

Science, Service, Stewardship



Beaufort Assessment Model (BAM) applied to U.S. South Atlantic tilefish



SEDAR 25 Assessment Workshop
Sustainable Fisheries Branch
SEFSC, Beaufort, NC
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Outline

- Data decisions
- Model decisions



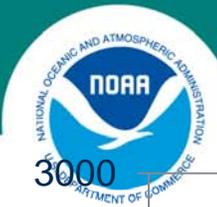
Data decisions

Landings – commercial ‘other’ category

- Treated as in SEDAR 4, distribute other category into longline and handline sectors proportionally

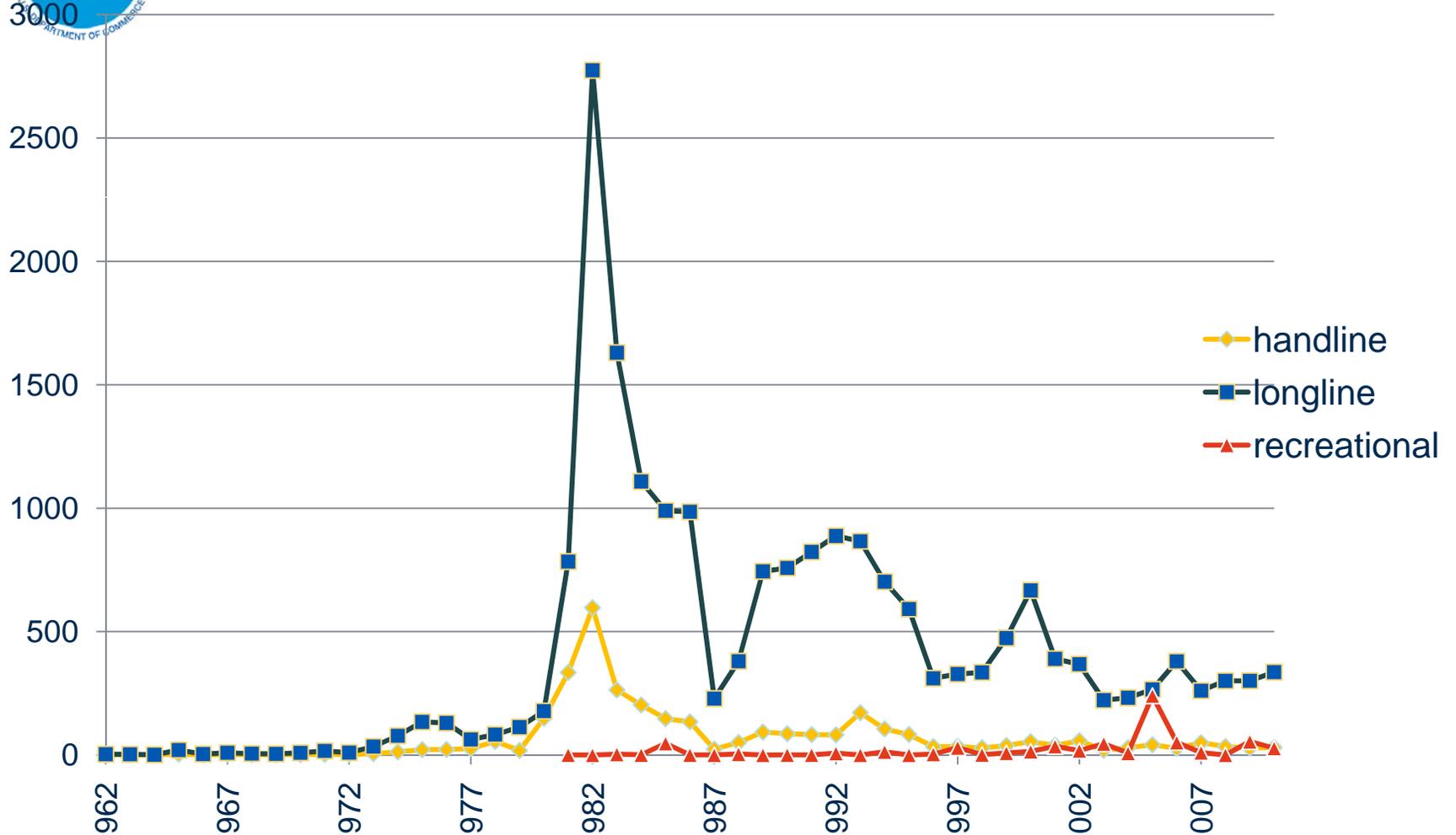
Start year of 1962, as was done in SEDAR 4.

