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**A Summary of Coded Wire Tag Recovery  
Information from British Columbia and  
Alaska Commercial Fisheries for the Years  
1986 to 1993 for Tagged Coho Originating  
from the Queen Charlotte Islands (Statistical  
Areas 1 and 2 East)**

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1996

**Canadian Data Report of  
Fisheries and Aquatic Sciences 994**



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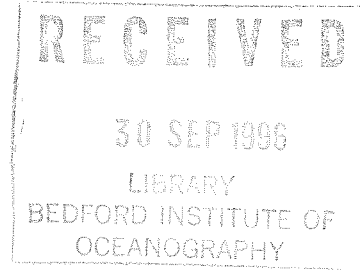
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Canadian Data Report of  
Fisheries and Aquatic Sciences 994

1996

A SUMMARY OF CODED WIRE TAG RECOVERY INFORMATION  
FROM BRITISH COLUMBIA AND ALASKA COMMERCIAL FISHERIES  
FOR THE YEARS 1986 TO 1993  
FOR TAGGED COHO ORIGINATING FROM THE  
QUEEN CHARLOTTE ISLANDS (STATISTICAL AREAS 1 AND 2 EAST)

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 1986 to 1993 for tagged coho originating from the Queen Charlotte Islands (Statistical Areas 1 and 2 East). Can. Data Rep. Fish. Aquat. Sci. 994: viii + 106 p.

Estimated adjusted coded wire tag (CWT) recovery data for 2-year, 3-year and 4-year age class tagged coho salmon (*Oncorhynchus kisutch*) originating from Statistical Area 1 (Yakoun River) and Statistical Area 2 East (Sachs Creek and Pallant Creek) of the Queen Charlotte Islands located in the North Coast of British Columbia is provided by statistical week. The data summarizes 1986 to 1993 recovery years (1983 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 1986 to 1993 for tagged coho originating from the Queen Charlotte Islands (Statistical Areas 1 and 2 East). Can. Data Rep. Fish. Aquat. Sci. 994: viii + 106 p.

Cette étude fait état des données estimatives hebdomadaires (ajustées) recueillies dans le cadre du programme de récupération des micromarques magnétisées codées (MMC) concernant les saumons cohos (*Oncorhynchus kisutch*) âgés de 2 ans, de 3 ans et de 4 ans capturés dans les secteurs statistiques n/ 1 (rivière Yakoun) et n/ 2 est (cours d'eau Sachs Creek et Pallant Creek), dans les îles de la Reine-Charlotte (côte nord de la Colombie-Britannique). L'information concerne les campagnes de récupération effectuées entre 1986 et 1993 (années d'éclosion comprises entre 1983 et 1989) par les pêcheurs commerciaux au filet maillant, à la senne et à la traîne fréquentant les pêcheries de l'Alaska et de la Colombie-Britannique. Les données de récupération concernant l'Alaska sont classées selon le secteur géographique et le type d'engin utilisé (pêche à la traîne/nord-ouest de l'Alaska, pêche à la traîne/nord-est de l'Alaska, pêche à la traîne/sud-ouest de l'Alaska, pêche à la senne/Alaska, pêche à la traîne/sud-est de l'Alaska et pêche au filet maillant/Alaska). Les données de récupération concernant les eaux canadiennes sont classées selon un système analogue qui comprend la pêche à la traîne et la pêche au filet (filet maillant et senne) effectuée dans les secteurs statistiques concernés.

## INTRODUCTION

This report documents 1986 to 1993 estimated adjusted coded wire tag (CWT) weekly recovery data from British Columbia and Alaska commercial gillnet, seine and troll fisheries for 2-year, 3-year and 4-year age class coho salmon originating from the Queen Charlotte Islands (QCI) of B.C. (1983 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 Queen Charlotte Islands are separated geographically for this summary. QCI sites include: Area 1, Yakoun River (Masset Inlet); and Area 2 East, Sachs Creek (Skidegate Inlet) and Pallant Creek (Cumsheewa Inlet). Tables 1 to 3 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 to 7 troll and net (gillnet + seine), Areas 8 to 11 troll, Area 12 net and Areas 14, 23, 26 and 27 troll groupings. 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), a summary of CWT recoveries of Nass River origin coho from B.C. and Alaska commercial fisheries (Spilsted and Hudson 1995a), 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 4. 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):

$$A = O \left[ 1 + \frac{LP}{K} + \frac{ND(K + LP)}{K(K + LP + NP)} \right]$$

where:

- A = "observed" recovery adjusted for non recovery of tags.
- O = "observed" recovery.
- K = number of known 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 5 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, 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 6 lists all MRP Recovery Area codes and the corresponding Statistical Area(s) for British Columbia and Alaska commercial fisheries which recovered QCI coho CWTs in the years 1986 to 1993.

### Recovery Areas.

Charts and data summaries of weekly recoveries of QCI 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 2 East Net (AREA2EN), 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 7 Net (AREA7N), Area 8 Troll (AREA8TR), Area 9 Troll (AREA9TR), Area 10 Troll (AREA10TR), Area 11 Troll (AREA11TR), Area 12 Net (AREA12N), Area 14 Troll (AREA14TR), Area 27 Troll (AREA27TR), Area 26 Troll (AREA26TR) and Area 23 Troll (AREA23TR). 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 "CN" (central net), "FWSP" (fresh water sport - river fishery), "NCTR" (north central troll), "NN" (northern net), "NSPT" (northern sport - tidal waters), "NTR" (northern troll), "NWTR" (northwest Vancouver Island troll), "GSTR" (Georgia Straight troll), "JSN" (Johnstone Straight net), "SCTR" (south central troll) and "SWTR" (Southwest Vancouver Island troll).

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 1986 to 1993 in Canadian statistical areas and in Alaska commercial fishing areas of 2-year, 3-year and 4-year age class CWT marked coho originating from S.E.P. facilities located on the Queen Charlotte Islands (1983 to 1989 brood years) are presented. Tagging sites that operated within this region during some or all of the brood years noted include Yakoun River (Area 1) and Sachs Creek and Pallant Creek (Area 2 East).

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.

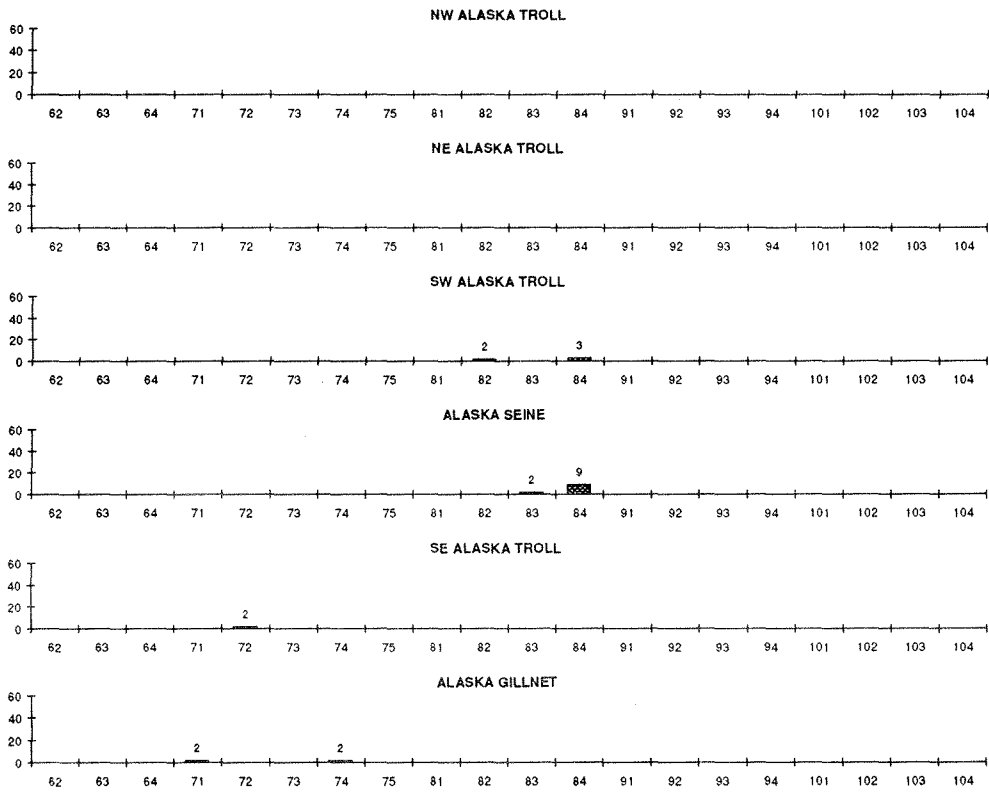
#### Harvest Data Bias.

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 7 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.

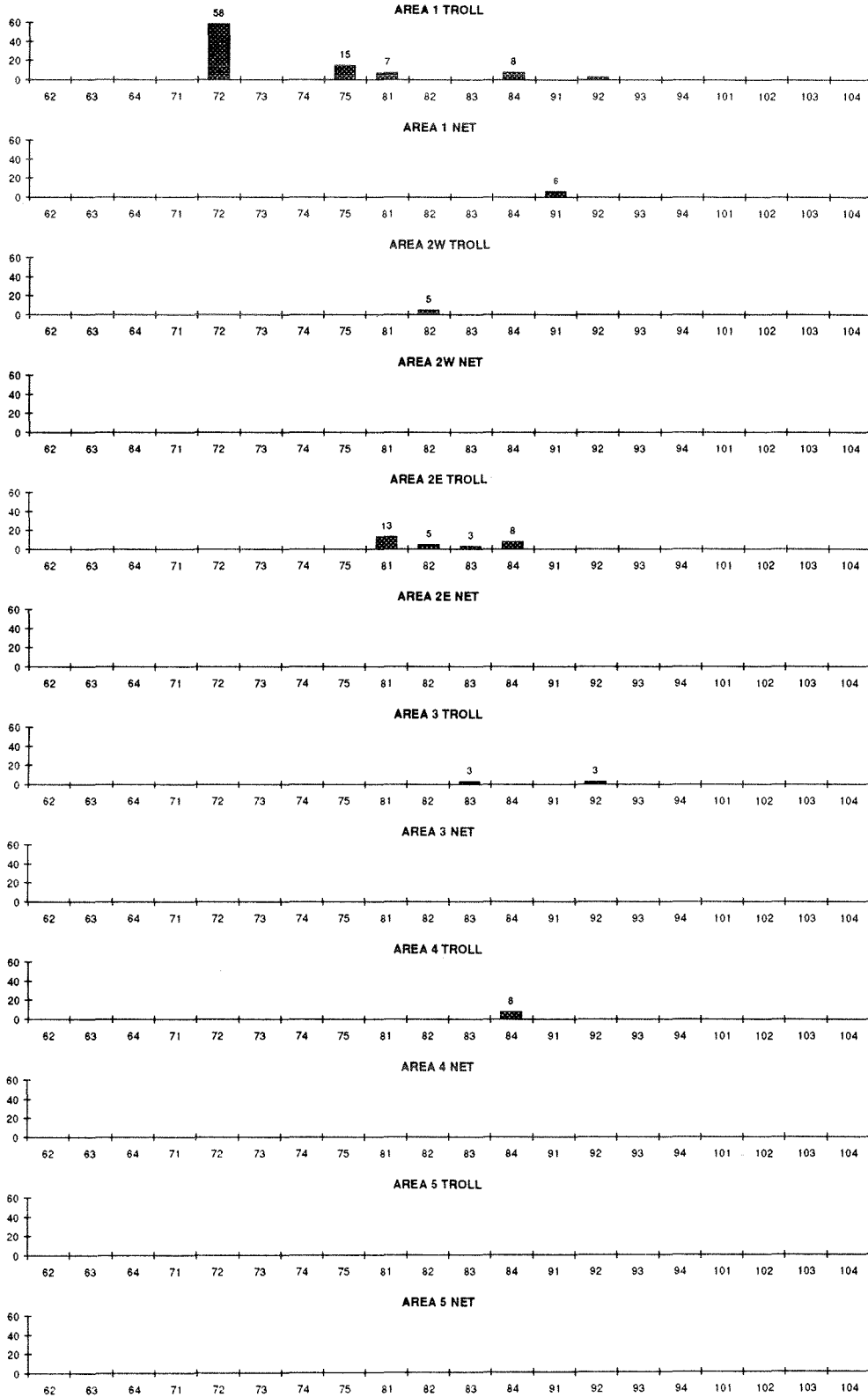




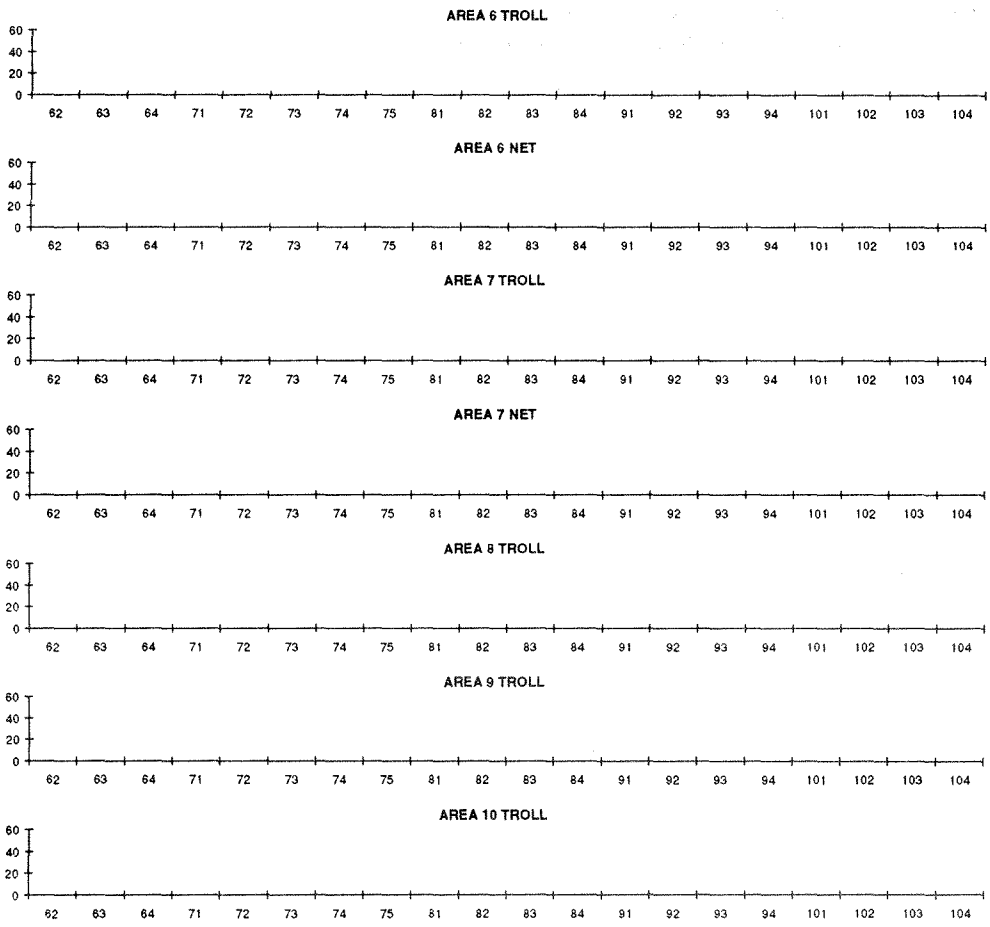
**Estimated Adjusted CWT weekly recoveries of age 3 coho tagged in the Yakoun River  
(Masset Inlet) tag group. 1989 brood year, 1992 recovery year.**



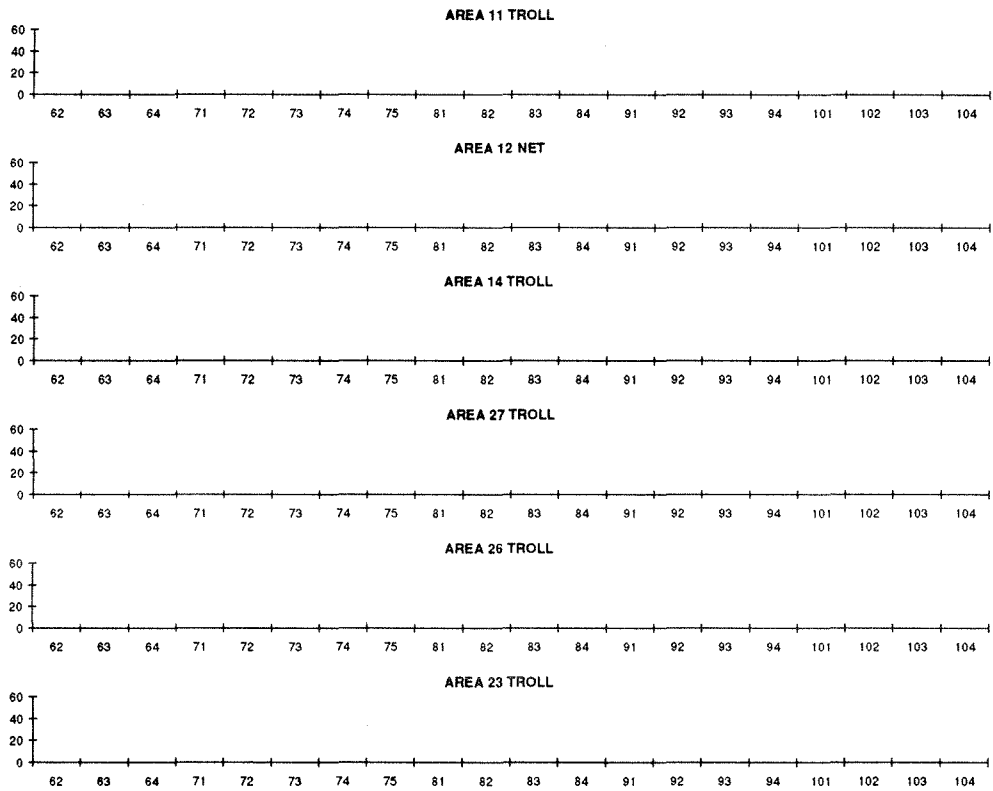
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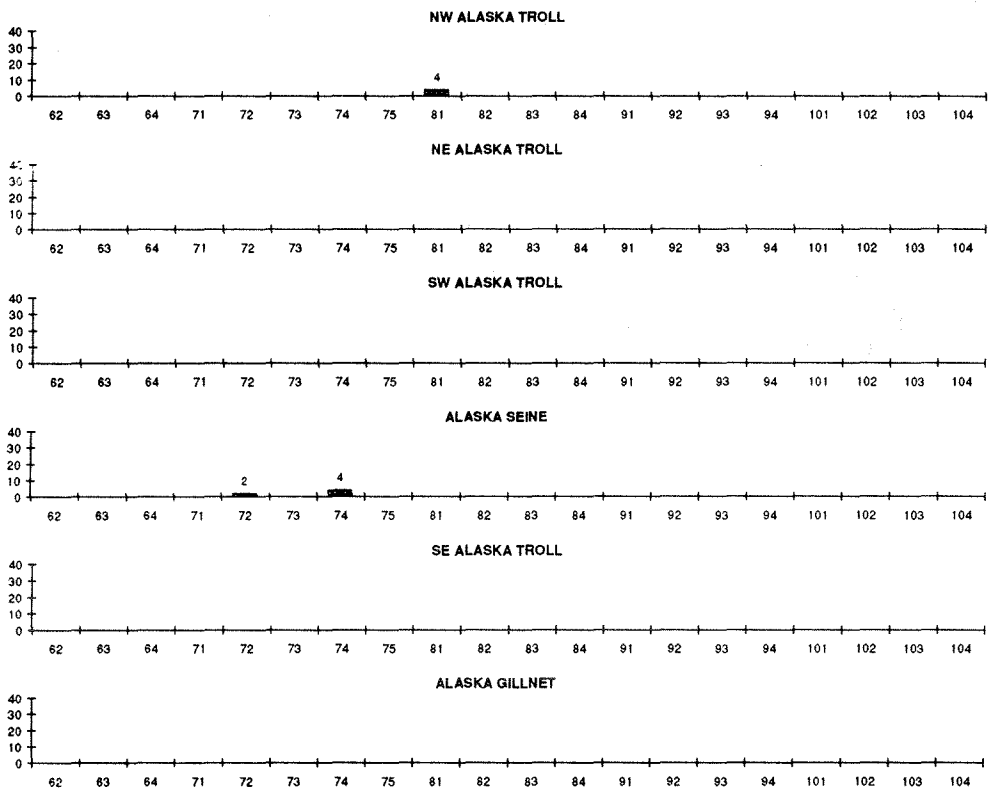


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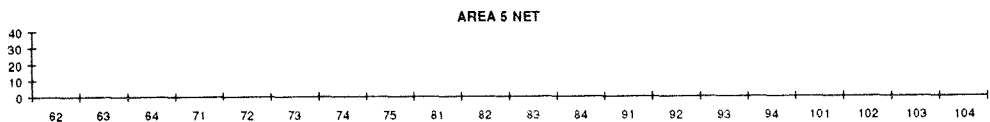
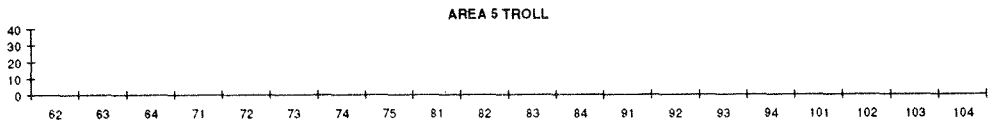
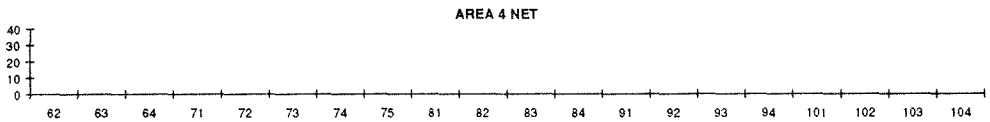
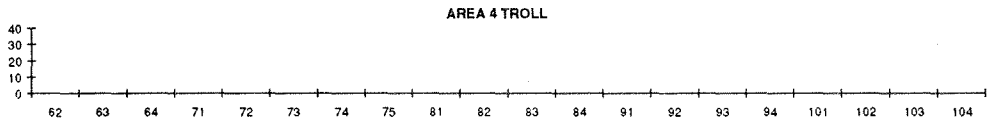
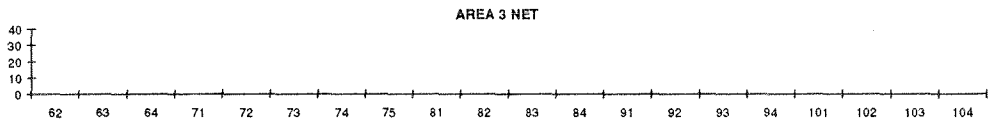
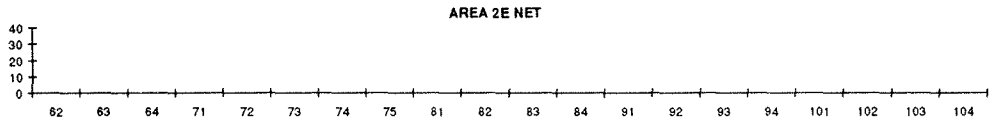
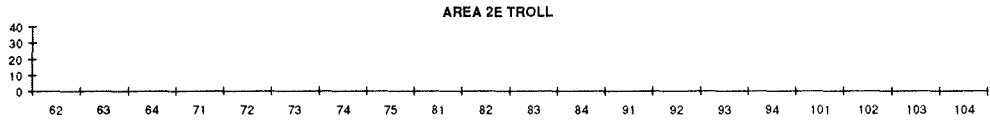
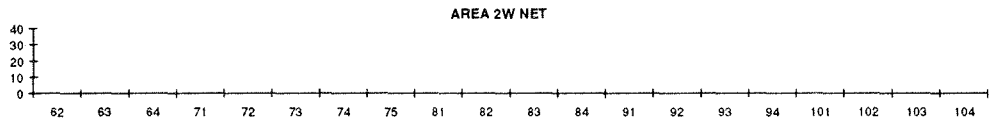
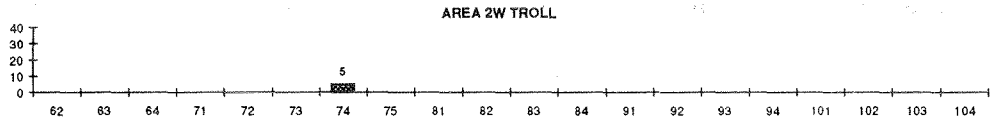
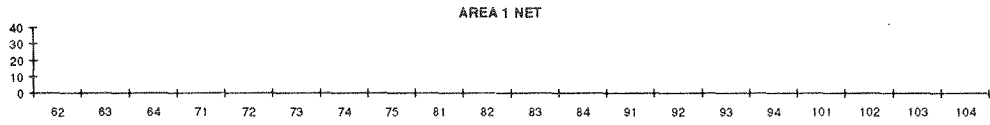
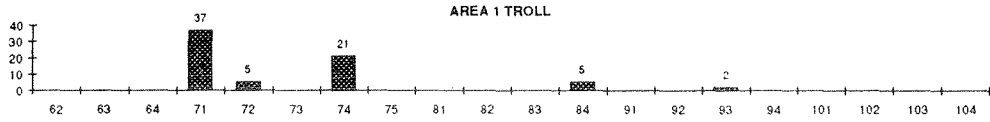




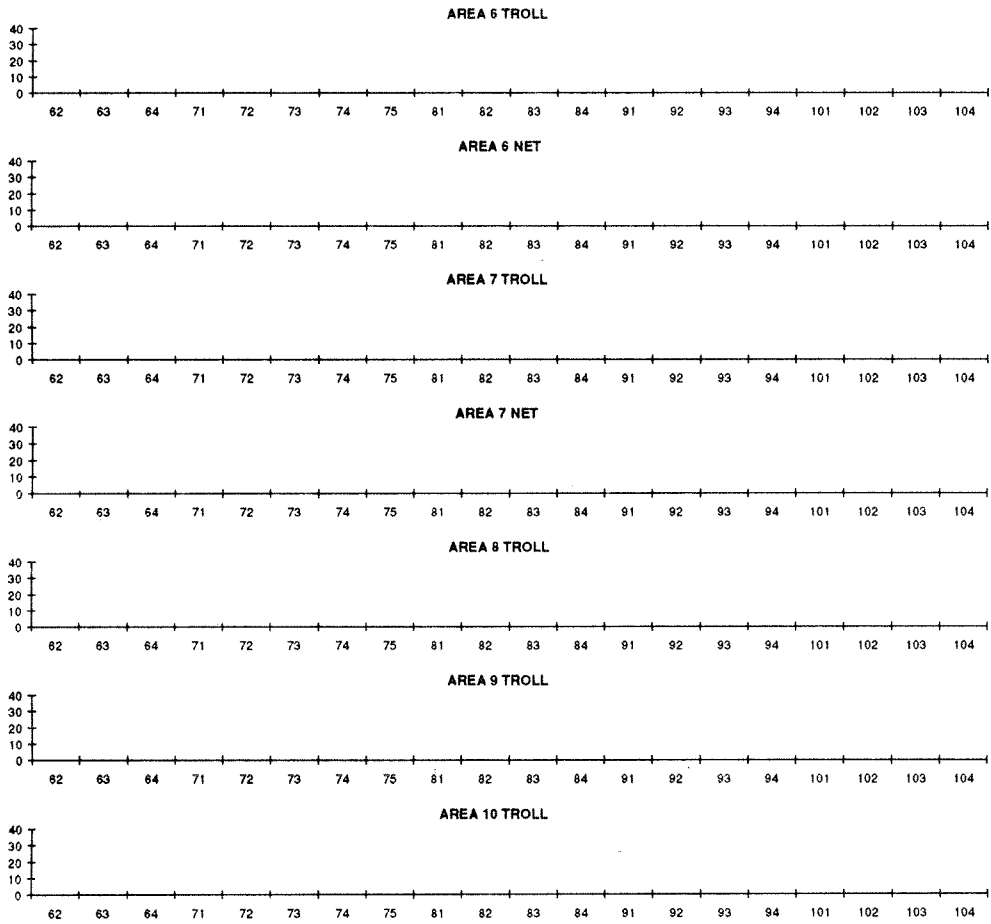
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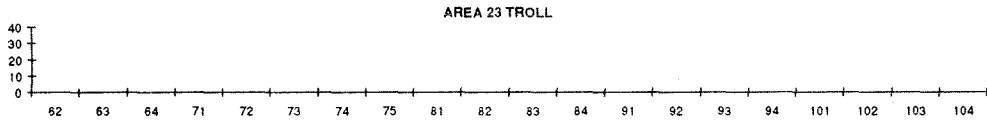
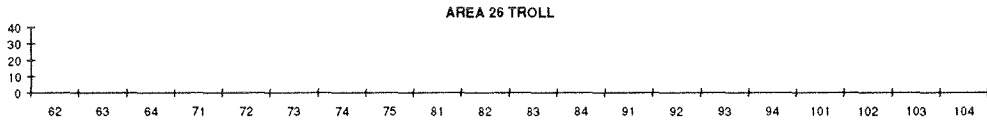
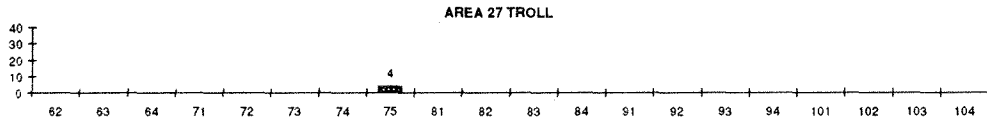
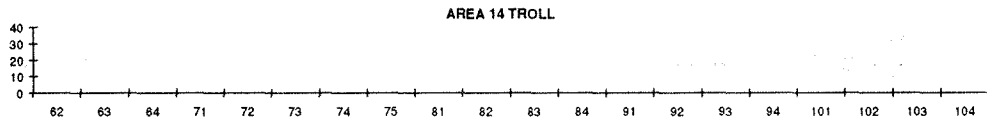
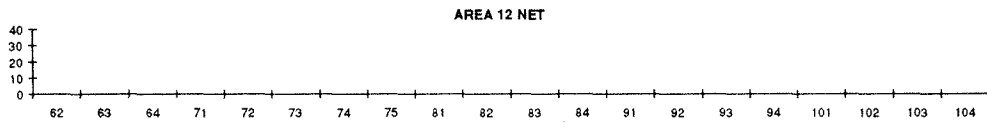
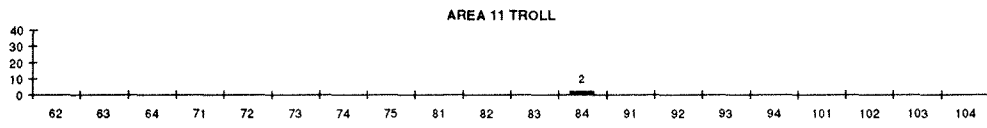


