1979 BOTTOM TRAWL COMPARABILITY STUDY FOR THE INTERREGIONAL TRAWL SURVEY

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SECTION I

CONCLUSIONS

The primary objective of the late fall 1979 trawl comparability study was to evaluate the feasibility of replacing the larger Interregional Trawl Survey (IRT) gear with the smaller try trawl and thereby streamline the long river studies. The conceptual framework for the comparability study and potential alternative recommendations are presented in Figure II-1. The try trawl was previously shown to be an effective sampling gear in shallow areas (3 to 6 m deep) of the Hudson River estuary during the fall of 1978. The 1979 comparability study demonstrated that in areas less than 10 m deep the try trawl was as good as the IRT gear in collecting Atlantic tomcod (*Microgadus tomcod*) (all ages), and better than the IRT gear in collecting yearling and older white perch (*Morone americana*). However, for young-of-the-year white perch in shallow water (<10 m) and for all species and age groups in deep water (≥10 m), the try trawl was not as effective as the IRT gear. Therefore, the answer to study question 2, relative catch effectiveness (see Figure II-1), is "no" for young-of-the-year white perch and "yes or no", depending upon sample depth, for the other two species groups.

The answer to study question 3, size selectivity (see Figure II-1), also differs among species and age groups and is again neither a clear yes or no for those species analyzed. For Atlantic tomcod (all ages) and young-of-the-year white perch, the two trawls did not exhibit differences in size selectivity. For yearling and older white perch, however, size selectivity differences were apparent between the two gear, but the direction of the size selectivity differences varied depending upon the depth where the fish were collected. Compared to the large trawl, the small trawl caught more larger individuals in shallow areas (<10 m) but apparently fewer larger individuals in deep areas (≥10 m).

Study question 4, adjustment factors, was difficult to answer because of the lack of a clear yes answer to question 2 and the lack of a clear no answer to question 3 (see Figure II-1). For the November-December time period when the comparability study was conducted, the results indicated that several rather than a few catch adjustment factors would be required for different species, ages, and depths to account for differences in catch effectiveness and size selectivity between the large IRT gear and small try trawl. The use of several catch adjustment factors would undesirably complicate analysis of these trawl data.

Whether these catch adjustment factors would be appropriate for other seasons could not be evaluated from the 1979 comparability study results. Hence, an even larger number of adjustment factors may be required to make the try trawl catches directly comparable to IRT catches throughout a sampling period spanning spring, summer, and fall. Therefore, based on these results, Texas Instruments (TI) cannot recommend that it is currently feasible to replace the IRT gear with the try trawl.

SECTION II

INTRODUCTION

During the fall of 1978, TI evaluated a small (6.1 m long with a 3.7 m head rope) otter trawl equipped with Vigneron-Dahl modifications (Bagenal 1964) to sample shore zone and shoal areas of the Hudson River estuary less than 6 m in depth. This stratum lies outside of the reach of the 30.5-m beach seine used in the Beach Seine Survey but is too close to shore to be sampled effectively by the Interregional Trawl (IRT) and Fall Shoal Surveys. This small trawl proved to be very effective in sampling the shallow offshore areas and was incorporated into TI's Long River Survey Program in 1979 [TI 1981 (in preparation)]. The small trawl is currently used in the Try Trawl Survey which is primarily designed as a recapture program for marked individuals of the three key fish species [striped bass (Morone saxatilis), white perch, and Atlantic tomcod]. The data from this survey are also used to describe the distribution, movements, and relative abundance of several selected species.

In order to integrate the data from the Try Trawl Survey with the long-term data base from the Interregional Trawl Survey (the lower and middle estuary have been sampled since 1973 in the IRT survey), TI compared the IRT and Try Trawl Survey gears during the late fall of 1979. The primary objective of this comparability study was to evaluate the feasibility of replacing the larger IRT gear with the smaller, more easily deployed try trawl and thereby streamline the long river studies. Since the feasibility of such a gear replacement is contingent upon an assessment of differences in catch effectiveness and size selectivity of the two trawls, the comparability study had two secondary or interim objectives: (1) to determine if the two trawls selectively caught different-sized individuals from the fish population in the study area, and (2) to determine if adjustment factors could be calculated so that the small trawl catches could be directly compared to the IRT catches. The conceptual framework for the comparability study and potential alternative recommendations are presented in Figure II-1. The description of the study results, discussion, and conclusions are guided by this conceptual framework.

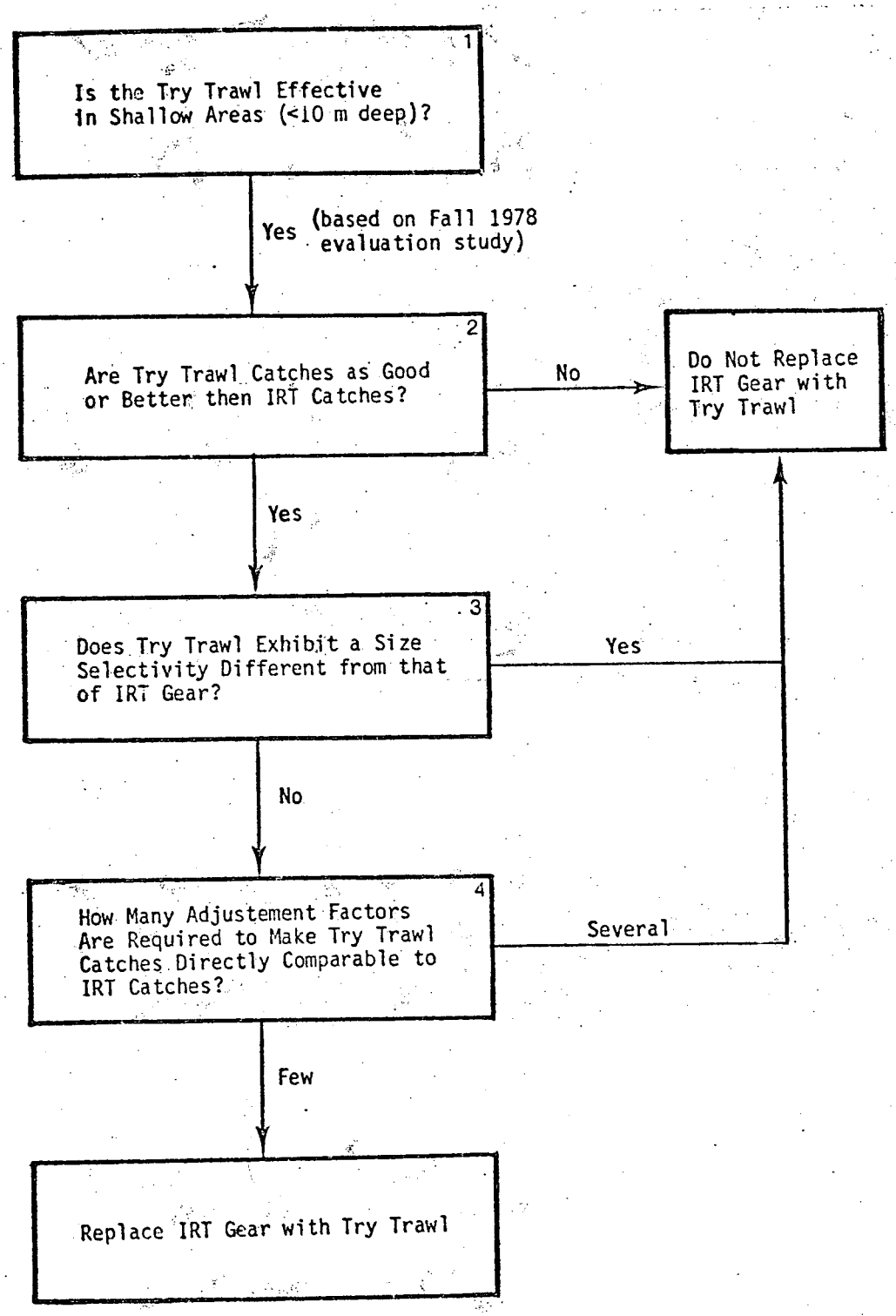

Figure II-1. Conceptual Framework of Fall 1979 Study Designed to Compare Gear Used in TI's Interregional Trawl and Try Trawl Surveys

SECTION III

METHODS

The gear tested in the comparability study were bottom trawls which differed in dimensions, type of towing vessel used, and size of crew required for deployment (Table III-1). The two trawls have similar mesh sizes in their first sections (3.8-cm versus 3.3-cm stretch mesh for large and small trawls, respectively). The large trawl has a 1.3-cm stretch mesh cover over a 3.3-cm stretch mesh cod end, whereas the small trawl has a 0.6-cm stretch mesh liner inside the cod end.

To compare the two trawls under similar conditions, 36 of the 38 sites normally used for the IRT Survey were sampled by both gear. These sites are located between the Tappan Zee (RM 27) and the Mid-Hudson (RM 75) bridges (Figure III-1). Eighteen sites were in shallow water (<10 m in depth) and 18 were in deep water (≥10 m in depth). At each site, the two trawls were towed simultaneously on parallel courses, approximately 16 m apart against the prevailing current and using standard operating procedures appropriate to each gear and its respective survey. A single pair of tows at each of the 36 sites was collected during each of the following periods: 5 through 9 November, 19 through 21 November, and 3 through 7 December 1979. A total of 54 tows were made with each gear in each depth stratum (for a study total of 216 tows).

The small trawl was towed for 10 min at 1.5 $m \cdot sec^{-1}$ and the large trawl was towed for 5 min at 1.3 $m \cdot sec^{-1}$; tow speeds were measured relative to the water. These deployment procedures resulted in approximately equal areas of the bottom swept per each set (pair) of tows with the two trawls. Approximations of area swept per tow are useful for comparing the two trawls on a relative basis. The actual area swept per tow by the two trawls will vary among different sets (pairs) of tows as the actual distances towed (relative to the bottom) vary due to the influences of tidal currents and wind conditions. During each tow, the small trawl swept approximately 3330 m^2 (3.7-m head

Table III-1

Gear Dimensions, Towing Vessel Descriptions, and Crew Size for Large and Small Otter Trawls Used in Trawl Comparability Study, Hudson River Estuary, November-December 1979

	Large Trawl	Small Trawl
Total length	13.5 m (44.3 ft)	6.1 m (20 ft)
Head rope length	7.8 m (25.6 ft)	3.7 m (12 ft)
Head rope diameter	1 cm (0.4 in)	0.94 cm (0.375 in)
Head rope float size	4 x 8 cm (1.6 x 3.2 in.)	3.3 x 6.0 cm (1.3 x 2.4 in)
float number	10	5
float material	Spongex	Spongex
Foot rope length	9.3 m (30.5 ft)	3.7 m (12 ft)
Foot rope diameter	1 cm (0.4 in)	0.95 cm (0.375 in)
Foot rope weights	13.2 m (43.3 ft) of 0.5 cm (0.2 in) galvanized chain	6.1 m (20 ft) of 0.6 cm (0.25 in) galvanized chain
First section length	10 m (32.8 ft)	NA
First section mesh (stretch)	3.8 cm (1.5 in)	3.3 cm (1.3 in)
Cod-end length	3.5 m (11.5 ft)	1.8 m (6 ft)
Cod-end mesh (stretch)	3.3 cm (1.3 in)	NA
Trawl doors	0.8 x 1.2 m (2.5 x 4.0 ft)	0.3 x 0.6 m (1 x 2 ft)
Cod-end cover mesh (stretch)	1.3 cm (0.5 in)	NA
Chafing cloth	3.0 x 6.7 m (9.8 x 22.0 ft)	NA
Cod-end liner mesh stretch	NA	0.6 cm (0.25 in)
Towing vessel	12-m boat powered with diesel engine	7-m boat powered with outboard engine
Crew size	3	2

NA = not applicable

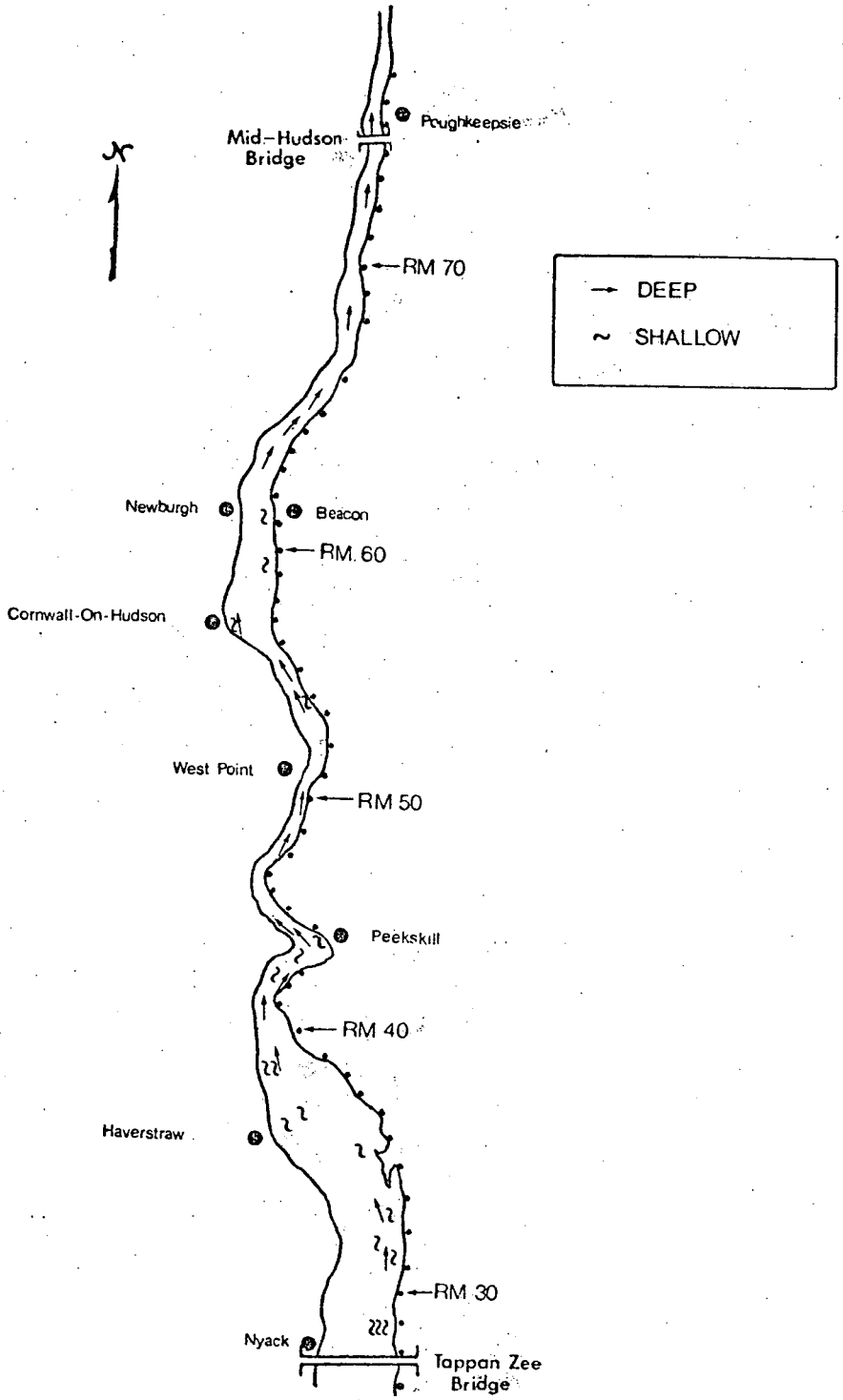

Figure III-1 Deep (≥10 m) and Shallow (<10 m) Sampling Sites Used in Trawl Comparability Study, Hudson River Estuary (RM 27 to RM 75), November-December 1979

rope length x 1.5 $m \cdot sec^{-1}$ tow speed x 60 $sec \cdot min^{-1}$ x 10 min tow duration) and the large trawl swept approximately 3042 m^2 (7.8-m head rope length x 1.3 $m \cdot sec^{-1}$ tow speed x 60 $sec \cdot min^{-1}$ x 5 min tow duration). These estimates of area swept assume that the tow speed relative to the water is the same as the tow speed relative to the bottom. The parallel tows were begun simultaneously with the large trawl vessel located 100 to 150 m ahead of the small trawl vessel.

All fish caught were identified to species and counted. The total lengths (TL) of white perch, striped bass, and Atlantic tomcod were measured to the nearest millimeter. The catches of striped bass were very low during the study period (only 27 young-of-the-year were collected); therefore only the catches of Atlantic tomcod (all ages combined) and white perch in the two trawls could be analyzed statistically. White perch were further separated into two age categories, young-of-the-year versus yearling and older, to compare the length frequencies of fish caught in the two trawls and evaluate any differences in size selectivity.

SECTION IV
RESULTS AND DISCUSSION

A. COMPARISONS OF OVERALL CATCH EFFECTIVENESS

Catches from the two trawls were compared to determine if the small trawl catch was as good or better than the large trawl catch (answer to question 2, Figure II-1). Differences in total catch were observed and these differences appeared to be influenced by at least three variables: fish size, fish species, and sampling depth. To check for the relationship of fish size to differences in relative effectiveness of the two trawls, white perch were separated into two age classes, young-of-the-year versus yearling and older. The differences among the catch totals were analyzed using a three dimensional [trawl, depth, and fish category (age and species)] contingency table (Sokal and Rohlf 1969).

