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A Summary of Code Wire Tag Recovery Information from British Columbia and Alaska Commercial Fisheries for the Years 1987 to 1993 for Coho Tagged in the Nass River Region (Statistical Area 3)

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1996

**Canadian Data Report of
Fisheries and Aquatic Sciences 987**



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Canadian Data Report of Fisheries and Aquatic Sciences

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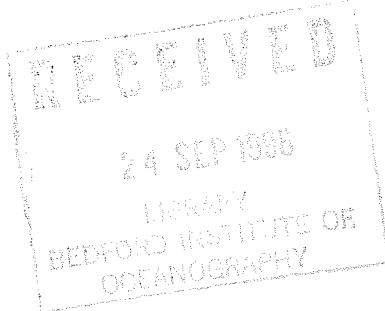
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Canadian Data Report of
Fisheries and Aquatic Sciences 987

A SUMMARY OF CODED WIRE TAG RECOVERY INFORMATION
FROM BRITISH COLUMBIA AND ALASKA COMMERCIAL FISHERIES
FOR THE YEARS 1987 TO 1993
FOR COHO TAGGED IN THE NASS RIVER REGION

(STATISTICAL AREA 3)

by



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ABSTRACT

Spilsted, B.P. and G. Hudson. 1996. A summary of coded wire tag recovery information from British Columbia and Alaska commercial fisheries for the years 1987 to 1993 for coho tagged in the Nass River region (Statistical Area 3). Can. Data Rep. Fish. Aquat. Sci. 987: 94 p.

Estimated adjusted coded wire tag (CWT) recovery data for 3-year and 4-year age class coho salmon (*Oncorhynchus kisutch*) tagged in the Nass River region of statistical Area 3 (Kincolith River and Lachmack River) of the North Coast is provided by statistical week. The data summarizes 1987 to 1993 recovery years (1984 to 1989 brood years) from commercial gillnet, seine and troll fisheries operating in Alaska and British Columbia. Alaskan CWT recoveries are organized using geographic recovery area and gear type criteria, and include N.W. Alaska troll, N.E. Alaska troll, S.W. Alaska troll, Alaska seine, S.E. Alaska troll and Alaska gillnet. Canadian CWT recoveries are organized in a similar manner and include Statistical Area troll and net (gillnet + seine) groupings.

RÉSUMÉ

Spilsted, B.P. and G. Hudson. 1996. A summary of coded wire tag recovery information from British Columbia and Alaska commercial fisheries for the years 1987 to 1993 for coho tagged in the Nass River region (Statistical Area 3). Can. Data Rep. Fish. Aquat. Sci. 987: 94 p.

Le présent rapport présente les données estimatives hebdomadaires des micromarques codées récupérées dans le saumon coho (*Oncorhynchus kisutch*) âgé de 3 et 4 ans échantillonné dans la zone statistique 3 de la rivière Nass (rivières Kincolith et Lachmack), sur la côte nord. Ces données ont été recueillies entre 1987 et 1993 (années d'éclosion : de 1984 à 1989) auprès des pêcheurs commerciaux aux filets maillants, à la senne et à la ligne traînante en Alaska et en Colombie-Britannique. En Alaska, la récupération des micromarques codées se fait par zone géographique de récupération et par type d'engin, et comprend la pêche à la ligne traînante dans le nord-ouest, dans le nord-est, dans le sud-ouest et dans le sud-est de l'Alaska, et la pêche à la senne et la pêche aux filets maillants dans tout l'Alaska. Les récupérations de micromarques codées sont organisées de façon similaire au Canada; elles sont groupées par zones statistiques et par types d'engins (filets maillants + senne).

INTRODUCTION

This report documents 1987 to 1993 estimated adjusted coded wire tag (CWT) weekly recovery data from British Columbia and Alaska commercial gillnet, seine and troll fisheries for 3-year and 4-year age class coho salmon originating from the Nass River region of Statistical Area 3 in the North Coast of B.C. (1984 to 1989 brood years). The data provided have been retrieved from the Pacific Biological Station (P.B.S.) Mark Recovery Program (MRP) database. Kuhn et al. (1988) provide an introduction to the MRP and its associated database and Kuhn (1988) documents the concepts and methods of the MRP-Reporter Program which creates CWT reports based on selection criteria specified by a user.

Coho stock sites (the site where the brood stock originated) and release sites (the site where the release group was released) within the Nass River region are separated geographically for this summary. These sites include: Kincolith River, located at the mouth of the Nass River and Lachmack River, located in Work Channel. Tables 1 and 2 provide information on releases from each Salmonid Enhancement Program (S.E.P.) facility and include tag code, stock site, brood year, number tagged, percent tag loss, days held, number released, CWT - percent marked, release weight, release date(s), release site and type of release.

Alaskan CWT recoveries are organized using geographic recovery area and gear type criteria, and include N.W. Alaska troll, N.E. Alaska troll, S.W. Alaska troll, Alaska seine, S.E. Alaska troll and Alaska gillnet. Canadian CWT recoveries are organized in a similar manner and include Statistical Areas 1 and 2 West troll and net (gillnet + seine), Area 2 East troll, Areas 3 to 6 troll and net, Area 7 troll, Area 8 net, and Areas 9 to 11 and 25 to 27 troll. Data tables include recoveries for all locations in British Columbia and Alaska and for all gear types.

An electronic copy of the data is available from the D.F.O. Stock Assessment Division, North Coast Salmon Section, located in Prince Rupert. Associated papers include a summary of CWT recoveries of Skeena origin coho from northern B.C. and Alaska commercial fisheries (Spilsted and Hudson, 1994), a summary of CWT recoveries of Central Coast origin coho from B.C. and Alaska commercial fisheries (Spilsted and Hudson, 1995), analysis of coded wire tag recovery information of Skeena origin coho from northern B.C. commercial fisheries (Spilsted, 1994a), and information on northern B.C. commercial coho catch data (Spilsted, 1994b).

METHODS

Recovery information used in this report employs "estimated" and "adjusted" data-type criteria rather than "observed" data, which only represents actual pin recoveries.

Adjusted Recovery.

All fish with CWTs are externally marked, usually by an adipose fin clip at the time of tagging. Landed fish are sampled for the external mark and the heads from marked fish are taken. Subsequently the CWTs (or pins) are found and removed and the data inscribed on them are decoded. In a (usually) small proportion of cases, no data are recovered from a sampled head for reasons explained in Table 3. An "adjusted" recovery algorithm takes into account lost pin, no pin and no data recoveries.

Observed data can be "adjusted" using the following calculation (Kuhn et al. 1988):

$$A = O \left[I + \frac{LP}{K} + \frac{ND(K + LP)}{K(K + LP + NP)} \right]$$

where:

A = "observed" recovery adjusted for non-tags.

O = "observed" recovery.

K = number of known (real) tag codes recovered for a particular stratum.

LP = number of "lost pin" recoveries for a particular stratum.

ND = number of "no data" recoveries for a particular stratum.

NP = number of "no pin" recoveries for a particular stratum.

The minimum parameters (fields) which are required to define a commercial (troll and net) Time-Area stratum and retrieve information from the MRP-Reporter Program include recovery year, catch region, species and statistical week. Table 4 provides a complete list of all recovery fields and a notation of the fields that apply to each commercial, sport and escapement recovery stratum.

Estimated Recovery.

An "estimated" recovery is the estimated number of tags of a particular code recovered within a stratum, which accounts for varied sampling rates by expansion of the adjusted number of recoveries by the ratio of catch to sample size. "Estimated" data is calculated by the following formula (Kuhn et al. 1988):

$$E = A \frac{C}{S}$$

where:

- E = the estimated number of recoveries of a particular tag code within a recovery stratum.
- A = the adjusted recoveries.
- C = the catch for the stratum.
- S = the sample size for the stratum.

Statistical Areas.

Data tables include statistical area information for northern (Fig. 1) and southern (Fig. 2) British Columbia and Alaska (Fig. 3) recovery locations. Alaskan statistical area codes are preceded by the letter "A", for example "A101" refers to Alaskan statistical area 101. The letter "G", "S" or "TR" follow the area number, denoting gillnet or seine or troll recovery gear type (eg. "A101S"). "ANW" refers to statistical areas encompassing northwest Alaska waters. Canadian statistical area codes are preceded by the number "0", for example "003" refers to Canadian statistical area 3. Some of the two digit numbers following the "0" indicate that a tag recovery location can only be associated with a combined catch region and will include more than one statistical area (SA). The combined recovery locations are noted in brackets in the recovery area column of the data table. Table 5 lists all MRP Recovery Area codes and the corresponding Statistical Area(s) for British Columbia and Alaska commercial fisheries which recovered Nass River region coho CWTs in the years 1987 to 1993.

Recovery Areas.

Charts and data summaries of weekly recoveries of Nass River region (Statistical Area 3) origin tagged coho present data in the following geographic and gear type groupings: NW Alaska Troll (AKNWTR), NE Alaska Troll (AKNETR), SW Alaska Troll (AKSWTR), Alaska Seine (AKSN), SE Alaska Troll (AKSETR), Alaska Gillnet

(AKGN), Area 1 Troll (AREA1TR), Area 1 Net (AREA1N), Area 2 West Troll (AREA2WTR), Area 2 West Net (AREA2WN), Area 2 East Troll (AREA2ETR), Area 3 Troll (AREA3TR), Area 3 Net (AREA3N), Area 4 Troll (AREA4TR), Area 4 Net (AREA4N), Area 5 Troll (AREA5TR), Area 5 Net (AREA5N), Area 6 Troll (AREA6TR), Area 6 Net (AREA6N), Area 7 Troll (AREA7TR), Area 8 Net (AREA8N), Area 9 Troll (AREA9TR), Area 10 Troll (AREA10TR), Area 11 Troll (AREA11TR), Area 27 Troll (AREA27TR), Area 26 Troll (AREA26TR) and Area 25 Troll (AREA25TR). Only data with a specific location designation for one of these groupings were used to generate the CWT recovery histograms. Data which had combined recovery locations were not used.

Recovery area codes used in data tables include "FWSP" (fresh water sport - river fishery), "NN" (northern net), "NSPT" (northern sport - tidal waters), "NTR" (northern troll), "CN" (central net), "NCTR" (north central troll), "SCTR" (south central troll), "NWTR" (northwest Vancouver Island troll) and "GSPTS" (Georgia Straight sport - tidal waters).

Data tables and charts present tag recovery data using "statistical week" time period units and Canada Department of Fisheries and Oceans (D.F.O.) and Alaska Department of Fish and Game "statistical area" location designations.

DATA SUMMARIES

The results of estimated adjusted recoveries from commercial troll and net fisheries operating from 1987 to 1993 in Canadian statistical areas and in Alaska commercial fishing areas of 3-year and 4-year age class CWT marked coho originating from the Nass River region in Statistical Area 3 (1984 to 1989 brood years) are presented. Tagging sites that operated within this region during some or all of the brood years noted include the Kincolith River and the Lachmack River.

Data summaries presented include 1) annual recoveries for all tag codes released from each of the tagging sites by brood and recovery years, and 2) all tag years combined recoveries for all tag codes released from each of the tagging sites.

The tables and graphs presented in this report should not be used to indicate the timing of these tagged fish through fisheries. Analysis of this data with weekly effort information for each of the recovery areas is required before run timing assumptions can be made.

Tag Recovery.

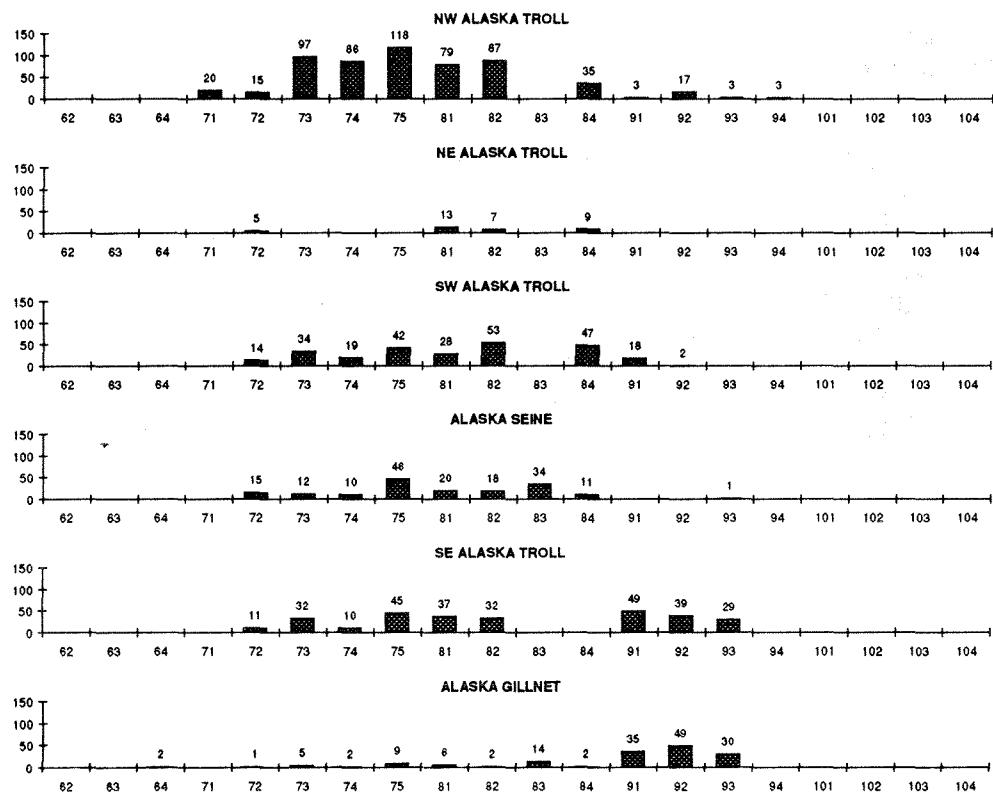
Tag recovery programs are not designed to support analysis by statistical area. Data are collected for catch regions broader than statistical areas (i.e. North Central Troll includes statistical areas 6, 7, 8, 9, and 30; South Central Troll includes statistical areas 10, 11 and 12) and although there is an effort to sample proportionate to catch by statistical area, it is not part of the sampling design specifications.

Harvest Data Bias.

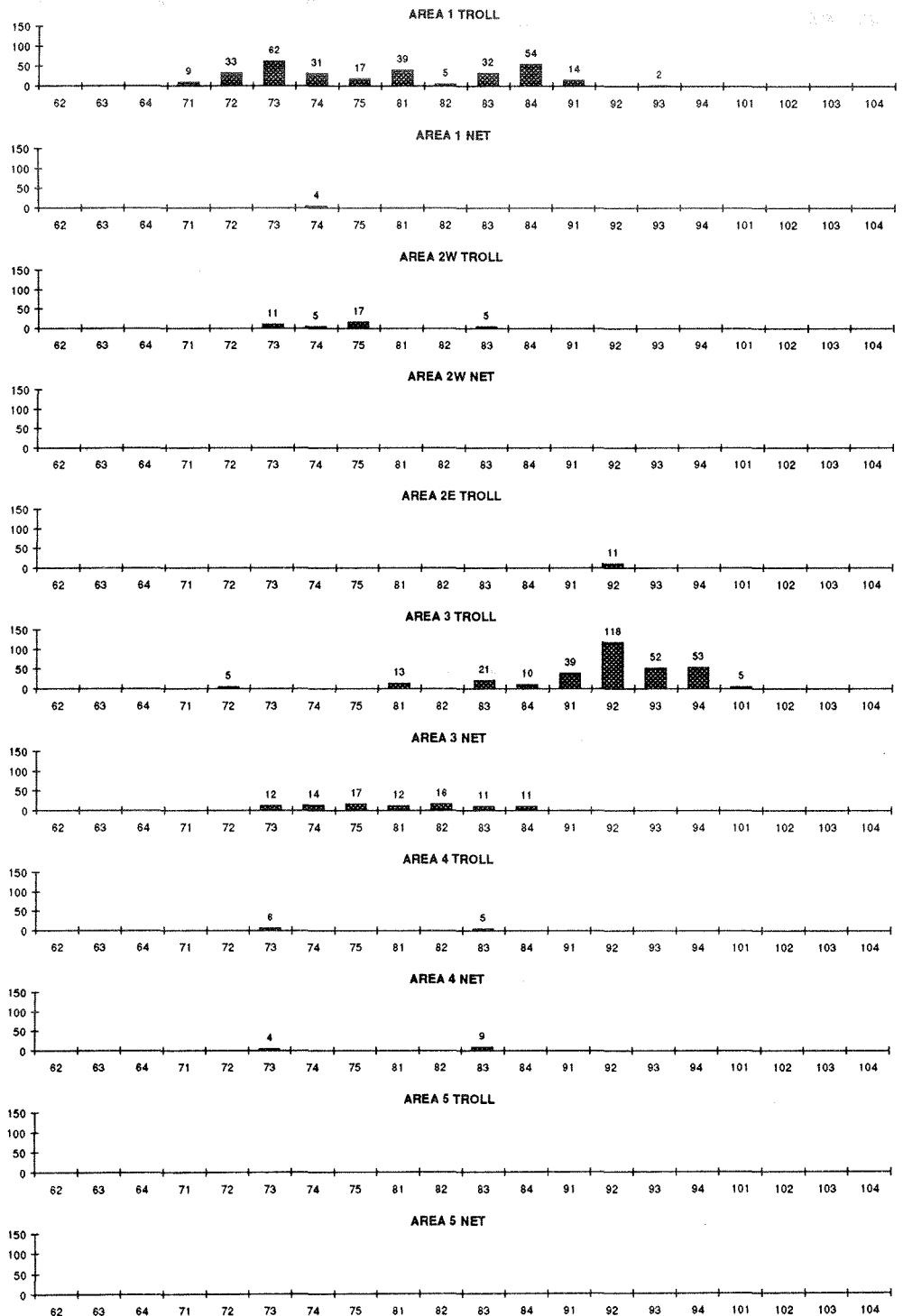
Sales slip catch data recorded from commercial vessel landings accurately reflect the number and species of salmon harvested, but can at times include an error for location and time of catch. Vessels that fish in more than one statistical area during weekly openings may have catches from these different areas reported under only one location when the catch is delivered rather than a complete list of the combined catch regions. The mixing of catches harvested within one statistical week with fish harvested in the next can arise when vessels delay delivering their catch because weekly openings occur close together. The errors are believed to be very modest for net fisheries. Canadian troll catch data used to provide CWT information in this report have been corrected to represent the best estimate of harvest date rather than landing date. Table 6 provides the algorithm, used by the Mark Recovery Program, which backdates commercial troll sales slip catches to provide this best estimate of harvest date. The landing dates for the Canadian troll fishery can be later than catch dates because of the delay in landing catches, particularly for freezer trollers.

**Estimated Adjusted CWT weekly recoveries of age 3 coho tagged at Kincolith River;
1988 brood year, 1991 recovery year.**

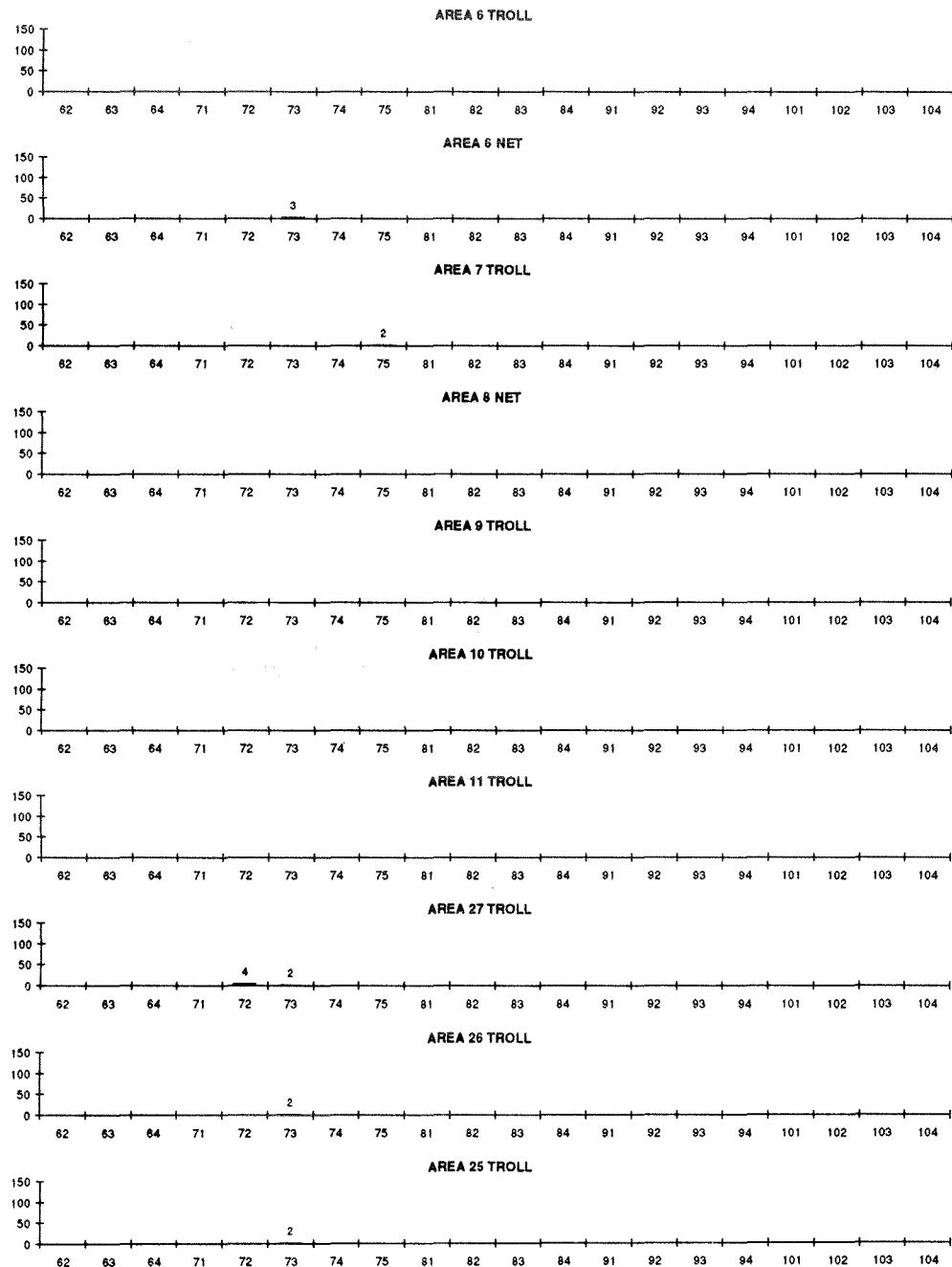
Estimated Adjusted CWT weekly recoveries of age 3 coho tagged in the Kincolith River tag group. 1988 brood year, 1991 recovery year.



Estimated Adjusted CWT weekly recoveries of age 3 coho tagged in the Kincolith River tag group. 1988 brood year, 1991 recovery year.

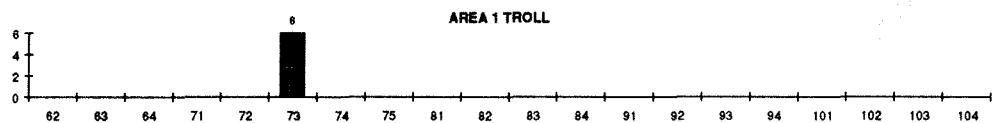


Estimated Adjusted CWT weekly recoveries of age 3 coho tagged in the Kincolith River tag group. 1988 brood year, 1991 recovery year.



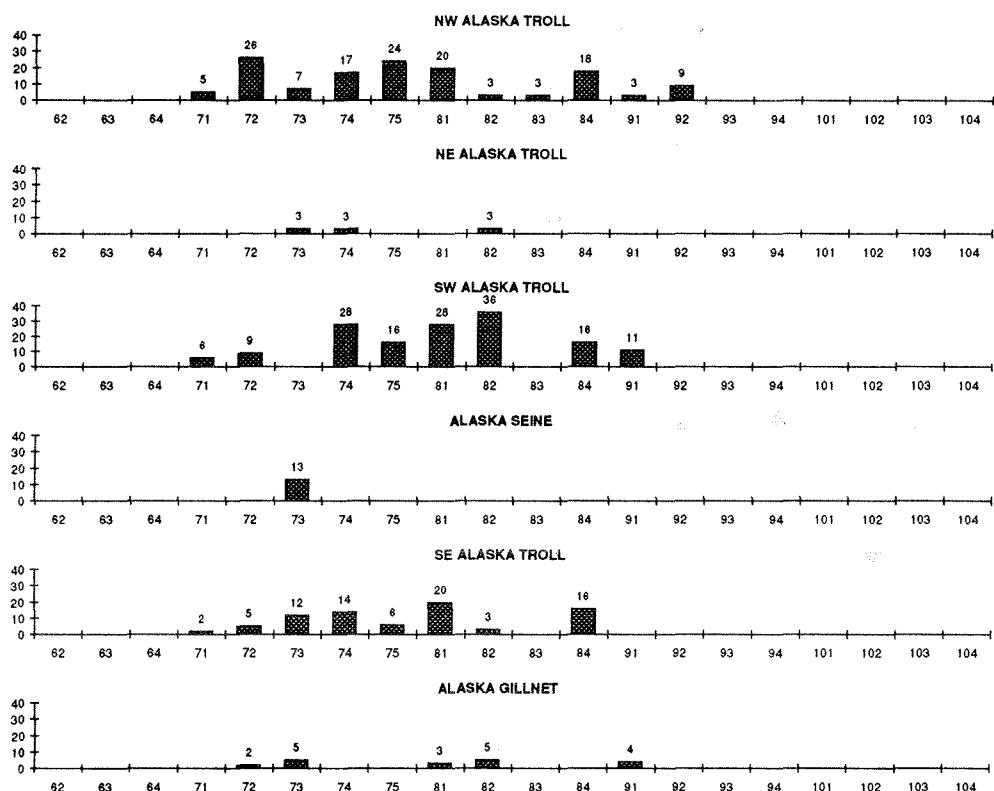
**Estimated Adjusted CWT weekly recoveries of age 4 coho tagged at Kincolith River;
1987 brood year, 1991 recovery year.**

Estimated Adjusted CWT weekly recoveries of age 4 coho tagged in the Kincolith River tag group. 1987 brood year, 1991 recovery year.

