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Sentinel surveys 1995-1999: catch per unit effort in NAFO divisions 2J3KL

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¹ This series documents the scientific basis for the evaluation of fisheries resources in Canada. As such, it addresses the issues of the day in the time frames required and the documents it contains are not intended as definitive statements on the subjects addressed but rather as progress reports on ongoing investigations.

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¹ La présente série documente les bases scientifiques des évaluations des ressources halieutiques du Canada. Elle traite des problèmes courants selon les échéanciers dictés. Les documents qu'elle contient ne doivent pas être considérés comme des énoncés définitifs sur les sujets traités, mais plutôt comme des rapports d'étape sur les études en cours.

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Abstract

Sentinel enterprises collected catch rate and biological information on inshore cod resources in 2J3KL for 1995-1999. Data were presented on weekly catch rates and annual relative length frequencies (number at length divided by amount of gear) by year and gear type, grouped by division and also summarized for each participant. Catches in 2J have remained very low since 1995 in all gears fished. Gillnet catch rates from Sentinel survey activity in 1999 declined from levels observed in 1998, which were generally the best observed since the inception of the surveys in 1995. Gill net (5 $\frac{1}{2}$ ") catch rates in 1999 were lower in 3K than in 3L but line trawl catch rates were similar. Line trawl catch rates were similar in 1999 to those in 1998 but lower than the highest catches observed in 1997. Trap catches were down in all areas in 1999, with only one trap site having a noteworthy catch.

Résumé

Des entreprises de pêche sentinelle ont recueilli des données sur les taux de capture et des données biologiques sur les ressources côtières en morue dans 2J3KL pour la période 1995-1999. Les données, portant sur les taux de capture hebdomadaires et les fréquences annuelles des longueurs relatives (le nombre selon la longueur divisé par le nombre d'engins) selon l'année et le type d'engin, ont été groupées selon la division et résumées selon chaque participant. Les prises aux divers engins dans 2J sont restées très faibles depuis 1995. Les taux de capture aux filets maillants en 1999 ont baissé par rapport aux taux observés en 1998, qui étaient généralement les meilleurs observés depuis le début des relevés, en 1995. Les taux de capture aux filets maillants en 1999 (5½ po) étaient plus faibles dans 3K que dans 3L, tandis que les taux de capture à la palangre dans ces deux divisions étaient semblables. Ces derniers se rapprochaient des taux obtenus en 1998, mais étaient plus faibles qu'en 1997, lorsque les prises observées étaient les plus fortes. Les captures à la trappe dans tous les secteurs ont fléchi en 1999, seul un secteur affichant des prises notables.

Introduction

Sentinel survey projects were formally announced by the Minister of Fisheries and Oceans in October 1994. The surveys in the DFO Newfoundland Region are an extension of the index fishermen's project from the Northern Cod Science Project with modifications to allow for science activities achievable only under a fishing moratorium. Sentinel data collection has continued during the index fishery of 1998 and commercial fishery in 1999.

The sentinel survey has the following objectives:

1. To develop a catch rate series for use in resource assessments.

2. To incorporate the knowledge of inshore fishers in to the resource assessment process.

3. To describe the temporal-spatial distribution of cod in the inshore area over a number of years through, for example, the use of catch rate information, tagging studies, by-catch information and fishers' observations.

4. To gather length frequencies, sex and maturity data and sample ages for use in resource assessment.

5. To establish a long-term physical oceanographic and environmental monitoring program of the inshore areas.

6. To provide a source of biological material for other researchers. For example, tissue for genetic, physiological and toxicological analyses, cod stomachs for food and feeding studies and by-catch information.

Participants

The primary collectors of data in the sentinel survey are inshore fishers. Through consultation with inshore fishers and fisheries organizations, traditional inshore fishing grounds have been identified and mapped, resulting in approximately 66 locations in NAFO Divisions 2J3KL.

Fishers from communities within the boundaries of the identified coastal areas and who met eligibility criteria were invited to apply to participate in the survey. Where more than one application was received from an area, the project partner conducted a draw or lottery to select the participant. While there was considerable interest in the project in most areas, there were many sites from which only one application was received and others where additional canvassing was required to enlist participants. Selected participants were required to complete a six-week course designed by the Marine Institute of Memorial University in consultation with DFO. Topics covered included scientific sampling methods and equipment, computer use, resource assessment basics and presentation skills.

In order to minimize inter-annual enterprise effects on data collection, participants are expected to remain with the survey over a number of years. It is also expected that most of the sampling activities will continue once commercial fishing operations resume and the sentinel participants will form a core of index fishers.

<u>Sites</u>

Sampling was conducted at 66 sites in NAFO Divisions 2J3KL. The specific location of each site was chosen after consultation between DFO scientists, fishermen, the Fishermen, Food and Allied Workers Union (FFAW) and the Fogo Island and Petty Harbour Cooperatives (for Fogo Island and Petty Harbour). Site selection was based on the need to survey throughout inshore areas and targeted historical fishing areas and historical gear use patterns.

Sampling Strategy

In 1999, sampling ran for a minimum of eight weeks. Many sites were allocated extra time as resources permitted. In 1996, 1997 and 1998 the survey covered a twelve-week period. In 1995, sampling was conducted over fifteen weeks. The timing of sampling was determined after discussions with fishers but was targeted for seasonally appropriate times based on historical fishing patterns. There was minimal disruption of these time frames in 1999 due to the opening of the index fishery.

The number of trap sites in 2J3KL was reduced from 35 in 1998 to 12 in 1999. Trap sites fished cod traps for a period up to four weeks. Participants used either baited trawl lines or gill nets for the remaining weeks of the survey. Non-trap sites fished either baited trawls or gill nets for the full survey. While traps are in the water continuously, they were hauled three days per week. Two sites at Petty Harbour fished baited handlines exclusively. Hook and line, handline and gill net crews fished up to three days per week. Fishing days in the week were selected at the discretion of the crew and depend primarily on weather conditions.

When a cod trap is hauled, the crew estimated how much fish by weight had been caught, removed a random sample for biological sampling and released the remaining catch. Meshed and/or dead, floating fish were retained and brought ashore. Fishers were instructed to release as much live fish as possible.

Hook and line crews fished two tubs of baited line trawl. Each tub consisted of approximately 500 hooks for a total of 1000 hooks per fishing day. Gill net crews fished a maximum of six fifty fathom 5 1/2 inch monofilament gill nets. Nets were rigged 2-3 to a fleet and up to three fleets were fished per fishing day. In addition, selected sites fished one 3-1/4 inch monofilament gill net one day per week. All fish caught in gill nets and on hooks were landed and measured. If catches exceeded 500 kg per week, the numbers of nets in a fleet were cut back. However, some consideration was given to bottom topography and net performance when reducing the number of nets in a fleet. Similarly, the number of hooks per tub was reduced if landings exceeded 500 kg per week. Other measures were considered if fish are particularly abundant in an area and catches appear to be excessive even with the minimal amounts of gear possible.

Prior to the start of sampling in 1995, a fixed (control) location on the fishing grounds was established for each site and will remain fixed for the duration of the project. Each fishing day, up to half of the gear was set at the control site. The remainder of the gear (experimental) was set at one or two other locations on the fishing grounds at the discretion of the crew. The location of each fishing set was plotted on a nautical chart. The time of the set and the soak time for the gear were recorded. Other environmental observations were recorded, including wind direction and speed, percent cloud cover, tide conditions, presence of invertebrates (bait) and other fish species in the area, marine mammals, sea birds and any other variables which might have influenced fishing behavior. Selected sites were equipped with a CTD (measuring temperature and salinity at depth). At these locations, casts were conducted in the vicinity of fishing sets each fishing day. CTD locations were fished for subsequent years if possible.

When the gear was retrieved, catches from the control and experimental gear were kept separate and sampled on shore. All fish from gill net, handline and line trawl, and a sample of the catch from traps, were measured for length and sex. Otoliths were sampled on a length-stratified basis and stored in manila envelopes with relevant information recorded on the outside. Every other week, selected sites collected a sample of up to 100 frozen fish. These were transported to St. John's for detailed biological sampling. All information was recorded on forms similar to those used by the Port Sampling Section and on DFO Research Vessels

Other biological samples were collected as needed.

Data Presentation

The data were summarized for each NAFO division and presented by gear type. Summaries for each enterprise follow, in general, organized from north to south. This paper presents data for gill net (5 ½" and 3 ¼"), line trawl and trap. The relative length frequency plot depicts the number of fish at length scaled by total amount of gear fished so that changes in length frequency distribution may be compared across years. Lengths, in 1cm intervals, are from both control and experimental gear, and for gill net and line trawl represent every fish measured, as the total catch is measured. For trap catches, where only samples of fish were measured, the weekly length frequency was bumped up using the weekly estimated catch before being scaled by effort. Where estimated catches occurred in weeks with no frequencies taken, the catch was applied to the previous or subsequent week's frequency. Length frequency summaries for NAFO division are shown as an average of the relative length frequencies for each fisher in the division. The CPUE figures show control and experimental catches separately, in number of fish per net or 1000 hooks by week and are constructed by calculating a daily catch rate for each set and averaging all the CPUEs for all sets in a given week. The tables give catch details broken down by year, including number of fish measured (Nmeas), amount of gear fished (Ngear), total number of sets (Nhauls) and number of sets in which no fish were caught (Nzero). The first table contains data for control sets only and the second table on each sheet combines the data for all experimental sets.

Results

Data summarizing Sentinel Survey activity in 2J3KL for 1995 through 1999 are presented in figures 1-405 and tables 1-268. Sixty-six inshore fishing enterprises representing communities from Black Tickle to St. Mary's Bay participated in the 2J3KL Sentinel Survey for 1999. Survey activity covered mostly summer and fall periods in all years, traditional fishing times for the areas involved. A total of 2 453 sets of 5 ½" gill net and 295 sets of 3 ¼" gill net resulted in total measurements of just over 90 000 fish. One hundred sixty-six sets of line trawl resulted in 5166 measurements. Otoliths from 3 235 fish were collected for aging purposes in 1999. Twelve cod traps were fished for a maximum period of 4 weeks at each site and a total of 6270 fish were sampled from 107 trap hauls. Sentinel Survey participants were again involved with inshore tagging experiments in 3K and 3L for 1999 in which 8825 fish were tagged in order to track migrations and provide data on cod abundance in inshore areas.

Figure 1 shows the control sites and trap berths that were surveyed in 1999 plotted by gear type. Control sites were generally consistent from year to year but shifts in location may have resulted due to weather or tide conditions or competition for sites by commercial activity.

Most line trawl sets in 2J3KL were fished for 6 hours or less (Fig. 2), with the second most frequent interval fished at 12-24 hours. Gear left longer than 24 hours was most likely not recovered earlier due to weather constraints. Gill nets were generally left overnight, fishing between 12 and 24 hours (Fig. 3).

5 1/2" Gill net

The summary data for 2J3KL in Figures 4-12 and tables 1-6 give an indication of catch rate change since inception of the Sentinel Survey in 1995. Gill nets show the narrowest range of selectivity of Sentinel Survey gears, targeting fish in the 50cm to 80cm range with full recruitment to the gear around 59cm to 66cm. According to age-length analysis (Stansbury et al.), these lengths mainly represent age 6 fish. In general, catch rates from 5 ½" gill nets were lowest in 1995, increased in 1996 and 1998 and decreased to a level comparable with 1997 in 1999. The relative length frequency plot (Fig. 4) shows the widest and strongest distribution in 1998 and probably reflects the relatively strong year-class of 1992. The second strongest signal overall is from the 1996 Sentinel Survey and may reflect the relative strength of the 1990 year-class. Weekly catch rate series (Figs 5 and 6) indicate a bimodal distribution in catch rates, with best catch rates in weeks 25-30 (June 13-July 24 in 1999) and a second, mode in late fall. The enterprises which survey in the fall (primarily Summerford, Miles Cove, Ming's Bight, & Petley) may be fishing on aggregations preparing to overwinter in inshore areas, which may partially explain the higher catch rates during this time frame.

Figures 7-15 and tables 5-10 give summary results broken down by NAFO division. In general, catch rates improve from north to south.

Catches in 2J 5 ½" gill nets were poor in all years. Of 456 sets in 1999, 41% contained no fish (tables 5 and 6). Similar percentages of water hauls were reported in previous years. The relative length frequency plot reflects the scarcity of data in its jagged appearance. The period of time covered by the gill net survey in 2J is the most condensed of all division, likely because all fishers have their gear in the water in the same weeks because of the shorter season in 2J.

In 3K catches from 5 $\frac{1}{2}$ " gill net were best in 1996 and 1998. Catch rates in 1999 were comparable to 1997 and the 1995 survey showed the lowest catch rate in the series. Fall catch rates were stronger than the summer peak and a drop in catches in weeks 39-42 was observed in all years.

The best catch rates in 5 ½" gill net were seen in 3L for all years, 1995 to 1999. The relative length frequency plot (Fig. 13) shows 1998 as the strongest peak, again probably reflecting the relative strength of the 1992 year-class. Peaks for 1996, 1997 and 1999 are comparable and 1995 again shows the lowest in the series.

Small mesh gill nets (3 ¼") were used in 2J3KL since 1996 in order to get information on smaller size ranges of fish. Figures 16-27 and tables 11-18 summarize the results. One 3 ¼" gill net (35 fathoms) was fished in combination with one 5 ½" Gill net (50 fathoms) primarily on experimental

sites. A strong bimodal peak in length frequency distribution results from this mesh size as the gear selects two size ranges of fish. The first and strongest peak, in most cases, is between 35cm and 47cm. Fish in this size range are meshed while the larger fish (52cm to 65cm) are caught by the lips and generally entangle as they twist around. Fish in the range of the first mode of selectivity for this gear (41cm to 43cm), according to age at length tables in Stansbury et al. (2000), are 3 and 4 years.

Good catch rates from small mesh gill nets were observed in 2J, particularly in 1997 and 1998, but only in the range of the first peak of selectivity. No indications of the larger sizes or "lipped" fish were observed. The relatively strong peaks in 1997 and weaker signal in 1998 may both represent the 1993 year-class. The shift in frequency distribution in 1998 may reflect growth of this year-class and part of the year-class has moved out of range of gear selectivity.

The small mesh gear survey in 3K shows the strongest peak of relative length frequency observed. The meshed peak in 1996 dominates and again, may reflect the relative strength of the 92 yearclass. The meshed peaks for other years are similar but the "lipped" mode shows continual decline from 1996 through 1999. The fact that lipped fish are probably not fully recruited to the gear at any particular length group makes it difficult to infer what this decline represents. Catch rates are generally good in small mesh gill nets and are best in the fall of the year in 3K.

The two size ranges of fish in the relative length frequency for 3L small mesh gear are more equally represented than in other divisions. The gear catches more of the larger fish than other areas. The 1997 meshed mode is most dominant over other years and the "lipped" mode shows 1999 at the lowest in the series with other years comparable.

Line trawl

Figures 28-39 and tables19-25 summarize the data from the line trawl portion of the 2J3KL Sentinel Survey. The line trawl survey generally takes place from weeks 34 to 48. Line trawl shows a much wider selectivity curve than gill net and catches mainly fish between 29cm and 83cm. The majority of fish are selected between 41cm and 65cm and full recruitment is probably within that range. Overall, 1997 shows the broadest range of fish sizes caught and the highest weekly catch rates in the series.

Very few line trawl sets were conducted in 2J. Only 52 sets were conducted over the course of the Sentinel Survey (1995-1999) and in 1999 of 3 sets fished, none caught fish (tables 21 and 22).

In 3K, the line trawl survey had the best catch rates in all weeks fished in 1997. The relative length frequency plot for 1997 shows the widest size ranges of fish caught as well. The peak in size frequency occurs from about 52cm to 59cm, probably age 5 fish from the 1992 year-class. In 1999 there is a noticeable absence of smaller fish in the relative frequency plot and may be indicating the relatively poor recruitment of the 1995 year-class.

Similar to that seen in the gill net survey, line trawl in 3L appears to have more large fish available to the gear over the course of the survey as the relative length frequency plot shows a broader size range of fish caught (Figure 37). 1996 and 1997 frequency plots are dominant with modes representing the 1992 year-class shifting and moving out of range of gear selectivity in 1998. 1999

shows catch rates similar to other years, in contrast with 3K data, and although the absence of small fish isn't as pronounced as in 3K, there is no indication of smaller fish becoming available to the gear.

Trap

Trap has the broadest range of selectivity of all gears used in the Sentinel Survey. Fish from 34 to 86cm were well represented in the frequency distributions and it is probably the most useful gear to track year-class strengths over the course of time. Trap data is presented in figures 40-48 and tables 27-30. The relative length frequency for all traps fished in 2J3KL (fig. 40) track the movement of a size range of fish from 1996 through 1998, which seem to correspond to the 1992 year-class. In 1999 the absence of larger fish available to the trap is noticeable. The pattern in size progression is driven mainly by the 3L trap data. 2J had very little catch in 1995-1998 and no data for 1999. Catch rates in 3K were less than half those for 3L in most years. Interestingly, there is a peak of relatively small fish indicated in the 1999 relative frequency plot for 3K while 3L shows very poor trap catches compared to previous years.

The relative length frequencies for trap are broken out in figure 48 to make it easier to track progression of length groups over the years.

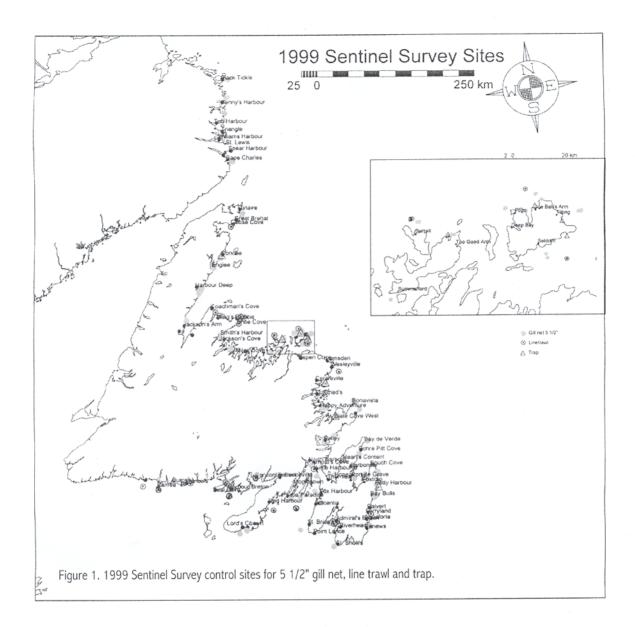
Data for Individual Enterprises

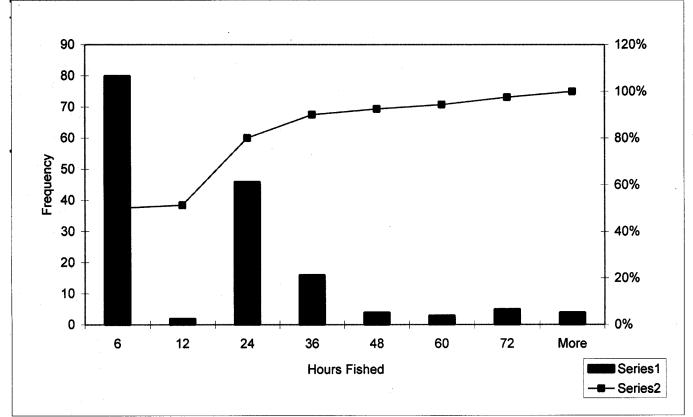
A summary sheet for each trip (Sentinel participant) is included following the summary sheets by NAFO division. Figures and tables for gill net and line trawl data are presented in general order of north to south distribution.

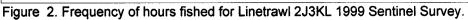
References

Brattey, J. 2000. Stock structure and seasonal movement patterns of Atlantic cod (*Gadus morhua*) in NAFO Divs 3KL inferred from recent tagging experiments. DFO Can. Stock Assess. Sec. Res. Doc. 2000/084.

Stansbury, D., Shelton, P., and Maddock Parsons, D. 2000. An age disaggregate index from the Sentinel program for cod in NAFO divisions 2J3KL. DFO Can. Stock Assess. Sec. Res. Doc. 2000/090.







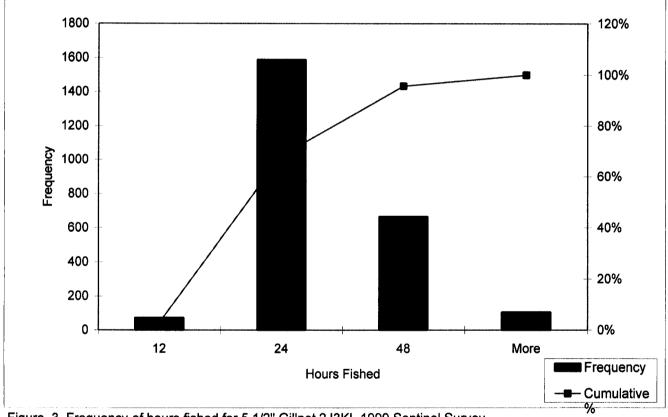


Figure 3. Frequency of hours fished for 5 1/2" Gillnet 2J3KL 1999 Sentinel Survey.

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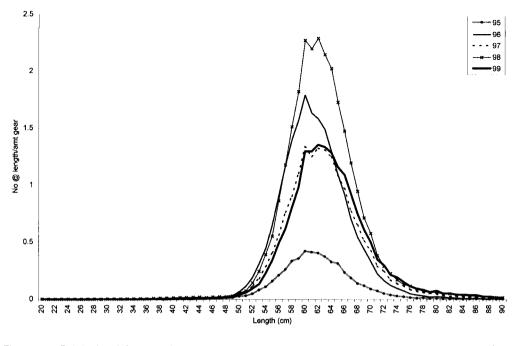


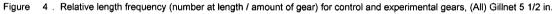
Table 3.	Summary data for All sites (All) Control
	Sets Gillnet 5 1/2 in.

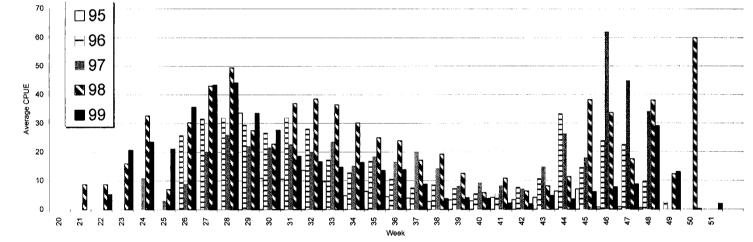
Div	(All)
Trip	(All)
Туре	F
Gear	5
Mesh Size	5.5

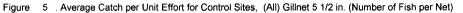
	Year				
Data	1995	1996	1997	1998	1999
Nmeas	12913	36675	36208	50816	30938
Ngear	2618	1998	2023	2043	1961
Nhauls	889	848	865	892	880
Nzero	192	152	110	111	116
Table 4.	Summary	data for	All sites	i (All) Ex	p sets
	Gillnet 5	1/2 in		• •	•

Div	(All)
Trip	(All)
Туре	(All)
Gear	5
Mesh Size	5.5

	Year				
Data	1995	1996	1997	1998	1999
Nmeas	15873	61163	50734	73531	52666
Ngear	2652	3066	2923	2940	3031
Nhauls	892	1402	1427	1514	1573
Nzero	191	240	233	240	259







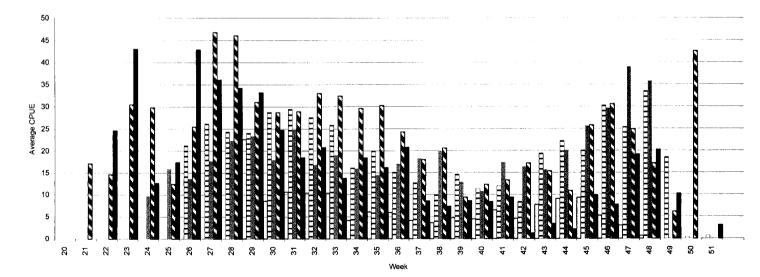


Figure 6 . Average Catch per Unit Effort for Experimental Sites, (All) Gillnet 5 1/2 in. (Number of Fish per Net)

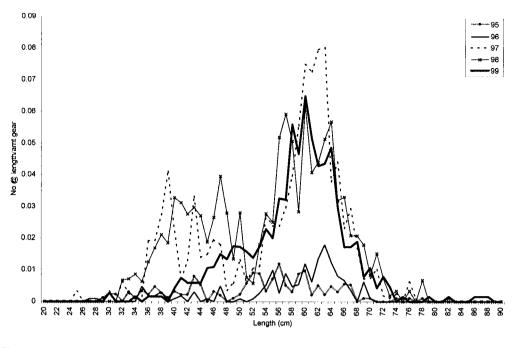


Table 5.	Summary data for All sites 2J Control
	Sets Gillnet 5 1/2 In.

Div	2J
Trip	(All)
Туре	F
Gear	5
Mesh Size	5.5

	Year				
Data	1995	1996	1997	1998	1999
Nmeas	75	21	320	237	135
Ngear	323	250	249	204	237
Nhauls	110	115	117	96	114
Nzero	77	99	72	59	72
Table 6.	Summary	data for	All sites	2J Exp	sets

Gillnet 5 1/2 in.

Div	2J
Trip	(All)
Туре	(All)
Gear	5
Mesh Size	5.5

	Year				
Data	1995	1996	1997	1998	1999
Nmeas	47	84	284	227	321
Ngear	323	484	380	323	359
Nhauls	110	228	213	198	227
Nzero	87	191	167	146	165



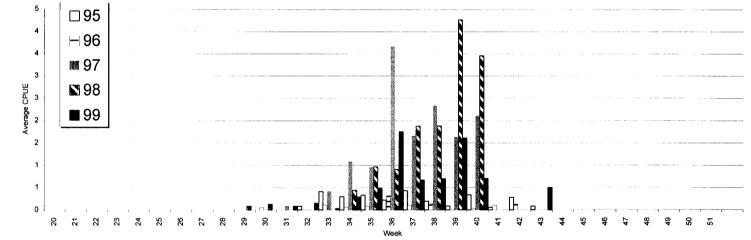


Figure 8 . Average Catch per Unit Effort for Control Sites, 2J Gillnet 5 1/2 in. (Number of Fish per Net)

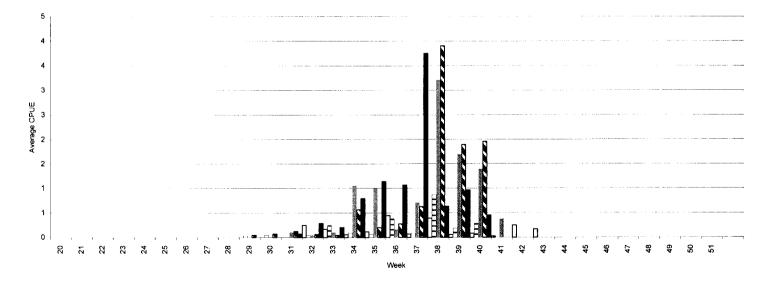
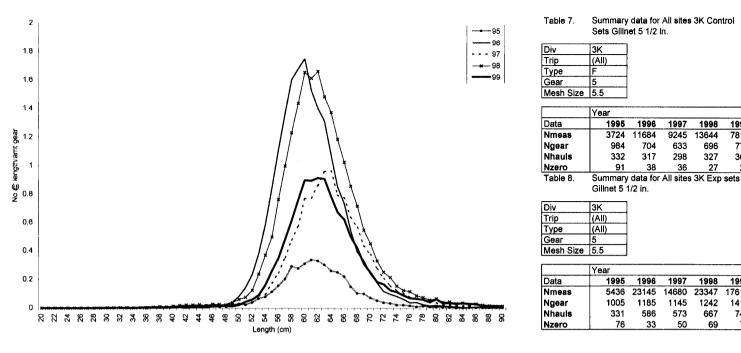
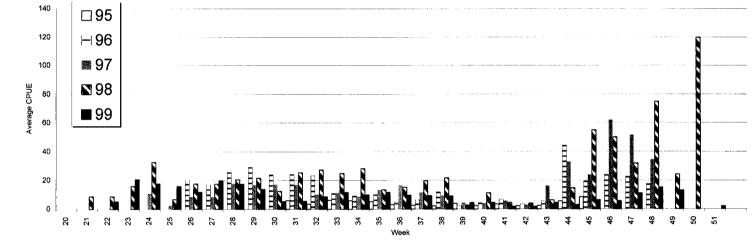


Figure 9 . Average Catch per Unit Effort for Experimental Sites, 2J Gillnet 5 1/2 in. (Number of Fish per Net)







. Average Catch per Unit Effort for Control Sites, 3K Gillnet 5 1/2 in. (Number of Fish per Net) Figure 11

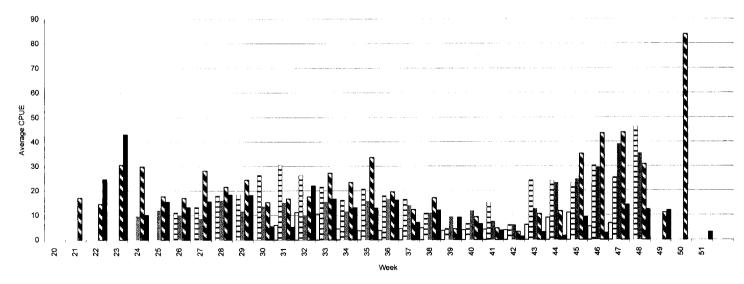
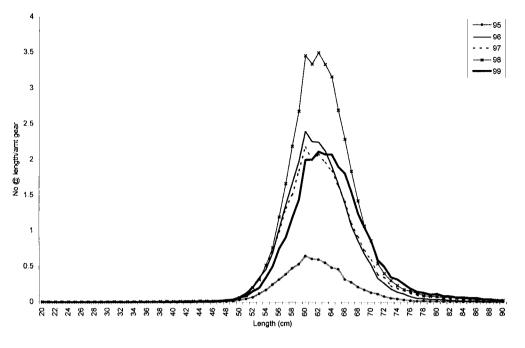


Figure 12 . Average Catch per Unit Effort for Experimental Sites, 3K Gillnet 5 1/2 in. (Number of Fish per Net)



Tabie 9.	Summary data for All sites 3L Control
	Sets Gillnet 5 1/2 in.

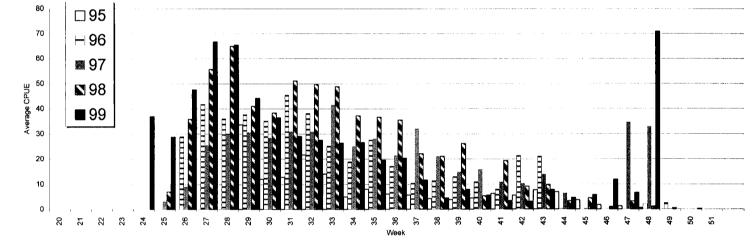
Div	3L.
Trip	(All)
Туре	F
Gear	5
Mesh Size	5.5

	Year				
Data	1995	1996	1997	1998	1999
Nmeas	9114	24970	26643	36935	22992
Ngear	1311	1044	1141	1143	951
Nhauls	447	416	450	469	399
Nzero	24	15	2	25	16
Table 10.	Summary	data for	All sites	3L Exp	sets
	Gillnet 5	1/2 in			

Div	3L
Trip	(All)
Туре	(All)
Gear	5
Mesh Size	5.5

	Year				
Data	1995	1996	1997	1998	1999
Nmeas	10390	37934	35770	49957	34734
Ngear	1324	1397	1398	1375	1254
Nhauls	451	588	641	649	600
Nzero	28	16	16	25	22







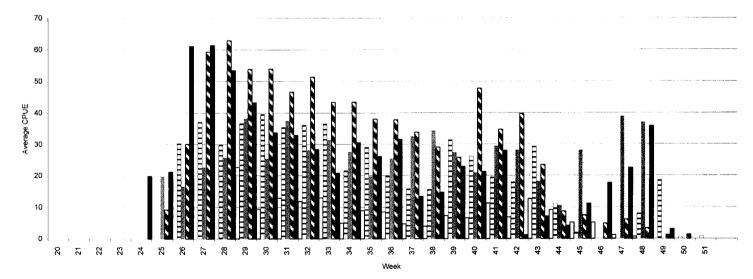


Figure 15 . Average Catch per Unit Effort for Experimental Sites, 3L Gillnet 5 1/2 in. (Number of Fish per Net)

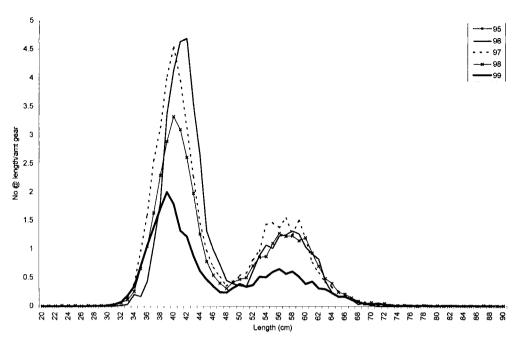


Table 11. Summary data for All sites (All) Control Sets Gillnet 3 1/4 in.

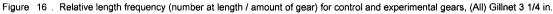
Div	(All)
Trip	(All)
Туре	F
Gear	5
Mesh Size	3.25

	Year				
Data	1995	1996	1997	1998	1999
Nmeas		11	212	178	
Ngear		1	3	7	
Nhauls		1	3	7	
Nzero	1	0	0	3	
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Table 12. Summary data for All sites (All) Exp sets Gillnet 3 1/4 in.

Div	(All)
Trip	(All)
Туре	(All)
Gear	5
Mesh Size	3.25

	Year				
Data	1995	1996	1997	1998	1999
Nmeas		2417	10968	11819	6409
Ngear		31	225	316	297
Nhauls		31	224	316	295
Nzero		0	18	21	50



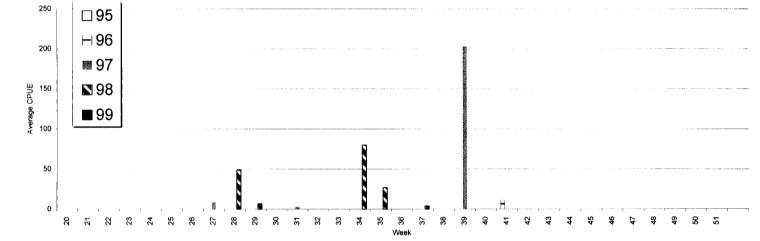


Figure 17 . Average Catch per Unit Effort for Control Sites, (All) Gillnet 3 1/4 in. (Number of Fish per Net)

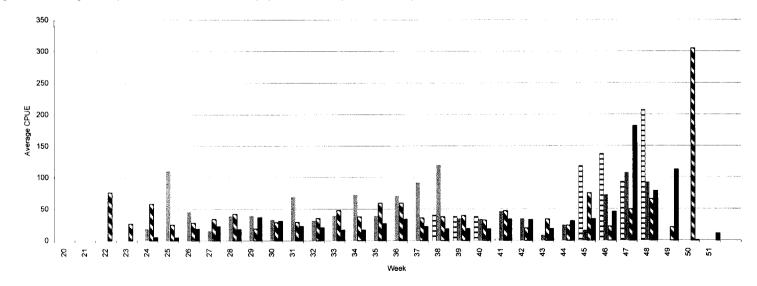
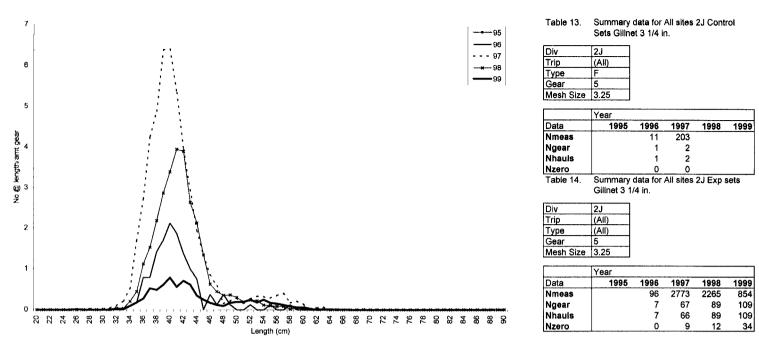


Figure 18 . Average Catch per Unit Effort for Experimental Sites, (All) Gillnet 3 1/4 in. (Number of Fish per Net)





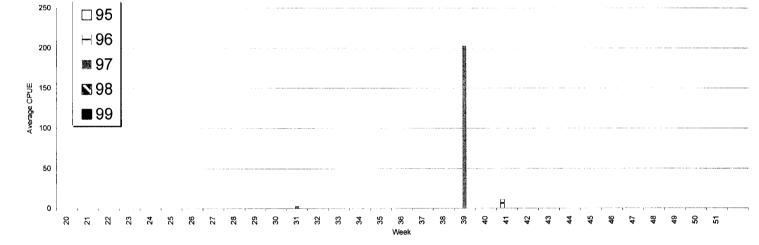


Figure 20 . Average Catch per Unit Effort for Control Sites, 2J Gillnet 3 1/4 in. (Number of Fish per Net)

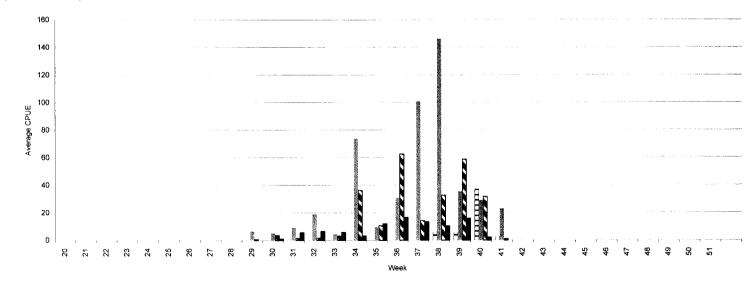


Figure 21 . Average Catch per Unit Effort for Experimental Sites, 2J Gillnet 3 1/4 in. (Number of Fish per Net)

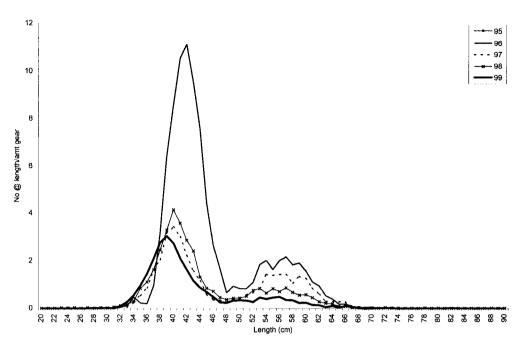


Table 15.	Summary data for All sites 3K Control
	Sets Gillnet 3 1/4 in.

Div	3K
Trip	(All)
Туре	F
Gear	5
Mesh Size	3.25

F

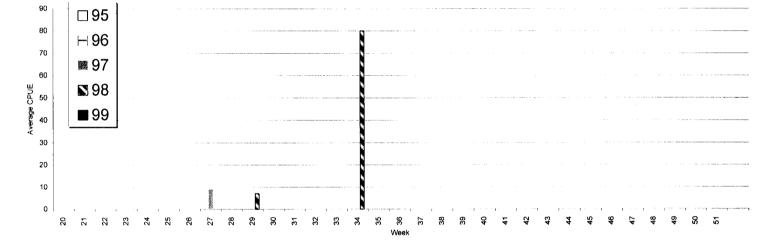
	Year				
Data	1995	1996	1997	1998	1999
Nmeas			9	87	
Ngear			1	2	
Nhauls			1	2	
Nzero			0	0	

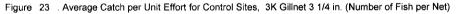
Table 16. Summary data for All sites 3K Exp sets Gillnet 3 1/4 in.

Div	ЗК	
Trip	(All)	
Туре	(All)	
Gear	5	
Mesh Size	3.25	

	Year				
Data	1995	1996	1997	1998	1999
Nmeas		1822	2526	3830	2762
Ngear		15	52	107	93
Nhauls		15	52	107	92
Nzero		0	2	7	7







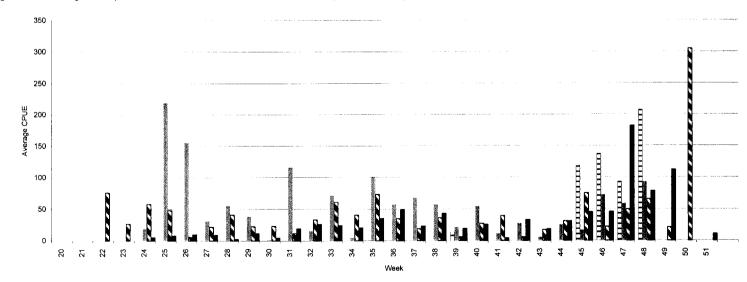


Figure 24 . Average Catch per Unit Effort for Experimental Sites, 3K Gillnet 3 1/4 in. (Number of Fish per Net)

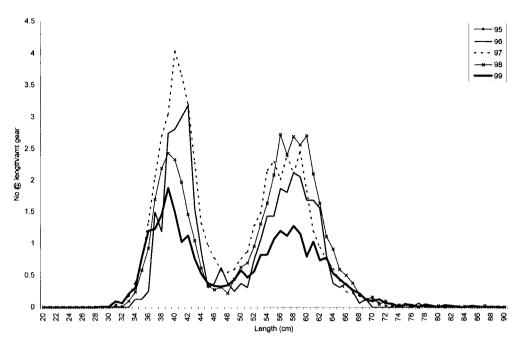


Table 17.	Summary data for All sites 3L Control
	Sets Gillnet 3 1/4 in.

