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Results of the 1998 End of Season Survey of Groundfish Harvesters from the Southern Gulf of St. Lawrence

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by

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3 - Abstract

Hurlbut, T. and D. Daigle. 2000. Results of the 1998 End of Season Survey of Groundfish Harvesters from the Southern Gulf of St. Lawrence. Manuscr. Rep. Fish. Aquat. Sci. 2517E: 58 p.

A telephone survey was conducted of participants that were active in the southern Gulf of St. Lawrence groundfish fishery in 1998. Of the approximately 450 vessel owners from the southern Gulf that were identified from purchase slips as having sold groundfish in 1998, 192 were successfully interviewed. The survey employed a questionnaire to obtain the views and opinions of harvesters concerning stock abundance, environmental conditions, the impact of seals, dogfish, markets, fishery management actions, etc., for inclusion in stock assessments. This document reports the results of the survey.

3 - Résumé

Hurlbut, T. et D. Daigle. 2000. Résultats du sondage effectué à la fin de la saison 1998 auprès des pêcheurs de poisson de fond dans le sud du golfe du Saint-Laurent. Rapport manuscrit des sciences halieut. et aquat. n° 2517F : 58 p.

Un sondage téléphonique a été réalisé auprès des pêcheurs qui ont participé activement à la pêche du poisson de fond dans le sud du golfe du Saint-Laurent en 1998. Sur environ 450 propriétaires de bateau du sud du golfe qui, d'après les bordereaux d'achat ont vendu du poisson de fond en 1998, 192 ont participé à des entrevues fructueuses. Le sondage était basé sur un questionnaire visant à obtenir les opinions et les points de vue des pêcheurs concernant l'abondance du stock, les conditions du milieu, les effets des phoques, de l'aiguillat, des marchés, des mesures de gestion des pêches, etc. en vue de les intégrer aux évaluations des stocks. Le présent document constitue une synthèse des résultats du sondage.

4 - Introduction

Many groundfish fisheries in Atlantic Canada are currently under moratoria or are in a sufficiently depressed state that restrictive quotas, fishing seasons and other management measures have been imposed for their protection. Attempts to understand the decline of these fisheries have been hampered, to a certain extent, by a lack of information from the perspective of the actual participants in the fishery. The information that is lacking includes perceptions of stock abundance and environmental conditions, the impact of seals, dogfish, markets, fishery management actions, etc. To obtain this information, public meetings ("Science Workshops") with the groundfish industry and Department of Fisheries and Oceans (D.F.O.) biologists have become commonplace. Unfortunately, attendance by industry at these meetings has been highly variable. Consequently, telephone surveys have been conducted since 1995 of participants in the southern Gulf groundfish fishery, in order to document the views and opinions of active harvesters (Hurlbut 1997 and 1998, Hurlbut and Stevens 1999). This document reports the results of the 1998 telephone survey.

5 - Survey Design, Selection of Subjects and Description of Interviews

The questionnaire (Appendix 3) was developed by biologists from the Gulf Fisheries Centre (Moncton, N.B.). Staff from the Social Survey Methods Division of Statistics Canada (Halifax, N.S.) reviewed an earlier version of the questionnaire to ensure that the questions were clear and coherent and were worded so as to avoid "leading questions" and ambiguous responses. The 29 questions were selected and arranged in order to:

1. Characterize the respondent, their fishing vessel and fishing activities in 1998 by gear, directed species, etc.
2. Identify any factors that may have affected their fishing activities in 1998.
3. Quantify their fishing effort in 1998 (amount and types of fishing gear used, number of days fished, etc.).
4. Record and characterize the opinions of the respondents on the abundance of dogfish, seals and the species of groundfish that they fished for in 1998.

Aside from the addition of two questions that inquired about the discarding of groundfish and unreported catches of cod in 1998 (Questions 27 and 28), the same questions were asked in the 1996 and 1997 surveys (Hurlbut 1998 and Hurlbut and Stevens 1999).

The 1995 survey (Hurlbut 1997) interviewed harvesters from New Brunswick, Nova Scotia and Prince Edward Island. For 1996 and 1997, the survey population was expanded to include harvesters from Quebec and the Magdalen Islands. Interview subjects for the 1998 survey were selected from all of the purchase slips that were received and processed by November 4, 1998 (i.e., each purchase slip represents the sale of groundfish). Four hundred and thirty-seven harvesters were identified from New Brunswick, Nova Scotia, Prince Edward Island and Quebec. To minimize the impact of time delays on the respondent's memories of the 1998 fishery, it was our goal to commence the survey as soon as possible after fishing ended (October 31, 1998) and to complete it within one month. To accomplish this and to maximize the geographical coverage of the survey, the interviewer was instructed to attempt to interview a maximum of ten harvesters from each fisheries statistical district (Figure 1). Interview subjects were randomly selected from a list of harvesters that was sorted by fisheries statistical district and Canadian Fishing Vessel number (C.F.V.N.) of the vessel owners. They were selected without regard to the type of fishing gear that they used, the species of groundfish that they targeted, etc. As soon as the interviewer had successfully interviewed ten harvesters from a statistical district she began calling harvesters from the next statistical district.

The interviews were conducted by telephone in both of the official languages from November 16 to December 18, 1998. The calls were generally made during the afternoon or evening, on weekdays and weekends. The same individual conducted all of the interviews. The respondents were assured that their responses were strictly confidential and would not be disclosed in any way that could identify them.

6 - Results and Discussion

Of the 437 vessel owners who were identified from purchase slips, 192 were successfully interviewed (Note: In the 1995, 1996 and 1997 surveys 138, 223 and 172 harvesters respectively were successfully interviewed). No attempt was made to contact 181 of the 437 owners because the interviewer had already contacted 10 harvesters from their respective statistical districts. Of the remaining owners, 33 could not be reached by telephone (three attempts were made with each harvester), 6 refused to participate, 3 were unable to answer all of the interview questions and 22 indicated that they did not fish for groundfish in 1998. This latter group is perplexing given that purchase slips were received by D.F.O. Statistics Branch, indicating that groundfish were sold and presumably caught by their fishing vessels. It is possible that these occurrences represent the sale of groundfish that were caught in lobster traps or other 'non-traditional groundfish gear, or that they represent cases where groundfish were caught and landed by harvesters other than the registered owners of the vessels in question.

The remainder of this discussion will focus on the 192 completed questionnaires. The average duration of these interviews was 15 minutes (range from 7-45 minutes). In terms of their experience in the groundfish fishery (Question 4), the average number of years fishing commercially for groundfish was 23 years (range from 1-55 years). The average size (i.e., length overall) of the fishing vessels that they used when fishing for groundfish in 1998 (Question 5) was 12.5 m (41.1 ft) (range from 5-22 m or 16-73 ft).

The 192 respondents were from 30 statistical districts situated in a zone extending from near Matane, Que. to Dingwall on the northeastern coast of Cape Breton Island, including the Magdalen Islands (Figure 1). Although some of these statistical districts are located outside of the southern Gulf (NAFO Division 4T), purchase slips indicated that these respondents caught and landed groundfish in the southern Gulf in 1998.

The respondents were asked which species of groundfish they fished for most of the time before the fisheries for cod and hake were closed (i.e., 1993 and 1994 respectively in NAFO Div. 4T)(Question 8). As in the three previous surveys, many respondents indicated that they fished for more than one species of groundfish, most of the time. In this case, the harvesters were asked to list the species that they fished for in order of priority, starting with the species that they most preferred to catch. The responses to this question (Figure 2) indicate the following preferences: cod, white hake, winter flounder, American plaice, halibut and turbot. None of these respondents identified witch, yellowtail, redfish, dogfish or skates as the species that they most preferred to catch before the closure of the cod and hake fisheries.

The respondents were also asked to identify the species of groundfish that they fished for most of the time in 1998 (Question 9). The following table and Figure 3 summarize the preferences of the 192 respondents:

Groundfish Species	All Respondents[1]	Number of Respondents Who Identified this Species as Their First Choice or First Priority of the Species of Groundfish That They Fished for in 1998*			
		Commercial Fishery*	Sentinel Fishery or Sentinel Survey*	Index Fishery*	Recreational Fishery*
Cod	75	62	18	43	12
Winter Flounder	56	46	1	3	3
American Plaice	48	30	0	2	4
Turbot	29	28	0	3	1
Halibut	34	18	0	1	1
Witch	13	3	0	0	0
White Hake	9	2	2	0	1
Spiny Dogfish	4	2	0	2	0
Yellowtail	3	1	0	0	0

[1] - Number of respondents who indicated that they directed for this species of groundfish to some extent in 1998* (This species was not necessarily their first choice or first priority)

* For example: 75 respondents indicated that they directed some of their fishing effort at cod in 1998 and 62 of them identified cod as their primary choice of the species of groundfish that they directed for. Eighteen of these 62 respondents were participants in the Sentinel Fishery, 43 of them were participants in the Index Fishery, and 12 of them indicated that they fished for groundfish in the recreational fishery.

As in the 1995, 1996 and 1997 surveys, a significant number of respondents identified cod and white hake as the species that they fished for most of the time in 1998, when directed fishing for these species was forbidden under the moratoria (i.e., by-catch only). The participation of many of these respondents in the Sentinel Fishery partially explains this occurrence (18 of the 62 respondents that identified cod as the species that they fished for most of the time in 1998 were participants in the Sentinel Fishery and both (2) of the respondents that identified hake as the species that they fished for most of the time were participants in the Sentinel Fishery). Furthermore, of the 62 respondents that identified cod as the species that they fished for most of the time in 1998, 43 were participants in the index fishery and 12 indicated that they fished for cod in the recreational fishery. Only two of these 12 respondents said that they caught the majority of their groundfish (i.e., cod) in the Recreational Fishery.

Figures 4-12 show the geographical distribution of the respondents based on the species of groundfish that they fished for, most of the time in 1998. In each case, the species indicated was either the first, second or third priority of respondents that fished for more than one species of groundfish in 1998.

When asked to compare the average size of the species of groundfish that they identified as their first priority in 1998 to previous years (Question 10 and Figure 13), most of the respondents considered that cod, plaice, halibut, witch flounder, winter flounder, turbot and dogfish were the same size or larger than in previous years and the respondents that identified white hake and yellowtail flounder as their first priority felt that they were the same size as in previous years.

Figure 14 shows the fishing gears that were used most of the time by all of the respondents and those used by respondents based on the species of groundfish that they fished for most of the time in 1998 (Question 11a). Overall, approximately two-thirds of the respondents used fixed gears and the balance used mobile gears. In general, fixed gears tended to be used to direct for cod, hake, halibut, turbot and dogfish, and respondents that directed for plaice, witch and yellowtail generally used mobile gears. The respondents that directed for winter flounder used both fixed and mobile gears. When the harvesters were asked to quantify the amount of fishing gear that they used during a typical day of fishing (Question 11b), the quantities indicated by the respondents (below) were very similar to those obtained in the 1996 and 1997 surveys:

All Respondents & All Species

Fishing Gear	Average Amount Used	Minimum Amount Used	Maximum Amount Used
Gillnet (# of nets)	32	2	80
Longline (# of hooks)	2,084	300	10,000
Otter Trawl (# of sets)	7	2	10
Seine (# of sets)	7	5	20

When asked to compare the amount of fishing gear used in 1998 with the amount used in previous years (Question 12), almost 60% of the respondents indicated that they used the same amount of fishing gear in 1998 and nearly 40% said they used less fishing gear (Figure 15). Likewise, the majority of the respondents to the three previous surveys reported that they used the same amount of fishing gear or less in each year. Similarly, when the responses to this question were examined based on the species of groundfish fished for most of the time in 1998, most respondents reported using the same amount of fishing gear or less (Figure 15).

Forty-three percent of the respondents indicated that they spent the whole season fishing for groundfish in 1998, compared to 36%, 35% and 47% respectively in the 1995, 1996 and 1997 surveys (Question 13). As the following table shows, the percentage varied depending on the species of groundfish

fished for most of the time and ranged from 22% for harvesters that fished for winter flounder to 90% for harvesters that fished for turbot.

Species	Percentage of Respondents That Spent the Whole Season Fishing for Groundfish in 1998
Cod	44
Hake	89
A. Plaice	45
Winter Flounder	22
Halibut	62
Turbot	90
Witch	50
Yellowtail	33
Dogfish	50

Questions 14 to 17 asked the respondents who indicated that they did not spend the whole season fishing for groundfish in 1998 the following:

#14. If they switched to another fishery (i.e., tuna, herring, scallops, etc.) during the 1998 groundfish season?
#15. What fishery did they switch to?
#16. What was their main reason for switching from fishing for groundfish?
#17. If they usually switch from groundfish to another fishery during the groundfish season?

Of the respondents that indicated they did not spend the whole season fishing for groundfish in 1998, 43% (47 harvesters) reported that they switched to another fishery during the groundfish season. This finding represents a sharp reduction from the 1996 and 1997 surveys in which 77% and 75% respectively of the respondents who said they did not spend the whole season fishing for groundfish, reported that they switched to another fishery. As the following table indicates, the percentage that switched to another fishery in 1998 varied depending on the species of groundfish that they fished for most of the time.

Species	Percentage of Respondents Who Reported That They Switched to Another Fishery (Other Than Groundfish) in 1998
Cod	16
Hake	0
A. Plaice	43
Winter Flounder	58
Halibut	43
Turbot	25
Witch	63
Yellowtail	100
Dogfish	0

These results are also considerably different from those obtained in the 1996 and 1997 surveys, in which the percentages of respondents (by species) who reported that they switched to another fishery were much higher.

As found in the 1996 and 1997 surveys, mackerel, herring, lobster and scallops were the fisheries to which most of the respondents switched in 1998 (Figure 16). Figure 17 illustrates the main reasons given by respondents for switching from groundfish to another fishery during the 1998 groundfish season. The most prevalent reason given by respondents for switching to another fishery was closure of the fishery. Other common reasons that were cited included low numbers of groundfish, lack of quota and the movement of flounders (i.e., winter flounder) from their fishing area. Of the 47 respondents that said they switched to

another fishery, 66% (31 harvesters) said that they usually switch to another fishery during the groundfish season. In the 1996 and 1997 surveys, 53% and 63% respectively indicated that they usually switch to another fishery.

Thirty-five percent (68 harvesters) of the 192 respondents were able to recall the exact number of days that they spent fishing for groundfish in 1998 (Question 18), which averaged 14 days (range from 1-90 days). This represents a decrease in both the percentage of respondents able to recall the exact number of days they spent fishing for groundfish, and the average number of days that they spent fishing for groundfish relative to the 1997 survey results. In 1995, 33% of the respondents could recall the exact number which averaged 22 days; in 1996, 22% could recall the exact number which averaged 15 days; and in 1997 49% could recall the exact number which averaged 28 days.

The respondents that could not recall the exact number of days they spent fishing for groundfish in 1998 (124 harvesters) were asked for their "best estimate" (Question 19). As in the previous surveys, the majority of the estimates (59%) were between 10-39 days fishing for groundfish in 1998 (their estimates ranged from less than 10 to more than 100 days) (Figure 18). When the estimates were compared based on the species of groundfish fished for most of the time, most of the estimates for the respondents that directed for cod, white hake, plaice, winter flounder, halibut and dogfish were between 10-39 days. The majority of the estimates for the respondents that directed for turbot and witch were between 30-59 days.

In comparison to 1997, 25% of the respondents (48 out of 192) said that they spent the same number of days fishing for groundfish in 1998, but 42% reported spending more days and 33% reported spending fewer (Question 20 - Figure 19). The majority of the respondents that directed for cod, white hake and halibut indicated that they fished more days in 1998 than in 1997. Of the respondents that targeted plaice, winter flounder and yellowtail in 1998, there were more that said they fished fewer days than more days, but a significant number indicated that they spent about the same number of days fishing for groundfish in 1998. For those respondents that directed for turbot and witch, there were more that said they fished more days than fewer, but again, a significant number said they spent about the same number of days fishing for groundfish in 1998. Of the respondents that targeted dogfish, equal numbers indicated that they fished fewer days and more days. The most common reason given by respondents for spending fewer days fishing for groundfish in 1998 was fishery management regulations (i.e., closures of fisheries, quota reductions, etc.), and the most frequent reason given for spending more days fishing for groundfish was participation in the index fishery for cod, followed by fishery management regulations (Question 21 - Figure 20).