**Estimated Adjusted CWT weekly recoveries of age 3 coho tagged in the Yakoun River (Masset Inlet) tag group. 1988 brood year, 1991 recovery year.**



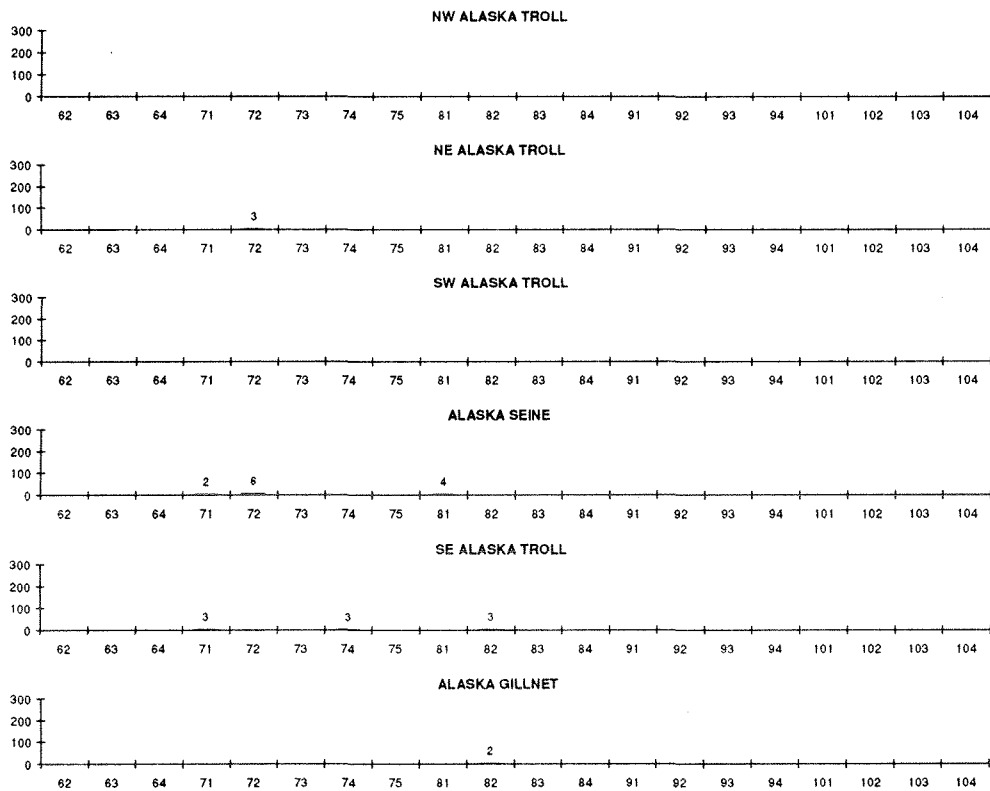


**Estimated Adjusted CWT weekly recoveries of age 3 coho tagged in the Yakoun River (Masset Inlet) tag group. 1988 brood year, 1991 recovery year.**



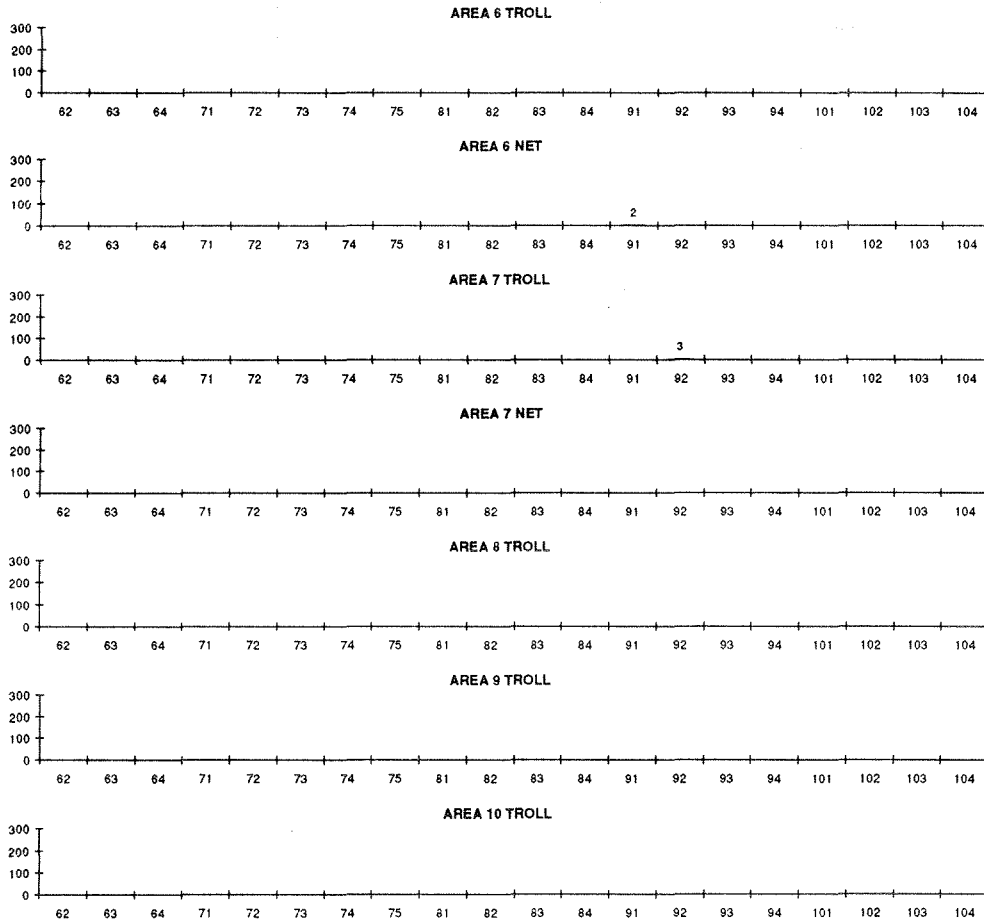


**Estimated Adjusted CWT weekly recoveries of age 3 coho tagged in the Yakoun River (Masset Inlet) tag group. 1987 brood year, 1990 recovery year.**

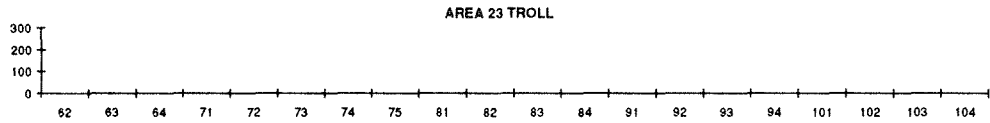
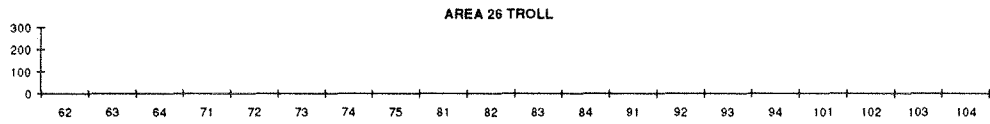
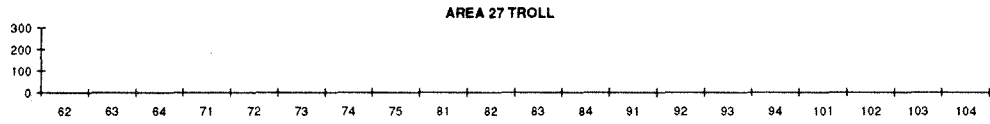
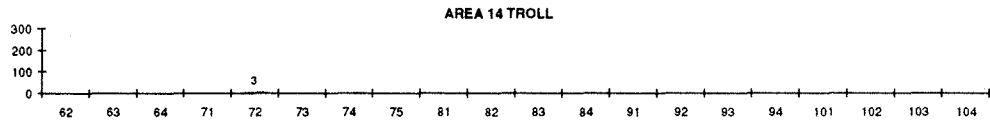
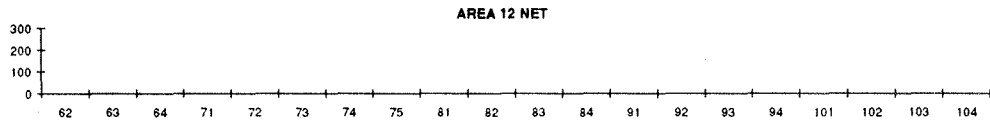
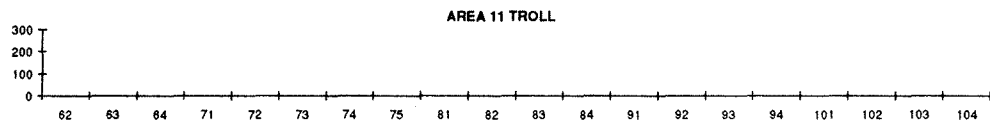




**Estimated Adjusted CWT weekly recoveries of age 3 coho tagged in the Yakoun River (Masset Inlet) tag group. 1987 brood year, 1990 recovery year.**

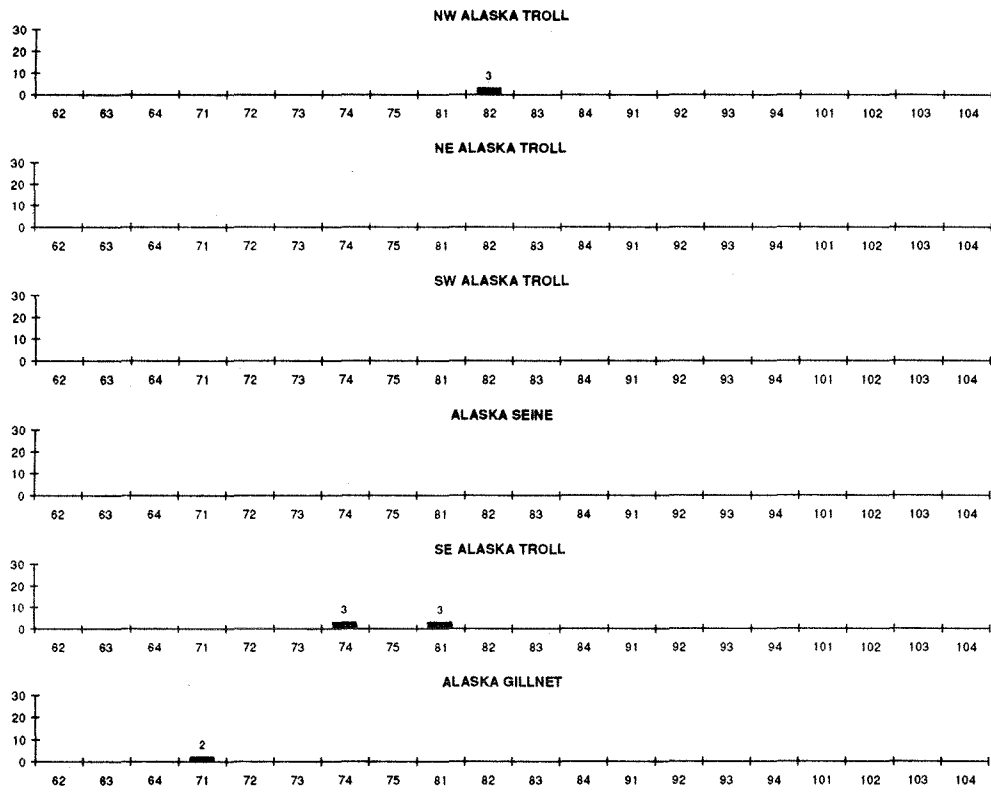


**Estimated Adjusted CWT weekly recoveries of age 3 coho tagged in the Yakoun River (Masset Inlet) tag group. 1987 brood year, 1990 recovery year.**



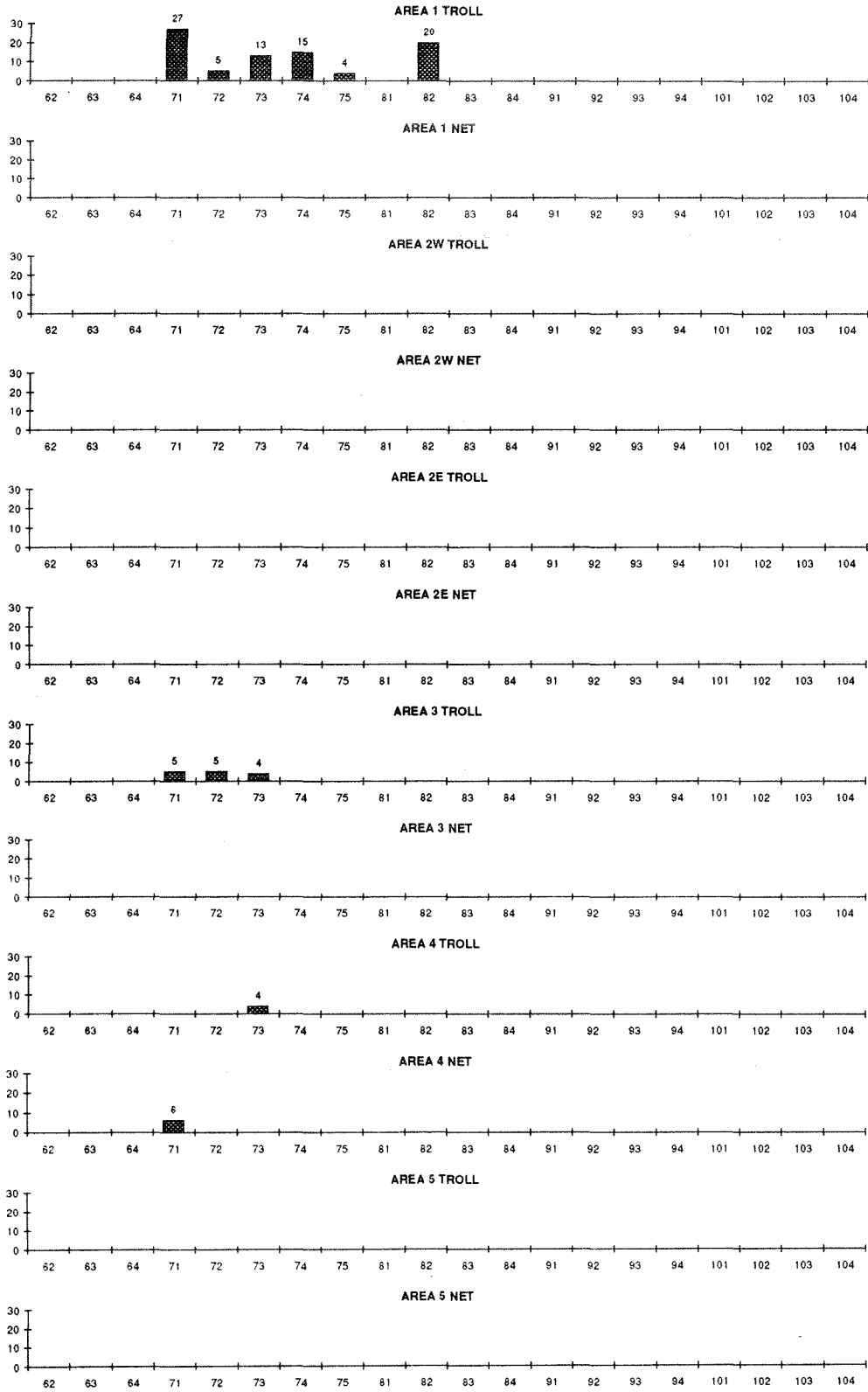


**Estimated Adjusted CWT weekly recoveries of age 3 coho tagged in the Yakoun River (Masset Inlet) tag group. 1986 brood year, 1989 recovery year.**

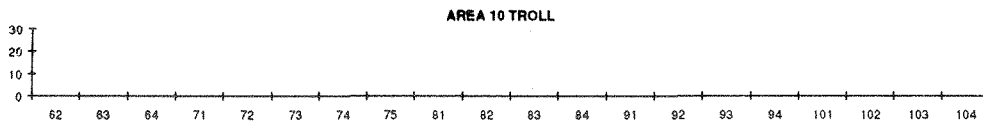
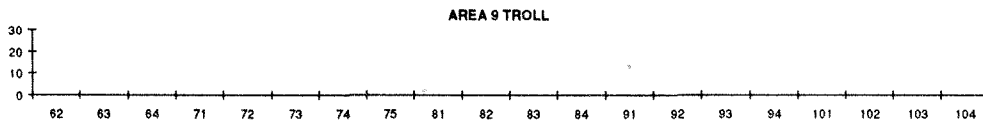
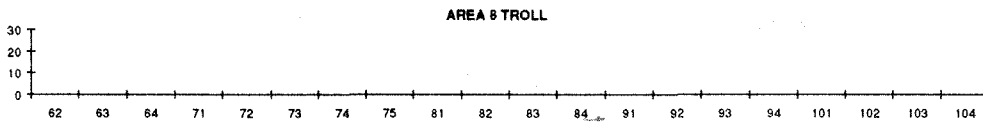
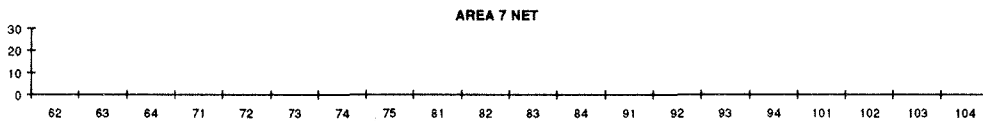
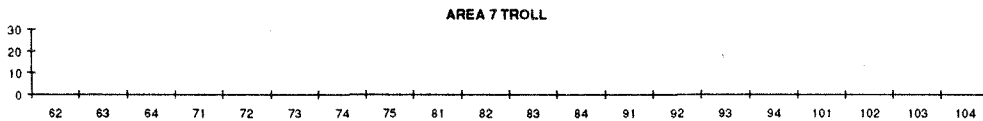
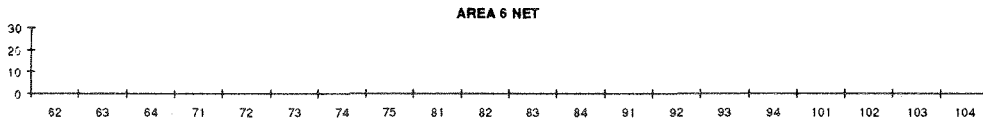
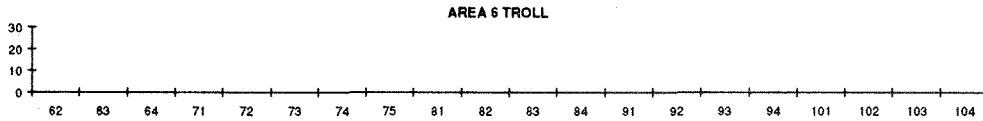




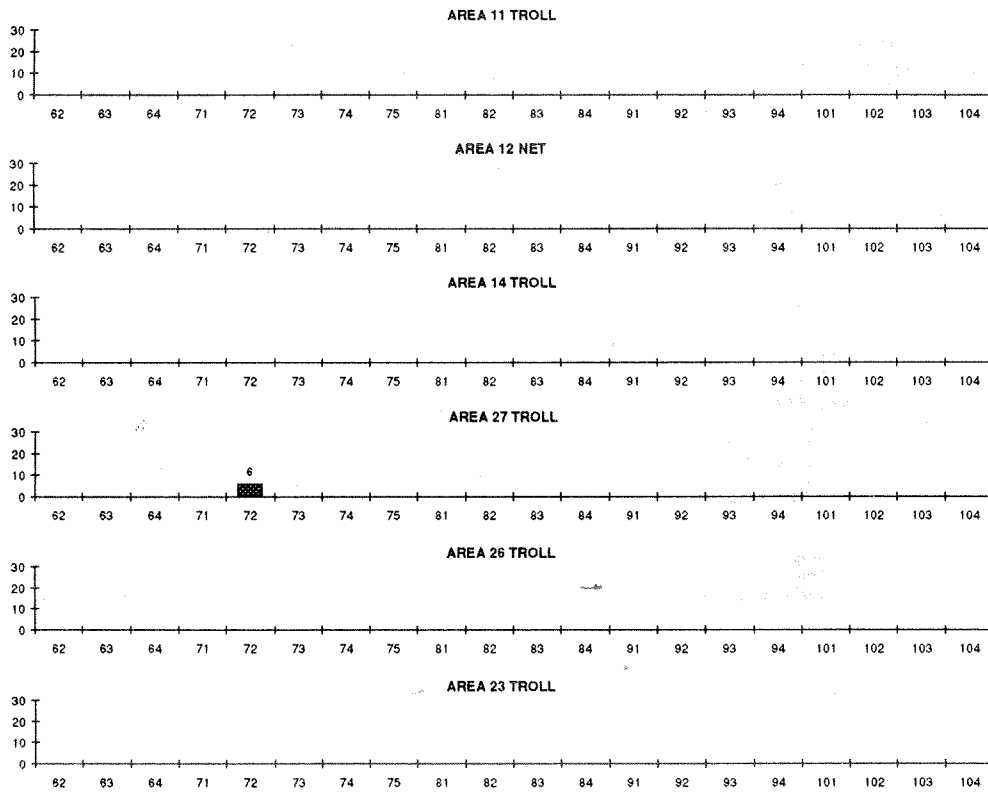
Estimated Adjusted CWT weekly recoveries of age 3 coho tagged in the Yakoun River (Masset inlet) tag group. 1986 brood year, 1989 recovery year.



**Estimated Adjusted CWT weekly recoveries of age 3 coho tagged in the Yakoun River (Masset Inlet) tag group, 1986 brood year, 1989 recovery year.**



**Estimated Adjusted CWT weekly recoveries of age 3 coho tagged in the Yakoun River (Masset Inlet) tag group. 1986 brood year, 1989 recovery year.**



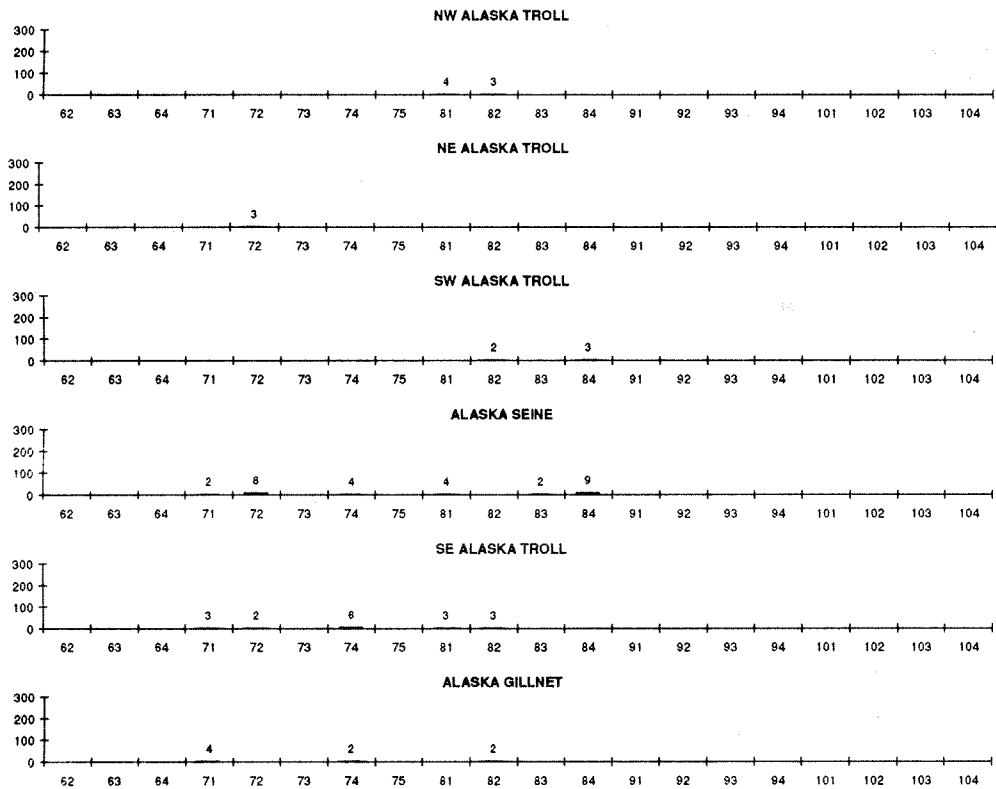






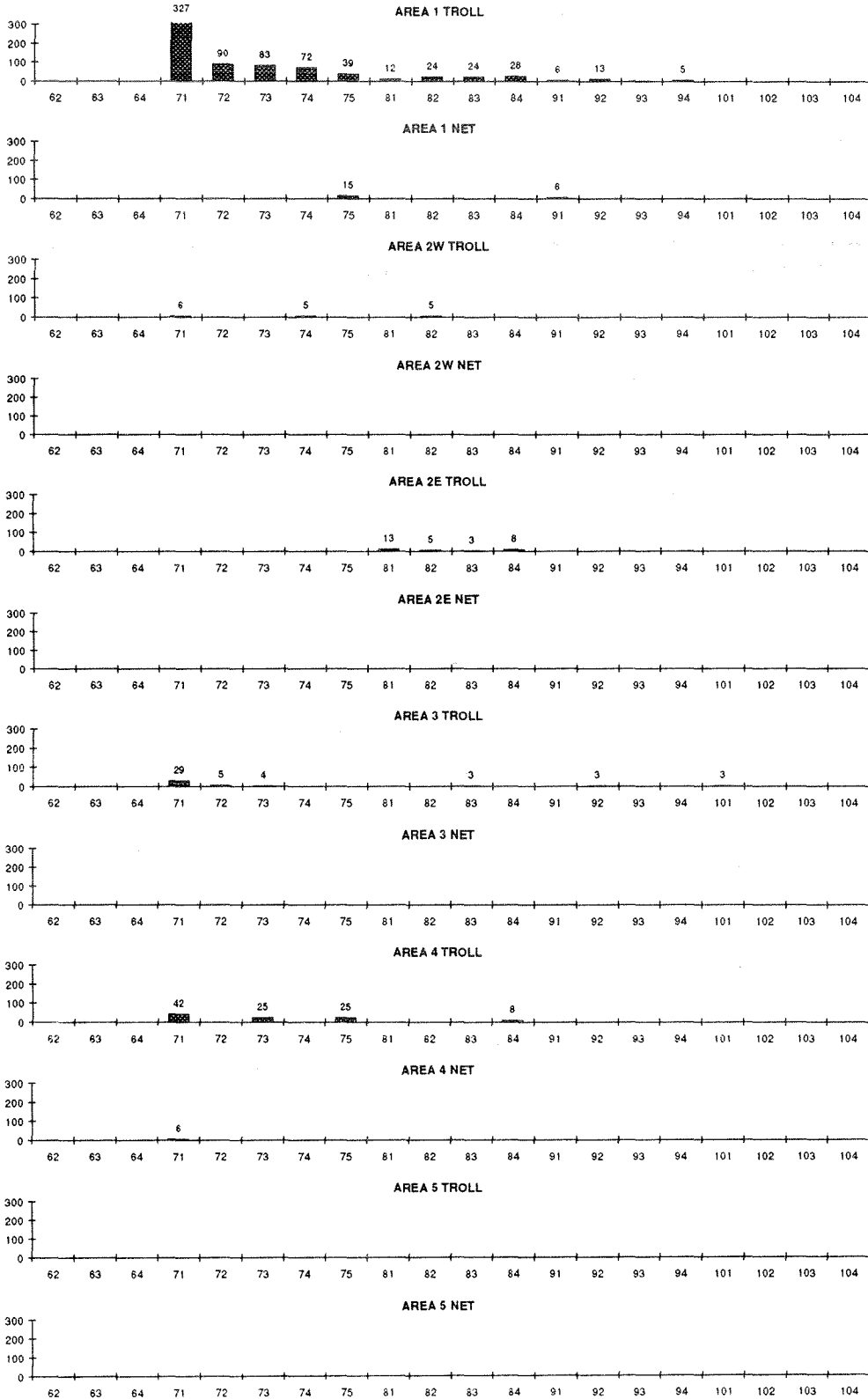


**Estimated Adjusted CWT weekly recoveries of age 3 coho tagged in the Yakoun River (Masset Inlet) tag group. 1986 to 1989 brood years, 1989 to 1992 recovery years.**

