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Juvenile Finfish and Blue Crab Stock Assessment Program York River Random Stratified Bottom Trawl Survey Data Summary Report Volume R1989-1990

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Juvenile Finfish and Blue Crab Stock Assessment Program

York River Random Stratified Bottom Trawl Survey

Data Summary Report

Volume R1989 - 1990

By

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Special Scientific Report No. 124 Volume R89-90

College of William and Mary

School of Marine Science

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Gloucester Point, Virginia 23062

L. Donelson Wright, Dean and Director

October 1996

RECENT VIMS TRAWL SURVEY CONTRIBUTIONS

- Austin, H.M. 1993. Evidence for a strong 1987 year class of striped bass in Virginia. Va. Mar. Res. Rpt. 93-07. 22p.
- Bonzek, C.F., P.J. Geer, and H.M. Austin. 1995. VIMS juvenile fish trawl survey. Juvenile indices 1979-1994. Virginia Sea Grant Marine Resource Advisory No. 57. Virginia Sea Grant Marine Advisory Program, College of William and Mary, VIMS/SMS, Gloucester Pt., VA. 23062. 15 p.
- Geer, P.J., H.M. Austin, and D.N. Hata. 1995. Estimation of relative abundance of recreationally important finfish in the Virginia portion of Chesapeake Bay July 1994 - June 1995. Annual report to VMRC/USFWS. Virginia Institute of Marine Science, Gloucester Pt., Va. 23062. 171 p.
- Geer, P.J. 1993. Virginia report for Atlantic Croaker and Spot. Pgs. 24-33, 103-112. *In* Proceedings of a workshop on Spot (*Leiostomus xanthurus*) and Atlantic Croaker (*Micropogonias undulatus*). Ed. by L.L. Kline and H. Speirs. Special Report No. 25 of the Atlantic States Marine Fisheries Commission, October 26-27, 1993, Virginia Institute of Marine Science, Gloucester Pt., Va. 160 p.
- Geer, P.J. 1994. Virginia Institute of Marine Science's Trawl Survey. Pgs. 61-79. *In* Proceedings of the workshop on the collection and use of trawl survey data for fisheries management. Ed by T. Berger. Special Report No. 35 of the Atlantic States Marine Fisheries Commission, August 15-17, 1994, Charleston, SC. 192 p.
- Hata, D.N. 1996. Comparison of gears and vessels used in the Virginia Institute of Marine Science juvenile finfish trawl survey. *In review*.
- Land, M.F., P.J. Geer, C.F. Bonzek, and H.M. Austin. 1996. Juvenile finfish and blue crab stock assessment program York River random bottom trawl survey data summary report. Volume R1991-1994. Va. Inst. Mar. Sci. Spec. Rpt. No. 124. Virginia Institute of Marine Science, Gloucester Pt., Va. 23062. 211 p.
- Land, M.F., P.J. Geer, C.F. Bonzek, and H.M. Austin. 1995. Juvenile finfish and blue crab stock assessment program bottom trawl survey annual data summary report series. Volume 1994. Va. Inst. Mar. Sci. Spec. Rpt. No. 124. Virginia Institute of Marine Science, Gloucester Pt., Va. 23062. 211 p.
- Mosca, T.C., H.M. Austin, and D.M. Plotner. 1994. Evidence for a relation between white perch young-of-the-year index and indices of later life stages. Va. Mar. Res. Rpt. 94-8.

A list of all published material using VIMS trawl survey data is available upon request. All contributions are available from the author or through the VIMS library. The annual data report series presently dates back to 1986.

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JUVENILE FINFISH AND BLUE CRAB STOCK ASSESSMENT PROGRAM

YORK RIVER RANDOM STRATIFIED BOTTOM TRAWL SURVEY

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VOLUME R1989-1990

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We gratefully acknowledge federal and state agencies who provided financial support: Wallop Breaux and U.S. Fish and Wildlife Service Sportfish Restoration Project F104 (through the Virginia Marine Resources Commission). This is the continuation of an attempt to summarize portions of the York River Random Stratified Survey. Future efforts will involve incorporation of these data into the yearly Bottom Trawl Survey Annual Data Report Series.

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INTRODUCTION

The Virginia Institute of Marine Science (VIMS) has conducted a bottom trawl survey of some fashion since 1955. Historically, sampling has occurred as mid-channel transects at fixed locations spaced at approximately five mile intervals. In the early 1970's, work was performed on the Mobjack Bay and Piankatank River using the standard 30 ft. fishing gear from a large research platform, with a 16 ft. gear towed from an outboard skiff or Chesapeake deadrise at shallow stations (≤ 12 ft.). Linda Pushee Mercer initiated the first random survey of the York River in 1971-72, as part of the results of a pipefish study. This survey, and the realization of an increasing need for a random survey of the main stem Bay and tributaries, were factors in implementing a Bay wide random survey in 1973. This program had a very large spatial coverage in various depth strata, but was very limited in its temporal component. Sampling occurred on a semi-annual basis primarily in January and February, and again in July (Wojcik, 1988a.) Based on previous results from the fixed station sampling, effort was high to provide the desired margin of error (300-700 trawls per survey). This survey was discontinued after several years because of decreased funding. Subsequently, the program returned to a fixed station transect design. These river transects continued monthly until 1988, when the Chesapeake Bay Stock Assessment Committee (CBSAC) funded a monthly random stratified survey of the main stem Bay (Chittenden, 1991) in hopes that this initiative would produce similar surveys of Virginia's major tributaries, the James, York, and Rappahannock Rivers. With this in mind, a pilot survey similar in design was established and implemented for the York River (for logistic reasons), beginning in October 1989. This work was performed independent of, and with a different vessel and smaller fishing gear than the primary sampling of the Bay and tributaries. With the purchase of the solely dedicated trawler *R/V Fish Hawk*, this random survey of the York was later incorporated and sampled along with the historic fixed stations (June 1991).

METHODS

The pilot survey of the York River was initiated in October 1989 using a 22 ft. semi-balloon otter trawl (Marinovich Gulf Shrimp Trawl) with 1.5 in. stretched mesh body, a 0.25 in. mesh cod liner, attached tickler chain, 60 ft. bridle length, 30 in. x 15 in. otter board doors, (VIMS gear code 107), towed from the side of a 28 ft. outboard Garvey. This survey was conducted independent of the mid-channel fixed station sampling which sampled with a 30 ft version of this same gear from the *R/V Captain John Smith*. A sampling day was defined as the period between sunrise and sunset.

Methods were identical to the primary survey. At each location, station identification, beginning and ending coordinates, depth, tidal current stage, secchi depth, tow direction (upstream vs. downstream and relative to the current), beginning and ending time, tow duration, air temperature, wind direction, wind speed, weather conditions, and sea state were recorded. Surface and bottom hydrographic data (temperature, salinity, and dissolved oxygen), were recorded immediately following the tow at depth consistent with that of the trawling depth. Onboard processing of catches involved separating them according to species, and measuring individual lengths (to the nearest millimeter). For fish species, all lengths were taken as fork lengths unless no fork was present for a given species, in which case total length was measured.

For blue crabs, point-to-point carapace width was measured, with males, juvenile females, and adult females processed separately. All length data were entered directly into computer files using electronic measuring boards. Subsampling was performed when large homogeneous catches of a species were encountered. On these occasions, a subsampling protocol was followed with enumeration of the discarded sample taking priority over subsampling by volume. When subsampling was performed by volume, the total weights of the discarded sample and of the subsample were taken and the individual fish in the subsample were enumerated and measured. An average weight per fish was then estimated from the subsample (total subsample weight / total subsample number). Number of fish in the discarded catch was estimated by dividing total discarded weight by calculated average weight. Station and environmental data were recorded first on paper and later transferred to a computer database. A sample data sheet appears in Appendix A. To distinguish the random stations from the fixed mid-channel transect survey, the prefix 'RS' was assigned in naming the database. When the surveys began in parallel (June, 1991) an 'R' was designated in the cruise number for the random stations allowing for easy separation of the surveys.

SAMPLING DESIGN

The random survey was stratified by water depth and longitude. The VIMS Chesapeake Bay geographic segmentation divides each river into approximate five mile segments. Main stem York River comprised six of these segments up to West Point, Virginia, where the river forks into the Pamunkey and Mattaponi Rivers. The river was divided into three regions, bottom, lower, and upper consisting of two VIMS segments each. Within each region were three depth strata, 4-12 ft, 12-30ft and ≥ 30 ft, (inclusive of the lower value). If certain depths were limited in a given region, depth strata were combined, resulting in 16 strata total. Trawl sites within a strata were provided by the National Ocean Survey's Chesapeake Bay bathymetry map, a data base containing depth records measured or calculated at 15 cartographic second intervals. In areas where these data were missing or sparse, depth records were created by assigning coordinates and a depth to each quarter mile quadrant, using similar techniques as the NOS data base.

Each month 15 stations were selected randomly from these files, providing one or two stations per strata. The number varied seasonally according to changes in distribution, with sampling intensity being highest in the most heavily used strata. The number of potential sites and approximate areas of each strata which are subsequently used as weighing factors in calculating abundance estimates are given in Appendix C. A map of the strata appears in Appendix D. Random sampling was not performed in the Pamunkey or Mattaponi Rivers.

RESULTS

Catch data in this report represent total numbers caught. Due to the difficulty of taking weights at sea on a small vessel, weights are not typically recorded in the field except for subsampling purposes of unusually large catches. Although biomass is an important parameter, it is felt accurate length weight relationships gathered in the laboratory would provided better estimates than those collected onboard. For this reason, biomass is not included in this report.

Figure 2 shows the locations of the stations occupied each month from October 1989 to July 1990. The blocks represent the fixed mid-channel stations, with the lines separating the bottom, lower and upper York River. Table 1 shows the codes used for the various hydrographic and atmospheric parameters. The corresponding station information is located in Tables 2-21.

Figures 3-18 geographically illustrate catch by month and station for the predominant species (the 13 historically most abundant finfish plus three categories of blue crabs) over the York River sampling area for 1989-1990 combined. These figures provide a helpful synopsis for showing temporal and geographic distribution of these species.

Figures 19-34 provide monthly length frequency summaries for the above selected species for October 1989-July 1990. These graphs and accompanying statistics are useful in separating young-of-the-year from older fish since age of each fish is not taken. Calendar year is not the optimal way to present such data for species spawning late in the year, however the figures are presented this way for convenience and consistency.

Catch, catch per unit effort (CPUE), and length statistics for the data pooled by year are listed in Tables 22-25. Similar data for each month begins with Table 26.

DISCUSSION

The purpose of this report is to provide a quick visual summary of the data collected from the random stratified pilot survey of the York River for the period October 1989 to July 1990. It must also be noted that these data presented here were collected independent of the fixed transect surveys. Different vessels and gears were used for the two surveys with direct side-by-side comparisons never having been performed. The more recent random surveys (June 1991-1995) aboard the R/V *Fish Hawk* with the primary fishing gear, would provide a better comparison with the fixed transect survey. A more analytical review of these data and how they related to the fixed station transects is warranted to insure continuance of the data base. It would be prudent to continue the historical fixed station sampling to provide a reference to historical fish stocks. These fixed stations have been incorporated into a random stratified design, providing a reference to the past and a sampling scheme to meet future research and management goals. Initial analyses of these data support a relationship between the pilot random stratified and the fixed station sampling for many species. In most cases the coefficient of variation is lower for the random survey, while the correlations between surveys were highly significant (Geer, 1996).

NOTICE

No portion of this report may be used without consent or citation of the Virginia Institute of Marine Science, Trawl Survey Project. For further information contact Chris Bonzek or Patrick Geer at the Virginia Institute of Marine Science, Gloucester Point, Virginia, 23062, Telephone (804) 642-7000, FAX (804) 642-7327.

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- Chittenden, M.E., Jr. 1991. Evaluation of spatial/temporal sources of variation in nekton catch and the efficacy of stratified sampling in the Chesapeake Bay. Final report to Chesapeake Bay Stock Assessment Committee & NOAA/NMFS. Virginia Institute of Marine Science, Gloucester Point, Va. 254 p.
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- Wojcik, F.J. and W.A. Van Engel. 1988a. A documentation of Virginia trawl surveys, 1955-1984, listing pertinent variables. Volume II - York River. Coll. of William and Mary, Va. Inst. Mar. Sci., Gloucester Point, Va. 127 p.

TABLES

Table 1. VIMS codes for selected parameters as used in the trawl survey database.
These same codes appear in several of the included tables and figures.

Table 1.

TOWDIR 1: Tow Direction, up or down stream

- 1: Upstream
- 2: Downstream
- 3: Slack

TOWDIR2: Tow Direction, relative to current

- 1: With
- 2: Against
- 3: Perpendicular
- 4: Oblique with
- 5: Oblique against
- 6: Slack

TIDE: Tidal stage

- 1: Early flood
- 2: Maximum flood
- 3: Late flood
- 4: Slack before ebb
- 5: Early ebb
- 6: Maximum ebb
- 7: Late ebb
- 8: Slack before flood

SEASTATE

- 0: Calm-glassy 0m
- 1: Calm-rippled 0-0.1m
- 2: Smooth-wavelets 0.1-0.5m
- 3: Slight 0.5-1.25m
- 4: Moderate 1.25-2.5m
- 5: Rough 2.5-4m
- 6: Very rough 4-6m
- 7: High 6-9m
- 8: Very high 9-14m
- 9: Phenomenal >14m

WEATHER: Observed weather

- 1: Clear-no cloud at any level
- 2: Partly cloudy-scattered or broken
- 3: Overcast
- 4: Sand, dust storm, or blowing snow
- 5: Fog-thick, dust, or haze
- 6: Drizzle
- 7: Rain
- 8: Snow-rain and snow mix
- 9: Showers
- 9: Thunderstorms

Tables 2-11. Station data for the 1989-90 random surveys by month.

Explanation: To conserve space, some variables are presented as coded values.
Code keys are presented in Table 1 (p.7).

Table 2.

October, 1989

Cruise Number	River	River Mile	Station Date	Beginning Latitude	Beginning Longitude	Ending Latitude	Ending Longitude	Tow Dist. (m)	Depth (m)	Tow Direct. Up or Down Stream	Tow Direct. Rel. to Current	Sea State	Tidal Stage
891001	YK	1	19891025	3713.44	7625.89	3713.46	7625.70	290.95	1.5	2	1	2	7
891001	YK	2	19891025	3715.68	7622.67	3715.63	7622.87	317.59	3.4	1	1	1	1
891001	YK	3	19891025	3713.31	7627.36	3713.44	7627.11	449.68	4.6	2	1	1	7
891001	YK	4	19891025	3715.36	7622.08	3715.39	7622.32	368.74	6.1	1	1	2	1
891001	YK	5	19891025	3713.81	7625.59	3713.86	7625.37	346.75	10.7	2	1	2	7
891001	YK	6	19891025	3713.87	7624.83	3713.93	7624.63	323.48	9.8	2	1	2	7
891001	YK	7	19891025	3714.71	7631.35	3714.86	7631.55	411.74	1.8	1	1	1	1
891001	YK	9	19891025	3714.64	7629.17	3714.70	7628.94	366.60	6.4	2	1	1	6
891002	YK	11	19891025	3713.87	7628.91	3713.86	7628.64	410.51	15.2	2	1	2	7
891002	YK	18	19891026	3721.87	7638.70	3721.95	7638.85	271.81	2.4	1	2	1	7
891002	YK	21	19891026	3722.89	7638.96	3722.98	7639.04	206.34	4.0	1	2	1	6
891002	YK	22	19891026	3721.74	7637.28	3721.78	7637.46	283.26	10.1	1	2	1	7
891002	YK	23	19891026	3722.25	7637.92	3722.34	7638.02	225.57	9.8	2	1	1	7
891002	YK	25	19891026	3724.97	7641.49	3725.06	7641.56	197.78	1.8	1	2	2	6
891002	YK	26	19891026	3725.03	7641.35	3725.01	7641.36	40.05	5.5	2	2	2	6
891002	YK	27	19891026	3726.94	7643.40	3727.11	7643.46	327.93	5.8	1	1	1	3
891002	YK	28	19891026	3728.95	7645.41	3728.87	7645.37	160.21	1.5	1	1	1	3
891002	YK	29	19891026	3729.63	7646.88	3729.80	7647.00	363.94	1.5	1	1	1	3
891002	YK	30	19891026	3728.54	7644.34	3728.66	7644.55	388.82	5.8	1	1	2	3
891003	YK	12	19891027	3717.83	7635.75	3717.75	7635.57	311.00	2.4	2	2	2	3
891003	YK	13	19891027	3718.13	7633.89	3717.95	7633.82	350.08	2.1	2	6	2	4
891003	YK	14	19891027	3718.54	7635.73	3718.44	7635.64	230.27	7.3	2	2	2	3
891003	YK	15	19891027	3718.80	7635.76	3718.75	7635.59	274.32	6.1	2	2	2	3
891003	YK	16	19891027	3717.19	7634.35	3717.11	7634.19	284.66	13.1	2	6	2	6

Table 3.

November, 1989

Cruise Number	River	River Mile	Station Date	Beginning Latitude	Beginning Longitude	Ending Latitude	Ending Longitude	Tow Dist. (m)	Depth (m)	Tow Direct. Up or Down Stream	Tow Direct. Rel. to Current	Sea State	Tidal Stage
891101	YK	13	19891108	3719.10	7636.83	3719.01	7636.77	190.05	2.1	2	2	2	3
891101	YK	15	19891108	3719.93	7636.19	3719.85	7636.07	234.94	4.9	2	2	2	2
891101	YK	16	19891108	3720.06	7636.68	3719.93	7636.71	245.16	5.5	2	2	2	2
891101	YK	18	19891108	3720.96	7637.76	3720.87	7637.72	177.49	1.5	2	2	2	2
891101	YK	20	19891108	3723.62	7639.55	3723.73	7639.63	237.30	4.6	2	2	2	2
891101	YK	22	19891108	3721.98	7637.65	3722.14	7637.78	356.21	10.7	1	1	2	2
891101	YK	23	19891108	3722.85	7638.91	3722.96	7639.01	254.20	9.5	1	6	2	8
891101	YK	24	19891108	3724.88	7641.96	3724.77	7641.80	317.18	1.5	2	1	2	7
891101	YK	25	19891108	3724.72	7641.28	3724.77	7641.36	152.80	5.2	2	2	2	7
891101	YK	26	19891108	3727.10	7643.50	3727.14	7643.56	117.47	4.6	1	2	2	7
891101	YK	27	19891108	3730.65	7647.57	3730.77	7647.68	278.13	3.1	1	2	1	6
891101	YK	28	19891108	3731.33	7646.93	3731.46	7647.03	284.78	1.8	1	2	1	6
891101	YK	29	19891108	3728.91	7644.98	3728.98	7645.10	223.71	6.7	1	2	2	6
891102	YK	1	19891109	3713.45	7625.99	3713.45	7625.96	45.57	1.8	1	2	2	7
891102	YK	2	19891109	3715.90	7622.34	3715.93	7622.10	368.74	2.1	2	2	2	1
891102	YK	3	19891109	3713.71	7625.70	3713.68	7625.86	249.29	7.3	1	2	2	7
891102	YK	5	19891109	3713.95	7624.65	3713.89	7624.87	352.16	9.8	1	2	2	7
891102	YK	6	19891109	3714.76	7623.56				17.7	2	2	2	2
891102	YK	8	19891109	3716.10	7631.22	3716.23	7631.31	276.97	11.0	1	2	2	6
891102	YK	9	19891109	3716.64	7633.35	3716.73	7633.70	557.14	8.2	1	2	2	6
891102	YK	11	19891109	3715.70	7631.24	3715.82	7631.31	246.47	12.8	1	2	2	7
891102	YK	14	19891109	3717.94	7633.88	3717.71	7633.69	514.70	2.7	2	1	2	6
891102	YK	17	19891109	3717.04	7634.11	3717.13	7634.25	270.24	12.5	1	2	2	6

Table 4.

December, 1989

Cruise Number	River	River Mile	Station Date	Beginning Latitude	Beginning Longitude	Ending Latitude	Ending Longitude	Tow Dist. (m)	Depth (m)	Tow Direct. Up or Down Stream	Tow Direct. Rel. to Current	Sea State	Tidal Stage
891201	YK	7	19891206	3716.37	7631.44	3716.26	7631.30	294.55	3.4	2	2	1	3
891201	YK	13	19891206	3717.29	7632.72	3717.26	7632.54	278.99	1.8	2	2	1	3
891201	YK	14	19891206	3718.88	7636.34	3718.79	7636.27	197.78	2.4	2	2	1	3
891201	YK	15	19891206	3719.92	7635.70	3719.83	7635.60	225.57	7.0	2	2	1	2
891201	YK	16	19891206	3719.93	7635.60				8.8	2	2	1	2
891201	YK	17	19891206	3716.79	7632.90	3716.68	7632.72	341.01	13.1	2	2	1	3
891201	YK	19	19891206	3721.10	7637.82	3720.99	7637.74	237.30	2.1	2	2	1	2
891201	YK	22	19891206	3724.27	7640.80	3724.15	7640.65	318.35	3.9	2	2	1	1
891201	YK	23	19891206	3722.22	7638.18	3722.13	7638.16	169.51	10.7	2	2	0	2
891201	YK	24	19891206	3722.55	7638.65	3722.41	7638.56	293.23	10.1	2	2	1	1
891201	YK	26	19891206	3725.62	7642.87	3725.80	7642.74	387.60	3.0	1	1	1	1
891201	YK	27	19891206	3725.57	7642.05	3725.74	7642.17	363.94	6.1	1	2	1	7
891201	YK	28	19891206	3726.26	7642.77				6.4	1	2	1	7
891201	YK	29	19891206	3729.60	7646.60	3729.66	7646.69	176.20	2.6	1	2	0	6
891201	YK	30	19891206	3730.28	7646.93	3730.35	7647.01	177.73	3.4	1	2	0	6
891201	YK	32	19891206	3730.90	7647.61	3731.00	7647.67	206.50	5.2	1	2	1	6
891202	YK	1	19891207	3713.48	7625.64	3713.44	7625.89	386.88	1.8	2	1	1	6
891202	YK	2	19891207	3713.70	7623.95	3713.67	7624.12	264.12	1.8	2	1	1	6
891202	YK	3	19891207	3713.68	7625.72	3713.67	7625.90	274.02	6.7	2	1	1	6
891202	YK	4	19891207	3715.15	7622.62	3715.08	7622.98	561.96	8.8	2	1	1	6
891202	YK	5	19891207	3714.15	7626.88	3714.09	7627.09	337.78	13.4	2	1	1	6
891202	YK	6	19891207	3714.47	7623.32	3714.42	7623.40	152.80	12.2	2	1	1	6
891202	YK	9	19891207	3714.39	7628.54	3714.41	7628.75	321.11	8.2	2	1	2	6
891202	YK	11	19891207	3713.91	7629.09	3713.94	7629.24	234.51	15.5	2	1	2	6

Table 5.

January, 1990

Cruise Number	River	River Mile	Station Date	Beginning Latitude	Beginning Longitude	Ending Latitude	Ending Longitude	Tow Dist. (m)	Depth (m)	Tow Direct. Up or Down Stream	Tow Direct. Rel. to Current	Sea State	Tidal Stage
900101	YK	1	19900118	3713.42	7625.76	3713.51	7625.56	346.54	1.5	2	2	1	2
900101	YK	2	19900118	3713.46	7625.97	3713.45	7625.75	334.66	2.7	2	2	1	2
900101	YK	3	19900118	3713.88	7624.24	3713.88	7624.05	288.58	7.6	2	2	1	2
900101	YK	4	19900118	3714.26	7626.73	3714.29	7626.89	249.29	8.5	2	2	1	3
900101	YK	5	19900118	3714.32	7623.98	3714.34	7624.17	290.95	16.5	1	2	1	3
900101	YK	6	19900118	3714.51	7624.37				8.8	2	2	1	3
900101	YK	7	19900118	3714.63	7627.43	3714.72	7627.57	270.24	1.6	2	2	1	5
900101	YK	10	19900118	3715.04	7631.34	3714.93	7631.26	237.30	10.4	2	2	0	2
900101	YK	11	19900118	3714.10	7627.31	3714.16	7627.46	253.51	9.8	2	1	1	5
900101	YK	13	19900118	3718.19	7635.98	3718.13	7635.87	200.69	3.0	2	2	1	2
900101	YK	14	19900118	3718.99	7634.90	3718.87	7634.73	340.76	1.5	2	2	2	2
900101	YK	15	19900118	3717.78	7635.31	3717.70	7635.18	246.91	3.9	2	2	1	2
900101	YK	16	19900118	3718.07	7635.51	3717.98	7635.42	215.63	8.5	2	2	1	2
900101	YK	17	19900118	3717.19	7633.86	3717.44	7633.71	516.24	12.8	2	2	1	2
900101	YK	19	19900118	3721.88	7638.44	3721.68	7638.26	460.53	2.4	2	2	2	1
900101	YK	21	19900118	3723.33	7639.78	3723.19	7639.71	280.36	3.7	2	1	1	7
900101	YK	23	19900118	3721.33	7637.28	3721.24	7637.15	258.46	10.4	2	2	2	1
900101	YK	24	19900118	3722.28	7638.43	3722.19	7638.28	282.34	9.8	2	1	1	7
900101	YK	25	19900118	3724.24	7641.02	3724.14	7640.85	317.81	2.4	2	6	1	6
900101	YK	27	19900118	3727.73	7644.10	3727.83	7644.12	187.77	7.6	1	2	2	6
900101	YK	28	19900118	3727.73	7644.26	3727.82	7644.35	215.63	5.5	1	2	2	6
900101	YK	29	19900118	3730.08	7646.64	3730.15	7646.70	158.52	3.0	1	1	1	6
900101	YK	30	19900118	3729.90	7646.28	3729.96	7646.40	213.50	3.9	1	2	1	6
900101	YK	31	19900118	3728.68	7644.71	3728.28	7644.74	742.60	7.6	1	2	1	6

Table 6.

February, 1990

Cruise Number	River	River Mile	Station Date	Beginning Latitude	Beginning Longitude	Ending Latitude	Ending Longitude	Tow Dist. (m)	Depth (m)	Tow Direct. Up or Down Stream	Tow Direct. Rel. to Current	Sea State	Tidal Stage
900201	YK	1	19900221	3713.44	7625.75	3713.50	7625.59	267.24	1.5	2	2	1	1
900201	YK	2	19900221	3714.63	7627.55	3714.70	7627.39	275.47	2.1	2	2	1	2
900201	YK	3	19900221	3713.42	7627.28	3713.45	7627.56	428.90	3.7	2	2	1	1
900201	YK	4	19900221	3713.65	7626.02	3713.68	7625.90	190.55	8.2	1	1	1	1
900201	YK	5	19900221	3713.61	7627.08	3713.71	7626.90	330.27	10.7	2	2	2	1
900201	YK	6	19900221	3714.38	7623.22	3714.39	7623.12	153.01	12.2	2	2	1	1
900201	YK	8	19900221	3714.89	7629.47	3714.89	7629.30	258.21	1.5	2	2	1	1
900201	YK	9	19900221	3715.70	7632.00	3715.86	7632.26	493.81	7.3	1	1	1	1
900201	YK	11	19900221	3714.14	7628.70	3714.19	7628.54	260.08	12.2	2	2	2	1
900201	YK	14	19900221	3718.97	7637.17	3719.11	7637.30	326.02	1.2	1	6	1	4
900201	YK	15	19900221	3718.38	7635.85	3718.46	7635.88	155.09	7.6	1	2	1	6
900201	YK	16	19900221	3720.32	7637.32	3720.40	7637.40	191.68	4.3	1	6	1	4
900201	YK	18	19900221	3717.87	7635.37	3717.99	7635.42	234.97	10.1	1	2	1	6
900201	YK	20	19900221	3721.70	7638.74	3721.79	7638.77	172.88	2.4	1	6	1	4
900201	YK	21	19900221	3721.35	7638.24	3721.45	7638.45	368.88	4.9	1	6	1	4
900201	YK	23	19900221	3722.19	7638.32	3722.26	7638.38	158.52	9.4	1	6	1	4
900201	YK	24	19900221	3722.87	7639.09	3722.99	7639.11	224.43	10.1	1	1	1	5
900201	YK	26	19900221	3725.87	7643.38	3726.09	7643.11	578.24	2.1	1	2	0	5
900201	YK	27	19900221	3725.17	7641.96				4.0	1	2	0	5
900201	YK	28	19900221	3728.02	7644.04	3728.17	7644.12	303.35	3.7	1	6	0	4
900201	YK	29	19900221	3730.03	7647.19				2.4	1	1	1	3
900201	YK	30	19900221	3730.49	7646.48	3730.31	7646.29	441.05	2.1	1	1	1	3
900201	YK	32	19900221	3729.78	7646.82	3729.70	7646.70	234.94	4.9	1	1	1	3

Table 7.

March, 1990

Cruise Number	River	River Mile	Station Date	Beginning Latitude	Beginning Longitude	Ending Latitude	Ending Longitude	Tow Dist. (m)	Depth (m)	Tow Direct. Up or Down Stream	Tow Direct. Rel. to Current	Sea State	Tidal Stage
900301	YK	8	19900322	3715.72	7632.64	3715.81	7632.74	225.57	2.1	1	2	1	6
900301	YK	10	19900322	3716.83	7632.37	3716.82	7632.53	243.72	7.3	1	2	2	6
900301	YK	13	19900322	3718.37	7634.38	3718.51	7634.51	326.02	2.1	1	2	2	5
900301	YK	14	19900322	3719.46	7637.05	3719.60	7637.14	293.23	2.7	2	1	1	2
900301	YK	15	19900322	3718.26	7635.57	3718.43	7635.70	371.78	8.5	1	2	2	6
900301	YK	16	19900322	3719.82	7636.04	3719.95	7636.11	263.31	7.6	1	2	2	5
900301	YK	17	19900322	3717.03	7633.92	3717.11	7634.05	246.91	1.2	1	2	3	6
900301	YK	19	19900322	3721.08	7638.81	3721.16	7638.88	182.43	1.5	1	2	2	6
900301	YK	22	19900322	3723.51	7639.96	3723.51	7639.76	303.77	4.0	2	1	1	5
900301	YK	23	19900322	3721.43	7637.37	3721.49	7637.44	153.83	10.4	1	6	1	4
900301	YK	24	19900322	3721.63	7637.57	3721.68	7637.61	110.79	9.8	1	2	1	5
900301	YK	26	19900322	3726.82	7642.26	3726.97	7642.19	297.59	4.6	1	1	1	3
900301	YK	27	19900322	3725.17	7641.58	3725.02	7641.39	400.67	8.2	2	1	1	3
900301	YK	28	19900322	3726.41	7642.79	3726.32	7642.65	270.24	5.8	2	2	1	3
900301	YK	29	19900322	3730.37	7646.86	3730.28	7646.72	270.24	3.4	2	1	1	3
900301	YK	30	19900322	3731.40	7646.95	3731.24	7646.96	296.87	19.5	2	1	1	3
900301	YK	31	19900322	3730.94	7647.67	3730.87	7647.54	236.25	5.2	1	2	1	3
900302	YK	1	19900323	3713.45	7625.70	3713.44	7625.85	228.58	2.1	1	1	2	2
900302	YK	2	19900323	3713.38	7626.68	3713.37	7626.83	228.58	1.8	1	1	2	1
900302	YK	3	19900323	3714.58	7625.68	3714.59	7625.86	274.02	4.9	1	1	2	1
900302	YK	4	19900323	3714.85	7624.74	3714.92	7624.52	358.44	5.2	1	1	3	1
900302	YK	5	19900323	3714.13	7624.17	3714.10	7624.24	119.98	10.1	1	1	3	1
900302	YK	6	19900323	3714.41	7624.28	3714.27	7624.52	447.41	13.4	1	1	3	1
900302	YK	11	19900323	3714.41	7628.93	3714.41	7629.05	182.26	9.4	1	1	2	1

Table 8.
April, 1990

Cruise Number	River	River Mile	Station Date	Beginning Latitude	Beginning Longitude	Ending Latitude	Ending Longitude	Tow Dist. (m)	Depth (m)	Tow Direct. Up or Down Stream	Tow Direct. Rel. to Current	Sea State	Tidal Stage
900401	YK	1	19900425	3713.45	7625.49	3713.44	7625.74	380.17	2.1	2	6	1	7
900401	YK	2	19900425	3715.37	7623.62	3715.29	7623.84	365.55	1.5	1	6	1	5
900401	YK	3	19900425	3714.42	7627.40	3714.42	7627.23	258.21	8.8	2	1	2	7
900401	YK	4	19900425	3714.38	7628.16	3714.37	7628.35	289.18	8.5	1	2	2	6
900401	YK	5	19900425	3714.14	7628.30	3714.14	7628.07	349.34	11.3	2	1	2	6
900401	YK	6	19900425	3714.45	7623.85	3714.43	7623.63	336.20	12.8	2	6	1	8
900401	YK	8	19900425	3717.16	7632.58	3717.11	7632.41	274.32	2.1	2	1	2	6
900401	YK	9	19900425	3714.68	7629.24	3714.65	7629.44	308.82	6.1	1	6	1	5
900401	YK	11	19900425	3713.89	7629.33	3713.84	7629.01	494.79	13.1	2	1	2	6
900401	YK	13	19900425	3718.11	7634.47	3718.12	7634.57	153.01	3.0	1	2	0	6
900401	YK	14	19900425	3719.14	7637.03	3719.01	7636.84	375.91	2.1	2	1	1	6
900401	YK	15	19900425	3717.79	7635.43	3717.71	7635.26	297.73	3.4	2	1	1	6
900401	YK	16	19900425	3720.43	7636.18	3720.31	7636.09	261.02	6.1	2	1	1	5
900401	YK	18	19900425	3717.62	7634.65	3717.51	7634.41	417.64	12.8	2	1	1	6
900401	YK	20	19900425	3723.25	7640.17	3723.17	7640.06	223.36	3.0	2	2	1	1
900401	YK	21	19900425	3724.15	7640.06	3724.04	7639.96	254.20	7.6	2	2	1	1
900401	YK	23	19900425	3721.70	7637.63	3721.58	7637.50	297.37	10.7	2	2	1	2
900401	YK	24	19900425	3721.90	7637.93				11.0	2	2	1	2
900401	YK	25	19900425	3724.73	7642.08	3724.61	7641.98	269.28	1.8	2	2	1	1
900401	YK	27	19900425	3725.31	7642.19	3725.25	7642.10	176.20	3.9	2	2	1	1
900401	YK	28	19900425	3726.66	7643.15	3726.62	7643.09	117.47	7.0	2	2	1	1
900401	YK	29	19900425	3729.88	7646.25	3730.19	7646.11	612.52	5.4	1	2	1	7
900401	YK	30	19900425	3730.22	7646.13	3730.33	7646.36	404.45	1.5	1	1	1	7
900401	YK	31	19900425	3728.97	7644.84	3728.91	7644.78	143.76	5.8	2	2	1	1

Table 9.
May, 1990

Cruise Number	River	River Mile	Station Date	Beginning Latitude	Beginning Longitude	Ending Latitude	Ending Longitude	Tow Dist. (m)	Depth (m)	Tow Direct. Up or Down Stream	Tow Direct. Rel. to Current	Sea State	Tidal Stage
900501	YK	1	19900522	3713.50	7625.52	3713.45	7625.68	260.08	1.5	1	1	2	3
900501	YK	2	19900522	3713.83	7623.83	3713.76	7623.54	459.17	1.5	1	1	3	3
900501	YK	3	19900522	3714.33	7628.03	3714.34	7628.18	228.58	9.4	1	1	3	3
900501	YK	4	19900522	3715.44	7622.95	3715.34	7623.10	293.67	4.0	1	1	1	3
900501	YK	5	19900522	3714.12	7624.75	3714.13	7624.87	183.20	11.6	1	1	2	3
900501	YK	6	19900522	3714.61	7622.41	3714.62	7622.38	49.19	13.1	1	1	3	3
900501	YK	8	19900522	3717.08	7632.89				2.4	1	1	2	3
900501	YK	9	19900522	3713.64	7629.04	3713.71	7629.14	199.73	6.7	1	1	2	3
900501	YK	11	19900522	3717.91	7630.50				12.2	1	1	2	3
900501	YK	13	19900522	3718.32	7634.32	3718.41	7634.54	373.45	2.4	1	1	2	3
900501	YK	17	19900522	3717.11	7634.13	3717.14	7634.27	219.79	14.6	1	1	2	3
900502	YK	14	19900523	3719.71	7637.62	3719.89	7637.84	472.13	1.8	1	1	2	3
900502	YK	15	19900523	3720.17	7636.34	3720.34	7636.50	397.86	6.7	1	1	2	3
900502	YK	16	19900523	3720.63	7636.77	3720.78	7636.89	332.38	8.5	1	1	1	3
900502	YK	20	19900523	3723.21	7640.10	3723.34	7640.25	331.56	3.0	1	6	1	4
900502	YK	22	19900523	3723.81	7639.71	3723.92	7639.80	245.42	4.0	2	2	1	5
900502	YK	23	19900523	3721.74	7637.65	3721.86	7637.83	352.40	10.4	1	1	1	5
900502	YK	24	19900523	3722.70	7638.77	3722.82	7638.95	352.40	10.4	1	1	1	5
900502	YK	26	19900523	3727.85	7644.57	3727.92	7644.59	133.22	2.1	1	2	1	5
900502	YK	27	19900523	3726.67	7643.08	3726.75	7643.20	234.94	6.1	1	2	1	5
900502	YK	28	19900523	3726.93	7643.34	3727.00	7643.46	223.71	4.9	1	2	1	5
900502	YK	29	19900523	3728.93	7645.34	3728.89	7645.43	155.50	1.8	1	2	1	6
900502	YK	30	19900523	3730.89	7647.00	3730.99	7646.99	185.92	2.4	1	2	1	6
900502	YK	32	19900523	3731.12	7647.78	3731.22	7647.85	213.64	4.6	1	2	1	6

Table 10.
June, 1990

Cruise Number	River	River Mile	Station Date	Beginning Latitude	Beginning Longitude	Ending Latitude	Ending Longitude	Tow Dist. (m)	Depth (m)	Tow Direct. Up or Down Stream	Tow Direct. Rel. to Current	Sea State	Tidal Stage
900601	YK	8	19900625	3716.84	7632.48	3716.71	7632.31	353.13	4.3	2	2	1	2
900601	YK	9	19900625	3714.77	7631.12	3714.67	7630.99	270.78	6.7	2	2	2	2
900601	YK	12	19900625	3713.87	7628.78	3713.86	7628.56	334.66	14.9	2	2	1	2
900601	YK	13	19900625	3716.37	7634.05	3716.34	7633.81	368.74	1.8	2	2	1	2
900601	YK	14	19900625	3719.45	7637.38	3719.37	7637.38	148.24	1.8	2	2	1	1
900601	YK	15	19900625	3717.22	7634.46	3717.11	7634.30	317.18	11.0	2	2	1	2
900601	YK	16	19900625	3718.37	7635.13	3718.33	7634.84	446.66	6.1	2	2	1	1
900601	YK	18	19900625	3717.95	7635.13	3717.62	7635.20	620.66	11.3	2	2	1	2
900601	YK	20	19900625	3722.89	7639.87	3722.81	7639.91	160.21	1.5	1	1	1	1
900601	YK	21	19900625	3722.74	7639.37	3722.69	7639.34	103.25	4.6	2	2	1	1
900601	YK	23	19900625	3721.37	7637.24	3721.30	7637.17	167.72	9.8	2	1	1	7
900601	YK	24	19900625	3724.26	7640.24	3724.20	7640.15	176.20	8.5	2	2	1	1
900601	YK	26	19900625	3727.74	7644.45	3727.81	7644.57	223.71	1.8	2	2	1	6
900601	YK	27	19900625	3725.80	7642.63	3725.96	7642.87	469.87	5.8	1	1	1	1
900601	YK	28	19900625	3727.72	7644.30	3727.86	7644.38	286.47	5.5	1	2	0	6
900601	YK	29	19900625	3728.87	7645.37	3728.78	7645.35	169.51	1.5	1	2	1	6
900601	YK	30	19900625	3730.37	7646.87	3730.17	7646.90	373.39	3.4	1	2	1	6
900601	YK	31	19900625	3729.75	7646.62	3729.77	7646.54	127.03	6.4	1	2	1	6
900602	YK	1	19900626	3713.38	7625.87				1.5	2	1	1	7
900602	YK	2	19900626	3715.63	7623.13	3715.63	7623.04	136.70	1.8	2	1	1	7
900602	YK	3	19900626	3714.88	7623.88	3714.90	7624.05	260.85	8.8	1	2	1	7
900602	YK	4	19900626	3715.04	7625.99				5.8	2	1	1	7
900602	YK	5	19900626	3714.06	7624.63	3714.13	7624.62	130.60	10.7	2	1	1	7
900602	YK	6	19900626	3714.45	7623.45	3714.50	7623.37	152.80	11.9	2	1	1	7

Table 11.

July, 1990

Cruise Number	River	River Mile	Station Date	Beginning Latitude	Beginning Longitude	Ending Latitude	Ending Longitude	Tow Dist. (m)	Depth (m)	Tow Direct. Up or Down Stream	Tow Direct. Rel. to Current	Sea State	Tidal Stage
900701	YK	8	19900723	3715.44	7630.50	3715.26	7630.42	354.98	2.4	2	1	1	6
900701	YK	9	19900723	3715.88	7631.37	3715.69	7631.88	850.87	2.1	2	1	1	5
900701	YK	12	19900723	3715.37	7631.39	3715.39	7631.51	185.99	12.8	2	1	1	5
900701	YK	13	19900723	3720.24	7637.67	3720.15	7637.70	172.88	2.7	2	1	1	5
900701	YK	14	19900723	3720.03	7637.56	3719.95	7637.45	223.36	2.6	2	6	1	4
900701	YK	15	19900723	3718.54	7635.26	3718.75	7635.39	436.36	8.5	2	1	1	5
900701	YK	16	19900723	3718.68	7635.25	3718.47	7635.06	484.46	6.4	2	1	1	5
900701	YK	17	19900723	3717.12	7636.49	3717.02	7636.29	355.83	9.8	2	1	1	5
900701	YK	19	19900723	3721.94	7638.39	3721.87	7638.27	223.71	3.0	2	2	1	3
900701	YK	20	19900723	3721.94	7638.39	3721.87	7638.27	223.71	3.0	2	2	1	3
900701	YK	21	19900723	3722.38	7639.16	3722.35	7639.06	161.74	4.9	2	2	1	3
900701	YK	23	19900723	3722.91	7639.14	3722.87	7639.02	196.76	10.4	2	2	1	3
900701	YK	24	19900723	3723.70	7639.86	3723.70	7639.81	75.94	8.8	2	2	1	3
900701	YK	25	19900723	3724.49	7641.36	3724.41	7641.23	246.91	2.1	2	2	1	3
900701	YK	27	19900723	3724.61	7641.17	3724.51	7641.12	200.26	6.4	2	2	1	3
900701	YK	28	19900723	3725.98	7642.24	3726.12	7642.12	317.05	4.6	2	2	1	3
900702	YK	1	19900724	3715.20	7626.24	3715.20	7626.03	318.96	1.8	2	6	2	4
900702	YK	2	19900724	3715.69	7621.89	3715.62	7621.70	316.39	3.4	2	2	2	2
900702	YK	3	19900724	3714.41	7627.21	3714.54	7627.03	364.38	8.2	2	2	1	2
900702	YK	4	19900724	3714.69	7626.41	3714.71	7626.24	260.85	4.3	2	2	1	3
900702	YK	5	19900724	3714.05	7624.72	3713.90	7624.92	411.74	11.0	1	1	2	2
900702	YK	6	19900724	3713.70	7627.33	3713.62	7627.71	595.90	11.3	1	1	2	2

Tables 12-21. Atmospheric and hydrographic data for the 1989-90 random surveys by month.

- Explanation:
- A. To conserve space, some variables are presented as coded values. Code keys are presented in Table 1 (p.7).
 - B. Due to measurement error (calibration differences and instrument drift) associated with the hydrographic equipment used to measure temperature, salinity, and dissolved oxygen, some calculated saturation values presented here are greater than 100 percent.

Table 12.

October, 1989

Cruise Number	River	River Mile	Air Temp. (C)	Wind Speed m/sec	Wind Direct. (deg)	Obs. Weather	Secchi (m)	Surface				Bottom			
								Temp. (C)	Salin. (ppt)	DO (mg/L)	% Satur.	Temp. (C)	Salin. (ppt)	DO (mg/L)	% Satur.
891001	YK	1	16.5	3	20		1.8	17.12	20.5	9.37	110.0	17.10	20.3	9.21	107.9
891001	YK	2	18.5	3	20		1.6	17.10	21.6	11.10	131.1	16.91	21.8	10.70	126.1
891001	YK	3	17.3	3	20		1.6	16.88	19.8	8.25	96.0	16.86	19.8	8.39	97.6
891001	YK	4	19.3	5	20		1.4	17.43	21.5	11.01	130.8	16.77	23.0	10.30	121.9
891001	YK	5	17.5	4	20		2.0	17.18	20.5	8.86	104.1	17.43	22.8	6.78	81.2
891001	YK	6	17.8	4	360		1.9	17.21	20.6	8.90	104.7	17.43	22.4	6.97	83.3
891001	YK	7	19.0	2	360		1.5	17.30	18.6	9.11	106.1	17.29	18.6	9.05	105.4
891001	YK	9	13.8	2	360		1.8	16.45	20.4	7.00	81.0	16.99	20.8	7.70	90.3
891001	YK	11	15.5	3	20		2.0	16.96	20.0	8.13	94.8	18.04	25.0	5.20	63.9
891002	YK	18	20.5			1	0.8	17.20	13.7	10.90	123.0	17.20	13.7	10.90	123.0
891002	YK	21	20.5	4	20	1	0.8	17.34	13.6	10.84	122.6	17.11	16.2	9.33	106.7
891002	YK	22	21.5	1	40	1	1.0	16.91	14.2	11.70	131.7	17.62	20.5	9.23	109.4
891002	YK	23	20.5	2	40	1	0.8	17.32	13.2	10.86	122.5	17.63	20.4	7.82	92.7
891002	YK	25	21.5	4	20	1	0.3	17.13	12.0	9.86	110.0	17.07	12.2	9.52	106.2
891002	YK	26	13.5	2	20	1	0.5	17.08	12.3	8.91	99.5	17.07	15.7	7.03	80.1
891002	YK	27	15.0	5	360	1	0.9	16.60	13.6	8.50	94.7	17.30	17.6	6.62	76.6
891002	YK	28	13.5	5	40	1	0.5	15.71	10.5	10.25	110.0	15.70	10.5	10.15	108.9
891002	YK	29	13.0	3	40	1	0.6	16.32	10.8	9.42	102.6	16.33	10.8	9.30	101.3
891002	YK	30	15.0	5	40	1	0.6	16.36	11.1	9.15	99.9	17.26	17.0	8.00	92.2
891003	YK	12	13.8	5	360		1.0	16.75	17.8	9.38	107.5	17.30	20.4	7.76	91.4
891003	YK	13	13.5	4	270		1.3	16.36	18.6	9.31	106.4	16.48	19.0	9.23	106.0
891003	YK	14	14.0	5	340		1.1	16.76	17.5	9.19	105.2	17.57	21.8	7.21	86.1
891003	YK	15	14.0	5	20		1.1	16.83	17.8	10.87	124.8	17.54	21.4	8.31	98.9
891003	YK	16	13.5	5	20		1.4	16.30	18.7	9.40	107.4	17.60	22.8	6.90	82.9

Table 13.