When asked to compare the number of days when the weather was too bad to fish for groundfish in 1998 with previous years, the majority of the respondents (102 harvesters or 53%) indicated that there were more bad weather days in 1998 (Question 22 - Figure 21). Twenty harvesters (10%) reported fewer days of bad weather in 1998 than usual and seventy (37%) reported the same number of bad weather days in 1998.

Only 14% of the respondents (26 harvesters) indicated that dogfish interfered with their efforts to fish for groundfish in 1998 (Question 23) which is consistent with the findings of the three previous surveys (23%, 18% and 16% respectively in 1995, 1996 and 1997). Most of the respondents that offered opinions (68% or 115 harvesters) considered the abundance of dogfish to be lower than average in 1998 (i.e., low or very low) (Question 25a - Figure 22). On the other hand, 17 respondents felt that the abundance of dogfish was high or very high in 1998 and 36 felt that it was average. In the 1995, 1996 and 1997 surveys, the greatest proportion of the respondents also regarded the abundance of dogfish to be lower than average.

As in the 1995, 1996 and 1997 surveys, most of the respondents (146 harvesters = 76%) reported that they saw seals when they fished for groundfish in 1998 (Question 24), and the majority provided locations (Appendix 1) (68%, 78% and 86% respectively reported that they saw seals in 1995, 1996 and 1997). When asked to describe the abundance of seals in 1998, most of the respondents that offered

opinions (128 harvesters = 71%) considered it to be above average (i.e., high or very high), but 16% (29 harvesters) felt that seal abundance was average and 13% (23 harvesters) thought that it was below average (Question 25b - Figure 23). In the 1995 survey, the opinions of respondents concerning the abundance of seals were split with equal numbers considering the abundance below average and above average, but in the 1996 survey most of the respondents (131 harvesters = 61%) felt that seal abundance was above average. In the 1997 survey, most of the respondents (111 harvesters = 65%) considered that seal abundance was above average.

In questions 26 a-c, the respondents were asked to compare the abundance of their most preferred species (i.e., First Priority) in 1998, with its abundance in three previous time periods: 1997, 1993 to 1997, and in all of their years fishing commercially for this species. As noted earlier, 18 of the 62 respondents that identified cod as the species that they fished for most of the time in 1998 were participants in the sentinel fishery, as were both (2) of the respondents that identified white hake as their first priority. As in the past, the protocols for the 1998 sentinel fishery in the southern Gulf required the participants to fish specific types and quantities of fishing gear at predetermined locations and times. Consequently, the perceptions and opinions of sentinel harvesters concerning groundfish abundance may not be comparable to those expressed by harvesters that were not participants in the sentinel fishery. As a result, the opinions of sentinel harvesters will be distinguished from the opinions of harvesters that were not participants in the sentinel fishery in the following discussion.

Question 26a asked the respondents to compare the abundance of their most preferred species (i.e., First Priority) in 1998 with its abundance in 1997 (Figure 24).

Cod

More than half (24 out of 44) of the respondents that identified cod as their first priority in 1998, and who were not participants in the sentinel fishery, indicated that this question was not applicable to them. This result is probably a reflection of the large proportion of these respondents (43 out of 44) that were participants in the index fishery for cod in 1998, and who would have been prohibited from fishing for cod in 1997 because of the moratorium. Of the remaining respondents that identified cod as their first priority, more than half (9 out of 16) described its abundance as higher or much higher than in 1997, but three considered it to be lower or much lower. A considerable proportion (7 out of 18) of the respondents that identified cod as their first priority in 1998, and who were participants in the sentinel fishery, indicated that this question was not applicable to them. Half of the remaining respondents that offered opinions (5 out of 10) regarded the abundance as higher or much higher in 1998 than in 1997, but one respondent felt that it was much lower, and 4 considered it to be the same as in 1997. Half of the respondents to the 1997 survey that directed for cod and offered opinions (5 of 10) described its abundance as higher or much higher than in 1996, but two harvesters considered it to be lower. In the 1996 survey, most of the respondents considered the abundance of cod to be higher than in 1995.

White Hake

Unfortunately, the two respondents that identified white hake as their first priority indicated that this question was not applicable to them. It is probable that they responded in this manner because the moratorium prevented them from fishing for white hake in 1997 (they were permitted to direct for white hake in 1998 because they were participants in the sentinel fishery). In the 1997 survey, 3 of the 4 respondents that directed for white hake in the 1997 sentinel fishery thought that the abundance of hake was higher in 1997 than in 1996, but one felt that it was the same in both years.

American Plaice

When asked to relate the abundance of plaice in 1998 with its abundance in 1997, 15 of the 25 respondents that expressed opinions (60%) regarded it as higher or much higher than in 1997; most of the remaining respondents described the abundance as the same in 1998 as in 1997. In the 1997 survey, more than half of the respondents that targeted American plaice felt that the abundance was the same in 1997 as in 1996, but 38% felt that the abundance was higher or much higher in 1997. In contrast, more than half of the respondents to the 1996 survey felt that the abundance was higher in 1996 than in 1995.

Winter Flounder

The responses to this question by the harvesters that identified winter flounder as their first priority in 1998 were almost evenly split, with slightly more respondents judging the abundance as higher or much higher in 1998 than lower or much lower (20% regarded the abundance as the same in 1998 as in 1997). Seventy-seven percent of the respondents to the 1997 survey considered that the abundance of winter flounder was the same or higher in 1997 than in 1996 (21% felt that the abundance was lower or much lower in 1997). In the 1996 survey, most of the respondents said that the abundance was the same in 1996 as in 1995, but of the remainder, more of the respondents felt that the abundance was lower in 1996.

Halibut

The majority of the respondents that directed for halibut and offered opinions (11 out of 12) felt that the abundance was higher or much higher in 1998 than in 1997. In the 1996 and 1997 surveys, most of the respondents that offered opinions considered the abundance to be the same or higher than in the previous year.

Witch

Two of the three respondents whose first priority was witch regarded its abundance as higher in 1998 than in 1997, and the third felt that it was the same in both years. In the 1997 survey, most of the respondents regarded the abundance of witch as the same as in 1996, and all of the respondents to the 1996 survey described the abundance as the same or higher in 1996, than in 1995.

Turbot

For turbot, the responses were very similar to those obtained in the 1996 and 1997 surveys, with the majority of the respondents (74%) considering the abundance to be higher or much higher than in 1997.

Yellowtail Flounder

Only one respondent identified yellowtail flounder as his first priority and he described its abundance as much lower in 1998 than in 1997. None of the respondents to the 1997 survey identified yellowtail flounder as their first priority, but both (2) of the respondents to the 1996 survey that targeted yellowtail described its abundance as the same in 1996 as in 1995.

Dogfish

The one respondent that directed for dogfish in 1998 and offered an opinion felt that its abundance was higher than in 1997. In contrast, the respondents that targeted dogfish in 1997 regarded its abundance as lower or much lower than in 1996.

Question 26b compared the abundance of the most preferred species (i.e., First Priority) in 1998, with its abundance from 1993 to 1997 (Figure 25).

Cod

Of the respondents that identified cod as their first priority in 1998 and who were not participants in the sentinel fishery, the majority that expressed opinions (11 out of 13) described its abundance as higher or much higher in 1998 than during the period from 1993 to 1997. There were no obvious trends in the responses of the harvesters who were participants in the sentinel fishery. Again, more than half of the respondents (sentinel and non-sentinel) indicated that this question was not applicable to them. In the 1996 and 1997 surveys, the majority of the respondents considered that cod abundance was higher or much higher than during the preceding five-year periods.

White Hake

As in the previous question, the two respondents that identified white hake as their first priority indicated that this question was not applicable to them. In the 1997 survey, the three respondents that directed for white hake felt the abundance was higher in 1997 than during the 1992-1996 period, and in the 1996 survey, the two respondents considered the abundance to be the same or higher in 1996, than during the 1991-1995 period.

American Plaice

For American plaice, the responses were very similar to those obtained in the 1996 and 1997 surveys, with the majority of the respondents that targeted plaice and who expressed opinions (65%) considering its abundance to be higher or much higher in 1998 than during the period from 1993 to 1997. A considerable number of the respondents (7) indicated that this question was not applicable to them.

Winter Flounder

More of the respondents that identified winter flounder as their first priority in 1998 considered its abundance to be lower or much lower (15) than higher or much higher (11) relative to the period from 1993 to 1997 (8 respondents considered the abundance to be the same). In the 1997 survey, the opinions of the respondents that directed for winter flounder were similarly split, with 18 judging the abundance as lower or much lower and 13 describing it as higher in 1997 than during the previous five-year period.

Halibut

Half of the respondents that directed for halibut in 1998 indicated that this question was not applicable to them. Of the remaining respondents that expressed opinions, the majority (6 out of 8) regarded the abundance of halibut as higher or much higher in 1998 than during the period from 1993 to 1997. In the 1997 survey, the two respondents that directed for halibut described the abundance as higher in 1997. In the 1996 survey, most of the respondents felt that the abundance was the same or higher in 1996 than during the previous five year period.

Turbot

The responses of the harvesters that identified turbot as their first priority in 1998 were very similar to those expressed by respondents to the 1996 and 1997 surveys with the majority describing the abundance as higher or much higher in 1998, than during the 1993 to 1997 period.

Witch

Two of the three respondents whose first priority was witch regarded its abundance as higher in 1998 than during the previous five-year period (the third indicated that this question was not applicable to him). The opinions of the respondents to the 1997 survey that targeted witch were divided with two judging the abundance as lower or much lower and two describing it as higher in 1997. In contrast, most of the harvesters that directed for witch in 1996 considered its abundance to be the same or higher than during the 1991 to 1995 period.

Yellowtail Flounder

The only respondent that identified yellowtail flounder as his first priority in 1998 described its abundance as lower than during the previous five-year period. None of the respondents to the 1997 survey identified yellowtail flounder as their first priority, but both (2) of the respondents to the 1996 survey that targeted yellowtail described its abundance as the same in 1996 as during the 1991 to 1995 period.

Dogfish

The sole respondent that directed for dogfish in 1998 and offered an opinion felt that its abundance was the same as during the previous five-year period. In the 1997 survey, the seven harvesters that directed for dogfish felt that the abundance was lower or much lower than during the 1992 to 1996 period.

The final question in this series (Question 26c) asked the respondents to relate the abundance of their most preferred species (i.e., First Priority) in 1998 to its abundance in all the years that they fished for it (Figure 26).

Cod

When asked to compare the abundance of cod in 1998 with its abundance during all of the years they fished for this species, the majority of the respondents who were not participants in the sentinel fishery and who offered opinions (57%) regarded the abundance as higher or much higher in 1998. However, 28% considered it to be lower or much lower and 15% felt that it was the same. In contrast, the majority (69%) of the respondents that were participants in the 1998 sentinel fishery described the abundance of cod as lower or much lower in 1998 than during all of the years they fished for this species. Of the respondents to the 1997 survey that identified cod as their first priority, most (62%) considered the abundance of cod as higher or much higher in 1997. In the 1996 survey, the opinions were split, with 44% of the respondents judging the abundance as lower or much lower, and 36% judging it as higher or much higher.

White Hake

The two respondents that identified white hake as their first priority in 1998 described its abundance as the same or higher than throughout their long-term experience. In the 1997 survey, three of the four harvesters that directed for white hake regarded its abundance as higher or much higher in 1997, and one felt that it was the same. The opinions of the two respondents that targeted white hake in the 1996 survey were divided, with one describing the abundance as lower and the other describing it as higher.

American Plaice

More of the respondents that directed for American plaice in 1998 considered its abundance to be higher or much higher (10) than lower or much lower (7) relative to all the years that they fished for this species (5 respondents regarded it as the same in 1998 as throughout their long-term experience). Again, a considerable number of the respondents (6) indicated that this question was not applicable to them. Likewise in the 1997 survey, almost twice as many of the respondents considered the abundance to be higher or much higher as considered it to be lower or much lower (37% felt that the abundance was the same in 1997 as it had been in all the years that they fished for plaice). The results were essentially identical for the respondents to the 1996 survey that directed for plaice (i.e., twice as many considered the abundance in 1996 to be higher or much higher as considered it to be lower or much lower).

Winter Flounder

Approximately one third of the respondents that identified winter flounder as their first priority in 1998 indicated that this question was not applicable to them. Of the remaining respondents that offered opinions, the majority (57%) regarded its abundance as lower or much lower in 1998. However, 25% considered it to be higher or much higher. In the 1997 survey, the responses to this question were very similar with more of the respondents judging the abundance as lower or much lower (42%) than higher or much higher (24%) (One third rated the abundance in 1997 as the same as their long-term experience). In the 1996 survey, the majority of the respondents that fished for winter flounder (63%) felt that the abundance was the same or lower in 1996 than their long-term experience.

Halibut

Nearly one half of the respondents that directed for halibut in 1998 indicated that this question was not applicable to them. Most (5 out of 9) of the remaining respondents judged the abundance of halibut in 1998 as higher or much higher than throughout their long-term experience, but 3 of the 9 respondents considered it to be lower in 1998. In the 1997 survey, the harvesters that directed for halibut considered its abundance in 1997 to be the same or higher than in all the years that they fished for this species, and most of the respondents to the 1996 survey (58%) considered its abundance in 1996 to be the same as during their long-term experience.

Turbot

The opinions of the respondents that targeted turbot in 1998 were divided, with slightly more judging the abundance as higher or much higher (11 or 44%) than lower (10 or 40%), in comparison to their long-term experience. In the 1996 and 1997 surveys, the majority of the respondents that identified turbot as their first priority regarded the abundance as higher or much higher than in all the years that they fished for this species.

Witch

The responses of the two harvesters that directed for witch in 1998 were evenly split (one respondent described the abundance as lower and the other described it as higher than throughout their long-term experience). The opinions of the respondents to the 1997 survey that targeted witch were similarly divided, with two judging the abundance as lower or much lower and two describing it as higher in 1997. In contrast, most of the respondents to the 1996 survey that targeted witch felt that the abundance was the same or lower in 1996 than in all the years that they fished for witch.

Yellowtail Flounder

The single respondent that identified yellowtail flounder as his first priority in 1998 regarded its abundance as lower than during all of the years that he fished for this species. None of the respondents to the 1997 survey identified yellowtail flounder as their first priority.

Dogfish

Of the two respondents that targeted dogfish in 1998, one indicated that this question was not applicable to him and the other indicated that he had no opinion to offer on this question. In the 1997 survey, five of the seven respondents that directed for dogfish felt that the abundance was much lower, and the remaining two felt that the abundance was lower than in their long-term experience. In the 1996 survey, most of the respondents that directed for dogfish felt that the abundance was the same or higher in 1996 as it had been in their long-term experience.

The respondents were asked to categorize the discarding of their most preferred species (i.e., First Priority), if any, by other harvesters during the 1998 fishery (Question 27)(Figure 27).

More than half (56%) of the respondents that identified cod as their first priority and who offered opinions indicated that they believed there was no discarding of cod in the 1998 fishery. Fifteen respondents (27%) considered that low to moderate amounts of cod were discarded, and 9 respondents (16%) considered that high to very high amounts were discarded. Of the two respondents that identified white hake as their first priority, one suggested that there was no discarding of white hake in 1998, and the other had no opinion on this question. Almost half (48%) of the respondents that targeted plaice indicated that they believed there was no discarding of plaice in the 1998 fishery. Six respondents (21%) felt that low amounts of plaice were discarded, 3 (10%) felt that moderate amounts were discarded, and six (21%) felt that high amounts were discarded in 1998. The majority of the respondents (69%) that identified winter flounder as their first priority considered that there was no discarding of winter flounder in the 1998 fishery, but twelve harvesters (27%) believed that a low amount was discarded. Of the respondents that targeted halibut and who offered opinions on this question, the majority (63%) suggested that a low amount was discarded in 1998. The remaining respondents (37%) said they believed there was no discarding of halibut. Most (20 harvesters or 80%) of the respondents that directed for turbot recommended that no turbot was discarded in 1998, but 3 (12%) believed that a low amount was discarded, 1 (4%) felt that a moderate amount was discarded, and 1 (4%) felt that a very high amount was discarded. All (3) of the respondents that identified witch as their first priority considered that there was no discarding of witch in 1998. The only respondent that targeted yellowtail flounder indicated that he had no opinion to offer on this question. Of the two respondents that directed for dogfish, one suggested that there was no discarding and the other suggested that a low amount was discarded.