Div	3L
Trip	(All)
Туре	F
Gear	5
Mesh Size	3.25

	Year				
Data	1995	1996	1997	1998	1999
Nmeas				91	
Ngear				5	
Nhauls				5	
Nzero				3	
Table 18.	Summary Gilinet 3 1		All sites	3L Exp :	sets

Div	3L
Trip	(All)
Туре	(All)
Gear	5
Mesh Size	3.25

	Year				
Data	1995	1996	1997	1998	1999
Nmeas		499	5669	5724	2793
Ngear		9	106	120	95
Nhauls		9	106	120	94
Nzero		0	7	2	ç



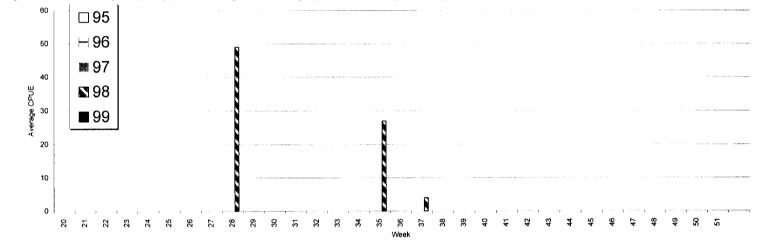


Figure 26 . Average Catch per Unit Effort for Control Sites, 3L Gillnet 3 1/4 in. (Number of Fish per Net)

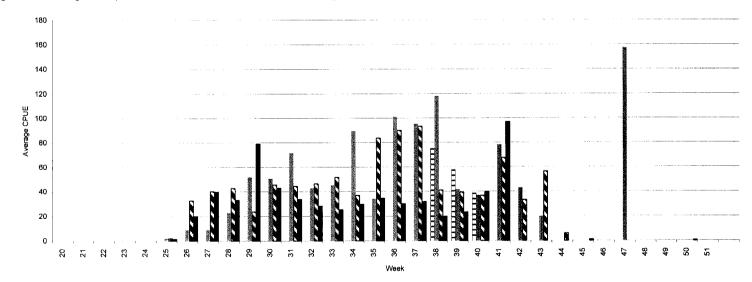


Figure 27 . Average Catch per Unit Effort for Experimental Sites, 3L Gillnet 3 1/4 in. (Number of Fish per Net)

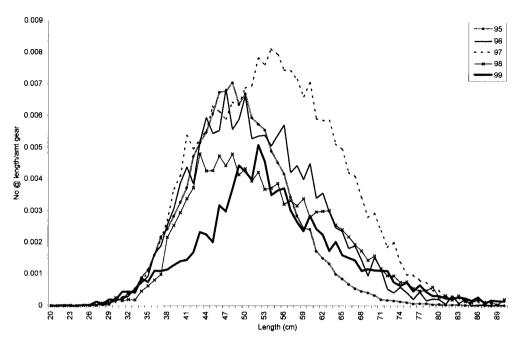


Table 19.	Summary data for All sites (All) Control
	Sets Linetrawl

Div	(All)
Trip	(All)
Туре	F
Gear	7
Mesh Size	0

	Year				
Data	1995	1996	1997	1998	1999
Nmeas	16325	9358	14848	5101	2386
Ngear	144250	81922	70400	45952	21950
Nhauls	406	239	211	142	74
Nzero	50	19	10	12	5
Table 20.	Summary Linetrawl	data for	All sites	(All) Ex	p sets

Div	(All)
Trip	(All)
Туре	(All)
Gear	7
Mesh Size	0

	Year				
Data	1995	1996	1997	1998	1999
Nmeas	20018	13797	18662	7249	2780
Ngear	144475	88200	79200	56114	26375
Nhauls	424	290	245	179	92
Nzero	32	23	11	11	4



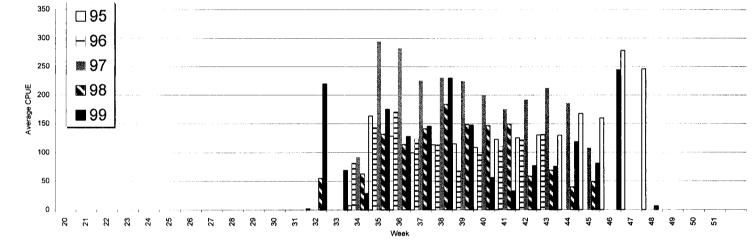


Figure 29 . Average Catch per Unit Effort for Control Sites, (All) Linetrawl (Number of Fish per 1000 hooks)

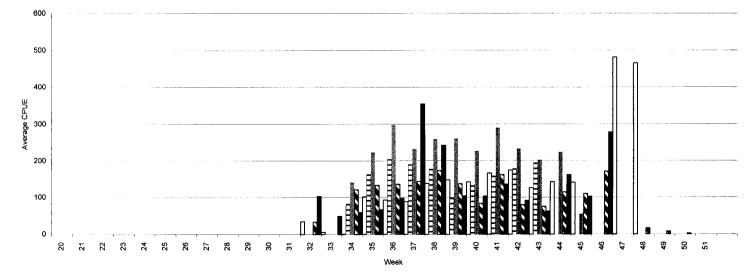


Figure 30 . Average Catch per Unit Effort for Experimental Sites, (All) Linetrawl (Number of Fish per 1000 hooks)

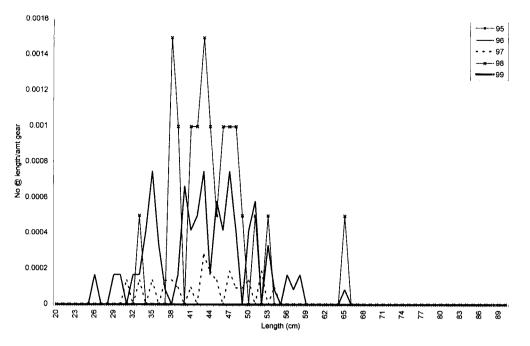


Table 21.	Summary Sets Linet		All sites	2J Cont	rol
Div	2J				
Trip	(All)				
Туре	F				
Gear	7				
Mesh Size	0				
		<u></u>			
	Year		·····		
Data	1995	1996	1997	1998	1999
Nmeas		38	16	15	
Ngear		3000	4200	1000	
Nhauis		9	12	4	
Nzero		2	6	0	
Table 22.	Summary Linetrawl	data for	All sites	2J Exp	sets
Div	2J				
Trip	(All)				
Туре	(All)				
Gear	7				
Mesh Size	0				

	Year				
Data	1995	1996	1997	1998	1999
Nmeas		37	5	11	0
Ngear		4000	4950	1000	750
Nhauis		11	12	4	3
Nzero		3	9	1	3



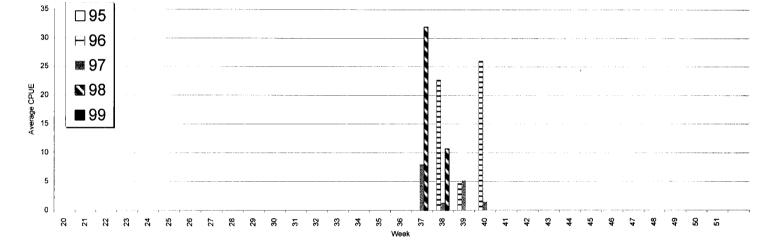


Figure 32 . Average Catch per Unit Effort for Control Sites, 2J Linetrawl (Number of Fish per 1000 hooks)

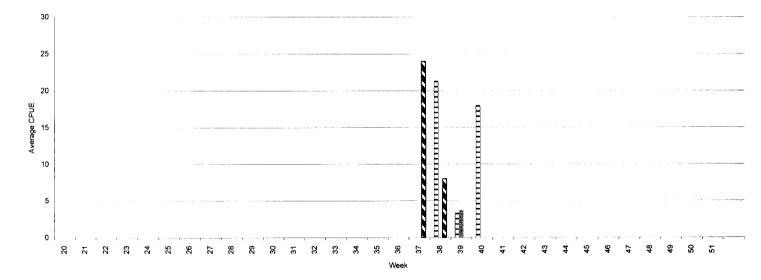


Figure 33 . Average Catch per Unit Effort for Experimental Sites, 2J Linetrawl (Number of Fish per 1000 hooks)

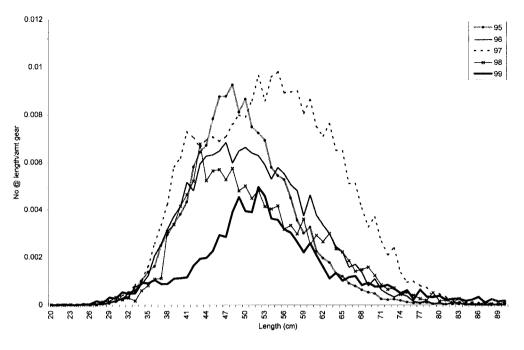


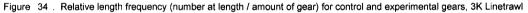
Table 23. Summary data for All sites 3K Control Sets Linetrawi

Div	ЗК
Trip	(All)
Туре	F
Gear	7
Mesh Size	0

	Year				
Data	1995	1996	1997	1998	1999
Nmeas	10204	5894	9502	2994	1509
Ngear	66150	38300	36000	25470	15150
Nhauls	222	129	123	83	54
Nzero	22	6	4	6	3
Table 24.	Summary	data for	All sites	з ЗК Ехр	sets

Div	3K
Trip	(All)
Туре	(All)
Gear	7
Mesh Size	0

	Year				
Data	1995	1996	1997	1998	1999
Nmeas	12477	7686	12899	4023	1585
Ngear	72475	46190	40500	30440	16825
Nhauls	243	173	145	101	62
Nzero	12	9	2	3	0



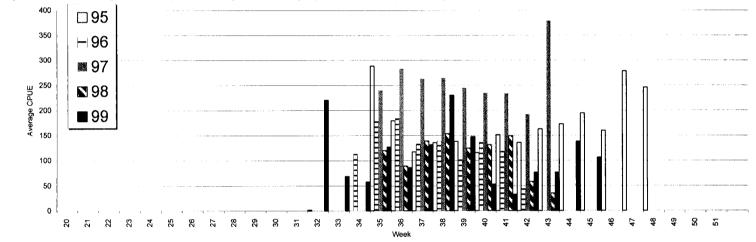


Figure 35 . Average Catch per Unit Effort for Control Sites, 3K Linetrawl (Number of Fish per 1000 hooks)

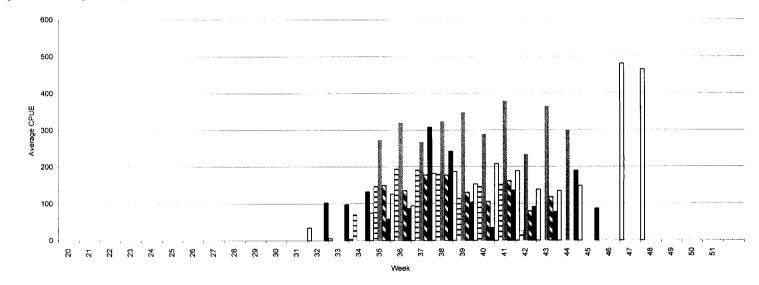


Figure 36 Average Catch per Unit Effort for Experimental Sites, 3K Linetrawl (Number of Fish per 1000 hooks)

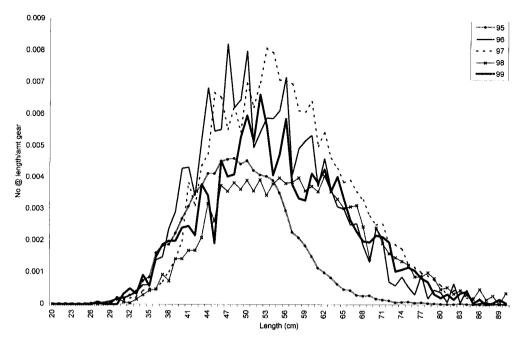


Table 25.	Summary data for All sites 3L Control Sets Linetrawi

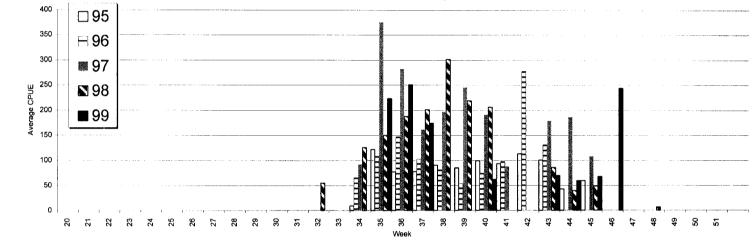
Div	3L.
Trip	(All)
Туре	F
Gear	7
Mesh Size	0

	Year				
Data	1995	1996	1997	1998	1999
Nmeas	6121	3426	5330	2092	877
Ngear	78100	40622	30200	19482	6800
Nhauls	184	101	76	55	20
Nzero	28	11	0	6	2
Table 26.	Summary Linetrawl	data for	All sites	3L Exp	

Div	3L
Trip	(All)
Туре	(All)
Gear	7
Mesh Size	0

	Year				
Data	1995	1996	1997	1998	1999
Nmeas	7541	6074	5758	3215	1195
Ngear	72000	38010	33750	24674	8800
Nhauls	181	106	88	74	27
Nzero	20	11	0	7	1





. Average Catch per Unit Effort for Control Sites, 3L Linetrawl (Number of Fish per 1000 hooks) Figure 38

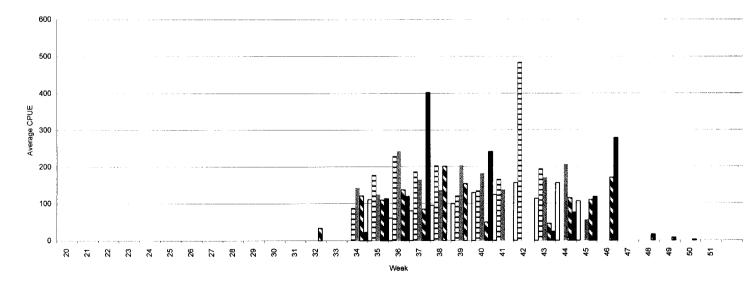
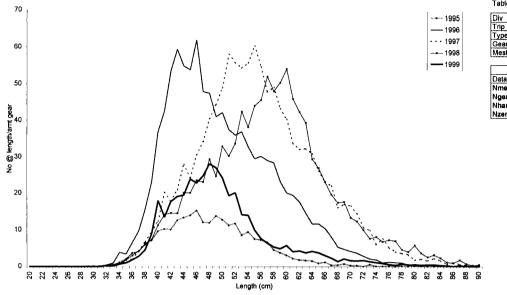
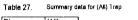
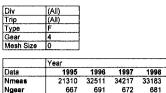


Figure 39 . Average Catch per Unit Effort for Experimental Sites, 3L Linetrawl (Number of Fish per 1000 hooks)







 Year
 Data
 1995
 1996
 1997
 1998
 1999

 Nmeas
 21310
 32511
 34217
 33183
 6270

 Ngear
 667
 691
 672
 681
 107

 Nhauis
 667
 691
 672
 681
 107

 Nzero
 166
 132
 156
 138
 41

Figure 40 . Relative length frequency (number at length / amount of gear) for control and experimental gears, (All) Trap

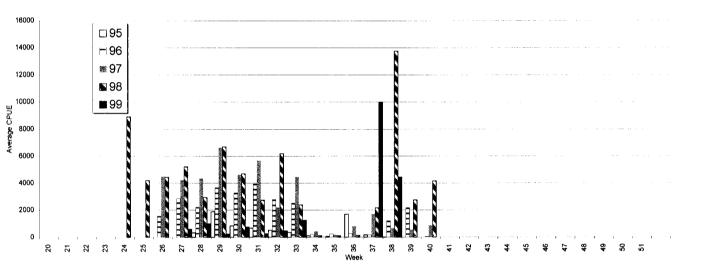
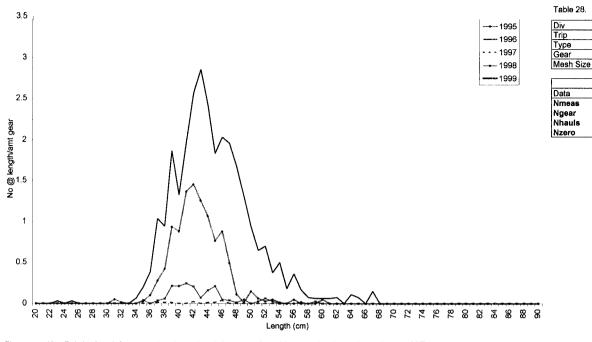
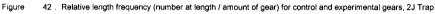
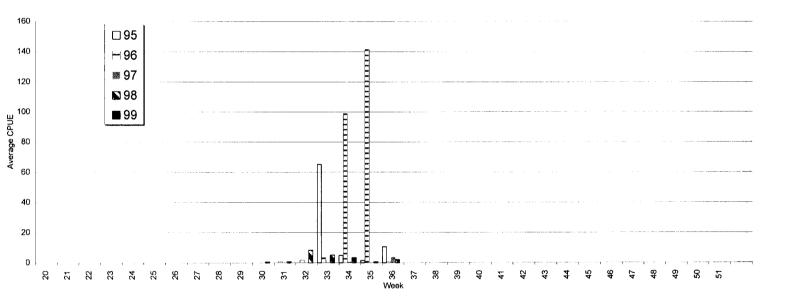


Figure 41 Average Catch per Unit Effort for Control Sites, (All) Trap (Estimated Weight per Haul)







Summary data for 2J Trap

2J (All)

Year



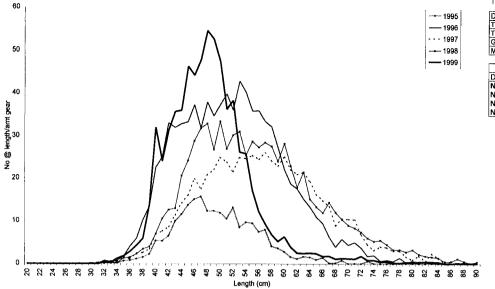


Table 29. Summary data for 3K Trap

Div 3K Trip (All) Type F Gear 4 Mesh Size 0

	Year				
Data	1995	1996	1997	1998	1999
Nmeas	10935	16042	14572	14869	3732
Ngear	311	290	276	280	44
Nhauls	311	290	276	280	44
Nzero	42	39	32	45	11

Figure 44 . Relative length frequency (number at length / amount of gear) for control and experimental gears, 3K Trap

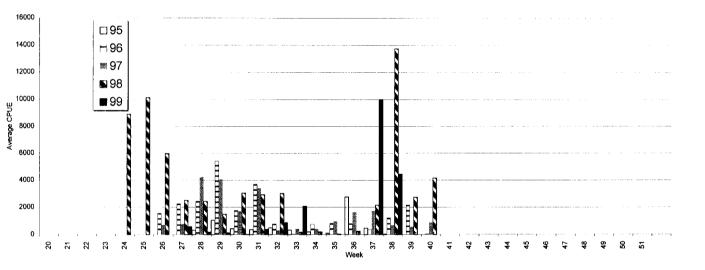
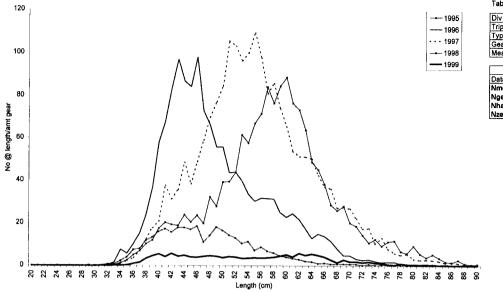


Figure 45 . Average Catch per Unit Effort for Control Sites, 3K Trap (Estimated Weight per Haul)



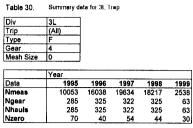


Figure 46 . Relative length frequency (number at length / amount of gear) for control and experimental gears, 3L Trap

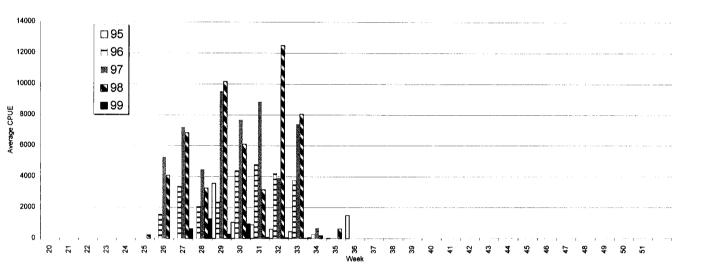
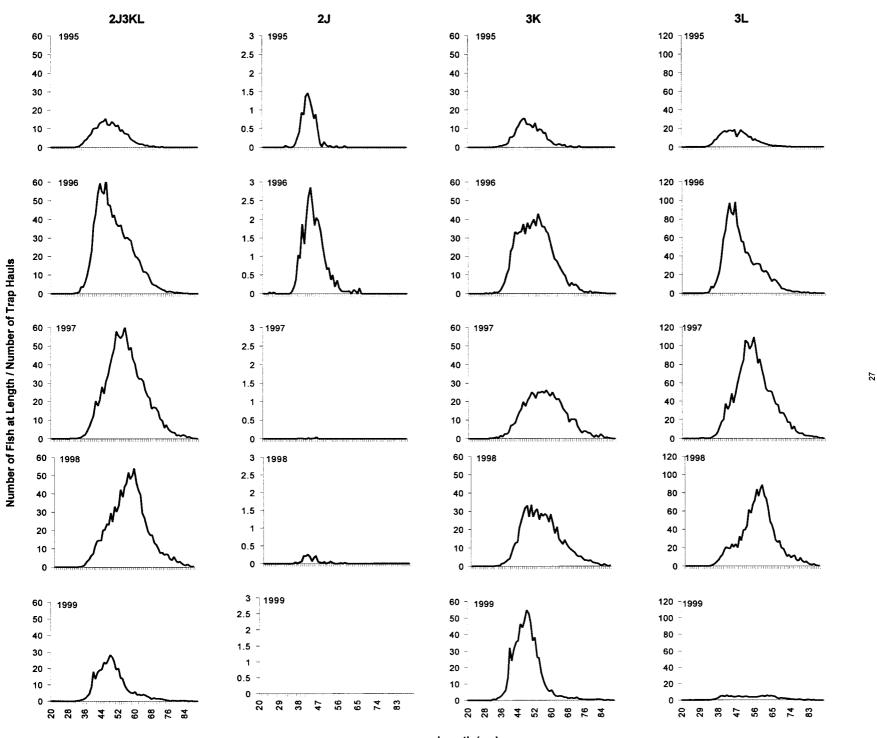
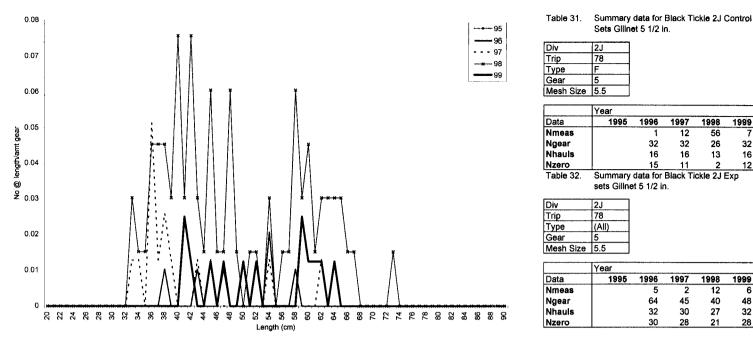
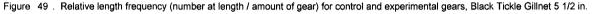


Figure 47 . Average Catch per Unit Effort for Control Sites, 3L Trap (Estimated Weight per Haul)



Length (cm) Figure 48. Relative Length frequenies for trap (number at length scaled to number of times the trap was hauled) broken down by NAFO subdivision and year.





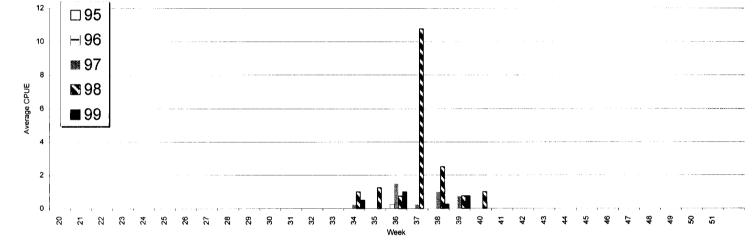


Figure 50 . Average Catch per Unit Effort for Control Sites, Black Tickle Gillnet 5 1/2 in. (Number of Fish per Net)

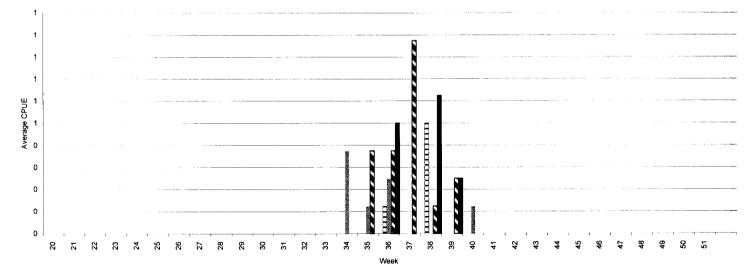
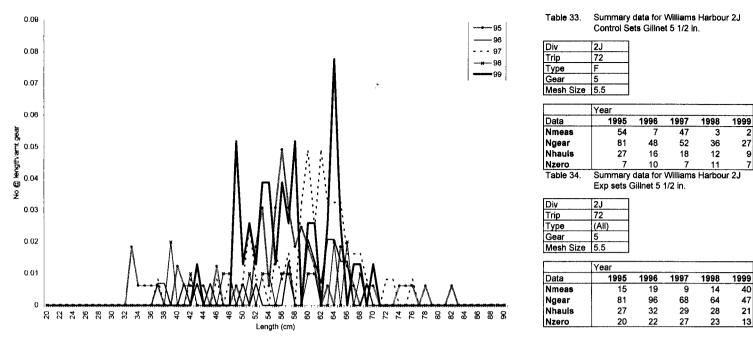


Figure 51 Average Catch per Unit Effort for Experimental Sites, Black Tickle Gillnet 5 1/2 in. (Number of Fish per Net)





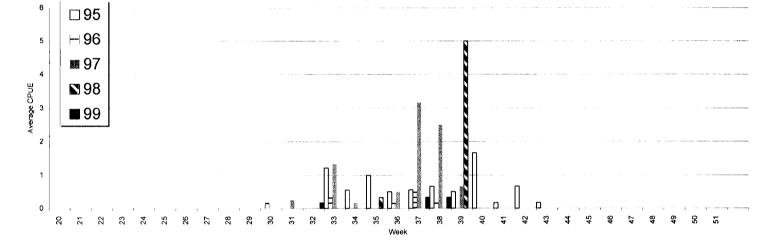


Figure 53 . Average Catch per Unit Effort for Control Sites, Williams Harbour Gillnet 5 1/2 in. (Number of Fish per Net)

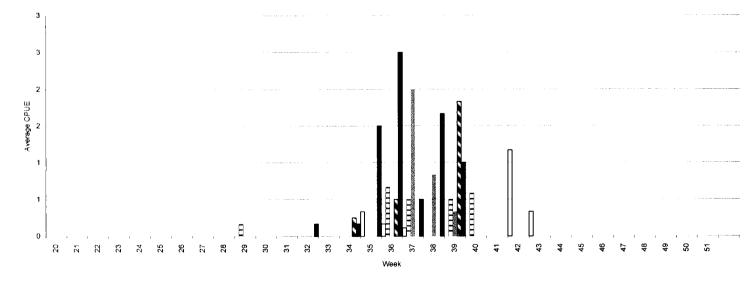
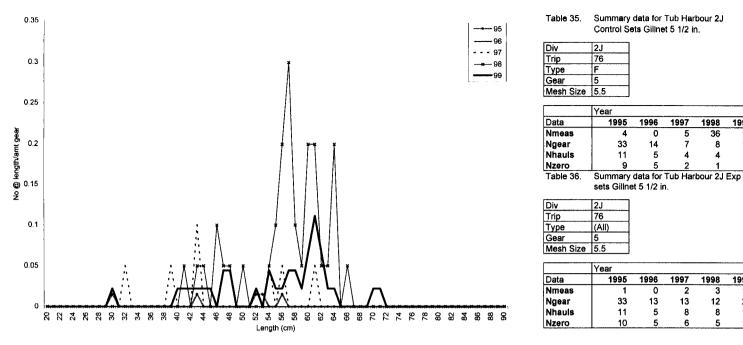
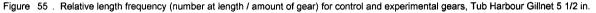


Figure 54 . Average Catch per Unit Effort for Experimental Sites, Williams Harbour Gillnet 5 1/2 in. (Number of Fish per Net)





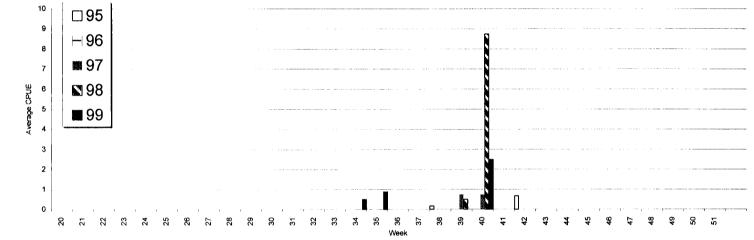


Figure 56 . Average Catch per Unit Effort for Control Sites, Tub Harbour Gillnet 5 1/2 in. (Number of Fish per Net)

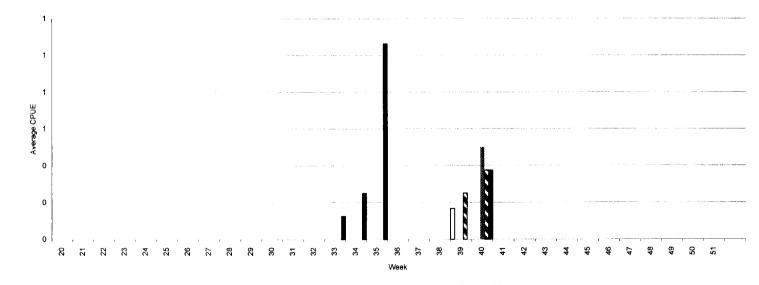


Figure 57 . Average Catch per Unit Effort for Experimental Sites, Tub Harbour Gillnet 5 1/2 in. (Number of Fish per Net)

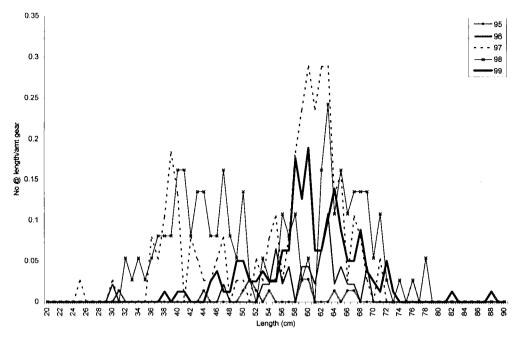


Table 37.	Summary data for Triangle 2J Control
	Sets Gillnet 5 1/2 in.

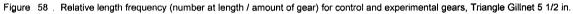
Div	2J
Trip	75
Туре	F
Gear	5
Mesh Size	5.5

	Year				····
Data	1995	1996	1997	1998	1999
Nmeas	2	4	55	39	8
Ngear	33	14	16	14	32
Nhauls	11	7	8	7	16
Nzero	9	4	0	2	12
Table 38.	Summary	data for	Triangle	2J Exp	sets

 Summary data for Triangle 2J Exp sets Gillnet 5 1/2 in.

Div	2J
Trip	75
Туре	(All)
Gear	5
Mesh Size	5.5

	Year				
Data	1995	1996	1997	1998	1999
Nmeas	12	26	77	99	134
Ngear	36	32	22	23	47
Nhauls	12	16	14	15	31
Nzero	11	11	4	3	21



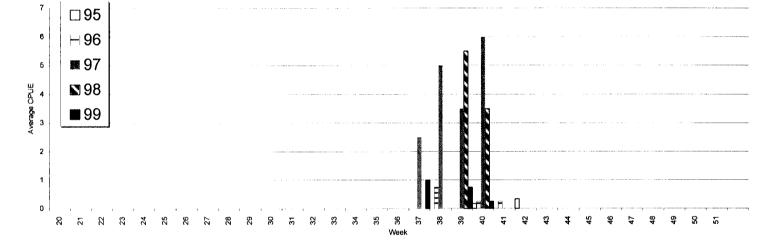


Figure 59 . Average Catch per Unit Effort for Control Sites, Triangle Gillnet 5 1/2 in. (Number of Fish per Net)

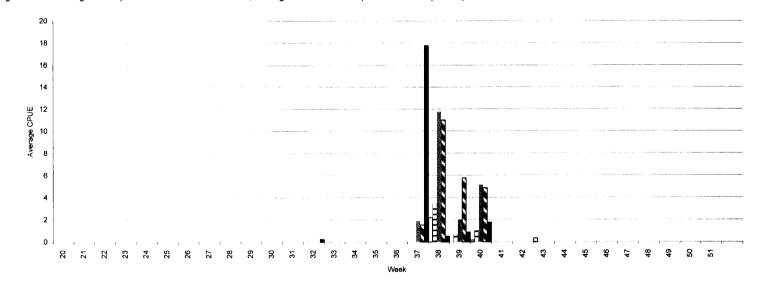
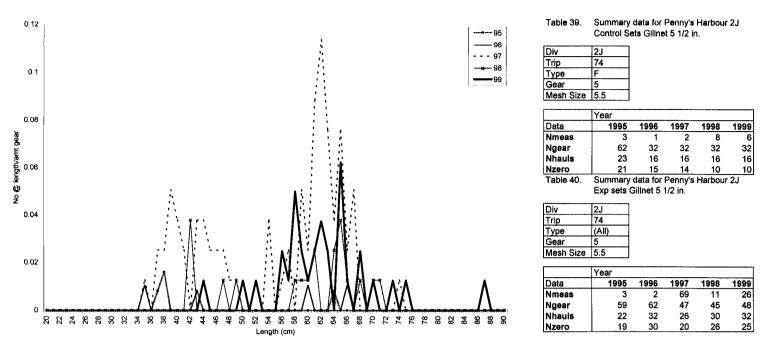
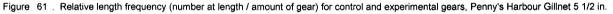


Figure 60 . Average Catch per Unit Effort for Experimental Sites, Triangle Gillnet 5 1/2 in. (Number of Fish per Net)





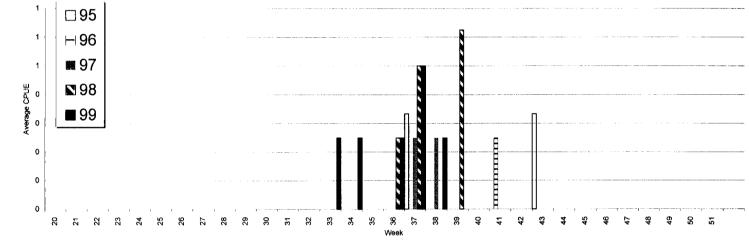


Figure 62 . Average Catch per Unit Effort for Control Sites, Penny's Harbour Gillnet 5 1/2 in. (Number of Fish per Net)

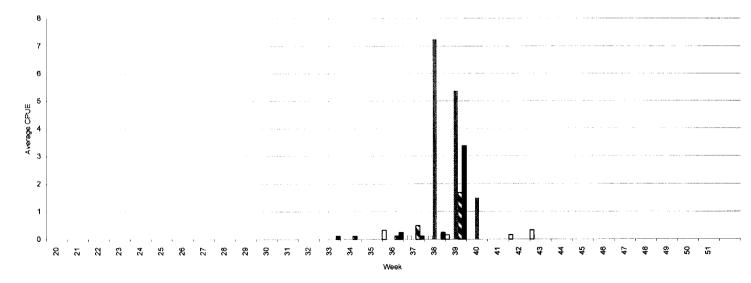
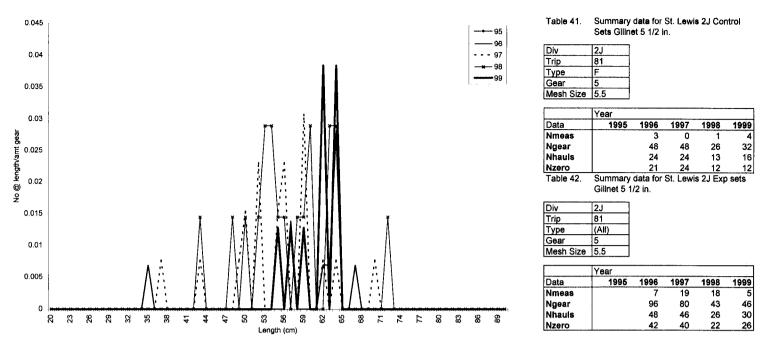
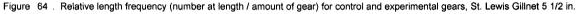


Figure 63 Average Catch per Unit Effort for Experimental Sites, Penny's Harbour Gillnet 5 1/2 in. (Number of Fish per Net)





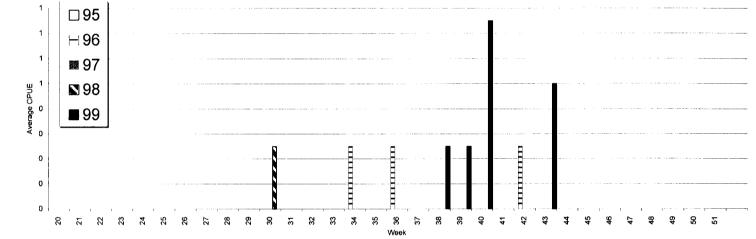


Figure 65 . Average Catch per Unit Effort for Control Sites, St. Lewis Gillnet 5 1/2 in. (Number of Fish per Net)

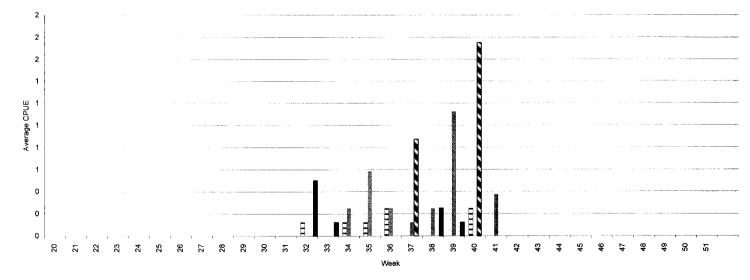


Figure 66 Average Catch per Unit Effort for Experimental Sites, St. Lewis Gillnet 5 1/2 in. (Number of Fish per Net)

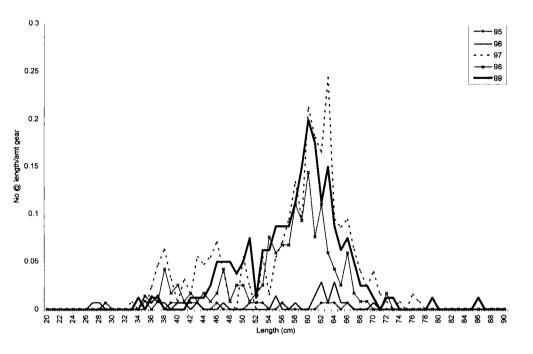


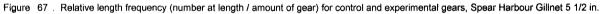
Table 43.	Summary data for Spear Harbour 2J
	Control Sets Gillnet 5 1/2 in.

Div	2J
Trip	67
Туре	F
Gear	5
Mesh Size	5.5

	Year				
Data	1995	1996	1997	1998	1999
Nmeas	9	3	197	92	84
Ngear	72	46	46	46	32
Nhauls	24	23	23	23	16
Nzero	20	22	8	15	5
Table 44.	Summary sets Gillne			larbour 2	2J Exp

Div 2J Trip 67 Type (All) Gear 5 Mesh Size 5.5

	Year				
Data	1995	1996	1997	1998	1999
Nmeas	11	24	104	70	84
Ngear	72	89	78	72	48
Nhauls	24	47	45	48	32
Nzero	17	36	29	30	15



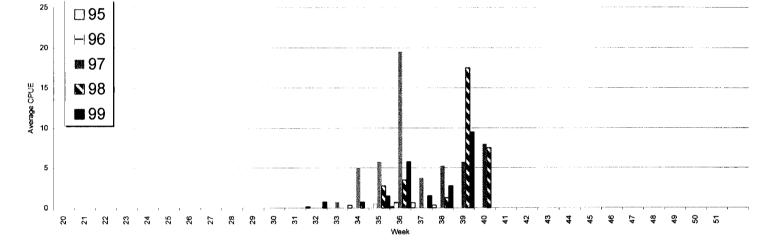


Figure 68 . Average Catch per Unit Effort for Control Sites, Spear Harbour Gillnet 5 1/2 in. (Number of Fish per Net)

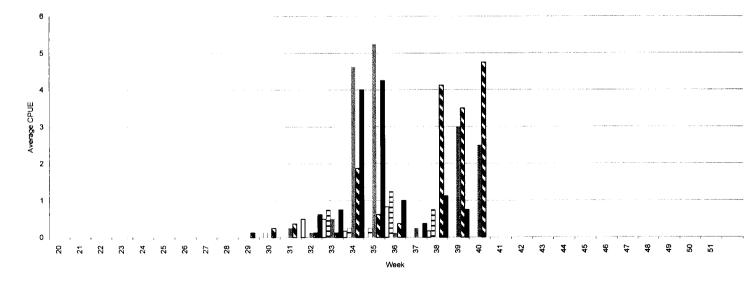
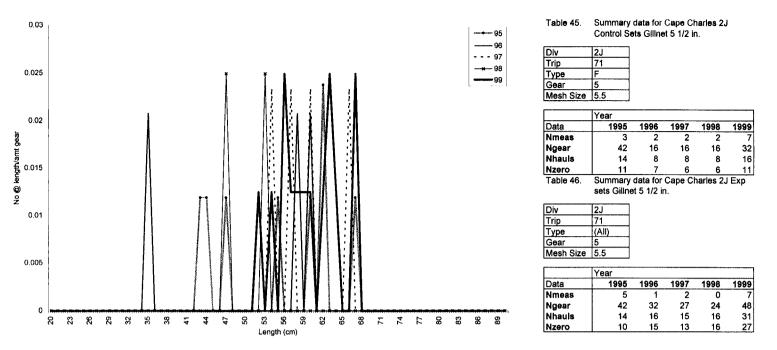
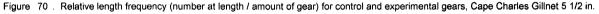


Figure 69 . Average Catch per Unit Effort for Experimental Sites, Spear Harbour Gillnet 5 1/2 in. (Number of Fish per Net)





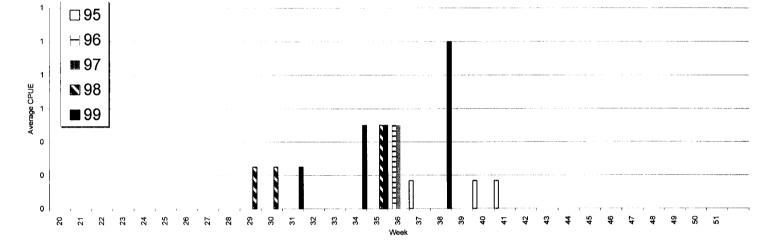


Figure 71 . Average Catch per Unit Effort for Control Sites, Cape Charles Gillnet 5 1/2 in. (Number of Fish per Net)

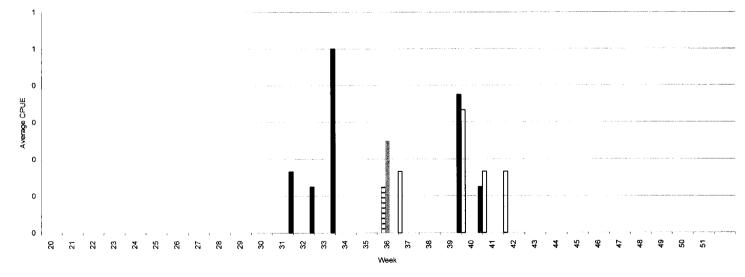


Figure 72 Average Catch per Unit Effort for Experimental Sites, Cape Charles Gillnet 5 1/2 in. (Number of Fish per Net)

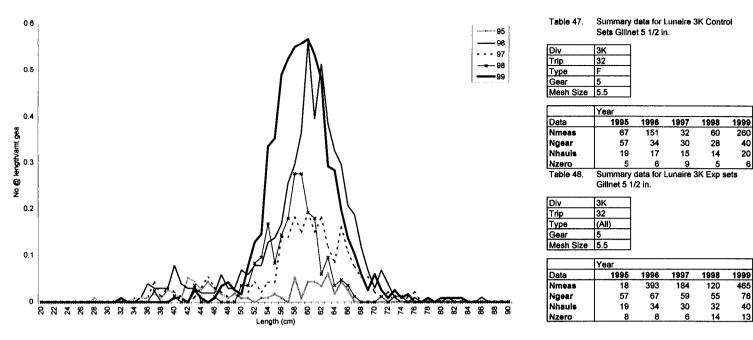


Figure 73 . Relative length frequency (number at length / amount of gear) for control and experimental gears, Lunaire Gillnet 5 1/2 in.

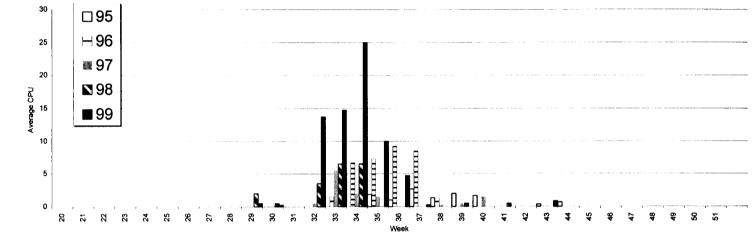


Figure 74 . Average Catch per Unit Effort for Control Sites, Lunaire Gillnet 5 1/2 in. (Number of Fish per Net)

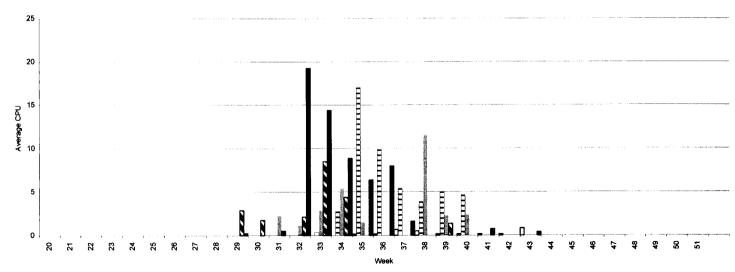


Figure 75 . Average Catch per Unit Effort for Experimental Sites, Lunaire Gillnet 5 1/2 in. (Number of Fish per Net)

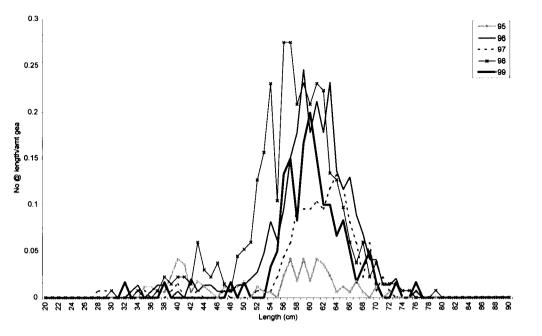


Table 49.	Summary data for Great Brehat 3K
	Control Sets Gilinet 5 1/2 in.

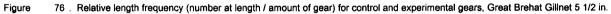
Div	3K
Trip	25
Туре	F
Gear	5
Mesh Size	5.5

	Year				
Data	1995	1996	1997	1998	1999
Nmeas	43	106	62	107	62
Ngear	81	48	46	46	20
Nhauls	27	24	23	23	10
Nzero	17	8	9	10	7
Table 50	Summary data for Great Brehat 3K Exp				

sets Gillnet 5 1/2 in.

Div	ЗК
Trip	25
Туре	(All)
Gear	5
Mesh Size	5.5

	Year				
Data	1995	1996	1997	1998	1999
Nmeas	51	267	115	343	33
Ngear	84	96	84	88	40
Nhauls	28	48	42	47	20
Nzero	18	7	16	13	13



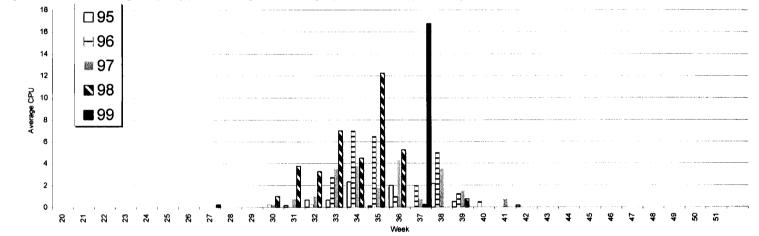


Figure 77 Average Catch per Unit Effort for Control Sites, Great Brehat Gillnet 5 1/2 in. (Number of Fish per Net)

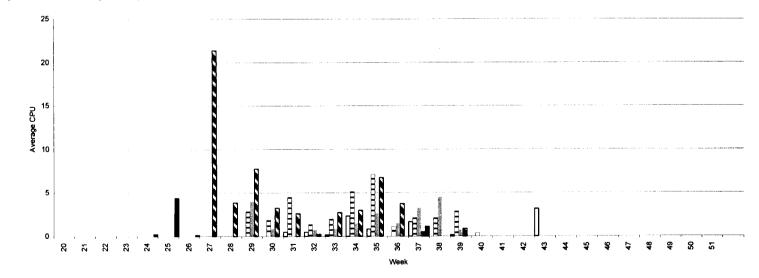
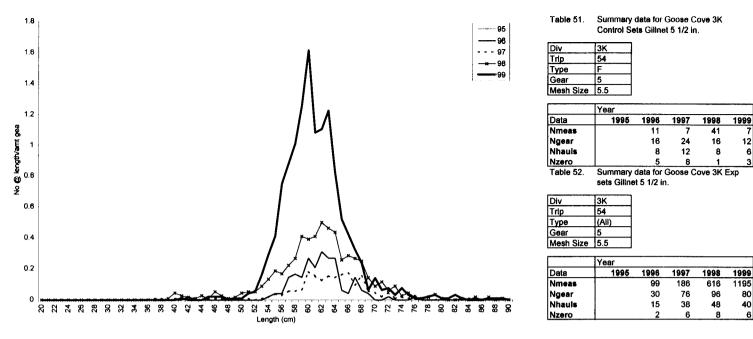
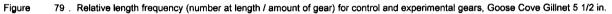
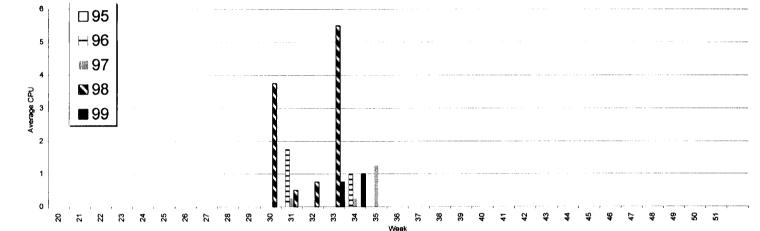


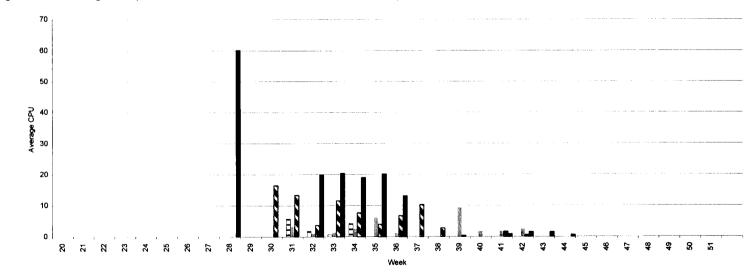
Figure 78 . Average Catch per Unit Effort for Experimental Sites, Great Brehat Gillnet 5 1/2 in. (Number of Fish per Net)











. Average Catch per Unit Effort for Experimental Sites, Goose Cove Gillnet 5 1/2 in. (Number of Fish per Net) Figure

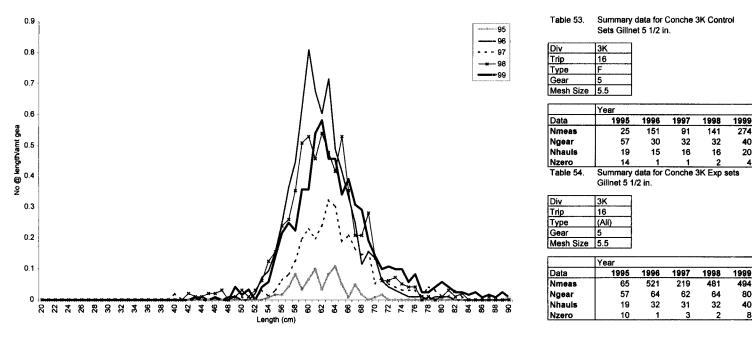


Figure 82. Relative length frequency (number at length / amount of gear) for control and experimental gears, Conche Gillnet 5 1/2 in.