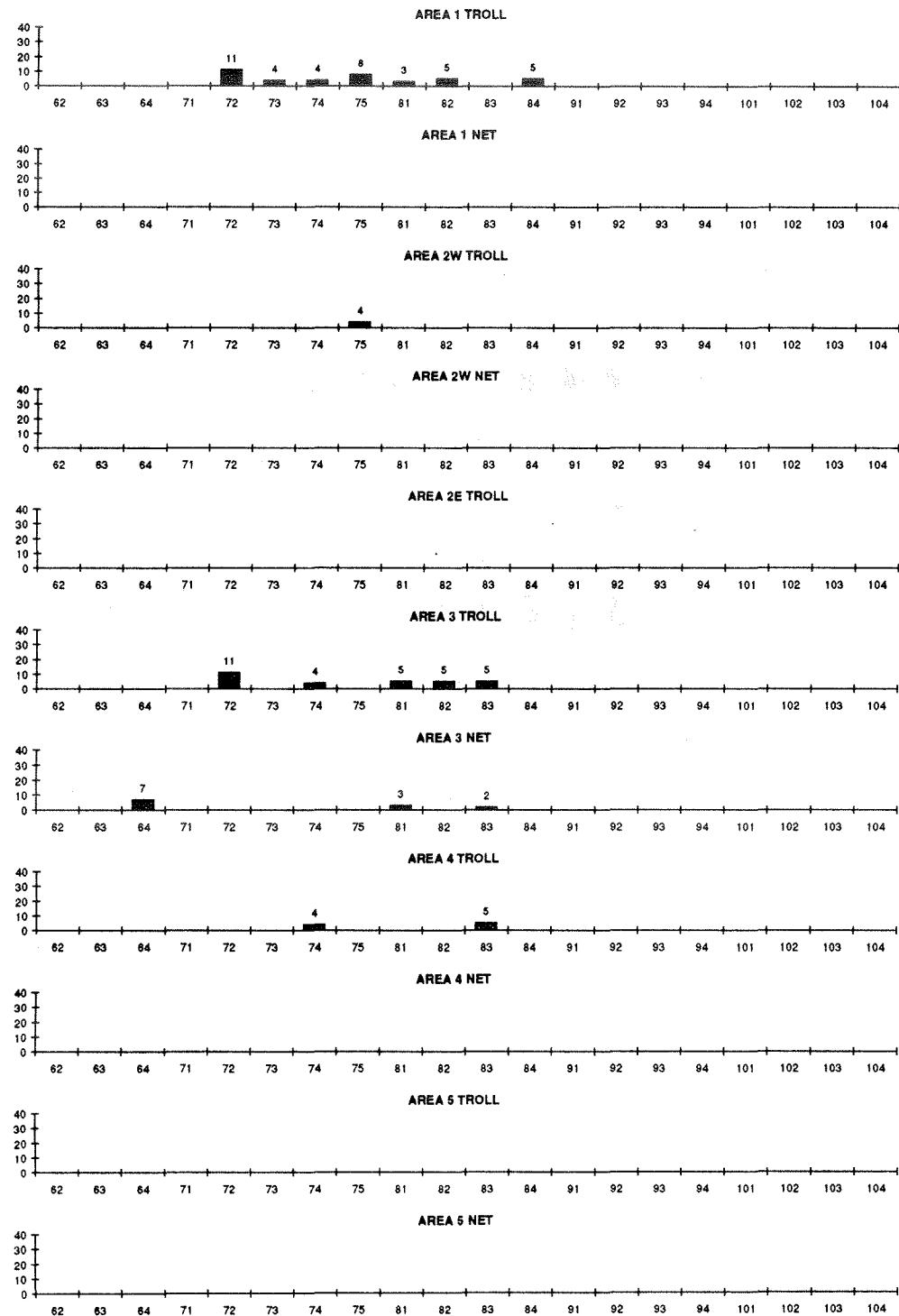


Estimated Adjusted CWT weekly recoveries of age 3 and age 4 coho tagged at Kincolith River; 1986 brood year, 1989 and 1990 recovery years.

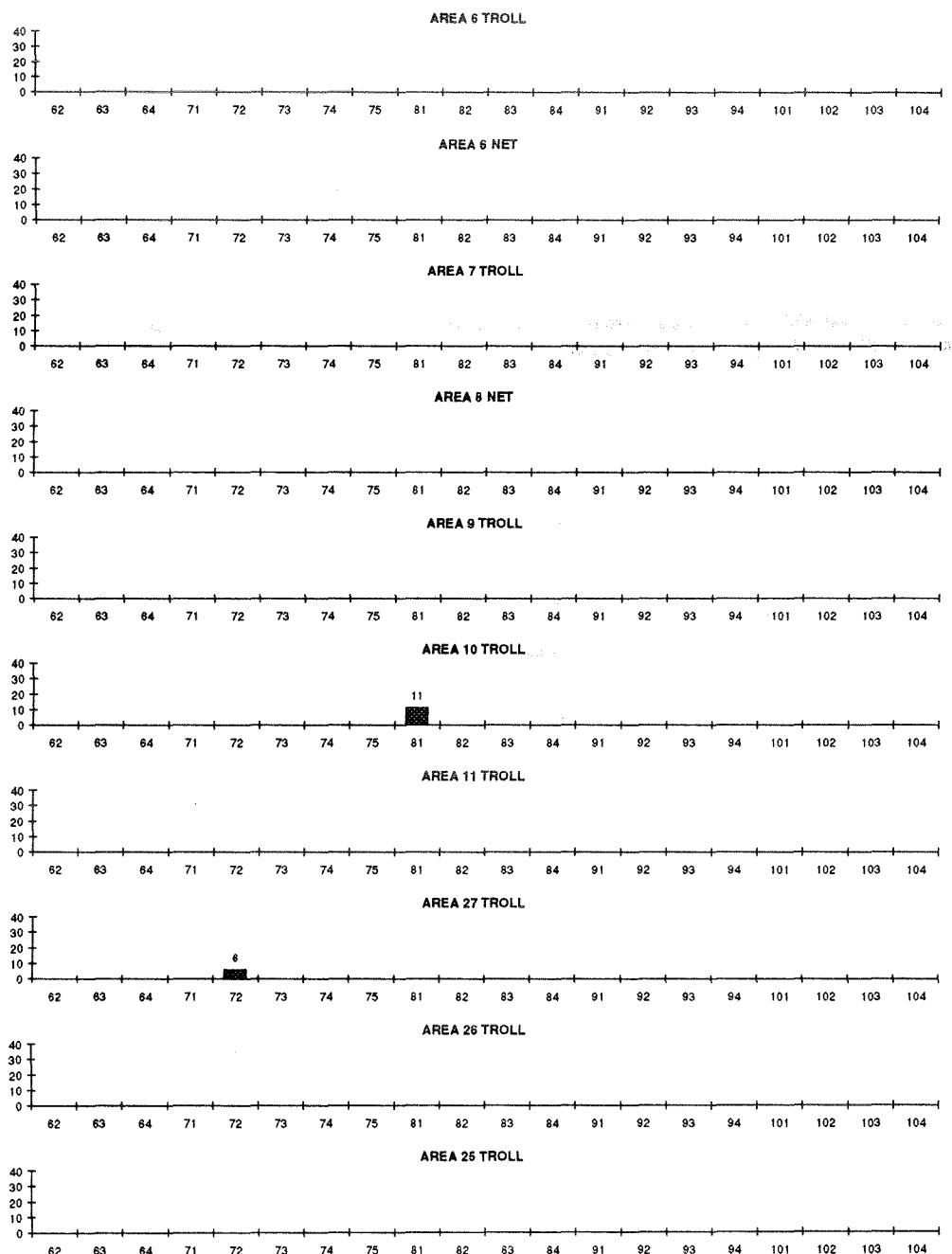
Estimated Adjusted CWT weekly recoveries of age 3 coho tagged in the Kincolith River tag group. 1986 brood year, 1989 recovery year.



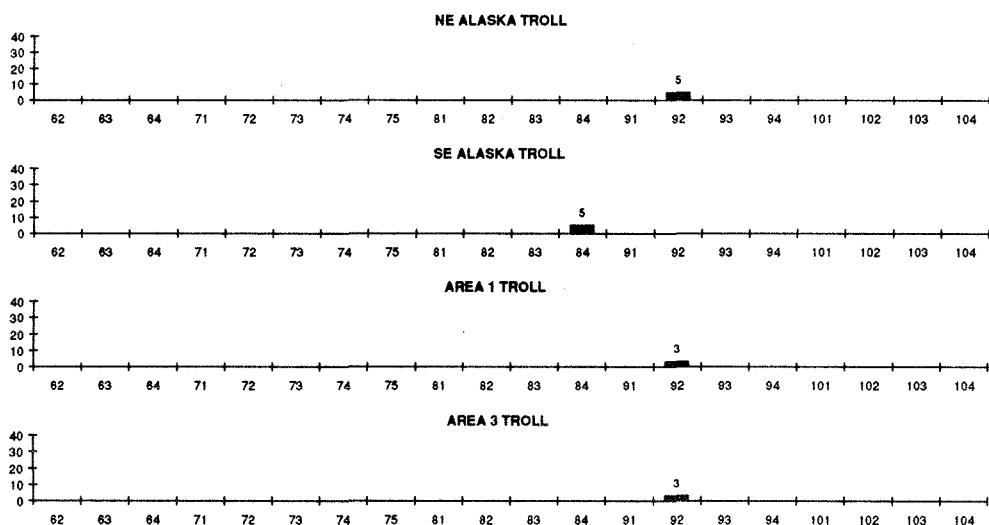
Estimated Adjusted CWT weekly recoveries of age 3 coho tagged in the Kincolith River tag group. 1986 brood year, 1989 recovery year.



Estimated Adjusted CWT weekly recoveries of age 3 coho tagged in the Kincolith River tag group. 1986 brood year, 1989 recovery year.

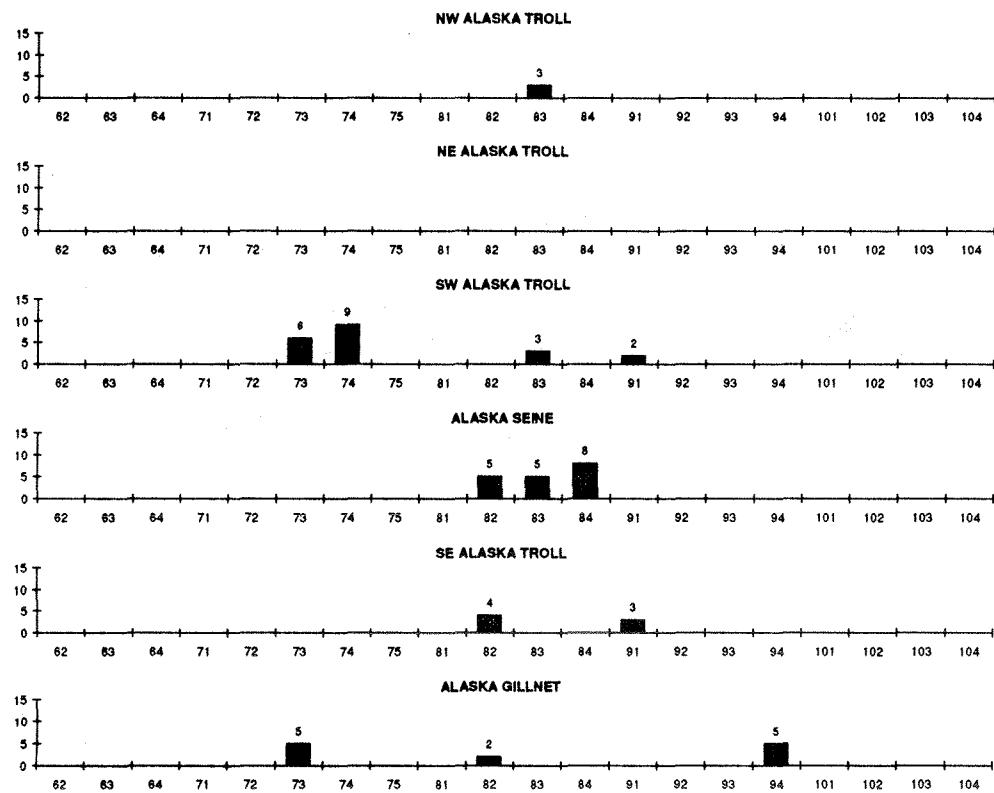


Estimated Adjusted CWT weekly recoveries of age 4 coho tagged in the Kincolith River tag group. 1986 brood year, 1990 recovery year.

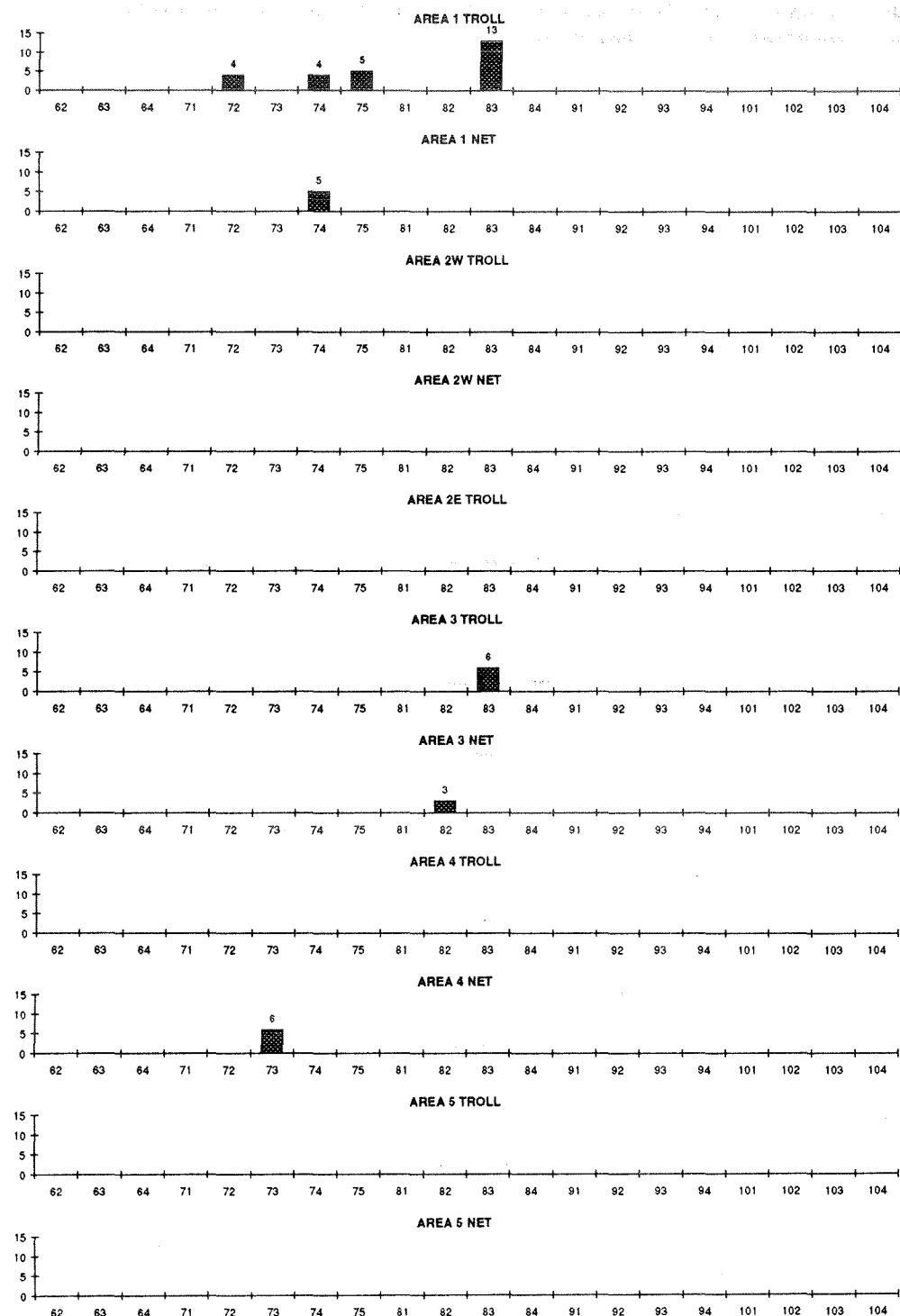


**Estimated Adjusted CWT weekly recoveries of age 3 coho tagged at Kincolith River;
1985 brood year, 1988 recovery year.**

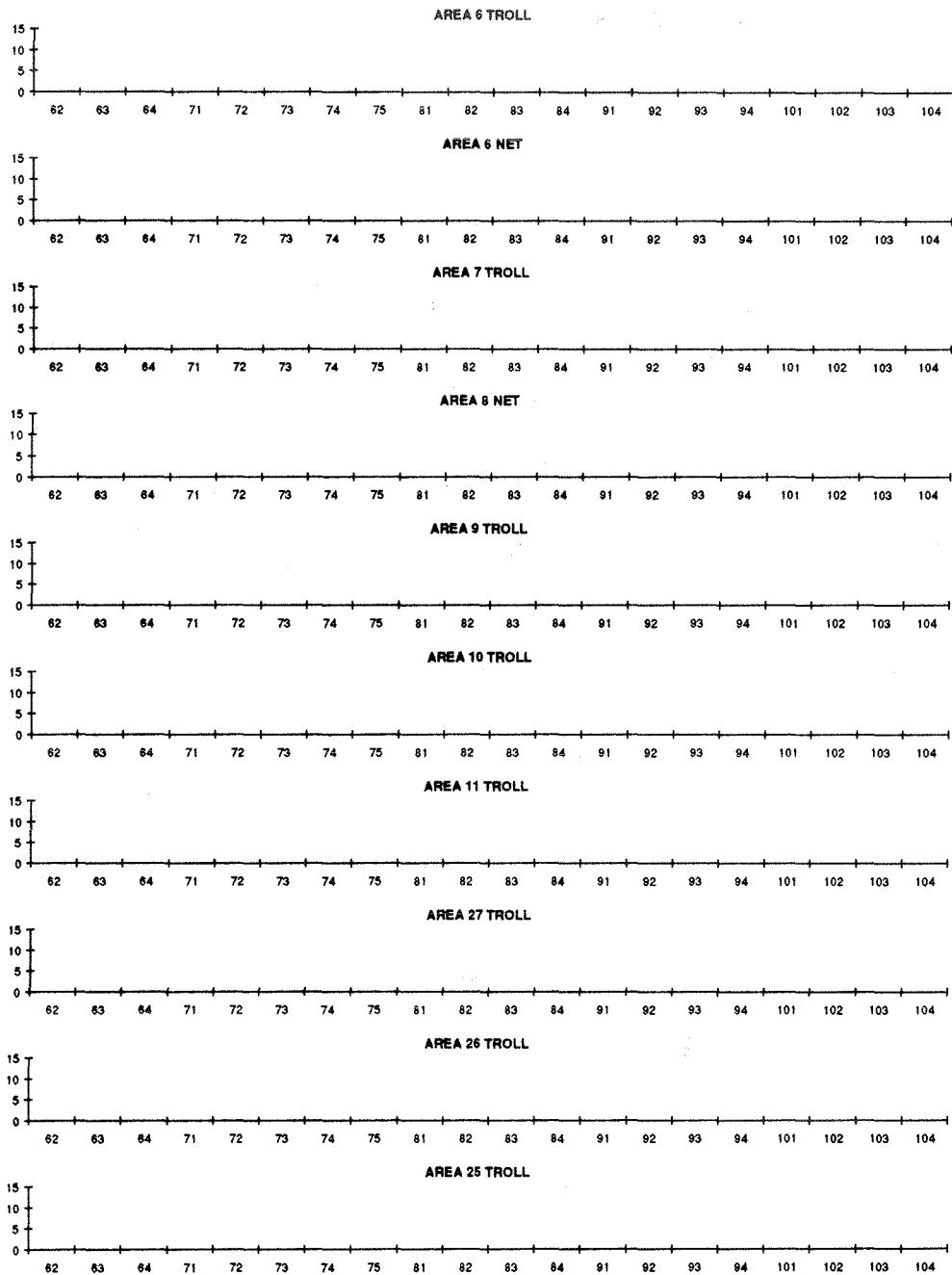
Estimated Adjusted CWT weekly recoveries of age 3 coho tagged in the Kincolith River tag group. 1985 brood year, 1988 recovery year.



Estimated Adjusted CWT weekly recoveries of age 3 coho tagged in the Kincolith River tag group. 1985 brood year, 1988 recovery year.

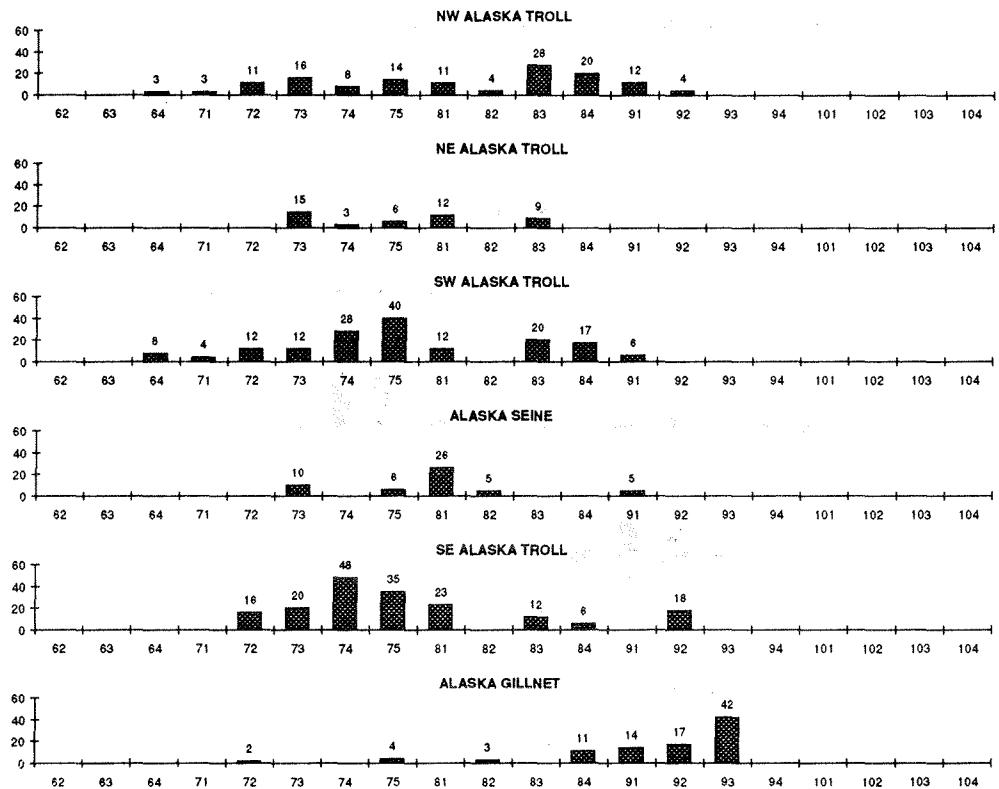


Estimated Adjusted CWT weekly recoveries of age 3 coho tagged in the Kincolith River tag group. 1985 brood year, 1988 recovery year.

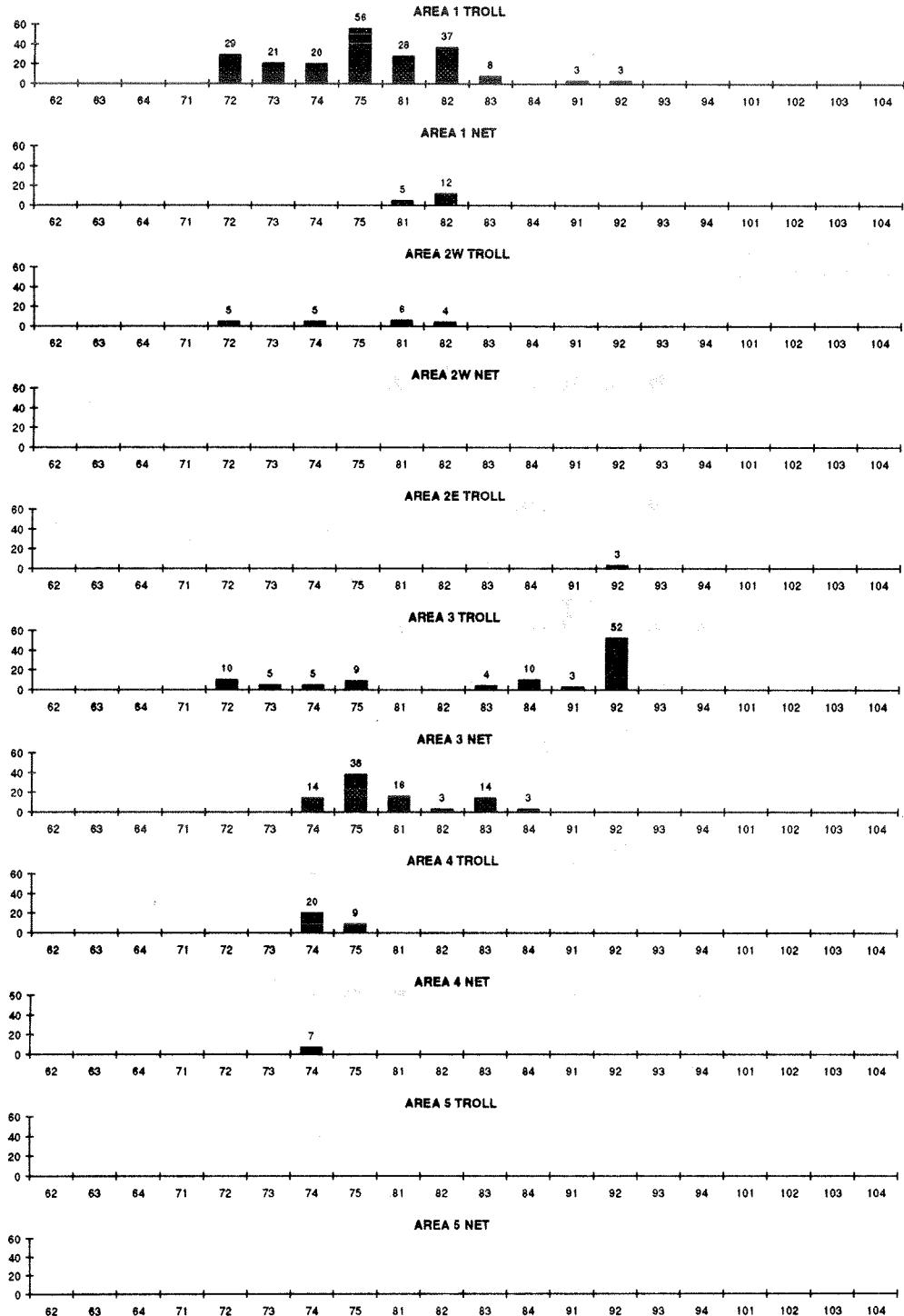


Estimated Adjusted CWT weekly recoveries of age 3 and age 4 coho tagged at Kincolith River; 1984 brood year, 1987 and 1988 recovery years.

