly selected using a probability to size site selection process. Headboat, charter, and private modes are sampled during the dockside survey and the length and weights of the catch are recorded (ALDCNR 2023). A total of 22,581 samples were provided by Snapper Check for length compositions.

Southeast Region Headboat Survey (SRHS)

The SRHS program estimates landings and effort for headboat vessels. In the Gulf of America, the SRHS program began in 1986 and extends from Monroe County, FL to South Padre Island, TX (Cheshire et al. 2023). Red Snapper sampled from areas 21-29 were included in length composition development (Figure 1). Biological samples (e.g. length, weight, and otoltihs) are collected as part of the SRHS dockside intercept sampling program (DISP) component of the SRHS program (Fitzpatrick et al. 2017). DISP sampling was temporarily suspended in March 2020 due to the COVID pandemic and no biological samples were collected. DISP biological sampling resumed in July 2021 once NMFS/SEFSC approved safety measures were approved (Cheshire et al. 2023). SRHS sampled 158,316 Red Snapper for length and of those fish, 21,545 were also sampled for age.

FIN-BIOSTAT

FIN-BIOSTAT has been conducted between 2001-2023 and the program is administered by the Gulf State Marine Fisheries Commission (GSMFC) through GulfFIN. All recreational fishing modes are sampled through FIN-BIOSTAT (Bray, pers com 2024). FIN-BIOSTAT is conducted in every Gulf state, however, in FL it is called RECFIN from 2001-2018 and RepBio from 2018-2023 (Bray and Cermak, pers com 2023). From TX-AL, 40,512 Red Snapper were sampled for length and of those 33,923 were also sampled for age. From FL, approximately 24,000 samples were provided by RECFIN for length and age compositions. RECFIN sampling assignments were not conducted using a randomized methodology because of trying to maximize the number of biological samples collected, however, fish were not sampled in a biased fashion. A pilot phase for RepBio was initiated in 2018 and the program was fully implemented in 2019. Fishing access points identified from the MRIP Site Register are selected weekly, by subregion, using a randomized draw process for sampling (Cermak, pers com 2023). RepBio provided approximately 1,700 samples for length and age compositions.

Stock and Fleet Structure

For SEDAR 98, Gulf of America Red Snapper are apportioned into three stock regions: West (W), Central (C), and East (E). The W region includes TX and LA. The C region includes MS, AL, and the FL panhandle which includes Escambia County and extends eastward through Dixie County. The E region includes the FL peninsula beginning at Levy County and extending to the area north of a line from Riley's Hump, the Tortugas and US 1. Sample sizes are consistently lower in the E compared to the W and C regions (Tables 1-2).

Three recreational fleets, private (PR), charter (CB), and headboat (HB) are included in SEDAR 98 (Tables 3-8).

Changes from SEDAR 74

There are differences between the sample sizes between SEDAR 74 and SEDAR 98 length compositions (Table 13). Improvements in data provision, facilitated by the Life History Template, allowed unique records (n=79,438) in the age data to be added to the length-only data

for inclusion in the length compositions. In SEDAR 74, data for Snapper Check were excluded because of concerns samples were being duplicated in MRIP. When Snapper Check first began, there were a small number of lengths (n=382) that were submitted to both Snapper Check and MRIP. This no longer occurs and a sample is only submitted to a single program. Biologists at ALDCNR are able to use the date and sampling identification number to match which samples were submitted to both programs. ALDCNR submitted their data using the Life History Template and flagged these samples using the 'Duplicate_Lengths' field (Anson, pers comm 2024). Samples that were flagged as duplicates were removed and 22,581 samples were retained for length compositions. Approximately 400 samples from SRHS were excluded from length and age compositions because of discrepancies in sampling location. The majority of these samples are from 1994. In the age data these samples were assigned to the Central stock region and were assigned to either the East or West stock regions for the length data.

Nominal Length Compositions

Fish were assigned to 1 cm bins with bins ranging from 1 cm - 120 cm. The label represents the floor of the bin. It is recommended to exclude strata where sample size was less than 30 fish. Nominal length compositions for SEDAR 98 are presented in Figures 2-4. Comparisons of the nominal length compositions for SEDAR 74 and SEDAR 98 are presented in Figures 5-13.

Nominal Age Compositions

Length distributions from the size-only data and the age data, for each fleet and region, are compared in Figure 14. Generally, the distributions between the two are very similar. However, for the headboat fleet in the west region, the size-only data length distribution is smaller than the age data length distribution. When looking at the length distributions annually (Figure 15), most years have similar distributions. In the earlier years, when only size-only data were available, the length distributions tended to skew towards the smaller side. While there are a few years with differences, there is generally good agreement for years when there is data for both size-only and age.

Red Snapper ages ranged from 1-41 years old, with the majority of fish being aged to less than 10 years old. It is recommended to exclude strata where sample size was less than 10 fish. Nominal age compositions for SEDAR 98 are presented in Figures 16-18.

References

Alabama Department of Conservation and Natural Resources Marine Resources Division (ALDCNR). 2023. Alabama Snapper Check Validation Survey: Sampler Protocols. 15 pp.

Cheshire, R.T., K. Brennan, and M.E. Green. 2023. SEDAR85-WP-02. Headboat Data for Yellowedge Grouper in the US Gulf of Mexico. National Marine Fisheries Service (NMFS) Southeast Fisheries Science Center (SEFSC). Beaufort, NC. Available at: https://sedarweb.org/documents/sedar-85-wp-02-headboat-data-for-yellowedge-grouper-in-the-us-gulf-of-mexico/

Fitzpatrick, E.E., E.H. Williams, K.W. Shertzer, K.I. Siegfried, J.K. Craig, R.T. Cheshire, G.T. Kellison, K.E. Fitzpatrick, and K. Brennan. 2017. The NMFS Southeast Region Headboat Survey: History, Methodology, and Data Integrity. Marine Fisheries Review, 79(1):1-25. doi: https://doi.org/10.7755/MFR.79.1.1

NMFS OST (National Marine Fisheries Service Office of Science and Technology). 2023. Marine Recreational Information Program: Survey Design and Statistical Methods for Estimation of Recreational Fisheries Catch and Effort. Silver Spring, MD. Available at: https://www.fisheries.noaa.gov/s3/2023-05/MRIP-Survey-Design-Statistical-Methods-April-2023.pdf

Nuttall, M.A. and V.M. Matter. 2020. Texas Parks and Wildlife Department's Marine Sport-Harvest Monitoring Program Metadata. SEDAR70-WP-03. SEDAR, North Charleston, SC. 25 pp. Available at: https://sedarweb.org/documents/sedar-70-wp-03-texas-parks-and-wildlife-departments-marine-sport-harvest-monitoring-program-metadata/

Tables

Table 1: Number of fish sampled for length by each data source.

Year	FIN_BIOSTAT	FWRI_OBS	HB	LA BIO	LA Creel	LADWF	MRIP	PCLAB	RECFIN	REPBIO	SRFS	SRHS	Snapper Check	TIP	TPWD
1980	0	0	0	0	0	0	0	337	0	0	0	0	0	0	0
1981	0	0	0	0	0	0	305	0	0	0	0	0	0	0	0
1982	0	0	0	0	0	0	512	0	0	0	0	0	0	0	0
1983	0	0	0	0	0	0	1,342	0	0	0	0	0	0	0	353
1984	0	0	0	0	0	0	374	0	0	0	0	0	0	0	391
1985	0	0	0	0	0	0	200	0	0	0	0	0	0	0	695
1986	0	0	0	0	0	0	586	0	0	0	0	6,416	0	0	344
1987	0	0	0	0	0	0	896	0	0	0	0	6,158	0	0	465
1988	0	0	0	0	0	0	354	0	0	0	0	4,786	0	0	448
1989	0	0	0	0	0	0	258	0	0	0	0	6,577	0	0	274
1990	0	0	0	0	0	0	331	0	0	0	0	4,596	0	0	333
1991	0	0	0	0	0	0	1,205	2	0	0	0	3,917	0	901	459
1992	0	0	0	0	0	0	2,261	0	0	0	0	8,555	0	972	658
1993	0	0	0	0	0	0	1,089	0	0	0	0	7,440	0	830	768
1994	0	0	0	0	0	0	862	0	0	0	0	7,592	0	695	1,081
1995	0	0	0	0	0	0	583	0	0	0	0	8,766	0	377	1,858
1996	0	0	0	0	0	0	494	0	0	0	0	5,756	0	128	1,462
1997	0	0	0	0	0	0	1,516	0	0	0	0	5,135	0	63	1,402
1998	0	0	0	0	0	0	3,278	0	0	0	0	8,708	0	337	1,252
1999	0	0	0	0	0	0	8,277	0	0	0	0	4,168	0	963	731