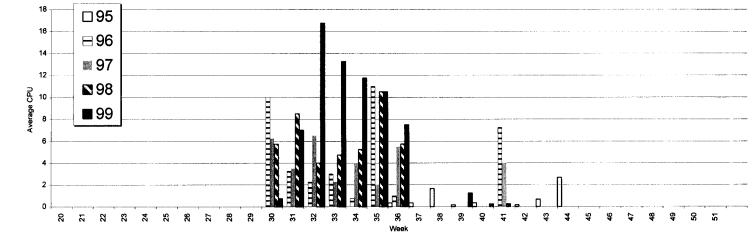
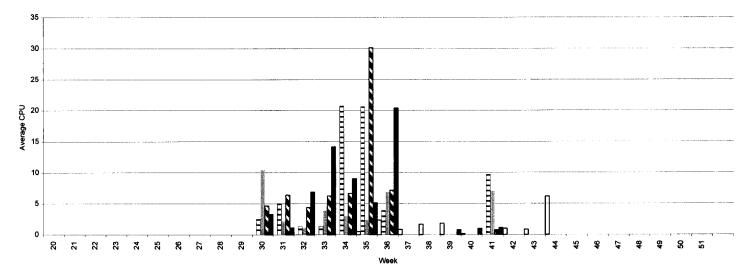
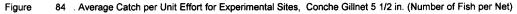
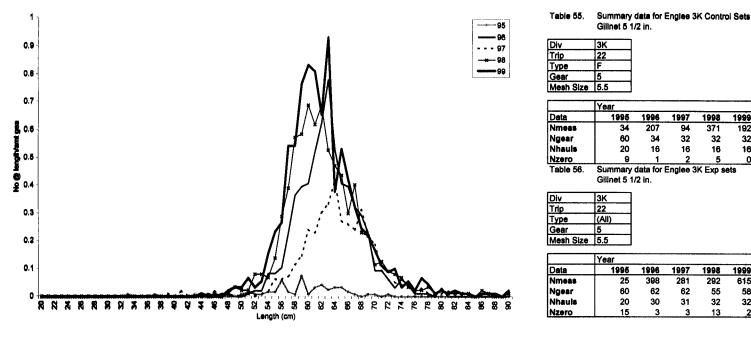


Figure . Average Catch per Unit Effort for Control Sites, Conche Gillnet 5 1/2 in. (Number of Fish per Net)







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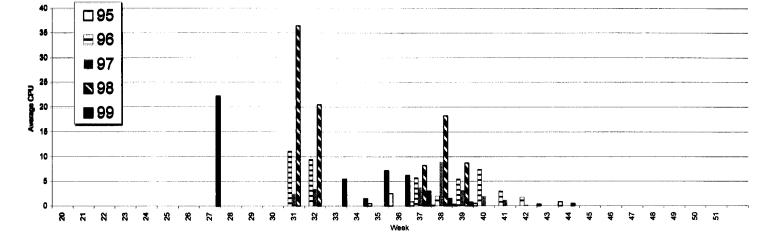


Figure Average Catch per Unit Effort for Control Sites, Englee Gillnet 5 1/2 in. (Number of Fish per Net)

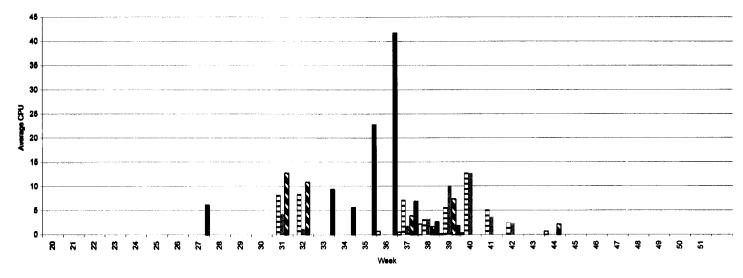
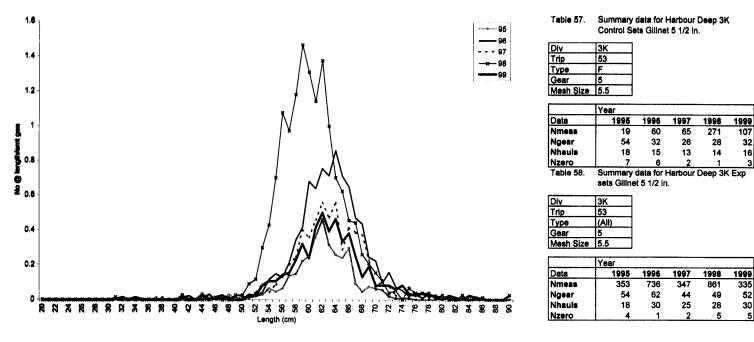
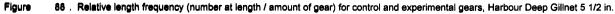
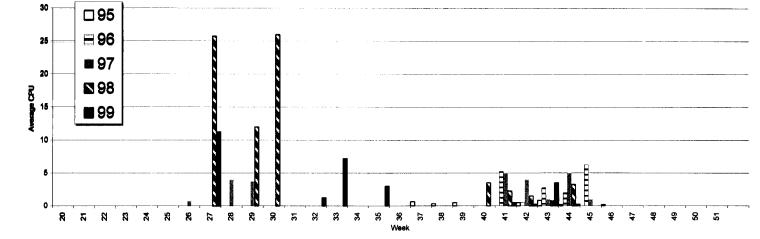
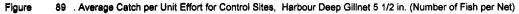


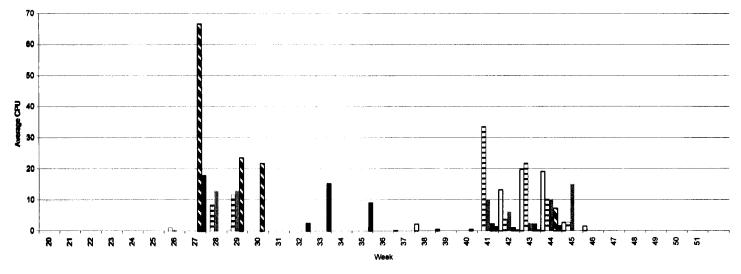
Figure 87 . Average Catch per Unit Effort for Experimental Sites, Englee Gillnet 5 1/2 in. (Number of Fish per Net)



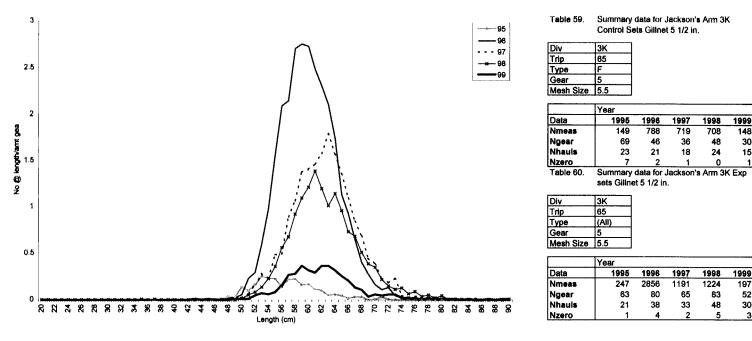








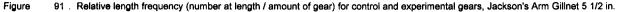


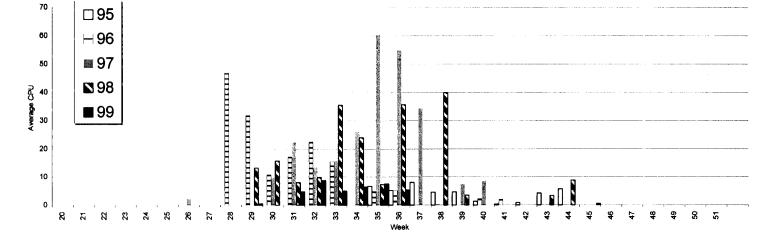


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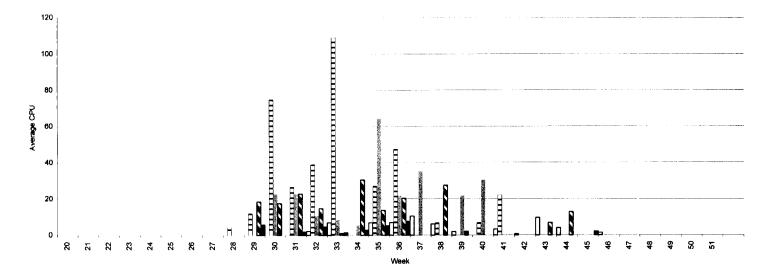
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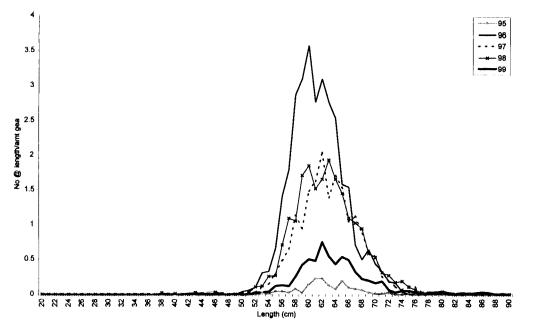


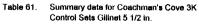






93 . Average Catch per Unit Effort for Experimental Sites, Jackson's Arm Gillnet 5 1/2 in. (Number of Fish per Net) Figure





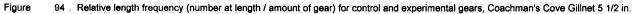
Div	ЗК
Trip	15
Туре	F
Gear	5
Mesh Size	5.5

	Year				
Data	1995	1996	1997	1998	1999
Nmeas	27	383	253	302	169
Ngear	30	16	20	20	26
Nhauls	10	8	10	10	13
Nzero	7	0	0	0	0
Table 62	Summary	data for	Coachm	an's Cou	10 3K

Exp sets Gillnet 5 1/2 in.

Div	3K
Trip	15
Туре	(All)
Gear	5
Mesh Size	5.5

	Year				
Data	1995	1996	1997	1998	1999
Nmeas	88	1139	1101	1234	419
Ngear	30	32	50	53	63
Nhauls	10	16	28	30	36
Nzero	4	0	0	2	2



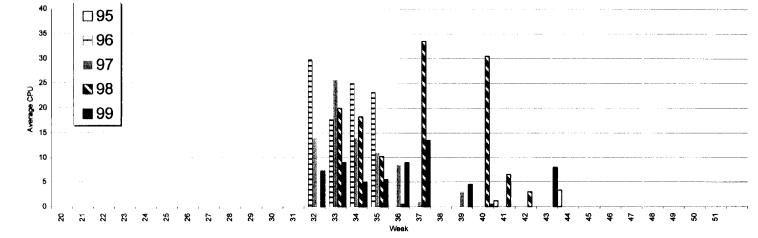


Figure 95 . Average Catch per Unit Effort for Control Sites, Coachman's Cove Gillnet 5 1/2 in. (Number of Fish per Net)

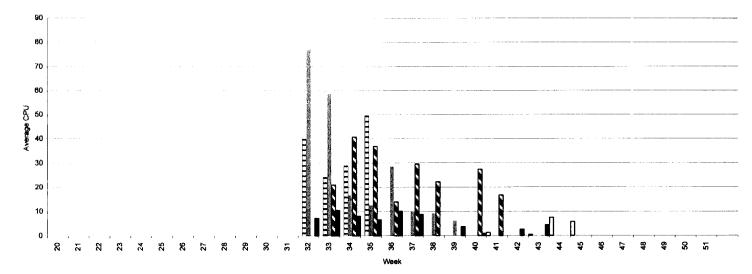
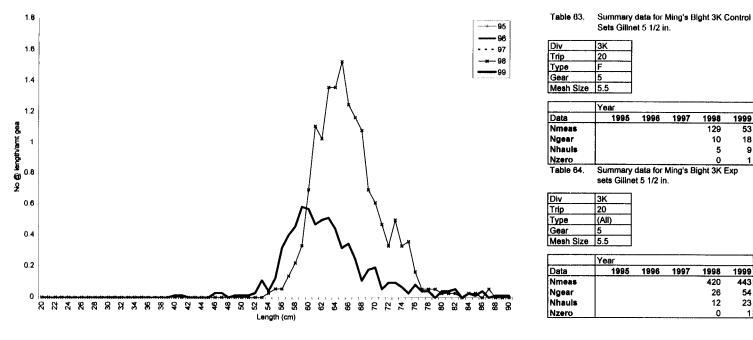
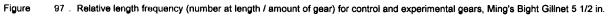


Figure 96 . Average Catch per Unit Effort for Experimental Sites, Coachman's Cove Gillnet 5 1/2 in. (Number of Fish per Net)



9

54 23



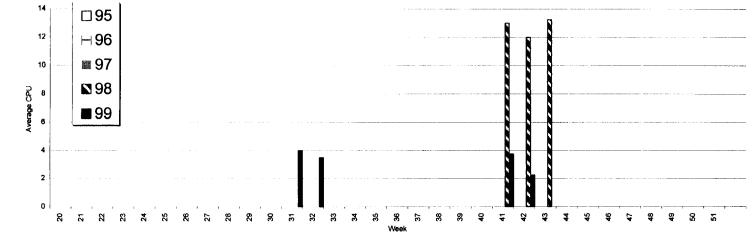
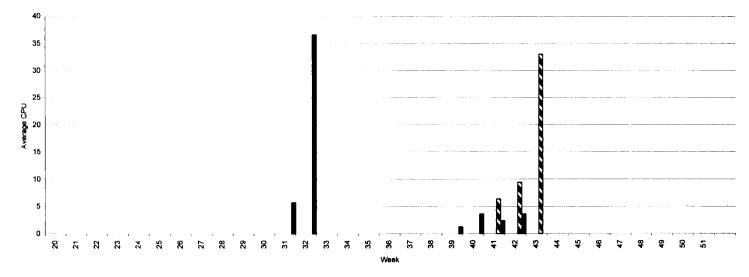
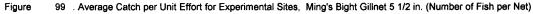
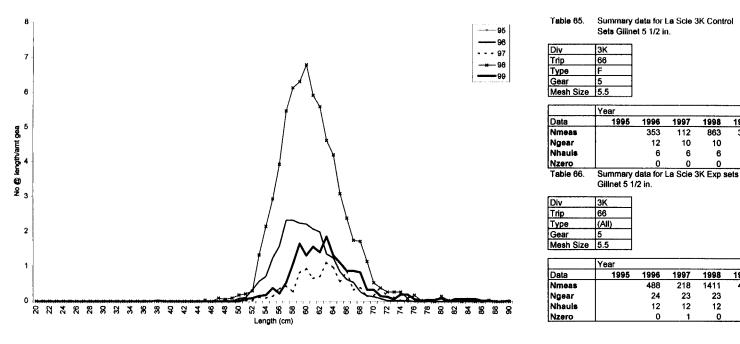
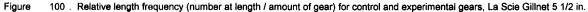


Figure . Average Catch per Unit Effort for Control Sites, Ming's Bight Gillnet 5 1/2 in. (Number of Fish per Net)









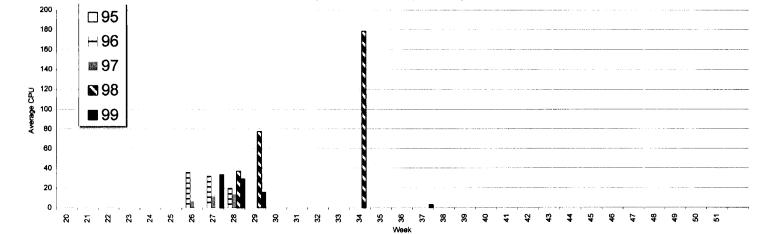


Figure 101 . Average Catch per Unit Effort for Control Sites, La Scie Gillnet 5 1/2 in. (Number of Fish per Net)

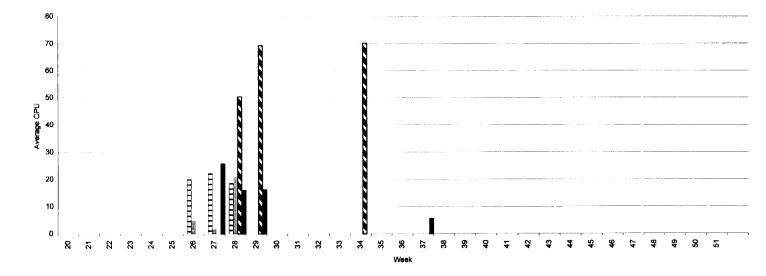
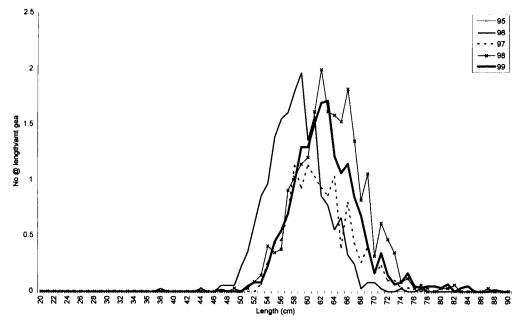


Figure 102 . Average Catch per Unit Effort for Experimental Sites, La Scie Gillnet 5 1/2 in. (Number of Fish per Net)



lable 67.	Summary data for Shoe Cove 3K Control
	Sets Gillnet 5 1/2 in.

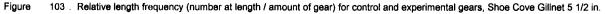
Div	зк
Trip	35
Туре	F
Gear	5
Mesh Size	5.5

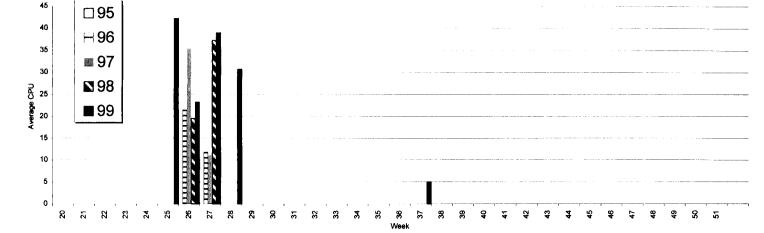
	Year				
Data	1995	1996	1997	1998	1999
Nmeas		200	207	241	517
Ngear		12	10	10	20
Nhauls		6	5	5	10
Nzero		0	0	0	0
Table 68	Summary data for Shoe Cove 3K Exp				

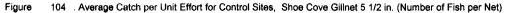
sets Gillnet 5 1/2 in.

Div	3K
Trip	35
Туре	(All)
Gear	5
Mesh Size	5.5

	Year				
Data	1995	1996	1997	1998	1999
Nmeas		457	157	485	529
Ngear		24	20	24	40
Nhauis		12	10	12	20
Nzero		0	1	0	1







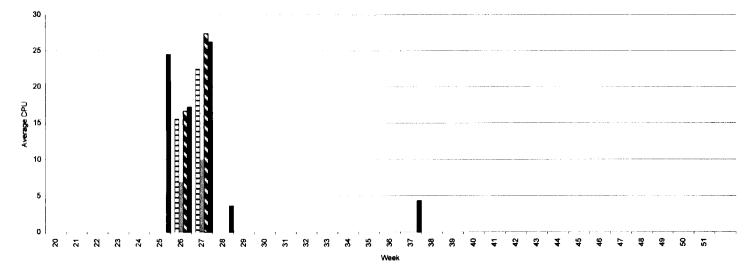
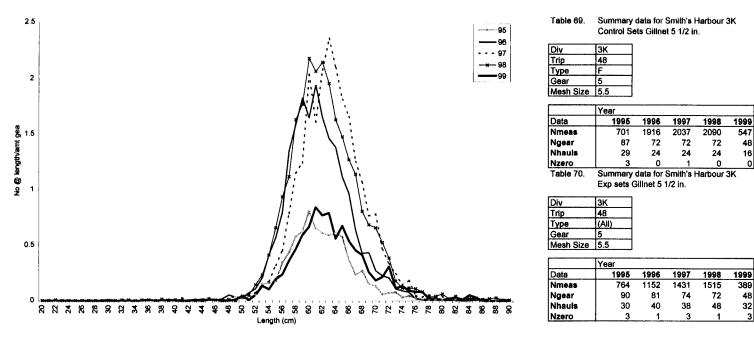
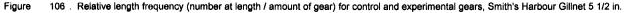
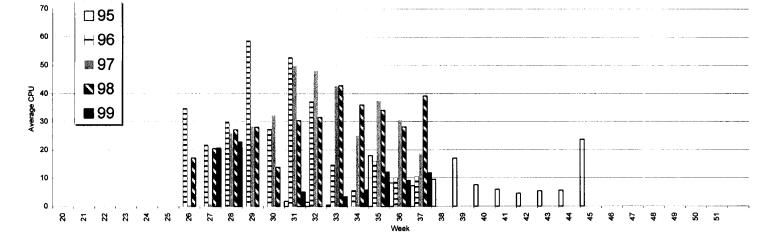


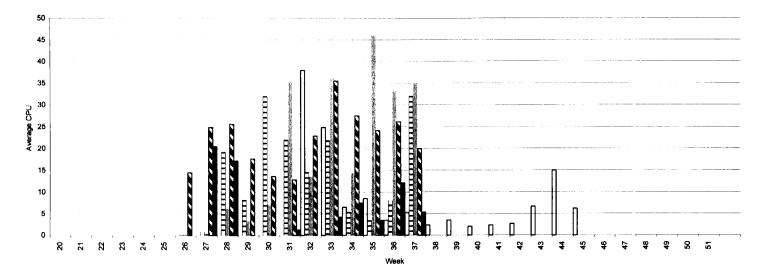
Figure 105 Average Catch per Unit Effort for Experimental Sites, Shoe Cove Gillnet 5 1/2 in. (Number of Fish per Net)



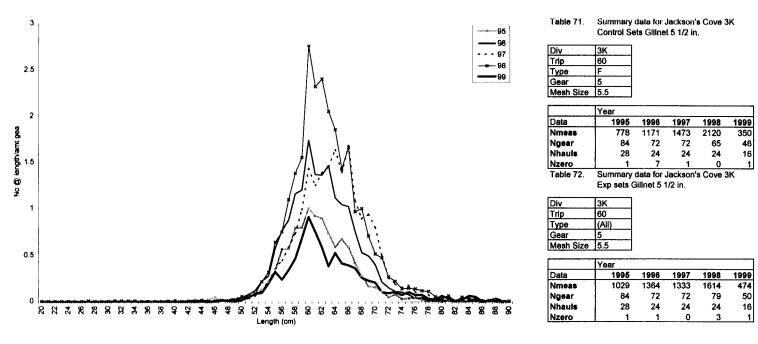


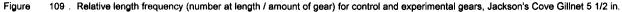






. Average Catch per Unit Effort for Experimental Sites, Smith's Harbour Gillnet 5 1/2 in. (Number of Fish per Net) Figure





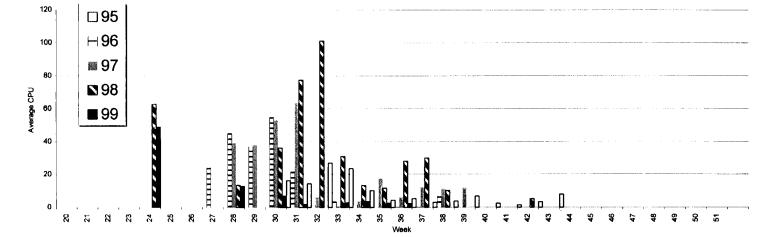


Figure 110 . Average Catch per Unit Effort for Control Sites, Jackson's Cove Gillnet 5 1/2 in. (Number of Fish per Net)

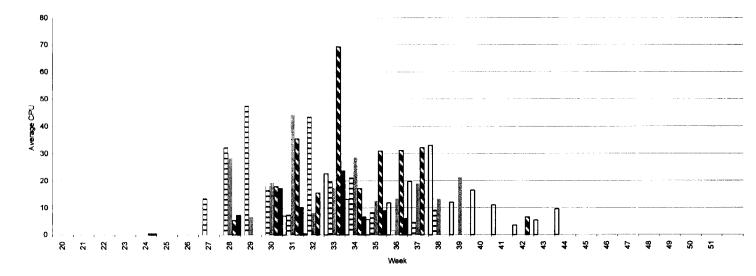


Figure 111 . Average Catch per Unit Effort for Experimental Sites, Jackson's Cove Gillnet 5 1/2 in. (Number of Fish per Net)

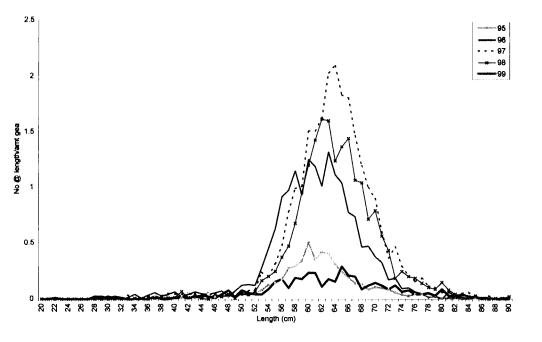


Table 73.	Summary data for Miles Cove 3K Control
	Sets Gillnet 5 1/2 in.

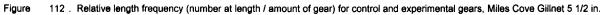
Div	зк
Trip	38
Туре	F
Gear	5
Mesh Size	5.5

	Year				
Data	1995	1996	1997	1998	1999
Nmeas	112	785	1227	970	182
Ngear	84	62	36	47	32
Nhauls	28	24	24	24	16
Nzero	5	1	1	0	0
Table 74.	Summary	data for	Miles Co	ve 3K E	хр

sets Gillnet 5 1/2 in.

Div	ЗK
Trip	38
Туре	(All)
Gear	5
Mesh Size	5.5

	Year				
Data	1995	1996	1997	1998	1999
Nmeas	797	1620	2046	1646	213
Ngear	84	74	96	85	56
Nhauls	28	44	47	47	32
Nzero	0	1	1	1	1



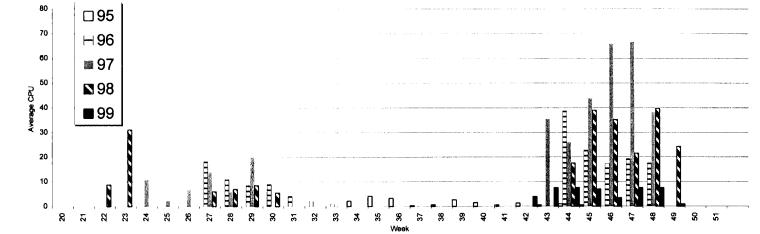


Figure 113 . Average Catch per Unit Effort for Control Sites, Miles Cove Gillnet 5 1/2 in. (Number of Fish per Net)

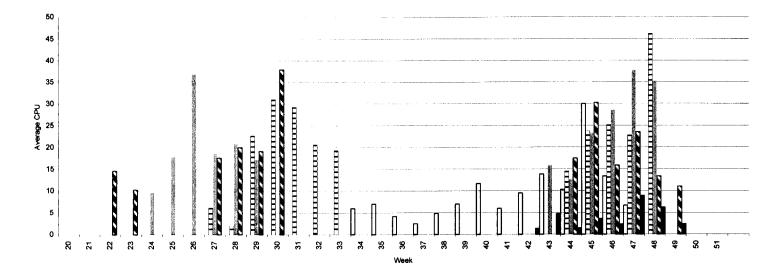
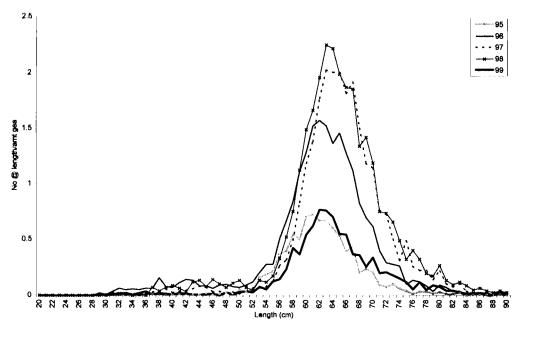


Figure 114 . Average Catch per Unit Effort for Experimental Sites, Miles Cove Gillnet 5 1/2 in. (Number of Fish per Net)



INITEDO	1 000	1000	1007	1007	
Ngear	90	48	48	46	52
Nhauis	30	24	24	23	26
Nzero	0	0	0	0	1
Table 76.	Summary	data for	Summer	ford 3K E	хр
	sets Gillne	t 5 1/2 ir	l.		-
Div	3K				
Trip	57				
Туре	(All)				
Gear	5				
Mesh Size	5.5				
	Voor				

Summary data for Summerford 3K

Control Sets Gilinet 5 1/2 in.

1996

1055

1997

1367

1998

1557

1999

544

Table 75.

зк

57

5.5 Year

1995

860

Div

Trip

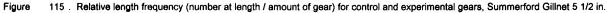
Туре

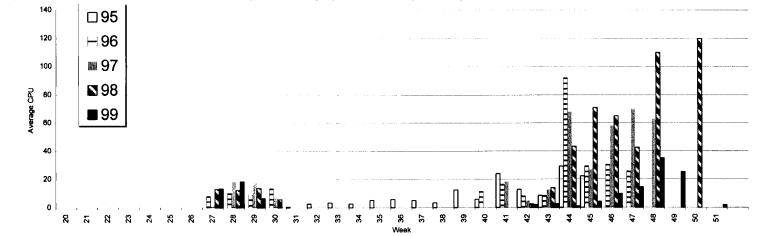
Gear Mesh Size

Data

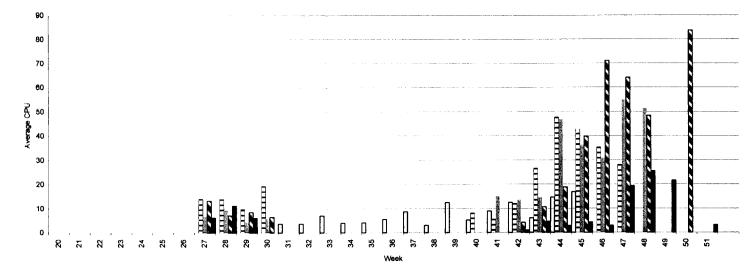
Nmeas

	Year				
Data	1995	1996	1997	1998	1999
Nmeas	697	1890	1985	2095	763
Ngear	90	91	83	80	91
Nhauls	30	48	47	46	52
Nzero	1	0	0	0	6

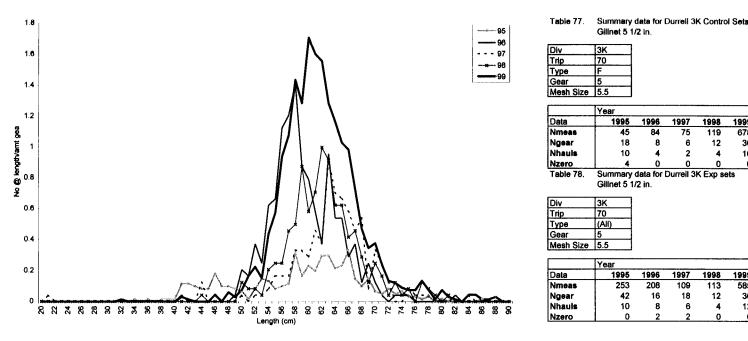




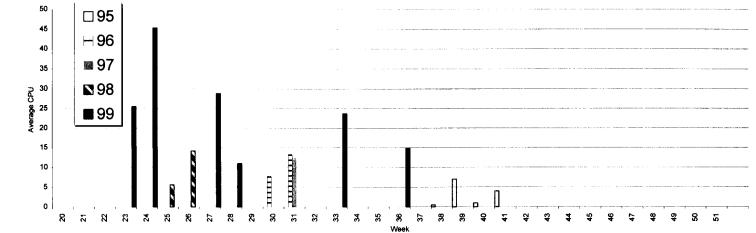
Average Catch per Unit Effort for Control Sites, Summerford Gillnet 5 1/2 in. (Number of Fish per Net) Figure 116

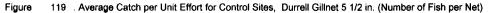


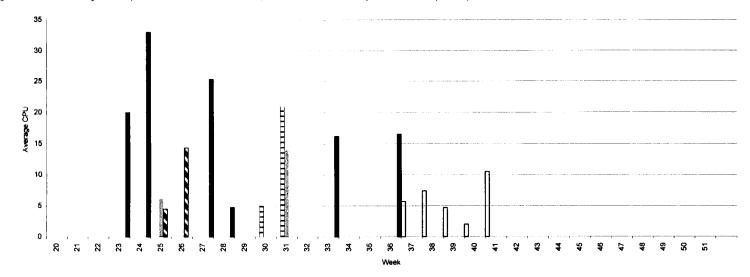
117 Average Catch per Unit Effort for Experimental Sites, Summerford Gillnet 5 1/2 in. (Number of Fish per Net) Figure



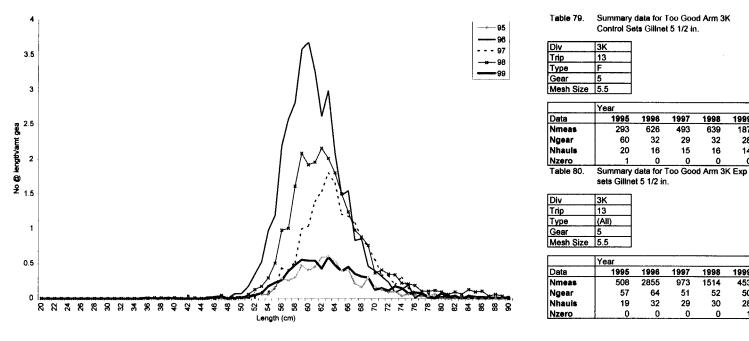




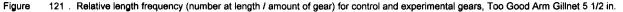








14



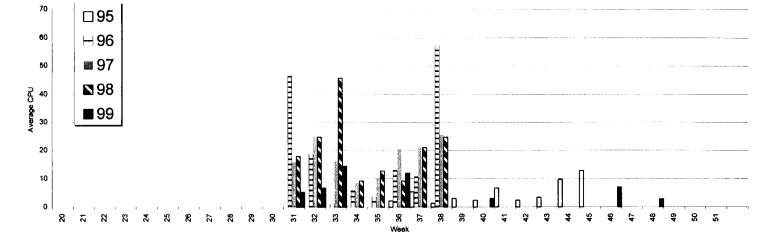


Figure . Average Catch per Unit Effort for Control Sites, Too Good Arm Gillnet 5 1/2 in. (Number of Fish per Net)

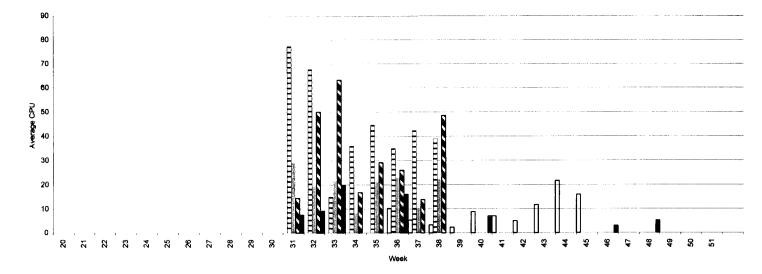
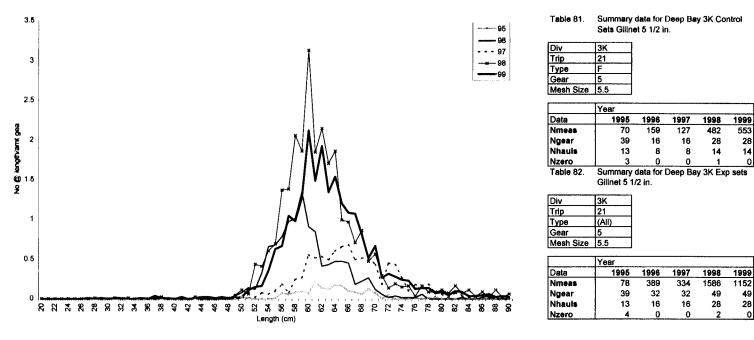
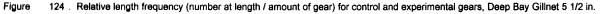


Figure 123 . Average Catch per Unit Effort for Experimental Sites, Too Good Arm Gillnet 5 1/2 in. (Number of Fish per Net)



28



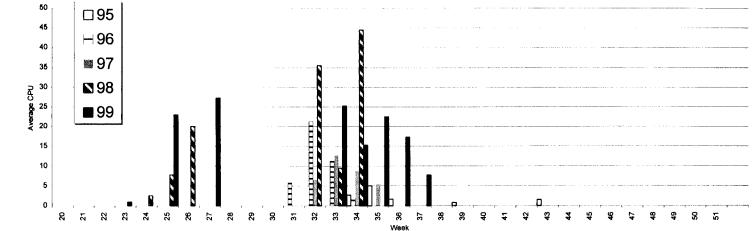
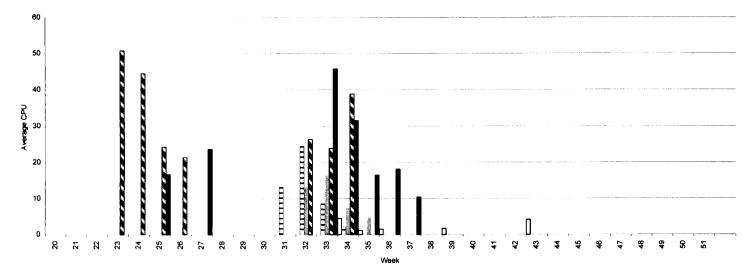
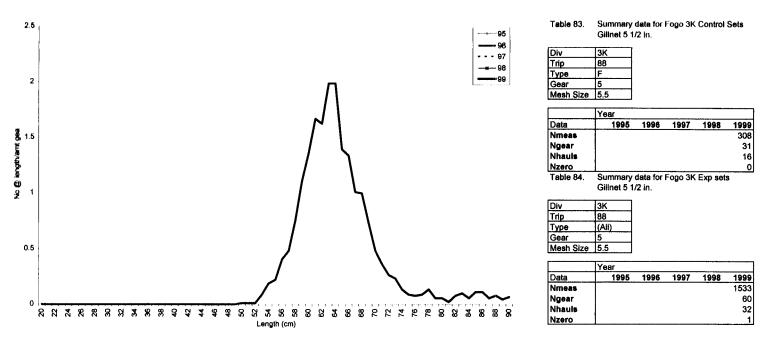
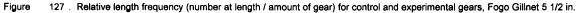


Figure . Average Catch per Unit Effort for Control Sites, Deep Bay Gillnet 5 1/2 in. (Number of Fish per Net)



126 . Average Catch per Unit Effort for Experimental Sites, Deep Bay Gillnet 5 1/2 in. (Number of Fish per Net) Figure





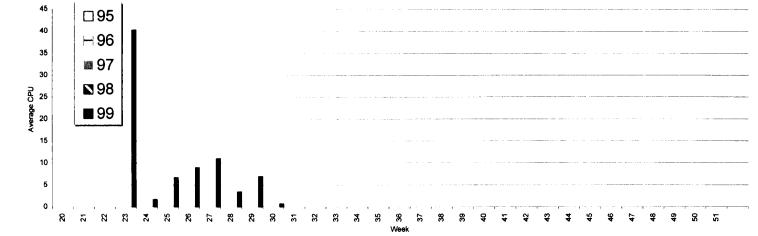


Figure 128 . Average Catch per Unit Effort for Control Sites, Fogo Gillnet 5 1/2 in. (Number of Fish per Net)

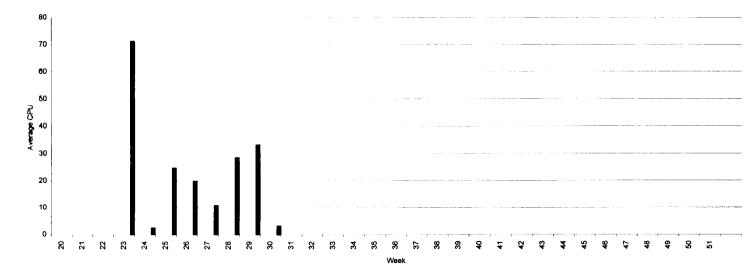
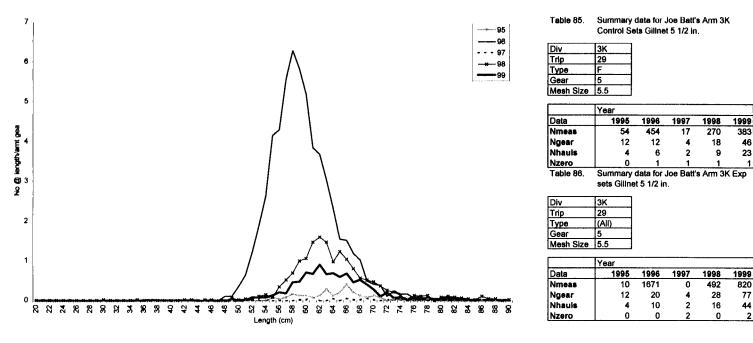
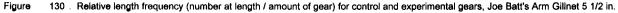
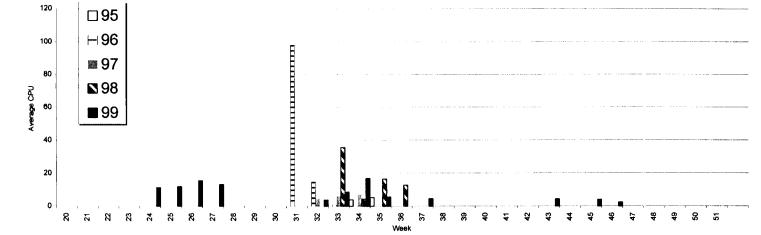


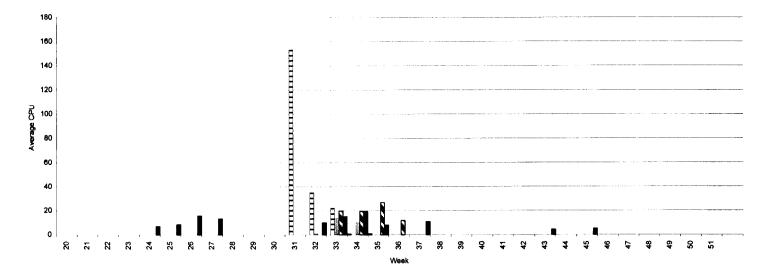
Figure 129 . Average Catch per Unit Effort for Experimental Sites, Fogo Gillnet 5 1/2 in. (Number of Fish per Net)



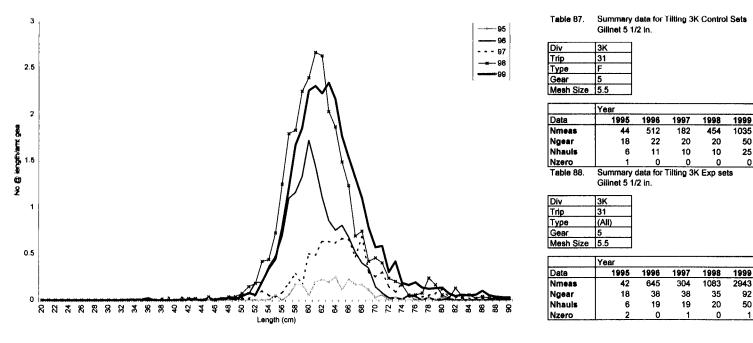




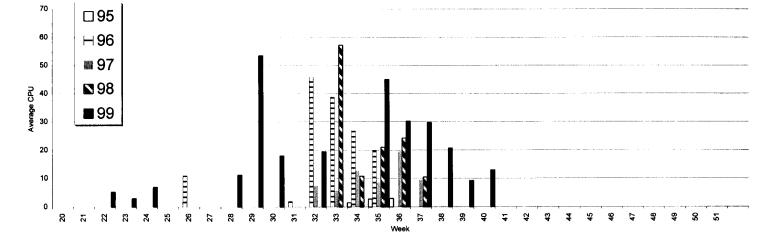
. Average Catch per Unit Effort for Control Sites, Joe Batt's Arm Gillnet 5 1/2 in. (Number of Fish per Net) Figure



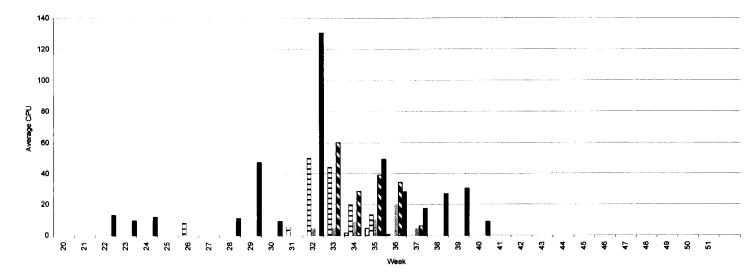
132 . Average Catch per Unit Effort for Experimental Sites, Joe Batt's Arm Gillnet 5 1/2 in. (Number of Fish per Net) Figure



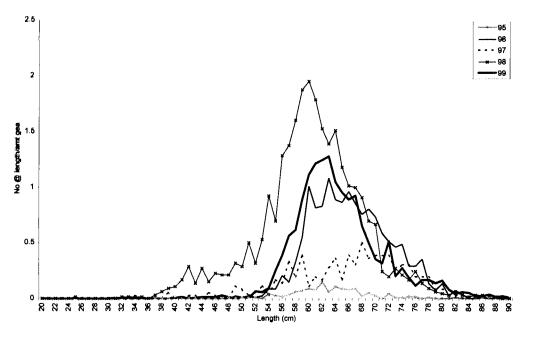




Average Catch per Unit Effort for Control Sites, Tilting Gillnet 5 1/2 in. (Number of Fish per Net) Figure



135 . Average Catch per Unit Effort for Experimental Sites, Tilting Gillnet 5 1/2 in. (Number of Fish per Net) Figure



Data	1980	1990	1981	1888	1888
Nmeas	73	218	49	294	326
Ngear	54	28	12	28	48
Nhauls	18	14	6	14	24
Nzero	7	0	0	1	. 0
Table 90.	Summary Gillnet 5 1		Seldom	3K Exp s	sets
Div	ЗК				
Trip	17				
Туре	(All)				
Gear	5				
Mesh Size	5.5				
	Year				
Data	1995	1996	1997	1998	1999
Nmeas	73	980	210	1484	1867
Ngear	54	54	22	38	90
Nhauls	18	27	11	23	45

1997

1998

0

0

1

1999

Summary data for Seldom 3K Control

Sets Gillnet 5 1/2 in.

3K

17

5.5 Year

1995

Table 89.

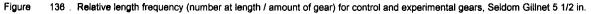
Div Trip

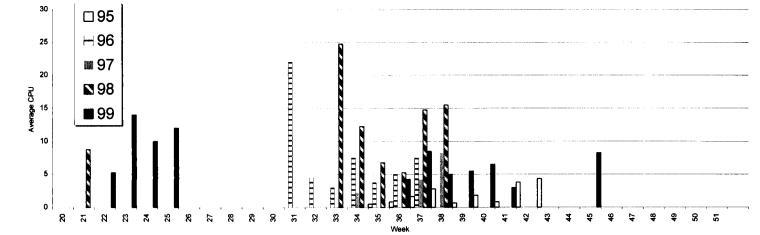
Туре

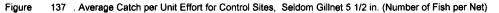
Gear Mesh Size

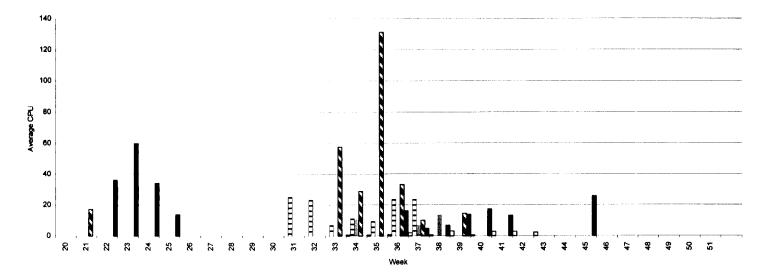
Data

Nzero

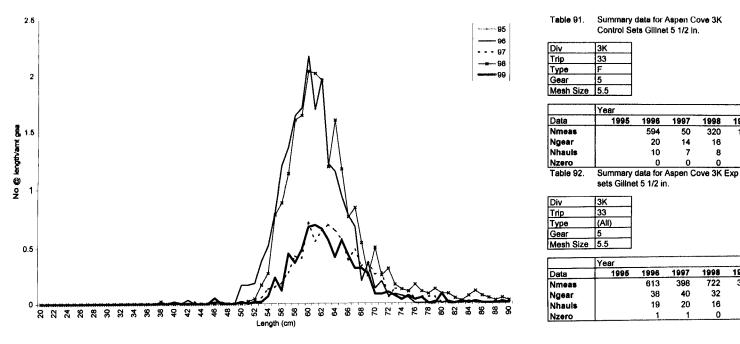


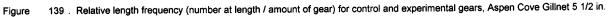


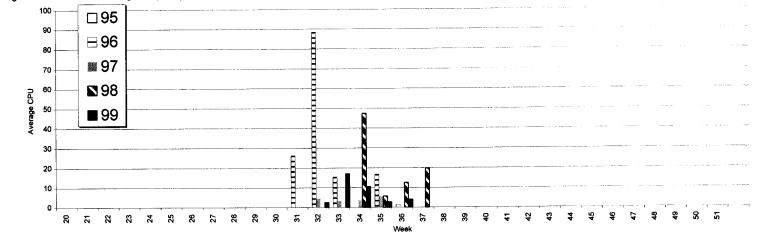




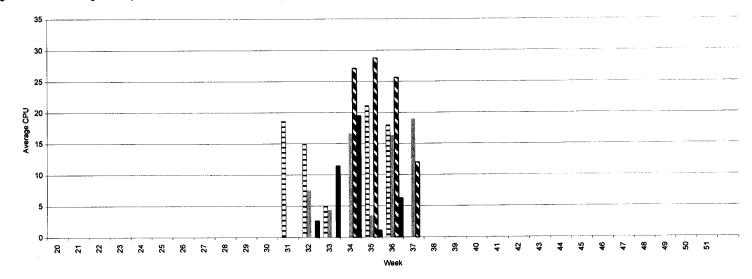
138 Average Catch per Unit Effort for Experimental Sites, Seldom Gillnet 5 1/2 in. (Number of Fish per Net) Figure













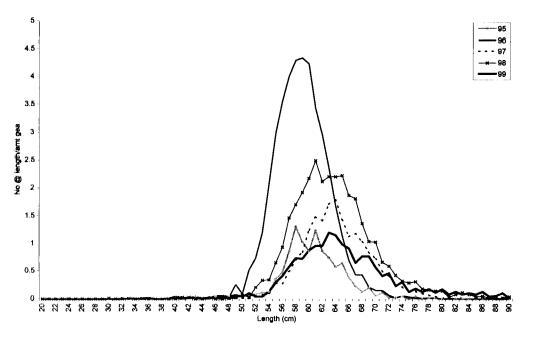


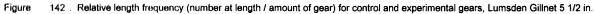
Table 93.	Summary data for Lumaden 3K Control
	Sets Gillnet 5 1/2 in.

