Appendix E. Swept area survey Q analyses for the Gulf of Maine stock of Atlantic cod.

Index	Index #	q	se	Q	CV	2 Std		
							NEFSC	
Index	Index #	q	se	Q	CV	2 Std	Area (sq mi) A	17892
WH Spr2	1	0.000064	0.1547	0.10224	0.1547	0.031633	Area Swept a	0.0112
WH Spr3	2	0.000132	0.1065	0.21087	0.1065	0.044915	Exp Fact	1597500
WH Spr4	3	0.000225	0.1026	0.359438	0.1026	0.073757	Exp Fact (1000s)	1597.5
WH Spr5	4	0.000293	0.1308	0.468068	0.1308	0.122446		
WH Spr6	5	0.000378	0.1666	0.603855	0.1666	0.201204	MADMF	
WH Spr7	6	0.000557	0.1964	0.889808	0.1964	0.349516	Area (sq mi) A	869
WH Spr8	7	0.000491	0.2765	0.784373	0.2765	0.433758	Area Swept a	0.00385
WH Aut2	8	0.000053	0.1286	0.084668	0.1286	0.021776	Exp Fact	225714.3
WH Aut3	9	0.000113	0.1128	0.180518	0.1128	0.040725	Exp Fact (1000s)	225.7143
WH Aut4	10	0.000224	0.1012	0.35784	0.1012	0.072427		
WH Aut5	11	0.000369	0.1239	0.589478	0.1239	0.146073		
WH Aut6	12	0.000473	0.1185	0.755618	0.1185	0.179081		
WH Aut7	13	0.000442	0.1875	0.706095	0.1875	0.264786		
WH Aut8	14	0.000545	0.2305	0.870638	0.2305	0.401364		
MA Spr2	15	0.00071	0.1511	0.160257	0.1511	0.04843		
MA Spr3	16	0.000544	0.0868	0.122789	0.0868	0.021316		
MA Spr4	17	0.000453	0.1231	0.102249	0.1231	0.025174		
MA Aut2	19	0.000123	0.2996	0.027763	0.2996	0.016636		

Survey catchabilities (q) obtained from the VPA (calibrated with number/per tow at age) were expanded on the basis of minimum swept area population numbers using the area of the strata used in the assessment (A = 17,892 sq mi) and the footprint of a standard tow (a = 0.0112 sq mi) for the NEFSC survey and the strata used in the assessment (A = 869 sq mi) and the footprint of a standard tow (a = 0.00385 sq mi) for the MA DMF survey. The expansion factor: (A/a *1/1000) converts a survey q from a kg/tow basis to a swept area basis (Q).

NEFSC Spring Surveys

NEFSC Autumn Surveys
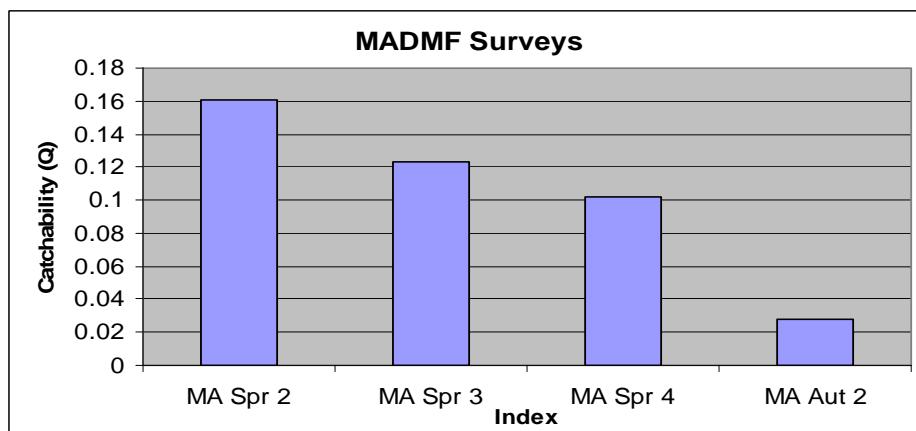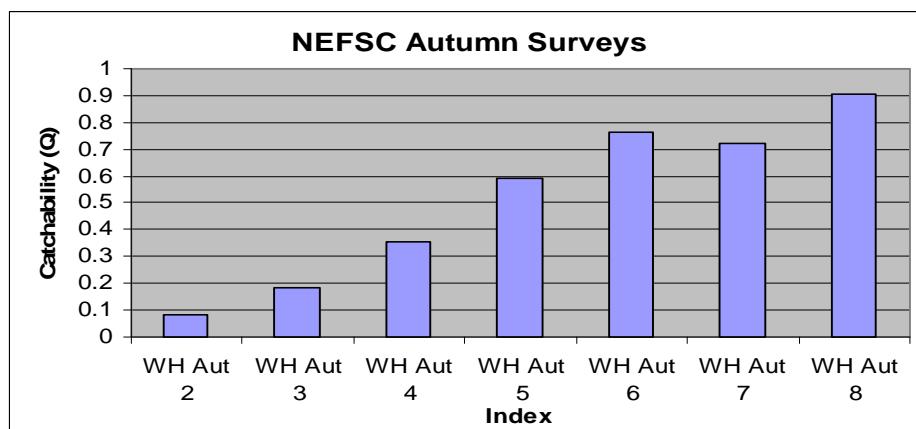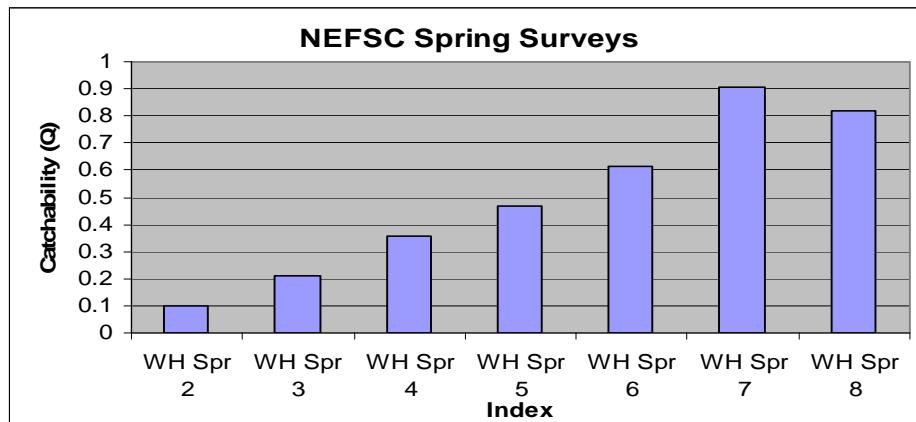
MADMF Surveys

As the figures above show, the NEFSC survey Qs start at about 10% at age 2, increase through age 5 or 6 and then level off at about 70-90%. The MADMF spring Qs show a continuously declining trend from age 2 to age 4, reflecting the movement of fish out of the survey area as they grow older.