CVs pulled from SEDAR 4, but set to 0.05 in model.



Data decisions

Landings (commercial in 1000 gutted pounds, recreational in 1000 pounds)

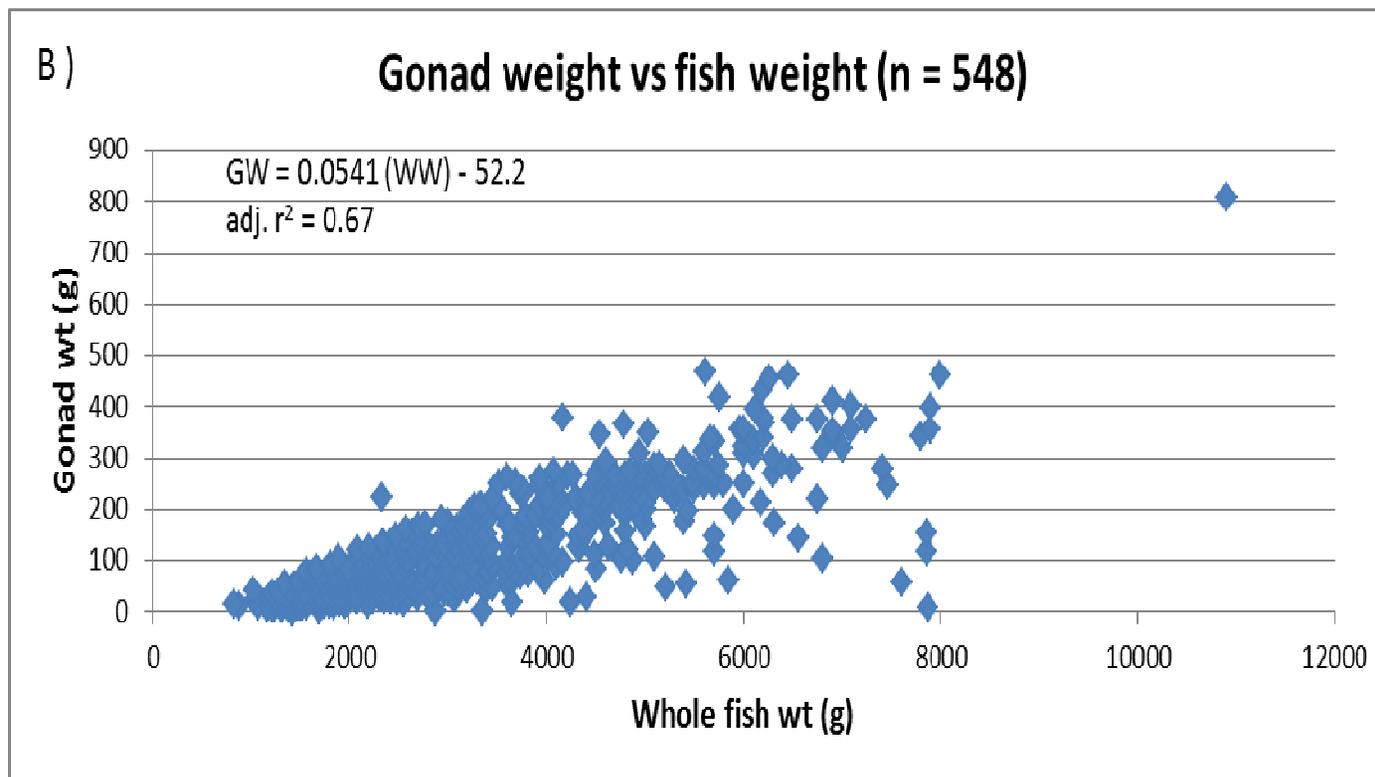




Data decisions

Gonad weight equation is negative at small weights