	Year				
Data	1995	1996	1997	1998	1999
Nmeas	330	1700	506	1095	471
Ngear	30	32	38	32	28
Nhauls	10	16	18	16	14
Nzero	0	0	0	0	0
Table 04	Summen	data for	umeda	3K Evn	ente

Gillnet 5 1/2 in.

Div	ЗК
qinT	37
Туре	(All)
Gear	5
Mesh Size	5.5

	Year				
Data	1995	1996	1997	1998	1999
Nmeas	338	2404	1558	1996	929
Ngear	30	64	70	64	56
Nhauls	10	32	34	32	28
Nzero	0	0	0	0	0



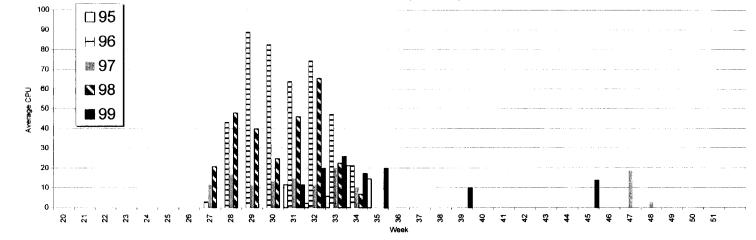


Figure 143 . Average Catch per Unit Effort for Control Sites, Lumsden Gillnet 5 1/2 in. (Number of Fish per Net)

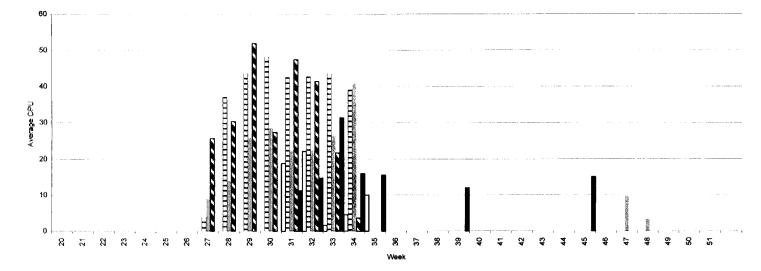


Figure 144 . Average Catch per Unit Effort for Experimental Sites, Lumsden Gillnet 5 1/2 in. (Number of Fish per Net)

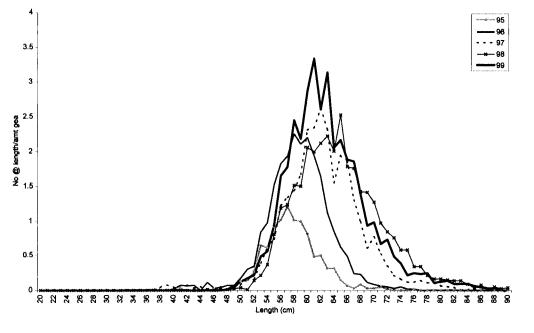


Table 95.	Summary data for Wesleyville 3L Control
	Sets Gillnet 5 1/2 in.

-

	Year				
Data	1995	1996	1997	1998	1999
Nmeas	203	819	892	987	766
Ngear	30	32	36	32	24
Nhauls	10	16	18	16	12
Nzero	0	0	0	0	0
Table 00	C	data feel	Alealare		

 Summary data for Wesleyville 3L Exp sets Gillnet 5 1/2 in.

Div	3L
Trip	41
Туре	(All)
Gear	5
Mesh Size	5.5

	Year				
Data	1995	1996	1997	1998	1999
Nmeas	398	1348	1788	1664	1672
Ngear	30	62	56	47	40
Nhauls	10	31	36	31	26
Nzero	0	0	0	0	0

Figure 145 . Relative length frequency (number at length / amount of gear) for control and experimental gears, Wesleyville Gillnet 5 1/2 in.

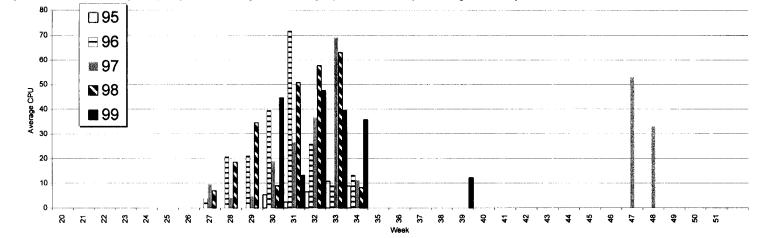
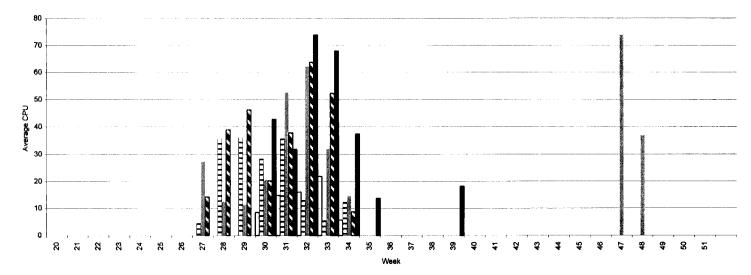
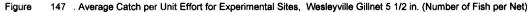


Figure 146 . Average Catch per Unit Effort for Control Sites, Wesleyville Gillnet 5 1/2 in. (Number of Fish per Net)





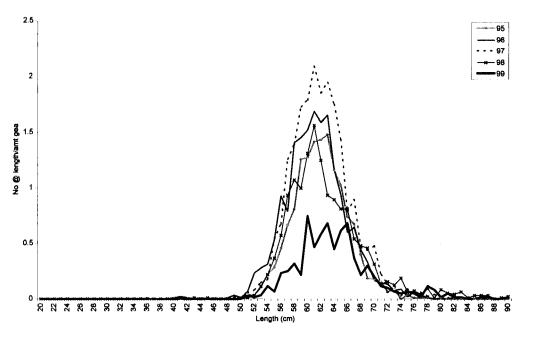


Table 97.	Summary data for Centreville 3L Control
	Sets Gillnet 5 1/2 in.

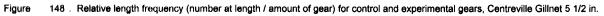
	0010 0
Div	3L
Trip	49
Туре	F
Gear	5
Mesh Size	5.5

	Year				
Data	1995	1996	1997	1998	1999
Nmeas	891	825	1148	744	256
Ngear	56	48	48	48	30
Nhauls	20	16	16	16	10
Nzero	0	0	0	0	0
Table 98.	Summary	data for	Centrevi	lle 3L Ex	p sets

Gillnet 5 1/2 in.

Div	3L
Trip	49
Туре	(All)
Gear	5
Mesh Size	5.5

	Year				
Data	1995	1996	1997	1998	1999
Nmeas	712	748	862	691	191
Ngear	56	42	48	48	30
Nhauls	20	14	16	16	10
Nzero	0	0	1	0	0



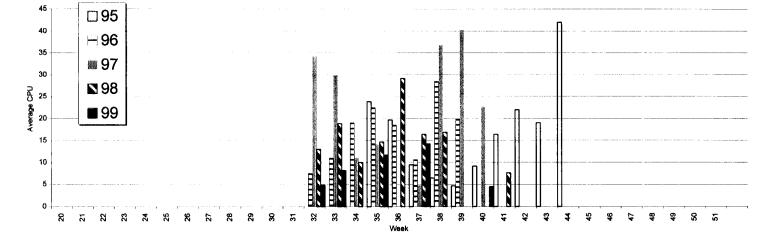


Figure 149 . Average Catch per Unit Effort for Control Sites, Centreville Gillnet 5 1/2 in. (Number of Fish per Net)

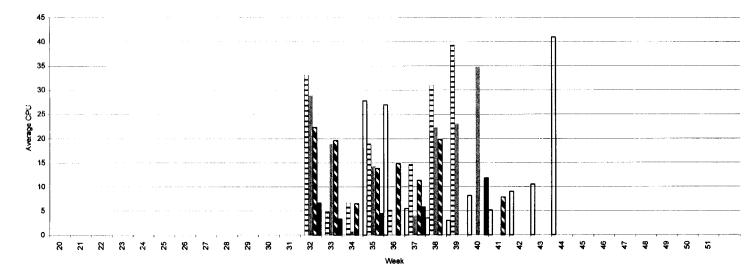
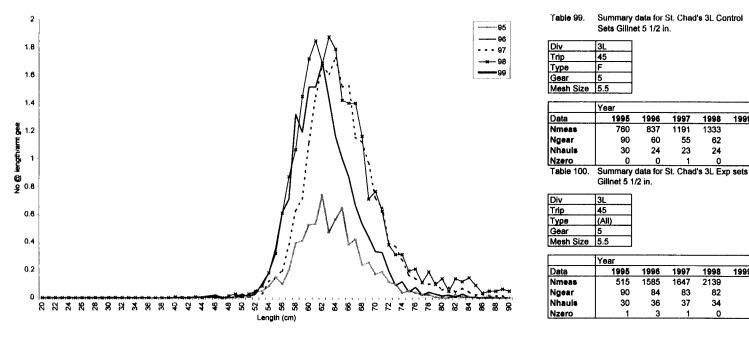
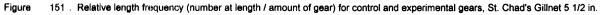
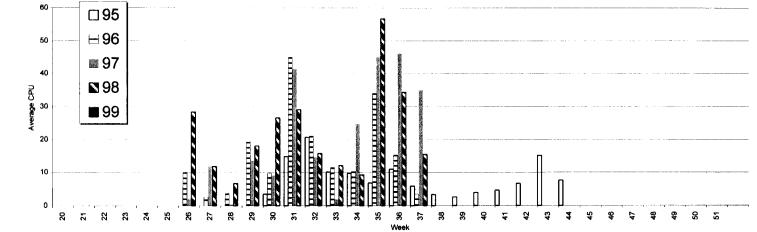


Figure 150 . Average Catch per Unit Effort for Experimental Sites, Centreville Gillnet 5 1/2 in. (Number of Fish per Net)







Average Catch per Unit Effort for Control Sites, St. Chad's Gillnet 5 1/2 in. (Number of Fish per Net) Figure 152

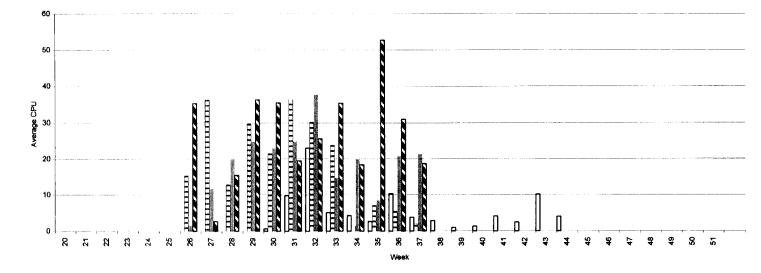


Figure 153 Average Catch per Unit Effort for Experimental Sites, St. Chad's Gillnet 5 1/2 in. (Number of Fish per Net)

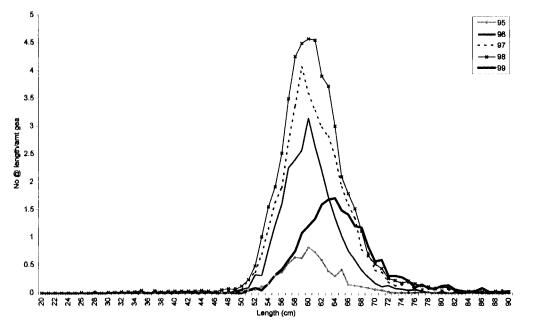


Table 101.	Summary data for Plate Cove West 3L
	Control Sets Gillnet 5 1/2 in.

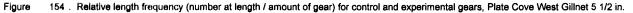
Div	3L
Trip	44
Туре	F
Gear	5
Mesh Size	5.5

	Year				
Data	1995	1996	1997	1998	1999
Nmeas	552	794	1780	2285	619
Ngear	39	33	32	32	28
Nhauls	13	16	16	16	14
Nzero	0	1	0	0	0
Table 102	Summary	data for	Plate Co	ve West	31

Exp sets Gillnet 5 1/2 in.

Div	3L
Trip	44
Туре	(All)
Gear	5
Mesh Size	5.5

	Year				
Data	1995	1996	1997	1998	1999
Nmeas	267	1768	1567	2170	982
Ngear	42	62	51	56	49
Nhauls	14	30	29	32	27
Nzero	0	2	2	5	2



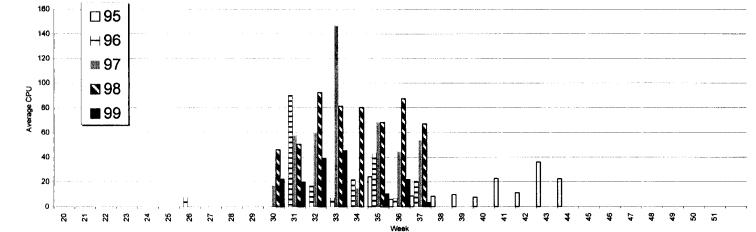
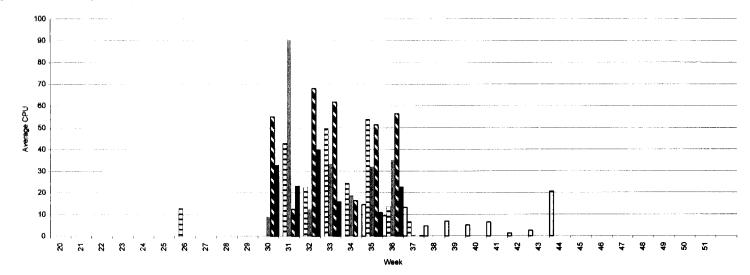
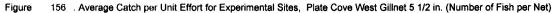
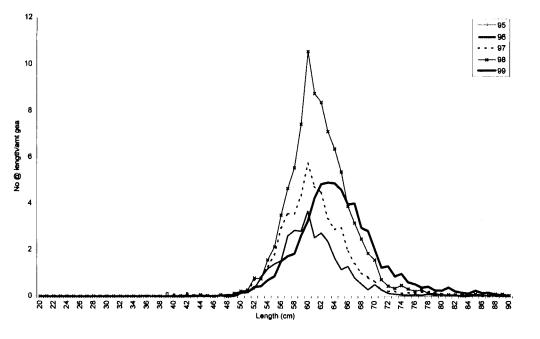
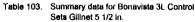


Figure 155 . Average Catch per Unit Effort for Control Sites, Plate Cove West Gillnet 5 1/2 in. (Number of Fish per Net)









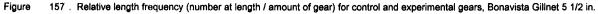
Div	3L
Trip	64
Туре	F
Gear	5
Mesh Size	5.5

	Year				
Data	1995	1996	1997	1998	1999
Nmeas	1	953	884	1545	1779
Ngear		32	16	16	25
Nhauls		16	8	8	13
Nzero	1	1	0	0	0
Table 104.	Summary	data for	Bonavista	3L Exp	sets

Gillnet 5 1/2 in.

3L
64
(All)
5
5.5

	Year				
Data	1995	1996	1997	1998	1999
Nmeas		1662	675	1352	1788
Ngear		48	16	16	33
Nhauls		24	8	8	17
Nzero		0	0	0	0



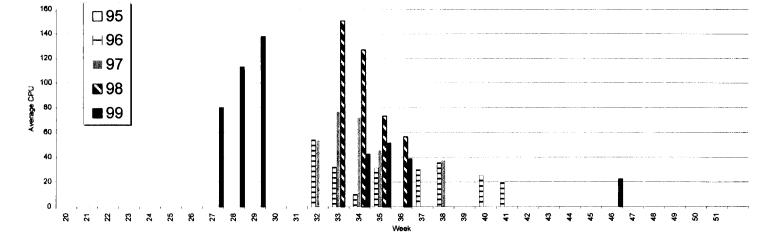


Figure 158 . Average Catch per Unit Effort for Control Sites, Bonavista Gillnet 5 1/2 in. (Number of Fish per Net)

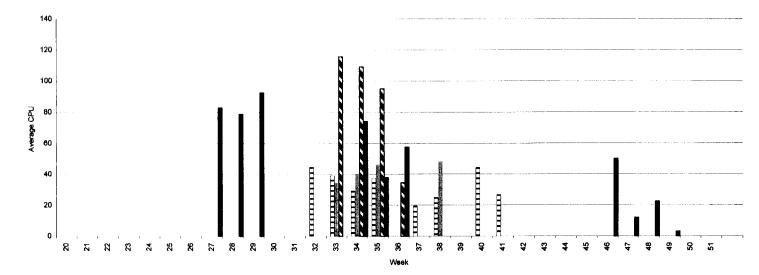
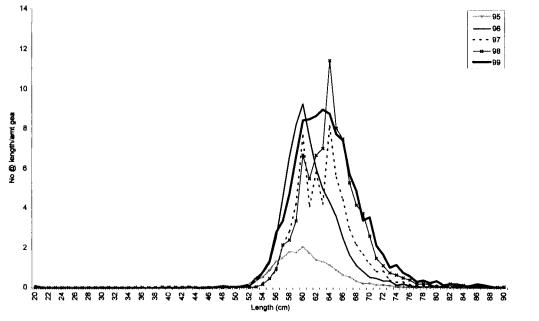


Figure 159 Average Catch per Unit Effort for Experimental Sites, Bonavista Gillnet 5 1/2 in. (Number of Fish per Net)



Yable 105.	Summary data for Little Catalina 3L Control Sets Gillnet 5 1/2 in.
Div	31

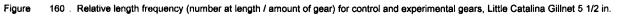
Div	3L
Trip	26
Туре	F
Gear	5
Mesh Size	5.5

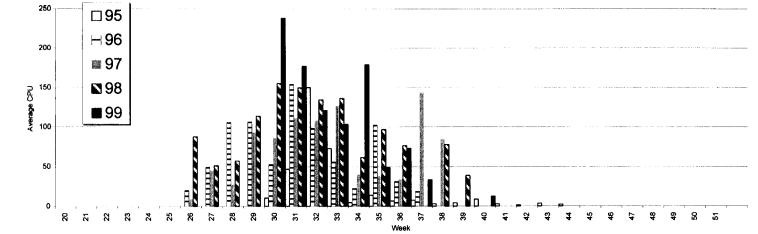
-

	Year				
Data	1995	1996	1997	1998	1999
Nmeas	1582	2438	3377	3339	2475
Ngear	84	36	46	36	22
Nhauls	30	24	23	24	18
Nzero	0	0	0	0	0
Table 106.	Summary data for Little Catalina 3L Exp				
	sets Gillnet 5 1/2 in				

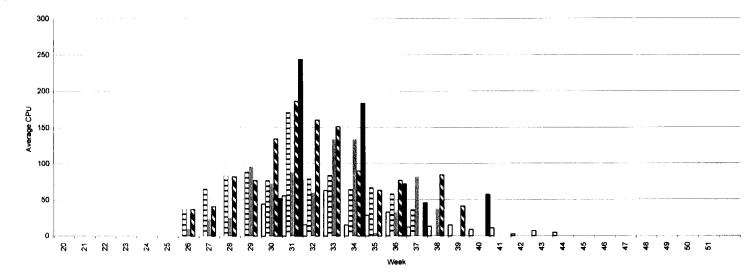
Div	3L
Trip	26
Туре	(All)
Gear	5
Mesh Size	5.5

	Year					
Data	1995	1996	1997	1998	1999	
Nmeas	1772	4090	2564	3157	1043	
Ngear	83	58	49	40	11	
Nhauls	30	35	31	30	10	
Nzero	0	0	0	0	0	

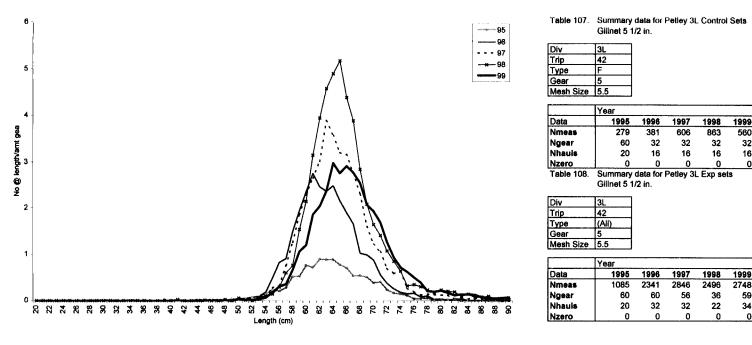


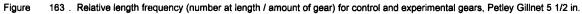


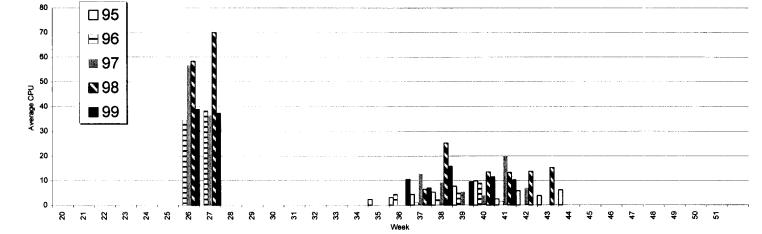
Average Catch per Unit Effort for Control Sites, Little Catalina Gillnet 5 1/2 in. (Number of Fish per Net) Figure 161



162 . Average Catch per Unit Effort for Experimental Sites, Little Catalina Gillnet 5 1/2 in. (Number of Fish per Net) Figure







Average Catch per Unit Effort for Control Sites, Petley Gillnet 5 1/2 in. (Number of Fish per Net) Figure

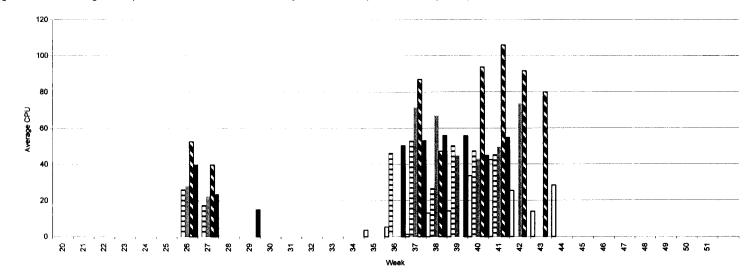


Figure 165 . Average Catch per Unit Effort for Experimental Sites, Petley Gillnet 5 1/2 in. (Number of Fish per Net)

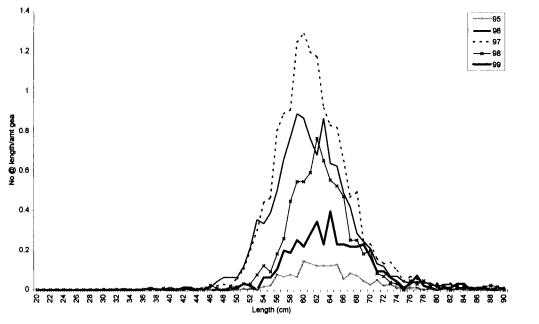


Table 109.	Summary data for Thomlea 3L Control
	Sets Gillnet 5 1/2 in.

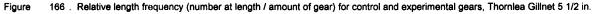
Div	3L
Trip	59
Туре	F
Gear	5
Mesh Size	5.5

	Year				
Data	1995	1996	1997	1998	1999
Nmeas	106	246	278	188	102
Ngear	90	48	48	44	32
Nhauls	30	24	24	22	16
Nzero	6	2	0	3	2
T-11- 440	0	+ - + ·	Th	01 5	

Table 110. Summary data for Thomlea 3L Exp sets Gillnet 5 1/2 in.

Div	3L
Trip	59
Туре	(All)
Gear	5
Mesh Size	5.5

	Year				
Data	1995	1996	1997	1998	1999
Nmeas	194	1391	1829	782	314
Ngear	90	96	92	88	64
Nhauls	30	48	46	44	32
Nzero	4	2	1	3	4



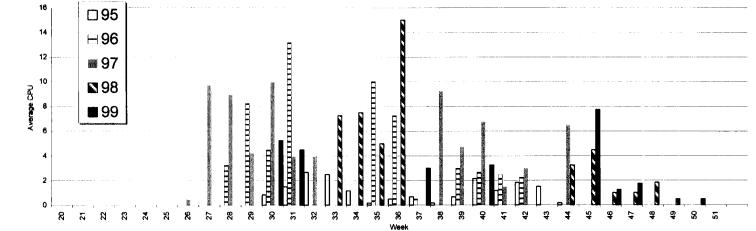


Figure 167 . Average Catch per Unit Effort for Control Sites, Thornlea Gillnet 5 1/2 in. (Number of Fish per Net)

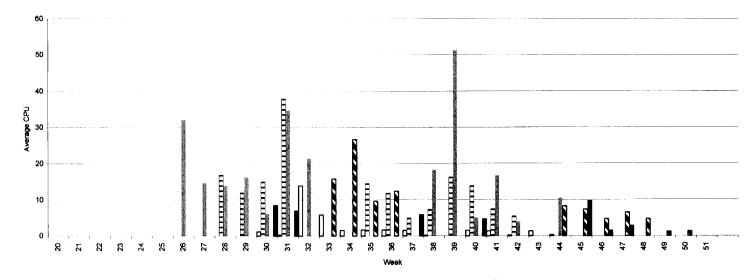
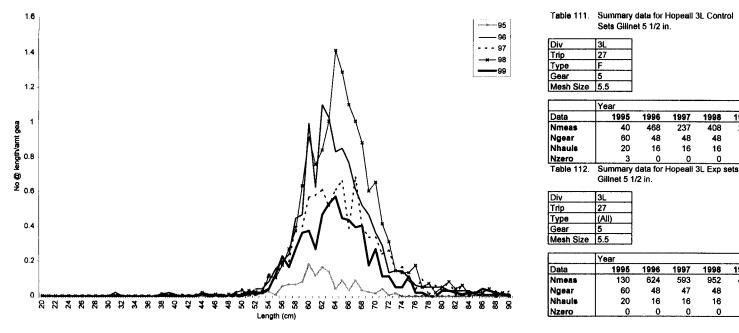
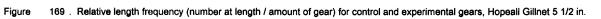
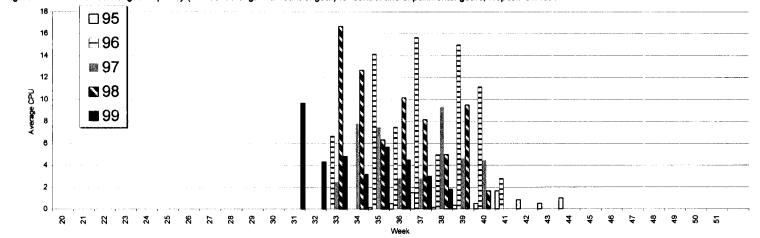


Figure 168 . Average Catch per Unit Effort for Experimental Sites, Thornlea Gillnet 5 1/2 in. (Number of Fish per Net)







. Average Catch per Unit Effort for Control Sites, Hopeall Gillnet 5 1/2 in. (Number of Fish per Net) Figure

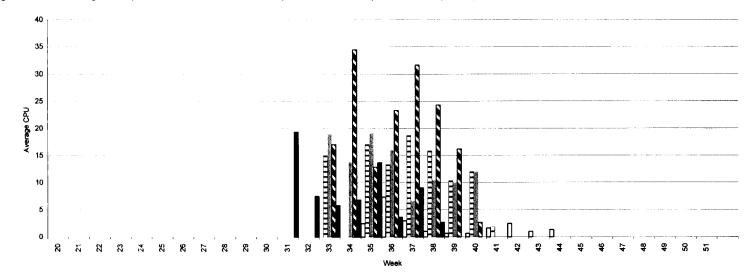
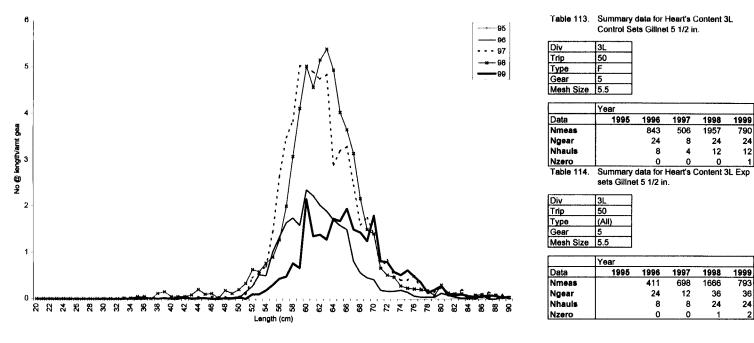
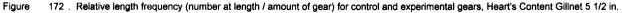
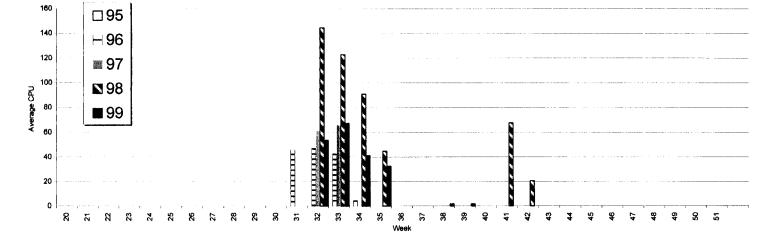


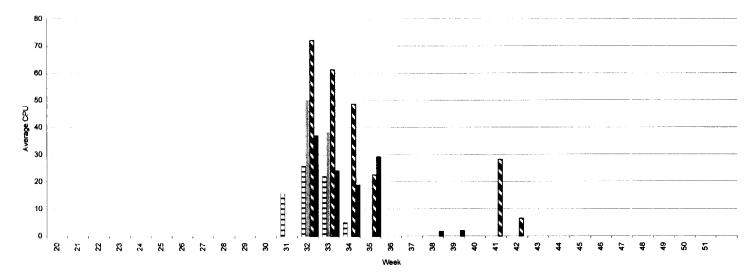
Figure 171 . Average Catch per Unit Effort for Experimental Sites, Hopeall Gillnet 5 1/2 in. (Number of Fish per Net)



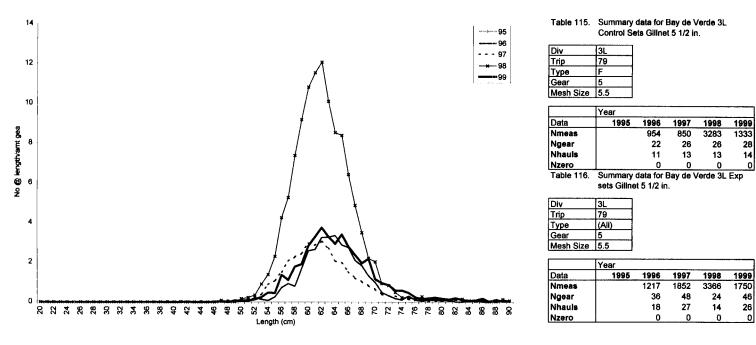


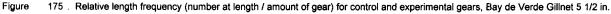


Average Catch per Unit Effort for Control Sites, Heart's Content Gillnet 5 1/2 in. (Number of Fish per Net) Figure 173



174 . Average Catch per Unit Effort for Experimental Sites, Heart's Content Gillnet 5 1/2 in. (Number of Fish per Net) Figure





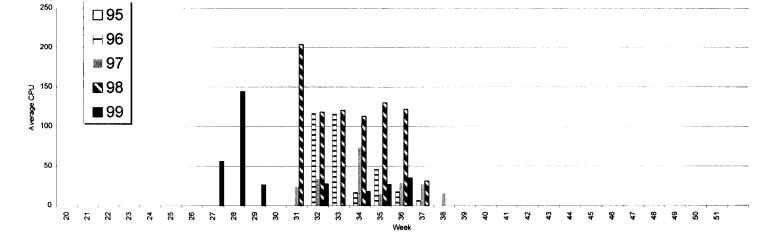


Figure 176 Average Catch per Unit Effort for Control Sites, Bay de Verde Gillnet 5 1/2 in. (Number of Fish per Net)

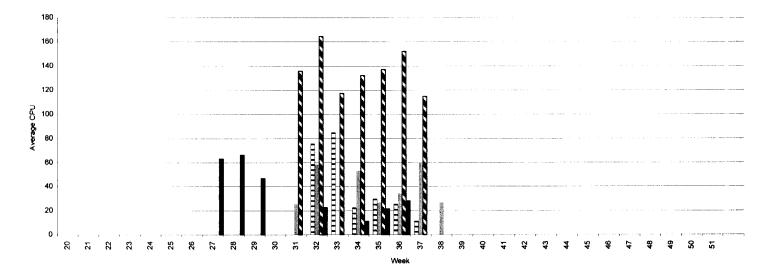
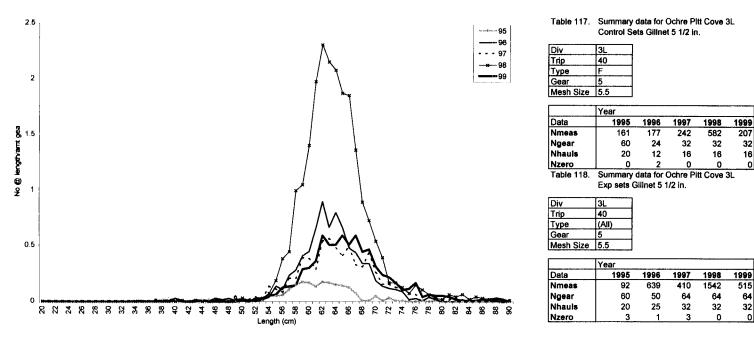
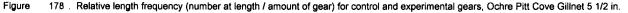
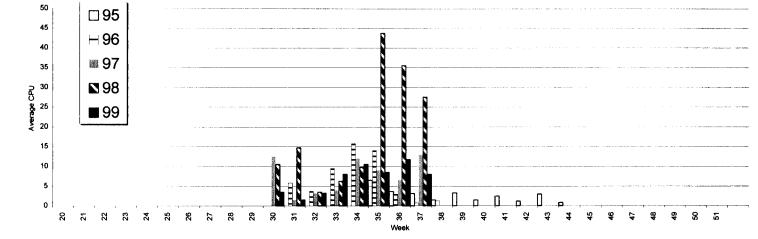


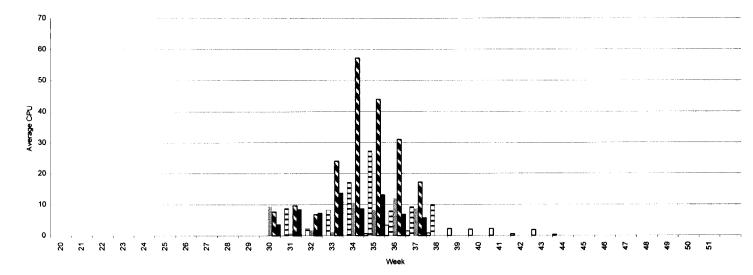
Figure 177 Average Catch per Unit Effort for Experimental Sites, Bay de Verde Gillnet 5 1/2 in. (Number of Fish per Net)

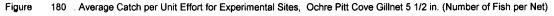






. Average Catch per Unit Effort for Control Sites, Ochre Pitt Cove Gillnet 5 1/2 in. (Number of Fish per Net) Figure





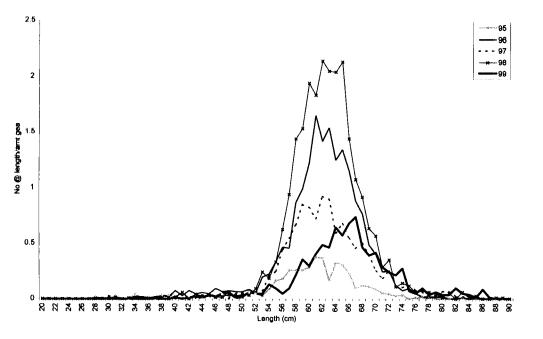


Table 119.	Summary data for Carbonear 3L Control
	Sets Gillnet 5 1/2 in.

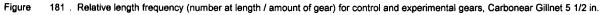
	0010 0111
Div	3L
Trip	55
Туре	F
Gear	5
Mesh Size	5.5

	Year				
Data	1995	1996	1997	1998	1999
Nmeas	270	781	518	1237	263
Ngear	57	38	36	40	30
Nhauls	19	18	18	20	14
Nzero	0	0	0	0	0
Table 120	Summary	data for	Carhone	ar 3L Ev	n eete

Gillnet 5 1/2 in.

136
55
(All)
5
5.5

	Year				
Data	1995	1996	1997	1998	1999
Nmeas	249	1097	715	1639	463
Ngear	60	69	70	80	54
Nhauls	20	34	35	40	26
Nzero	1	1	1	1	1



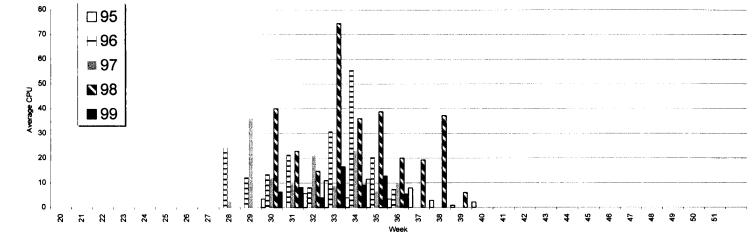


Figure 182 . Average Catch per Unit Effort for Control Sites, Carbonear Gillnet 5 1/2 in. (Number of Fish per Net)

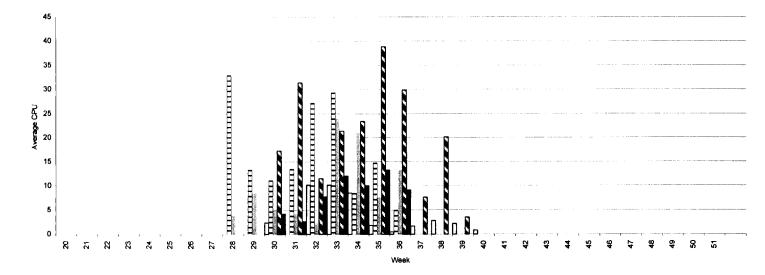
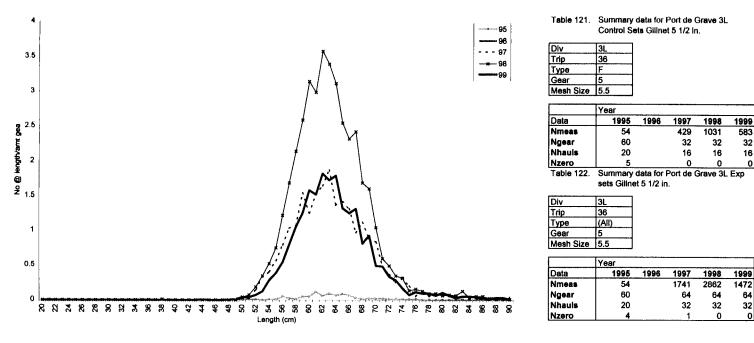
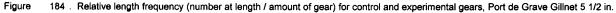


Figure 183 . Average Catch per Unit Effort for Experimental Sites, Carbonear Gillnet 5 1/2 in. (Number of Fish per Net)





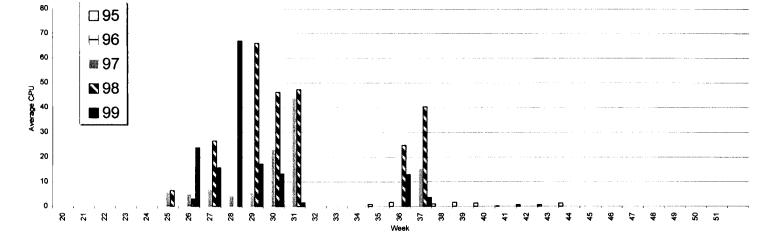


Figure 185 . Average Catch per Unit Effort for Control Sites, Port de Grave Gillnet 5 1/2 in. (Number of Fish per Net)

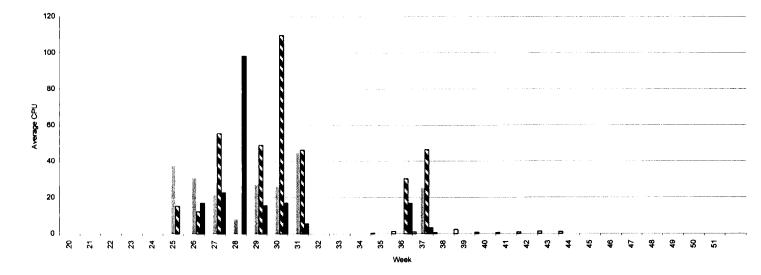
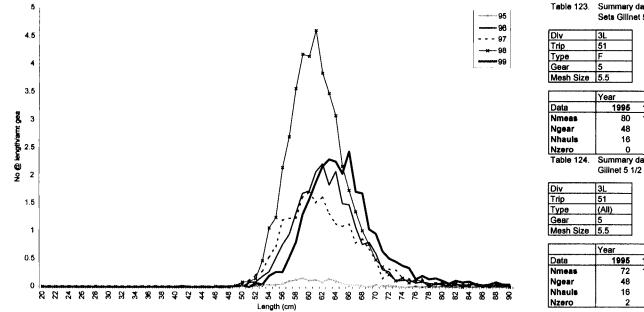
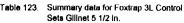


Figure 186 Average Catch per Unit Effort for Experimental Sites, Port de Grave Gillnet 5 1/2 in. (Number of Fish per Net)





	Year				
Data	1995	1996	1997	1998	1999
Nmeas	80	1464	991	2087	1073
Ngear	48	54	48	48	42
Nhauls	16	18	16	16	14
Nzero	0	0	0	0	0
Table 124.	Summary		Foxtrap 3	3L Exp s	ets

Gillnet 5 1/2 in.

	Year				
Data	1995	1996	1997	1998	1999
Nmeas	72	1139	730	1449	853
Ngear	48	55	32	32	28
Nhauis	16	19	16	16	14
Nzero	2	0	0	0	0

Figure 187 . Relative length frequency (number at length / amount of gear) for control and experimental gears, Foxtrap Gillnet 5 1/2 in.

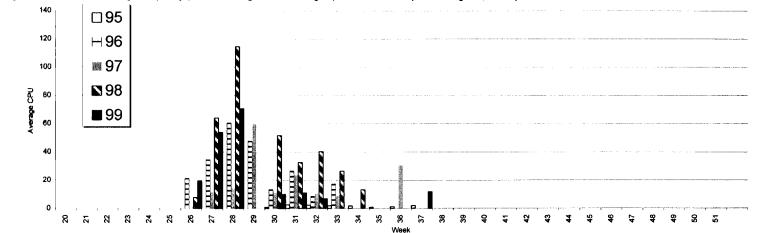


Figure . Average Catch per Unit Effort for Control Sites, Foxtrap Gillnet 5 1/2 in. (Number of Fish per Net) 188

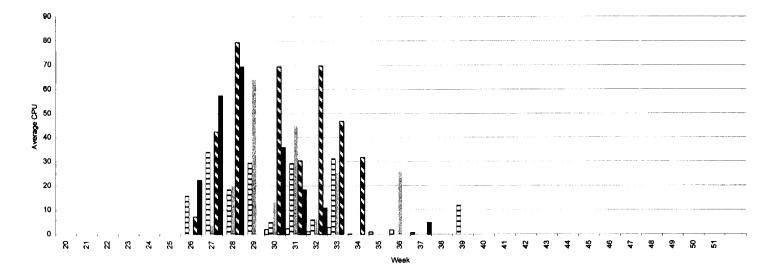


Figure 189 Average Catch per Unit Effort for Experimental Sites, Foxtrap Gillnet 5 1/2 in. (Number of Fish per Net)

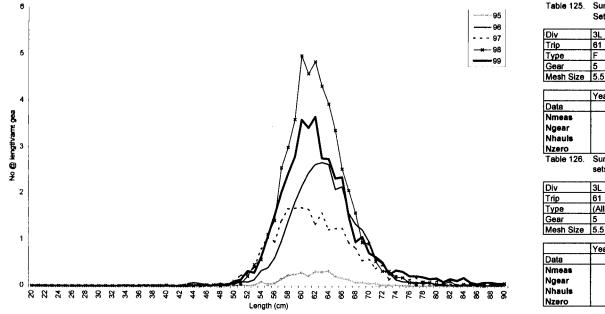


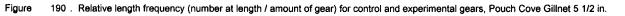
Table 125.	Summary data for Pouch Cove 3L Control
	Sets Gillnet 5 1/2 in.

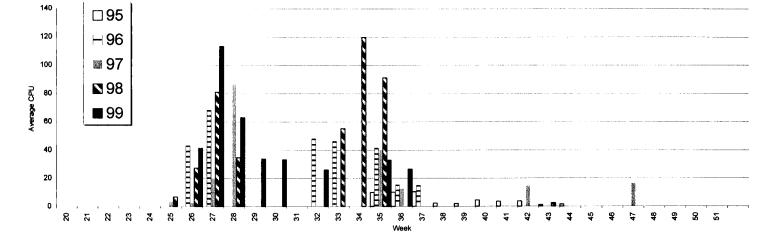
Div	3L
Trip	61
Туре	F
Gear	5
Mesh Size	5.5

	Year				
Data	1995	1996	1997	1998	1999
Nmeas	294	1663	919	1590	1206
Ngear	60	42	36	32	29
Nhauls	20	14	14	16	16
Nzero	0	0	0	0	0
Table 126.	Summary sets Gillne			ove 3L E	Exp

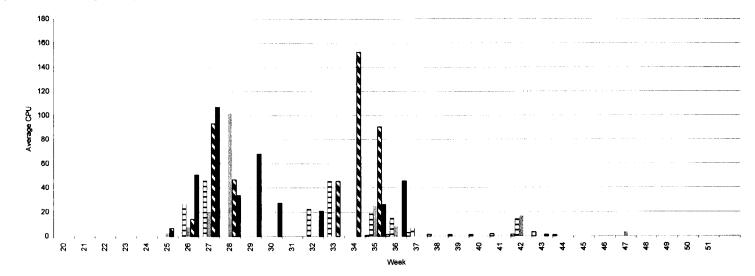
iv	3L
rip	61
уре	(All)
ear	5

	Year		_		
Data	1995	1996	1997	1998	1999
Nmeas	90	1229	866	2273	2039
Ngear	57	54	39	46	51
Nhauls	19	18	20	27	29
Nzero	1	0	1	0	c





Average Catch per Unit Effort for Control Sites, Pouch Cove Gillnet 5 1/2 in. (Number of Fish per Net) Figure 191



192 Average Catch per Unit Effort for Experimental Sites, Pouch Cove Gillnet 5 1/2 in. (Number of Fish per Net) Figure

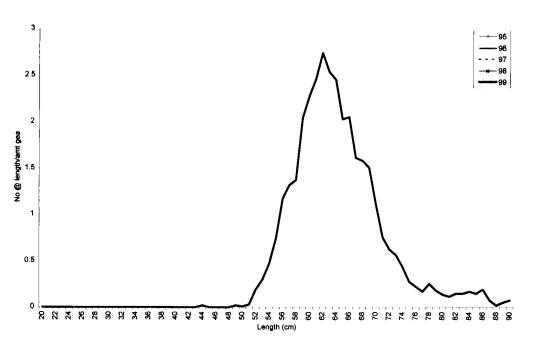


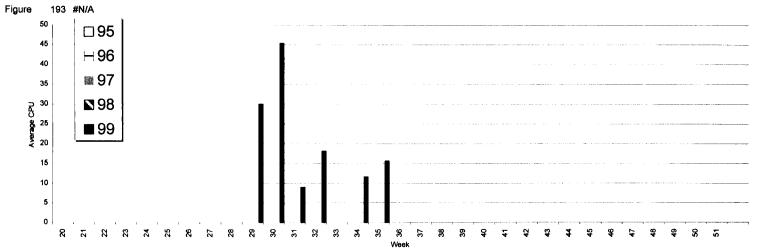
	Table	127.	#N/A
--	-------	------	------

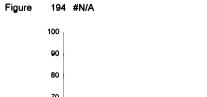
Div	3L
Trip	87
Туре	F
Gear	5
Mesh Size	5.5

	Year				
Data	1995	1996	1997	1998	1999
Nmeas					761
Ngear					34
Nhauls					17
Nzero					0
Table 128.	#N/A				

Div	3L
Trip	87
Туре	(All)
Gear	5
Mesh Size	5.5

	Year				
Data	1995	1996	1997	1998	1999
Nmeas					2530
Ngear					60
Nhauls					30
Nzero					0





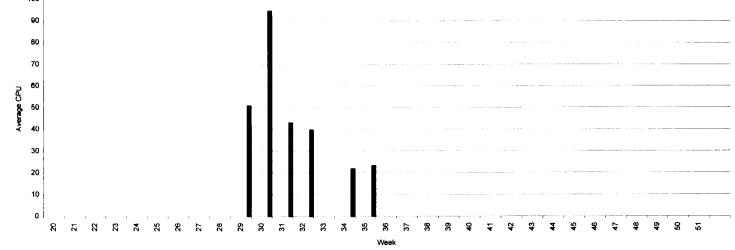


Figure 195 #N/A

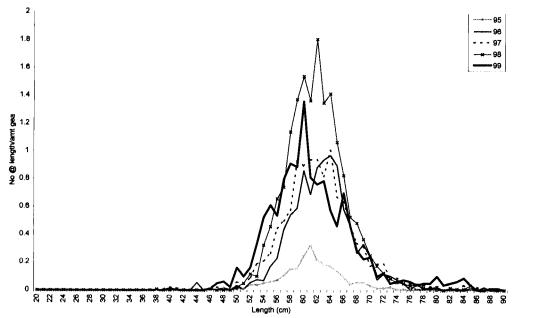


Table 129.	Summary data for Bay Bulls 3L Control
	Sets Gillnet 5 1/2 in.