The trawl x depth x fish interaction was highly significant (Figure IV-1). In deep water, the large trawl caught greater numbers of all species than the small trawl. In shallow water, the large trawl caught more young-of-the-year white perch. The small trawl caught more yearling and older white perch and the two gear caught comparable numbers of Atlantic tomcod (Table IV-1). Therefore, the answer to study question 2 (relative catch effectiveness - see Figure II-1), is neither a clear yes or no for those species analyzed. Rather, the answer differs among species and the depth of the sampling site.

B. COMPARISONS OF LENGTH FREQUENCY DISTRIBUTIONS

In order to determine whether the differences in catch totals were also associated with any evidence of differential size selectivity by the two trawls (question 3, Figure II-1), length frequency data were analyzed and compared. The length frequency distribution for each fish category x depth x trawl combination are presented in the Figures IV-2, IV-3, and IV-4, but only the samples for young-of-the-year white perch (from both deep and shallow sites) and yearling and older white perch

(from shallow sites only) were large enough (Sokal and Rohlf 1969) to warrant a statistical analysis of the differences in mean length. The other fish species, fish age, and sample depth combinations are discussed qualitatively.

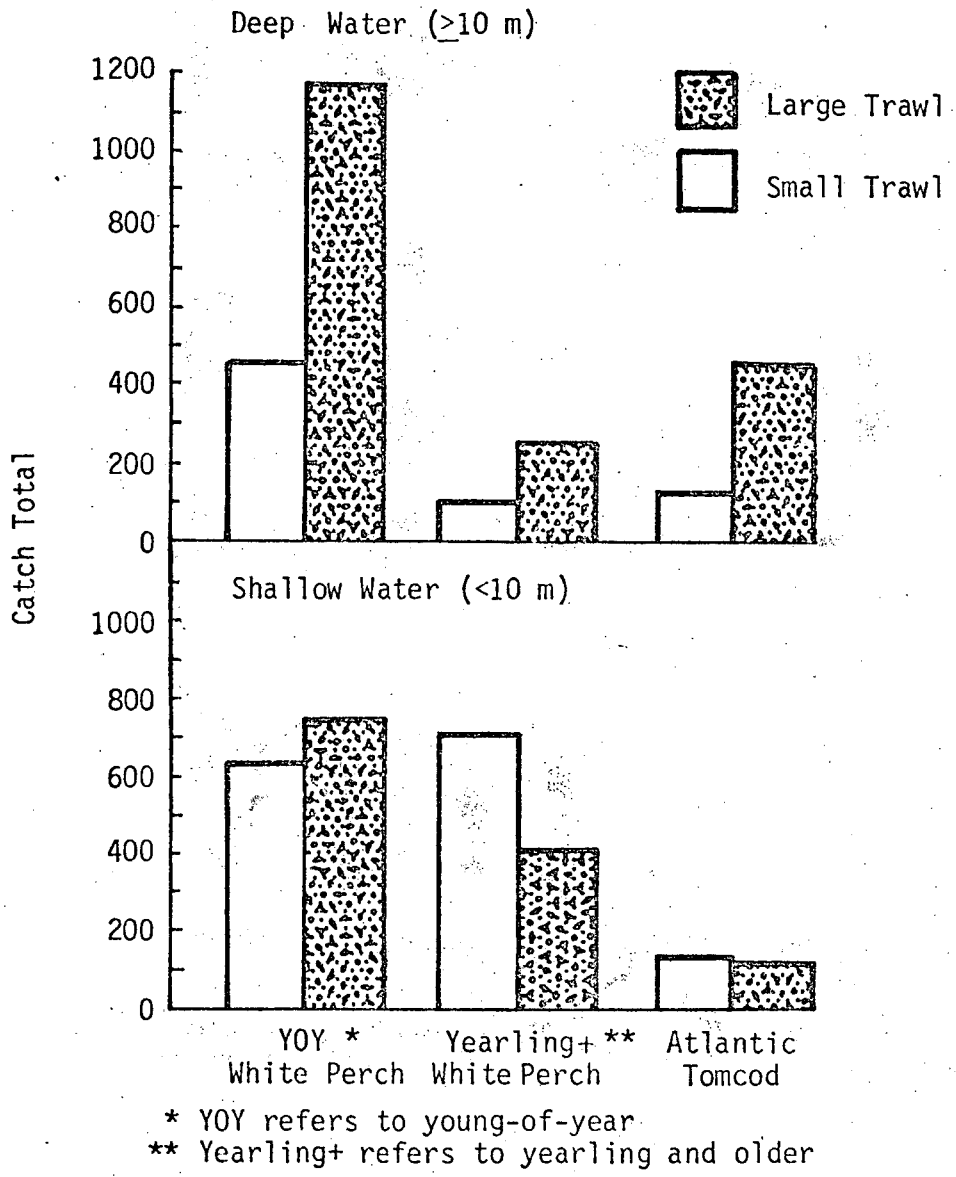

Figure IV-1. Catch Totals for Small and Large Trawls in Deep and Shallow Water Sampling Sites, Hudson River Estuary, November-December 1979 (Trawl X Depth X Fish Interaction: $X^2_{(2)} = 490.756$; $p << 0.005$)

Table IV-1

Examination of Differences in Catch Totals at Shallow Water Sampling Sites, Hudson River Estuary, November-December 1979

	Small Trawl	Large Trawl
Young-of-the-Year White Perch	635	749
	$\chi^2_{(1)} = 9.390$; $p<0.005$	
Yearling and Older White Perch	704	406
	$\chi^2_{(1)} = 80.004$; $p<<0.005$	
Atlantic Tomcod (all ages combined)	140	122
	$\chi^2_{(1)} = 1.237$; $0.50>p>0.25$	

1. Atlantic Tomcod (all ages combined)

There were no obvious differences in the size frequency distribution of Atlantic tomcod caught by the two trawls. In deep water, each trawl caught similarly sized tomcod (Figure IV-2). In shallow water, no tomcod over approximately 190 mm (TL) were caught by the small trawl. This result probably reflects the relatively low abundance of tomcod in shallow water during the study period rather than size selectivity since few large tomcod were caught in the large trawl.

2. Yearling and Older White Perch

In deep water, the small trawl appeared to catch fewer large white perch than the large trawl (Figure IV-3). However, since the sample sizes did not permit a statistical analysis, this apparent difference may not be real. In shallow water, catches of yearling and older white perch were sufficiently large in both trawls such that size differences could be tested. The results of a t-test (Appendix Table C-1) showed the means to be significantly different. An examination of the third (skewness) and fourth (kurtosis) moments (Table IV-2) for the

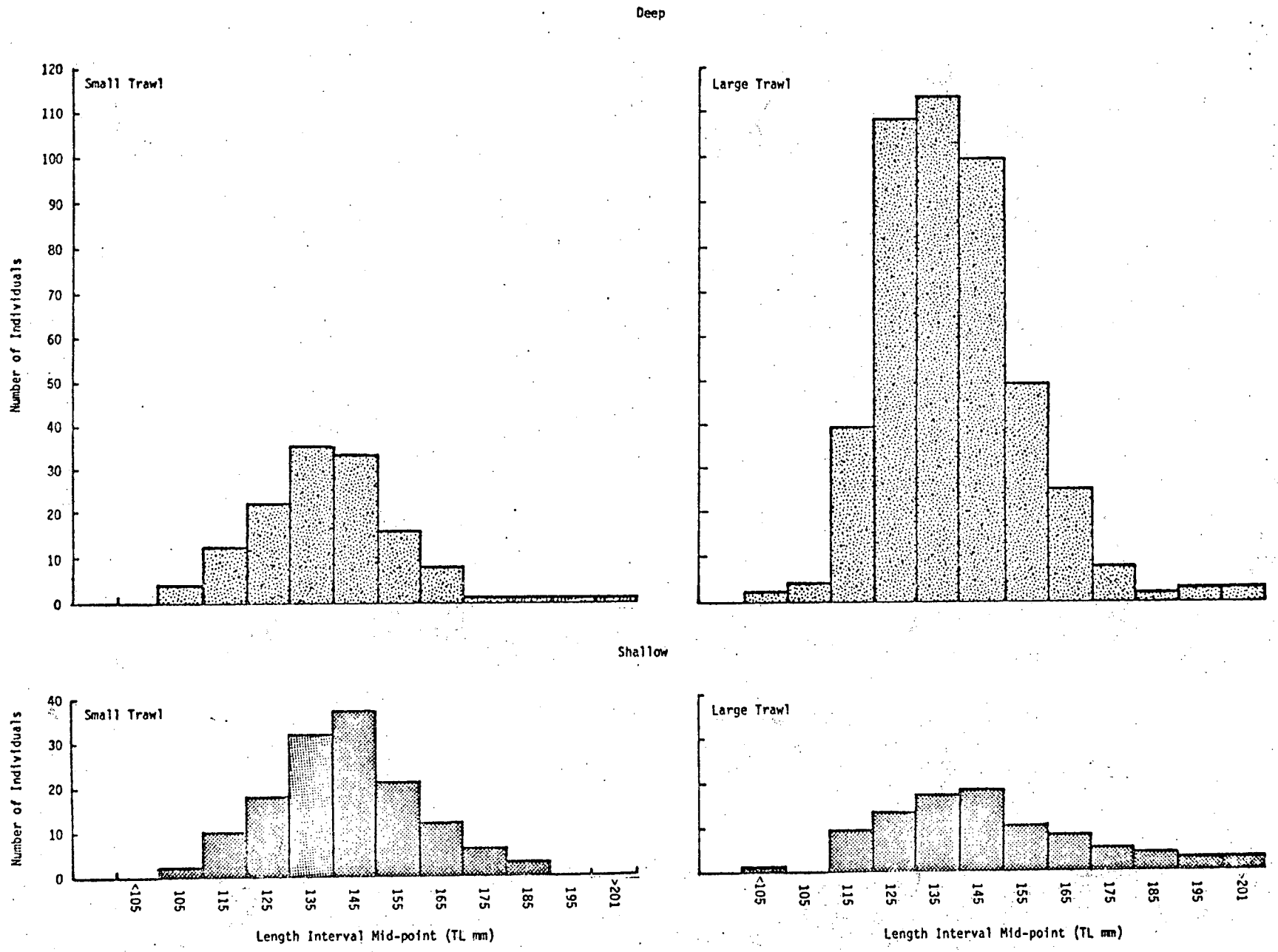

Figure IV-2. Length Frequency Distributions for Atlantic Tomcod (all ages) Caught by Large and Small Trawls in Deep (≥10 m) and Shallow (<10 m) Sampling Sites, Hudson River Estuary, November-December 1979

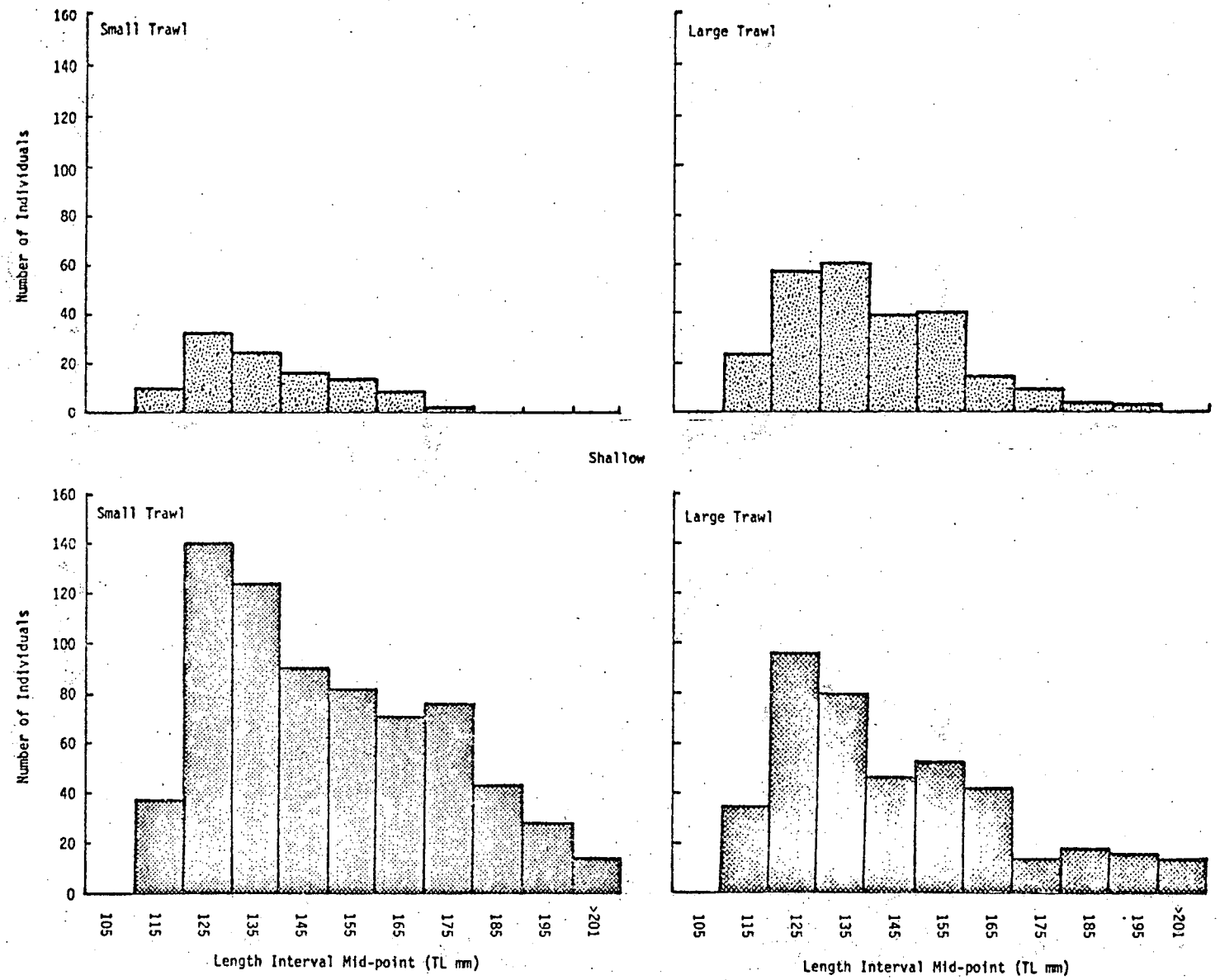

Figure IV-3. Length Frequency Distributions for Yearling and Older White Perch Caught by Large and Small Trawls in Deep (≥10 m) and Shallow (<10 m) Sampling Sites, Hudson River Estuary, November-December 1979

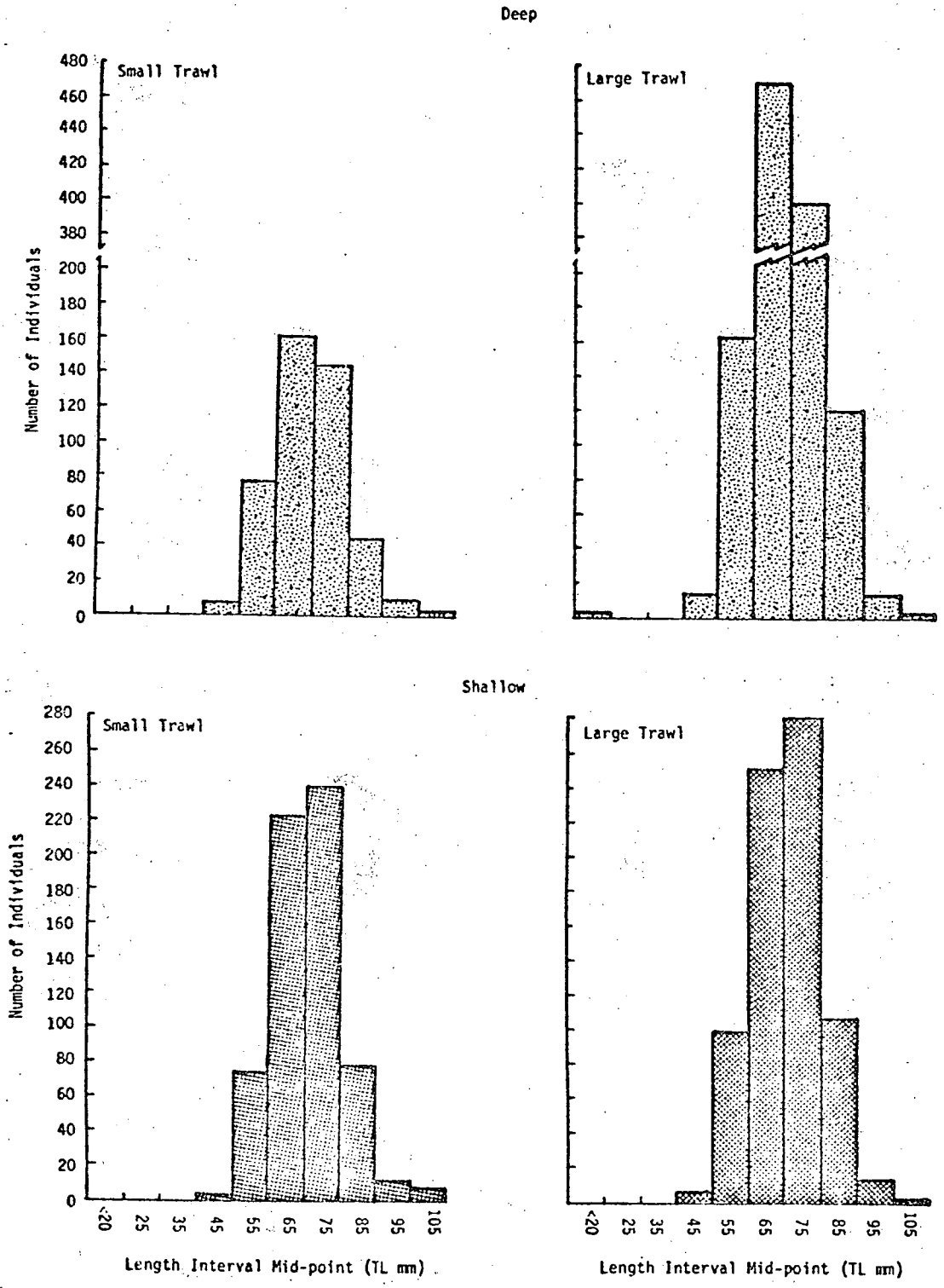

Figure IV-4. Length Frequency Distributions for Young-of-the-Year White Perch Caught by Large and Small Trawls in Deep (≥10 m) and Shallow (<10 m) Sampling Sites, Hudson River Estuary, November-December 1979

Table IV-2

Moment Statistics for Length Frequency Distributions of Yearling and Older White Perch Collected at Shallow (<10 m) Sampling Sites, Hudson River Estuary, November-December 1979

Statistic	Large Trawl	Small Trawl
Mean	147.26	150.20
Standard Deviation	24.92	23.74
Skewness	1.12	0.60
Kurtosis	1.13	-0.24

length frequency distributions demonstrated that the small trawl caught more of the larger fish than did the large trawl. The length frequency distribution of the small trawl catch was also less skewed and more platykurtotic than the length frequency distribution of the large trawl catch (Table IV-2).