Question 28a asked the respondents if they were aware of any unreported catches of cod in the ports where they landed their catches in 1998 (i.e., through poaching, excessive recreational fishing, black market fishing, or other similar activities)(Figure 28).

Of all the respondents to the questionnaire that offered an opinion on this question, 63% (115 out of 182) indicated that they were not aware of any unreported catches of cod in 1998. On the other hand, 37% said that they were aware of unreported catches of cod. For the respondents that identified cod as their first priority, most (56%) of those that offered opinions, stated that they were not aware of any unreported catches

of cod but 44% said that they were aware of such catches. The areas with the highest percentage of respondents indicating they were aware of such activities were Gaspé (56%) and the Magdalen Islands (44%), and the areas with the highest percentage indicating they were not aware of such activities were Prince Edward Island (82%), New Brunswick (64%) and Nova Scotia (61%).

The respondents who indicated they were aware of unreported catches of cod in 1998 were also asked to estimate approximately how much cod was landed through these activities (i.e., in the hundreds or thousands of tonnes)(Question 28b)(Figure 29).

The majority of these respondents (72%) were unable to estimate the amount of cod landed in this manner. Of those respondents that were able to provide an estimate, 58% were in the hundreds of tonnes and 42% were in the thousands of tonnes. The highest percentage of respondents providing estimates in the hundreds of tonnes were from Prince Edward Island, and the highest percentage providing estimates in the thousands of tonnes were from New Brunswick.

Almost all of the respondents (190 of 192) indicated that they wanted to receive a copy of the results of the questionnaire (Question 29).

The final question on the questionnaire asked the respondents if they had any additional comments that they wanted to make on the 1998 groundfish fishery. For convenience, these comments and opinions (Appendix 2) were grouped into the following categories:

- Seals
- Dogfish
- Mesh Sizes
- Gear Conflicts
- Licenses and Quotas
- Fisheries Management
- Other/Miscellaneous

7 - Acknowledgments

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8 - References

Hurlbut, T. 1997. Results of the 1995 End of Season Survey of Groundfish Fishers from the Southern Gulf of St. Lawrence. Man. Rep. Fish. Aquat. Sci. 2434E: 35p.

Hurlbut, T. 1998. Results of the 1996 End of Season Survey of Groundfish Fishers from the Southern Gulf of St. Lawrence. Man. Rep. Fish. Aquat. Sci. 2442E: 58p.

Hurlbut, T. and R. Stevens. 1999. Results of the 1997 End of Season Survey of Groundfish Fishers from the Southern Gulf of St. Lawrence. Manuscr. Rep. Fish Aquat. Sci. 2483E: 50 p.

9 - Figures

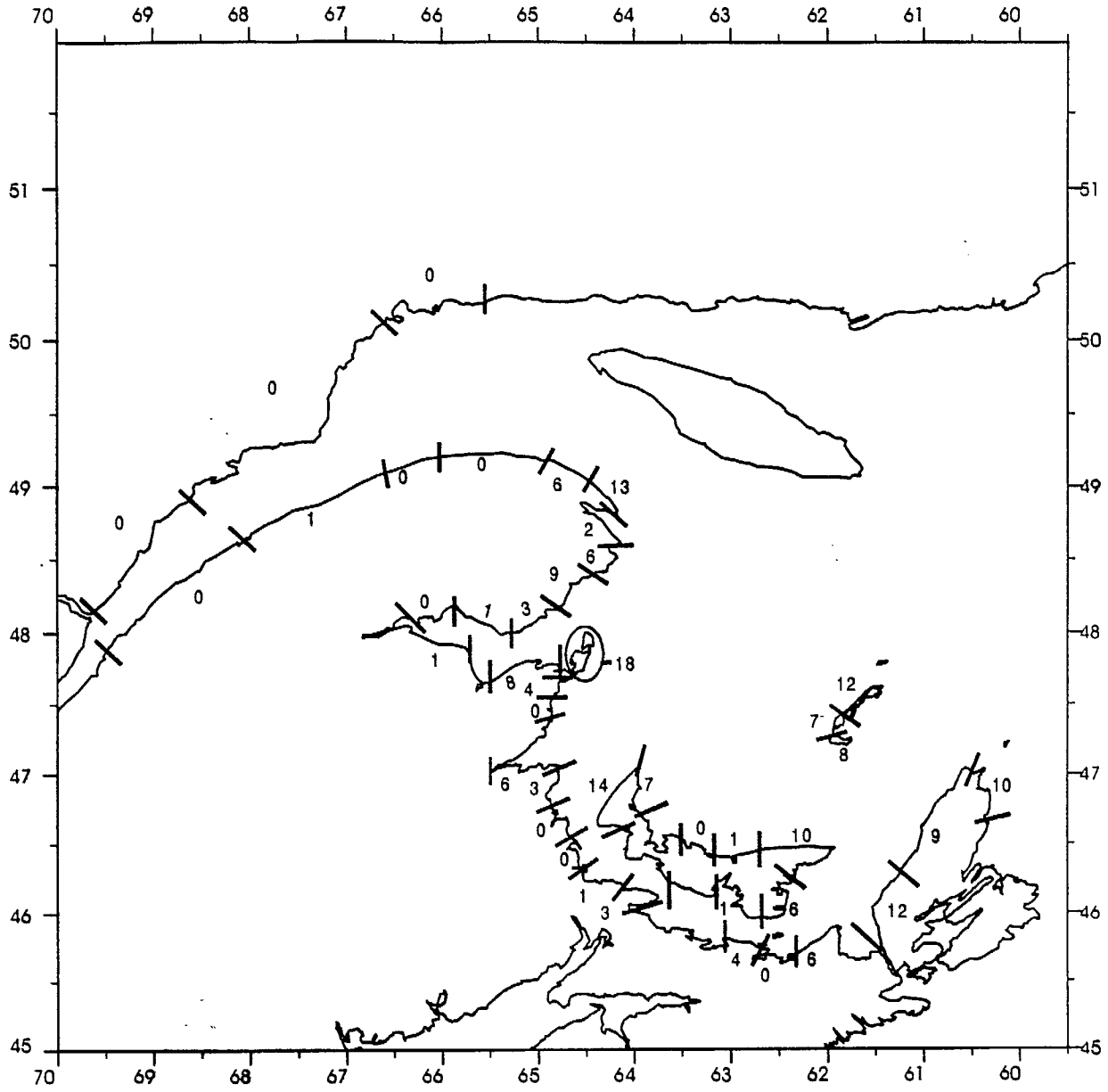


Figure 1. The distribution of all respondents to the 1998 groundfish questionnaire by statistical district (The lines delimit the borders of statistical districts).

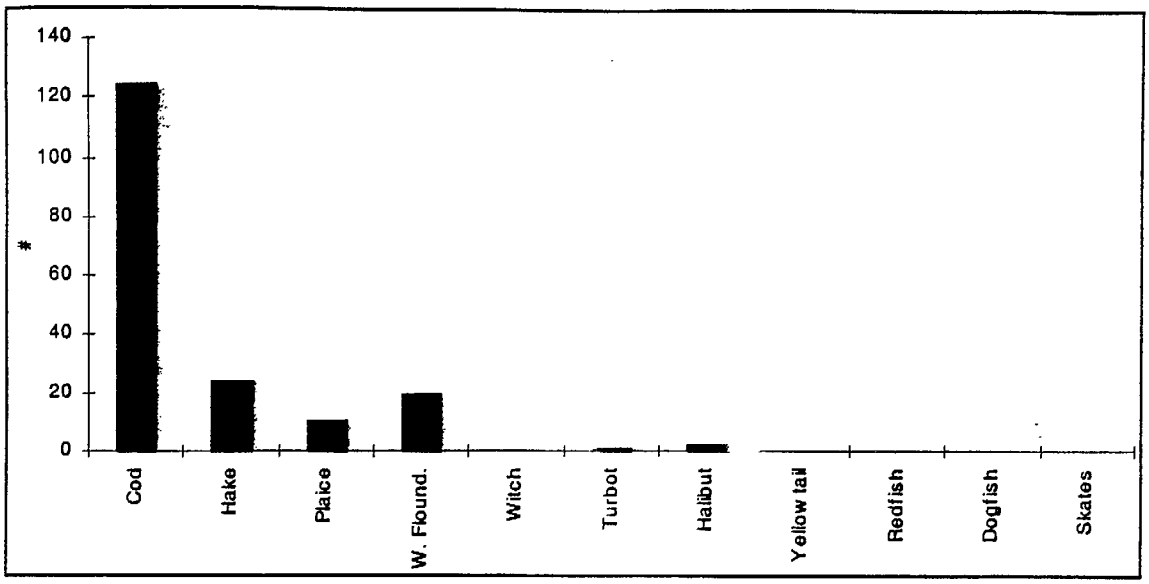


Figure 2. The species of groundfish that respondents fished for 'most of the time' before the fisheries for cod and hake were closed (Note: These species represent the 'first priority' of respondents who indicated that they fished for more than one species of groundfish, 'most of the time').

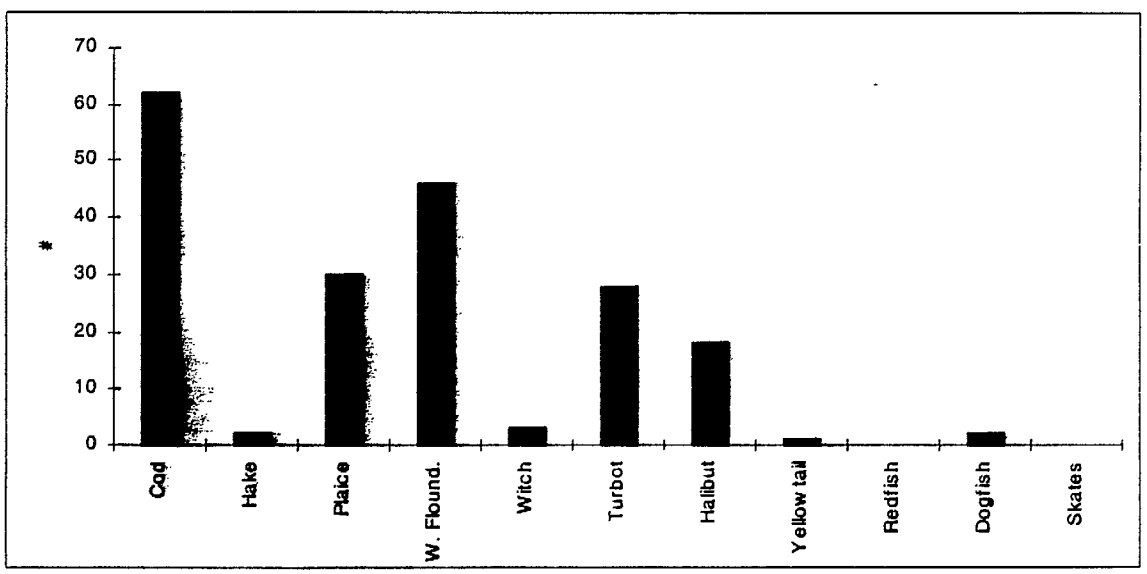
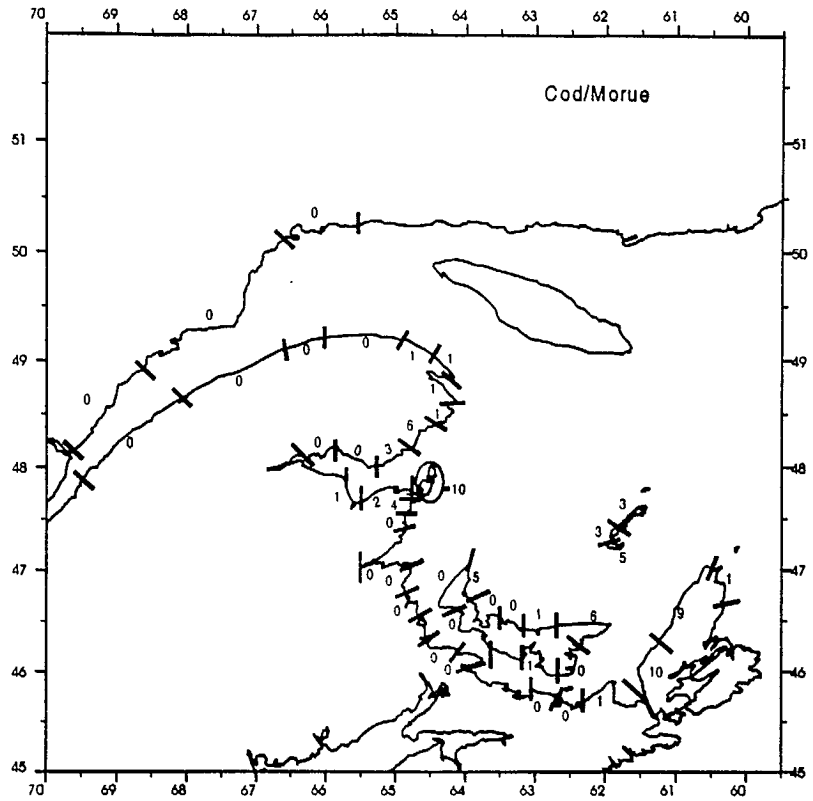
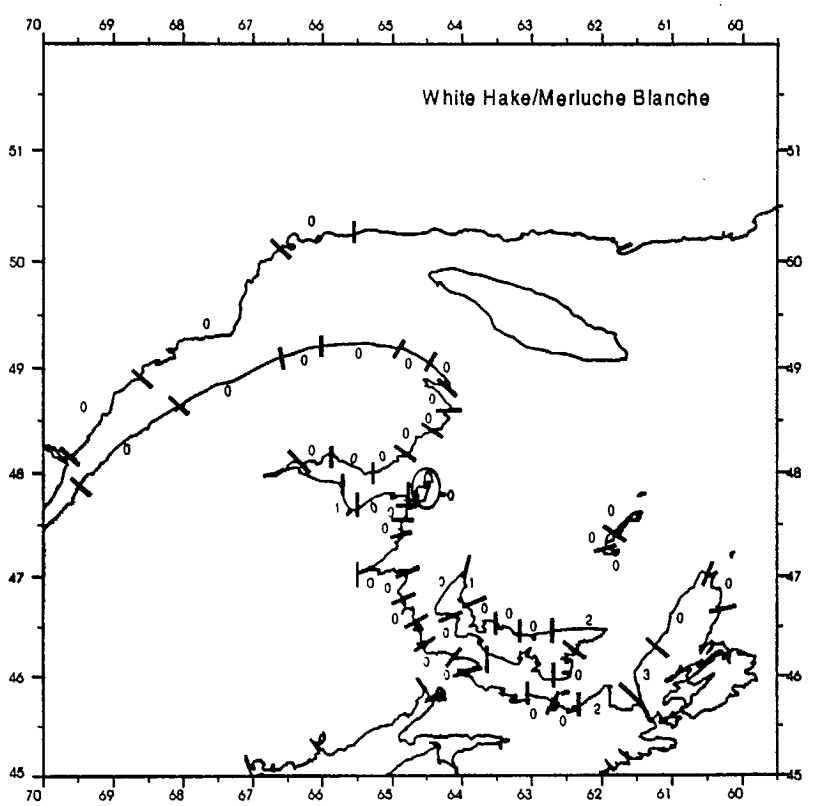
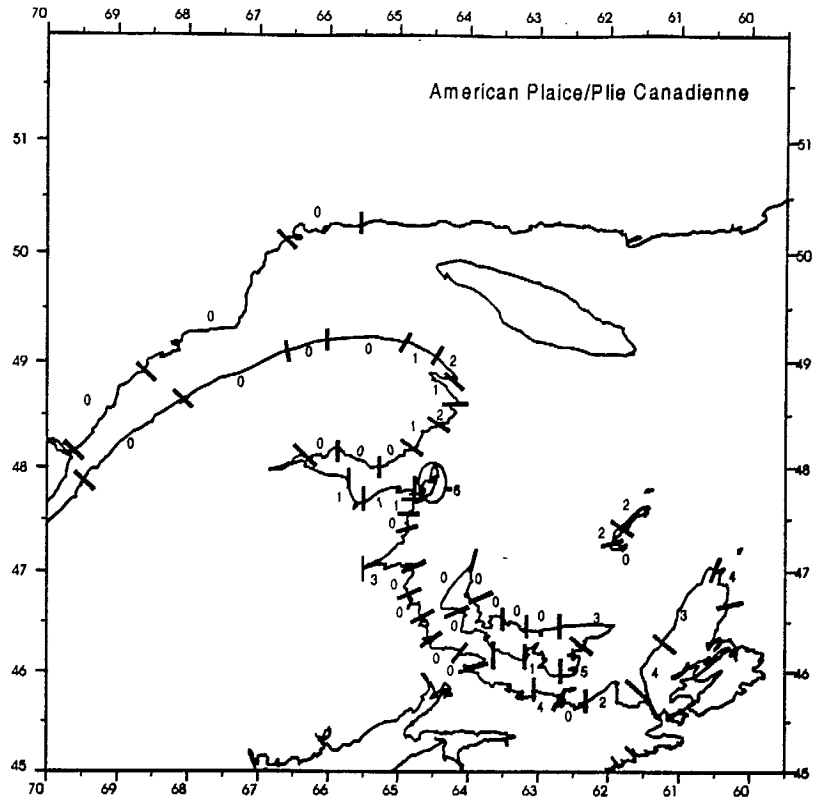