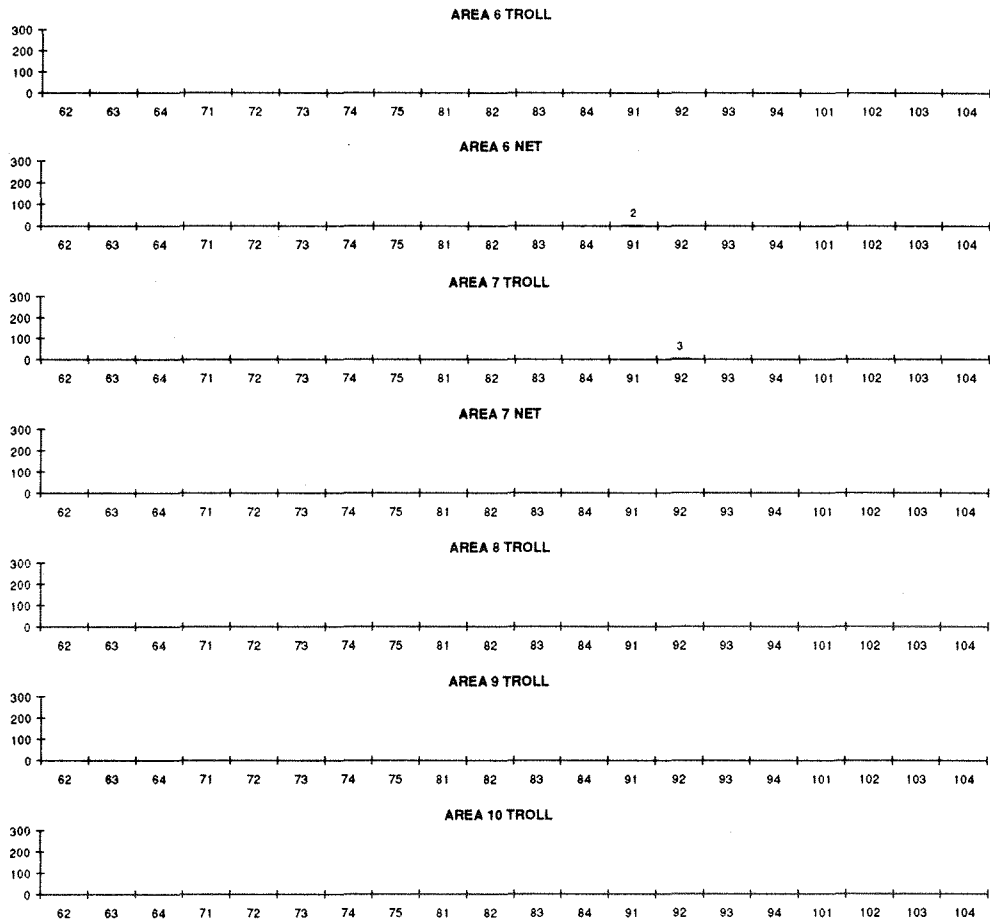




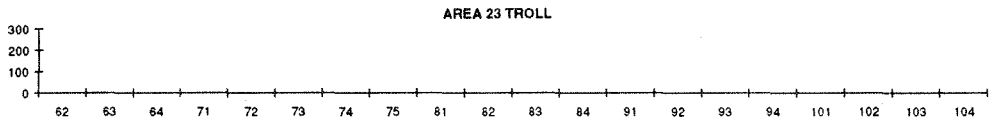
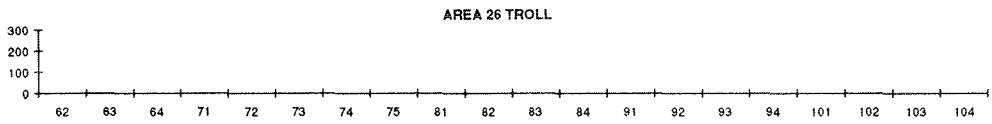
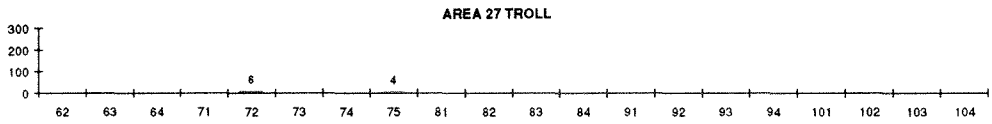
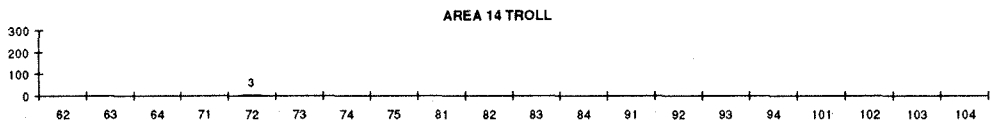
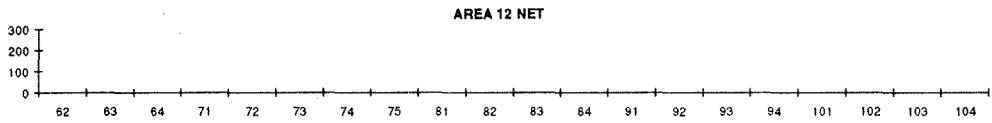
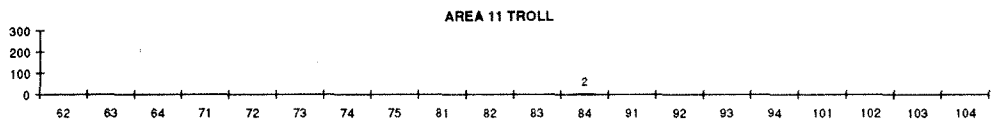
**Estimated Adjusted CWT weekly recoveries of age 3 coho tagged in the Yakoun River (Masset Inlet) tag group. 1986 to 1989 brood years, 1989 to 1992 recovery years.**



**Estimated Adjusted CWT weekly recoveries of age 3 coho tagged in the Yakoun River (Masset Inlet) tag group. 1986 to 1989 brood years, 1989 to 1992 recovery years.**

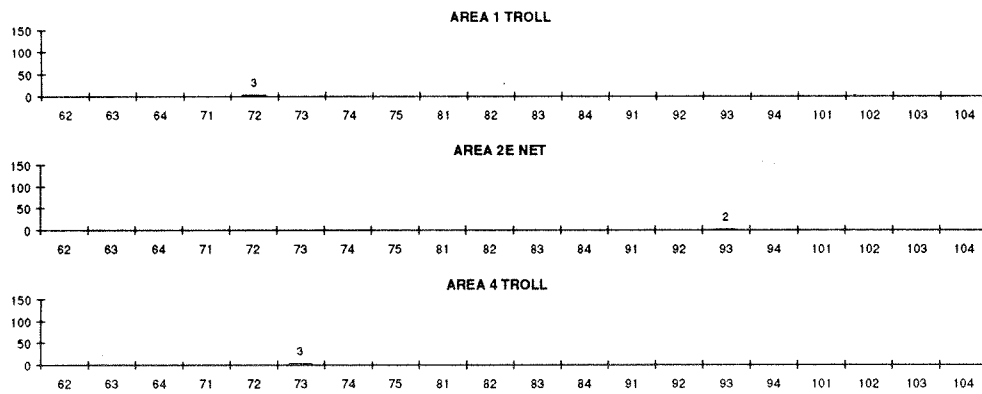


**Estimated Adjusted CWT weekly recoveries of age 3 coho tagged in the Yakoun River (Masset Inlet) tag group. 1986 to 1989 brood years, 1989 to 1992 recovery years.**

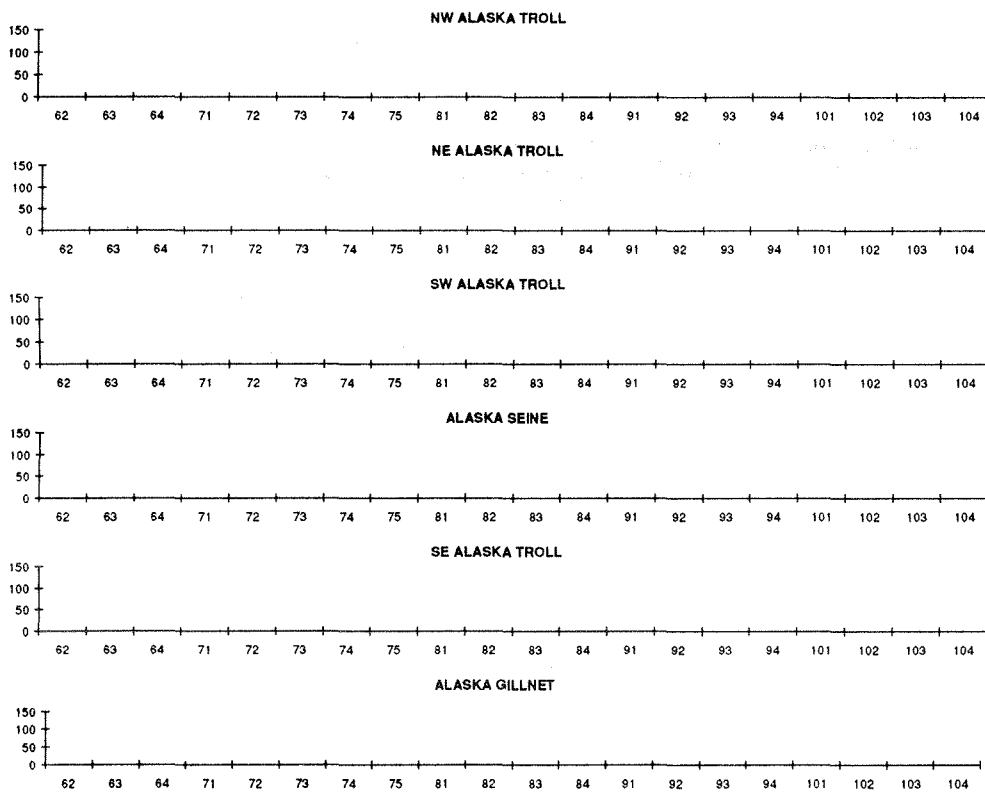




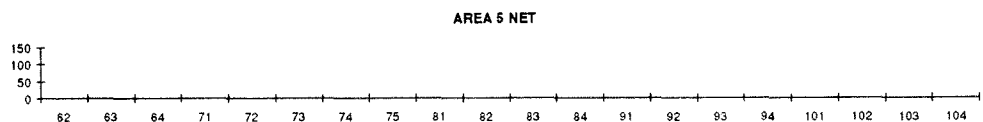
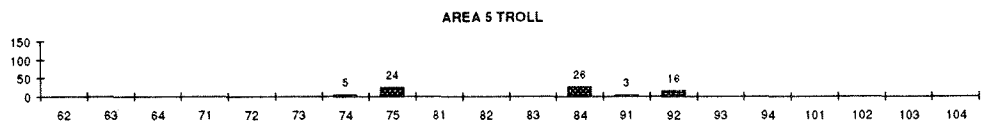
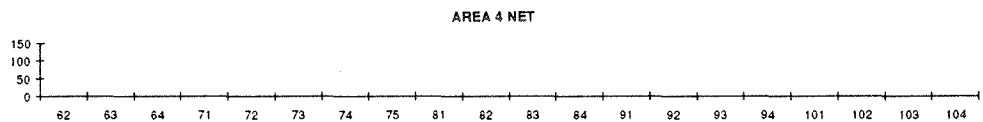
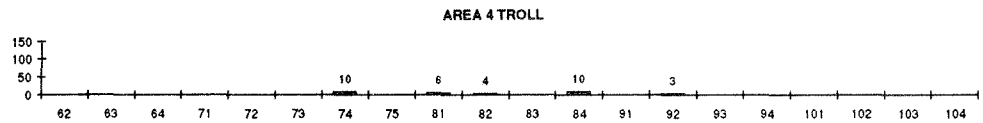
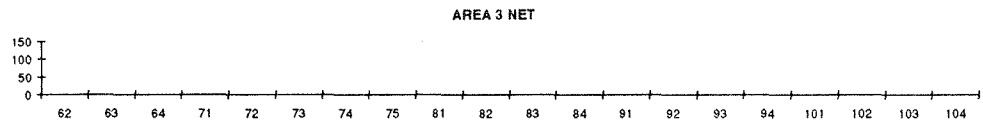
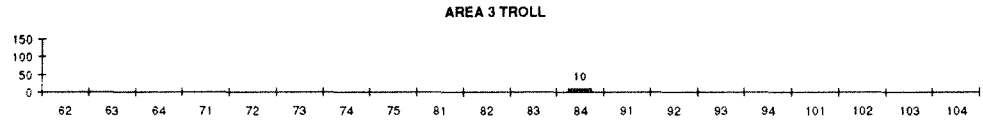
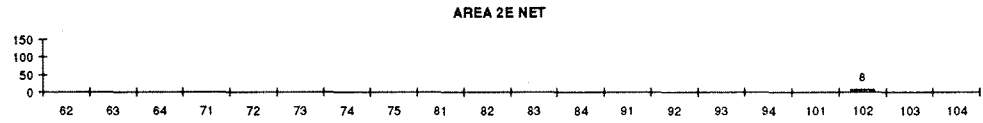
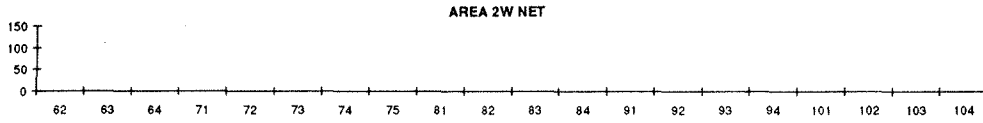
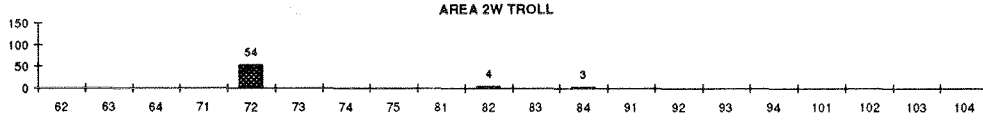
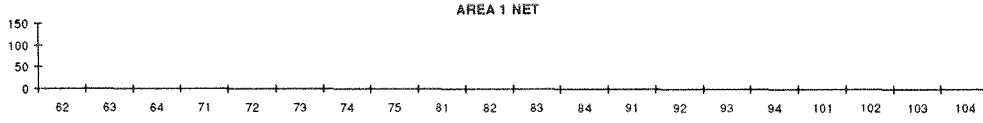
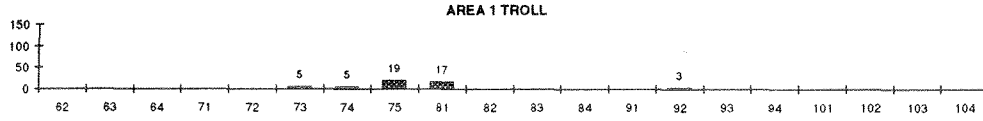
**Estimated Adjusted CWT weekly recoveries of age 2 coho tagged in the Sachs Creek  
(Skidegate Inlet) tag group. 1984 brood year, 1986 recovery year.**



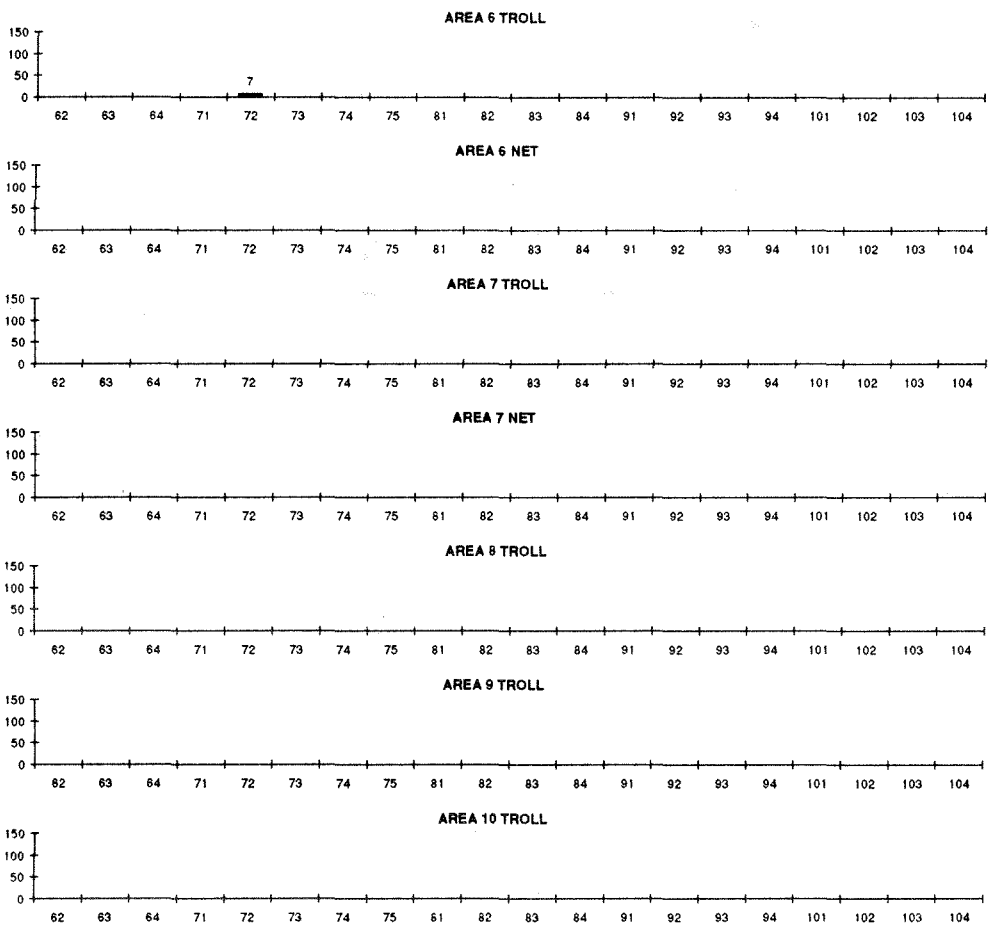
**Estimated Adjusted CWT weekly recoveries of age 3 coho tagged in the Sachs Creek  
(Skidegate Inlet) tag group. 1984 brood year, 1987 recovery year.**



**Estimated Adjusted CWT weekly recoveries of age 3 coho tagged in the Sachs Creek (Skidegate Inlet) tag group. 1984 brood year, 1987 recovery year.**

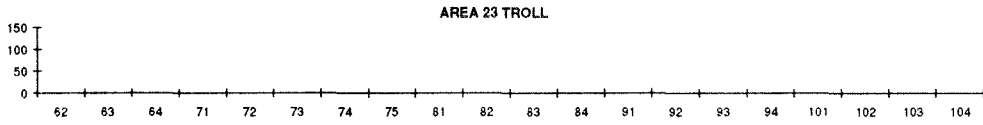
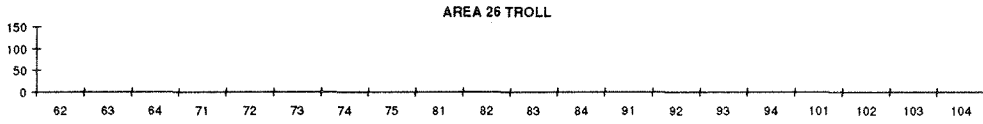
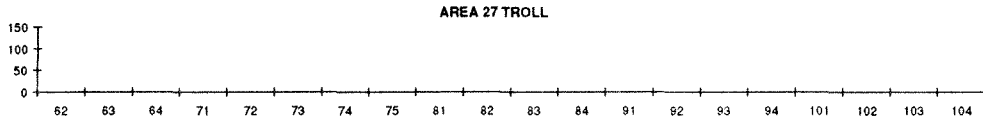
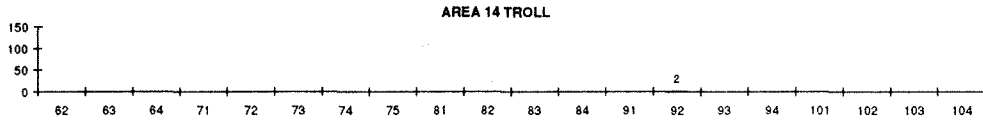
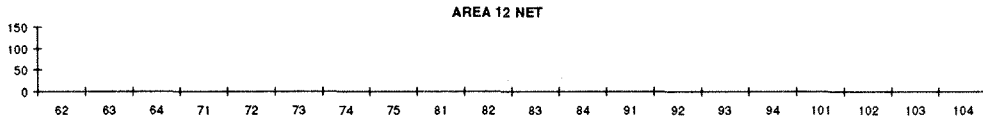
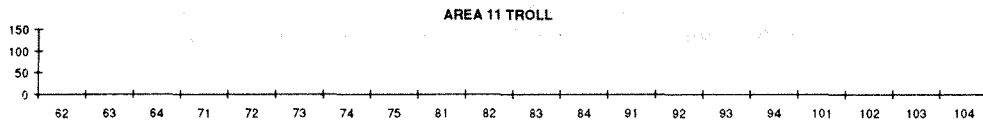


**Estimated Adjusted CWT weekly recoveries of age 3 coho tagged in the Sachs Creek (Skidegate Inlet) tag group. 1984 brood year, 1987 recovery year.**

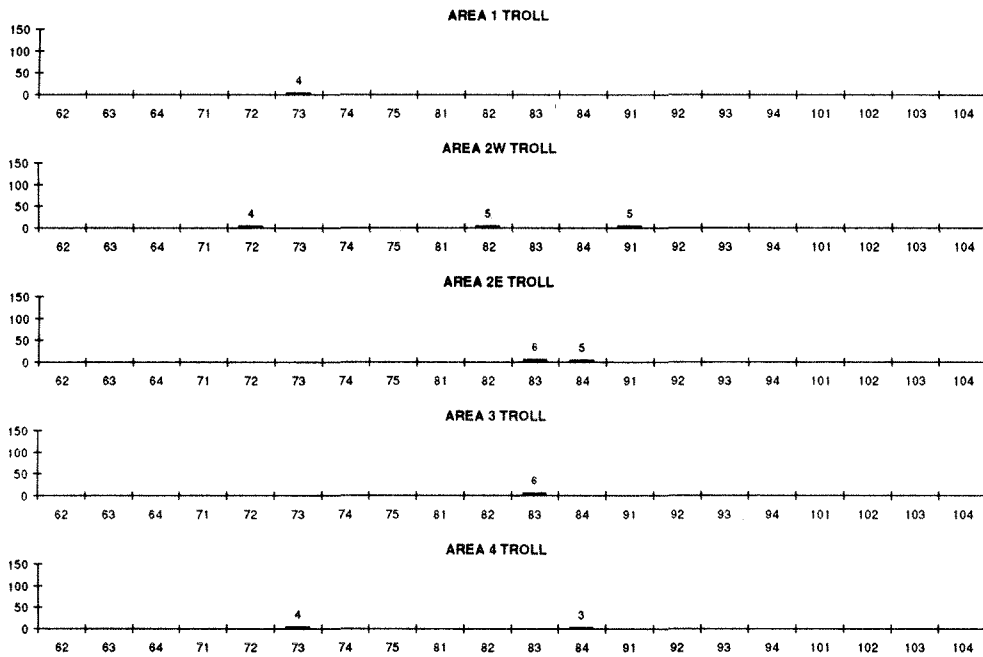




**Estimated Adjusted CWT weekly recoveries of age 3 coho tagged in the Sachs Creek (Skidegate Inlet) tag group. 1984 brood year, 1987 recovery year.**



**Estimated Adjusted CWT weekly recoveries of age 4 coho tagged in the Sachs Creek (Skidegate Inlet) tag group. 1984 brood year, 1988 recovery year.**



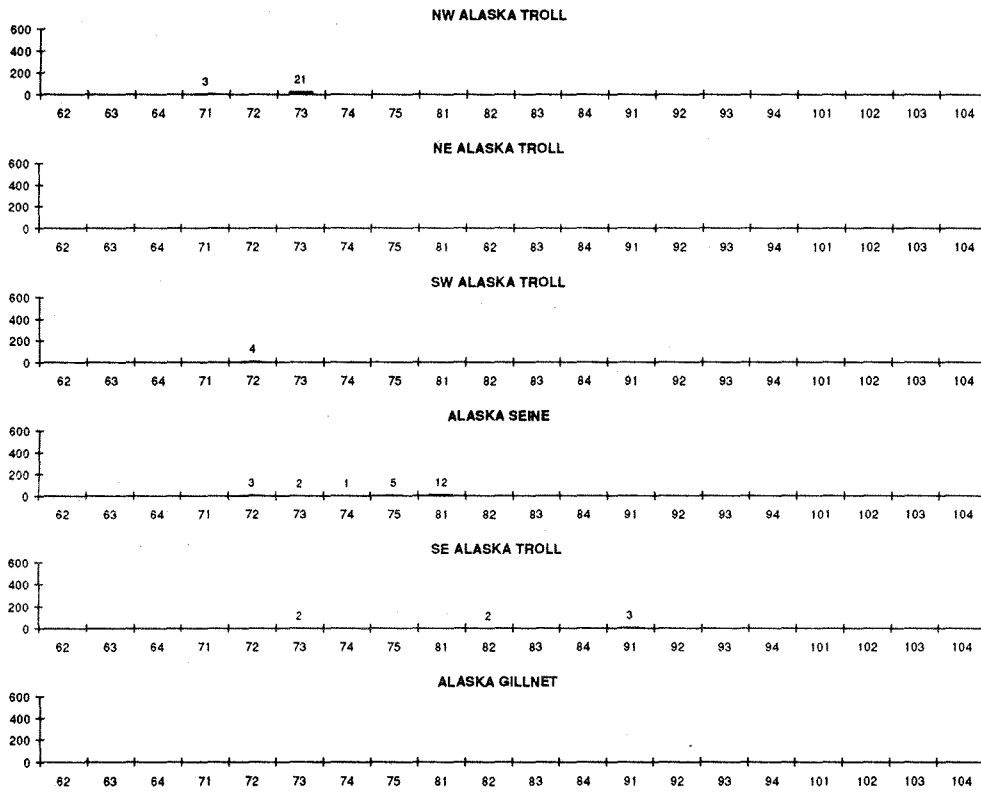
**Estimated Adjusted CWT weekly recoveries of age 3 and age 4 coho tagged in the Pallant Creek tag group, Cumshewa Inlet. 1989 brood year, 1992 and 1993 recovery years.**

RECOVERY AREA / GEARTYPE	STATISTICAL AREA	AGE CLASS	STATISTICAL WEEK																		
			62	63	64	71	72	73	74	75	81	82	83	84	91	92	93	94	101	102	103
A102S	A102	3	0	0	0	0	0	0	0	0	7	0	0	0	0	0	0	0	0	0	0
A104S	A104	3	0	0	0	0	3	2	1	5	5	0	0	0	0	0	0	0	0	0	0
ANWTR	A113	3	0	0	0	3	0	17	0	0	0	0	0	0	0	0	0	0	0	0	
ANWTR	ANW	3	0	0	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	
ASETR	A101	3	0	0	0	0	2	0	0	0	2	0	0	3	0	0	0	0	0	0	
ASWTR	A103	3	0	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
FWSP	0FW	3	0	0	0	0	0	0	0	0	0	0	0	0	16	0	52	8	0	4	
NN	001	3	0	0	0	0	0	0	0	4	0	0	0	0	0	0	0	0	0	0	
NN	003	3	0	0	0	0	0	0	0	0	0	0	0	0	37	0	0	0	0	0	
NN	02E	3	0	0	0	0	0	0	0	0	0	0	0	489	402	151	41	0	0	0	
NN	02E	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
NN (SA's 4 + 5)	074	4	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
NSPT	02E	3	0	0	4	0	12	4	0	0	0	0	32	119	28	32	16	0	0	0	
NTR	001	3	0	0	0	33	15	0	37	7	10	0	0	0	0	0	0	0	0	0	
NTR	003	3	0	0	0	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
NTR	004	3	0	0	0	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
NTR	005	3	0	0	0	0	0	0	22	0	0	0	0	0	0	0	0	0	0	0	
NTR	02E	3	0	0	0	8	7	18	0	137	41	301	159	230	0	0	0	0	0	0	
NTR	02E	4	0	0	0	0	0	0	0	0	0	0	9	0	0	0	0	0	0	0	
NTR	02W	3	0	0	0	0	0	9	75	0	118	0	0	0	0	0	0	0	0	0	
NTR	02W	4	0	0	0	0	0	0	4	0	0	0	0	0	0	0	0	0	0	0	
NTR (SA's 1 + 2E - 2W)	040	3	0	0	0	0	0	0	0	0	0	0	0	130	24	0	0	0	0	0	
NTR (SA's 2E + 2W)	041	3	0	0	0	493	0	330	217	267	0	0	0	0	0	0	0	0	0	0	
NTR (SA's 1 + 4)	045	3	0	0	0	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
NTR (SA's 2E + 4 + 5)	051	3	0	0	0	33	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
NTR (SA's 2E + 3)	058	3	0	0	0	0	0	0	0	0	0	0	7	0	0	0	0	0	0	0	
NWTR (NWVI)	027	3	0	0	0	0	4	9	0	0	0	0	24	0	0	0	0	0	0	0	
NWTR (NWVI)	027	4	0	0	0	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	
SWTR (SWVI)	023	3	0	0	0	0	0	0	0	0	0	0	0	0	4	0	0	0	0	0	

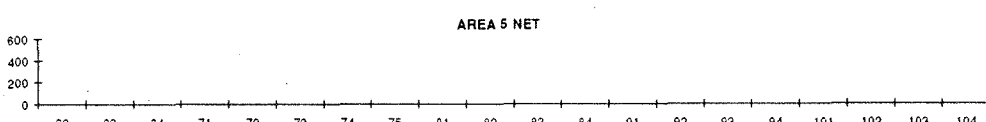
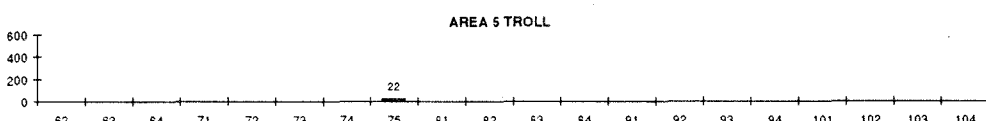
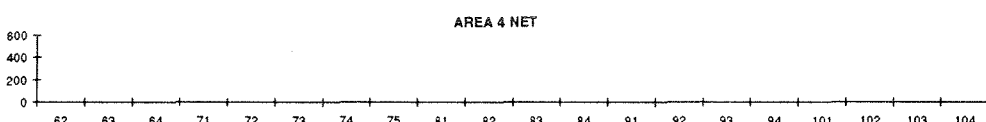
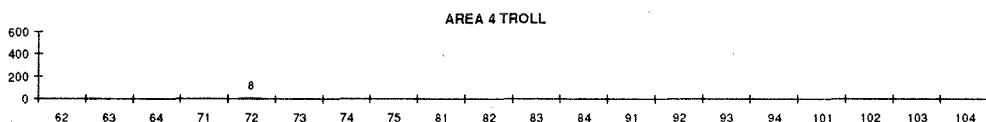
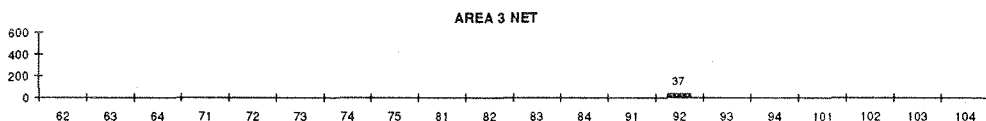
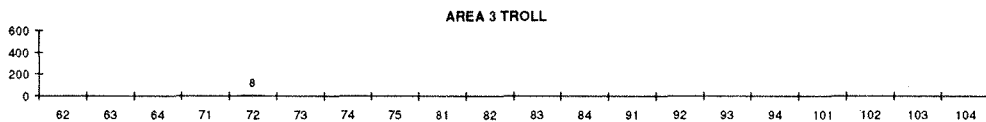
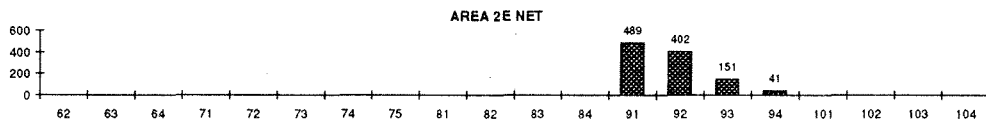
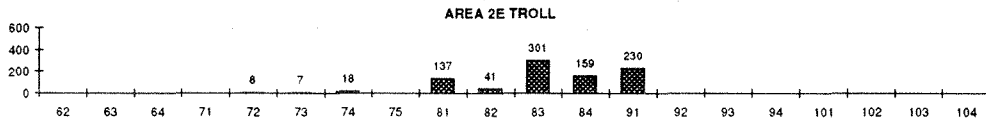
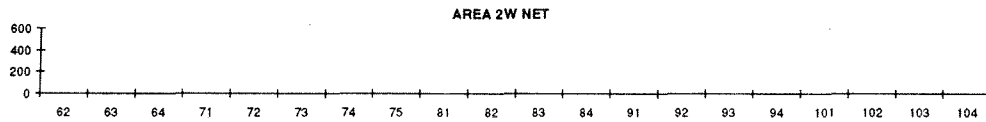
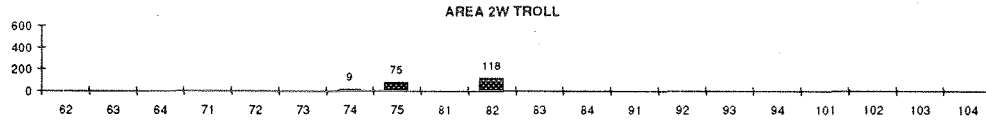
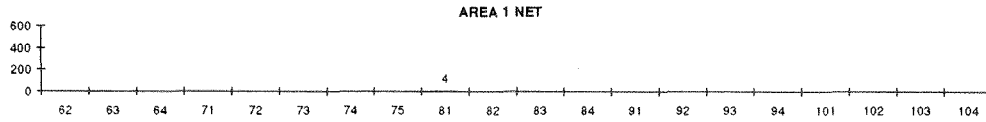
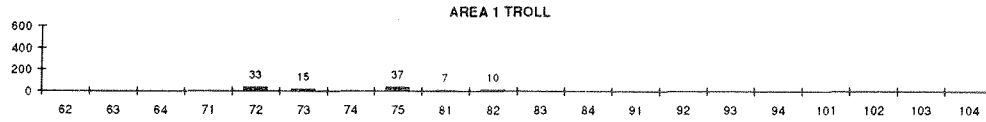
  