November, 1989

Cruise Number	River	River Mile	Air Temp. (C)	Wind Speed m/sec	Wind Direct. (deg)	Obs. Weather	Secchi (m)	Surface				Bottom			
								Temp. (C)	Salin. (ppt)	DO (mg/L)	% Satur.	Temp. (C)	Salin. (ppt)	DO (mg/L)	% Satur.
891101	YK	13	17.8	5	180	2	0.8	15.76	16.2	9.09	101.1	15.72	16.4	9.22	102.6
891101	YK	15	17.5	5	160	2	1.4	15.68	16.2	8.92	99.1	15.84	18.3	8.13	91.8
891101	YK	16		5			1.2	15.67	15.8	8.75	96.9	15.79	18.1	7.72	86.9
891101	YK	18	17.0	5	160	2	0.5	15.40	15.0	8.90	97.6	15.40	15.1	8.90	97.6
891101	YK	20	15.5	5	160	2	0.8	15.22	13.3	9.68	104.6	15.43	15.5	9.11	100.2
891101	YK	22	17.0	5	160	2	1.1	15.39	14.2	8.97	97.8	15.82	18.2	7.98	90.0
891101	YK	23	15.8	5	160	2	1.0	15.32	13.1	9.41	101.8	15.70	17.5	8.80	98.6
891101	YK	24	15.5	5	180	2	0.3	14.82	12.4	7.50	80.0	14.80	12.4	7.42	79.1
891101	YK	25	15.8	4	160	6	0.8	15.05	12.0	9.21	98.4	15.24	14.2	8.83	96.0
891101	YK	26	15.3	3	160	2	0.5	15.17	11.9	7.20	77.1	15.24	13.4	7.06	76.4
891101	YK	27	14.8	2	180	2	0.7	14.95	8.6	7.35	76.8	14.86	9.5	7.36	77.1
891101	YK	28	14.5	2	160	4	0.6	15.00	8.4	8.08	84.4	15.07	9.3	7.67	80.6
891101	YK	29	15.0	3	160	2	0.7	14.97	9.9	7.36	77.5	15.18	13.1	6.99	75.4
891102	YK	1	18.3	8	220	6	1.4	16.71	20.5	7.94	92.4	16.74	20.5	7.86	91.6
891102	YK	2	18.5	10	200	1	1.0	16.63	20.4	7.78	90.4	16.62	20.4	7.90	91.8
891102	YK	3	18.0	10	220	6	1.6	16.47	20.6	7.64	88.6	16.42	20.9	7.58	88.0
891102	YK	5	18.0	7	220	2	2.2	16.40	20.4	7.78	90.0	16.40	20.9	7.47	86.6
891102	YK	6													
891102	YK	8	18.8	7	250	6	1.4	16.46	19.3	7.81	89.8				
891102	YK	9	18.8	7	200	6	1.6	16.37	20.5	7.61	88.0	16.33	22.3	6.64	77.6
891102	YK	11	18.5	8	220	6	1.4	16.42	19.0	7.89	90.5	16.40	23.1	6.21	73.0
891102	YK	14	18.8	6	160	2	1.0	16.25	18.9	9.79	111.8	16.26	18.9	10.10	115.4
891102	YK	17	18.5	7	180	2	1.3	16.34	20.0	8.45	97.4	16.37	22.8	7.33	86.0

Table 14.

December, 1989

Cruise Number	River	River Mile	Air Temp. (C)	Wind Speed m/sec	Wind Direct. (deg)	Obs. Weather	Secchi (m)	Surface				Bottom			
								Temp. (C)	Salin. (ppt)	DO (mg/L)	% Satur.	Temp. (C)	Salin. (ppt)	DO (mg/L)	% Satur.
891201	YK	7	16.5	3	220	1		7.93	19.9			7.81	19.7		
891201	YK	13	14.0	3	220	2		7.66	19.0			7.60	18.6		
891201	YK	14	15.0	3	220	2		7.31	18.0			7.71	19.5		
891201	YK	15	15.0	3	220	1		7.51	16.5			7.92	19.9		
891201	YK	16	16.5	4	220	1		7.45	16.6			7.91	20.5		
891201	YK	17	14.5	3	220	1		7.67	18.5			8.10	21.5		
891201	YK	19	16.0	1	140	1		6.75	14.5			6.75	15.2		
891201	YK	22	14.0	3	140	1		6.25	11.7			6.25	12.3		
891201	YK	23	15.0	3	140	1		7.17	12.2			7.83	19.2		
891201	YK	24	14.5	3	140	1		6.93	12.6			6.80	18.8		
891201	YK	26	13.0	3	140	1		6.57	10.3			6.37	11.4		
891201	YK	27	11.0	3	220	1		6.44	10.0			6.44	14.3		
891201	YK	28	11.0	3	220	1		6.51	9.7			6.60	14.0		
891201	YK	29	10.0	2	220	1		6.62	7.9			6.35	9.0		
891201	YK	30	9.0	3	220	1		6.51	7.9			6.38	10.8		
891201	YK	32	8.0	3	250	1		5.97	8.4				10.5		
891202	YK	1	8.0	5	320	1		8.00	16.5						
891202	YK	2	8.5	3	320	1		8.00	16.0						
891202	YK	3	8.5	3	320	1		8.00	16.5						
891202	YK	4	8.0	3	320	1		8.00							
891202	YK	5	8.0	7	320	1		8.00	16.5						
891202	YK	6	7.5	3	320	1		7.50	16.5						
891202	YK	9	10.0	7	320	1		8.00	17.0						
891202	YK	11	11.0	7	320	1		8.00	16.0						

Table 15.

January, 1990

Cruise Number	River	River Mile	Air Temp. (C)	Wind Speed m/sec	Wind Direct. (deg)	Obs. Weather	Secchi (m)	Surface				Bottom			
								Temp. (C)	Salin. (ppt)	DO (mg/L)	% Satur.	Temp. (C)	Salin. (ppt)	DO (mg/L)	% Satur.
900101	YK	1	18.5	7	200	2	0.8					6.50	18.0	9.20	84.3
900101	YK	2	15.0	7	200	2	0.9	5.50	18.0	9.10	81.4	6.50	18.0	9.00	82.4
900101	YK	3	17.0	7	200	2	1.0	6.00	18.0	9.00	81.5	7.00	18.0	9.40	87.1
900101	YK	4	15.0	5	200	2		5.50	16.0	9.60	84.7	6.00	18.0	9.30	84.2
900101	YK	5	17.0	8	200	2	1.1	5.50	17.0	9.40	83.5	4.50	19.0	8.80	77.3
900101	YK	6	15.0	5	200	2	1.0	7.00	18.0	9.40	87.1	5.00	18.0	9.00	79.5
900101	YK	7	15.0	5	200	2	0.9	7.00	16.0	9.40	86.0	7.00	16.0	9.40	86.0
900101	YK	10	18.0	5	270	2	1.0	6.50	16.0	9.00	81.4	5.00	19.0	8.70	77.3
900101	YK	11	15.0	5	200	2	0.8	6.00	18.0	9.40	85.1	5.50	18.0	8.90	79.6
900101	YK	13		5	270	2	0.9	7.00	14.0	10.40	93.9	6.00	15.0	10.60	94.0
900101	YK	14	17.0	5	270	5	0.8	7.50	12.0	11.20	101.0	8.00	12.0	11.40	104.1
900101	YK	15	18.0	5	270	6	0.7	6.50	13.0	11.20	99.3	7.50	15.0	9.90	91.1
900101	YK	16		5	270	2	0.9	6.50	13.0	11.40	101.0	6.00	14.0	10.20	89.9
900101	YK	17	18.0	5	270	2	0.9	6.60	14.0	9.80	87.6	5.50	17.0	8.40	74.6
900101	YK	19	17.5	8	140	2	0.4	6.50	9.0	10.20	88.1	7.00	9.0	10.20	89.1
900101	YK	21	18.0	5	140	1	0.5	6.00	10.0	9.80	84.1	6.00	12.0	9.60	83.5
900101	YK	23	17.0	5	140	2	0.9	6.50	8.0	10.20	87.5	5.50	12.0	10.40	89.3
900101	YK	24	18.0	8	220	2	0.9	6.50	8.0	10.00	85.8	6.00	9.0	9.20	78.4
900101	YK	25		8	320	0	0.4	9.00	8.0	9.20	83.8	6.00	10.0	9.60	82.4
900101	YK	27	19.0	8	320	1	0.4	6.50	5.0	9.00	75.7	7.00	6.0	9.20	78.8
900101	YK	28		7	320	1	0.4	6.00	4.0	8.50	70.1	6.00	5.0	8.50	70.6
900101	YK	29	14.0	7	320	1	0.6	14.00	3.0	9.20	90.9	10.00	5.0	9.60	87.8
900101	YK	30	14.0	7	320	1	0.6	12.00	5.0	8.20	78.5	10.00	5.0	9.00	82.3
900101	YK	31	14.5	7	320	1		12.00	5.0	9.00	86.2	9.00	6.0	9.20	82.7

Table 16.

February, 1990

Cruise Number	River	River Mile	Air Temp. (C)	Wind Speed m/sec	Wind Direct. (deg)	Obs. Weather	Secchi (m)	Surface				Bottom			
								Temp. (C)	Salin. (ppt)	DO (mg/L)	% Satur.	Temp. (C)	Salin. (ppt)	DO (mg/L)	% Satur.
900201	YK	1	15.0	4	40	1	1.5	9.30	14.3	11.07	105.7	9.05	15.7	11.15	106.9
900201	YK	2	12.0	4	40	1	1.0	9.40	14.1	11.35	108.5	9.42	14.5	11.59	111.2
900201	YK	3	16.0	5	70	1	1.1	8.87	12.9	11.19	104.9	8.76	15.9	10.74	102.4
900201	YK	4	14.5	4	40	1	1.2	9.03	14.5	11.30	107.4	8.32	21.9	8.21	80.5
900201	YK	5	14.0	5	40	1		9.08	13.5	12.46	117.8	8.19	22.1	10.67	104.5
900201	YK	6	12.0	4	40	1	1.2	9.05	15.2	11.19	106.9	7.99	24.0	7.71	76.1
900201	YK	8	14.0	5	140	1	1.3	9.59	14.5	11.23	108.1	9.43	14.8	11.36	109.2
900201	YK	9	10.0	5	180	1	0.9	9.22	11.4	11.59	108.5	8.58	18.1	9.09	87.5
900201	YK	11	13.0	5	70	1	0.9	8.81	13.6	11.35	106.7	8.01	23.1	7.51	73.7
900201	YK	14	10.5	5	160	1	0.4	9.15	8.3	9.72	89.0	9.15	8.3	9.72	89.0
900201	YK	15	9.5	5	140	1	0.7	9.30	9.1	11.35	104.9	8.79	17.4	7.86	75.7
900201	YK	16	11.5	4	160	1	0.5	8.63	8.2	10.48	94.8	9.10	14.5	7.71	73.4
900201	YK	18	10.0	5	180	1	0.5	9.27	9.4	12.83	118.7	8.51	19.6	9.65	93.7
900201	YK	20	10.0	4	160	1	0.3	8.94	8.1	9.54	86.8	8.89	10.6	8.78	81.1
900201	YK	21	10.5	4	160	1	0.5	8.77	8.3	9.26	84.1	9.14	12.8	7.85	74.0
900201	YK	23	9.5	4	160	1	0.3	8.91	8.3	13.55	123.4	8.56	19.4	10.00	97.0
900201	YK	24	9.5	4	160	1	0.4	8.92	8.2	12.71	115.7	8.60	19.2	10.52	102.1
900201	YK	26	10.0	2	160	1	0.2	8.52	6.4	9.14	81.5	8.97	9.2	8.35	76.6
900201	YK	27	10.5	4	160	1	0.3	8.72	7.1	8.72	78.4	9.19	11.6	8.01	75.0
900201	YK	28	10.5	2	360	1	0.5	8.45	7.4	10.02	89.7	8.94	12.6	7.82	73.3
900201	YK	29	10.0	2	360	1	0.5	8.60	6.2	9.01	80.4	9.23	11.9	7.61	71.5
900201	YK	30	10.0	2	360	1	0.5	9.27	8.8	7.94	73.2	9.27	8.8	7.94	73.2
900201	YK	32	11.0	2	360	1	0.4	8.50	6.3	9.71	86.4	9.20	14.3	7.07	67.4

Table 17.

March, 1990

Cruise Number	River	River Mile	Air Temp. (C)	Wind Speed m/sec	Wind Direct. (deg)	Obs. Weather	Secchi (m)	Surface				Bottom			
								Temp. (C)	Salin. (ppt)	DO (mg/L)	% Satur.	Temp. (C)	Salin. (ppt)	DO (mg/L)	% Satur.
900301	YK	8	20.0	2	220	1	0.9	12.70	17.4	11.16	117.3			11.16	
900301	YK	10	20.0	7	220	1		12.12	14.7	10.41	106.2	9.36	16.9	9.68	94.2
900301	YK	13	18.5	7	220	1	0.8	12.24	13.3	12.53	127.1	11.54	14.5	10.51	105.8
900301	YK	14	17.5	7	220	1	0.3	12.39	12.2	13.04	131.8	12.37	12.3	7.70	77.8
900301	YK	15	17.0	7	220	1	0.5	12.56	12.8	10.26	104.5	10.13	20.0	8.12	82.0
900301	YK	16	18.0	7	220	1	0.5	12.29	11.4	12.45	124.9	9.68	21.8	8.10	81.9
900301	YK	17		7	220	1	0.7	12.16	14.1	10.66	108.5	9.08	23.8	7.01	70.8
900301	YK	19	17.0	7	220	0	0.2	12.25	11.8	11.94	120.0	12.25	11.8	11.94	120.0
900301	YK	22	17.0	7	220	0	0.7	11.98	9.4	13.56	133.4	11.17	14.8	10.68	106.8
900301	YK	23	17.0	7	220	0	0.7	11.63	10.1	13.90	136.3	9.53	22.3	9.41	95.1
900301	YK	24		7	220	1	0.5	11.73	9.8	13.89	136.3	9.55	22.2	9.70	98.0
900301	YK	26	16.0	5	220	0	0.6	11.29	6.4	9.86	93.7	11.27	6.6	9.52	90.6
900301	YK	27	17.0	7	220	0	0.6	12.00	8.3	12.48	122.0	10.70	20.2	7.64	78.2
900301	YK	28	18.5	7	220	0	0.5	12.40	7.9	11.26	110.8	10.98	14.8	8.31	82.7
900301	YK	29	12.5	2	220	0	0.8	11.87	7.3	11.86	114.9	12.11	7.4	11.48	111.9
900301	YK	30	13.5	2	220	0	0.5	12.40	5.2	8.50	82.2	12.54	7.8	8.15	80.4
900301	YK	31	18.0	2	220	0	0.8	11.71	6.4	10.43	100.1	11.09	16.3	7.66	77.2
900302	YK	1	15.5	10	220	0	2.0	11.54	19.7	11.75	122.2	11.28	19.7	11.72	121.2
900302	YK	2		10	220	0	1.5	11.28	19.2	11.95	123.2	11.12	20.1	12.12	125.2
900302	YK	3	15.0	10	220	0	1.2	11.19	18.4	12.18	124.6	11.13	18.9	11.92	122.2
900302	YK	4	15.5	10	220	0	1.0	11.20	18.9	12.98	133.3	11.13	19.2	12.99	133.4
900302	YK	5	16.0	10	220	0	1.0	11.19	19.3	12.55	129.2	10.34	22.5	11.83	121.9
900302	YK	6		10	220	0	0.9	11.25	19.2	12.72	131.0	10.23	22.2	12.11	124.3
900302	YK	11	22.0	10	220	0	1.0	11.30	18.8	10.86	111.7	9.66	23.3	8.93	91.1

Table 18.

April, 1990

Cruise Number	River	River Mile	Air Temp. (C)	Wind Speed m/sec	Wind Direct. (deg)	Obs. Weather	Secchi (m)	Surface				Bottom			
								Temp. (C)	Salin. (ppt)	DO (mg/L)	% Satur.	Temp. (C)	Salin. (ppt)	DO (mg/L)	% Satur.
900401	YK	1	21.0	2	220	1	1.5	17.18	14.6	9.07	102.9	17.18	14.6	9.07	102.9
900401	YK	2	21.0	2	220	1	1.8	17.92	15.0	9.02	104.1	17.92	15.0	9.02	104.1
900401	YK	3	21.5	5	220	1	1.5	15.68	14.9	6.20	68.3	14.05	15.7	5.87	62.8
900401	YK	4	21.0	5	220	1	1.0	14.68	15.4	5.97	64.6	13.57	16.4	5.88	62.6
900401	YK	5	23.5	5	220	1	1.0	15.70	14.8	6.25	68.9	13.74	16.4	5.81	62.1
900401	YK	6	21.0	2	220	1	2.0	16.89	14.9	8.71	98.4	14.35	15.7	7.57	81.5
900401	YK	8	20.5	5	220	1	1.1	18.80	13.6	6.36	74.0	18.80	13.6	6.36	74.0
900401	YK	9	19.5	2	220	1	1.0	15.96	15.0	6.26	69.4	14.42	15.1	5.57	59.9
900401	YK	11	20.5	5	220	1	1.0	17.33	14.1	7.38	83.7	14.28	15.2	6.10	65.4
900401	YK	13	24.5	1	220	1	0.6	15.38	14.0	6.85	74.6	15.10	14.1	6.20	67.2
900401	YK	14	24.0	2	220	1	0.6	19.29	11.4	7.77	90.1	15.27	13.5	5.70	61.8
900401	YK	15	23.5	2	220	1	0.7	17.76	12.0	8.64	97.6	16.02	12.9	6.92	75.9
900401	YK	16	25.0	2	220	1	0.9	15.16	13.1	5.77	62.2	15.04	13.3	5.71	61.5
900401	YK	18	24.0	2	220	1	1.0	16.94	13.8	6.39	71.8	14.72	14.6	5.53	59.6
900401	YK	20	20.0	2	220	1	0.3	16.56	9.9	7.82	85.1	16.18	9.8	7.48	80.7
900401	YK	21	19.5	2	220	1	0.5	16.12	9.3	7.54	81.0	15.17	11.8	6.17	66.0
900401	YK	23	25.0	2	220	1	0.6	17.16	11.2	6.78	75.3	15.18	12.8	5.93	63.9
900401	YK	24	24.0	2	220	1	0.7	16.36	11.6	7.05	77.2	15.24	12.6	6.38	68.7
900401	YK	25	19.5	2	220	1	0.4	17.34	7.9	9.03	98.7	17.34	7.9	9.03	98.7
900401	YK	27	18.0	2	220	1	0.3	16.47	7.4	8.44	90.3	16.29	8.2	7.84	84.0
900401	YK	28	18.0	2	220	1	0.4	16.40	7.3	8.70	92.9	16.23	8.0	7.85	83.9
900401	YK	29		2	220	1		16.30	3.7	8.25	86.0	10.30	3.7	8.25	75.4
900401	YK	30	16.0	2	220	4	0.2	16.39	3.1	7.90	82.2	16.37	3.1	7.90	82.2
900401	YK	31	16.0	2	220	1	0.4	16.45	4.8	8.12	85.5	7.81	5.6	7.69	67.0

Table 19.

May, 1990

Cruise Number	River	River Mile	Air Temp. (C)	Wind Speed m/sec	Wind Direct. (deg)	Obs. Weather	Secchi (m)	Surface				Bottom			
								Temp. (C)	Salin. (ppt)	DO (mg/L)	% Satur.	Temp. (C)	Salin. (ppt)	DO (mg/L)	% Satur.
900501	YK	1	14.0	5	90	1		19.03	19.8	8.75	106.2				
900501	YK	2	13.5	8	90	6	0.8	18.63	20.6	8.85	107.1				
900501	YK	3	14.0	10	40	1	0.9	19.46	20.5	8.60	105.7	19.41	21.0	6.94	85.4
900501	YK	4	15.0	8	90	6	1.2	19.17	20.6	7.09	86.7	19.23	20.6	7.13	87.3
900501	YK	5	14.0	10	90	6	6	19.11	20.6	8.57	104.6	18.15	23.8	4.74	57.9
900501	YK	6	14.0	8	90	6	1.0	18.84	20.6	8.86	107.6	17.63	23.7	5.84	70.6
900501	YK	8	14.5	8	40	5	0.5	18.50	20.2	7.51	90.4	18.89	20.7	6.00	73.0
900501	YK	9	14.0	10	40	6	0.8	19.26	20.6	7.87	96.4	19.30	20.5	7.28	89.2
900501	YK	11	15.0	5	40	6	1.0	18.95	20.1	7.61	92.4	18.75	22.0	5.42	66.3
900501	YK	13		5	40	6		18.73	20.0	7.65	92.4				
900501	YK	17	15.0	5	40	5	0.7	18.77	17.8	9.95	118.7	19.01	20.3	9.27	112.8
900502	YK	14	15.0	5	320	1	0.3	18.10	15.6	9.67	112.4				
900502	YK	15		5	320	1	0.8	18.91	16.2	7.30	86.5				
900502	YK	16	18.0	5	320	1	0.6	19.50	14.0						
900502	YK	20	18.0	5	320	1		20.00	12.0						
900502	YK	22	19.0	5	320	1	0.6	20.50	12.0						
900502	YK	23		4	320	1	0.6	19.50	15.0						
900502	YK	24	18.0	5	320	1	0.5	20.00	14.0						
900502	YK	26	19.0	2	320	1	0.2	20.00	10.0						
900502	YK	27	20.0	2	320	1	0.4	20.50	10.0						
900502	YK	28	19.5	2	320	1		20.00	12.0						
900502	YK	29		2	320	1		20.00	10.0						
900502	YK	30	20.5	2	320	1	0.3	21.00	5.0						
900502	YK	32	21.0	2	320	1		21.00	5.0						

Table 20.

June, 1990

Cruise Number	River	River Mile	Air Temp. (C)	Wind Speed m/sec	Wind Direct. (deg)	Obs. Weather	Secchi (m)	Surface				Bottom			
								Temp. (C)	Salin. (ppt)	DO (mg/L)	% Satur.	Temp. (C)	Salin. (ppt)	DO (mg/L)	% Satur.
900601	YK	8	27.0	5	90	1	0.7	26.23	18.1	8.90	122.0	24.57	19.0	5.07	67.8
900601	YK	9	27.0	8	90	1	1.0	25.54	18.7	7.82	106.3	24.40	19.4	5.25	70.2
900601	YK	12	28.0	8	90	1	1.3	25.72	19.0	9.13	124.7	23.17	21.3	4.56	60.3
900601	YK	13	27.5	5	90	1	0.5	25.74	17.4	7.92	107.2				
900601	YK	14	28.0	5	320	1	1.5	25.89	15.8	6.71	90.2				
900601	YK	15	28.5	2	90	1	1	25.79	18.3	7.29	99.3	24.44	19.0	4.77	63.7
900601	YK	16	26.0	0	0	1	0.8	25.18	18.1	5.72	77.0	24.87	18.3	5.17	69.3
900601	YK	18	27.5	0	1	1	1.2	25.93	18.0	6.88	93.8	24.65	18.6	5.17	69.1
900601	YK	20	25.0	5	320	1	0.4	25.70	13.2	6.36	84.0				
900601	YK	21	25.0	5	320	1	0.6	26.33	13.0	7.91	105.5	25.46	14.1	5.91	78.1
900601	YK	23	24.0	5	320	1	0.6	25.66	13.4	6.59	87.1	25.29	16.4	5.59	74.6
900601	YK	24	25.0	5	320	1		25.61	12.8	6.31	83.0	25.57	14.5	5.22	69.3
900601	YK	26	24.0	2	320	0	0.3	25.86	9.2	6.20	80.3				
900601	YK	27	24.0	5	320	1		26.41	10.9	7.09	93.6	25.69	11.5	5.50	71.9
900601	YK	28	26.0	2	320	0	0.5	25.85	8.9	5.82	75.2	25.85	9.7	5.52	71.7
900601	YK	29	27.5	2	320	0	0.2	25.51	8.7	5.81	74.6				
900601	YK	30	25.0	5	320	1	0.3	25.76	7.3	5.53	70.7	26.08	9.0	8.82	114.5
900601	YK	31	27.0	2	320	0	0.4	26.04	6.9	6.30	80.8	26.07	8.7	6.03	78.2
900602	YK	1	27.5	5	140	1	0.7	24.82	19.3	6.46	87.0				
900602	YK	2	27.5	5	140	1	1.1	25.19	19.4	8.25	111.9	25.15	19.4	8.12	110.0
900602	YK	3	28.5	2	140	1	1.0	25.10	19.3	8.31	112.4	24.72	19.4	6.83	91.8
900602	YK	4	27.5	5	140	1		25.06	19.6	7.85	106.3	25.06	19.4	7.56	102.3
900602	YK	5	26.0	2	140	1	1.0	24.96	19.1	6.92	93.3	24.37	19.6	5.71	76.4
900602	YK	6	28.5	2	140	1	1.3	25.01	19.2	8.18	110.4	24.16	20.1	5.43	72.6

Table 21.

July, 1990

Cruise Number	River	River Mile	Air Temp. (C)	Wind Speed m/sec	Wind Direct. (deg)	Obs. Weather	Secchi (m)	Surface				Bottom			
								Temp. (C)	Salin. (ppt)	DO (mg/L)	% Satur.	Temp. (C)	Salin. (ppt)	DO (mg/L)	% Satur.
900701	YK	8	.	8	220	1	.	30.00	22.0	.	.	29.00	22.0	.	.
900701	YK	9	.	8	220	1	0.5	30.00	22.0	.	.	29.50	22.0	.	.
900701	YK	12	.	7	220	1	0.8	29.50	22.0	.	.	29.50	22.0	.	.
900701	YK	13	.	5	220	1	0.5	29.00	20.0	5.20	75.5	28.00	20.0	4.80	68.5
900701	YK	14	.	5	220	1	0.4	29.00	21.0	4.90	71.6	29.00	19.0	4.20	60.7
900701	YK	15	.	8	220	1	0.9	30.00	24.0	.	.	28.00	22.0	.	.
900701	YK	16	.	5	220	1	0.8	30.00	22.0	9.20	137.3	28.00	22.0	7.60	109.7
900701	YK	17	.	8	220	1	0.5	29.00	25.0	.	.	29.00	22.0	.	.
900701	YK	19	.	5	220	1	0.3	29.50	19.0	5.80	84.5	29.00	18.0	5.90	84.7
900701	YK	20	.	5	220	1	0.3	29.50	19.0	5.80	84.5	29.00	18.0	5.90	84.7
900701	YK	21	.	5	220	1	0.5	29.00	16.0	5.20	73.9	29.00	17.0	5.70	81.4
900701	YK	23	.	5	220	1	0.5	29.00	15.0	5.80	81.9	28.50	16.0	5.90	83.1
900701	YK	24	.	5	220	1	0.5	29.00	14.0	5.80	81.5	28.50	15.0	4.90	68.6
900701	YK	25	.	5	220	1	.	29.00	15.0	5.30	74.9	28.00	16.0	5.90	82.4
900701	YK	27	.	8	220	1	0.5	29.00	15.0	.	.	28.50	14.0	5.60	78.0
900701	YK	28	.	7	220	1	0.4	28.00	28.5	.	.	28.50	15.0	.	.
900702	YK	1	.	5	360	1	0.7	28.00	22.0
900702	YK	2	.	10	360	0	1.0	27.00	22.0	.	.	26.00	22.0	.	.
900702	YK	3	.	8	360	0	1.1	27.50	23.0	.	.	28.00	22.0	.	.
900702	YK	4	.	8	360	1	0.8	28.00	24.0	.	.	27.50	23.0	.	.
900702	YK	5	.	5	360	0	0.7	28.00	22.0	.	.	27.00	22.0	.	.
900702	YK	6	.	10	360	0	0.9	28.00	22.0	.	.	27.00	22.0	.	.

Table 22. Species composition, number caught, catch per trawl, and length statistics for **all months** of the 1989 random trawl survey.

- Notes:
- A. The 'Number of Species' notation at the top of the table includes each of the three categories of blue crabs (male, juvenile female, adult female) as a different "species".
 - B. 'Adjusted Percent of Catch' excludes bay anchovy and hogchoker due to low biomass estimates in relation to number of fish caught.

Table 22.

Month - All - Pooled, 1989

Segment - All - Pooled

No. of Fish Trawls Made - 71

No. of Add'l Crab Trawls Made - 0

No. of Species - 36

Adjusted Percent of Catch Excludes Bay Anchovy and Hogchoker

Species	Number of Fish (All)	Percent of Catch	Catch Per Trawl	Adjusted Percent of Catch	Number of Fish (Index Age)	Average Length (mm)	Standard Error (length)	Minimum Length (mm)	Maximum Length (mm)
bay anchovy	11,222	56.86	158.06		8,975	52	0.18	20	90
spot	3,309	16.77	46.61	45.60	3,309	126	0.37	94	191
Atlantic croaker	2,160	10.95	30.42	29.76	2,095	53	0.45	11	191
hogchoker	1,256	6.36	17.69		59	91	0.84	30	191
blue crab, male	638	3.23	8.99	8.79		48	1.43	8	194
blue crab, juvenile female	411	2.08	5.79	5.66		40	1.22	6	131
weakfish	309	1.57	4.35	4.26	307	132	1.42	86	301
oyster toadfish	115	0.58	1.62	1.58		228	6.51	62	339
blackcheek tonguefish	70	0.35	0.99	0.96	43	97	4.23	44	152
silver perch	60	0.30	0.85	0.83	60	128	1.48	103	151
blue crab, adult female	37	0.19	0.52	0.51		154	2.04	133	187
summer flounder	35	0.18	0.49	0.48	29	233	11.35	131	406
white perch	28	0.14	0.39	0.39	8	148	11.97	55	262
kingfish	17	0.09	0.24	0.23		125	8.49	75	185
Atlantic menhaden	13	0.07	0.18	0.18		136	8.05	111	209
butterfish	11	0.06	0.15	0.15		117	5.70	90	150
American shad	7	0.04	0.10	0.10	7	85	1.55	79	91
threadfin shad	5	0.03	0.07	0.07		109	1.93	104	115
naked goby	4	0.02	0.06	0.06		42	5.52	28	55
bluefish	3	0.02	0.04	0.04		161	12.88	136	178
white catfish	3	0.02	0.04	0.04	0	366	40.13	310	444
inshore lizardfish	3	0.02	0.04	0.04		165	18.77	130	194
blueback herring	2	0.01	0.03	0.03	2	71	2.50	68	73
American eel	2	0.01	0.03	0.03		206	11.50	194	217
northern searobin	2	0.01	0.03	0.03		48	25.50	22	73
striped searobin	2	0.01	0.03	0.03		59	0.00	59	59
skilletfish	2	0.01	0.03	0.03		55	9.00	46	64
harvestfish	1	0.01	0.01	0.01		88		88	88
alewife	1	0.01	0.01	0.01	1	110		110	110
striped bass	1	0.01	0.01	0.01	1	86		86	86
Spanish mackerel	1	0.01	0.01	0.01		156		156	156
gizzard shad	1	0.01	0.01	0.01		280		280	280
spiny butterfly ray	1	0.01	0.01	0.01		479		479	479
conger eel	1	0.01	0.01	0.01		502		502	502
northern stargazer	1	0.01	0.01	0.01		37		37	37
smallmouth flounder	1	0.01	0.01	0.01		87		87	87
All Species Combined	19,735								

Tables 23-25. Species composition, number caught, catch per trawl, and length statistics for **all months, by segment** of the 1989 random trawl survey.

- Notes:
- A. The 'Number of Species' notation at the top of the table includes each of the three categories of blue crabs (male, juvenile female, adult female) as a different "species".
 - B. 'Adjusted Percent of Catch' excludes bay anchovy and hogchoker due to low biomass estimates in relation to number of fish caught.

Table 23.

Month - All - Pooled, 1989									
Segment - York River - Bottom									
No. of Fish Trawls Made - 27									
No. of Add'l Crab Trawls Made - 0									
No. of Species - 15									
Adjusted Percent of Catch Excludes Bay Anchovy and Hogchoker									
Species	Number of Fish (All)	Percent of Catch	Catch Per Trawl	Adjusted Percent of Catch	Number of Fish (Index Age)	Average Length (mm)	Standard Error (length)	Minimum Length (mm)	Maximum Length (mm)
bay anchovy	425	45.45	15.74		422	47	0.41	30	75
spot	354	37.86	13.11	71.08	354	123	0.57	98	146
Atlantic croaker	87	9.30	3.22	17.47	87	51	1.86	19	96
blue crab, male	16	1.71	0.59	3.21		81	12.56	16	155
hogchoker	12	1.28	0.44		0	125	7.03	95	162
blue crab, juvenile female	11	1.18	0.41	2.21		75	9.78	26	115
weakfish	7	0.75	0.26	1.41	7	146	2.63	140	157
silver perch	5	0.53	0.19	1.00	5	122	7.91	109	151
summer flounder	4	0.43	0.15	0.80	4	207	3.92	197	216
blue crab, adult female	4	0.43	0.15	0.80		157	10.41	139	182
blackcheek tonguefish	3	0.32	0.11	0.60	0	131	1.76	128	134
bluefish	2	0.21	0.07	0.40		157	21.00	136	178
kingfish	2	0.21	0.07	0.40		157	5.50	151	162
oyster toadfish	2	0.21	0.07	0.40		134	68.00	66	202
naked goby	1	0.11	0.04	0.20		42		42	42
All Species Combined	935								

Table 24.

Month - All - Pooled, 1989									
Segment - York River - Lower									
No. of Fish Trawls Made - 18									
No. of Add'l Crab Trawls Made - 0									
No. of Species - 20									
Adjusted Percent of Catch Excludes Bay Anchovy and Hogchoker									
Species	Number of Fish (All)	Percent of Catch	Catch Per Trawl	Adjusted Percent of Catch	Number of Fish (Index Age)	Average Length (mm)	Standard Error (length)	Minimum Length (mm)	Maximum Length (mm)
bay anchovy	4,852	79.33	269.56		4,092	49	0.46	20	89
Atlantic croaker	431	7.05	23.94	50.77	426	56	0.92	15	111
hogchoker	415	6.79	23.06		2	91	1.51	30	191
spot	92	1.50	5.11	10.84	92	126	1.39	104	179
blue crab, male	89	1.46	4.94	10.48		33	1.80	8	116
blue crab, juvenile female	84	1.37	4.67	9.89		33	1.20	14	83
weakfish	42	0.69	2.33	4.95	42	135	2.75	93	184
oyster toadfish	33	0.54	1.83	3.89		241	12.57	62	332
blackcheek tonguefish	26	0.43	1.44	3.06	14	104	7.67	44	152
silver perch	13	0.21	0.72	1.53	13	130	2.48	113	142
white perch	11	0.18	0.61	1.30	0	188	12.91	125	262
butterfish	10	0.16	0.56	1.18		118	6.21	90	150
summer flounder	5	0.08	0.28	0.59	5	215	5.33	201	227
kingfish	4	0.07	0.22	0.47		94	1.19	90	95
American shad	3	0.05	0.17	0.35	3	89	1.15	87	91
Atlantic menhaden	2	0.03	0.11	0.24		125	6.00	119	131
gizzard shad	1	0.02	0.06	0.12		280		280	280
northern searobin	1	0.02	0.06	0.12		22		22	22
skilletfish	1	0.02	0.06	0.12		46		46	46
conger eel	1	0.02	0.06	0.12		502		502	502
All Species Combined	6,116								

Table 25.

Month - All - Pooled, 1989									
Segment - York River - Upper									
No. of Fish Trawls Made - 18									
No. of Add'l Crab Trawls Made - 0									
No. of Species - 19									
Adjusted Percent of Catch Excludes Bay Anchovy and Hogchoker									
Species	Number of Fish (All)	Percent of Catch	Catch Per Trawl	Adjusted Percent of Catch	Number of Fish (Index Age)	Average Length (mm)	Standard Error (length)	Minimum Length (mm)	Maximum Length (mm)
bay anchovy	1,084	49.91	60.22		1,024	45	0.42	24	84
Atlantic croaker	642	29.56	35.67	67.23	642	47	1.17	11	99
hogchoker	133	6.12	7.39		10	92	2.46	36	170
blue crab, male	99	4.56	5.50	10.37		47	3.21	10	158
blue crab, juvenile female	66	3.04	3.67	6.91		49	3.84	15	130
spot	55	2.53	3.06	5.76	55	132	1.83	110	168
weakfish	22	1.01	1.22	2.30	22	119	4.17	86	164
oyster toadfish	20	0.92	1.11	2.09		206	13.35	112	327
white perch	16	0.74	0.89	1.68	8	114	13.42	55	190
blackcheek tonguefish	10	0.46	0.56	1.05	10	78	2.25	63	86
blue crab, adult female	7	0.32	0.39	0.73		155	3.08	146	168
Atlantic menhaden	6	0.28	0.33	0.63		150	16.03	111	209
silver perch	4	0.18	0.22	0.42	4	126	2.60	119	131
blueback herring	2	0.09	0.11	0.21	2	71	2.50	68	73
white catfish	2	0.09	0.11	0.21	0	328	17.50	310	345
summer flounder	1	0.05	0.06	0.10	1	232		232	232
striped bass	1	0.05	0.06	0.10	1	86		86	86
naked goby	1	0.05	0.06	0.10		55		55	55
skilletfish	1	0.05	0.06	0.10		64		64	64
All Species Combined	2,172								

Tables 26-28. Species composition, number caught, catch per trawl, and length statistics by **month** for the 1989 random trawl survey.

- Notes:
- A. The 'Number of Species' notation at the top of the table includes each of the three categories of blue crabs (male, juvenile female, adult female) as a different "species".
 - B. 'Adjusted Percent of Catch' excludes bay anchovy and hogchoker due to low biomass estimates in relation to number of fish caught.

Table 26.

Month - October, 1989									
RIVER - York									
No. of Fish Trawls Made - 24									
No. of Add'l Crab Trawls Made - 0									
No. of Species - 31									
Adjusted Percent of Catch Excludes Bay Anchovy and Hogchoker									
Species	Number of Fish (All)	Percent of Catch	Catch Per Trawl	Adjusted Percent of Catch	Number of Fish (Index Age)	Average Length (mm)	Standard Error (length)	Minimum Length (mm)	Maximum Length (mm)
bay anchovy	4,860	46.24	202.50		3,436	56	0.20	29	90
spot	2,808	26.72	117.00	56.68	2,808	126	0.45	94	191
Atlantic croaker	1,000	9.51	41.67	20.19	940	54	0.58	20	191
hogchoker	696	6.62	29.00		47	89	1.09	31	171
blue crab, male	434	4.13	18.08	8.76	.	50	1.82	8	194
blue crab, juvenile female	249	2.37	10.38	5.03	.	39	1.53	6	131
weakfish	238	2.26	9.92	4.80	236	132	1.71	87	301
oyster toadfish	60	0.57	2.50	1.21	.	231	8.86	64	339
silver perch	38	0.36	1.58	0.77	38	129	1.91	103	150
blackcheek tonguefish	31	0.29	1.29	0.63	19	93	6.48	52	146
blue crab, adult female	26	0.25	1.08	0.52	.	153	2.42	133	187
summer flounder	25	0.24	1.04	0.50	19	241	15.63	131	406
kingfish	11	0.10	0.46	0.22	.	131	10.97	75	185
Atlantic menhaden	5	0.05	0.21	0.10	.	124	2.04	119	131
threadfin shad	5	0.05	0.21	0.10	.	109	1.93	104	115
American shad	4	0.04	0.17	0.08	4	83	1.32	79	85
inshore lizardfish	3	0.03	0.13	0.06	.	165	18.77	130	194
American eel	2	0.02	0.08	0.04	.	206	11.50	194	217
striped searobin	2	0.02	0.08	0.04	.	59	0.00	59	59
naked goby	2	0.02	0.08	0.04	.	36	7.50	28	43
butterfish	1	0.01	0.04	0.02	.	107	.	107	107
bluefish	1	0.01	0.04	0.02	.	170	.	170	170
harvestfish	1	0.01	0.04	0.02	.	88	.	88	88
alewife	1	0.01	0.04	0.02	1	110	.	110	110
white perch	1	0.01	0.04	0.02	0	248	.	248	248
white catfish	1	0.01	0.04	0.02	0	444	.	444	444
Spanish mackerel	1	0.01	0.04	0.02	.	156	.	156	156
northern searobin	1	0.01	0.04	0.02	.	73	.	73	73
spiny butterfly ray	1	0.01	0.04	0.02	.	479	.	479	479
northern stargazer	1	0.01	0.04	0.02	.	37	.	37	37
smallmouth flounder	1	0.01	0.04	0.02	.	87	.	87	87
All Species Combined	10,510								

Table 27.

Month - November, 1989									
RIVER - York									
No. of Fish Trawls Made - 23									
No. of Add'l Crab Trawls Made - 0									
No. of Species - 22									
Adjusted Percent of Catch Excludes Bay Anchovy and Hogchoker									
Species	Number of Fish (All)	Percent of Catch	Catch Per Trawl	Adjusted Percent of Catch	Number of Fish (Index Age)	Average Length (mm)	Standard Error (length)	Minimum Length (mm)	Maximum Length (mm)
bay anchovy	4,807	66.47	209.00		3,987	58	0.37	30	89
Atlantic croaker	945	13.07	41.09	47.13	940	59	0.67	16	111
spot	501	6.93	21.78	24.99	501	125	0.60	98	179
hogchoker	420	5.81	18.26		11	98	1.82	32	191
blue crab, male	182	2.52	7.91	9.08	.	46	2.37	10	158
blue crab, juvenile female	143	1.98	6.22	7.13	.	44	2.23	15	130
weakfish	71	0.98	3.09	3.54	71	131	2.34	86	184
oyster toadfish	53	0.73	2.30	2.64	.	231	8.99	66	332
blackcheek tonguefish	35	0.48	1.52	1.75	22	100	5.49	53	152
silver perch	22	0.30	0.96	1.10	22	127	2.36	109	151
blue crab, adult female	11	0.15	0.48	0.55	.	155	3.94	139	182
butterfish	10	0.14	0.43	0.50	.	118	6.21	90	150
summer flounder	9	0.12	0.39	0.45	9	213	4.08	197	232
kingfish	6	0.08	0.26	0.30	.	115	13.38	90	162
white perch	5	0.07	0.22	0.25	0	176	4.48	164	190
Atlantic menhaden	3	0.04	0.13	0.15	.	157	25.83	131	209
bluefish	2	0.03	0.09	0.10	.	157	21.00	136	178
white catfish	2	0.03	0.09	0.10	0	328	17.50	310	345
naked goby	2	0.03	0.09	0.10	.	49	6.50	42	55
northern searobin	1	0.01	0.04	0.05	.	22	.	22	22
skilletfish	1	0.01	0.04	0.05	.	64	.	64	64
conger eel	1	0.01	0.04	0.05	.	502	.	502	502
All Species Combined	7,232								

Table 28.

Month - December, 1989

RIVER - York

No. of Fish Trawls Made - 24

No. of Add'l Crab Trawls Made - 0

No. of Species - 15

Adjusted Percent of Catch Excludes Bay Anchovy and Hogchoker

Species	Number of Fish (All)	Percent of Catch	Catch Per Trawl	Adjusted Percent of Catch	Number of Fish (Index Age)	Average Length (mm)	Standard Error (length)	Minimum Length (mm)	Maximum Length (mm)
bay anchovy	1,555	78.02	64.79	.	1,552	41	0.23	20	81
Atlantic croaker	215	10.79	8.96	72.15	215	31	0.94	11	90
hogchoker	140	7.02	5.83	.	1	84	1.50	30	148
white perch	22	1.10	0.92	7.38	8	137	14.06	55	262
blue crab, male	22	1.10	0.92	7.38	.	24	2.43	8	47
blue crab, juvenile female	19	0.95	0.79	6.38	.	31	2.61	14	55
Atlantic menhaden	5	0.25	0.21	1.68	.	136	13.94	111	184
blackcheek tonguefish	4	0.20	0.17	1.34	2	97	30.03	44	150
American shad	3	0.15	0.13	1.01	3	89	1.15	87	91
blueback herring	2	0.10	0.08	0.67	2	71	2.50	68	73
oyster toadfish	2	0.10	0.08	0.67	.	64	2.00	62	66
summer flounder	1	0.05	0.04	0.34	1	221	.	221	221
striped bass	1	0.05	0.04	0.34	1	86	.	86	86
gizzard shad	1	0.05	0.04	0.34	.	280	.	280	280
skilletfish	1	0.05	0.04	0.34	.	46	.	46	46
All Species Combined	1,993								

Table 29. Species composition, number caught, catch per trawl, and length statistics for **all months** of the 1990 random trawl survey.

- Notes:
- A. The 'Number of Species' notation at the top of the table includes each of the three categories of blue crabs (male, juvenile female, adult female) as a different "species".
 - B. 'Adjusted Percent of Catch' excludes bay anchovy and hogchoker due to low biomass estimates in relation to number of fish caught.

Table 29.

Month - All - Pooled, 1990

Segment - All - Pooled

No. of Fish Trawls Made - 165

No. of Add'l Crab Trawls Made - 0

No. of Species - 43

Adjusted Percent of Catch Excludes Bay Anchovy and Hogchoker

Species	Number of Fish (All)	Percent of Catch	Catch Per Trawl	Adjusted Percent of Catch	Number of Fish (Index Age)	Average Length (mm)	Standard Error (length)	Minimum Length (mm)	Maximum Length (mm)
bay anchovy	34,852	62.09	211.22		28,293	51	0.13	22	98
spot	8,326	14.83	50.46	57.94	8,258	74	0.50	16	211
hogchoker	6,914	12.32	41.90		2,215	84	0.49	32	196
blue crab, male	1,948	3.47	11.81	13.56	.	73	0.91	9	191
blue crab, juvenile female	1,363	2.43	8.26	9.49	.	64	0.86	5	154
weakfish	347	0.62	2.10	2.41	337	56	2.74	15	401
white perch	342	0.61	2.07	2.38	124	111	2.22	47	245
blueback herring	323	0.58	1.96	2.25	323	83	0.62	48	106
harvestfish	260	0.46	1.58	1.81	.	42	0.97	16	156
spotted hake	240	0.43	1.45	1.67	.	98	2.64	45	243
oyster toadfish	216	0.38	1.31	1.50	.	188	5.75	47	360
white catfish	155	0.28	0.94	1.08	3	184	5.13	102	404
blue crab, adult female	113	0.20	0.68	0.79	.	148	1.47	95	192
northern pipefish	109	0.19	0.66	0.76	.	138	2.15	81	204
summer flounder	103	0.18	0.62	0.72	96	107	5.91	41	355
Atlantic croaker	99	0.18	0.60	0.69	73	112	4.14	46	222
blackcheek tonguefish	81	0.14	0.49	0.56	74	78	2.82	35	164
northern searobin	75	0.13	0.45	0.52	.	76	1.68	49	116
striped bass	62	0.11	0.38	0.43	58	116	5.64	31	309
naked goby	48	0.09	0.29	0.33	.	44	1.24	27	61
American eel	25	0.04	0.15	0.17	.	252	19.43	139	500
Atlantic menhaden	17	0.03	0.10	0.12	.	99	13.71	28	191
butterfish	15	0.03	0.09	0.10	.	44	2.96	24	60
black seabass	13	0.02	0.08	0.09	13	117	5.28	90	148
inshore lizardfish	12	0.02	0.07	0.08	.	82	2.16	70	99
American shad	11	0.02	0.07	0.08	11	109	4.22	86	129
bluefish	9	0.02	0.05	0.06	.	173	17.23	61	242
red hake	7	0.01	0.04	0.05	.	127	11.52	72	160
winter flounder	7	0.01	0.04	0.05	.	73	5.23	60	93
northern puffer	7	0.01	0.04	0.05	5	92	25.98	33	215
Atlantic silverside	7	0.01	0.04	0.05	7	98	5.27	83	114
striped searobin	4	0.01	0.02	0.03	.	139	3.75	131	147
silver perch	4	0.01	0.02	0.03	3	94	31.82	58	189
alewife	3	0.01	0.02	0.02	3	97	2.31	93	101
dusky pipefish	3	0.01	0.02	0.02	.	80	10.04	67	100
green goby	3	0.01	0.02	0.02	.	54	4.41	46	61
smallmouth flounder	3	0.01	0.02	0.02	.	36	3.28	31	42
gizzard shad	2	0.00	0.01	0.01	.	130	17.50	112	147
spotted seatrout	2	0.00	0.01	0.01	.	43	6.50	36	49
skilletfish	2	0.00	0.01	0.01	.	50	3.00	47	53
kingfish	1	0.00	0.01	0.01	.	179	.	179	179
lined seahorse	1	0.00	0.01	0.01	.	97	.	97	97
gag	1	0.00	0.01	0.01	.	96	.	96	96
All Species Combined	56,135								

Tables 30-32. Species composition, number caught, catch per trawl, and length statistics for **all months, by segment** of the 1990 random trawl survey.

- Notes:
- A. The 'Number of Species' notation at the top of the table includes each of the three categories of blue crabs (male, juvenile female, adult female) as a different "species".
 - B. 'Adjusted Percent of Catch' excludes bay anchovy and hogchoker due to low biomass estimates in relation to number of fish caught.

Table 30.