Year	FIN_BIOSTAT	FWRI_OBS	HB	LA BIO	LA Creel	LADWF	MRIP	PCLAB	RECFIN	REPBIO	SRFS	SRHS	Snapper Check	TIP	TPWD
2000	0	0	0	0	0	0	8,279	19	0	0	0	4,329	0	492	1,053
2001	0	0	0	0	0	0	6,966	38	0	0	0	3,184	0	269	944
2002	3,853	0	0	0	0	0	8,168	34	1,200	0	0	3,635	0	405	1,031
2003	4,636	0	0	0	0	0	7,147	2	3,955	0	0	3,094	0	298	1,008
2004	2,809	0	0	0	0	0	6,191	17	2,947	0	0	1,352	0	0	961
2005	2,941	0	0	0	0	0	5,537	0	4,312	0	0	1,318	0	0	1,187
2006	2,935	0	0	0	0	0	4,762	1	2,376	0	0	1,247	0	0	1,453
2007	1,538	0	0	0	0	74	5,298	0	101	0	0	2,048	0	0	1,133
2008	1,243	0	0	0	0	0	2,176	0	362	0	0	1,624	0	2	862
2009	1,518	499	0	0	0	0	1,178	0	348	0	0	1,813	0	3	1,019
2010	654	987	0	0	0	0	1,221	59	942	0	0	1,504	0	0	639
2011	1,130	544	0	0	0	0	1,294	72	883	0	0	1,715	0	9	867
2012	1,569	350	0	0	0	0	1,483	86	1,180	0	0	1,063	0	0	742
2013	1,186	534	0	0	0	0	1,020	317	1,492	0	0	3,375	0	2	1,042
2014	989	597	15	938	384	0	1,178	123	1,018	0	0	6,923	2,053	0	790
2015	1,200	543	0	778	488	0	1,273	311	1,672	0	173	6,277	1,567	0	1,443
2016	1,547	283	0	864	224	0	1,711	209	938	0	349	4,463	1,992	0	964
2017	1,662	459	0	811	447	0	1,836	310	126	0	701	3,680	2,350	0	1,652
2018	1,845	559	0	762	663	0	1,654	419	541	0	560	4,661	1,989	0	1,858
2019	1,921	432	0	415	458	0	2,276	428	0	577	369	5,297	4,581	0	2,101
2020	1,510	69	0	511	400	0	1,755	269	0	184	262	138	3,191	0	1,900
2021	1,239	411	0	715	341	0	1,802	489	0	488	197	1,264	3,897	0	1,920
2022	1,098	385	0	872	630	0	1,722	357	0	345	157	2,409	491	0	1,770
2023	1,489	435	0	1,521	503	0	2,497	396	0	198	276	3,333	470	0	2,105

Table 2: Number of fish sampled for age by each data source.

Year	CO-OP	FIN-BIOSTAT	FIN-OBS	FWRI-OBS	HB	LADWF	MRFSS	PCLAB	RECFIN	REPBIO	SRFS	SRHS	TIP	NA
1980	0	0	0	0	0	0	0	325	0	0	0	0	0	0
1986	0	0	0	0	0	0	0	0	0	0	0	363	0	0
1987	0	0	0	0	0	0	0	0	0	0	0	145	0	0
1988	0	0	0	0	0	0	0	0	0	0	0	357	0	0
1989	0	0	0	0	0	0	0	0	0	0	0	97	0	0
1990	0	0	0	0	0	0	0	0	0	0	0	39	0	0
1991	0	0	0	0	0	0	0	2	0	0	0	0	885	0
1992	0	0	0	0	0	0	0	0	0	0	0	0	935	0
1993	0	0	0	0	0	0	0	0	0	0	0	1,042	767	0
1994	0	0	0	0	0	0	0	0	0	0	0	107	578	0
1995	0	0	0	0	0	0	0	0	0	0	0	10	371	0
1996	0	0	0	0	0	0	0	0	0	0	0	70	125	0
1997	0	0	0	0	0	0	0	0	0	0	0	88	62	0
1998	0	0	0	0	0	0	1,407	0	0	0	0	1,562	170	0
1999	0	0	0	0	0	0	1,108	0	0	0	0	618	313	0
2000	0	0	0	0	0	0	4	19	0	0	0	388	487	3
2001	0	0	0	0	0	0	111	16	0	0	0	283	268	0
2002	0	2,396	0	0	0	0	274	34	410	0	0	324	398	0
2003	18	3,148	0	0	2	0	44	2	3,846	0	0	99	297	0
2004	0	2,153	0	0	1	0	75	17	2,906	0	0	122	0	0
2005	0	2,393	32	0	2	0	44	0	4,239	0	0	120	0	0

Year	CO-OP	FIN-BIOSTAT	FIN-OBS	FWRI-OBS	HB	LADWF	MRFSS	PCLAB	RECFIN	REPBIO	SRFS	SRHS	TIP	NA
2006	0	2,629	71	0	1	0	152	1	2,347	0	0	150	0	0
2007	0	1,299	1	0	6	74	13	0	100	0	0	252	0	0
2008	0	1,063	0	0	0	0	0	0	347	0	0	133	2	0
2009	0	1,137	0	431	16	0	0	0	292	0	0	628	3	0
2010	0	627	0	648	11	0	1	58	936	0	0	518	0	0
2011	0	981	0	257	10	0	0	72	862	0	0	761	9	0
2012	0	1,307	0	253	2	0	14	85	1,167	0	0	507	0	0
2013	0	1,200	0	524	13	0	0	316	1,483	0	0	1,814	2	0
2014	0	842	0	580	1,641	0	0	114	1,011	0	0	2,036	0	0
2015	0	1,194	0	516	1,212	0	0	308	1,664	0	77	2,026	0	0
2016	0	1,509	0	280	11	0	0	207	934	0	303	945	0	0
2017	0	1,528	0	448	28	0	0	302	125	0	674	1,277	0	0
2018	0	1,827	0	552	71	0	0	419	539	0	503	1,492	0	0
2019	0	1,787	0	424	76	0	0	420	0	545	339	1,765	0	0
2020	0	1,220	0	68	0	0	0	245	0	178	242	8	0	0
2021	0	1,234	0	405	3	0	0	426	0	471	181	243	0	0
2022	0	1,003	0	366	23	0	0	347	0	337	139	590	0	0
2023	0	1,446	0	433	87	0	0	392	0	169	265	566	0	0

Table 3: Number of fish (nfish) and trips (ntrip) sampled from the **charter fleet for length** by stock region.

Year	nfish_W	nfish_C	nfish_E	ntrip_W	ntrip_C	ntrip_E
1980	0	337	0	0	29	0
1981	22	82	0	3	13	0
1982	5	79	0	3	19	0
1983	442	197	7	72	24	1
1984	220	17	24	30	7	3
1985	134	38	1	8	9	1
1986	360	152	10	40	27	6
1987	265	464	1	31	79	1
1988	31	235	3	8	46	1
1989	29	150	8	7	46	1
1990	90	167	0	21	33	0
1991	824	974	3	63	144	2
1992	787	1,751	4	68	234	3
1993	381	1,109	0	33	183	0
1994	166	971	0	31	168	0
1995	192	626	0	25	97	0
1996	193	331	2	29	81	1
1997	168	1,262	5	35	212	3
1998	297	3,157	30	37	352	11
1999	127	8,292	12	24	678	6
2000	187	8,241	3	29	703	3
2001	130	6,736	15	26	512	5
2002	652	11,586	27	73	1,326	15
2003	737	13,747	51	87	4,482	10
2004	952	9,714	10	93	3,435	8
2005	837	10,661	16	95	4,806	3
2006	1,076	7,419	22	111	2,723	7
2007	1,386	4,853	16	138	544	4
2008	800	2,235	24	84	417	13
2009	859	1,475	70	92	393	69
2010	135	2,458	139	19	1,432	121
2011	681	2,202	73	57	882	73
2012	775	2,822	30	77	1,365	16

Year	nfish_W	nfish_C	nfish_E	ntrip_W	ntrip_C	ntrip_E
2013	850	2,427	46	80	1,695	23
2014	733	1,958	116	61	808	36
2015	1,413	3,520	175	113	497	26
2016	1,260	3,148	69	89	437	22
2017	1,848	2,506	155	132	320	34
2018	1,993	3,012	303	176	393	58
2019	1,273	5,411	331	104	696	68
2020	1,098	3,617	76	111	493	14
2021	1,305	4,976	411	139	722	78
2022	994	2,155	315	133	390	64
2023	1,363	2,746	371	148	512	76

Table 4: Number of fish (nfish) and trips (ntrip) sampled from the **headboat fleet for length** by stock region.

Year	nfish_W	nfish_C	nfish_E	ntrip_W	ntrip_C	ntrip_E
1981	10	32	3	1	12	3
1982	134	57	0	16	46	0
1983	416	113	42	55	43	29
1984	26	10	10	4	7	10
1985	62	14	3	17	12	3
1986	6,252	141	23	413	64	10
1987	5,966	191	1	392	99	1
1988	4,591	194	1	299	93	1
1989	6,291	280	6	287	122	4
1990	4,263	330	3	247	114	2
1991	3,523	516	1	217	153	1
1992	7,898	771	6	329	206	2
1993	7,144	430	0	336	137	0
1994	6,578	717	498	306	116	28
1995	8,325	452	0	357	119	0
1996	5,260	521	0	241	122	0
1997	3,996	1,144	1	231	167	1
1998	6,552	2,239	0	342	264	0
1999	3,284	860	45	221	133	6
2000	3,194	1,132	5	150	137	1
2001	2,531	655	5	187	89	2
2002	2,480	1,267	0	210	131	0
2003	2,086	1,095	3	183	134	2
2004	894	571	1	86	106	1
2005	1,017	301	21	91	46	20
2006	883	466	41	71	80	31
2007	768	1,264	16	65	113	3
2008	401	1,375	49	37	232	49
2009	866	1,130	355	63	278	322
2010	796	899	313	40	246	298
2011	978	898	378	53	209	366
2012	456	684	192	35	143	166
2013	2,335	1,356	163	120	260	148

Year	nfish_W	nfish_C	nfish_E	ntrip_W	ntrip_C	ntrip_E
2014	4,773	2,637	86	142	307	6
2015	4,013	2,384	187	193	158	11
2016	3,793	723	60	149	52	15
2017	2,887	1,220	213	130	101	29
2018	3,936	1,088	263	201	111	45
2019	3,788	1,805	214	204	146	33
2020	138	222	0	13	19	0
2021	916	558	131	44	71	21
2022	1,518	602	462	78	88	36
2023	2,533	602	419	108	99	35

Table 5: Number of fish (nfish) and trips (ntrip) sampled from the **private fleet for length** by stock region.

