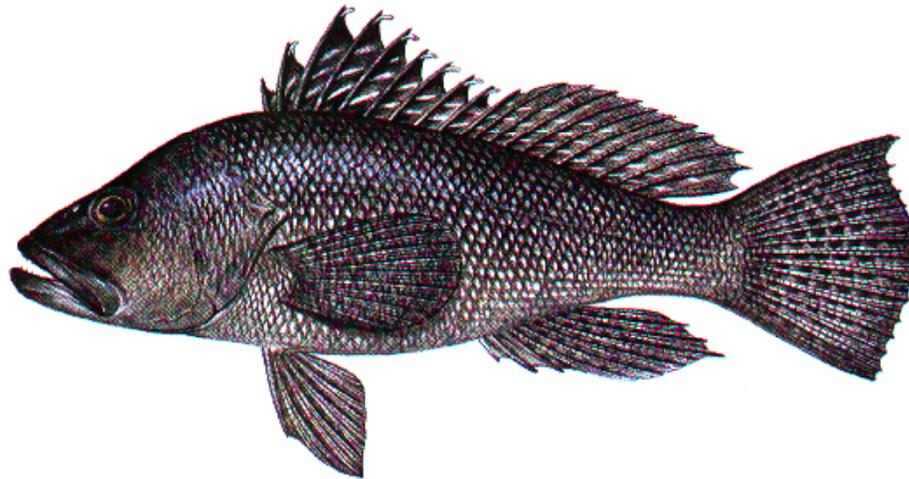


# **SEDAR 25 -Black Sea Bass Assessment Workshop Data input summary**



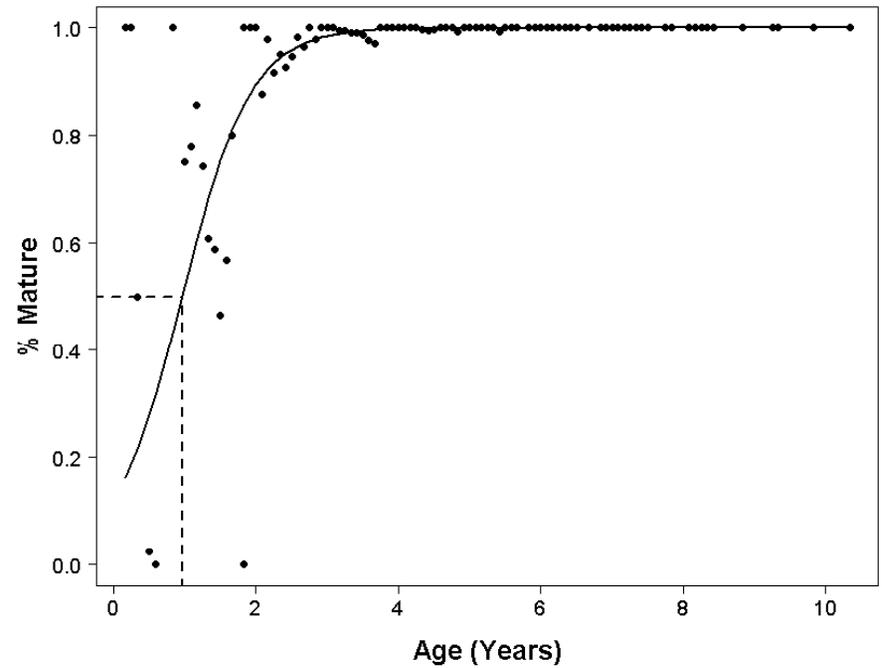
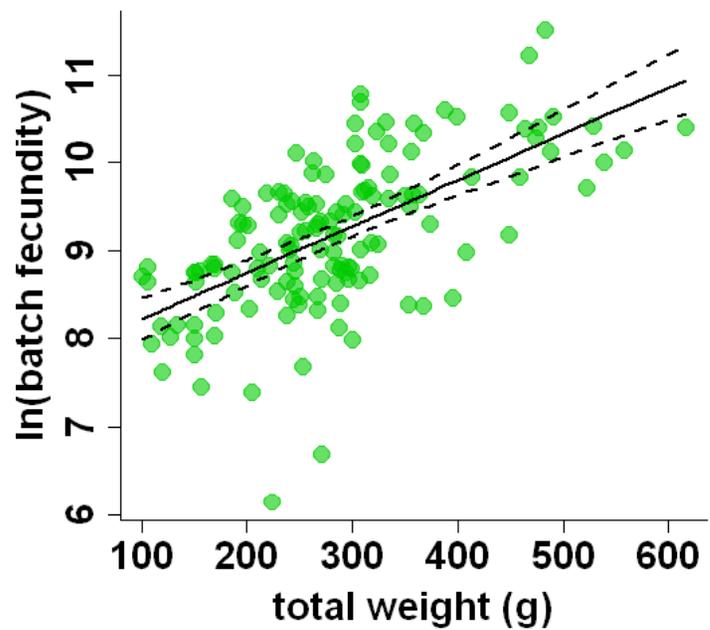
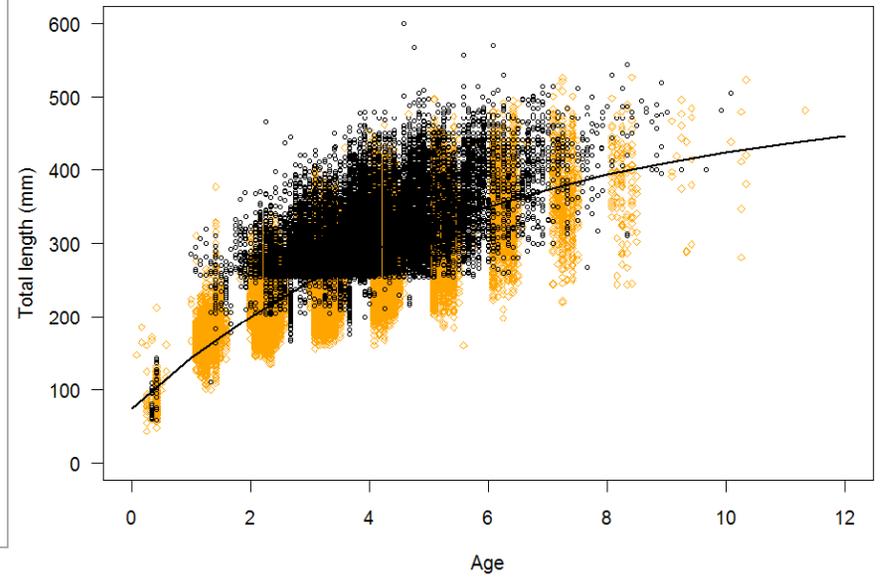
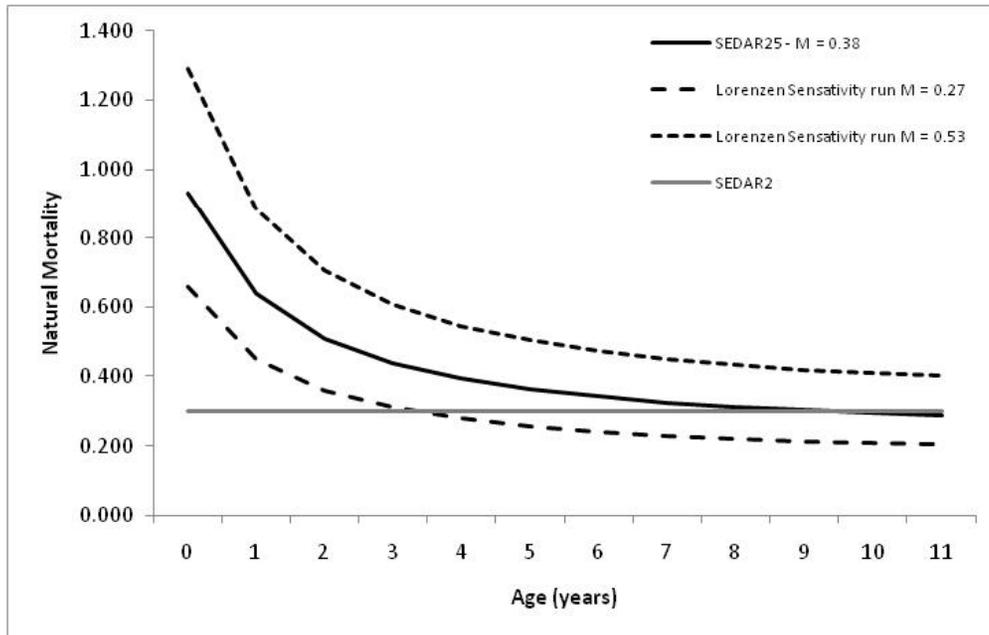
**Beaufort, NC  
June 21, 2011**