Month - All - Pooled, 1990
 Segment - York River - Bottom
 No. of Fish Trawls Made - 63
 No. of Add'l Crab Trawls Made - 0
 No. of Species - 32
 Adjusted Percent of Catch Excludes Bay Anchovy and Hogchoker

Species	Number of Fish (All)	Percent of Catch	Catch Per Trawl	Adjusted Percent of Catch	Number of Fish (Index Age)	Average Length (mm)	Standard Error (length)	Minimum Length (mm)	Maximum Length (mm)
bay anchovy	23,733	84.32	376.71		17,993	49	0.18	22	97
spot	2,658	9.44	42.19	64.11	2,637	73	0.74	16	211
blue crab, juvenile female	456	1.62	7.24	11.00		65	1.52	5	151
blue crab, male	380	1.35	6.03	9.17		83	2.25	9	176
hogchoker	267	0.95	4.24		14	93	1.23	60	185
weakfish	109	0.39	1.73	2.63	109	47	3.86	15	190
harvestfish	99	0.35	1.57	2.39		41	1.07	16	64
northern pipefish	99	0.35	1.57	2.39		137	2.16	81	204
northern searobin	62	0.22	0.98	1.50		77	1.93	49	116
blue crab, adult female	61	0.22	0.97	1.47		146	2.14	101	192
summer flounder	42	0.15	0.67	1.01	37	125	11.40	47	347
oyster toadfish	34	0.12	0.54	0.82		202	16.93	47	360
spotted hake	23	0.08	0.37	0.55		69	4.88	45	160
naked goby	22	0.08	0.35	0.53		45	1.88	27	60
blackcheek tonguefish	17	0.06	0.27	0.41	16	62	6.50	35	141
butterfish	12	0.04	0.19	0.29		44	3.06	27	60
inshore lizardfish	12	0.04	0.19	0.29		82	2.16	70	99
black seabass	11	0.04	0.17	0.27	11	113	5.08	90	148
Atlantic croaker	10	0.04	0.16	0.24	3	167	14.46	70	202
winter flounder	7	0.02	0.11	0.17		73	5.23	60	93
northern puffer	6	0.02	0.10	0.14	4	82	28.23	33	215
Atlantic silverside	6	0.02	0.10	0.14	6	97	6.03	83	114
American shad	5	0.02	0.08	0.12	5	98	3.81	86	106
striped searobin	3	0.01	0.05	0.07		137	3.84	131	144
green goby	3	0.01	0.05	0.07		54	4.41	46	61
spotted seatrout	2	0.01	0.03	0.05		43	6.50	36	49
skilletfish	2	0.01	0.03	0.05		50	3.00	47	53
bluefish	1	0.00	0.02	0.02		179		179	179
kingfish	1	0.00	0.02	0.02		179		179	179
lined seahorse	1	0.00	0.02	0.02		97		97	97
dusky pipefish	1	0.00	0.02	0.02		100		100	100
gag	1	0.00	0.02	0.02		96		96	96
All Species Combined	28,146								

Table 31.

Month - All - Pooled, 1990
 Segment - York River - Lower
 No. of Fish Trawls Made - 62
 No. of Add'l Crab Trawls Made - 0
 No. of Species - 32
 Adjusted Percent of Catch Excludes Bay Anchovy and Hogchoker

Species	Number of Fish (All)	Percent of Catch	Catch Per Trawl	Adjusted Percent of Catch	Number of Fish (Index Age)	Average Length (mm)	Standard Error (length)	Minimum Length (mm)	Maximum Length (mm)
bay anchovy	5,941	38.00	95.82		5,403	53	0.22	26	98
spot	4,587	29.34	73.98	64.41	4,555	77	1.02	17	194
hogchoker	2,572	16.45	41.48		608	85	0.71	37	196
blue crab, male	869	5.56	14.02	12.20		72	1.31	10	191
blue crab, juvenile female	628	4.02	10.13	8.82		64	1.25	10	154
blueback herring	321	2.05	5.18	4.51	321	83	0.56	70	106
spotted hake	191	1.22	3.08	2.68		99	2.99	48	243
oyster toadfish	105	0.67	1.69	1.47		189	8.88	48	346
harvestfish	97	0.62	1.56	1.36		37	1.05	16	61
weakfish	95	0.61	1.53	1.33	85	91	7.85	21	401
blue crab, adult female	40	0.26	0.65	0.56		148	2.00	95	168
white perch	37	0.24	0.60	0.52	8	164	10.36	60	245
summer flounder	34	0.22	0.55	0.48	33	100	5.07	57	187
Atlantic croaker	23	0.15	0.37	0.32	13	140	10.17	80	222
blackcheek tonguefish	22	0.14	0.35	0.31	18	86	7.11	40	164
northern searobin	13	0.08	0.21	0.18		73	3.00	56	92
naked goby	12	0.08	0.19	0.17		45	2.73	31	61
striped bass	9	0.06	0.15	0.13	8	126	23.55	80	309
northern pipefish	6	0.04	0.10	0.08		166	11.70	131	200
American shad	5	0.03	0.08	0.07	5	121	4.53	103	129
Atlantic menhaden	5	0.03	0.08	0.07		96	7.02	80	119
white catfish	5	0.03	0.08	0.07	0	323	17.27	298	388
American eel	4	0.03	0.06	0.06		329	80.02	168	500
silver perch	4	0.03	0.06	0.06	3	94	31.82	58	189
black seabass	2	0.01	0.03	0.03	2	143	2.50	140	145
dusky pipefish	2	0.01	0.03	0.03		71	3.50	67	74
butterfish	1	0.01	0.02	0.01		24		24	24
bluefish	1	0.01	0.02	0.01		61		61	61
alewife	1	0.01	0.02	0.01	1	101		101	101
northern puffer	1	0.01	0.02	0.01	1	154		154	154
striped searobin	1	0.01	0.02	0.01		147		147	147
Atlantic silverside	1	0.01	0.02	0.01	1	106		106	106
All Species Combined	15,635								

Table 32.

Month - All - Pooled, 1990

Segment - York River - Upper

No. of Fish Trawls Made - 39

No. of Add'l Crab Trawls Made - 0

No. of Species - 27

Adjusted Percent of Catch Excludes Bay Anchovy and Hogchoker

Species	Number of Fish (All)	Percent of Catch	Catch Per Trawl	Adjusted Percent of Catch	Number of Fish (Index Age)	Average Length (mm)	Standard Error (length)	Minimum Length (mm)	Maximum Length (mm)
bay anchovy	5,069	41.74	129.97	.	4,879	51	0.30	27	90
hogchoker	4,075	33.56	104.49	.	1,593	79	0.76	32	168
spot	1,081	8.90	27.72	36.03	1,066	70	0.84	19	158
blue crab, male	699	5.76	17.92	23.30	.	69	1.46	10	183
white perch	305	2.51	7.82	10.17	116	105	1.85	47	221
blue crab, juvenile female	277	2.28	7.10	9.23	.	64	1.84	10	146
white catfish	150	1.24	3.85	5.00	3	180	4.83	102	404
oyster toadfish	77	0.63	1.97	2.57	.	181	7.62	63	313
Atlantic croaker	66	0.54	1.69	2.20	57	94	2.40	46	148
harvestfish	58	0.48	1.49	1.93	.	53	2.99	21	156
striped bass	53	0.44	1.36	1.77	50	115	5.37	31	253
weakfish	52	0.43	1.33	1.73	52	47	2.23	27	104
blackcheek tonguefish	42	0.35	1.08	1.40	40	80	2.48	44	124
summer flounder	27	0.22	0.69	0.90	26	87	11.19	41	355
spotted hake	26	0.21	0.67	0.87	.	116	7.30	63	179
American eel	21	0.17	0.54	0.70	.	237	16.98	139	485
naked goby	14	0.12	0.36	0.47	.	43	2.10	28	55
Atlantic menhaden	12	0.10	0.31	0.40	.	101	19.47	28	191
blue crab, adult female	12	0.10	0.31	0.40	.	160	3.82	140	182
bluefish	7	0.06	0.18	0.23	.	188	13.14	129	242
red hake	7	0.06	0.18	0.23	.	127	11.52	72	160
northern pipefish	4	0.03	0.10	0.13	.	131	1.31	129	134
smallmouth flounder	3	0.02	0.08	0.10	.	36	3.28	31	42
alewife	2	0.02	0.05	0.07	2	95	2.00	93	97
blueback herring	2	0.02	0.05	0.07	2	61	13.00	48	74
gizzard shad	2	0.02	0.05	0.07	.	130	17.50	112	147
American shad	1	0.01	0.03	0.03	1	110	.	110	110
All Species Combined	12,144								

Tables 33-39. Species composition, number caught, catch per trawl, and length statistics by **month** for the 1991 random trawl survey.

- Notes:
- A. The 'Number of Species' notation at the top of the table includes each of the three categories of blue crabs (male, juvenile female, adult female) as a different "species".
 - B. 'Adjusted Percent of Catch' excludes bay anchovy and hogchoker due to low biomass estimates in relation to number of fish caught.

Table 33.

Month - January, 1990									
RIVER - York									
No. of Fish Trawls Made - 24									
No. of Add'l Crab Trawls Made - 0									
No. of Species - 19									
Adjusted Percent of Catch Excludes Bay Anchovy and Hogchoker									
Species	Number of Fish (All)	Percent of Catch	Catch Per Trawl	Adjusted Percent of Catch	Number of Fish (Index Age)	Average Length (mm)	Standard Error (length)	Minimum Length (mm)	Maximum Length (mm)
white perch	143	43.20	5.96	49.83	68	108	3.86	56	245
hogchoker	42	12.69	1.75		4	87	3.66	46	148
striped bass	34	10.27	1.42	11.85	33	103	4.75	68	210
blue crab, male	23	6.95	0.96	8.01	.	29	4.72	10	115
harvestfish	20	6.04	0.83	6.97	.	77	4.82	45	156
blackcheck tonguefish	17	5.14	0.71	5.92	16	58	5.96	35	141
blue crab, juvenile female	16	4.83	0.67	5.57	.	23	3.23	10	56
naked goby	12	3.63	0.50	4.18	.	40	1.87	27	49
Atlantic silverside	5	1.51	0.21	1.74	5	99	6.72	83	114
oyster toadfish	5	1.51	0.21	1.74	.	190	50.32	47	321
green goby	3	0.91	0.13	1.05	.	54	4.41	46	61
blueback herring	2	0.60	0.08	0.70	2	59	11.00	48	70
gizzard shad	2	0.60	0.08	0.70	.	130	17.50	112	147
bay anchovy	2	0.60	0.08		2	46	6.00	40	52
summer flounder	1	0.30	0.04	0.35	1	178	.	178	178
American shad	1	0.30	0.04	0.35	1	103	.	103	103
dusky pipefish	1	0.30	0.04	0.35	.	100	.	100	100
skilletfish	1	0.30	0.04	0.35	.	47	.	47	47
blue crab, adult female	1	0.30	0.04	0.35	.	153	.	153	153
All Species Combined	331								

Table 34.

Month - February, 1990									
RIVER - York									
No. of Fish Trawls Made - 23									
No. of Add'l Crab Trawls Made - 0									
No. of Species - 17									
Adjusted Percent of Catch Excludes Bay Anchovy and Hogchoker									
Species	Number of Fish (All)	Percent of Catch	Catch Per Trawl	Adjusted Percent of Catch	Number of Fish (Index Age)	Average Length (mm)	Standard Error (length)	Minimum Length (mm)	Maximum Length (mm)
bay anchovy	464	34.60	20.17		456	52	0.62	27	92
blueback herring	281	20.95	12.22	40.37	281	84	0.66	70	106
hogchoker	131	13.50	7.87		13	84	1.53	41	160
white perch	125	9.32	5.43	17.96	46	105	3.11	47	208
blue crab, male	102	7.61	4.43	14.66	.	38	2.51	10	161
spotted hake	68	5.07	2.96	9.77	.	66	2.16	48	163
blue crab, juvenile female	58	4.33	2.52	8.33	.	38	2.24	19	96
white catfish	33	2.46	1.43	4.74	0	217	15.07	135	404
striped bass	9	0.67	0.39	1.29	8	135	23.76	83	309
oyster toadfish	7	0.52	0.30	1.01	.	177	44.68	49	308
Atlantic croaker	3	0.22	0.13	0.43	3	77	3.71	70	82
alewife	2	0.15	0.09	0.29	2	95	2.00	93	97
American shad	2	0.15	0.09	0.29	2	117	6.50	110	123
Atlantic menhaden	2	0.15	0.09	0.29	.	112	7.50	104	119
naked goby	2	0.15	0.09	0.29	.	37	5.50	31	42
northern pipefish	1	0.07	0.04	0.14	.	109	.	109	109
blackcheck tonguefish	1	0.07	0.04	0.14	1	52	.	52	52
All Species Combined	1,341								

Table 35.

Month - March, 1990
 RIVER - York
 No. of Fish Trawls Made - 24
 No. of Add'l Crab Trawls Made - 0
 No. of Species - 20
 Adjusted Percent of Catch Excludes Bay Anchovy and Hogchoker

Species	Number of Fish (All)	Percent of Catch	Catch Per Trawl	Adjusted Percent of Catch	Number of Fish (Index Age)	Average Length (mm)	Standard Error (length)	Minimum Length (mm)	Maximum Length (mm)
bay anchovy	4,029	80.92	167.88	.	3,983	60	0.38	34	97
hogchoker	372	7.47	15.50	.	15	92	1.32	40	196
blue crab, male	132	2.65	5.50	22.84	.	46	3.07	10	152
blue crab, juvenile female	113	2.27	4.71	19.55	.	41	2.43	10	139
spotted hake	92	1.85	3.83	15.92	.	89	1.78	60	138
white perch	57	1.14	2.38	9.86	4	121	3.16	56	195
spot	51	1.02	2.13	8.82	51	21	0.30	17	27
oyster toadfish	47	0.94	1.96	8.13	.	196	10.99	51	313
blueback herring	40	0.80	1.67	6.92	40	80	0.89	72	97
striped bass	11	0.22	0.46	1.90	11	123	7.55	96	166
northern searobin	9	0.18	0.38	1.56	.	65	3.75	52	83
American shad	8	0.16	0.33	1.38	8	109	5.55	86	129
blackcheek tonguefish	5	0.10	0.21	0.87	5	62	3.50	52	72
white catfish	4	0.08	0.17	0.69	0	208	28.59	162	285
Atlantic croaker	3	0.06	0.13	0.52	3	86	4.18	81	94
dusky pipefish	2	0.04	0.08	0.35	.	71	3.50	67	74
alewife	1	0.02	0.04	0.17	1	101	.	101	101
Atlantic menhaden	1	0.02	0.04	0.17	.	162	.	162	162
northern pipefish	1	0.02	0.04	0.17	.	198	.	198	198
naked goby	1	0.02	0.04	0.17	.	47	.	47	47
All Species Combined	4,979								

Table 36.

Month - April, 1990
 RIVER - York
 No. of Fish Trawls Made - 24
 No. of Add'l Crab Trawls Made - 0
 No. of Species - 23
 Adjusted Percent of Catch Excludes Bay Anchovy and Hogchoker

Species	Number of Fish (All)	Percent of Catch	Catch Per Trawl	Adjusted Percent of Catch	Number of Fish (Index Age)	Average Length (mm)	Standard Error (length)	Minimum Length (mm)	Maximum Length (mm)
bay anchovy	14,918	86.98	621.58	.	14,917	46	0.18	32	82
hogchoker	1,389	8.10	57.88	.	164	86	1.19	39	194
blue crab, male	333	1.94	13.88	39.41	.	50	1.96	9	166
blue crab, juvenile female	180	1.05	7.50	21.30	.	42	2.07	5	142
spot	88	0.51	3.67	10.41	85	32	2.48	19	157
Atlantic croaker	53	0.31	2.21	6.27	45	92	2.43	46	131
spotted hake	46	0.27	1.92	5.44	.	109	4.95	45	163
white catfish	22	0.13	0.92	2.60	0	180	14.85	122	388
oyster toadfish	20	0.12	0.83	2.37	.	206	17.52	109	331
naked goby	16	0.09	0.67	1.89	.	41	1.88	28	55
blackcheek tonguefish	14	0.08	0.58	1.66	11	80	8.80	40	157
northern searobin	12	0.07	0.50	1.42	.	61	2.31	49	80
Atlantic menhaden	11	0.06	0.46	1.30	.	95	20.44	28	191
blue crab, adult female	11	0.06	0.46	1.30	.	139	4.88	101	160
white perch	10	0.06	0.42	1.18	6	103	10.51	72	158
American eel	7	0.04	0.29	0.83	.	254	37.13	139	428
northern pipefish	6	0.03	0.25	0.71	.	133	1.98	129	142
summer flounder	5	0.03	0.21	0.59	4	91	47.17	41	280
striped bass	5	0.03	0.21	0.59	5	137	11.65	106	170
smallmouth flounder	3	0.02	0.13	0.36	.	36	3.28	31	42
northern puffer	1	0.01	0.04	0.12	1	154	.	154	154
Atlantic silverside	1	0.01	0.04	0.12	1	84	.	84	84
skilletfish	1	0.01	0.04	0.12	.	53	.	53	53
All Species Combined	17,152								

Table 37.

Month - May, 1990									
RIVER - York									
No. of Fish Trawls Made - 24									
No. of Add'l Crab Trawls Made - 0									
No. of Species - 27									
Adjusted Percent of Catch Excludes Bay Anchovy and Hogchoker									
Species	Number of Fish (All)	Percent of Catch	Catch Per Trawl	Adjusted Percent of Catch	Number of Fish (Index Age)	Average Length (mm)	Standard Error (length)	Minimum Length (mm)	Maximum Length (mm)
spot	6,578	41.13	274.08	81.90	6,520	61	0.45	23	194
bay anchovy	4,821	30.14	200.88		4,800	53	0.27	37	90
hogchoker	3,141	19.64	130.88		1,095	81	0.80	32	185
blue crab, male	574	3.59	23.92	7.15		72	1.40	16	183
blue crab, juvenile female	463	2.89	19.29	5.76		60	1.23	11	135
white catfish	71	0.44	2.96	0.88	3	178	6.21	111	371
northern searobin	51	0.32	2.13	0.63		81	1.56	56	106
oyster toadfish	49	0.31	2.04	0.61		233	11.42	48	360
summer flounder	47	0.29	1.96	0.59	45	88	7.77	52	347
spotted hake	34	0.21	1.42	0.42		172	5.19	71	243
blackcheek tonguefish	33	0.21	1.38	0.41	30	87	3.51	57	164
weakfish	32	0.20	1.33	0.40	30	188	10.15	147	401
blue crab, adult female	28	0.18	1.17	0.35		159	2.64	132	192
naked goby	17	0.11	0.71	0.21		51	1.77	36	61
northern pipefish	11	0.07	0.46	0.14		158	5.99	131	200
Atlantic croaker	8	0.05	0.33	0.10	4	136	4.29	123	152
American eel	8	0.05	0.33	0.10		246	38.76	159	500
red hake	7	0.04	0.29	0.09		127	11.52	72	160
white perch	7	0.04	0.29	0.09	0	206	9.88	156	232
winter flounder	5	0.03	0.21	0.06		65	1.36	60	67
black seabass	2	0.01	0.08	0.02	2	95	0.50	94	95
striped searobin	2	0.01	0.08	0.02		133	2.00	131	135
bluefish	1	0.01	0.04	0.01		61		61	61
kingfish	1	0.01	0.04	0.01		179		179	179
northern puffer	1	0.01	0.04	0.01	0	215		215	215
lined seahorse	1	0.01	0.04	0.01		97		97	97
Atlantic silverside	1	0.01	0.04	0.01	1	106		106	106
All Species Combined	15,994								

Table 38.

Month - June, 1990									
RIVER - York									
No. of Fish Trawls Made - 24									
No. of Add'l Crab Trawls Made - 0									
No. of Species - 21									
Adjusted Percent of Catch Excludes Bay Anchovy and Hogchoker									
Species	Number of Fish (All)	Percent of Catch	Catch Per Trawl	Adjusted Percent of Catch	Number of Fish (Index Age)	Average Length (mm)	Standard Error (length)	Minimum Length (mm)	Maximum Length (mm)
bay anchovy	2,931	53.22	122.96		2,931	51	0.25	36	98
spot	990	17.85	41.25	53.72	990	86	0.59	40	127
hogchoker	751	13.54	31.29		354	72	1.12	37	164
blue crab, male	419	7.56	17.46	22.73		82	1.67	17	171
blue crab, juvenile female	264	4.76	11.00	14.32		77	1.65	34	151
oyster toadfish	35	0.63	1.46	1.90		145	11.63	63	276
summer flounder	25	0.45	1.04	1.36	21	136	15.30	77	355
white catfish	25	0.45	1.04	1.36	0	161	7.08	102	264
blue crab, adult female	22	0.40	0.92	1.19		152	2.89	128	181
Atlantic croaker	14	0.25	0.58	0.76	12	107	10.41	78	193
American eel	10	0.18	0.42	0.54		254	30.56	144	485
weakfish	8	0.14	0.33	0.43	3	123	26.44	27	200
bluefish	7	0.13	0.29	0.38		188	13.14	129	242
black seabass	5	0.09	0.21	0.27	5	116	3.01	107	125
blackcheek tonguefish	5	0.09	0.21	0.27	5	90	5.16	78	108
striped bass	3	0.05	0.13	0.16	1	162	67.13	31	253
Atlantic menhaden	3	0.05	0.13	0.16		86	3.48	80	92
northern pipefish	3	0.05	0.13	0.16		181	12.50	161	204
northern searobin	2	0.04	0.08	0.11		100	4.50	95	104
striped searobin	2	0.04	0.08	0.11		146	1.50	144	147
northern puffer	1	0.02	0.04	0.05	1	46		46	46
All Species Combined	5,545								

Table 39.

Month - July, 1990

RIVER - York

No. of Fish Trawls Made - 22

No. of Add'l Crab Trawls Made - 0

No. of Species - 23

Adjusted Percent of Catch Excludes Bay Anchovy and Hogchoker

Species	Number of Fish (All)	Percent of Catch	Catch Per Trawl	Adjusted Percent of Catch	Number of Fish (Index Age)	Average Length (mm)	Standard Error (length)	Minimum Length (mm)	Maximum Length (mm)
bay anchovy	7,667	71.04	348.50	.	1,204	48	0.32	22	84
hogchoker	1,038	9.62	47.18	.	570	93	1.54	46	182
spot	619	5.74	28.14	29.65	612	105	0.71	16	211
blue crab, male	365	3.38	16.59	17.48	.	107	1.82	43	191
weakfish	307	2.84	13.95	14.70	304	41	1.01	15	206
blue crab, juvenile female	269	2.49	12.23	12.88	.	92	1.37	46	154
harvestfish	240	2.22	10.91	11.49	.	39	0.68	16	67
northern pipefish	87	0.81	3.95	4.17	.	134	2.12	81	178
oyster toadfish	53	0.49	2.41	2.54	.	164	11.21	52	355
blue crab, adult female	51	0.47	2.32	2.44	.	142	1.87	95	162
summer flounder	25	0.23	1.14	1.20	25	112	3.13	86	146
Atlantic croaker	18	0.17	0.82	0.86	6	175	9.31	94	222
butterfish	15	0.14	0.68	0.72	.	44	2.96	24	60
inshore lizardfish	12	0.11	0.55	0.57	.	82	2.16	70	99
black seabass	6	0.06	0.27	0.29	6	126	9.35	90	148
blackcheck tonguefish	6	0.06	0.27	0.29	6	89	7.44	77	118
northern puffer	4	0.04	0.18	0.19	3	58	14.61	33	90
silver perch	4	0.04	0.18	0.19	3	94	31.82	58	189
winter flounder	2	0.02	0.09	0.10	.	93	0.50	92	93
spotted seatrout	2	0.02	0.09	0.10	.	43	6.50	36	49
bluefish	1	0.01	0.05	0.05	.	179	.	179	179
northern scarobin	1	0.01	0.05	0.05	.	116	.	116	116
gag	1	0.01	0.05	0.05	.	96	.	96	96
All Species Combined	10,793								

FIGURES

Figure 1. Sampling system, design, and gear changes for the VIMS trawl survey, 1955-1996.

VIMS Juvenile Fish Trawl Survey

Sampling Changes 1955 - 1996

Vessel

- VL = Virginia Lee
- PA = Pathfinder
- LA = Langley
- BR = Brooks
- RE = Restless
- JS = Capt. John Smith
- FH = Fish Hawk

Gear Type

- 10 = Unlined/No Tickler
- 33 = Lined/No Tickler
- 43 = Unlined/Tickler
- OT = 16' Nets
- 70 = Lined/Tickler
- 108 = Lined/Tickler/China-V

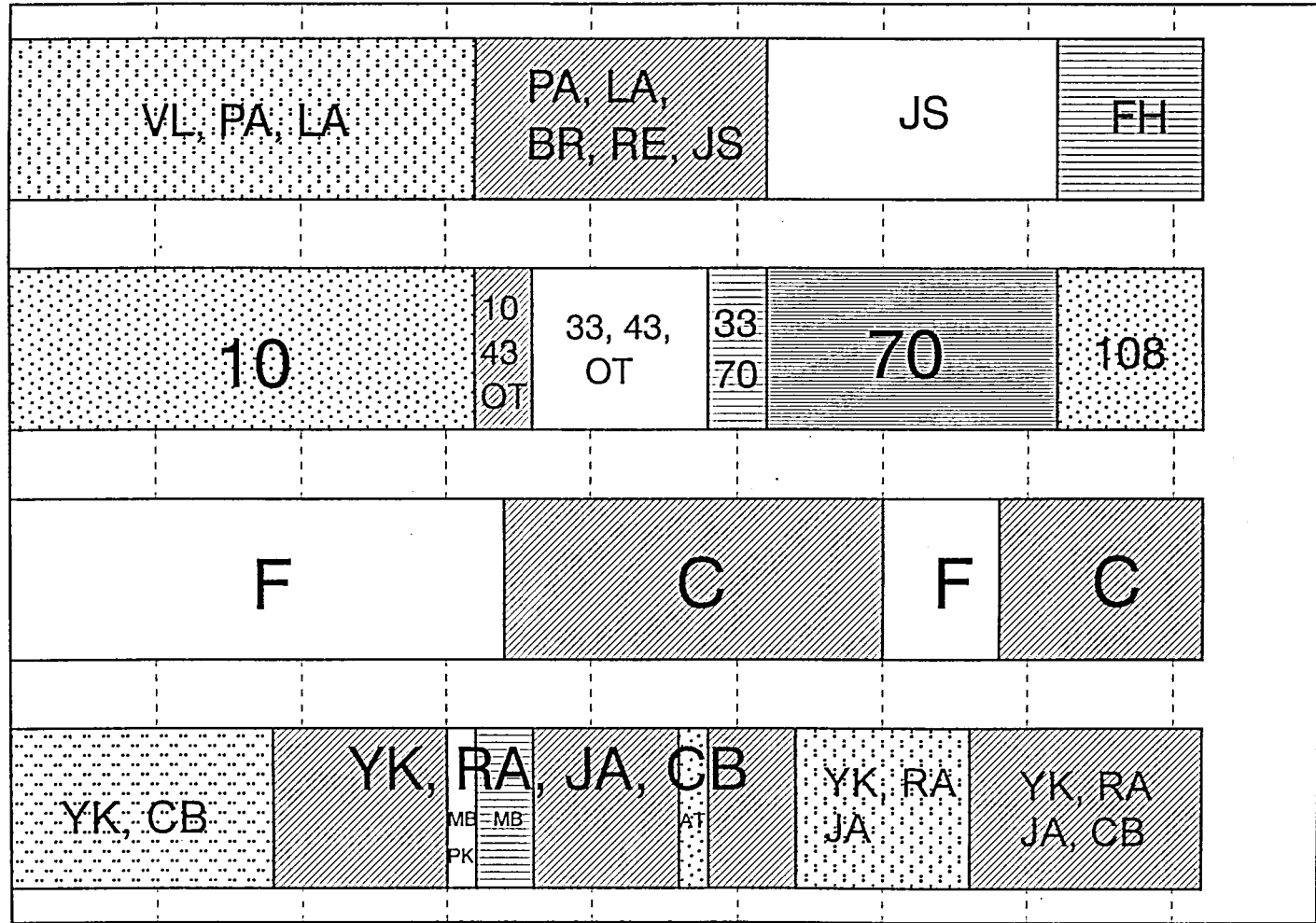
37

Sampling System

- F = Fixed
- R = Random
- C = Combination

System

- YK = York River
- RA = Rappahannock River
- JA = James River
- CB = Chesapeake Bay
- MB = Mobjack Bay
- PK = Piankatank River
- AT = Atlantic Ocean



1955 1960 1965 1970 1975 1980 1985 1990 1995 2000

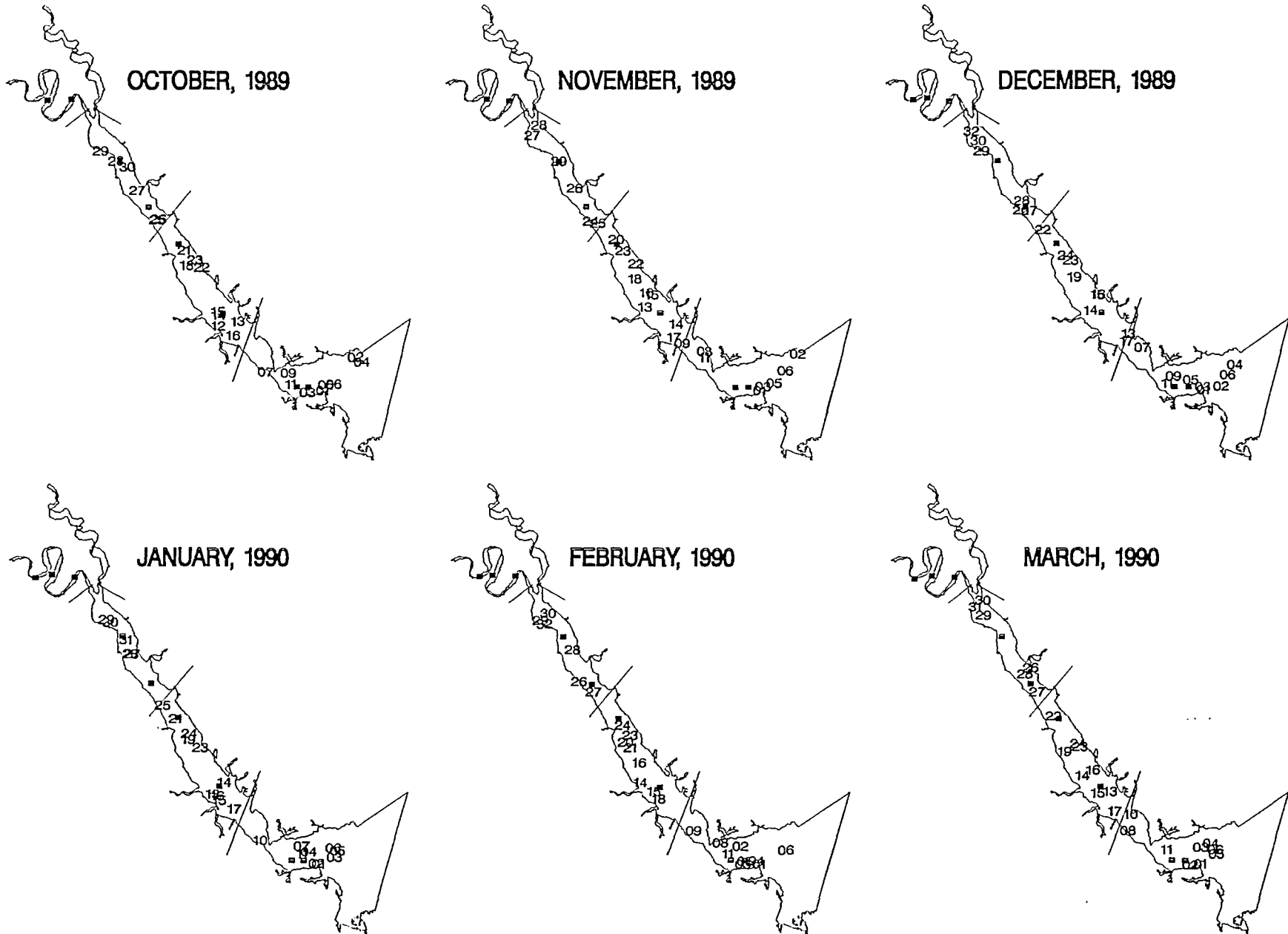
Gear Type is 30 foot otter trawl if not specified.

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Figure 2. Stations sampled in 1989-1990 by month.

Notes: A. Due to LORAN distortion at upriver stations and to computer software control of the placement of figures on these maps, the locations shown may vary slightly from the actual stations occupied. For exact coordinates refer to Tables 2-11.

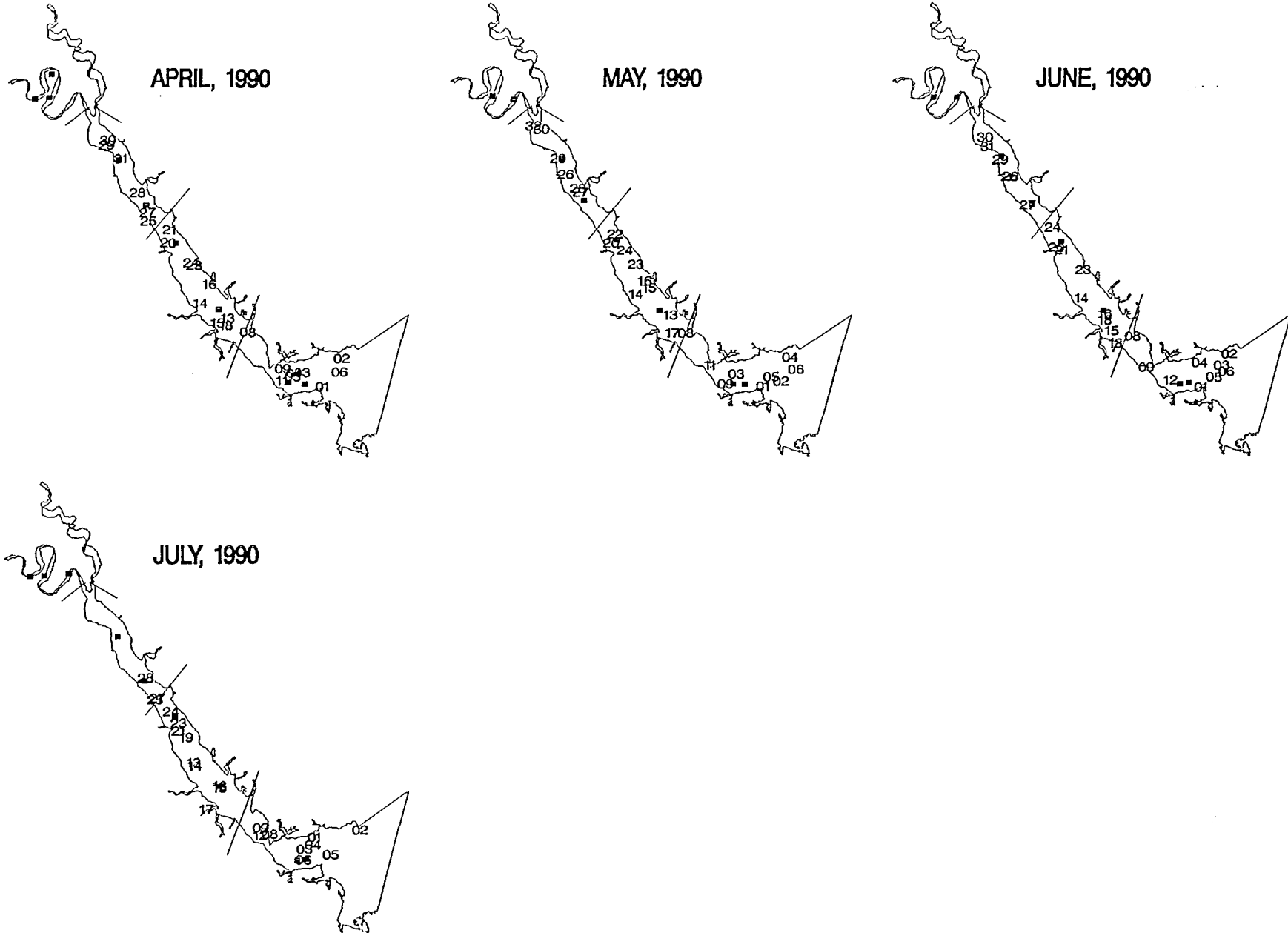
York River Random Station Locations



Note: Squares Represent Fixed Station Locations

Figure 2.

York River Random Station Locations



41

Note: Squares Represent Fixed Station Locations

Figure 2. (cont.)

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Figures 3-18. Geographic distribution, by month, of predominant species for 1989-1990 combined. Density values represent total number of specimens caught.

Notes: A. Due to LORAN distortion at upriver stations and to computer software control of the placement of figures on these maps, the locations shown may vary slightly from the actual stations occupied. For exact coordinates, refer to Tables 2-11.

Atlantic Croaker, 1989 – 1990

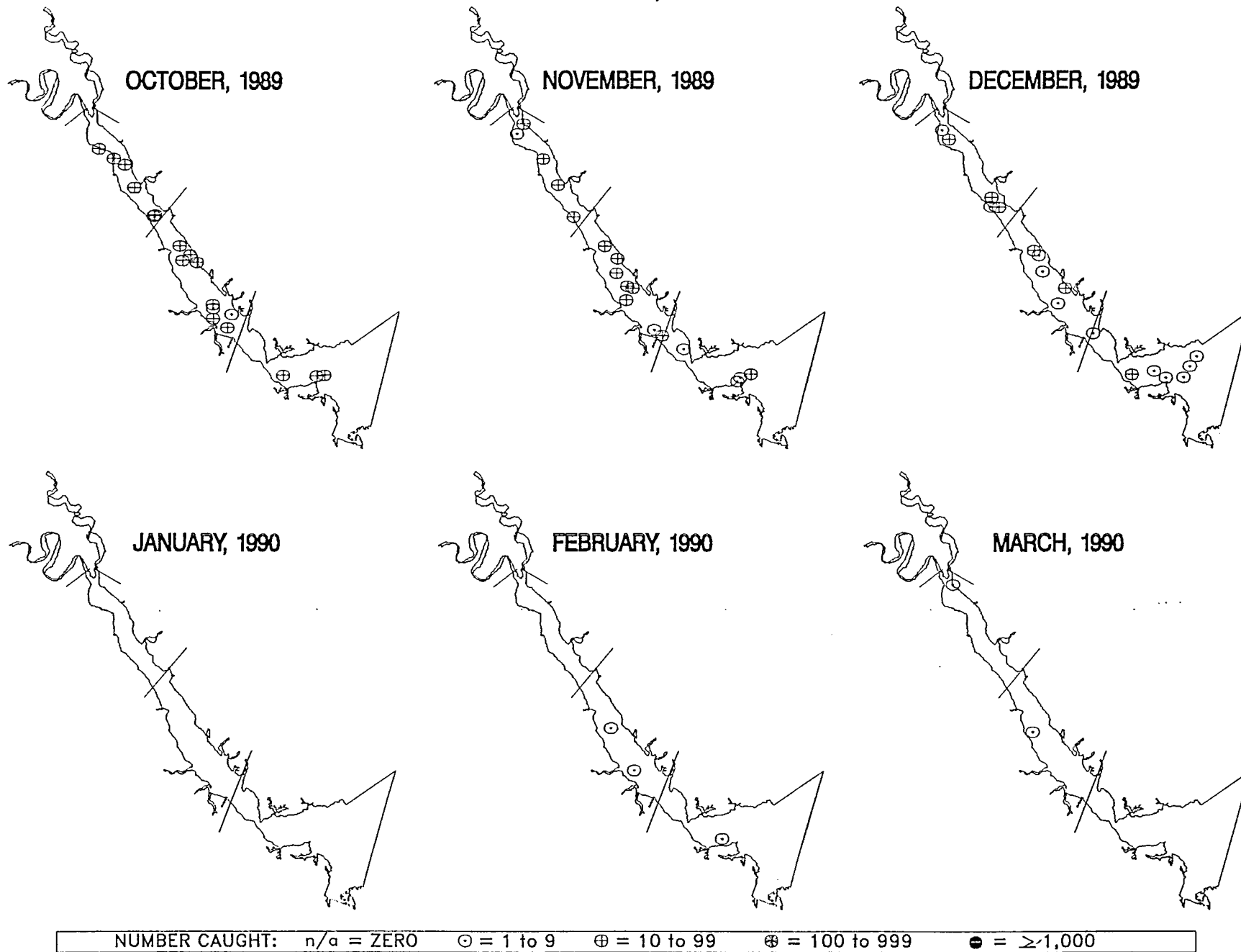
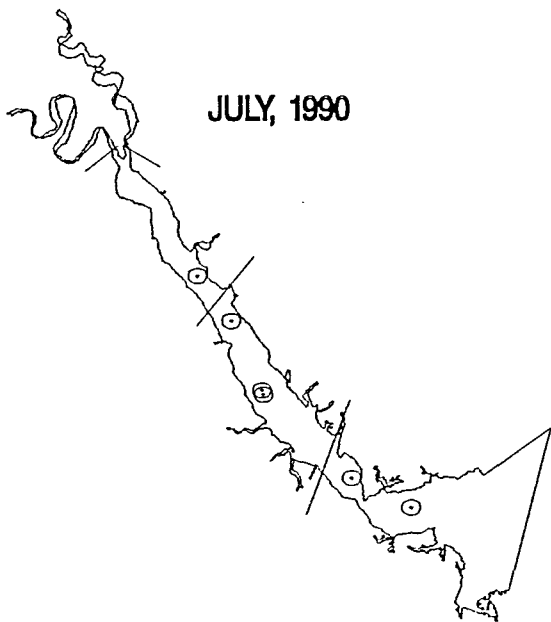
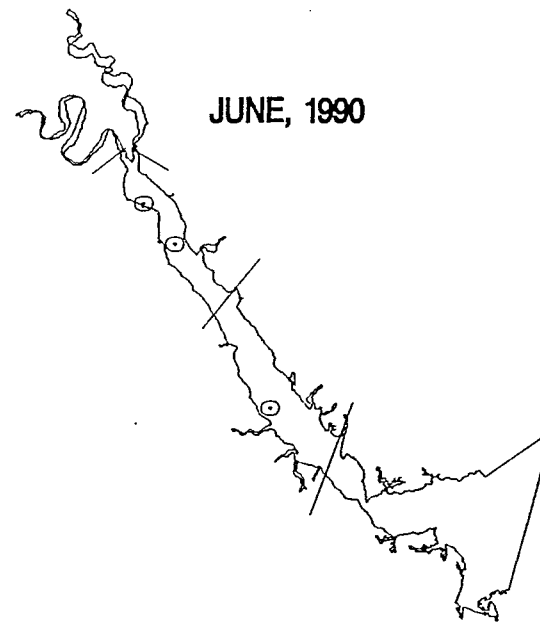
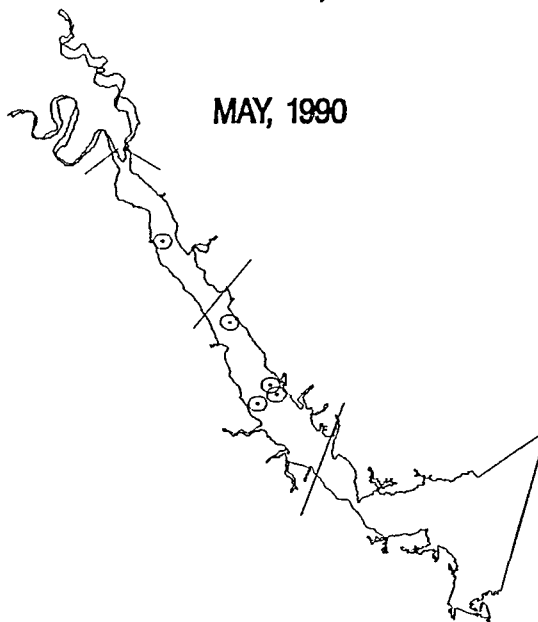
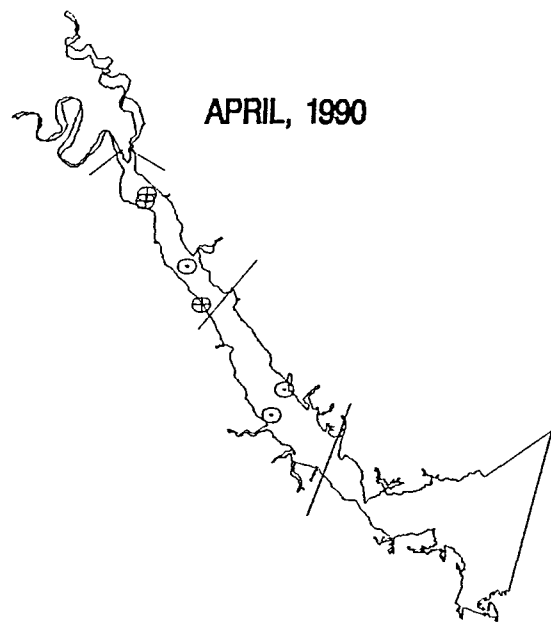


Figure 3.

Atlantic Croaker, 1989 – 1990

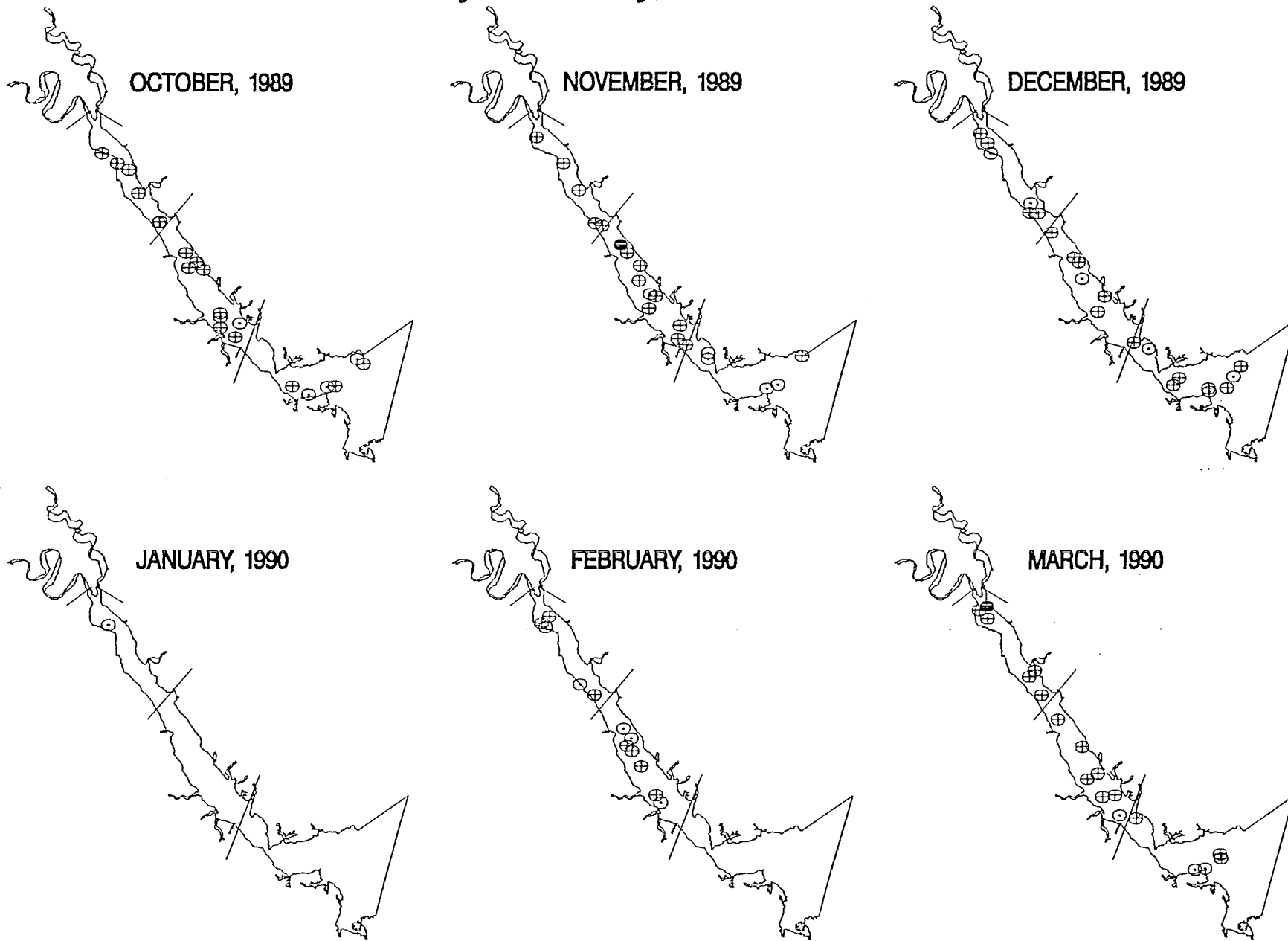


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NUMBER CAUGHT: n/a = ZERO ○ = 1 to 9 ⊕ = 10 to 99 ⊕ = 100 to 999 ● = ≥ 1,000

Figure 3. (cont.)