- Set negative values to zero in model





Data decisions

Life History and Indices

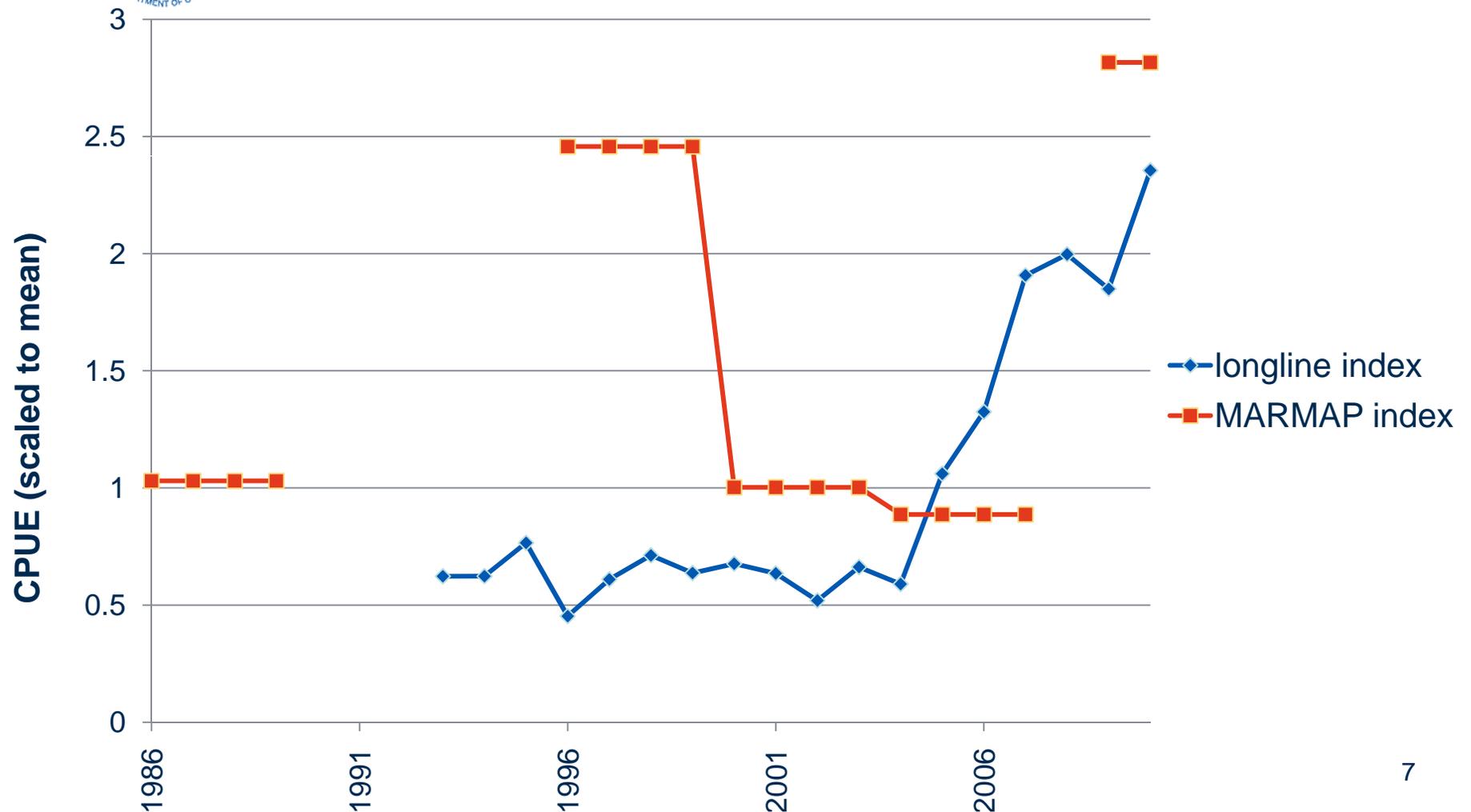
Corrections to some life history data input since the SEDAR 25 DW. Corrections required based on implementation and not methodology and updated in the SEDAR 25 DW report.