3. Young-of-the-Year White Perch

The catches of young-of-the-year white perch were large in both trawls at both sampling depths so a 2-way analysis of variance (Appendix Table C-2) was used to compare the length frequency distributions. The gear x depth interaction and the gear main effect were not significant ($p > 0.05$). The depth main effect was significant; i.e., the mean lengths of fish collected in both trawls at the shallow sites (71.3 mm TL) were greater than the mean lengths of fish collected in both trawls at the deep water sites (69.7 mm TL). These results suggest that the larger young-of-the-year white perch were distributed closer to shore during the November-December 1979 study period. The length frequency distributions (Figure IV-4) and the moment statistics (Table IV-3) indicate, however, that there were no differences in the size selectivities of the two trawls for young-of-the-year white perch.

Table IV-3

Moment Statistics for Length Frequency Distributions of Young-of-the-Year White Perch Collected at Shallow (<10 m) and Deep (≥10 m) Sampling Sites, Hudson River Estuary, November-December 1979

Sampling Site	Small Trawl	Large Trawl
Shallow		
Mean	71.53	71.20
Standard Deviation	9.26	9.35
Skewness	0.38	0.15
Kurtosis	0.62	-0.24
Deep		
Mean	69.56	60.72
Standard Deviation	9.38	9.10
Skewness	0.19	0.07
Kurtosis	0.21	0.61

Thus, the answer to study question 3 (size selectivity - see Figure II-1), also differs among species and age groups and is again neither a clear yes or no for those species analyzed. For Atlantic tomcod (all ages) and young-of-the-year white perch, the two trawls did not exhibit differences in size selectivity. For yearling and older white perch, however, size selectivity differences were apparent between the two gear, but the direction of the size selectivity differences varied depending upon the depth where the fish were collected.

SECTION V

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APPENDIX A

White Perch and Atlantic Tomcod
Catch Data

Definitions of codes appearing in this Appendix are as follows:

GEAR:	17 = 12 FOOT TRY TRAWL 01+04 = IRT (COD END AND COD END COVER CATCHES COMBINED)
USE_CODE:	1 = NO SAMPLING PROBLEMS ENCOUNTERED
TC:	79 = 12 FOOT TRY TRAWL SURVEY 13 = INTERREGIONAL BOTTOM TRAWL (IRT) SURVEY
SAMPLE:	FIELD COLLECTION SAMPLE NUMBER
DATE:	MONTH, DAY AND YEAR THE SAMPLE WAS COLLECTED
TIME:	TIME OF DAY GEAR WAS DEPLOYED (USING 24 HOUR CLOCK)
RIV_MILE:	RIVER MILE WHERE SAMPLE WAS COLLECTED
SITE:	SIDE OF RIVER WHERE SAMPLE WAS COLLECTED (1=WEST, 2=CENTER, 3=EAST)
TOW_DUR:	TOW DURATION (AMOUNT OF TIME GEAR WAS DEPLOYED, IN MINUTES)
TOW_SPD:	SPEED THAT GEAR WAS TOWED RELATIVE TO WATER (METERS/SEC)
SAM_DPTH:	DEPTH WHERE SAMPLE WAS COLLECTED (IN FEET)
LC1_CT:	TOTAL # OF FISH CAUGHT IN LENGTH CLASS 1 (0 TO DIV_1)
LC2_CT:	TOTAL # OF FISH CAUGHT IN LENGTH CLASS 2 (DIV_1+1MM TO 150 MM)
LC3_CT:	TOTAL # OF FISH CAUGHT IN LENGTH CLASS 3 (151MM TO 250MM)
LC4_CT:	TOTAL # OF FISH CAUGHT IN LENGTH CLASS 4 (251MM+)
TOTAL_CT:	TOTAL # OF FISH CAUGHT IN SAMPLE

Table A-1

Catch Data for White Perch Collected in Small (3.7-m head rope) and Large (7.8-m head rope) Trawls (in water <10 m), Hudson River Estuary, 1979

WEEK OF 11/5/79 TO 11/9/79

GEAR	USE_CODE	TC	SAMPLE	DATE	TIME	RIV_MILE	SITE	DURATION	TOW_SPD	SAM_DPTH	LC1_CT	LC2_CT	LC3_CT	LC4_CT	TOTAL_CT
TRY	1	79	1	11/05/79	13:14	39	1	10	1.5	12	15	6	1	0	22
01+04 IRT	1	13	588	11/05/79	13:12	39	1	5	1.3	10	0	0	0	0	0
TRY	1	79	2	11/05/79	13:44	39	2	10	1.5	35	6	0	0	0	6
01+04 IRT	1	13	589	11/05/79	13:42	39	2	5	1.3	30	56	10	11	0	77
TRY	1	79	6	11/05/79	16:03	42	1	10	1.5	20	18	6	5	0	29
01+04 IRT	1	13	593	11/05/79	16:00	42	1	5	1.3	20	16	7	2	0	25
TRY	1	79	8	11/06/79	9:45	43	1	10	1.5	30	4	1	1	0	6
01+04 IRT	1	13	594	11/06/79	9:05	43	1	5	1.3	30	30	4	2	0	36
TRY	1	79	9	11/06/79	10:17	43	3	10	1.5	20	1	2	0	0	3
01+04 IRT	1	13	595	11/06/79	10:15	43	3	5	1.3	15	0	0	0	0	0
TRY	1	79	16	11/06/79	15:07	54	3	10	1.5	30	28	10	4	0	42
01+04 IRT	1	13	603	11/06/79	15:05	54	3	5	1.3	30	19	14	5	0	38
TRY	1	79	27	11/08/79	13:00	57	1	10	1.5	20	26	0	0	0	26
01+04 IRT	1	13	614	11/08/79	12:55	57	1	5	1.3	15	0	0	0	0	0
TRY	1	79	25	11/08/79	12:02	59	3	10	1.5	30	1	9	4	0	14
01+04 IRT	1	13	612	11/08/79	12:01	59	3	5	1.3	25	1	0	0	0	1
TRY	1	79	23	11/08/79	10:25	61	2	10	1.5	30	7	3	2	0	12
01+04 IRT	1	13	610	11/08/79	10:24	61	2	5	1.3	30	0	1	1	0	2
TRY	1	79	38	11/09/79	13:15	29	1	10	1.5	20	30	12	23	0	65
01+04 IRT	1	13	625	11/09/79	13:14	29	1	5	1.3	20	15	2	11	0	28
TRY	1	79	39	11/09/79	13:43	29	2	10	1.5	30	8	1	0	0	9
01+04 IRT	1	13	626	11/09/79	13:41	29	2	5	1.3	30	9	0	0	0	9
TRY	1	79	40	11/09/79	14:10	29	3	10	1.5	30	4	1	1	0	6
01+04 IRT	1	13	627	11/09/79	14:07	29	3	5	1.3	25	5	2	0	0	7
TRY	1	79	37	11/09/79	12:47	31	1	10	1.5	25	13	4	0	0	17
01+04 IRT	1	13	624	11/09/79	12:45	31	1	5	1.3	25	30	1	0	0	31
TRY	1	79	35	11/09/79	10:41	31	3	10	1.5	30	2	0	0	0	2
01+04 IRT	1	13	622	11/09/79	10:37	31	3	5	1.3	20	0	0	0	0	0
TRY	1	79	34	11/09/79	10:14	33	3	10	1.5	25	13	7	0	0	20
01+04 IRT	1	13	621	11/09/79	10:10	33	3	5	1.3	25	24	2	0	0	26
TRY	1	79	32	11/09/79	9:10	35	3	10	1.5	8	2	11	35	0	48
01+04 IRT	1	13	619	11/09/79	9:06	35	3	5	1.3	11	0	0	1	0	1
TRY	1	79	30	11/09/79	8:10	37	2	10	1.5	25	11	1	0	0	12
01+04 IRT	1	13	617	11/09/79	8:10	37	2	5	1.3	30	27	1	1	0	29
TRY	1	79	31	11/09/79	8:45	37	3	10	1.5	10	0	2	7	0	9
01+04 IRT	1	13	618	11/09/79	8:42	37	3	5	1.3	11	0	0	1	0	1

Table A-2

Catch Data for White Perch Collected in Small (3.7-m head rope) and Large (7.8-m head rope) Trawls (in water <10 m), Hudson River Estuary, 1979

WEEK OF 11/19/79 TO 11/23/79

GEAR	USE_CODE	TC	SAMPLE	DATE	TIME	RIV_MILE	SITE	DURATION	TOW_SPD	SAM_DPTH	LC1_CT	LC2_CT	LC3_CT	LC4_CT	TOTAL_CT
TRY	1	79	41	11/19/79	7:45	39	1	10	1.5	15	23	75	43	0	141
01+04 IRT	1	13	628	11/19/79	7:43	39	1	5	1.3	10	0	0	0	0	0
TRY	1	79	42	11/19/79	8:25	39	2	10	1.5	30	103	16	8	0	127
01+04 IRT	1	13	629	11/19/79	8:19	39	2	5	1.3	30	38	9	6	0	53
TRY	1	79	46	11/19/79	11:15	42	1	10	1.5	25	8	5	5	0	18
01+04 IRT	1	13	633	11/19/79	11:15	42	1	5	1.3	20	7	2	18	0	27
TRY	1	79	47	11/19/79	11:45	43	1	10	1.5	30	0	1	1	0	2
01+04 IRT	1	13	634	11/19/79	11:40	43	1	5	1.3	30	34	9	4	0	47
TRY	1	79	48	11/19/79	12:20	43	3	10	1.5	15	46	63	4	0	113
01+04 IRT	1	13	635	11/19/79	12:15	43	3	5	1.3	15	0	1	0	0	1
TRY	1	79	55	11/19/79	16:30	54	3	10	1.5	25	3	0	0	0	3
01+04 IRT	1	13	642	11/19/79	16:25	54	3	5	1.3	30	47	23	2	0	72
TRY	1	79	58	11/20/79	9:45	57	1	10	1.5	15	6	16	3	0	25
01+04 IRT	1	13	645	11/20/79	9:45	57	1	5	1.3	15	0	1	0	0	1
TRY	1	79	60	11/20/79	10:35	59	3	10	1.5	25	3	3	2	0	8
01+04 IRT	1	13	647	11/20/79	10:30	59	3	5	1.3	25	10	18	7	0	35
TRY	1	79	61	11/20/79	11:05	61	2	10	1.5	30	3	4	0	0	7
01+04 IRT	1	13	648	11/20/79	11:00	61	2	5	1.3	30	22	14	5	0	41
TRY	1	79	76	11/21/79	11:50	29	1	10	1.5	15	16	12	39	0	67
01+04 IRT	1	13	663	11/21/79	11:46	29	1	5	1.3	20	7	0	19	0	26
TRY	1	79	77	11/21/79	12:20	29	2	10	1.5	25	1	0	2	0	3
01+04 IRT	1	13	664	11/21/79	12:17	29	2	5	1.3	30	3	0	0	0	3
TRY	1	79	78	11/21/79	12:45	29	3	10	1.5	30	8	2	1	0	11
01+04 IRT	1	13	665	11/21/79	12:45	29	3	5	1.3	25	0	0	1	0	1
TRY	1	79	75	11/21/79	11:20	31	1	10	1.5	25	60	0	2	0	62
01+04 IRT	1	13	662	11/21/79	11:20	31	1	5	1.3	25	1	0	0	0	1
TRY	1	79	73	11/21/79	10:32	31	3	10	1.5	15	7	11	23	0	41
01+04 IRT	1	13	660	11/21/79	10:30	31	3	5	1.3	20	1	1	5	0	7
TRY	1	79	72	11/21/79	10:05	33	3	10	1.5	25	10	4	3	0	17
01+04 IRT	1	13	659	11/21/79	10:05	33	3	5	1.3	25	3	0	3	0	6
TRY	1	79	70	11/21/79	9:08	35	3	10	1.5	10	0	5	10	0	15
01+04 IRT	1	13	657	11/21/79	9:05	35	3	5	1.3	11	0	0	0	0	0
TRY	1	79	68	11/21/79	8:10	37	2	10	1.5	25	6	0	1	0	7
01+04 IRT	1	13	655	11/21/79	8:00	37	2	5	1.3	30	44	6	4	0	54
TRY	1	79	69	11/21/79	8:40	37	3	10	1.5	11	2	8	2	0	12
01+04 IRT	1	13	656	11/21/79	8:35	37	3	5	1.3	11	0	0	0	0	0

Table A-3

Catch Data for White Perch Collected in Small (3.7-m head rope) and Large (7.8-m head rope) Trawls (in water <10 m), Hudson River Estuary, 1979

WEEK OF 12/3/79 TO 12/7/79

GEAR	USE_CODE	TC	SAMPLE	DATE	TIME	RIV_MILE	SITE	DURATION	TOW_SPD	SAM_DPTH	LC1_CT	LC2_CT	LC3_CT	LC4_CT	TOTAL_CT
TRY	1	79	79	12/03/79	13:08	39	1	10	1.5	10	1	0	0	0	1
01+04 IRT	1	13	666	12/03/79	13:00	39	1	5	1.3	10	0	0	0	0	0
TRY	1	79	80	12/03/79	13:28	39	2	10	1.5	35	36	15	0	0	51
01+04 IRT	1	13	667	12/03/79	13:25	39	2	5	1.3	30	104	40	14	0	158
TRY	1	79	92	12/04/79	12:37	29	1	10	1.5	18	5	1	3	0	9
01+04 IRT	1	13	679	12/04/79	12:40	29	1	5	1.3	20	6	1	0	0	7
TRY	1	79	93	12/04/79	13:00	29	2	10	1.5	30	13	0	0	0	13
01+04 IRT	1	13	680	12/04/79	13:00	29	2	5	1.3	30	2	1	0	0	3
TRY	1	79	94	12/04/79	13:20	29	3	10	1.5	20	14	1	3	0	18
01+04 IRT	1	13	681	12/04/79	13:30	29	3	5	1.3	25	0	0	1	0	1
TRY	1	79	91	12/04/79	12:22	31	1	10	1.5	30	0	0	0	0	0
01+04 IRT	1	13	678	12/04/79	12:20	31	1	5	1.3	25	5	3	0	0	8
TRY	1	79	89	12/04/79	11:38	31	3	10	1.5	17	15	21	9	0	45
01+04 IRT	1	13	676	12/04/79	11:35	31	3	5	1.3	20	3	4	0	0	7
TRY	1	79	88	12/04/79	11:12	33	3	10	1.5	22	12	16	14	0	42
01+04 IRT	1	13	675	12/04/79	11:05	33	3	5	1.3	25	12	11	10	0	33
TRY	1	79	86	12/04/79	10:20	35	3	10	1.5	10	2	8	21	0	31
01+04 IRT	1	13	673	12/04/79	10:20	35	3	5	1.3	11	0	0	0	0	0
TRY	1	79	84	12/04/79	9:25	37	2	10	1.5	30	11	3	1	0	15
01+04 IRT	1	13	671	12/04/79	9:22	37	2	5	1.3	30	91	44	4	0	139
TRY	1	79	85	12/04/79	9:48	37	3	10	1.5	11	16	22	20	0	58
01+04 IRT	1	13	672	12/04/79	9:55	37	3	5	1.3	11	2	0	5	0	7
TRY	1	79	95	12/05/79	12:43	42	1	10	1.5	20	3	3	2	0	8
01+04 IRT	1	13	682	12/05/79	12:46	42	1	5	1.3	20	0	4	5	0	9
TRY	1	79	96	12/05/79	13:04	43	1	10	1.5	30	3	2	0	0	5
01+04 IRT	1	13	683	12/05/79	13:00	43	1	5	1.3	30	30	2	2	0	34
TRY	1	79	97	12/05/79	13:28	43	3	10	1.5	15	1	1	0	0	2
01+04 IRT	1	13	684	12/05/79	13:25	43	3	5	1.3	15	0	2	0	0	2
TRY	1	79	109	12/06/79	13:50	59	3	10	1.5	25	8	4	0	0	12
01+04 IRT	1	13	696	12/06/79	13:50	59	3	5	1.3	25	0	1	0	0	1
TRY	1	79	108	12/06/79	13:32	61	2	10	1.5	30	1	0	0	0	1
01+04 IRT	1	13	695	12/06/79	13:25	61	2	5	1.3	30	22	6	2	0	30
TRY	1	79	113	12/07/79	12:21	54	3	10	1.5	30	0	1	0	0	1
01+04 IRT	1	13	702	12/07/79	12:15	54	3	5	1.3	30	14	1	2	0	17
TRY	1	79	115	12/07/79	13:03	57	1	10	1.5	20	0	0	0	0	0
01+04 IRT	1	13	697	12/07/79	13:00	57	1	5	1.3	15	9	3	1	0	13