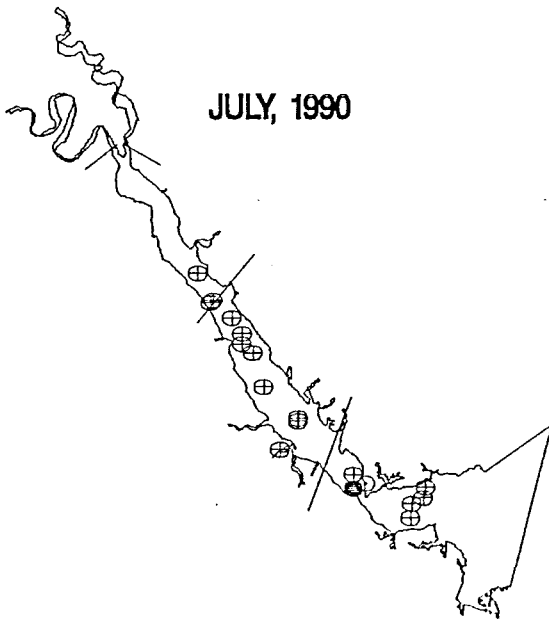
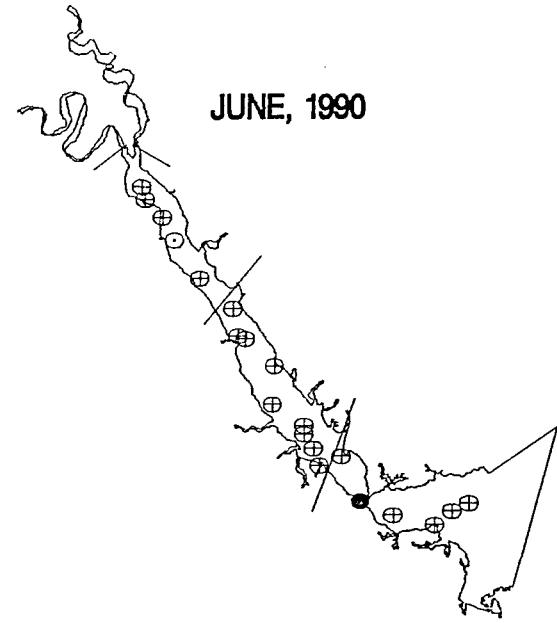
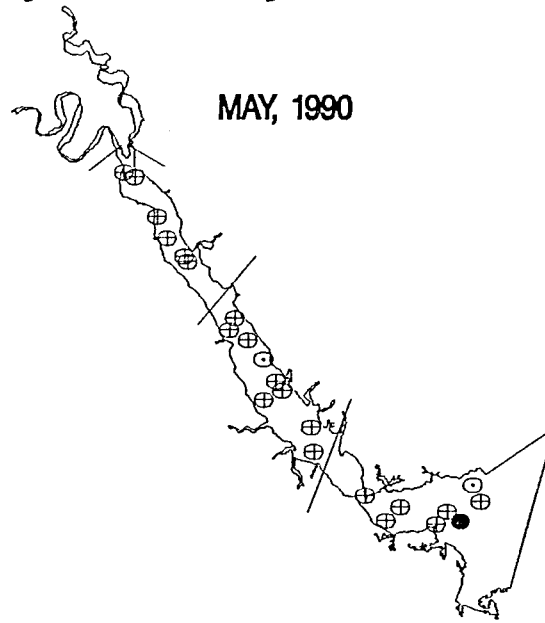
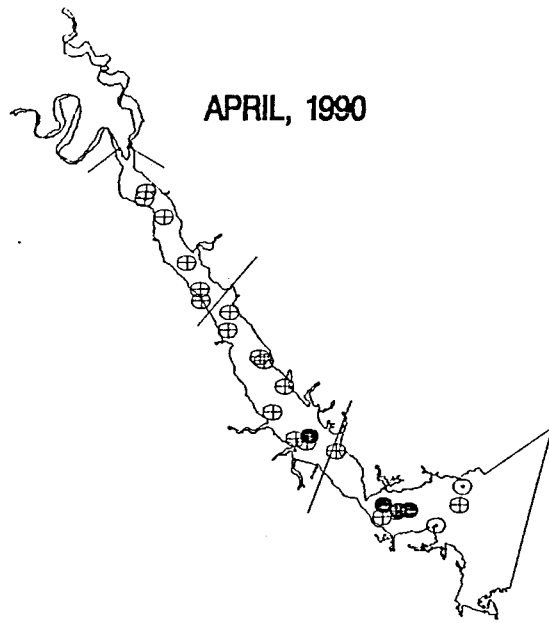
Bay Anchovy, 1989 – 1990



NUMBER CAUGHT: n/a = ZERO ○ = 1 to 9 ⊕ = 10 to 99 ⊕ = 100 to 999 ● = ≥ 1,000

Figure 4.

Bay Anchovy, 1989 – 1990



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NUMBER CAUGHT: n/a = ZERO ⊙ = 1 to 9 ⊕ = 10 to 99 ⊗ = 100 to 999 ● = ≥ 1,000

Figure 4. (cont.)

Blackcheek Tonguefish, 1989 – 1990

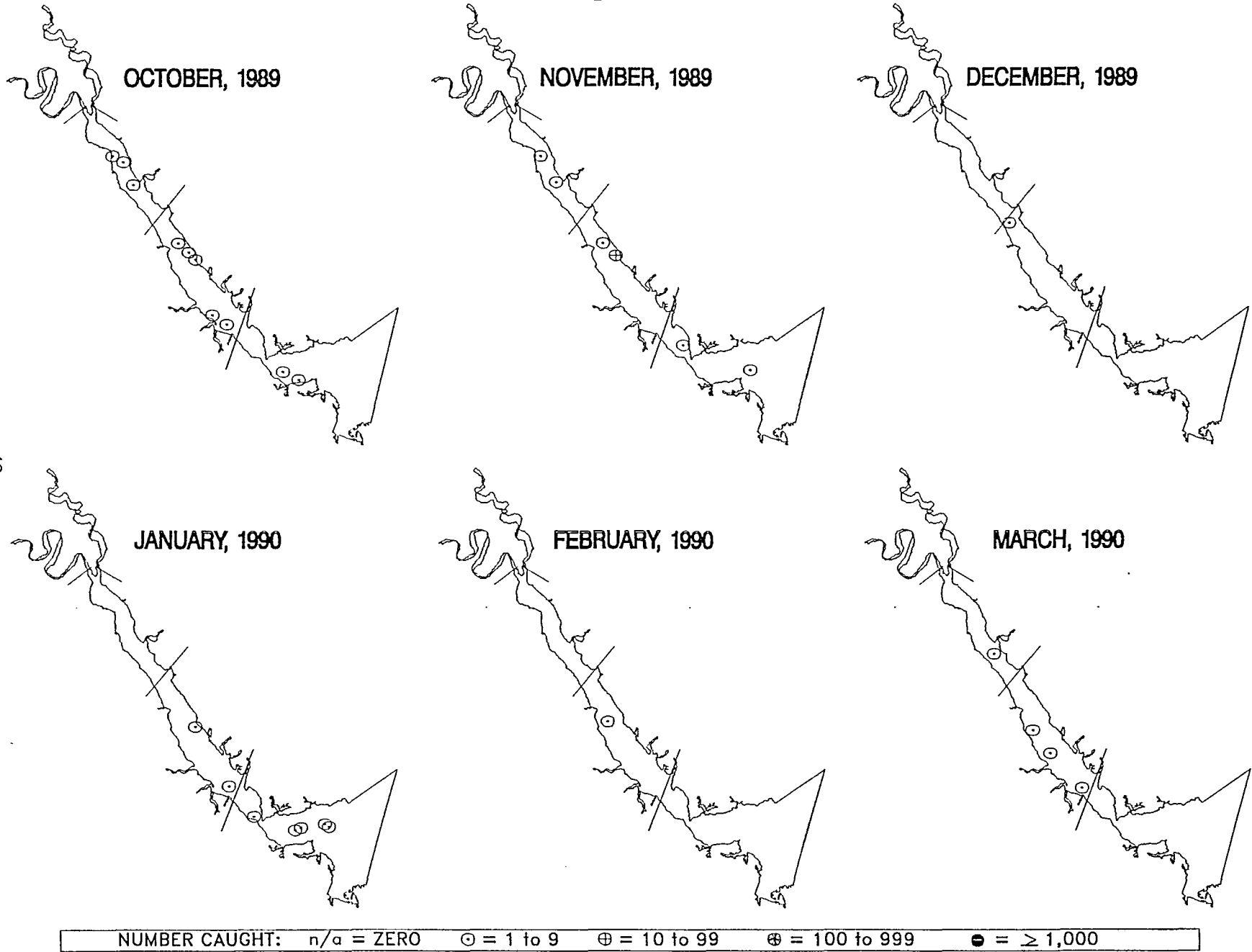


Figure 5.

Blackcheek Tonguefish, 1989 – 1990

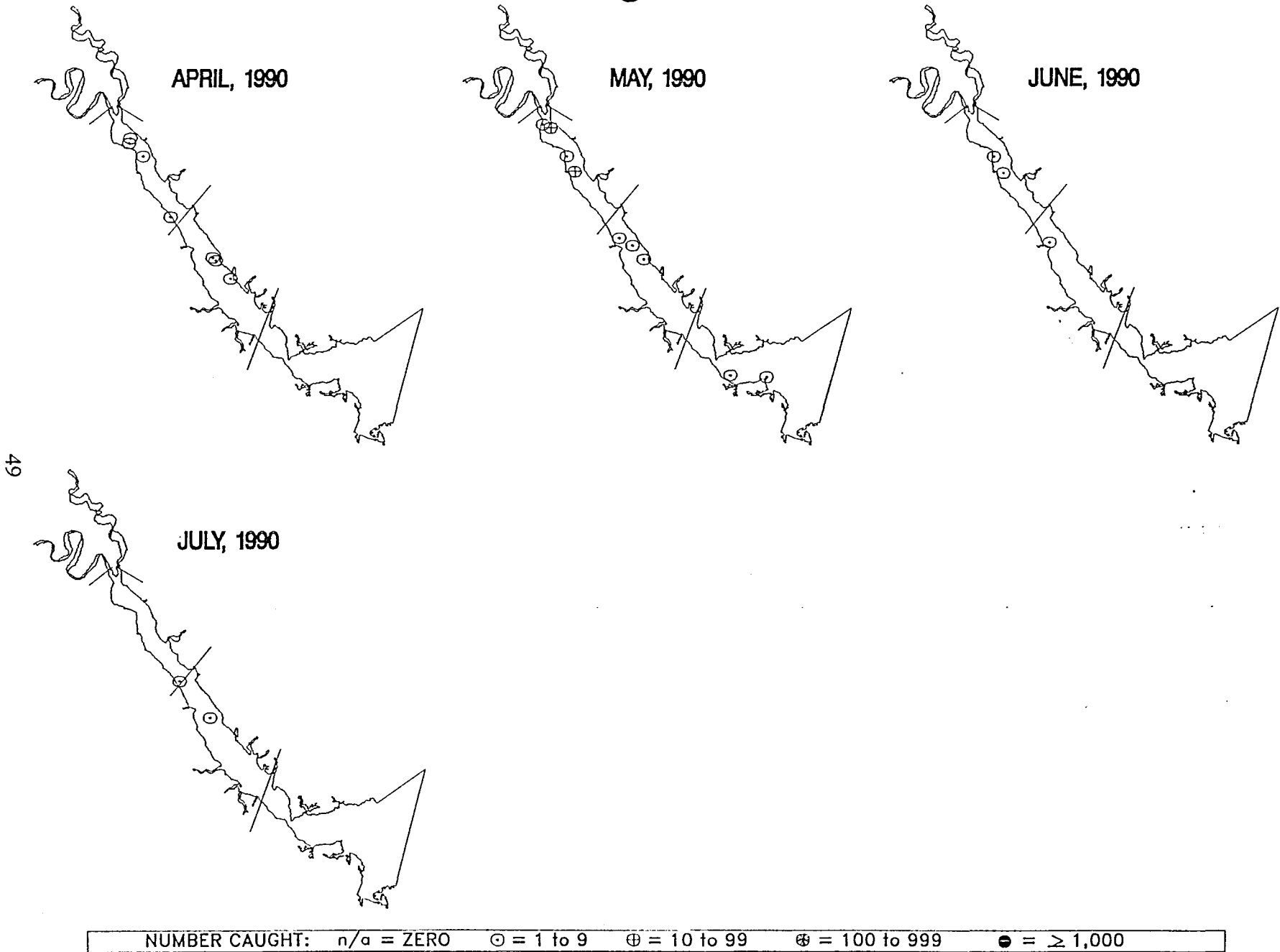


Figure 5. (cont.)

Blue Crab — Adult Female, 1989—1990

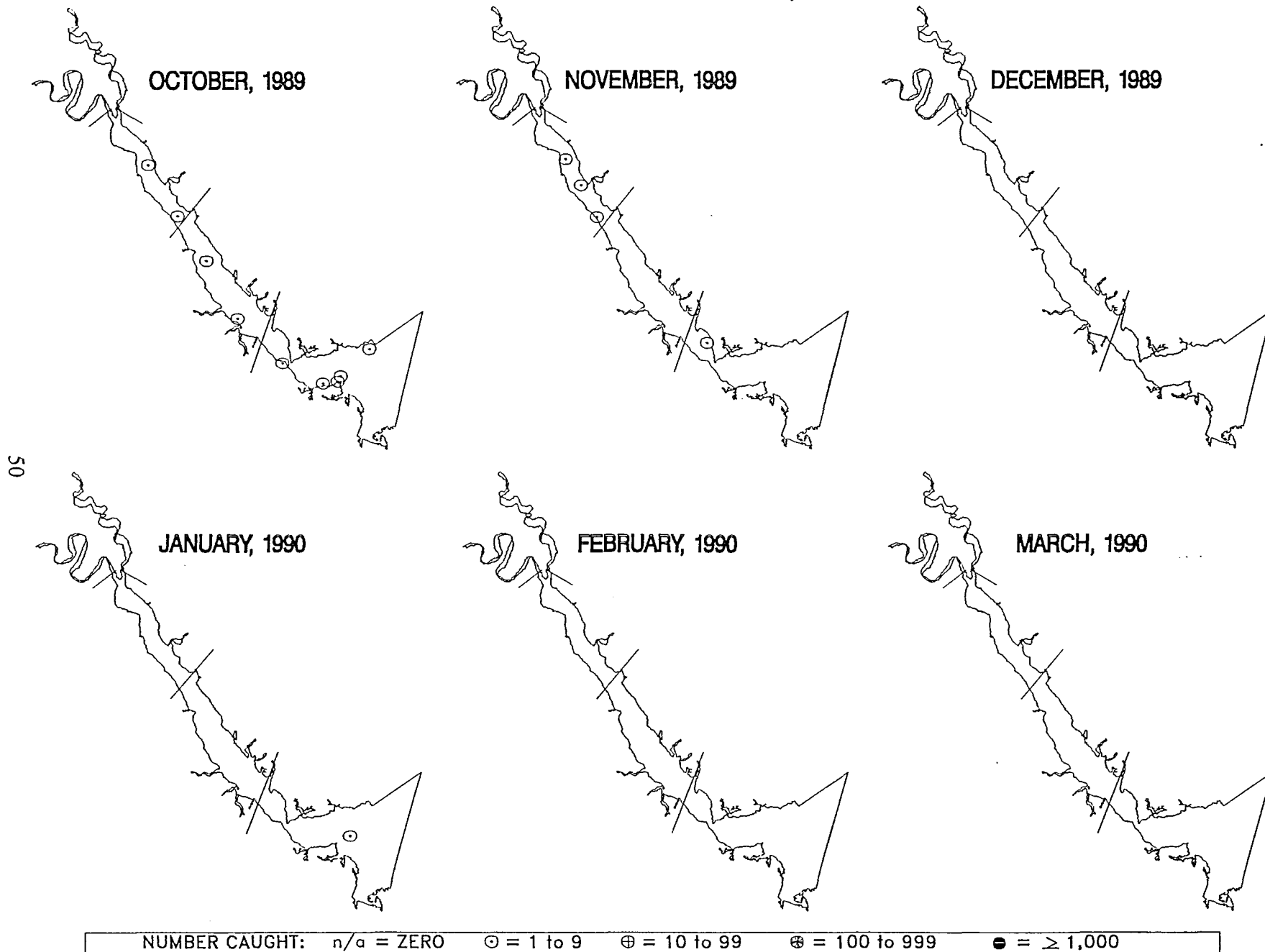


Figure 6.

Blue Crab — Adult Female, 1989 — 1990

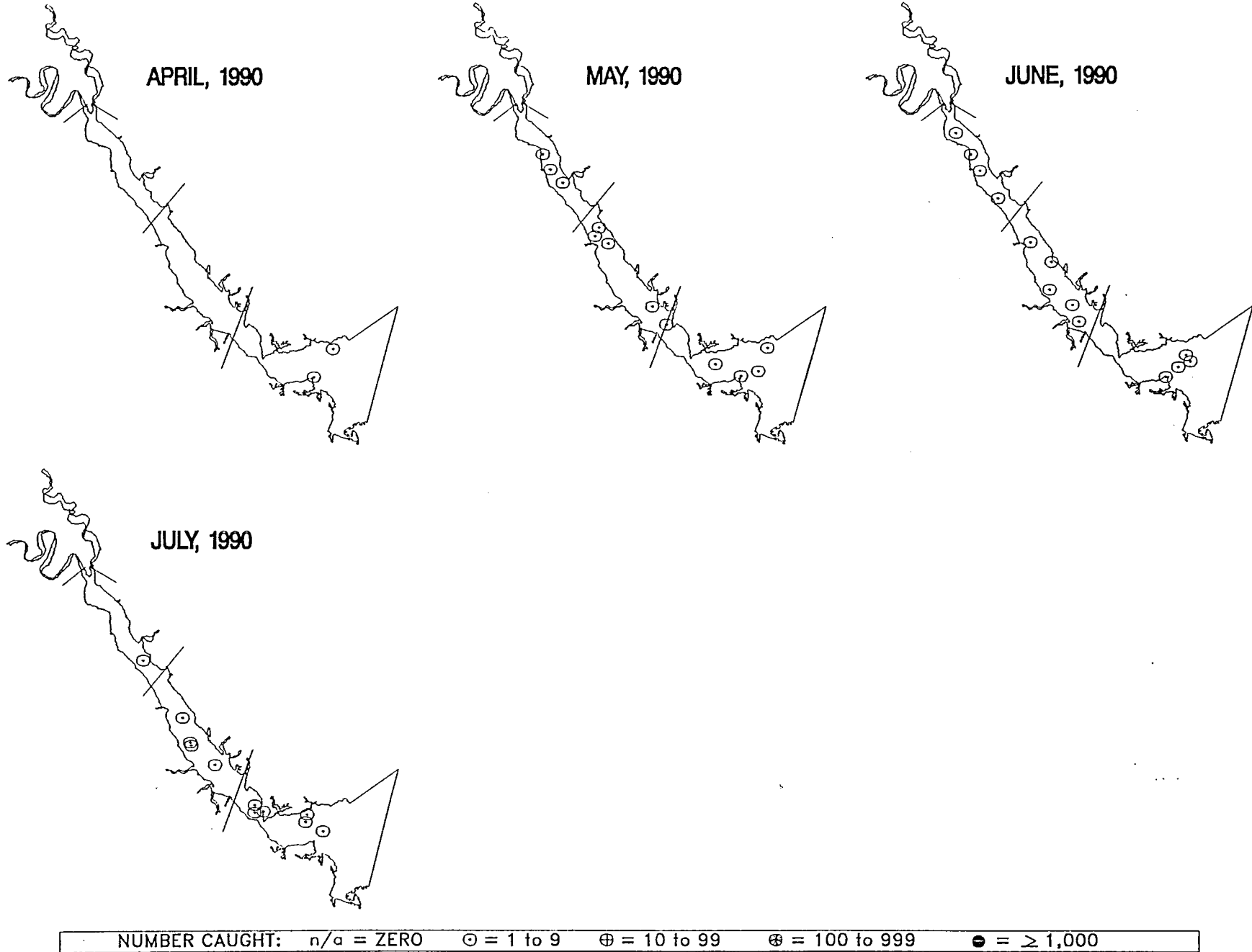
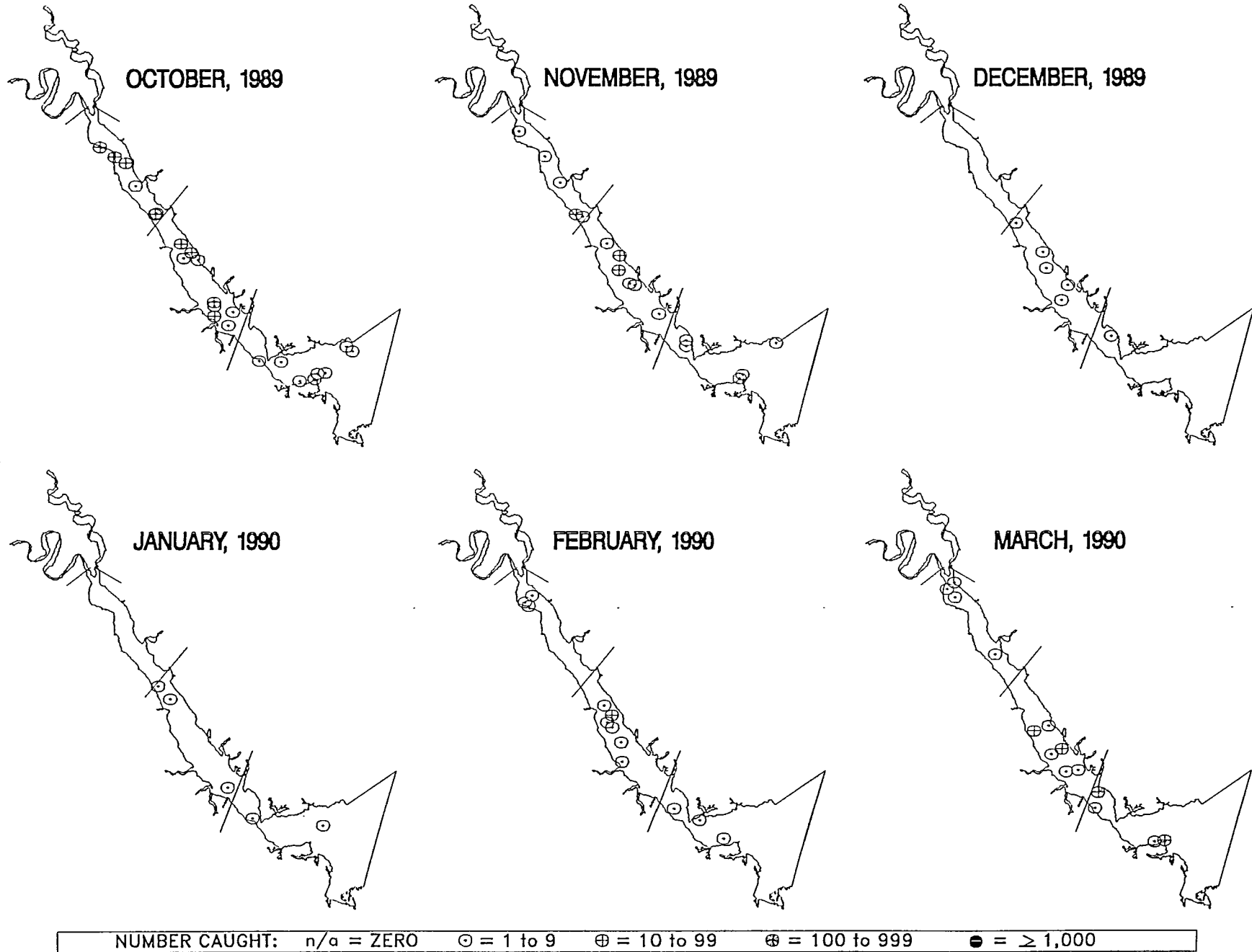


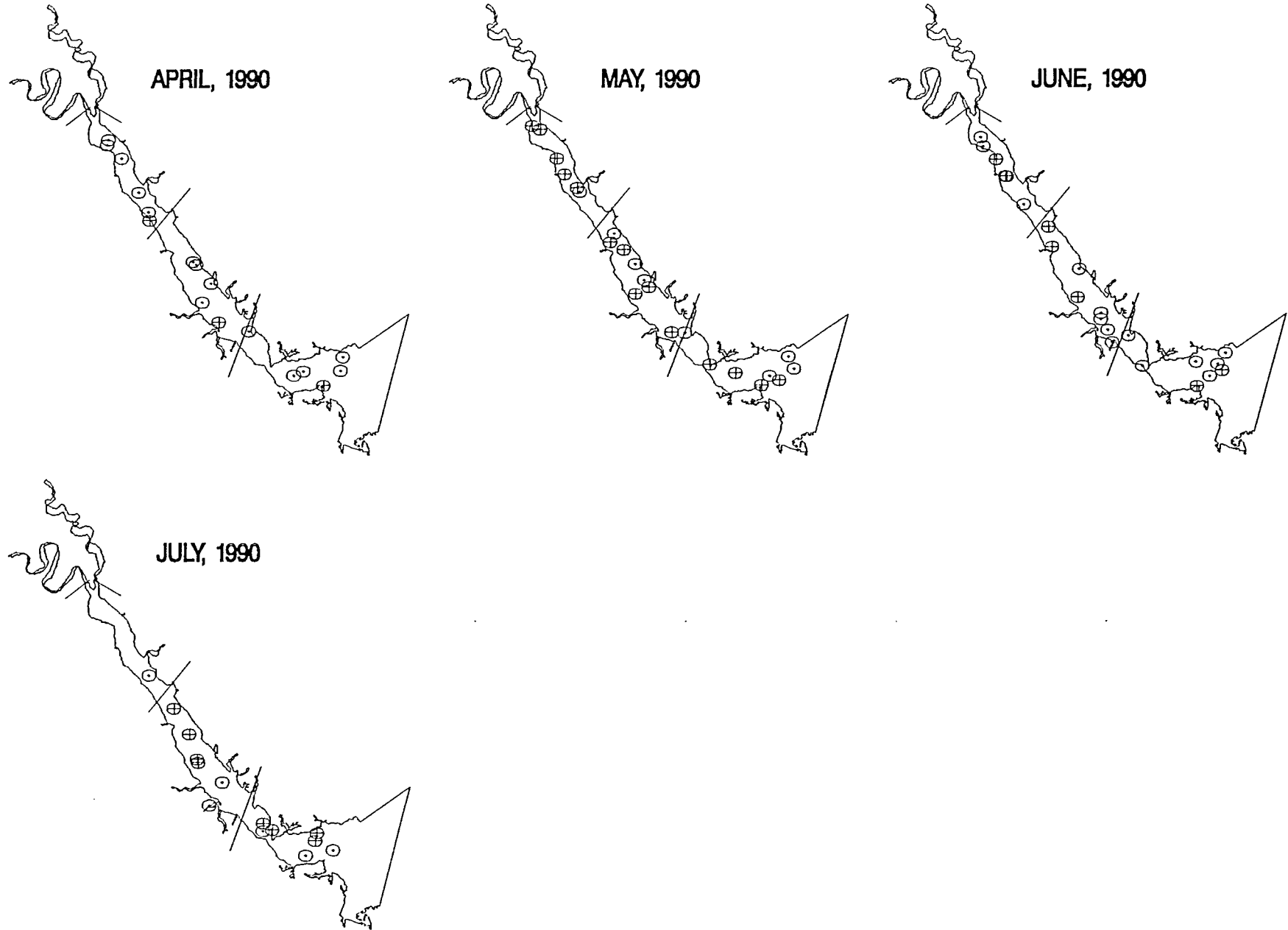
Figure 6. (cont.)

Blue Crab — Juvenile Female, 1989 — 1990

Figure 7.



Blue Crab — Juvenile Female, 1989 — 1990



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NUMBER CAUGHT: n/a = ZERO ○ = 1 to 9 ⊕ = 10 to 99 ⊗ = 100 to 999 ● = ≥ 1,000

Figure 7. (cont.)

Blue Crab — Male, 1989 — 1990

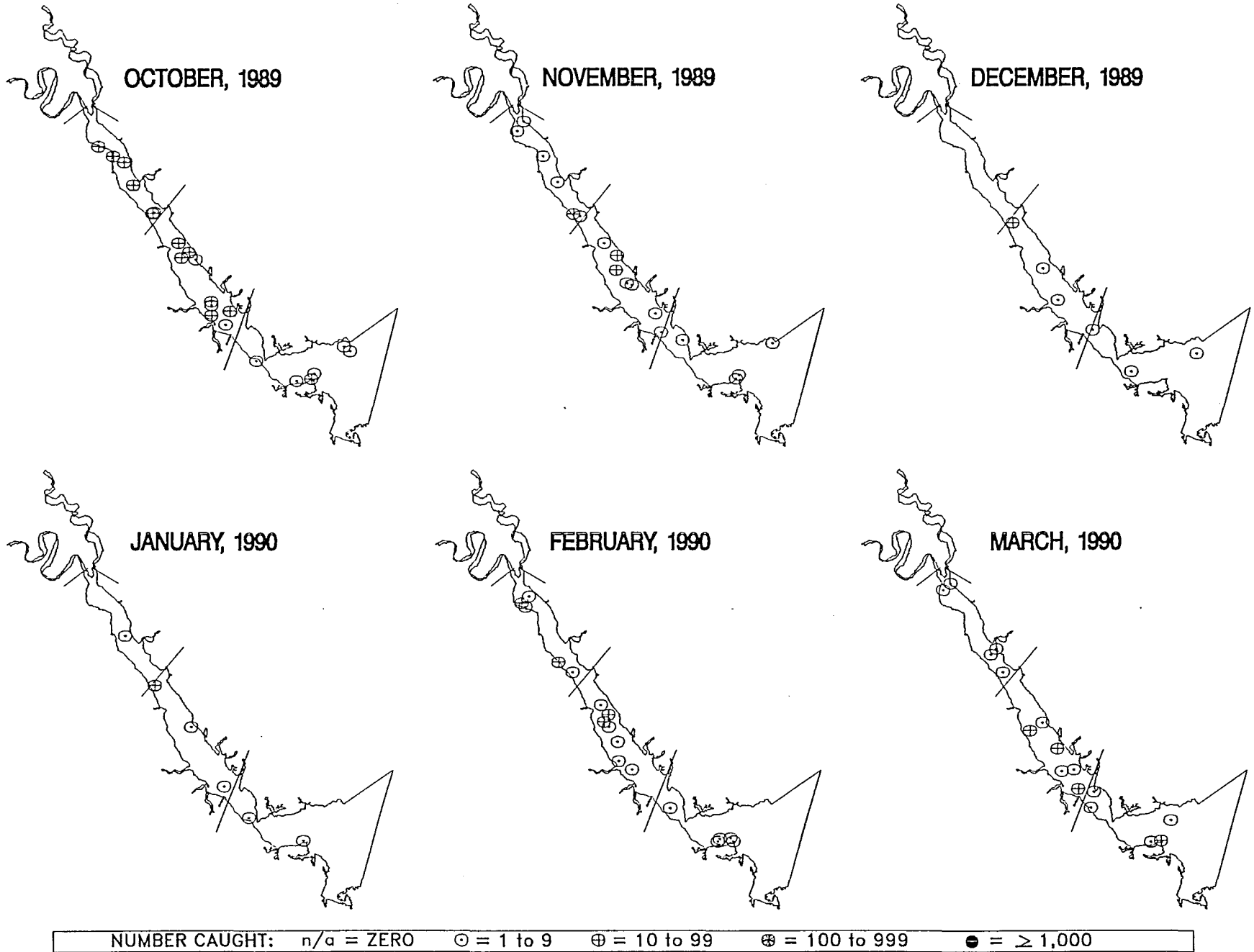


Figure 8.

Blue Crab — Male, 1989 — 1990

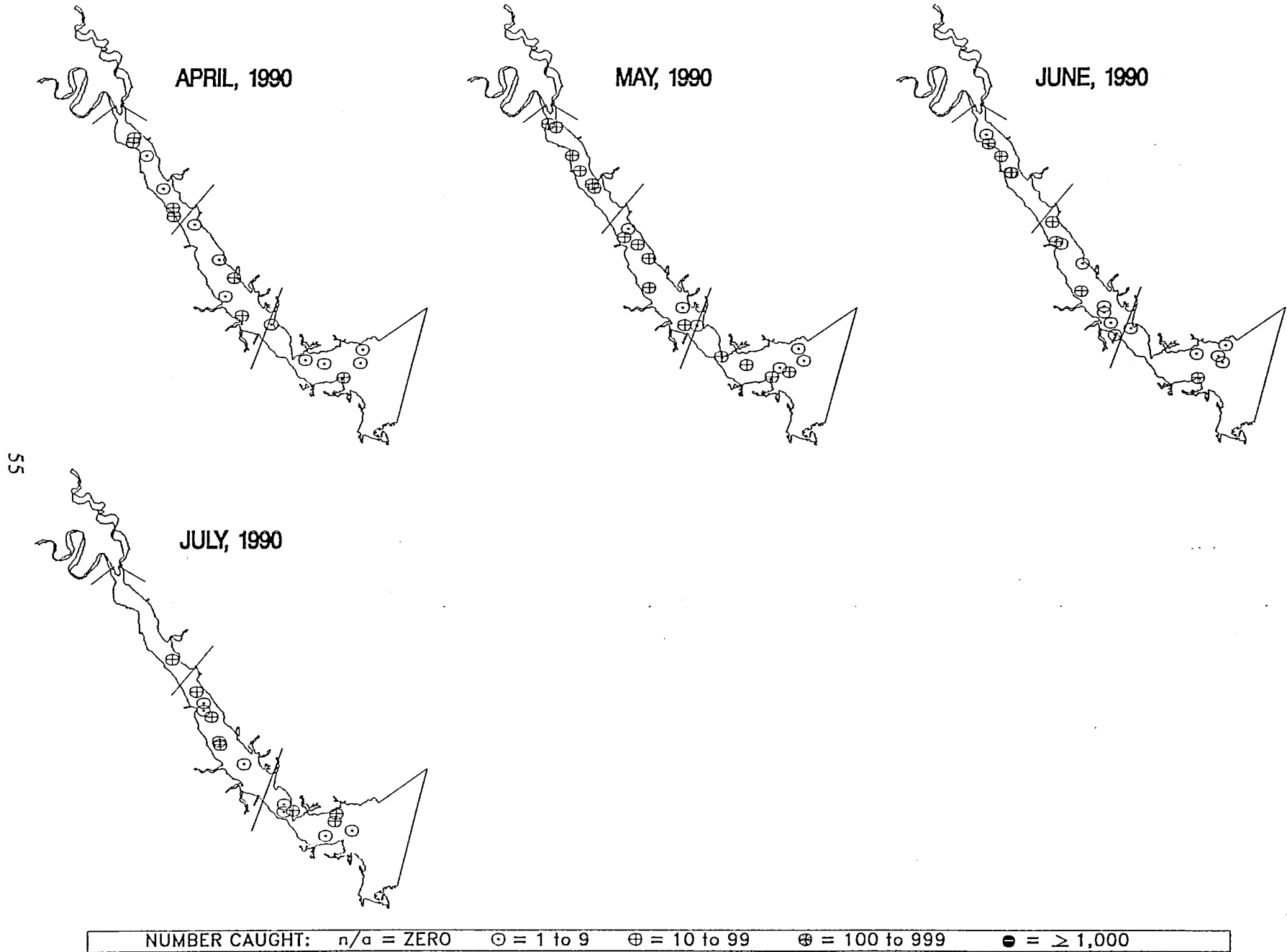


Figure 8. (cont.)

Hogchoker, 1989 – 1990

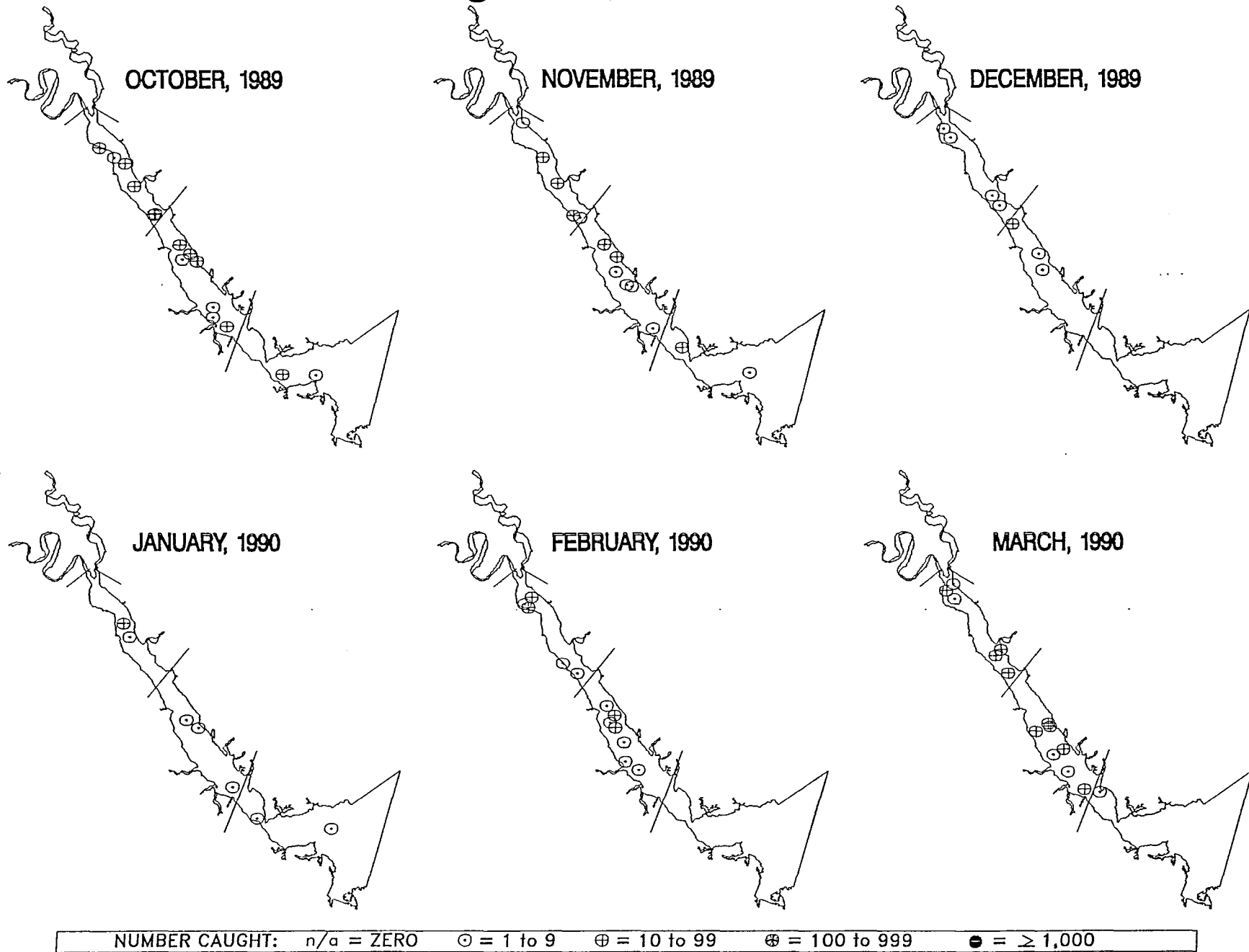
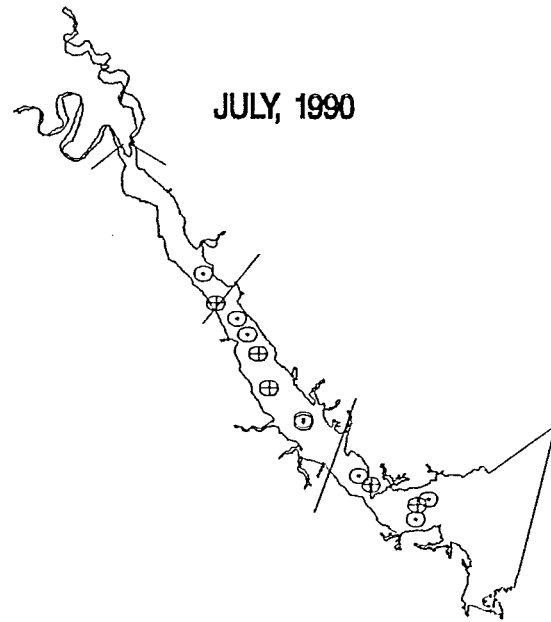
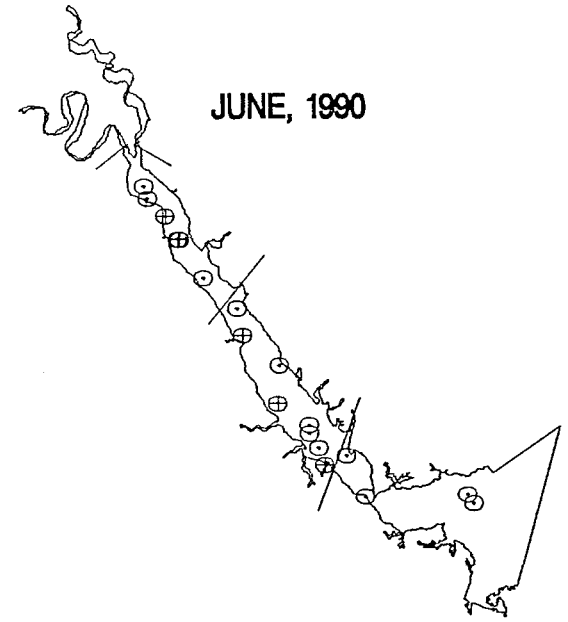
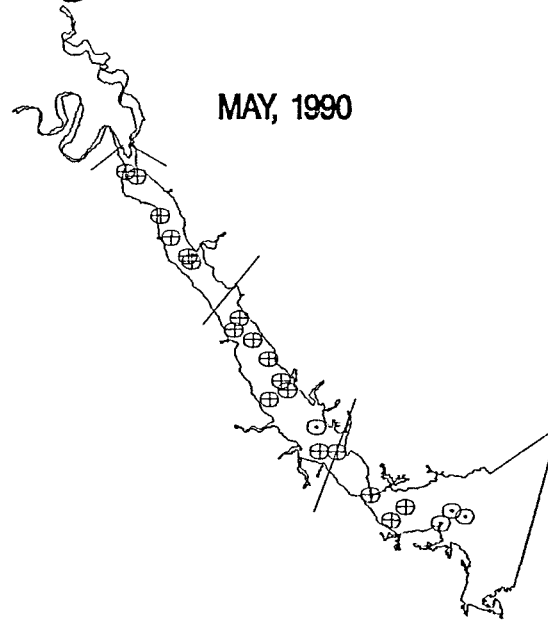
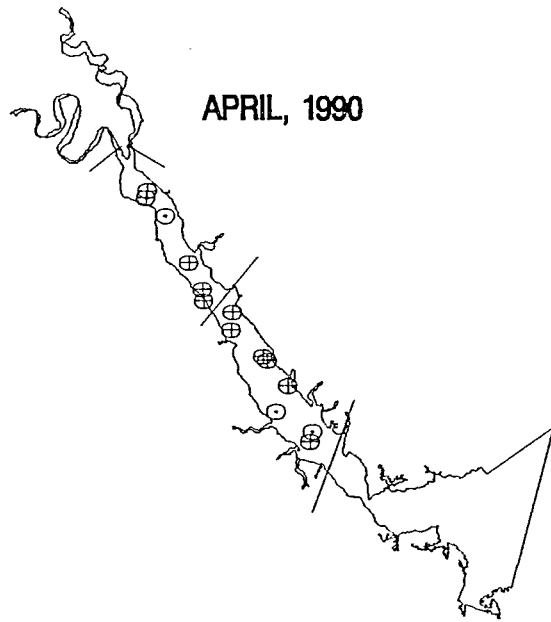


Figure 9.

Hogchoker, 1989 – 1990



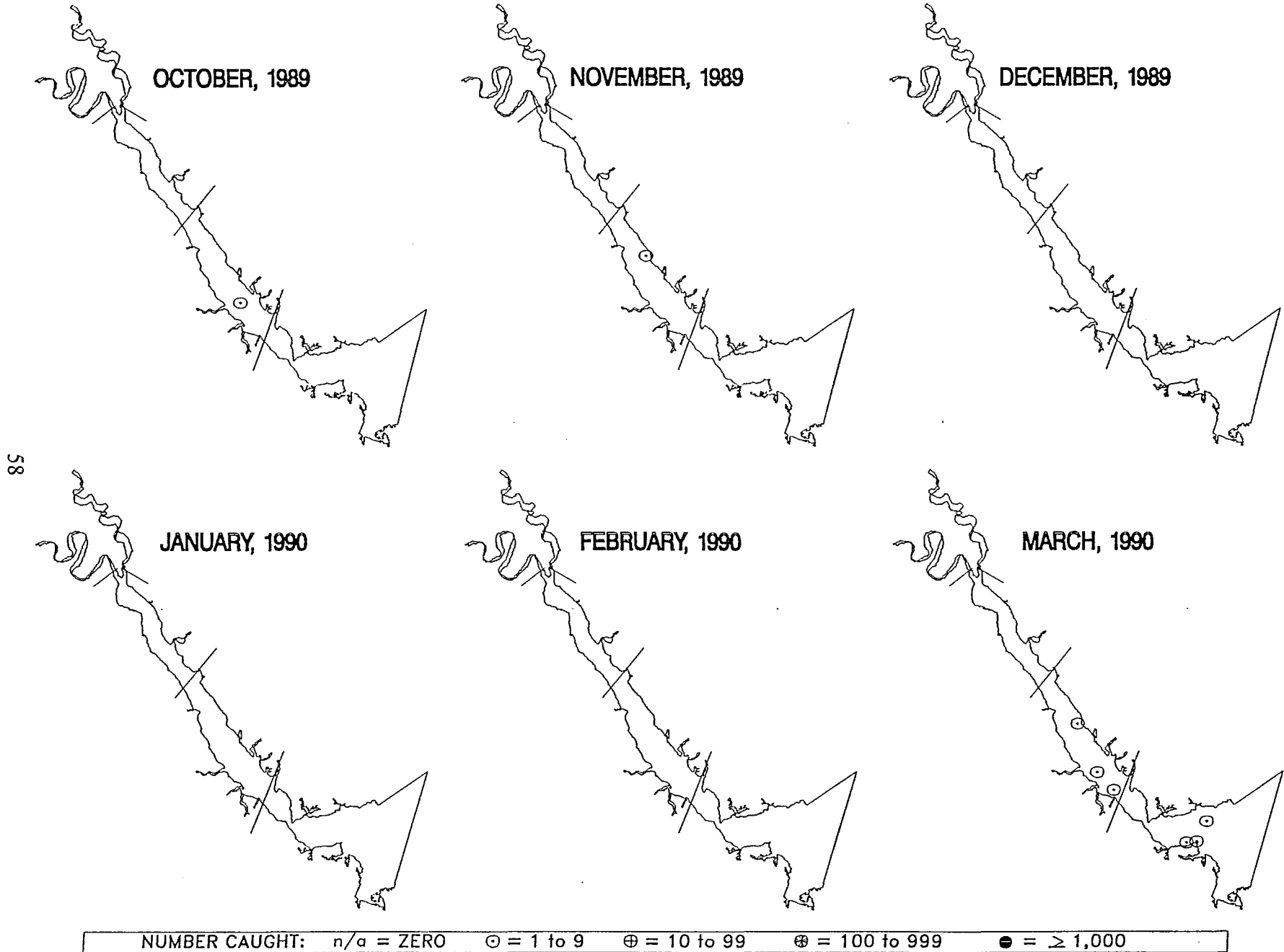
57

NUMBER CAUGHT: n/a = ZERO ⊕ = 1 to 9 ⊗ = 10 to 99 ⊛ = 100 to 999 ● = ≥ 1,000

Figure 9. (cont.)

Northern Searobin, 1989 – 1990

Figure 10.