Year	nfish_W	nfish_C	nfish_E	ntrip_W	ntrip_C	ntrip_E
1981	35	91	30	4	15	5
1982	153	82	2	33	23	2
1983	463	8	7	101	3	1
1984	437	15	6	100	4	2
1985	631	7	5	105	5	1
1986	390	12	6	88	7	4
1987	452	176	3	99	60	3
1988	491	26	16	113	11	6
1989	329	8	8	83	6	4
1990	349	55	3	95	17	3
1991	449	193	1	104	39	1
1992	666	562	1	160	97	1
1993	826	237	0	182	55	0
1994	1,101	199	0	245	45	0
1995	1,869	119	1	408	37	1
1996	1,425	104	4	330	31	3
1997	1,348	192	0	309	48	0
1998	1,159	141	0	266	39	0
1999	759	751	9	185	156	4
2000	966	444	0	222	103	0
2001	832	497	0	191	116	0
2002	1,349	962	3	247	142	2
2003	1,620	795	6	269	165	5
2004	1,493	632	10	270	184	2
2005	2,087	348	7	354	124	4
2006	2,416	444	7	409	131	5
2007	1,485	396	8	266	106	2
2008	1,105	263	17	210	75	12
2009	1,336	282	5	247	77	5
2010	986	264	16	140	71	14
2011	945	339	20	190	127	15
2012	1,032	477	5	178	162	3
2013	1,270	511	10	234	175	9

Year	nfish_W	nfish_C	nfish_E	ntrip_W	ntrip_C	ntrip_E
2014	2,271	2,415	19	238	686	15
2015	2,229	1,803	1	322	449	1
2016	1,894	2,581	16	229	673	8
2017	2,319	2,476	410	341	574	96
2018	2,772	2,071	73	405	446	25
2019	2,853	3,114	66	455	697	21
2020	2,635	2,346	57	399	493	20
2021	2,747	1,679	40	415	362	16
2022	3,024	1,096	70	414	332	17
2023	4,055	1,061	73	513	341	19

Table 6: Number of fish (nfish) and trips (ntrip) sampled from the **charter fleet for age** by stock region.

Year	nfish_W	nfish_C	nfish_E	ntrip_W	ntrip_C	ntrip_E
1980	0	325	0	0	29	0
1991	526	237	2	29	43	1
1992	485	347	0	27	67	0
1993	222	399	0	7	73	0
1994	0	423	0	0	73	0
1995	0	360	0	0	52	0
1996	0	100	0	0	29	0
1997	0	56	0	0	11	0
1998	135	945	1	6	43	1
1999	97	658	0	1	44	0
2000	2	504	2	1	64	2
2001	0	376	11	0	56	3
2002	246	2,521	14	24	146	4
2003	232	6,022	35	34	3,974	15
2004	400	3,815	3	35	2,974	3
2005	438	5,073	5	47	4,287	5
2006	277	3,343	5	28	2,494	5
2007	479	398	14	52	136	14
2008	467	366	7	41	165	6
2009	427	519	52	52	242	52
2010	49	1,269	106	4	1,132	106
2011	423	1,128	73	32	680	73
2012	419	1,650	14	34	1,204	14
2013	635	1,971	19	47	1,639	19
2014	241	838	81	26	692	29
2015	529	1,733	141	51	276	22
2016	489	1,170	24	44	160	9
2017	766	667	66	77	109	16
2018	857	976	207	126	150	39
2019	523	1,320	208	66	226	46
2020	356	651	55	47	123	10
2021	436	981	276	64	195	49
2022	191	873	172	28	194	40
2023	394	822	133	68	159	38

Table 7: Number of fish (nfish) and trips (ntrip) sampled from the **headboat fleet for age** by stock region.

Year	nfish_W	nfish_C	nfish_E	ntrip_W	ntrip_C	ntrip_E
1986	349	13	1	59	7	1
1987	142	3	0	46	3	0
1988	350	7	0	69	7	0
1989	82	14	1	28	14	1
1990	36	3	0	11	3	0
1991	102	20	0	5	10	0
1992	26	70	5	6	23	1
1993	910	254	0	107	90	0
1994	241	21	0	29	10	0
1995	10	11	0	2	8	0
1996	0	95	0	0	31	0
1997	0	93	1	0	44	1
1998	962	646	1	92	141	1
1999	263	351	14	33	74	3
2000	250	139	1	54	30	1
2001	74	215	1	19	35	1
2002	205	219	0	42	46	0
2003	139	70	2	23	24	2
2004	168	63	1	31	37	1
2005	205	48	52	28	12	52
2006	205	109	78	27	44	78
2007	67	185	7	13	46	7
2008	133	146	46	11	146	46
2009	428	367	316	50	219	316
2010	393	236	240	31	142	240
2011	660	185	260	44	113	260
2012	361	228	126	30	114	126
2013	1,476	668	150	120	256	150
2014	1,231	2,925	67	135	1,606	32
2015	998	2,337	203	153	280	24
2016	723	307	39	87	50	13
2017	1,072	370	158	80	60	24
2018	1,065	699	236	131	101	40

Year	nfish_W	nfish_C	nfish_E	ntrip_W	ntrip_C	ntrip_E
2019	1,060	771	207	139	125	32
2020	8	26	0	3	9	0
2021	84	217	39	14	53	14
2022	236	430	115	46	87	22
2023	258	457	157	14	93	30

Table 8: Number of fish (nfish) and trips (ntrip) sampled from the **private fleet for age** by stock region.

Year	nfish_W	nfish_C	nfish_E	ntrip_W	ntrip_C	ntrip_E
1992	0	2	0	0	2	0
1993	24	0	0	1	0	0
1998	212	237	0	10	19	0
1999	75	581	0	10	13	0
2000	3	0	0	1	0	0
2001	0	1	0	0	1	0
2002	324	307	0	34	38	0
2003	652	301	3	61	57	3
2004	627	197	0	68	85	0
2005	878	131	0	116	45	0
2006	1,114	218	2	91	69	2
2007	532	62	1	52	21	1
2008	340	30	10	43	10	10
2009	326	70	2	51	22	2
2010	435	58	13	26	20	13
2011	130	80	13	20	64	13
2012	380	157	0	29	73	0
2013	349	77	7	39	53	7
2014	527	302	12	58	261	12
2015	398	658	0	53	138	0
2016	595	832	10	62	229	6
2017	484	457	342	61	121	79
2018	617	706	40	82	156	14
2019	609	632	26	75	149	10
2020	552	263	50	63	84	15
2021	628	280	22	93	74	10
2022	549	209	30	54	72	8
2023	847	255	35	101	98	12

Table 9: Number of fish lengths included in SEDAR 74 and SEDAR 98 nominal length compositions. Diff is the difference from SEDAR 98 to SEDAR 74.

Year	S74	S98	Diff
1980	0	337	337
1981	290	305	15
1982	476	512	36
1983	1,650	1,695	45
1984	761	765	4
1985	887	895	8
1986	7,348	7,346	-2
1987	7,530	7,519	-11
1988	5,685	5,588	-97
1989	7,115	7,109	-6
1990	5,213	5,260	47
1991	5,576	6,484	908
1992	11,829	12,446	617
1993	9,294	10,127	833
1994	9,836	10,230	394
1995	11,183	11,584	401
1996	7,699	7,840	141
1997	8,011	8,116	105
1998	13,188	13,575	387
1999	13,147	14,139	992
2000	13,642	14,172	530
2001	11,093	11,401	308
2002	17,548	18,326	778
2003	19,912	20,140	228
2004	14,353	14,277	-76
2005	15,455	15,295	-160
2006	12,959	12,774	-185
2007	10,203	10,192	-11
2008	6,311	6,269	-42
2009	6,406	6,378	-28
2010	5,966	6,006	40
2011	6,421	6,514	93
2012	6,383	6,473	90

Year	S74	S98	Diff
2013	8,990	8,968	-22
2014	12,171	15,008	2,837
2015	13,032	15,725	2,693
2016	10,437	13,544	3,107
2017	10,532	14,034	3,502
2018	11,936	15,511	3,575
2019	13,298	18,855	5,557