# Data Input Summary

- Life History
- Landings
- Discards
- Indices
- Length Comp
- Age Comp

# Life History

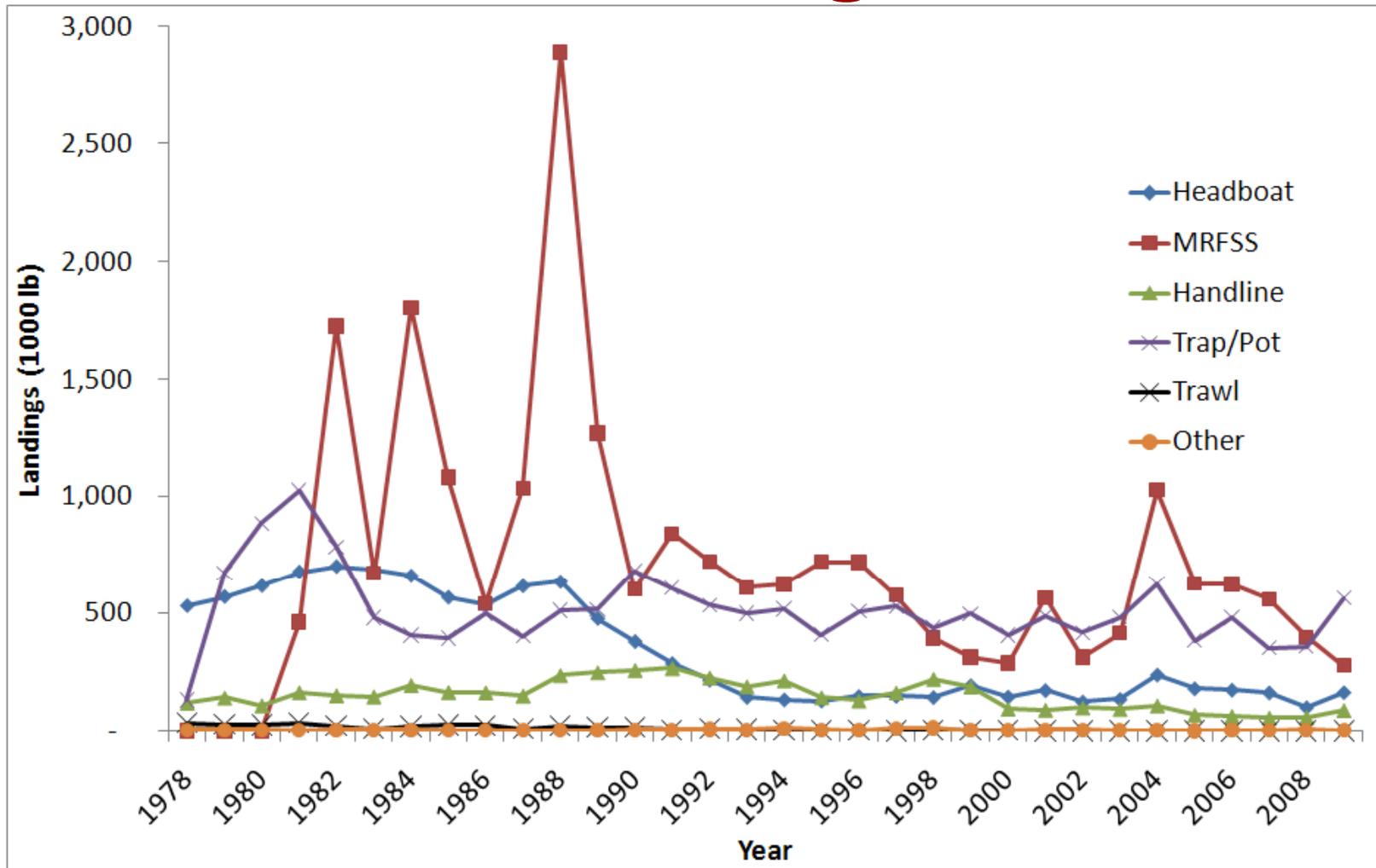
- W-TL Conversion
  - Approximately 70,000 new samples were available since previous assessment
- Von Bertalanffy growth equation, estimated CV at age
  - $K=0.177$  (0.118)
  - $L_{inf}=495.9$  (154.5) mm TL
  - $t_0= -0.92$  (0.61)
  - $CV=0.18$  (0.04)
- Sex Ratio
- Maturity
- Fecundity
- Natural mortality
  - Hoenig, constant (0.38)
  - Age specific calculated (Lorenzen), with upper and lower estimates
- Discard Mortality
  - Hook & Line (0.07), Trap (1 ½" - (0.05)), Trap (2" -(0.01))



# Updates for Life History

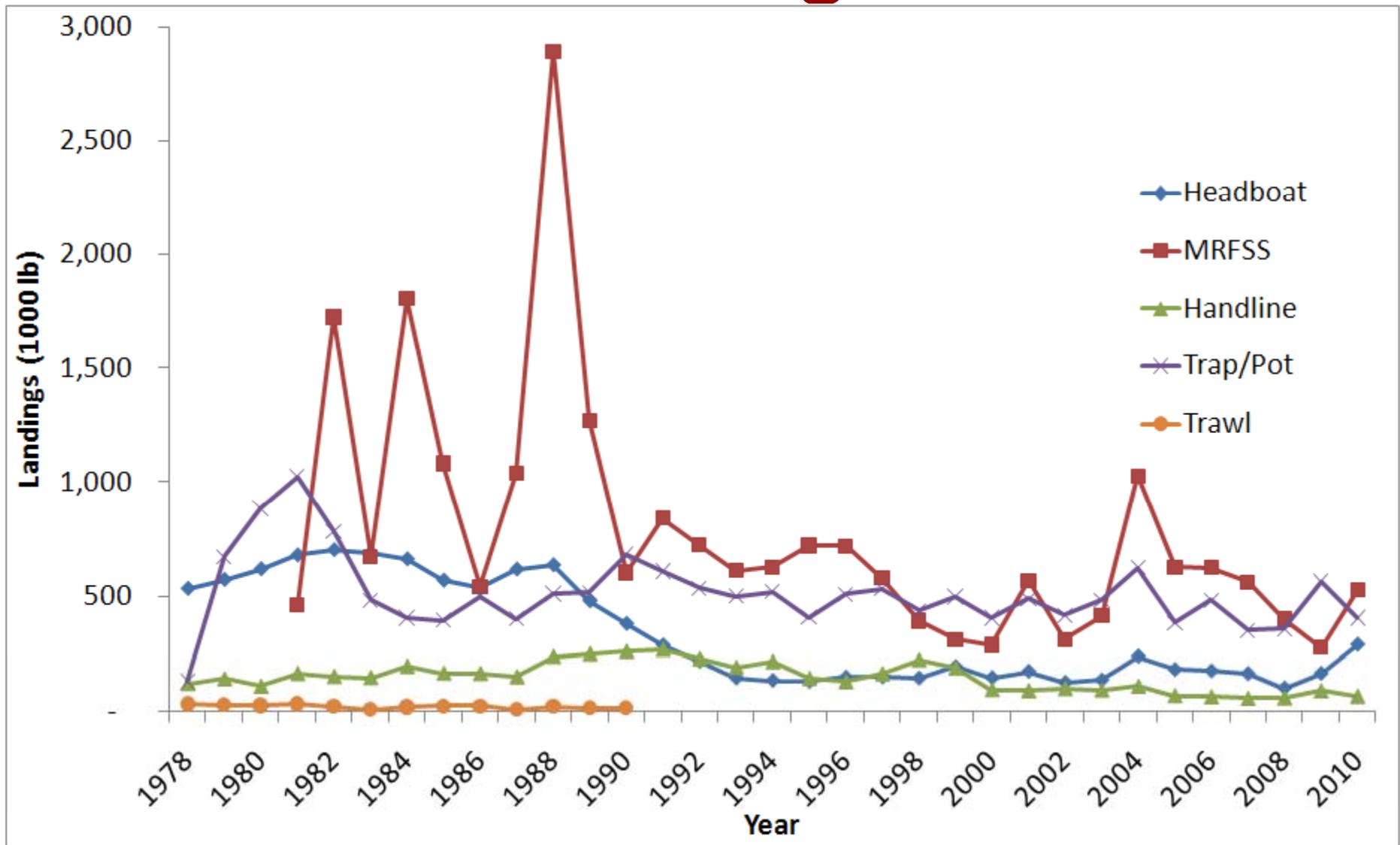
- Natural Mortality
  - Lorenzen age specific mortality vector was recalculated to include upper and lower estimates
- Sex Ratio
  - At the DW, sex ratio was provided in fractional age but was needed in calendar age
- Female Maturity
  - At the DW, age specific maturity was not provided