Northern Searobin, 1989 – 1990

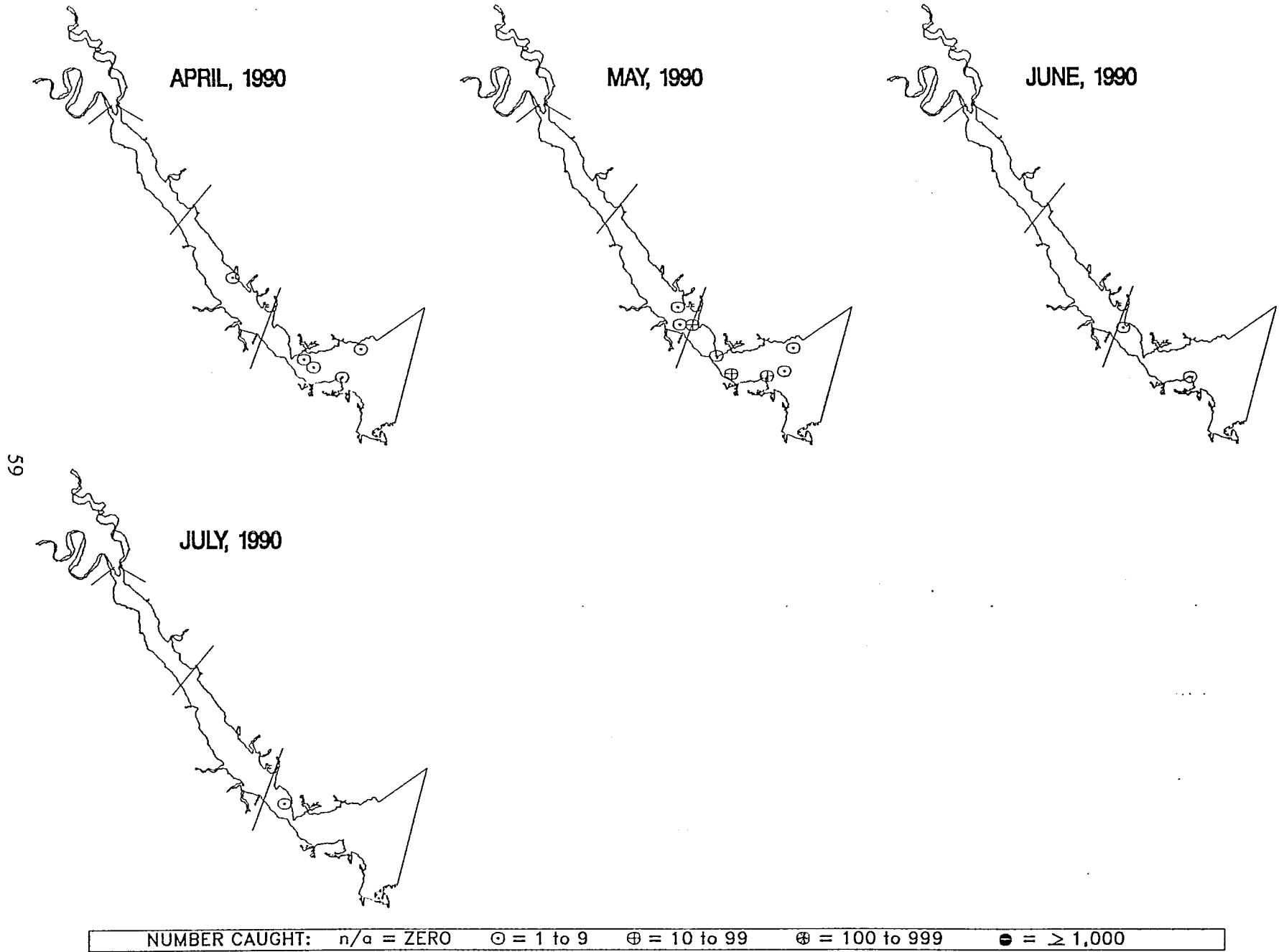
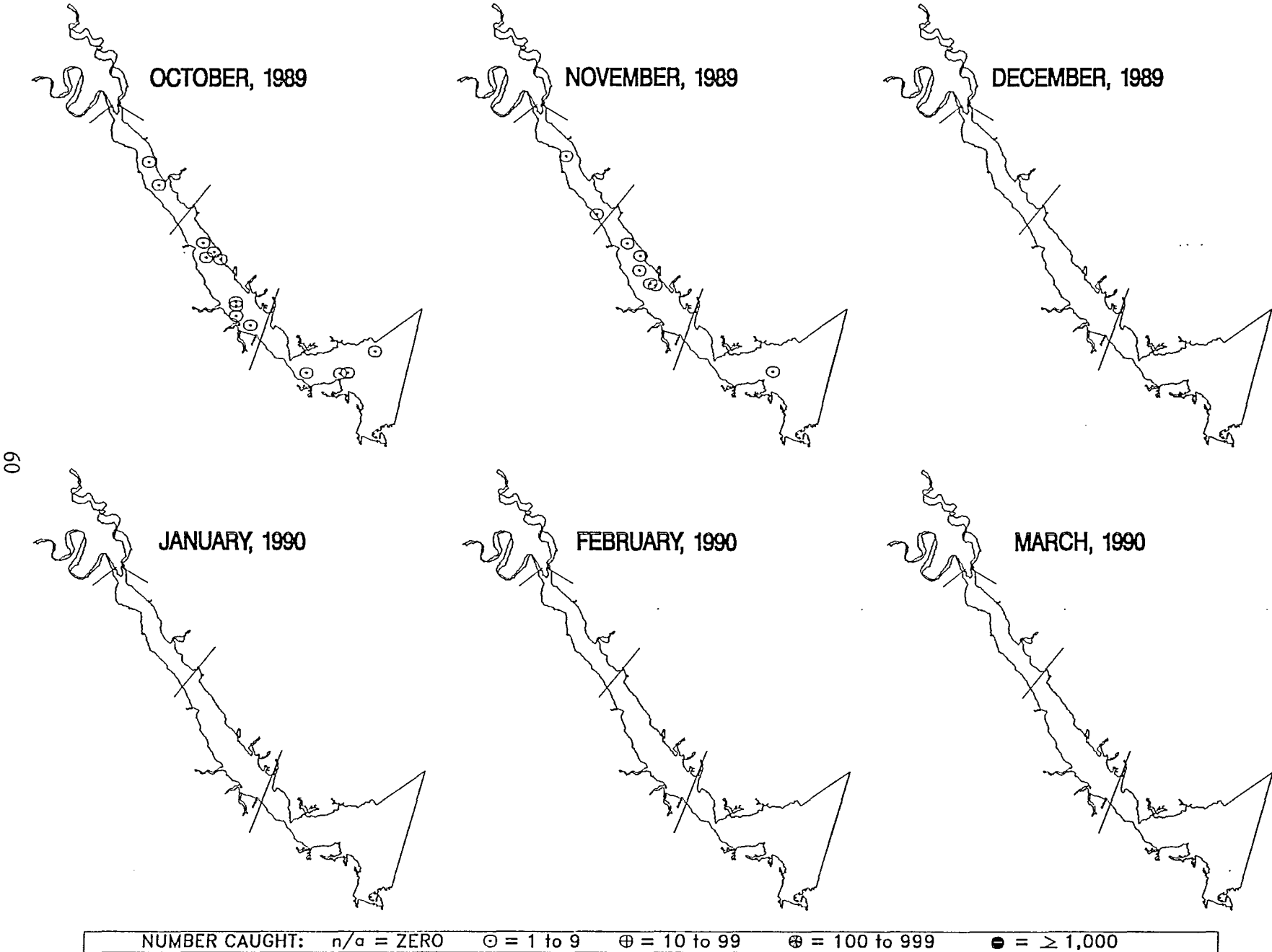


Figure 10. (cont.)

Silver Perch, 1989 – 1990

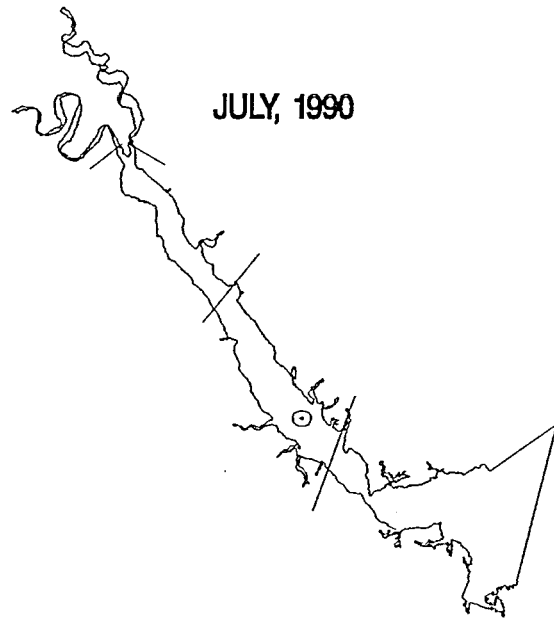
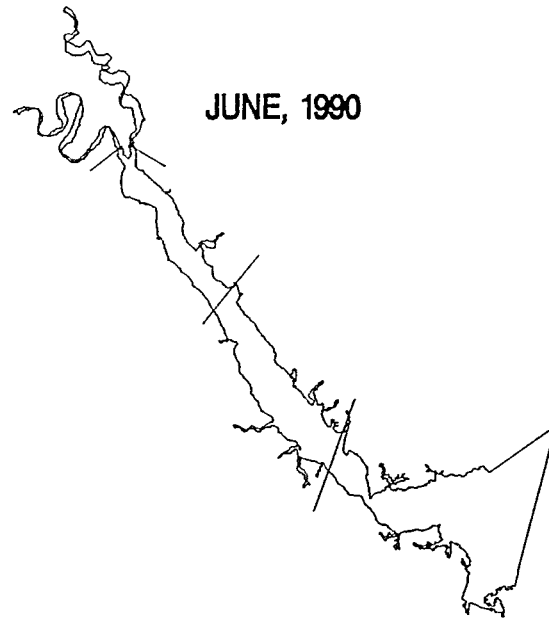
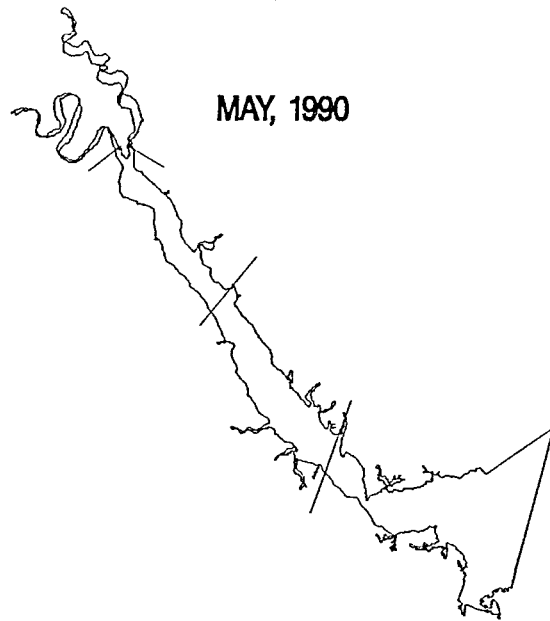
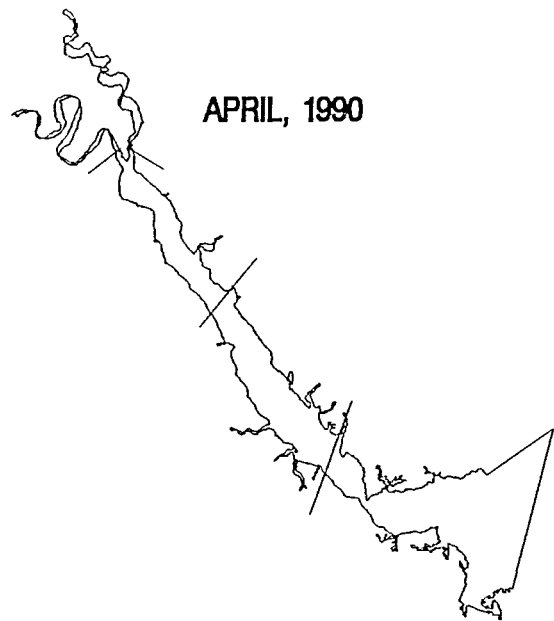


NUMBER CAUGHT: n/a = ZERO ● = 1 to 9 ⊕ = 10 to 99 ⊕ = 100 to 999 ● = ≥ 1,000

Figure 11.

60

Silver Perch, 1989 – 1990

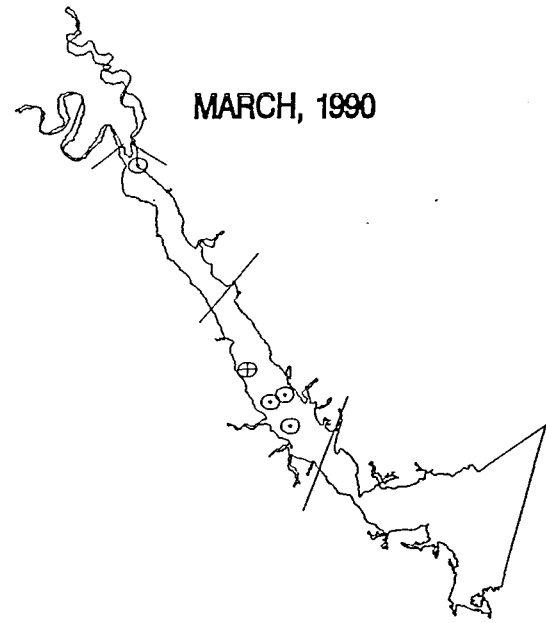
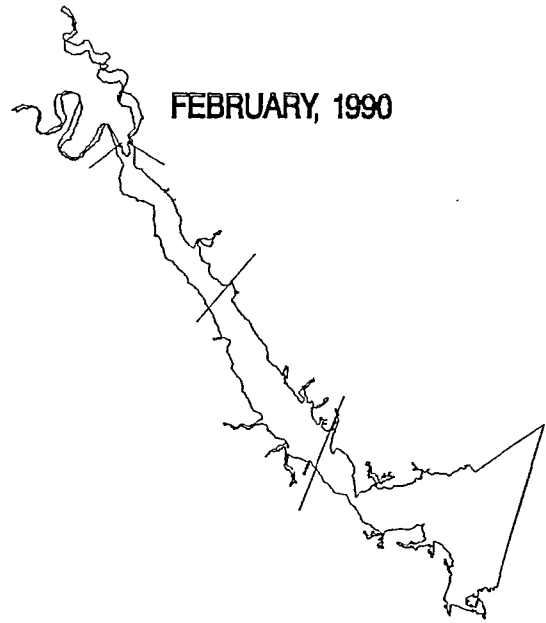
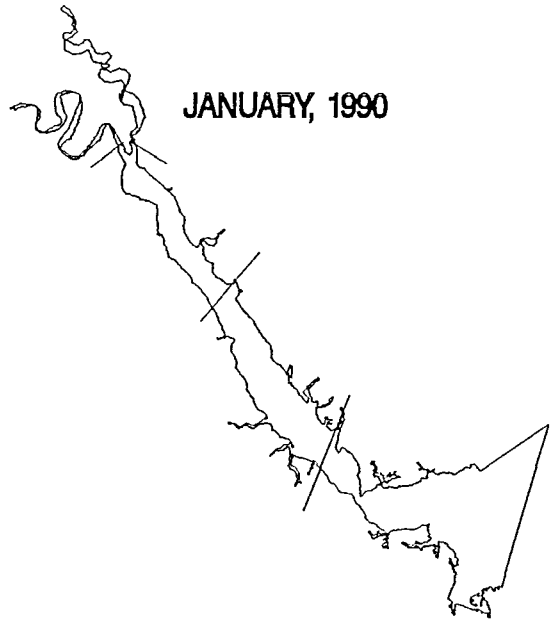
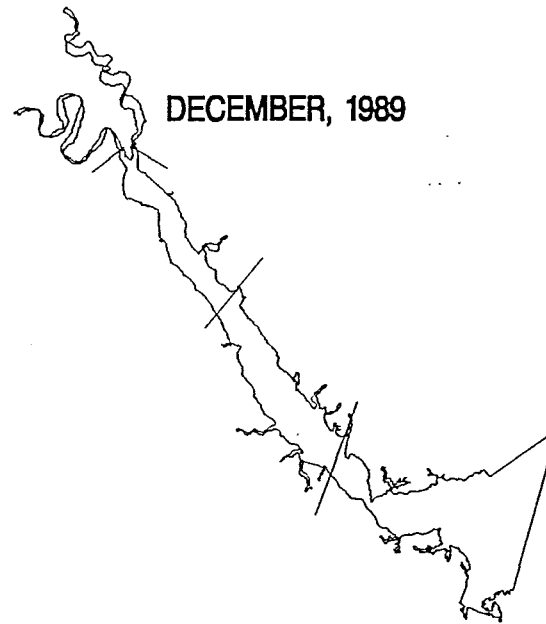
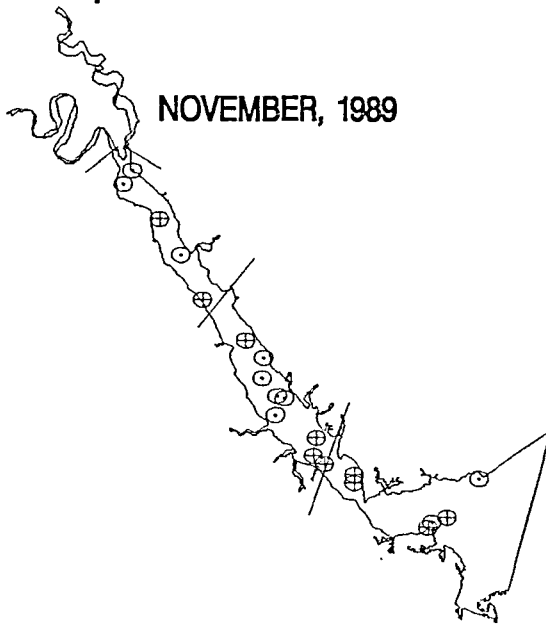
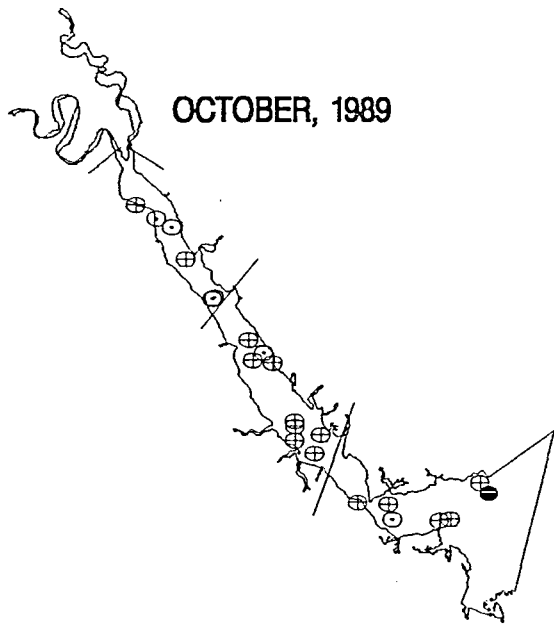


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NUMBER CAUGHT: n/a = ZERO ⊙ = 1 to 9 ⊕ = 10 to 99 ⊕ = 100 to 999 ● = ≥ 1,000

Figure 11. (cont.)

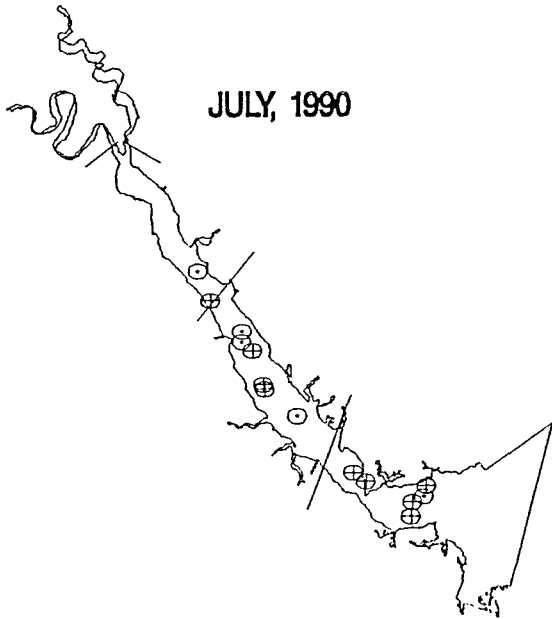
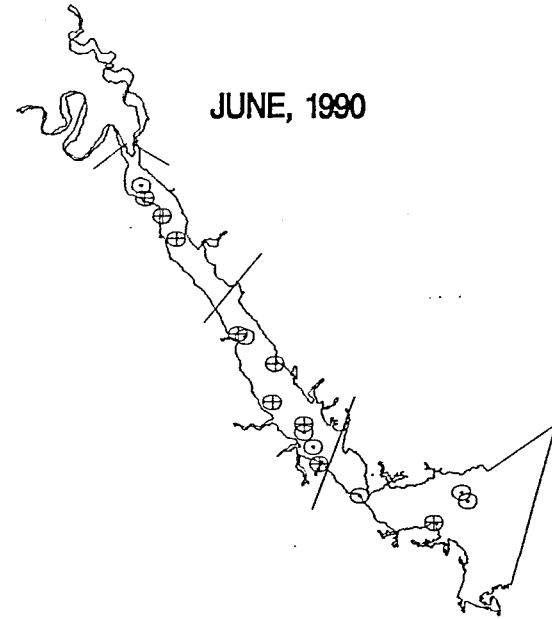
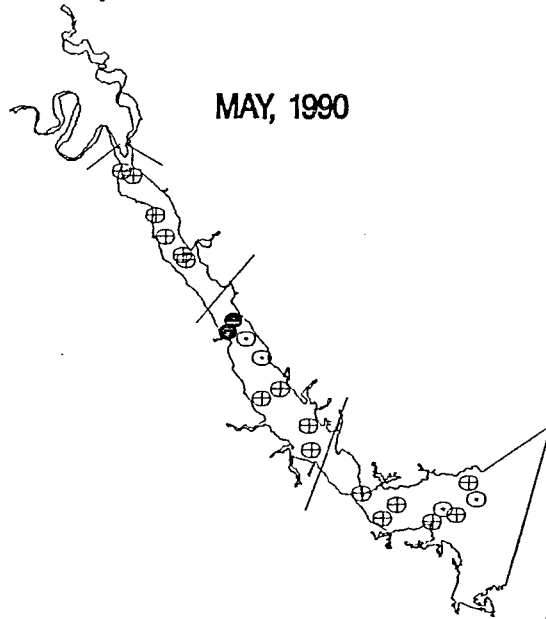
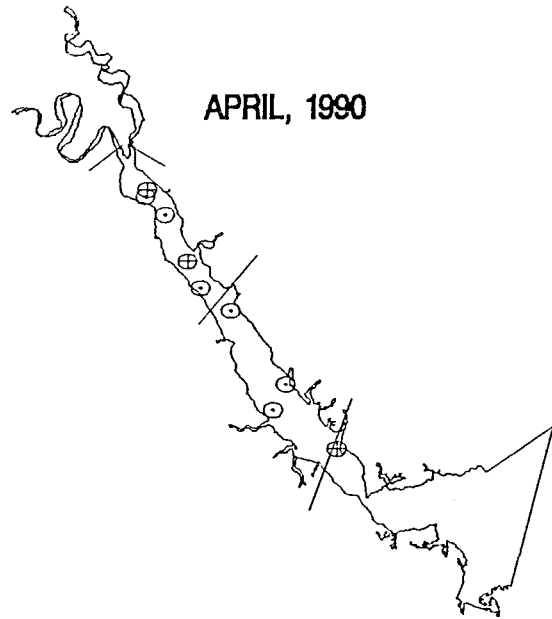
Spot, 1989 – 1990



NUMBER CAUGHT: n/a = ZERO ○ = 1 to 9 ⊕ = 10 to 99 ⊗ = 100 to 999 ● = ≥ 1,000

Figure 12.

Spot, 1989 – 1990

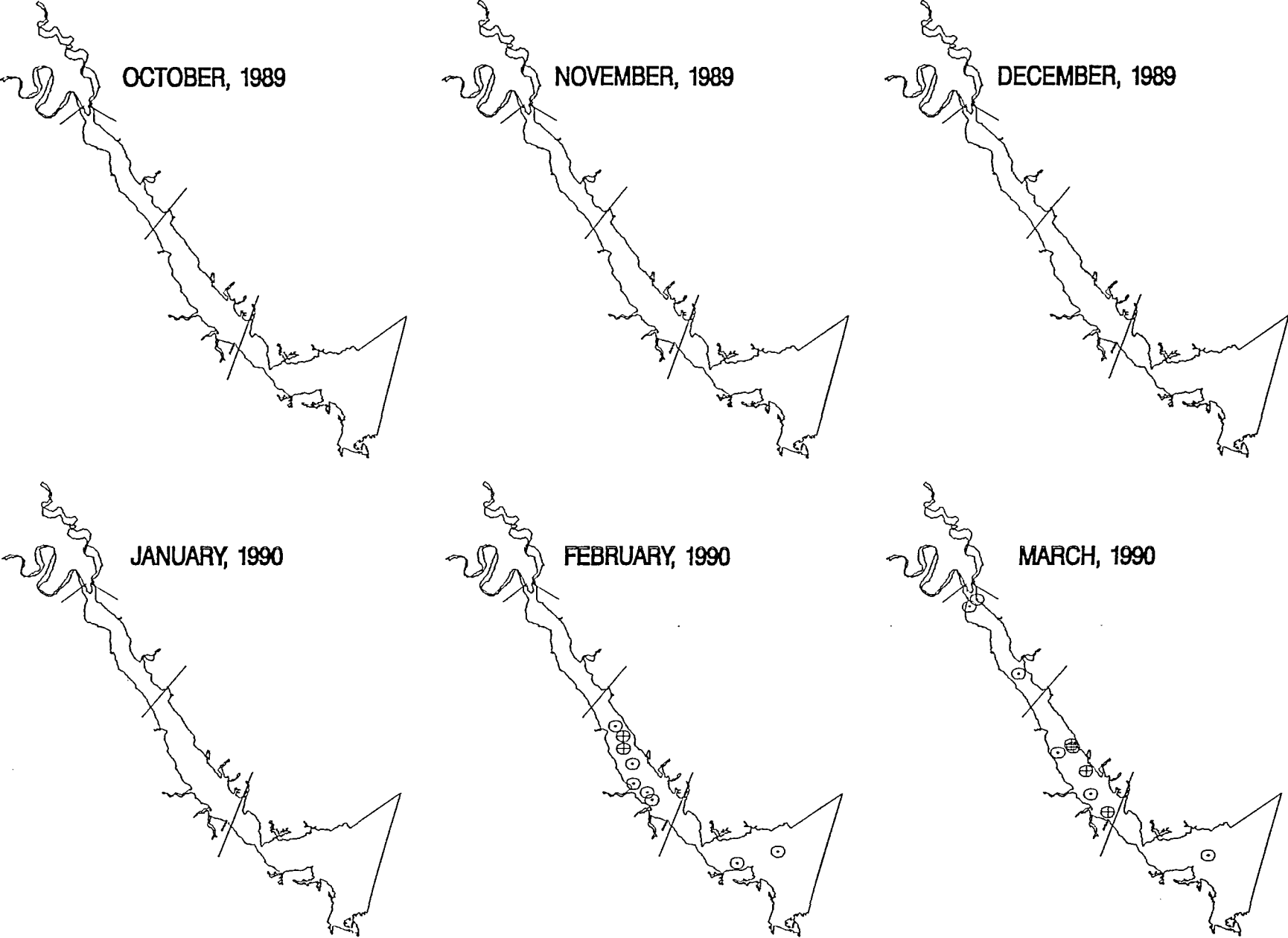


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NUMBER CAUGHT: n/a = ZERO ⊙ = 1 to 9 ⊕ = 10 to 99 ⊗ = 100 to 999 ● = ≥ 1,000

Figure 12. (cont.)

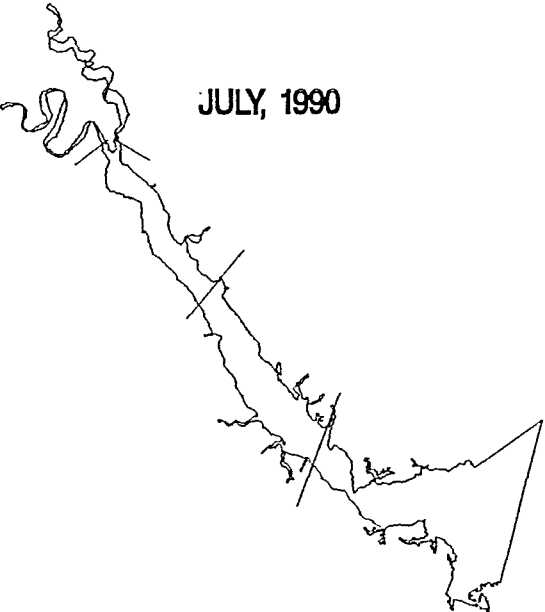
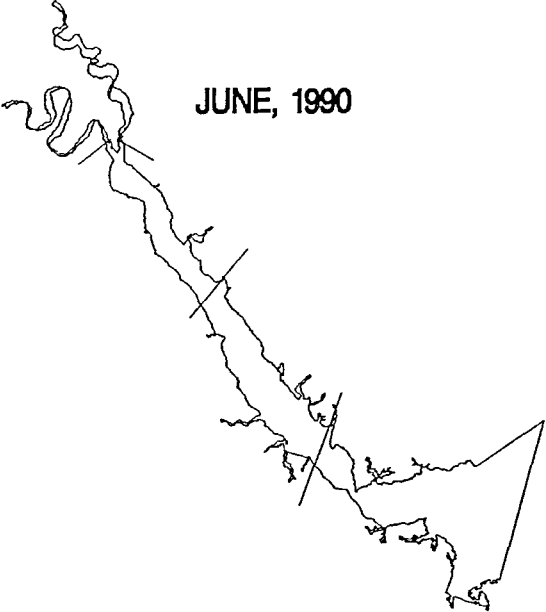
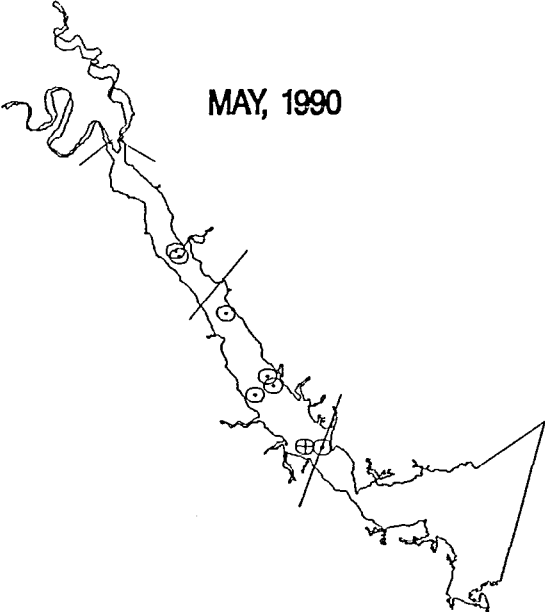
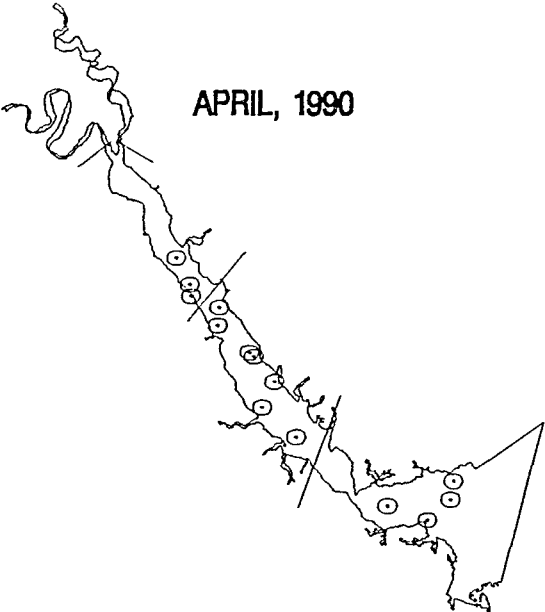
Spotted Hake, 1989 – 1990



NUMBER CAUGHT: n/a = ZERO ⊙ = 1 to 9 ⊕ = 10 to 99 ⊗ = 100 to 999 ● = ≥ 1,000

Figure 13.

Spotted Hake, 1989 – 1990



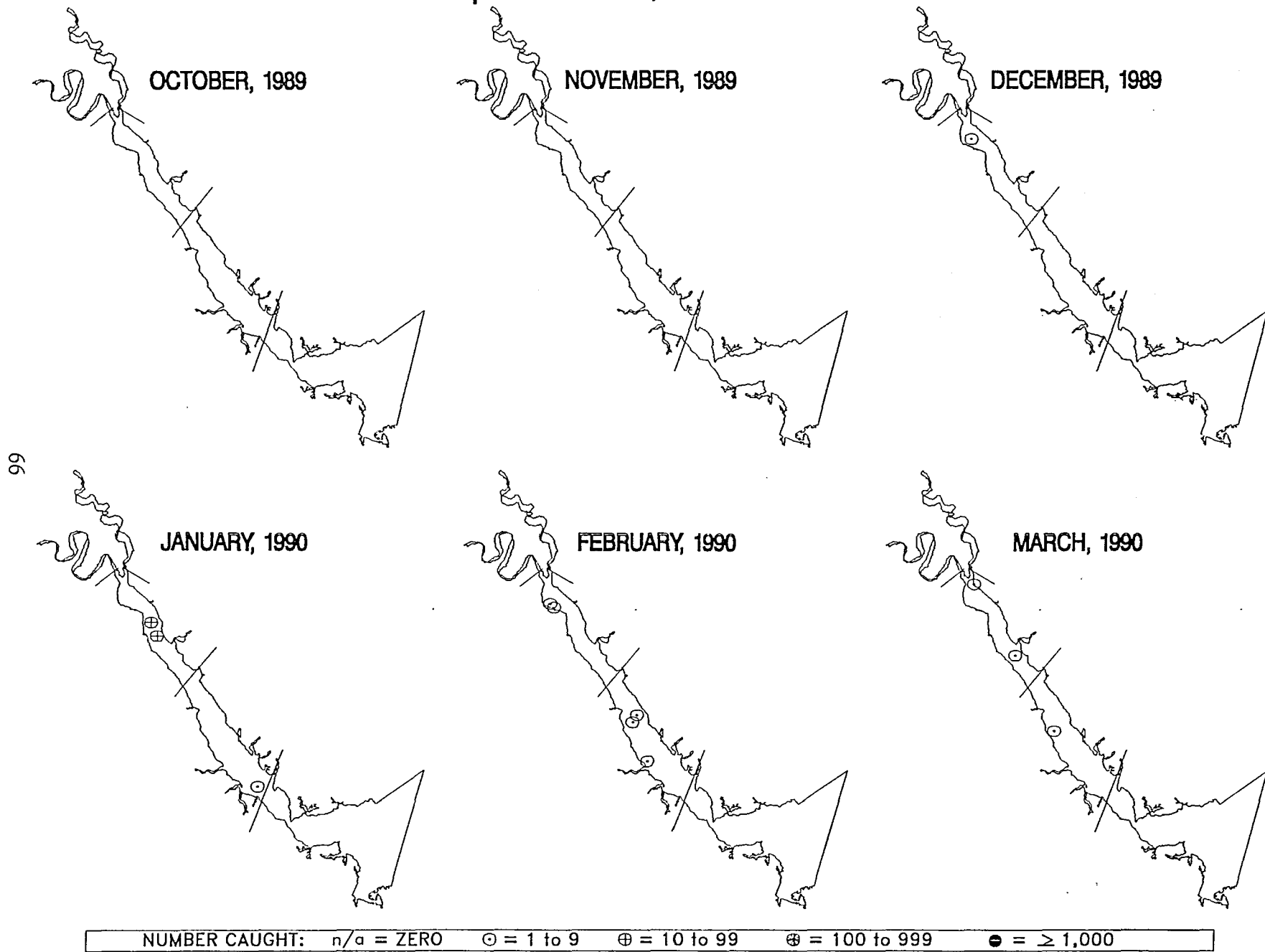
65

NUMBER CAUGHT: n/a = ZERO ○ = 1 to 9 ⊕ = 10 to 99 ⊕ = 100 to 999 ● = ≥ 1,000

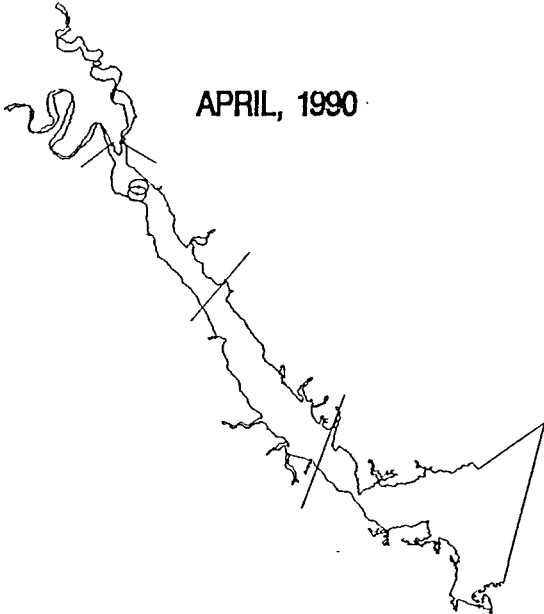
Figure 13. (cont.)

Striped Bass, 1989 – 1990

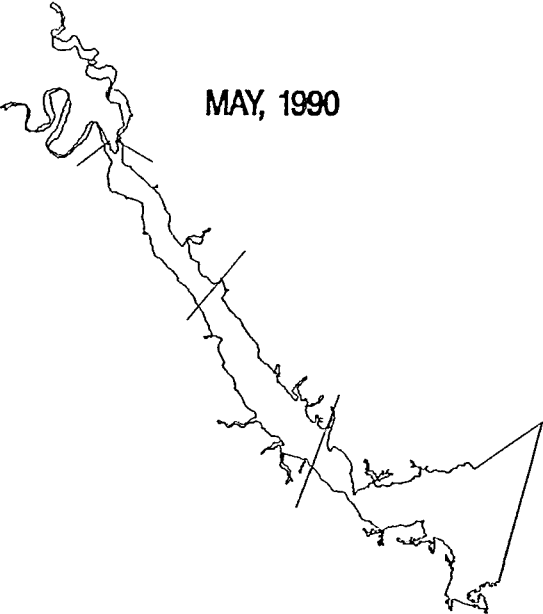
Figure 14.



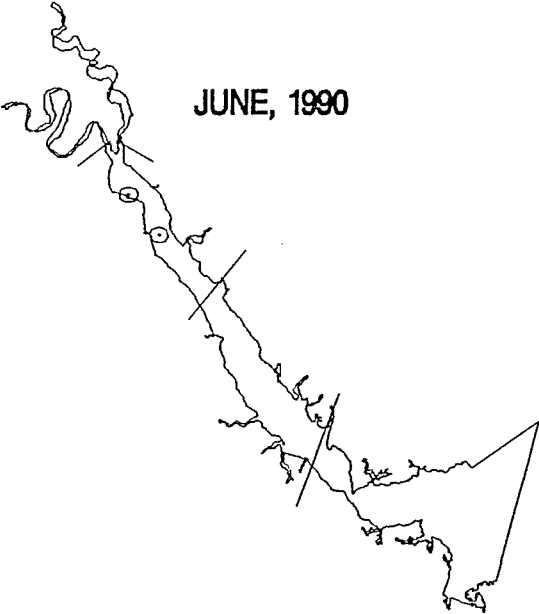
Striped Bass, 1989 – 1990



APRIL, 1990

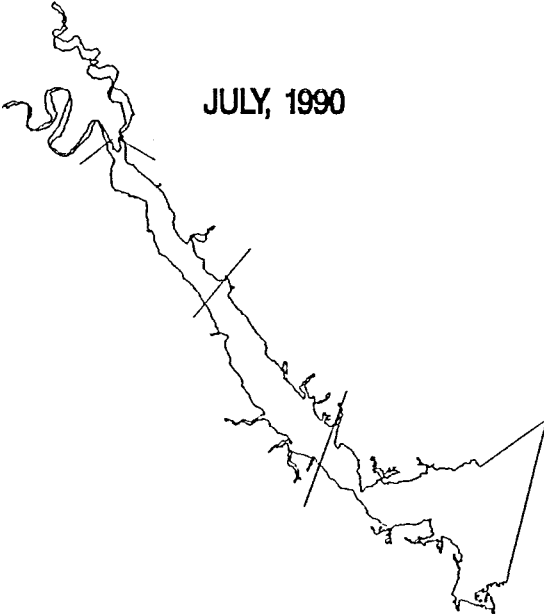


MAY, 1990



JUNE, 1990

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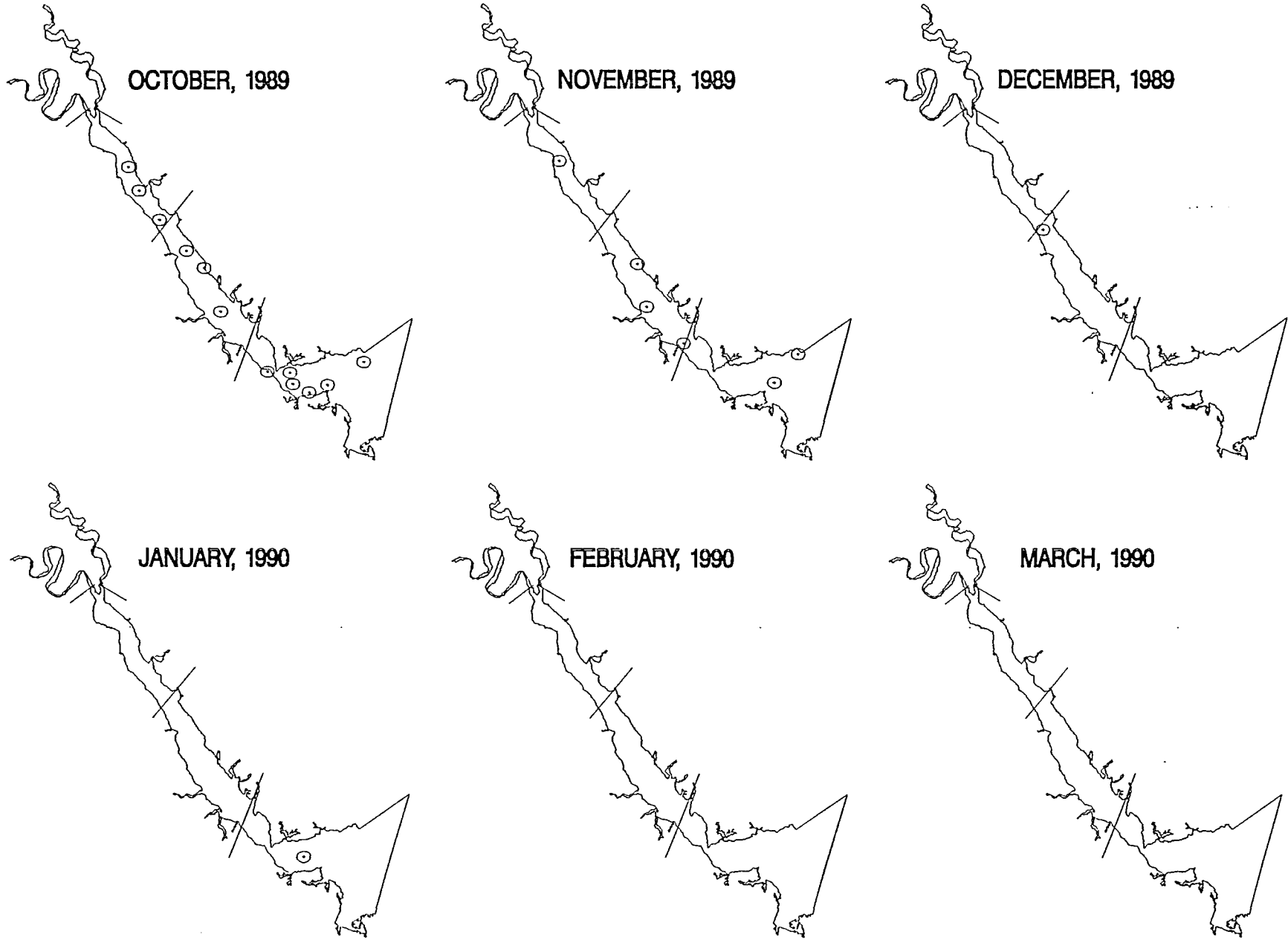


JULY, 1990

NUMBER CAUGHT: n/a = ZERO ⊙ = 1 to 9 ⊕ = 10 to 99 ⊗ = 100 to 999 ● = ≥ 1,000

Figure 14. (cont.)

Summer Flounder, 1989 – 1990



NUMBER CAUGHT: n/a = ZERO ○ = 1 to 9 ⊕ = 10 to 99 ⊕ = 100 to 999 ● = ≥ 1,000

Figure 15.

Summer Flounder, 1989 – 1990

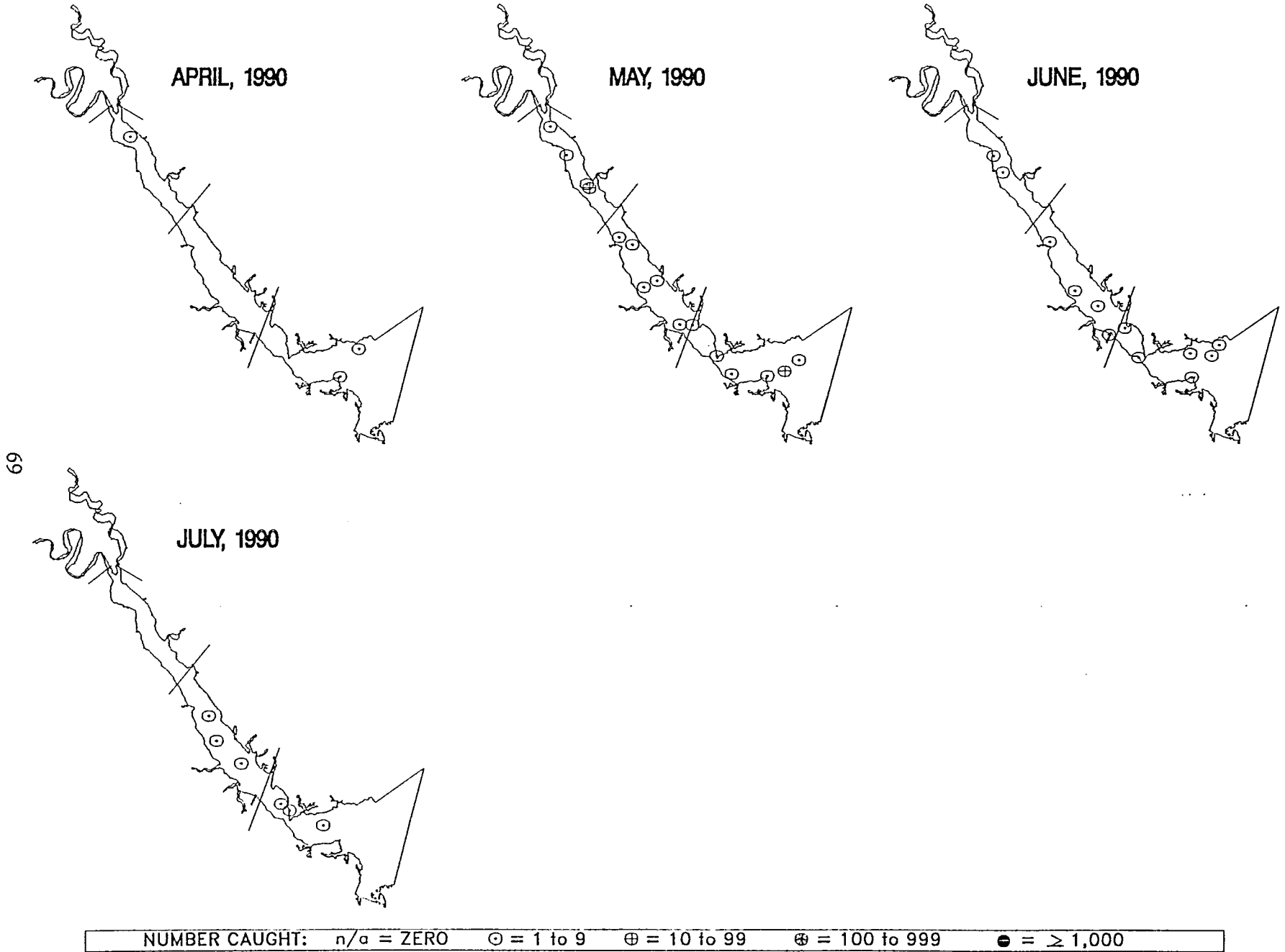


Figure 15. (cont.)