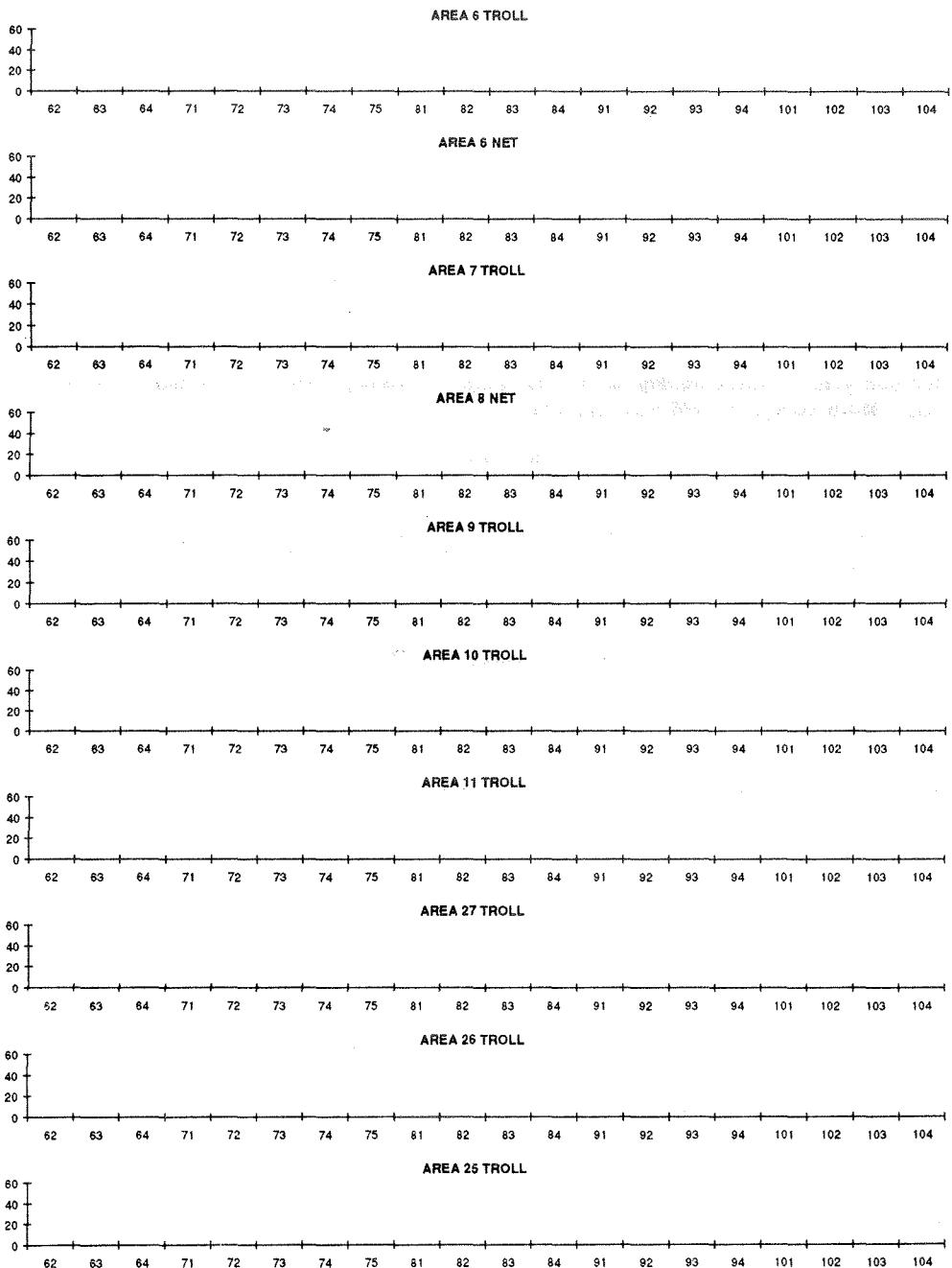
Estimated Adjusted CWT weekly recoveries of age 3 coho tagged in the Kincolith River tag group. 1984 brood year, 1987 recovery year.



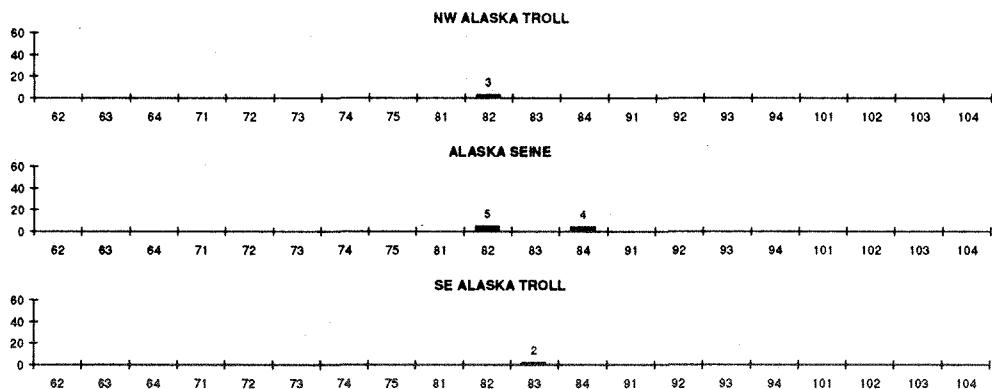
Estimated Adjusted CWT weekly recoveries of age 3 coho tagged in the Kincolith River tag group. 1984 brood year, 1987 recovery year.



Estimated Adjusted CWT weekly recoveries of age 3 coho tagged in the Kincolith River tag group. 1984 brood year, 1987 recovery year.

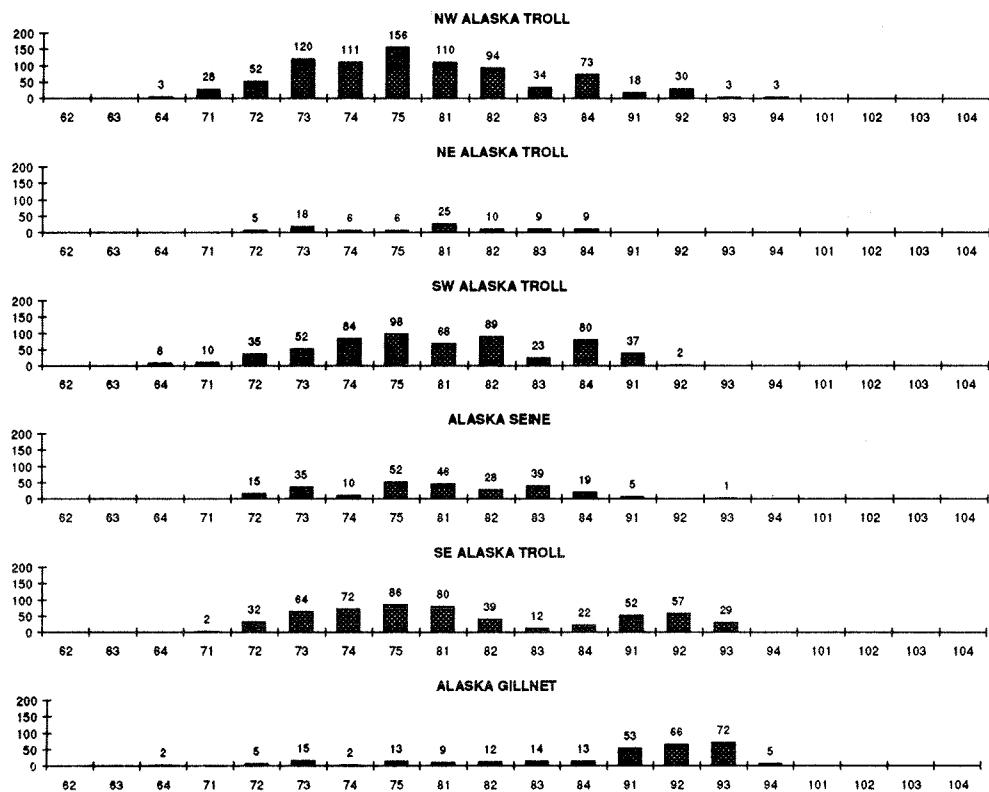


Estimated Adjusted CWT weekly recoveries of age 4 coho tagged in the Kincolith River tag group. 1984 brood year, 1988 recovery year.

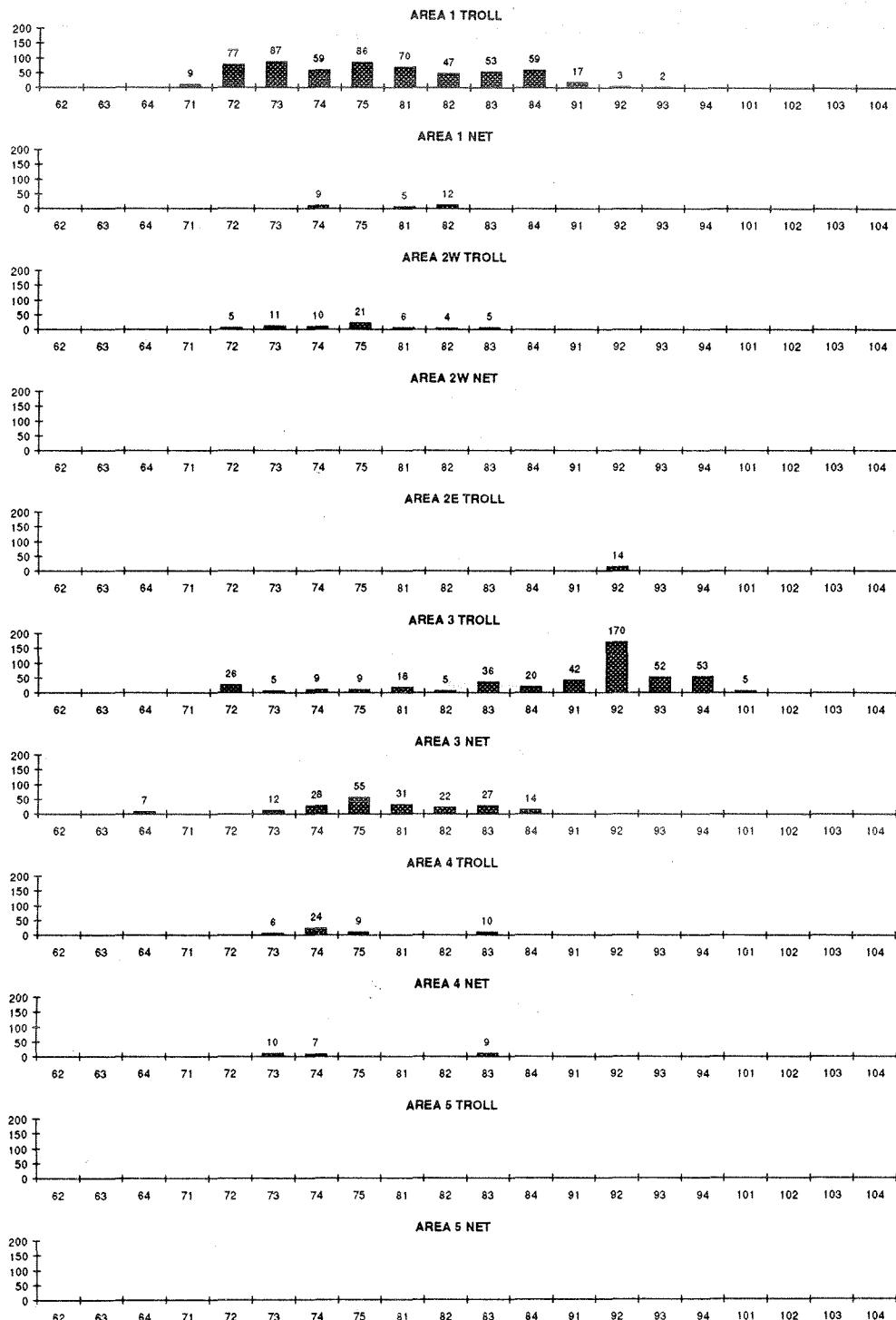


Estimated Adjusted CWT weekly recoveries of age 3 coho tagged in the Kincolith River tag group. 1984 to 1988 brood years, 1987 to 1991 recovery years.																				
BROOD YEAR	STATISTICAL AREA	RECOVERY AREA / GEARTYPE	AGE	STATISTICAL WEEK																
				62	63	64	71	72	73	74	75	81	82	83	84	91	92	93	94	
1988	113,114,116,154,157,189,NW	AKNWTR	3	0	0	0	20	15	97	86	118	70	87	0	35	3	17	3	3	
1987	No data	AKNWTR	3														0	0	0	0
1986	113, 114, 116, 154, 157, NW	AKNWTR	3	0	0	0	5	26	7	17	24	20	3	3	18	3	9	0	0	
1985	NW	AKNWTR	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
1984	113, 116, 154, 156, NW	AKNWTR	3	0	0	3	3	11	16	8	14	11	4	28	20	12	4	0	0	
	1984 TO 1988 NW ALASKA TROLL TOTAL		3	0	0	3	28	52	120	111	156	110	94	34	73	18	30	3	3	
																	0	0	0	
1988	109	AKNETR	3	0	0	0	0	5	0	0	0	13	7	0	9	0	0	0	0	
1987	No data	AKNETR	3														0	0	0	0
1986	109	AKNETR	3	0	0	0	0	0	3	3	0	0	3	0	0	0	0	0	0	
1985	No data	AKNETR	3														0	0	0	0
1984	109	AKNETR	3	0	0	0	0	0	15	3	6	12	0	9	0	0	0	0	0	
	1984 TO 1988 NE ALASKA TROLL TOTAL		3	0	0	0	0	5	18	6	6	25	10	9	9	0	0	0	0	
																	0	0	0	
1988	103, 104, 150, SW	AKSWTR	3	0	0	0	0	14	34	19	42	28	53	0	47	18	2	0	0	
1987	No data	AKSWTR	3														0	0	0	0
1986	103, 104, SW	AKSWTR	3	0	0	0	6	9	0	28	16	28	36	0	16	11	0	0	0	
1985	103, 104, SW	AKSWTR	3	0	0	0	0	0	6	9	0	0	0	3	0	2	0	0	0	
1984	103, 104, 152, SW	AKSWTR	3	0	0	8	4	12	12	28	40	12	0	20	17	6	0	0	0	
	1984 TO 1988 SW ALASKA TROLL TOTAL		3	0	0	8	10	35	52	84	98	68	89	23	80	37	2	0	0	
																	0	0	0	
1988	101, 102, 103, 104	AKSN	3	0	0	0	0	15	12	10	46	20	18	34	11	0	0	1	0	
1987	No data	AKSN	3														0	0	0	
1986	104	AKSN	3	0	0	0	0	0	13	0	0	0	0	0	0	0	0	0	0	
1985	104	AKSN	3	0	0	0	0	0	0	0	0	0	0	5	5	8	0	0	0	
1984	101, 102, 104	AKSN	3	0	0	0	0	0	10	0	6	26	5	0	0	5	0	0	0	
	1984 TO 1988 ALASKA SEINE TOTAL		3	0	0	0	0	15	35	10	52	46	28	39	19	5	0	1	0	
																	0	0	0	
1988	101, 102, 105, SE	AKSETR	3	0	0	0	0	11	32	10	45	37	32	0	0	49	39	29	0	
1987	No data	AKSETR	3														0	0	0	
1986	101, 102, 106, SE	AKSETR	3	0	0	0	2	5	12	14	6	20	3	0	16	0	0	0	0	
1985	101, 106	AKSETR	3	0	0	0	0	0	0	0	0	0	4	0	0	3	0	0	0	
1984	101, 102, SE	AKSETR	3	0	0	0	0	16	20	48	35	23	0	12	6	0	18	0	0	
	1984 TO 1988 SE ALASKA TROLL TOTAL		3	0	0	0	2	32	64	72	86	80	39	12	22	52	57	29	0	
																	0	0	0	
1988	101, 106	AKGN	3	0	0	2	0	1	5	2	9	6	2	14	2	35	49	30	0	
1987	No data	AKGN	3														0	0	0	
1986	101	AKGN	3	0	0	0	0	2	5	0	0	3	5	0	0	4	0	0	0	
1985	101	AKGN	3	0	0	0	0	0	5	0	0	0	2	0	0	0	0	5	0	
1984	101	AKGN	3	0	0	0	0	2	0	0	4	0	3	0	11	14	17	42	0	
	1984 TO 1988 ALASKA GILLNET TOTAL		3	0	0	2	0	5	15	2	13	9	12	14	13	53	66	72	5	
																0	0	0	0	

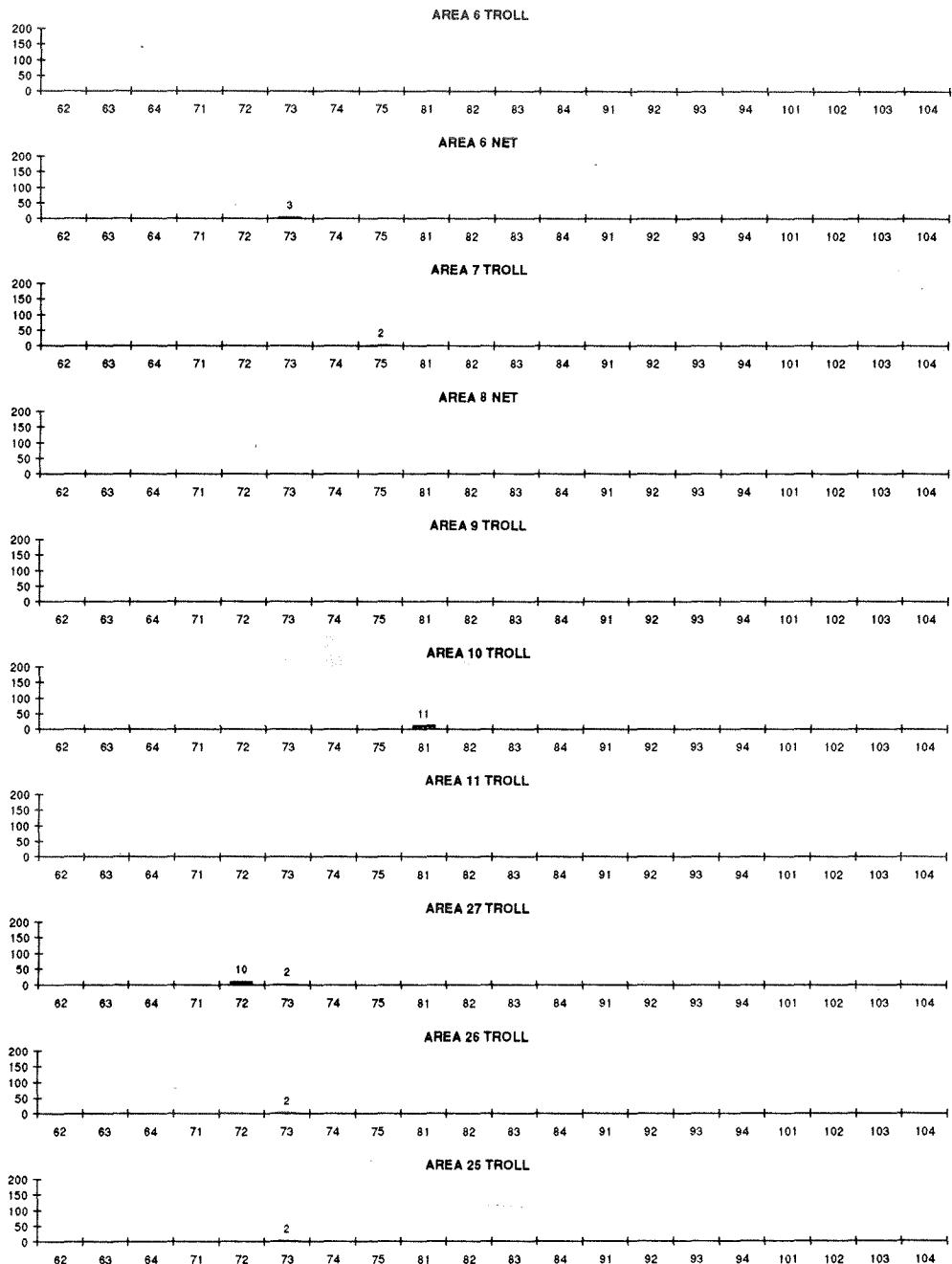
Estimated Adjusted CWT weekly recoveries of age 3 coho tagged in the Kincolith River tag group. 1984 to 1988 brood years, 1987 to 1991 recovery years.



Estimated Adjusted CWT weekly recoveries of age 3 coho tagged in the Kincolith River tag group. 1984 to 1988 brood years, 1987 to 1991 recovery years.

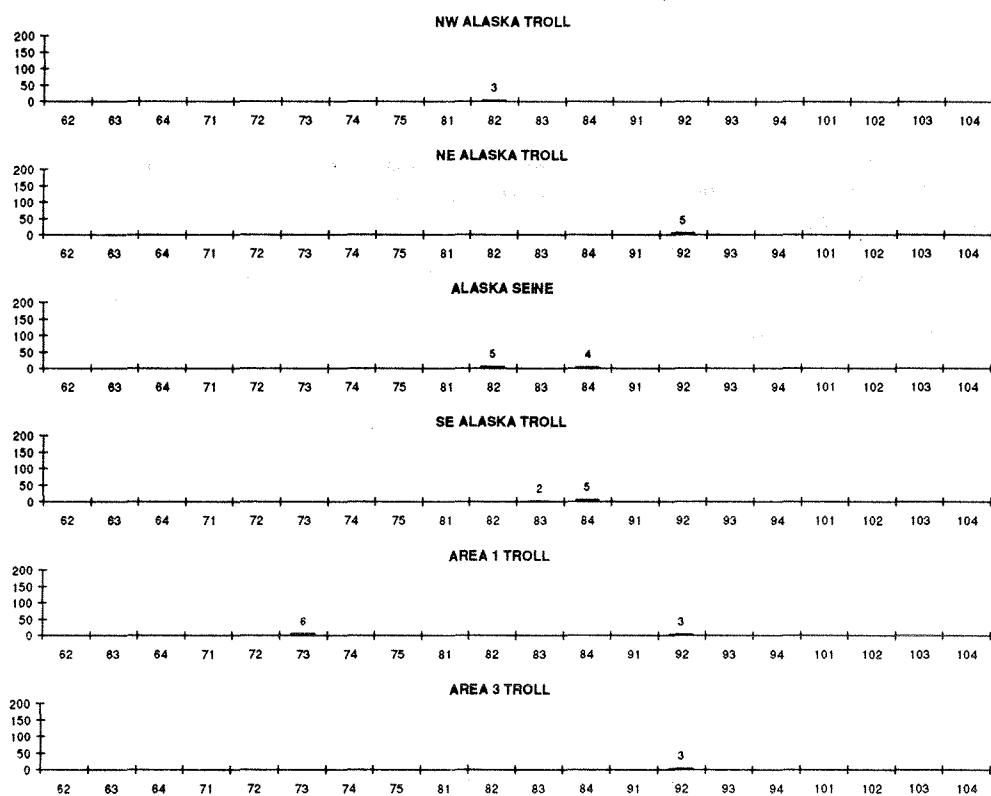


Estimated Adjusted CWT weekly recoveries of age 3 coho tagged in the Kincolith River tag group. 1984 to 1988 brood years, 1987 to 1991 recovery years.