# Landings

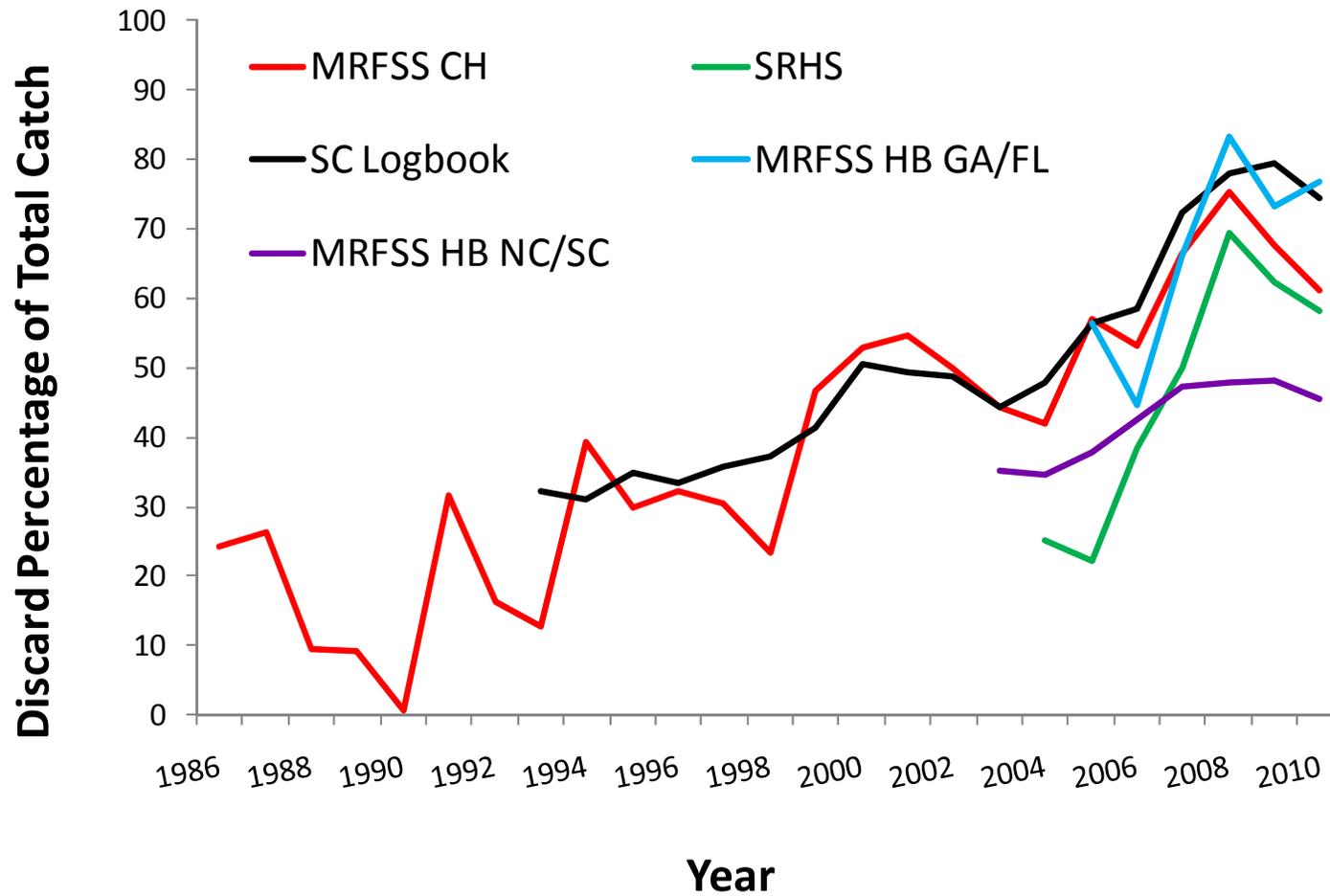


- Other was pooled with Trap/Pots
- Trawl 1978-1990
- Trawl 1991-2010 was pooled with Trap/Pots

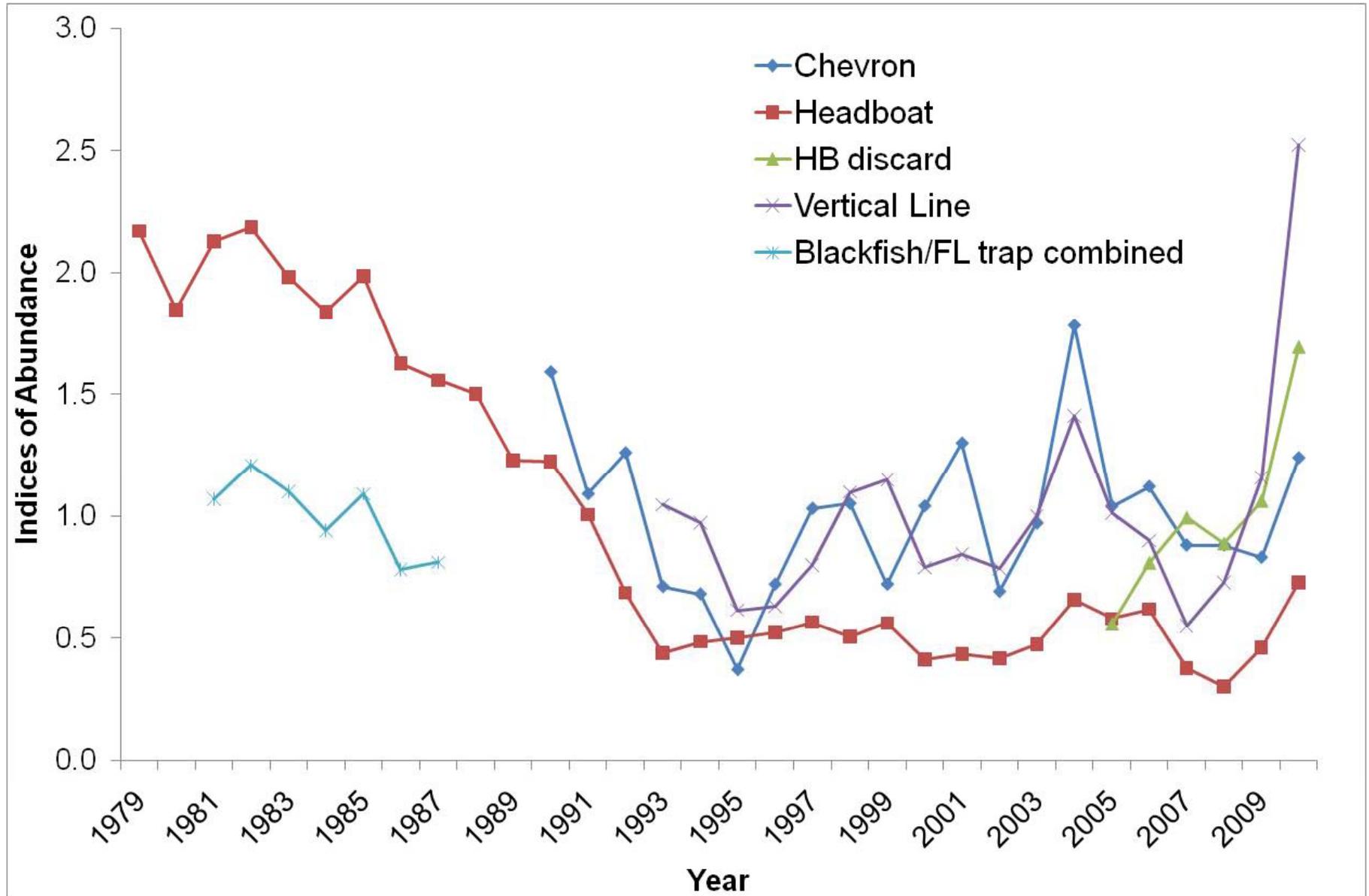
# Landings



# Discards



# Indices of Abundance



# Indices of Abundance

	MARMAP Chevron	Headboat	Headboat -at sea observer discard	Commercial logbook - vertical line	MARMAP - blackfish/FL snapper trap combined
MARMAP Chevron	1	0.557 (0.0086)	0.418 (0.4089)	0.454 (0.0585)	-
Headboat	1990-2010	1	0.397 (0.4353)	0.689 (0.002)	0.956 (0.0008)
Headboat -at sea observer discard	2005-2010	2005-2010	1	0.824 (0.043)	-
Commercial logbook - vertical line	1993-2010	1993-2010	2005-2010	1	-
MARMAP - blackfish/FL snapper trap combined	-	1981-1987	-	-	1

# Data Update

- Recreational
  - Headboat at sea observer discard length comps were not completed at the DW
  - MRIP trip sample sizes by year were calculated
- Commercial
  - Landings and length comps were recalculated
- MARMAP
  - Length and age comp sample size differences

# Sample sizes – recreational

Year	MRIP				Headboat				Headboat At-sea discard	
	Length comps*		Age comps		Length comps		Age comps		Length Comps	
	N.fish	N.trip	N.fish	N.trip	N.fish	N.trip	N.fish	N.trip	N.fish	N.trip
1978					2353	330				
1979					1654	201				
1980					2418	276				
1981	194	97			3035	388				
1982	417	222			3686	439				
1983	174	113			5732	625				
1984	285	163			6086	694				
1985	488	222			5842	638				
1986	380	175			6549	682				
1987	668	387			6442	787				
1988	604	339			4253	545	7	3		
1989	605	445			3836	427	5	3		
1990	440	372			5772	481	25	11		
1991	334	220					85	43		
1992	655	492					60	31		
1993	494	345			3948	389	7	5		
1994	349	376			4215	350	5	2		
1995	363	281			3325	283	2	1		
1996	492	281			3212	285	27	12		
1997	306	301	8	1	3678	379	4	2		
1998	452	302	379	57	4364	462	75	9		
1999	706	315			4114	402				
2000	473	250			3419	333	1	1		
2001	775	452	9	4	2982	329				
2002	504	264	84	29	1957	304	23	15		
2003	998	413	77	21			105	31		
2004	1283	597	567	46			234	53		
2005	1039	395	139	36			480	104	2773	151
2006	1042	524	173	17			1,066	247	3913	133
2007	897	368	37	4			671	271	5408	152
2008	616	355	2	1			309	161	5038	153
2009	667	402	19	2			517	218	6388	136
2010	1125	542	29	4			1,029	341	11055	146

\*model input, but pooled by regulation periods

# Sample sizes – commercial

Year	Pot/Trap				Handline			
	Length comps*		Age comps		Length comps		Age comps	
	N.fish	N.trip	N.fish	N.trip	N.fish	N.trip	N.fish	N.trip
1978								
1979								
1980								
1981								
1982								
1983	258	7			54	6	50	6
1984	757	9			1,528	66	2	66
1985	0	0			1,248	56	2	56
1986	0	0			695	45		
1987	694	5			804	50		
1988	1,080	12			814	52		
1989	265	3			695	30		
1990	770	9			1,140	43		
1991	470	7			812	46		
1992	477	5			404	26		
1993	115	2			398	32		
1994	250	3			570	41	77	41
1995	0	0			235	39		
1996	0	0			239	23		
1997	0	0			149	17	22	17
1998	319	1			184	20	29	20
1999	0	0			802	42		
2000	416	3			410	47		
2001	268	2			937	73		
2002	916	6			1,039	61	81	61
2003	1,238	7			394	53	443	53
2004	1,015	8	127	8	1,527	98	609	98
2005	670	16	423	16	1,339	116	836	116
2006	1,115	26	785	26	1,214	98	809	98
2007	1,958	47	2124	47	860	93	779	93
2008	1,945	79	2098	79	629	90	553	90
2009	2,218	89	2252	89	622	71	693	71
2010	1,883	74	1572	74	631	91	586	91