Weakfish, 1989 – 1990

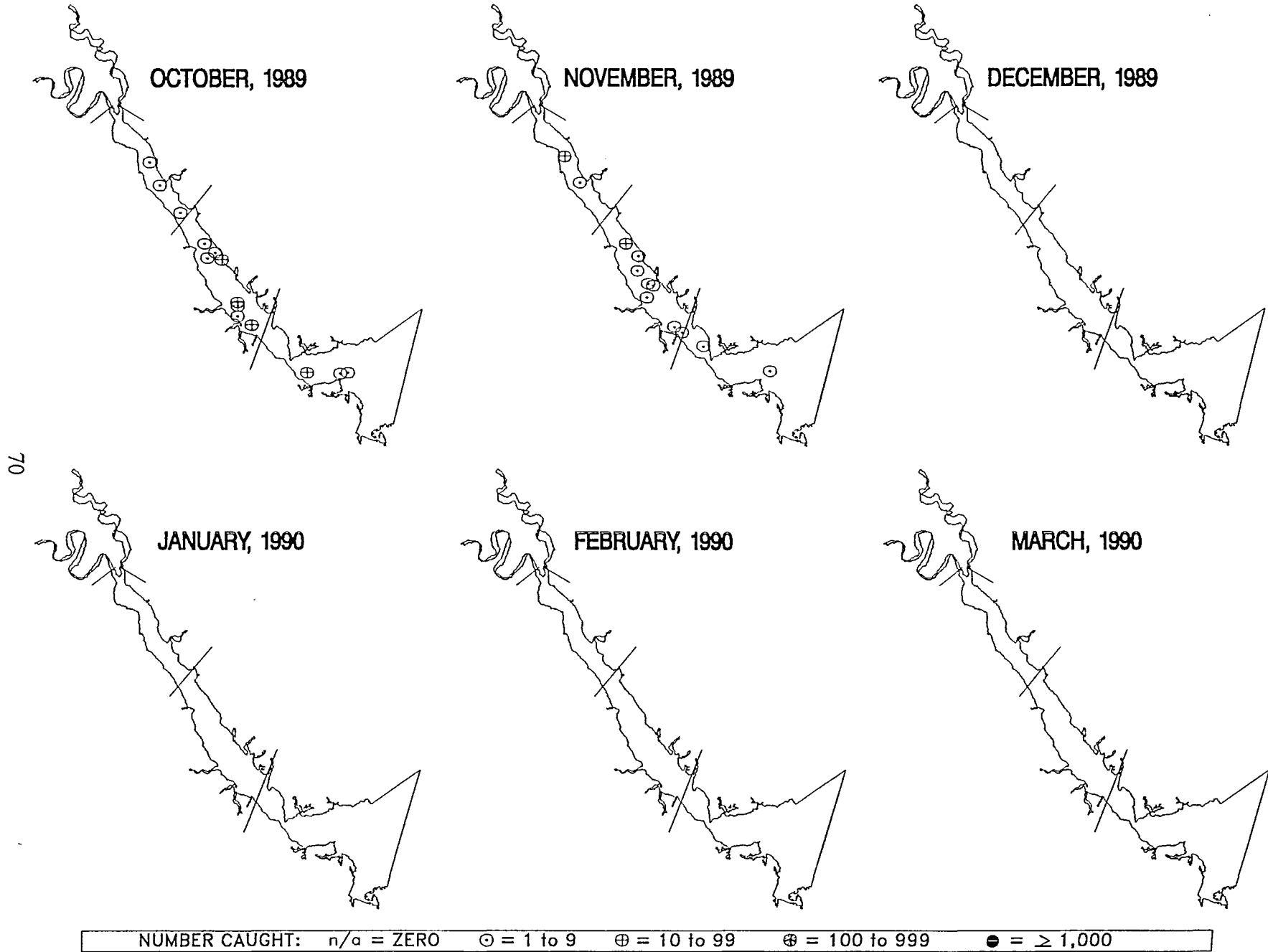
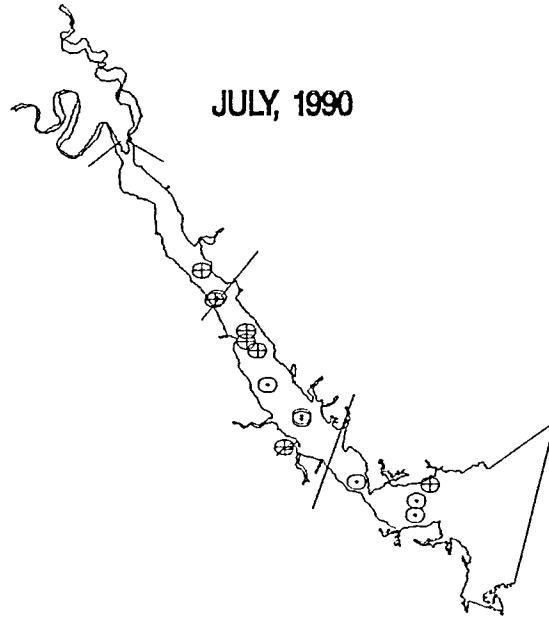
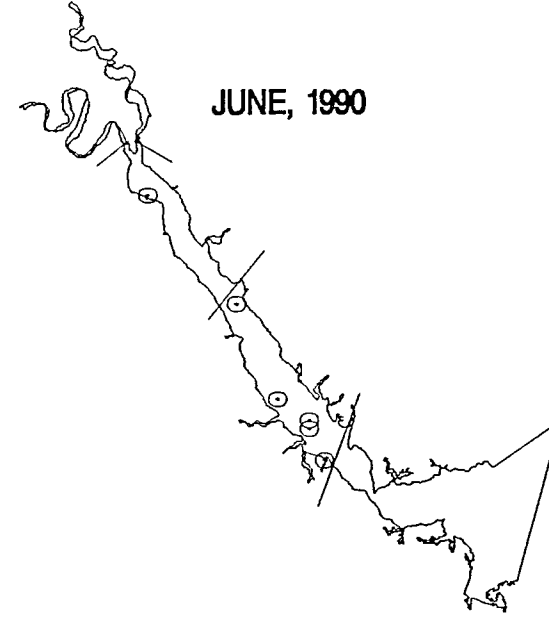
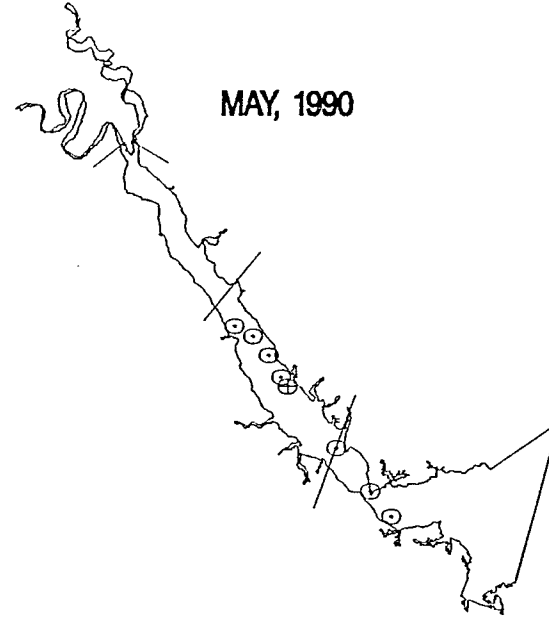
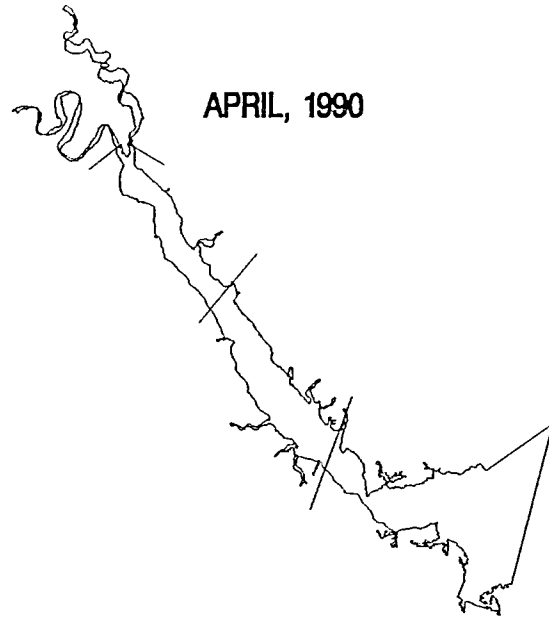


Figure 16.

Weakfish, 1989 – 1990



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NUMBER CAUGHT: n/a = ZERO ○ = 1 to 9 ⊕ = 10 to 99 ⊕ = 100 to 999 ● = ≥ 1,000

Figure 16. (cont.)

White Catfish, 1989 – 1990

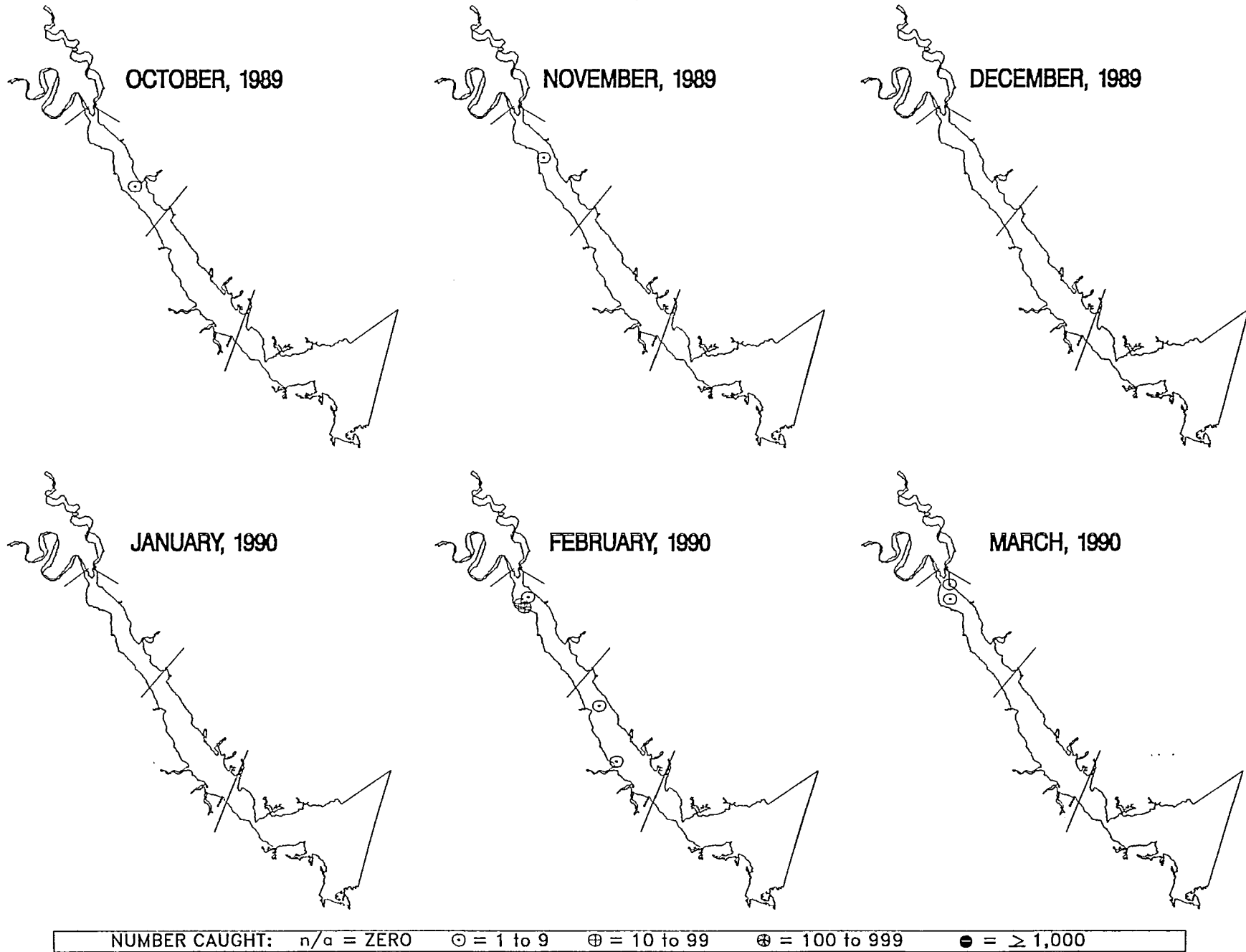
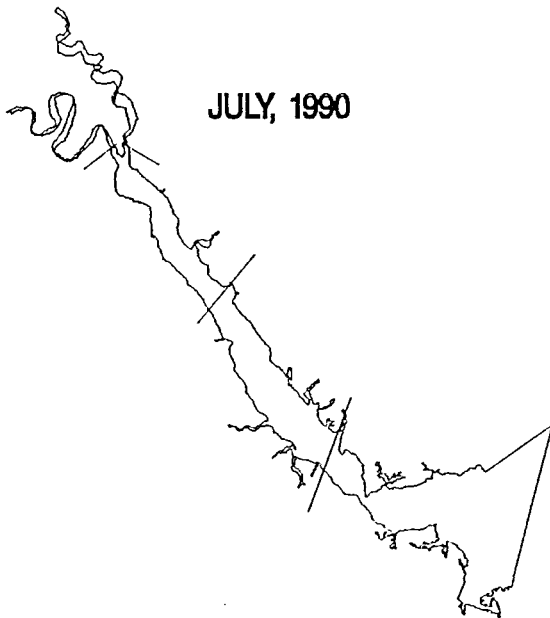
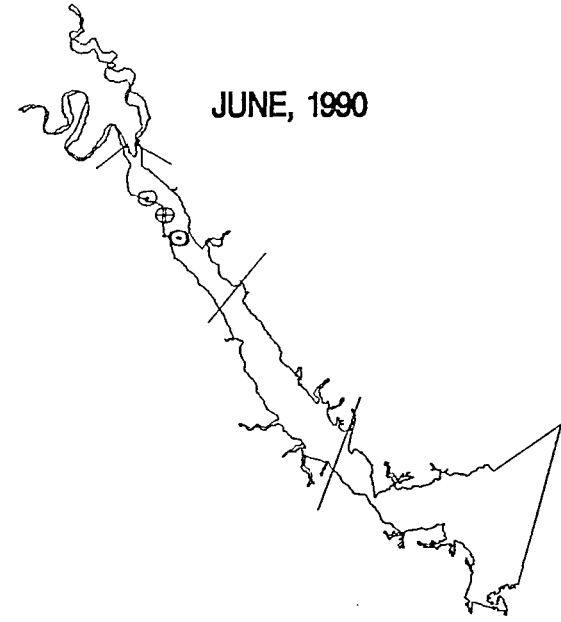
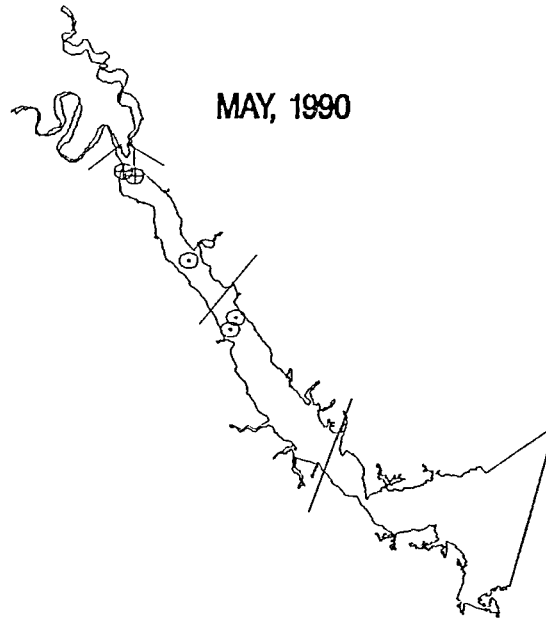
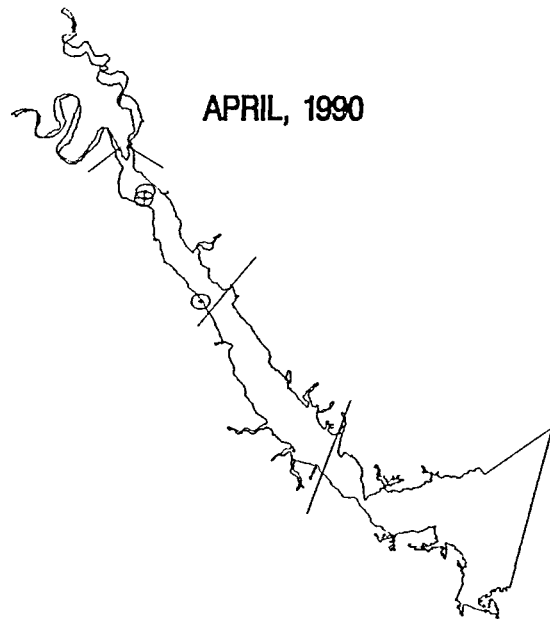


Figure 17.

NUMBER CAUGHT: n/a = ZERO ⊙ = 1 to 9 ⊕ = 10 to 99 ⊗ = 100 to 999 ● = ≥ 1,000

White Catfish, 1989 – 1990

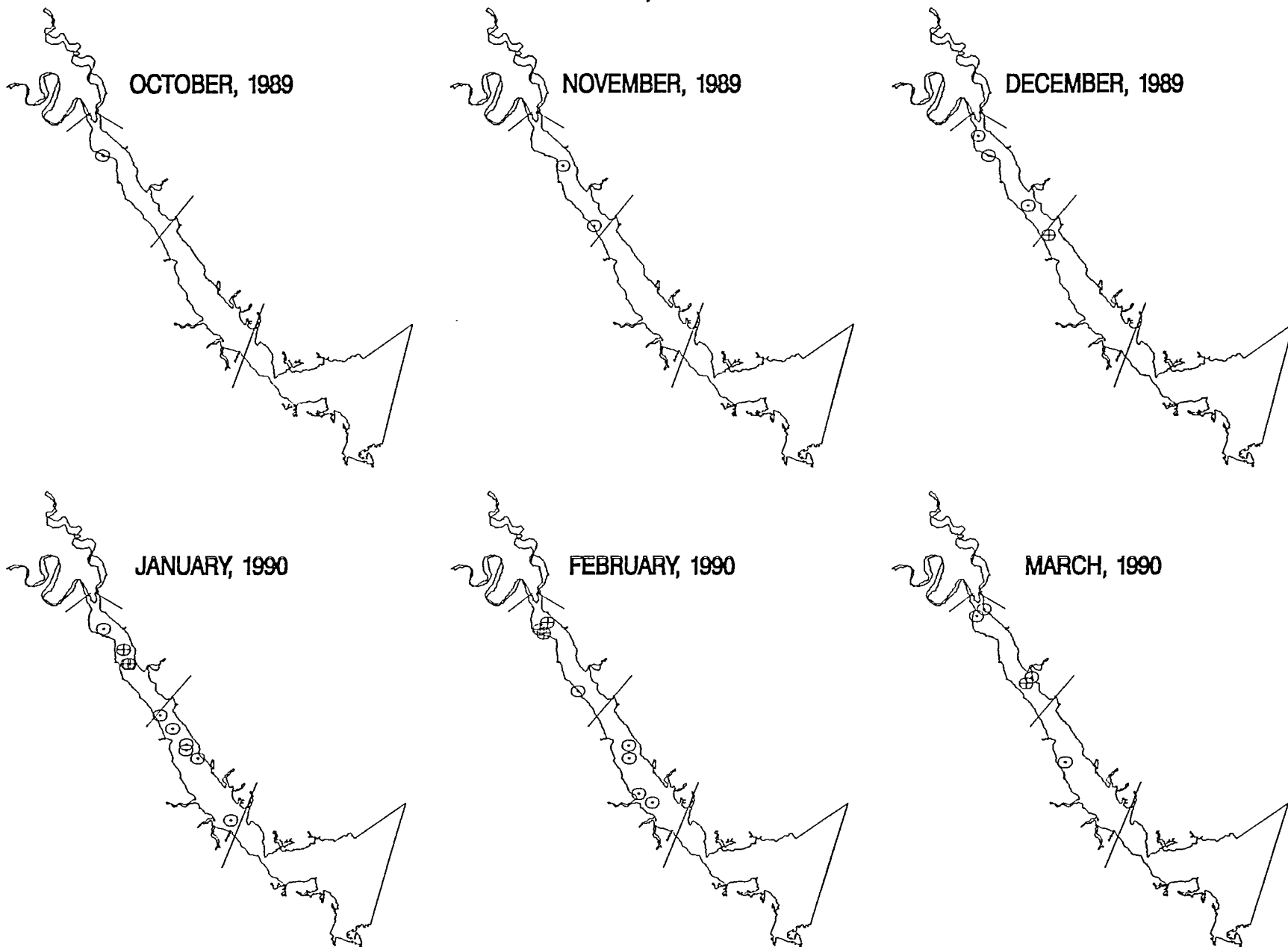


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NUMBER CAUGHT: n/a = ZERO ⊙ = 1 to 9 ⊕ = 10 to 99 ⊕ = 100 to 999 ● = ≥ 1,000

Figure 17. (cont.)

White Perch, 1989 – 1990



NUMBER CAUGHT: n/a = ZERO ○ = 1 to 9 ⊕ = 10 to 99 ⊗ = 100 to 999 ● = ≥ 1,000

Figure 18.

White Perch, 1989 – 1990

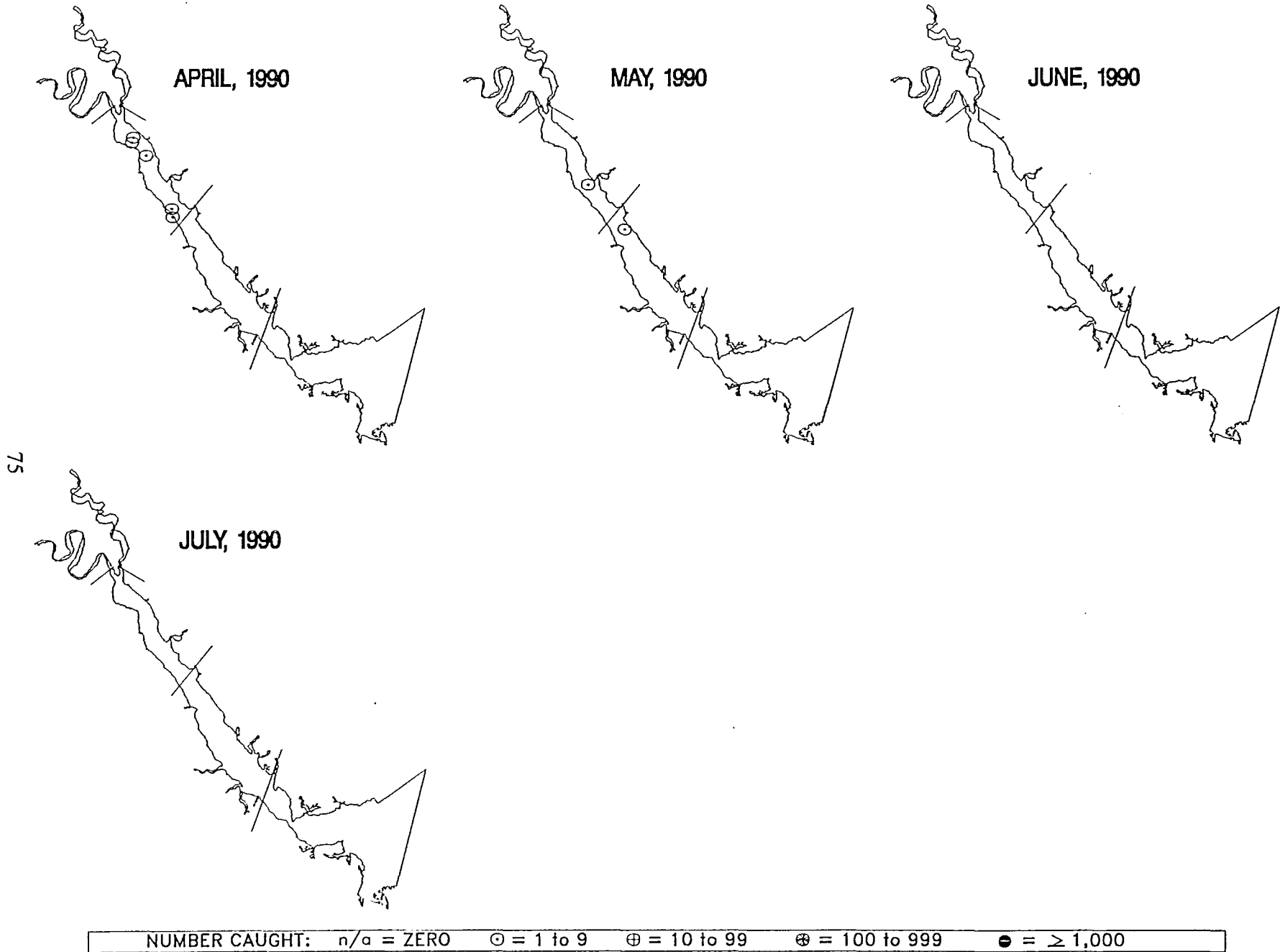


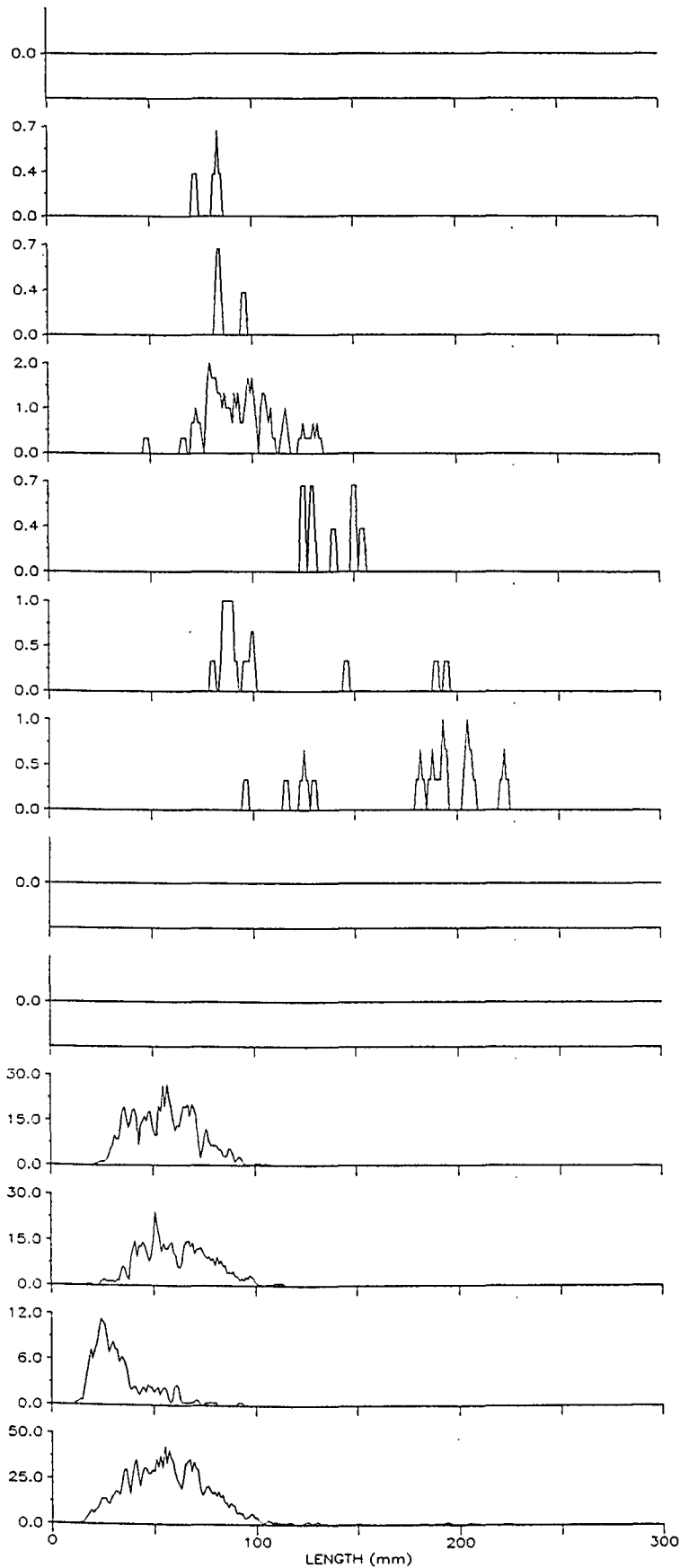
Figure 18. (cont.)

Figures 19-34. Monthly length frequency summaries for the predominant species.

- Explanations:
- A. These figures represent all fish of each species presented from 1989-1990 combined.
 - B. For curve smoothing, the values plotted are a moving average of three of the number of fish caught at each millimeter length group; therefore fractional values can occur.
 - C. The bottom plot on each page is a summary of all fish for all years combined.
 - D. The values to the right of the month name on each plot represent the inclusive dates of the cruises during the month for all years combined, in format year-month-day.
 - E. The catch per haul data presented here should not be used as a young-of-year (YOY) index. No distinction has been made in these calculations between YOY and older fish.

Figure 19.

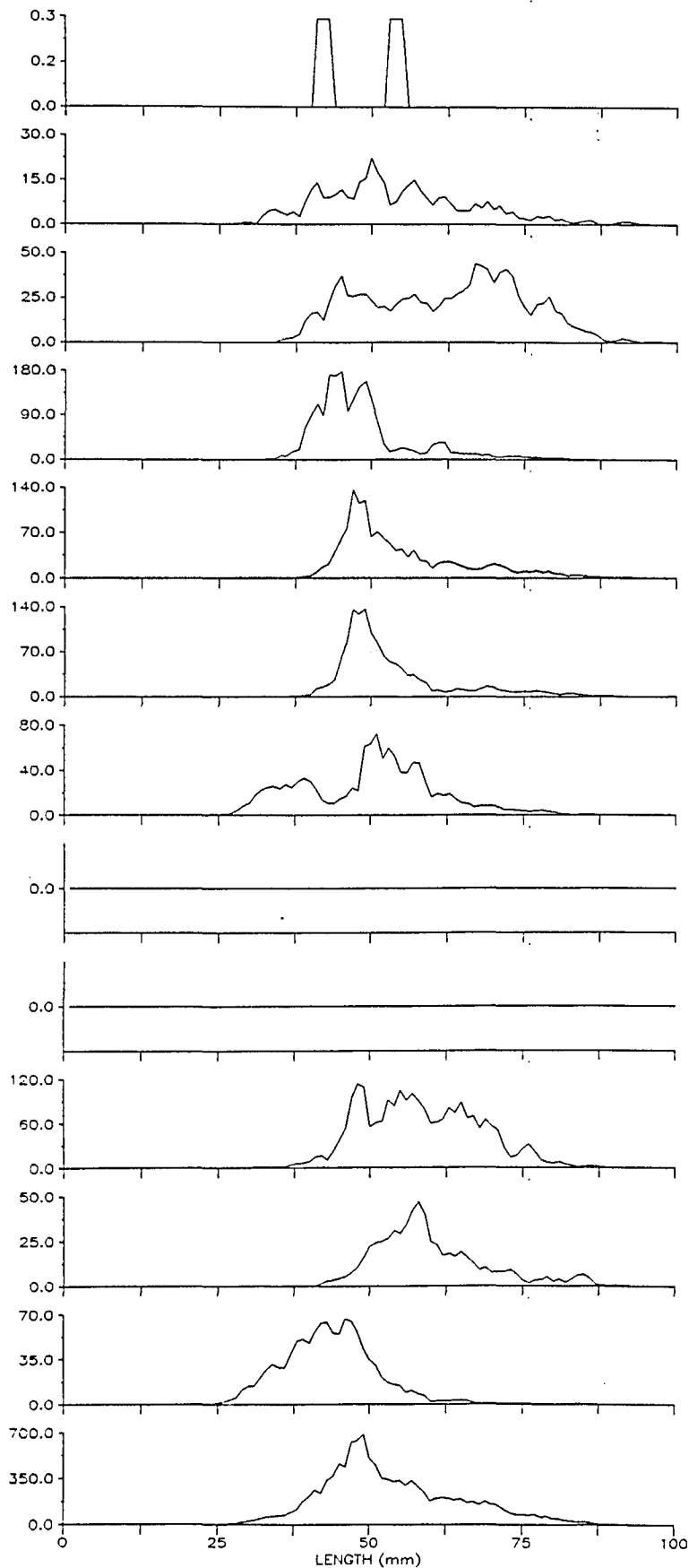
Atlantic Croaker
1989 - 1990 Pooled



JANUARY	900118 - 900118		
NO. CGHT.	- 0	MEAN SIZE	- .
NO. MEAS.	- 0	S.E. SIZE	- .
NO. HAULS	- 24	MIN. SIZE	- .
CAT./HAUL	- 0	MAX. SIZE	- .
FEBRUARY	900221 - 900221		
NO. CGHT.	- 3	MEAN SIZE	- 77.3
NO. MEAS.	- 3	S.E. SIZE	- 3.7
NO. HAULS	- 23	MIN. SIZE	- 70
CAT./HAUL	- 0.1	MAX. SIZE	- 82
MARCH	900322 - 900323		
NO. CGHT.	- 3	MEAN SIZE	- 85.7
NO. MEAS.	- 3	S.E. SIZE	- 4.2
NO. HAULS	- 24	MIN. SIZE	- 81
CAT./HAUL	- 0.1	MAX. SIZE	- 94
APRIL	900425 - 900425		
NO. CGHT.	- 53	MEAN SIZE	- 91.9
NO. MEAS.	- 53	S.E. SIZE	- 2.4
NO. HAULS	- 24	MIN. SIZE	- 46
CAT./HAUL	- 2.2	MAX. SIZE	- 131
MAY	900522 - 900523		
NO. CGHT.	- 8	MEAN SIZE	- 135.9
NO. MEAS.	- 8	S.E. SIZE	- 4.3
NO. HAULS	- 24	MIN. SIZE	- 123
CAT./HAUL	- 0.3	MAX. SIZE	- 152
JUNE	900625 - 900626		
NO. CGHT.	- 14	MEAN SIZE	- 106.6
NO. MEAS.	- 14	S.E. SIZE	- 10.4
NO. HAULS	- 24	MIN. SIZE	- 78
CAT./HAUL	- 0.6	MAX. SIZE	- 193
JULY	900723 - 900724		
NO. CGHT.	- 18	MEAN SIZE	- 174.7
NO. MEAS.	- 18	S.E. SIZE	- 9.3
NO. HAULS	- 22	MIN. SIZE	- 94
CAT./HAUL	- 0.8	MAX. SIZE	- 222
AUGUST	000000 - 000000		
NO. CGHT.	- 0	MEAN SIZE	- .
NO. MEAS.	- 0	S.E. SIZE	- .
NO. HAULS	- 0	MIN. SIZE	- .
CAT./HAUL	- .	MAX. SIZE	- .
SEPTEMBER	000000 - 000000		
NO. CGHT.	- 0	MEAN SIZE	- .
NO. MEAS.	- 0	S.E. SIZE	- .
NO. HAULS	- 0	MIN. SIZE	- .
CAT./HAUL	- .	MAX. SIZE	- .
OCTOBER	891025 - 891027		
NO. CGHT.	- 1000	MEAN SIZE	- 54.2
NO. MEAS.	- 809	S.E. SIZE	- 0.6
NO. HAULS	- 24	MIN. SIZE	- 20
CAT./HAUL	- 41.7	MAX. SIZE	- 191
NOVEMBER	891108 - 891109		
NO. CGHT.	- 945	MEAN SIZE	- 59.1
NO. MEAS.	- 826	S.E. SIZE	- 0.7
NO. HAULS	- 23	MIN. SIZE	- 16
CAT./HAUL	- 41.1	MAX. SIZE	- 111
DECEMBER	891206 - 891207		
NO. CGHT.	- 215	MEAN SIZE	- 31.2
NO. MEAS.	- 215	S.E. SIZE	- 0.9
NO. HAULS	- 24	MIN. SIZE	- 11
CAT./HAUL	- 9	MAX. SIZE	- 90
JAN - DEC	891025 - 900724		
NO. CGHT.	- 2259	MEAN SIZE	- 56.4
NO. MEAS.	- 1749	S.E. SIZE	- 0.6
NO. HAULS	- 236	MIN. SIZE	- 11
CAT./HAUL	- 9.6	MAX. SIZE	- 222

Figure 20.

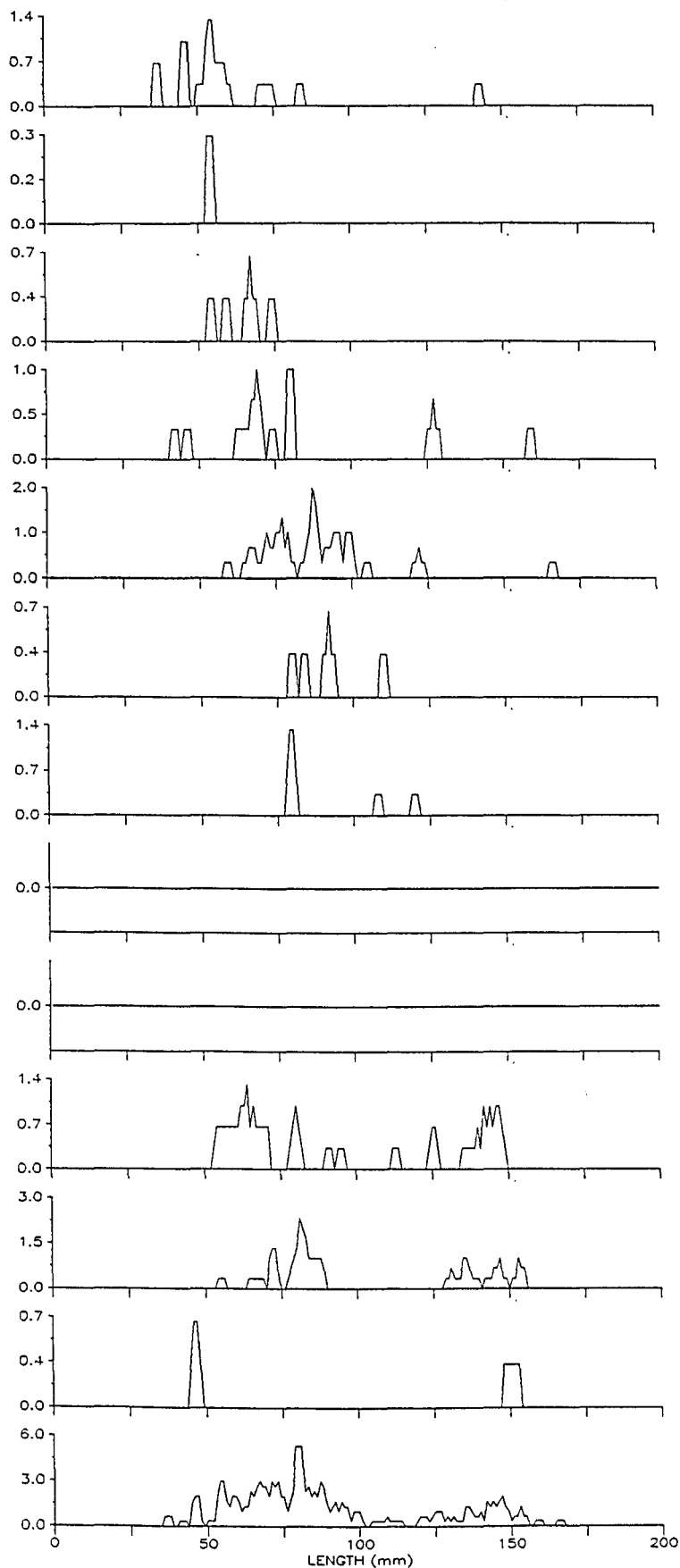
Bay Anchovy
1989 - 1990 Pooled



JANUARY	900118	-	900118		
NO. CGHT.	2		MEAN SIZE	-	46
NO. MEAS.	2		S.E. SIZE	-	6
NO. HAULS	24		MIN. SIZE	-	40
CAT./HAUL	0.1		MAX. SIZE	-	52
FEBRUARY	900221	-	900221		
NO. CGHT.	464		MEAN SIZE	-	52
NO. MEAS.	390		S.E. SIZE	-	0.6
NO. HAULS	23		MIN. SIZE	-	27
CAT./HAUL	20.2		MAX. SIZE	-	92
MARCH	900322	-	900323		
NO. CGHT.	4029		MEAN SIZE	-	59.9
NO. MEAS.	1158		S.E. SIZE	-	0.4
NO. HAULS	24		MIN. SIZE	-	34
CAT./HAUL	167.9		MAX. SIZE	-	97
APRIL	900425	-	900425		
NO. CGHT.	14918		MEAN SIZE	-	46.1
NO. MEAS.	2031		S.E. SIZE	-	0.2
NO. HAULS	24		MIN. SIZE	-	32
CAT./HAUL	621.6		MAX. SIZE	-	82
MAY	900522	-	900523		
NO. CGHT.	4821		MEAN SIZE	-	52.5
NO. MEAS.	1404		S.E. SIZE	-	0.3
NO. HAULS	24		MIN. SIZE	-	37
CAT./HAUL	200.9		MAX. SIZE	-	90
JUNE	900625	-	900626		
NO. CGHT.	2951		MEAN SIZE	-	51.1
NO. MEAS.	1346		S.E. SIZE	-	0.2
NO. HAULS	24		MIN. SIZE	-	36
CAT./HAUL	123		MAX. SIZE	-	98
JULY	900723	-	900724		
NO. CGHT.	7667		MEAN SIZE	-	48.1
NO. MEAS.	1177		S.E. SIZE	-	0.3
NO. HAULS	22		MIN. SIZE	-	22
CAT./HAUL	348.5		MAX. SIZE	-	84
AUGUST	000000	-	000000		
NO. CGHT.	0		MEAN SIZE	-	.
NO. MEAS.	0		S.E. SIZE	-	.
NO. HAULS	0		MIN. SIZE	-	.
CAT./HAUL	.		MAX. SIZE	-	.
SEPTEMBER	000000	-	000000		
NO. CGHT.	0		MEAN SIZE	-	.
NO. MEAS.	0		S.E. SIZE	-	.
NO. HAULS	0		MIN. SIZE	-	.
CAT./HAUL	.		MAX. SIZE	-	.
OCTOBER	891025	-	891027		
NO. CGHT.	4860		MEAN SIZE	-	56.3
NO. MEAS.	2306		S.E. SIZE	-	0.2
NO. HAULS	24		MIN. SIZE	-	29
CAT./HAUL	202.5		MAX. SIZE	-	90
NOVEMBER	891108	-	891109		
NO. CGHT.	4807		MEAN SIZE	-	57.8
NO. MEAS.	630		S.E. SIZE	-	0.4
NO. HAULS	23		MIN. SIZE	-	30
CAT./HAUL	209		MAX. SIZE	-	89
DECEMBER	891206	-	891207		
NO. CGHT.	1555		MEAN SIZE	-	41.5
NO. MEAS.	1095		S.E. SIZE	-	0.2
NO. HAULS	24		MIN. SIZE	-	20
CAT./HAUL	64.8		MAX. SIZE	-	81
JAN - DEC	891025	-	900724		
NO. CGHT.	46074		MEAN SIZE	-	51.5
NO. MEAS.	11539		S.E. SIZE	-	0.1
NO. HAULS	236		MIN. SIZE	-	20
CAT./HAUL	195.2		MAX. SIZE	-	98

Figure 21.

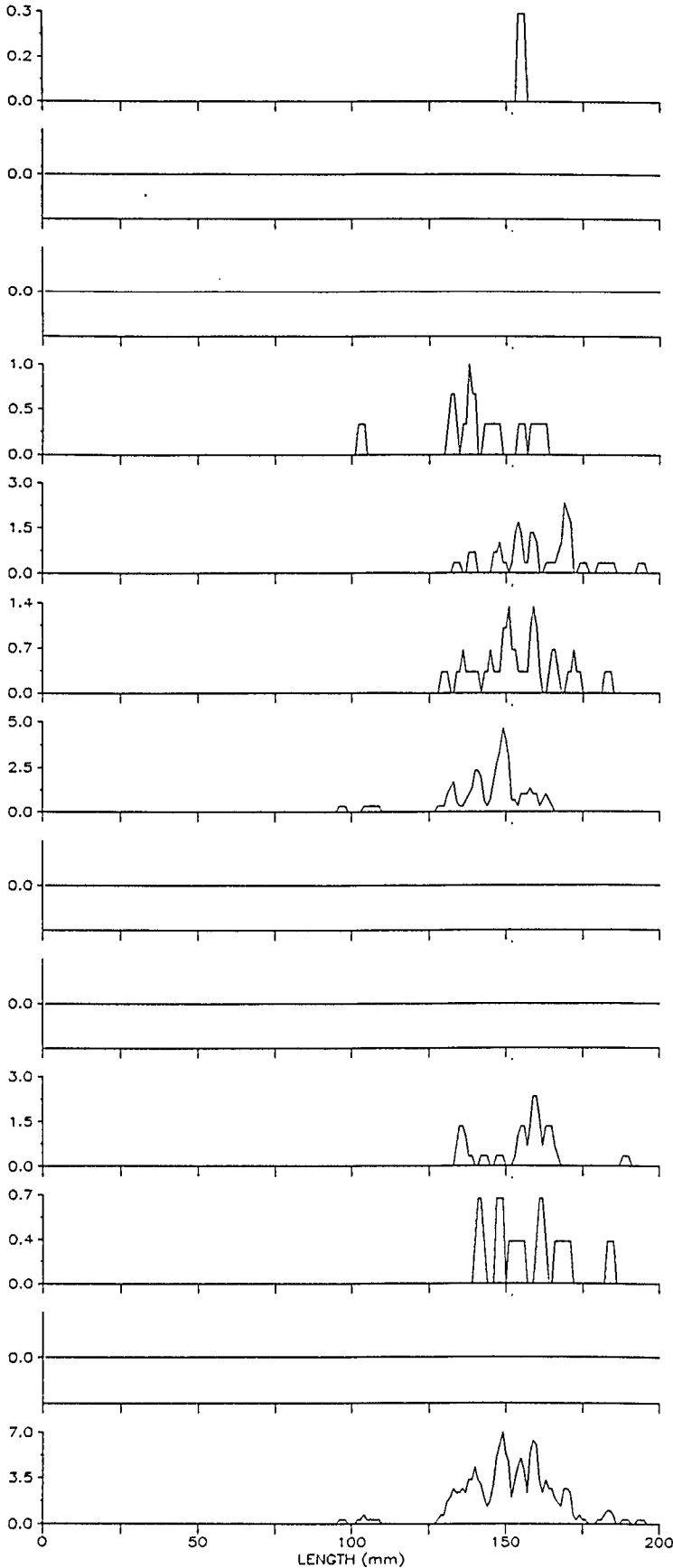
Blackcheek Tonguefish
1989 - 1990 Pooled



JANUARY	900118	-	900118		
NO. CGHT.	-	17	MEAN SIZE	-	58.4
NO. MEAS.	-	17	S.E. SIZE	-	6
NO. HAULS	-	24	MIN. SIZE	-	35
CAT./HAUL	-	0.7	MAX. SIZE	-	141
FEBRUARY	900221	-	900221		
NO. CGHT.	-	1	MEAN SIZE	-	52
NO. MEAS.	-	1	S.E. SIZE	-	.
NO. HAULS	-	23	MIN. SIZE	-	52
CAT./HAUL	-	0	MAX. SIZE	-	52
MARCH	900322	-	900323		
NO. CGHT.	-	5	MEAN SIZE	-	62.2
NO. MEAS.	-	5	S.E. SIZE	-	3.5
NO. HAULS	-	24	MIN. SIZE	-	52
CAT./HAUL	-	0.2	MAX. SIZE	-	72
APRIL	900425	-	900425		
NO. CGHT.	-	14	MEAN SIZE	-	80.2
NO. MEAS.	-	14	S.E. SIZE	-	8.8
NO. HAULS	-	24	MIN. SIZE	-	40
CAT./HAUL	-	0.6	MAX. SIZE	-	157
MAY	900522	-	900523		
NO. CGHT.	-	33	MEAN SIZE	-	86.6
NO. MEAS.	-	33	S.E. SIZE	-	3.5
NO. HAULS	-	24	MIN. SIZE	-	57
CAT./HAUL	-	1.4	MAX. SIZE	-	164
JUNE	900625	-	900626		
NO. CGHT.	-	5	MEAN SIZE	-	89.6
NO. MEAS.	-	5	S.E. SIZE	-	5.2
NO. HAULS	-	24	MIN. SIZE	-	78
CAT./HAUL	-	0.2	MAX. SIZE	-	108
JULY	900723	-	900724		
NO. CGHT.	-	6	MEAN SIZE	-	89
NO. MEAS.	-	6	S.E. SIZE	-	7.4
NO. HAULS	-	22	MIN. SIZE	-	77
CAT./HAUL	-	0.3	MAX. SIZE	-	118
AUGUST	000000	-	000000		
NO. CGHT.	-	0	MEAN SIZE	-	.
NO. MEAS.	-	0	S.E. SIZE	-	.
NO. HAULS	-	0	MIN. SIZE	-	.
CAT./HAUL	-	.	MAX. SIZE	-	.
SEPTEMBER	000000	-	000000		
NO. CGHT.	-	0	MEAN SIZE	-	.
NO. MEAS.	-	0	S.E. SIZE	-	.
NO. HAULS	-	0	MIN. SIZE	-	.
CAT./HAUL	-	.	MAX. SIZE	-	.
OCTOBER	891025	-	891027		
NO. CGHT.	-	31	MEAN SIZE	-	93.2
NO. MEAS.	-	31	S.E. SIZE	-	6.5
NO. HAULS	-	24	MIN. SIZE	-	52
CAT./HAUL	-	1.3	MAX. SIZE	-	146
NOVEMBER	891108	-	891109		
NO. CGHT.	-	35	MEAN SIZE	-	100.1
NO. MEAS.	-	35	S.E. SIZE	-	5.5
NO. HAULS	-	23	MIN. SIZE	-	53
CAT./HAUL	-	1.5	MAX. SIZE	-	152
DECEMBER	891206	-	891207		
NO. CGHT.	-	4	MEAN SIZE	-	96.5
NO. MEAS.	-	4	S.E. SIZE	-	30
NO. HAULS	-	24	MIN. SIZE	-	44
CAT./HAUL	-	0.2	MAX. SIZE	-	150
JAN - DEC	891025	-	900724		
NO. CGHT.	-	151	MEAN SIZE	-	86.7
NO. MEAS.	-	151	S.E. SIZE	-	2.6
NO. HAULS	-	236	MIN. SIZE	-	35
CAT./HAUL	-	0.6	MAX. SIZE	-	164

Figure 22.