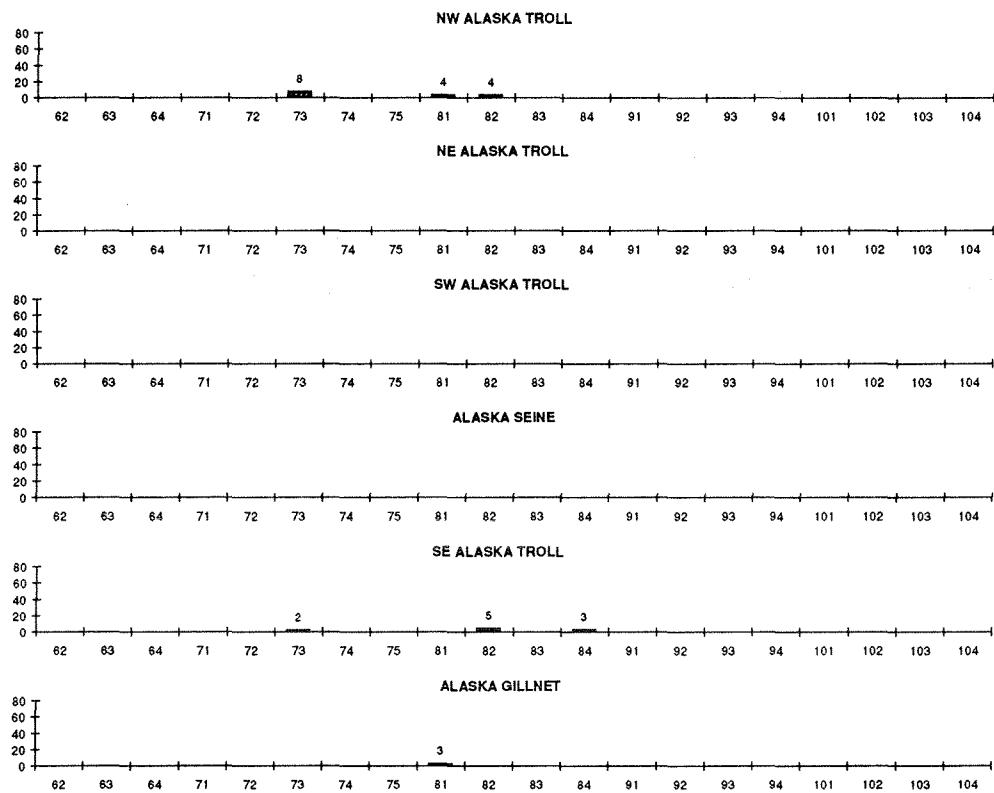


Estimated Adjusted CWT weekly recoveries of age 4 coho tagged in the Kincolith River tag group. 1984 to 1987 brood years, 1988 to 1991 recovery years.																			
BROOD YEAR	STATISTICAL AREA	RECOVERY AREA / GEARTYPE	AGE CLASS	STATISTICAL WEEK															
				62	63	64	71	72	73	74	75	81	82	83	84	91	92	93	94
1984	NW	AKNWTR	4	0	0	0	0	0	0	0	0	3	0	0	0	0	0	0	0
	1984 TO 1987 NW ALASKA TROLL TOTAL		4	0	0	0	0	0	0	0	0	3	0	0	0	0	0	0	0
1986	109	AKNETR	4	0	0	0	0	0	0	0	0	0	0	0	0	5	0	0	0
	1984 TO 1987 NE ALASKA TROLL TOTAL		4	0	0	0	0	0	0	0	0	0	0	0	0	5	0	0	0
1984	104	AKSN	4	0	0	0	0	0	0	0	0	5	0	4	0	0	0	0	0
	1984 TO 1987 ALASKA SEINE TOTAL		4	0	0	0	0	0	0	0	0	5	0	4	0	0	0	0	0
1986	101	AKSETR	4	0	0	0	0	0	0	0	0	0	0	0	0	5	0	0	0
1984	101	AKSETR	4	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0
	1984 TO 1987 SE ALASKA TROLL TOTAL		4	0	0	0	0	0	0	0	0	0	0	2	5	0	0	0	0
1987	001	AREA1TR	4	0	0	0	0	0	6	0	0	0	0	0	0	0	0	0	0
1986	001	AREA1TR	4	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0	0
	1984 TO 1987 AREA 1 TROLL TOTAL		4	0	0	0	0	0	6	0	0	0	0	0	0	3	0	0	0
1986	003	AREA3TR	4	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0
	1984 TO 1987 AREA 3 TROLL TOTAL		4	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0

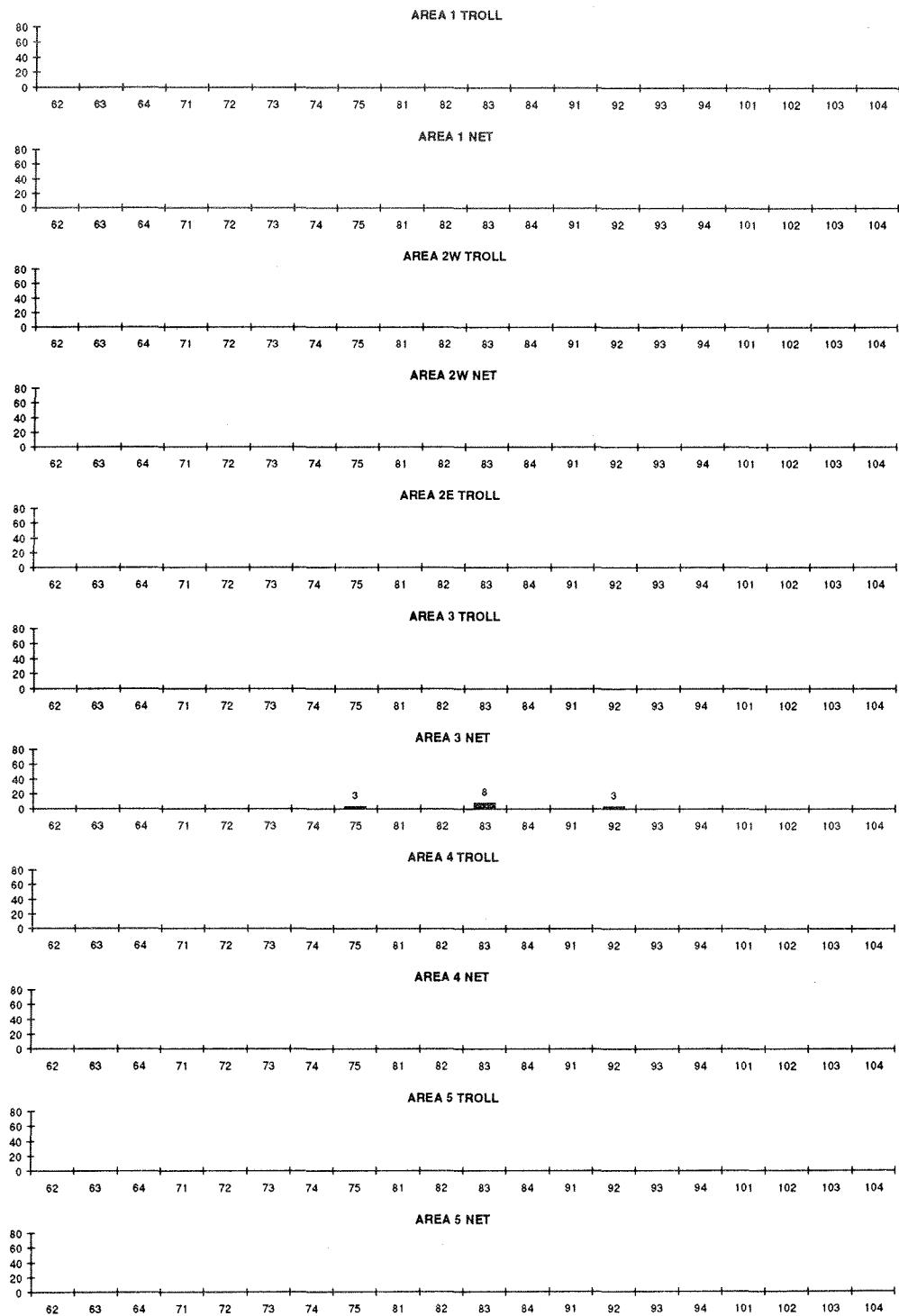
Estimated Adjusted CWT weekly recoveries of age 4 coho tagged in the Kincolith River tag group. 1984 to 1987 brood years, 1988 to 1991 recovery years.



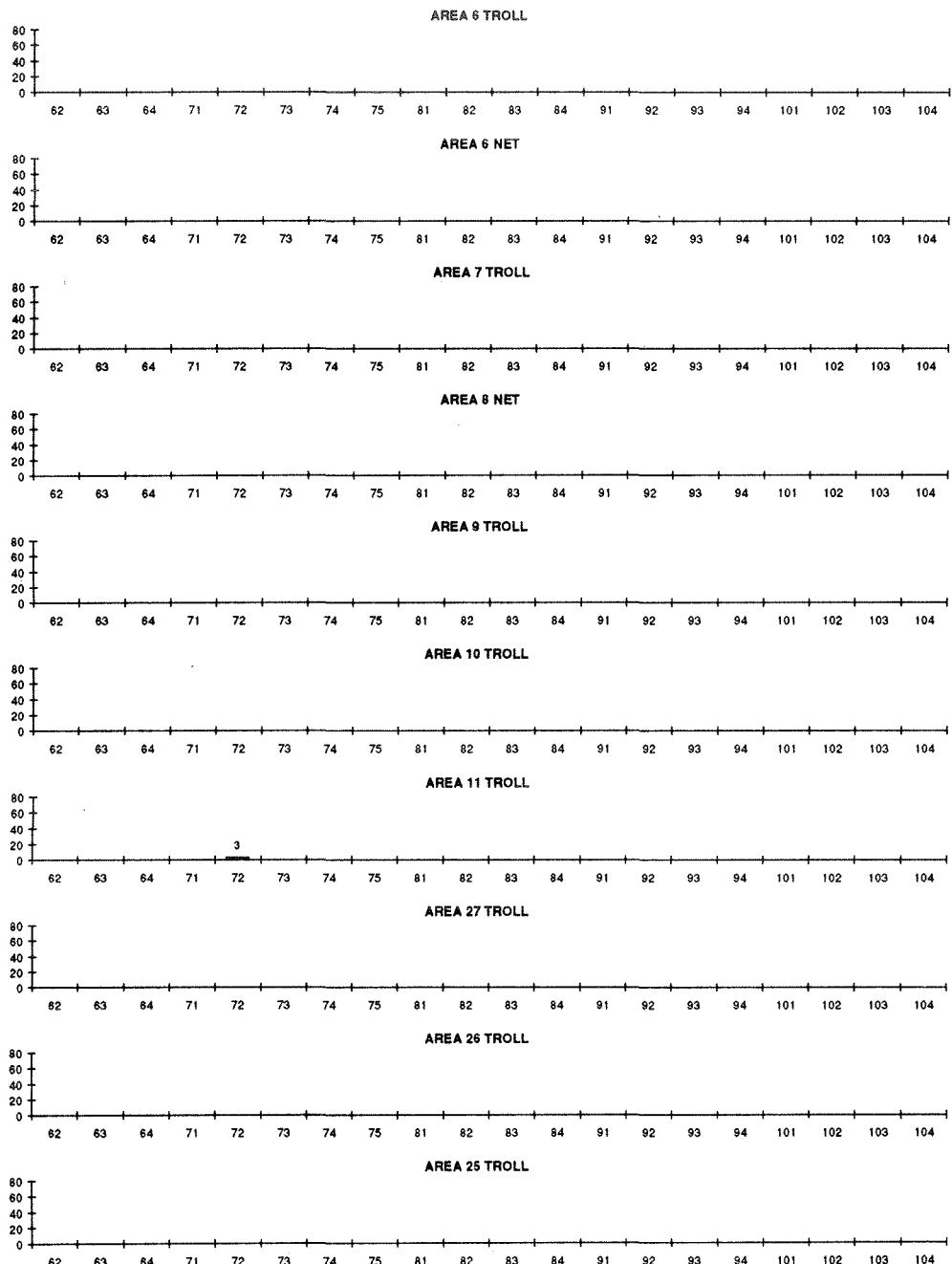
Estimated Adjusted CWT weekly recoveries of age 3 coho tagged in the Lachmack River tag group. 1989 brood year, 1992 recovery year.



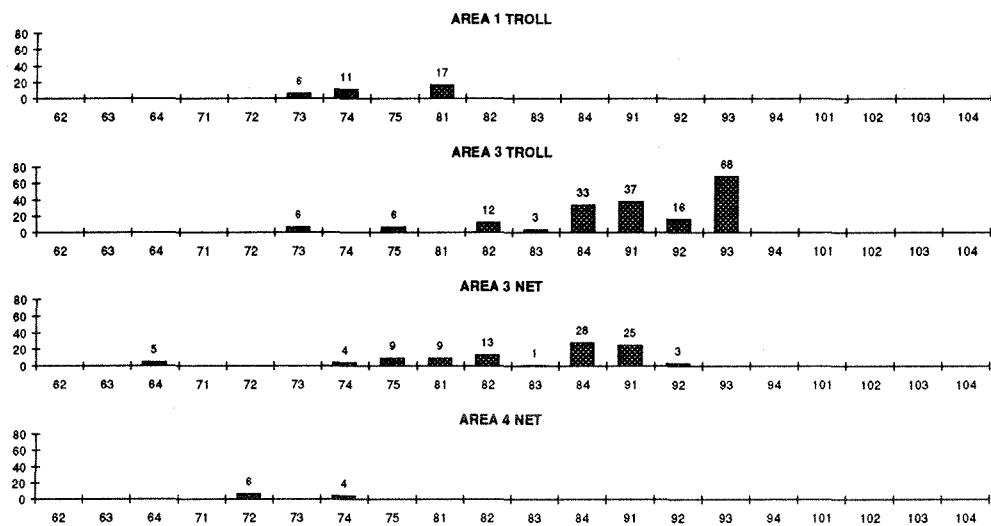
Estimated Adjusted CWT weekly recoveries of age 3 coho tagged in the Lachmack River tag group. 1989 brood year, 1992 recovery year.



Estimated Adjusted CWT weekly recoveries of age 3 coho tagged in the Lachmack River tag group. 1989 brood year, 1992 recovery year.

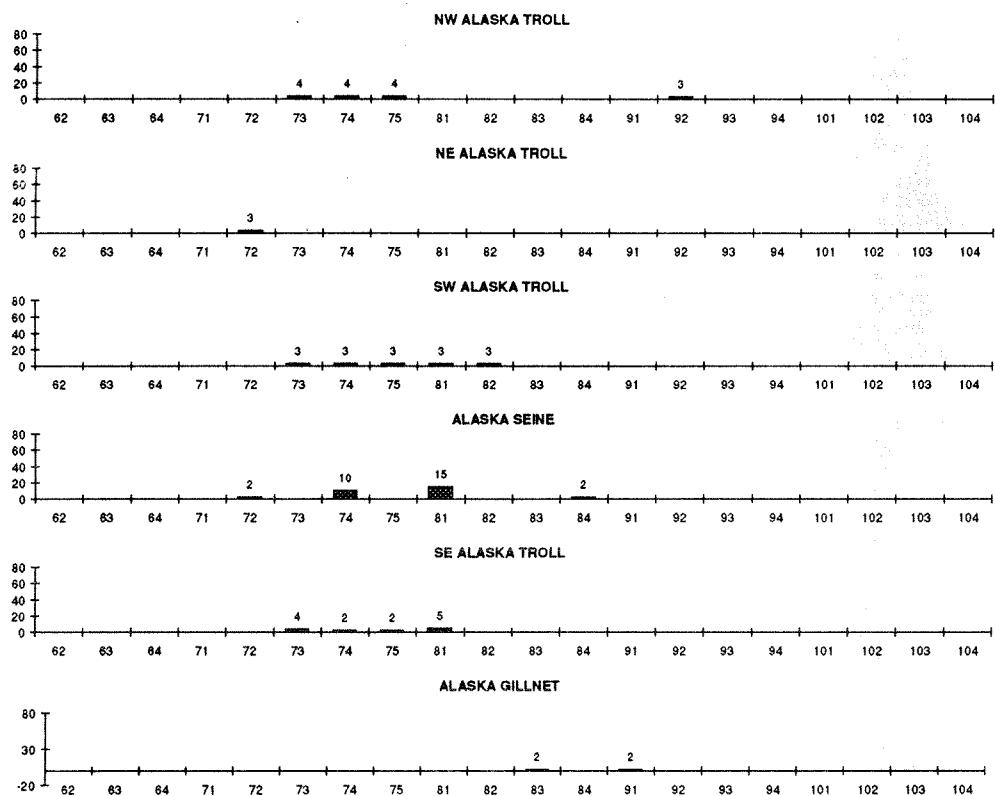


Estimated Adjusted CWT weekly recoveries of age 4 coho tagged in the Lachmack River tag group. 1989 brood year, 1993 recovery year.

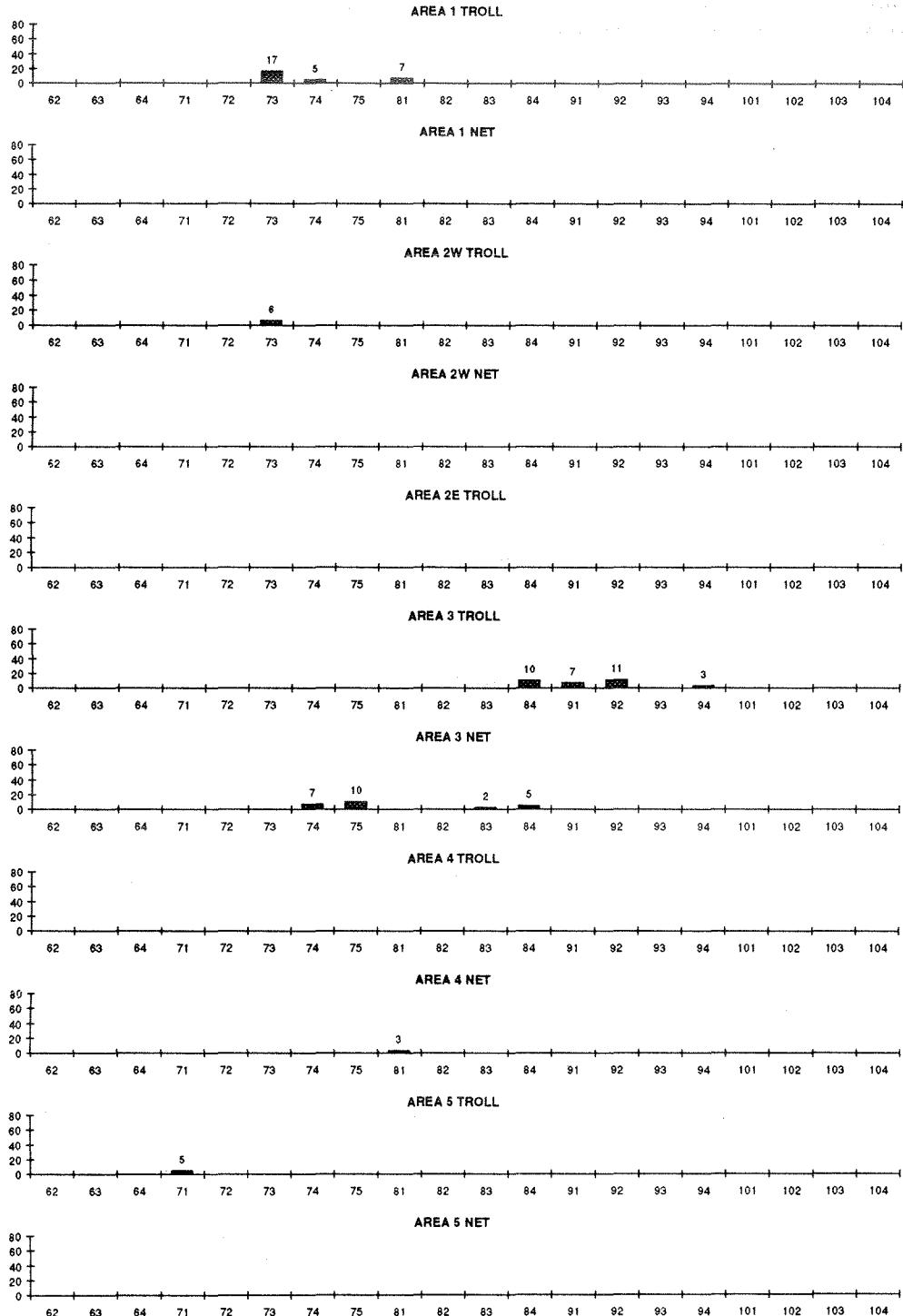


Estimated Adjusted CWT weekly recoveries of age 3 and age 4 coho tagged at Lachmack River - Work Channel; 1988 brood year, 1991 and 1992 recovery years.

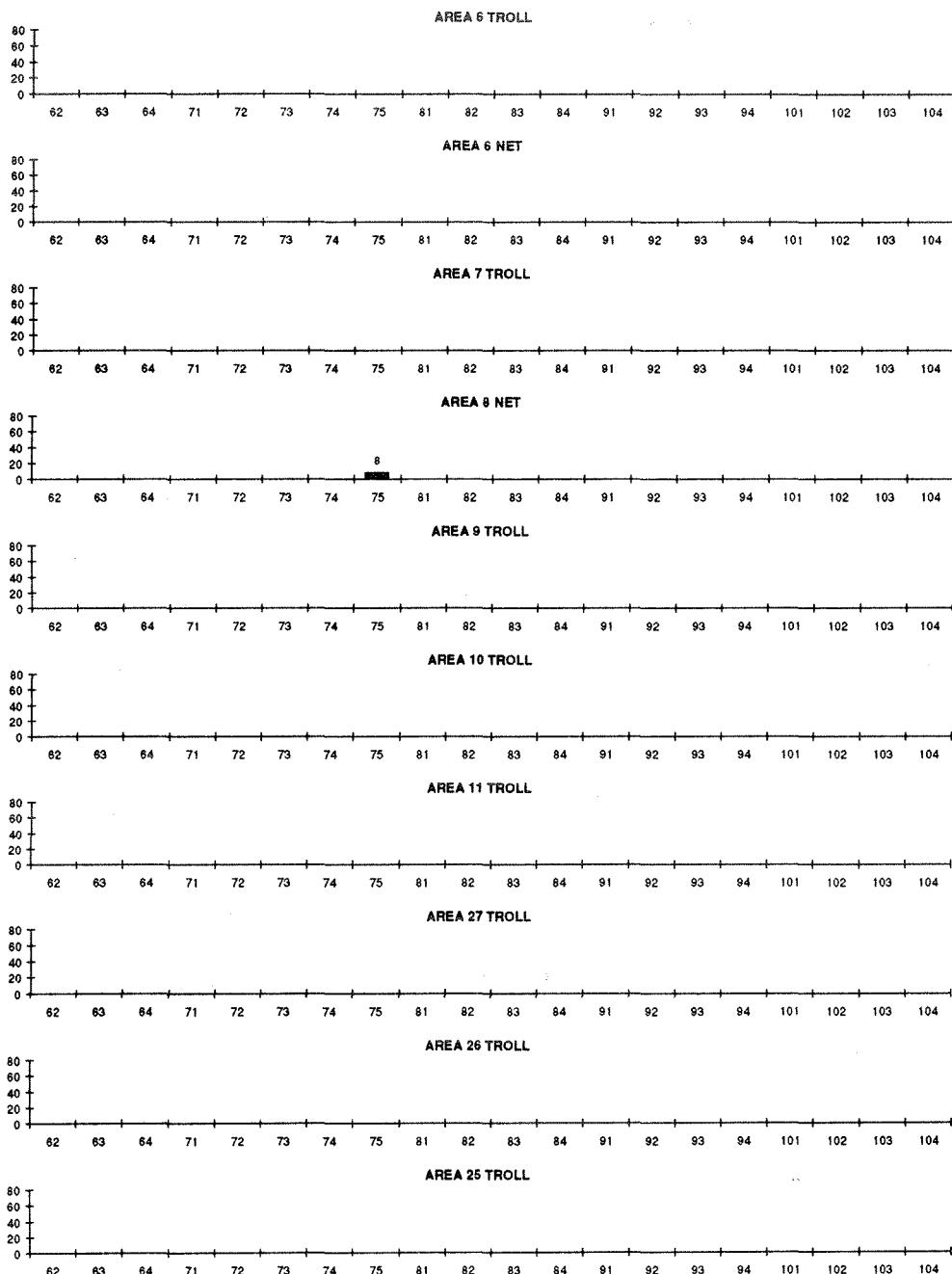
Estimated Adjusted CWT weekly recoveries of age 3 coho tagged in the Lachmack River tag group. 1988 brood year, 1991 recovery year.



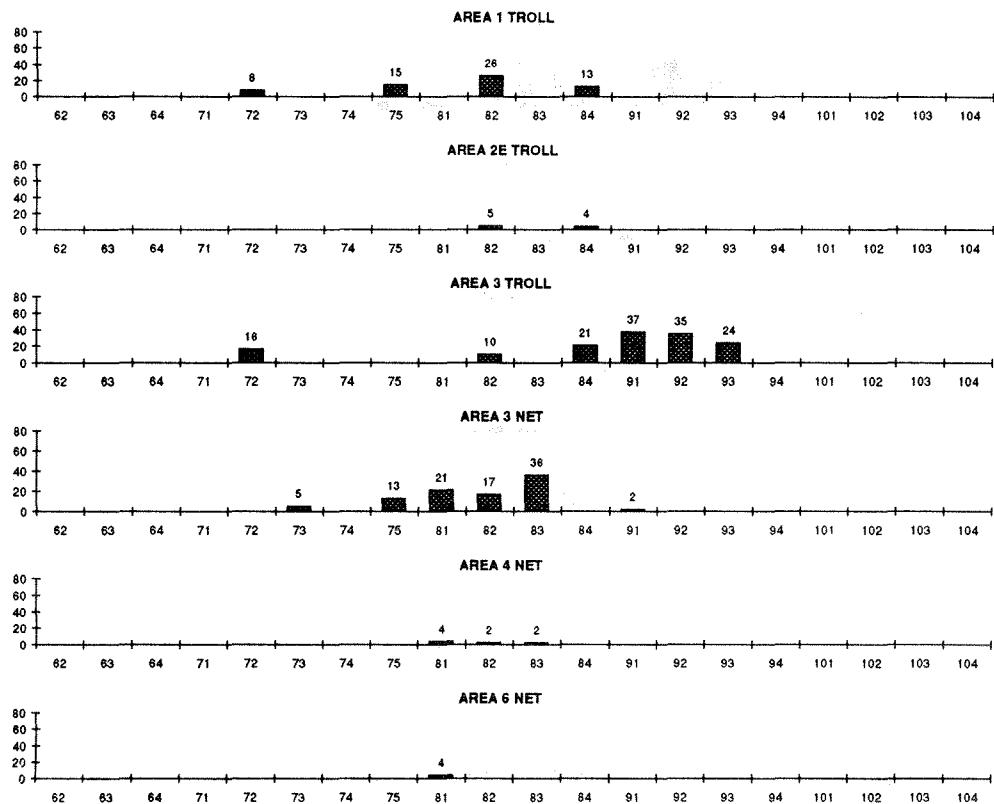
Estimated Adjusted CWT weekly recoveries of age 3 coho tagged in the Lachmack River tag group. 1988 brood year, 1991 recovery year.



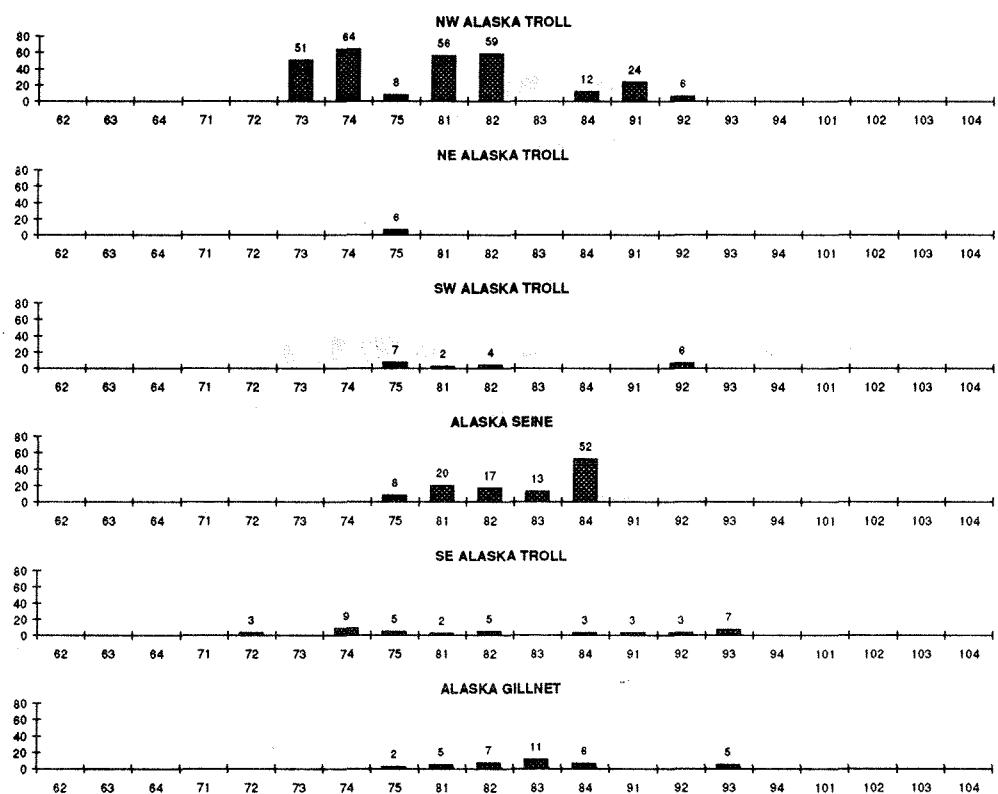
Estimated Adjusted CWT weekly recoveries of age 3 coho tagged in the Lachmack River tag group. 1988 brood year, 1991 recovery year.



Estimated Adjusted CWT weekly recoveries of age 4 coho tagged in the Lachmack River tag group. 1988 brood year, 1992 recovery year.