Figures

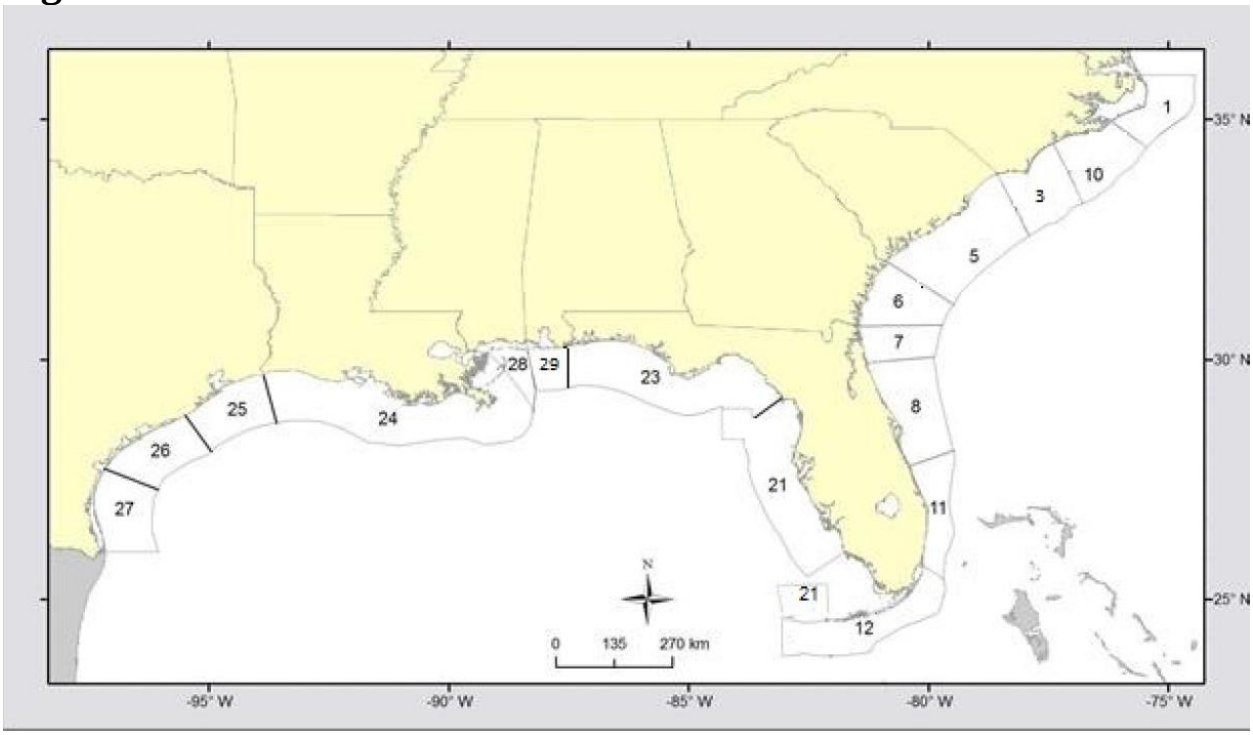

Fig. 1. Map of Southeast Region Headboat Survey (SRHS) headboat areas. Areas 21-29 are included in S98 Red Snapper.

Figure 2. Nominal length distribution for the **charter fleet** in the Central (C), East (E), and West (W) regions.

Figure 3. Nominal length distribution for the **headboat fleet** in the Central (C), East (E), and West (W) regions.

Figure 4. Nominal length distribution for the **private fleet** in the Central (C), East (E), and West (W) regions.

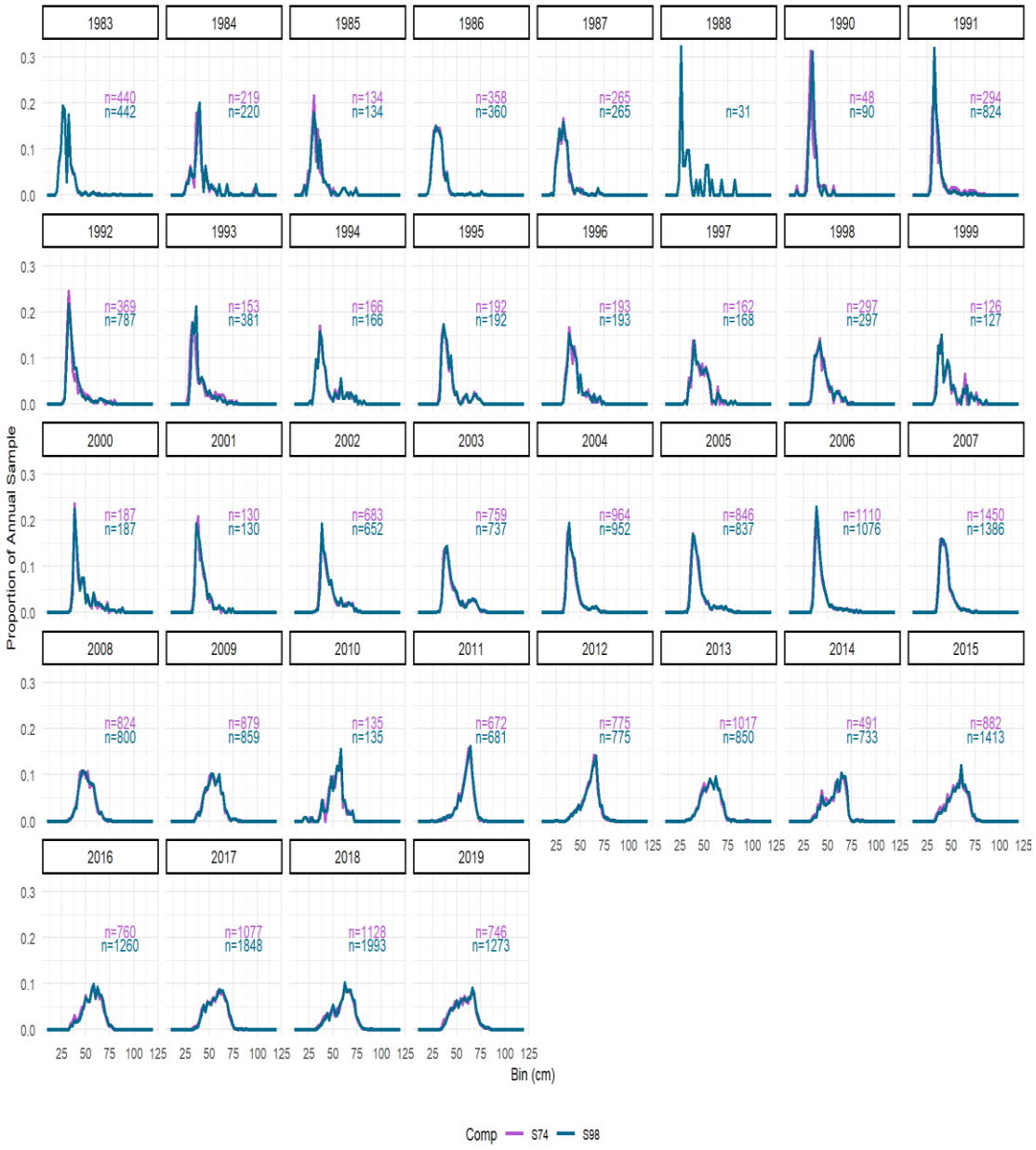

Figure 5. Comparison of nominal length compositions between SEDAR 74 and SEDAR 98 for the **charter fleet in the west region**.

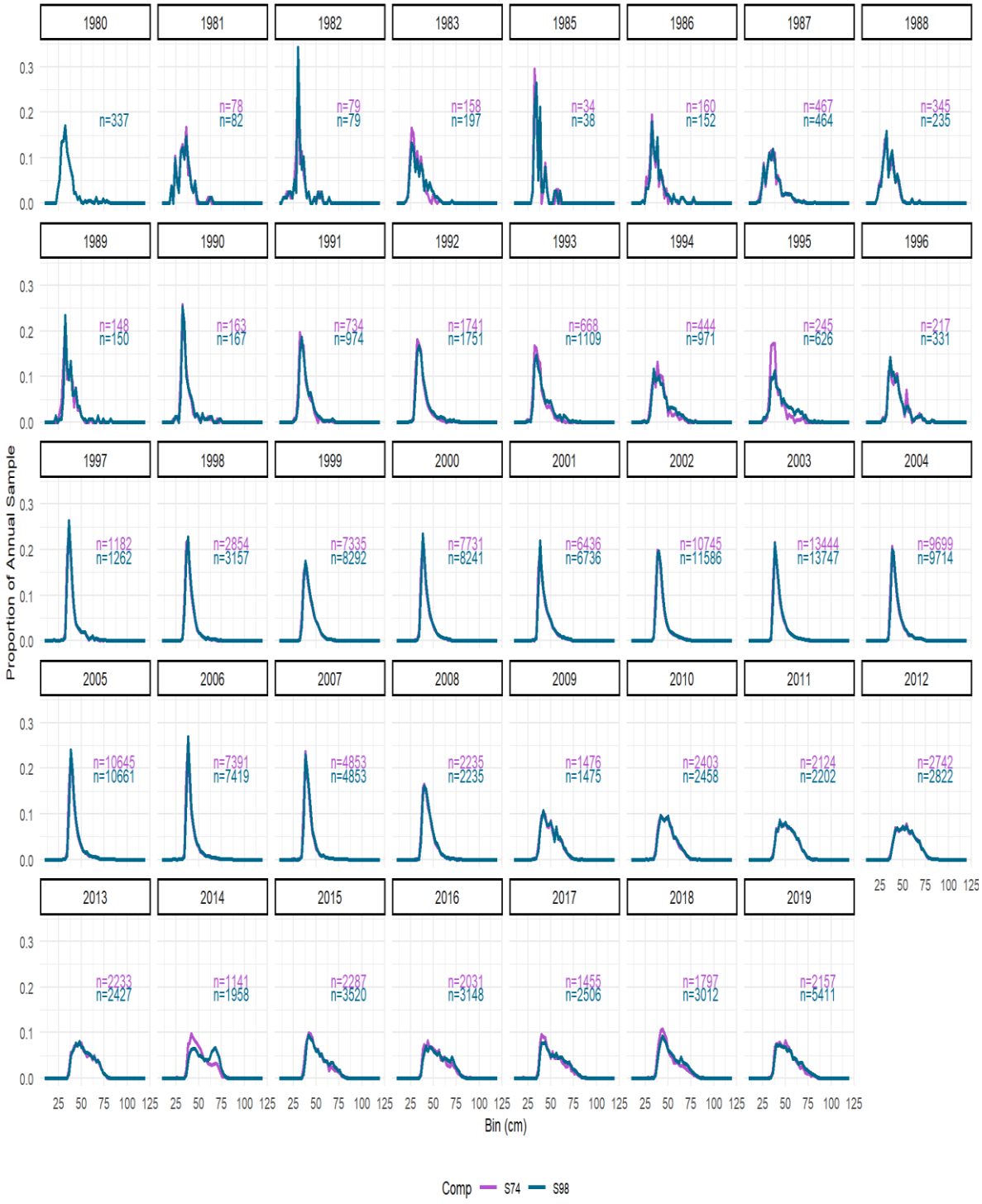

Figure 6. Comparison of nominal length compositions between SEDAR 74 and SEDAR 98 for the **charter fleet in the central region**.