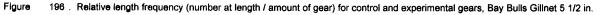
Div	3L
Trip	69
Туре	F
Gear	5
Mesh Size	5.5

	Year				
Data	1995	1996	1997	1998	1999
Nmeas	161	673	669	1302	509
Ngear	90	72	72	72	48
Nhauls	30	24	24	24	16
Nzero	3	5	0	0	0
Table 130.	Summary	data for	Bay Bull	s 3L Exp	

Gillnet 5 1/2 in.

Div	3L
Trip	69
Туре	(All)
Gear	5
Mesh Size	5.5

	Year				
Data	1995	1996	1997	1998	1999
Nmeas	271	771	855	705	526
Ngear	87	66	60	48	32
Nhauls	29	22	24	24	16
Nzero	2	3	1	1	0



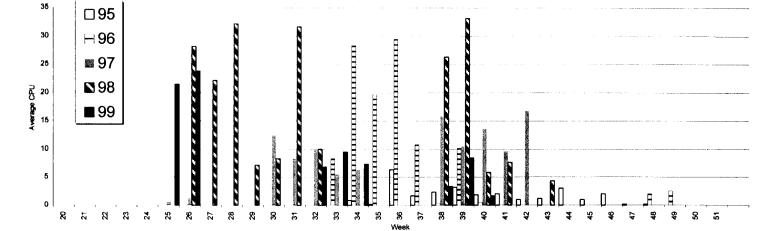


Figure 197 Average Catch per Unit Effort for Control Sites, Bay Bulls Gillnet 5 1/2 in. (Number of Fish per Net)

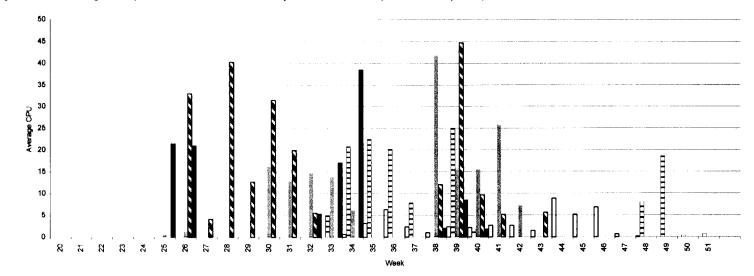
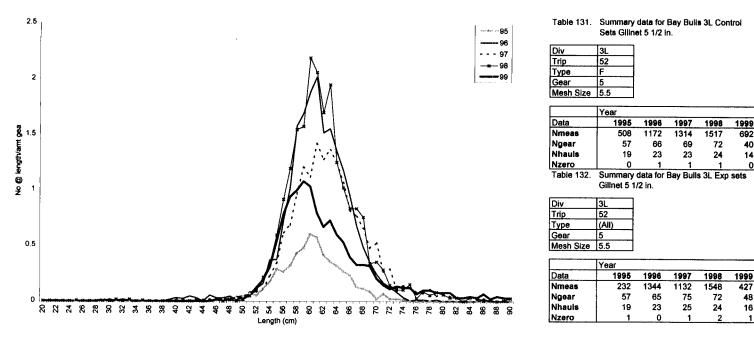
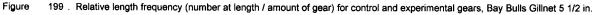


Figure 198 . Average Catch per Unit Effort for Experimental Sites, Bay Bulls Gillnet 5 1/2 in. (Number of Fish per Net)





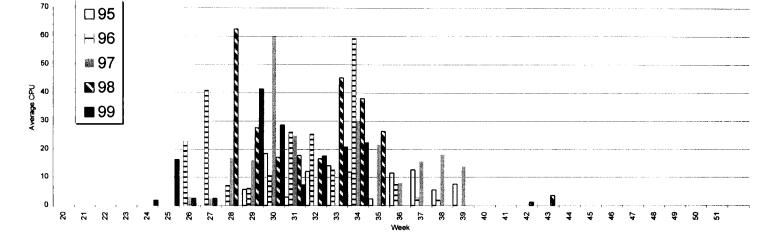


Figure 200 Average Catch per Unit Effort for Control Sites, Bay Bulls Gillnet 5 1/2 in. (Number of Fish per Net)

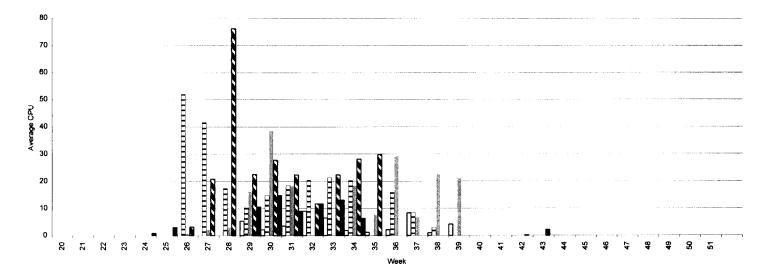
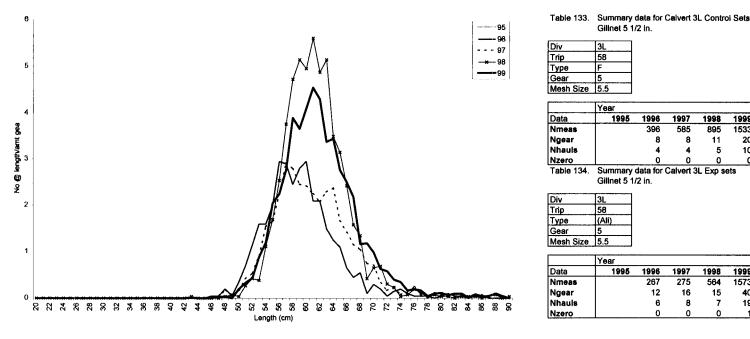
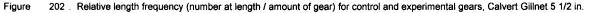
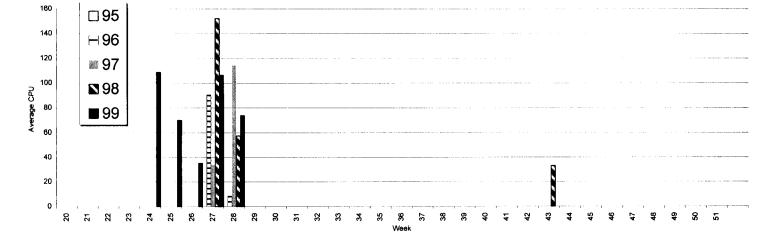


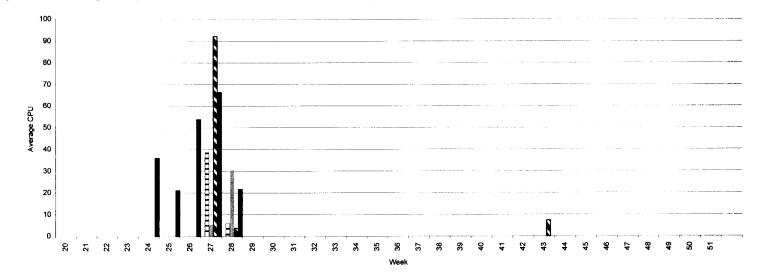
Figure 201 . Average Catch per Unit Effort for Experimental Sites, Bay Bulls Gillnet 5 1/2 in. (Number of Fish per Net)



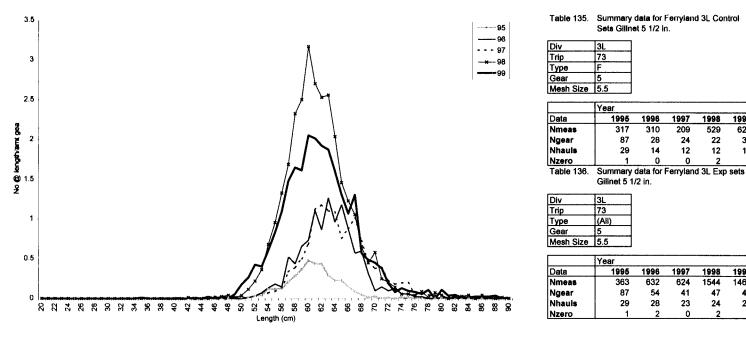


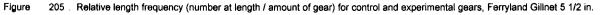






. Average Catch per Unit Effort for Experimental Sites, Calvert Gillnet 5 1/2 in. (Number of Fish per Net) Figure





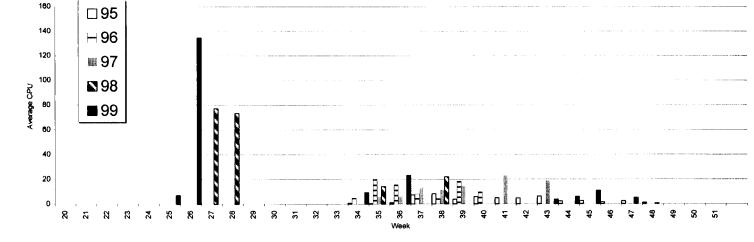
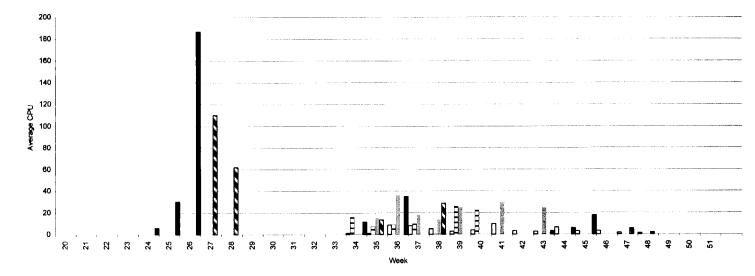


Figure Average Catch per Unit Effort for Control Sites, Ferryland Gillnet 5 1/2 in. (Number of Fish per Net)



. Average Catch per Unit Effort for Experimental Sites, Ferryland Gillnet 5 1/2 in. (Number of Fish per Net) Figure

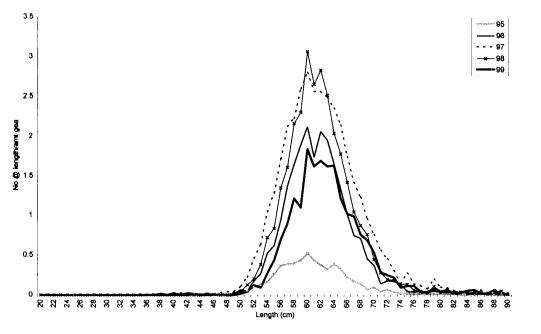


Table 137.	Summary data for Aquaforte 3L Control
	Sets Gillnet 5 1/2 in.

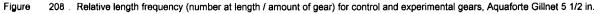
Div	3L
Trip	24
Туре	F
Gear	5
Mesh Size	5.5

	Year				
Data	1995	1996	1997	1998	1999
Nmeas	472	2028	2700	2154	1058
Ngear	87	69	71	66	48
Nhauls	29	23	24	23	16
Nzero	2	0	0	0	0
Table 138.	Summary	data for	Aquafort	e 3L Exc	sets

Gillnet 5 1/2 in.

3L
24
(All)
5
5.5

	Year				
Data	1995	1996	1997	1998	1999
Nmeas	578	1082	2529	1947	884
Ngear	90	66	72	67	48
Nhauls	30	22	24	24	16
Nzero	2	0	0	0	1



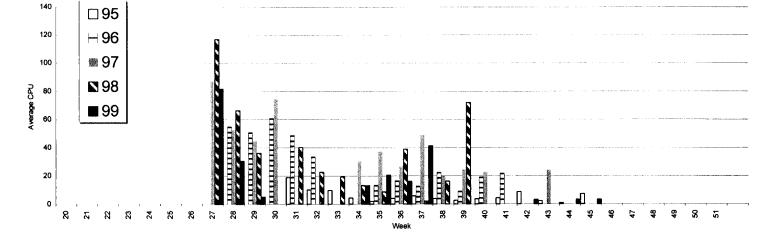


Figure 209 . Average Catch per Unit Effort for Control Sites, Aquaforte Gillnet 5 1/2 in. (Number of Fish per Net)

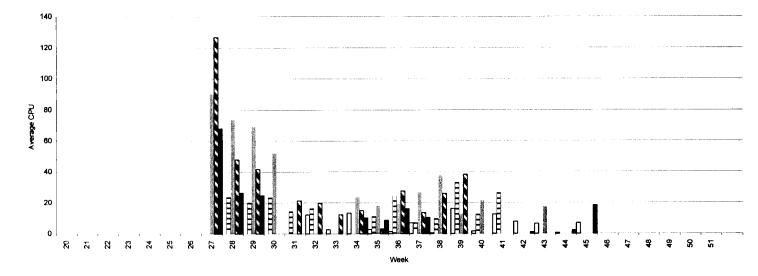
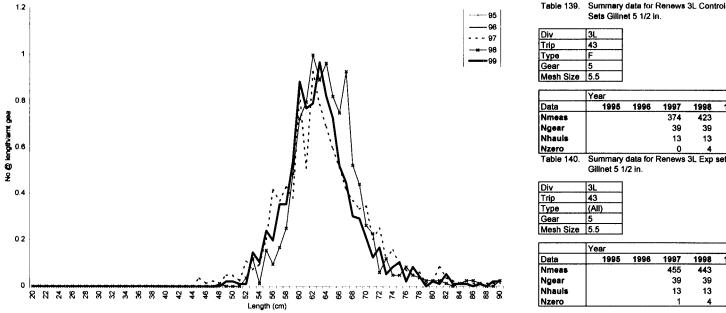


Figure 210 Average Catch per Unit Effort for Experimental Sites, Aquaforte Gillnet 5 1/2 in. (Number of Fish per Net)



Trip	43				
Туре	(AII)				
Gear	5				
Mesh Size	5.5				
	Year				<u> </u>
Data		1996	1997	1998	1999
Data	1995	1990	1991	1990	1888
Nmeas			455	443	460
Ngear			39	39	48
Nhauls			13	13	16
Nzero			1	4	3

Summary data for Renews 3L Exp sets

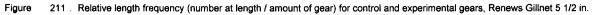
Sets Gilinet 5 1/2 in.

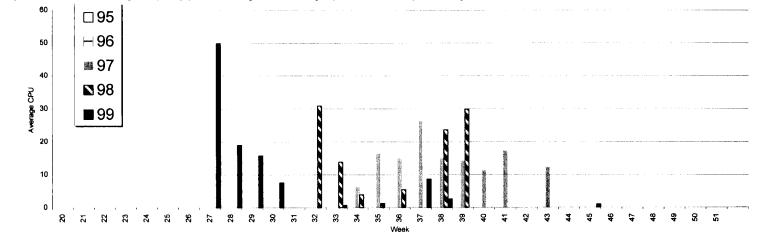
F

Year

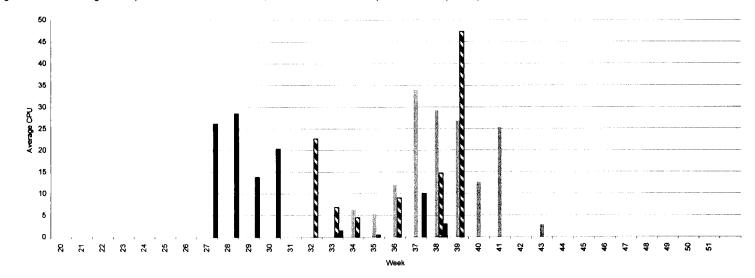
3L

Gillnet 5 1/2 in.

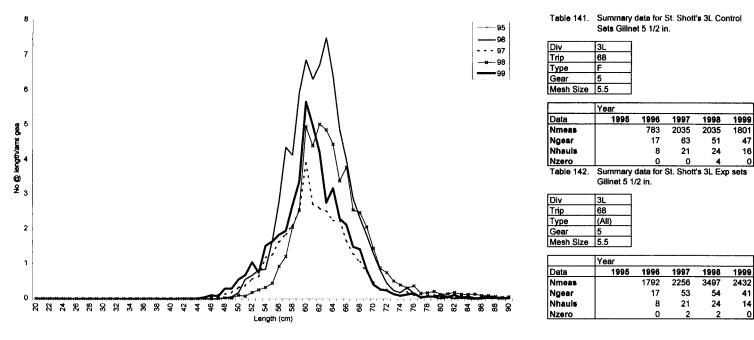


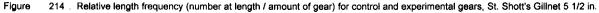


Average Catch per Unit Effort for Control Sites, Renews Gillnet 5 1/2 in. (Number of Fish per Net) Figure



213 Average Catch per Unit Effort for Experimental Sites, Renews Gillnet 5 1/2 in. (Number of Fish per Net) Figure





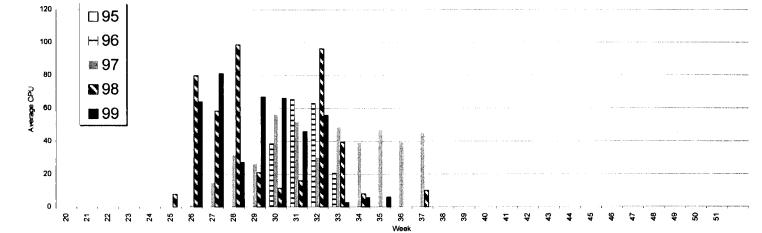


Figure 215 . Average Catch per Unit Effort for Control Sites, St. Shott's Gillnet 5 1/2 in. (Number of Fish per Net)

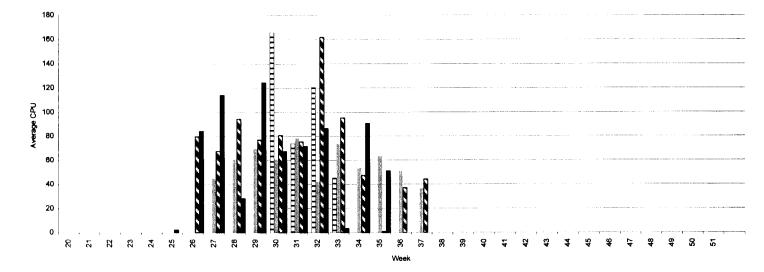


Figure 216 Average Catch per Unit Effort for Experimental Sites, St. Shott's Gillnet 5 1/2 in. (Number of Fish per Net)

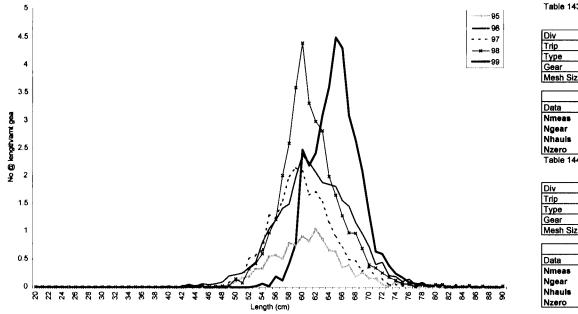


Table 143.	Summary data for Riverhead 3L Control
	Sets Gillnet 5 1/2 in.

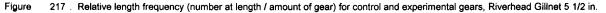
Div	3L
Trip	23
Туре	F
Gear	5
Mesh Size	5.5

	Year				
Data	1995	1996	1997	1998	1999
Nmeas	476	1925	968	1001	992
Ngear	40	75	66	54	57
Nhauls	14	25	22	18	19
Nzero	2	1	0	0	0
Table 144.	Summary		Riverhea	d 3L Ex	o sets

Gillnet 5 1/2 in.

)iv	3L
rip	23
уре	(All)
iear	5
lesh Size	5.5

	Year				
Data	1995	1996	1997	1998	1999
Nmeas	413	2968	2019	2728	3093
Ngear	40	90	63	53	57
Nhauls	14	30	21	18	19
Nzero	3	0	0	0	C



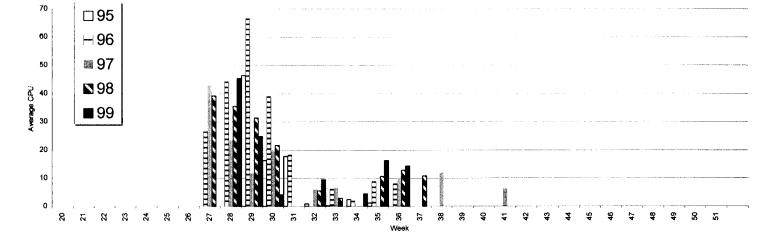


Figure 218 . Average Catch per Unit Effort for Control Sites, Riverhead Gillnet 5 1/2 in. (Number of Fish per Net)

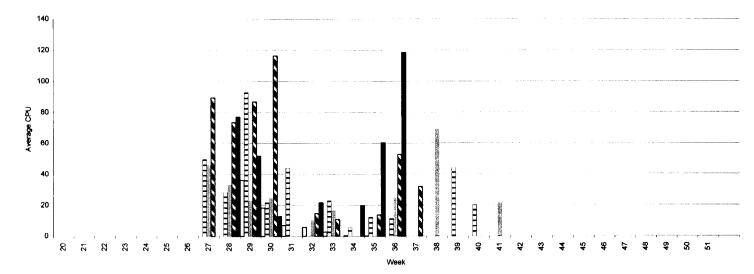
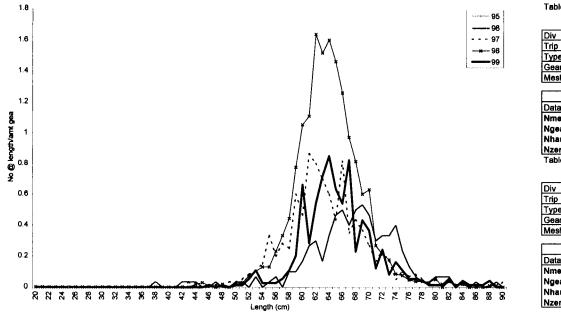


Figure 219 . Average Catch per Unit Effort for Experimental Sites, Riverhead Gillnet 5 1/2 in. (Number of Fish per Net)



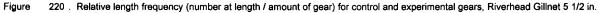
l able 145.	Summary data for Riverhead 3L Control
	Sets Gillnet 5 1/2 in.

Div	3L
Trip	63
Туре	F
Gear	5
Mesh Size	5.5

	Year				
Data	1995	1996	1997	1998	1999
Nmeas		163	284	758	34
Ngear		15	27	54	30
Nhauls		5	9	18	10
Nzero		1	0	Э	4
Table 146.	Summary		Riverhea	d 3L Ex	o sets

Div	3L
rip	63
уре	(All)
Gear	5
lesh Size	5.5

	Year				
Data	1995	1996	1997	1998	1999
Nmeas		43	280	989	548
Ngear		15	30	54	44
Nhauls		5	10	18	15
Nzero		2	0	3	2



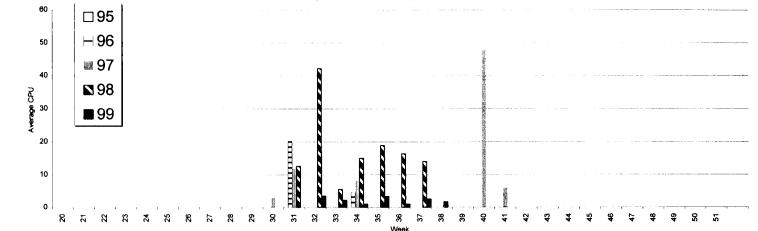


Figure 221 Average Catch per Unit Effort for Control Sites, Riverhead Gillnet 5 1/2 in (Number of Fish per Net)

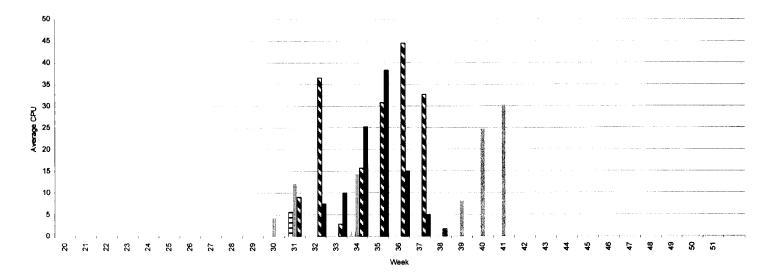


Figure 222 Average Catch per Unit Effort for Experimental Sites, Riverhead Gillnet 5 1/2 in. (Number of Fish per Net)

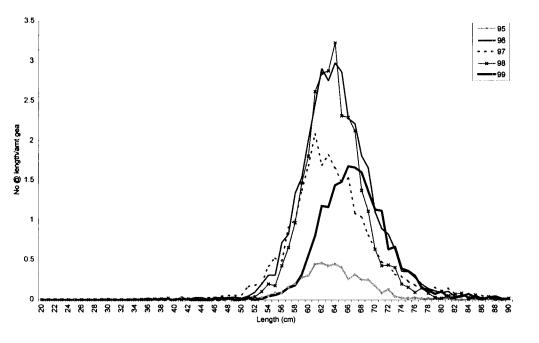


Table 147.	Summary data for Admiral's Beach 3L.
	Control Sets Gillnet 5 1/2 in.

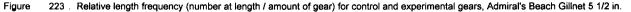
Div	3L
Trip	28
Туре	F
Gear	5
Mesh Size	5.5

	Year				
Data	1995	1996	1997	1998	1999
Nmeas	546	2195	1366	1539	587
Ngear	90	60	57	54	39
Nhauls	30	20	19	18	13
Nzero	2	0	0	0	2
Table 148.	Summary	data for	Admiral's	Beach	3L
	Tun anta (Villmot E -	10 in		

Exp sets Gillnet 5 1/2 in.

28
(All)
5
5.5

	Year				
Data	1995	1996	1997	1998	1999
Nmeas	408	2786	1280	1341	690
Ngear	93	82	44	42	27
Nhauis	31	28	25	30	19
Nzero	3	0	0	0	3



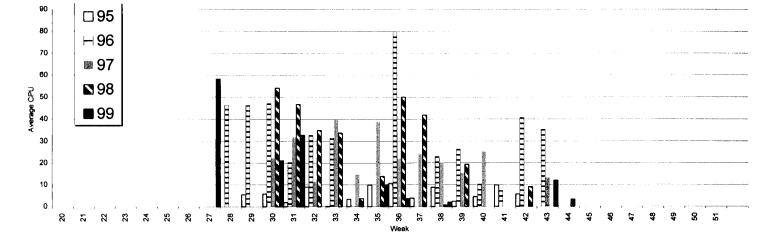
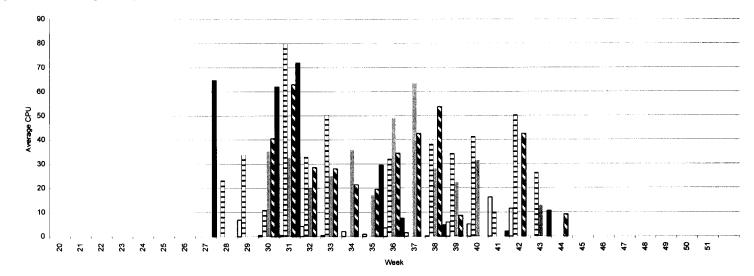
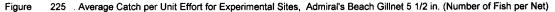


Figure 224 . Average Catch per Unit Effort for Control Sites, Admiral's Beach Gillnet 5 1/2 in. (Number of Fish per Net)





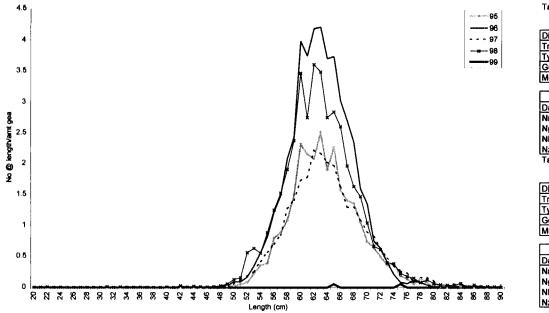


Table 149.	Summary data for Point Lance 3L Control
	Sets Gillnet 5 1/2 in.

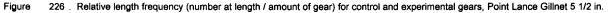
	0010 ()
Div	3L
rip 🛛	18
Гуре	F
Gear	5
Aesh Size	5.5

	Year				
Data	1995	1996	1997	1998	1999
Nmeas	1362	1682	1291	1323	0
Ngear	66	61	66	64	9
Nhauls	28	21	22	23	3
Nzero	0	1	0	8	3
Table 150.	Summary	data for	Point La	nce 3L E	XD

sets Gillnet 5 1/2 in.

liv	3L
rip	18
уре	(All)
ear	5
lesh Size	5.5

	Year				
Data	1995	1996	1997	1998	1999
Nmeas	2495	4960	2682	4451	2
Ngear	74	82	78	77	9
Nhauls	30	28	26	25	3
Nzero	0	0	0	1	2



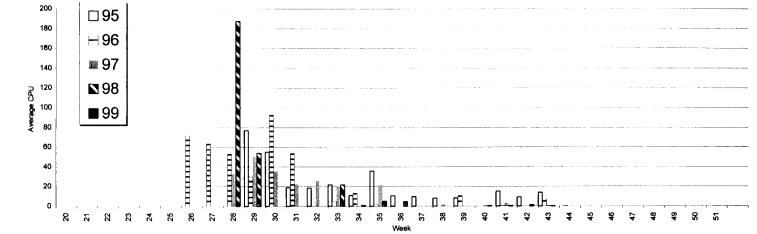


Figure 227 . Average Catch per Unit Effort for Control Sites, Point Lance Gillnet 5 1/2 in. (Number of Fish per Net)

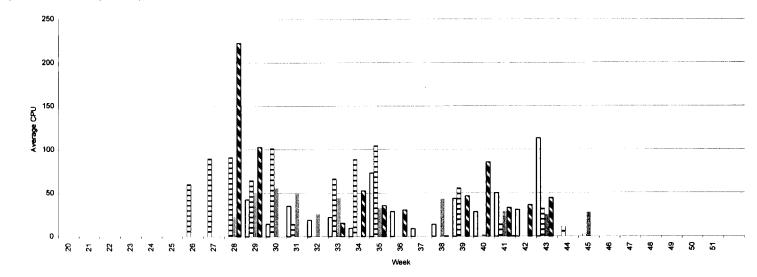
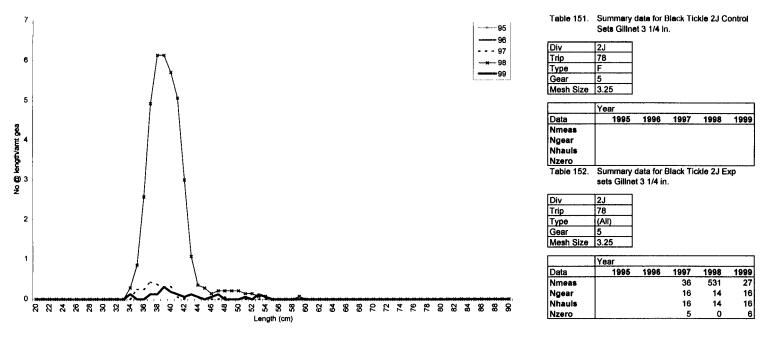
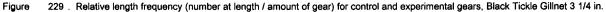
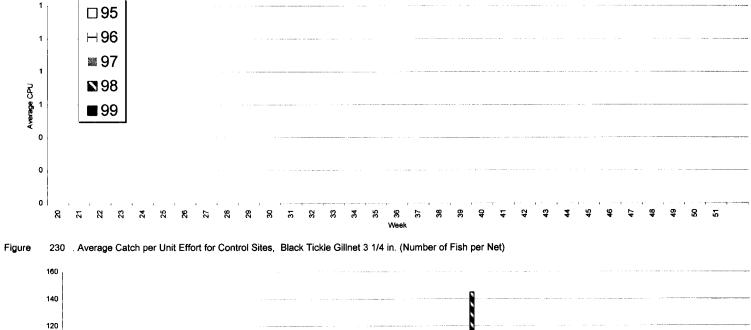


Figure 228 Average Catch per Unit Effort for Experimental Sites, Point Lance Gillnet 5 1/2 in. (Number of Fish per Net)







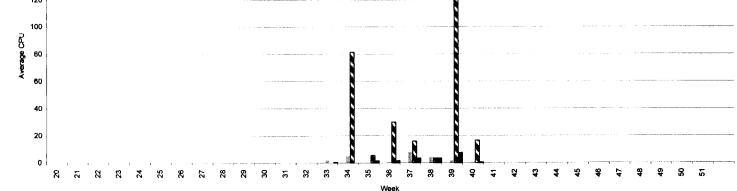
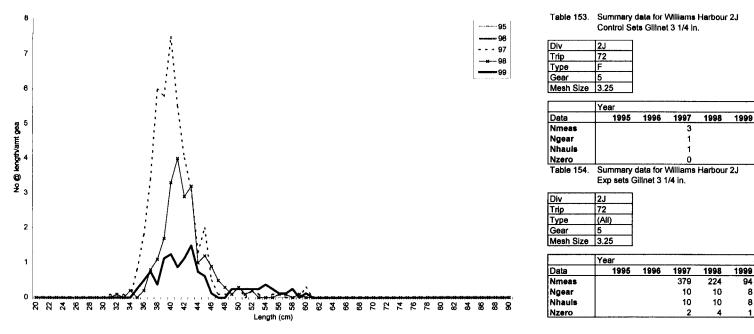
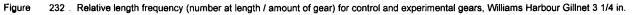


Figure 231 Average Catch per Unit Effort for Experimental Sites, Black Tickle Gillnet 3 1/4 in. (Number of Fish per Net)





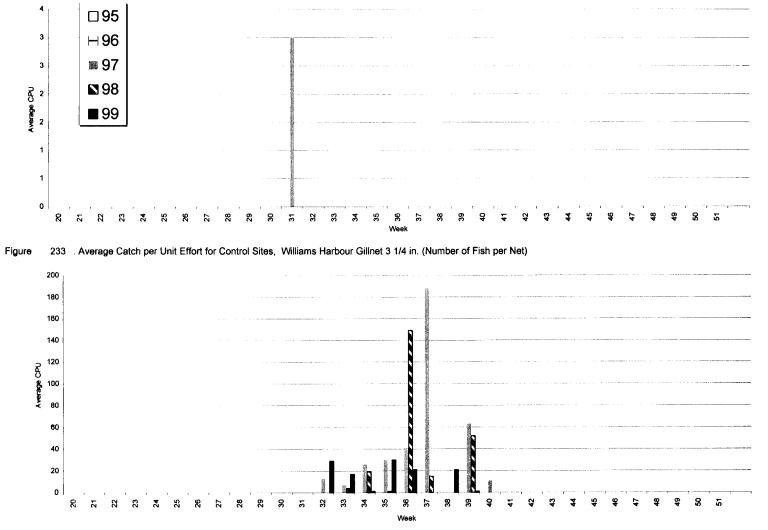
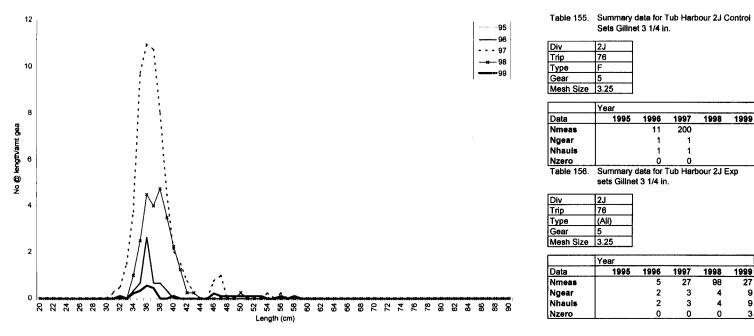
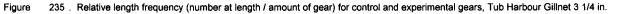


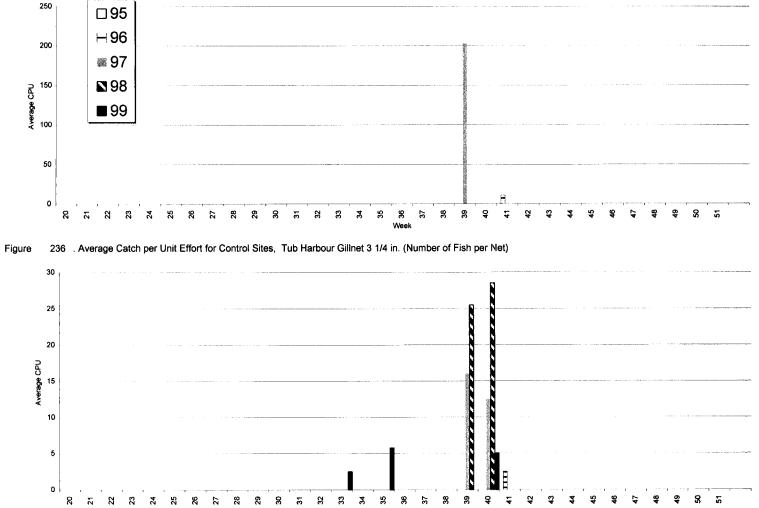
Figure 234 . Average Catch per Unit Effort for Experimental Sites, Williams Harbour Gillnet 3 1/4 in. (Number of Fish per Net)



9

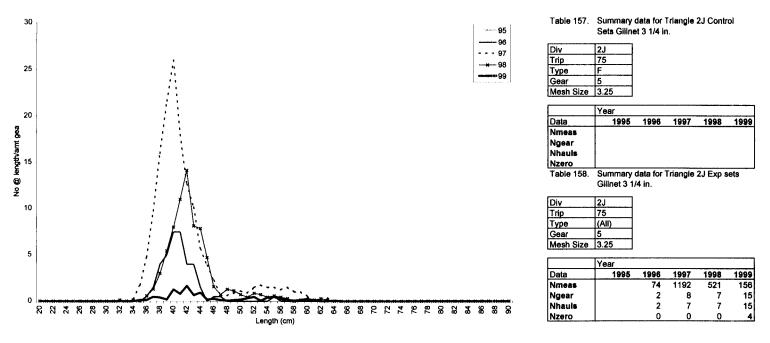
з





Week

Figure 237 Average Catch per Unit Effort for Experimental Sites, Tub Harbour Gillnet 3 1/4 in. (Number of Fish per Net)





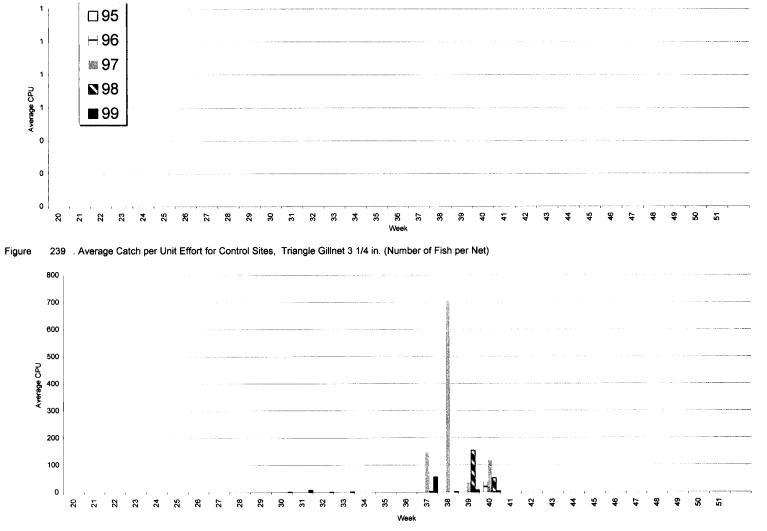
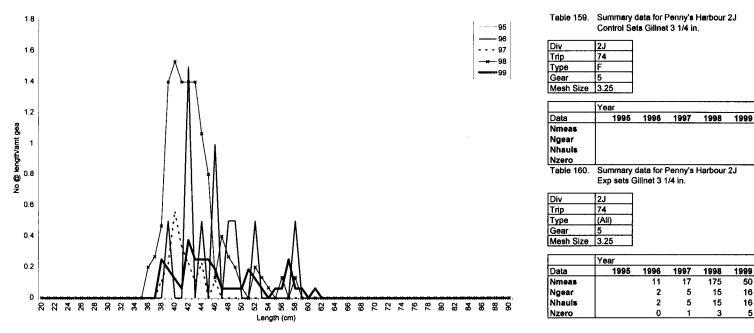
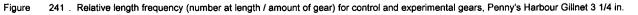


Figure 240 Average Catch per Unit Effort for Experimental Sites, Triangle Gillnet 3 1/4 in. (Number of Fish per Net)





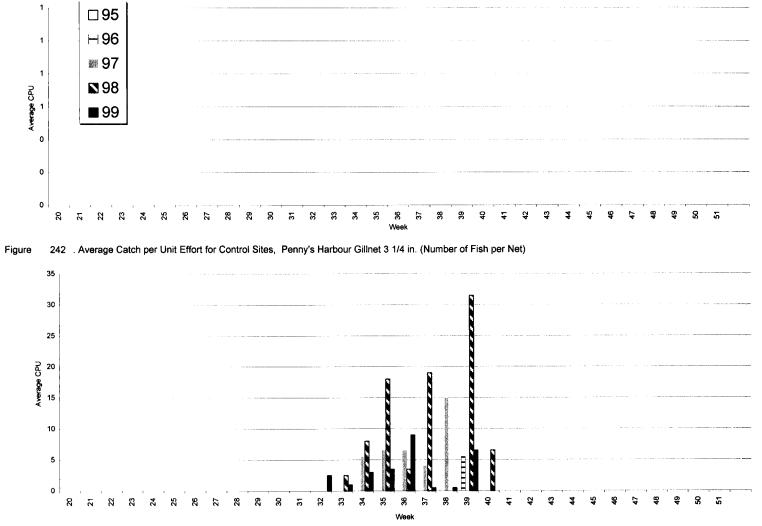
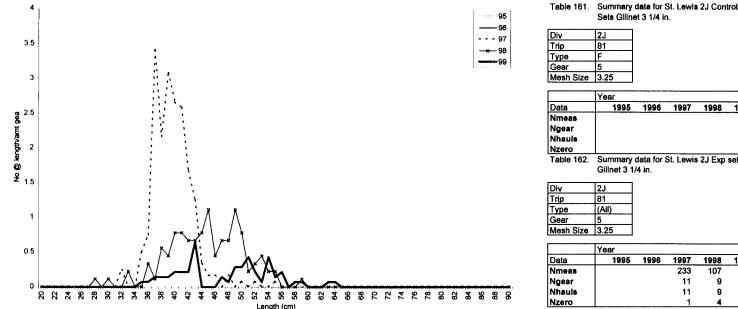
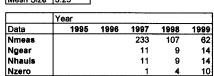


Figure 243 Average Catch per Unit Effort for Experimental Sites, Penny's Harbour Gillnet 3 1/4 in. (Number of Fish per Net)





1997

Summary data for St. Lewis 2J Exp sets

1998

1999

Sets Gillnet 3 1/4 in.

2.

81

١F

5

Year

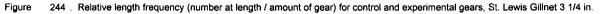
2J

81 (All)

5

1995

Gillnet 3 1/4 in.



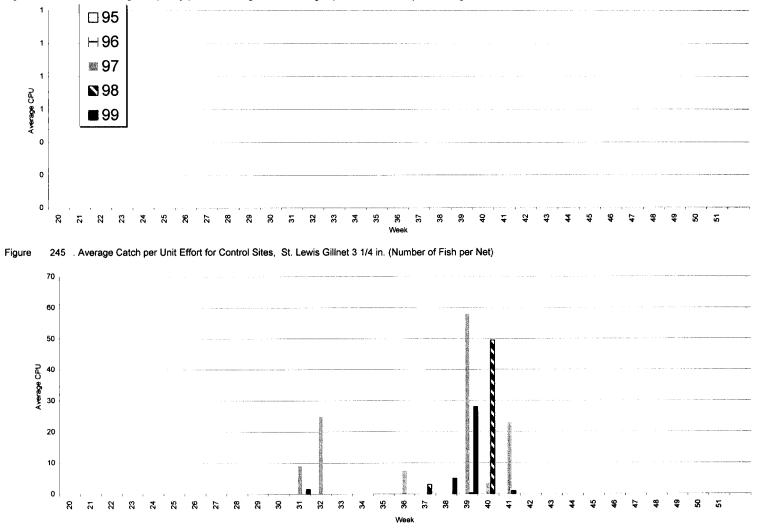
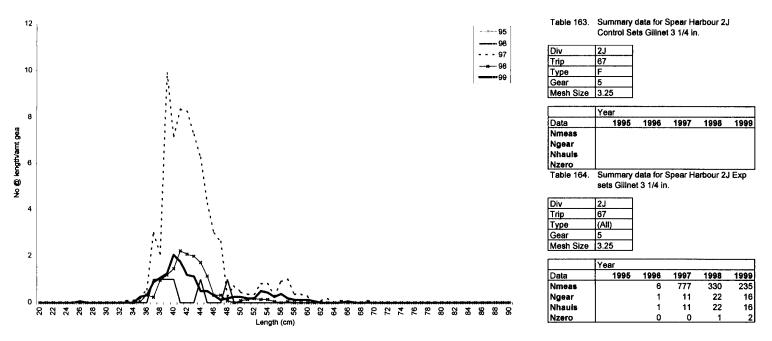
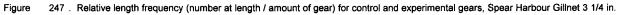


Figure 246 Average Catch per Unit Effort for Experimental Sites, St. Lewis Gillnet 3 1/4 in. (Number of Fish per Net)





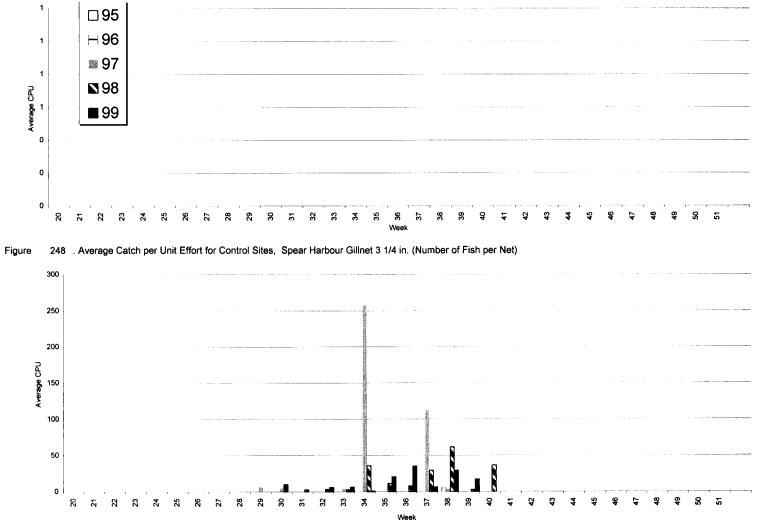
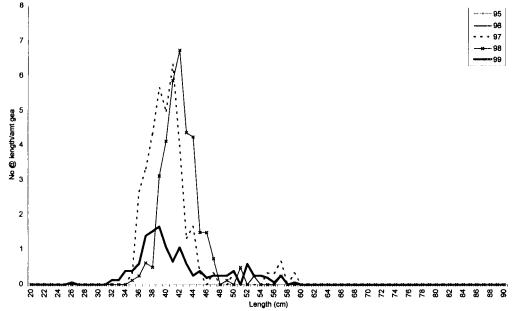


Figure 249 . Average Catch per Unit Effort for Experimental Sites, Spear Harbour Gillnet 3 1/4 in. (Number of Fish per Net)



Div	2J				
Trip	71				
Туре	F				
Gear	5				
Mesh Size	3.25				
	Year				
Data	1995	1996	1997	1998	1999
Nmeas					
Ngear					
Nhauls					
Nhauls Nzero					
	Summary sets Gillne			arles 2J	Ехр
Nzero				arles 2J	Ехр
Nzero Table 166.	sets Gillne			arles 2J	Ехр
Nzero Table 166. Div	sets Gillne			narles 2J	Ехр
Nzero Table 166. Div Trip	sets Gillne 2J 71			arles 2J	Ехр
Nzero Table 166. Div Trip Type	sets Gillne 2J 71 (All)			narles 2J	Ехр
Nzero Table 166. Div Trip Type Gear	sets Gillne 2J 71 (All) 5			arles 2J	Ехр
Nzero Table 166. Div Trip Type Gear	sets Gillne 2J 71 (All) 5 3.25			1998	Exp 1999
Nzero Table 166. Div Trip Type Gear Mesh Size	sets Gillne 2J 71 (All) 5 3.25 Year	t 3 1/4 in			

8

8

3

3

0

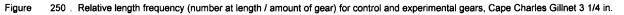
Table 165. Summary data for Cape Charles 2J

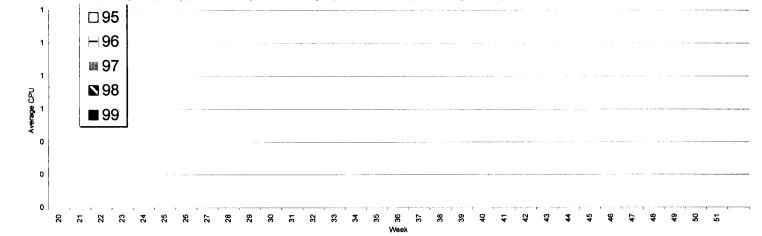
Ngear

Nhauls

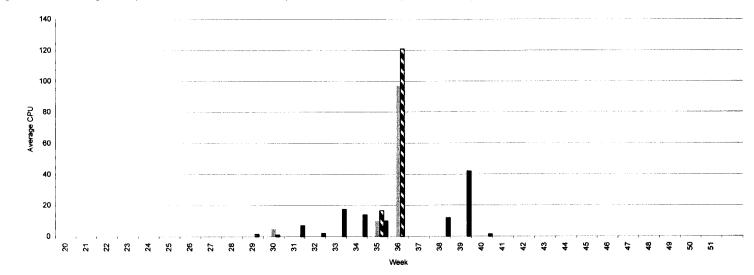
Nzero

Control Sets Gilinet 3 1/4 in.