Table A-4

Catch Data for White Perch Collected in Small (3.7-m head rope) and Large (7.8-m head rope) Trawls (in water ≥10 m), Hudson River Estuary, 1979

WEEK OF 11/5/79 TO 11/9/79

GEAR	USE_CODE	TC	SAMPLE	DATE	TIME	RIV_MILE	SITE	DURATION	TOW_SPD	SAM_DPTH	LC1_CT	LC2_CT	LC3_CT	LC4_CT	TOTAL_CT
TRY	1	79	3	11/05/79	14:33	39	3	10	1.5	65	0	0	0	0	0
01+04 IRT	1	13	590	11/05/79	14:30	39	3	5	1.3	75	11	2	1	0	14
TRY	1	79	4	11/05/79	15:06	41	2	10	1.5	45	1	0	0	0	1
01+04 IRT	1	13	591	11/05/79	15:05	41	2	5	1.3	45	16	0	0	0	16
TRY	1	79	5	11/05/79	15:39	42	3	10	1.5	45	1	0	0	0	1
01+04 IRT	1	13	592	11/05/79	15:36	42	3	5	1.3	50	1	0	0	0	1
TRY	1	79	11	11/06/79	11:16	44	1	10	1.5	35	28	0	3	0	31
01+04 IRT	1	13	597	11/06/79	11:13	44	1	5	1.3	45	32	1	0	0	33
TRY	1	79	10	11/06/79	10:43	44	2	10	1.5	70	0	0	0	0	0
01+04 IRT	1	13	596	11/06/79	10:40	44	2	5	1.3	75	9	0	0	0	9
TRY	1	79	13	11/06/79	13:05	48	3	10	1.5	40	10	1	1	0	12
01+04 IRT	1	13	600	11/06/79	13:02	48	3	5	1.3	45	40	14	5	0	59
TRY	1	79	14	11/06/79	13:38	49	1	10	1.5	80	1	0	0	0	1
01+04 IRT	1	13	601	11/06/79	13:32	49	1	5	1.3	80	0	0	0	0	0
TRY	1	79	15	11/06/79	15:47	54	2	10	1.5	50	0	0	0	0	0
01+04 IRT	1	13	602	11/06/79	15:43	54	2	5	1.3	60	3	0	1	0	4
TRY	1	79	22	11/07/79	14:05	63	2	10	1.5	45	28	2	0	0	30
01+04 IRT	1	13	609	11/07/79	14:00	63	2	5	1.3	45	25	4	2	0	31
TRY	1	79	21	11/07/79	13:36	65	2	10	1.5	55	18	2	0	0	20
01+04 IRT	1	13	608	11/07/79	13:32	65	2	5	1.3	60	23	3	0	0	26
TRY	1	79	20	11/07/79	12:57	66	2	10	1.5	50	0	2	0	0	2
01+04 IRT	1	13	607	11/07/79	12:55	66	2	5	1.3	60	5	5	3	0	13
TRY	1	79	19	11/07/79	12:26	67	2	10	1.5	40	7	5	1	0	13
01+04 IRT	1	13	606	11/07/79	12:22	67	2	5	1.3	45	42	10	3	0	55
TRY	1	79	18	11/07/79	11:52	72	2	10	1.5	55	2	2	0	0	4
01+04 IRT	1	13	605	11/07/79	11:50	72	2	5	1.3	50	8	2	0	0	10
TRY	1	79	17	11/07/79	11:19	74	2	10	1.5	60	1	0	0	0	1
01+04 IRT	1	13	604	11/07/79	11:16	74	2	5	1.3	60	3	4	0	0	7
TRY	1	79	29	11/08/79	13:55	55	3	10	1.5	45	1	0	0	0	1
01+04 IRT	1	13	616	11/08/79	13:50	55	3	5	1.3	45	3	1	0	0	4
TRY	1	79	28	11/08/79	13:30	57	2	10	1.5	35	5	1	0	0	6
01+04 IRT	1	13	615	11/08/79	13:24	57	2	5	1.3	35	29	7	2	0	38
TRY	1	79	36	11/09/79	11:38	31	2	10	1.5	30	65	1	0	0	66
01+04 IRT	1	13	623	11/09/79	11:40	31	2	5	1.3	35	13	0	0	0	13
TRY	1	79	33	11/09/79	9:45	33	2	10	1.5	35	0	0	0	0	0
01+04 IRT	1	13	620	11/09/79	9:40	33	2	5	1.3	40	23	0	0	0	23

Table A-5

Catch Data for White Perch Collected in Small (3.7-m head rope) and Large (7.8-m head rope) Trawls (in water ≥10 m), Hudson River Estuary, 1979

WEEK OF 11/19/79 TO 11/23/79

GEAR	USE_CODE	TC	SAMPLE	DATE	TIME	RIV_MILE	SITE	DURATION	TOW_SPD	SAM_DPTH	LC1_CT	LC2_CT	LC3_CT	LC4_CT	TOTAL_CT
TRY	1	79	43	11/19/79	9:00	39	3	10	1.5	70	20	0	0	0	20
01+04 IRT	1	13	630	11/19/79	8:55	39	3	5	1.3	75	94	3	4	0	101
TRY	1	79	44	11/19/79	10:07	41	2	10	1.5	45	8	4	0	0	12
01+04 IRT	1	13	631	11/19/79	10:00	41	2	5	1.3	45	202	7	0	0	209
TRY	1	79	45	11/19/79	10:50	42	3	10	1.5	50	2	2	0	0	4
01+04 IRT	1	13	632	11/19/79	10:45	42	3	5	1.3	50	11	1	1	0	13
TRY	1	79	50	11/19/79	14:00	44	1	10	1.5	45	29	5	4	0	38
01+04 IRT	1	13	637	11/19/79	13:55	44	1	5	1.3	45	57	15	3	0	75
TRY	1	79	49	11/19/79	12:55	44	2	10	1.5	70	5	1	0	0	6
01+04 IRT	1	13	636	11/19/79	12:50	44	2	5	1.3	75	13	0	1	0	14
TRY	1	79	52	11/19/79	15:05	48	3	10	1.5	45	9	1	0	0	10
01+04 IRT	1	13	639	11/19/79	15:00	48	3	5	1.3	45	34	7	4	0	45
TRY	1	79	53	11/19/79	15:30	49	1	10	1.5	75	3	1	0	0	4
01+04 IRT	1	13	640	11/19/79	15:37	49	1	5	1.3	80	19	6	0	0	25
TRY	1	79	54	11/19/79	16:10	54	2	10	1.5	55	6	1	0	0	7
01+04 IRT	1	13	641	11/19/79	16:05	54	2	5	1.3	60	35	1	0	0	36
TRY	1	79	56	11/20/79	8:55	55	3	10	1.5	40	49	7	2	0	58
01+04 IRT	1	13	643	11/20/79	8:50	55	3	5	1.3	45	70	11	6	0	87
TRY	1	79	57	11/20/79	9:22	57	2	10	1.5	35	28	11	4	0	43
01+04 IRT	1	13	644	11/20/79	9:20	57	2	5	1.3	35	26	5	1	0	32
TRY	1	79	62	11/20/79	11:30	63	2	10	1.5	40	8	1	0	0	9
01+04 IRT	1	13	649	11/20/79	11:25	63	2	5	1.3	45	19	4	3	0	26
TRY	1	79	63	11/20/79	11:57	65	2	10	1.5	55	6	0	0	0	6
01+04 IRT	1	13	650	11/20/79	11:55	65	2	5	1.3	60	19	3	1	0	23
TRY	1	79	64	11/20/79	12:30	66	2	10	1.5	60	1	0	0	0	1
01+04 IRT	1	13	651	11/20/79	12:25	66	2	5	1.3	60	22	6	2	0	30
TRY	1	79	65	11/20/79	12:52	67	2	10	1.5	45	28	5	0	0	33
01+04 IRT	1	13	652	11/20/79	12:50	67	2	5	1.3	45	45	6	5	0	56
TRY	1	79	66	11/20/79	13:25	72	2	10	1.5	50	3	4	0	0	7
01+04 IRT	1	13	653	11/20/79	13:21	72	2	5	1.3	50	3	5	1	0	9
TRY	1	79	67	11/20/79	14:00	74	2	10	1.5	60	1	0	0	0	1
01+04 IRT	1	13	654	11/20/79	13:50	74	2	5	1.3	60	2	0	0	0	2
TRY	1	79	74	11/21/79	10:55	31	2	10	1.5	35	6	0	0	0	6
01+04 IRT	1	13	661	11/21/79	10:50	31	2	5	1.3	35	2	0	2	0	4
TRY	1	79	71	11/21/79	9:30	33	2	10	1.5	40	15	1	0	0	16
01+04 IRT	1	13	658	11/21/79	9:30	33	2	5	1.3	40	29	5	5	0	39

Table A-6

Catch Data for White Perch Collected in Small (3.7-m head rope) and Large (7.8-m head rope) Trawls (in water ≥10 m), Hudson River Estuary, 1979

WEEK OF 12/3/79 TO 12/7/79

GEAR	USE_CODE	TC	SAMPLE	DATE	TIME	RIV_MILE	SITE	DURATION	TOW_SPD	SAM_DPTH	LC1_CT	LC2_CT	LC3_CT	LC4_CT	TOTAL_CT
TRY	1	79	81	12/03/79	14:15	39	3	10	1.5	70	0	0	0	0	0
01+04 IRT	1	13	668	12/03/79	14:05	39	3	5	1.3	75	20	1	1	0	22
TRY	1	79	82	12/03/79	14:48	41	2	10	1.5	45	1	0	0	0	1
01+04 IRT	1	13	669	12/03/79	14:40	41	2	5	1.3	45	17	0	1	0	18
TRY	1	79	83	12/03/79	15:16	42	3	10	1.5	50	1	1	0	0	2
01+04 IRT	1	13	670	12/03/79	15:15	42	3	5	1.3	50	6	6	3	0	15
TRY	1	79	90	12/04/79	11:59	31	2	10	1.5	40	14	0	0	0	14
01+04 IRT	1	13	677	12/04/79	11:55	31	2	5	1.3	35	4	1	1	0	6
TRY	1	79	87	12/04/79	10:45	33	2	10	1.5	42	4	0	0	0	4
01+04 IRT	1	13	674	12/04/79	10:40	33	2	5	1.3	40	12	2	0	0	14
TRY	1	79	99	12/05/79	14:20	44	1	10	1.5	45	9	11	5	0	25
01+04 IRT	1	13	686	12/05/79	14:20	44	1	5	1.3	45	8	5	0	0	13
TRY	1	79	98	12/05/79	13:52	44	2	10	1.5	75	0	0	0	0	0
01+04 IRT	1	13	685	12/05/79	13:50	44	2	5	1.3	75	0	1	1	0	2
TRY	1	79	101	12/05/79	15:31	48	3	10	1.5	45	1	3	0	0	4
01+04 IRT	1	13	688	12/05/79	15:30	48	3	5	1.3	45	26	9	4	0	39
TRY	1	79	107	12/06/79	13:06	63	2	10	1.5	45	2	2	1	0	5
01+04 IRT	1	13	694	12/06/79	13:00	63	2	5	1.3	45	3	1	0	0	4
TRY	1	79	106	12/06/79	12:45	65	2	10	1.5	60	2	0	0	0	2
01+04 IRT	1	13	693	12/06/79	12:40	65	2	5	1.3	60	5	1	1	0	7
TRY	1	79	105	12/06/79	12:22	66	2	10	1.5	60	2	0	0	0	2
01+04 IRT	1	13	692	12/06/79	12:20	66	2	5	1.3	60	7	1	0	0	8
TRY	1	79	104	12/06/79	11:57	67	2	10	1.5	50	0	0	1	0	1
01+04 IRT	1	13	691	12/06/79	11:55	67	2	5	1.3	45	3	2	0	0	5
TRY	1	79	103	12/06/79	11:25	72	2	10	1.5	55	1	1	0	0	2
01+04 IRT	1	13	690	12/06/79	11:21	72	2	5	1.3	50	5	2	1	0	8
TRY	1	79	102	12/06/79	10:56	74	2	10	1.5	60	0	1	0	0	1
01+04 IRT	1	13	689	12/06/79	10:55	74	2	5	1.3	60	1	0	0	0	1
TRY	1	79	110	12/07/79	9:38	49	1	10	1.5	80	2	0	0	0	2
01+04 IRT	1	13	700	12/07/79	9:35	49	1	5	1.3	80	1	1	0	0	2
TRY	1	79	112	12/07/79	12:00	54	2	10	1.5	60	2	0	0	0	2
01+04 IRT	1	13	701	12/07/79	12:00	54	2	5	1.3	60	1	0	2	0	3
TRY	1	79	114	12/07/79	12:42	55	3	10	1.5	45	5	2	0	0	7
01+04 IRT	1	13	703	12/07/79	12:40	55	3	5	1.3	45	12	1	0	0	13
TRY	1	79	116	12/07/79	13:17	57	2	10	1.5	35	6	3	1	0	10
01+04 IRT	1	13	698	12/07/79	13:15	57	2	5	1.3	35	64	6	0	0	70

Table A-7

Catch Data for Atlantic Tomcod Collected in Small (3.7-m head rope) and Large (7.8-m head rope) Trawls (in water <10 m), Hudson River Estuary, 1979

WEEK OF 11/5/79 TO 11/9/79

GEAR	USE_CODE	TC	SAMPLE	DATE	TIME	RIV_MILE	SITE	DURATION	TOW_SPD	SAM_DPTH	LC1_CT	LC2_CT	LC3_CT	LC4_CT	TOTAL_CT
TRY	1	79	1	11/05/79	13:14	39	1	10	1.5	12	0	0	0	0	0
01+04 IRT	1	13	583	11/05/79	13:12	39	1	5	1.3	10	0	0	0	0	0
TRY	1	79	2	11/05/79	13:44	39	2	10	1.5	35	1	0	0	0	1
01+04 IRT	1	13	589	11/05/79	13:42	39	2	5	1.3	30	11	0	0	0	11
TRY	1	79	6	11/05/79	16:03	42	1	10	1.5	20	5	0	0	0	5
01+04 IRT	1	13	593	11/05/79	16:00	42	1	5	1.3	20	1	0	0	0	1
TRY	1	79	8	11/06/79	9:45	43	1	10	1.5	30	10	0	0	0	10
01+04 IRT	1	13	594	11/06/79	9:05	43	1	5	1.3	30	9	0	0	0	9
TRY	1	79	9	11/06/79	10:17	43	3	10	1.5	20	0	0	0	0	0
01+04 IRT	1	13	595	11/06/79	10:15	43	3	5	1.3	15	0	0	0	0	0
TRY	1	79	16	11/06/79	15:07	54	3	10	1.5	30	1	0	0	0	1
01+04 IRT	1	13	603	11/06/79	15:05	54	3	5	1.3	30	2	0	0	0	2
TRY	1	79	27	11/08/79	13:00	57	1	10	1.5	20	0	0	0	0	0
01+04 IRT	1	13	614	11/08/79	12:55	57	1	5	1.3	15	0	0	0	0	0
TRY	1	79	25	11/08/79	12:02	59	3	10	1.5	30	0	0	0	0	0
01+04 IRT	1	13	612	11/08/79	12:01	59	3	5	1.3	25	0	0	0	0	0
TRY	1	79	23	11/08/79	10:25	61	2	10	1.5	30	0	0	0	0	0
01+04 IRT	1	13	610	11/08/79	10:24	61	2	5	1.3	30	1	0	0	0	1
TRY	1	79	38	11/09/79	13:15	29	1	10	1.5	20	4	1	0	0	5
01+04 IRT	1	13	625	11/09/79	13:14	29	1	5	1.3	20	3	0	0	0	3
TRY	1	79	39	11/09/79	13:43	29	2	10	1.5	30	11	0	0	0	11
01+04 IRT	1	13	626	11/09/79	13:41	29	2	5	1.3	30	5	0	0	0	5
TRY	1	79	40	11/09/79	14:10	29	3	10	1.5	30	2	0	0	0	2
01+04 IRT	1	13	627	11/09/79	14:07	29	3	5	1.3	25	1	0	0	0	1
TRY	1	79	37	11/09/79	12:47	31	1	10	1.5	25	4	0	0	0	4
01+04 IRT	1	13	624	11/09/79	12:45	31	1	5	1.3	25	2	0	0	0	2
TRY	1	79	35	11/09/79	10:41	31	3	10	1.5	30	8	0	0	0	8
01+04 IRT	1	13	622	11/09/79	10:37	31	3	5	1.3	20	0	0	0	0	0
TRY	1	79	34	11/09/79	10:14	33	3	10	1.5	25	4	0	0	0	4
01+04 IRT	1	13	621	11/09/79	10:10	33	3	5	1.3	25	0	0	0	0	0
TRY	1	79	32	11/09/79	9:10	35	3	10	1.5	8	0	0	0	0	0
01+04 IRT	1	13	619	11/09/79	9:06	35	3	5	1.3	11	0	0	0	0	0
TRY	1	79	30	11/09/79	8:10	37	2	10	1.5	25	4	0	0	0	4
01+04 IRT	1	13	617	11/09/79	8:10	37	2	5	1.3	30	2	0	0	0	2
TRY	1	79	31	11/09/79	8:45	37	3	10	1.5	10	0	0	0	0	0
01+04 IRT	1	13	618	11/09/79	8:42	37	3	5	1.3	11	0	0	0	0	0