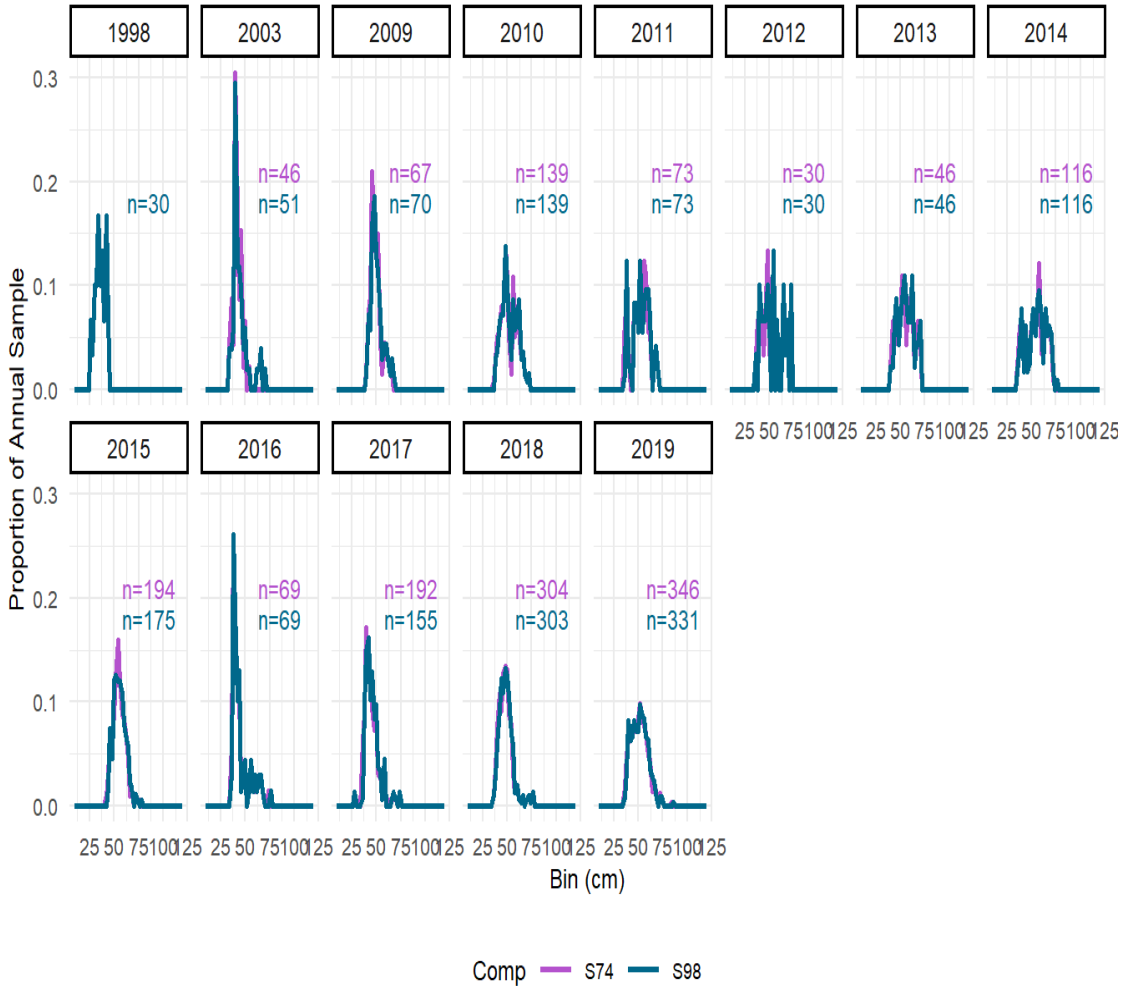

Figure 7. Comparison of nominal length compositions between SEDAR 74 and SEDAR 98 for the **charter fleet in the east region**.

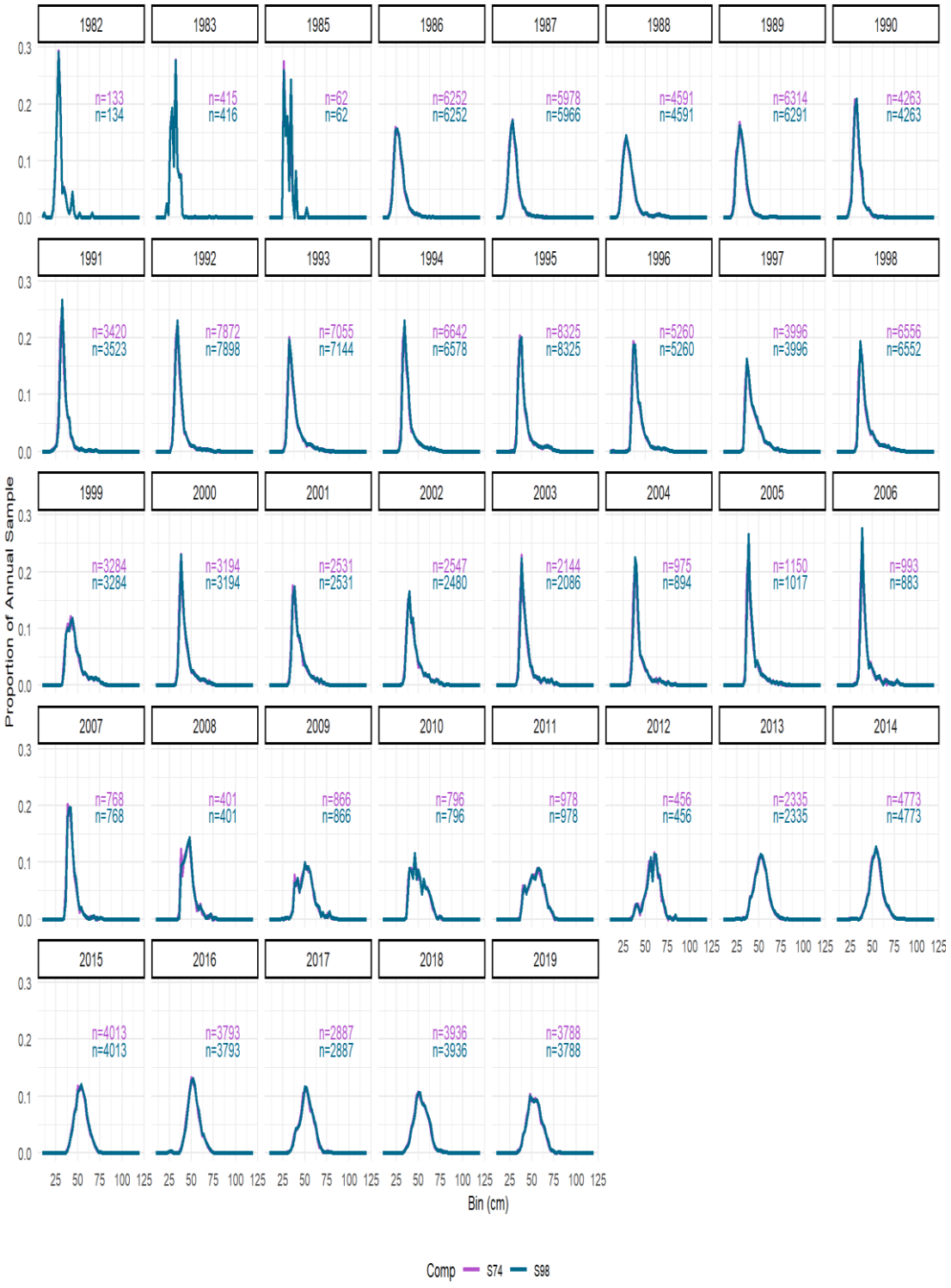

Figure 8. Comparison of nominal length compositions between SEDAR 74 and SEDAR 98 for the **headboat fleet in the west region**.