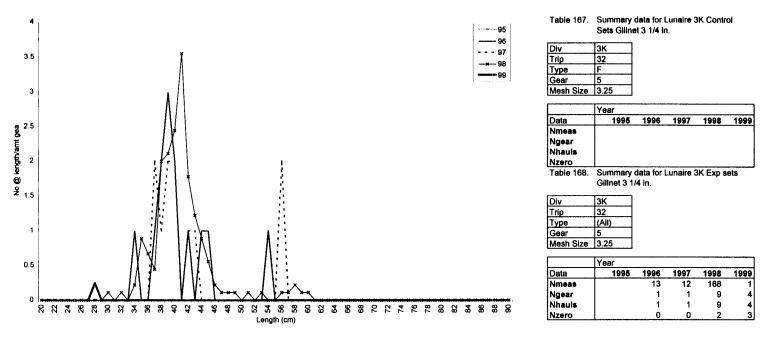


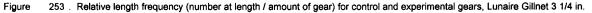






252 . Average Catch per Unit Effort for Experimental Sites, Cape Charles Gillnet 3 1/4 in. (Number of Fish per Net) Figure





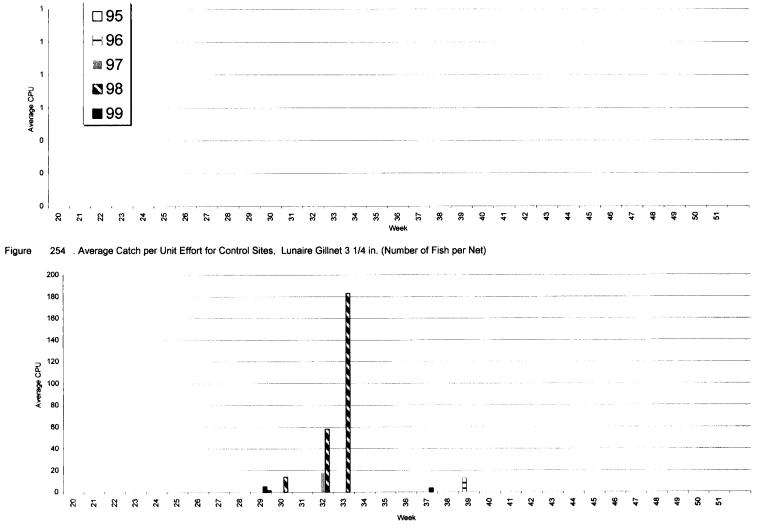
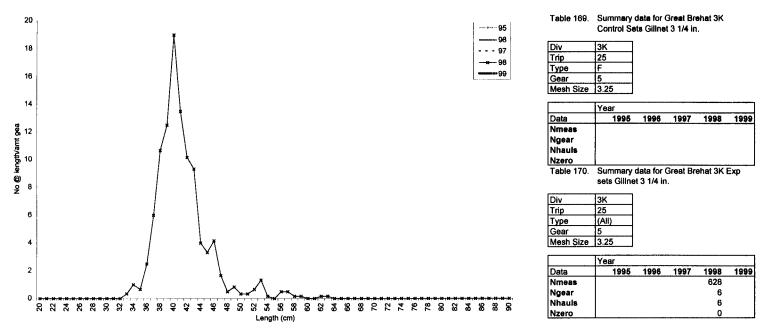
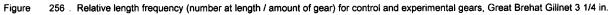
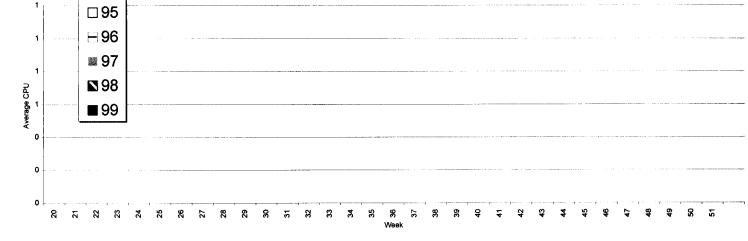
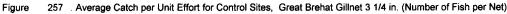


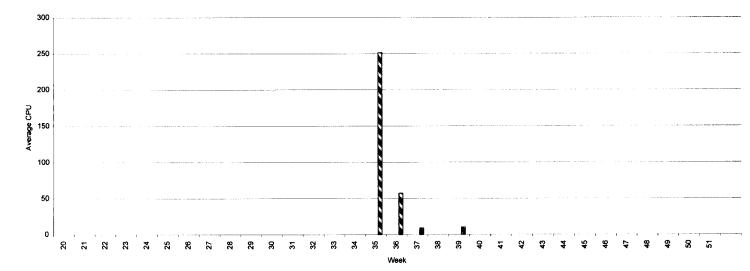
Figure 255 Average Catch per Unit Effort for Experimental Sites, Lunaire Gillnet 3 1/4 in. (Number of Fish per Net)

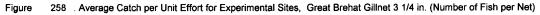


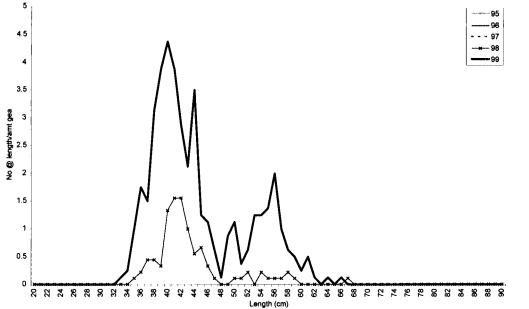












	Gilinet 3 1/	/4 in.			
Div	ЗК				
Trip	22				
Туре	F				
Gear	5				
Mesh Size	3.25				
	Year				
Data	1995	1996	1997	1998	1999
Nmeas					
Ngear					
Nhauls	1				
NIIAUIS					

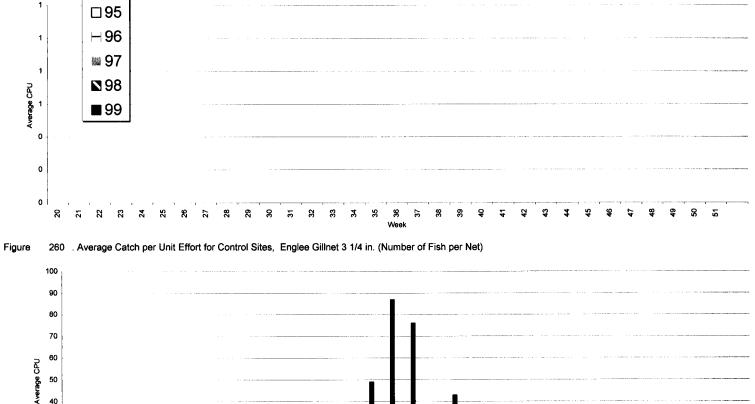
Table 171. Summary data for Englee 3K Control Sets

Table 172. Summary data for Englee 3K Exp sets Gillnet 3 1/4 in.

Div	3K
Trip	22
Туре	(All)
Gear	5
Mesh Size	3.25

	Year				
Data	1995	1996	1997	1998	1999
Nmeas				91	349
Ngear				9	8
Nhauls				9	7
Nzero				4	0

Figure 259 . Relative length frequency (number at length / amount of gear) for control and experimental gears, Englee Gillnet 3 1/4 in.



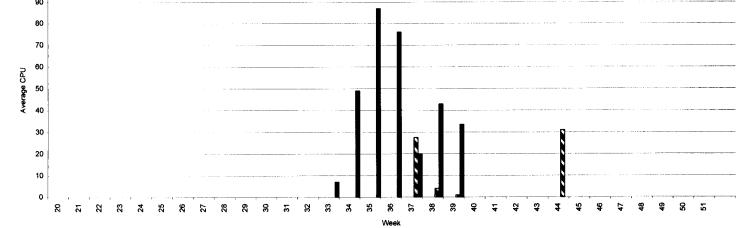
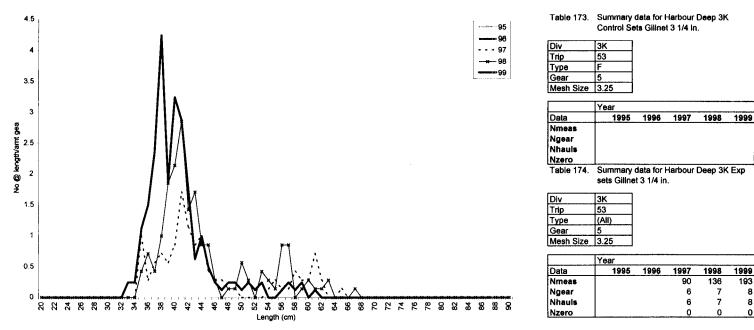
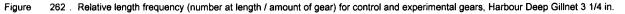
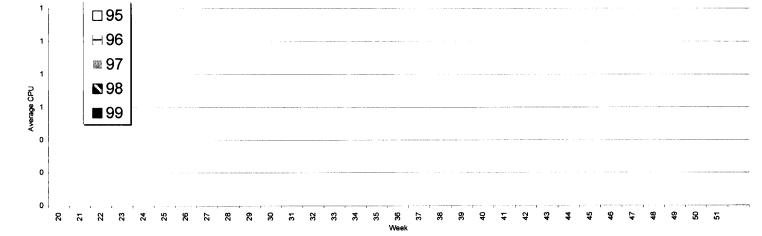


Figure 261 . Average Catch per Unit Effort for Experimental Sites, Englee Gillnet 3 1/4 in. (Number of Fish per Net)









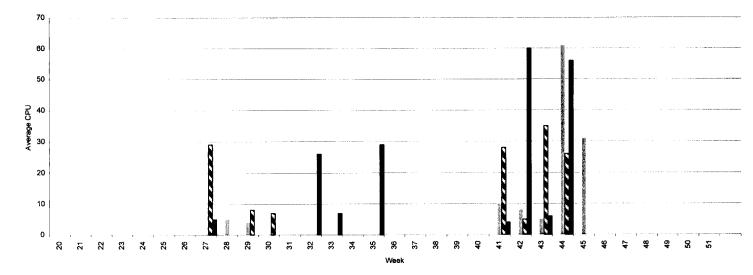
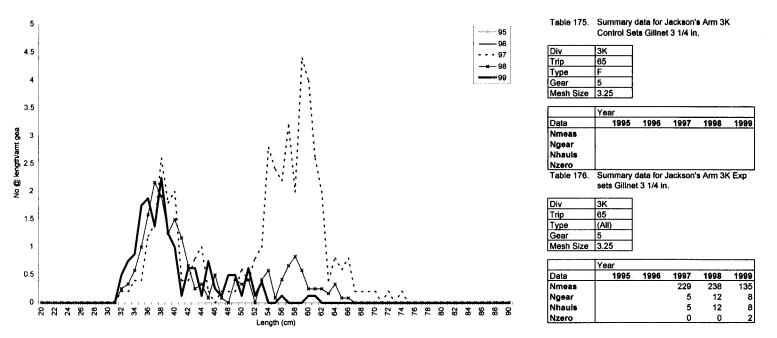
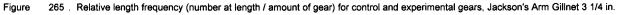
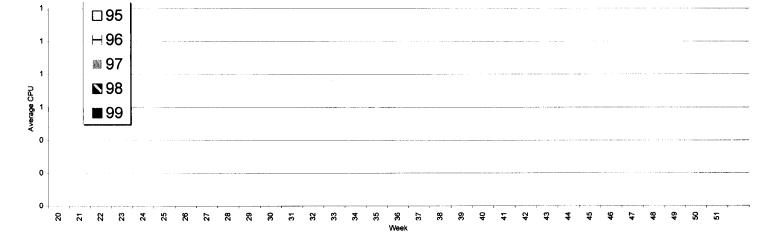


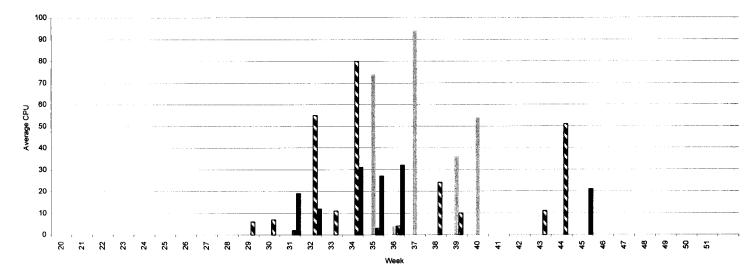
Figure 264 . Average Catch per Unit Effort for Experimental Sites, Harbour Deep Gillnet 3 1/4 in. (Number of Fish per Net)

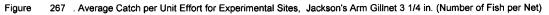


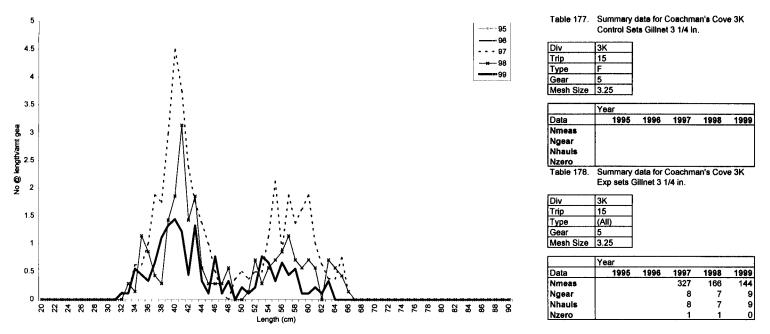


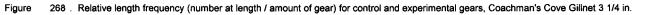












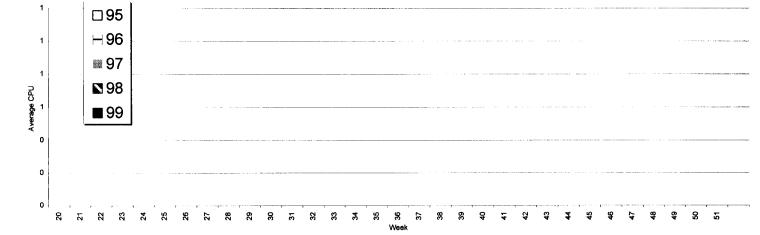


Figure 269 Average Catch per Unit Effort for Control Sites, Coachman's Cove Gillnet 3 1/4 in. (Number of Fish per Net)

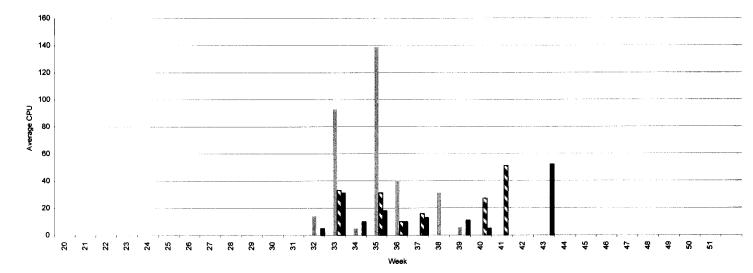


Figure 270 . Average Catch per Unit Effort for Experimental Sites, Coachman's Cove Gillnet 3 1/4 in. (Number of Fish per Net)

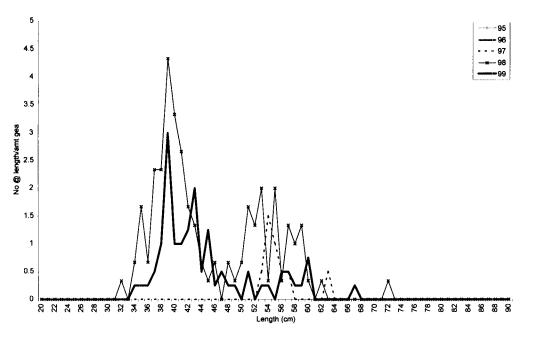


Table 179.	Summary data for La Scie 3K Control
	Sets Gillnet 3 1/4 In.

Div	3K
Trip	66
Туре	F
Gear	5
Mesh Size	3.25

	Year				
Data	1995	1996	1997	1998	1999
Nmeas			9	87	
Ngear			1	2	
Nhauls			1	2	
Nzero			0	0	
Table 180	Summanu	data for l	a Scie 3	K Evn e	oto

e 180. Summary data for La Scie 3K Exp sets Gillnet 3 1/4 in.

Div	ЗК
Trip	66
Туре	(All)
Gear	5
Mesh Size	3.25

	Year				
Data	1995	1996	1997	1998	1999
Nmeas				24	68
Ngear				1	4
Nhauls				1	4
Nzero				0	C

Figure 271 . Relative length frequency (number at length / amount of gear) for control and experimental gears, La Scie Gillnet 3 1/4 in.

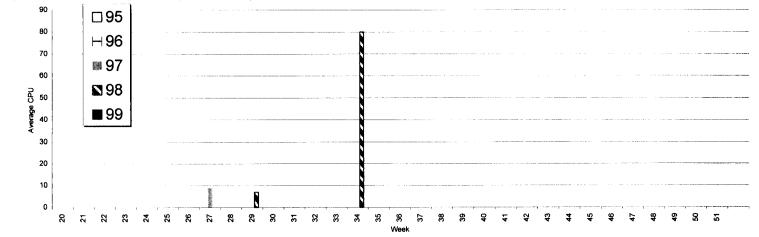


Figure 272 Average Catch per Unit Effort for Control Sites, La Scie Gillnet 3 1/4 in (Number of Fish per Net)

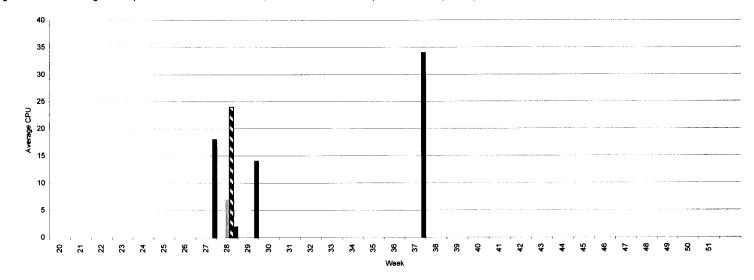


Figure 273 Average Catch per Unit Effort for Experimental Sites, La Scie Gillnet 3 1/4 in. (Number of Fish per Net)

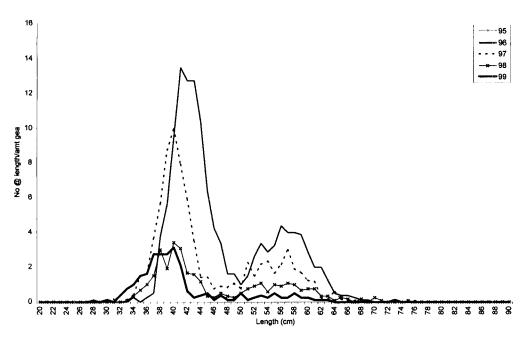


Table 181.	Summary data for Miles Cove 3K Control
	Sets Gillnet 3 1/4 in.

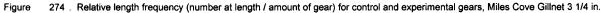
	0013 01
Div	3K
Trip	38
Туре	F
Gear	5
Mesh Size	3.25

	Year				
Data	1995	1996	1997	1998	1999
Nmeas					-
Ngear	1				
Nhauls					
Nzero					
Table 182.	Summary	data for	Miles Co	ve 3K Ex	кр

sets Gillnet 3 1/4 in.

38
(All)
5
3.25

	Year				
Data	1995	1996	1997	1998	1999
Nmeas		1019	951	394	203
Ngear		8	12	12	8
Nhauls		8	12	12	8
Nzero		0	0	0	C



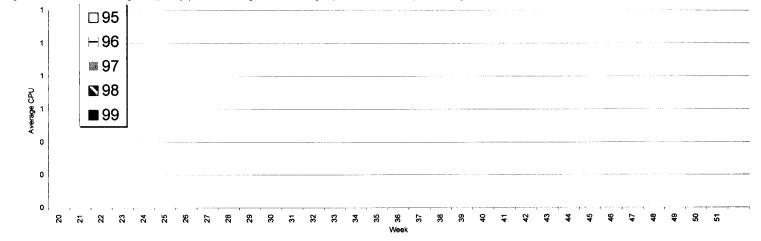
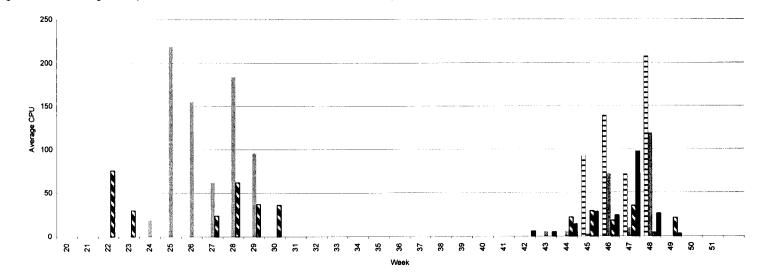
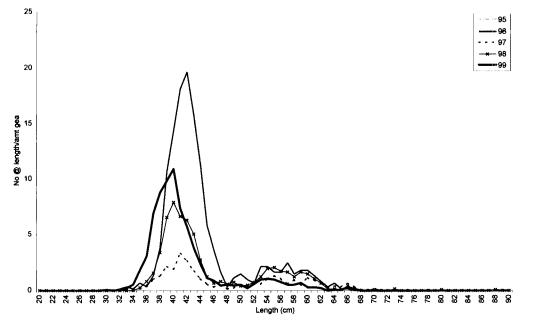


Figure 275 . Average Catch per Unit Effort for Control Sites, Miles Cove Gillnet 3 1/4 in. (Number of Fish per Net)







Trip	57				
Туре	F				
Gear	5				
Mesh Size	3.25				
	Year				
Data	1995	1996	1997	1998	199
Nmeas	1.1.1.1				
Ngear					
	1				
Nhauls					
Nhauls Nzero	Summary	data for :	Summer	ford 3K E	Exp
Nhauls	Summary of sets Gillne			ford 3K f	Exp
Nhauls Nzero Table 184.	sets Gillne			ford 3K f	Ξхр
Nhauls Nzero Table 184. Div	sets Gillne			ford 3K E	Ξхр
Nhauls Nzero Table 184. Div Trip	sets Gillne 3K 57			ford 3K f	Ξхр
Nhauls Nzero Table 184. Div	sets Gillne			ford 3K f	Ξхр

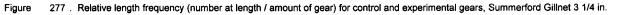
Table 183. Summary data for Summerford 3K

ЗK

Div

Control Sets Glilnet 3 1/4 in.

Data	Year					
	1995	1996	1997	1998	1999	
Nmeas		790	373	762	958	
Ngear		6	12	12	13	
Nhauls		6	12	12	13	
Nzero		0	1	0	2	



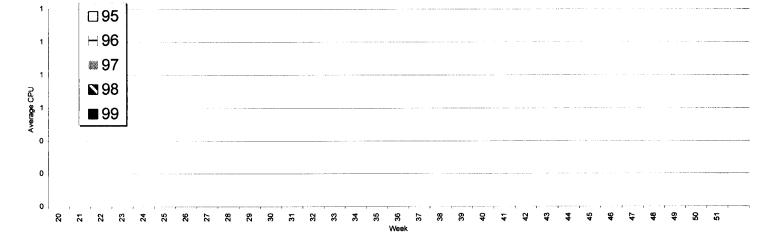


Figure 278 Average Catch per Unit Effort for Control Sites, Summerford Gillnet 3 1/4 in. (Number of Fish per Net)

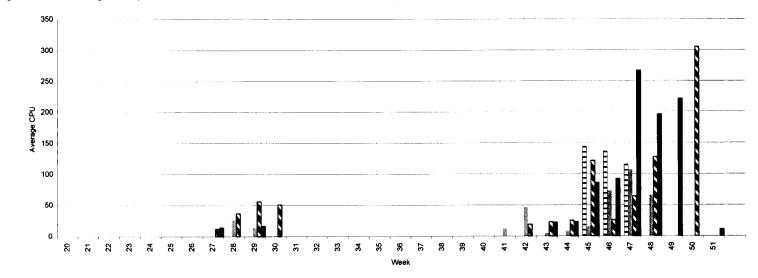
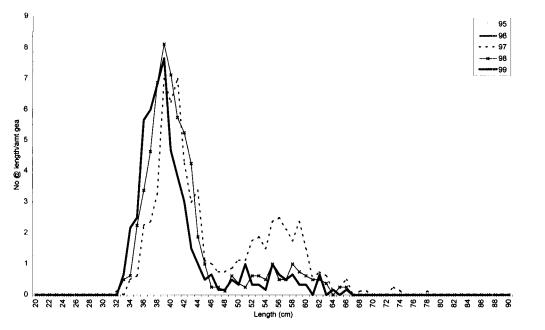


Figure 279 . Average Catch per Unit Effort for Experimental Sites, Summerford Gillnet 3 1/4 in. (Number of Fish per Net)



able 185.	Summary data for Too Good Arm 3K
	Control Sets Gillnet 3 1/4 In.

	-
Div	зк
Trip	13
Туре	F
Gear	5
Mesh Size	3.25

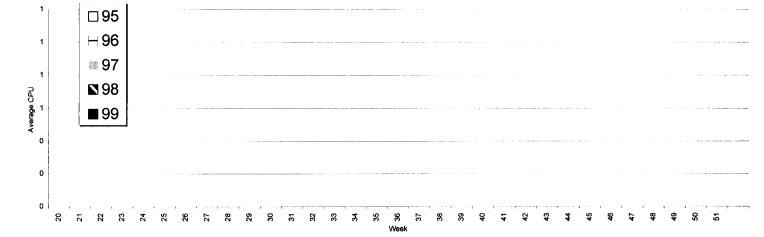
	Year				
Data	1995	1996	1997	1998	1999
Nmeas					
Ngear					
Nhauls					
Nzero					
Table 186.	Summary		Too Goo	d Arm 3	КЕхр

sets Gillnet 3 1/4 in.

Div	ЗК
Trip	13
Туре	(All)
Gear	5
Mesh Size	3.25

	Year				
Data	1995	1996	1997	1998	1999
Nmeas			544	492	325
Ngear			8	8	6
Nhauls			8	8	6
Nzero			0	0	0

Figure 280 . Relative length frequency (number at length / amount of gear) for control and experimental gears, Too Good Arm Gillnet 3 1/4 in.





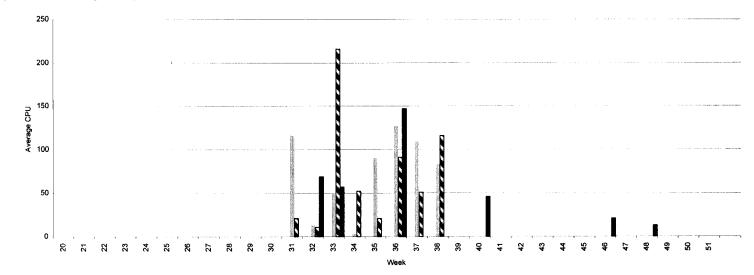
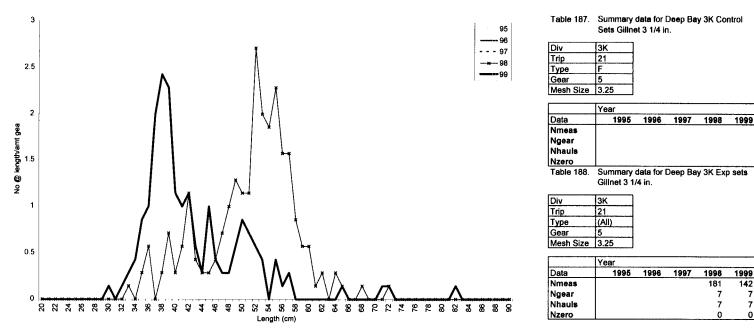
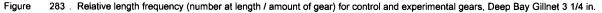
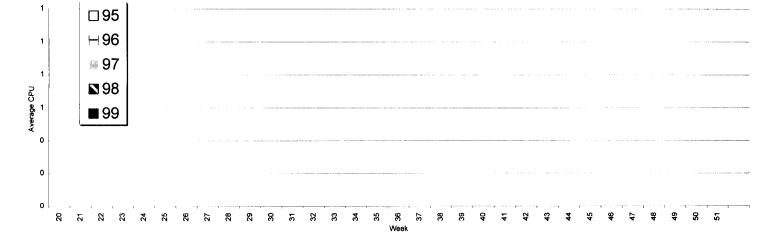


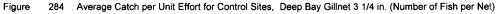
Figure 282 Average Catch per Unit Effort for Experimental Sites, Too Good Arm Gillnet 3 1/4 in. (Number of Fish per Net)

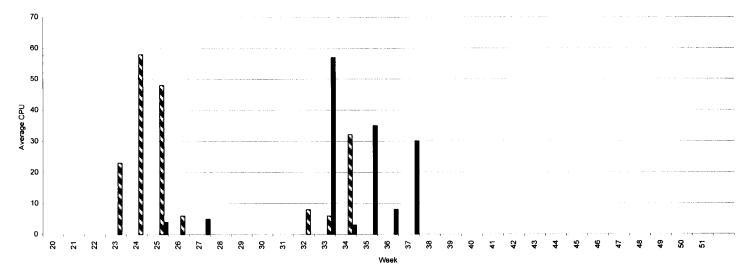


n

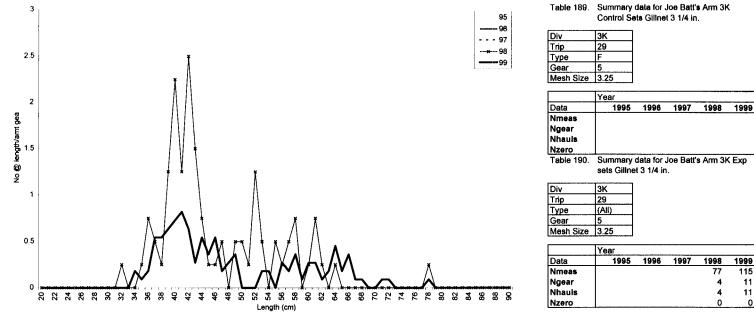


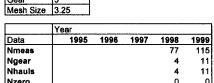


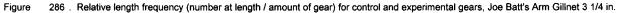


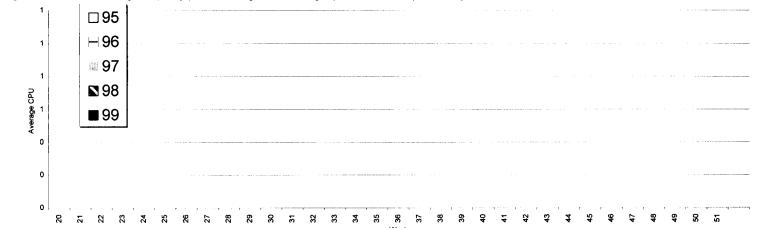




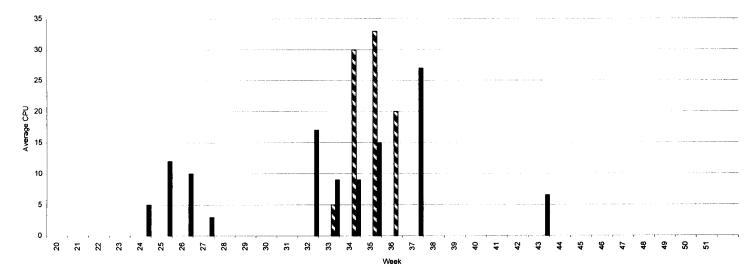




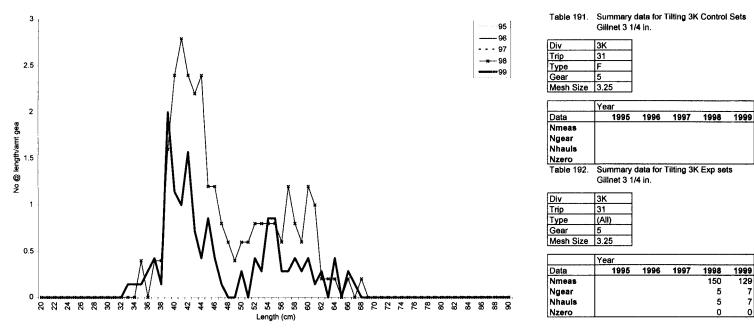


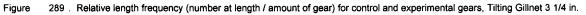






Average Catch per Unit Effort for Experimental Sites, Joe Batt's Arm Gillnet 3 1/4 in. (Number of Fish per Net) Figure 288





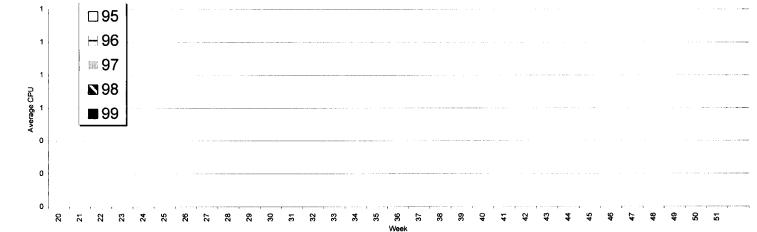
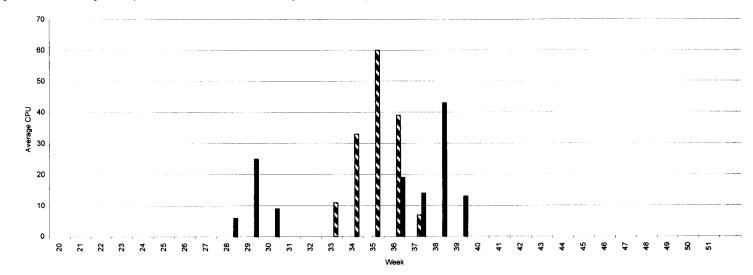
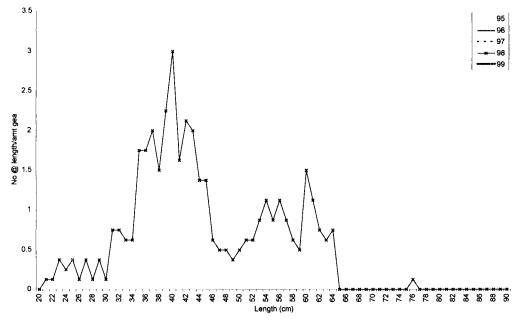


Figure Average Catch per Unit Effort for Control Sites, Tilting Gillnet 3 1/4 in. (Number of Fish per Net)



291 . Average Catch per Unit Effort for Experimental Sites, Tilting Gillnet 3 1/4 in. (Number of Fish per Net) Figure



100.	ourning				01
	Sets Giline	ot 3 1/4 ir	٦.		
Div	ЗК				
Trip	17				
Туре	F				
Gear	5				
Mesh Size	3.25				
	Year				
Data	1995	1996	1997	1998	1999
Nmeas					
Ngear					
Nhauls					
Nzero					
Table 194.	Summary	data for	Seldom 3	3K Exp s	ets
	Gillnet 3 1/	4 in.			
Div	ЗК				
Trip	17				
Туре	(All)				
Gear	5				
Mesh Size	3.25				
	Year				
Data					
	1995	1996	1997	1998	1999

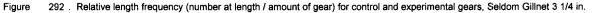
8

Ngear

Nhauls

Nzero

Table 193. Summary data for Seldom 3K Control



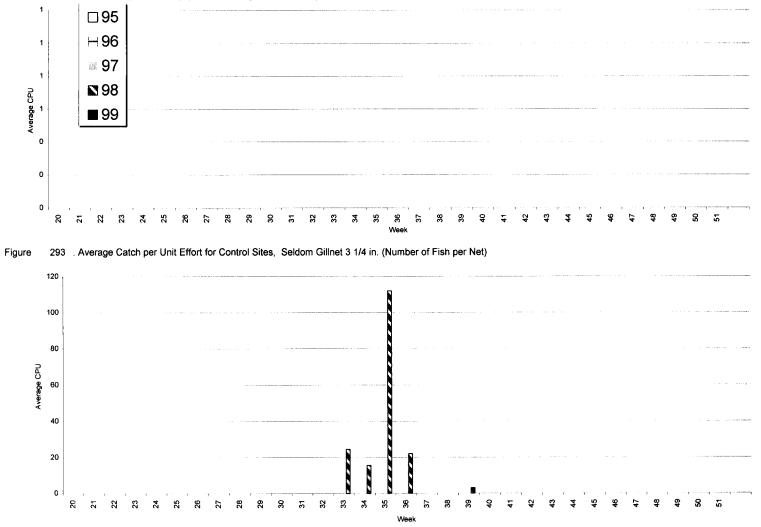
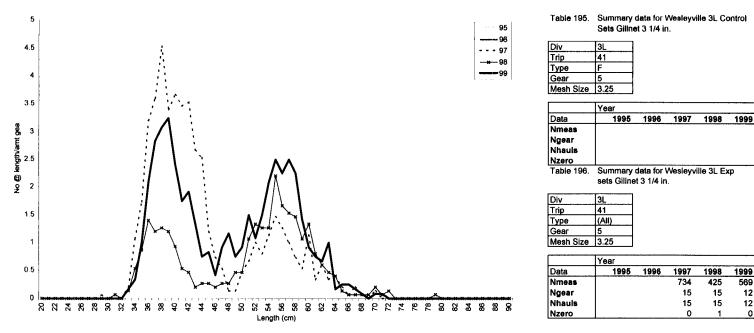
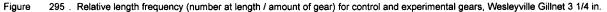


Figure 294 . Average Catch per Unit Effort for Experimental Sites, Seldom Gillnet 3 1/4 in. (Number of Fish per Net)





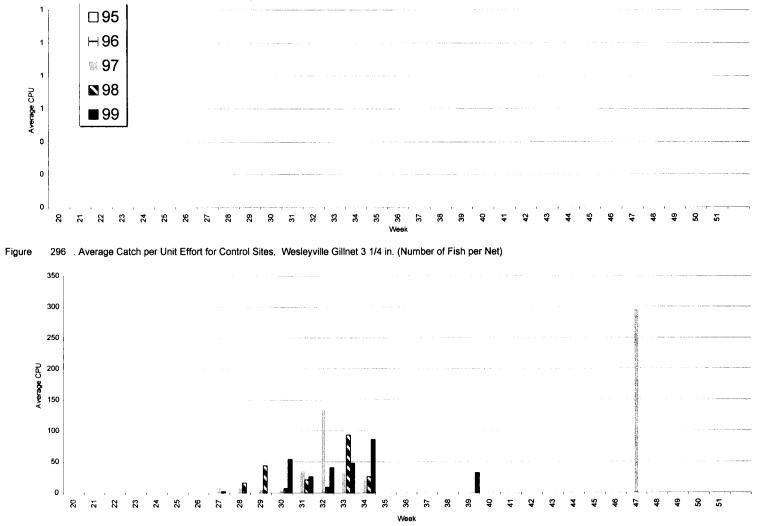
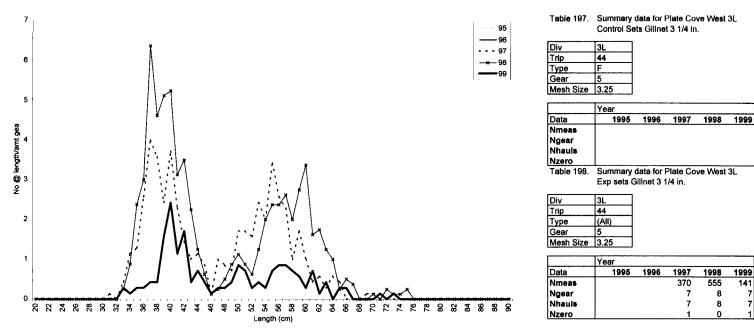
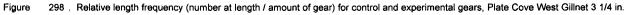
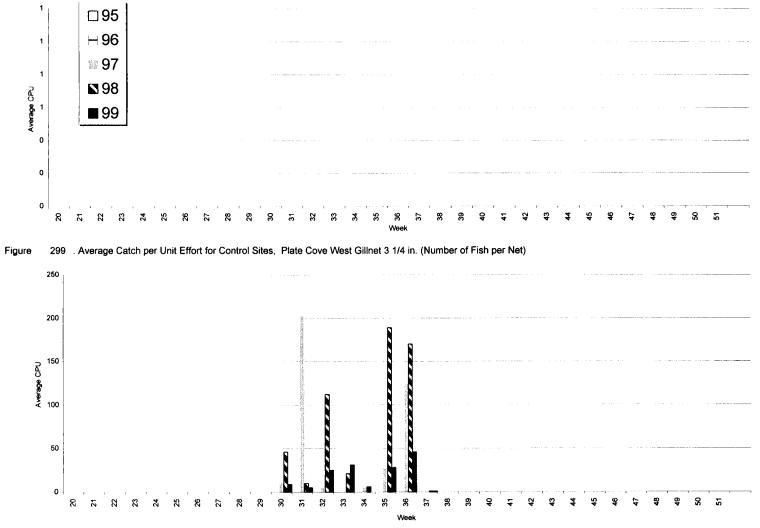


Figure 297 . Average Catch per Unit Effort for Experimental Sites, Wesleyville Gillnet 3 1/4 in. (Number of Fish per Net)

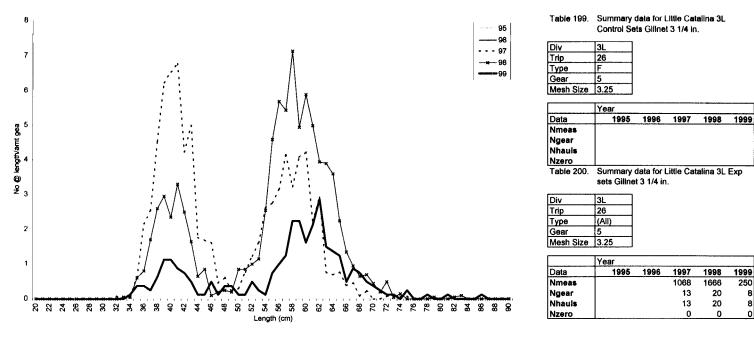


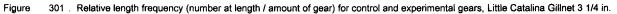
7

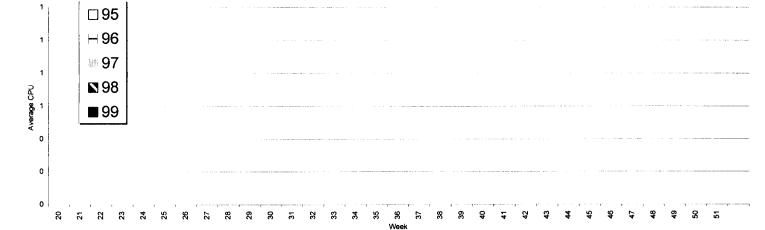




300 . Average Catch per Unit Effort for Experimental Sites, Plate Cove West Gillnet 3 1/4 in. (Number of Fish per Net) Figure









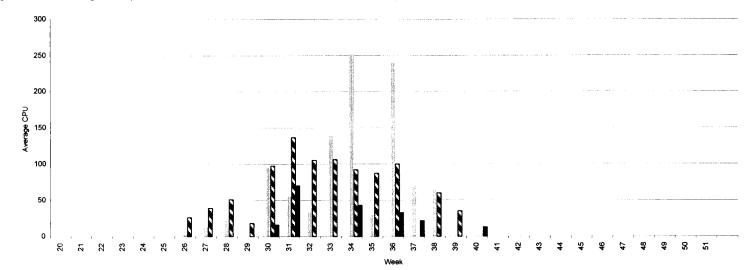


Figure 303 . Average Catch per Unit Effort for Experimental Sites, Little Catalina Gillnet 3 1/4 in. (Number of Fish per Net)

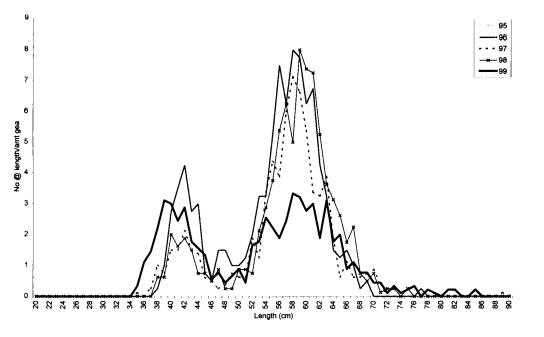


Table 201.	Summary data for Petley 3L Control Seta
	Gillnet 3 1/4 in.

Gilinet
3L
42
F
5
3.25

	Year				
Data	1995	1996	1997	1998	1999
Nmeas					
Ngear					
Nhauls					
Nzero					

Table 202. Summary data for Petley 3L Exp sets Gillnet 3 1/4 in.

Div	3L
Trip	42
Туре	(All)
Gear	5
Mesh Size	3.25

	Year				
Data	1995	1996	1997	1998	1999
Nmeas		380	573	671	588
Ngear		4	8	8	9
Nhauls		4	8	8	9
Nzero		0	0	0	0

Figure 304 . Relative length frequency (number at length / amount of gear) for control and experimental gears, Petley Gillnet 3 1/4 in.