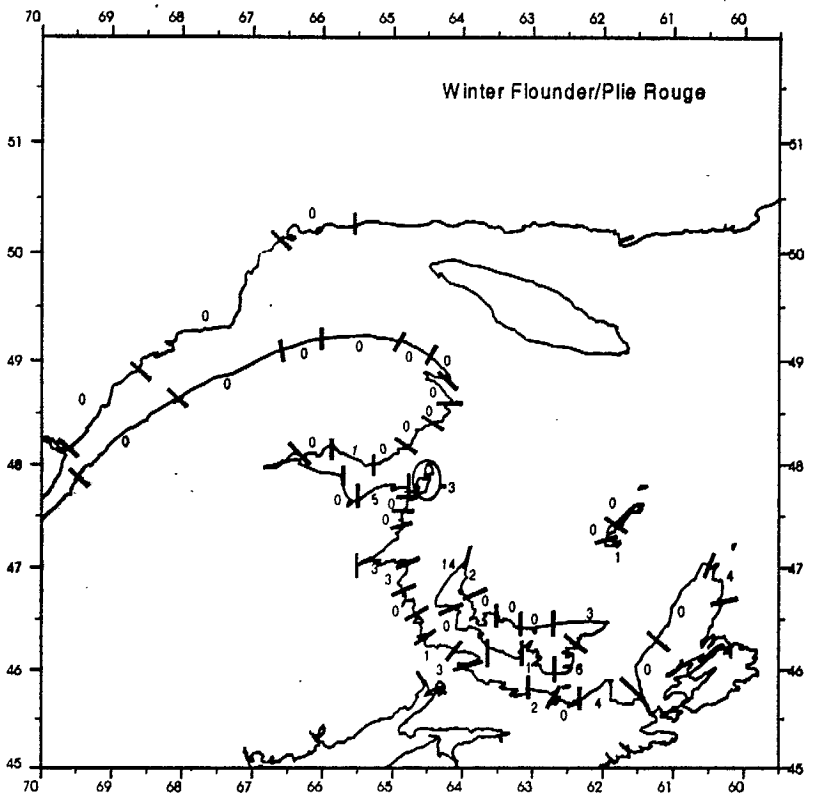
Figure 3. The species of groundfish that respondents fished for 'most of the time' in 1998. (Note: These species represent the 'first priority' of respondents who indicated that they fished for more than one species of groundfish, 'most of the time').



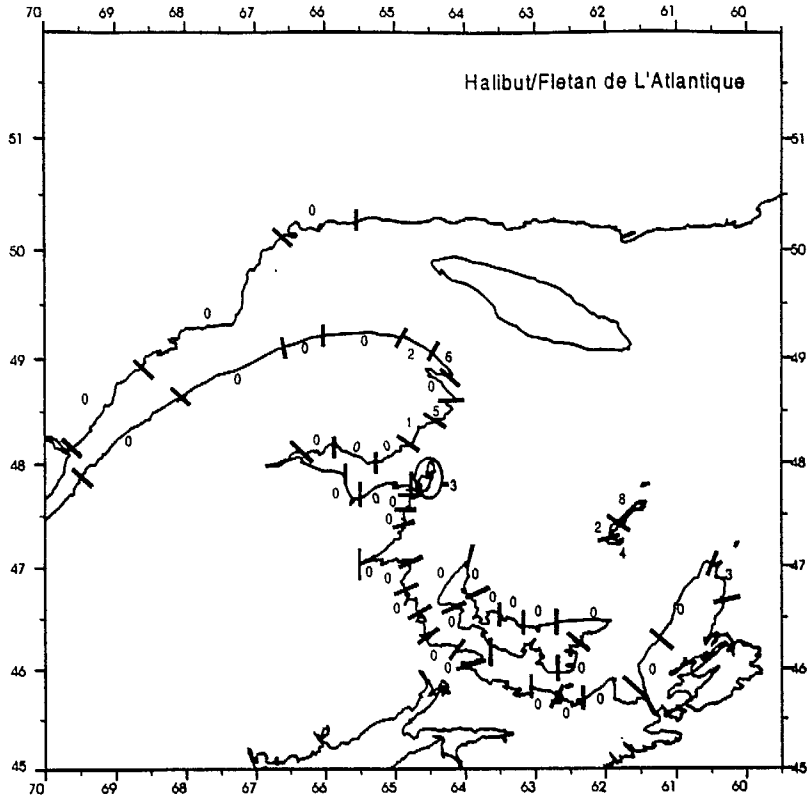


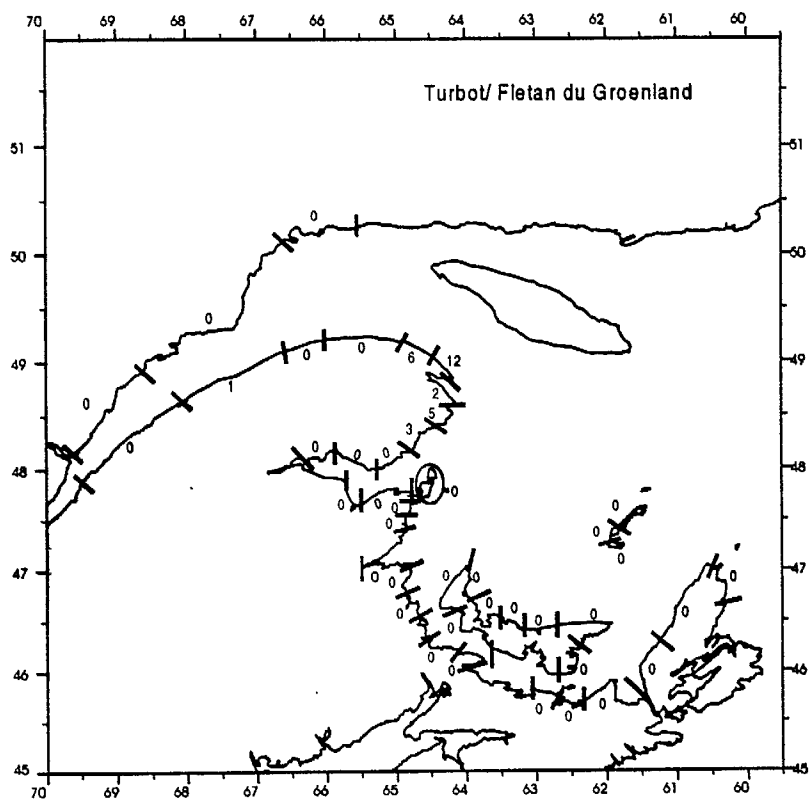
Figures 4 and 5. The distribution of respondents that fished for cod and white hake 'most of the time' in 1998 by statistical district (In Figures 4-12, the species represented are either the first, second or third priority of respondents that fished for more than one species of groundfish in 1998).



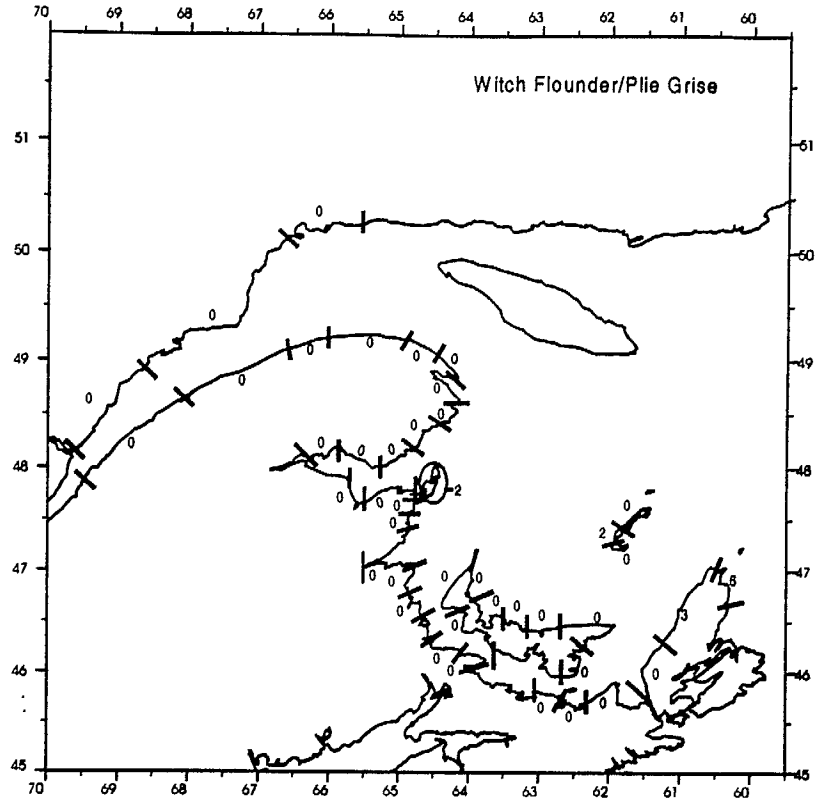


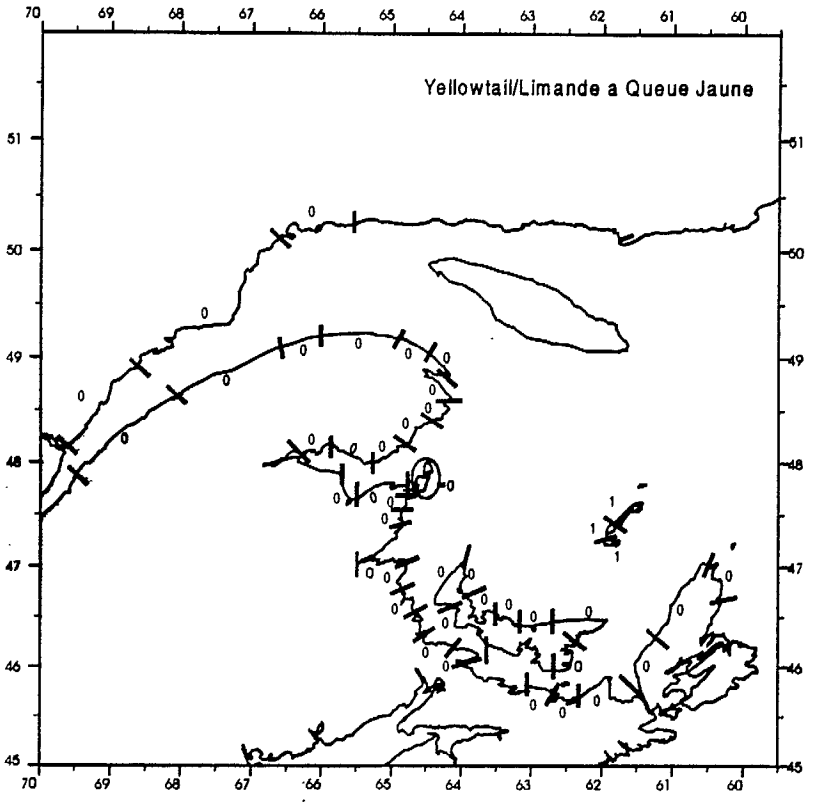
Figures 6 and 7. The distribution of respondents that fished for American plaice and winter flounder 'most of the time' in 1998 by statistical district.





Figures 8 and 9. The distribution of respondents that fished for halibut and turbot 'most of the time' in 1998 by statistical district.





Figures 10 and 11. The distribution of respondents that fished for witch flounder and yellowtail flounder 'most of the time' in 1998 by statistical district.

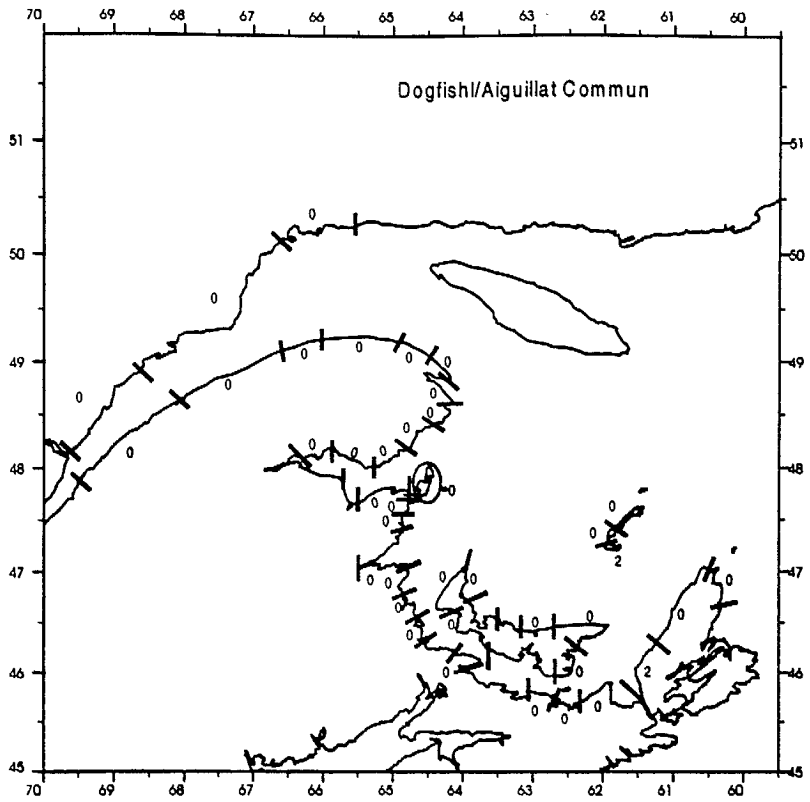


Figure 12. The distribution of respondents that fished for spiny dogfish 'most of the time' in 1998 by statistical district.