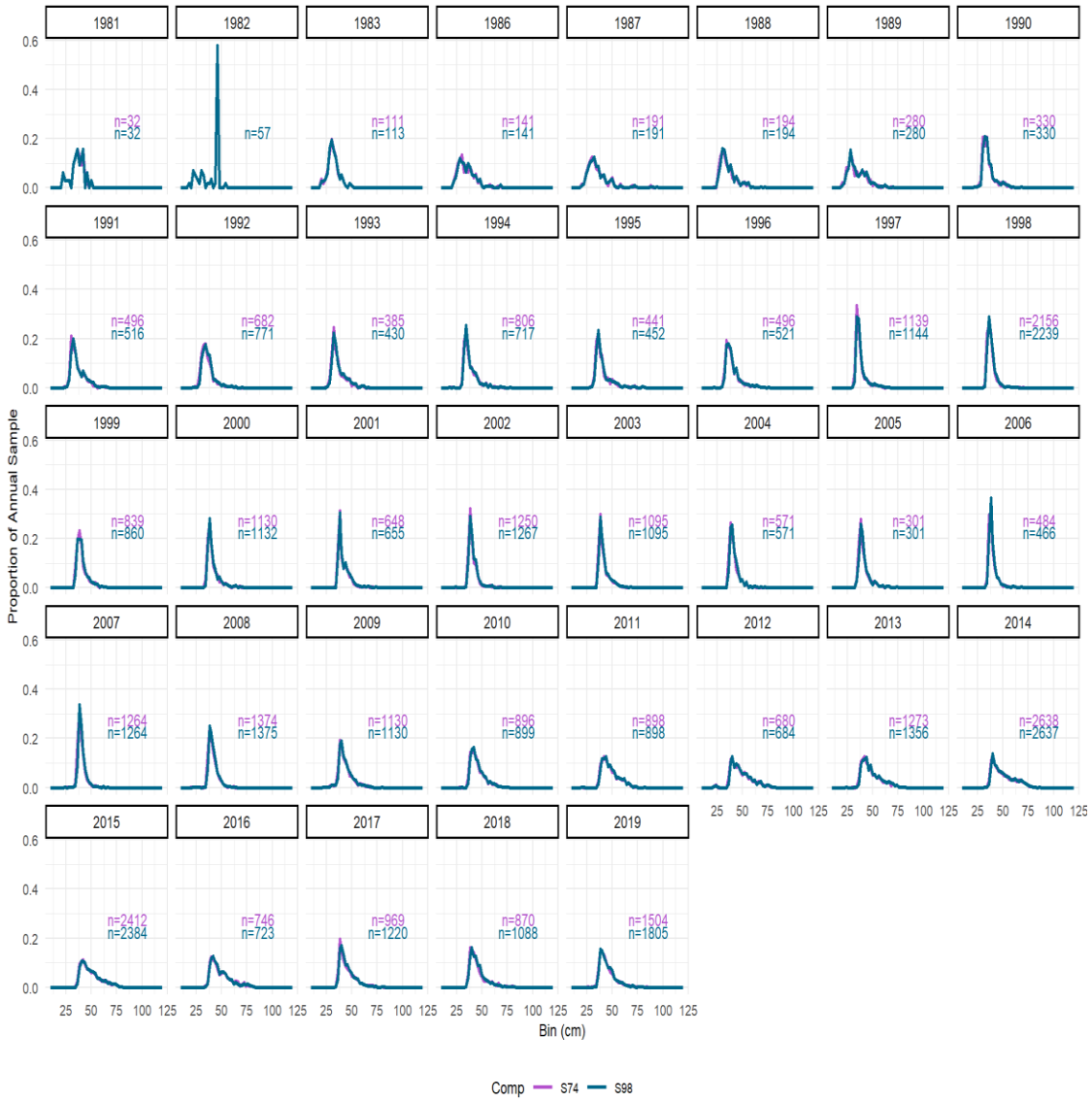

Figure 9. Comparison of nominal length compositions between SEDAR 74 and SEDAR 98 for the **headboat fleet in the central region**.

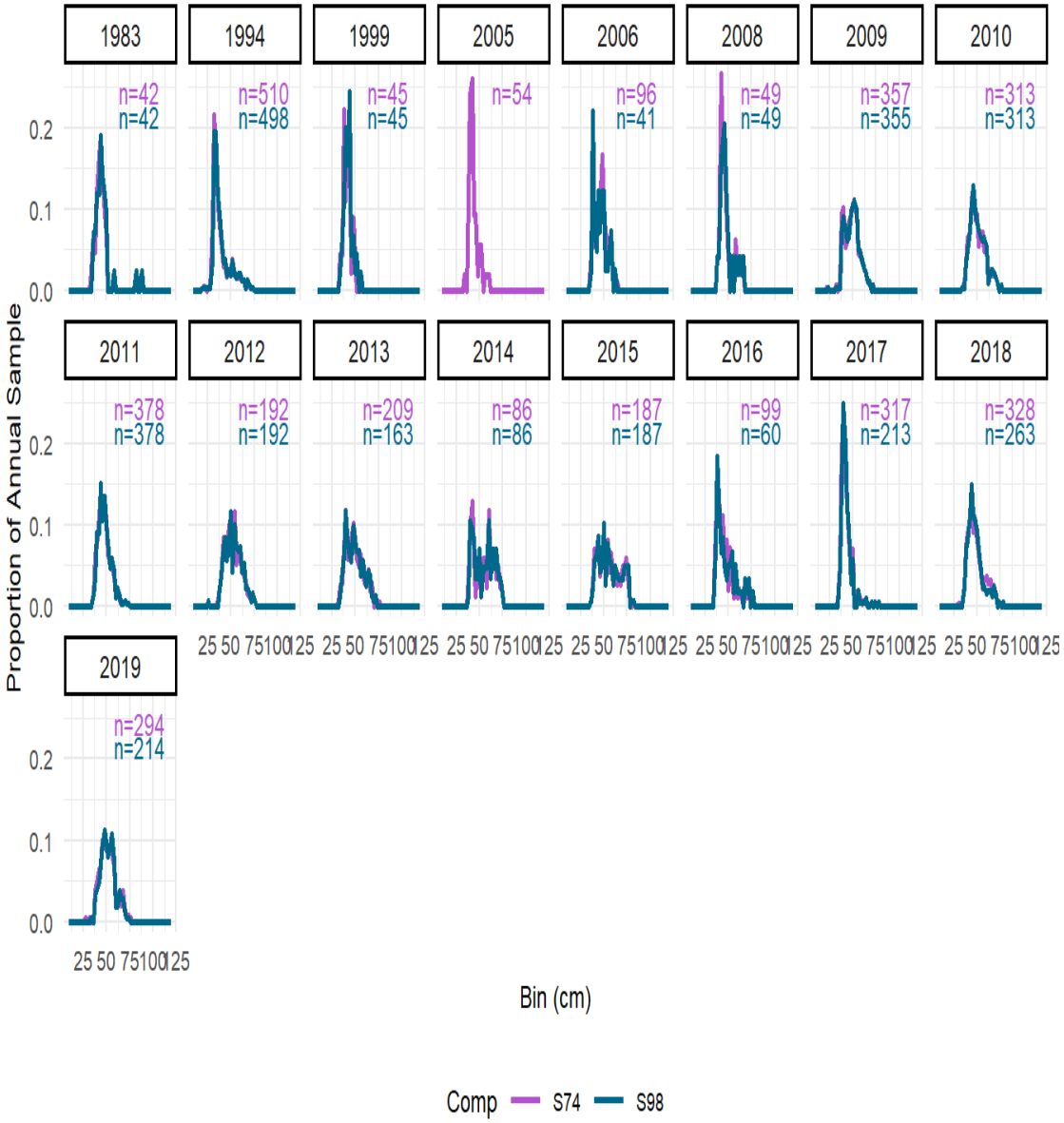

Figure 10. Comparison of nominal length compositions between SEDAR 74 and SEDAR 98 for the **headboat fleet in the east region**.

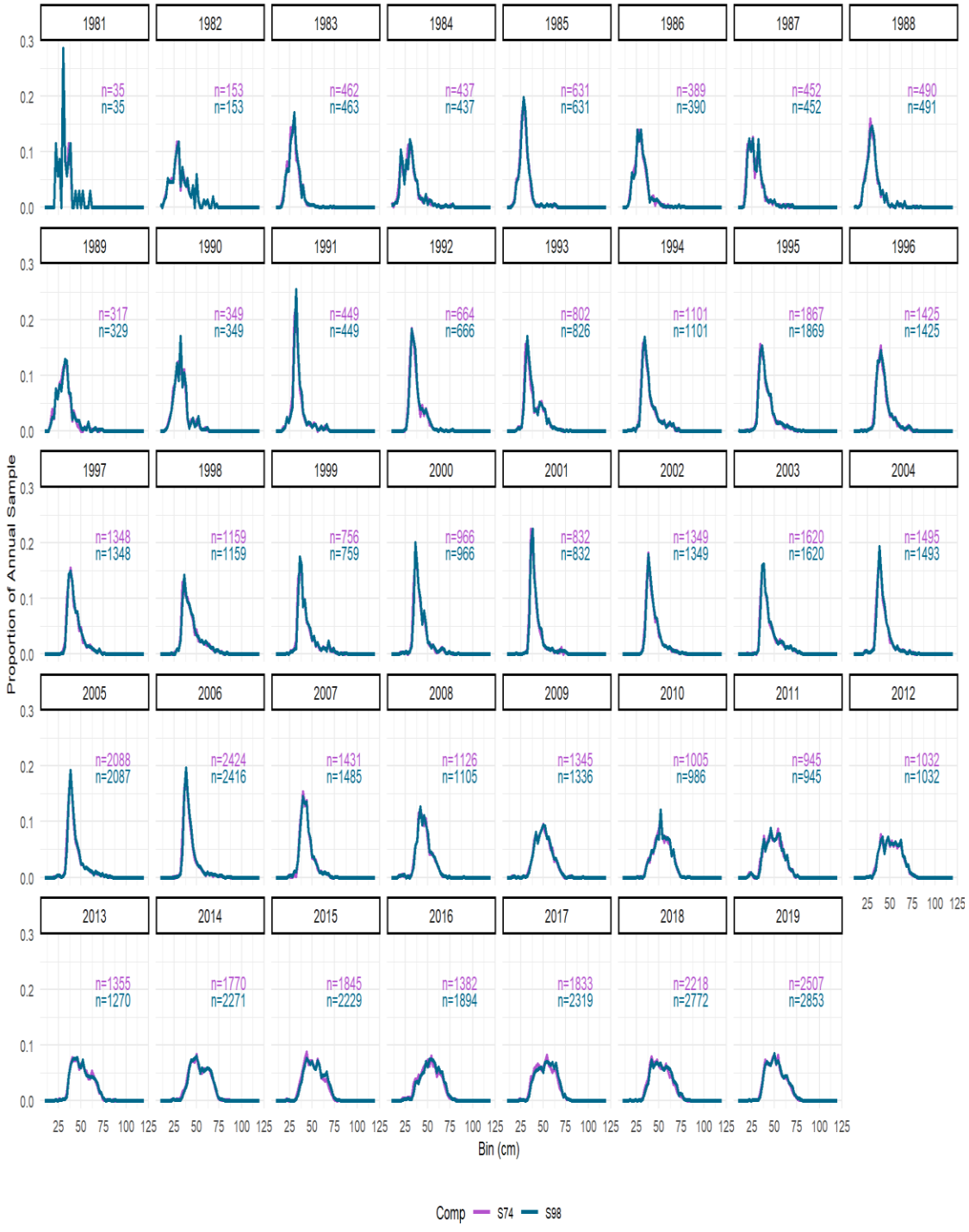

Figure 11. Comparison of nominal length compositions between SEDAR 74 and SEDAR 98 for the **private fleet in the west region**.