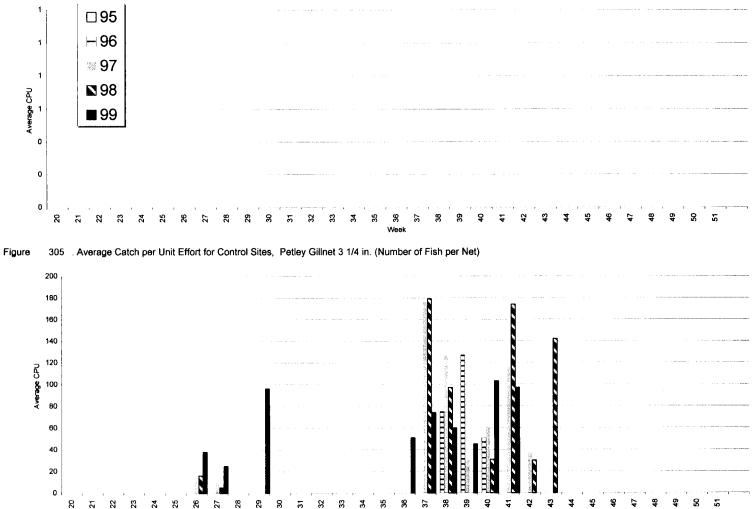


Figure 306 Average Catch per Unit Effort for Experimental Sites, Petley Gillnet 3 1/4 in. (Number of Fish per Net)

Week

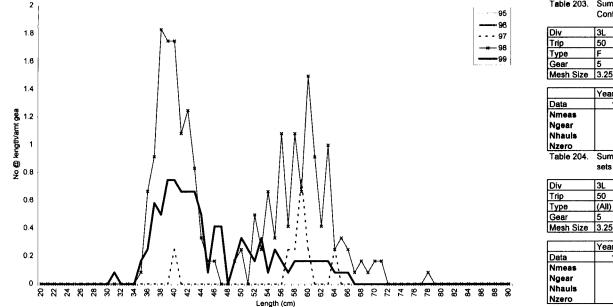


Table 203.	Summary data for Heart's Content 3L
	Control Sets Gillnet 3 1/4 in.

Div	3L
Trip	50
Туре	F
Gear	5
Mesh Size	3.25

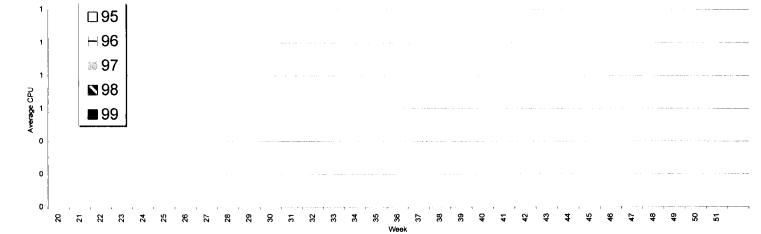
	Year				
Data	1995	1996	1997	1998	1999
Nmeas					
Ngear					
Nhauls					
Nzero					
Table 204.	Summary	data for I	Heart's C	Content 3	LExp

sets Gillnet 3 1/4 in.

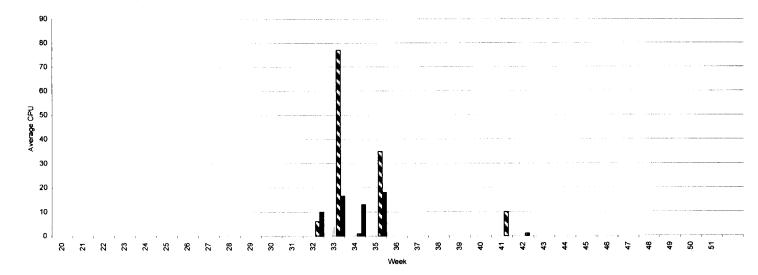
iv	3L
rip	50
уре	(All)
iear	5
lesh Size	3.25

	Year				
Data	1995	1996	1997	1998	1999
Nmeas			8	260	115
Ngear			4	12	12
Nhauls			4	12	12
Nzero			3	1	4

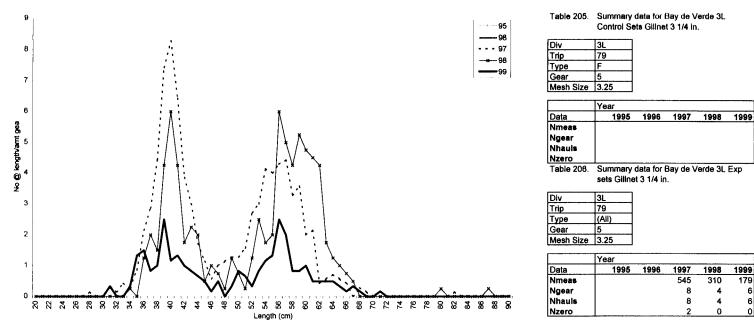
307. Relative length frequency (number at length / amount of gear) for control and experimental gears, Heart's Content Gillnet 3 1/4 in. Figure

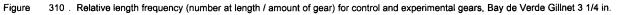


. Average Catch per Unit Effort for Control Sites, Heart's Content Gillnet 3 1/4 in. (Number of Fish per Net) Figure 308



. Average Catch per Unit Effort for Experimental Sites, Heart's Content Gillnet 3 1/4 in. (Number of Fish per Net) Figure 309





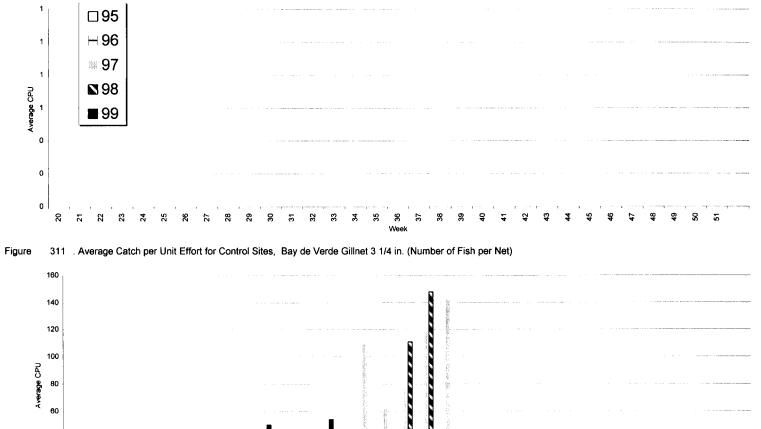


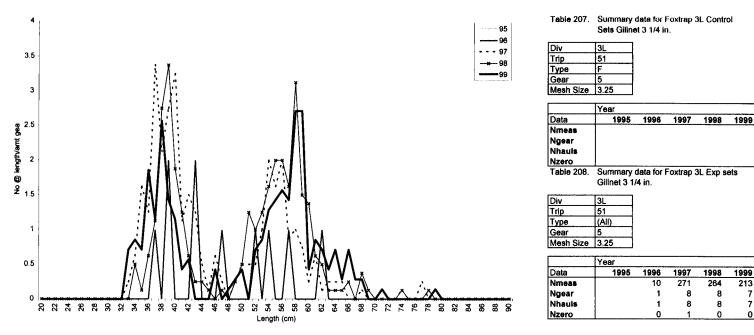
Figure 312 . Average Catch per Unit Effort for Experimental Sites, Bay de Verde Gillnet 3 1/4 in. (Number of Fish per Net)

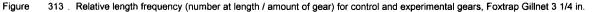
23 23 24

26 27 28

ഇ

<u>5</u> 8





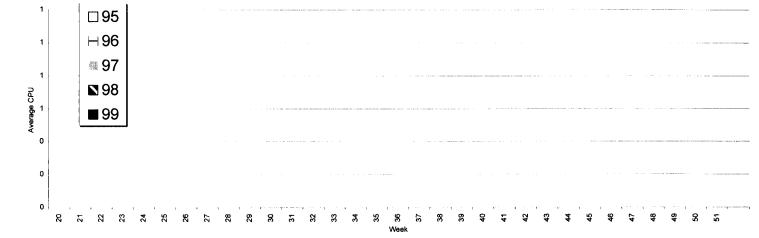
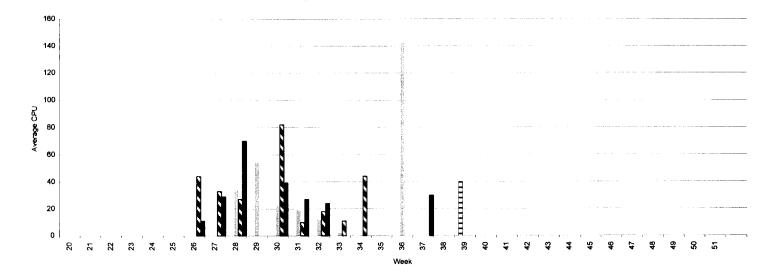
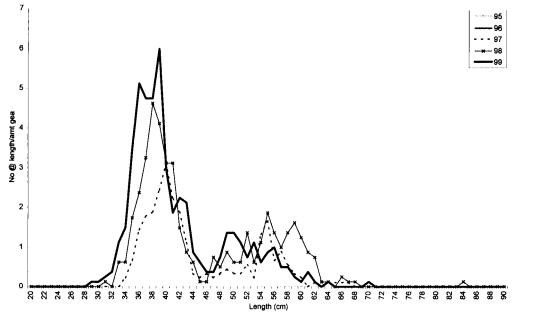


Figure 314 . Average Catch per Unit Effort for Control Sites, Foxtrap Gillnet 3 1/4 in. (Number of Fish per Net)





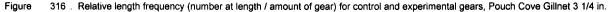


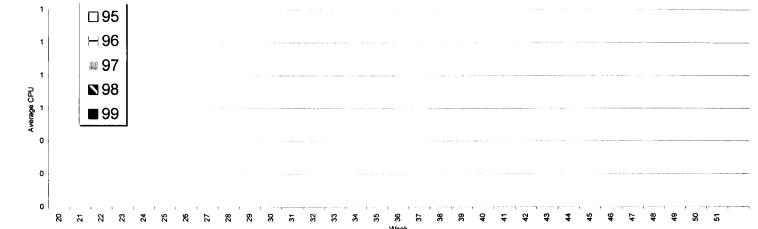
Div	3L				
Trip	61				
Туре	F				
Gear	5				
Mesh Size	3.25				
	Year				
Data	1995	1996	1997	1998	1999
Nmeas					
Ngear					
Nhauls					
Nzero					
Table 210.	Summary	data for F	Pouch C	ove 3L E	xp
	sets Gillne	t 3 1/4 in			•
			•		
Div	3L		•		
Div Trip					
and the second se	3L				
Trip	3L 61				

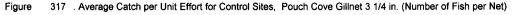
Table 209. Summary data for Pouch Cove 3L Control

Sets Gillnet 3 1/4 in.

	Year				
Data	1995	1996	1997	1998	1999
Nmeas			238	356	401
Ngear			8	8	8
Nhauls			8	8	8
Nzero			0	0	C







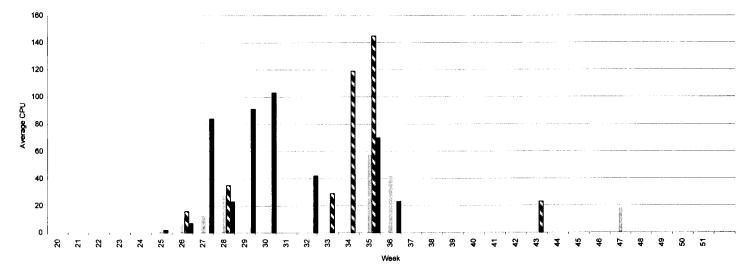
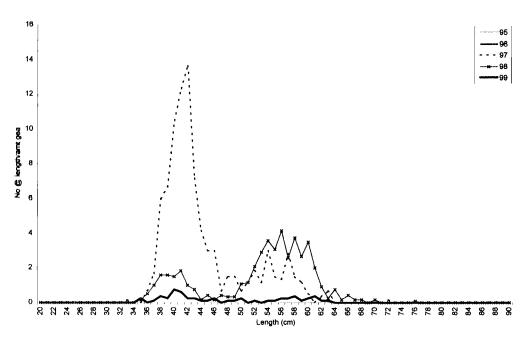


Figure 318 . Average Catch per Unit Effort for Experimental Sites, Pouch Cove Gillnet 3 1/4 in. (Number of Fish per Net)



Div	3L		
Trip	69		
Туре	F		
Gear	5	7	
Mesh Size	3.25	7	

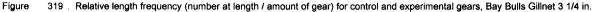
Table 211. Summary data for Bay Bulls 3L Control

Data	1995	1996	1997	1998	1999
Nmeas					
Ngear					
Nhauls					
Nzero					
Table 212.	Summary	data for l	Bay Bulls	3L Exp	sets

Gillnet 3 1/4 in.

3L
69
(All)
5
3.25

Data	Year				
	1995	1996	1997	1998	1999
Nmeas			543	569	49
Ngear			6	12	8
Nhauls			6	12	8
Nzero			0	0	1



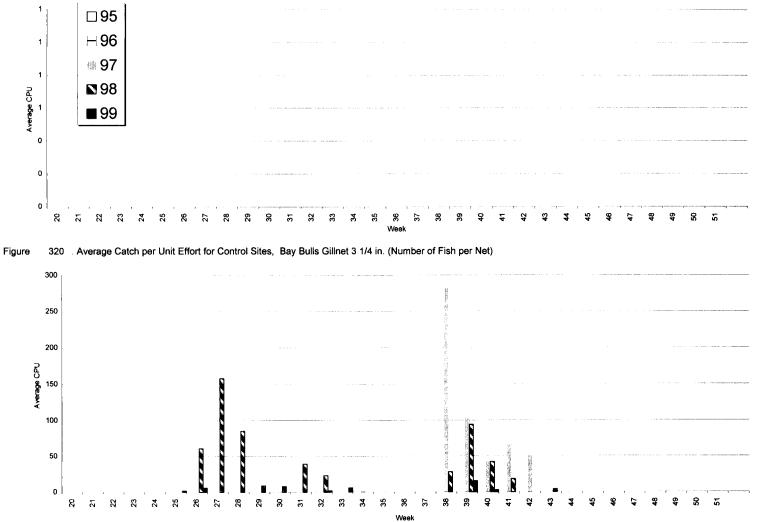


Figure 321 Average Catch per Unit Effort for Experimental Sites, Bay Bulls Gillnet 3 1/4 in. (Number of Fish per Net)

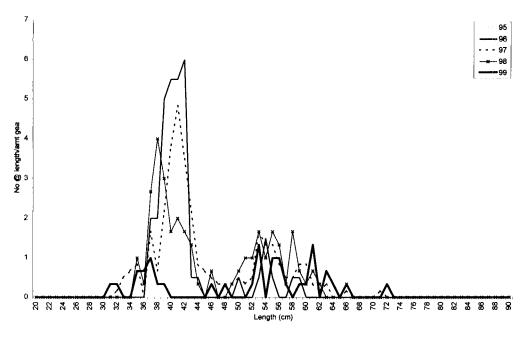


Table 213.	Summary data for Ferryland 3L Control
	Sets Gillnet 3 1/4 in.

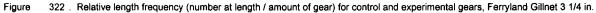
3618 0
3L
73
F
5
3.25

	Year				
Data	1995	1996	1997	1998	1999
Nmeas				91	
Ngear				2	
Nhauls				2	
Nzero				0	
Table 044	C	data faa		101 5	1 -

Table 214. Summary data for Ferryland 3L Exp sets Gillnet 3 1/4 in.

Div	3L
Trip	73
Туре	(All)
Gear	5
Mesh Size	3.25

Data	Year					
	1995	1996	1997	1998	1999	
Nmeas		62	206	4	36	
Ngear		2	6	1	3	
Nhauls		2	6	1	3	
Nzero		0	0	0	c	



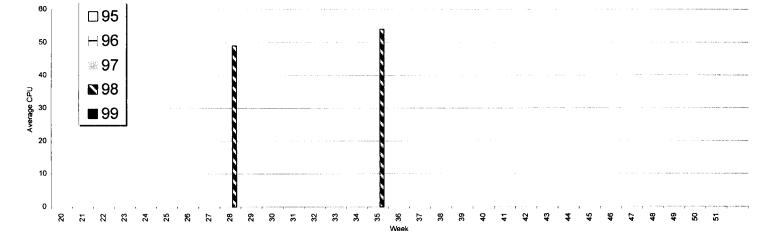


Figure 323 . Average Catch per Unit Effort for Control Sites, Ferryland Gillnet 3 1/4 in. (Number of Fish per Net)

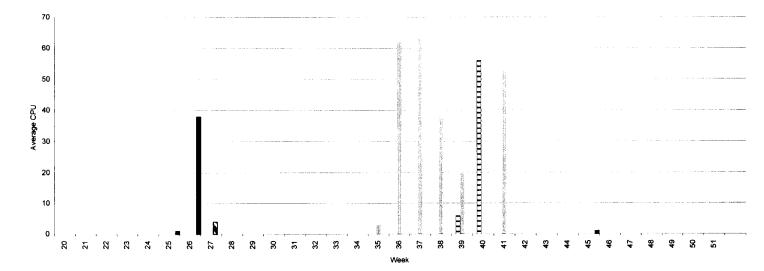
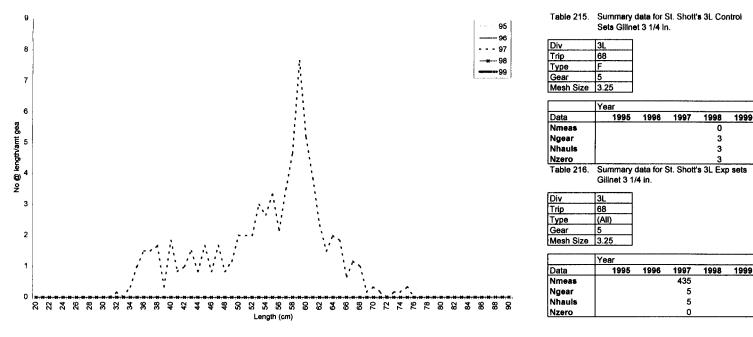
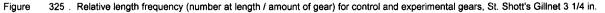


Figure 324 . Average Catch per Unit Effort for Experimental Sites, Ferryland Gillnet 3 1/4 in. (Number of Fish per Net)





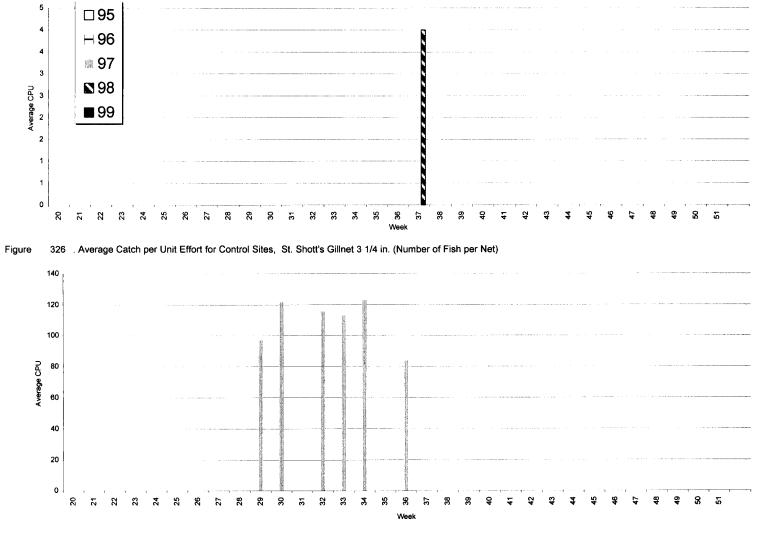
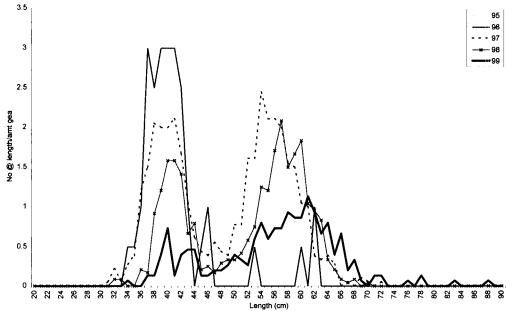


Figure 327 Average Catch per Unit Effort for Experimental Sites, St. Shott's Gillnet 3 1/4 in. (Number of Fish per Net)



Туре	F				
Gear	5				
Mesh Size	3.25				
	Year				
Data	1995	1996	1997	1998	19
Nmeas					
Ngear					
Nhauls					
Nzero					
Table 218.	Summary	data for /	Admiral's	Beach	3L
	Exp sets G	illnet 3 1	/4 in.		
Div	13L				
Div Trip	3L 28				
STATISTICS AND ADDRESS OF ADDRES					
Trip Type	28				
	28 (All)				
Trip Type Gear	28 (All) 5 3.25				
Trip Type Gear	28 (All) 5				
Trip Type Gear	28 (All) 5 3.25	1996	1997	1998	19
Trip Type Gear Mesh Size	28 (All) 5 3.25 Year	1996 47	1997 678	1998 644	19

18

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24

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14

Table 217. Summary data for Admiral's Beach 3L

Div

Trip

Ngear

Nhauls

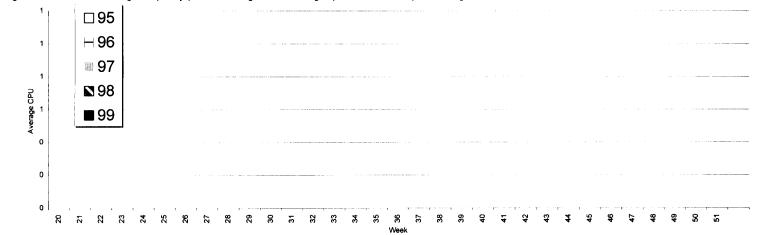
Nzero

3L

28

Control Sets Gilinet 3 1/4 in.

Figure 328 . Relative length frequency (number at length / amount of gear) for control and experimental gears, Admiral's Beach Gillnet 3 1/4 in.





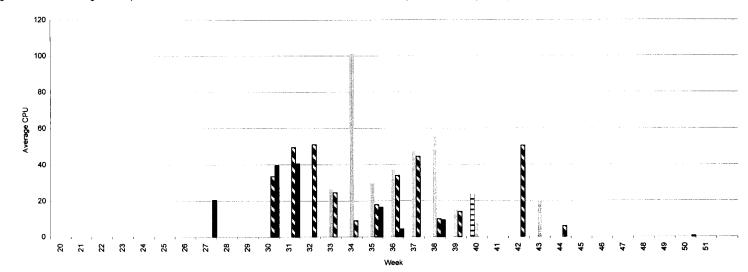
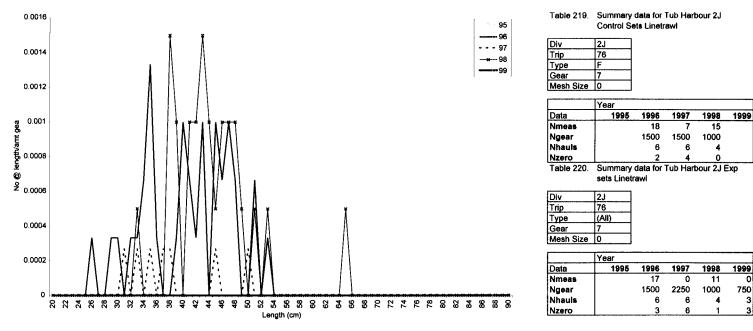


Figure 330 . Average Catch per Unit Effort for Experimental Sites, Admiral's Beach Gillnet 3 1/4 in. (Number of Fish per Net)



3



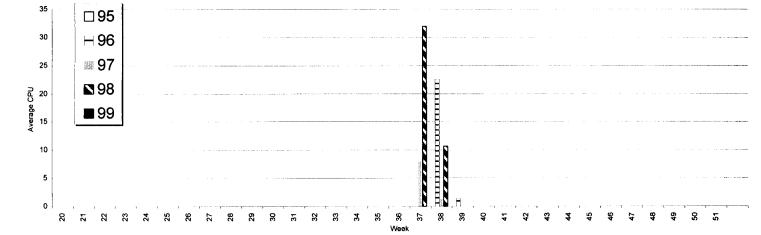


Figure 332 . Average Catch per Unit Effort for Control Sites, Tub Harbour Linetrawl (Number of Fish per 1000 hooks)

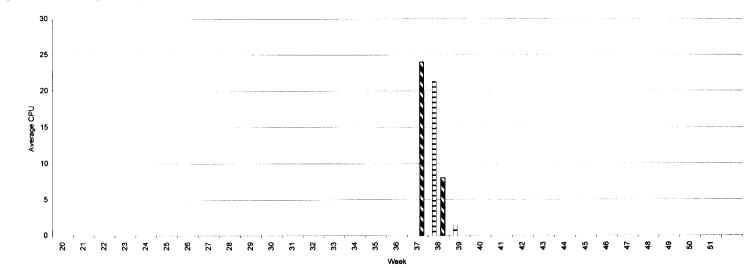
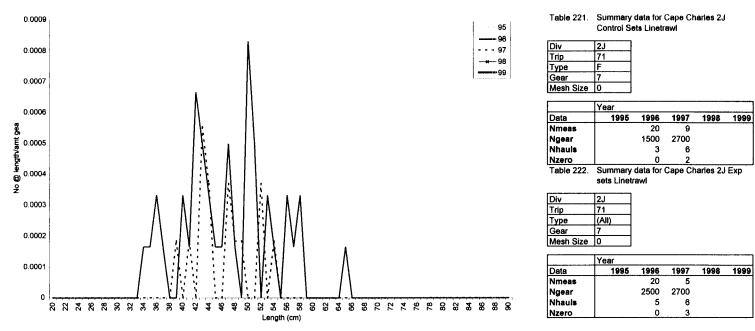
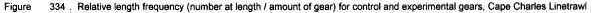


Figure 333 . Average Catch per Unit Effort for Experimental Sites, Tub Harbour Linetrawl (Number of Fish per 1000 hooks)





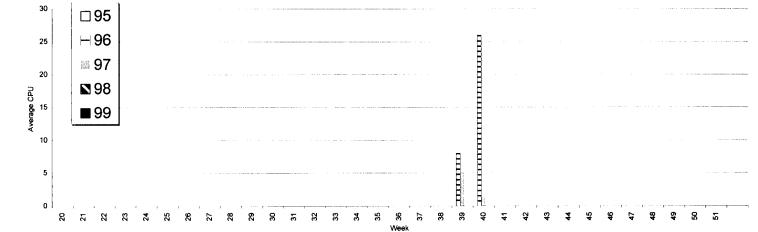
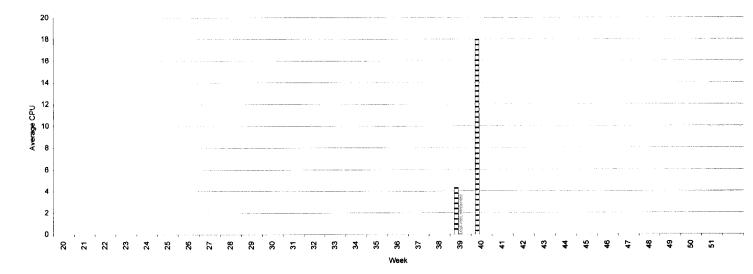
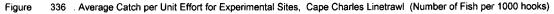


Figure 335 . Average Catch per Unit Effort for Control Sites, Cape Charles Linetrawl (Number of Fish per 1000 hooks)





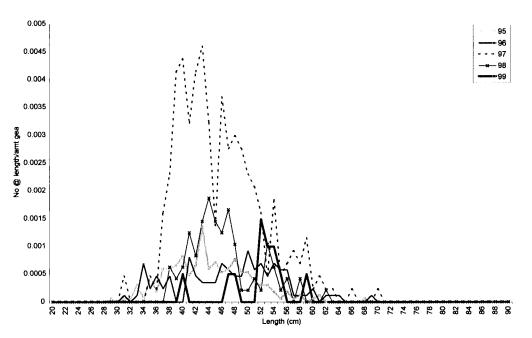


Table 223.	Summary data for Goose Cove 3K
	Control Sets Linetrawl

	Control Se
Div	3K
Trip	54
Туре	F
Gear	7
Mesh Size	0

	Year				
Data	1995	1996	1997	1998	1999
Nmeas	106	49	219	79	12
Ngear	8600	4000	3340	4800	2000
Nhauls	30	16	12	16	8
Nzero	15	4	4	5	3
Table 224.	Summary	data for	Goose C	ove 3K	Exp

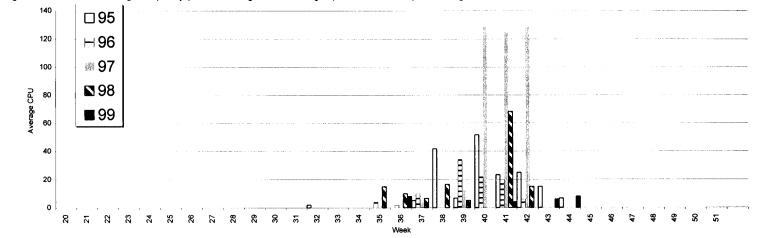
Summary data for Goose Cove 3K Exp sets Linetrawl

3K	

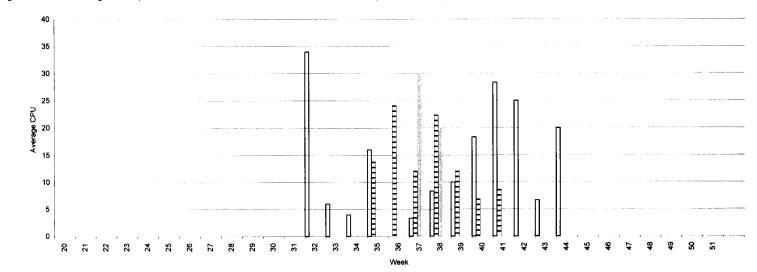
Div	3K
Trip	54
Туре	(All)
Gear	7
Mesh Size	0

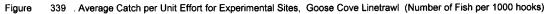
	Year				
Data	1995	1996	1997	1998	1999
Nmeas	102	58	25		
Ngear	8300	4640	1000		
Nhauls	30	16	4		
Nzero	9	5	0		

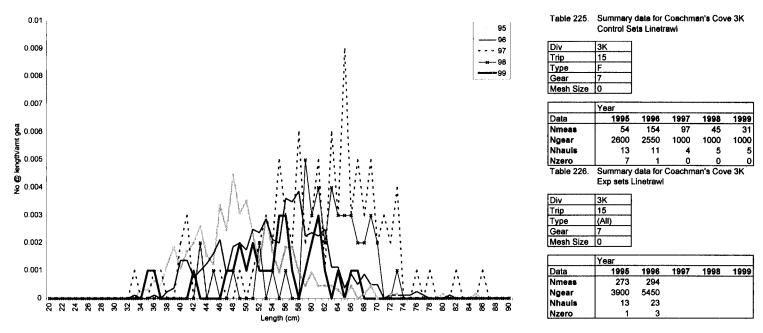
337 . Relative length frequency (number at length / amount of gear) for control and experimental gears, Goose Cove Linetrawl Figure

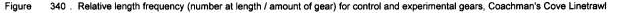


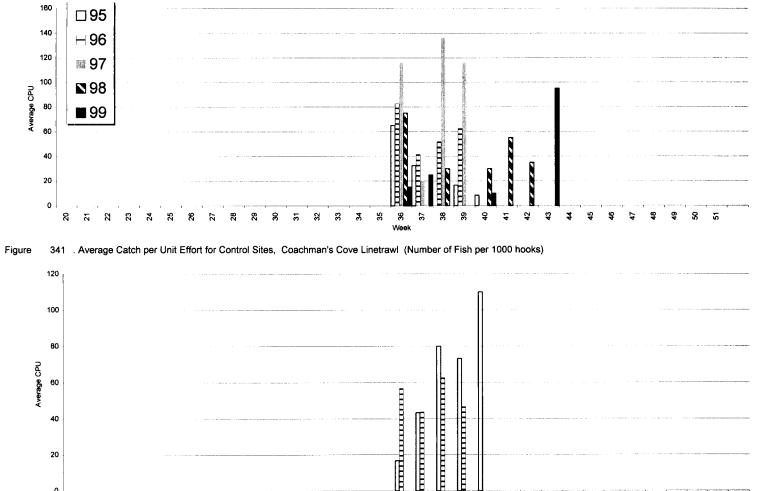
. Average Catch per Unit Effort for Control Sites, Goose Cove Linetrawl (Number of Fish per 1000 hooks) Figure 338













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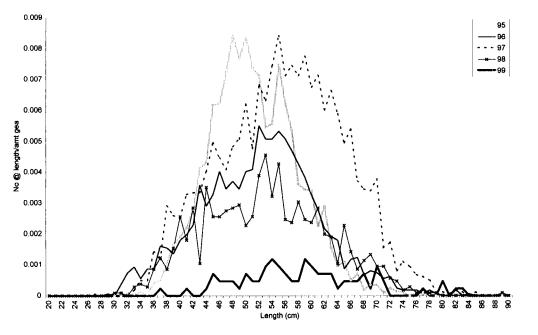


Table 227	Summary data for Ming's Bight 3K Control
	Sets Linetrawl

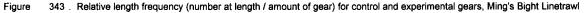
	Sets Lin
Div	ЗК
Trip	20
Туре	F
Gear	7
Mesh Size	0

	Year				
Data	1995	1996	1997	1998	1999
Nmeas	1054	622	891	181	14
Ngear	9950	6300	6650	3150	700
Nhauls	28	18	19	9	2
Nzero	0	0	0	0	0
Table 228	Summon	data for	Mina's P	ight 3K	Evn.

 Summary data for ming s Bight 3K E. sets Linetrawi

3K
20
(All)
7
0

	Year				
Data	1995	1996	1997	1998	1999
Nmeas	1541	1097	2091	697	66
Ngear	9950	9800	9450	7350	3500
Nhauls	28	28	27	21	10
Nzero	0	0	0	0	c



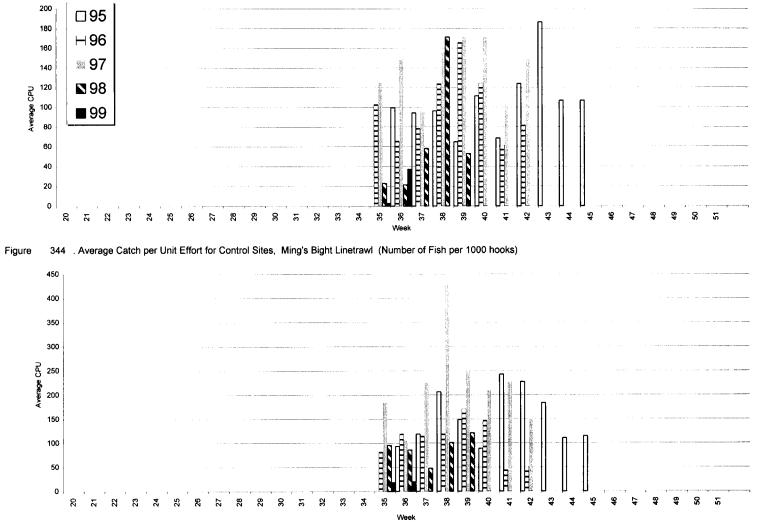


Figure 345 Average Catch per Unit Effort for Experimental Sites, Ming's Bight Linetrawl (Number of Fish per 1000 hooks)

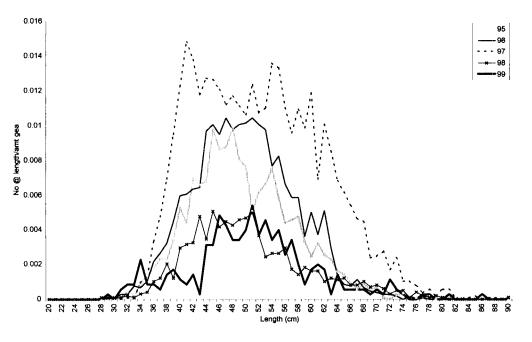


Table 229.	Summary data for La Scie 3K Control
	Sets Linetrawi

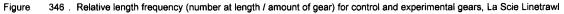
	Sets Filler
Div	3K
Trip	66
Туре	F
Gear	7
Mesh Size	0

	Year				
Data	1995	1996	1997	1998	1999
Nmeas	808	1119	1855	345	155
Ngear	3850	4900	5250	3500	1750
Nhauis	11	14	15	10	5
Nzero	0	0	0	0	0
Table 230.	Summary data for La Scie 3K Exp sets				

Linetrawl

Div	ЗК
Trip	66
Туре	(All)
Gear	7
Mesh Size	0

	Year				
Data	1995	1996	1997	1998	1999
Nmeas	1108	1009	1793	552	139
Ngear	7900	5600	5250	6300	1750
Nhauls	25	16	15	18	5
Nzero	0	0	0	0	0



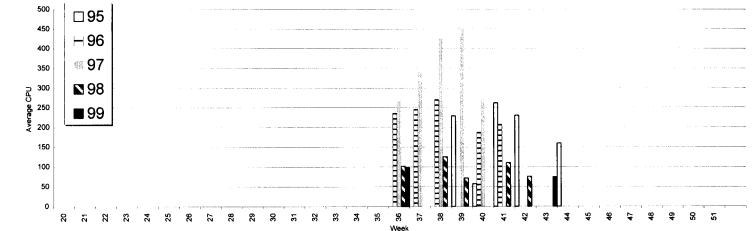


Figure 347 . Average Catch per Unit Effort for Control Sites, La Scie Linetrawl (Number of Fish per 1000 hooks)

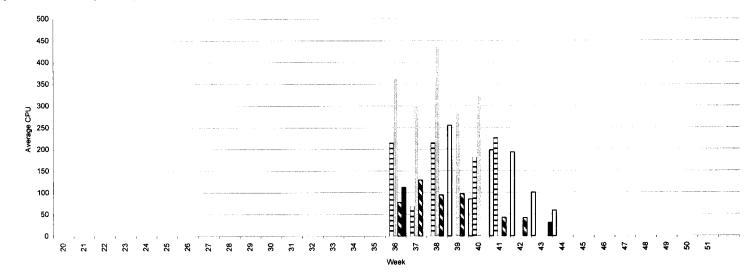


Figure 348 Average Catch per Unit Effort for Experimental Sites, La Scie Linetrawl (Number of Fish per 1000 hooks)

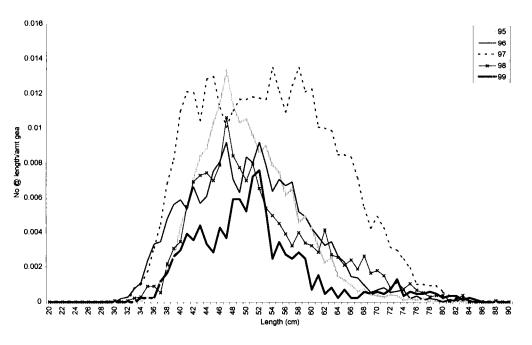


Table 231	Summary data for Shoe Cove 3K Control
	Sets Linetrawi

	2010 41
Div	ЗK
Trip	35
Туре	F
Gear	7
Mesh Size	0

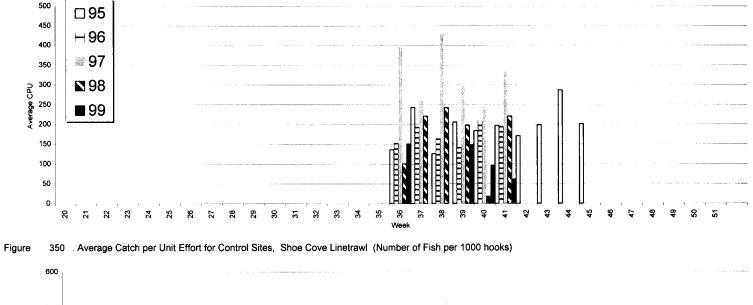
	Year				
Data	1995	1996	1997	1998	1999
Nmeas	2338	1268	2351	1161	413
Ngear	12000	7200	7200	6850	3850
Nhauls	30	18	18	18	9
Nzero	0	0	0	0	0
Table 232.	Summary	data for	Shoe Co	ve 3K E	XD

sets Linetrawl

Div	зк
Trip	35
Туре	(AII)
Gear	7
Mesh Size	0

	Year				
Data	1995	1996	1997	1998	1999
Nmeas	2285	1467	2824	1069	449
Ngear	12000	6800	6650	6400	4550
Nhauls	30	17	18	18	13
Nzero	0	0	0	1	0





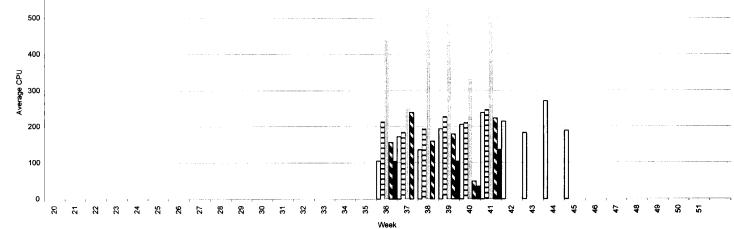


Figure 351 Average Catch per Unit Effort for Experimental Sites, Shoe Cove Linetrawl (Number of Fish per 1000 hooks)

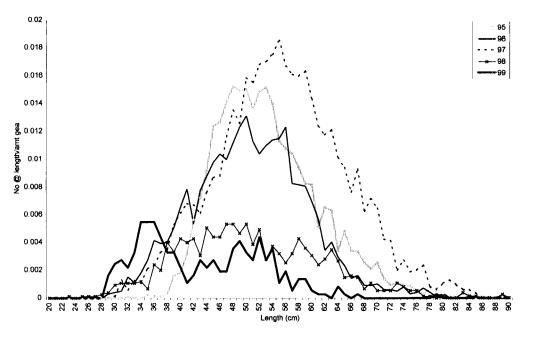


Table 233. Summary data for Durrell 3K Control Seta Linetrawi

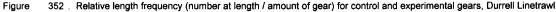
Lineta
ЗК
70
F
7
0

	Year				
Data	1995	1996	1997	1998	1999
Nmeas	1842	963	1071	162	126
Ngear	6900	5100	3000	1700	1500
Nhauis	18	17	10	6	5
Nzero	0	0	0	1	0
Table 234	Summary	data for	Durrell 3	K Exn se	ats

Linetrawl

Div	ЗК
Trip	70
Туре	(All)
Gear	7
Mesh Size	0

	Year				
Data	1995	1996	1997	1998	1999
Nmeas	2003	1588	2417	791	200
Ngear	6500	4800	5500	5800	2150
Nhauls	17	31	21	24	9
Nzero	0	0	0	2	0



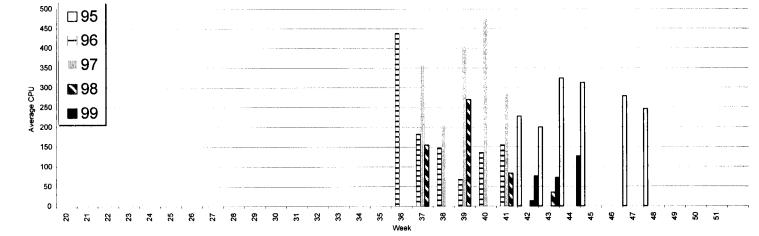


Figure 353 . Average Catch per Unit Effort for Control Sites, Durrell Linetrawl (Number of Fish per 1000 hooks)

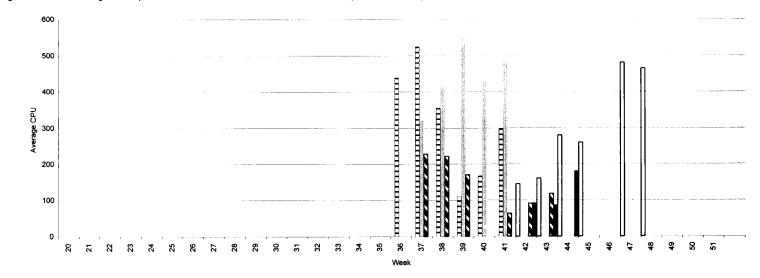


Figure 354 Average Catch per Unit Effort for Experimental Sites, Durrell Linetrawl (Number of Fish per 1000 hooks)

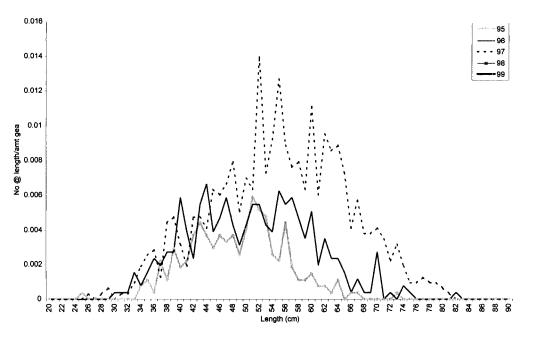


Table 235.	Summary data for Deep Bay 3K Control
	Sets Linetrawl

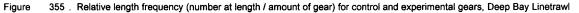
Div	ЗK
Trip	21
Туре	F
Gear	7
Mesh Size	0

	Year				
Data	1995	1996	1997	1998	1999
Nmeas	132	105	288		
Ngear	1350	900	1050		
Nhauls	9	6	7		
Nzero	0	0	0		
Table 236.	Summary	data for l	Deep Ba	y 3K Ex	p sets

Linetrawl

Div	3K
Trip	21
Туре	(All)
Gear	7
Mesh Size	0

	Year				
Data	1995	1996	1997	1998	1999
Nmeas	84	238	495		
Ngear	1350	1650	2100		
Nhauls	9	11	14		
Nzero	1	0	2		



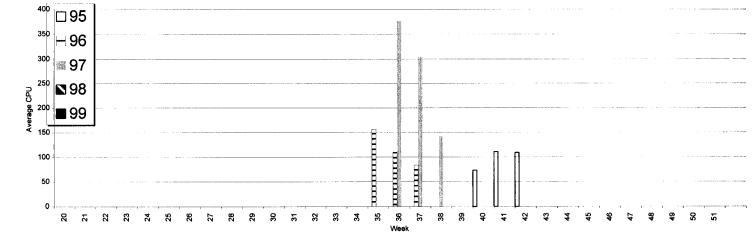


Figure 356 Average Catch per Unit Effort for Control Sites, Deep Bay Linetrawl (Number of Fish per 1000 hooks)

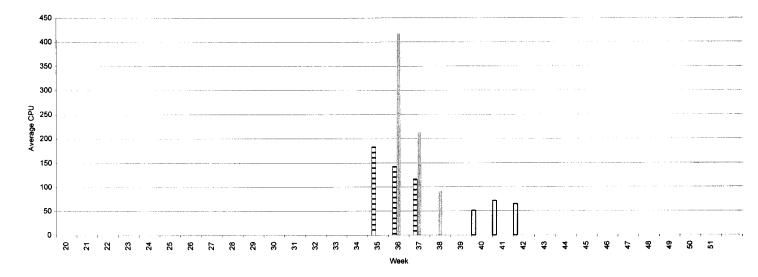
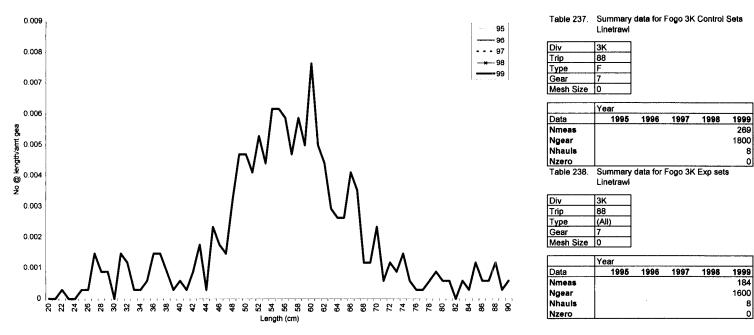


Figure 357 . Average Catch per Unit Effort for Experimental Sites, Deep Bay Linetrawl (Number of Fish per 1000 hooks)





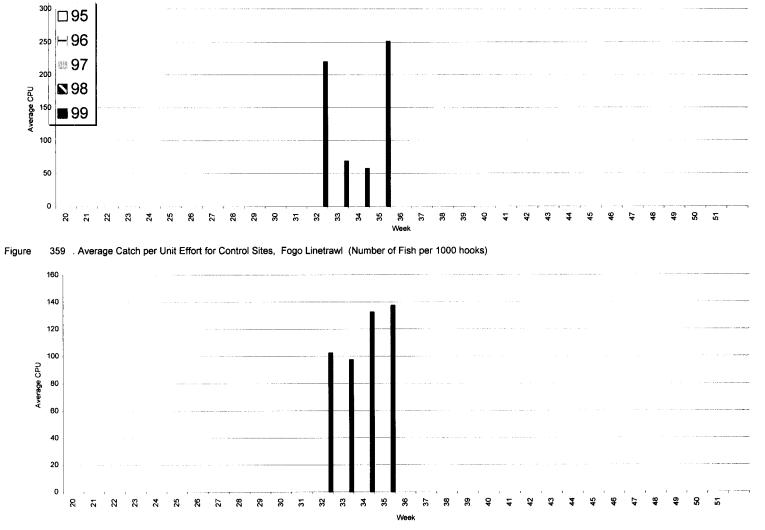


Figure 360 Average Catch per Unit Effort for Experimental Sites, Fogo Linetrawl (Number of Fish per 1000 hooks)