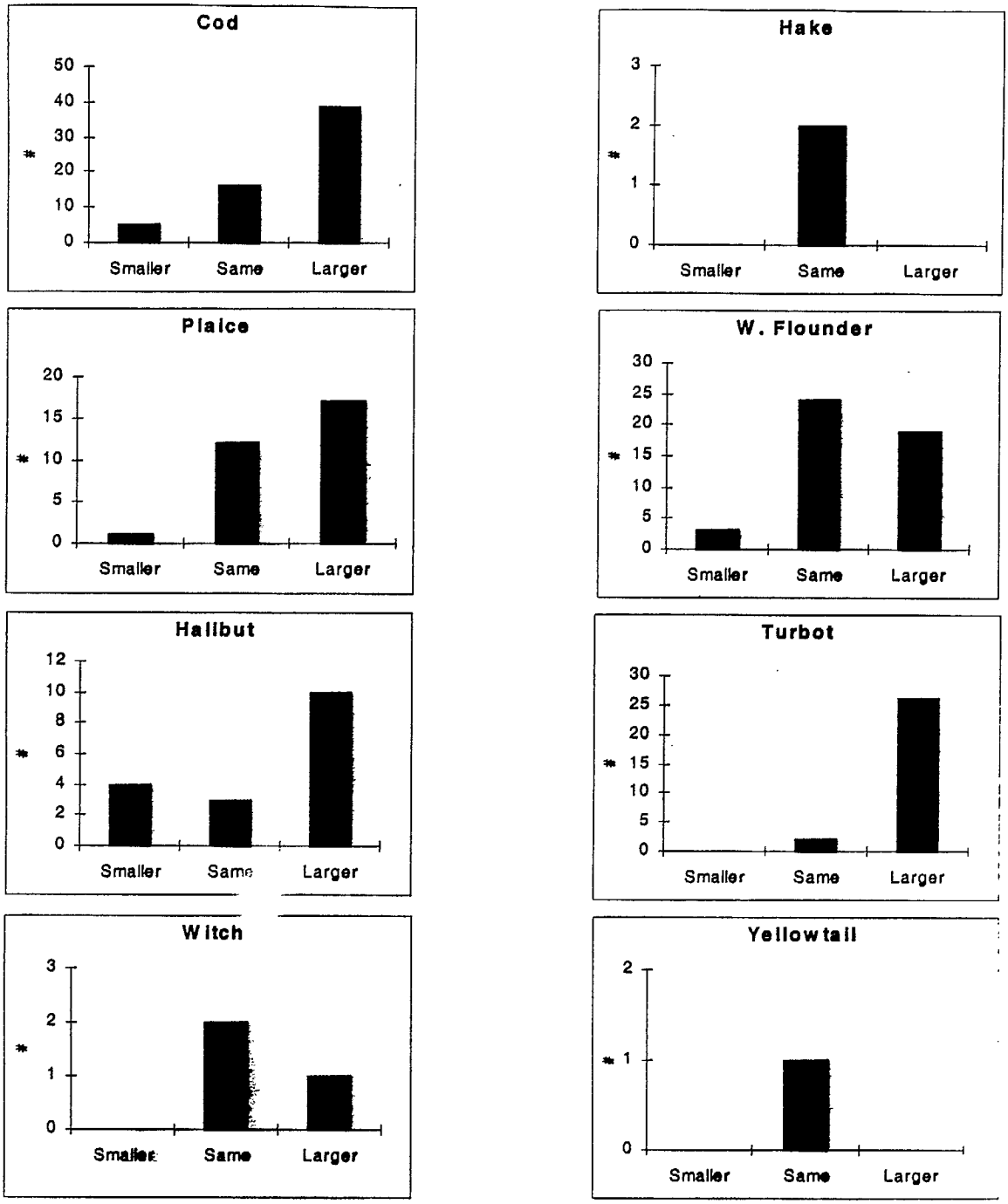


Figure 13. Comparison to previous years of the average size of the species of groundfish fished for 'most of the time' in 1998 (Note: These species represent the 'first priority' of respondents who indicated that they fished for more than one species of groundfish, 'most of the time').

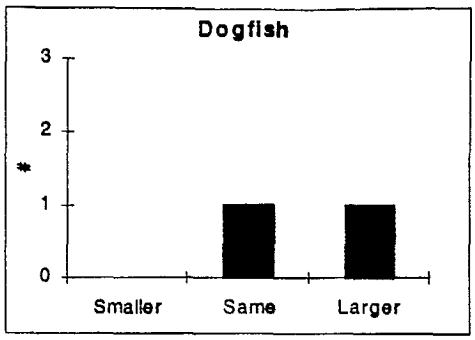
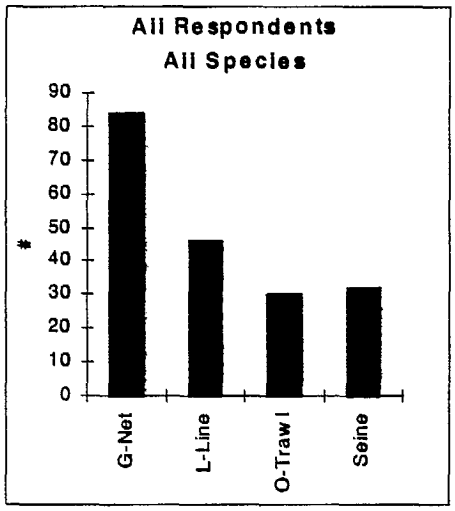
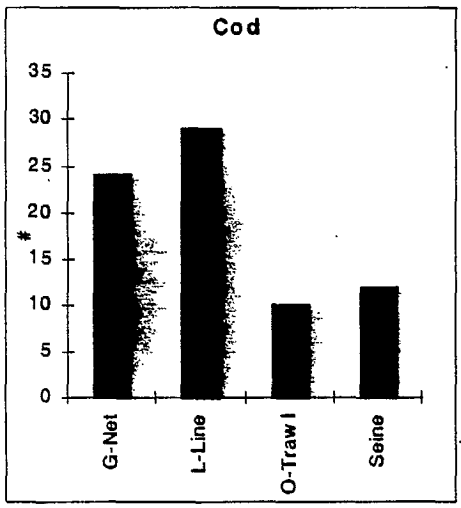


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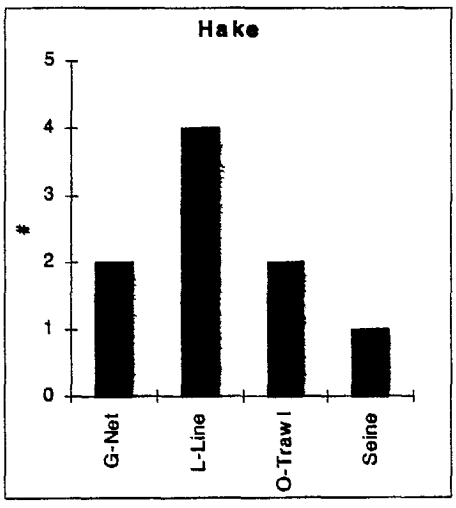
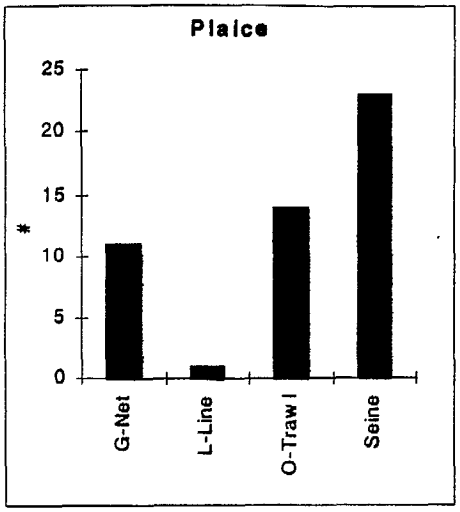
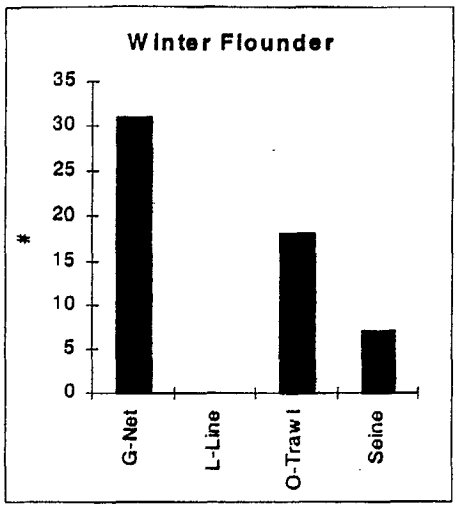
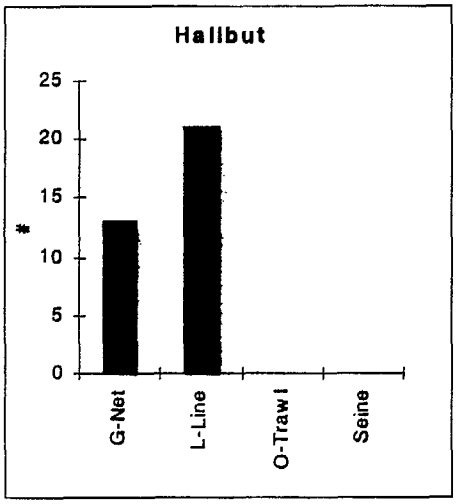
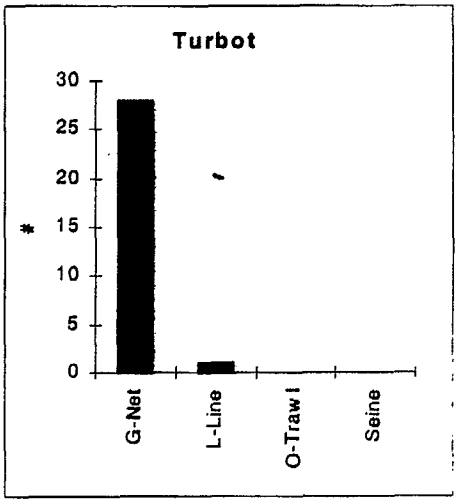


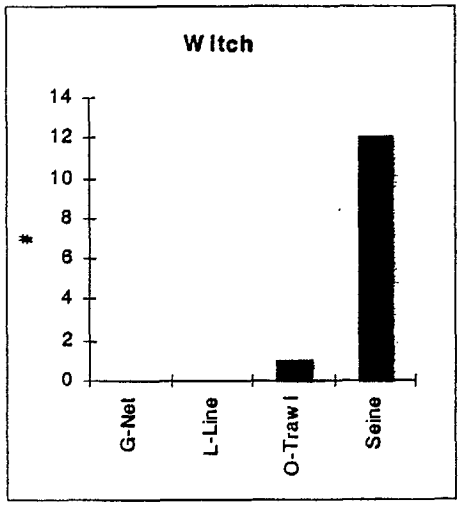
Figure 14. The fishing gear that was used 'most of the time' by respondents.
(Note: These species represent the 'first, second or third priority' of respondents who indicated that they fished for more than one species of groundfish, 'most of the time').











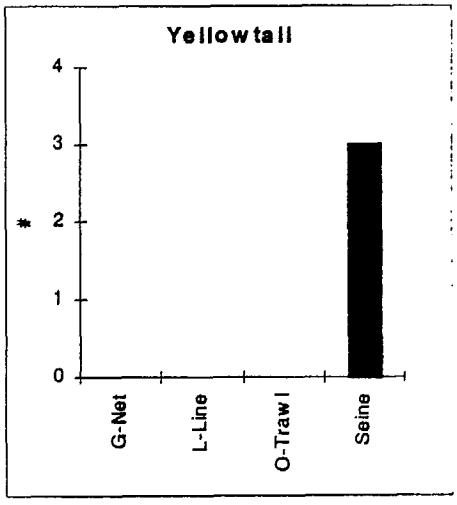


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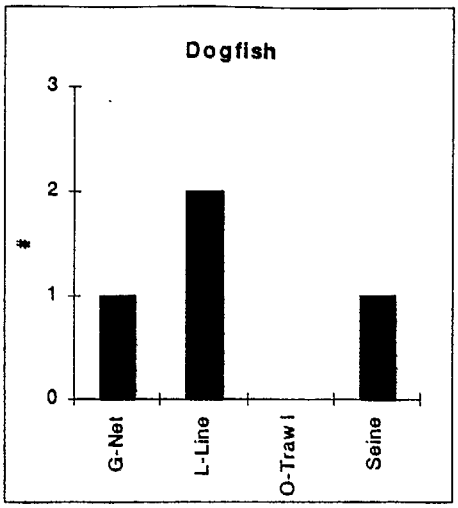
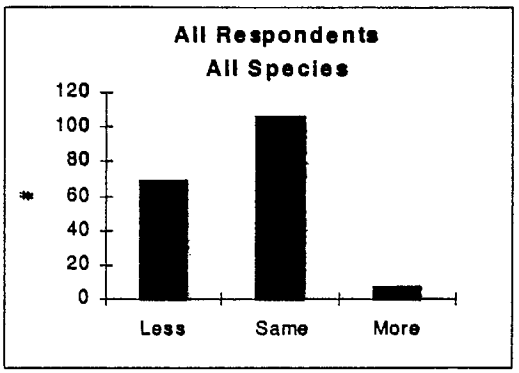
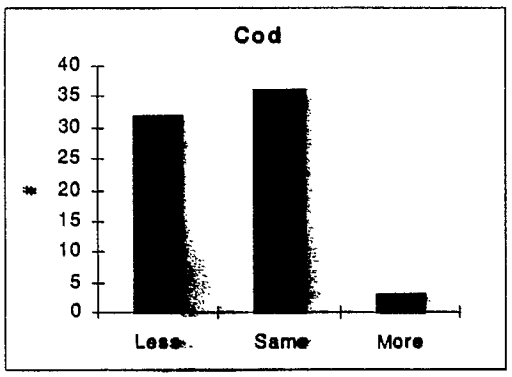


Figure 14. Continued.





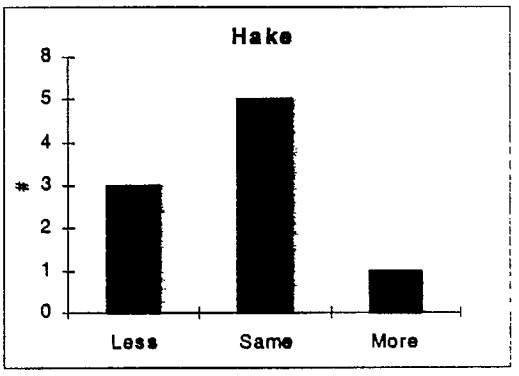
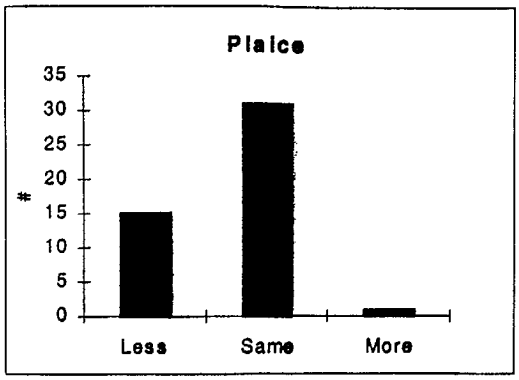
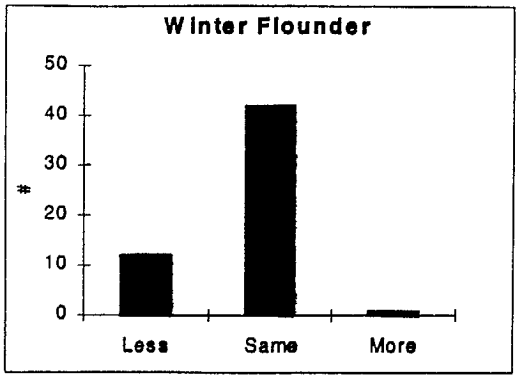
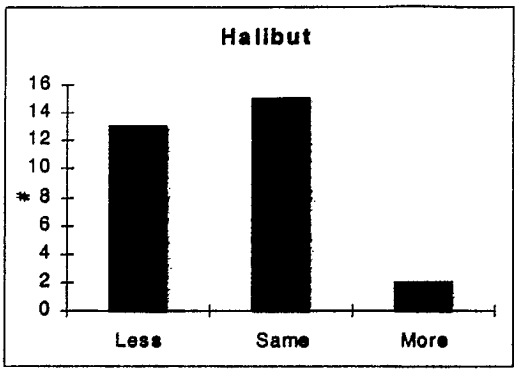
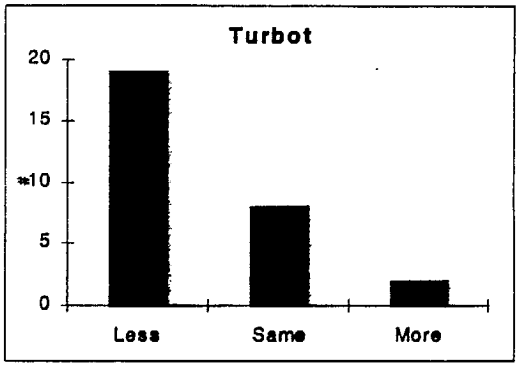


Figure 15. Comparison to previous years of the amount of fishing gear used in 1998. (Note: These species represent the 'first, second or third priority' of respondents who indicated that they fished for more than one species of groundfish, 'most of the time').