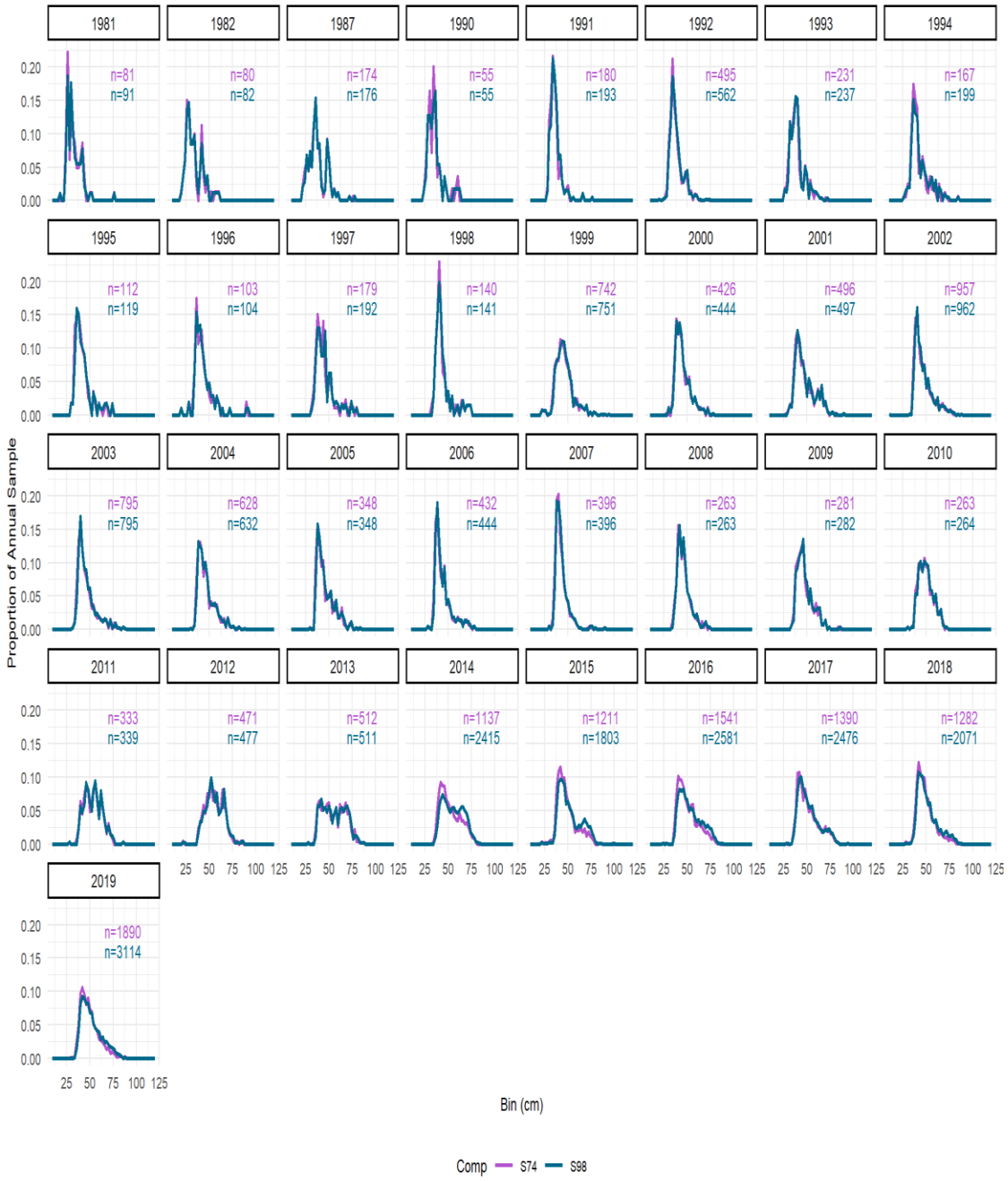

Figure 12. Comparison of nominal length compositions between SEDAR 74 and SEDAR 98 for the **private fleet in the central region**.

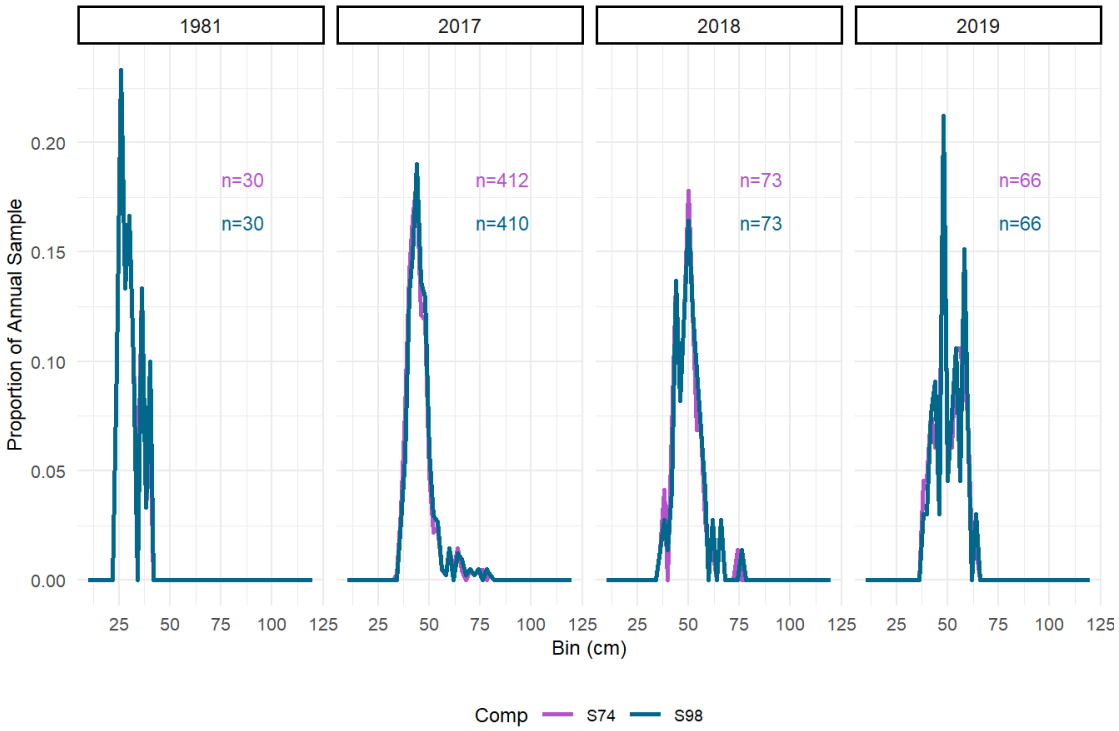

Figure 13. Comparison of nominal length compositions between SEDAR 74 and SEDAR 98 for the **private fleet in the east region**.