\*due to low sample size by year, pooled 1984, 1988, 1990, 1991; weighted by sample size, used to estimate selectivity during 8" limit

## Sample sizes – MARMAP

Year	MARMAP Chevron				MARMAP Blackfish/FL Trap combined			
	Length comps		Age comps		Length comps		Age comps	
	N.fish	N.trip	N.fish	N.trip	N.fish	N.trip	N.fish	N.trip
1978								
1979								
1980								
1981					4669	108	973	107
1982					4851	120	906	117
1983					5518	459	5486	453
1984					7946	62	1555	61
1985					5319	25	702	24
1986					3415	26	435	26
1987					2460	16	338	16
1988								
1989								
1990	6771	161	2136	159				
1991	4092	110	4050	107				
1992	4667	132	4585	130				
1993	3260	165	3240	163				
1994	3787	135	3710	135				
1995	3457	110	3423	109				
1996	3771	170	3656	167				
1997	4324	141	4257	139				
1998	4324	130	4225	128				
1999	4779	87	4623	86				
2000	4589	97	4550	97				
2001	4225	81	4001	79				
2002	2798	79	2721	78				
2003	1815	67	1660	64				
2004	5136	91	5041	91				
2005	6021	107	5636	106				
2006	4673	107	4466	105				
2007	3264	100	3174	99				
2008	3160	106	710	102				
2009	3871	127	740	124				
2010	5462	176	1385	176				

# Summary of Data Sources (1)

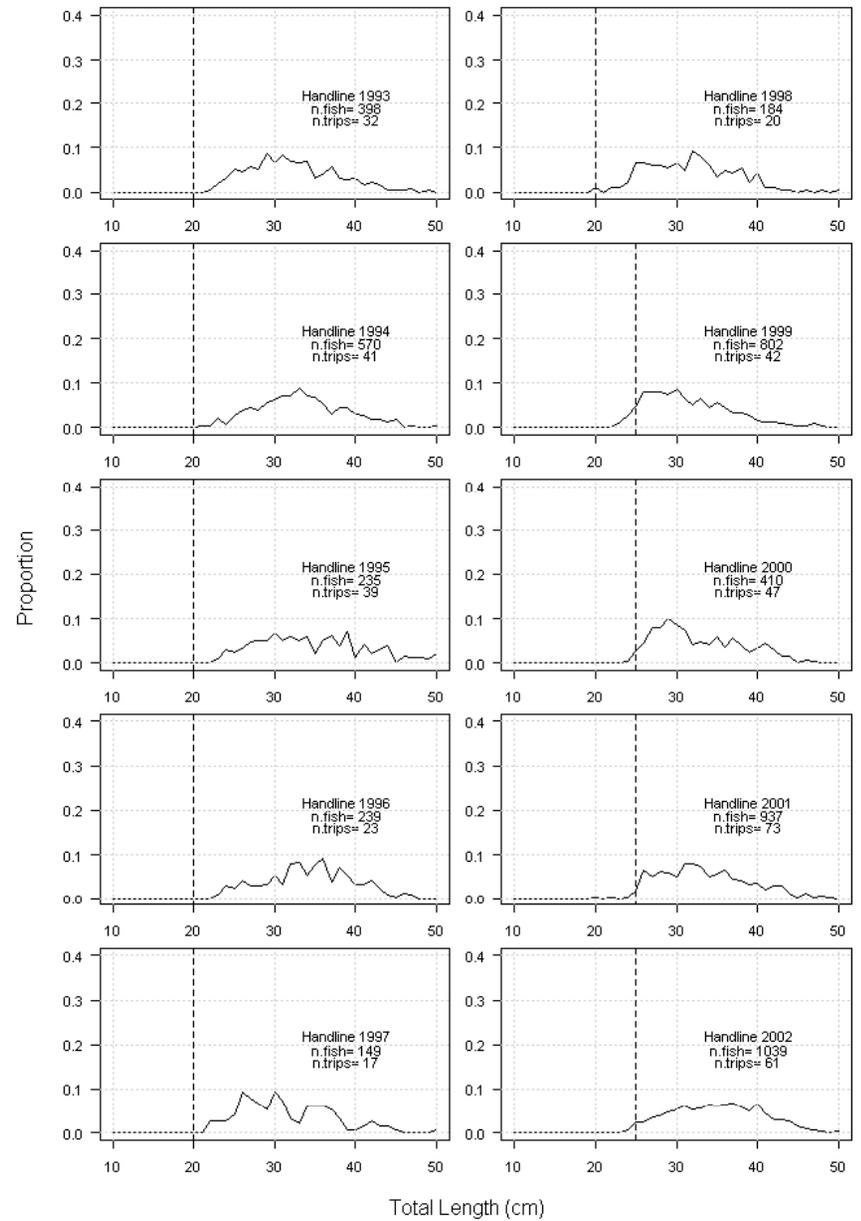
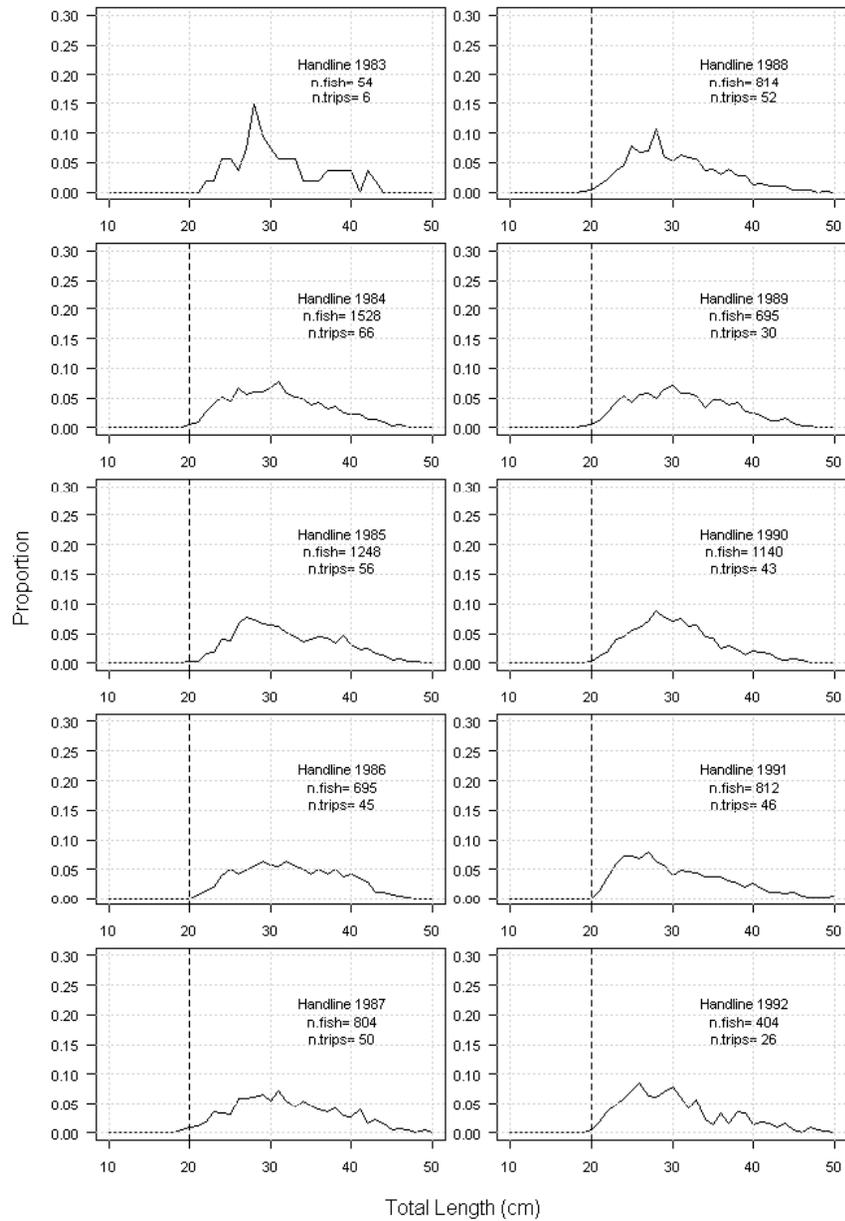
- Life History (age specific vectors)
  - Natural mortality, female maturity, growth, fecundity, transition to male
- Landings time series
  - Commercial
    - Handline(1978-2010), Trap/Pot (1983-2010, includes other and trawl(1991-2010)), Trawl (1978-1990)
  - Recreational
    - MRIP, (1981-2010)
    - Headboat, (1978-2010)
- Discards
  - Commercial (1993-2010)
    - Combined Pots and Handlines
  - MRIP & Headboat (combined estimates from 1981-1985)
    - Separate estimates (1986-2010)