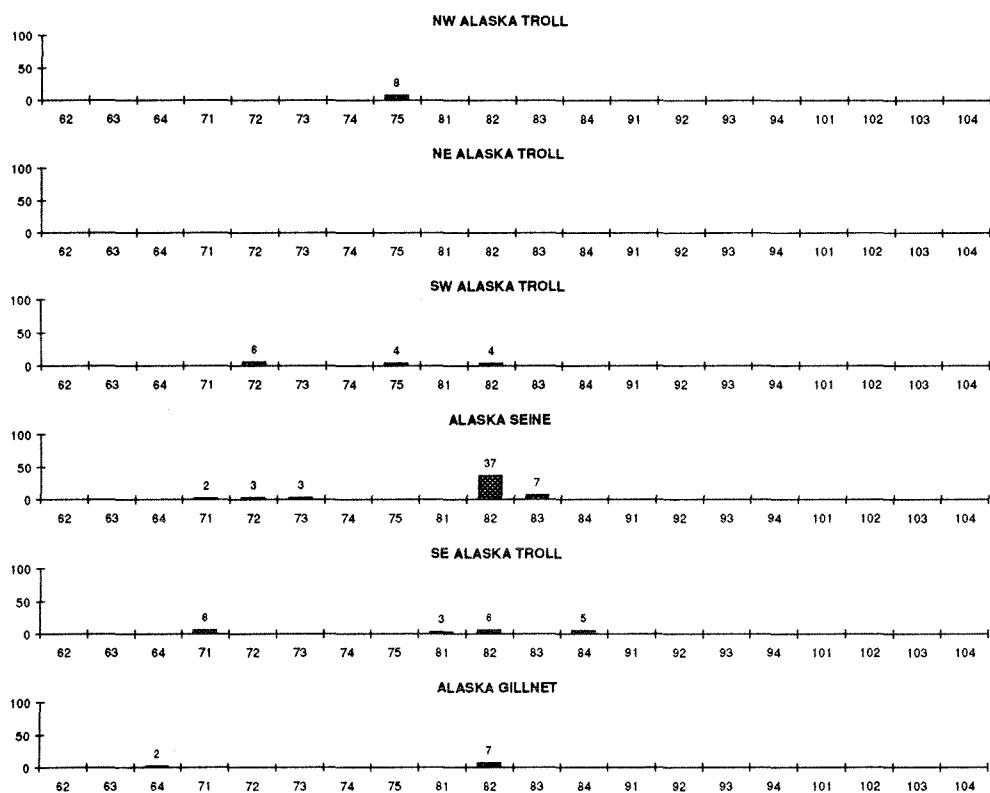


Estimated Adjusted CWT weekly recoveries of age 4 coho tagged in the Lachmack River tag group. 1988 brood year, 1992 recovery year.

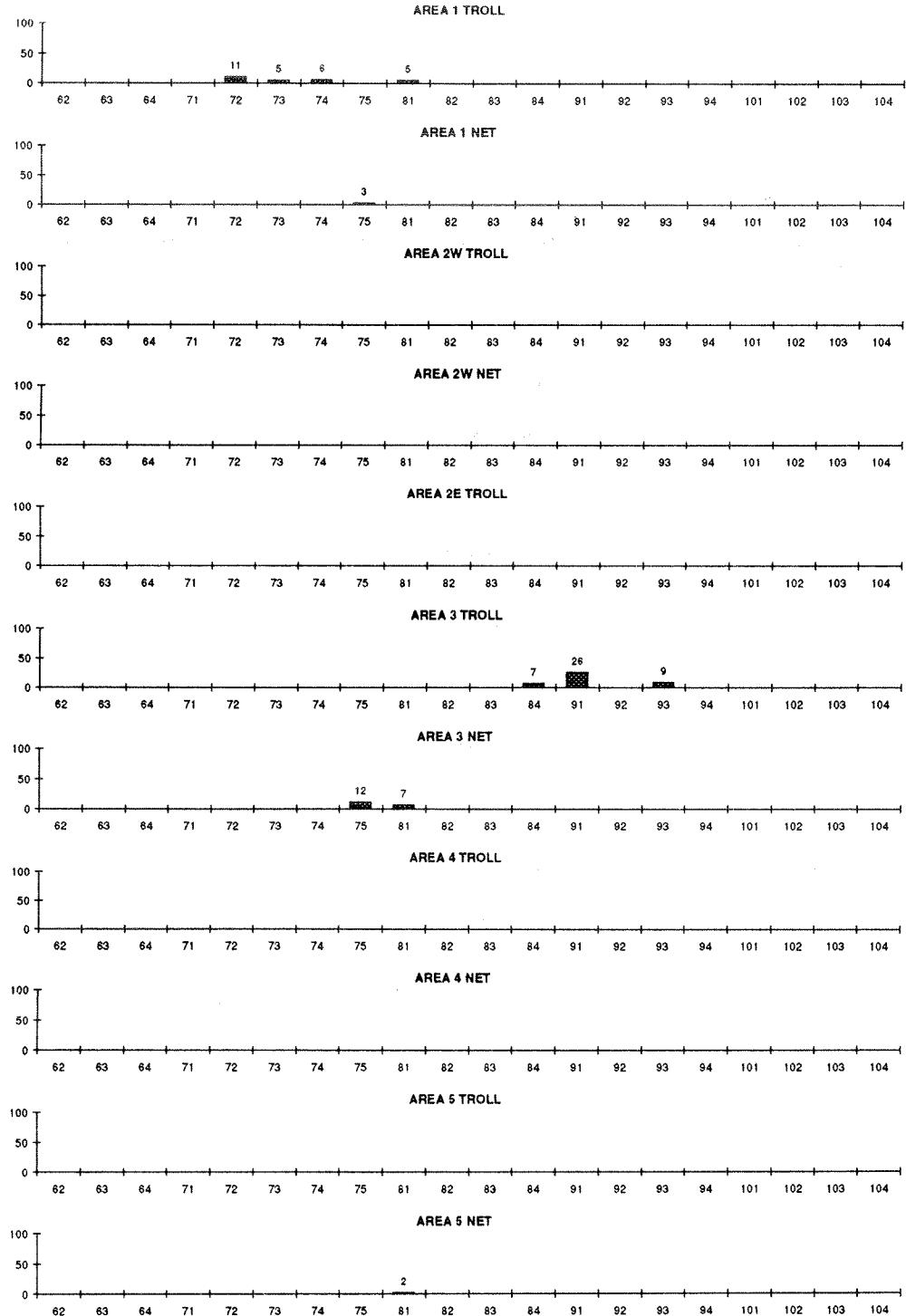


Estimated Adjusted CWT weekly recoveries of age 3 and age 4 coho tagged at Lachmack River - Work Channel; 1987 brood year, 1990 and 1991 recovery years.

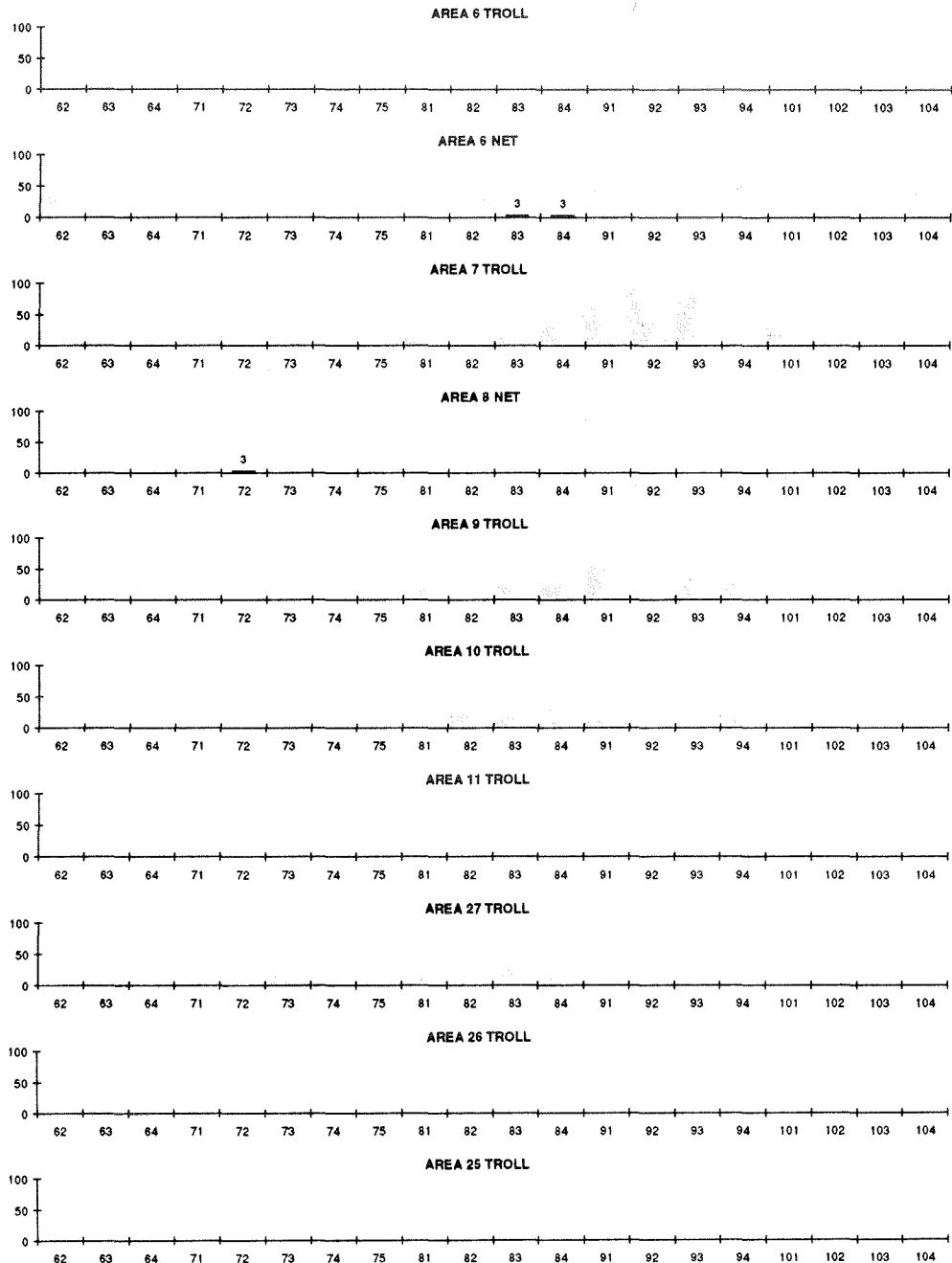
Estimated Adjusted CWT weekly recoveries of age 3 coho tagged in the Lachmack River tag group. 1987 brood year, 1990 recovery year.



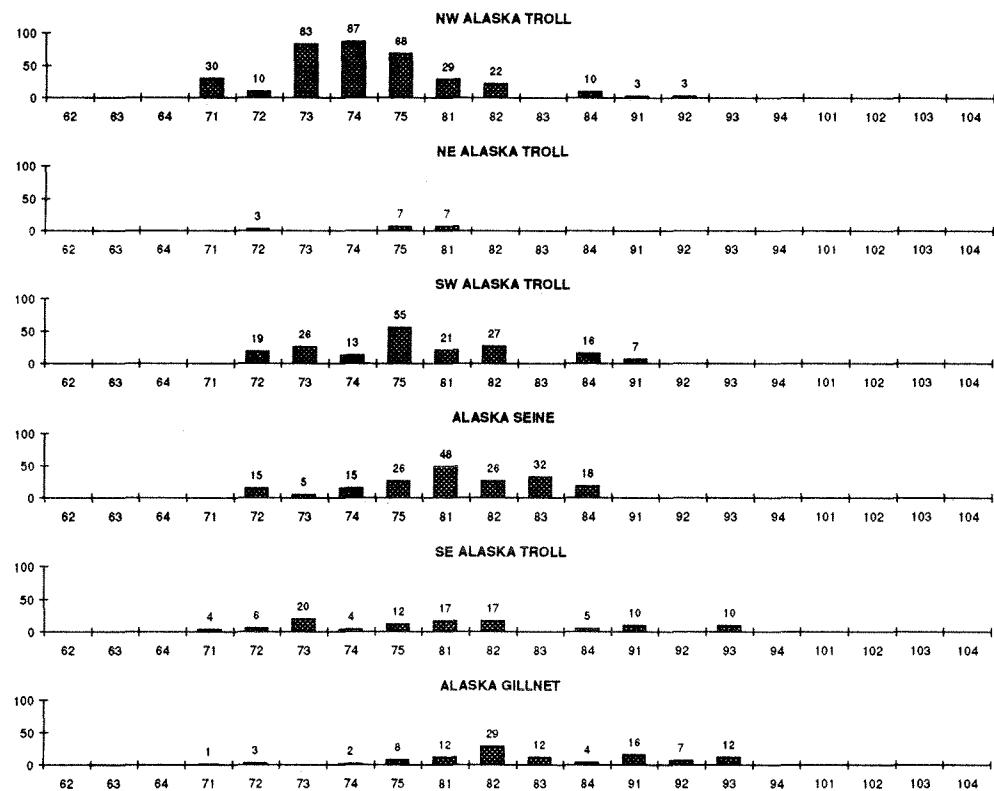
Estimated Adjusted CWT weekly recoveries of age 3 coho tagged in the Lachmack River tag group. 1987 brood year, 1990 recovery year.



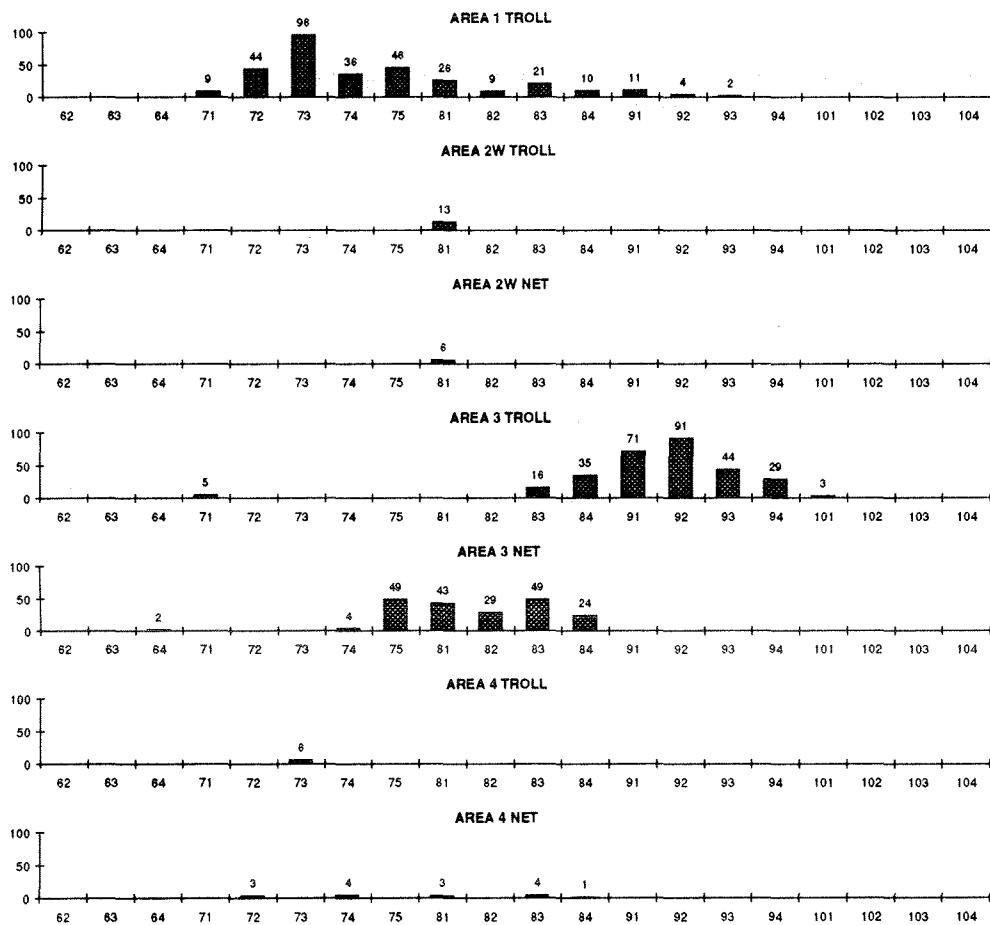
Estimated Adjusted CWT weekly recoveries of age 3 coho tagged in the Lachmack River tag group. 1987 brood year, 1990 recovery year.



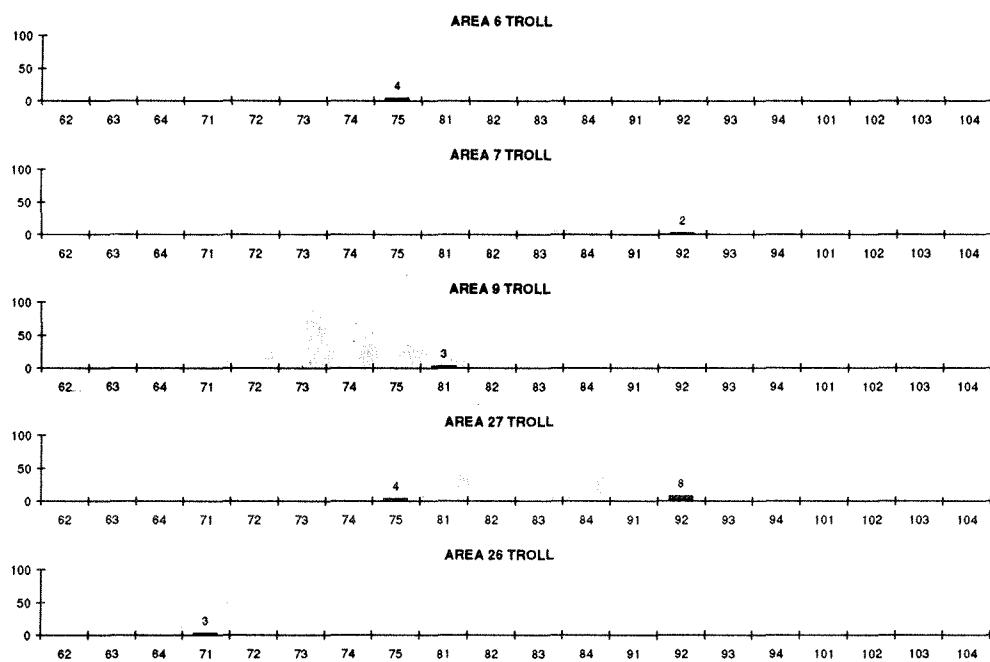
Estimated Adjusted CWT weekly recoveries of age 4 coho tagged in the Lachmack River tag group. 1987 brood year, 1991 recovery year.



Estimated Adjusted CWT weekly recoveries of age 4 coho tagged in the Lachmack River tag group. 1987 brood year, 1991 recovery year.



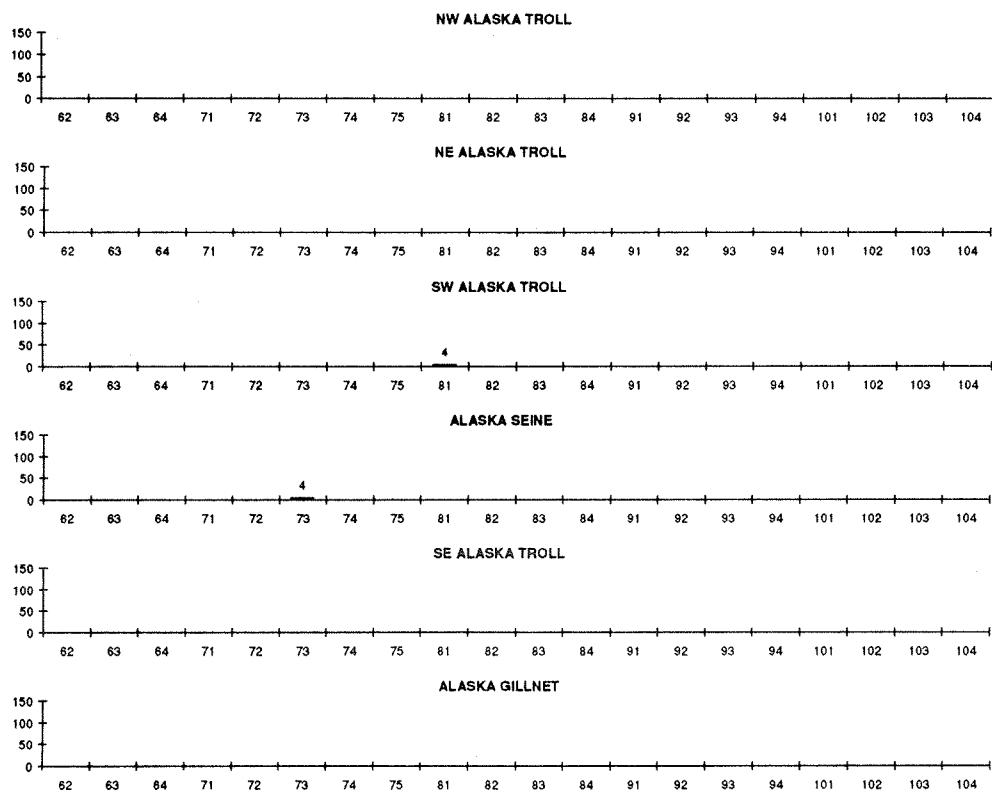
Estimated Adjusted CWT weekly recoveries of age 4 coho tagged in the Lachmack River tag group. 1987 brood year, 1991 recovery year.



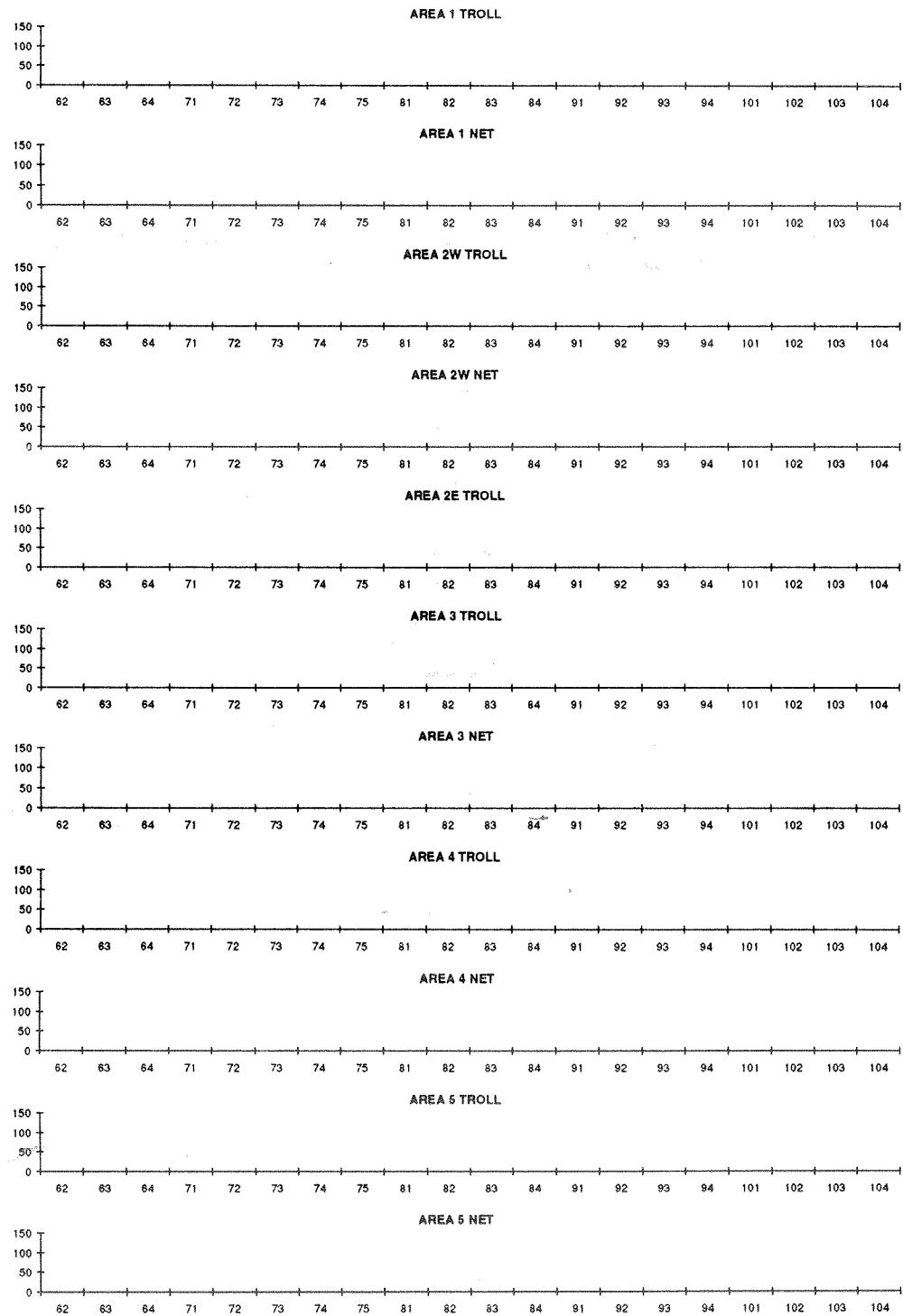
Estimated Adjusted CWT weekly recoveries of age 3 and age 4 coho tagged at Lachmack River - Work Channel; 1986 brood year, 1989 and 1990 recovery years.

Estimated Adjusted CWT weekly recoveries of age 3 and age 4 coho tagged at Lachmack River - Work Channel; 1986 brood year, 1989 and 1990 recovery years.

Estimated Adjusted CWT weekly recoveries of age 3 coho tagged in the Lachmack River tag group. 1986 brood year, 1989 recovery year.



Estimated Adjusted CWT weekly recoveries of age 3 coho tagged in the Lachmack River tag group. 1986 brood year, 1989 recovery year.