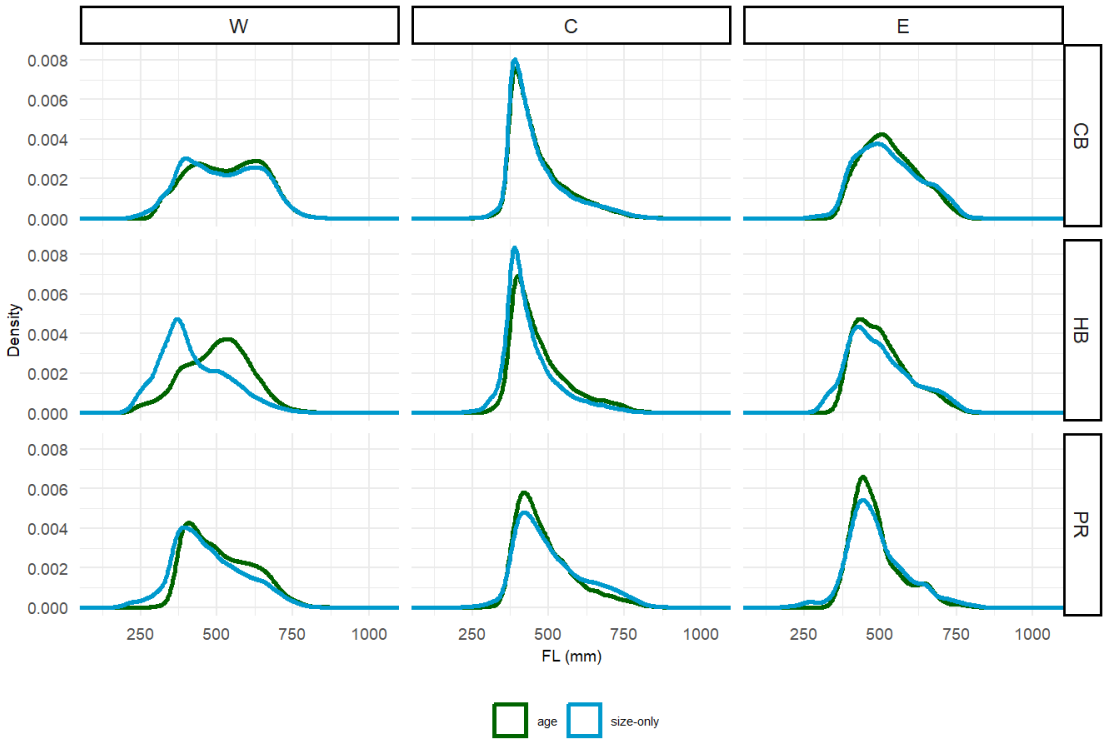

Figure 14. Comparison of the length distributions from the size-only and age data by for each region and fleet across all years.

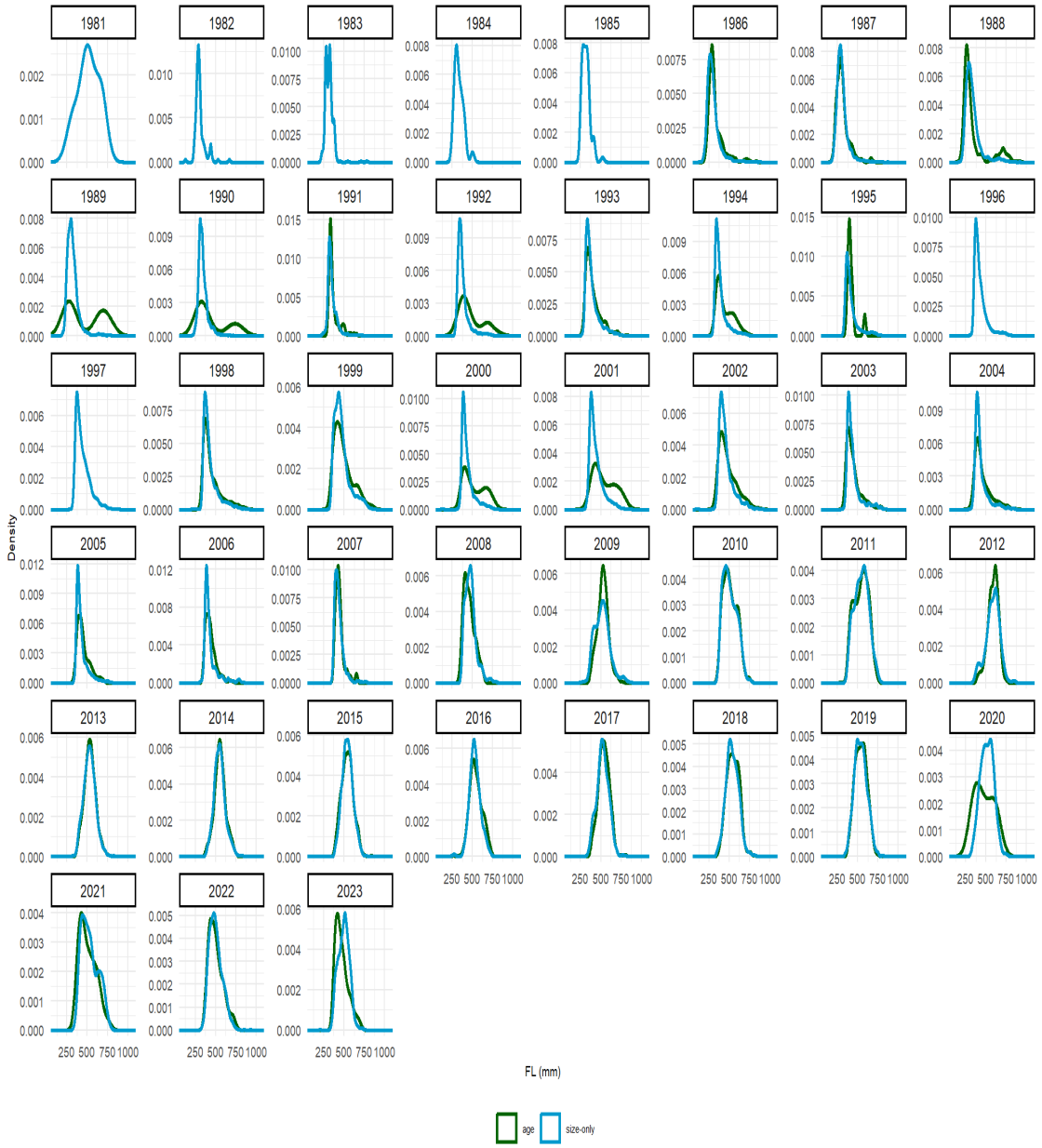

Figure 15. Annual length distribution from the length-only and the age data from **the headboat fleet in the west region**.

Figure 16. Nominal age compositions for the **charter fleet** in the central (C), east (E), and west (W) regions.

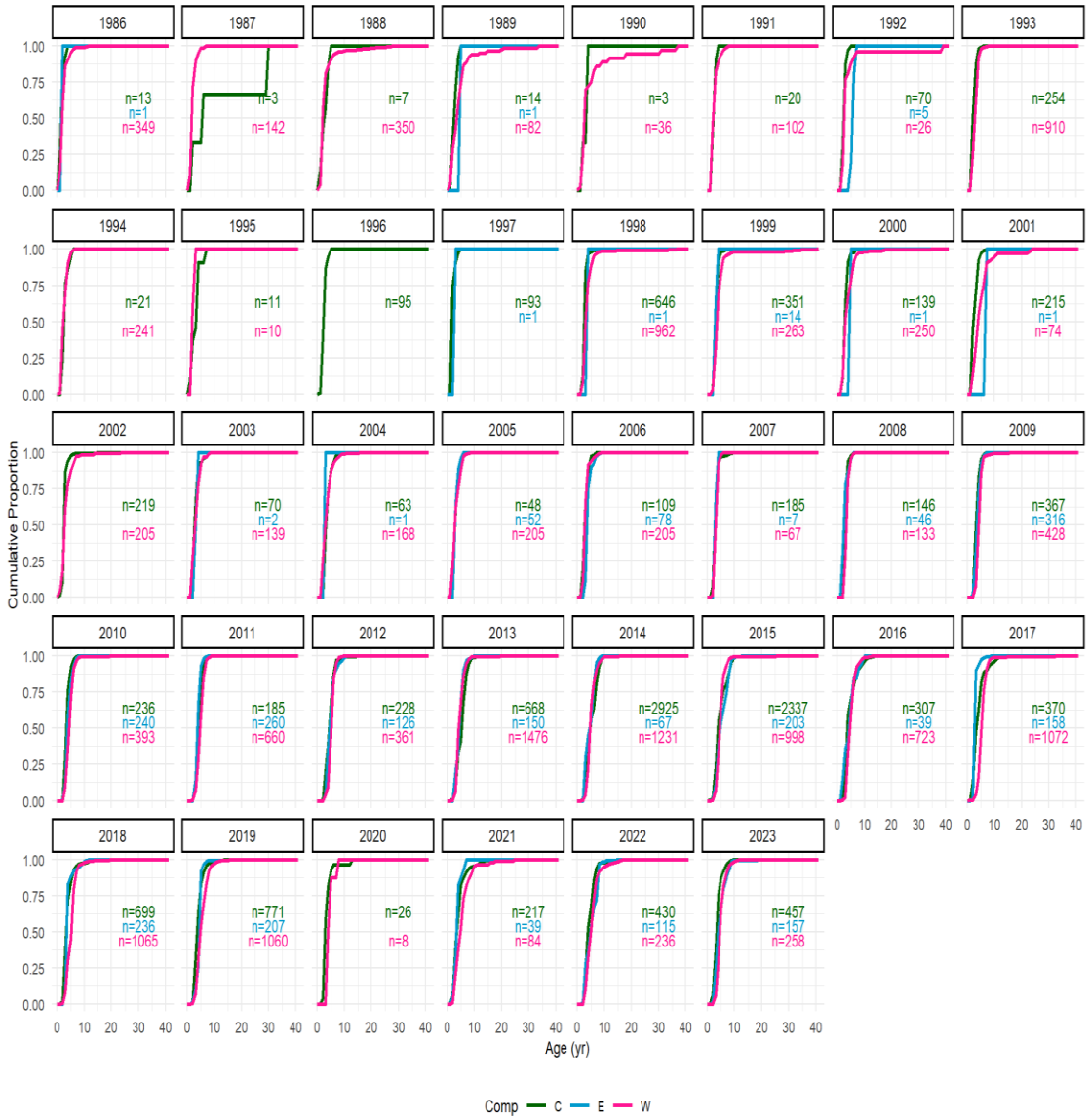

Figure 17. Nominal age compositions for the **headboat fleet** in the central (C), east (E), and west (W) regions.

Figure 18. Nominal age compositions for the **private fleet** in the central (C), east (E), and west (W) regions.