The MARMAP longline index was recomputed including missing data for 2005 and updated in the SEDAR 25 DW report.

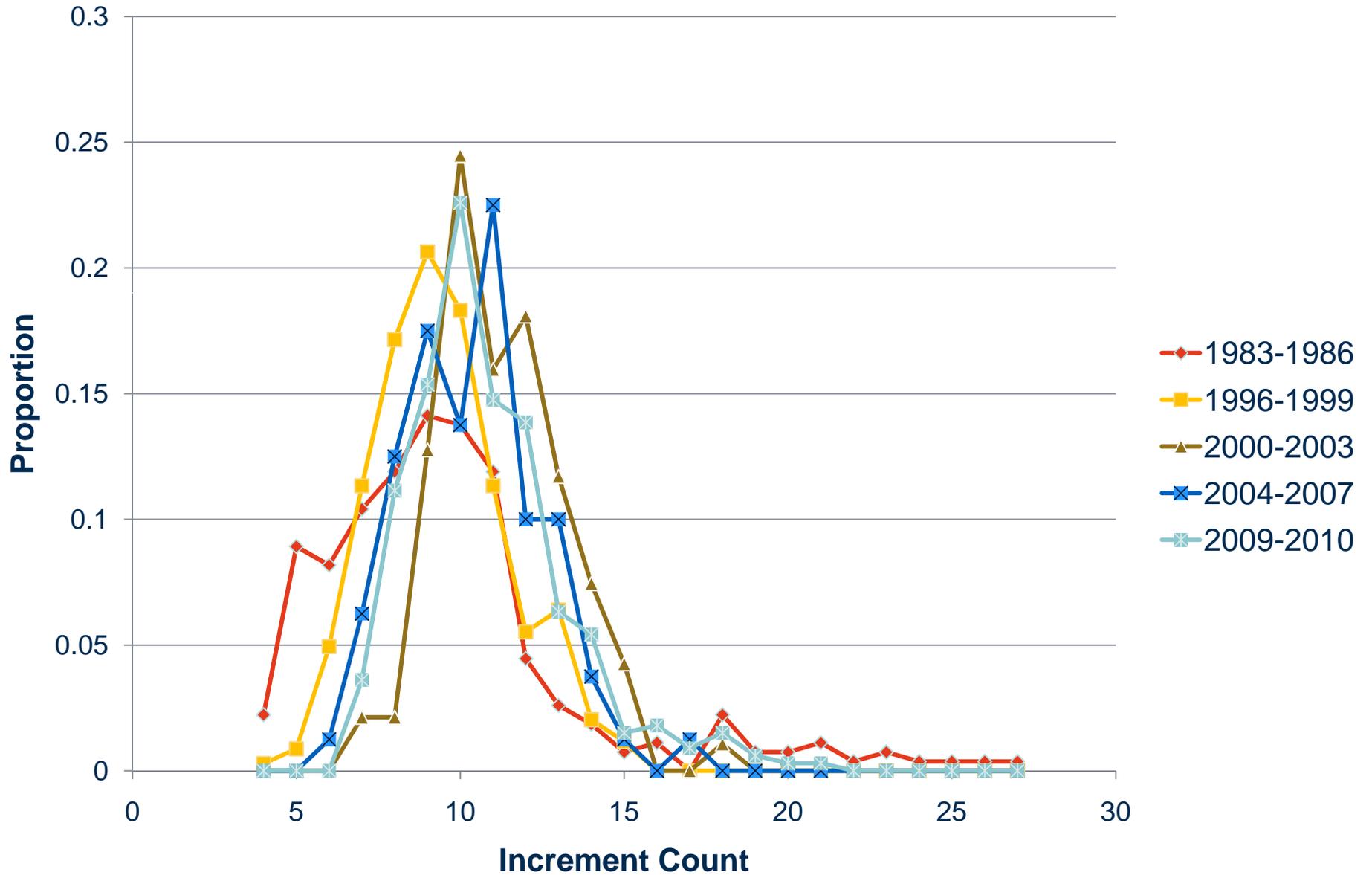
Marmap longline length compositions were developed and samples were pooled across years to match the longline index.