GROUP

130
120
110
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AREA 3 TROLL

AREA 3 NET

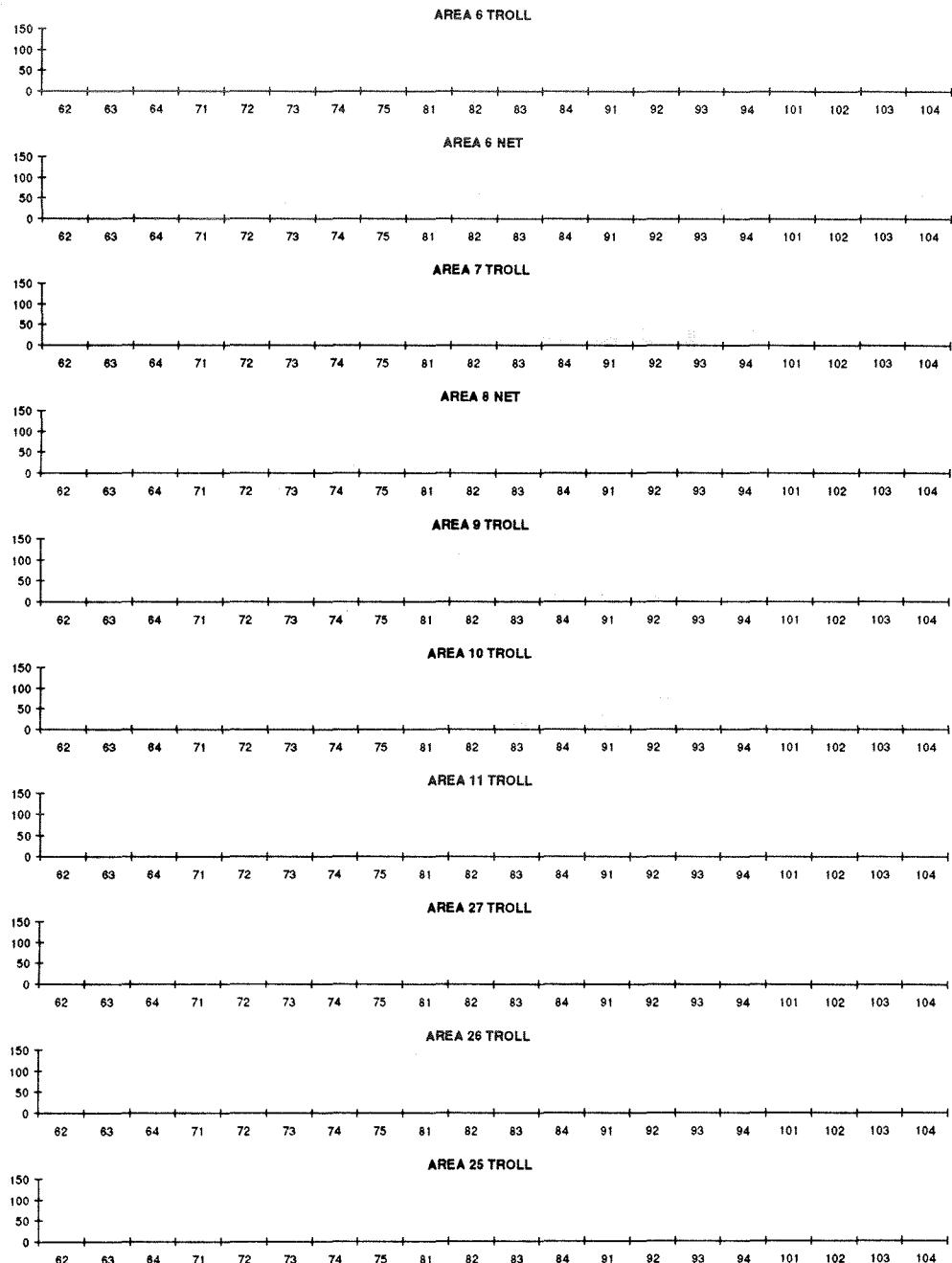
AREA 4 TROLL

AREA 4 NET

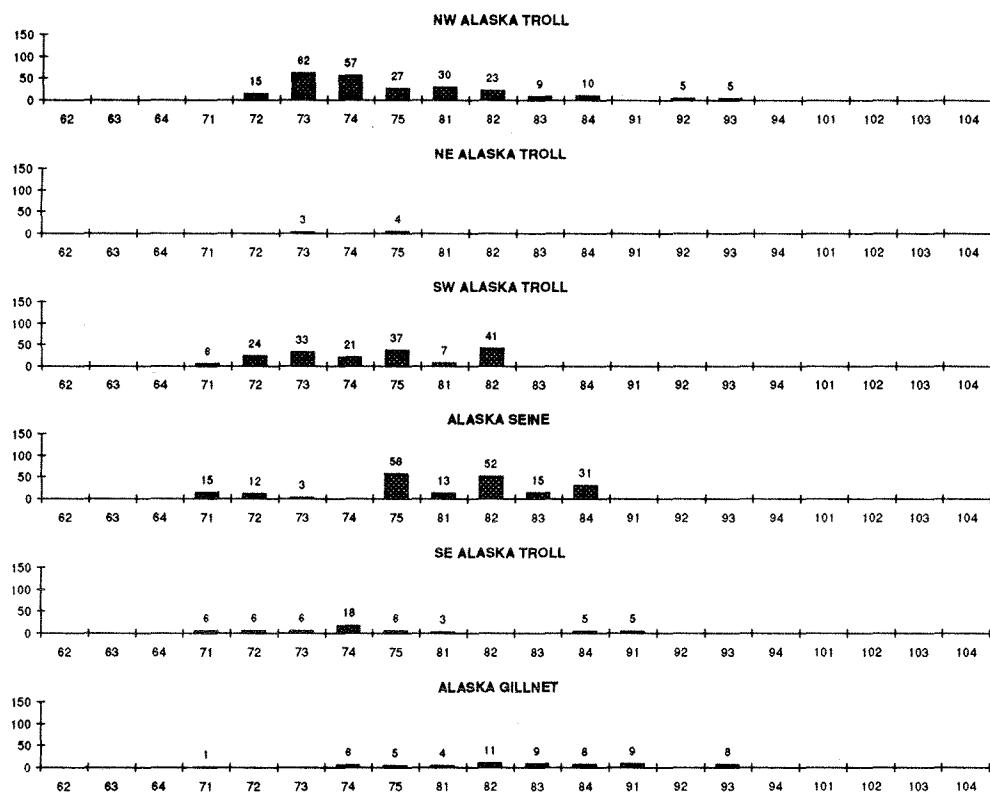
AREA 5 TROLL

AREA 6 NET

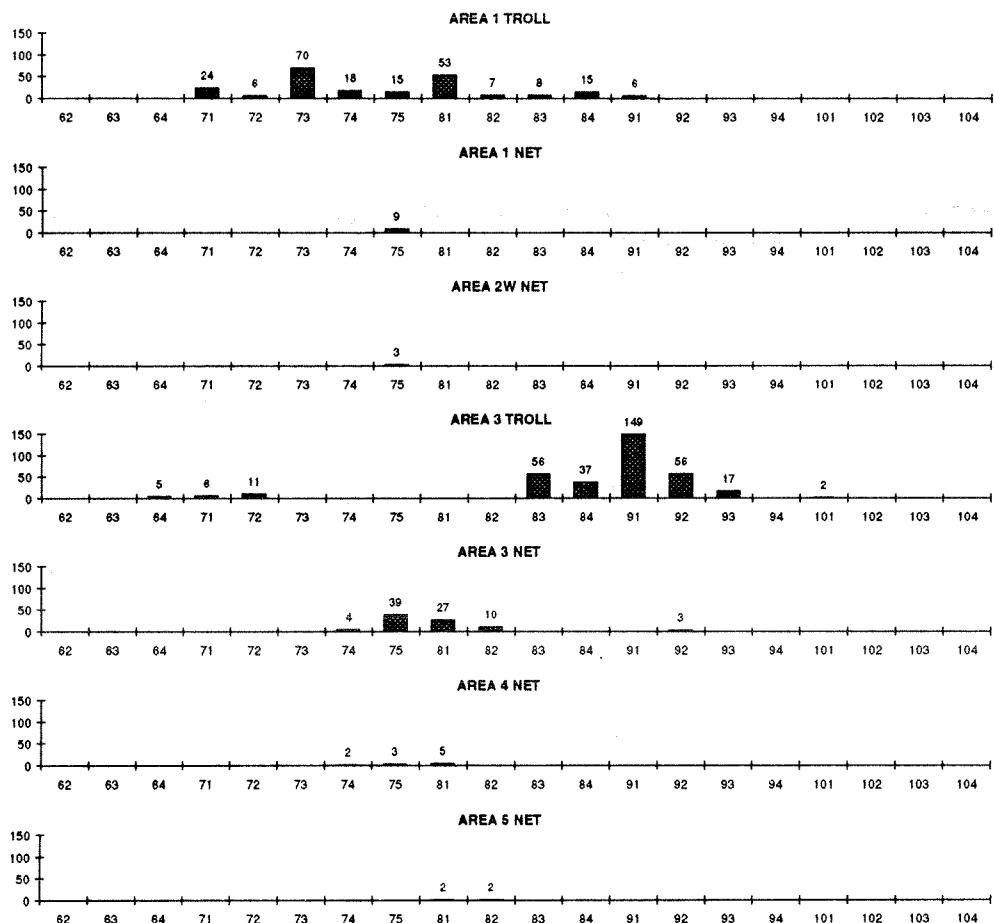
Estimated Adjusted CWT weekly recoveries of age 3 coho tagged in the Lachmack River tag group. 1986 brood year, 1989 recovery year.



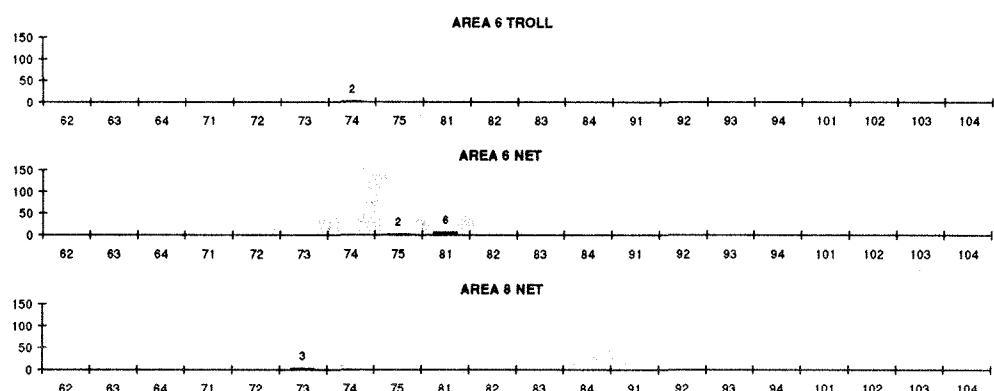
Estimated Adjusted CWT weekly recoveries of age 4 coho tagged in the Lachmack River tag group. 1986 brood year, 1990 recovery year.



Estimated Adjusted CWT weekly recoveries of age 4 coho tagged in the Lachmack River tag group. 1986 brood year, 1990 recovery year.

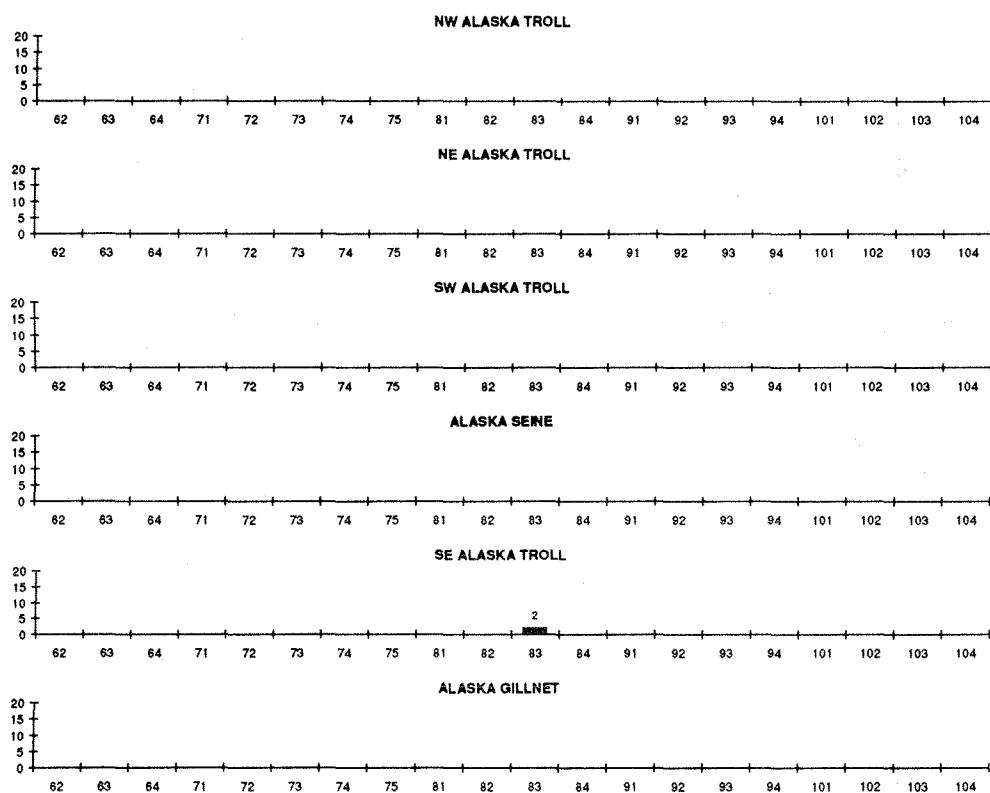


Estimated Adjusted CWT weekly recoveries of age 4 coho tagged in the Lachmack River tag group. 1986 brood year, 1990 recovery year.

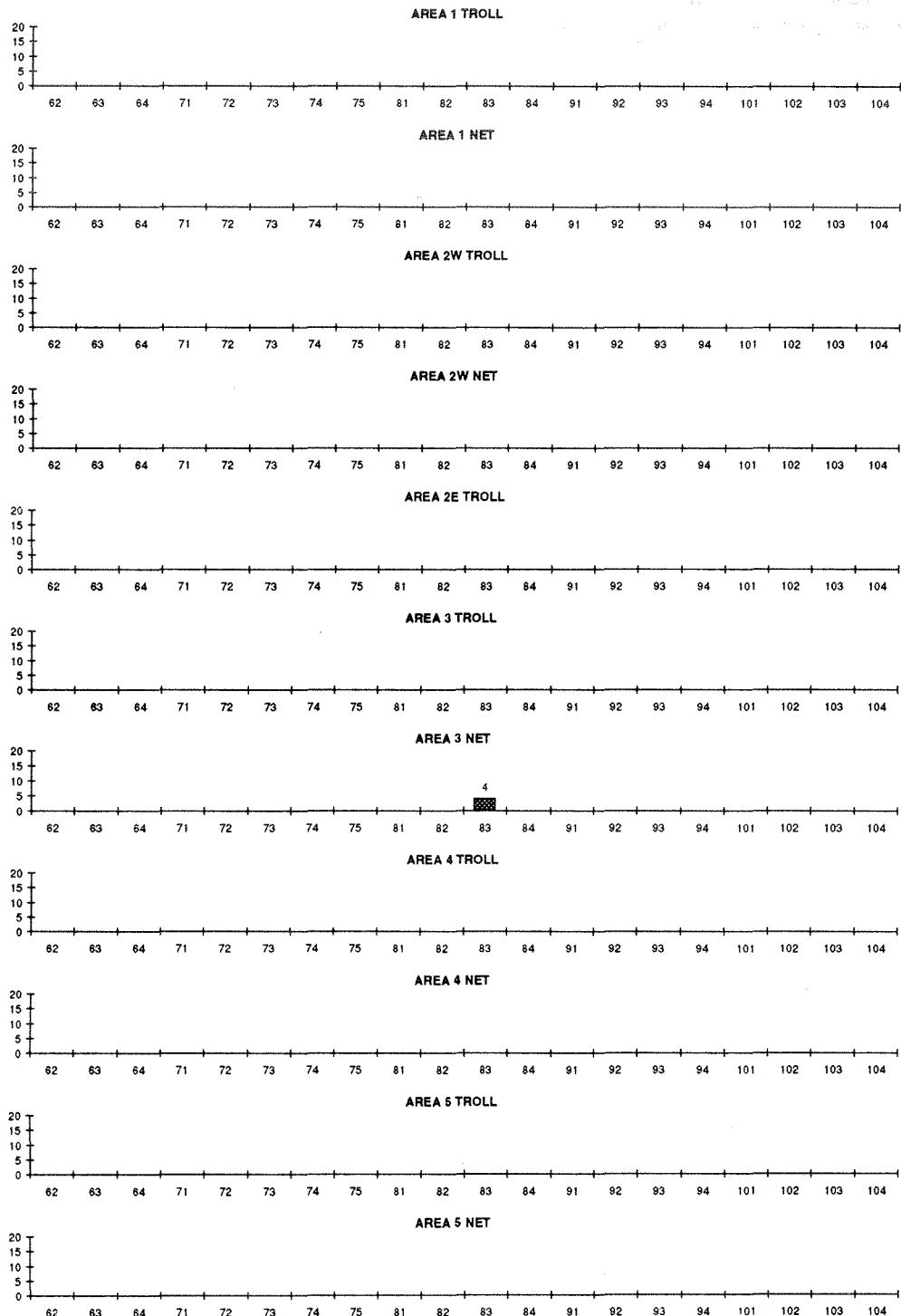


Estimated Adjusted CWT weekly recoveries of age 3 and age 4 coho tagged at Lachmack River - Work Channel; 1985 brood year, 1988 and 1989 recovery years.

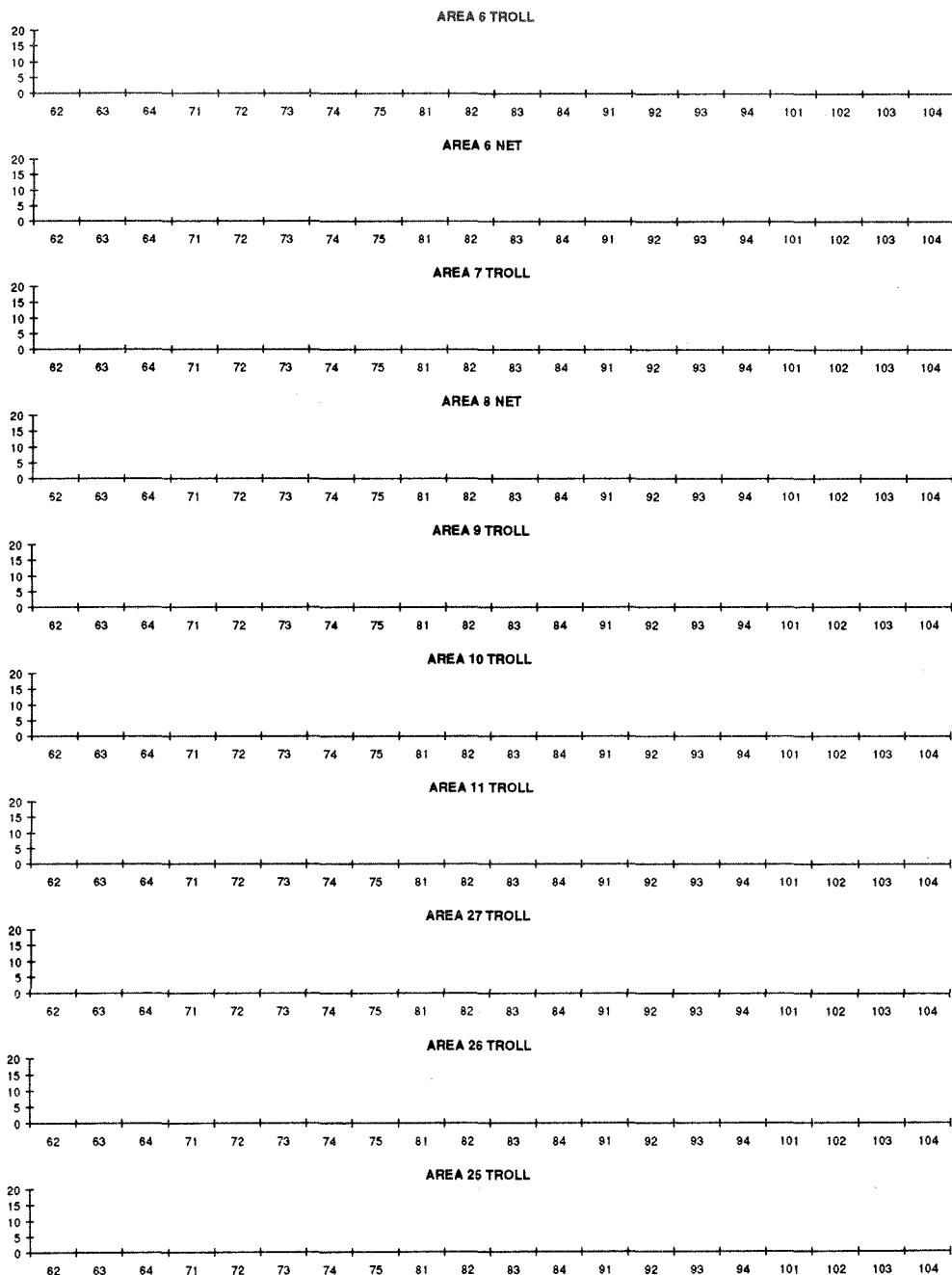
Estimated Adjusted CWT weekly recoveries of age 3 coho tagged in the Lachmack River tag group. 1985 brood year, 1988 recovery year.



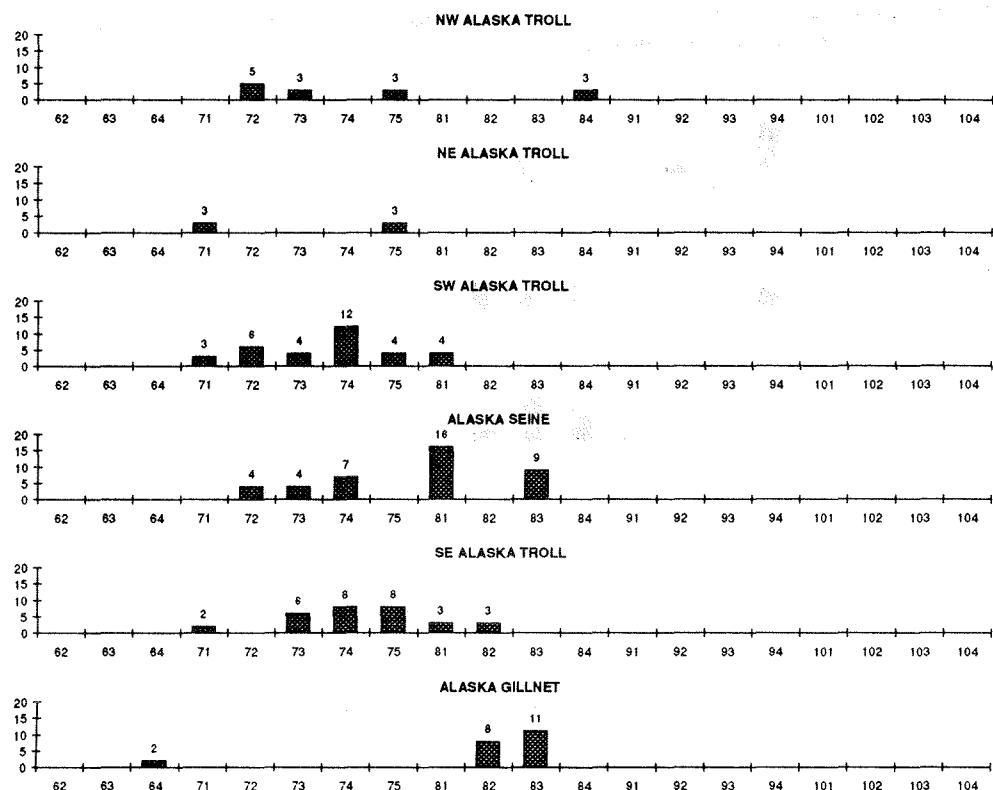
Estimated Adjusted CWT weekly recoveries of age 3 coho tagged in the Lachmack River tag group. 1985 brood year, 1988 recovery year.



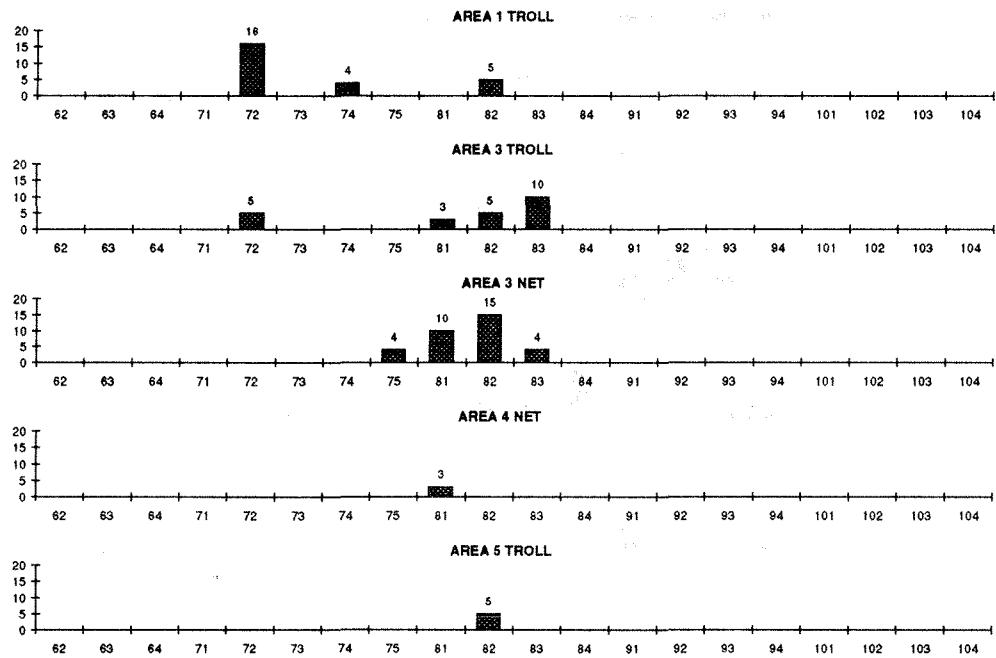
Estimated Adjusted CWT weekly recoveries of age 3 coho tagged in the Lachmack River tag group. 1985 brood year, 1988 recovery year.



Estimated Adjusted CWT weekly recoveries of age 4 coho tagged in the Lachmack River tag group. 1985 brood year, 1989 recovery year.