# Summary of Data Sources (2)

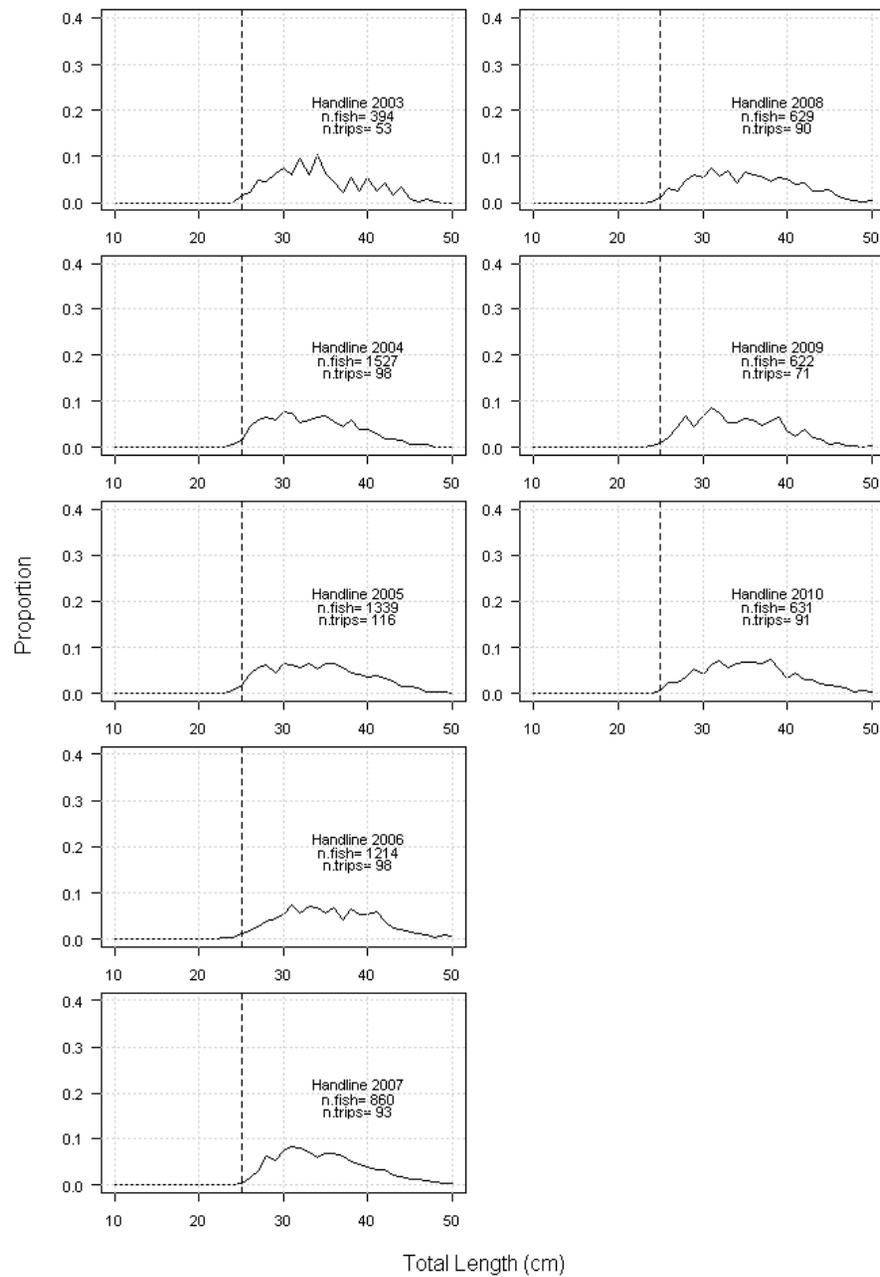
- Indices
  - MARMAP Chevron (1990-2010), Headboat (1979-2010), Headboat At-sea discard (2005-2010), Commercial Vertical Line (1993-2010), MARMAP Blackfish/FL trap combined (1981-1987)
- Age Comps
  - MRFSS(1998, 2004, 2005); Headboat (1991, 1992, 2003-2010); Trap/Pot (2007-2010); Handline (1994, 2002-2010); MARMAP Chevron (1990-2010); MARMAP BF/FL combined (1983)
- Length Comps
  - 1cm bins beginning @ 10cm, pooled 50cm+
  - MRIP(1981-2010); Headboat (1978-1990, 1993-2002); Headboat at-sea discard(2005-2010); Trap/Pot (1984, 1988, 1990, 1991); Handline (1984-1991, 1993, 1995, 1999-2001); MARMAP BF/FL combined (1981-1982, 1984-1987)



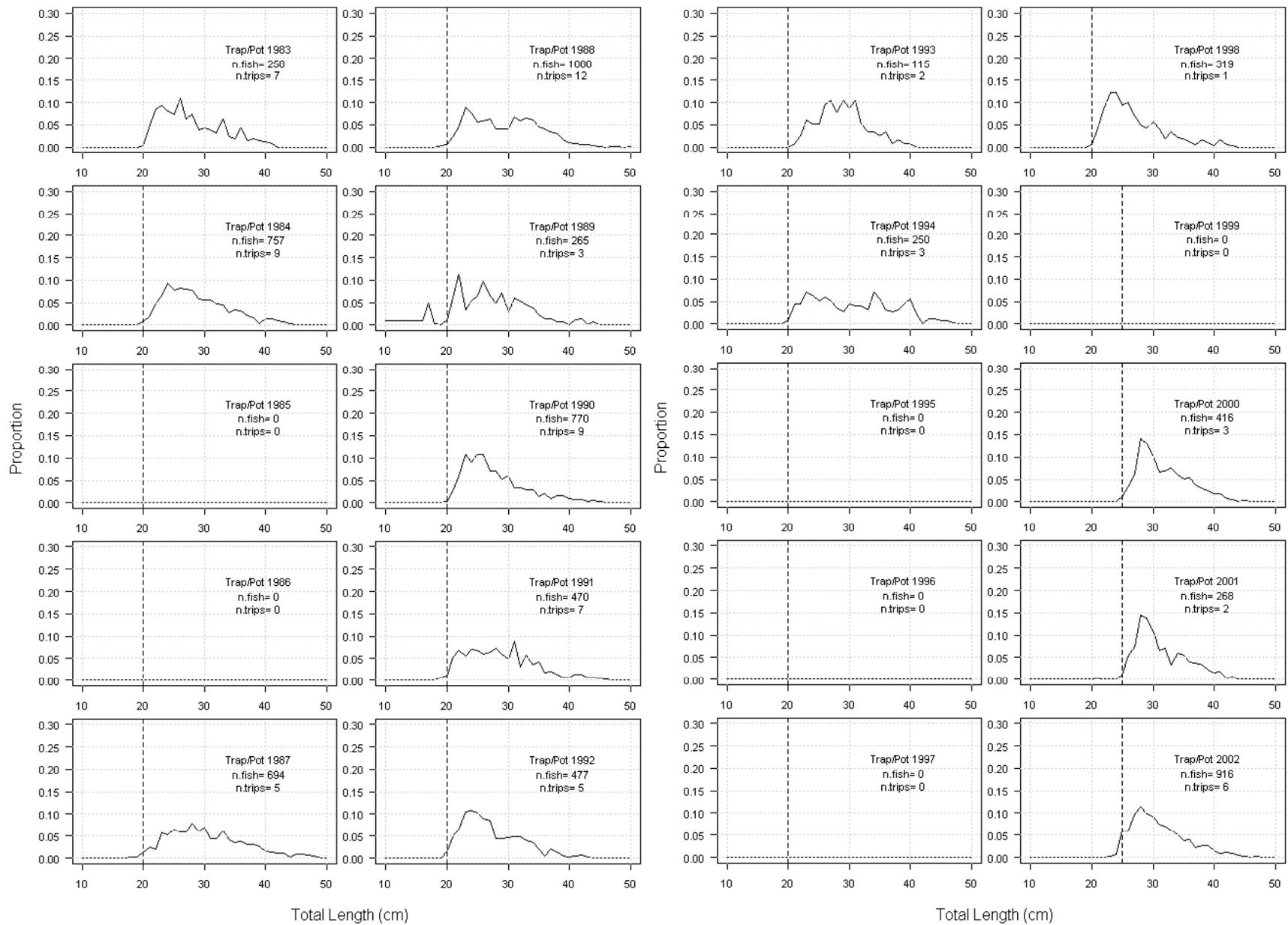
# Commercial Handline Length Composition



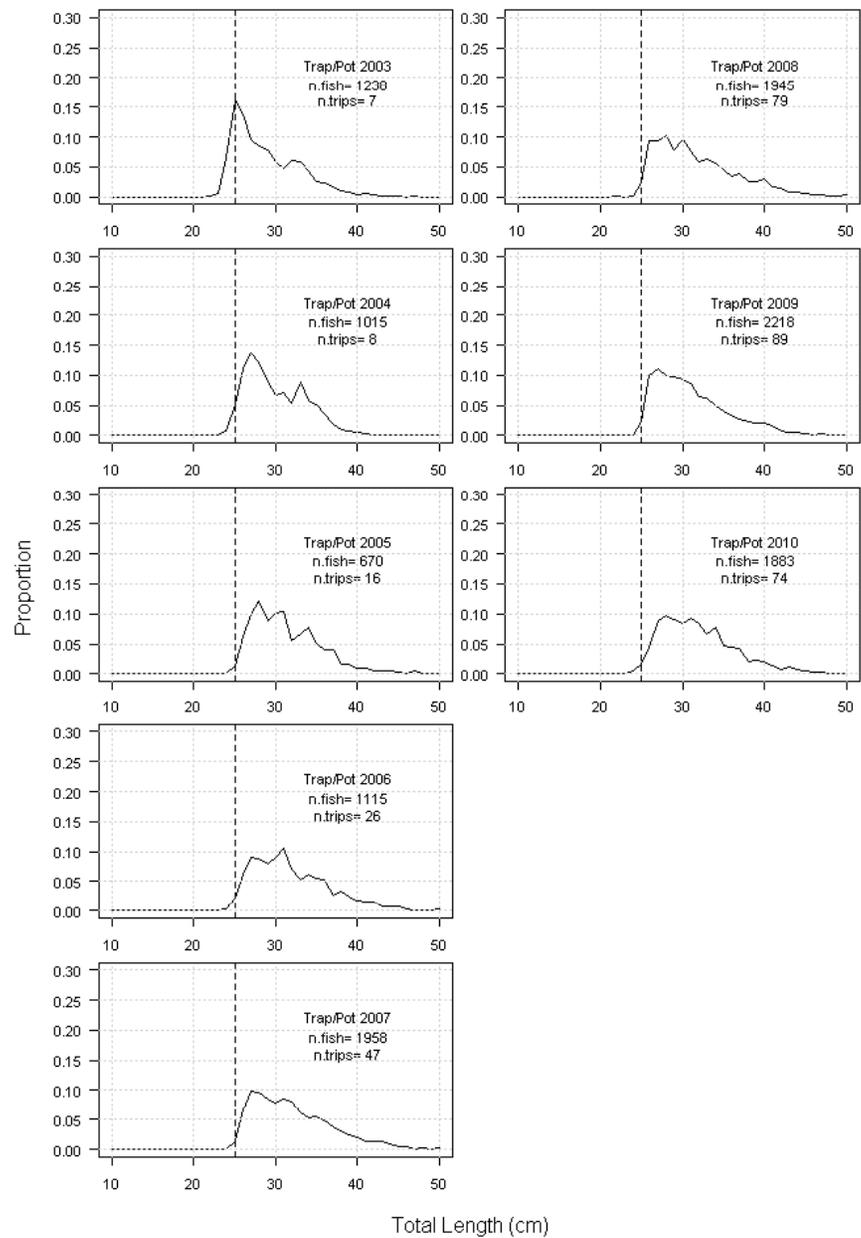
# Commercial Handline Length Composition