Table A-8

Catch Data for Atlantic Tomcod Collected in Small (3.7-m head rope) and Large (7.8-m head rope) Trawls (in water <10 m), Hudson River Estuary, 1979

WEEK OF 11/19/79 TO 11/23/79

GEAR	USE_CODE	TC	SAMPLE	DATE	TIME	RIV_MILE	SITE	DURATION	TOW_SPD	SAM_DPTH	LC1_CT	LC2_CT	LC3_CT	LC4_CT	TOTAL_CT
TRY	1	79	41	11/19/79	7:45	39	1	10	1.5	15	0	0	0	0	0
01+04 IRT	1	13	628	11/19/79	7:43	39	1	5	1.3	10	0	0	0	0	0
TRY	1	79	42	11/19/79	8:25	39	2	10	1.5	30	0	0	0	0	0
01+04 IRT	1	13	629	11/19/79	8:19	39	2	5	1.3	30	2	0	0	0	2
TRY	1	79	46	11/19/79	11:15	42	1	10	1.5	25	6	0	0	0	6
01+04 IRT	1	13	633	11/19/79	11:15	42	1	5	1.3	20	0	0	0	0	0
TRY	1	79	47	11/19/79	11:45	43	1	10	1.5	30	2	0	0	0	2
01+04 IRT	1	13	634	11/19/79	11:40	43	1	5	1.3	30	4	0	0	0	4
TRY	1	79	48	11/19/79	12:20	43	3	10	1.5	15	0	0	0	0	0
01+04 IRT	1	13	635	11/19/79	12:15	43	3	5	1.3	15	0	0	0	0	0
TRY	1	79	55	11/19/79	16:30	54	3	10	1.5	25	1	0	0	0	1
01+04 IRT	1	13	642	11/19/79	16:25	54	3	5	1.3	30	4	0	0	0	4
TRY	1	79	58	11/20/79	9:45	57	1	10	1.5	15	0	0	0	0	0
01+04 IRT	1	13	645	11/20/79	9:45	57	1	5	1.3	15	0	0	0	0	0
TRY	1	79	60	11/20/79	10:35	59	3	10	1.5	25	0	0	0	0	0
01+04 IRT	1	13	647	11/20/79	10:30	59	3	5	1.3	25	1	0	0	0	1
TRY	1	79	61	11/20/79	11:05	61	2	10	1.5	30	3	0	0	0	3
01+04 IRT	1	13	648	11/20/79	11:00	61	2	5	1.3	30	1	0	0	0	1
TRY	1	79	76	11/21/79	11:50	29	1	10	1.5	15	8	0	0	0	8
01+04 IRT	1	13	663	11/21/79	11:46	29	1	5	1.3	20	4	0	0	0	4
TRY	1	79	77	11/21/79	12:20	29	2	10	1.5	25	1	0	0	0	1
01+04 IRT	1	13	664	11/21/79	12:17	29	2	5	1.3	30	5	0	0	0	5
TRY	1	79	78	11/21/79	12:45	29	3	10	1.5	30	19	0	0	0	19
01+04 IRT	1	13	665	11/21/79	12:45	29	3	5	1.3	25	1	0	0	0	1
TRY	1	79	75	11/21/79	11:20	31	1	10	1.5	25	1	0	0	0	1
01+04 IRT	1	13	662	11/21/79	11:20	31	1	5	1.3	25	0	0	0	0	0
TRY	1	79	73	11/21/79	10:32	31	3	10	1.5	15	4	0	0	0	4
01+04 IRT	1	13	660	11/21/79	10:30	31	3	5	1.3	20	0	0	0	0	0
TRY	1	79	72	11/21/79	10:05	33	3	10	1.5	25	8	0	0	0	8
01+04 IRT	1	13	659	11/21/79	10:05	33	3	5	1.3	25	0	1	25	4	30
TRY	1	79	70	11/21/79	9:08	35	3	10	1.5	10	0	0	0	0	0
01+04 IRT	1	13	657	11/21/79	9:05	35	3	5	1.3	11	0	0	0	0	0
TRY	1	79	68	11/21/79	8:10	37	2	10	1.5	25	1	0	0	0	1
01+04 IRT	1	13	655	11/21/79	8:00	37	2	5	1.3	30	0	0	0	0	0
TRY	1	79	69	11/21/79	8:40	37	3	10	1.5	11	0	0	0	0	0
01+04 IRT	1	13	656	11/21/79	8:35	37	3	5	1.3	11	0	0	0	0	0

Table A-9

Catch Data for Atlantic Tomcod Collected in Small (3.7-m head rope) and Large (7.8-m head rope) Trawls (in water <10 m), Hudson River Estuary, 1979

WEEK OF 12/3/79 TO 12/7/79

GEAR	USE_CODE	TC	SAMPLE	DATE	TIME	RIV_MILE	SITE	DURATION	TOW_SPD	SAM_DPTH	LC1_CT	LC2_CT	LC3_CT	LC4_CT	TOTAL_CT
TRY	1	79	79	12/03/79	13:03	39	1	10	1.5	10	0	0	0	0	0
01+04 IRT	1	13	666	12/03/79	13:00	39	1	5	1.3	10	0	0	0	0	0
TRY	1	79	80	12/03/79	13:28	39	2	10	1.5	35	3	0	0	0	3
01+04 IRT	1	13	667	12/03/79	13:25	39	2	5	1.3	30	12	0	5	1	18
TRY	1	79	92	12/04/79	12:37	29	1	10	1.5	18	0	0	0	0	0
01+04 IRT	1	13	679	12/04/79	12:40	29	1	5	1.3	20	0	0	0	0	0
TRY	1	79	93	12/04/79	13:00	29	2	10	1.5	30	6	0	0	0	6
01+04 IRT	1	13	680	12/04/79	13:00	29	2	5	1.3	30	1	0	0	0	1
TRY	1	79	94	12/04/79	13:20	29	3	10	1.5	20	9	0	0	0	9
01+04 IRT	1	13	681	12/04/79	13:30	29	3	5	1.3	25	0	0	0	0	0
TRY	1	79	91	12/04/79	12:22	31	1	10	1.5	30	0	0	0	0	0
01+04 IRT	1	13	678	12/04/79	12:20	31	1	5	1.3	25	0	0	0	0	0
TRY	1	79	89	12/04/79	11:38	31	3	10	1.5	17	2	0	0	0	2
01+04 IRT	1	13	676	12/04/79	11:35	31	3	5	1.3	20	0	0	0	0	0
TRY	1	79	88	12/04/79	11:12	33	3	10	1.5	22	5	0	0	0	5
01+04 IRT	1	13	675	12/04/79	11:05	33	3	5	1.3	25	6	0	1	0	7
TRY	1	79	86	12/04/79	10:20	35	3	10	1.5	10	2	0	0	0	2
01+04 IRT	1	13	673	12/04/79	10:20	35	3	5	1.3	11	0	0	0	0	0
TRY	1	79	84	12/04/79	9:25	37	2	10	1.5	30	0	0	0	0	0
01+04 IRT	1	13	671	12/04/79	9:22	37	2	5	1.3	30	2	0	0	0	2
TRY	1	79	85	12/04/79	9:48	37	3	10	1.5	11	0	0	0	0	0
01+04 IRT	1	13	672	12/04/79	9:55	37	3	5	1.3	11	0	0	0	0	0
TRY	1	79	95	12/05/79	12:43	42	1	10	1.5	20	0	0	0	0	0
01+04 IRT	1	13	682	12/05/79	12:46	42	1	5	1.3	20	0	0	0	0	0
TRY	1	79	96	12/05/79	13:04	43	1	10	1.5	30	4	0	0	0	4
01+04 IRT	1	13	683	12/05/79	13:00	43	1	5	1.3	30	3	0	0	0	3
TRY	1	79	97	12/05/79	13:28	43	3	10	1.5	15	0	0	0	0	0
01+04 IRT	1	13	684	12/05/79	13:25	43	3	5	1.3	15	0	0	0	0	0
TRY	1	79	109	12/06/79	13:50	59	3	10	1.5	25	0	0	0	0	0
01+04 IRT	1	13	696	12/06/79	13:50	59	3	5	1.3	25	0	0	0	0	0
TRY	1	79	108	12/06/79	13:32	61	2	10	1.5	30	0	0	0	0	0
01+04 IRT	1	13	695	12/06/79	13:25	61	2	5	1.3	30	0	0	0	0	0
TRY	1	79	113	12/07/79	12:21	54	3	10	1.5	30	0	0	0	0	0
01+04 IRT	1	13	702	12/07/79	12:15	54	3	5	1.3	30	2	0	0	0	2
TRY	1	79	115	12/07/79	13:03	57	1	10	1.5	20	0	0	0	0	0
01+04 IRT	1	13	697	12/07/79	13:00	57	1	5	1.3	15	0	0	0	0	0

Table A-10

Catch Data for Atlantic Tomcod Collected in Small (3.7-m head rope) and Large (7.8-m head rope) Trawls (in water ≥10 m), Hudson River Estuary, 1979

WEEK OF 11/5/79 TO 11/9/79

GEAR	USE_CODE	TC	SAMPLE	DATE	TIME	RIV_MILE	SITE	DURATION	TOW_SPD	SAM_DPTH	LC1_CT	LC2_CT	LC3_CT	LC4_CT	TOTAL_CT
TRY	1	79	3	11/05/79	14:33	39	3	10	1.5	65	0	0	0	0	0
01+04 IRT	1	13	590	11/05/79	14:30	39	3	5	1.3	75	7	0	0	0	7
TRY	1	79	4	11/05/79	15:06	41	2	10	1.5	45	0	0	0	0	0
01+04 IRT	1	13	591	11/05/79	15:05	41	2	5	1.3	45	13	0	0	0	13
TRY	1	79	5	11/05/79	15:39	42	3	10	1.5	45	4	0	0	0	4
01+04 IRT	1	13	592	11/05/79	15:36	42	3	5	1.3	50	7	0	0	0	7
TRY	1	79	11	11/06/79	11:16	44	1	10	1.5	35	10	0	0	0	10
01+04 IRT	1	13	597	11/06/79	11:13	44	1	5	1.3	45	19	0	0	0	19
TRY	1	79	10	11/06/79	10:43	44	2	10	1.5	70	1	0	0	0	1
01+04 IRT	1	13	596	11/06/79	10:40	44	2	5	1.3	75	16	0	0	0	16
TRY	1	79	13	11/06/79	13:05	48	3	10	1.5	40	0	0	0	0	0
01+04 IRT	1	13	600	11/06/79	13:02	48	3	5	1.3	45	3	0	0	0	3
TRY	1	79	14	11/06/79	13:38	49	1	10	1.5	80	1	0	0	0	1
01+04 IRT	1	13	601	11/06/79	13:32	49	1	5	1.3	80	6	0	0	0	6
TRY	1	79	15	11/06/79	15:47	54	2	10	1.5	50	0	0	0	0	0
01+04 IRT	1	13	602	11/06/79	15:43	54	2	5	1.3	60	8	0	0	0	8
TRY	1	79	22	11/07/79	14:05	63	2	10	1.5	45	2	0	0	0	2
01+04 IRT	1	13	609	11/07/79	14:00	63	2	5	1.3	45	0	0	0	0	0
TRY	1	79	21	11/07/79	13:36	65	2	10	1.5	55	1	0	0	0	1
01+04 IRT	1	13	608	11/07/79	13:32	65	2	5	1.3	60	5	0	0	0	5
TRY	1	79	20	11/07/79	12:57	66	2	10	1.5	50	2	0	0	0	2
01+04 IRT	1	13	607	11/07/79	12:55	66	2	5	1.3	60	19	0	0	0	19
TRY	1	79	19	11/07/79	12:26	67	2	10	1.5	40	1	0	0	0	1
01+04 IRT	1	13	606	11/07/79	12:22	67	2	5	1.3	45	5	0	0	0	5
TRY	1	79	18	11/07/79	11:52	72	2	10	1.5	55	0	0	0	0	0
01+04 IRT	1	13	605	11/07/79	11:50	72	2	5	1.3	50	2	0	0	0	2
TRY	1	79	17	11/07/79	11:19	74	2	10	1.5	60	0	0	0	0	0
01+04 IRT	1	13	604	11/07/79	11:16	74	2	5	1.3	60	5	0	0	0	5
TRY	1	79	29	11/08/79	13:55	55	3	10	1.5	45	4	0	0	0	4
01+04 IRT	1	13	616	11/08/79	13:50	55	3	5	1.3	45	1	0	0	0	1
TRY	1	79	28	11/08/79	13:30	57	2	10	1.5	35	4	0	0	0	4
01+04 IRT	1	13	615	11/08/79	13:24	57	2	5	1.3	35	11	0	0	0	11
TRY	1	79	36	11/09/79	11:38	31	2	10	1.5	30	4	0	0	0	4
01+04 IRT	1	13	623	11/09/79	11:40	31	2	5	1.3	35	0	0	0	0	0
TRY	1	79	33	11/09/79	9:45	33	2	10	1.5	35	1	0	0	0	1
01+04 IRT	1	13	620	11/09/79	9:40	33	2	5	1.3	40	4	0	6	0	10

Table A-11

Catch Data for Atlantic Tomcod Collected in Small (3.7-m head rope) and Large (7.8-m head rope) Trawls (in water ≥10 m), Hudson River Estuary, 1979

WEEK OF 11/19/79 TO 11/23/79

GEAR	USE_CODE	TC	SAMPLE	DATE	TIME	RIV_MILE	SITE	DURATION	TOW_SPD	SAM_DPTH	LC1_CT	LC2_CT	LC3_CT	LC4_CT	TOTAL_CT
TRY	1	79	43	11/19/79	9:00	39	3	10	1.5	70	5	0	0	0	5
01+04 IRT	1	13	630	11/19/79	8:55	39	3	5	1.3	75	5	0	1	0	6
TRY	1	79	44	11/19/79	10:07	41	2	10	1.5	45	0	0	0	0	0
01+04 IRT	1	13	631	11/19/79	10:00	41	2	5	1.3	45	27	0	0	0	27
TRY	1	79	45	11/19/79	10:50	42	3	10	1.5	50	1	0	0	0	1
01+04 IRT	1	13	632	11/19/79	10:45	42	3	5	1.3	50	1	0	0	0	1
TRY	1	79	50	11/19/79	14:00	44	1	10	1.5	45	0	0	0	0	0
01+04 IRT	1	13	637	11/19/79	13:55	44	1	5	1.3	45	1	0	0	0	1
TRY	1	79	49	11/19/79	12:55	44	2	10	1.5	70	5	0	0	0	5
01+04 IRT	1	13	636	11/19/79	12:50	44	2	5	1.3	75	6	0	0	0	6
TRY	1	79	52	11/19/79	15:05	48	3	10	1.5	45	0	0	0	0	0
01+04 IRT	1	13	639	11/19/79	15:00	48	3	5	1.3	45	6	0	0	0	6
TRY	1	79	53	11/19/79	15:30	49	1	10	1.5	75	0	0	0	0	0
01+04 IRT	1	13	640	11/19/79	15:37	49	1	5	1.3	80	8	0	0	0	8
TRY	1	79	54	11/19/79	16:10	54	2	10	1.5	55	13	0	0	0	13
01+04 IRT	1	13	641	11/19/79	16:05	54	2	5	1.3	60	16	0	0	0	16
TRY	1	79	56	11/20/79	8:55	55	3	10	1.5	40	2	0	0	0	2
01+04 IRT	1	13	643	11/20/79	8:50	55	3	5	1.3	45	10	0	0	0	10
TRY	1	79	57	11/20/79	9:22	57	2	10	1.5	35	2	0	0	0	2
01+04 IRT	1	13	644	11/20/79	9:20	57	2	5	1.3	35	1	0	0	0	1
TRY	1	79	62	11/20/79	11:30	63	2	10	1.5	40	0	0	0	0	0
01+04 IRT	1	13	649	11/20/79	11:25	63	2	5	1.3	45	0	0	0	0	0
TRY	1	79	63	11/20/79	11:57	65	2	10	1.5	55	0	0	0	0	0
01+04 IRT	1	13	650	11/20/79	11:55	65	2	5	1.3	60	1	0	0	0	1
TRY	1	79	64	11/20/79	12:30	66	2	10	1.5	60	0	0	0	0	0
01+04 IRT	1	13	651	11/20/79	12:25	66	2	5	1.3	60	31	0	0	0	31
TRY	1	79	65	11/20/79	12:52	67	2	10	1.5	45	2	0	0	0	2
01+04 IRT	1	13	652	11/20/79	12:50	67	2	5	1.3	45	6	0	0	0	6
TRY	1	79	66	11/20/79	13:25	72	2	10	1.5	50	0	0	0	0	0
01+04 IRT	1	13	653	11/20/79	13:21	72	2	5	1.3	50	21	0	0	0	21
TRY	1	79	67	11/20/79	14:00	74	2	10	1.5	60	1	0	0	0	1
01+04 IRT	1	13	654	11/20/79	13:50	74	2	5	1.3	60	24	0	0	0	24
TRY	1	79	74	11/21/79	10:55	31	2	10	1.5	35	17	0	1	0	18
01+04 IRT	1	13	661	11/21/79	10:50	31	2	5	1.3	35	3	0	0	0	3
TRY	1	79	71	11/21/79	9:30	33	2	10	1.5	40	4	0	0	0	4
01+04 IRT	1	13	658	11/21/79	9:30	33	2	5	1.3	40	3	0	0	0	3