STATISTICAL AREA	RECOVERY AREA / AGE	CLASS	STATISTICAL WEEK																	
			62	63	64	71	72	73	74	75	81	82	83	84	91	92	93	94	101	102
113,NW	AKNWTR	3	0	0	0	3	0	21	0	0	0	0	0	0	0	0	0	0	0	0
No data	AKNETR	3,4																		
103	AKSWTR	3	0	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0
102,104	AKSN	3	0	0	0	3	2	1	5	12	0	0	0	0	0	0	0	0	0	0
101	AKSETR	3	0	0	0	2	0	0	0	2	0	0	3	0	0	0	0	0	0	0
No data	AKGN	3,4																		
001	AREA1TR	3	0	0	0	33	15	0	37	7	10	0	0	0	0	0	0	0	0	0
001	AREA1N	3	0	0	0	0	0	0	4	0	0	0	0	0	0	0	0	0	0	0
02W	AREA2WTR	3	0	0	0	0	0	9	75	0	118	0	0	0	0	0	0	0	0	0
02W	AREA2WTR	4	0	0	0	0	0	0	4	0	0	0	0	0	0	0	0	0	0	0
No data	AREA2WN	3,4																		
02E	AREA2ETR	3	0	0	0	8	7	18	0	137	41	301	159	230	0	0	0	0	0	0
02E	AREA2ETR	4	0	0	0	0	0	0	0	0	0	0	9	0	0	0	0	0	0	0
02E	AREA2EN	3	0	0	0	0	0	0	0	0	0	0	489	402	151	41	0	0	0	0
02E	AREA2EN	4	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0
003	AREA3TR	3	0	0	0	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0
003	AREA3N	3	0	0	0	0	0	0	0	0	0	0	0	37	0	0	0	0	0	0
004	AREA4TR	3	0	0	0	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0
No data	AREA4N	3,4																		
005	AREA5TR	3	0	0	0	0	0	0	22	0	0	0	0	0	0	0	0	0	0	0
No data	AREA5N	3,4																		
No data	AREA6TR	3,4																		
No data	AREA6N	3,4																		
No data	AREA7TR	3,4																		
No data	AREA7N	3,4																		
No data	AREA8TR	3,4																		
No data	AREA9TR	3,4																		
No data	AREA10TR	3,4																		
No data	AREA11TR	3,4																		
No data	AREA12N	3,4																		
No data	AREA14TK	3,4																		
027	AREA27TR	3	0	0	0	0	4	9	0	0	0	0	0	24	0	0	0	0	0	0
027	AREA27TR	4	0	0	0	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0
No data	AREA26TR	3,4																		
023	AREA23TR	3	0	0	0	0	0	0	0	0	0	0	0	0	4	0	0	0	0	0

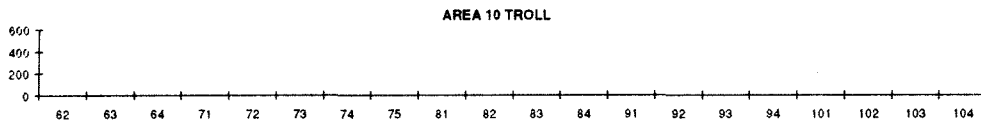
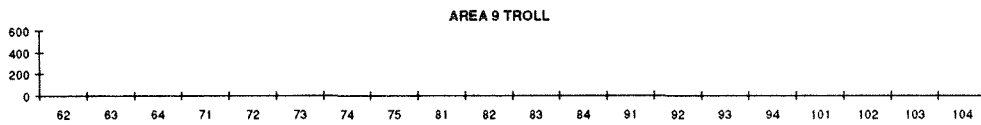
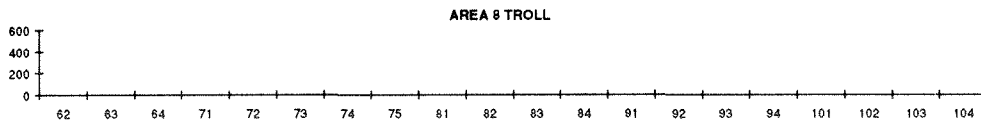
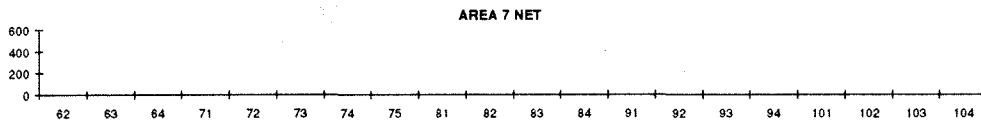
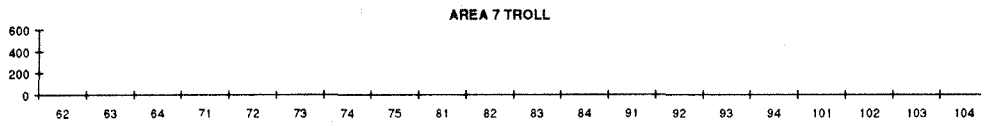
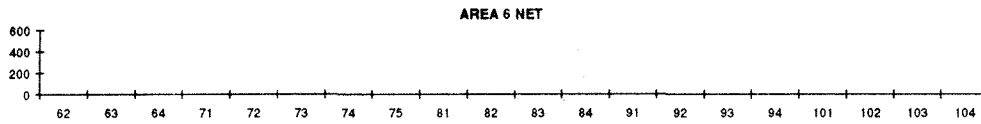
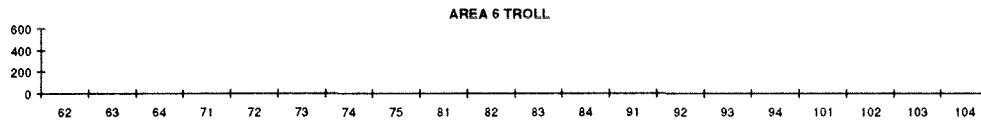
**Estimated Adjusted CWT weekly recoveries of age 3 coho tagged in the Pallant Creek (Cumshewa Inlet) tag group. 1989 brood year, 1992 recovery year.**



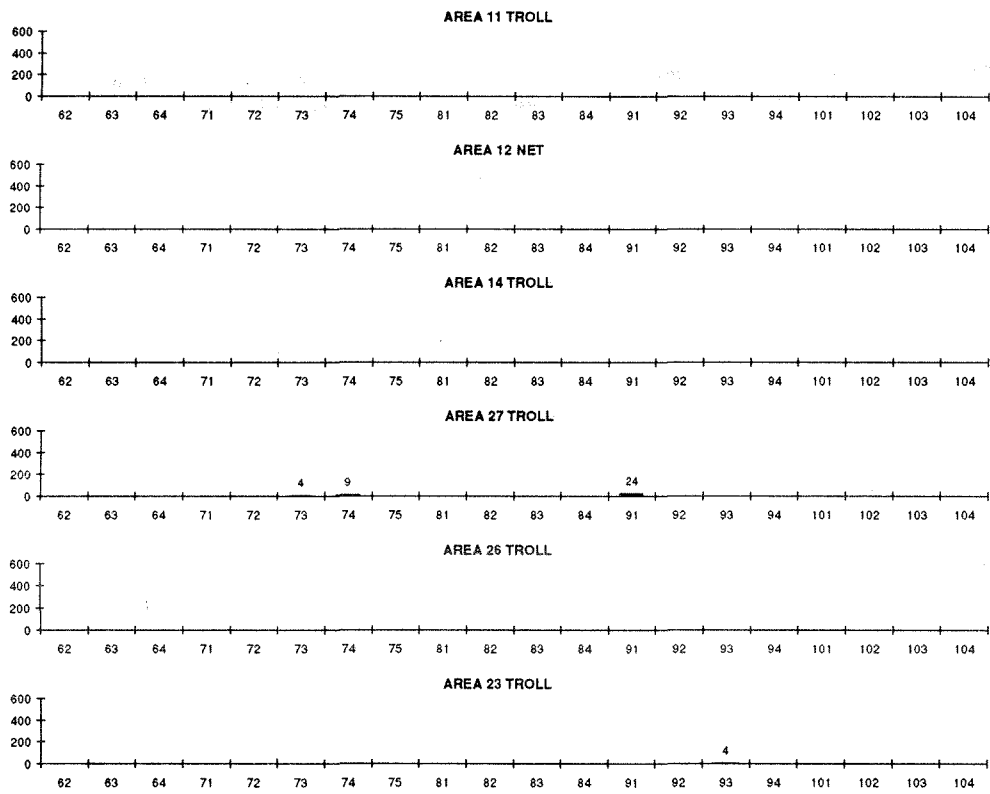
Estimated Adjusted CWT weekly recoveries of age 3 coho tagged in the Pallant Creek (Cumshewa Inlet) tag group. 1989 brood year, 1992 recovery year.



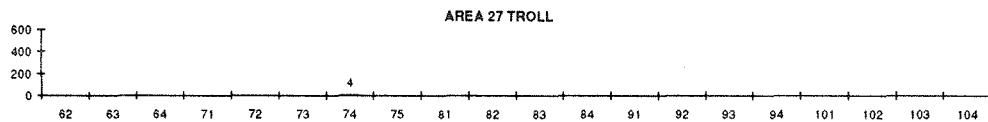
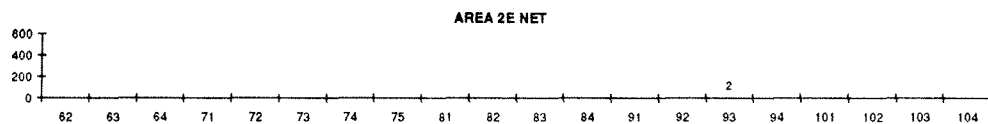
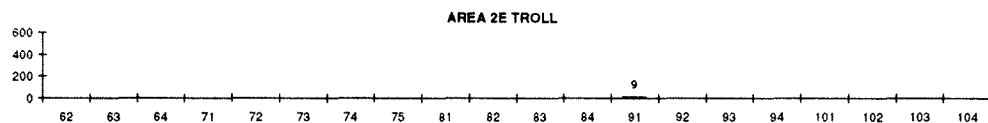
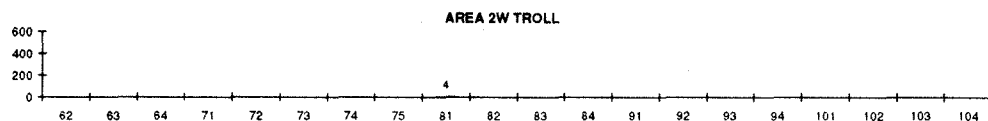
**Estimated Adjusted CWT weekly recoveries of age 3 coho tagged in the Pallant Creek (Cumshewa Inlet) tag group. 1989 brood year, 1992 recovery year.**



**Estimated Adjusted CWT weekly recoveries of age 3 coho tagged in the Pallant Creek (Cumshewa Inlet) tag group. 1989 brood year, 1992 recovery year.**



**Estimated Adjusted CWT weekly recoveries of age 4 coho tagged in the Pallant Creek (Cumshewa Inlet) tag group. 1989 brood year, 1993 recovery year.**

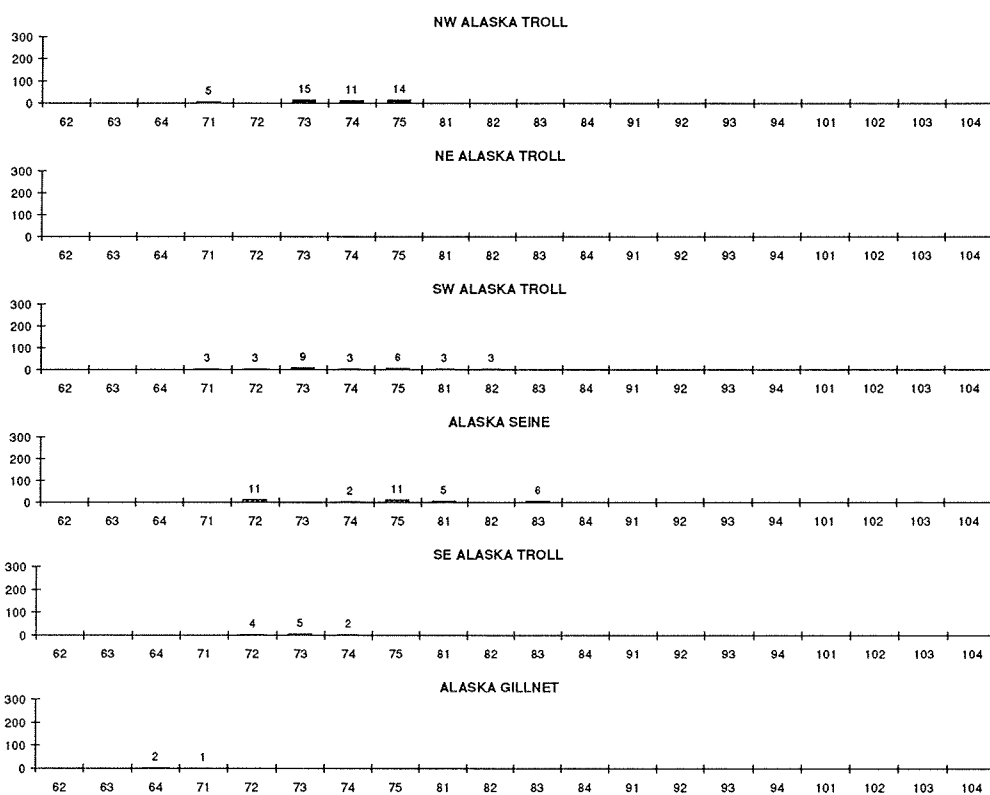




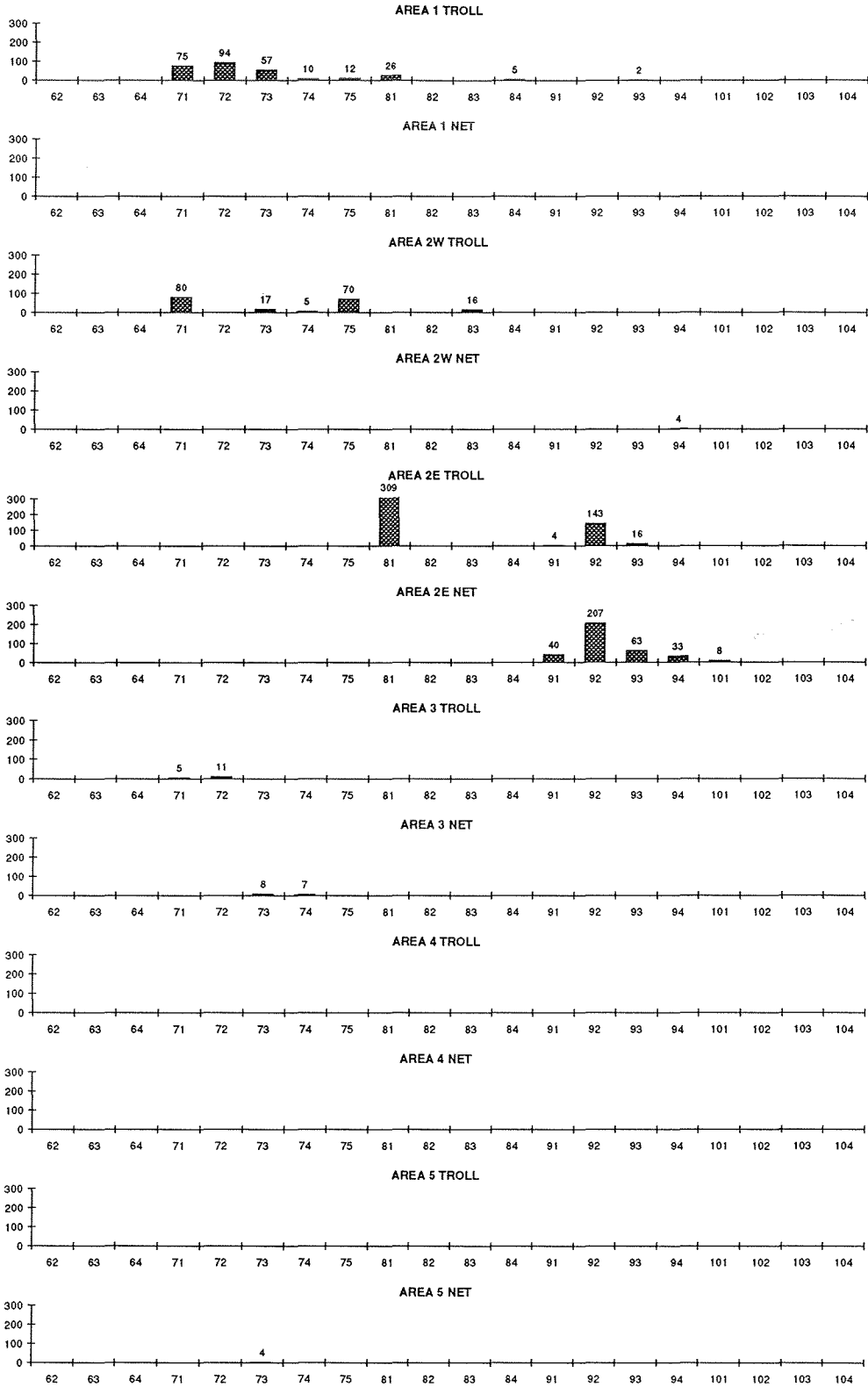




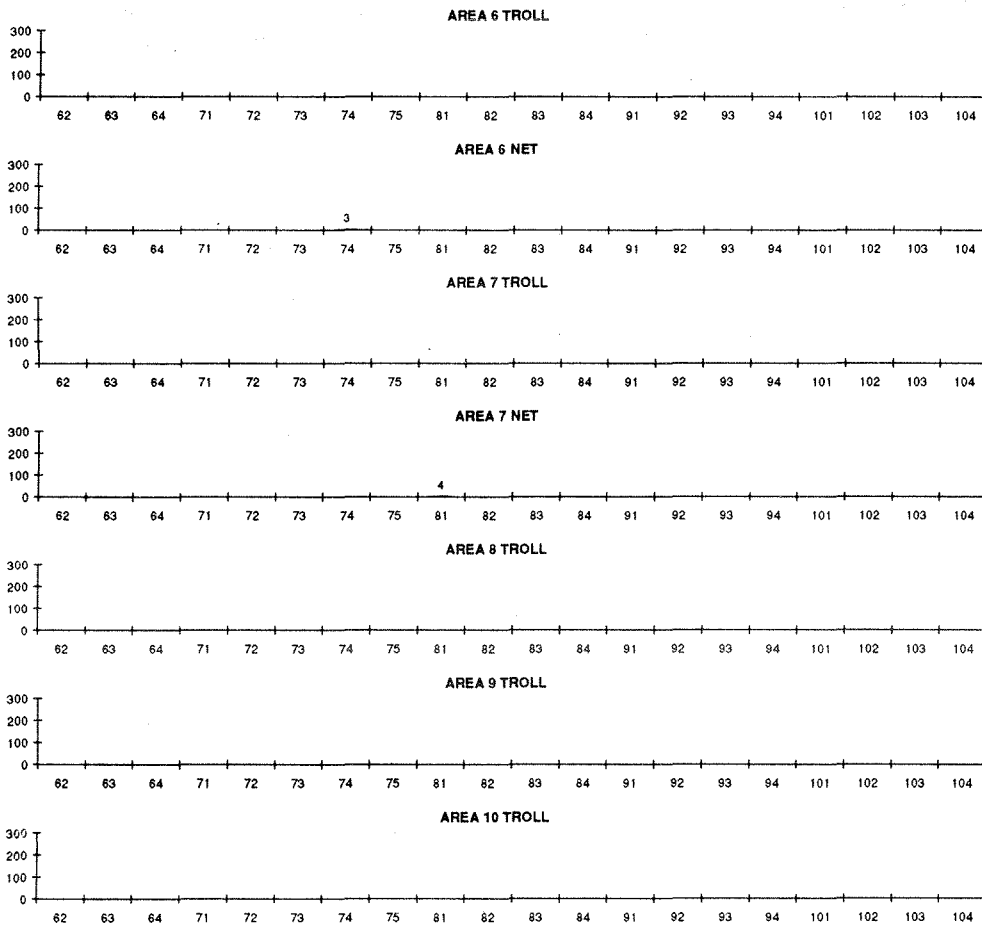
Estimated Adjusted CWT weekly recoveries of age 3 coho tagged in the Pallant Creek  
(Cumshewa Inlet) tag group. 1988 brood year, 1991 recovery year.



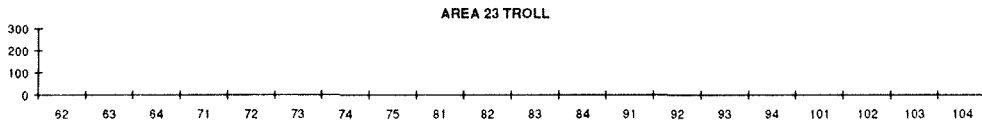
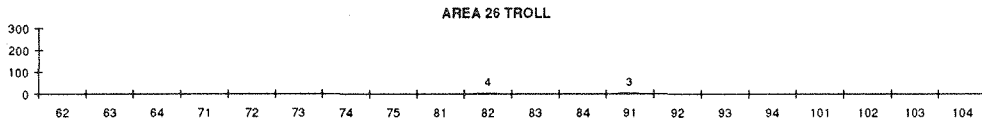
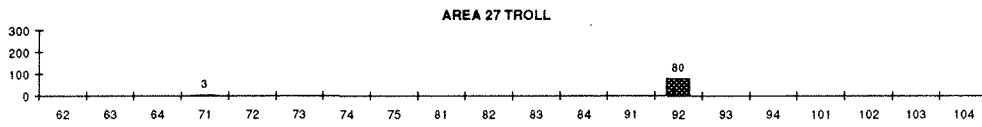
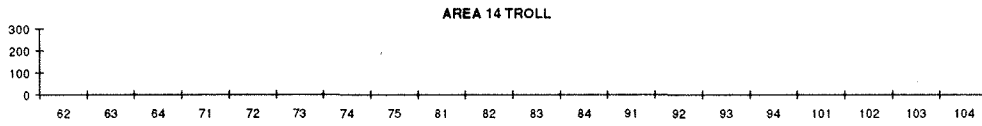
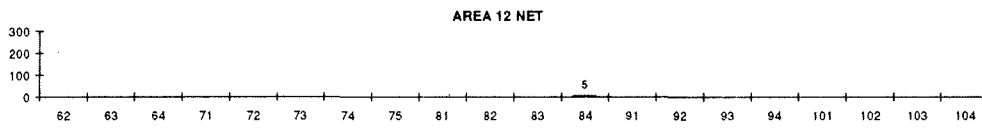
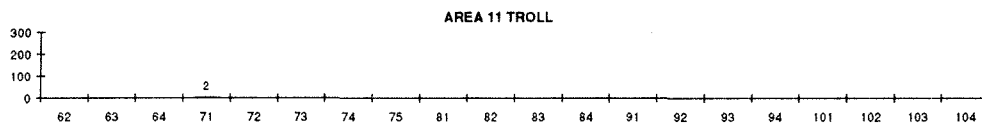
Estimated Adjusted CWT weekly recoveries of age 3 coho tagged in the Pallant Creek (Cumshewa Inlet) tag group. 1988 brood year, 1991 recovery year.



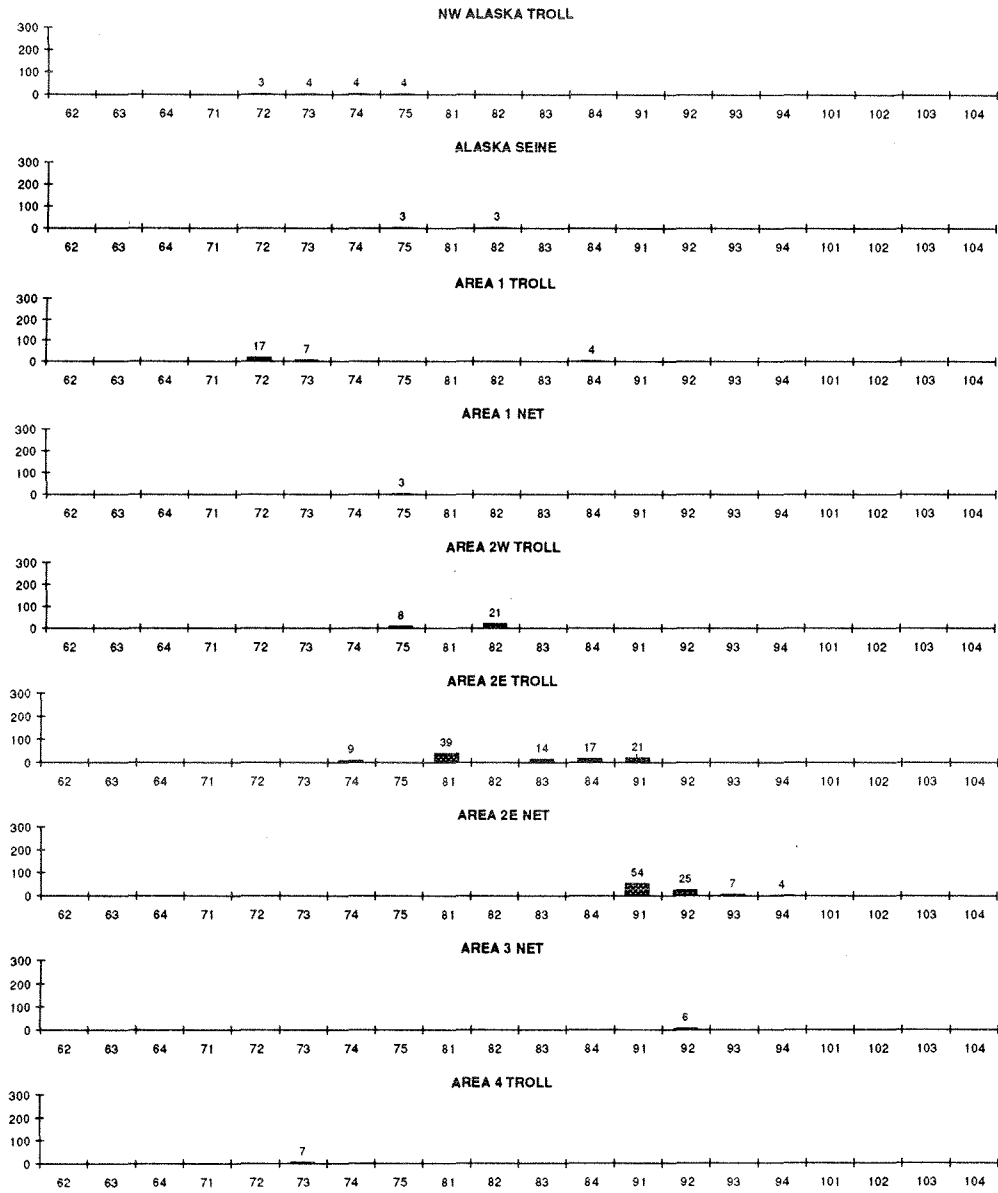
**Estimated Adjusted CWT weekly recoveries of age 3 coho tagged in the Pallant Creek (Cumshewa Inlet) tag group, 1988 brood year, 1991 recovery year.**



**Estimated Adjusted CWT weekly recoveries of age 3 coho tagged in the Pallant Creek (Cumshewa Inlet) tag group. 1988 brood year, 1991 recovery year.**



**Estimated Adjusted CWT weekly recoveries of age 4 coho tagged in the Pallant Creek (Cumshewa Inlet) tag group. 1988 brood year, 1992 recovery year.**



Estimated Adjusted CWT weekly recoveries of age 3 and age 4 coho tagged in the Pallant Creek tag group, Cumshewa Inlet, 1987 brood year, 1990 and 1991 recovery years.