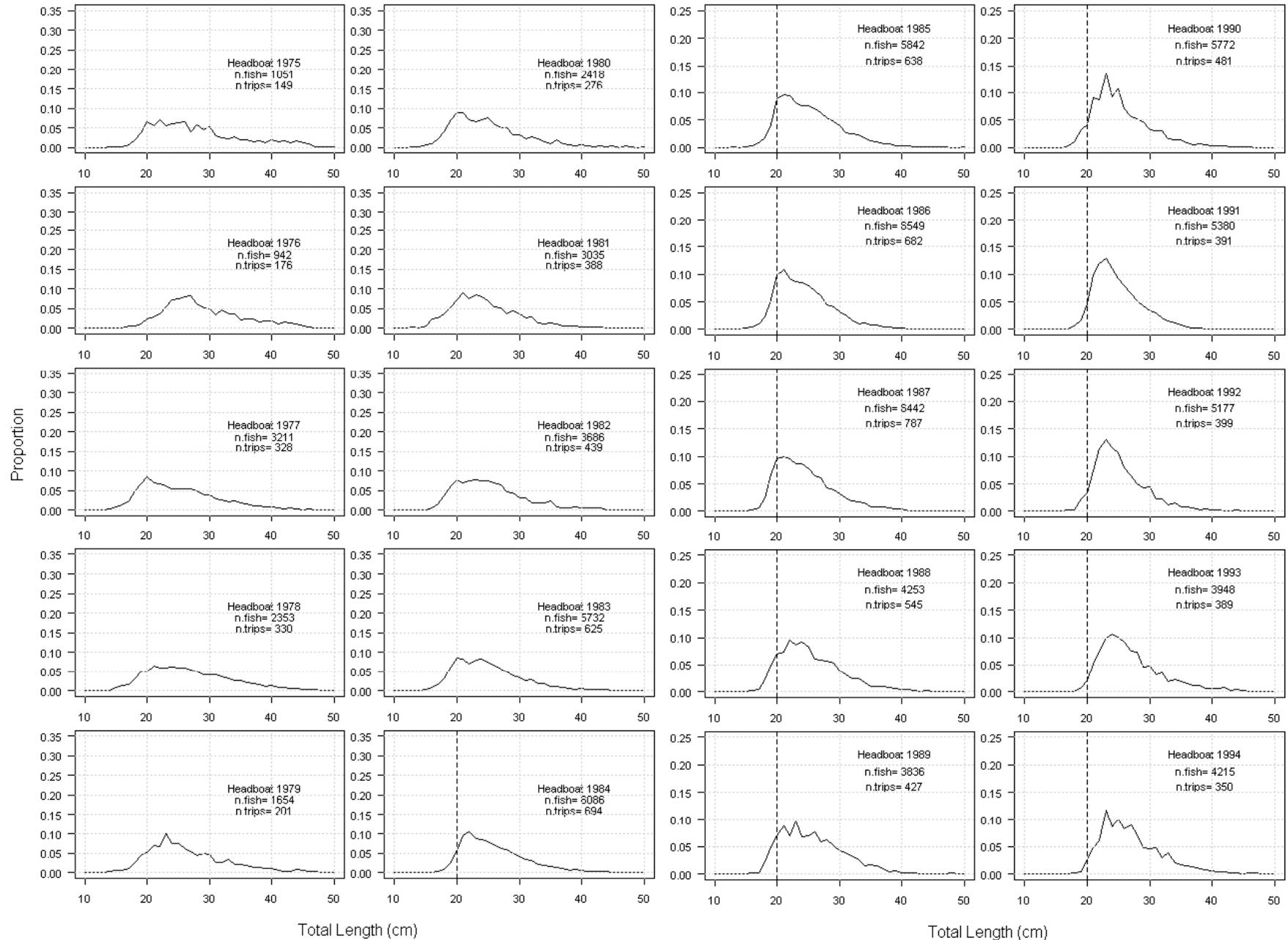
# Commercial Trap/Pot Length Composition



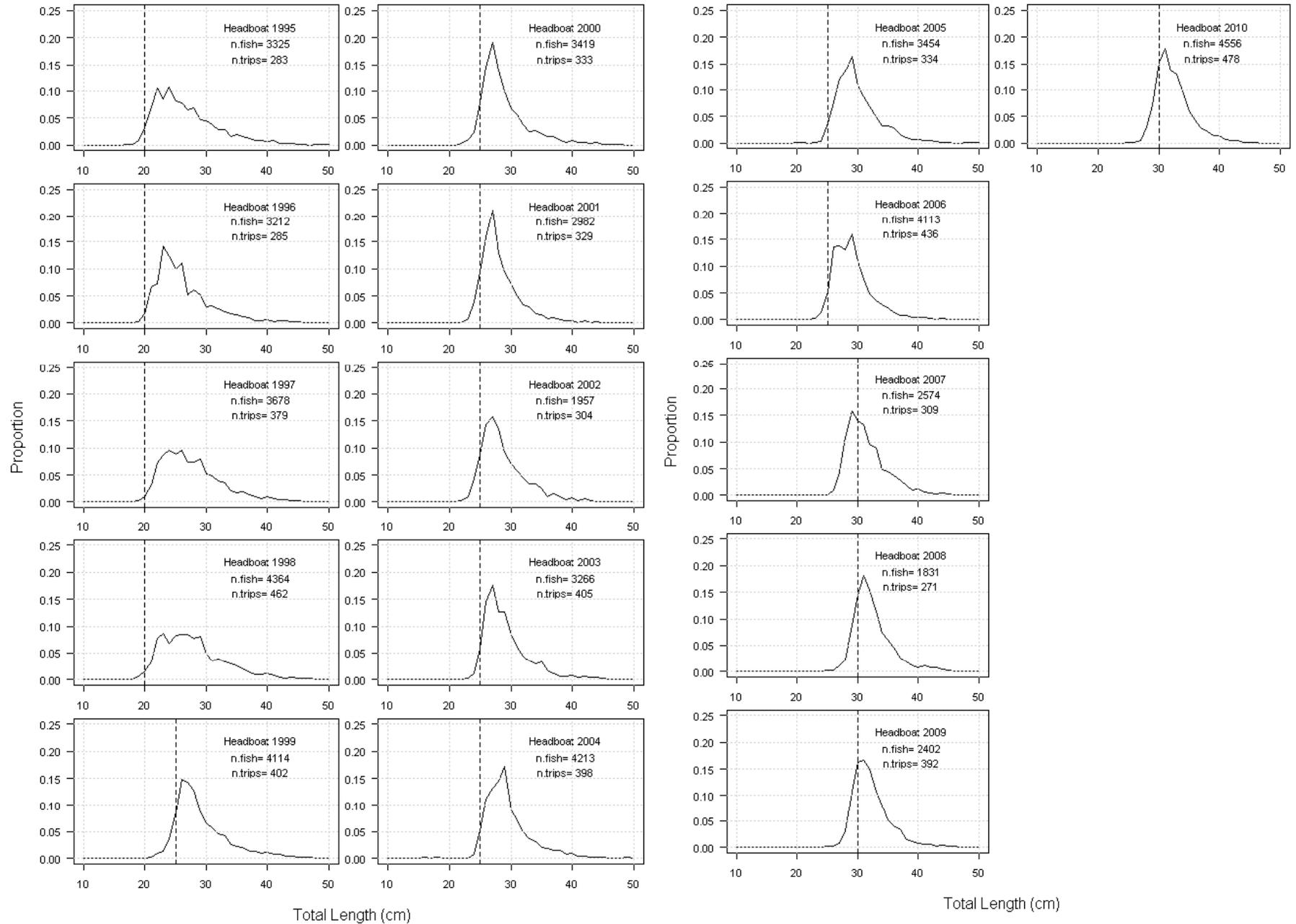
# Commercial Trap/Pot Length Composition