Blue Crab — Adult Female
1989 — 1990 Pooled



JANUARY	900118	—	900118	
NO. CGHT.	—	1	MEAN SIZE	— 153
NO. MEAS.	—	1	S.E. SIZE	— .
NO. HAULS	—	24	MIN. SIZE	— 153
CAT./HAUL	—	0	MAX. SIZE	— 153

FEBRUARY	900221	—	900221	
NO. CGHT.	—	0	MEAN SIZE	— .
NO. MEAS.	—	0	S.E. SIZE	— .
NO. HAULS	—	23	MIN. SIZE	— .
CAT./HAUL	—	0	MAX. SIZE	— .

MARCH	900322	—	900323	
NO. CGHT.	—	0	MEAN SIZE	— .
NO. MEAS.	—	0	S.E. SIZE	— .
NO. HAULS	—	24	MIN. SIZE	— .
CAT./HAUL	—	0	MAX. SIZE	— .

APRIL	900425	—	900425	
NO. CGHT.	—	11	MEAN SIZE	— 138.9
NO. MEAS.	—	11	S.E. SIZE	— 4.9
NO. HAULS	—	24	MIN. SIZE	— 101
CAT./HAUL	—	0.5	MAX. SIZE	— 160

MAY	900522	—	900523	
NO. CGHT.	—	28	MEAN SIZE	— 159.1
NO. MEAS.	—	28	S.E. SIZE	— 2.6
NO. HAULS	—	24	MIN. SIZE	— 132
CAT./HAUL	—	1.2	MAX. SIZE	— 192

JUNE	900625	—	900626	
NO. CGHT.	—	22	MEAN SIZE	— 152
NO. MEAS.	—	21	S.E. SIZE	— 2.9
NO. HAULS	—	24	MIN. SIZE	— 128
CAT./HAUL	—	0.9	MAX. SIZE	— 181

JULY	900723	—	900724	
NO. CGHT.	—	51	MEAN SIZE	— 142.3
NO. MEAS.	—	51	S.E. SIZE	— 1.9
NO. HAULS	—	22	MIN. SIZE	— 95
CAT./HAUL	—	2.3	MAX. SIZE	— 162

AUGUST	000000	—	000000	
NO. CGHT.	—	0	MEAN SIZE	— .
NO. MEAS.	—	0	S.E. SIZE	— .
NO. HAULS	—	0	MIN. SIZE	— .
CAT./HAUL	—	.	MAX. SIZE	— .

SEPTEMBER	000000	—	000000	
NO. CGHT.	—	0	MEAN SIZE	— .
NO. MEAS.	—	0	S.E. SIZE	— .
NO. HAULS	—	0	MIN. SIZE	— .
CAT./HAUL	—	.	MAX. SIZE	— .

OCTOBER	891025	—	891027	
NO. CGHT.	—	26	MEAN SIZE	— 153.3
NO. MEAS.	—	26	S.E. SIZE	— 2.4
NO. HAULS	—	24	MIN. SIZE	— 133
CAT./HAUL	—	1.1	MAX. SIZE	— 187

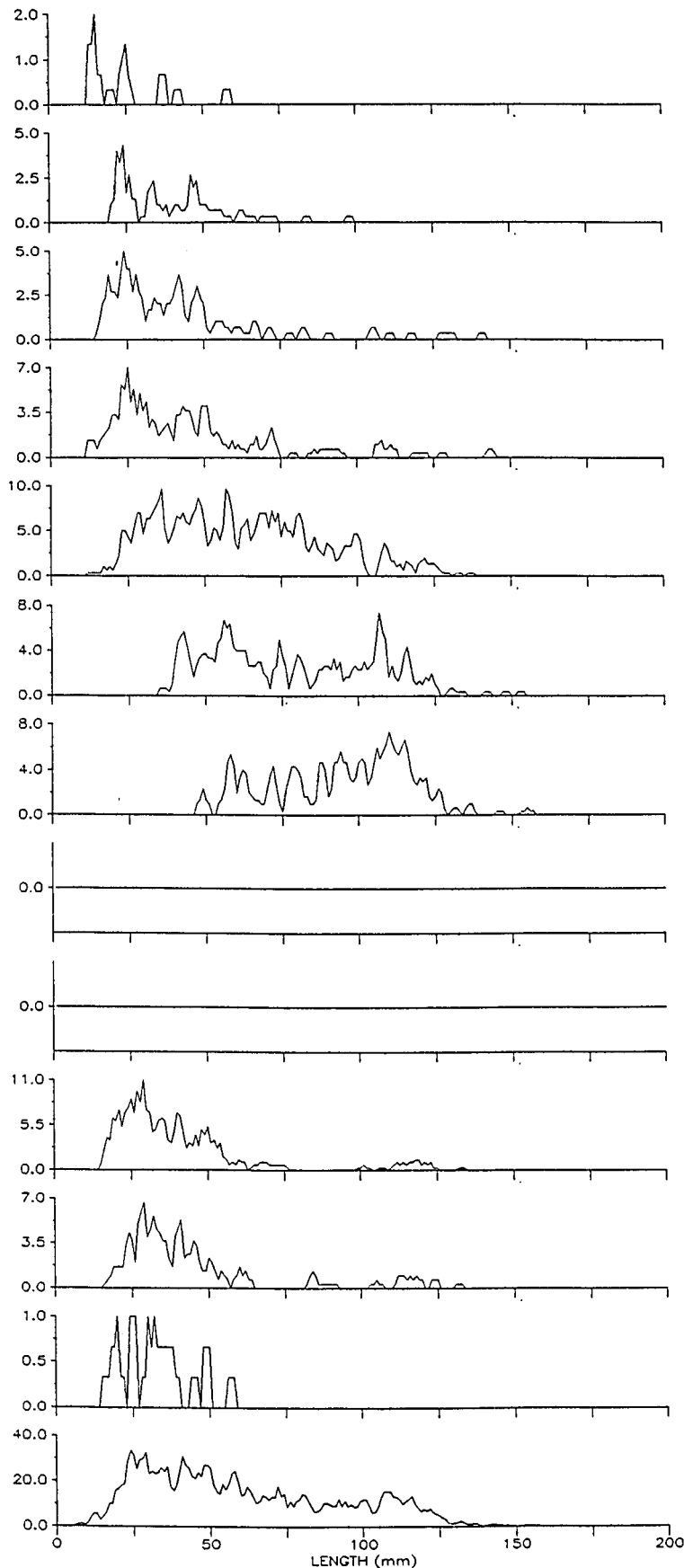
NOVEMBER	891108	—	891109	
NO. CGHT.	—	11	MEAN SIZE	— 155.3
NO. MEAS.	—	11	S.E. SIZE	— 3.9
NO. HAULS	—	23	MIN. SIZE	— 139
CAT./HAUL	—	0.5	MAX. SIZE	— 182

DECEMBER	891206	—	891207	
NO. CGHT.	—	0	MEAN SIZE	— .
NO. MEAS.	—	0	S.E. SIZE	— .
NO. HAULS	—	24	MIN. SIZE	— .
CAT./HAUL	—	0	MAX. SIZE	— .

JAN — DEC	891025	—	900724	
NO. CGHT.	—	150	MEAN SIZE	— 149.5
NO. MEAS.	—	149	S.E. SIZE	— 1.2
NO. HAULS	—	236	MIN. SIZE	— 95
CAT./HAUL	—	0.6	MAX. SIZE	— 192

Figure 23.

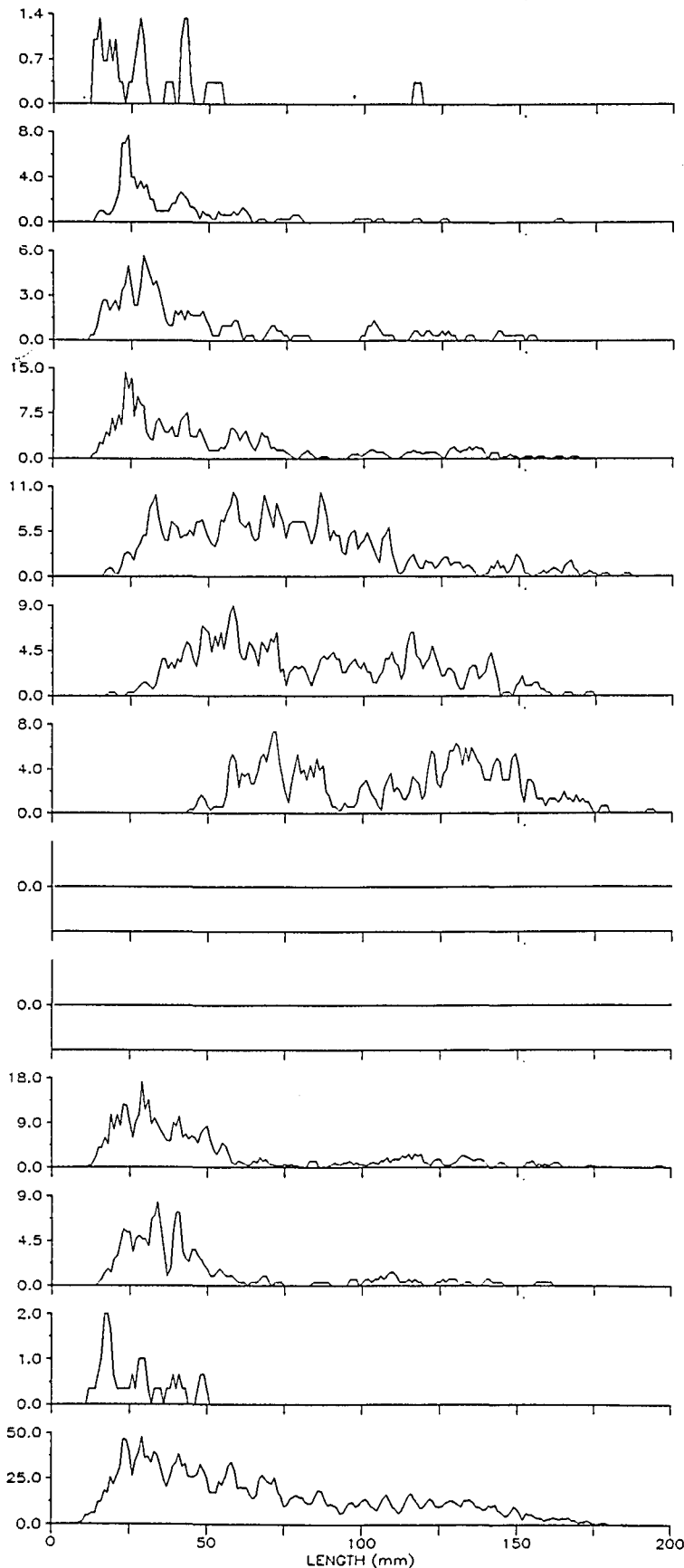
Blue Crab — Juvenile Female
1989 — 1990 Pooled



JANUARY	900118	—	900118		
NO. CGHT.	—	16	MEAN SIZE	—	22.6
NO. MEAS.	—	16	S.E. SIZE	—	3.2
NO. HAULS	—	24	MIN. SIZE	—	10
CAT./HAUL	—	0.7	MAX. SIZE	—	56
FEBRUARY	900221	—	900221		
NO. CGHT.	—	58	MEAN SIZE	—	37.9
NO. MEAS.	—	58	S.E. SIZE	—	2.2
NO. HAULS	—	23	MIN. SIZE	—	19
CAT./HAUL	—	2.5	MAX. SIZE	—	96
MARCH	900322	—	900323		
NO. CGHT.	—	113	MEAN SIZE	—	40.7
NO. MEAS.	—	113	S.E. SIZE	—	2.4
NO. HAULS	—	24	MIN. SIZE	—	10
CAT./HAUL	—	4.7	MAX. SIZE	—	139
APRIL	900425	—	900425		
NO. CGHT.	—	180	MEAN SIZE	—	41.8
NO. MEAS.	—	180	S.E. SIZE	—	2.1
NO. HAULS	—	24	MIN. SIZE	—	5
CAT./HAUL	—	7.5	MAX. SIZE	—	142
MAY	900522	—	900523		
NO. CGHT.	—	463	MEAN SIZE	—	60.2
NO. MEAS.	—	463	S.E. SIZE	—	1.2
NO. HAULS	—	24	MIN. SIZE	—	11
CAT./HAUL	—	19.3	MAX. SIZE	—	135
JUNE	900625	—	900626		
NO. CGHT.	—	264	MEAN SIZE	—	76.7
NO. MEAS.	—	264	S.E. SIZE	—	1.6
NO. HAULS	—	24	MIN. SIZE	—	34
CAT./HAUL	—	11	MAX. SIZE	—	151
JULY	900723	—	900724		
NO. CGHT.	—	269	MEAN SIZE	—	92.3
NO. MEAS.	—	269	S.E. SIZE	—	1.4
NO. HAULS	—	22	MIN. SIZE	—	46
CAT./HAUL	—	12.2	MAX. SIZE	—	154
AUGUST	000000	—	000000		
NO. CGHT.	—	0	MEAN SIZE	—	.
NO. MEAS.	—	0	S.E. SIZE	—	.
NO. HAULS	—	0	MIN. SIZE	—	.
CAT./HAUL	—	.	MAX. SIZE	—	.
SEPTEMBER	000000	—	000000		
NO. CGHT.	—	0	MEAN SIZE	—	.
NO. MEAS.	—	0	S.E. SIZE	—	.
NO. HAULS	—	0	MIN. SIZE	—	.
CAT./HAUL	—	.	MAX. SIZE	—	.
OCTOBER	891025	—	891027		
NO. CGHT.	—	249	MEAN SIZE	—	38.6
NO. MEAS.	—	249	S.E. SIZE	—	1.5
NO. HAULS	—	24	MIN. SIZE	—	6
CAT./HAUL	—	10.4	MAX. SIZE	—	131
NOVEMBER	891108	—	891109		
NO. CGHT.	—	143	MEAN SIZE	—	43.6
NO. MEAS.	—	143	S.E. SIZE	—	2.2
NO. HAULS	—	23	MIN. SIZE	—	15
CAT./HAUL	—	6.2	MAX. SIZE	—	130
DECEMBER	891206	—	891207		
NO. CGHT.	—	19	MEAN SIZE	—	30.6
NO. MEAS.	—	19	S.E. SIZE	—	2.6
NO. HAULS	—	24	MIN. SIZE	—	14
CAT./HAUL	—	0.8	MAX. SIZE	—	55
JAN — DEC	891025	—	900724		
NO. CGHT.	—	1774	MEAN SIZE	—	58.7
NO. MEAS.	—	1774	S.E. SIZE	—	0.8
NO. HAULS	—	236	MIN. SIZE	—	5
CAT./HAUL	—	7.5	MAX. SIZE	—	154

Figure 24.

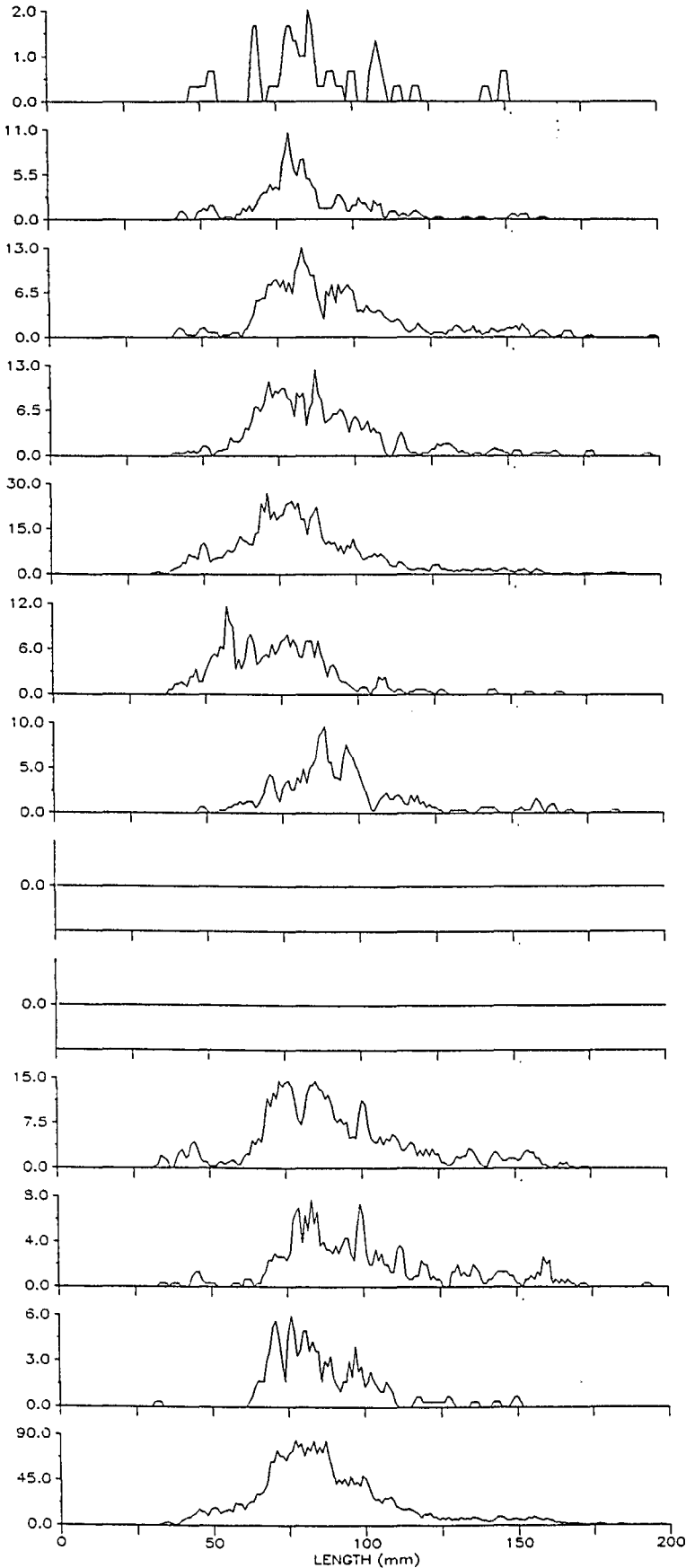
Blue Crab – Male
1989 – 1990 Pooled



JANUARY	900118	–	900118	
NO. CGHT.	– 23	MEAN SIZE	–	29.3
NO. MEAS.	– 23	S.E. SIZE	–	4.7
NO. HAULS	– 24	MIN. SIZE	–	10
CAT./HAUL	– 1	MAX. SIZE	–	115
FEBRUARY	900221	–	900221	
NO. CGHT.	– 102	MEAN SIZE	–	37.5
NO. MEAS.	– 102	S.E. SIZE	–	2.5
NO. HAULS	– 23	MIN. SIZE	–	10
CAT./HAUL	– 4.4	MAX. SIZE	–	161
MARCH	900322	–	900323	
NO. CGHT.	– 132	MEAN SIZE	–	46
NO. MEAS.	– 132	S.E. SIZE	–	3.1
NO. HAULS	– 24	MIN. SIZE	–	10
CAT./HAUL	– 5.5	MAX. SIZE	–	152
APRIL	900425	–	900425	
NO. CGHT.	– 333	MEAN SIZE	–	50.4
NO. MEAS.	– 333	S.E. SIZE	–	2
NO. HAULS	– 24	MIN. SIZE	–	9
CAT./HAUL	– 13.9	MAX. SIZE	–	166
MAY	900522	–	900523	
NO. CGHT.	– 574	MEAN SIZE	–	71.9
NO. MEAS.	– 574	S.E. SIZE	–	1.4
NO. HAULS	– 24	MIN. SIZE	–	16
CAT./HAUL	– 23.9	MAX. SIZE	–	183
JUNE	900625	–	900626	
NO. CGHT.	– 419	MEAN SIZE	–	81.6
NO. MEAS.	– 419	S.E. SIZE	–	1.7
NO. HAULS	– 24	MIN. SIZE	–	17
CAT./HAUL	– 17.5	MAX. SIZE	–	171
JULY	900723	–	900724	
NO. CGHT.	– 365	MEAN SIZE	–	107
NO. MEAS.	– 365	S.E. SIZE	–	1.8
NO. HAULS	– 22	MIN. SIZE	–	43
CAT./HAUL	– 16.6	MAX. SIZE	–	191
AUGUST	000000	–	000000	
NO. CGHT.	– 0	MEAN SIZE	–	.
NO. MEAS.	– 0	S.E. SIZE	–	.
NO. HAULS	– 0	MIN. SIZE	–	.
CAT./HAUL	– .	MAX. SIZE	–	.
SEPTEMBER	000000	–	000000	
NO. CGHT.	– 0	MEAN SIZE	–	.
NO. MEAS.	– 0	S.E. SIZE	–	.
NO. HAULS	– 0	MIN. SIZE	–	.
CAT./HAUL	– .	MAX. SIZE	–	.
OCTOBER	891025	–	891027	
NO. CGHT.	– 434	MEAN SIZE	–	50.2
NO. MEAS.	– 434	S.E. SIZE	–	1.8
NO. HAULS	– 24	MIN. SIZE	–	8
CAT./HAUL	– 18.1	MAX. SIZE	–	194
NOVEMBER	891108	–	891109	
NO. CGHT.	– 182	MEAN SIZE	–	45.8
NO. MEAS.	– 182	S.E. SIZE	–	2.4
NO. HAULS	– 23	MIN. SIZE	–	10
CAT./HAUL	– 7.9	MAX. SIZE	–	158
DECEMBER	891206	–	891207	
NO. CGHT.	– 22	MEAN SIZE	–	24.2
NO. MEAS.	– 22	S.E. SIZE	–	2.4
NO. HAULS	– 24	MIN. SIZE	–	8
CAT./HAUL	– 0.9	MAX. SIZE	–	47
JAN – DEC	891025	–	900724	
NO. CGHT.	– 2586	MEAN SIZE	–	66.7
NO. MEAS.	– 2586	S.E. SIZE	–	0.8
NO. HAULS	– 236	MIN. SIZE	–	8
CAT./HAUL	– 11	MAX. SIZE	–	194

Figure 25.

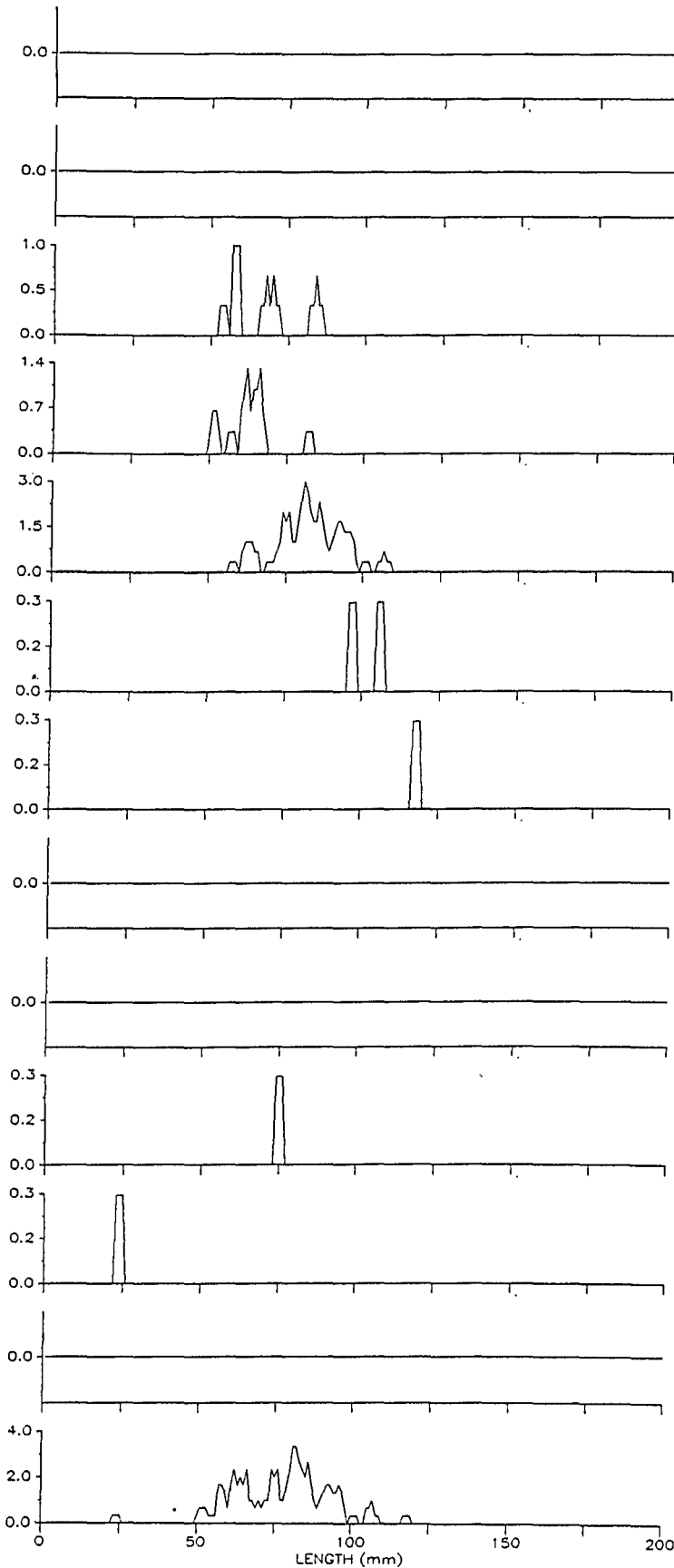
Hogchoker
1989 - 1990 Pooled



JANUARY	900118	-	900118		
NO. CGHT.	42		MEAN SIZE	-	87
NO. MEAS.	42		S.E. SIZE	-	3.7
NO. HAULS	24		MIN. SIZE	-	46
CAT./HAUL	1.8		MAX. SIZE	-	148
FEBRUARY	900221	-	900221		
NO. CGHT.	181		MEAN SIZE	-	83.9
NO. MEAS.	181		S.E. SIZE	-	1.5
NO. HAULS	23		MIN. SIZE	-	41
CAT./HAUL	7.9		MAX. SIZE	-	160
MARCH	900322	-	900323		
NO. CGHT.	372		MEAN SIZE	-	92
NO. MEAS.	372		S.E. SIZE	-	1.3
NO. HAULS	24		MIN. SIZE	-	40
CAT./HAUL	15.5		MAX. SIZE	-	196
APRIL	900425	-	900425		
NO. CGHT.	1389		MEAN SIZE	-	86.1
NO. MEAS.	359		S.E. SIZE	-	1.2
NO. HAULS	24		MIN. SIZE	-	39
CAT./HAUL	57.9		MAX. SIZE	-	194
MAY	900522	-	900523		
NO. CGHT.	3141		MEAN SIZE	-	80.6
NO. MEAS.	900		S.E. SIZE	-	0.8
NO. HAULS	24		MIN. SIZE	-	32
CAT./HAUL	130.9		MAX. SIZE	-	185
JUNE	900625	-	900626		
NO. CGHT.	751		MEAN SIZE	-	71.9
NO. MEAS.	306		S.E. SIZE	-	1.1
NO. HAULS	24		MIN. SIZE	-	37
CAT./HAUL	31.3		MAX. SIZE	-	164
JULY	900723	-	900724		
NO. CGHT.	1038		MEAN SIZE	-	92.6
NO. MEAS.	224		S.E. SIZE	-	1.5
NO. HAULS	22		MIN. SIZE	-	46
CAT./HAUL	47.2		MAX. SIZE	-	182
AUGUST	000000	-	000000		
NO. CGHT.	0		MEAN SIZE	-	.
NO. MEAS.	0		S.E. SIZE	-	.
NO. HAULS	0		MIN. SIZE	-	.
CAT./HAUL	.		MAX. SIZE	-	.
SEPTEMBER	000000	-	000000		
NO. CGHT.	0		MEAN SIZE	-	.
NO. MEAS.	0		S.E. SIZE	-	.
NO. HAULS	0		MIN. SIZE	-	.
CAT./HAUL	.		MAX. SIZE	-	.
OCTOBER	891025	-	891027		
NO. CGHT.	696		MEAN SIZE	-	89.1
NO. MEAS.	585		S.E. SIZE	-	1.1
NO. HAULS	24		MIN. SIZE	-	31
CAT./HAUL	29		MAX. SIZE	-	171
NOVEMBER	891108	-	891109		
NO. CGHT.	420		MEAN SIZE	-	97.7
NO. MEAS.	240		S.E. SIZE	-	1.8
NO. HAULS	23		MIN. SIZE	-	32
CAT./HAUL	18.3		MAX. SIZE	-	191
DECEMBER	891206	-	891207		
NO. CGHT.	140		MEAN SIZE	-	84.1
NO. MEAS.	140		S.E. SIZE	-	1.5
NO. HAULS	24		MIN. SIZE	-	30
CAT./HAUL	5.8		MAX. SIZE	-	148
JAN - DEC	891025	-	900724		
NO. CGHT.	8170		MEAN SIZE	-	85.6
NO. MEAS.	3349		S.E. SIZE	-	0.4
NO. HAULS	236		MIN. SIZE	-	30
CAT./HAUL	34.6		MAX. SIZE	-	196

Figure 26.

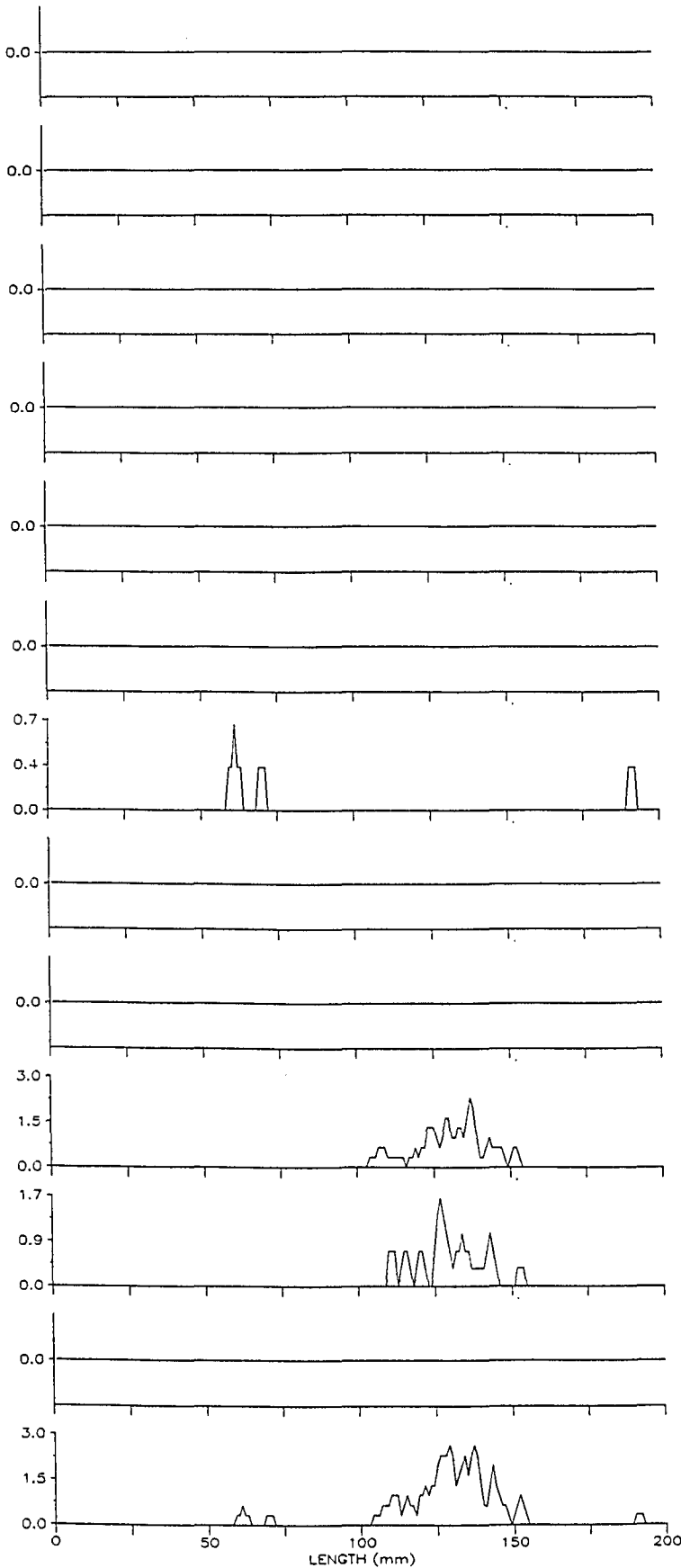
Northern Searobin
1989 - 1990 Pooled



JANUARY	900118	-	900118		
NO. CGHT.	0	MEAN SIZE	-		
NO. MEAS.	0	S.E. SIZE	-		
NO. HAULS	24	MIN. SIZE	-		
CAT./HAUL	0	MAX. SIZE	-		
FEBRUARY	900221	-	900221		
NO. CGHT.	0	MEAN SIZE	-		
NO. MEAS.	0	S.E. SIZE	-		
NO. HAULS	23	MIN. SIZE	-		
CAT./HAUL	0	MAX. SIZE	-		
MARCH	900322	-	900323		
NO. CGHT.	9	MEAN SIZE	-	65	
NO. MEAS.	9	S.E. SIZE	-	3.7	
NO. HAULS	24	MIN. SIZE	-	52	
CAT./HAUL	0.4	MAX. SIZE	-	83	
APRIL	900425	-	900425		
NO. CGHT.	12	MEAN SIZE	-	60.7	
NO. MEAS.	12	S.E. SIZE	-	2.3	
NO. HAULS	24	MIN. SIZE	-	49	
CAT./HAUL	0.5	MAX. SIZE	-	80	
MAY	900522	-	900523		
NO. CGHT.	51	MEAN SIZE	-	80.6	
NO. MEAS.	51	S.E. SIZE	-	1.6	
NO. HAULS	24	MIN. SIZE	-	56	
CAT./HAUL	2.1	MAX. SIZE	-	106	
JUNE	900625	-	900626		
NO. CGHT.	2	MEAN SIZE	-	99.5	
NO. MEAS.	2	S.E. SIZE	-	4.5	
NO. HAULS	24	MIN. SIZE	-	95	
CAT./HAUL	0.1	MAX. SIZE	-	104	
JULY	900723	-	900724		
NO. CGHT.	1	MEAN SIZE	-	116	
NO. MEAS.	1	S.E. SIZE	-		
NO. HAULS	22	MIN. SIZE	-	116	
CAT./HAUL	0	MAX. SIZE	-	116	
AUGUST	000000	-	000000		
NO. CGHT.	0	MEAN SIZE	-		
NO. MEAS.	0	S.E. SIZE	-		
NO. HAULS	0	MIN. SIZE	-		
CAT./HAUL	.	MAX. SIZE	-		
SEPTEMBER	000000	-	000000		
NO. CGHT.	0	MEAN SIZE	-		
NO. MEAS.	0	S.E. SIZE	-		
NO. HAULS	0	MIN. SIZE	-		
CAT./HAUL	.	MAX. SIZE	-		
OCTOBER	891025	-	891027		
NO. CGHT.	1	MEAN SIZE	-	73	
NO. MEAS.	1	S.E. SIZE	-		
NO. HAULS	24	MIN. SIZE	-	73	
CAT./HAUL	0	MAX. SIZE	-	73	
NOVEMBER	891108	-	891109		
NO. CGHT.	1	MEAN SIZE	-	22	
NO. MEAS.	1	S.E. SIZE	-		
NO. HAULS	23	MIN. SIZE	-	22	
CAT./HAUL	0	MAX. SIZE	-	22	
DECEMBER	891206	-	891207		
NO. CGHT.	0	MEAN SIZE	-		
NO. MEAS.	0	S.E. SIZE	-		
NO. HAULS	24	MIN. SIZE	-		
CAT./HAUL	0	MAX. SIZE	-		
JAN - DEC	891025	-	900724		
NO. CGHT.	77	MEAN SIZE	-	75.7	
NO. MEAS.	77	S.E. SIZE	-	1.8	
NO. HAULS	236	MIN. SIZE	-	22	
CAT./HAUL	0.3	MAX. SIZE	-	116	

Figure 27.

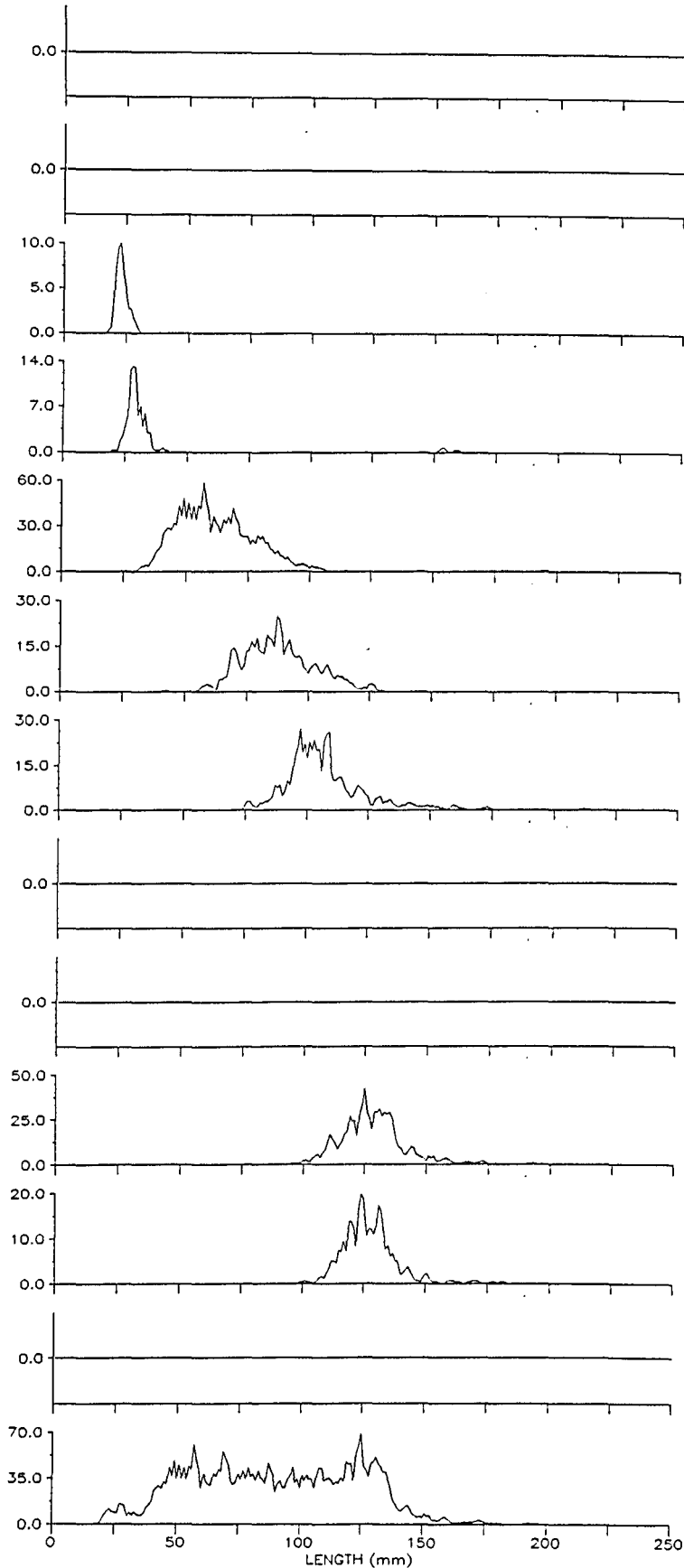
Silver Perch
1989 - 1990 Pooled



JANUARY		900118 - 900118		
NO. CGHT.	-	0	MEAN SIZE	-
NO. MEAS.	-	0	S.E. SIZE	-
NO. HAULS	-	24	MIN. SIZE	-
CAT./HAUL	-	0	MAX. SIZE	-
FEBRUARY		900221 - 900221		
NO. CGHT.	-	0	MEAN SIZE	-
NO. MEAS.	-	0	S.E. SIZE	-
NO. HAULS	-	23	MIN. SIZE	-
CAT./HAUL	-	0	MAX. SIZE	-
MARCH		900322 - 900323		
NO. CGHT.	-	0	MEAN SIZE	-
NO. MEAS.	-	0	S.E. SIZE	-
NO. HAULS	-	24	MIN. SIZE	-
CAT./HAUL	-	0	MAX. SIZE	-
APRIL		900425 - 900425		
NO. CGHT.	-	0	MEAN SIZE	-
NO. MEAS.	-	0	S.E. SIZE	-
NO. HAULS	-	24	MIN. SIZE	-
CAT./HAUL	-	0	MAX. SIZE	-
MAY		900522 - 900523		
NO. CGHT.	-	0	MEAN SIZE	-
NO. MEAS.	-	0	S.E. SIZE	-
NO. HAULS	-	24	MIN. SIZE	-
CAT./HAUL	-	0	MAX. SIZE	-
JUNE		900625 - 900626		
NO. CGHT.	-	0	MEAN SIZE	-
NO. MEAS.	-	0	S.E. SIZE	-
NO. HAULS	-	24	MIN. SIZE	-
CAT./HAUL	-	0	MAX. SIZE	-
JULY		900723 - 900724		
NO. CGHT.	-	4	MEAN SIZE	- 93.8
NO. MEAS.	-	4	S.E. SIZE	- 31.8
NO. HAULS	-	22	MIN. SIZE	- 58
CAT./HAUL	-	0.2	MAX. SIZE	- 189
AUGUST		000000 - 000000		
NO. CGHT.	-	0	MEAN SIZE	-
NO. MEAS.	-	0	S.E. SIZE	-
NO. HAULS	-	0	MIN. SIZE	-
CAT./HAUL	-	.	MAX. SIZE	-
SEPTEMBER		000000 - 000000		
NO. CGHT.	-	0	MEAN SIZE	-
NO. MEAS.	-	0	S.E. SIZE	-
NO. HAULS	-	0	MIN. SIZE	-
CAT./HAUL	-	.	MAX. SIZE	-
OCTOBER		891025 - 891027		
NO. CGHT.	-	38	MEAN SIZE	- 128.5
NO. MEAS.	-	38	S.E. SIZE	- 1.9
NO. HAULS	-	24	MIN. SIZE	- 103
CAT./HAUL	-	1.6	MAX. SIZE	- 150
NOVEMBER		891108 - 891109		
NO. CGHT.	-	22	MEAN SIZE	- 127.3
NO. MEAS.	-	22	S.E. SIZE	- 2.4
NO. HAULS	-	23	MIN. SIZE	- 109
CAT./HAUL	-	1	MAX. SIZE	- 151
DECEMBER		891206 - 891207		
NO. CGHT.	-	0	MEAN SIZE	-
NO. MEAS.	-	0	S.E. SIZE	-
NO. HAULS	-	24	MIN. SIZE	-
CAT./HAUL	-	0	MAX. SIZE	-
JAN - DEC		891025 - 900724		
NO. CGHT.	-	64	MEAN SIZE	- 125.9
NO. MEAS.	-	64	S.E. SIZE	- 2.5
NO. HAULS	-	236	MIN. SIZE	- 58
CAT./HAUL	-	0.3	MAX. SIZE	- 189

Figure 28.

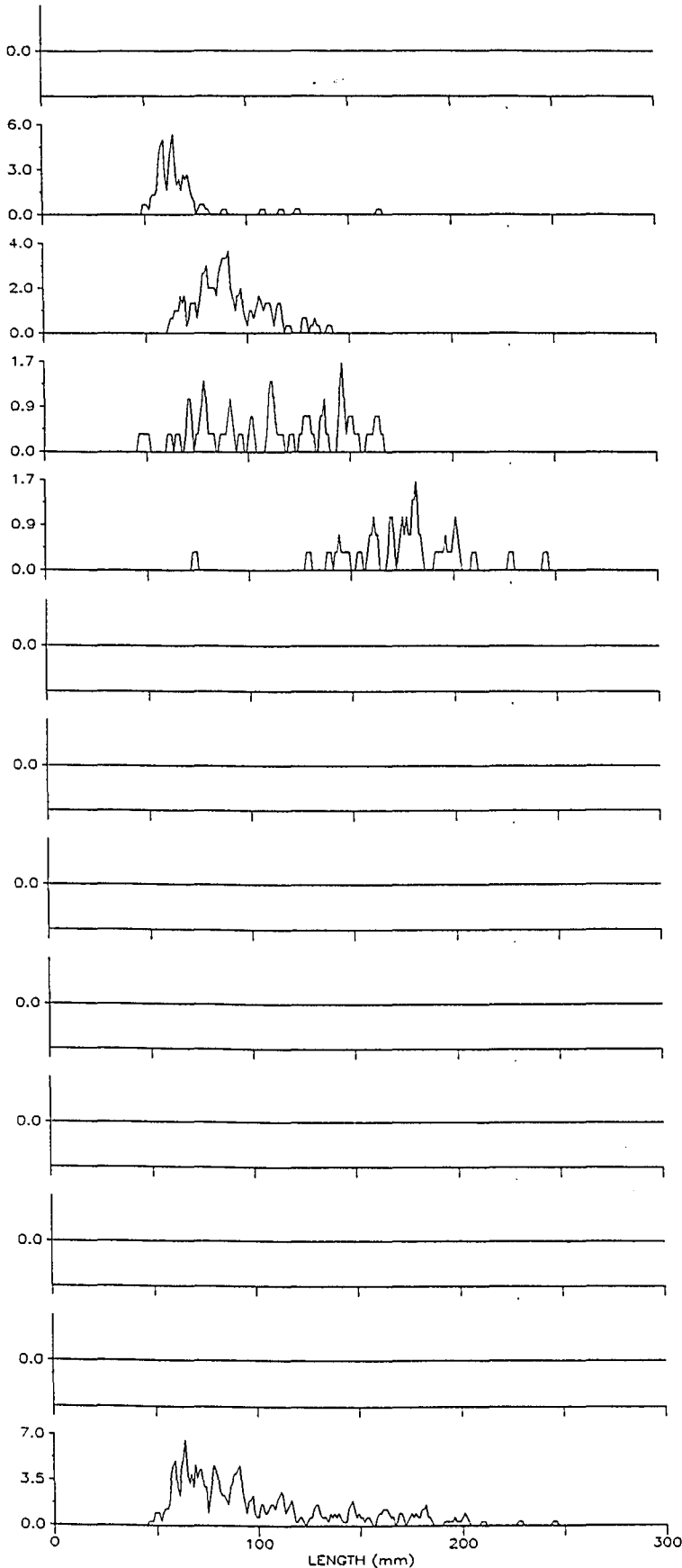
Spot
1989 - 1990 Pooled



JANUARY	900118	-	900118		
NO. CGHT.	0		MEAN SIZE	-	.
NO. MEAS.	0		S.E. SIZE	-	.
NO. HAULS	24		MIN. SIZE	-	.
CAT./HAUL	0		MAX. SIZE	-	.
FEBRUARY	900221	-	900221		
NO. CGHT.	0		MEAN SIZE	-	.
NO. MEAS.	0		S.E. SIZE	-	.
NO. HAULS	23		MIN. SIZE	-	.
CAT./HAUL	0		MAX. SIZE	-	.
MARCH	900322	-	900323		
NO. CGHT.	51		MEAN SIZE	-	21.3
NO. MEAS.	51		S.E. SIZE	-	0.3
NO. HAULS	24		MIN. SIZE	-	17
CAT./HAUL	2.1		MAX. SIZE	-	27
APRIL	900425	-	900425		
NO. CGHT.	88		MEAN SIZE	-	31.5
NO. MEAS.	88		S.E. SIZE	-	2.5
NO. HAULS	24		MIN. SIZE	-	19
CAT./HAUL	3.7		MAX. SIZE	-	157
MAY	900522	-	900523		
NO. CGHT.	6578		MEAN SIZE	-	60.6
NO. MEAS.	1601		S.E. SIZE	-	0.4
NO. HAULS	24		MIN. SIZE	-	23
CAT./HAUL	274.1		MAX. SIZE	-	194
JUNE	900625	-	900626		
NO. CGHT.	990		MEAN SIZE	-	86.1
NO. MEAS.	605		S.E. SIZE	-	0.6
NO. HAULS	24		MIN. SIZE	-	40
CAT./HAUL	41.3		MAX. SIZE	-	127
JULY	900723	-	900724		
NO. CGHT.	619		MEAN SIZE	-	105.5
NO. MEAS.	619		S.E. SIZE	-	0.7
NO. HAULS	22		MIN. SIZE	-	16
CAT./HAUL	28.1		MAX. SIZE	-	211
AUGUST	000000	-	000000		
NO. CGHT.	0		MEAN SIZE	-	.
NO. MEAS.	0		S.E. SIZE	-	.
NO. HAULS	0		MIN. SIZE	-	.
CAT./HAUL	.		MAX. SIZE	-	.
SEPTEMBER	000000	-	000000		
NO. CGHT.	0		MEAN SIZE	-	.
NO. MEAS.	0		S.E. SIZE	-	.
NO. HAULS	0		MIN. SIZE	-	.
CAT./HAUL	.		MAX. SIZE	-	.
OCTOBER	891025	-	891027		
NO. CGHT.	2808		MEAN SIZE	-	126.2
NO. MEAS.	820		S.E. SIZE	-	0.5
NO. HAULS	24		MIN. SIZE	-	94
CAT./HAUL	117		MAX. SIZE	-	191
NOVEMBER	891108	-	891109		
NO. CGHT.	501		MEAN SIZE	-	125.5
NO. MEAS.	337		S.E. SIZE	-	0.6
NO. HAULS	23		MIN. SIZE	-	98
CAT./HAUL	21.8		MAX. SIZE	-	179
DECEMBER	891206	-	891207		
NO. CGHT.	0		MEAN SIZE	-	.
NO. MEAS.	0		S.E. SIZE	-	.
NO. HAULS	24		MIN. SIZE	-	.
CAT./HAUL	0		MAX. SIZE	-	.
JAN - DEC	891025	-	900724		
NO. CGHT.	11635		MEAN SIZE	-	88.4
NO. MEAS.	4121		S.E. SIZE	-	0.5
NO. HAULS	236		MIN. SIZE	-	16
CAT./HAUL	49.3		MAX. SIZE	-	211

Figure 29.