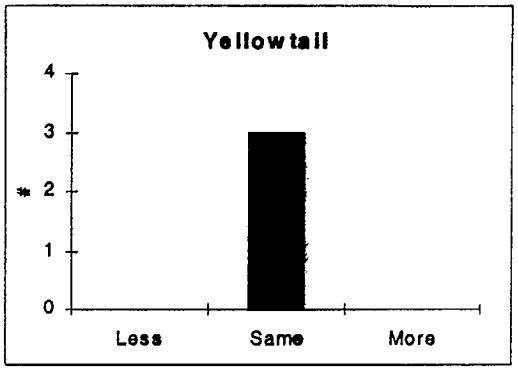












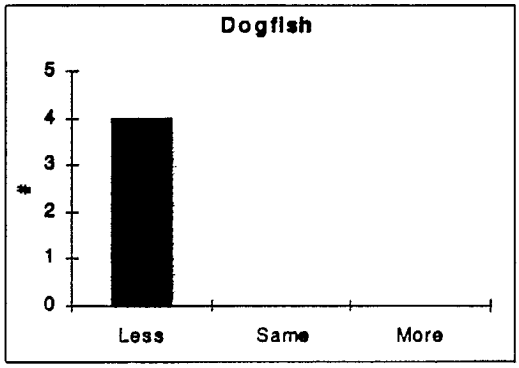


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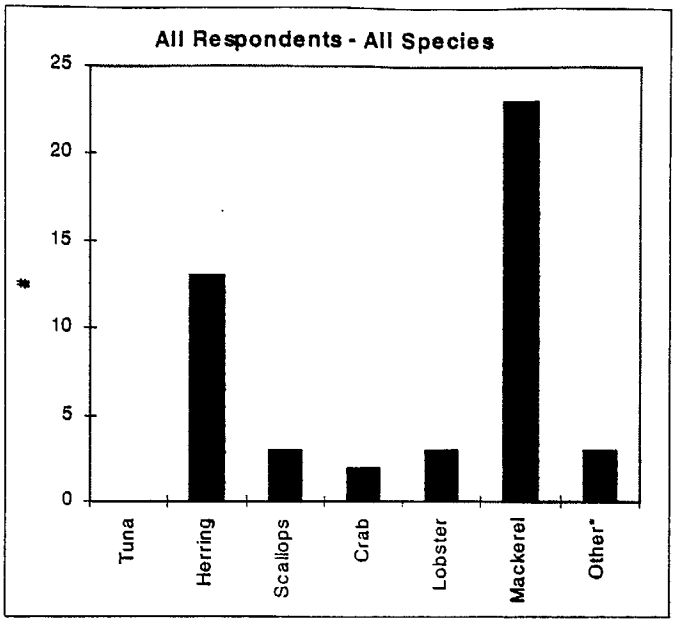


Figure 16. Fisheries that respondents switched to during the 1998 groundfish season.
(Note: "Other" category includes fisheries like shrimp, silversides, rock crab, etc.).

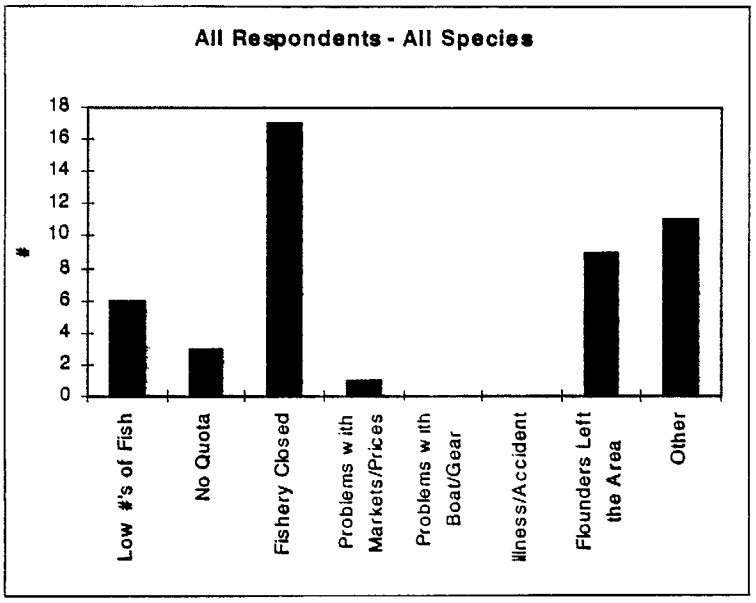
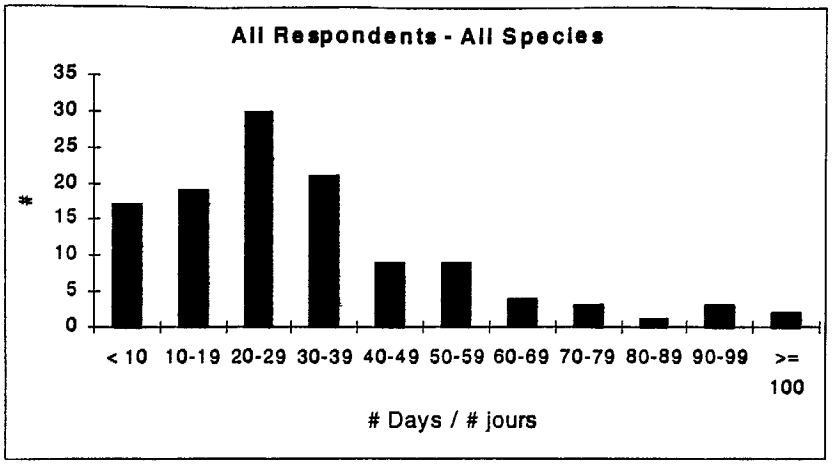
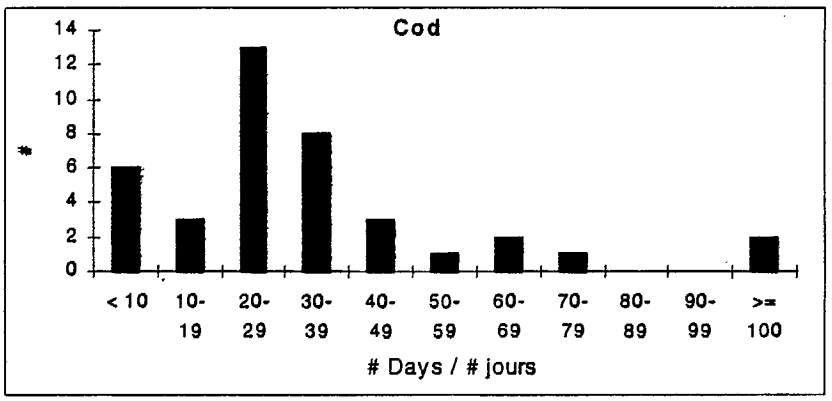


Figure 17. Main reasons given by respondents for switching from groundfish fishing to another fishery during the 1998 groundfish season.
(Note: "Other" category includes the following reasons: groundfish license restrictions, bad weather, participation in experimental fishery projects or the index fishery, etc.).





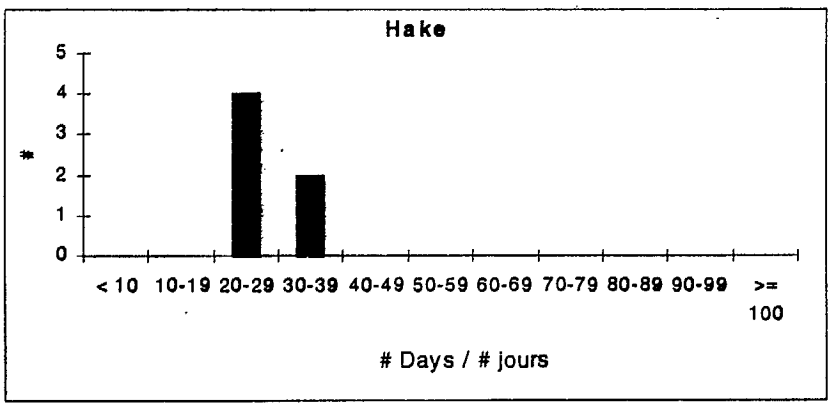


Figure 18. Respondent's best estimates of the number of days they spent fishing for groundfish in 1998 (Note: These species represent the 'first, second or third priority' of respondents who indicated that they fished for more than one species of groundfish, 'most of the time').

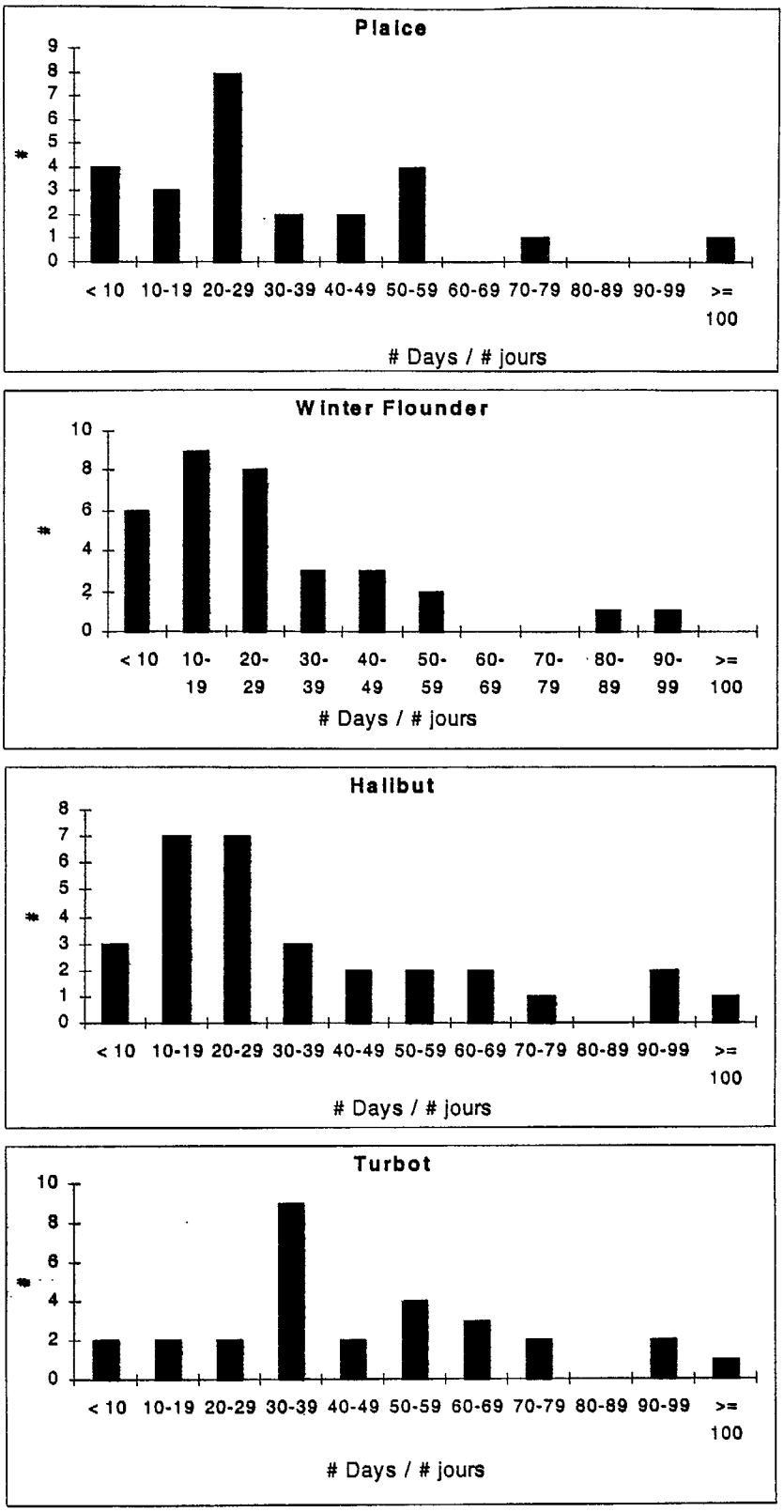


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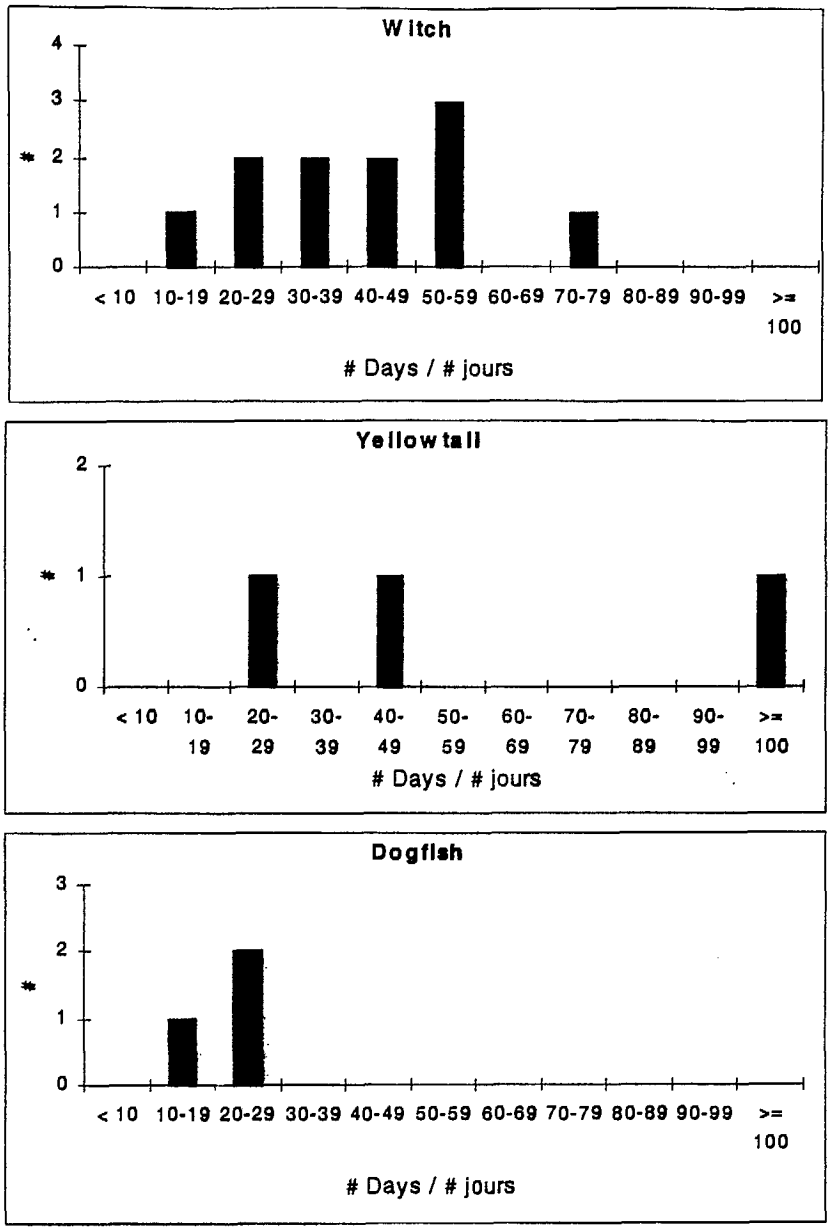