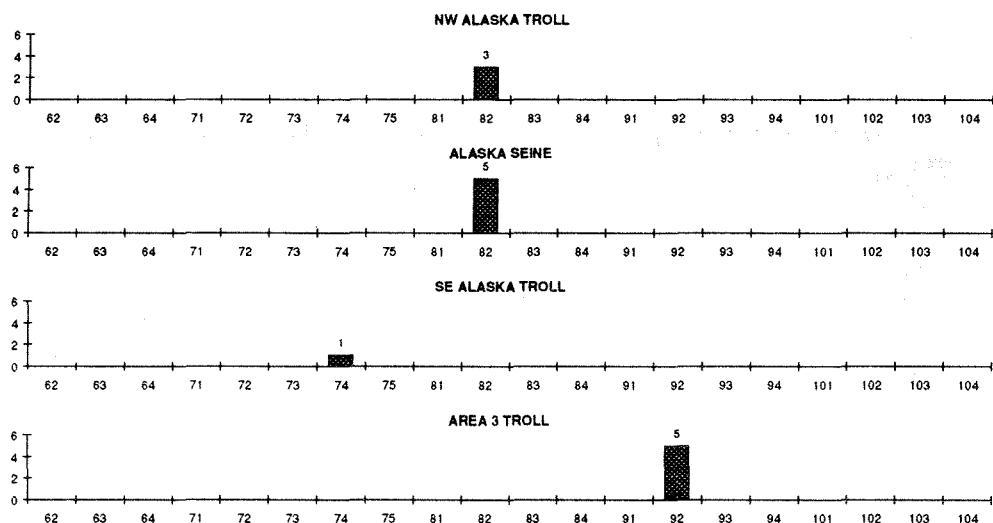


Estimated Adjusted CWT weekly recoveries of age 4 coho tagged in the Lachmack River tag group. 1985 brood year, 1989 recovery year.



Estimated Adjusted CWT weekly recoveries of age 4 coho tagged at Lachmack River - Work Channel; 1984 brood year, 1988 recovery year.

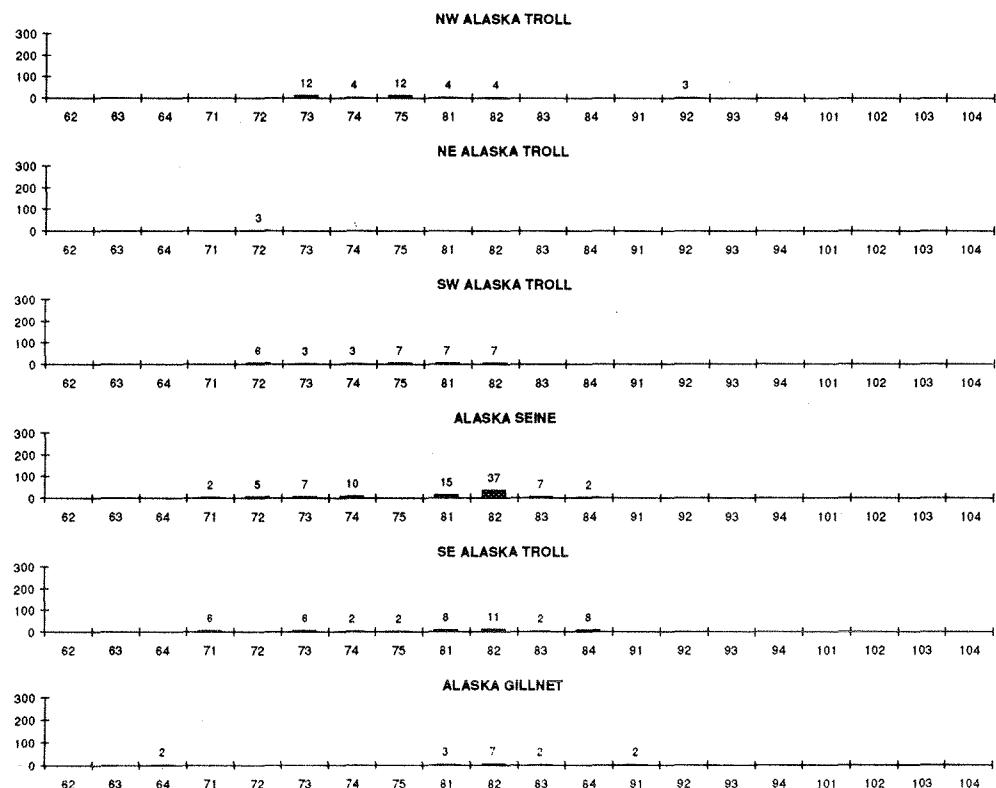
Estimated Adjusted CWT weekly recoveries of age 4 coho tagged in the Lachmack River tag group. 1984 brood year, 1988 recovery year.



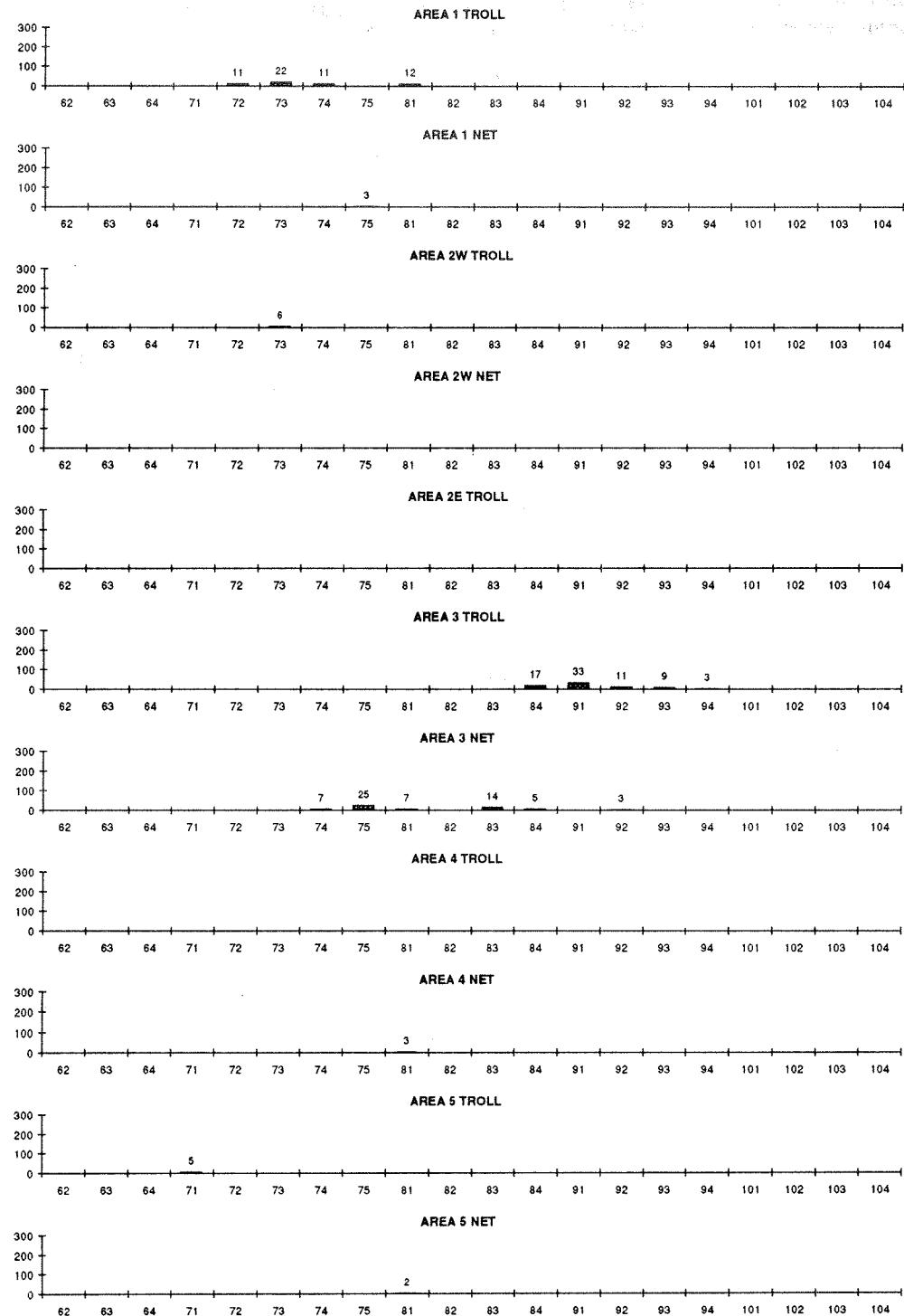
Estimated Adjusted CWT weekly recoveries of age 3 coho tagged in the Lachmack River tag group. 1985 to 1989 brood years, 1988 to 1992 recovery years.																							
BROOD YEAR	STATISTICAL AREA	RECOVERY AREA / GEARTYPE	AGE CLASS	STATISTICAL WEEK																			
				62	63	64	71	72	73	74	75	81	82	83	84	91	92	93	94	101	102	103	104
1989	154, 156, NW	AKNWTR	3	0	0	0	0	0	8	0	0	4	4	0	0	0	0	0	0	0	0	0	0
1988	113	AKNWTR	3	0	0	0	0	0	4	4	4	0	0	0	0	0	3	0	0	0	0	0	0
1987	113	AKNWTR	3	0	0	0	0	0	0	0	8	0	0	0	0	0	0	0	0	0	0	0	0
1986	No data	AKNWTR	3																				
1985	No data	AKNWTR	3																				
1985 TO 1989 NW ALASKA TROLL TOTAL				3	0	0	0	0	0	12	4	12	4	4	0	0	0	3	0	0	0	0	0
1989	No data	AKNETR	3																				
1988	109	AKNETR	3	0	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1987	No data	AKNETR	3																				
1986	No data	AKNETR	3																				
1985	No data	AKNETR	3																				
1985 TO 1989 NE ALASKA TROLL TOTAL				3	0	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1989	No data	AKSWTR	3																				
1988	103, 104, SW	AKSWTR	3	0	0	0	0	0	3	3	3	3	3	0	0	0	0	0	0	0	0	0	0
1987	104, SW	AKSWTR	3	0	0	0	0	6	0	0	4	0	4	0	0	0	0	0	0	0	0	0	0
1986	104	AKSWTR	3	0	0	0	0	0	0	0	0	4	0	0	0	0	0	0	0	0	0	0	0
1985	No data	AKSWTR	3																				
1985 TO 1989 SW ALASKA TROLL TOTAL				3	0	0	0	0	6	3	3	7	7	7	0	0	0	0	0	0	0	0	0
1989	No data	AKSN	3																				
1988	101, 102, 104	AKSN	3	0	0	0	0	2	0	10	0	15	0	0	2	0	0	0	0	0	0	0	0
1987	101, 104, 112	AKSN	3	0	0	0	2	3	3	0	0	0	37	7	0	0	0	0	0	0	0	0	0
1986	101	AKSN	3	0	0	0	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1985	No data	AKSN	3																				
1985 TO 1989 ALASKA SEINE TOTAL				3	0	0	0	2	5	7	10	0	15	37	7	2	0	0	0	0	0	0	0
1989	101	AKSETR	3	0	0	0	0	0	2	0	0	0	5	0	3	0	0	0	0	0	0	0	0
1988	101, 102	AKSETR	3	0	0	0	0	0	4	2	2	5	0	0	0	0	0	0	0	0	0	0	0
1987	101, 102, 105	AKSETR	3	0	0	0	6	0	0	0	0	3	6	0	5	0	0	0	0	0	0	0	0
1986	No data	AKSETR	3																				
1985	101	AKSETR	3	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0
1985 TO 1989 SE ALASKA TROLL TOTAL				3	0	0	0	6	0	6	2	2	8	11	2	8	0	0	0	0	0	0	0
1989	101	AKGN	3	0	0	0	0	0	0	0	0	0	3	0	0	0	0	0	0	0	0	0	0
1988	101	AKGN	3	0	0	0	0	0	0	0	0	0	0	0	2	0	2	0	0	0	0	0	0
1987	101, 106	AKGN	3	0	0	2	0	0	0	0	0	0	0	7	0	0	0	0	0	0	0	0	0
1986	No data	AKGN	3																				
1985	No data	AKGN	3																				
1985 TO 1989 ALASKA GILLNET TOTAL				3	0	0	2	0	0	0	0	0	3	7	2	0	2	0	0	0	0	0	0

Estimated Adjusted CWT weekly recoveries of age 3 coho tagged in the Lachmack River tag group, 1985 to 1989 brood years, 1988 to 1992 recovery years.

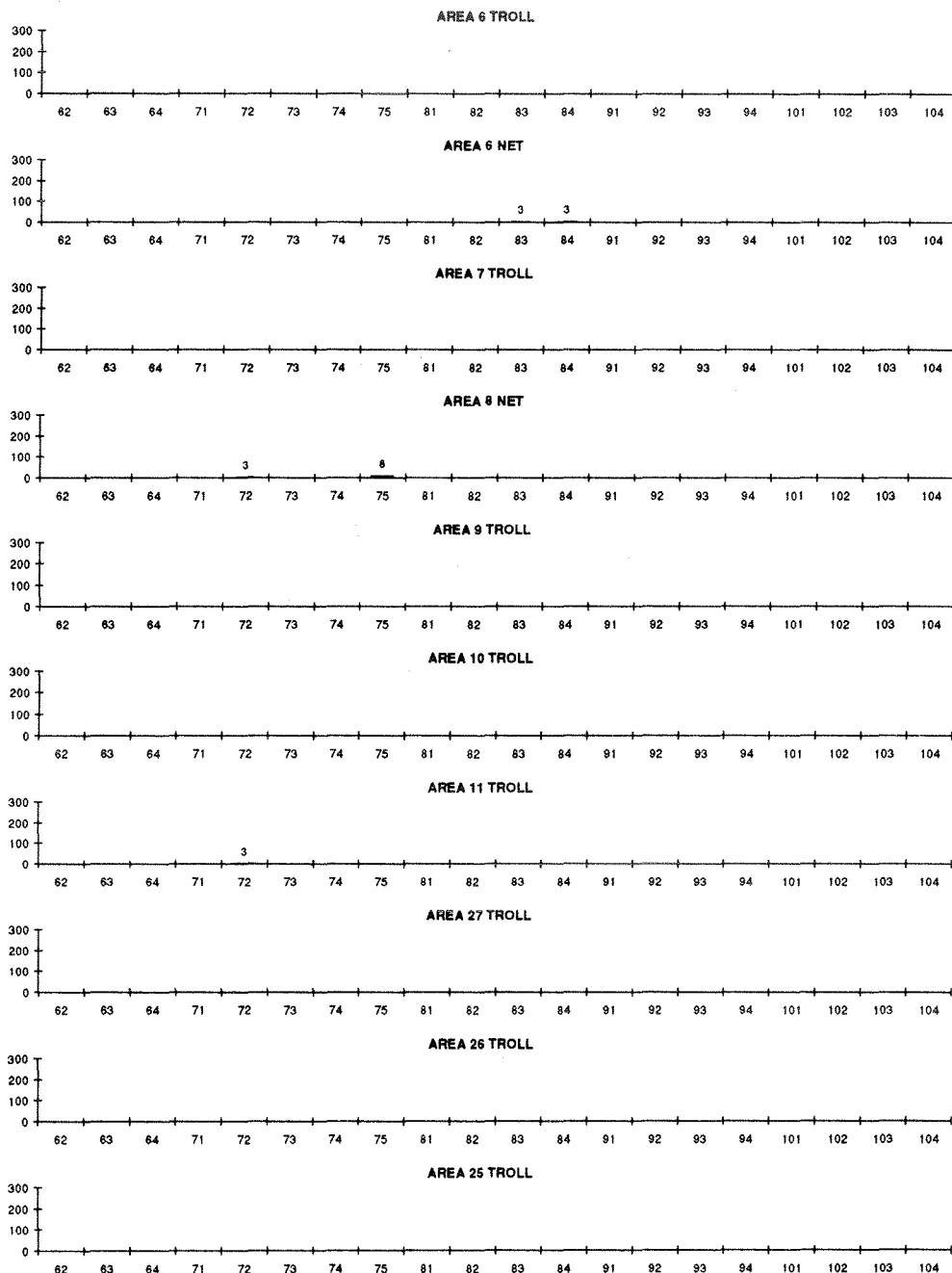
Estimated Adjusted CWT weekly recoveries of age 3 coho tagged in the Lachmack River tag group. 1985 to 1989 brood years, 1988 to 1992 recovery years.



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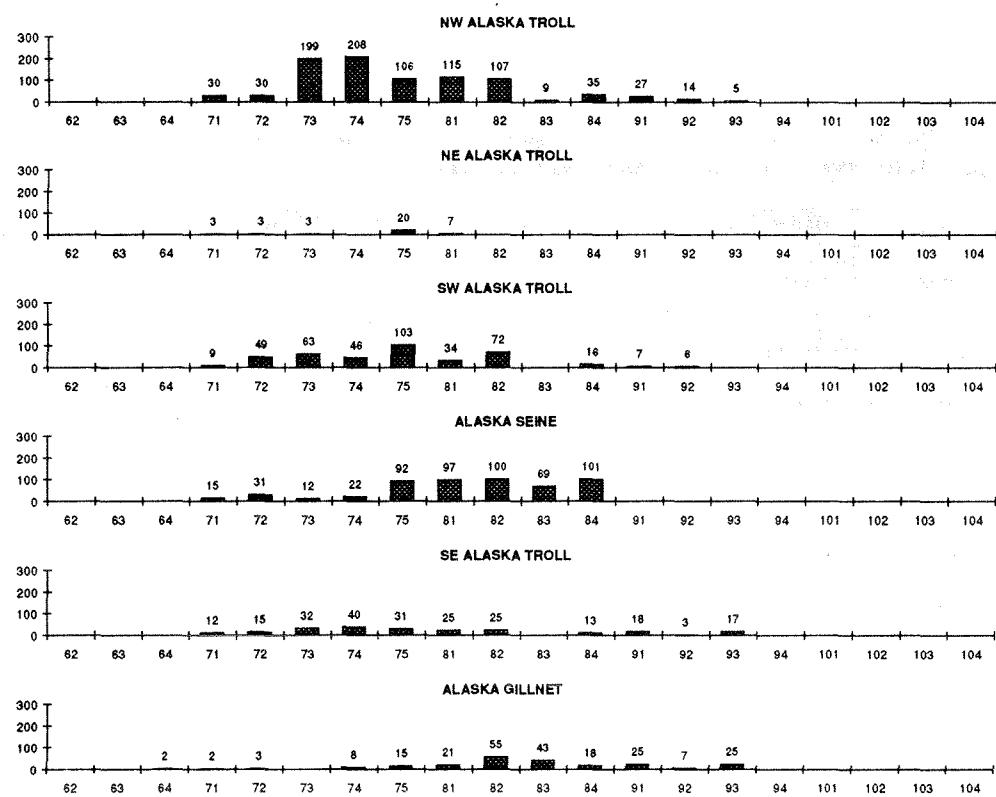
Estimated Adjusted CWT weekly recoveries of age 3 coho tagged in the Lachmack River tag group. 1985 to 1989 brood years, 1988 to 1992 recovery years.



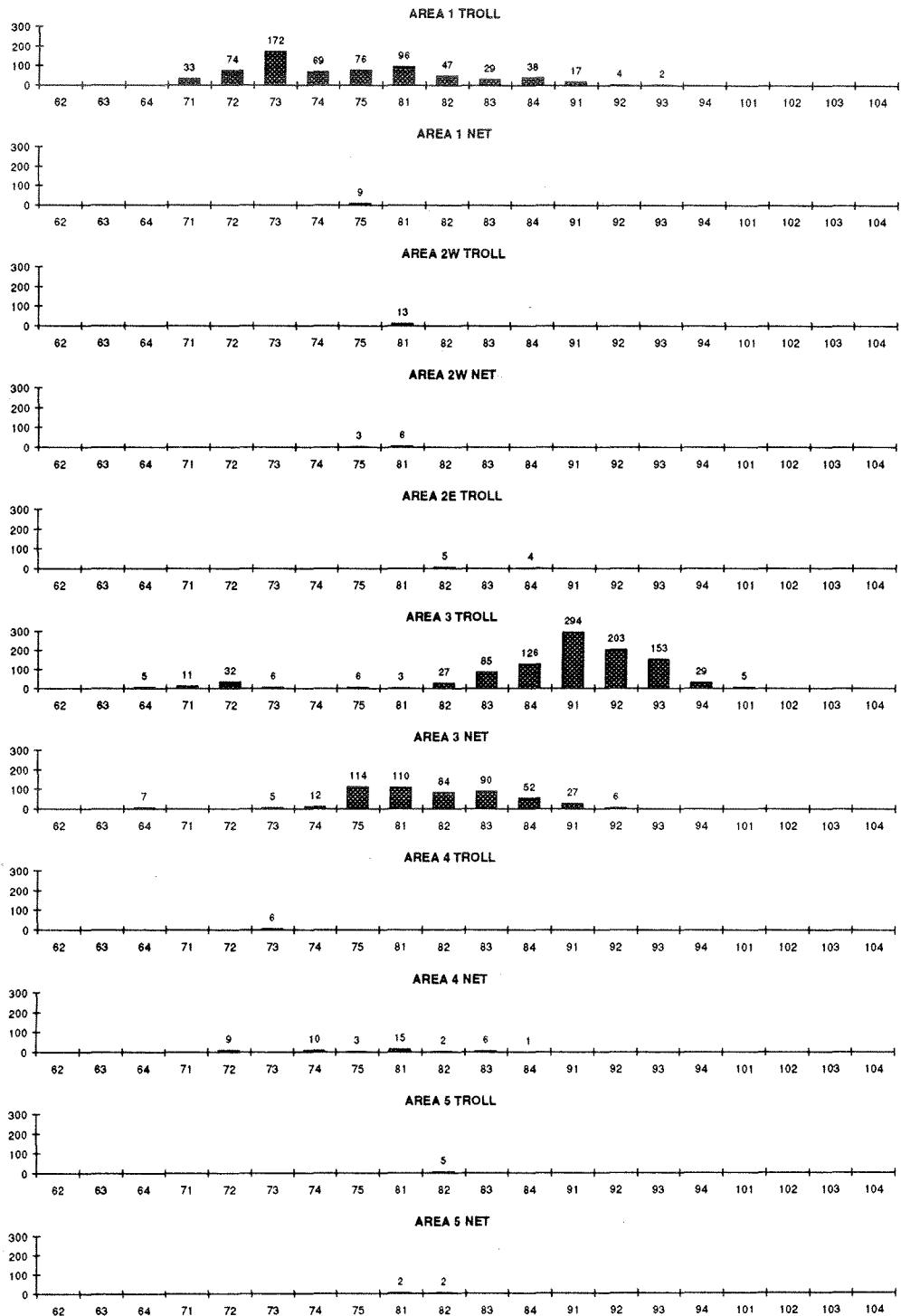
Estimated Adjusted CWT weekly recoveries of age 4 coho tagged in the Lachmack River tag group. 1984 to 1989 brood years, 1988 to 1993 recovery years.																			
BROOD YEAR	STATISTICAL AREA	RECOVERY AREA / GEAR TYPE	AGE CLASS	STATISTICAL WEEK															
				62	63	64	71	72	73	74	75	81	82	83	84	91	92	93	94
1988	113, 154, 189, NW	AKNWTR	4	0	0	0	0	0	51	64	8	56	59	0	12	24	6	0	0
1987	113, 114, 154, 189, NW	AKNWTR	4	0	0	0	30	10	83	87	68	29	22	0	10	3	3	0	0
1986	113, 114, 116, 156, 157, NW	AKNWTR	4	0	0	0	0	15	62	57	27	30	23	9	10	0	5	5	0
1985	113, NW	AKNWTR	4	0	0	0	0	5	3	0	3	0	0	0	3	0	0	0	0
1984	154, AKNWTR		4	0	0	0	0	0	0	0	0	0	0	3	0	0	0	0	0
	1984 TO 1989 NW ALASKA TROLL TOTAL		4	0	0	0	30	30	199	208	106	115	107	9	35	27	14	5	0
1988	112 AKNETR		4	0	0	0	0	0	0	0	6	0	0	0	0	0	0	0	0
1987	109 AKNETR		4	0	0	0	0	3	0	0	7	7	0	0	0	0	0	0	0
1986	109 AKNETR		4	0	0	0	0	0	3	0	4	0	0	0	0	0	0	0	0
1985	109 AKNETR		4	0	0	0	0	3	0	0	0	3	0	0	0	0	0	0	0
	1984 TO 1989 NE ALASKA TROLL TOTAL		4	0	0	0	3	3	3	0	20	7	0	0	0	0	0	0	0
1988	103, 104, 152, SW	AKSWTR	4	0	0	0	0	0	0	0	7	2	4	0	0	0	6	0	0
1987	103, 104, SW	AKSWTR	4	0	0	0	0	19	26	13	55	21	27	0	16	7	0	0	0
1986	103, 104, SW	AKSWTR	4	0	0	0	6	24	33	21	37	7	41	0	0	0	0	0	0
1985	103, 104, SW	AKSWTR	4	0	0	0	3	6	4	12	4	4	0	0	0	0	0	0	0
	1984 TO 1989 SW ALASKA TROLL TOTAL		4	0	0	0	9	49	63	46	103	34	72	0	16	7	6	0	0
1988	101, 104 AKSN		4	0	0	0	0	0	0	0	8	20	17	13	52	0	0	0	0
1987	101, 102, 103, 104 AKSN		4	0	0	0	0	15	5	15	26	48	26	32	18	0	0	0	0
1986	101, 102, 103, 104 AKSN		4	0	0	0	15	12	3	0	58	13	52	15	31	0	0	0	0
1985	101, 104, 112 AKSN		4	0	0	0	0	4	4	7	0	16	0	9	0	0	0	0	0
1984	104 AKSN		4	0	0	0	0	0	0	0	0	0	5	0	0	0	0	0	0
	1984 TO 1989 ALASKA SEINE TOTAL		4	0	0	0	15	31	12	22	92	97	100	69	101	0	0	0	0
1988	101, 105, SE	AKSETR	4	0	0	0	0	3	0	9	5	2	5	0	3	3	3	7	0
1987	101, 102, 105, SE	AKSETR	4	0	0	0	4	6	20	4	12	17	17	0	5	10	0	10	0
1986	101, 102, 105, 106, SE	AKSETR	4	0	0	0	6	6	6	18	6	3	0	0	5	5	0	0	0
1985	101, 102 AKSETR		4	0	0	0	2	0	6	8	8	3	3	0	0	0	0	0	0
1984	101 AKSETR		4	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0
	1984 TO 1989 SE ALASKA TROLL TOTAL		4	0	0	0	12	15	32	40	31	25	25	0	13	18	3	17	0
1988	101, 106 AKGN		4	0	0	0	0	0	0	0	2	5	7	11	6	0	0	5	0
1987	101, 106 AKGN		4	0	0	0	1	3	0	2	8	12	29	12	4	16	7	12	0
1986	101, 106 AKGN		4	0	0	0	1	0	0	6	5	4	11	9	8	9	0	8	0
1985	101, 106 AKGN		4	0	0	2	0	0	0	0	0	0	8	11	0	0	0	0	0
	1984 TO 1989 ALASKA GILLNET TOTAL		4	0	0	2	2	3	0	8	15	21	55	43	18	25	7	25	0

**Estimated Adjusted CWT weekly recoveries of age 4 coho tagged in the Lachmack River
tag group. 1984 to 1989 brood years, 1988 to 1993 recovery years.**