Data decisions



MARMAP Longline Age Compositon





Data decisions

Recreational discards

- Very small numbers – consistent with SEDAR 4, these were ignored.



Data decisions

Age and length composition data

- In SEDAR 4, both age and length comp data were used.
- In most recent SEDAR reviews, it was recommended not use both age and lengths when these are based on the same fish.
- Recommend dropping length comp data in years where age comp data is available.



Data decisions

Age and length composition data

- In SEDAR 4, the actual sample sizes of fish measured were used in the multinomial likelihoods.
- Following recommendations from recent SEDAR reviews, recommend using the number of trips in place of the number of fish.



Model decisions

Min sample size for comps

- Minimum of 10 fish sampled for inclusion
- Other?

Tilefish Length and Age Composition Sample Sizes

Year	Comm.LL		Comm.HL			Recreational		MARMAP				
	Length		Age	Length		Age	Length		Length		Age	
	fish	trips	fish	fish	trips	fish	fish	trips*	fish	sets	fish	trips
1981							1	1				
1982							0	0				
1983							0	0	313	63	269	59
1984	2335	24	137	19	2	16	10	2				
1985	5267	37	47	52	6	20	1	1				
1986	5335	25	24	79	2	3	0	0				
1987	484	7	28	58	2	3	1	1				
1988	1057	8	0	3	1	0	1	1				
1989	328	5	0	5	1	0	17	10				
1990	738	7	0	3	1	0	14	6				
1991	5291	40	0	134	7	0	2	1				
1992	12558	100	124	8	1	8	1	1				
1993	26441	141	209	54	3	1	0	0				
1994	9943	59	8	68	2	8	2	2				
1995	7473	64	373	438	5	0	0	0				
1996	1847	30	782	13	2	0	53	6	350	38	344	38
1997	1388	19	908	84	5	143	126	9				
1998	881	15	269	43	2	61	48	5				
1999	2807	26	350	84	8	35	4	2				
2000	1603	13	338	322	8	222	5	2	97	24	94	23
2001	1488	23	296	66	7	46	20	7				
2002	987	19	57	160	13	202	28	6				
2003	254	10	177	1	1	61	64	7				
2004	356	15	264	1	1	255	28	4	81	14	80	14
2005	404	16	410	103	5	255	130	9				
2006	821	36	842	59	2	214	17	4				
2007	945	35	1153	1	1	275	1	1				
2008	554	20	1172	1	1	50	0	0				
2009	880	25	1542	7	1	86	12	5	340	45	332	44
2010	703	24	989	13	2	67	11	5				