Figure 18. **Continued.**

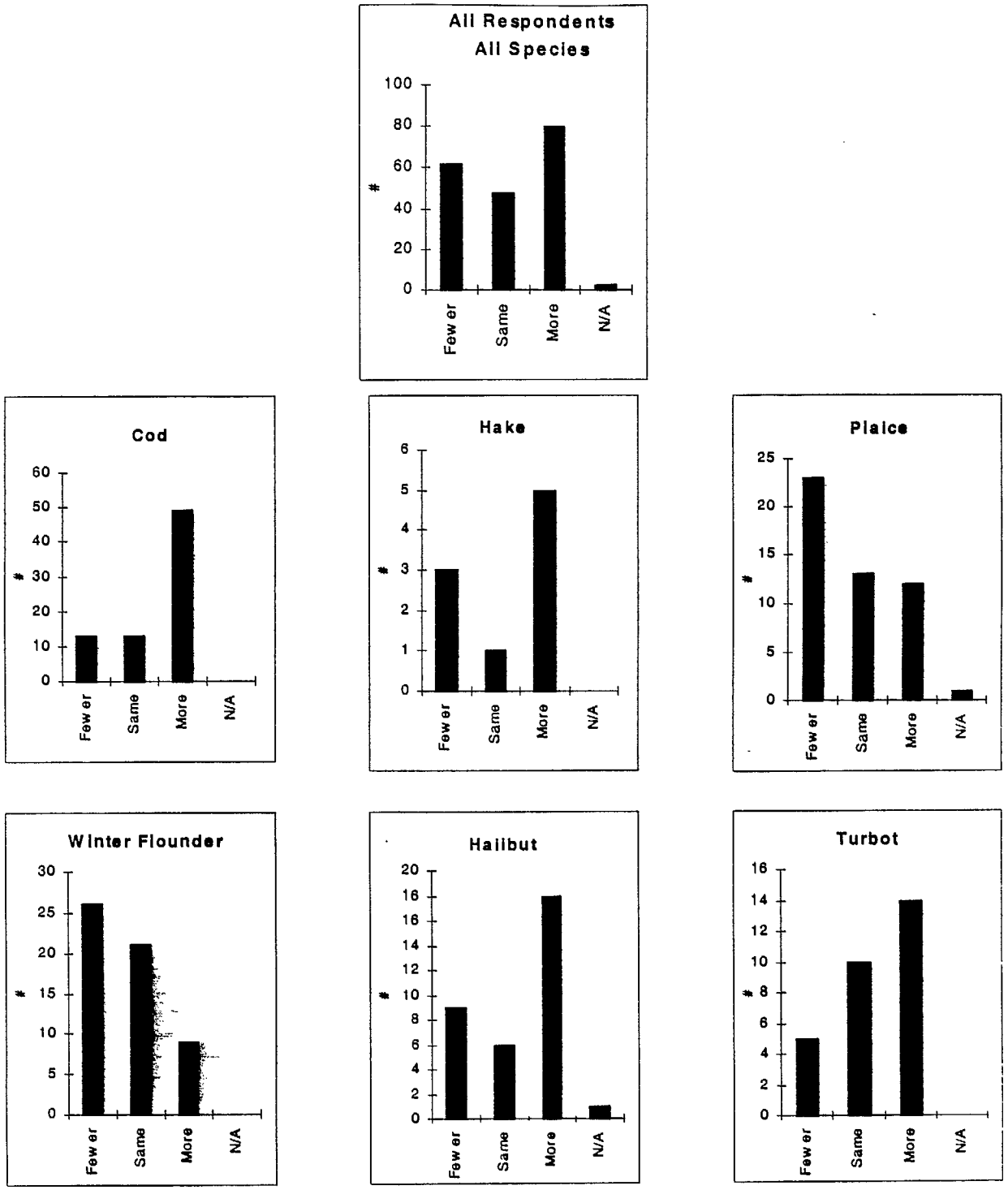
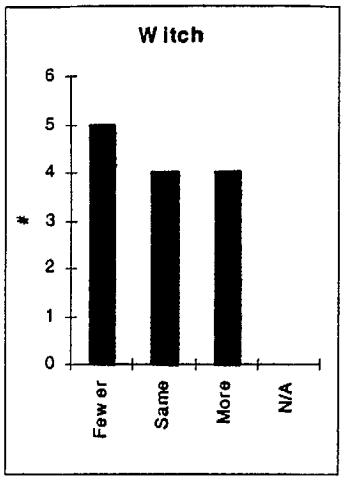
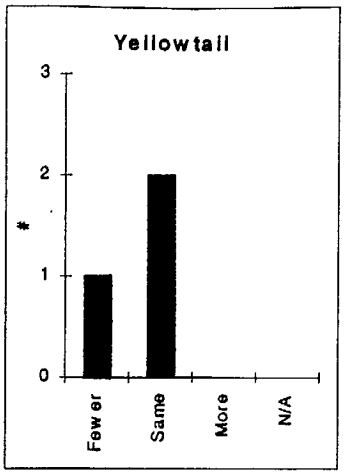


Figure 19. Comparison to 1997 of the number of days spent fishing for groundfish in 1998. (Note: 1. These species represent the 'first, second or third priority' of respondents who indicated that they fished for more than one species of groundfish, 'most of the time'. Note: 2. N/A = "Not Applicable" category represents respondents that did not fish for groundfish in 1997).





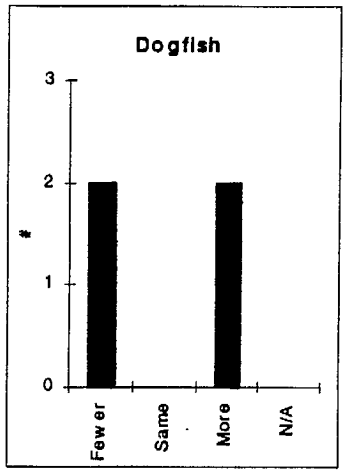
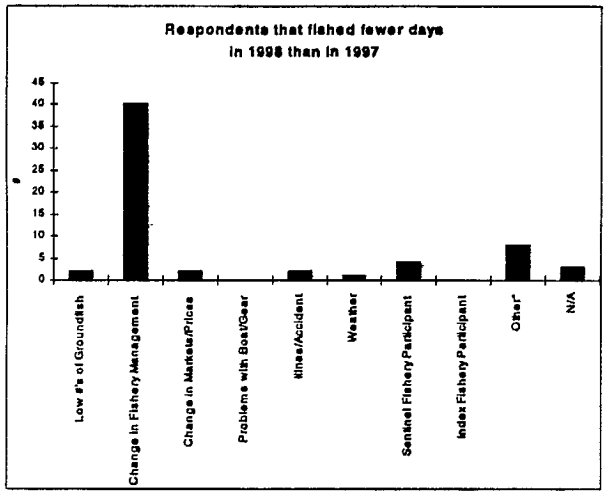


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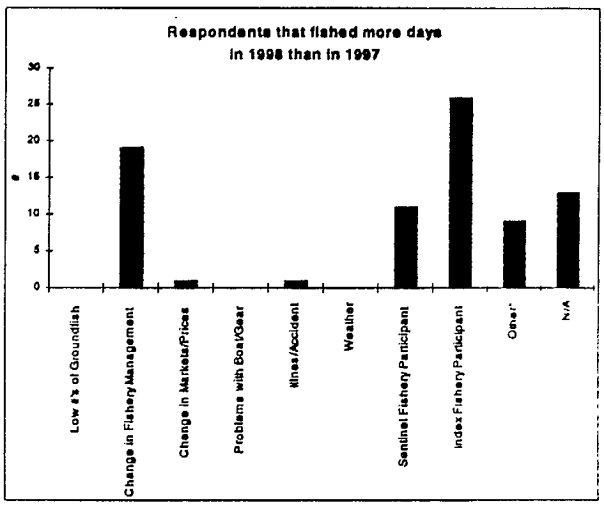


Figure 20. Main reasons given by respondents for spending less or more time fishing for groundfish in 1998 than in 1997.

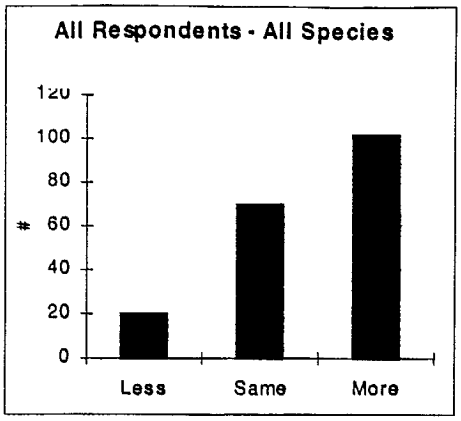


Figure 21. Comparison to previous years of the number of days when the weather was too bad to fish for groundfish in 1998.

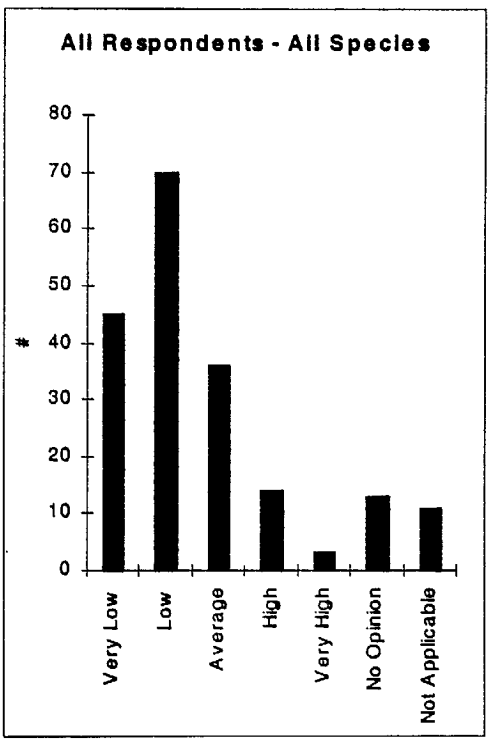


Figure 22. Opinions of respondents concerning the abundance of dogfish in 1998.

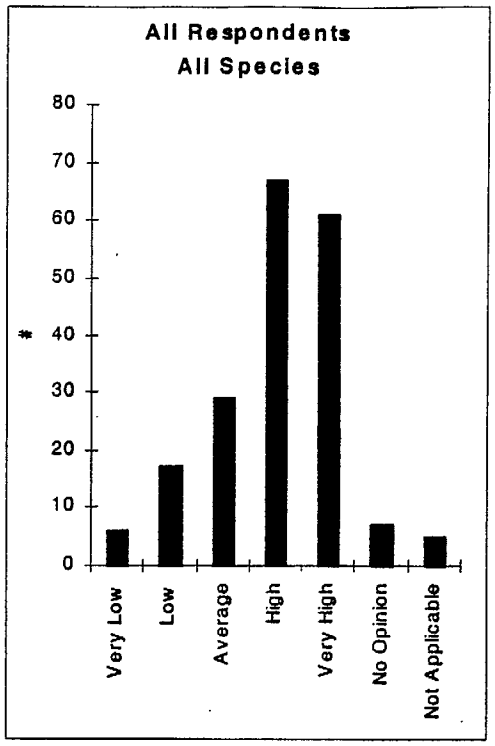
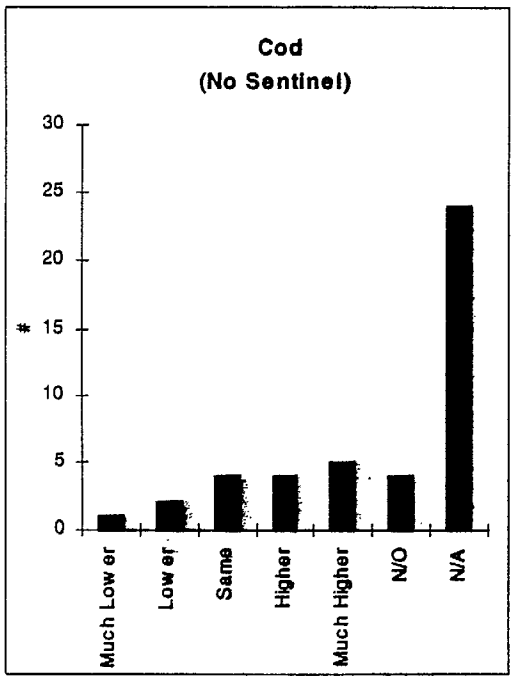


Figure 23. Opinions of respondents concerning the abundance of seals in 1998.



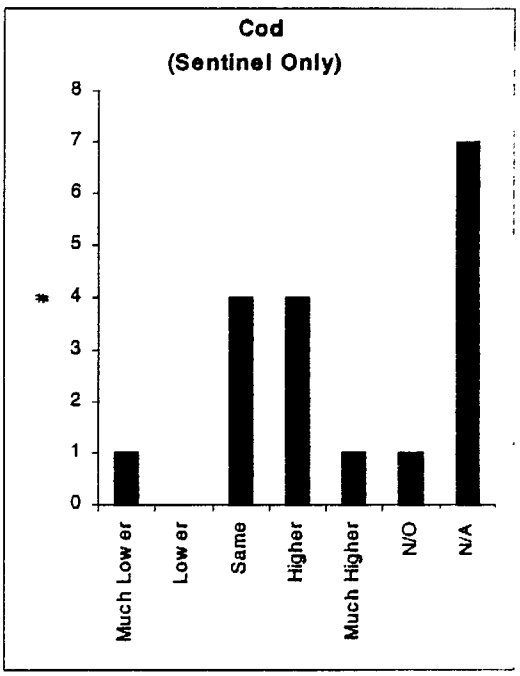
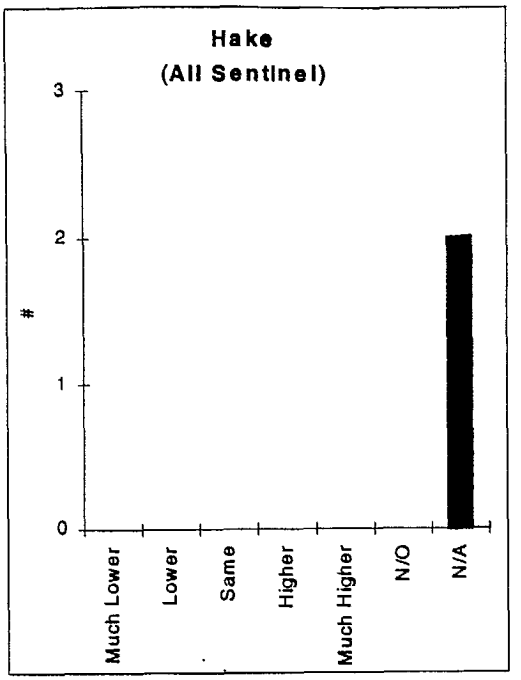
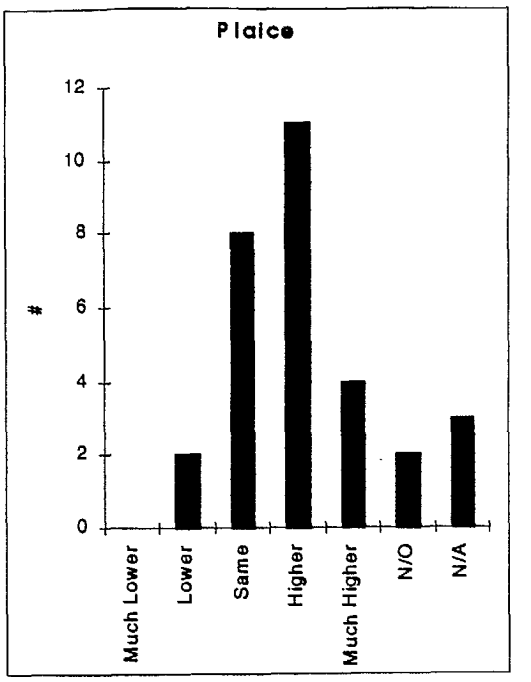
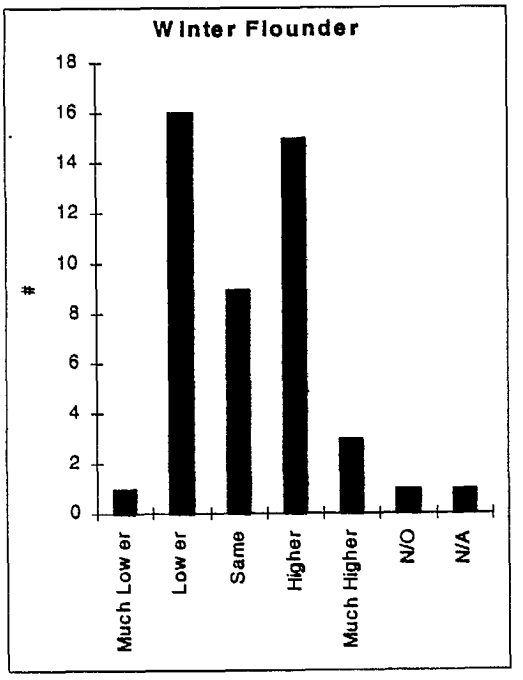


Figure 24. Opinions of respondents asked to compare the abundance of cod, hake, plaice, winter flounder, halibut, turbot, witch, yellowtail and dogfish in 1998 with their abundance in 1997 (Note: 1. These species represent the 'first priority' of respondents who indicated that they fished for more than one species of groundfish, 'most of the time'. 2. N/A = Not Applicable and N/O = No Opinion).