Table A-12

Catch Data for Atlantic Tomcod Collected in Small (3.7-m head rope) and Large (7.8-m head rope) Trawls (in water ≥10 m), Hudson River Estuary, 1979

WEEK OF 12/3/79 TO 12/7/79

GEAR	USE_CODE	TC	SAMPLE	DATE	TIME	RIV_MILE	SITE	DURATION	TOW_SPD	SAM_DPTH	LC1_CT	LC2_CT	LC3_CT	LC4_CT	TOTAL_CT
TRY	1	79	81	12/03/79	14:15	39	3	10	1.5	70	0	0	0	0	0
01+04 IRT	1	13	668	12/03/79	14:05	39	3	5	1.3	75	25	0	0	0	25
TRY	1	79	82	12/03/79	14:48	41	2	10	1.5	45	7	0	0	0	7
01+04 IRT	1	13	669	12/03/79	14:40	41	2	5	1.3	45	24	0	0	0	24
TRY	1	79	83	12/03/79	15:16	42	3	10	1.5	50	4	0	0	0	4
01+04 IRT	1	13	670	12/03/79	15:15	42	3	5	1.3	50	14	0	0	0	14
TRY	1	79	90	12/04/79	11:59	31	2	10	1.5	40	6	0	0	0	6
01+04 IRT	1	13	677	12/04/79	11:55	31	2	5	1.3	35	1	0	0	0	1
TRY	1	79	87	12/04/79	10:45	33	2	10	1.5	42	5	0	0	0	5
01+04 IRT	1	13	674	12/04/79	10:40	33	2	5	1.3	40	1	0	0	0	1
TRY	1	79	99	12/05/79	14:20	44	1	10	1.5	45	6	0	1	0	7
01+04 IRT	1	13	686	12/05/79	14:20	44	1	5	1.3	45	3	0	1	0	4
TRY	1	79	98	12/05/79	13:52	44	2	10	1.5	75	0	0	0	0	0
01+04 IRT	1	13	685	12/05/79	13:50	44	2	5	1.3	75	33	0	0	0	33
TRY	1	79	101	12/05/79	15:31	48	3	10	1.5	45	0	0	0	0	0
01+04 IRT	1	13	688	12/05/79	15:30	48	3	5	1.3	45	0	0	0	0	0
TRY	1	79	107	12/06/79	13:06	63	2	10	1.5	45	2	0	0	0	2
01+04 IRT	1	13	694	12/06/79	13:00	63	2	5	1.3	45	0	0	0	0	0
TRY	1	79	106	12/06/79	12:45	65	2	10	1.5	60	0	0	0	0	0
01+04 IRT	1	13	693	12/06/79	12:40	65	2	5	1.3	60	1	0	0	0	1
TRY	1	79	105	12/06/79	12:22	66	2	10	1.5	60	1	0	0	0	1
01+04 IRT	1	13	692	12/06/79	12:20	66	2	5	1.3	60	27	0	0	0	27
TRY	1	79	104	12/06/79	11:57	67	2	10	1.5	50	3	0	0	0	3
01+04 IRT	1	13	691	12/06/79	11:55	67	2	5	1.3	45	1	0	0	0	1
TRY	1	79	103	12/06/79	11:25	72	2	10	1.5	55	3	0	0	0	3
01+04 IRT	1	13	690	12/06/79	11:21	72	2	5	1.3	50	0	0	0	0	0
TRY	1	79	102	12/06/79	10:56	74	2	10	1.5	60	0	0	0	0	0
01+04 IRT	1	13	689	12/06/79	10:55	74	2	5	1.3	60	1	0	0	0	1
TRY	1	79	110	12/07/79	9:38	49	1	10	1.5	80	0	0	0	0	0
01+04 IRT	1	13	700	12/07/79	9:35	49	1	5	1.3	80	8	0	0	0	8
TRY	1	79	112	12/07/79	12:00	54	2	10	1.5	60	0	0	0	0	0
01+04 IRT	1	13	701	12/07/79	12:00	54	2	5	1.3	60	0	0	0	0	0
TRY	1	79	114	12/07/79	12:42	55	3	10	1.5	45	0	0	0	0	0
01+04 IRT	1	13	703	12/07/79	12:40	55	3	5	1.3	45	0	0	0	0	0
TRY	1	79	116	12/07/79	13:17	57	2	10	1.5	35	8	0	0	0	8
01+04 IRT	1	13	698	12/07/79	13:15	57	2	5	1.3	35	5	0	0	0	5

APPENDIX B

White Perch and Atlantic Tomcod
Length Data

Definitions of codes appearing in this Appendix are as follows:

GEAR:	TRY = 12 FOOT TRY TRAWL
01+04	IRT = COD END AND COD END COVER CATCHES COMBINED
USE_CODE:	1 = NO SAMPLING PROBLEMS ENCOUNTERED
TC:	79 = 12 FOOT TRY TRAWL SURVEY 13 = INTERREGIONAL BOTTOM TRAWL (IRT) SURVEY
SAMPLE:	FIELD COLLECTION SAMPLE NUMBER
DATE:	MONTH, DAY AND YEAR THE SAMPLE WAS COLLECTED
TIME:	TIME OF DAY GEAR WAS DEPLOYED (USING 24 HOUR CLOCK)
RIV_MILE:	RIVER MILE WHERE SAMPLE WAS COLLECTED
SITE:	SIDE OF RIVER WHERE SAMPLE WAS COLLECTED (1=WEST, 2=CENTER, 3=EAST)

Table B-1

Length Data for White Perch Collected in Small (3.7-m head rope) and Large (7.8-m head rope) Trawls (in water <10 m), Hudson River Estuary, 1979

YEAR	USE CODE	TC	SAMPLE	DATE	RIVMILE	SITE	LE 20	21-30	31-40	41-50	51-60	61-70	71-80	81-90	91-100	101-110	111-120	121-130	131-140	141-150	151-160	161-170	171-180	181-190	191-200	OE 201
TRY	1	79	1	11/05/79	39	1	0	0	0	0	0	6	6	2	1	0	1	0	4	1	1	0	0	0	0	0
TRY	1	79	2	11/05/79	39	2	0	0	0	0	2	0	2	1	1	0	0	0	0	0	0	0	0	0	0	0
TRY	1	79	6	11/05/79	42	1	0	0	0	0	6	2	5	4	1	1	0	3	1	1	0	0	3	2	0	0
TRY	1	79	8	11/06/79	43	1	0	0	0	0	1	0	3	0	0	0	0	0	1	0	0	0	0	0	1	0
TRY	1	79	9	11/06/79	43	3	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0
TRY	1	79	16	11/06/79	54	3	0	0	0	0	3	6	12	3	1	0	0	7	2	1	1	2	1	0	0	0
TRY	1	79	27	11/08/79	57	1	0	0	0	0	2	9	14	1	0	0	0	0	0	0	0	0	0	0	0	0
TRY	1	79	25	11/08/79	59	3	0	0	0	0	0	0	0	1	0	0	2	5	0	2	1	1	1	0	1	0
TRY	1	79	23	11/08/79	61	2	0	0	0	0	1	0	3	3	0	0	0	0	0	3	2	0	0	0	0	0
TRY	1	79	38	11/09/79	29	1	0	0	0	0	6	6	14	3	1	0	2	3	2	5	3	2	6	6	3	3
TRY	1	79	39	11/09/79	29	2	0	0	0	0	1	2	2	3	0	0	0	1	0	0	0	0	0	0	0	0
TRY	1	79	40	11/09/79	29	3	0	0	0	0	1	2	0	1	0	0	0	1	0	0	0	1	0	0	0	0
TRY	1	79	37	11/09/79	31	1	0	0	0	0	2	3	4	4	0	0	1	1	1	0	1	0	0	0	0	0
TRY	1	79	35	11/09/79	31	3	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TRY	1	79	34	11/09/79	33	3	0	0	0	0	1	9	2	1	0	0	0	2	3	2	0	0	0	0	0	0
TRY	1	79	32	11/09/79	35	3	0	0	0	0	1	1	0	0	0	0	1	2	5	3	7	5	12	7	3	1
TRY	1	79	30	11/09/79	37	2	0	0	0	0	1	5	3	2	0	0	0	1	0	0	0	0	0	0	0	0
TRY	1	79	31	11/09/79	37	3	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	2	2	1	2	0
TRY	1	79	41	11/19/79	39	1	0	0	0	0	1	[illegible]	10	4	1	2	5	19	28	22	23	11	6	1	1	0
TRY	1	79	42	11/19/79	39	2	0	0	0	0	12	46	35	9	1	1	1	2	5	7	2	5	1	0	0	0
TRY	1	79	46	11/19/79	42	1	0	0	0	0	4	2	2	0	0	0	0	2	1	2	3	0	2	0	0	0
TRY	1	79	47	11/19/79	43	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0
TRY	1	79	48	11/19/79	43	3	0	0	0	0	1	19	20	6	0	1	9	31	16	6	2	1	1	0	0	0
TRY	1	79	55	11/19/79	54	3	0	0	0	0	1	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0
TRY	1	79	58	11/20/79	57	1	0	0	0	0	1	1	3	1	0	0	1	11	2	2	2	1	0	0	0	0
TRY	1	79	60	11/20/79	59	3	0	0	0	0	0	0	2	1	0	0	0	2	1	0	0	1	0	0	0	1
TRY	1	79	61	11/20/79	61	2	0	0	0	0	0	2	1	0	0	0	0	3	0	1	0	0	0	0	0	0
TRY	1	79	76	11/21/79	29	1	0	0	0	0	3	8	5	0	0	0	1	1	8	2	4	6	7	9	8	5
TRY	1	79	77	11/21/79	29	2	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	1	0	0
TRY	1	79	78	11/21/79	29	3	0	0	0	0	1	2	4	1	0	0	0	0	0	2	0	0	1	0	0	0
TRY	1	79	75	11/21/79	31	1	0	0	0	0	5	29	20	6	0	0	0	0	0	0	1	0	1	0	0	0
TRY	1	79	73	11/21/79	31	3	0	0	0	0	0	2	3	1	1	1	0	6	2	2	4	7	6	4	2	0
TRY	1	79	72	11/21/79	33	3	0	0	0	0	1	3	5	1	0	0	1	1	0	2	2	1	0	0	0	0
TRY	1	79	70	11/21/79	35	3	0	0	0	0	0	0	0	0	0	0	0	3	1	1	1	4	3	2	0	0
TRY	1	79	68	11/21/79	37	2	0	0	0	0	1	3	2	0	0	0	0	0	0	0	0	0	1	0	0	0
TRY	1	79	69	11/21/79	37	3	0	0	0	0	0	0	2	0	0	0	2	1	1	4	1	0	0	0	1	0
TRY	1	79	79	12/03/79	39	1	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0
TRY	1	79	80	12/03/79	39	2	0	0	0	0	4	11	11	7	1	1	1	7	5	2	4	4	1	0	0	0
TRY	1	79	92	12/04/79	29	1	0	0	0	0	1	1	1	2	0	0	0	0	1	0	1	0	2	0	0	0
TRY	1	79	93	12/04/79	29	2	0	0	0	0	2	8	3	0	0	0	0	0	0	0	0	0	0	0	0	0
TRY	1	79	94	12/04/79	29	3	0	0	0	1	1	10	1	1	0	0	0	0	1	0	0	1	2	0	0	0
TRY	1	79	89	12/04/79	31	3	0	0	0	1	1	4	5	4	0	0	3	6	9	3	6	2	1	0	0	0
TRY	1	79	88	12/04/79	33	3	0	0	0	0	2	2	5	3	0	0	1	6	6	3	3	5	1	2	3	0
TRY	1	79	86	12/04/79	35	3	0	0	0	0	0	0	2	0	0	0	0	2	5	1	2	3	9	3	2	2
TRY	1	79	84	12/04/79	37	2	0	0	0	0	2	2	6	1	0	0	0	1	2	0	1	0	0	0	0	0
TRY	1	79	85	12/04/79	37	3	0	0	0	1	0	2	12	0	0	1	4	9	3	6	3	4	6	5	0	2
TRY	1	79	95	12/05/79	42	1	0	0	0	0	0	0	2	0	1	0	0	0	3	0	0	1	0	0	1	0
TRY	1	79	96	12/05/79	43	1	0	0	0	0	0	1	2	0	0	0	0	0	1	1	0	0	0	0	0	0
TRY	1	79	97	12/05/79	43	3	0	0	0	0	0	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0
TRY	1	79	109	12/06/79	59	3	0	0	0	0	3	3	2	0	0	0	0	1	1	2	0	0	0	0	0	0

Table B-1 (contd)