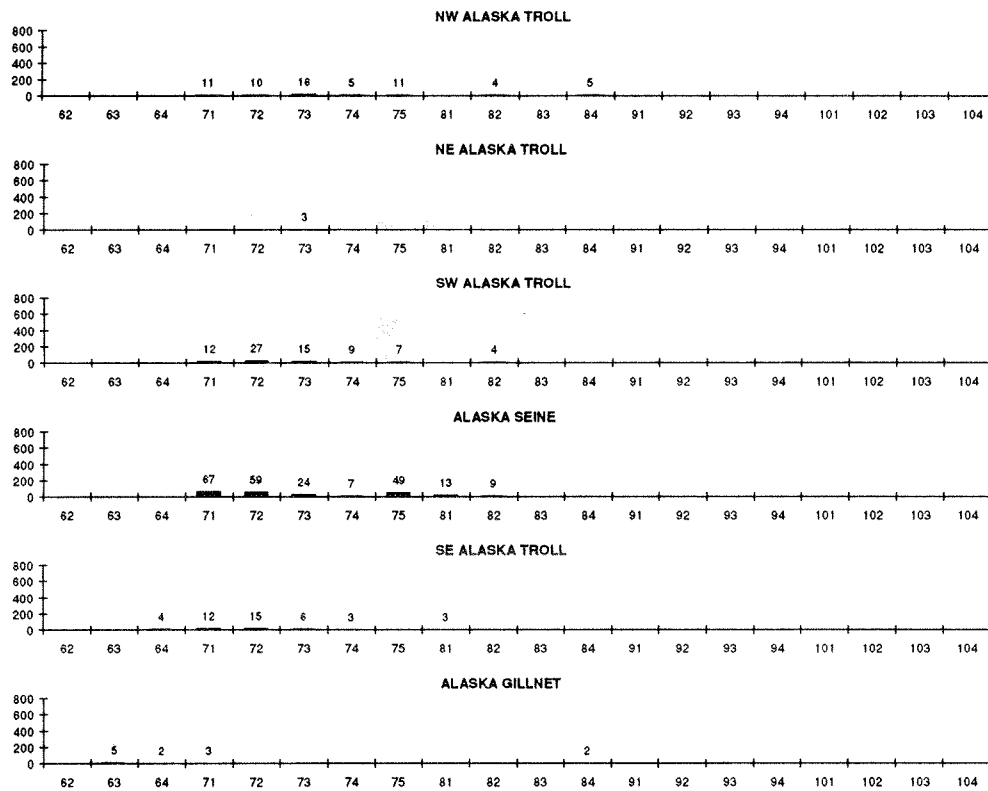
RECOVERY AREA / GEARTYPE	STATISTICAL AREA	AGE CLASS	STATISTICAL WEEK																			
			62	63	64	71	72	73	74	75	81	82	83	84	91	92	93	94	101	102	103	104
A101G	A101	3	0	5	0	5	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0
A101G	A101	4	0	0	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0
A101S	A101	3	0	0	0	0	0	0	0	6	0	0	0	0	0	0	0	0	0	0	0	0
A101S	A101	4	0	0	0	0	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0
A102S	A102	3	0	0	0	0	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
A104S	A104	3	0	0	0	67	52	24	7	43	13	9	0	0	0	0	0	0	0	0	0	0
A104S	A104	4	0	0	0	0	0	0	0	0	0	6	0	0	0	0	0	0	0	0	0	0
A106G	A106	3	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ANETR	A109	3	0	0	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ANWTR	A113	3	0	0	0	11	5	11	0	11	0	4	0	0	0	0	0	0	0	0	0	0
ANWTR	A157	3	0	0	0	0	0	5	0	5	0	0	0	0	0	0	0	0	0	0	0	0
ANWTR	ANW	3	0	0	0	0	5	5	0	0	0	0	5	0	0	0	0	0	0	0	0	0
ASESP	A102	3	0	0	0	13	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ASETR	A101	3	0	0	2	9	15	6	0	3	0	0	0	0	0	0	0	0	0	0	0	0
ASETR	A102	3	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ASETR	A105	3	0	0	2	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0
ASWTR	A103	3	0	0	0	12	15	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ASWTR	A103	4	0	0	0	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0
ASWTR	A104	3	0	0	0	0	9	9	6	0	0	4	0	0	0	0	0	0	0	0	0	0
ASWTR	ASW	3	0	0	0	0	3	3	3	7	0	0	0	0	0	0	0	0	0	0	0	0
CN (SA's 7 + 8)	083	3	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0
FWSP	0FW	3	0	0	0	0	0	0	0	0	0	0	0	0	4	8	16	20	8	0	0	0
NCTR	006	3	0	0	0	0	7	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0
NCTR	007	3	0	0	0	9	4	0	0	4	3	0	0	0	6	0	0	0	0	0	0	0
NCTR	008	3	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0
NCTR	009	3	0	0	0	0	0	3	0	3	0	0	0	0	0	0	0	0	0	0	0	0
NN	001	3	0	0	0	0	0	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0
NN	003	3	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
NN	004	3	0	0	3	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
NN	005	3	0	0	3	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0
NN	02E	3	0	0	0	0	0	0	0	0	0	0	17	774	0	133	0	150	17	4	0	0
NN	02E	4	0	0	0	0	0	0	0	0	0	0	1	16	13	4	0	0	0	0	0	0
NN	02W	3	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0
NN (SA's 1 + 2E + 2W)	040	3	0	0	0	0	0	0	0	0	0	0	0	0	0	11	0	0	0	0	0	0
NN (SA's 1 + 3)	044	3	0	0	0	0	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0
NN (SA's 3 + 4)	068	3	0	0	0	2	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0
NSPT	02E	3	0	0	0	0	0	0	0	0	8	24	20	103	40	95	0	4	0	0	0	0
NSPT	02E	4	0	0	0	0	0	0	0	0	0	0	0	4	0	0	0	0	0	0	0	0
NTR	001	3	0	0	0	311	88	166	54	54	21	22	12	120	6	14	0	0	0	0	0	0
NTR	001	4	0	0	0	5	0	0	0	7	0	5	0	0	0	0	0	0	0	0	0	0
NTR	003	3	0	0	5	24	39	0	0	5	0	4	0	0	0	5	0	0	0	0	0	0
NTR	003	4	0	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
NTR	004	3	0	0	0	60	0	38	0	50	0	0	0	0	0	0	0	0	0	0	0	0
NTR	02E	3	0	0	0	12	0	5	0	0	0	0	314	291	136	9	50	130	0	0	0	0
NTR	02E	4	0	0	0	0	0	0	0	20	0	0	0	0	8	4	0	0	0	0	0	0
NTR	02W	3	0	0	0	30	6	0	0	0	0	0	0	58	0	0	0	0	0	0	0	0
NTR	02W	4	0	0	0	9	0	0	0	6	0	0	0	0	0	0	0	0	0	0	0	0
NTR (SA's 1 to 5)	033	3	0	0	0	12	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
NTR (SA's 1 + 2W)	035	3	0	0	0	18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
NTR (SA's 1 + 2E)	036	3	0	0	0	0	0	0	0	0	0	0	0	0	4	0	0	0	0	0	0	0
NTR (SA's 1 + 2E + 2W)	040	3	0	0	0	12	17	43	18	5	74	0	0	0	0	0	0	0	0	0	0	0
NTR (SA's 1 + 2E + 2W)	040	4	0	0	0	5	0	0	10	0	0	0	0	0	0	0	0	0	0	0	0	0
NTR (SA's 1 - 4)	045	3	0	0	0	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0
NTR (SA's 1 - 4)	045	4	0	0	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
NWTR (NWV1)	026	3	0	0	0	5	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
NWTR (NWV1)	027	3	0	0	0	23	14	8	12	0	0	0	14	0	0	0	0	0	0	0	0	0
NWTR (NWV1)	027	4	0	0	0	0	0	0	0	0	0	0	16	0	0	0	0	0	0	0	0	0
SCTR	010	3	0	0	0	0	0	0	4	0	7	0	0	0	0	0	0	0	0	0	0	0
SCTR	011	3	0	0	0	24	7	7	8	0	0	0	0	0	0	0	0	0	0	0	0	0
SCTR (SA's 10 + 11 + 12)	079	3	0	0	0	12	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

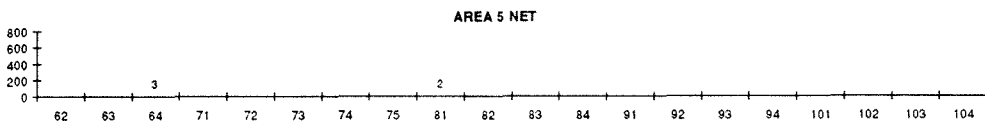
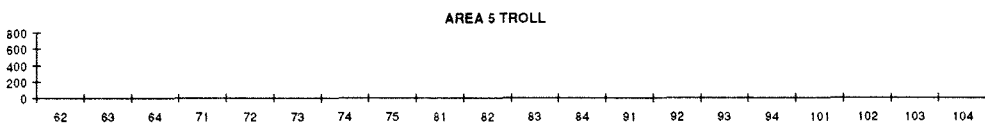
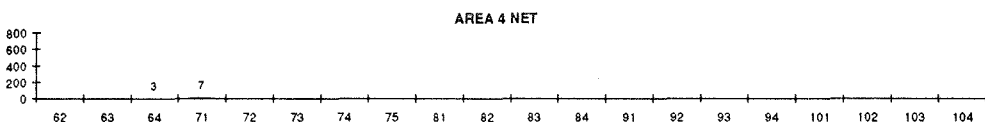
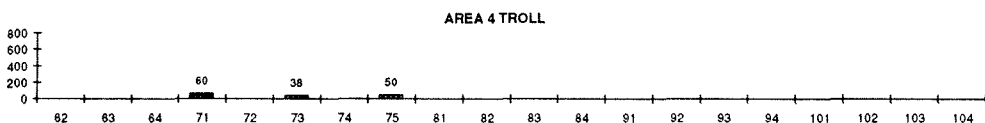
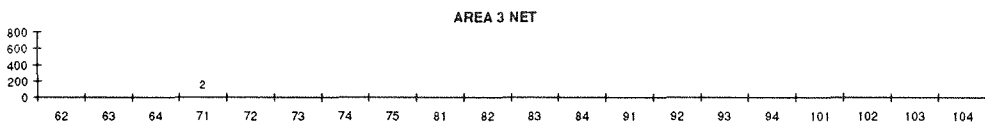
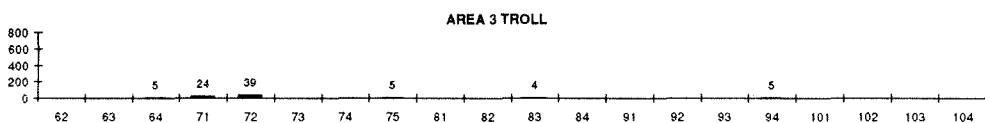
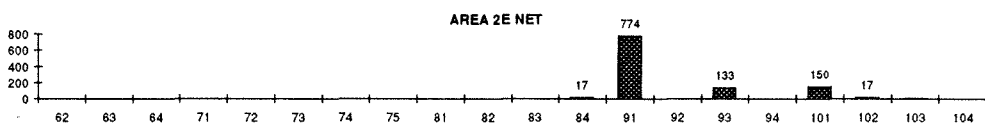
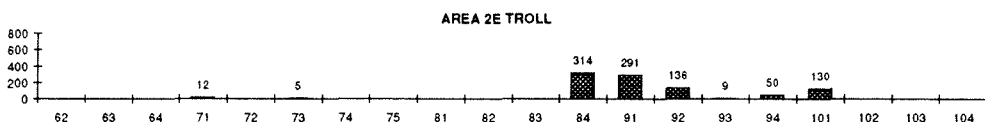
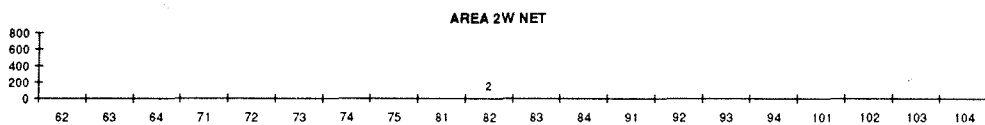
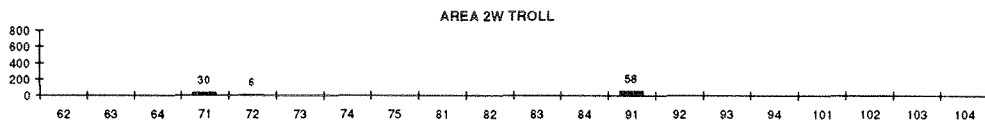
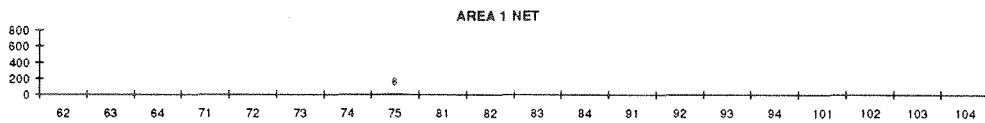
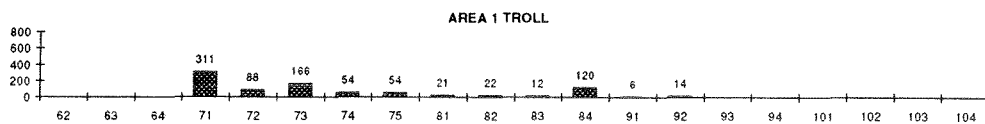
STATISTICAL AREA	RECOVERY AREA / GEARTYPE	AGE CLASS	STATISTICAL WEEK																			
			62	63	64	71	72	73	74	75	81	82	83	84	91	92	93	94	101	102	103	104
113,157,NW	AKNWTR	3	0	0	0	11	10	16	5	11	0	4	0	5	0	0	0	0	0	0	0	0
109	AKNETR	3	0	0	0	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0
103,104,SW	AKSWTR	3	0	0	0	12	27	15	9	7	0	4	0	0	0	0	0	0	0	0	0	0
103	AKSWTR	4	0	0	0	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0
101,102,104	AKSN	3	0	0	0	67	59	24	7	49	13	9	0	0	0	0	0	0	0	0	0	0
101,104	AKSN	4	0	0	0	0	0	0	4	0	0	0	6	0	0	0	0	0	0	0	0	0
101,102,105	AKSETR	3	0	0	4	12	15	6	3	0	3	0	0	0	0	0	0	0	0	0	0	0
101,106	AKGN	3	0	5	2	3	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0
101	AKGN	4	0	0	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0
001	AREA1TR	3	0	0	0	311	88	166	54	54	21	22	12	120	6	14	0	0	0	0	0	0
001	AREA1TR	4	0	0	0	5	0	0	0	7	0	5	0	0	0	0	0	0	0	0	0	0
001	AREA1N	3	0	0	0	0	0	0	0	6	0	0	0	0	0	0	0	0	0	0	0	0
02W	AREA2WTR	3	0	0	0	30	6	0	0	0	0	0	0	58	0	0	0	0	0	0	0	0
02W	AREA2WTR	4	0	0	0	9	0	0	0	6	0	0	0	0	0	0	0	0	0	0	0	0
02W	AREA2WN	3	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0
02E	AREA2ETR	3	0	0	0	12	0	5	0	0	0	0	314	291	136	9	50	130	0	0	0	0
02E	AREA2ETR	4	0	0	0	0	0	0	0	20	0	0	0	8	4	0	0	0	0	0	0	0
02E	AREA2EN	3	0	0	0	0	0	0	0	0	0	17	774	0	133	0	150	17	4	0	0	0
02E	AREA2EN	4	0	0	0	0	0	0	0	0	0	1</										



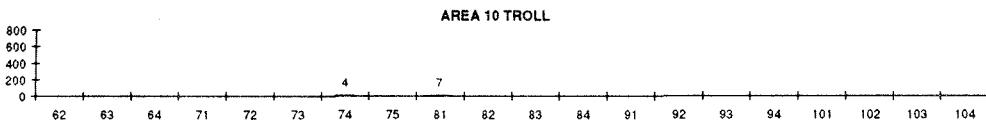
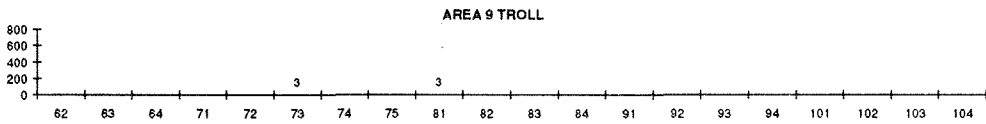
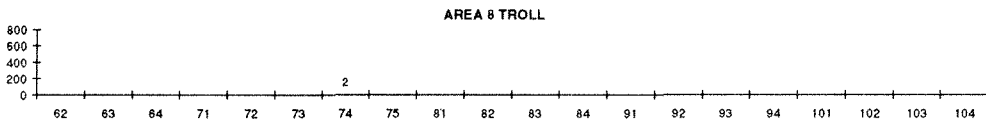
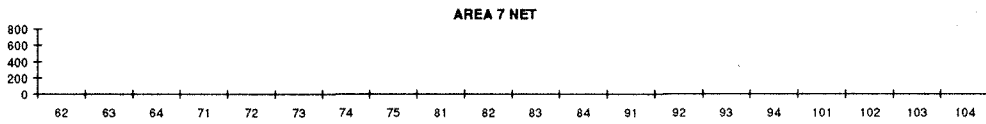
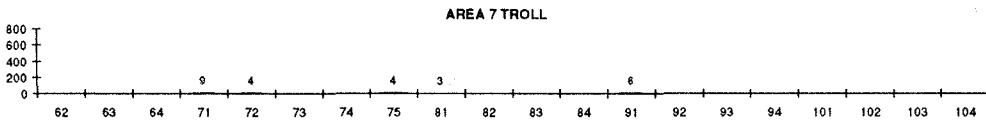
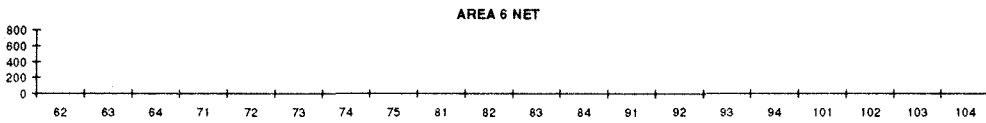
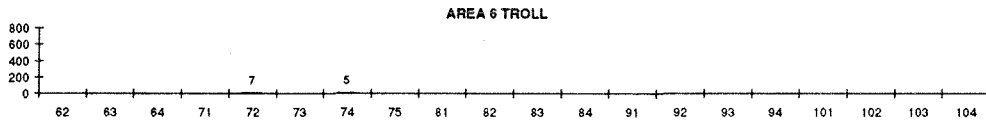
Estimated Adjusted CWT weekly recoveries of age 3 coho tagged in the Pallant Creek (Cumshewa Inlet) tag group. 1987 brood year, 1990 recovery year.



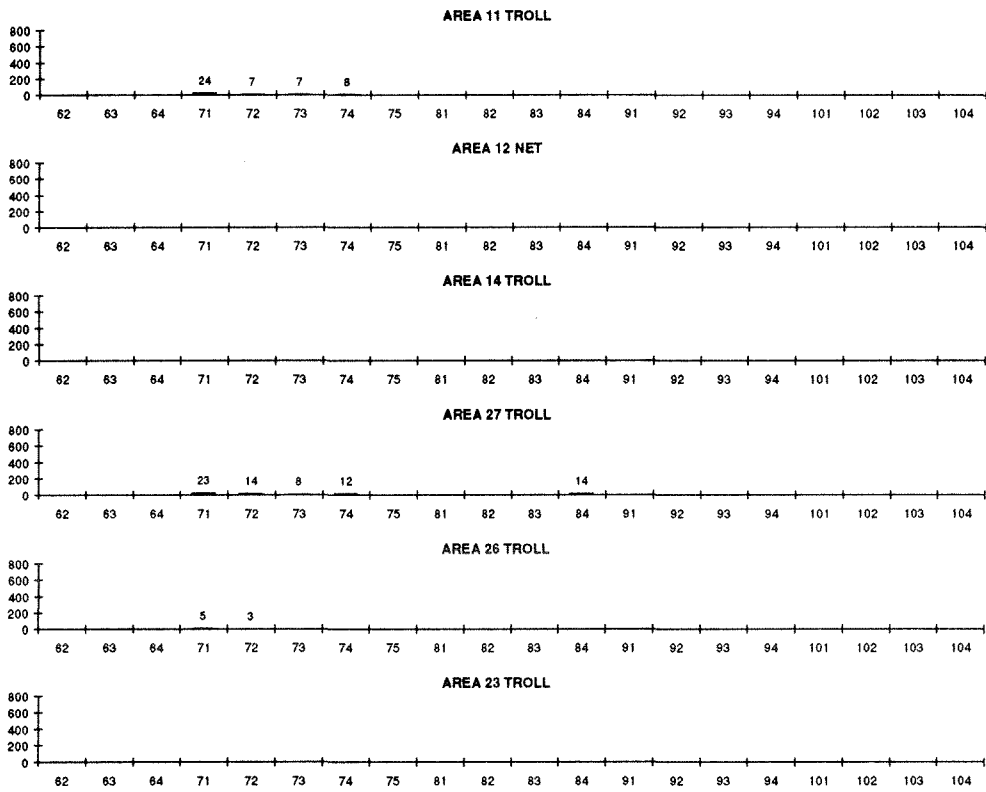
**Estimated Adjusted CWT weekly recoveries of age 3 coho tagged in the Pallant Creek (Cumshewa Inlet) tag group. 1987 brood year, 1990 recovery year.**



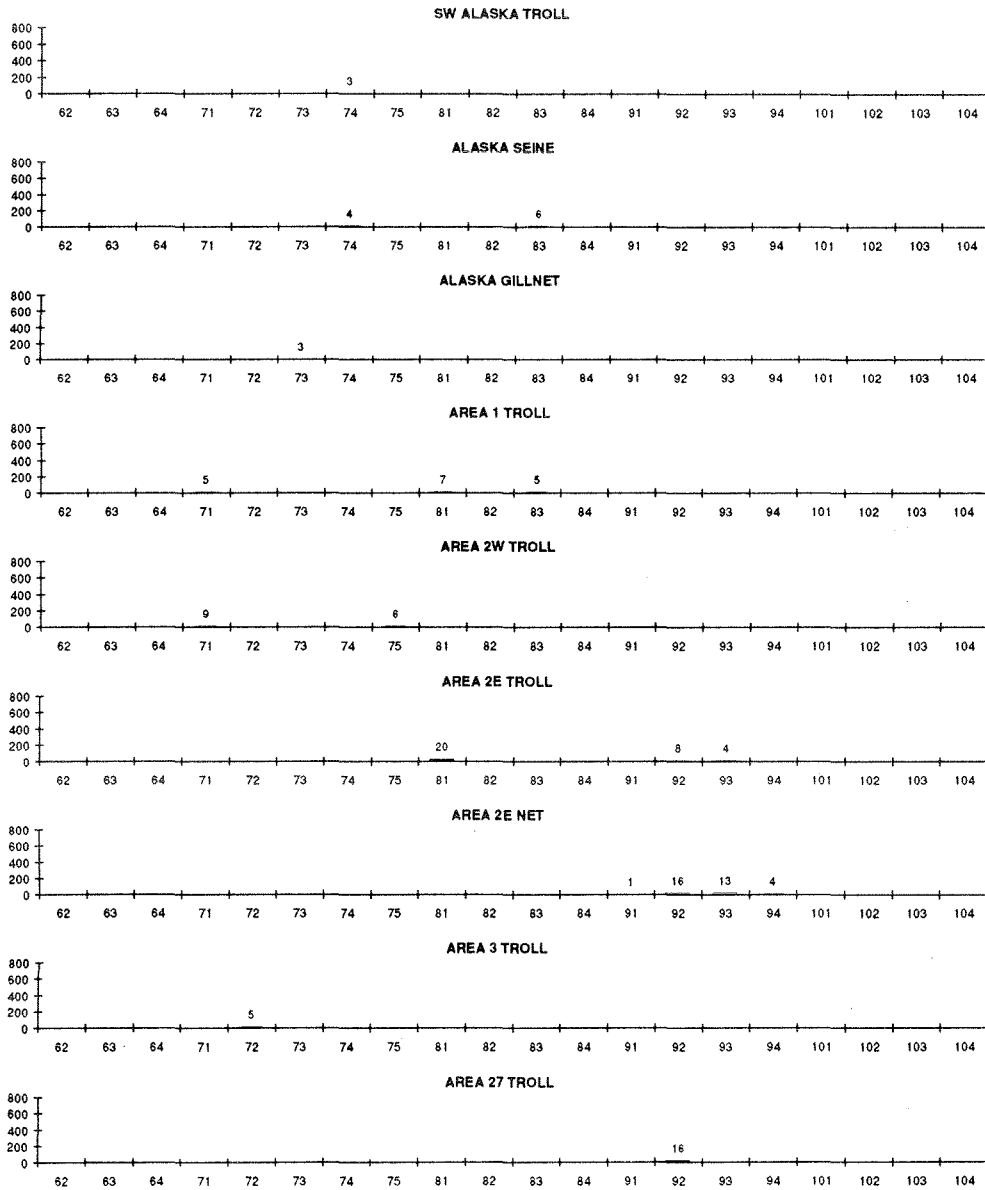
**Estimated Adjusted CWT weekly recoveries of age 3 coho tagged in the Pallant Creek (Cumshewa Inlet) tag group. 1987 brood year, 1990 recovery year.**



**Estimated Adjusted CWT weekly recoveries of age 3 coho tagged in the Pallant Creek (Cumshewa Inlet) tag group. 1987 brood year, 1990 recovery year.**

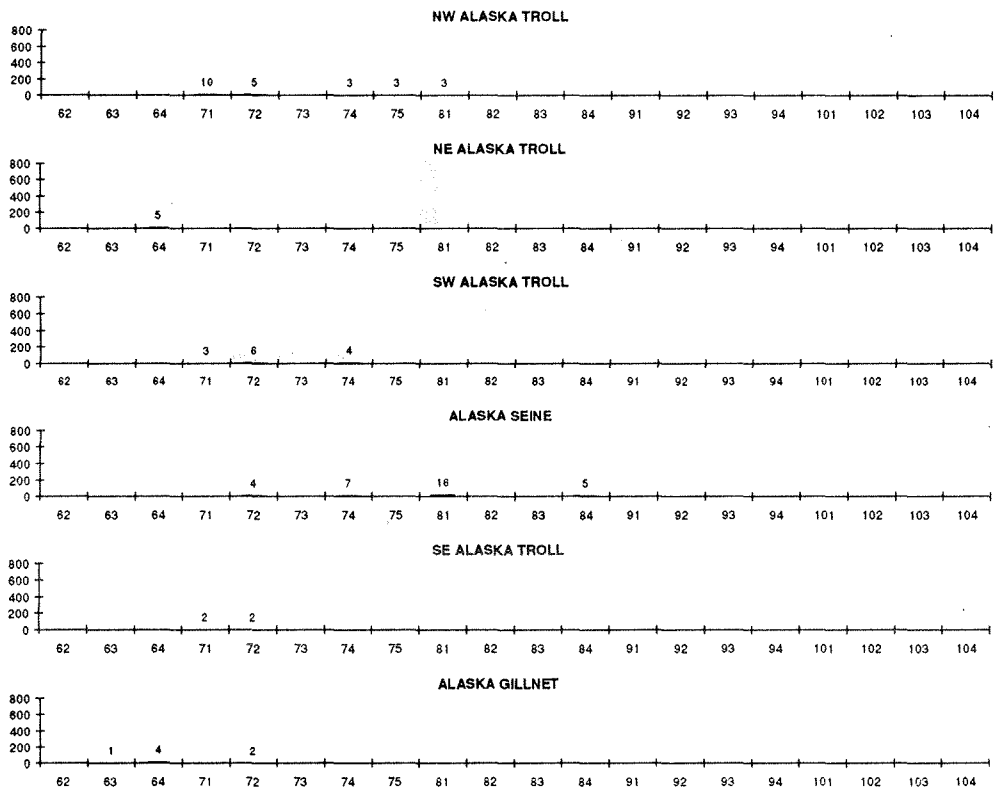


**Estimated Adjusted CWT weekly recoveries of age 4 coho tagged in the Pallant Creek (Cumshewa Inlet) tag group. 1987 brood year, 1991 recovery year.**

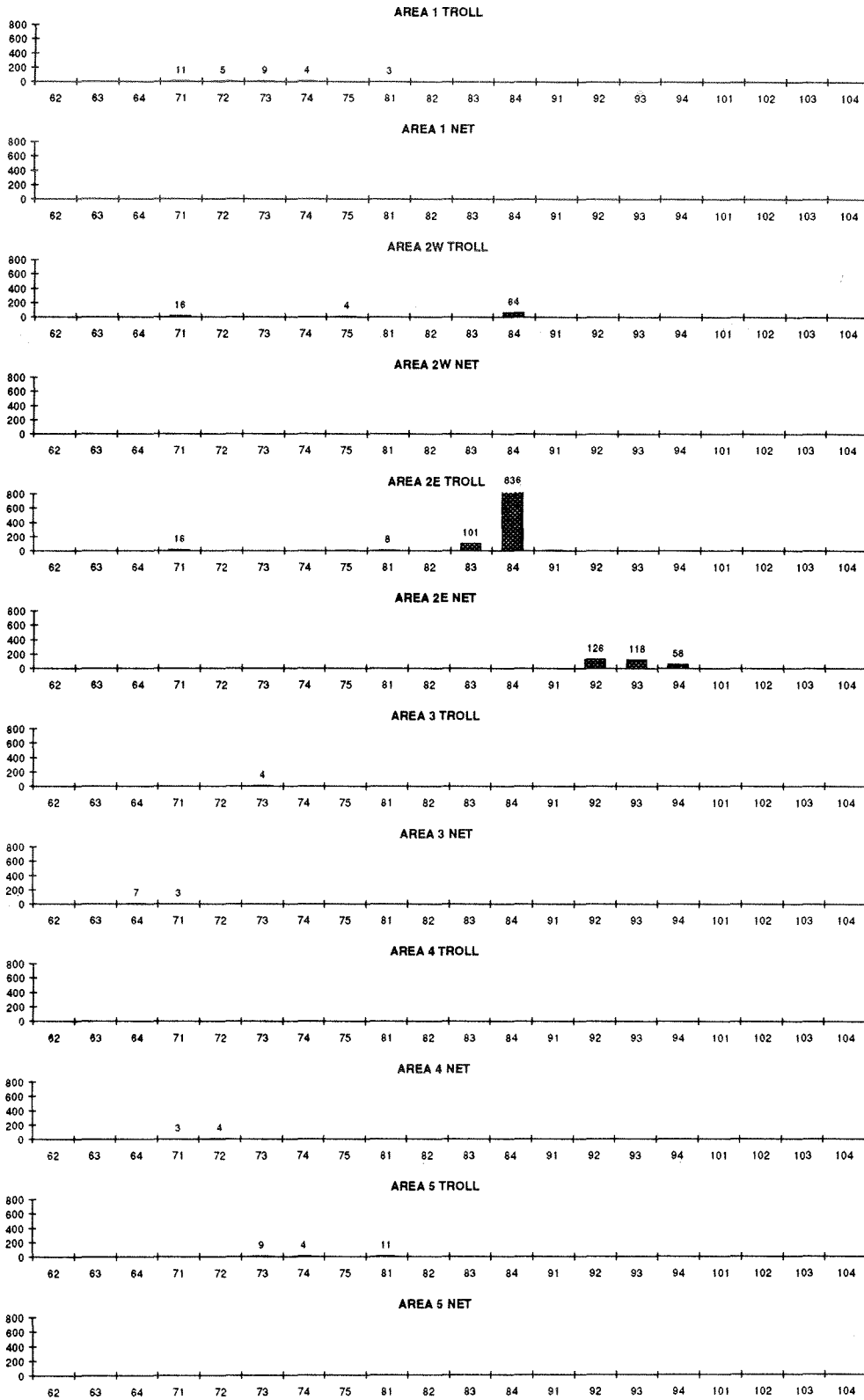




**Estimated Adjusted CWT weekly recoveries of age 3 coho tagged in the Pallant Creek (Cumshewa Inlet) tag group. 1986 brood year, 1989 recovery year.**