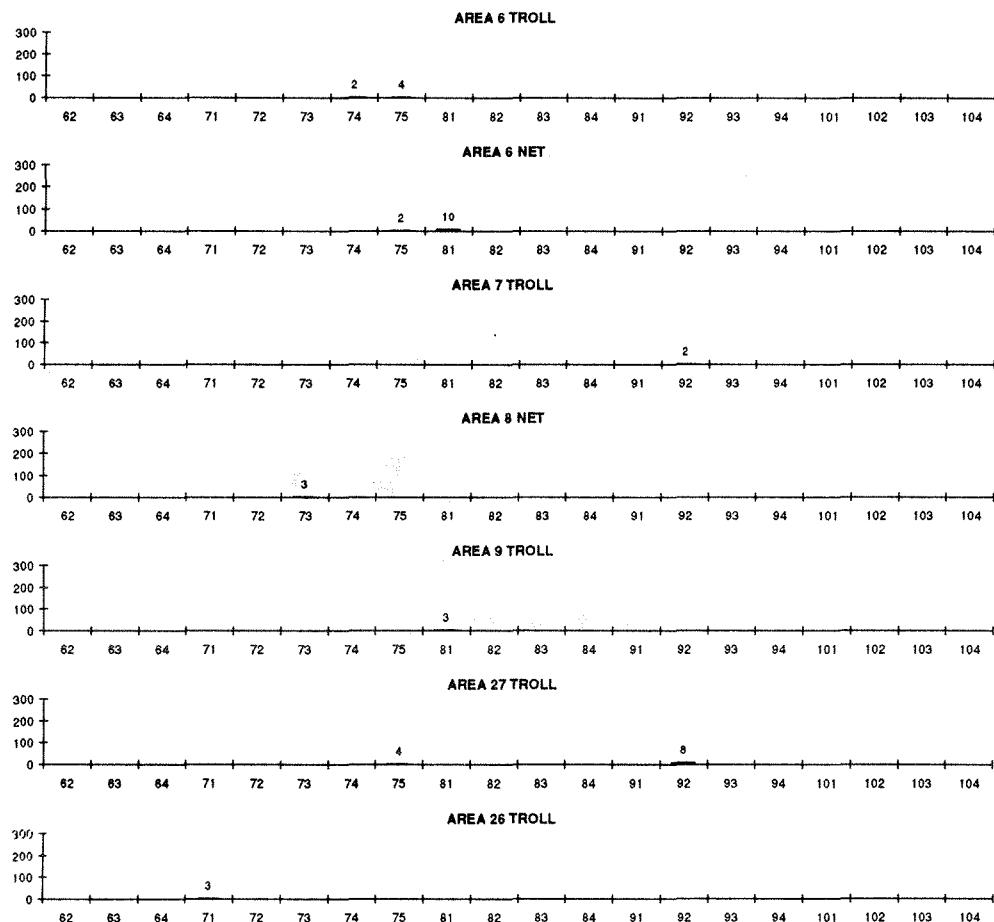
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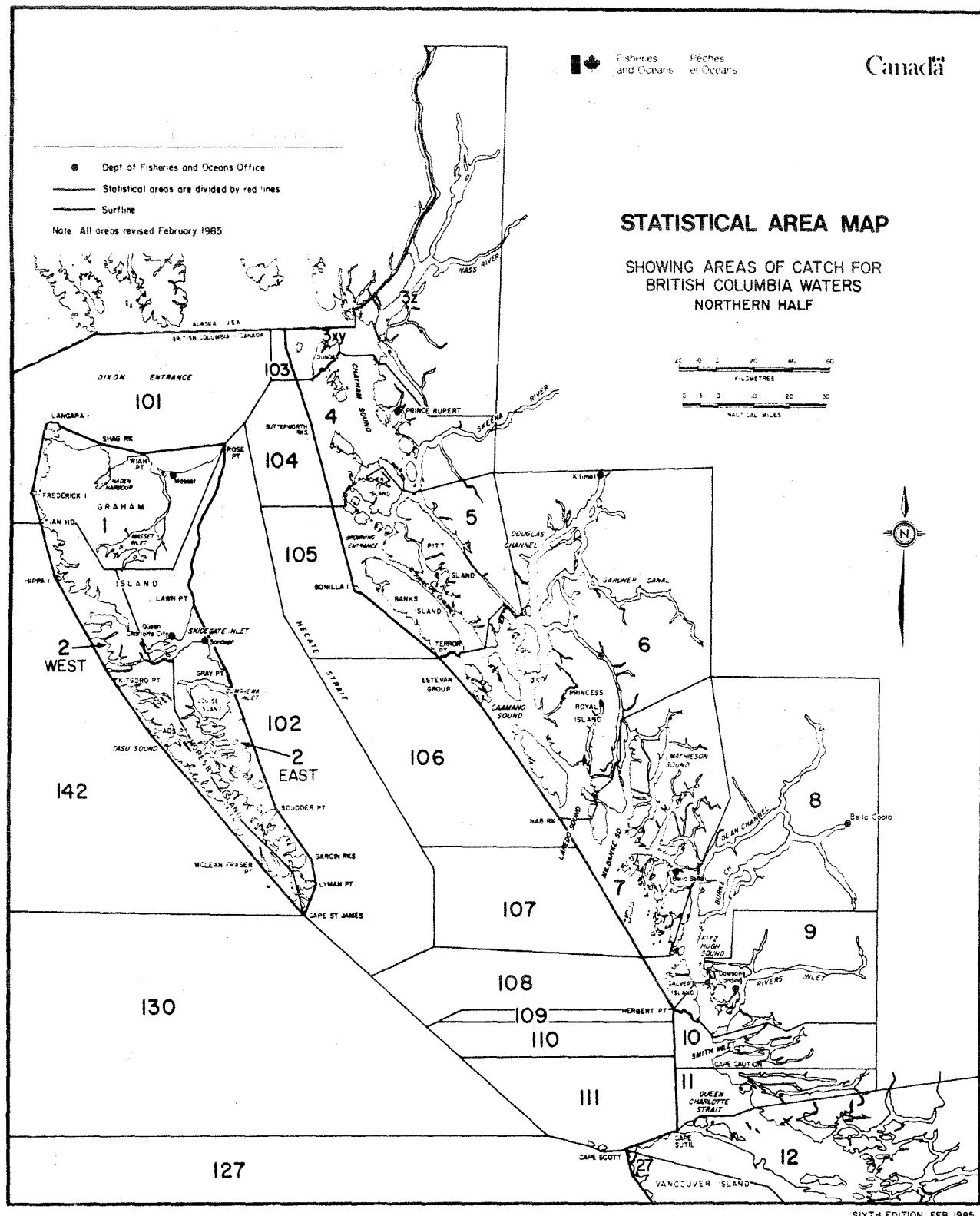
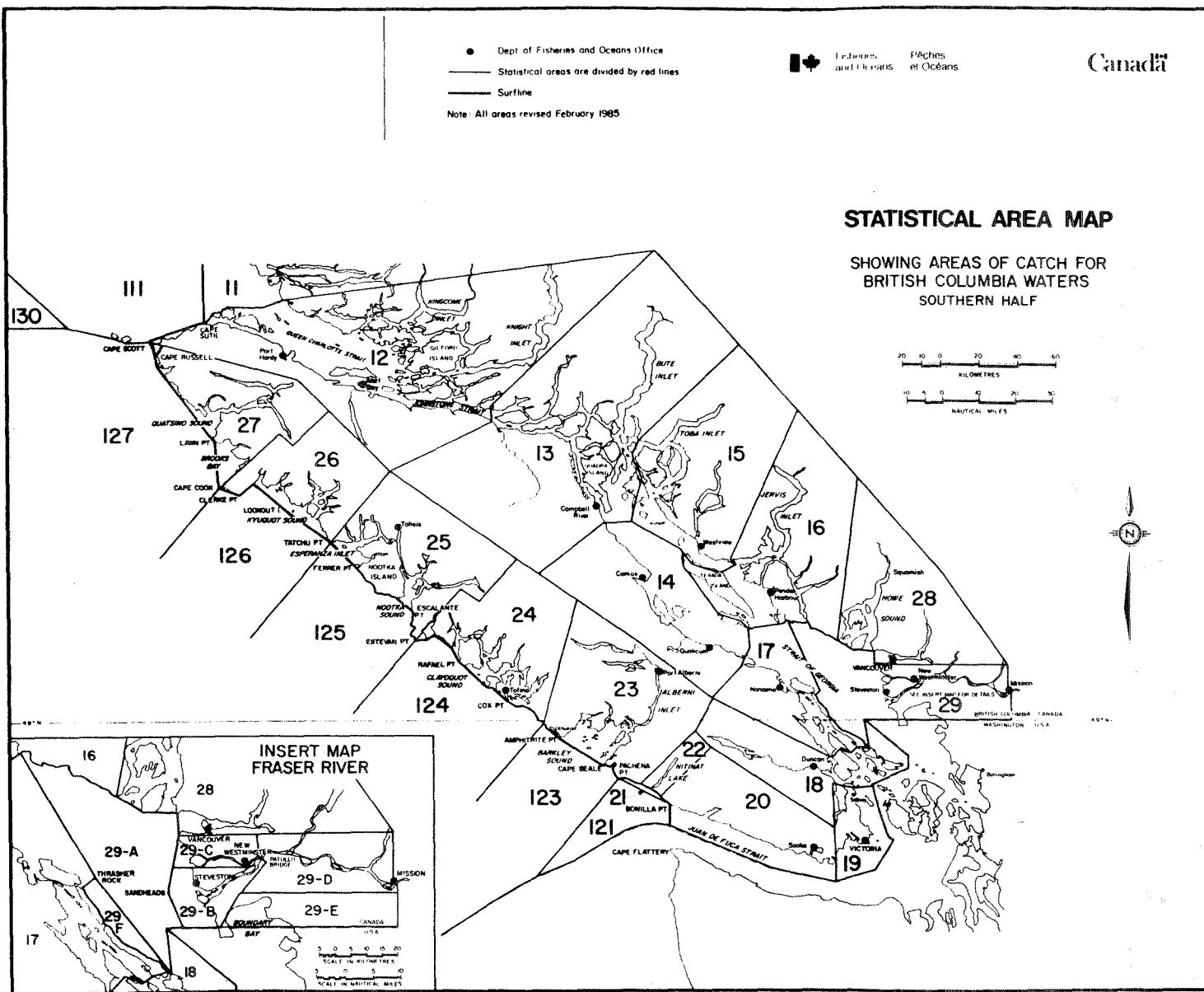


Figure 1. Statistical Area Map for Northern British Columbia.

SIXTH EDITION FEB 1965

Figure 2. Statistical Area Map for Southern British Columbia.



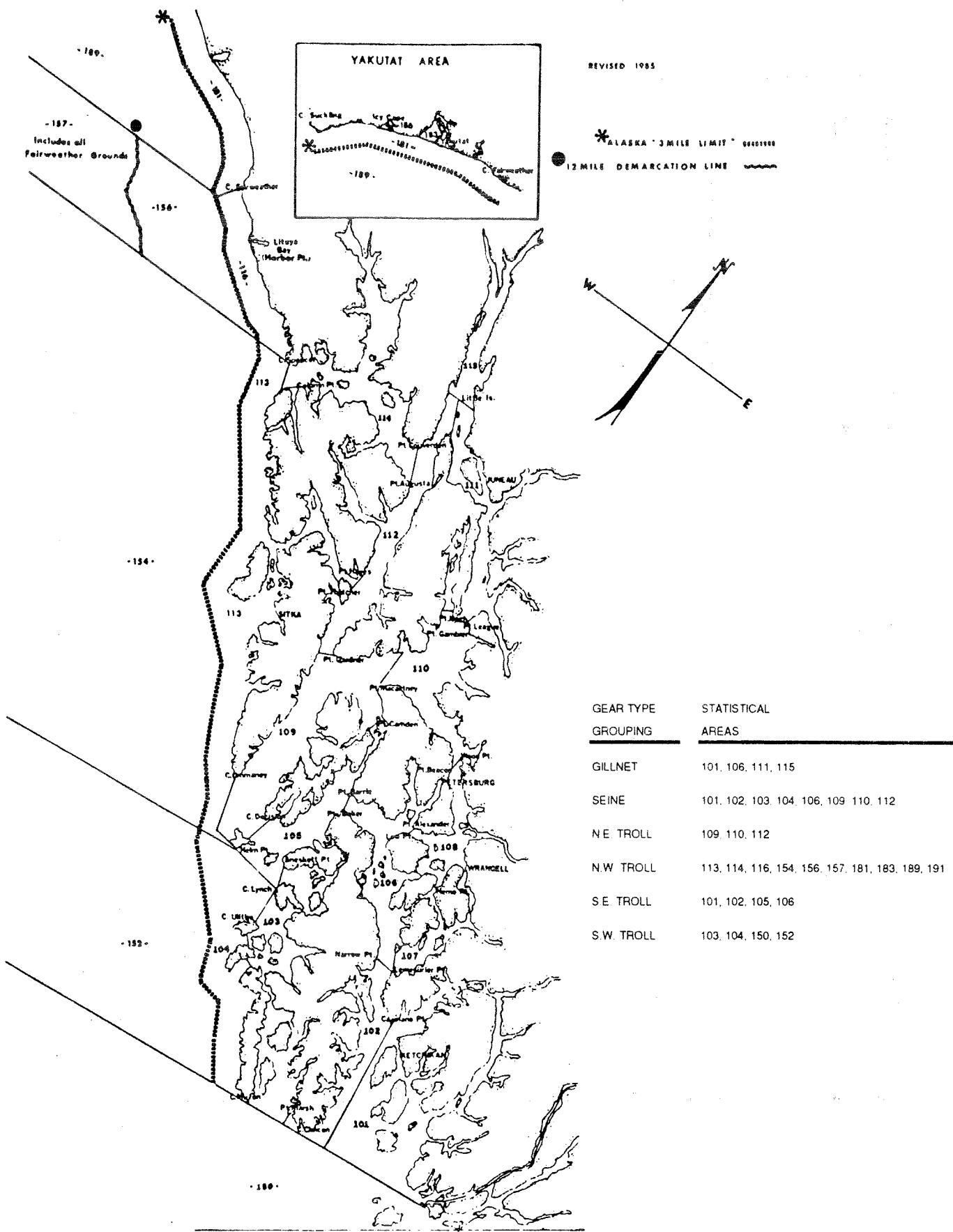


Figure 3. Statistical Area Map for Alaska.

**TABLE 1. KINCOLITH RIVER CDP HATCHERY COHO RELEASES,
1984 TO 1988 BROOD YEARS.**

TAG CODE	STOCK SITE	BROOD	NUMBER	% TAG	LOSS	DAY(S)	NUMBER	CWT %	WEIGHT	RELEASE DATE(S)	RELEASE SITE	REARING	STUDY TYPE**
		YEAR	TAGGED	HELD	RELEASED	MARKED	(gm)	ddmmmyy:ddmmmyy	TYPE*	TYPE*	OF RELEASE		
25313	0120-KINCOLITH RIVER	88	17,181	0	1		37,879	45.4	Unk	03Jun90:03Jun90	0120-KINCOLITH RIVER	H	M
25314	0120-KINCOLITH RIVER	88	16,151	0	1		36,849	43.8	Unk	03Jun90:03Jun90	0120-KINCOLITH RIVER	H	M
	HATCHERY TOTAL:		33,332				74,728						
25458	0120-KINCOLITH RIVER	87	993	1	1		1,003	99	Unk	29-Sep-88	0120-KINCOLITH RIVER	H	B
25459	0120-KINCOLITH RIVER	87	996	1.1	1		1,007	98.9	Unk	29-Sep-88	0120-KINCOLITH RIVER	H	B
25460	0120-KINCOLITH RIVER	87	980	1	1		990	99	Unk	29-Sep-88	0120-KINCOLITH RIVER	H	B
	HATCHERY TOTAL:		2,969				3,000						
24901	0120-KINCOLITH RIVER	86	16,543	1.7	1		16,951	97.6	11.9	16May88:10Jun88	0120-KINCOLITH RIVER	H	B
24902	0120-KINCOLITH RIVER	86	15,980	1.7	1		16,378	97.6	11.9	16May88:10Jun88	0120-KINCOLITH RIVER	H	B
	HATCHERY TOTAL:		32,523				33,329						
23855	0120-KINCOLITH RIVER	85	10,812	0	1		10,812	100	5	31Oct86:23Jun87	0120-KINCOLITH RIVER	H	B
23856	0120-KINCOLITH RIVER	85	10,822	0	1		10,822	100	5	31Oct86:23Jun87	0120-KINCOLITH RIVER	H	B
23857	0120-KINCOLITH RIVER	85	10,681	0	1		10,681	100	5	31Oct86:23Jun87	0120-KINCOLITH RIVER	H	B
23858	0120-KINCOLITH RIVER	85	10,722	0	1		10,722	100	5	31Oct86:23Jun87	0120-KINCOLITH RIVER	H	B
23859	0120-KINCOLITH RIVER	85	8,429	0	1		8,429	100	5	31Oct86:23Jun87	0120-KINCOLITH RIVER	H	B
	HATCHERY TOTAL:		51,466				51,466						
23501	0120-KINCOLITH RIVER	84	14,132	0	1		14,132	100	12	18Apr86:30Jul86	0120-KINCOLITH RIVER	H	B
23502	0120-KINCOLITH RIVER	84	14,057	0	1		14,057	100	12	18Apr86:30Jul86	0120-KINCOLITH RIVER	H	B
23521	0120-KINCOLITH RIVER	84	18,273	0.3	1		36,293	50.3	12	18Apr86:30Jul86	0120-KINCOLITH RIVER	H	B
	HATCHERY TOTAL:		46,462				64,482						

*REARING TYPE: H = HATCHERY.

**STUDY TYPE OF RELEASE: M = AN INDEX POPULATION USED FOR INTERNATIONAL STOCK MONITORING.
B = EXPERIMENTAL GROUPS WHICH CAN ALSO BE CONSIDERED PRODUCTION, E.G. EXPERIMENTAL CONTROLS.

TABLE 2. LACHMACH RIVER COHO RELEASES,
1984 TO 1989 BROOD YEARS.

TABLE 2. LACHMACH RIVER COHO RELEASES, 1984 TO 1989 BROOD YEARS.												
TAG CODE	STOCK SITE	YEAR	BROOD NUMBER	% TAG LOSS	NUMBER	CWT %	WEIGHT (gm)	RELEASE DATE(S) ddmmmyy:ddmmmyy	RELEASE SITE	REARING TYPE*	STUDY TYPE** OF RELEASE	
80126	2659-LACHMACH RIVER	89	5,452	0	0	5,452	100	Unk 11May92:25May92	2659-LACHMACH RIVER	W	M	
80127	2659-LACHMACH RIVER	89	542	6.1	1	577	93.9	Unk 25Apr93:01Jun93	2659-LACHMACH RIVER	W	M	
80128	2659-LACHMACH RIVER	89	1,948	0.3	0	1,954	99.7	Unk 25May92:04Jun92	2659-LACHMACH RIVER	W	M	
80803	2659-LACHMACH RIVER	89	10,086	3.4	0	10,441	96.6	Unk 22Apr92:11May92	2659-LACHMACH RIVER	W	M	
80805	2659-LACHMACH RIVER	89	1,945	1.9	1	1,982	98.1	Unk 22Apr91:20Jun91	2659-LACHMACH RIVER	W	M	
HATCHERY TOTAL:				19,973		20,406						
80801	2659-LACHMACH RIVER	88	9,044	2.8	1	9,305	97.2	Unk 17May91:20Jun91	2659-LACHMACH RIVER	W	M	
80909	2659-LACHMACH RIVER	88	2,197	1	1	2,219	99	Unk 22Apr91:17May91	2659-LACHMACH RIVER	W	M	
82634	2659-LACHMACH RIVER	88	1,269	1.9	1	1,294	98.1	Unk 18Apr90:14May90	2659-LACHMACH RIVER	W	M	
82707	2659-LACHMACH RIVER	88	2,651	0.8	1	2,672	99.2	Unk 15May90:06Jun90	2659-LACHMACH RIVER	W	M	
HATCHERY TOTAL:				15,161		15,490						
82630	2659-LACHMACH RIVER	87	1,757	2.7	1	1,806	97.3	Unk 18Apr90:08May90	2659-LACHMACH RIVER	W	M	
82647	2659-LACHMACH RIVER	87	4,453	0.9	1	4,600	96.8	Unk 04May89:05Jun89	2659-LACHMACH RIVER	W	M	
82718	2659-LACHMACH RIVER	87	8,334	0.5	1	8,376	99.5	Unk 19May90:06Jun90	2659-LACHMACH RIVER	W	M	
82719	2659-LACHMACH RIVER	87	10,397	0.9	1	10,491	99.1	Unk 08May90:19May90	2659-LACHMACH RIVER	W	M	
HATCHERY TOTAL:				24,941		25,273						
82456	2659-LACHMACH RIVER	86	718	3.9	1	751	95.6	Unk 29Apr88:30May88	2659-LACHMACH RIVER	W	M	
82627	2659-LACHMACH RIVER	86	2,003	0.5	1	2,041	98.1	Unk 27May89:05Jun89	2659-LACHMACH RIVER	W	M	
82629	2659-LACHMACH RIVER	86	2,464	2.2	1	2,515	98	Unk 24May89:27May89	2659-LACHMACH RIVER	W	M	
82648	2659-LACHMACH RIVER	86	4,969	2.8	1	5,158	96.3	Unk 04May89:16May89	2659-LACHMACH RIVER	W	M	
82649	2659-LACHMACH RIVER	86	5,324	0.5	1	5,399	98.6	Unk 16May89:24May89	2659-LACHMACH RIVER	W	M	
HATCHERY TOTAL:				15,478		15,864						
82434	2659-LACHMACH RIVER	85	502	4.9	22	528	95.1	4.6 06May87:07Jun87	2659-LACHMACH RIVER	W	M	
82457	2659-LACHMACH RIVER	85	487	0.8	1	491	99.2	Unk 25May88:30May88	2659-LACHMACH RIVER	W	M	
82458	2659-LACHMACH RIVER	85	7,741	2.6	1	7,950	97.4	Unk 29Apr88:21May88	2659-LACHMACH RIVER	W	M	
HATCHERY TOTAL:				8,730		8,969						
82433	2659-LACHMACH RIVER	84	1,169	5.7	22	1,240	94.3	8.1 06May87:07Jun87	2659-LACHMACH RIVER	W	M	
HATCHERY TOTAL:				1,169		1,240						

TABLE 3. REASONS FOR NO CWT DATA RECOVERY FROM MARKED FISH.

TERM FOR MISSING OR NON-RECOVERABLE DATA	EXPLANATION
"no-pin"	The head contained no CWT because the CWT was lost after tagging but before sampling ("tag-loss").
	The external mark was natural and did not indicate the presence of a tag.
"lost-pin"	A CWT was recovered but was accidentally lost before decoding.
	The pin was unreadable.
"no-data"	The fish had an external mark indicating the presence of a CWT but no effort was made to locate the pin.
	The head was lost before the pin was extracted and decoded.
	A CWT was recovered but one or more of the data fields on the tag was either incomplete or could not be read.

Table 4. List of recovery fields found in the MRP database.

Field Name:	Recovery fields that apply to:	Field Numbers:
01. Tag code	Commercial (Troll)	1-16, 18-21, 27
02. Recovery year	Commercial (Net)	1-21, 27
03. Replicate number	Sport	1-10, 22, 27
04. Gear	Escapement	1-8, 23-27
05. Catch region		
06. Brood year		
07. Recovery type		
08. Species HART code		
09. Statistical week		
10. Statistical area		
11. Grade		
12. Color		
13. Length code		
14. Length (mm)		
15. Weight code		
16. Weight (kg)		
17. Sexual maturity		
18. Sub-area code		
19. Sample location		
20. Delivery method		
21. Scale age		
22. Sport location code		
23. Recovery site code		
24. Recovery site number		
25. Escapement sample period		
26. Sample age type		
27. Number of observed recoveries		

Table 5. List of all MRP Recovery Area codes and the corresponding Statistical Area(s) for British Columbia and Alaska commercial fisheries which recovered Nass River region coho CWTs in the years 1987 to 1993.

MRP STATISTICAL AREA CODE	CANADA DFO STATISTICAL AREA CODE(S)	MRP STATISTICAL AREA CODE	ALASKA STATISTICAL AREA CODE	
001	1	A101	101	
02W	2 WEST	A102	102	
02E	2 EAST	A103	103	
003	3	A104	104	
004	4	A105	105	
005	5	A106	106	
006	6	A109	109	
007	7	A112	112	
008	8	A113	113	
009	9	A114	114	
010	10	A116	116	
011	11	A150	150	
025	25	A152	152	
026	26	A154	154	
027	27	A156	156	
035	1 + 2W	A157	157	COMBINED STATISTICAL AREAS
038	1 + 2E + 4	A189	189	
040	1 + 2E + 2W	ANW	NW	113, 114, 116, 154, 156, 157, 181, 183, 189, 191
044	1 + 3	ASE	SE	101, 102, 105, 106
045	1 + 4	ASW	SW	103, 104, 150, 152
058	2E + 3			
064	2 + 3 + 4 + 5			
068	3 + 4			
071	3 + 4 + 5			
072	3 + 5			
074	4 + 5			
094	11 + 12			

TABLE 6. ALGORITHM FOR BACKDATING TROLL SALES SLIP CATCHES:

For each troll sales slip:

1. Get sales slip date, statistical area(s) of catch, number of days fished ($D_{\#}$) and weight of each species caught recorded on sales slip.
2. Convert weights recorded for each species (W_{sp}) to number of pieces for each species (N_{sp}) using the MRP sample average weights for each species (\bar{W}_{sp}):

$$N_{SP} = \frac{W_{SP}}{\bar{W}_{SP}}$$

3. Determine the last day of fishing (D_L):

- a) let D_L = landing day,
(landing day = sale slip date, the date on which the vessel landed catch)
- b) check D_L with commercial fishing management plans to confirm that D_L was actually open for commercial troll fishing,
- c) if D_L does not correspond to a scheduled opening, let:

$$D_L = D_L - D_b$$

where D_b = the number of days of backdating required to encounter a day open to commercial trolling,

- d) if no previous opening is found, reject and print error message.

4. Determine the first day of fishing (D_F):

- a) let:

$$D_F = D_L - D_{\#} + 1$$

- b) check D_F with commercial fishing management plans to confirm that D_F was actually open for commercial troll fishing,

- c) if D_F does not correspond to a scheduled opening, let:

$$D_F = D_F + D_f$$

where D_f = the number of days D_F is required to move forward to encounter a day open to commercial trolling or until $D_F = D_L$.

5. Assign the catch of each species equally to each open fishing day (C_o) within the fishing period:

$$C_o = \frac{N_{SP}}{D_L - D_f + 1}$$