YEAR	USE CODE	TC	SAMPLE	DATE	RIV MILE	SITE	LE 20	21 30	31 40	41 50	51 60	61 70	71 80	81 90	91 100	101 110	111 120	121 130	131 140	141 150	151 160	161 170	171 180	181 190	191 200	GE 201
TRY	1	79	108	12/06/79	61	2	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TRY	1	79	113	12/07/79	54	3	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0
01+04 IRT	1	13	589	11/05/79	39	2	0	0	0	1	6	19	20	9	1	0	2	4	3	1	1	4	1	2	2	1
01+04 IRT	1	13	593	11/05/79	42	1	0	0	0	0	2	7	3	4	0	0	2	3	2	1	0	1	0	0	0	0
01+04 IRT	1	13	594	11/06/79	43	1	0	0	0	0	6	13	11	0	0	0	0	2	2	0	2	0	0	0	0	0
01+04 IRT	1	13	603	11/06/79	54	3	0	0	0	0	1	4	14	5	0	1	3	4	5	1	3	0	2	0	0	0
01+04 IRT	1	13	612	11/08/79	59	3	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
01+04 IRT	1	13	610	11/08/79	61	2	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	0	0	0	0
01+04 IRT	1	13	625	11/09/79	29	1	0	0	0	0	2	1	8	4	0	0	0	0	1	1	0	0	1	1	3	6
01+04 IRT	1	13	626	11/09/79	29	2	0	0	0	0	0	3	5	1	0	0	0	0	0	0	0	0	0	0	0	0
01+04 IRT	1	13	627	11/09/79	29	3	0	0	0	0	0	1	4	0	0	0	0	1	1	0	0	0	0	0	0	0
01+04 IRT	1	13	624	11/09/79	31	1	0	0	0	1	4	15	8	1	0	0	0	0	1	0	0	0	0	0	0	0
01+04 IRT	1	13	621	11/09/79	33	3	0	0	0	0	4	11	4	4	0	0	0	0	2	0	0	0	0	0	0	0
01+04 IRT	1	13	619	11/09/79	35	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0
01+04 IRT	1	13	617	11/09/79	37	2	0	0	0	0	6	12	7	2	0	0	0	1	0	0	1	0	0	0	0	0
01+04 IRT	1	13	629	11/19/79	39	2	0	0	0	0	6	15	15	2	0	0	2	5	2	0	4	2	0	0	0	0
01+04 IRT	1	13	633	11/19/79	42	1	0	0	0	0	2	4	1	0	0	0	0	0	2	0	7	10	0	1	0	0
01+04 IRT	1	13	634	11/19/79	43	1	0	0	0	1	5	8	17	1	2	0	1	3	2	3	2	1	0	1	0	0
01+04 IRT	1	13	635	11/19/79	43	3	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0
01+04 IRT	1	13	642	11/19/79	54	3	0	0	0	0	6	14	19	7	1	0	1	11	5	6	2	0	0	0	0	0
01+04 IRT	1	13	645	11/20/79	57	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0
01+04 IRT	1	13	647	11/20/79	59	3	0	0	0	0	0	1	6	1	2	0	4	7	4	3	2	2	1	0	1	1
01+04 IRT	1	13	648	11/20/79	61	2	0	0	0	0	0	7	11	4	0	0	2	5	6	1	4	1	0	0	0	0
01+04 IRT	1	13	663	11/21/79	29	1	0	0	0	0	0	4	2	2	1	0	0	0	0	0	1	2	2	6	3	5
01+04 IRT	1	13	664	11/21/79	29	2	0	0	0	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0
01+04 IRT	1	13	665	11/21/79	29	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0
01+04 IRT	1	13	662	11/21/79	31	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
01+04 IRT	1	13	660	11/21/79	31	3	0	0	0	0	0	0	1	0	0	0	0	0	1	0	0	0	0	3	2	0
01+04 IRT	1	13	659	11/21/79	33	3	0	0	0	0	1	1	1	0	0	0	0	0	0	0	0	1	0	1	1	0
01+04 IRT	1	13	655	11/21/79	37	2	0	0	0	0	4	16	14	9	1	0	0	1	3	2	2	2	0	0	0	0
01+04 IRT	1	13	667	12/03/79	39	2	0	0	0	0	9	34	39	21	1	0	3	13	13	12	7	4	2	1	1	0
01+04 IRT	1	13	679	12/04/79	29	1	0	0	0	0	0	2	3	1	0	0	1	0	0	0	0	0	0	0	0	0
01+04 IRT	1	13	680	12/04/79	29	2	0	0	0	0	0	0	1	1	0	0	0	1	0	0	0	0	0	0	0	0
01+04 IRT	1	13	681	12/04/79	29	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
01+04 IRT	1	13	678	12/04/79	31	1	0	0	0	0	2	3	0	0	0	0	1	0	1	1	0	0	0	0	0	0
01+04 IRT	1	13	676	12/04/79	31	3	0	0	0	0	1	0	2	0	0	0	0	1	3	0	0	0	0	0	0	0
01+04 IRT	1	13	675	12/04/79	33	3	0	0	0	0	1	1	4	4	2	0	0	7	5	1	4	5	1	1	1	0
01+04 IRT	1	13	671	12/04/79	37	2	0	0	0	0	18	23	33	15	2	0	7	18	13	8	2	1	1	0	0	0
01+04 IRT	1	13	672	12/04/79	37	3	0	0	0	0	0	2	0	0	0	0	0	0	0	0	2	1	1	0	1	0
01+04 IRT	1	13	682	12/05/79	42	1	0	0	0	0	0	0	0	0	0	0	0	1	0	3	1	2	2	0	0	0
01+04 IRT	1	13	683	12/05/79	43	1	0	0	0	0	6	10	11	3	0	0	1	1	0	0	0	2	0	0	0	0
01+04 IRT	1	13	684	12/05/79	43	3	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0
01+04 IRT	1	13	696	12/06/79	59	3	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0
01+04 IRT	1	13	695	12/06/79	61	2	0	0	0	2	3	9	6	2	0	0	2	4	0	0	1	0	0	1	0	0
01+04 IRT	1	13	702	12/07/79	54	3	0	0	0	0	2	9	3	0	0	0	0	0	1	0	1	0	0	0	1	0
01+04 IRT	1	13	697	12/07/79	57	1	0	0	0	0	2	0	4	3	0	0	1	0	1	1	1	0	0	0	0	0

Table B-2

Length Data for White Perch Collected in Small (3.7-m head rope) and Large (7.8-m head rope) Trawls (in water ≥10 m), Hudson River Estuary, 1979

GEAR	USE CODE	TC	SAMPLE	DATE	RIV MILE	SITE	LE 20	21 30	31 40	41 50	51 60	61 70	71 80	81 90	91 100	101 110	111 120	121 130	131 140	141 150	151 160	161 170	171 180	181 190	191 200	GE 201
TRY	1	79	4	11/05/79	41	2	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TRY	1	79	5	11/05/79	42	3	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0
TRY	1	79	11	11/06/79	44	1	0	0	0	1	10	12	4	1	0	0	0	0	0	0	1	2	0	0	0	0
TRY	1	79	13	11/06/79	43	3	0	0	0	1	2	2	5	0	0	0	0	1	0	0	1	0	0	0	0	0
TRY	1	79	14	11/06/79	49	1	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
TRY	1	79	22	11/07/79	63	2	0	0	0	0	2	10	6	9	1	0	0	1	0	1	0	0	0	0	0	0
TRY	1	79	21	11/07/79	65	2	0	0	0	1	2	8	5	2	0	0	0	2	0	0	0	0	0	0	0	0
TRY	1	79	20	11/07/79	66	2	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0
TRY	1	79	19	11/07/79	67	2	0	0	0	0	1	3	3	0	0	0	0	3	1	1	1	0	0	0	0	0
TRY	1	79	18	11/07/79	72	2	0	0	0	0	0	2	0	0	0	0	1	0	0	1	0	0	0	0	0	0
TRY	1	79	17	11/07/79	74	2	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TRY	1	79	29	11/08/79	55	3	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TRY	1	79	28	11/08/79	57	2	0	0	0	0	0	1	4	0	0	0	0	1	0	0	0	0	0	0	0	0
TRY	1	79	36	11/09/79	31	2	0	0	0	0	10	24	23	7	1	0	0	1	0	0	0	0	0	0	0	0
TRY	1	79	43	11/19/79	39	3	0	0	0	0	3	9	7	1	0	0	0	0	0	0	0	0	0	0	0	0
TRY	1	79	44	11/19/79	41	2	0	0	0	0	1	3	2	2	0	0	0	0	3	1	0	0	0	0	0	0
TRY	1	79	45	11/19/79	42	3	0	0	0	1	0	1	0	0	0	0	1	0	0	1	0	0	0	0	0	0
TRY	1	79	50	11/19/79	44	1	0	0	0	1	7	11	10	0	0	0	0	1	2	2	1	3	0	0	0	0
TRY	1	79	49	11/19/79	44	2	0	0	0	0	1	2	2	0	0	0	1	0	0	0	0	0	0	0	0	0
TRY	1	79	52	11/19/79	48	3	0	0	0	0	5	2	1	1	0	0	1	0	0	0	0	0	0	0	0	0
TRY	1	79	53	11/19/79	49	1	0	0	0	0	0	0	2	0	1	0	0	1	0	0	0	0	0	0	0	0
TRY	1	79	54	11/19/79	54	2	0	0	0	0	5	1	0	0	0	0	0	0	1	0	0	0	0	0	0	0
TRY	1	79	56	11/20/79	55	3	0	0	0	1	12	19	14	3	0	0	0	1	5	1	1	1	0	0	0	0
TRY	1	79	57	11/20/79	57	2	0	0	0	0	0	8	13	4	3	0	0	7	3	1	2	1	1	0	0	0
TRY	1	79	62	11/20/79	63	2	0	0	0	0	1	1	2	3	1	1	0	0	0	0	0	0	0	0	0	0
TRY	1	79	63	11/20/79	65	2	0	0	0	0	3	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TRY	1	79	64	11/20/79	66	2	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0
TRY	1	79	65	11/20/79	67	2	0	0	0	0	7	11	8	2	0	1	0	2	2	0	0	0	0	0	0	0
TRY	1	79	66	11/20/79	72	2	0	0	0	0	0	0	2	1	0	1	0	1	1	1	0	0	0	0	0	0
TRY	1	79	67	11/20/79	74	2	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
TRY	1	79	74	11/21/79	31	2	0	0	0	0	0	2	4	0	0	0	0	0	0	0	0	0	0	0	0	0
TRY	1	79	71	11/21/79	33	2	0	0	0	1	1	5	7	1	0	0	0	0	1	0	0	0	0	0	0	0
TRY	1	79	83	12/03/79	42	3	0	0	0	0	0	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0
TRY	1	79	90	12/04/79	31	2	0	0	0	0	1	7	5	1	0	0	0	0	0	0	0	0	0	0	0	0
TRY	1	79	87	12/04/79	33	2	0	0	0	0	0	1	2	1	0	0	0	0	0	0	0	0	0	0	0	0
TRY	1	79	99	12/05/79	44	1	0	0	0	0	2	1	4	1	1	0	1	4	3	3	4	1	0	0	0	0
TRY	1	79	101	12/05/79	48	3	0	0	0	0	0	1	0	0	0	0	1	0	1	1	0	0	0	0	0	0
TRY	1	79	107	12/06/79	63	2	0	0	0	0	0	1	1	0	0	0	1	1	0	0	1	0	0	0	0	0
TRY	1	79	106	12/06/79	65	2	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TRY	1	79	105	12/06/79	66	2	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0
TRY	1	79	104	12/06/79	67	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0
TRY	1	79	103	12/06/79	72	2	0	0	0	0	0	0	1	0	0	0	0	0	1	0	0	0	0	0	0	0
TRY	1	79	102	12/06/79	74	2	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0
TRY	1	79	110	12/07/79	49	1	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0
TRY	1	79	112	12/07/79	54	2	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0
TRY	1	79	114	12/07/79	55	3	0	0	0	0	1	1	2	1	0	0	0	1	0	1	0	0	0	0	0	0

Table B-2 (contd)

GEAR	USE CODE	TC	SAMPLE	DATE	RIVER MILE	SITE	LE 20	21 30	31 40	41 50	51 60	61 70	71 80	81 90	91 100	101 110	111 120	121 130	131 140	141 150	151 160	161 170	171 180	181 190	191 200	OE 201
TRY	1	79	116	12/07/79	57	2	0	0	0	0	0	2	2	2	0	0	2	1	0	0	1	0	0	0	0	0
01+04 IRT	1	13	590	11/05/79	39	3	0	0	0	0	3	5	2	1	0	0	1	0	0	1	1	0	0	0	0	0
01+04 IRT	1	13	591	11/05/79	41	2	0	0	0	1	5	7	3	0	0	0	0	0	0	0	0	0	0	0	0	0
01+04 IRT	1	13	592	11/05/79	42	3	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
01+04 IRT	1	13	597	11/06/79	44	1	0	0	0	1	4	12	12	2	1	0	0	0	0	1	0	0	0	0	0	0
01+04 IRT	1	13	596	11/06/79	44	2	0	0	0	0	2	4	2	1	0	0	0	0	0	0	0	0	0	0	0	0
01+04 IRT	1	13	600	11/06/79	48	3	0	0	0	0	6	17	14	3	0	1	1	3	5	4	3	1	1	0	0	0
01+04 IRT	1	13	602	11/06/79	54	2	0	0	0	0	1	2	0	0	0	0	0	0	0	0	0	1	0	0	0	0
01+04 IRT	1	13	609	11/07/79	63	2	0	0	0	0	0	9	12	4	0	0	0	1	1	2	2	0	0	0	0	0
01+04 IRT	1	13	608	11/07/79	65	2	0	0	0	0	0	9	11	3	0	0	0	0	3	0	0	0	0	0	0	0
01+04 IRT	1	13	607	11/07/79	66	2	0	0	0	0	0	3	1	0	1	0	1	1	2	1	2	0	1	0	0	0
01+04 IRT	1	13	606	11/07/79	67	2	0	0	0	0	4	13	14	6	0	0	3	5	1	1	3	0	0	0	0	0
01+04 IRT	1	13	605	11/07/79	72	2	0	0	0	0	0	5	3	0	0	0	0	2	0	0	0	0	0	0	0	0
01+04 IRT	1	13	604	11/07/79	74	2	0	0	0	0	0	0	2	1	0	0	0	1	2	1	0	0	0	0	0	0
01+04 IRT	1	13	616	11/08/79	55	3	0	0	0	0	2	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0
01+04 IRT	1	13	615	11/08/79	57	2	0	0	0	0	0	10	13	4	2	0	2	2	2	1	2	0	0	0	0	0
01+04 IRT	1	13	623	11/09/79	31	2	0	0	0	1	3	6	3	0	0	0	0	0	0	0	0	0	0	0	0	0
01+04 IRT	1	13	620	11/09/79	33	2	0	0	0	0	0	11	10	2	0	0	0	0	0	0	0	0	0	0	0	0
01+04 IRT	1	13	630	11/19/79	39	3	0	0	0	1	12	37	32	12	0	0	1	0	1	1	1	1	0	1	1	0
01+04 IRT	1	13	631	11/19/79	41	2	0	0	0	4	40	92	52	13	1	0	1	5	1	0	0	0	0	0	0	0
01+04 IRT	1	13	632	11/19/79	42	3	0	0	0	0	0	6	3	2	0	0	0	0	0	1	0	1	0	0	0	0
01+04 IRT	1	13	637	11/19/79	44	1	0	0	0	0	5	23	18	11	0	0	2	4	7	2	2	0	0	0	1	0
01+04 IRT	1	13	636	11/19/79	44	2	0	0	0	0	3	5	3	2	0	0	0	0	0	0	1	0	0	0	0	0
01+04 IRT	1	13	639	11/19/79	48	3	0	0	0	0	4	12	15	3	0	0	0	4	3	0	0	1	3	0	0	0
01+04 IRT	1	13	640	11/19/79	49	1	0	0	0	1	3	6	9	0	0	0	1	1	2	2	0	0	0	0	0	0
01+04 IRT	1	13	641	11/19/79	54	2	0	0	0	0	5	15	11	3	1	0	1	0	0	0	0	0	0	0	0	0
01+04 IRT	1	13	643	11/20/79	55	3	0	0	0	1	7	31	23	8	0	0	1	5	4	1	4	1	1	0	0	0
01+04 IRT	1	13	644	11/20/79	57	2	0	0	0	0	1	9	14	1	0	0	1	2	2	0	1	0	0	0	0	0
01+04 IRT	1	13	649	11/20/79	63	2	0	0	0	0	2	9	7	1	0	0	0	0	1	3	2	0	1	0	0	0
01+04 IRT	1	13	650	11/20/79	65	2	0	0	0	0	6	6	5	2	0	0	0	2	1	0	0	1	0	0	0	0
01+04 IRT	1	13	651	11/20/79	66	2	0	0	0	0	0	9	10	3	0	0	0	3	0	3	2	0	0	0	0	0
01+04 IRT	1	13	652	11/20/79	67	2	0	0	0	1	13	14	10	6	1	0	2	2	1	2	3	0	0	0	1	0
01+04 IRT	1	13	653	11/20/79	72	2	0	0	0	0	0	1	1	1	0	0	0	2	3	0	1	0	0	0	0	0
01+04 IRT	1	13	654	11/20/79	74	2	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0
01+04 IRT	1	13	661	11/21/79	31	2	0	0	0	0	0	0	2	0	0	0	0	0	0	0	1	1	0	0	0	0
01+04 IRT	1	13	658	11/21/79	33	2	0	0	0	0	3	9	13	3	1	0	0	0	2	3	1	3	0	1	0	0
01+04 IRT	1	13	668	12/03/79	39	3	0	0	0	1	4	9	4	2	0	0	0	0	0	1	1	0	0	0	0	0
01+04 IRT	1	13	669	12/03/79	41	2	0	0	0	0	5	6	5	0	1	0	0	0	0	0	1	0	0	0	0	0
01+04 IRT	1	13	670	12/03/79	42	3	0	0	0	0	0	3	2	1	0	0	1	3	2	0	1	1	1	0	0	0
01+04 IRT	1	13	677	12/04/79	31	2	0	0	0	0	1	2	0	1	0	0	0	1	0	0	1	0	0	0	0	0
01+04 IRT	1	13	674	12/04/79	33	2	1	0	0	0	2	1	7	1	0	0	1	0	0	1	0	0	0	0	0	0
01+04 IRT	1	13	686	12/05/79	44	1	0	0	0	0	1	3	3	0	1	0	0	1	2	2	0	0	0	0	0	0
01+04 IRT	1	13	685	12/05/79	44	2	0	0	0	0	0	0	1	0	0	0	0	0	1	0	0	0	0	0	0	0
01+04 IRT	1	13	688	12/05/79	48	3	0	0	0	0	1	11	6	6	1	1	0	4	3	2	2	1	1	0	0	0
01+04 IRT	1	13	694	12/06/79	63	2	0	0	0	0	0	0	2	1	0	0	0	0	0	0	1	0	0	0	0	0
01+04 IRT	1	13	693	12/06/79	65	2	0	0	0	1	0	0	2	2	0	0	0	0	1	0	1	0	0	0	0	0
01+04 IRT	1	13	692	12/06/79	66	2	0	0	0	0	3	3	1	0	0	0	0	1	0	0	0	0	0	0	0	0
01+04 IRT	1	13	691	12/06/79	67	2	0	0	0	0	1	0	2	0	0	0	1	0	0	1	0	0	0	0	0	0
01+04 IRT	1	13	690	12/06/79	72	2	0	0	0	1	1	1	2	0	0	0	0	1	1	1	0	0	0	0	0	0
01+04 IRT	1	13	689	12/06/79	74	2	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0
01+04 IRT	1	13	700	12/07/79	49	1	0	0	0	0	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0
01+04 IRT	1	13	701	12/07/79	54	2	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0
01+04 IRT	1	13	703	12/07/79	55	3	0	0	0	0	2	4	6	0	0	0	0	0	1	0	0	0	0	0	0	0
01+04 IRT	1	13	698	12/07/79	57	2	0	0	0	0	6	22	28	6	2	0	1	1	4	0	0	0	0	0	0	0