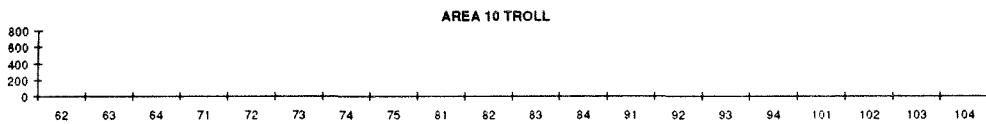
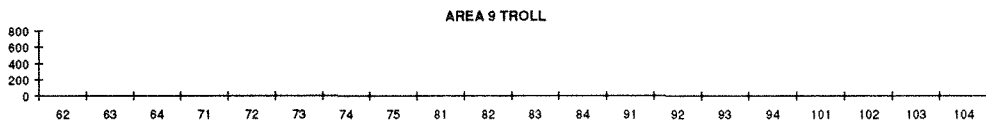
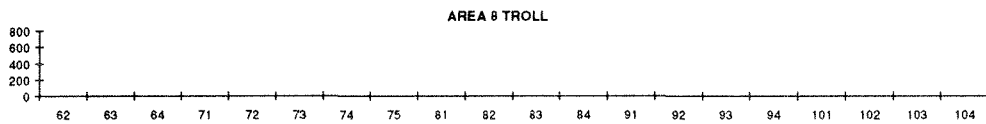
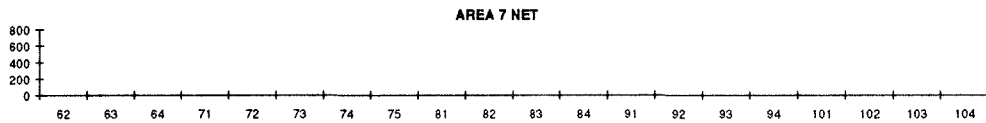
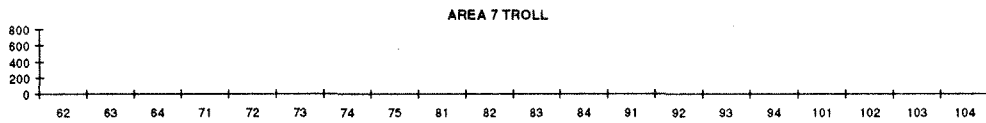
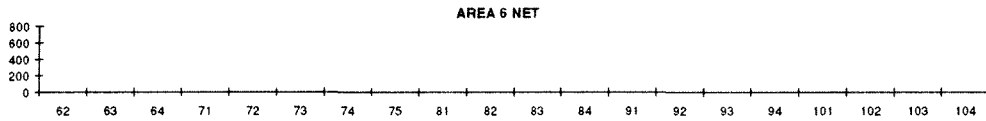
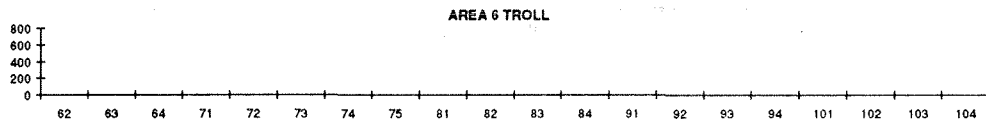


**Estimated Adjusted CWT weekly recoveries of age 3 coho tagged in the Pallant Creek (Cumshewa Inlet) tag group. 1986 brood year, 1989 recovery year.**

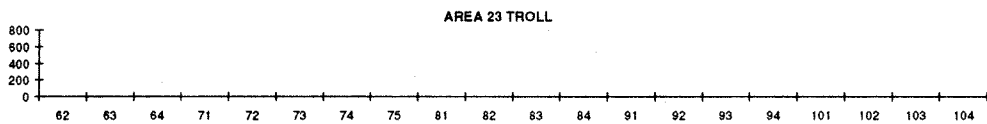
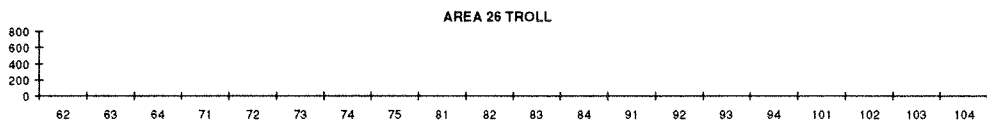
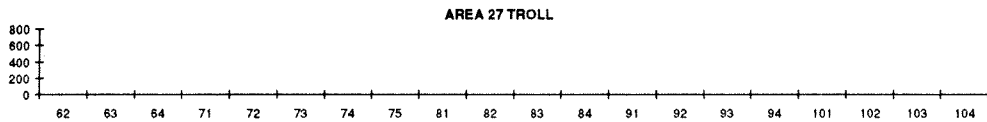
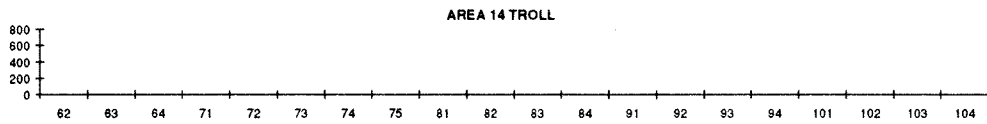
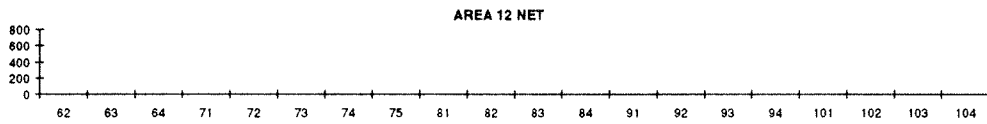
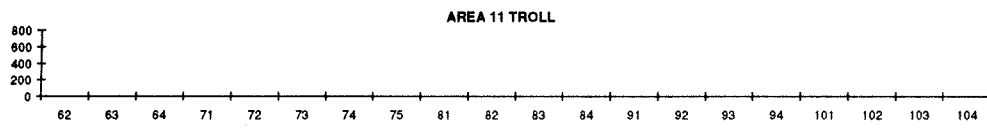




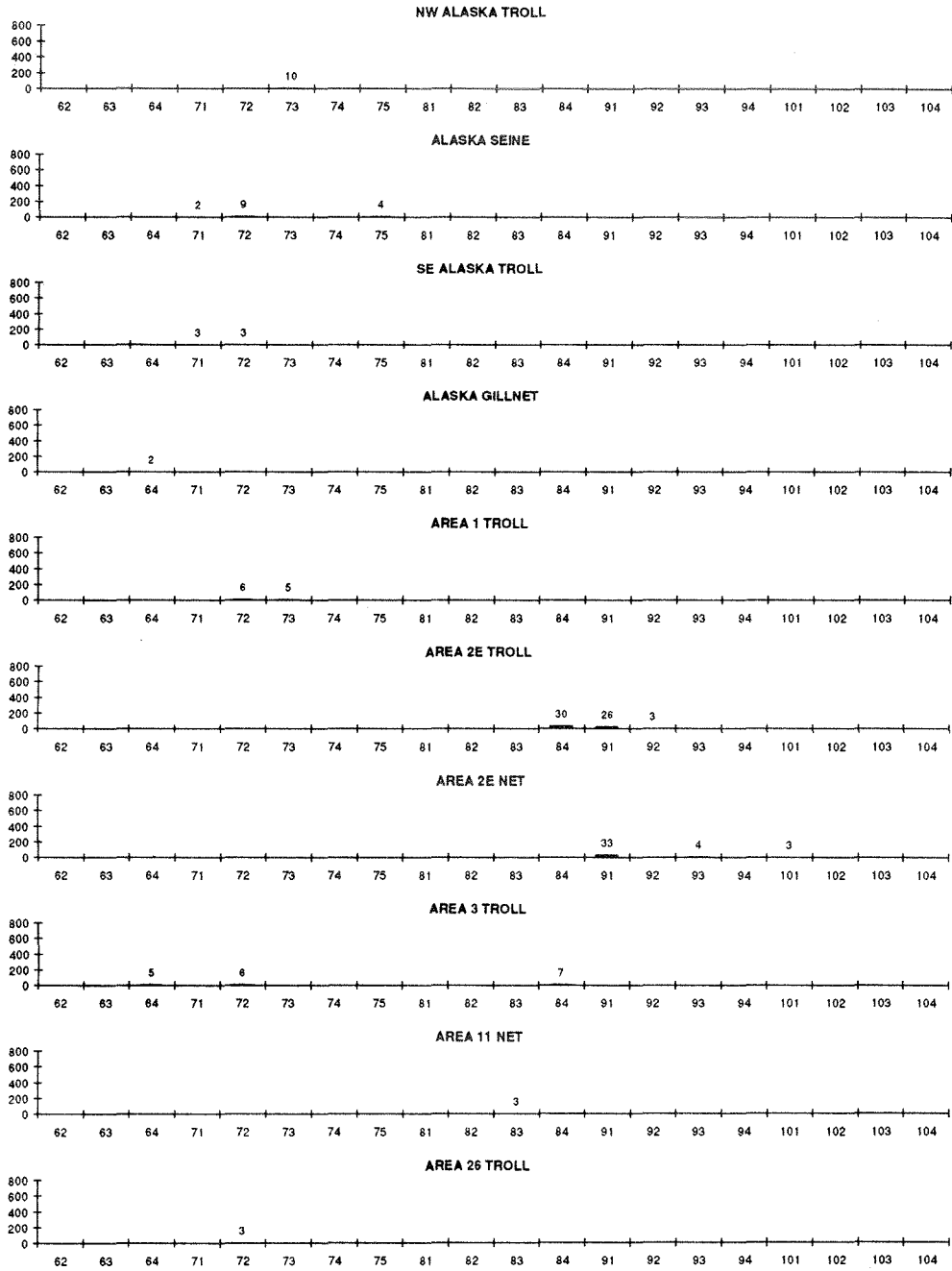
Estimated Adjusted CWT weekly recoveries of age 3 coho tagged in the Pallant Creek  
(Cumshewa Inlet) tag group. 1986 brood year, 1989 recovery year.



**Estimated Adjusted CWT weekly recoveries of age 3 coho tagged in the Pallant Creek  
(Cumshewa Inlet) tag group. 1986 brood year, 1989 recovery year.**

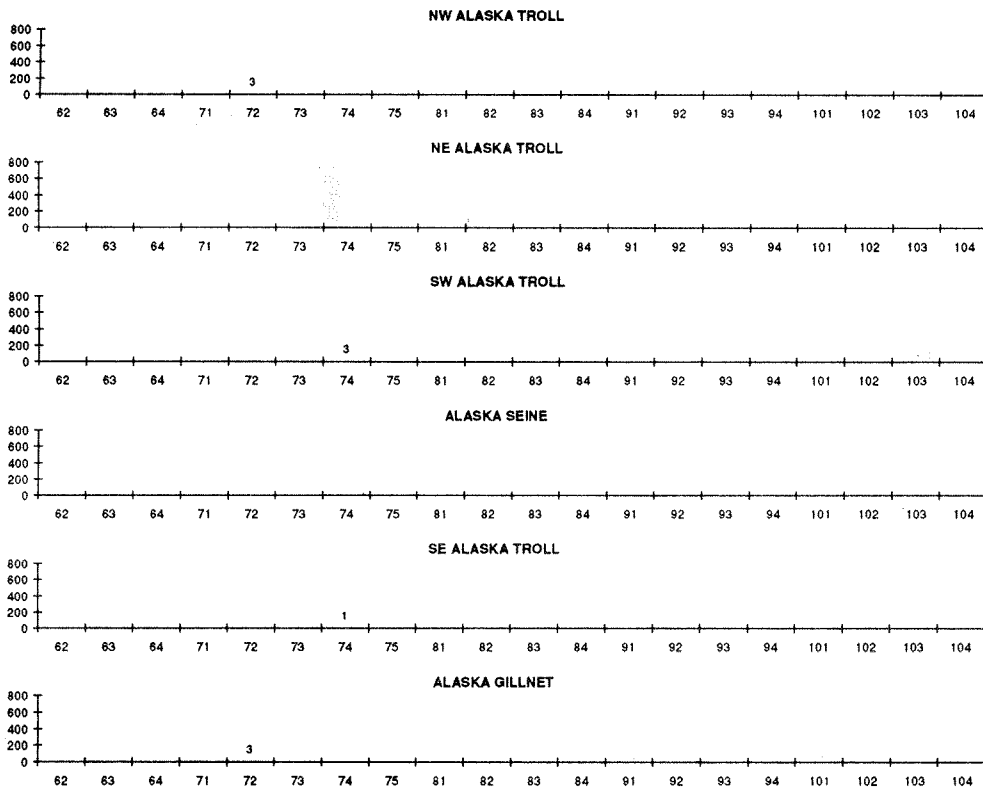


Estimated Adjusted CWT weekly recoveries of age 4 coho tagged in the Pallant Creek (Cumshewa Inlet) tag group. 1986 brood year, 1990 recovery year.

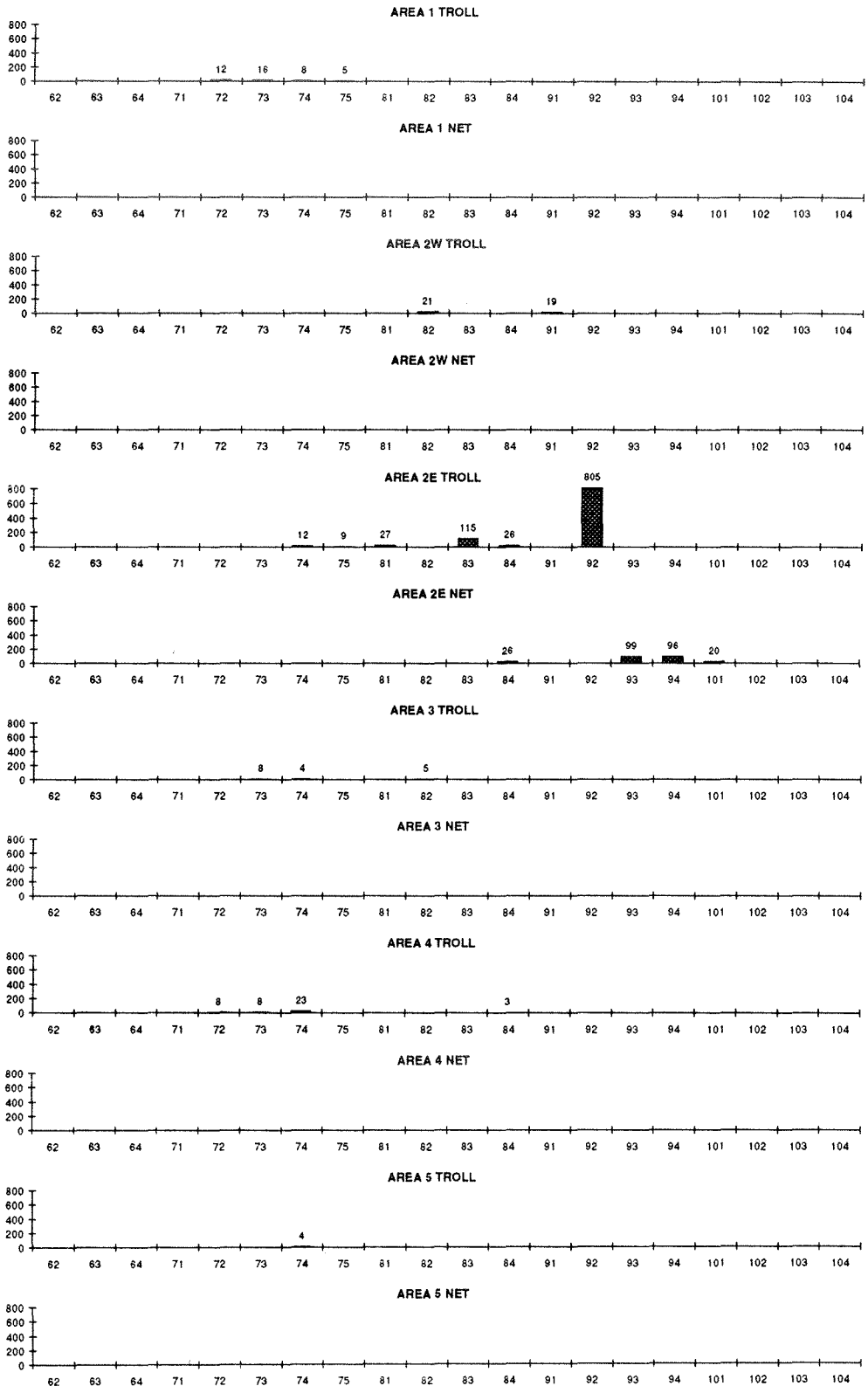




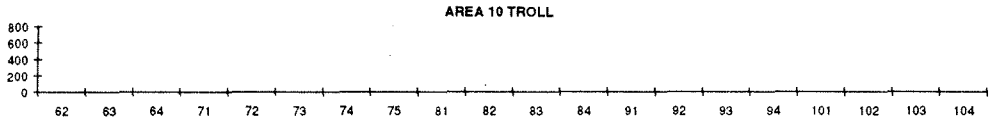
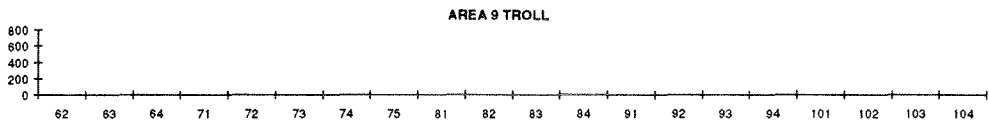
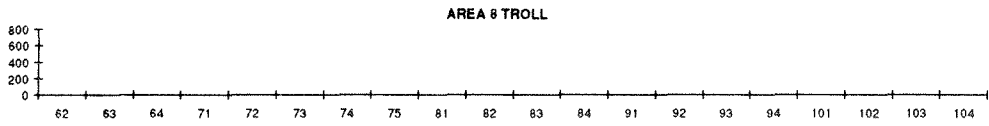
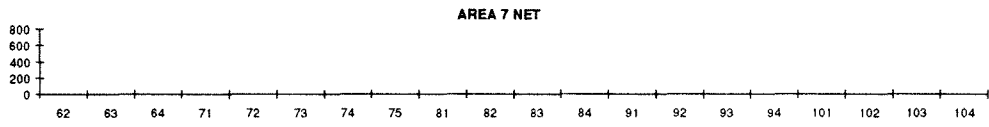
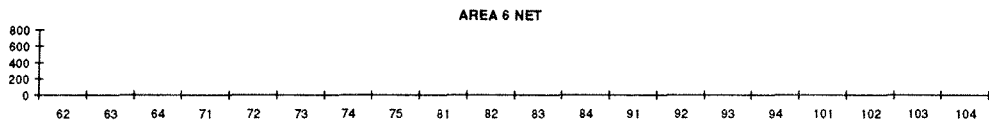
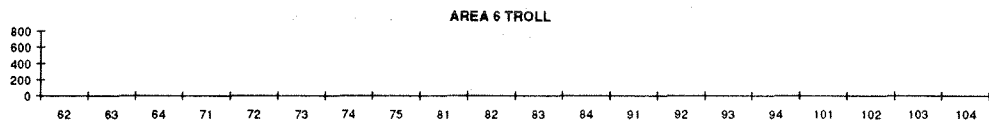
**Estimated Adjusted CWT weekly recoveries of age 3 coho tagged in the Pallant Creek (Cumshewa Inlet) tag group. 1985 brood year, 1988 recovery year.**



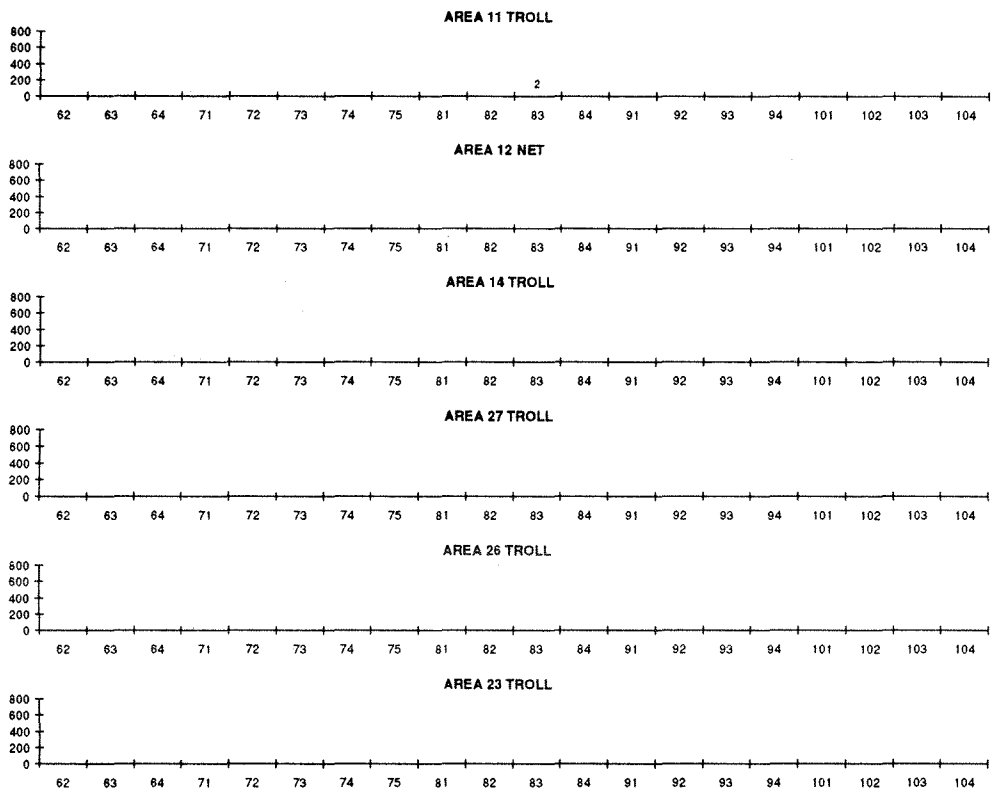
**Estimated Adjusted CWT weekly recoveries of age 3 coho tagged in the Pallant Creek (Cumshewa Inlet) tag group. 1985 brood year, 1988 recovery year.**



**Estimated Adjusted CWT weekly recoveries of age 3 coho tagged in the Pallant Creek (Cumshewa Inlet) tag group. 1985 brood year, 1988 recovery year.**

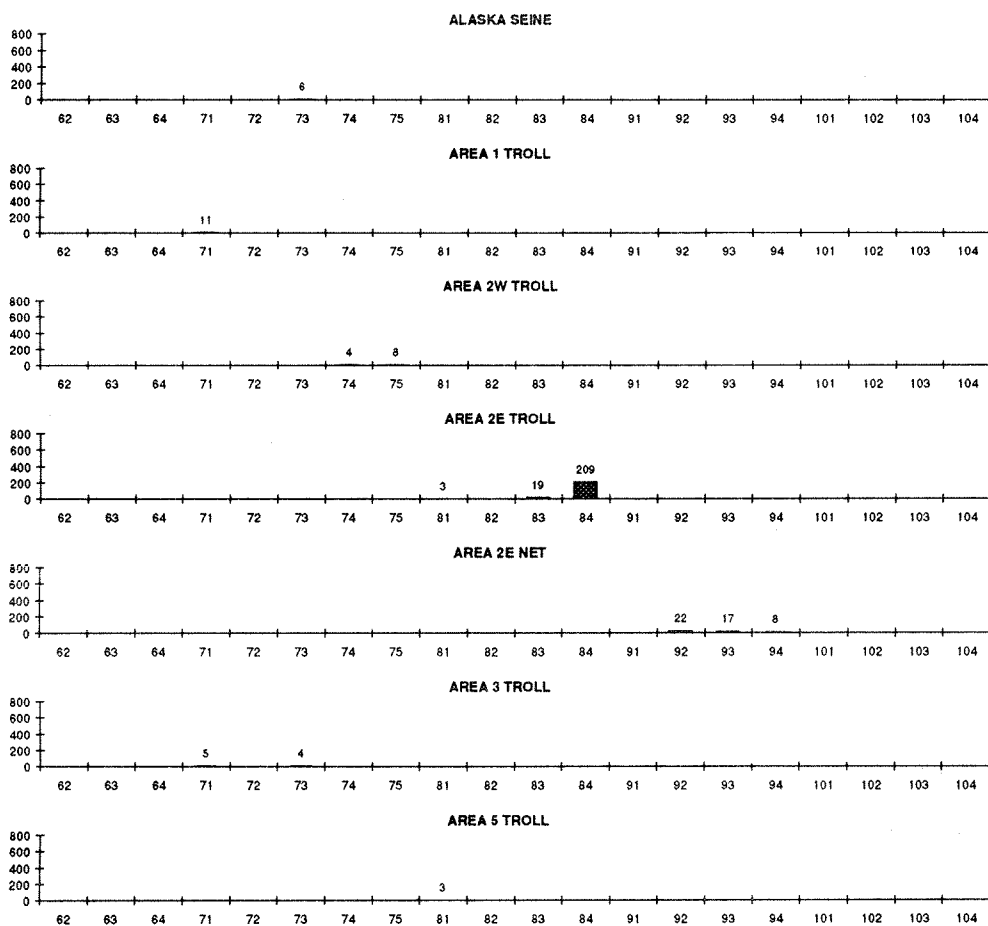


**Estimated Adjusted CWT weekly recoveries of age 3 coho tagged in the Pallant Creek (Cumshewa Inlet) tag group. 1985 brood year, 1988 recovery year.**



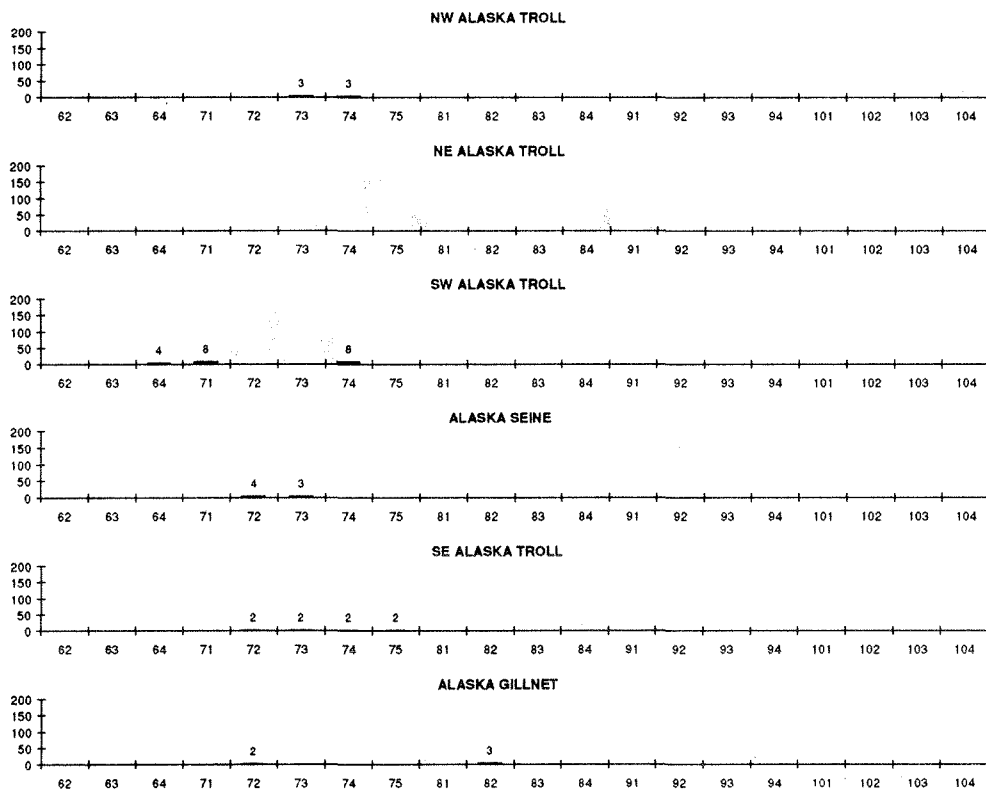


Estimated Adjusted CWT weekly recoveries of age 4 coho tagged in the Pallant Creek  
(Cumshewa Inlet) tag group. 1985 brood year, 1989 recovery year.