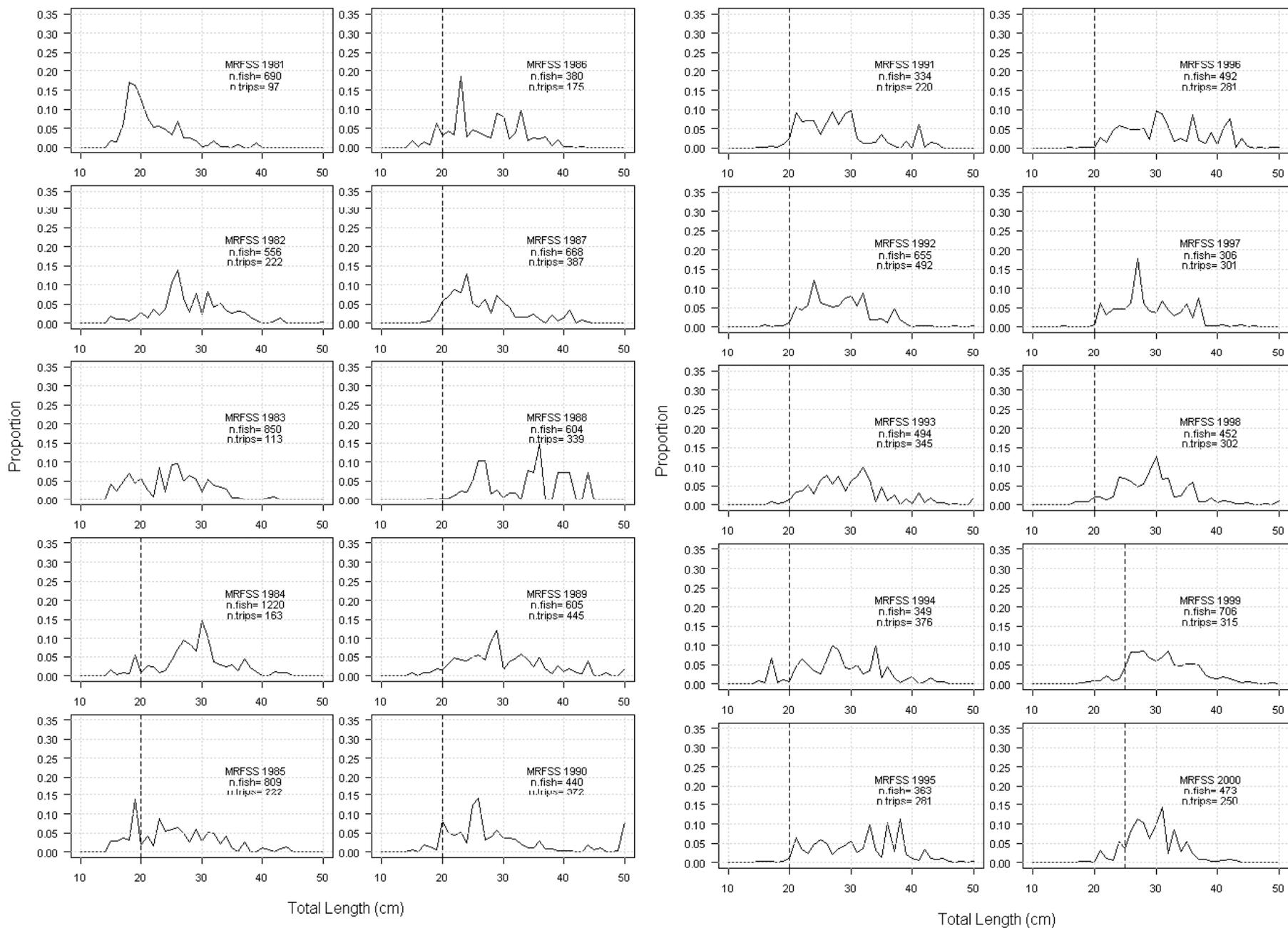
# Headboat Length Composition



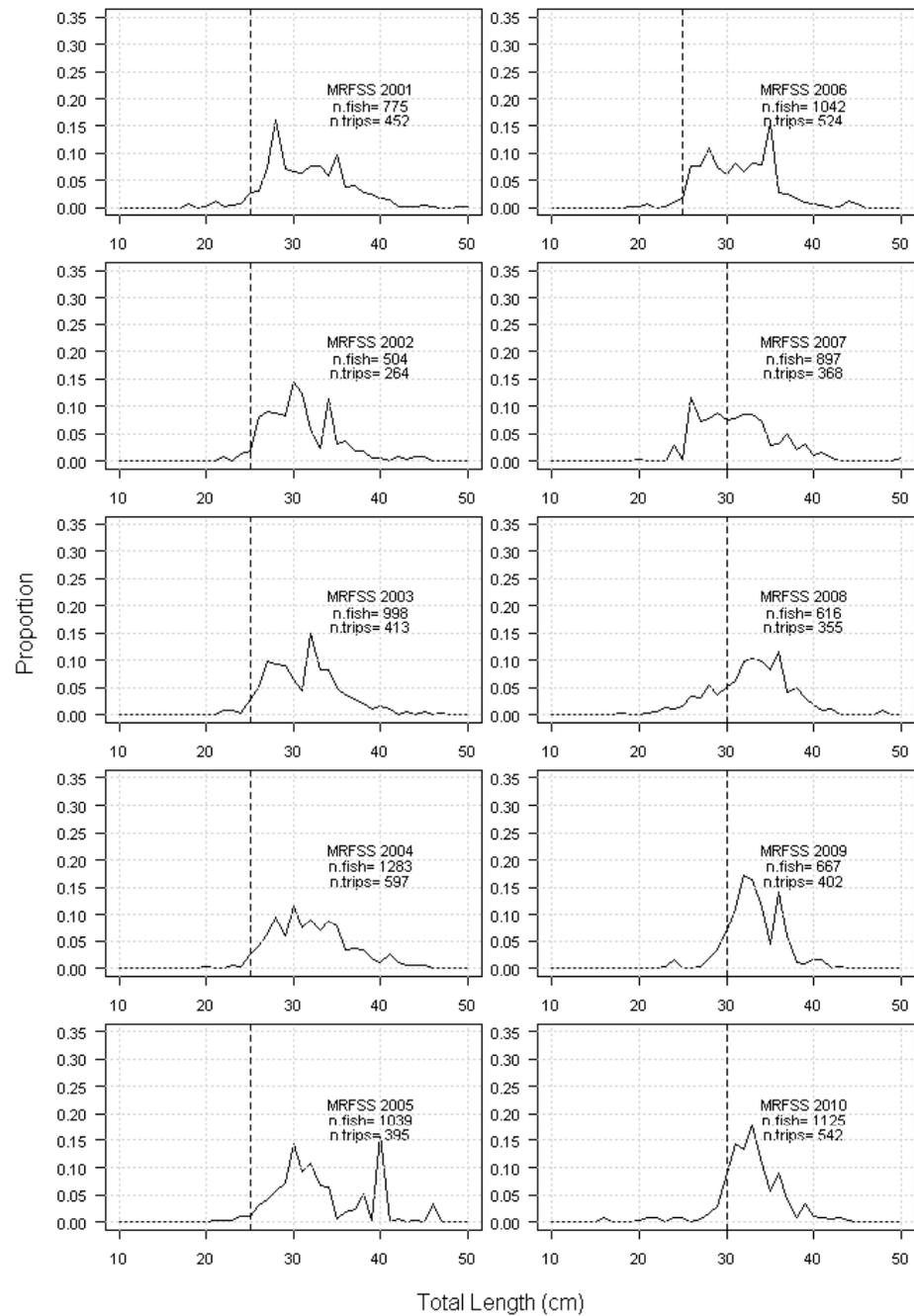
# Headboat Length Composition



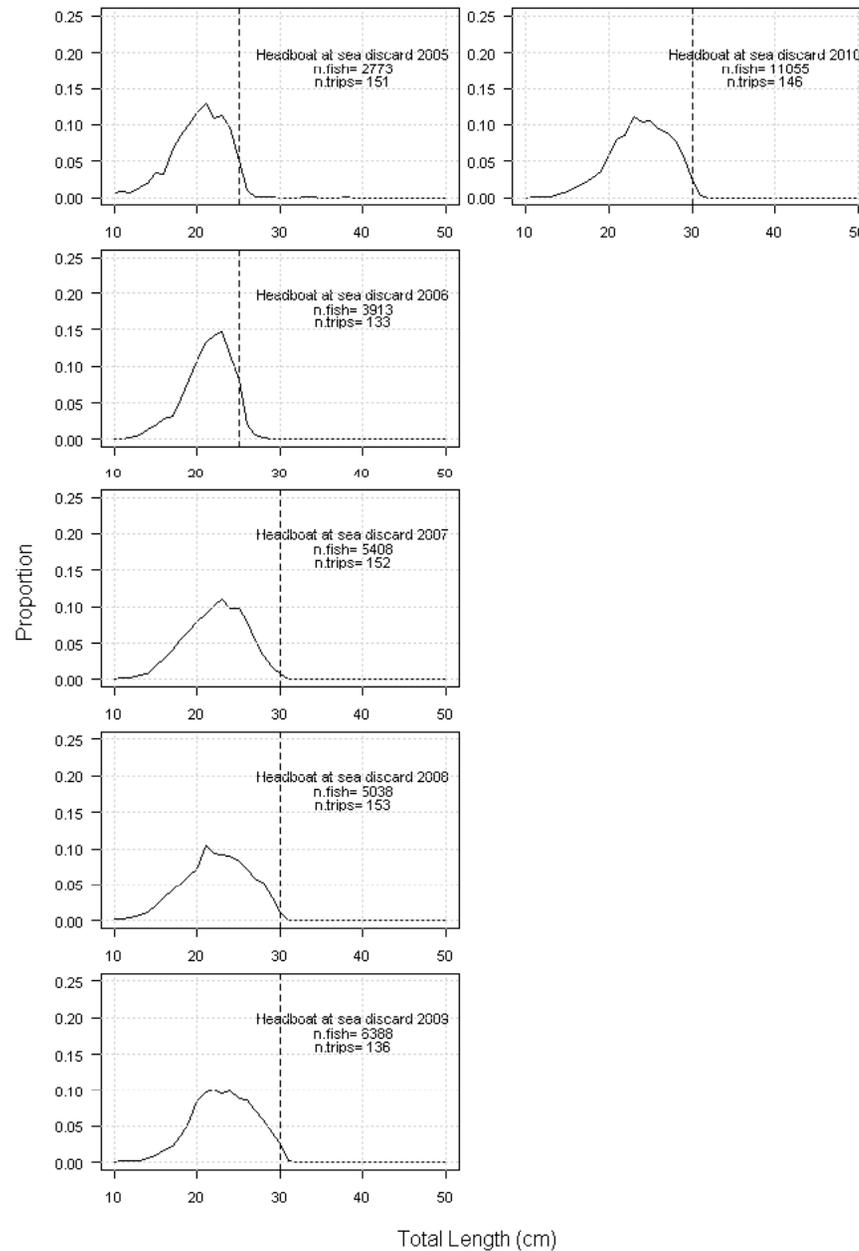
# MRIP Length Composition



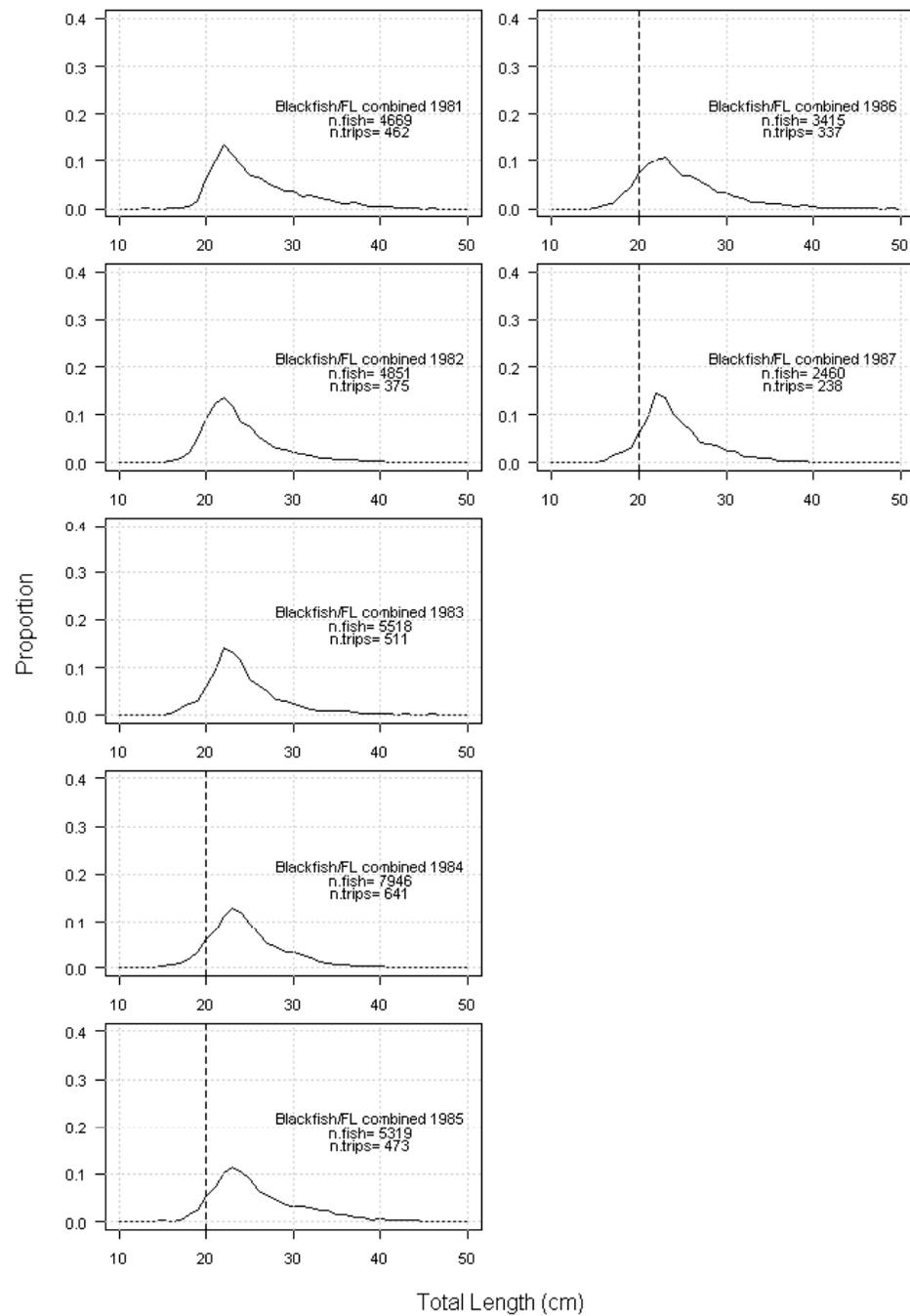
# MRIP Length Composition



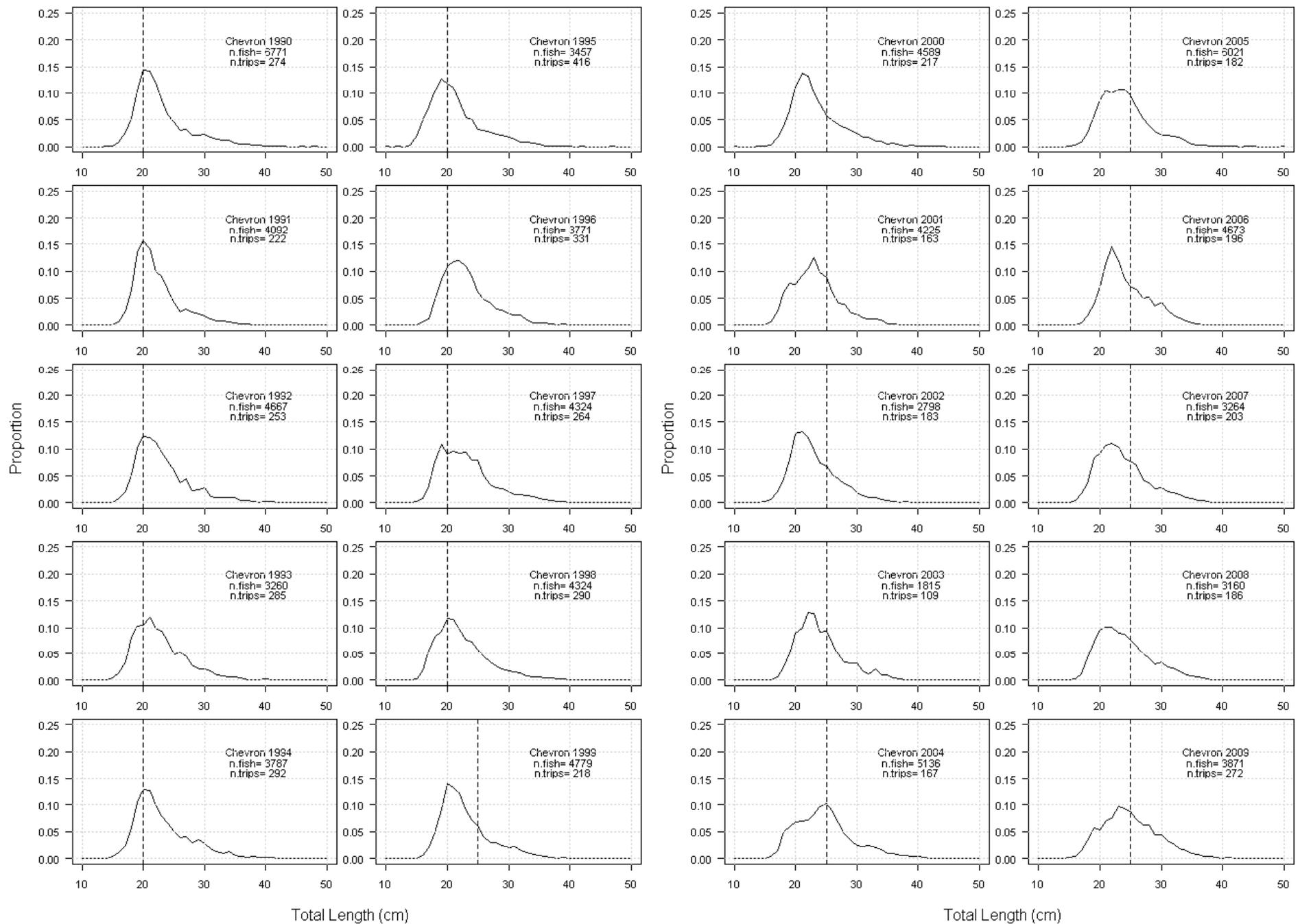
# Headboat at-sea observer discard Length Composition



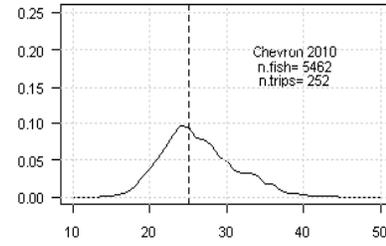
# MARMAP Blackfish/FL Trap Combined Length Composition



# MARMAP Chevron Length Composition



# MARMAP Chevron Length Composition



Proportion

Total Length (cm)