Table B-3

Length Data for Atlantic Tomcod Collected in Small (3.7-m head rope) and Large (7.8-m head rope) Trawls (in water <10 m), Hudson River Estuary, 1979

GEAR	USE CODE	TC	SAMPLE	DATE	RIVMILE	SITE	LE 20	21 30	31 40	41 50	51 60	61 70	71 80	81 90	91 100	101 110	111 120	121 130	131 140	141 150	151 160	161 170	171 180	181 190	191 200	6E 201
TRY	1	79	2	11/05/79	39	2	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0
TRY	1	79	6	11/05/79	42	1	0	0	0	0	0	0	0	0	0	0	0	3	1	1	0	0	0	0	0	0
TRY	1	79	8	11/06/79	43	1	0	0	0	0	0	0	0	0	0	1	2	3	3	1	0	0	0	0	0	0
TRY	1	79	16	11/06/79	54	3	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0
TRY	1	79	23	11/08/79	61	2	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0
TRY	1	79	38	11/09/79	29	1	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1	1	0	1	0	0
TRY	1	79	39	11/09/79	29	2	0	0	0	0	0	0	0	0	0	1	1	0	3	3	2	1	0	0	0	0
TRY	1	79	40	11/09/79	29	3	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0
TRY	1	79	37	11/09/79	31	1	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	0	0	0	0	0
TRY	1	79	35	11/09/79	31	3	0	0	0	0	0	0	0	0	0	0	0	3	1	1	3	0	0	0	0	0
TRY	1	79	34	11/09/79	33	3	0	0	0	0	0	0	0	0	0	0	0	1	3	0	0	0	0	0	0	0
TRY	1	79	30	11/09/79	37	2	0	0	0	0	0	0	0	0	0	0	1	0	0	2	1	0	0	0	0	0
TRY	1	79	46	11/19/79	42	1	0	0	0	0	0	0	0	0	0	0	1	0	3	1	1	0	0	0	0	0
TRY	1	79	47	11/19/79	43	1	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0
TRY	1	79	55	11/19/79	54	3	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0
TRY	1	79	61	11/20/79	61	2	0	0	0	0	0	0	0	0	0	0	0	0	1	2	0	0	0	0	0	0
TRY	1	79	76	11/21/79	29	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	2	3	2	0	0	0
TRY	1	79	77	11/21/79	29	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0
TRY	1	79	78	11/21/79	29	3	0	0	0	0	0	0	0	0	0	0	2	0	3	7	3	3	1	0	0	0
TRY	1	79	75	11/21/79	31	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0
TRY	1	79	73	11/21/79	31	3	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0	1	0	0	0
TRY	1	79	72	11/21/79	33	3	0	0	0	0	0	0	0	0	0	0	0	1	1	2	3	0	1	0	0	0
TRY	1	79	68	11/21/79	37	2	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0
TRY	1	79	80	12/03/79	39	2	0	0	0	0	0	0	0	0	0	0	1	0	1	1	0	0	0	0	0	0
TRY	1	79	93	12/04/79	29	2	0	0	0	0	0	0	0	0	0	0	0	1	1	3	1	0	0	0	0	0
TRY	1	79	94	12/04/79	29	3	0	0	0	0	0	0	0	0	0	0	0	1	0	4	2	2	0	0	0	0
TRY	1	79	89	12/04/79	31	3	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0
TRY	1	79	83	12/04/79	33	3	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	2	0	2	0	0
TRY	1	79	86	12/04/79	35	3	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0
TRY	1	79	96	12/05/79	43	1	0	0	0	0	0	0	0	0	0	0	0	1	2	0	0	0	1	0	0	0
01+04 IRT	1	13	589	11/05/79	39	2	0	0	0	0	0	0	0	0	1	0	2	2	3	2	0	0	1	0	0	0
01+04 IRT	1	13	593	11/05/79	42	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0
01+04 IRT	1	13	594	11/06/79	43	1	0	0	0	0	0	0	0	0	0	0	2	1	3	1	2	0	0	0	0	0
01+04 IRT	1	13	603	11/06/79	54	3	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0
01+04 IRT	1	13	610	11/08/79	61	2	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0
01+04 IRT	1	13	625	11/09/79	29	1	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0	0	0	0	0	0
01+04 IRT	1	13	626	11/09/79	29	2	0	0	0	0	0	0	0	0	0	1	1	1	0	2	0	0	0	0	0	0
01+04 IRT	1	13	627	11/09/79	29	3	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0
01+04 IRT	1	13	624	11/09/79	31	1	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0
01+04 IRT	1	13	617	11/09/79	37	2	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0
01+04 IRT	1	13	629	11/19/79	39	2	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0
01+04 IRT	1	13	634	11/19/79	43	1	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0	0	1	0	0
01+04 IRT	1	13	642	11/19/79	54	3	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1	1	0	0	0	0
01+04 IRT	1	13	647	11/20/79	59	3	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0
01+04 IRT	1	13	648	11/20/79	61	2	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0
01+04 IRT	1	13	653	11/21/79	29	1	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	1	0	0	0	0
01+04 IRT	1	13	664	11/21/79	29	2	0	0	0	0	0	0	0	0	0	0	1	1	0	3	0	0	0	0	0	0
01+04 IRT	1	13	668	11/21/79	29	3	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0
01+04 IRT	1	13	667	12/03/79	39	2	0	0	0	0	0	0	0	0	0	0	0	2	1	1	0	2	3	3	3	2
01+04 IRT	1	13	680	12/04/79	29	2	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0
01+04 IRT	1	13	675	12/04/79	33	3	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2	1	1	0	0	1
01+04 IRT	1	13	671	12/04/79	37	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0
01+04 IRT	1	13	683	12/05/79	43	1	0	0	0	0	0	0	0	0	0	0	1	0	1	1	0	0	0	0	0	0
01+04 IRT	1	13	702	12/07/79	54	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0

Table B-4

Length Data for Atlantic Tomcod Collected in Small (3.7-m head rope) and Large (7.8-m head rope) Trawls (in water ≥10 m), Hudson River Estuary, 1979

GEAR	MESH CODE	TC	SAMPLE	DATE	RIVER MILE	SITE	LEN 20	LEN 30	LEN 40	LEN 50	LEN 60	LEN 70	LEN 80	LEN 90	LEN 100	LEN 110	LEN 120	LEN 130	LEN 140	LEN 150	LEN 160	LEN 170	LEN 180	LEN 190	LEN 200	LEN 201
TRY	1	79	5	11/05/79	42	3	0	0	0	0	0	0	0	0	0	0	1	2	0	1	0	0	0	0	0	0
TRY	1	79	11	11/06/79	44	1	0	0	0	0	0	0	0	0	0	2	1	2	3	2	0	0	0	0	0	0
TRY	1	79	10	11/06/79	44	2	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0
TRY	1	79	14	11/06/79	49	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0
TRY	1	79	22	11/07/79	63	2	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0
TRY	1	79	21	11/07/79	65	2	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0
TRY	1	79	20	11/07/79	66	2	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0
TRY	1	79	19	11/07/79	67	2	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0
TRY	1	79	29	11/08/79	55	3	0	0	0	0	0	0	0	0	0	1	2	0	0	1	0	0	0	0	0	0
TRY	1	79	28	11/08/79	57	2	0	0	0	0	0	0	0	0	0	0	0	1	2	0	1	0	0	0	0	0
TRY	1	79	36	11/09/79	31	2	0	0	0	0	0	0	0	0	0	1	0	0	3	0	0	0	0	0	0	0
TRY	1	79	33	11/09/79	33	2	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0
TRY	1	79	43	11/19/79	39	3	0	0	0	0	0	0	0	0	0	0	0	3	2	0	0	0	0	0	0	0
TRY	1	79	45	11/19/79	42	3	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0
TRY	1	79	49	11/19/79	44	2	0	0	0	0	0	0	0	0	0	1	1	1	2	0	0	0	0	0	0	0
TRY	1	79	54	11/19/79	54	2	0	0	0	0	0	0	0	0	0	3	2	8	0	0	0	0	0	0	0	0
TRY	1	79	56	11/20/79	55	3	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0
TRY	1	79	57	11/20/79	57	2	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0
TRY	1	79	65	11/20/79	67	2	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0
TRY	1	79	67	11/20/79	74	2	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0
TRY	1	79	74	11/21/79	31	2	0	0	0	0	0	0	0	0	0	1	6	3	2	1	3	1	0	0	1	0
TRY	1	79	71	11/21/79	33	2	0	0	0	0	0	0	0	0	1	0	0	1	0	1	1	0	0	0	0	0
TRY	1	79	82	12/03/79	41	2	0	0	0	0	0	0	0	0	0	0	1	2	0	2	2	0	0	0	0	0
TRY	1	79	83	12/03/79	42	3	0	0	0	0	0	0	0	0	0	0	1	0	2	1	0	0	0	0	0	0
TRY	1	79	90	12/04/79	31	2	0	0	0	0	0	0	0	0	0	0	0	0	4	2	0	0	0	0	0	0
TRY	1	79	87	12/04/79	33	2	0	0	0	0	0	0	0	0	0	0	1	2	1	0	1	0	0	0	0	0
TRY	1	79	99	12/05/79	44	1	0	0	0	0	0	0	0	0	0	0	2	3	1	0	0	0	0	1	0	0
TRY	1	79	107	12/06/79	63	2	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0
TRY	1	79	105	12/06/79	66	2	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0
TRY	1	79	104	12/06/79	67	2	0	0	0	0	0	0	0	0	0	0	1	0	1	1	0	0	0	0	0	0
TRY	1	79	103	12/06/79	72	2	0	0	0	0	0	0	0	0	0	0	0	2	1	0	0	0	0	0	0	0
TRY	1	79	116	12/07/79	57	2	0	0	0	0	0	0	0	0	0	0	0	1	2	4	0	0	1	0	0	0
01+04 IRT	1	13	590	11/05/79	39	3	0	0	0	0	0	0	0	0	0	2	2	1	2	0	0	0	0	0	0	0
01+04 IRT	1	13	591	11/05/79	41	2	0	0	0	0	0	0	0	0	0	2	3	5	3	0	0	0	0	0	0	0
01+04 IRT	1	13	592	11/05/79	42	3	0	0	0	0	0	0	0	0	0	2	3	2	0	0	0	0	0	0	0	0
01+04 IRT	1	13	597	11/06/79	44	1	0	0	0	0	0	0	0	0	1	3	8	8	2	0	2	0	0	0	0	0
01+04 IRT	1	13	596	11/06/79	44	2	0	0	0	0	0	0	0	0	0	2	5	4	4	0	0	1	0	0	0	0
01+04 IRT	1	13	600	11/06/79	48	3	0	0	0	0	0	0	0	0	0	0	1	0	2	0	0	0	0	0	0	0
01+04 IRT	1	13	601	11/06/79	49	1	0	0	0	0	0	0	0	0	0	2	1	3	0	0	0	0	0	0	0	0
01+04 IRT	1	13	602	11/06/79	54	2	0	0	0	0	0	0	0	0	0	1	2	2	1	1	0	0	0	0	0	0
01+04 IRT	1	13	608	11/07/79	65	2	0	0	0	0	0	0	0	0	0	1	1	1	1	0	1	0	0	0	0	0
01+04 IRT	1	13	607	11/07/79	66	2	0	0	0	0	0	0	0	0	3	5	4	3	3	1	0	0	0	0	0	0
01+04 IRT	1	13	606	11/07/79	67	2	0	0	0	0	0	0	0	0	0	0	2	3	0	0	0	0	0	0	0	0
01+04 IRT	1	13	605	11/07/79	72	2	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0
01+04 IRT	1	13	604	11/07/79	74	2	0	0	0	0	0	0	0	0	0	2	0	1	1	1	0	0	0	0	0	0
01+04 IRT	1	13	616	11/08/79	55	3	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0

Table B-4 (contd)

GEAR	USE CODE	TC	SAMPLE	DATE	RIVER MILE	SITE	LE 20	21 30	31 40	41 50	51 60	61 70	71 80	81 90	91 100	101 110	111 120	121 130	131 140	141 150	151 160	161 170	171 180	181 190	191 200	GE 201
01+04 IRT	1	13	615	11/08/79	57	2	0	0	0	0	0	0	0	0	0	0	3	4	3	1	0	0	0	0	0	0
01+04 IRT	1	13	620	11/09/79	33	2	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	2	1	2	3
01+04 IRT	1	13	630	11/19/79	39	3	0	0	0	0	0	0	0	0	0	0	0	0	1	3	0	0	0	1	1	0
01+04 IRT	1	13	631	11/19/79	41	2	0	0	0	0	0	0	0	0	1	0	2	9	8	4	3	0	0	0	0	0
01+04 IRT	1	13	632	11/19/79	42	3	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0
01+04 IRT	1	13	637	11/19/79	44	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0
01+04 IRT	1	13	636	11/19/79	44	2	0	0	0	0	0	0	0	0	0	0	1	3	1	0	1	0	0	0	0	0
01+04 IRT	1	13	639	11/19/79	48	3	0	0	0	0	0	0	0	0	0	0	2	0	1	2	0	1	0	0	0	0
01+04 IRT	1	13	640	11/19/79	49	1	0	0	0	0	0	0	0	0	0	0	0	4	3	0	1	0	0	0	0	0
01+04 IRT	1	13	641	11/19/79	54	2	0	0	0	0	0	0	0	0	0	0	0	2	4	7	2	1	0	0	0	0
01+04 IRT	1	13	643	11/20/79	55	3	0	0	0	0	0	0	0	0	0	0	0	3	3	3	0	1	0	0	0	0
01+04 IRT	1	13	644	11/20/79	57	2	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0
01+04 IRT	1	13	650	11/20/79	65	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0
01+04 IRT	1	13	651	11/20/79	66	2	0	0	0	0	0	0	0	0	0	0	3	15	7	4	1	1	0	0	0	0
01+04 IRT	1	13	652	11/20/79	67	2	0	0	0	0	0	0	0	0	0	0	0	1	2	1	0	2	0	0	0	0
01+04 IRT	1	13	653	11/20/79	72	2	0	0	0	0	0	0	0	0	0	0	2	8	9	2	0	0	0	0	0	0
01+04 IRT	1	13	654	11/20/79	74	2	0	0	0	0	0	0	0	0	0	0	1	5	4	7	4	3	0	0	0	0
01+04 IRT	1	13	661	11/21/79	31	2	0	0	0	0	0	0	0	0	0	0	1	1	0	0	1	0	0	0	0	0
01+04 IRT	1	13	658	11/21/79	33	2	0	0	0	0	0	0	0	0	0	0	0	1	0	0	2	0	0	0	0	0
01+04 IRT	1	13	668	12/03/79	39	3	0	0	0	0	0	0	0	0	0	0	1	2	4	7	7	4	0	0	0	0
01+04 IRT	1	13	669	12/03/79	41	2	0	0	0	0	0	0	0	0	0	0	1	3	4	8	5	2	1	0	0	0
01+04 IRT	1	13	670	12/03/79	42	3	0	0	0	0	0	0	0	0	0	0	0	2	2	8	1	1	0	0	0	0
01+04 IRT	1	13	677	12/04/79	31	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0
01+04 IRT	1	13	674	12/04/79	33	2	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0
01+04 IRT	1	13	685	12/05/79	44	2	0	0	0	0	0	0	0	0	0	0	0	3	10	10	7	1	2	0	0	0
01+04 IRT	1	13	693	12/06/79	65	2	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0
01+04 IRT	1	13	692	12/06/79	66	2	0	0	0	0	0	0	0	0	0	0	0	6	7	4	5	4	1	0	0	0
01+04 IRT	1	-13	691	12/06/79	67	2	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0
01+04 IRT	1	13	690	12/06/79	72	2	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0
01+04 IRT	1	13	689	12/06/79	74	2	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0
01+04 IRT	1	13	700	12/07/79	49	1	0	0	0	0	0	0	0	0	0	0	0	0	1	4	3	0	0	0	0	0
01+04 IRT	1	13	698	12/07/79	57	2	0	0	0	0	0	0	0	0	0	0	0	0	0	2	3	0	0	0	0	0

APPENDIX C

STATISTICAL ANALYSES FOR WHITE PERCH LENGTH DATA

Table C-1

Results of t-Test on Length Data of Yearling and Older White Perch from Shallow Water Sampling Sites, Hudson River Estuary, November-December 1979

Gear	Sample Size	Mean	Standard Error
Small Trawl	712	150.20	0.880
Large Trawl	413	147.26	1.226

$t_{0.05,1123} = 1,966$; $p = 0.0495$

Table C-2

Results of Analysis of Variance on Length Data of Young-of-the-Year White Perch from Deep and Shallow Water Sampling Sites, Hudson River Estuary, November-December 1979

Source	df	MS	F Value	p>F
Stratum*	1	2102.14	24.62	0.0001
Gear	1	124.31	1.46	0.2276
Stratum X Gear	1	0.00	0.00	1.0000
Error	3013	85.37		

*Differences between stratum means: shallow 71.35
deep 69.68