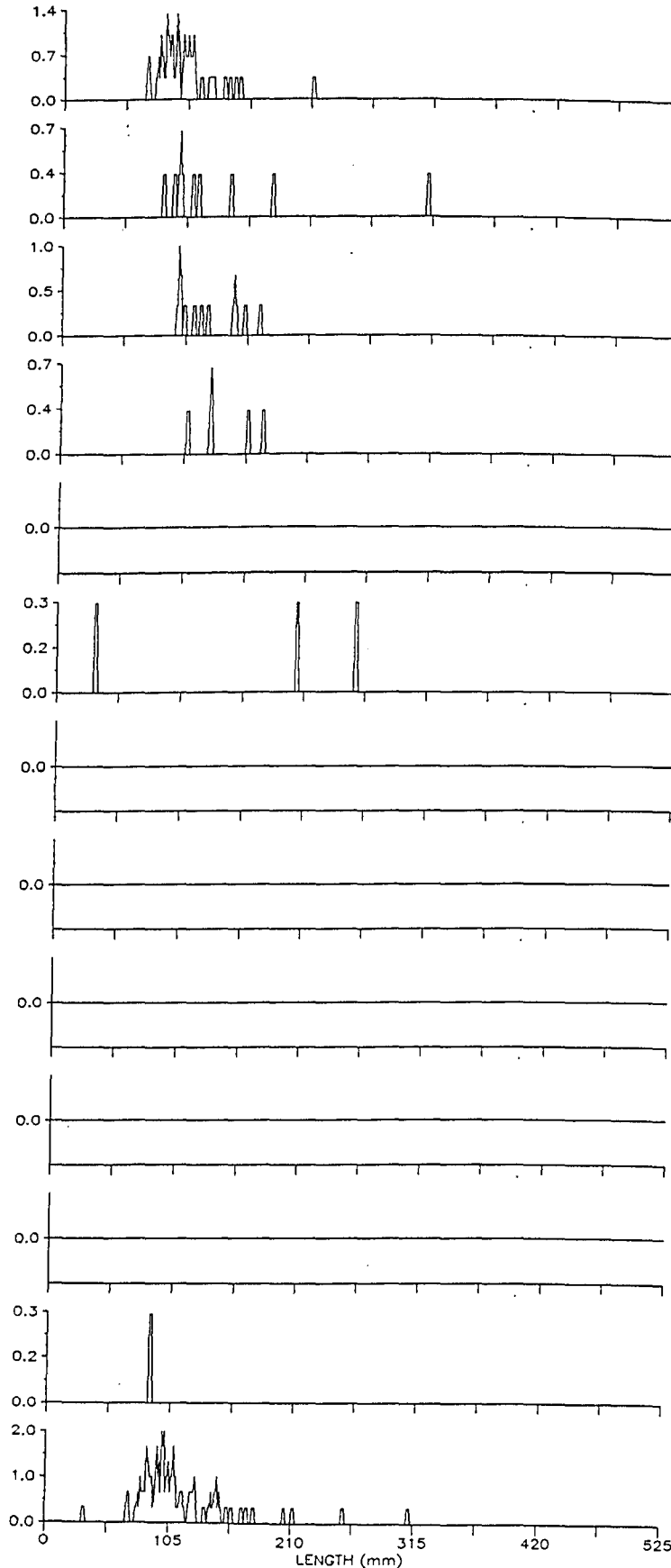
Spotted Hake
1989 - 1990 Pooled



JANUARY	900118	-	900118		
NO. CGHT.	0		MEAN SIZE	-	.
NO. MEAS.	0		S.E. SIZE	-	.
NO. HAULS	24		MIN. SIZE	-	.
CAT./HAUL	0		MAX. SIZE	-	.
FEBRUARY	900221	-	900221		
NO. CGHT.	68		MEAN SIZE	-	65.6
NO. MEAS.	68		S.E. SIZE	-	2.2
NO. HAULS	23		MIN. SIZE	-	48
CAT./HAUL	3		MAX. SIZE	-	163
MARCH	900322	-	900323		
NO. CGHT.	92		MEAN SIZE	-	89.2
NO. MEAS.	92		S.E. SIZE	-	1.8
NO. HAULS	24		MIN. SIZE	-	60
CAT./HAUL	3.8		MAX. SIZE	-	138
APRIL	900425	-	900425		
NO. CGHT.	46		MEAN SIZE	-	109.1
NO. MEAS.	46		S.E. SIZE	-	5
NO. HAULS	24		MIN. SIZE	-	45
CAT./HAUL	1.9		MAX. SIZE	-	163
MAY	900522	-	900523		
NO. CGHT.	34		MEAN SIZE	-	172.3
NO. MEAS.	34		S.E. SIZE	-	5.2
NO. HAULS	24		MIN. SIZE	-	71
CAT./HAUL	1.4		MAX. SIZE	-	243
JUNE	900625	-	900626		
NO. CGHT.	0		MEAN SIZE	-	.
NO. MEAS.	0		S.E. SIZE	-	.
NO. HAULS	24		MIN. SIZE	-	.
CAT./HAUL	0		MAX. SIZE	-	.
JULY	900723	-	900724		
NO. CGHT.	0		MEAN SIZE	-	.
NO. MEAS.	0		S.E. SIZE	-	.
NO. HAULS	22		MIN. SIZE	-	.
CAT./HAUL	0		MAX. SIZE	-	.
AUGUST	000000	-	000000		
NO. CGHT.	0		MEAN SIZE	-	.
NO. MEAS.	0		S.E. SIZE	-	.
NO. HAULS	0		MIN. SIZE	-	.
CAT./HAUL	.		MAX. SIZE	-	.
SEPTEMBER	000000	-	000000		
NO. CGHT.	0		MEAN SIZE	-	.
NO. MEAS.	0		S.E. SIZE	-	.
NO. HAULS	0		MIN. SIZE	-	.
CAT./HAUL	.		MAX. SIZE	-	.
OCTOBER	891025	-	891027		
NO. CGHT.	0		MEAN SIZE	-	.
NO. MEAS.	0		S.E. SIZE	-	.
NO. HAULS	24		MIN. SIZE	-	.
CAT./HAUL	0		MAX. SIZE	-	.
NOVEMBER	891108	-	891109		
NO. CGHT.	0		MEAN SIZE	-	.
NO. MEAS.	0		S.E. SIZE	-	.
NO. HAULS	23		MIN. SIZE	-	.
CAT./HAUL	0		MAX. SIZE	-	.
DECEMBER	891206	-	891207		
NO. CGHT.	0		MEAN SIZE	-	.
NO. MEAS.	0		S.E. SIZE	-	.
NO. HAULS	24		MIN. SIZE	-	.
CAT./HAUL	0		MAX. SIZE	-	.
JAN - DEC	891025	-	900724		
NO. CGHT.	240		MEAN SIZE	-	98.1
NO. MEAS.	240		S.E. SIZE	-	2.6
NO. HAULS	236		MIN. SIZE	-	45
CAT./HAUL	1		MAX. SIZE	-	243

Figure 30.

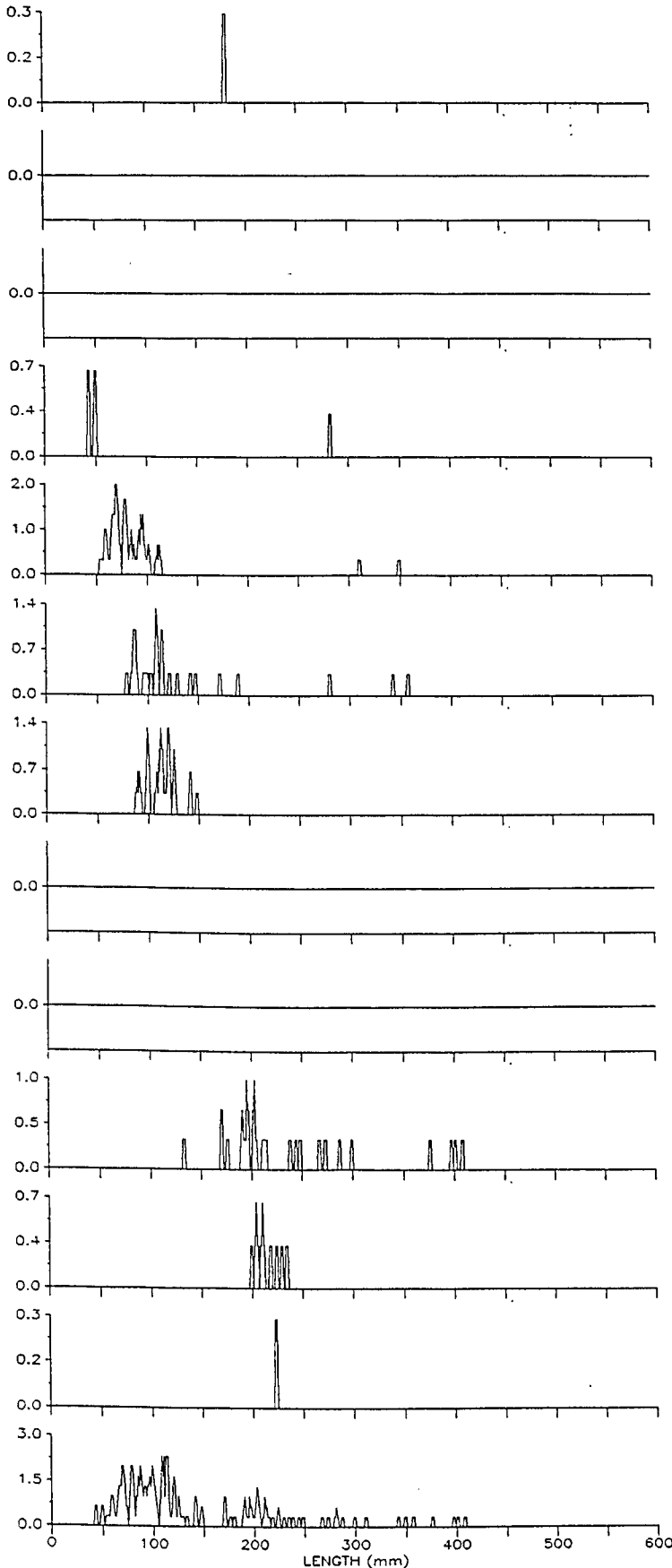
Striped Bass
1989 - 1990 Pooled



JANUARY	900118	-	900118		
NO. CGHT.	34		MEAN SIZE	-	102.5
NO. MEAS.	34		S.E. SIZE	-	4.8
NO. HAULS	24		MIN. SIZE	-	68
CAT./HAUL	1.4		MAX. SIZE	-	210
FEBRUARY	900221	-	900221		
NO. CGHT.	9		MEAN SIZE	-	135
NO. MEAS.	9		S.E. SIZE	-	23.8
NO. HAULS	23		MIN. SIZE	-	83
CAT./HAUL	0.4		MAX. SIZE	-	309
MARCH	900322	-	900323		
NO. CGHT.	11		MEAN SIZE	-	122.6
NO. MEAS.	11		S.E. SIZE	-	7.6
NO. HAULS	24		MIN. SIZE	-	96
CAT./HAUL	0.5		MAX. SIZE	-	166
APRIL	900425	-	900425		
NO. CGHT.	5		MEAN SIZE	-	136.8
NO. MEAS.	5		S.E. SIZE	-	11.7
NO. HAULS	24		MIN. SIZE	-	106
CAT./HAUL	0.2		MAX. SIZE	-	170
MAY	900522	-	900523		
NO. CGHT.	0		MEAN SIZE	-	.
NO. MEAS.	0		S.E. SIZE	-	.
NO. HAULS	24		MIN. SIZE	-	.
CAT./HAUL	0		MAX. SIZE	-	.
JUNE	900625	-	900626		
NO. CGHT.	3		MEAN SIZE	-	162
NO. MEAS.	3		S.E. SIZE	-	67.1
NO. HAULS	24		MIN. SIZE	-	31
CAT./HAUL	0.1		MAX. SIZE	-	253
JULY	900723	-	900724		
NO. CGHT.	0		MEAN SIZE	-	.
NO. MEAS.	0		S.E. SIZE	-	.
NO. HAULS	22		MIN. SIZE	-	.
CAT./HAUL	0		MAX. SIZE	-	.
AUGUST	000000	-	000000		
NO. CGHT.	0		MEAN SIZE	-	.
NO. MEAS.	0		S.E. SIZE	-	.
NO. HAULS	0		MIN. SIZE	-	.
CAT./HAUL	.		MAX. SIZE	-	.
SEPTEMBER	000000	-	000000		
NO. CGHT.	0		MEAN SIZE	-	.
NO. MEAS.	0		S.E. SIZE	-	.
NO. HAULS	0		MIN. SIZE	-	.
CAT./HAUL	.		MAX. SIZE	-	.
OCTOBER	891025	-	891027		
NO. CGHT.	0		MEAN SIZE	-	.
NO. MEAS.	0		S.E. SIZE	-	.
NO. HAULS	24		MIN. SIZE	-	.
CAT./HAUL	0		MAX. SIZE	-	.
NOVEMBER	891108	-	891109		
NO. CGHT.	0		MEAN SIZE	-	.
NO. MEAS.	0		S.E. SIZE	-	.
NO. HAULS	23		MIN. SIZE	-	.
CAT./HAUL	0		MAX. SIZE	-	.
DECEMBER	891206	-	891207		
NO. CGHT.	1		MEAN SIZE	-	86
NO. MEAS.	1		S.E. SIZE	-	.
NO. HAULS	24		MIN. SIZE	-	86
CAT./HAUL	0		MAX. SIZE	-	86
JAN - DEC	891025	-	900724		
NO. CGHT.	63		MEAN SIZE	-	116
NO. MEAS.	63		S.E. SIZE	-	5.6
NO. HAULS	236		MIN. SIZE	-	31
CAT./HAUL	0.3		MAX. SIZE	-	309

Figure 31.

Summer Flounder
1989 - 1990 Pooled



JANUARY	900118	-	900118		
NO. CGHT.	-	1	MEAN SIZE	-	178
NO. MEAS.	-	1	S.E. SIZE	-	.
NO. HAULS	-	24	MIN. SIZE	-	178
CAT./HAUL	-	0	MAX. SIZE	-	178

FEBRUARY	900221	-	900221		
NO. CGHT.	-	0	MEAN SIZE	-	.
NO. MEAS.	-	0	S.E. SIZE	-	.
NO. HAULS	-	23	MIN. SIZE	-	.
CAT./HAUL	-	0	MAX. SIZE	-	.

MARCH	900322	-	900323		
NO. CGHT.	-	0	MEAN SIZE	-	.
NO. MEAS.	-	0	S.E. SIZE	-	.
NO. HAULS	-	24	MIN. SIZE	-	.
CAT./HAUL	-	0	MAX. SIZE	-	.

APRIL	900425	-	900425		
NO. CGHT.	-	5	MEAN SIZE	-	91.4
NO. MEAS.	-	5	S.E. SIZE	-	47.2
NO. HAULS	-	24	MIN. SIZE	-	41
CAT./HAUL	-	0.2	MAX. SIZE	-	280

MAY	900522	-	900523		
NO. CGHT.	-	47	MEAN SIZE	-	88.2
NO. MEAS.	-	47	S.E. SIZE	-	7.3
NO. HAULS	-	24	MIN. SIZE	-	52
CAT./HAUL	-	2	MAX. SIZE	-	347

JUNE	900625	-	900626		
NO. CGHT.	-	25	MEAN SIZE	-	135.5
NO. MEAS.	-	25	S.E. SIZE	-	15.3
NO. HAULS	-	24	MIN. SIZE	-	77
CAT./HAUL	-	1	MAX. SIZE	-	355

JULY	900723	-	900724		
NO. CGHT.	-	25	MEAN SIZE	-	111.9
NO. MEAS.	-	25	S.E. SIZE	-	3.1
NO. HAULS	-	22	MIN. SIZE	-	86
CAT./HAUL	-	1.1	MAX. SIZE	-	146

AUGUST	000000	-	000000		
NO. CGHT.	-	0	MEAN SIZE	-	.
NO. MEAS.	-	0	S.E. SIZE	-	.
NO. HAULS	-	0	MIN. SIZE	-	.
CAT./HAUL	-	.	MAX. SIZE	-	.

SEPTEMBER	000000	-	000000		
NO. CGHT.	-	0	MEAN SIZE	-	.
NO. MEAS.	-	0	S.E. SIZE	-	.
NO. HAULS	-	0	MIN. SIZE	-	.
CAT./HAUL	-	.	MAX. SIZE	-	.

OCTOBER	891025	-	891027		
NO. CGHT.	-	25	MEAN SIZE	-	241.5
NO. MEAS.	-	25	S.E. SIZE	-	15.6
NO. HAULS	-	24	MIN. SIZE	-	131
CAT./HAUL	-	1	MAX. SIZE	-	406

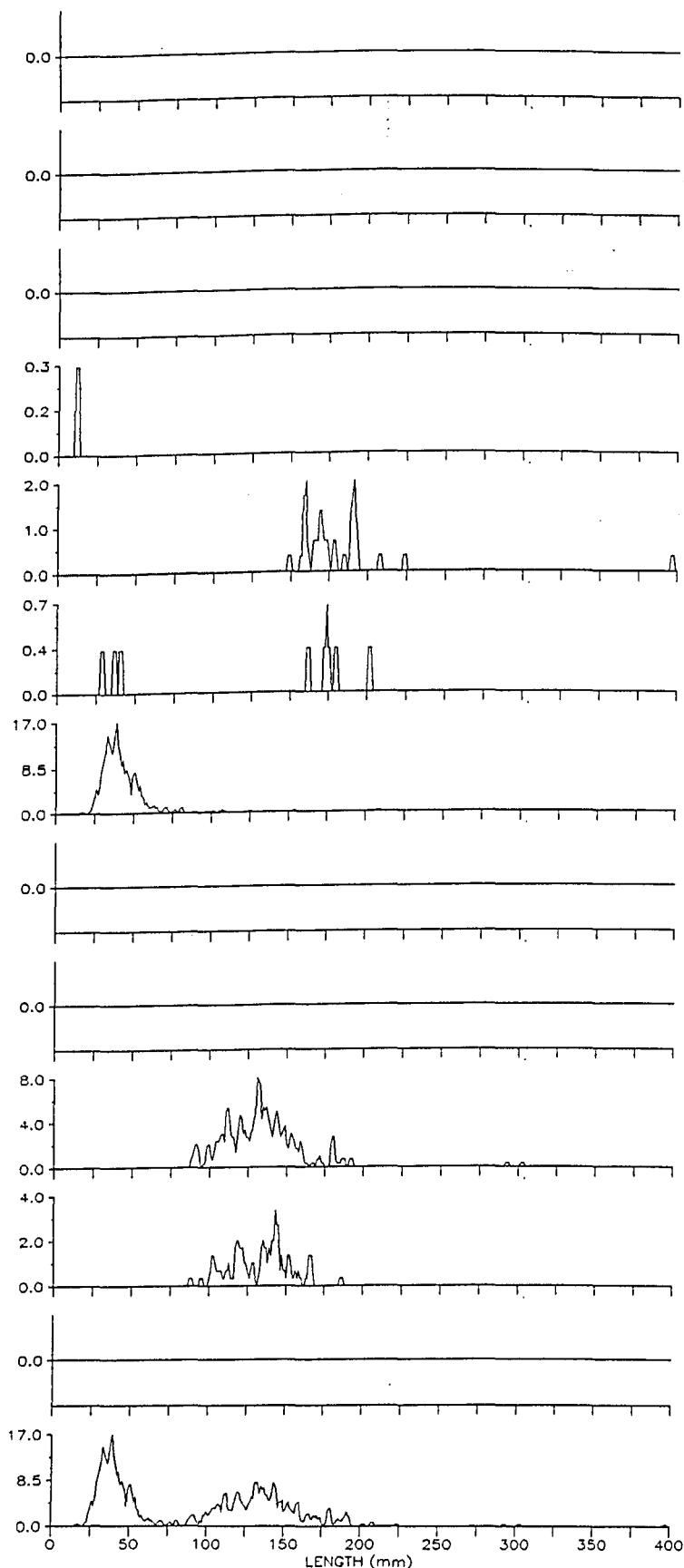
NOVEMBER	891108	-	891109		
NO. CGHT.	-	9	MEAN SIZE	-	212.7
NO. MEAS.	-	9	S.E. SIZE	-	4.1
NO. HAULS	-	23	MIN. SIZE	-	197
CAT./HAUL	-	0.4	MAX. SIZE	-	232

DECEMBER	891206	-	891207		
NO. CGHT.	-	1	MEAN SIZE	-	221
NO. MEAS.	-	1	S.E. SIZE	-	.
NO. HAULS	-	24	MIN. SIZE	-	221
CAT./HAUL	-	0	MAX. SIZE	-	221

JAN - DEC	891025	-	900724		
NO. CGHT.	-	138	MEAN SIZE	-	138.9
NO. MEAS.	-	138	S.E. SIZE	-	7.1
NO. HAULS	-	236	MIN. SIZE	-	41
CAT./HAUL	-	0.6	MAX. SIZE	-	406

Figure 32.

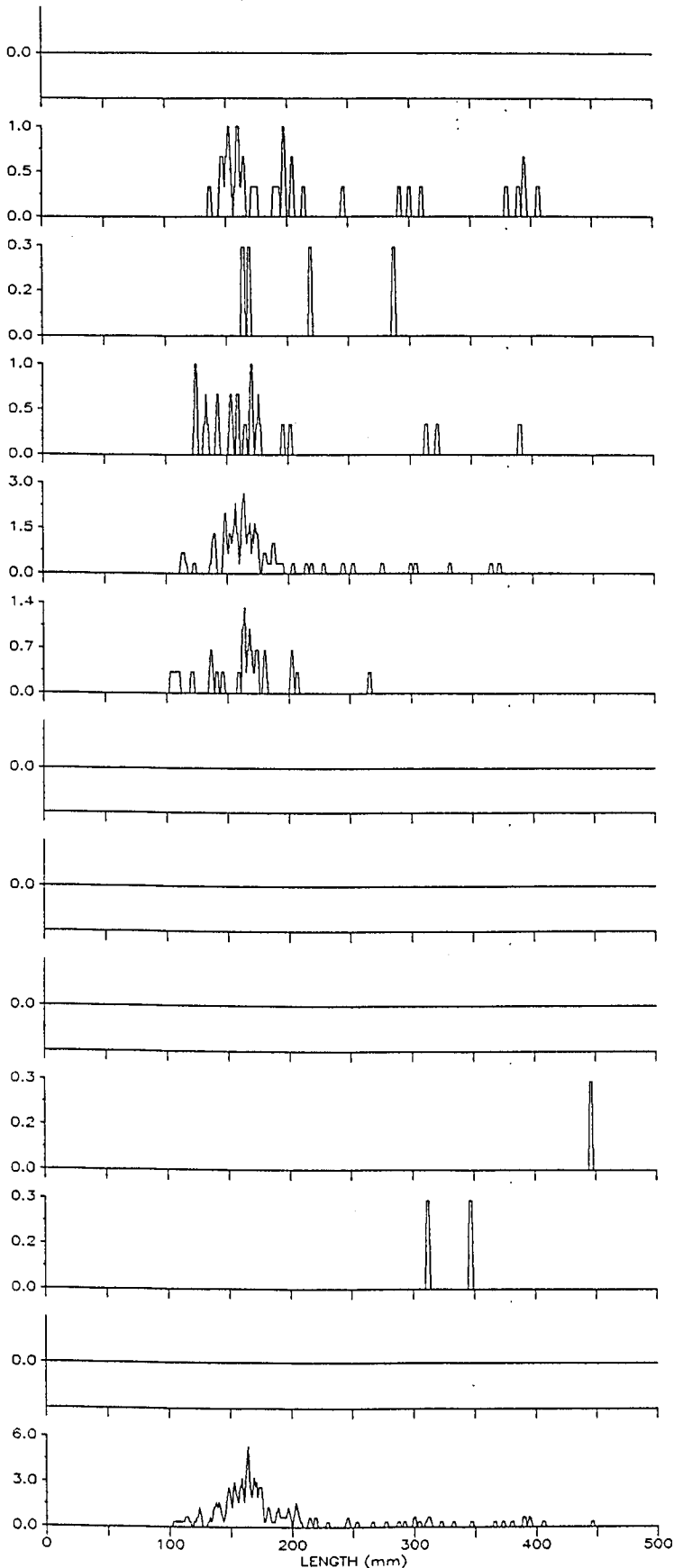
Weakfish
1989 - 1990 Pooled



JANUARY	900118	-	900118		
NO. CGHT.	0	MEAN SIZE	-		
NO. MEAS.	0	S.E. SIZE	-		
NO. HAULS	24	MIN. SIZE	-		
CAT./HAUL	0	MAX. SIZE	-		
FEBRUARY	900221	-	900221		
NO. CGHT.	0	MEAN SIZE	-		
NO. MEAS.	0	S.E. SIZE	-		
NO. HAULS	23	MIN. SIZE	-		
CAT./HAUL	0	MAX. SIZE	-		
MARCH	900322	-	900323		
NO. CGHT.	0	MEAN SIZE	-		
NO. MEAS.	0	S.E. SIZE	-		
NO. HAULS	24	MIN. SIZE	-		
CAT./HAUL	0	MAX. SIZE	-		
APRIL	900425	-	900425		
NO. CGHT.	0	MEAN SIZE	-		
NO. MEAS.	0	S.E. SIZE	-		
NO. HAULS	24	MIN. SIZE	-		
CAT./HAUL	0	MAX. SIZE	-		
MAY	900522	-	900523		
NO. CGHT.	32	MEAN SIZE	-	188.3	
NO. MEAS.	32	S.E. SIZE	-	10.1	
NO. HAULS	24	MIN. SIZE	-	147	
CAT./HAUL	1.3	MAX. SIZE	-	401	
JUNE	900625	-	900626		
NO. CGHT.	8	MEAN SIZE	-	122.9	
NO. MEAS.	8	S.E. SIZE	-	26.4	
NO. HAULS	24	MIN. SIZE	-	27	
CAT./HAUL	0.3	MAX. SIZE	-	200	
JULY	900723	-	900724		
NO. CGHT.	307	MEAN SIZE	-	41	
NO. MEAS.	307	S.E. SIZE	-	1	
NO. HAULS	22	MIN. SIZE	-	15	
CAT./HAUL	14	MAX. SIZE	-	206	
AUGUST	000000	-	000000		
NO. CGHT.	0	MEAN SIZE	-		
NO. MEAS.	0	S.E. SIZE	-		
NO. HAULS	0	MIN. SIZE	-		
CAT./HAUL	.	MAX. SIZE	-		
SEPTEMBER	000000	-	000000		
NO. CGHT.	0	MEAN SIZE	-		
NO. MEAS.	0	S.E. SIZE	-		
NO. HAULS	0	MIN. SIZE	-		
CAT./HAUL	.	MAX. SIZE	-		
OCTOBER	891025	-	891027		
NO. CGHT.	238	MEAN SIZE	-	131.6	
NO. MEAS.	238	S.E. SIZE	-	1.7	
NO. HAULS	24	MIN. SIZE	-	87	
CAT./HAUL	9.9	MAX. SIZE	-	301	
NOVEMBER	891108	-	891109		
NO. CGHT.	71	MEAN SIZE	-	131.3	
NO. MEAS.	71	S.E. SIZE	-	2.3	
NO. HAULS	23	MIN. SIZE	-	86	
CAT./HAUL	3.1	MAX. SIZE	-	184	
DECEMBER	891206	-	891207		
NO. CGHT.	0	MEAN SIZE	-		
NO. MEAS.	0	S.E. SIZE	-		
NO. HAULS	24	MIN. SIZE	-		
CAT./HAUL	0	MAX. SIZE	-		
JAN - DEC	891025	-	900724		
NO. CGHT.	656	MEAN SIZE	-	91.8	
NO. MEAS.	656	S.E. SIZE	-	2.2	
NO. HAULS	236	MIN. SIZE	-	15	
CAT./HAUL	2.8	MAX. SIZE	-	401	

Figure 33.

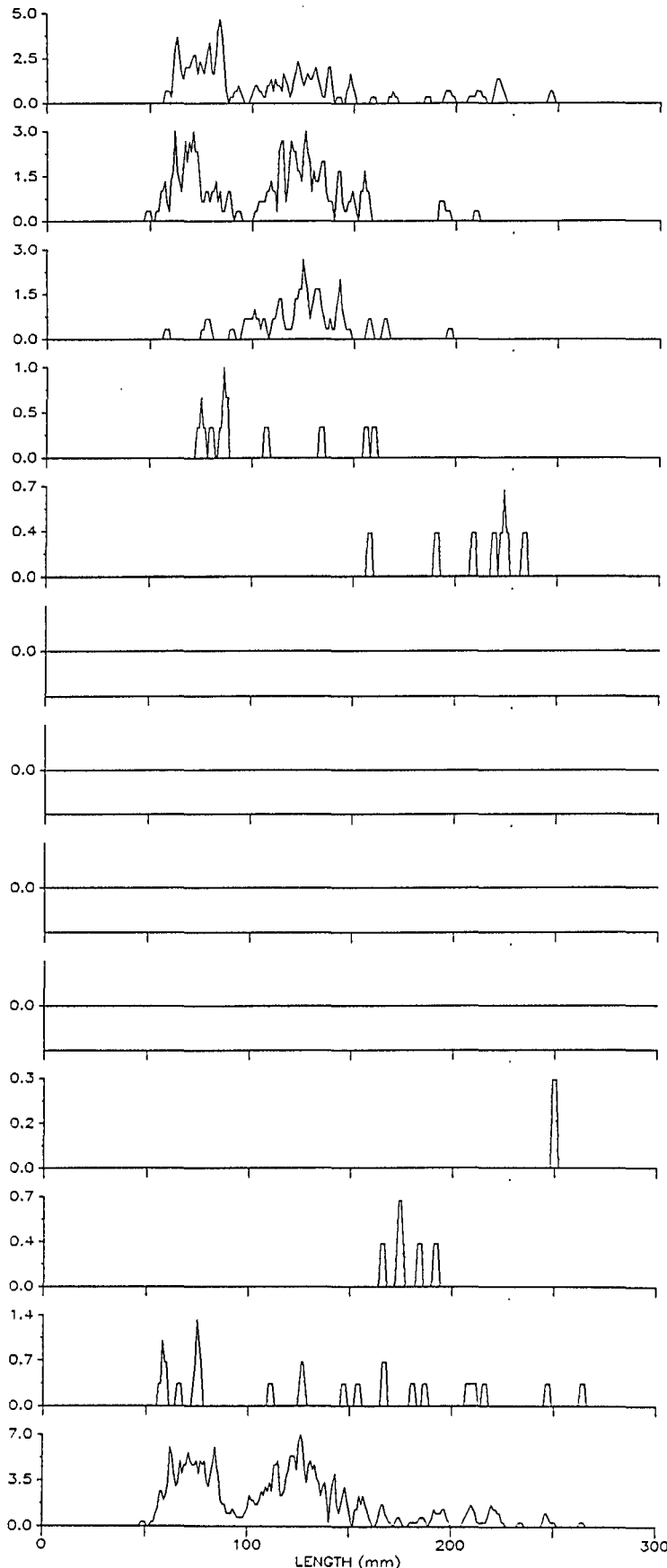
White Catfish
1989 - 1990 Pooled



JANUARY	900118	-	900118		
NO. CGHT.	-	0	MEAN SIZE	-	.
NO. MEAS.	-	0	S.E. SIZE	-	.
NO. HAULS	-	24	MIN. SIZE	-	.
CAT./HAUL	-	0	MAX. SIZE	-	.
FEBRUARY	900221	-	900221		
NO. CGHT.	-	33	MEAN SIZE	-	216.7
NO. MEAS.	-	33	S.E. SIZE	-	15.1
NO. HAULS	-	23	MIN. SIZE	-	135
CAT./HAUL	-	1.4	MAX. SIZE	-	404
MARCH	900322	-	900323		
NO. CGHT.	-	4	MEAN SIZE	-	207.8
NO. MEAS.	-	4	S.E. SIZE	-	28.6
NO. HAULS	-	24	MIN. SIZE	-	162
CAT./HAUL	-	0.2	MAX. SIZE	-	285
APRIL	900425	-	900425		
NO. CGHT.	-	22	MEAN SIZE	-	179.9
NO. MEAS.	-	22	S.E. SIZE	-	14.8
NO. HAULS	-	24	MIN. SIZE	-	122
CAT./HAUL	-	0.9	MAX. SIZE	-	388
MAY	900522	-	900523		
NO. CGHT.	-	71	MEAN SIZE	-	177.9
NO. MEAS.	-	71	S.E. SIZE	-	6.2
NO. HAULS	-	24	MIN. SIZE	-	111
CAT./HAUL	-	3	MAX. SIZE	-	371
JUNE	900625	-	900626		
NO. CGHT.	-	25	MEAN SIZE	-	161.1
NO. MEAS.	-	25	S.E. SIZE	-	7.1
NO. HAULS	-	24	MIN. SIZE	-	102
CAT./HAUL	-	1	MAX. SIZE	-	264
JULY	900723	-	900724		
NO. CGHT.	-	0	MEAN SIZE	-	.
NO. MEAS.	-	0	S.E. SIZE	-	.
NO. HAULS	-	22	MIN. SIZE	-	.
CAT./HAUL	-	0	MAX. SIZE	-	.
AUGUST	000000	-	000000		
NO. CGHT.	-	0	MEAN SIZE	-	.
NO. MEAS.	-	0	S.E. SIZE	-	.
NO. HAULS	-	0	MIN. SIZE	-	.
CAT./HAUL	-	.	MAX. SIZE	-	.
SEPTEMBER	000000	-	000000		
NO. CGHT.	-	0	MEAN SIZE	-	.
NO. MEAS.	-	0	S.E. SIZE	-	.
NO. HAULS	-	0	MIN. SIZE	-	.
CAT./HAUL	-	.	MAX. SIZE	-	.
OCTOBER	891025	-	891027		
NO. CGHT.	-	1	MEAN SIZE	-	444
NO. MEAS.	-	1	S.E. SIZE	-	.
NO. HAULS	-	24	MIN. SIZE	-	444
CAT./HAUL	-	0	MAX. SIZE	-	444
NOVEMBER	891108	-	891109		
NO. CGHT.	-	2	MEAN SIZE	-	327.5
NO. MEAS.	-	2	S.E. SIZE	-	17.5
NO. HAULS	-	23	MIN. SIZE	-	310
CAT./HAUL	-	0.1	MAX. SIZE	-	345
DECEMBER	891206	-	891207		
NO. CGHT.	-	0	MEAN SIZE	-	.
NO. MEAS.	-	0	S.E. SIZE	-	.
NO. HAULS	-	24	MIN. SIZE	-	.
CAT./HAUL	-	0	MAX. SIZE	-	.
JAN - DEC	891025	-	900724		
NO. CGHT.	-	158	MEAN SIZE	-	187.9
NO. MEAS.	-	158	S.E. SIZE	-	5.4
NO. HAULS	-	236	MIN. SIZE	-	102
CAT./HAUL	-	0.7	MAX. SIZE	-	444

Figure 34.

White Perch
1989 - 1990 Pooled



JANUARY	900118	-	900118	
NO. CGHT.	143	-	MEAN SIZE	108.5
NO. MEAS.	143	-	S.E. SIZE	3.9
NO. HAULS	24	-	MIN. SIZE	56
CAT./HAUL	6	-	MAX. SIZE	245
FEBRUARY	900221	-	900221	
NO. CGHT.	125	-	MEAN SIZE	104.8
NO. MEAS.	125	-	S.E. SIZE	3.1
NO. HAULS	23	-	MIN. SIZE	47
CAT./HAUL	5.4	-	MAX. SIZE	208
MARCH	900322	-	900323	
NO. CGHT.	57	-	MEAN SIZE	121.3
NO. MEAS.	57	-	S.E. SIZE	3.2
NO. HAULS	24	-	MIN. SIZE	56
CAT./HAUL	2.4	-	MAX. SIZE	195
APRIL	900425	-	900425	
NO. CGHT.	10	-	MEAN SIZE	102.6
NO. MEAS.	10	-	S.E. SIZE	10.5
NO. HAULS	24	-	MIN. SIZE	72
CAT./HAUL	0.4	-	MAX. SIZE	158
MAY	900522	-	900523	
NO. CGHT.	7	-	MEAN SIZE	206.4
NO. MEAS.	7	-	S.E. SIZE	9.9
NO. HAULS	24	-	MIN. SIZE	156
CAT./HAUL	0.3	-	MAX. SIZE	232
JUNE	900625	-	900626	
NO. CGHT.	0	-	MEAN SIZE	-
NO. MEAS.	0	-	S.E. SIZE	-
NO. HAULS	24	-	MIN. SIZE	-
CAT./HAUL	0	-	MAX. SIZE	-
JULY	900723	-	900724	
NO. CGHT.	0	-	MEAN SIZE	-
NO. MEAS.	0	-	S.E. SIZE	-
NO. HAULS	22	-	MIN. SIZE	-
CAT./HAUL	0	-	MAX. SIZE	-
AUGUST	000000	-	000000	
NO. CGHT.	0	-	MEAN SIZE	-
NO. MEAS.	0	-	S.E. SIZE	-
NO. HAULS	0	-	MIN. SIZE	-
CAT./HAUL	-	-	MAX. SIZE	-
SEPTEMBER	000000	-	000000	
NO. CGHT.	0	-	MEAN SIZE	-
NO. MEAS.	0	-	S.E. SIZE	-
NO. HAULS	0	-	MIN. SIZE	-
CAT./HAUL	-	-	MAX. SIZE	-
OCTOBER	891025	-	891027	
NO. CGHT.	1	-	MEAN SIZE	248
NO. MEAS.	1	-	S.E. SIZE	-
NO. HAULS	24	-	MIN. SIZE	248
CAT./HAUL	0	-	MAX. SIZE	248
NOVEMBER	891108	-	891109	
NO. CGHT.	5	-	MEAN SIZE	176.2
NO. MEAS.	5	-	S.E. SIZE	4.5
NO. HAULS	23	-	MIN. SIZE	164
CAT./HAUL	0.2	-	MAX. SIZE	190
DECEMBER	891206	-	891207	
NO. CGHT.	22	-	MEAN SIZE	136.9
NO. MEAS.	22	-	S.E. SIZE	14.1
NO. HAULS	24	-	MIN. SIZE	55
CAT./HAUL	0.9	-	MAX. SIZE	262
JAN - DEC	891025	-	900724	
NO. CGHT.	370	-	MEAN SIZE	113.9
NO. MEAS.	370	-	S.E. SIZE	2.3
NO. HAULS	236	-	MIN. SIZE	47
CAT./HAUL	1.6	-	MAX. SIZE	262

APPENDICES

APPENDIX A

Sample Data Sheet

APPENDIX B

Common and Scientific Names of Species Caught 1991-1994.

Species Names - Common Name Order		YEAR	
Common Name	Latin Name	1989	1990
American eel	<i>Anguilla rostrata</i>	X	X
American shad	<i>Alosa sapidissima</i>	X	X
Atlantic croaker	<i>Micropogonias undulatus</i>	X	X
Atlantic menhaden	<i>Brevoortia tyrannus</i>	X	X
Atlantic silverside	<i>Menidia menidia</i>		X
Spanish mackerel	<i>Scomberomorus maculatus</i>	X	
alewife	<i>Alosa pseudoharengus</i>	X	X
bay anchovy	<i>Anchoa mitchilli</i>	X	X
black seabass	<i>Centropristis striata</i>		X
blackcheek tonguefish	<i>Symphurus plagiusa</i>	X	X
blue crab, adult female	<i>Callinectes sapidus, ad fem</i>	X	X
blue crab, juvenile female	<i>Callinectes sapidus, juv fem</i>	X	X
blue crab, male	<i>Callinectes sapidus, male</i>	X	X
blueback herring	<i>Alosa aestivalis</i>	X	X
bluefish	<i>Pomatomus saltatrix</i>	X	X
butterfish	<i>Peprilus triacanthus</i>	X	X
conger eel	<i>Conger oceanicus</i>	X	
dusky pipefish	<i>Syngnathus floridae</i>		X
gag	<i>Mycteroperca microlepis</i>		X
gizzard shad	<i>Dorosoma cepedianum</i>	X	X
green goby	<i>Microgobius thalassinus</i>		X
harvestfish	<i>Peprilus alepidotus</i>	X	X
hogchoker	<i>Trinectes maculatus</i>	X	X
inshore lizardfish	<i>Synodus foetens</i>	X	X
lined seahorse	<i>Hippocampus erectus</i>		X
naked goby	<i>Gobiosoma boscii</i>	X	X
northern pipefish	<i>Syngnathus fuscus</i>		X
northern puffer	<i>Sphoeroides maculatus</i>		X
northern searobin	<i>Prionotus carolinus</i>	X	X
northern stargazer	<i>Astroscopus guttatus</i>	X	
oyster toadfish	<i>Opsanus tau</i>	X	X
red hake	<i>Urophycis chuss</i>		X
silver perch	<i>Bairdiella chrysoura</i>	X	X
skilletfish	<i>Gobiosox strumosus</i>	X	X
smallmouth flounder	<i>Etropus microstomus</i>	X	X
southern kingfish	<i>Menticirrhus americanus</i>	X	X
spiny butterfly ray	<i>Gymnura altavela</i>	X	
spot	<i>Leiostomus xanthurus</i>	X	X
spotted hake	<i>Urophycis regia</i>		X
spotted seatrout	<i>Cynoscion nebulosus</i>		X
striped bass	<i>Morone saxatilis</i>	X	X
striped searobin	<i>Prionotus evolans</i>	X	X
summer flounder	<i>Paralichthys dentatus</i>	X	X
threadfin shad	<i>Dorosoma petenense</i>	X	
weakfish	<i>Cynoscion regalis</i>	X	X

Species Names - Common Name Order		YEAR	
Common Name	Latin Name	1989	1990
white catfish	<i>Ictalurus catus</i>	X	X
white perch	<i>Morone americana</i>	X	X
winter flounder	<i>Pseudopleuronectes americanus</i>		X

Species Names - Latin Name Order		YEAR	
Latin Name	Common Name	1989	1990
<i>Alosa aestivalis</i>	blueback herring	X	X
<i>Alosa pseudoharengus</i>	alewife	X	X
<i>Alosa sapidissima</i>	American shad	X	X
<i>Anchoa mitchilli</i>	bay anchovy	X	X
<i>Anguilla rostrata</i>	American eel	X	X
<i>Astroscopus guttatus</i>	northern stargazer	X	
<i>Bairdiella chrysoura</i>	silver perch	X	X
<i>Brevoortia tyrannus</i>	Atlantic menhaden	X	X
<i>Callinectes sapidus, ad fem</i>	blue crab, adult female	X	X
<i>Callinectes sapidus, juv fem</i>	blue crab, juvenile female	X	X
<i>Callinectes sapidus, male</i>	blue crab, male	X	X
<i>Centropristis striata</i>	black seabass		X
<i>Conger oceanicus</i>	conger eel	X	
<i>Cynoscion nebulosus</i>	spotted seatrout		X
<i>Cynoscion regalis</i>	weakfish	X	X
<i>Dorosoma cepedianum</i>	gizzard shad	X	X
<i>Dorosoma petenense</i>	threadfin shad	X	
<i>Etropus microstomus</i>	smallmouth flounder	X	X
<i>Gobiosox strumosus</i>	skilletfish	X	X
<i>Gobiosoma boscii</i>	naked goby	X	X
<i>Gymnura altavela</i>	spiny butterfly ray	X	
<i>Hippocampus erectus</i>	lined seahorse		X
<i>Ictalurus catus</i>	white catfish	X	X
<i>Leiostomus xanthurus</i>	spot	X	X
<i>Menidia menidia</i>	Atlantic silverside		X
<i>Menticirrhus americanus</i>	southern kingfish	X	X
<i>Microgobius thalassinus</i>	green goby		X
<i>Micropogonias undulatus</i>	Atlantic croaker	X	X
<i>Morone americana</i>	white perch	X	X
<i>Morone saxatilis</i>	striped bass	X	X
<i>Mycteroperca microlepis</i>	gag		X
<i>Opsanus tau</i>	oyster toadfish	X	X
<i>Paralichthys dentatus</i>	summer flounder	X	X
<i>Peprilus alepidotus</i>	harvestfish	X	X
<i>Peprilus triacanthus</i>	butterfish	X	X
<i>Pomatomus saltatrix</i>	bluefish	X	X
<i>Prionotus carolinus</i>	northern searobin	X	X
<i>Prionotus evolans</i>	striped searobin	X	X

Species Names - Latin Name Order		YEAR	
Latin Name	Common Name	1989	1990
<i>Pseudopleuronectes americanus</i>	winter flounder		X
<i>Scomberomorus maculatus</i>	Spanish mackerel	X	
<i>Sphoeroides maculatus</i>	northern puffer		X
<i>Symphurus plagiusa</i>	blackcheek tonguefish	X	X
<i>Syngnathus floridae</i>	dusky pipefish		X
<i>Syngnathus fuscus</i>	northern pipefish		X
<i>Synodus foetens</i>	inshore lizardfish	X	X
<i>Trinectes maculatus</i>	hogchoker	X	X
<i>Urophycis chuss</i>	red hake		X
<i>Urophycis regia</i>	spotted hake		X

APPENDIX C

Number of potential trawl sites and approximate area of sampling strata for the York River Random Stratified Pilot Survey (1989-1995). Segment represents a VIMS geographic classification based on approximately five mile increments.

Area	Stratum ¹	Segment, Depth	Station No.	No. of Points	Square Miles
Bottom York	17	YK1, 4-12ft	1-2	55	3.55
	18	YK1, 12-30ft	3-4	57	3.68
	19	YK1, > 30ft	5-6	79	5.10
	20	YK2, 4-12ft	7-8	39	2.52
	21	YK2, 12-30ft	9-10	30	1.94
	22	YK2, > 30ft	11-12	54	3.49
				314	20.27
Lower York	23	YK3, 4-12ft	13-14	70	4.52
	24	YK3, 12-30ft	15-16	61	3.94
	25	YK3, > 30ft	17-18	15	0.97
	26	YK4, 4-12ft	19-20	41	2.64
	27	YK4, 12-30ft	21-22	53	3.42
	28 ²	YK4, >30ft	23-24	17	1.10
				257	16.59
Upper York	29	YK5, 4-12ft	25-26	26	1.68
	30	YK5, > 12ft	27-28	45	2.91
	31	YK6, 4-12ft	29-30	27	1.74
	32	YK6, > 12ft	31-32	37	2.39
				135	8.72

1. Strata were changed from a two character variable to a three character variable beginning in 1996.
2. Stratum 28 was combined with 27 beginning June 1992.

APPENDIX D

York River Trawl Survey Strata

York River Random Stratified Design