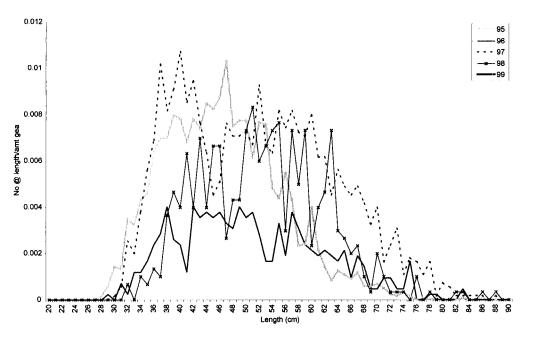


Table 239.	Summary data for Joe Batt's Arm 3K
	Control Sets Linetrawl

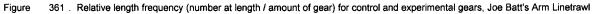
Div	зк
Trip	29
Туре	F
Gear	7
Mesh Size	0

	Year				
Data	1995	1996	1997	1998	1999
Nmeas	1310	280	713	262	
Ngear	6000	2700	2750	1500	
Nhauls	20	9	11	6	
Nzero	0	1	0	0	
Table 240.	Summary		Joe Batt	s Arm 3	< Exp

sets Linetrawl

Div	ЗK
Trip	29
Туре	(All)
Gear	7
Mesh Size	0

	Year				
Data	1995	1996	1997	1998	1999
Nmeas	1067	143	778	234	
Ngear	6000	1500	2750	1500	
Nhauls	20	5	11	6	
Nzero	0	0	0	0	



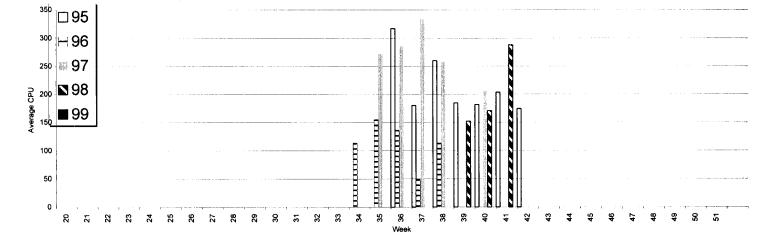
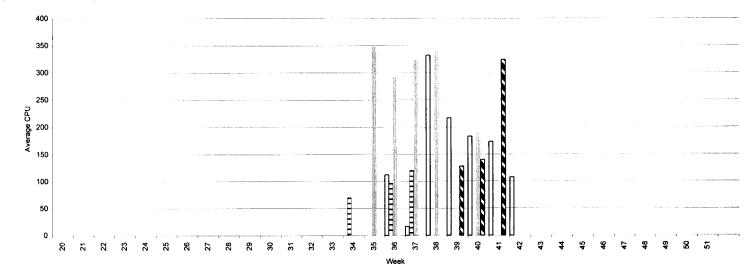
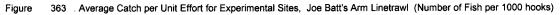


Figure 362 Average Catch per Unit Effort for Control Sites, Joe Batt's Arm Linetrawi (Number of Fish per 1000 hooks)





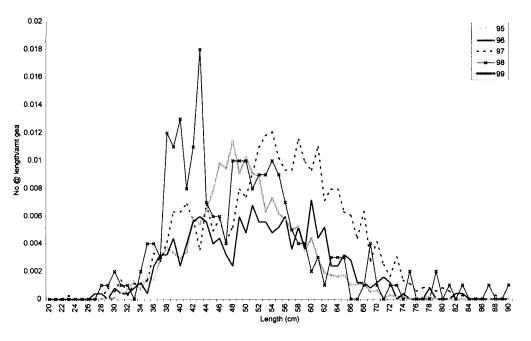


Table 241.	Summary data for Tilting 3K Control	I Sets
	Linetrawl	

	Linetrawi
Div	ЗК
Trip	31
Туре	F
Gear	7
Mesh Size	0

	Year				
Data	1995	1996	1997	1998	1999
Nmeas	502	104	412	139	
Ngear	5000	750	1210	500	
Nhauls	17	3	5	2	
Nzero	0	0	0	0	
Table 242	Summany	data for	Tilting 3	(Evo an	to

e 242. Summary data for Tilting 3K Exp sets Linetrawl

Div	зк
Trip	31
Туре	(All)
Gear	7
Mesh Size	0

	Year				
Data	1995	1996	1997	1998	1999
Nmeas	1532	270	571	102	
Ngear	6625	1750	2430	500	
Nhauls	24	7	10	2	
Nzero	1	0	0	0	



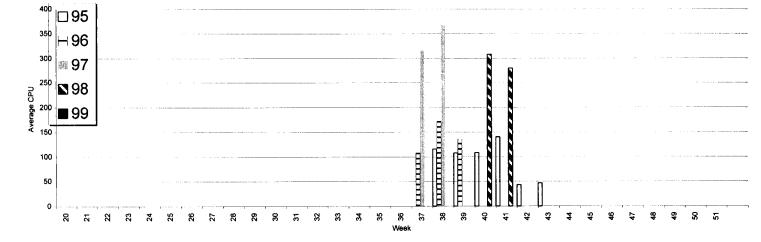
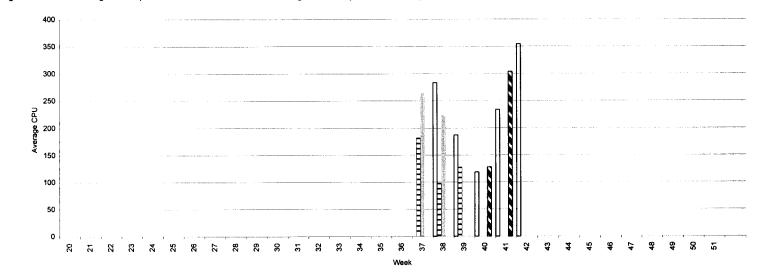


Figure 365 . Average Catch per Unit Effort for Control Sites, Tilting Linetrawl (Number of Fish per 1000 hooks)





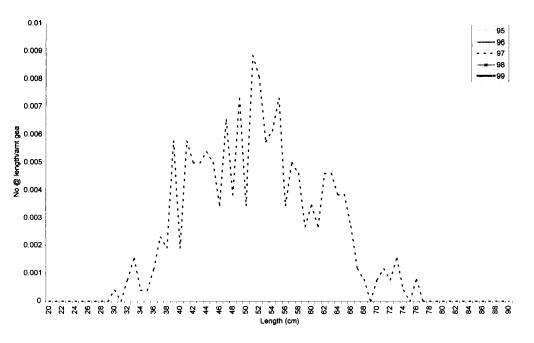


Table 243.	Summary data for Seldom 3K Control
	Sets Linetrawl

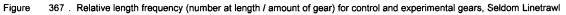
Div	3K
Trip	17
Туре	F
Gear	7
Mesh Size	0

	Year				
Data	1995	1996	1997	1998	1999
Nmeas	1		192		
Ngear	1		600		
Nhauls	1		3		
Nzero			0		
Table 244.	Summary	data for	Seldom	3K Exp s	sets

Linetrawl

Div	ЗK
Trip	17
Туре	(All)
Gear	7
Mesh Size	0

	Year				
Data	1995	1996	1997	1998	1999
Nmeas			204		
Ngear			800		
Nhauls			4		
Nzero			0		



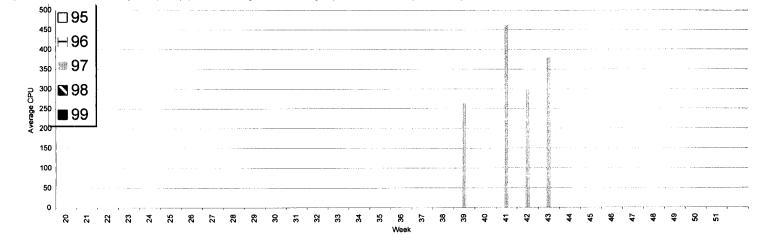


Figure 368 . Average Catch per Unit Effort for Control Sites, Seldom Linetrawl (Number of Fish per 1000 hooks)

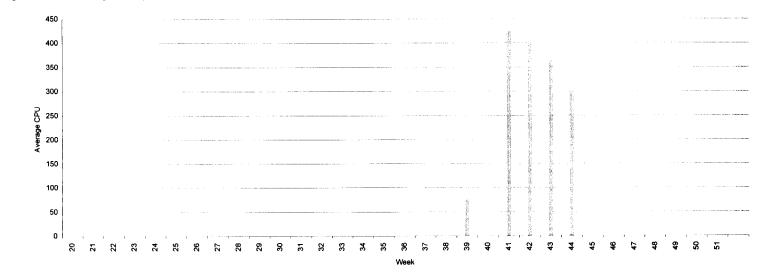


Figure 369 Average Catch per Unit Effort for Experimental Sites, Seldom Linetrawl (Number of Fish per 1000 hooks)

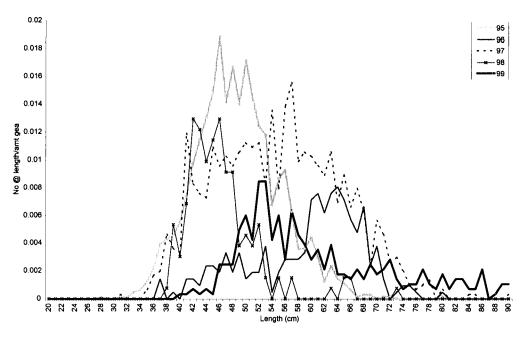


Table 245.	Summary data for Aspen Cove 3K
	Control Sets Linetrawl

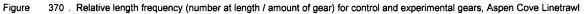
	Control 3
Div	ЗК
Trip	33
Туре	F
Gear	7
Mesh Size	0

	Year				
Data	1995	1996	1997	1998	1999
Nmeas	917	74	352	51	150
Ngear	3150	900	1200	470	1050
Nhauls	19	5	8	3	6
Nzero	0	0	0	0	0
Toble 246	Summon	data for	Annon C	aug 21/ 1	=

e 246. Summary data for Aspen Cove 3K Exp sets Linetrawt

Div	3K
Trip	33
Туре	(All)
Gear	7
Mesh Size	0

	Year				
Data	1995	1996	1997	1998	1999
Nmeas	692	170	607	107	192
Ngear	3200	1200	1820	840	1775
Nhauls	20	7	10	5	11
Nzero	0	1	0	0	0



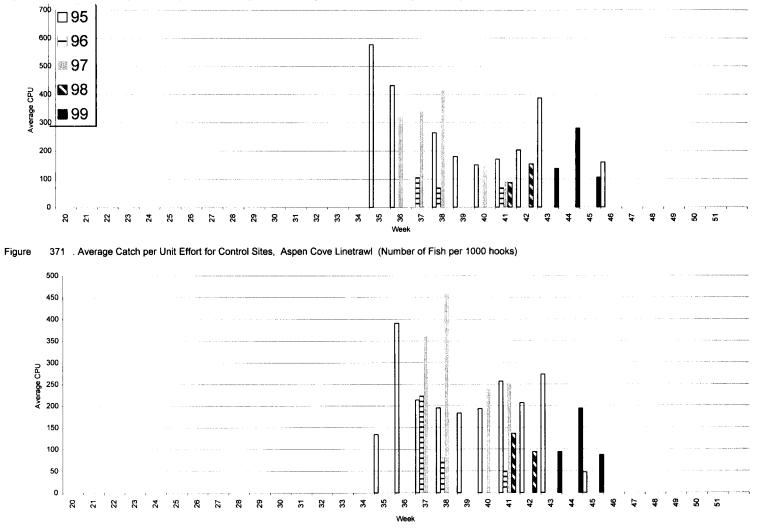


Figure 372 . Average Catch per Unit Effort for Experimental Sites, Aspen Cove Linetrawl (Number of Fish per 1000 hooks)

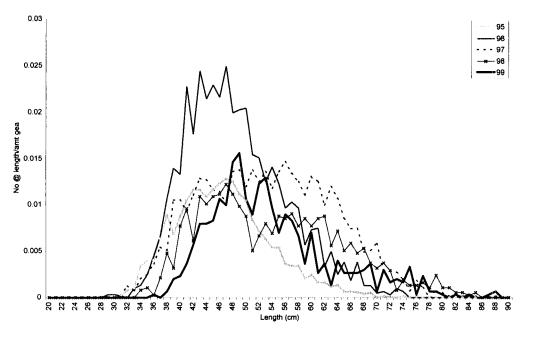


Table 247.	Summary data for Lumaden 3K Control
	Sets Linetrawl

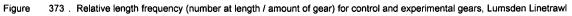
	Sets Line
Div	ЗК
Trip	37
Туре	F
Gear	7
Mesh Size	0

	Year				
Data	1995	1996	1997	1998	1999
Nmeas	1141	1156	1061	569	339
Ngear	6750	3000	2750	2000	1500
Nhauls	27	12	11	8	6
Nzero	0	0	0	0	0
Table 248	Summary	data for	lumsder	3K Exn	sets

Linetrawl

Div	3K
Trip	37
Туре	(All)
Gear	7
Mesh Size	0

	Year				
Data	1995	1996	1997	1998	1999
Nmeas	1790	1352	1094	471	355
Ngear	6750	3000	2750	1750	1500
Nhauls	27	12	11	7	6
Nzero	0	0	0	0	0



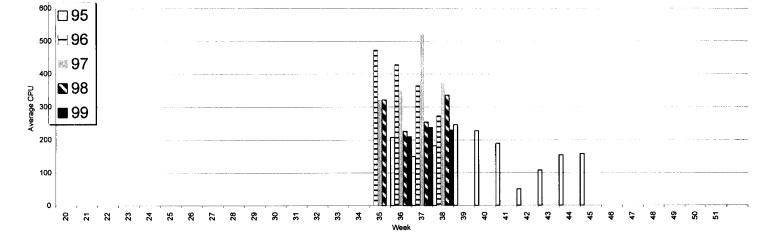


Figure 374 . Average Catch per Unit Effort for Control Sites, Lumsden Linetrawl (Number of Fish per 1000 hooks)

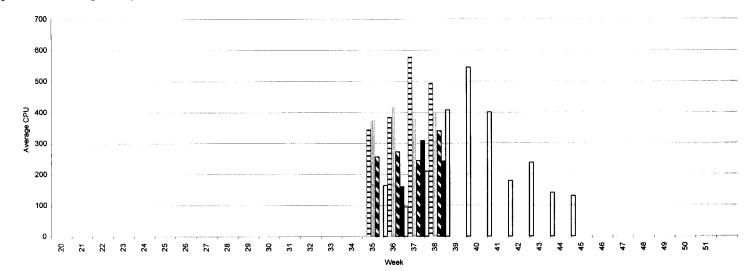


Figure 375 . Average Catch per Unit Effort for Experimental Sites, Lumsden Linetrawl (Number of Fish per 1000 hooks)

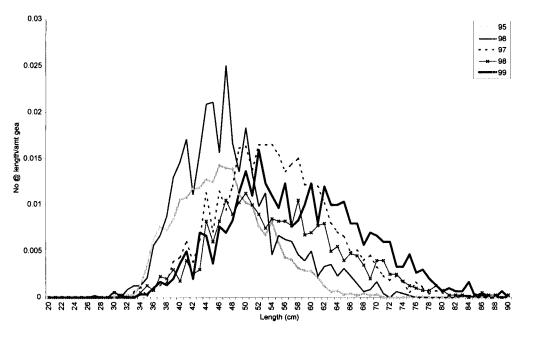


Table 249.	Summary data for	Wesleyville 3L Control
	Sets Linetrawi	

0000 1
3L
41
F
7
0

	Year				
Data	1995	1996	1997	1998	1999
Nmeas	1616	598	1113	590	545
Ngear	6600	2500	2750	2000	1500
Nhauls	22	10	11	8	6
Nzero	0	0	0	0	0
Table 250	Summary	data for	Weslevy	ille 3L E	vn -

 Summary data for Wesleyville 3L Es sets Linetrawi

Div	3L
Trip	41
Туре	(All)
Gear	7
Mesh Size	0

	Year				
Data	1995	1996	1997	1998	1999
Nmeas	1437	960	758	356	406
Ngear	6600	2280	2500	2000	1500
Nhauls	22	10	10	8	6
Nzero	0	0	0	0	(



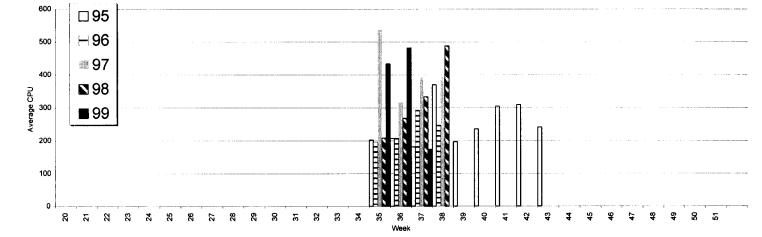
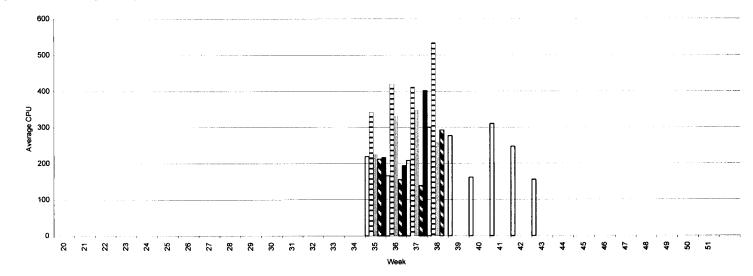
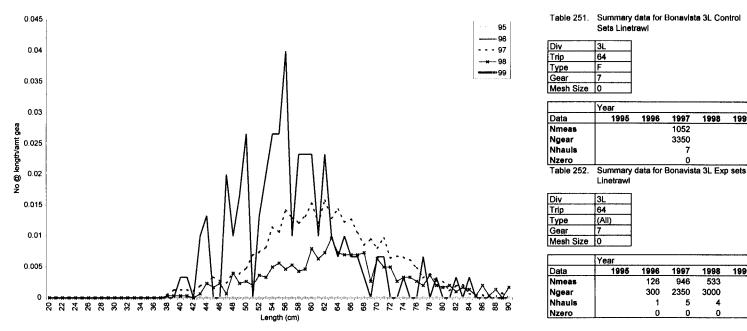


Figure 377 Average Catch per Unit Effort for Control Sites, Wesleyville Linetrawi (Number of Fish per 1000 hooks)

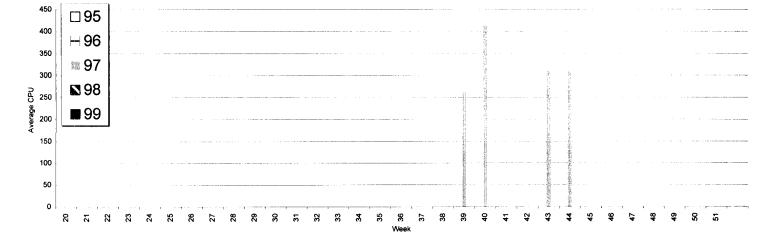




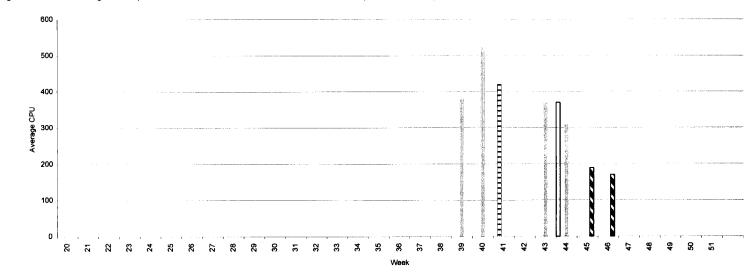


1999





. Average Catch per Unit Effort for Control Sites, Bonavista Linetrawl (Number of Fish per 1000 hooks) Figure 380



381 . Average Catch per Unit Effort for Experimental Sites, Bonavista Linetrawl (Number of Fish per 1000 hooks) Figure

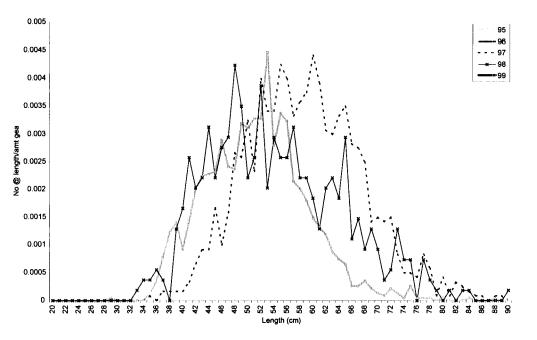


Table 253.	Summary data for Heart's Content 3L
	Control Sets Linetrawl

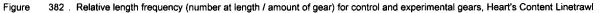
	Control G
Div	3L
Trip	50
Туре	F
Gear	7
Mesh Size	0

	Year				
Data	1995	1996	1997	1998	1999
Nmeas	529		478	186	
Ngear	11200		6000	2718	
Nhauls	28		12	6	
Nzero	0		0	0	
Table OFA	O	d = 4 = 4 = =	11	Sec. 4	

Table 254. Summary data for Heart's Content 3L Exp sets Linetrawl

Div	3L
Trip	50
Туре	(All)
Gear	7
Mesh Size	0

	Year				
Data	1995	1996	1997	1998	1999
Nmeas	933		591	251	<u>.</u>
Ngear	11600		6000	2706	
Nhauls	29		12	12	
Nzero	0		0	1	



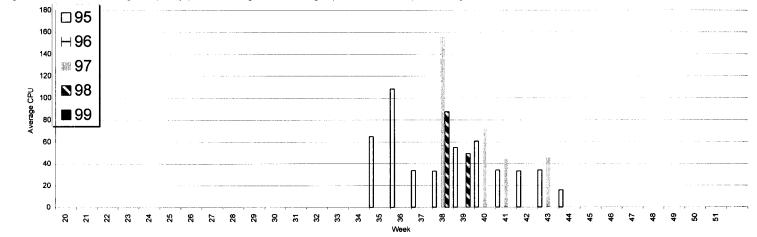


Figure 383 Average Catch per Unit Effort for Control Sites, Heart's Content Linetrawl (Number of Fish per 1000 hooks)

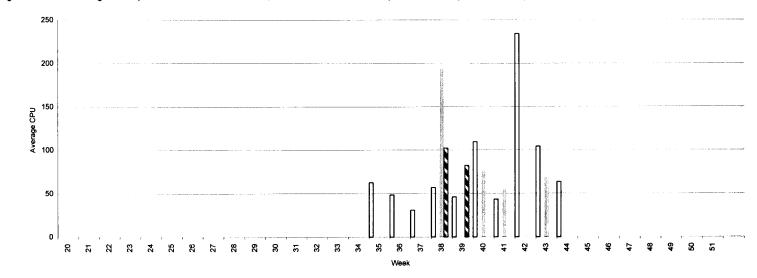
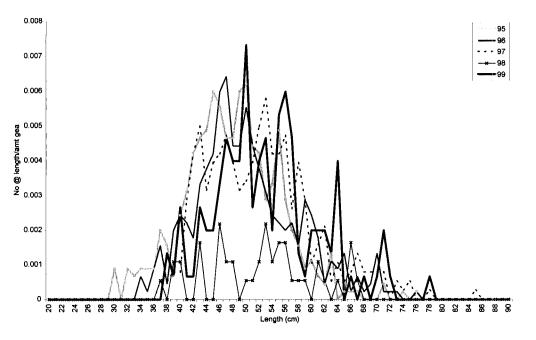
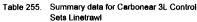


Figure 384 . Average Catch per Unit Effort for Experimental Sites, Heart's Content Linetrawl (Number of Fish per 1000 hooks)





	0013 1
Div	3L
Trip	55
Туре	F
Gear	7
Mesh Size	0

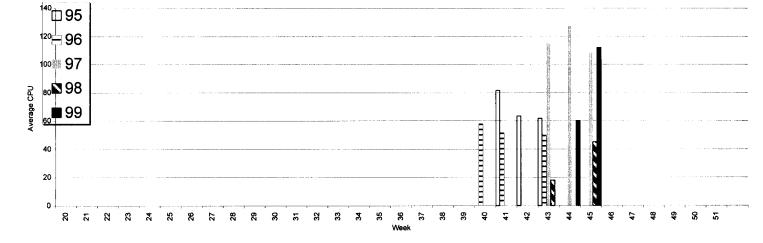
	Year				
Data	1995	1996	1997	1998	1999
Nmeas	124	92	162	21	58
Ngear	2100	1772	1400	664	750
Nhauls	7	7	7	4	3
Nzero	1	1	0	0	0
Table 256	Summony	data for	Carbona	ar 2 Ev	n ente

e 256. Summary data for Carbonear 3L Exp set Linetrawl

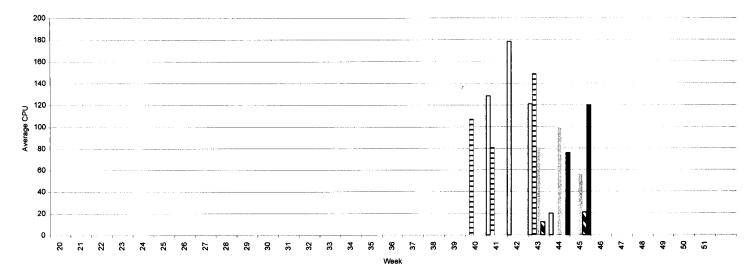
Div	3L
Trip	55
Туре	(All)
Gear	7
Mesh Size	0

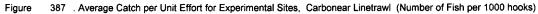
	Year				
Data	1995	1996	1997	1998	1999
Nmeas	299	284	190	22	68
Ngear	2400	2730	2400	1168	750
Nhauls	8	16	12	7	3
Nzero	0	2	0	4	0

Figure 385 Relative length frequency (number at length / amount of gear) for control and experimental gears, Carbonear Linetrawl









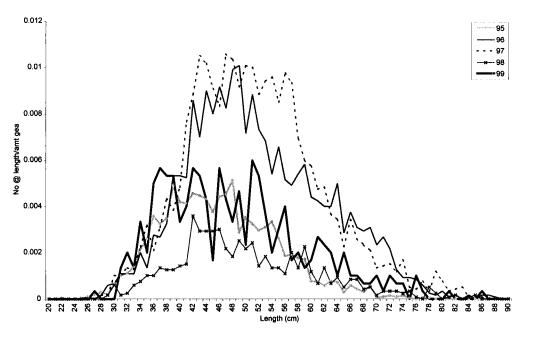


Table 257.	Summary data for Foxtrap 3L Control Sets Linetrawl
Div	3L

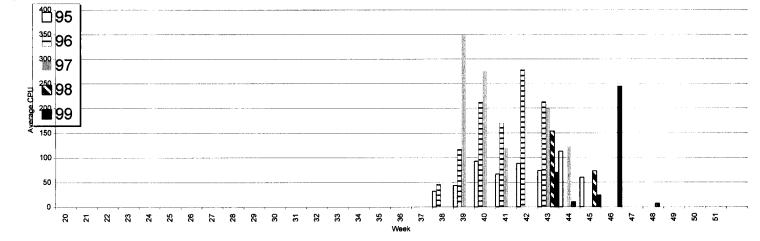
1
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)

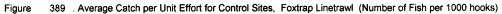
	Year				-
Data	1995	1996	1997	1998	1999
Nmeas	739	1065	1416	319	169
Ngear	10500	6000	6000	6000	1500
Nhauls	21	12	12	12	3
Nzero	0	0	0	4	0
Table 258.	Summary Linetrawl	data for	Foxtrap	3L Exp s	ets

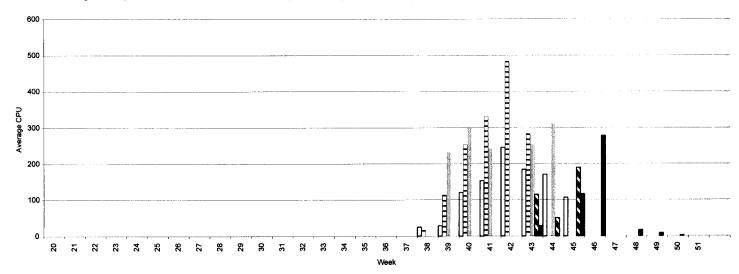
Div	3L
Trip	51
Туре	(All)
Gear	7
Mesh Size	0

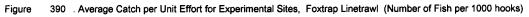
	Year				
Data	1995	1996	1997	1998	1999
Nmeas	1355	1538	1575	416	211
Ngear	10500	6000	6000	6000	1500
Nhauls	21	12	12	12	3
Nzero	0	0	0	1	0

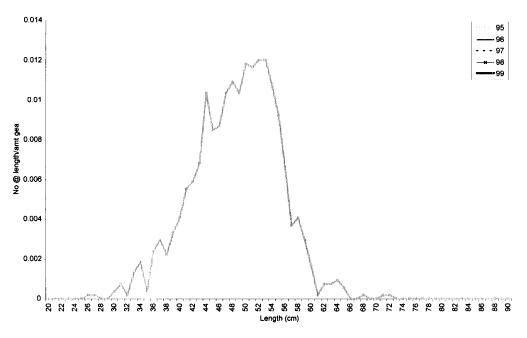
Figure 388 . Relative length frequency (number at length / amount of gear) for control and experimental gears, Foxtrap Linetrawl









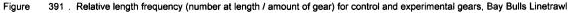


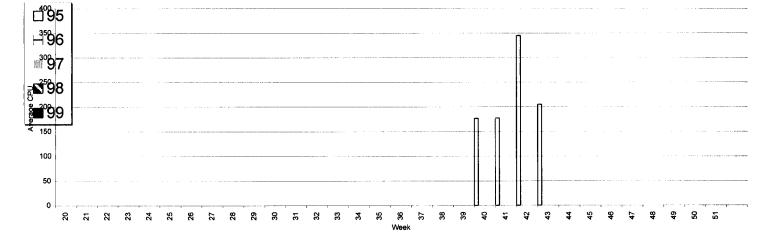
Div	3L				
Trip	52				
Туре	F				
Gear	7				
Mesh Size	0				
	Year				
Data	1995	1996	1997	1998	199
Nmeas	605				
Ngear	3000				
Nhauis	9				
Nzero	0				
Table 260.	Summary	data for	Bay Bull	s 3L Exp	sets
	Linetrawl				
Div	3L				
Trip	52				
Туре	(All)				
Gear	-				
Gear	7				
Mesh Size	0				
	0	1996	1997	1998	199
Mesh Size	0 Year	1996	1997	1998	199
Mesh Size Data	0 Year 1995	1996	1997	1998	199

Nzero

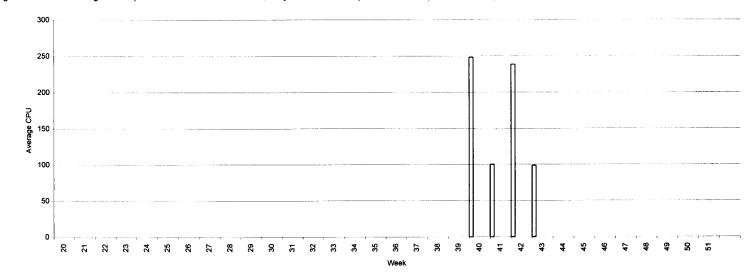
Summary data for Bay Bulls 3L Control Sets Linetrawi

Table 259.





. Average Catch per Unit Effort for Control Sites, Bay Bulls Linetrawl (Number of Fish per 1000 hooks) Figure 392





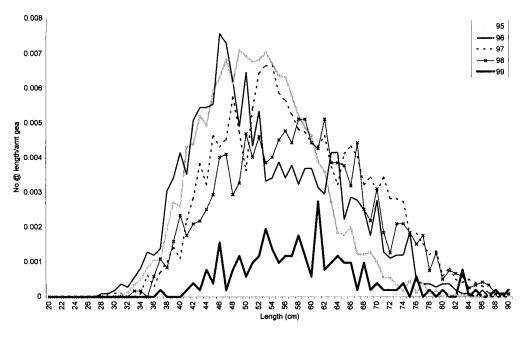


Table 261.	Summary data for Calvert 3L Control Sets
	Linetroud

	Linetawi
Div	3L
Тгір	58
Туре	F
Gear	7
Mesh Size	0

	Year				
Data	1995	1996	1997	1998	1999
Nmeas	1441	350	726	754	12
Ngear	10800	4500	3900	5100	1550
Nhauls	30	15	13	17	5
Nzero	0	0	0	2	2
Table 202	Cumment	data far	Caluad	L Fue e	-+-

le 262. Summary data for Calvert 3L Exp sets Linetrawl

Div	3L
Trip	58
Туре	(All)
Gear	7
Mesh Size	0

	Year					
Data	1995	1996	1997	1998	1999	
Nmeas	1325	1287	889	888	149	
Ngear	7200	6300	6000	6800	3550	
Nhauls	30	20	20	23	12	
Nzero	3	0	0	1	1	

Figure 394 . Relative length frequency (number at length / amount of gear) for control and experimental gears, Calvert Linetrawl

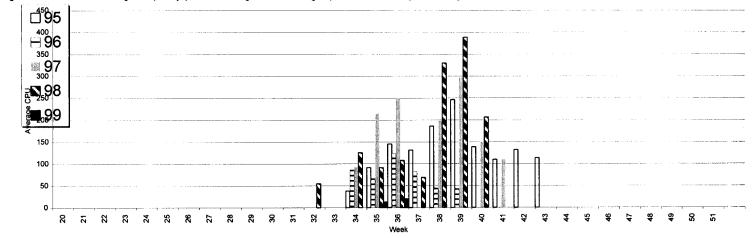
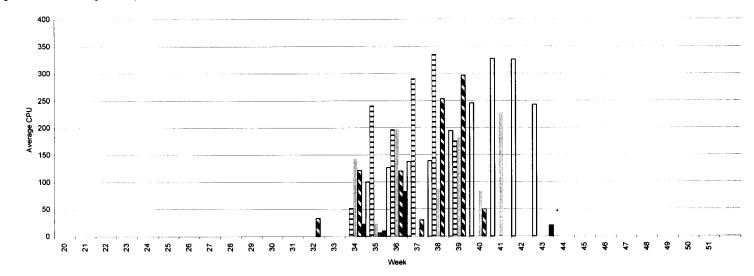
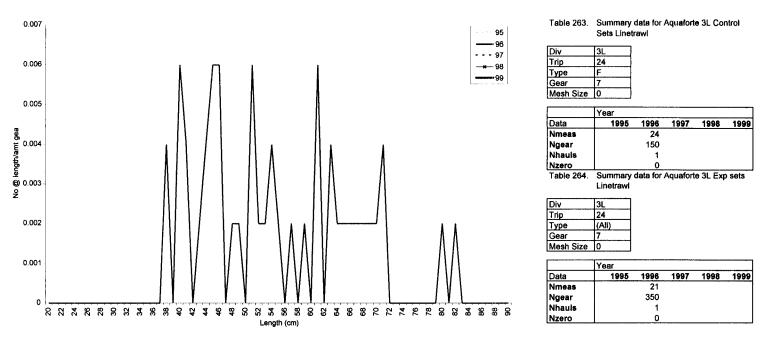
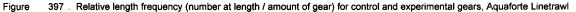


Figure 395 . Average Catch per Unit Effort for Control Sites, Calvert Linetrawl (Number of Fish per 1000 hooks)









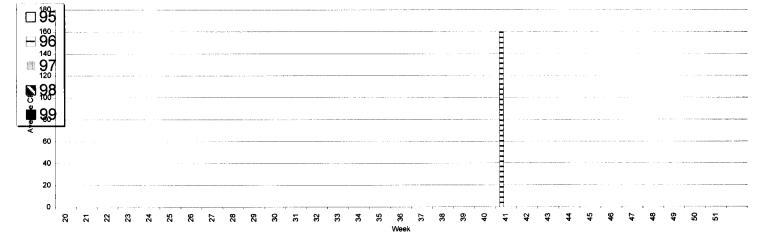
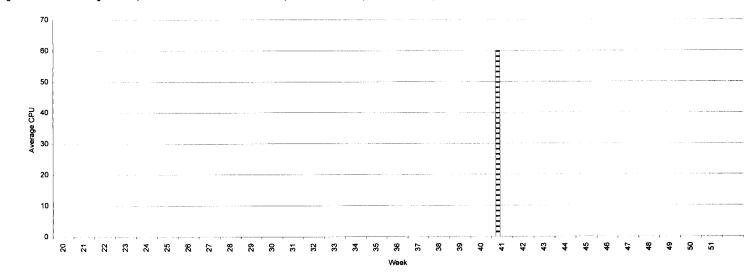
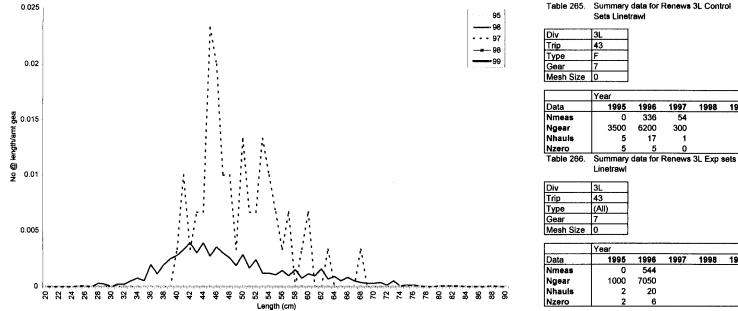
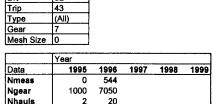


Figure 398 . Average Catch per Unit Effort for Control Sites, Aquaforte Linetrawl (Number of Fish per 1000 hooks)









1998 1999

Relative length frequency (number at length / amount of gear) for control and experimental gears, Renews Linetrawi Figure

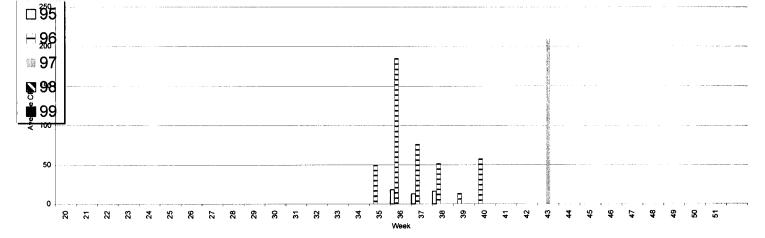
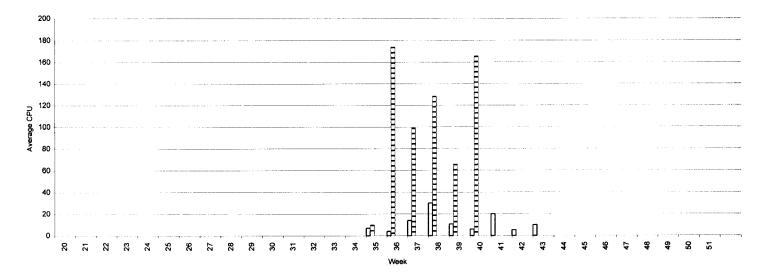
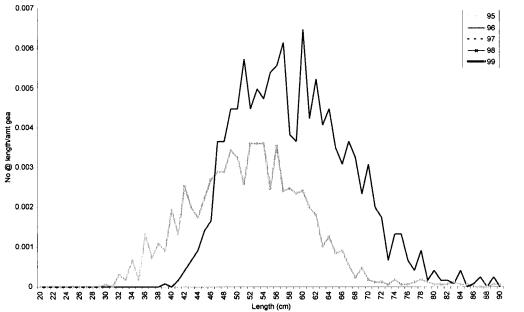


Figure . Average Catch per Unit Effort for Control Sites, Renews Linetrawl (Number of Fish per 1000 hooks)



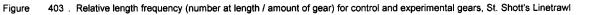
402 . Average Catch per Unit Effort for Experimental Sites, Renews Linetrawl (Number of Fish per 1000 hooks) Figure



	Sets Linet	rawi			
Div	3L				
Trip	68				
Туре	F				
Gear	7				
Mesh Size	0				
	Year				
Data	1995	1996	1997	1998	1999
Nmeas	406	539			
Ngear	8100	6000			
Nhauls	17	12			
Nzero	8	0			
Table 268.	Summary Linetrawl	data for	St. Shott	's 3L Exp	o sets
Div	3L				
Trip	68				
Туре	(All)				
Gear	7				
Mesh Size	0				
	Year				
Data	1995	1996	1997	1998	1999
Nmeas	799	917			
Ngear	8000	6000			
Nhauls	16	12			

Nzero

Table 267. Summary data for St. Shott's 3L Control



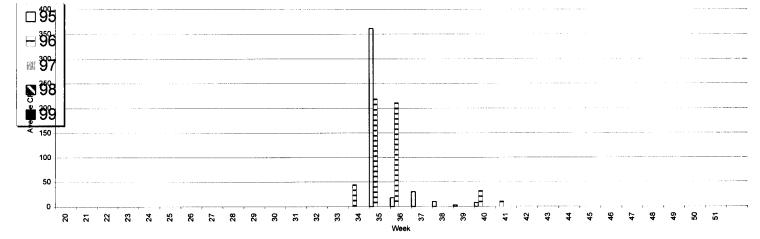


Figure 404 . Average Catch per Unit Effort for Control Sites, St. Shott's Linetrawl (Number of Fish per 1000 hooks)

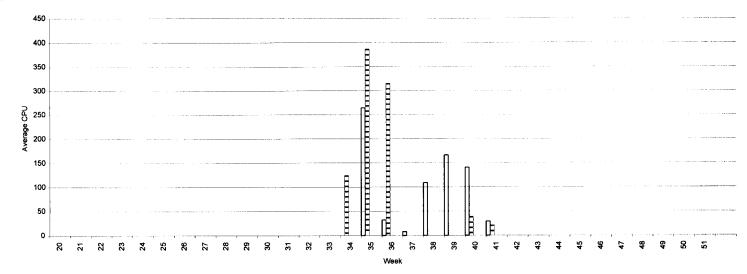


Figure 405 . Average Catch per Unit Effort for Experimental Sites, St. Shott's Linetrawl (Number of Fish per 1000 hooks)

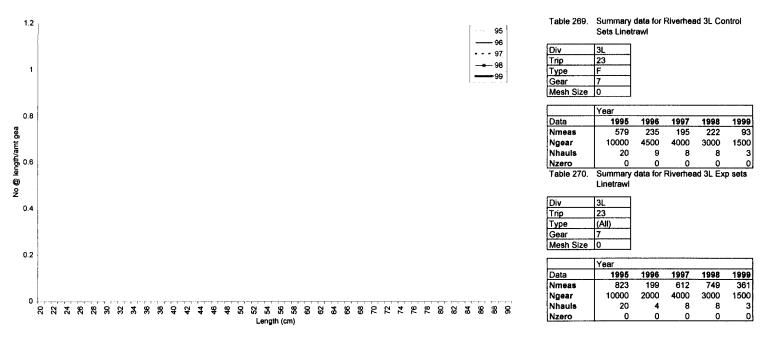


Figure 406 . Relative length frequency (number at length / amount of gear) for control and experimental gears, Riverhead Linetrawl

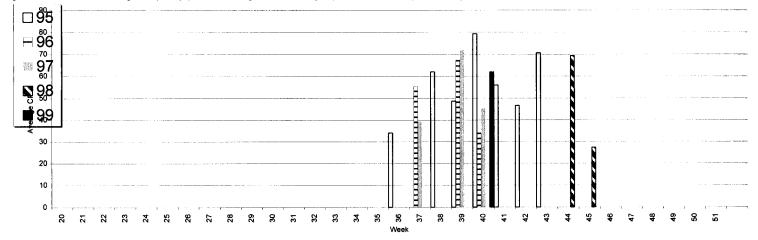


Figure 407 . Average Catch per Unit Effort for Control Sites, Riverhead Linetrawi (Number of Fish per 1000 hooks)

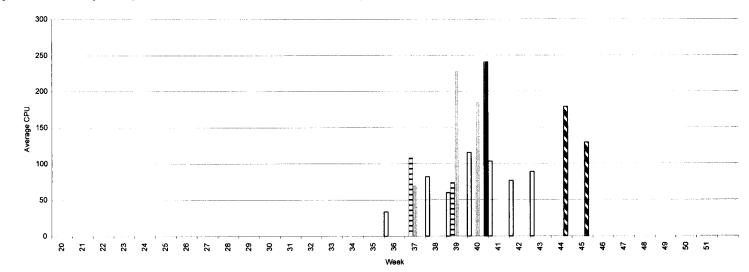


Figure 408 . Average Catch per Unit Effort for Experimental Sites, Riverhead Linetrawl (Number of Fish per 1000 hooks)

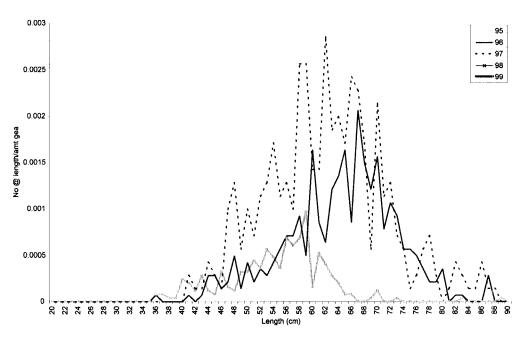


Table 271.	Summary data for Riverhead 3L Control
	Sets Linetrawl

Div	3L
qinT	63
Туре	F
Gear	7
Mesh Size	0

1995 82 12300	1996 187 9000	1997 134 2500	1998	1999
12300	0000	2500		
	2000	2000		
25	18	5		
14	5	0		
Summary	data for	Riverhea	d 3L Ex	p sets
inetrawl				
	25 14 Summary	25 18 14 5 Summary data for	25 18 5 14 5 0 Summary data for Riverhea	25 18 5 14 5 0 Summary data for Riverhead 3L Ex

Div	3L
Trip	63
Туре	(All)
Gear	7
Mesh Size	0

Data	Year				
	1995	1996	1997	1998	1999
Nmeas	159	198	197		
Ngear	12300	5000	4500		
Nhauls	25	10	9		
Nzero	12	3	0		



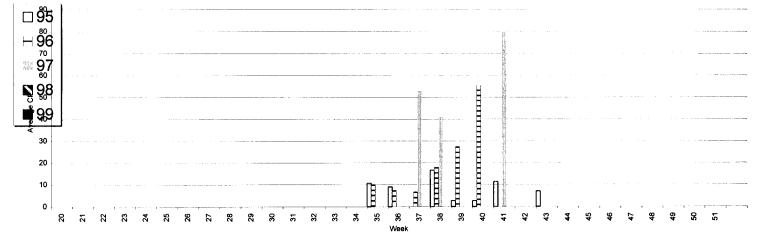


Figure 410 . Average Catch per Unit Effort for Control Sites, Riverhead Linetrawl (Number of Fish per 1000 hooks)

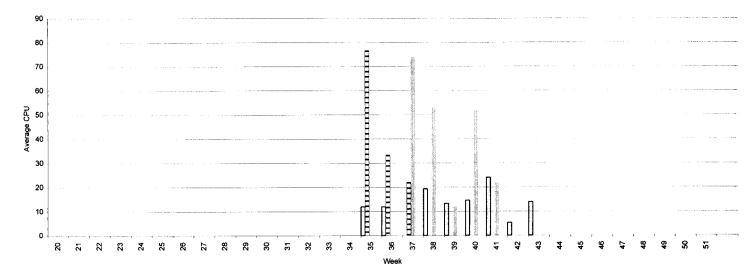


Figure 411 . Average Catch per Unit Effort for Experimental Sites, Riverhead Linetrawl (Number of Fish per 1000 hooks)