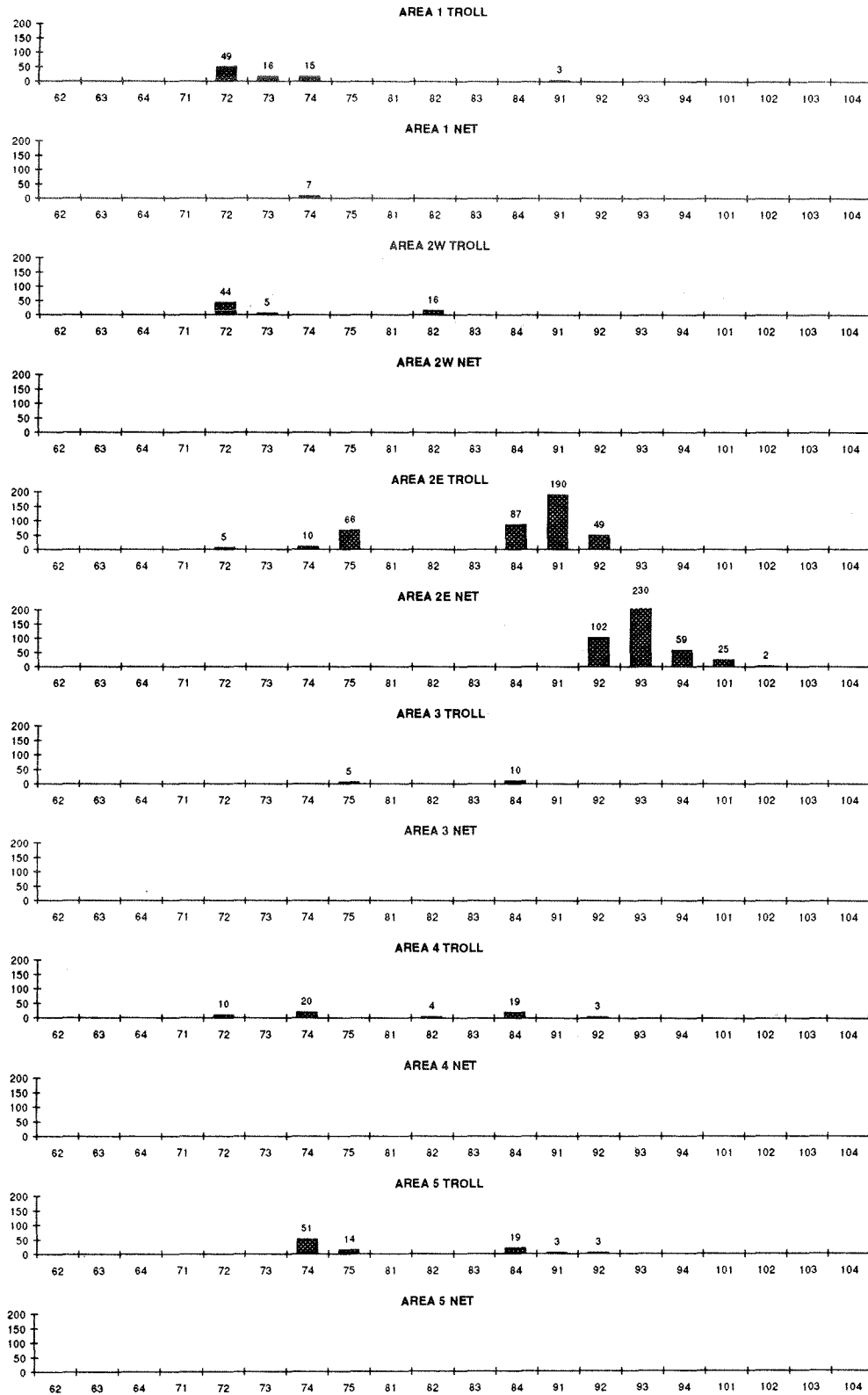




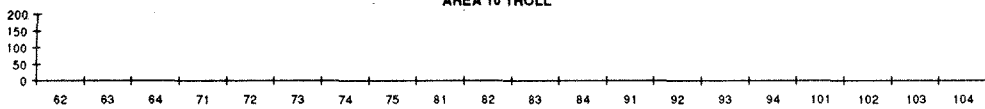
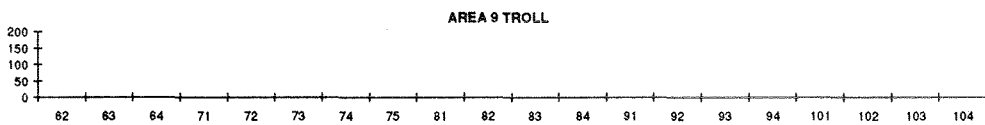
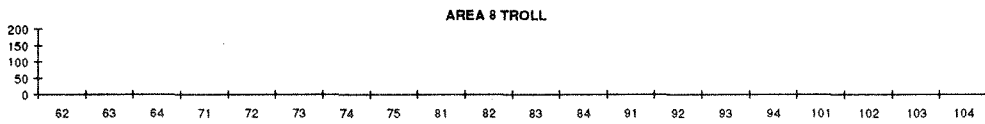
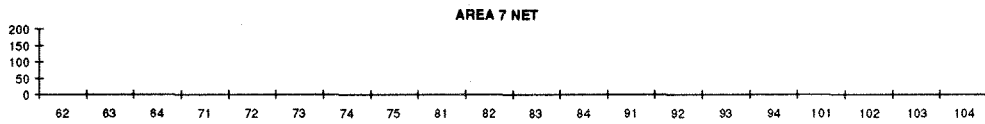
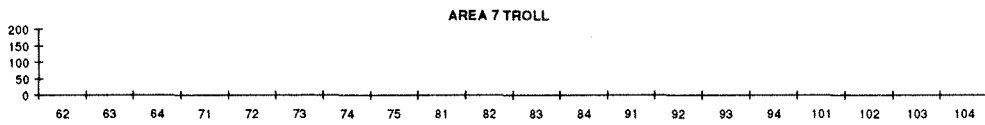
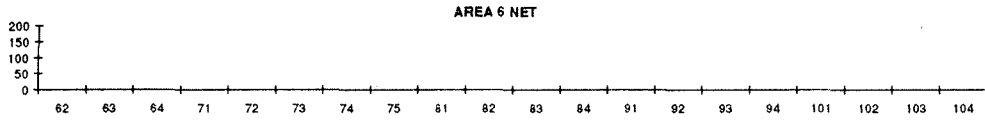
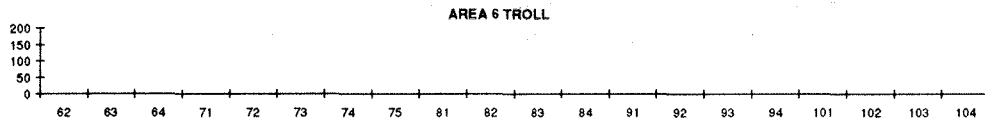
**Estimated Adjusted CWT weekly recoveries of age 3 coho tagged in the Pallant Creek  
(Cumshewa Inlet) tag group. 1984 brood year, 1987 recovery year.**



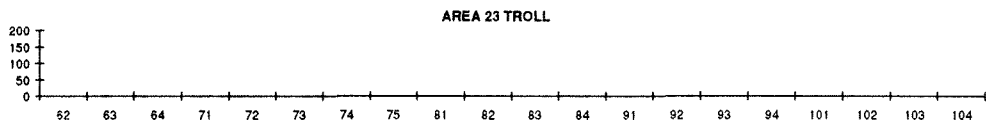
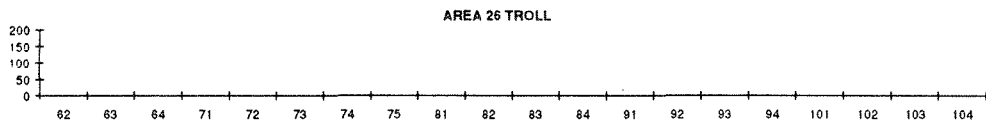
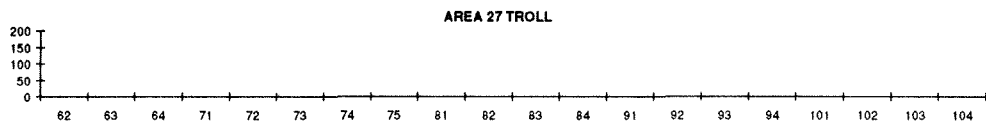
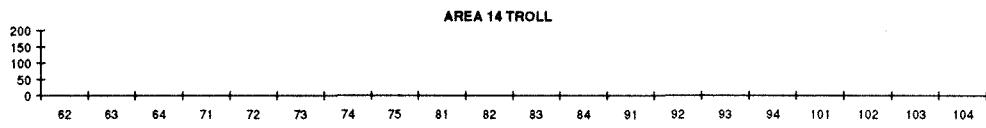
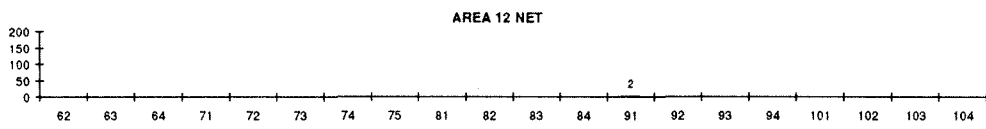
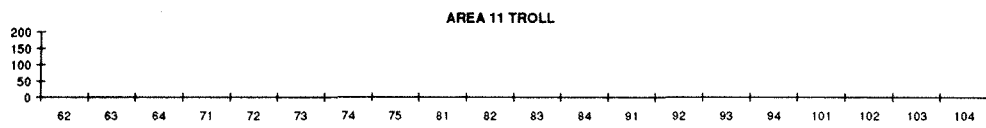
Estimated Adjusted CWT weekly recoveries of age 3 coho tagged in the Pallant Creek (Cumshewa Inlet) tag group. 1984 brood year, 1987 recovery year.



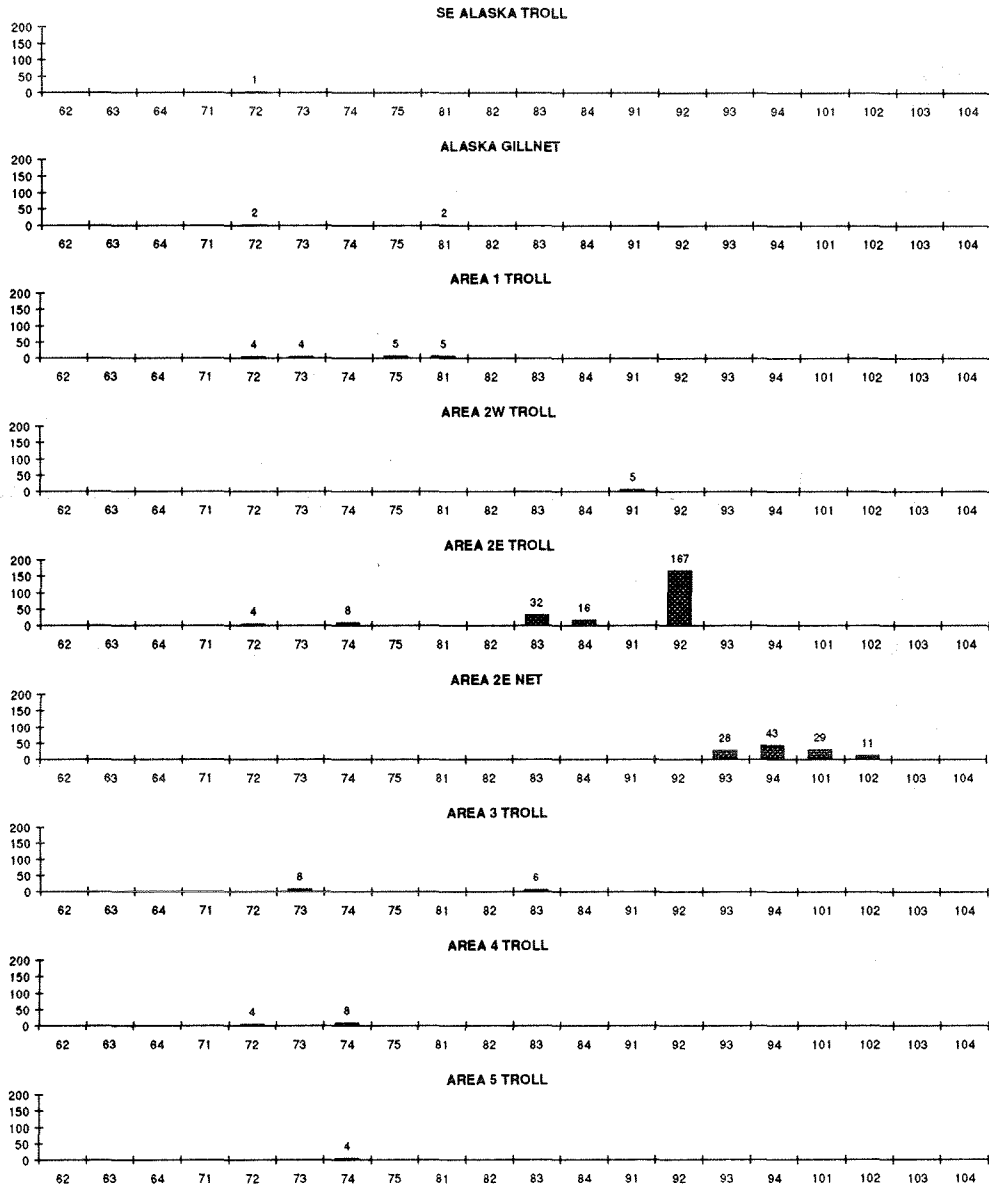
**Estimated Adjusted CWT weekly recoveries of age 3 coho tagged in the Pallant Creek  
(Cumshewa Inlet) tag group, 1984 brood year, 1987 recovery year.**



**Estimated Adjusted CWT weekly recoveries of age 3 coho tagged in the Pallant Creek  
(Cumshewa Inlet) tag group. 1984 brood year, 1987 recovery year.**



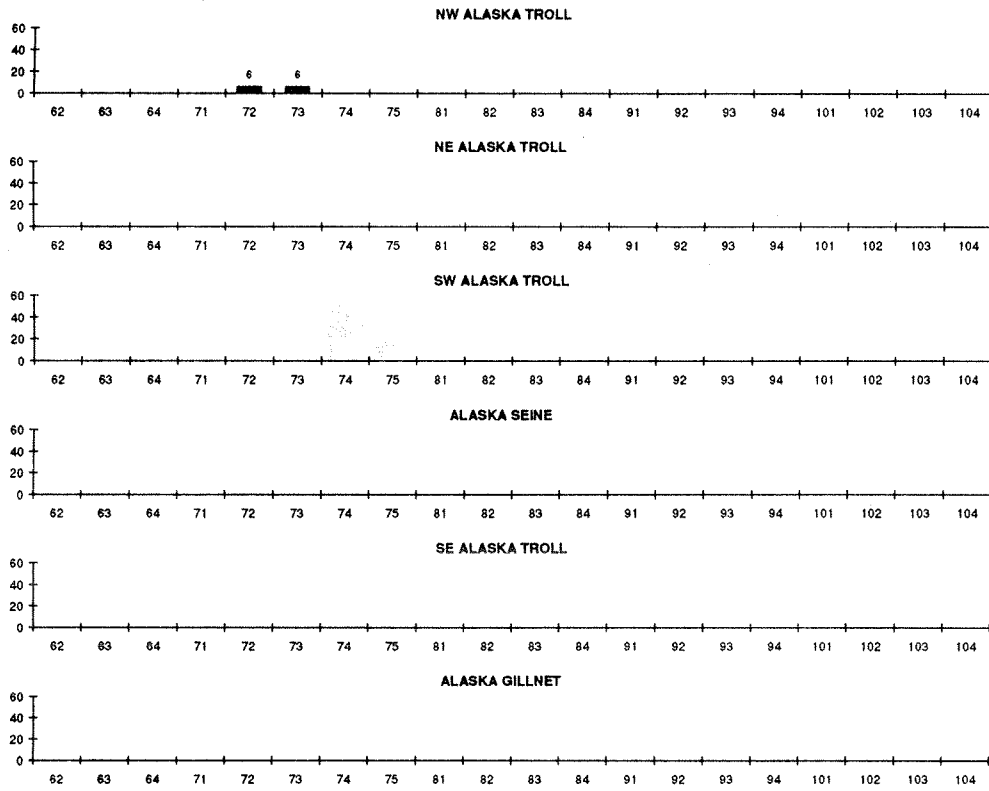
**Estimated Adjusted CWT weekly recoveries of age 4 coho tagged in the Pallant Creek (Cumshewa Inlet) tag group. 1984 brood year, 1988 recovery year.**



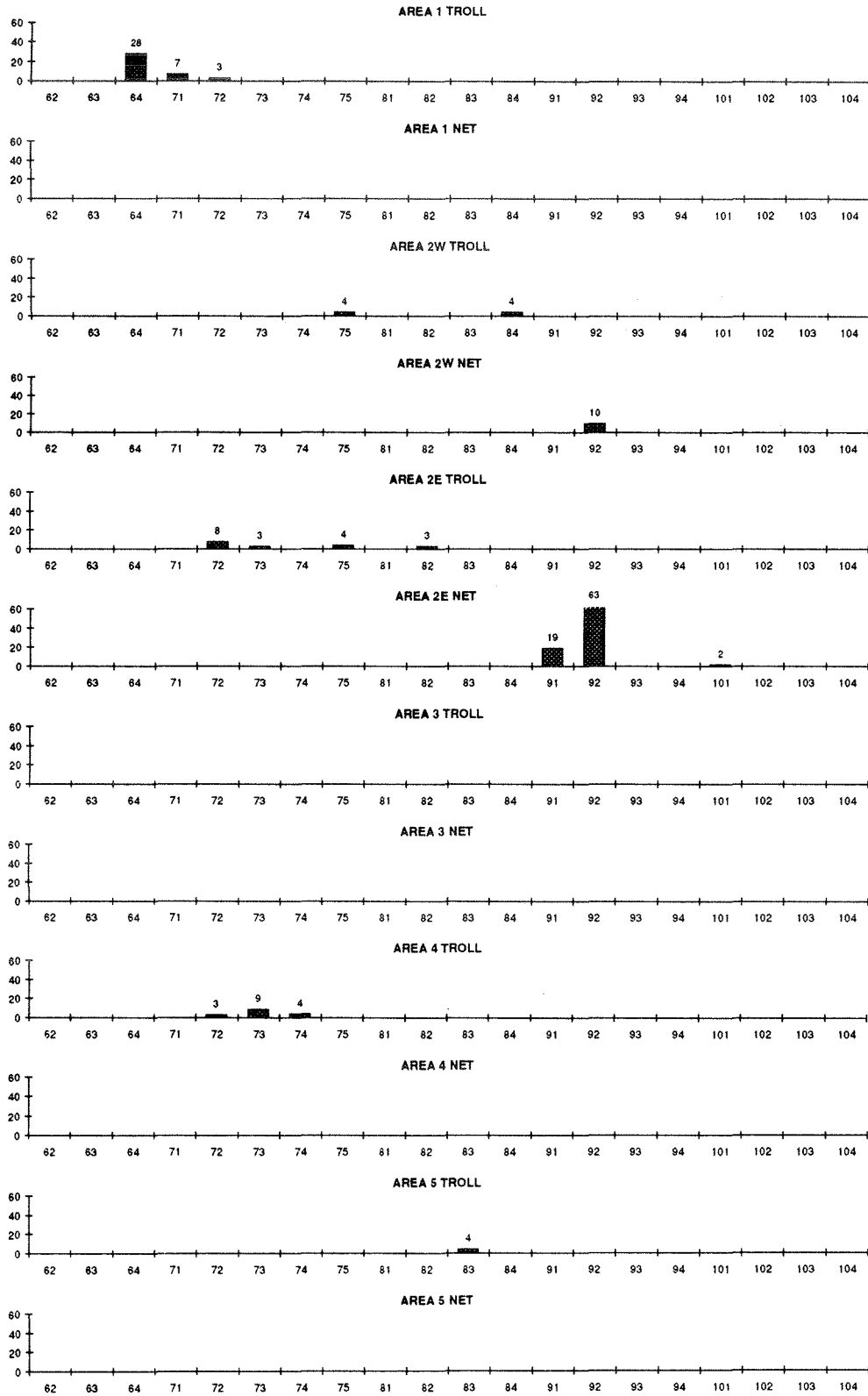




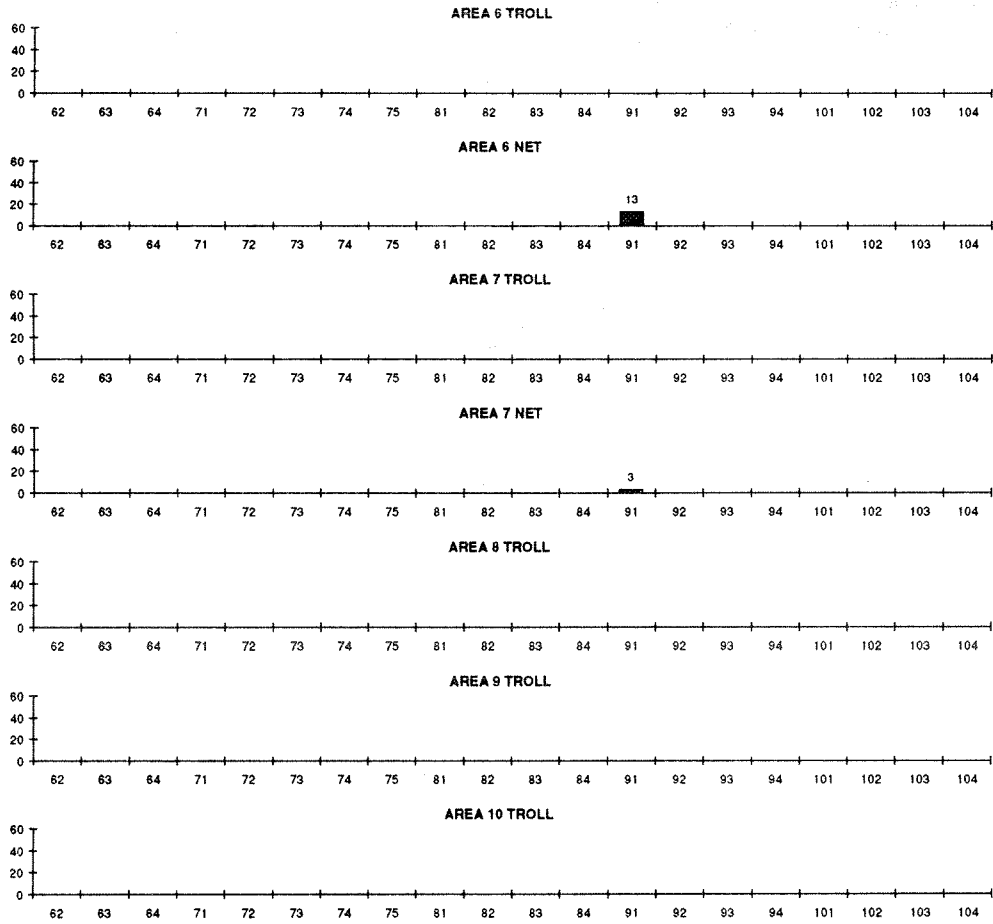
**Estimated Adjusted CWT weekly recoveries of age 3 coho tagged in the Pallant Creek  
(Cumshewa Inlet) tag group. 1983 brood year, 1986 recovery year.**



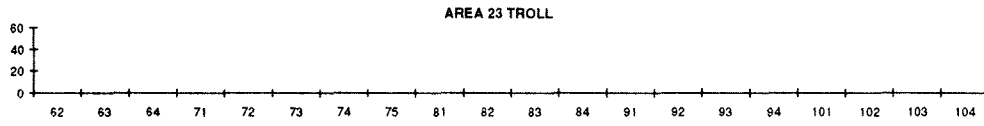
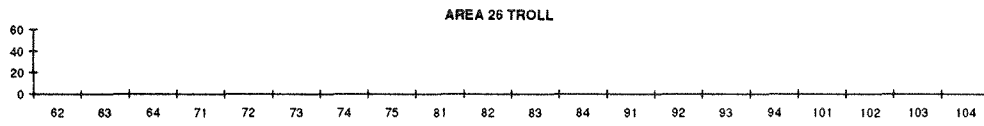
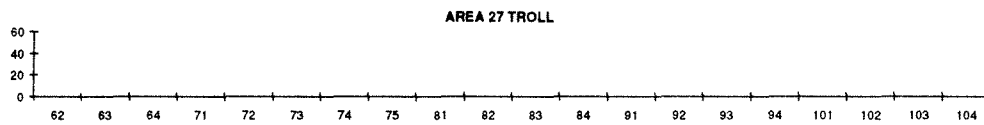
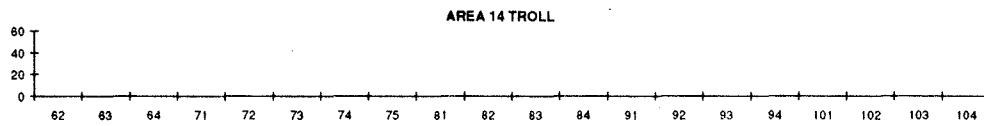
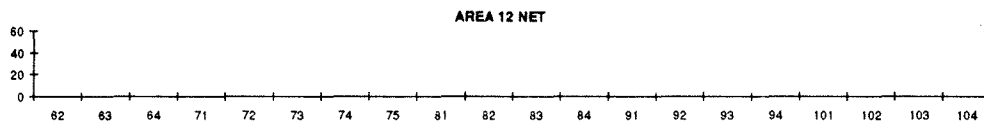
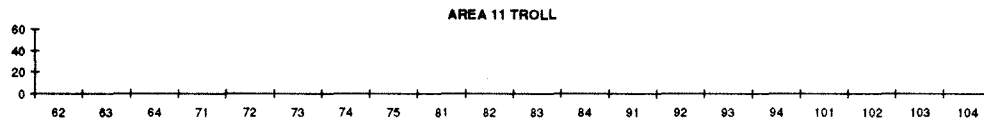
**Estimated Adjusted CWT weekly recoveries of age 3 coho tagged in the Pallant Creek (Cumshewa Inlet) tag group. 1983 brood year, 1986 recovery year.**



**Estimated Adjusted CWT weekly recoveries of age 3 coho tagged in the Pallant Creek (Cumshewa Inlet) tag group, 1983 brood year, 1986 recovery year.**



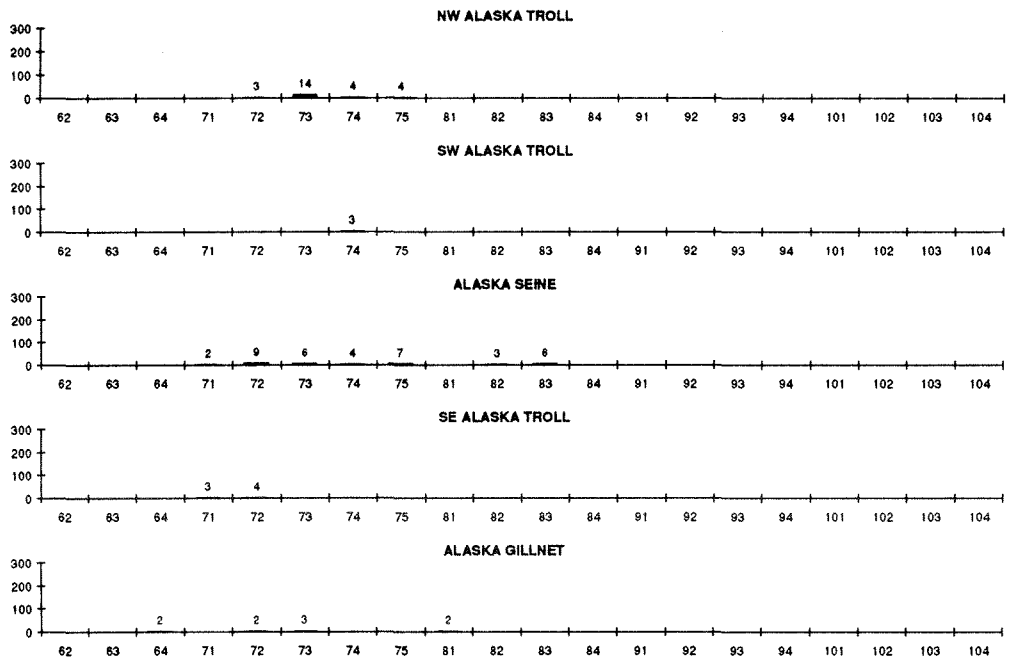
**Estimated Adjusted CWT weekly recoveries of age 3 coho tagged in the Pallant Creek (Cumshewa Inlet) tag group. 1983 brood year, 1986 recovery year.**



**Estimated Adjusted CWT weekly recoveries of age 3 coho tagged in the Pallant Creek tag group, Cumshewa Inlet, 1983 to 1989 brood years, 1986 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	113,NW	AKNWTR	3	0	0	0	3	0	21	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1988	113,154,NW	AKNWTR	3	0	0	0	5	0	15	11	14	0	0	0	0	0	0	0	0	0	0	0	
1987	113,157,NW	AKNWTR	3	0	0	0	11	10	16	5	11	0	4	0	5	0	0	0	0	0	0	0	
1986	113,157,NW	AKNWTR	3	0	0	0	10	5	0	3	3	3	0	0	0	0	0	0	0	0	0	0	
1985	113	AKNWTR	3	0	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
1984	156,NW	AKNWTR	3	0	0	0	0	0	3	3	0	0	0	0	0	0	0	0	0	0	0	0	
1983	113	AKNWTR	3	0	0	0	0	6	6	0	0	0	0	0	0	0	0	0	0	0	0	0	
1983 TO 1989 NW ALASKA TROLL TOTAL				3	0	0	0	29	24	61	22	28	3	4	0	5	0	0	0	0	0	0	0
1989	No data	AKNETR	3																				
1988	No data	AKNETR	3																				
1987	109	AKNETR	3	0	0	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	
1986	109	AKNETR	3	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
1985	No data	AKNETR	3																				
1984	No data	AKNETR	3																				
1983	No data	AKNETR	3																				
1983 TO 1989 NE ALASKA TROLL TOTAL				3	0	0	5	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0
1989	103	AKSWTR	3	0	0	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
1988	103,104,150,SW	AKSWTR	3	0	0	0	3	3	9	3	6	3	3	0	0	0	0	0	0	0	0	0	
1987	103,104,SW	AKSWTR	3	0	0	0	12	27	15	9	7	0	4	0	0	0	0	0	0	0	0	0	
1986	104,150,SW	AKSWTR	3	0	0	0	3	6	0	4	0	0	0	0	0	0	0	0	0	0	0	0	
1985	104	AKSWTR	3	0	0	0	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	
1984	104,SW	AKSWTR	3	0	0	4	8	0	0	8	0	0	0	0	0	0	0	0	0	0	0	0	
1983	No data	AKSWTR	3																				
1983 TO 1989 SW ALASKA TROLL TOTAL				3	0	0	4	26	40	24	27	13	3	7	0	0	0	0	0	0	0	0	0
1989	102,104	AKSN	3	0	0	0	0	3	2	1	5	12	0	0	0	0	0	0	0	0	0	0	
1988	103,104	AKSN	3	0	0	0	0	11	0	2	11	5	0	6	0	0	0	0	0	0	0	0	
1987	101,102,104	AKSN	3	0	0	0	67	59	24	7	49	13	9	0	0	0	0	0	0	0	0	0	
1986	101,102,104	AKSN	3	0	0	0	0	4	0	7	0	16	0	0	5	0	0	0	0	0	0	0	
1985	No data	AKSN	3																				
1984	104	AKSN	3	0	0	0	0	4	3	0	0	0	0	0	0	0	0	0	0	0	0	0	
1983	No data	AKSN	3																				
1983 TO 1989 ALASKA SEINE TOTAL				3	0	0	0	67	81	29	17	65	46	9	6	5	0	0	0	0	0	0	0
1989	101	AKSETR	3	0	0	0	0	0	2	0	0	0	2	0	0	3	0	0	0	0	0	0	
1988	101,102,106	AKSETR	3	0	0	0	0	4	5	2	0	0	0	0	0	0	0	0	0	0	0	0	
1987	101,102,105	AKSETR	3	0	0	4	12	15	6	3	0	3	0	0	0	0	0	0	0	0	0	0	
1986	102	AKSETR	3	0	0	0	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
1985	101	AKSETR	3	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	
1984	101,102,SE	AKSETR	3	0	0	0	0	2	2	2	2	0	0	0	0	0	0	0	0	0	0	0	
1983	No data	AKSETR	3																				
1983 TO 1989 SE ALASKA TROLL TOTAL				3	0	0	4	14	23	15	8	2	3	2	0	0	3	0	0	0	0	0	0
1989	No data	AKGN	3																				
1988	101,106	AKGN	3	0	0	2	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
1987	101,106	AKGN	3	0	5	2	3	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	
1986	101,106	AKGN	3	0	1	4	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
1985	106	AKGN	3	0	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
1984	101	AKGN	3	0	0	0	0	2	0	0	0	0	3	0	0	0	0	0	0	0	0	0	
1983	No data	AKGN	3																				
1983 TO 1989 ALASKA GILLNET TOTAL				3	0	6	8	4	7	0	0	0	0	3	0	2	0	0	0	0	0	0	0