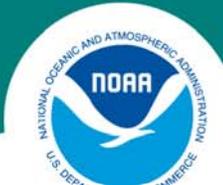
Model decisions

Age bins

- Following SEDAR 4, used ages 1-25+

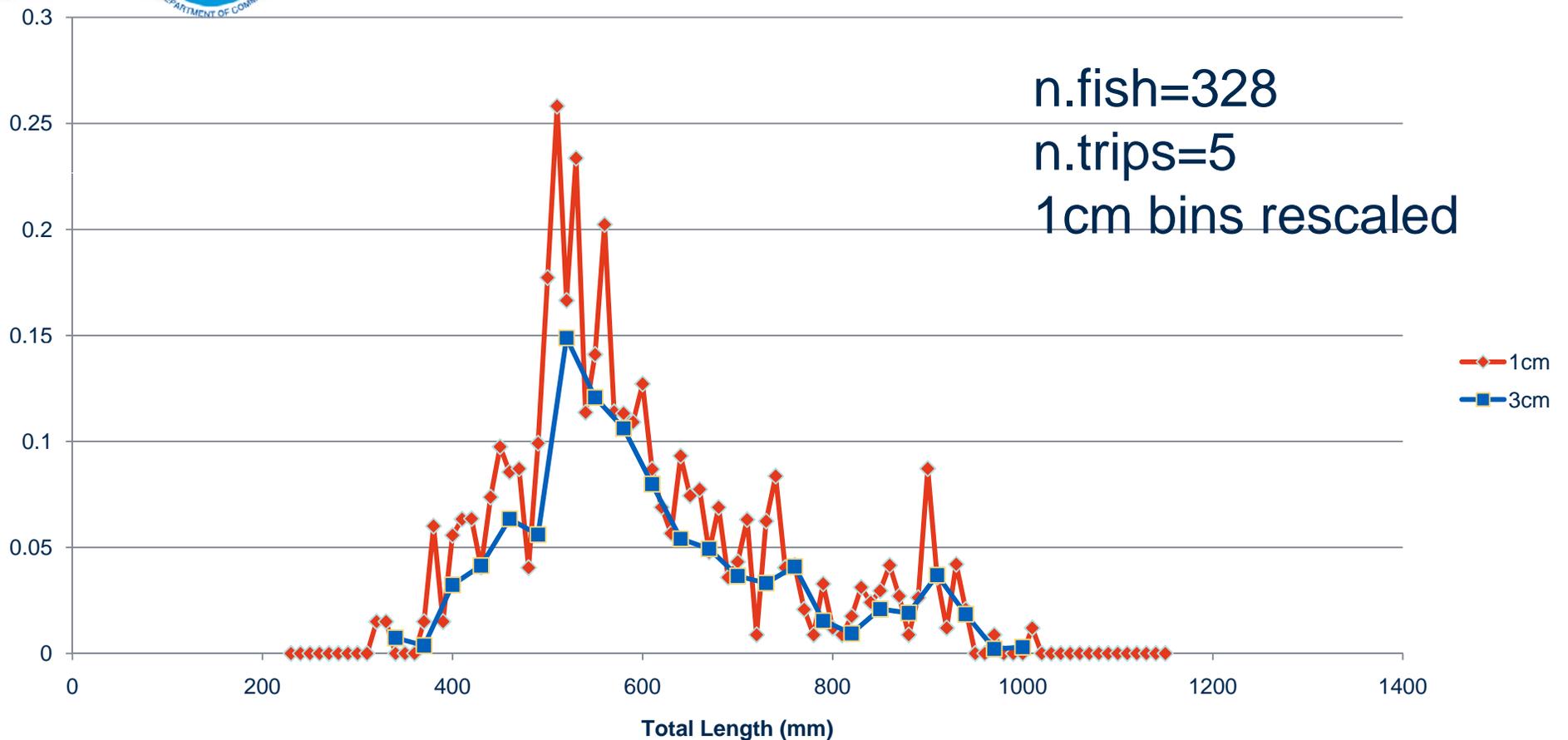
Length bins

- Following SEDAR 4, used 3 cm bins covering range of 34-100 cm



Model decisions

1989 Commercial Longline





Model decisions

Selectivity for fisheries

- Following SEDAR 4, applied logistic (flat-topped) selectivity to all fisheries and MARMAP longline gear



Model decisions

Recruitment residuals (starting and ending)

- First age/length comps occur in 1984, recommend starting recruitment residuals in 1974.
- First age at full selection appears to be around age 6-7, recommend ending recruitment residuals in 2004 (i.e. 2005-2010 not estimated).



Model decisions

Aging error

- Assumption is perfect aging. Should that be changed? To what?

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Model decisions

Likelihood weighting