**Estimated Adjusted CWT weekly recoveries of age 4 coho tagged in the Pallant Creek (Cumshewa Inlet) tag group. 1984 to 1989 brood years, 1988 to 1993 recovery years.**





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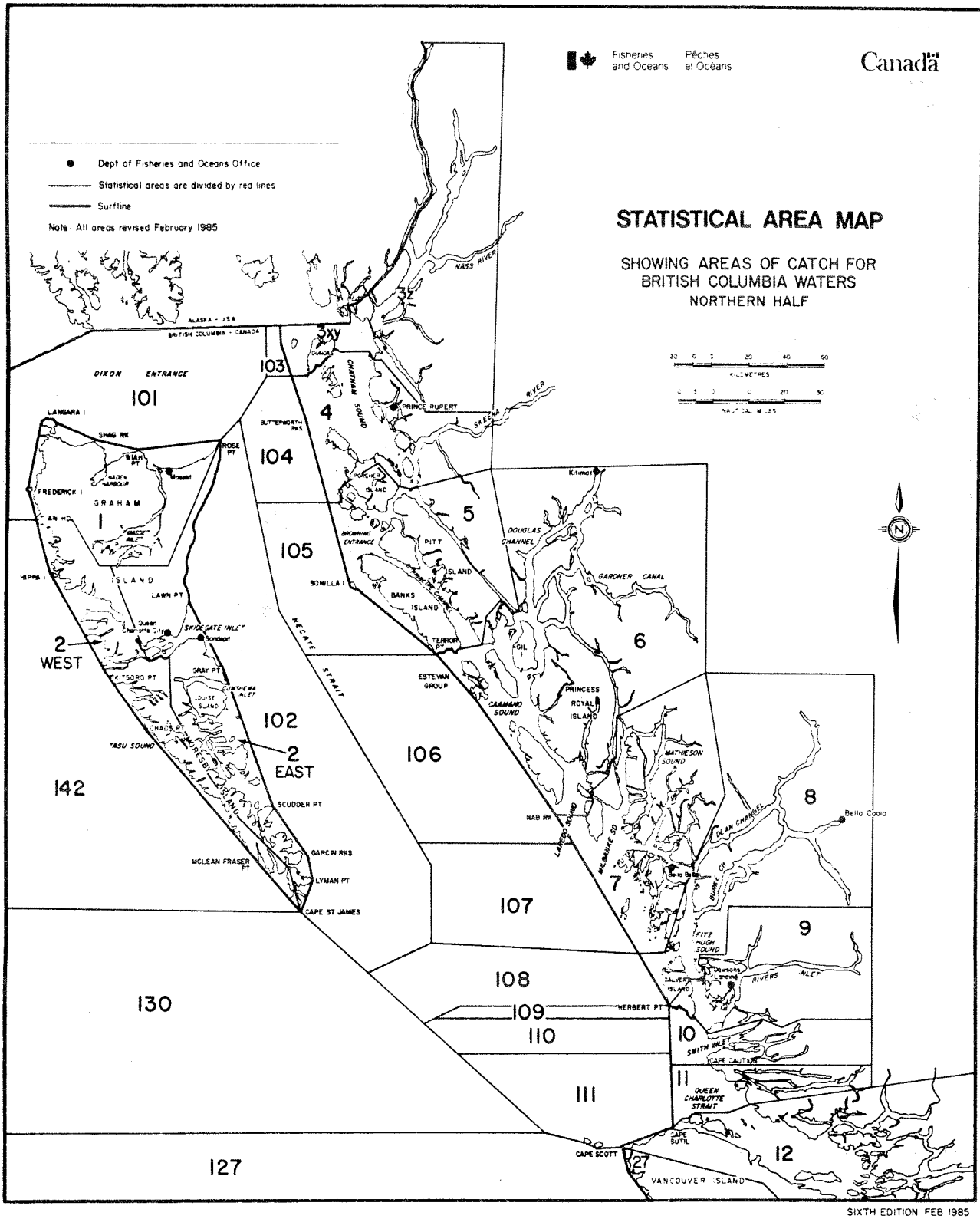
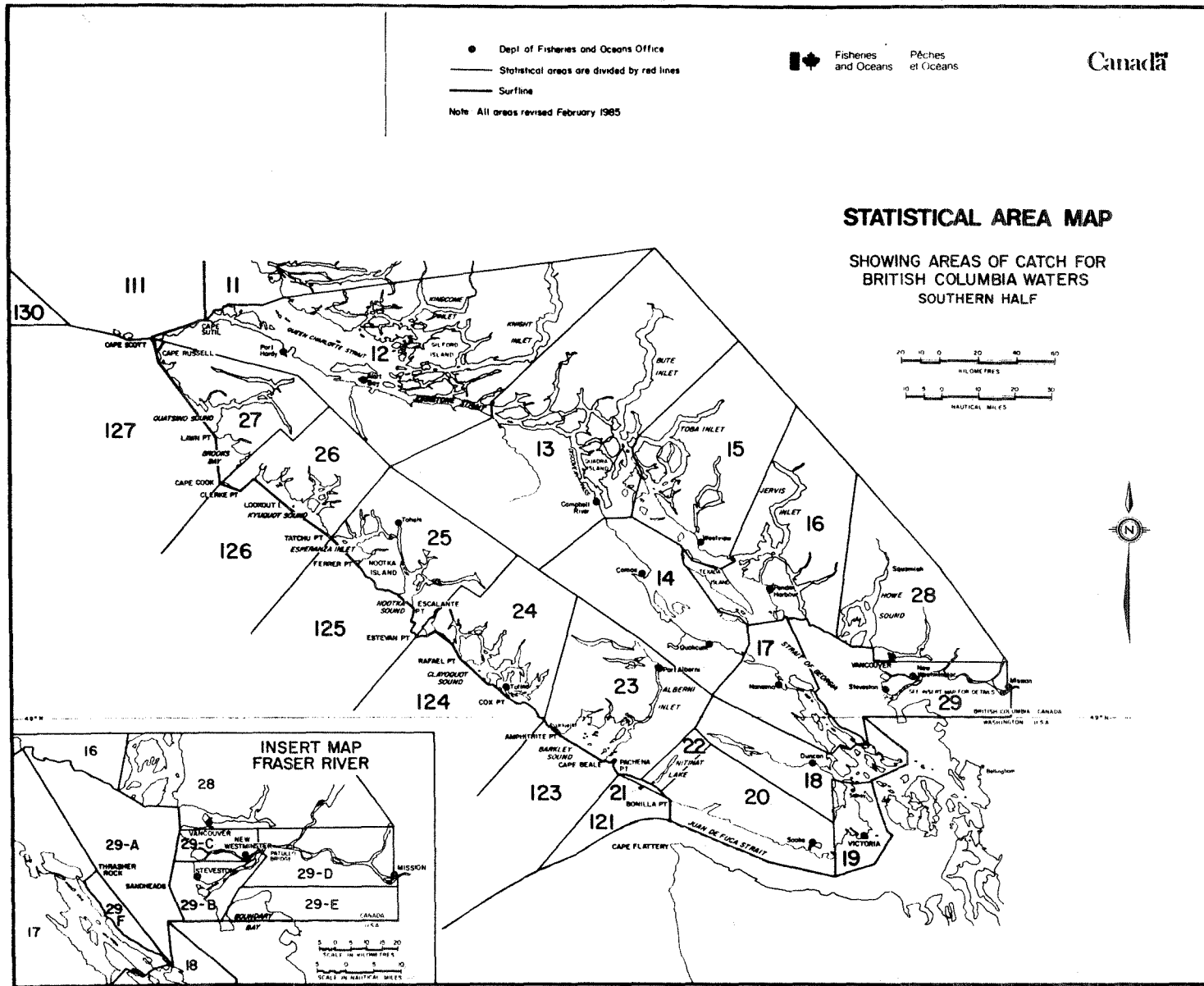


Figure 1. Statistical Area Map for Northern British Columbia.

Figure 2. Statistical Area Map for Southern British Columbia.



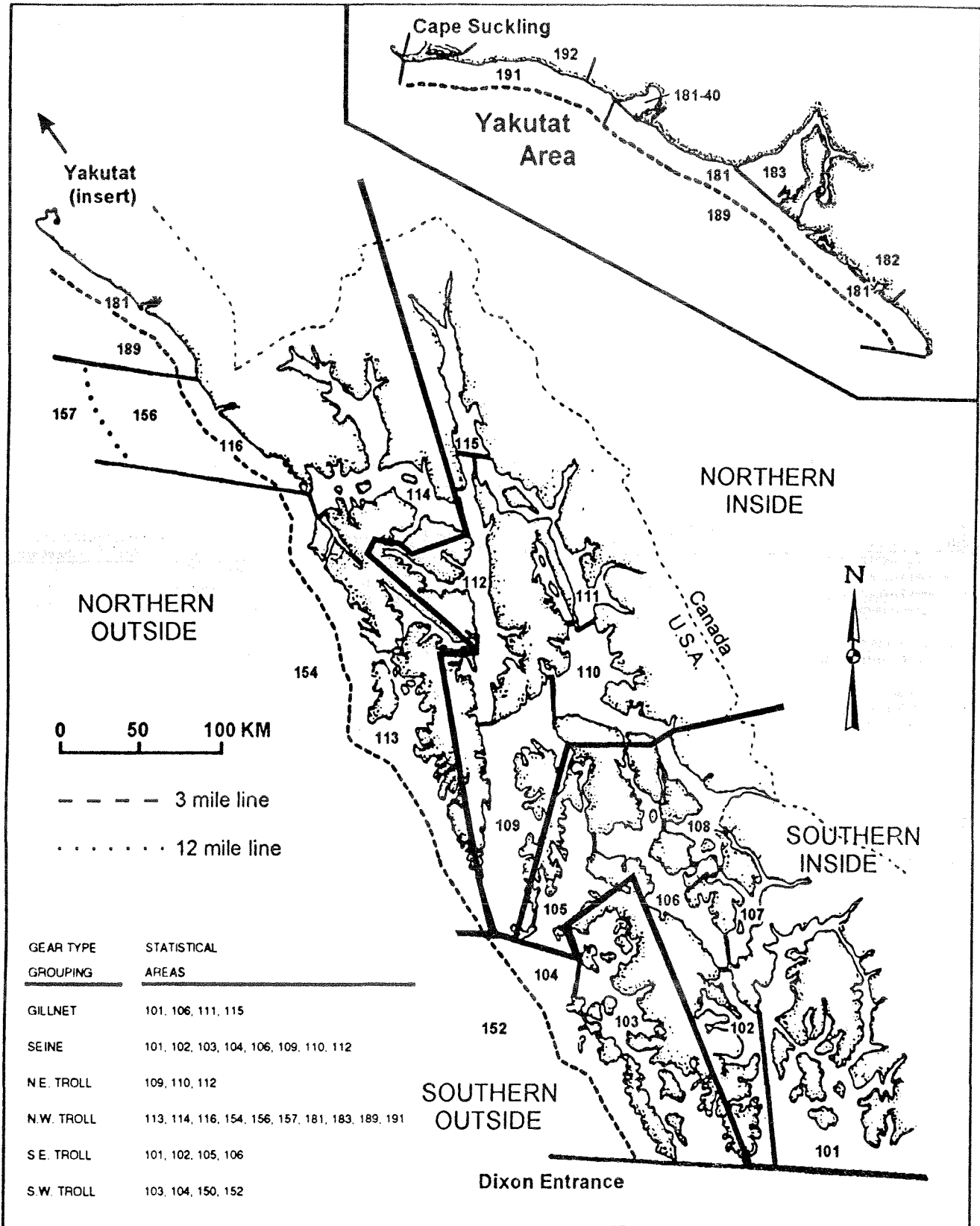


Figure 3. Statistical Area Map for Southeast Alaska.

**TABLE 1. MASSET CDP HATCHERY COHO RELEASES IN THE YAKOUN RIVER WATERSHED,  
1986 TO 1989 BROOD YEARS.**

TAG		BROOD	NUMBER	% TAG	DAYS	NUMBER	CWT %	WEIGHT	RELEASE DATES		REARING	STUDY TYPE**
CODE	STOCK SITE	YEAR	TAGGED	LOSS	HELD	RELEASED	MARKED	(gm)	ddmmyy:ddmmyy	RELEASE SITE	TYPE'	OF RELEASE
26148	0060-YAKOUN RIVER	89	10,302	0	1	14,016	73.5	20	15-May-91	0421-MARIE LAKE	H	M
26149	0060-YAKOUN RIVER	89	10,008	0	1	13,722	72.9	20	15-May-91	0421-MARIE LAKE	H	M
26150	0060-YAKOUN RIVER	89	9,933	0	1	13,647	72.8	20	15-May-91	0421-MARIE LAKE	H	M
HATCHERY TOTAL:			30,243			41,385						
26307	0060-YAKOUN RIVER	88	26,300	0	1	26,300	100	19	23-Apr-90	0415-GOLD CREEK	H	M
HATCHERY TOTAL:			26,300			26,300						
25556	0415-GOLD CREEK	87	10,265	1	1	11,101	92.5	26.6	17-May-89	0415-GOLD CREEK	H	M
25557	0415-GOLD CREEK	87	10,442	1	1	11,279	92.6	26.6	17-May-89	0415-GOLD CREEK	H	M
HATCHERY TOTAL:			20,707			22,380						
24332	0415-GOLD CREEK	86	14,448	0	1	14,448	100	26.6	17-May-88	0421-MARIE LAKE	H	M
HATCHERY TOTAL:			14,448			14,448						
*REARING TYPE H = HATCHERY												
**STUDY TYPE OF RELEASE: M = AN INDEX POPULATION USED FOR INTERNATIONAL STOCK MONITORING.												

**TABLE 2. SACHS CREEK PIP HATCHERY COHO RELEASES FOR SACHS AND HAANS CREEKS,  
1984 BROOD YEAR.**

TAG CODE	BROOD STOCK SITE	NUMBER YEAR	% TAG DAYS		NUMBER RELEASED	CWT % MARKED	WEIGHT (gm)	RELEASE DATES ddmmyy:ddmmyy	RELEASE SITE	REARING TYPE*	STUDY TYPE** OF RELEASE	
			TAGGED	LOSS HELD								
22835	0494-HAANS CREEK	84	43,504	1.5	1	48,608	89.5	2.9	09Jun85:21Jun85	0494-HAANS CREEK	H	B
22855	0495-SACHS CREEK	84	19,343	1.6	1	24,898	77.7	2.3	09Jun85:19Jun85	0495-SACHS CREEK	H	B
	HATCHERY TOTAL:		62,847			73,506						
*REARING TYPE: H = HATCHERY												
**STUDY TYPE OF RELEASE: B = EXPERIMENTAL GROUPS WHICH CAN ALSO BE CONSIDERED PRODUCTION, E.G. EXPERIMENTAL CONTROLS.												

TABLE 3. PALLANT CREEK HATCHERY COHO RELEASES, 1983 TO 1989 BROOD YEARS.

TAG CODE	STOCK SITE	BROOD YEAR	NUMBER TAGGED	% TAG LOSS	DAYS HELD	NUMBER RELEASED	CWT % MARKED	WEIGHT (gm)	RELEASE DATES (ddmmmyy:ddmmmyy)	RELEASE SITE	REARING TYPE*	STUDY TYPE**
20824	0148-PALLANT CREEK	89	51,182	1.7	30	177,380	28.9	3.1	12Jun90:14Jun90	0859-BRAVERMAN CREEK	H	B
20825	0148-PALLANT CREEK	89	48,307	1	346	178,156	27.1	17.9	25May91:27May91	0148-PALLANT CREEK	H	P
26028	0149-MATHERS CREEK	89	31,080	1.2	30	46,994	66.1	3.4	05Jun90:05Jun90	0149-MATHERS CREEK	H	B
HATCHERY TOTAL			130,569			402,530						
20143	0148-PALLANT CREEK	88	16,853	1.6	38	58,963	28.6	14.7	11May90:12May90	0148-PALLANT CREEK	H	B
20144	0148-PALLANT CREEK	88	15,436	5.5	59	81,756	18.9	14.5	22May90:23May90	0148-PALLANT CREEK	H	B
25711	0148-PALLANT CREEK	88	10,743	3	10	11,075	97	3.4	22Jun89:24Jun89	0057-PALLANT CR UPPER	H	B
25712	0148-PALLANT CREEK	88	10,725	3	10	11,056	97	3.4	22Jun89:24Jun89	0057-PALLANT CR UPPER	H	B
25713	0148-PALLANT CREEK	88	10,384	4.3	11	17,973	57.8	6	13-Jul-89	0059-MOSQUITO LAKE	H	B
25714	0148-PALLANT CREEK	88	8,389	22.7	11	16,609	50.5	6	13-Jul-89	0059-MOSQUITO LAKE	H	B
25715	0148-PALLANT CREEK	88	9,963	8.6	10	17,732	56.2	6	13-Jul-89	0059-MOSQUITO LAKE	H	B
25716	0148-PALLANT CREEK	88	10,454	6.5	Unk	11,180	93.5	3.1	22-Jun-89	0148-PALLANT CREEK	H	B
25717	0148-PALLANT CREEK	88	10,727	2.4	13	10,996	97.6	3.1	23Jun89:24Jun89	0148-PALLANT CREEK	H	B
25718	0148-PALLANT CREEK	88	10,753	2.4	13	11,023	97.6	3.1	23Jun89:24Jun89	0148-PALLANT CREEK	H	B
26114	0148-PALLANT CREEK	88	9,707	6.2	14	18,208	53.3	4.2	22-Jun-89	0859-BRAVERMAN CREEK	H	B
26115	0148-PALLANT CREEK	88	9,333	11.6	14	18,106	51.5	4.2	22-Jun-89	0859-BRAVERMAN CREEK	H	B
26116	0148-PALLANT CREEK	88	9,992	5.6	14	18,673	53.5	4.2	22-Jun-89	0859-BRAVERMAN CREEK	H	B
26117	0148-PALLANT CREEK	88	9,725	8.2	14	18,461	52.7	4.2	22-Jun-89	0859-BRAVERMAN CREEK	H	B
26118	0148-PALLANT CREEK	88	10,222	3.3	14	18,848	54.2	4.2	22-Jun-89	0859-BRAVERMAN CREEK	H	B
26119	0148-PALLANT CREEK	88	10,315	0	16	20,847	49.5	4.4	22-Jun-89	0859-BRAVERMAN CREEK	H	B
26120	0148-PALLANT CREEK	88	9,704	4.9	16	20,107	48.3	4.4	22-Jun-89	0859-BRAVERMAN CREEK	H	B
26121	0148-PALLANT CREEK	88	9,930	5.9	16	20,686	48	4.4	22-Jun-89	0859-BRAVERMAN CREEK	H	B
26122	0148-PALLANT CREEK	88	10,243	2.2	16	20,936	48.9	4.4	22-Jun-89	0859-BRAVERMAN CREEK	H	B
26123	0148-PALLANT CREEK	88	10,164	4.5	16	21,017	48.4	4.4	22-Jun-89	0859-BRAVERMAN CREEK	H	B
HATCHERY TOTAL			213,762			444,252						
25044	0148-PALLANT CREEK	87	10,503	2.4	7	21,526	48.8	3.2	07Jun88:09Jun88	0859-BRAVERMAN CREEK	H	B
25045	0148-PALLANT CREEK	87	10,181	4.4	7	21,092	48.3	3.2	07Jun88:09Jun88	0859-BRAVERMAN CREEK	H	B
25046	0148-PALLANT CREEK	87	10,052	5.3	7	20,924	48	3.2	07Jun88:09Jun88	0859-BRAVERMAN CREEK	H	B
25047	0148-PALLANT CREEK	87	10,229	3.9	7	21,129	48.4	3.2	07Jun88:09Jun88	0859-BRAVERMAN CREEK	H	B
25119	0148-PALLANT CREEK	87	9,590	8.9	7	18,228	52.6	3.3	07Jun88:08Jun88	0059-MOSQUITO LAKE	H	B
25120	0148-PALLANT CREEK	87	10,499	5.5	7	19,544	53.7	3.3	07Jun88:08Jun88	0059-MOSQUITO LAKE	H	B
25121	0148-PALLANT CREEK	87	11,026	2.6	7	20,179	54.6	3.3	07Jun88:08Jun88	0059-MOSQUITO LAKE	H	B
25122	0148-PALLANT CREEK	87	11,018	2.3	7	22,189	49.7	2.3	27May88:28May88	0148-PALLANT CREEK	H	B
25123	0148-PALLANT CREEK	87	11,203	0.8	7	22,383	50.1	2.3	27May88:28May88	0148-PALLANT CREEK	H	B
25124	0148-PALLANT CREEK	87	10,451	6.2	7	11,136	93.8	2.6	9-Jun-88	0148-PALLANT CREEK	H	B
25125	0148-PALLANT CREEK	87	11,146	1.9	7	11,357	98.1	2.9	9-Jun-88	0057-PALLANT CR UPPER	H	B
25126	0148-PALLANT CREEK	87	10,767	3.5	7	11,162	96.5	3.1	9-Jun-88	0057-PALLANT CR UPPER	H	B
25456	0148-PALLANT CREEK	87	24,723	1.5	56	35,499	69.6	22.4	9-May-89	0346-DEER BAY	H	B
25535	0148-PALLANT CREEK	87	26,700	0.5	49	35,186	75.9	23.3	1-Jun-89	0346-DEER BAY	H	B
25540	0148-PALLANT CREEK	87	10,190	2.1	7	20,757	49.1	3.5	07Jun88:09Jun88	0859-BRAVERMAN CREEK	H	B
25543	0148-PALLANT CREEK	87	10,496	1.1	7	21,268	49.4	3.5	07Jun88:09Jun88	0859-BRAVERMAN CREEK	H	B
25545	0148-PALLANT CREEK	87	9,652	1.4	7	19,840	48.6	3.2	07Jun88:09Jun88	0859-BRAVERMAN CREEK	H	B
25546	0148-PALLANT CREEK	87	10,547	1.8	7	21,730	48.5	3.2	07Jun88:09Jun88	0859-BRAVERMAN CREEK	H	B
25548	0148-PALLANT CREEK	87	9,761	4.3	7	20,372	47.9	3.2	07Jun88:09Jun88	0859-BRAVERMAN CREEK	H	B
25551	0148-PALLANT CREEK	87	9,395	2.2	7	19,396	48.4	3.2	07Jun88:09Jun88	0859-BRAVERMAN CREEK	H	B
HATCHERY TOTAL			238,129			414,897						
24422	0148-PALLANT CREEK	86	10,441	2.4	5	10,698	97.6	3.7	23-May-87	0057-PALLANT CR UPPER	H	B
24423	0148-PALLANT CREEK	86	10,592	1	3	10,699	99	2.7	22-May-87	0057-PALLANT CR UPPER	H	B
24424	0148-PALLANT CREEK	86	10,687	0.5	5	10,741	99.5	2.7	23-May-87	0411-PALLANT CR LOWER	H	B
24425	0148-PALLANT CREEK	86	9,986	2	5	17,337	57.6	1.7	21May87:23May87	0059-MOSQUITO LAKE	H	B
24426	0148-PALLANT CREEK	86	10,446	1.8	5	23,007	45.4	2.7	21May87:23May87	0059-MOSQUITO LAKE	H	B
24427	0148-PALLANT CREEK	86	10,296	2.4	5	17,609	58.5	3.7	21May87:23May87	0059-MOSQUITO LAKE	H	B
24428	0148-PALLANT CREEK	86	10,540	1	5	41,510	25.4	2.7	25May87:30May87	0411-PALLANT CR LOWER	H	B
24429	0148-PALLANT CREEK	86	10,359	0.8	5	43,647	23.7	3.7	25May87:30May87	0411-PALLANT CR LOWER	H	B
24430	0148-PALLANT CREEK	86	10,452	1	5	21,815	47.9	1.7	28May87:29May87	0859-BRAVERMAN CREEK	H	B
24431	0148-PALLANT CREEK	86	10,269	2.7	5	21,614	47.5	1.7	28May87:29May87	0859-BRAVERMAN CREEK	H	B
24444	0148-PALLANT CREEK	86	10,330	1.2	5	21,581	47.9	1.7	28May87:29May87	0859-BRAVERMAN CREEK	H	B
24445	0148-PALLANT CREEK	86	10,439	0.8	5	21,766	48	1.7	28May87:29May87	0859-BRAVERMAN CREEK	H	B
24446	0148-PALLANT CREEK	86	9,969	1.6	5	20,863	47.8	1.7	28May87:29May87	0859-BRAVERMAN CREEK	H	B
24447	0148-PALLANT CREEK	86	10,364	1.3	5	21,663	47.8	2.5	28May87:29May87	0859-BRAVERMAN CREEK	H	B
24448	0148-PALLANT CREEK	86	10,438	0.9	5	21,775	47.9	2.5	28May87:29May87	0859-BRAVERMAN CREEK	H	B
24449	0148-PALLANT CREEK	86	9,986	1.3	5	20,873	47.8	2.5	28May87:29May87	0859-BRAVERMAN CREEK	H	B
24450	0148-PALLANT CREEK	86	10,507	0.9	5	21,919	47.9	2.5	28May87:29May87	0859-BRAVERMAN CREEK	H	B
24451	0148-PALLANT CREEK	86	10,143	1.2	5	21,190	47.9	2.5	28May87:29May87	0859-BRAVERMAN CREEK	H	B
HATCHERY TOTAL			186,244			390,307						
23526	0148-PALLANT CREEK	85	21,373	1.5	5	54,565	39.2	1.8	24-Jun-86	0859-BRAVERMAN CREEK	H	B
23527	0148-PALLANT CREEK	85	21,351	1	5	54,236	39.4	1.8	24-Jun-86	0859-BRAVERMAN CREEK	H	B
23528	0148-PALLANT CREEK	85	21,384	0.5	5	54,044	39.6	1.8	24-Jun-86	0859-BRAVERMAN CREEK	H	B
23529	0148-PALLANT CREEK	85	21,173	0.7	5	53,619	39.5	1.8	24-Jun-86	0859-BRAVERMAN CREEK	H	B
23925	0148-PALLANT CREEK	85	10,713	0.6	5	25,824	41.5	1.6	12Jun86:15Jun86	0148-PALLANT CREEK	H	B
23926	0148-PALLANT CREEK	85	10,584	1.9	8	25,843	41	1.6	12Jun86:15Jun86	0148-PALLANT CREEK	H	B
23927	0148-PALLANT CREEK	85	9,629	2.8	9	23,730	40.6	1.6	12Jun86:15Jun86	0148-PALLANT CREEK	H	B
23928	0148-PALLANT CREEK	85	10,639	0.5	6	10,696	99.5	2	18-Jun-86	0148-PALLANT CREEK	H	B
23929	0148-PALLANT CREEK	85	9,872	2.1	11	17,200	57.4	1.9	18Jun86:19Jun86	0059-MOSQUITO LAKE	H	B
23930	0148-PALLANT CREEK	85	9,982	1	8	17,203	58	1.9	18Jun86:19Jun86	0059-MOSQUITO LAKE	H	B
23931	0148-PALLANT CREEK	85	10,002	1	8	17,238	58	1.9	18Jun86:19Jun86	0059-MOSQUITO LAKE	H	B
23932	0148-PALLANT CREEK	85	10,596	1	6	10,703	99	2	18Jun86:19Jun86	0057-PALLANT CR UPPER	H	B
23933	0148-PALLANT CREEK	85	9,942	1.2	6	10,063	98.8	2	18Jun86:19Jun86	0057-PALLANT CR UPPER	H	B
23934	0148-PALLANT CREEK	85	10,646	1.5	6	30,808	34.6	1.9	18-Jun-86	0845-MOSQUITO CREEK	H	B
HATCHERY TOTAL			187,886			405,772						
23249	0148-PALLANT CREEK	84	47,576	9.7	7	102,822	46.3	1.6	6-Jun-85	0845-MOSQUITO CREEK	H	B
23250	0148-PALLANT CREEK	84	49,561	7.2	7	103,653	47.8	1.6	6-Jun-85	0859-BRAVERMAN CREEK	H	B
HATCHERY TOTAL			97,137			206,475						
22746	0148-PALLANT CREEK	83	49,542	5.5	8	99,186	49.9	2.4	06Jun84:11Jun84	0148-PALLANT CREEK	H	B
HATCHERY TOTAL			49,542			99,186						
*REARING TYPE: H = HATCHERY												
**STUDY TYPE OF RELEASE: B = EXPERIMENTAL GROUPS WHICH CAN ALSO BE CONSIDERED PRODUCTION, E.G. EXPERIMENTAL CONTROLS.												
P = TYPICAL HATCHERY PRODUCTION.												

**TABLE 4. REASONS FOR NO CWT DATA RECOVERY FROM MARKED FISH.**

<b>TERM FOR MISSING OR NON-RECOVERABLE DATA</b>	<b>EXPLANATION</b>
"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 5. List of recovery fields found in the MRP database.**

<b>Field Name:</b>	<b>Recovery fields that apply to:</b>	<b>Field Numbers:</b>
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 6. List of all MRP Recovery Area codes and the corresponding Statistical Area(s) for British Columbia and Alaska commercial fisheries which recovered coho CWTs in the years 1986 to 1993 originating from the Queen Charlotte Islands.**

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	A150	150	
010	10	A154	154	
011	11	A156	156	
012	12	A157	157	
014	14	ANW	NW	113, 114, 116, 154, 156, 157, 181, 183, 189, 191
023	23	ASE	SE	101, 102, 105, 106
026	26	ASW	SW	103, 104, 150, 152
027	27			
033	1 + 2E + 2W + 3 + 4 + 5			
035	1 + 2W			
036	1 + 2E			
038	1 + 2E + 4			
040	1 + 2E + 2W			
041	2E + 2W			
044	1 + 3			
045	1 + 4			
051	2E + 4 + 5			
052	25 + 26 + 27			
058	2E + 3			
059	2E + 4			
061	2E + 5			
066	3 + 4			
071	3 + 4 + 5			
074	4 + 5			
079	10 + 11 + 12			
083	7 + 8			
091	9 + 10			

**TABLE 7. 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:

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