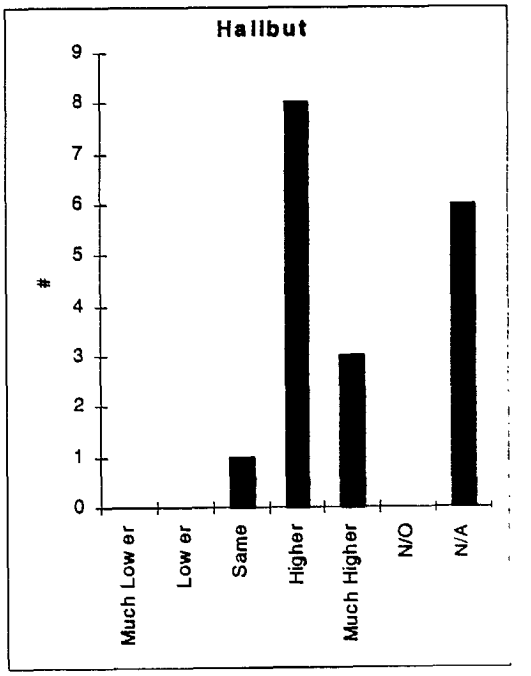
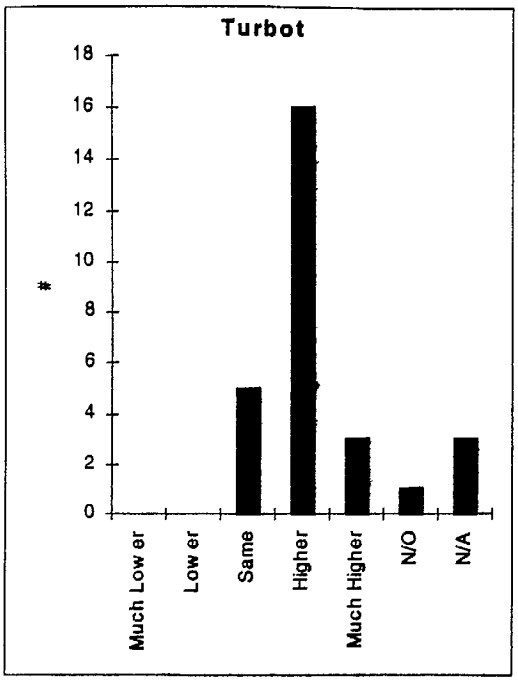
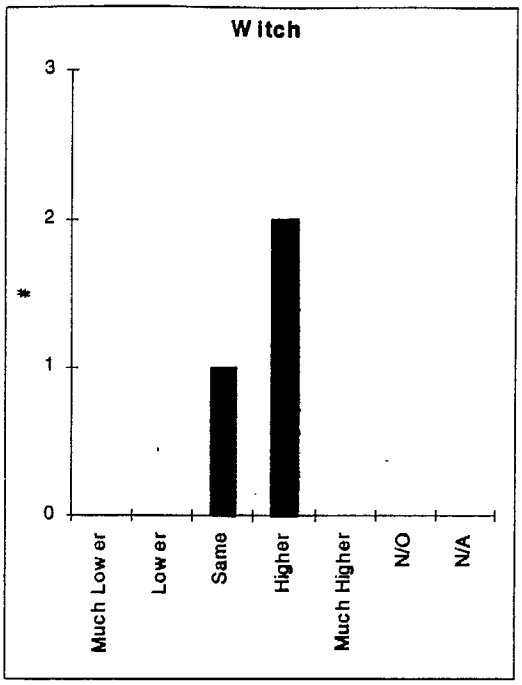
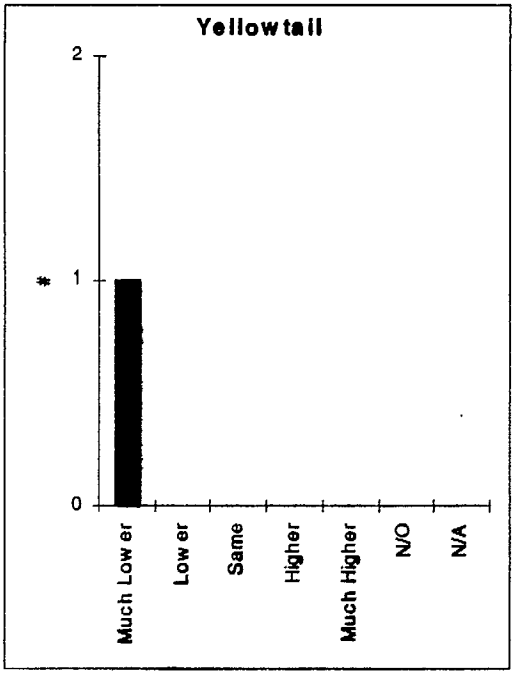


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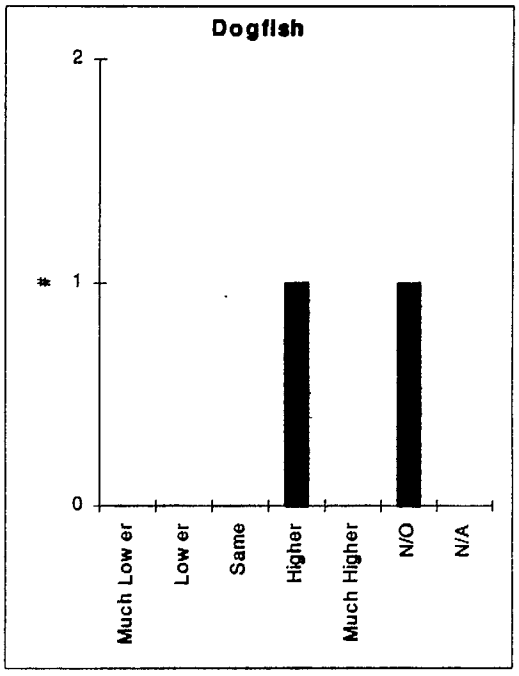


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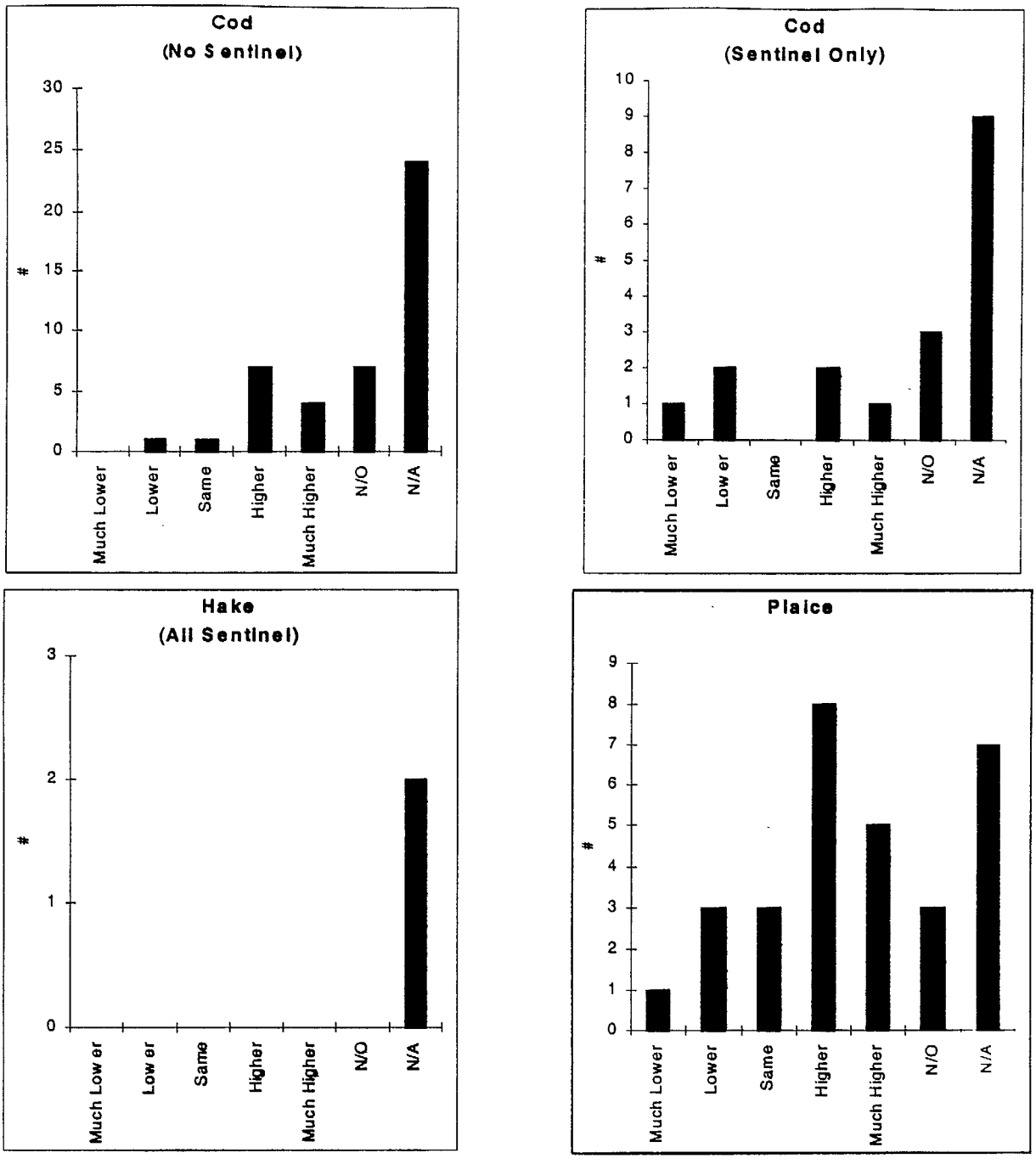
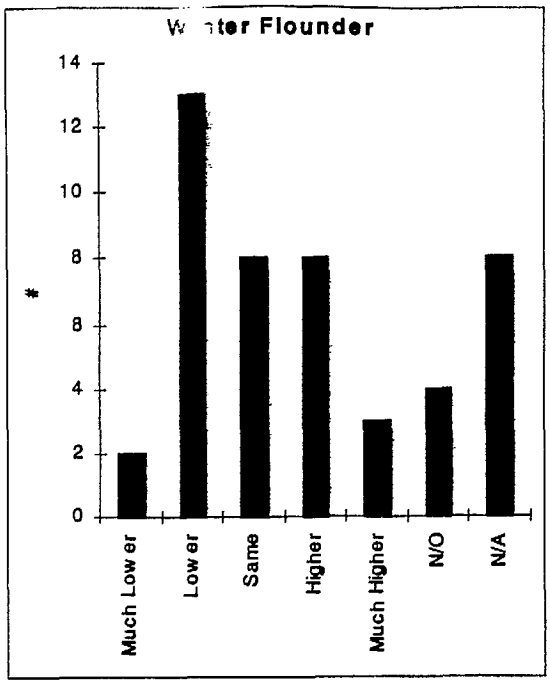
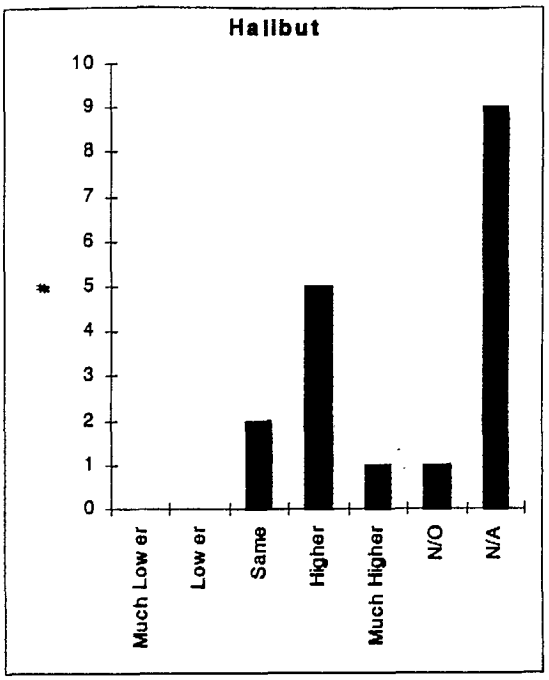
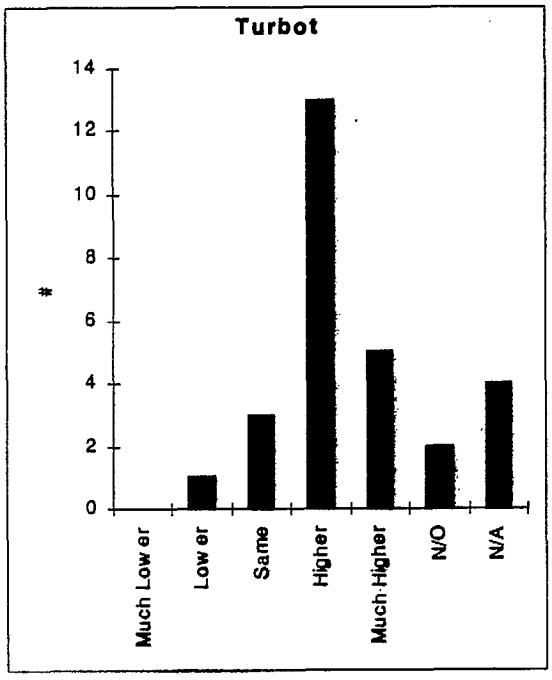


Figure 25. Opinions of respondents asked to compare the abundance of cod, hake, plaice, winter flounder, halibut, turbot, witch, yellowtail and dogfish in 1998 with their abundance from 1993 to 1997 (Note: 1. These species represent the 'first priority' of respondents who indicated that they fished for more than one species of groundfish, 'most of the time'. 2. N/A = Not Applicable and N/O = No Opinion).







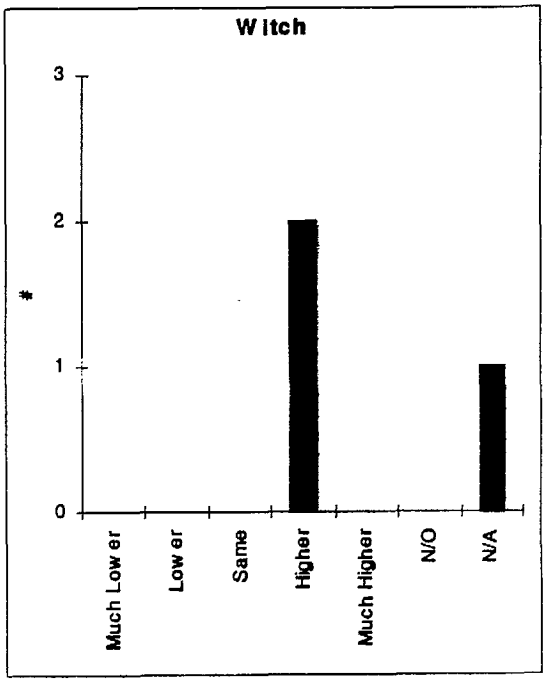
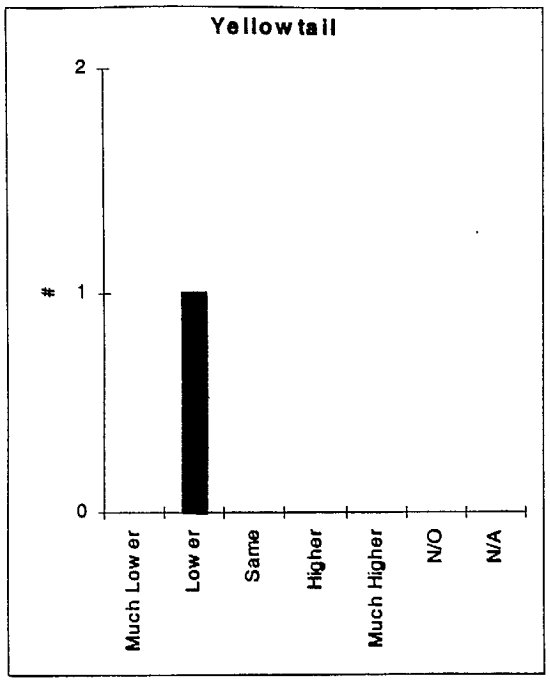


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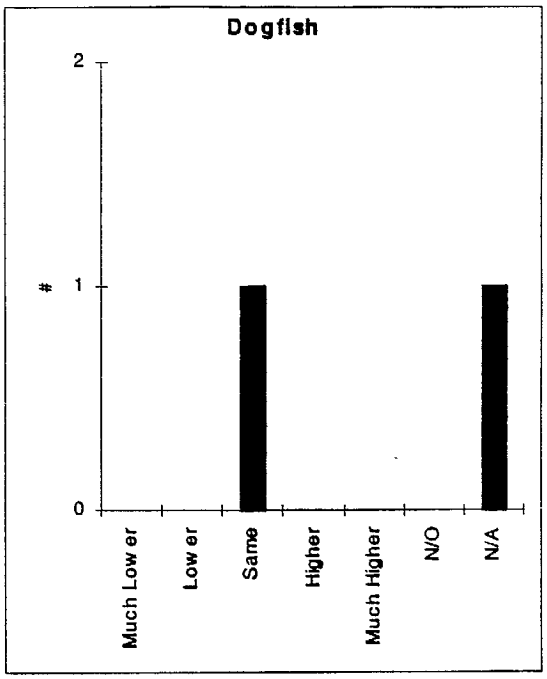
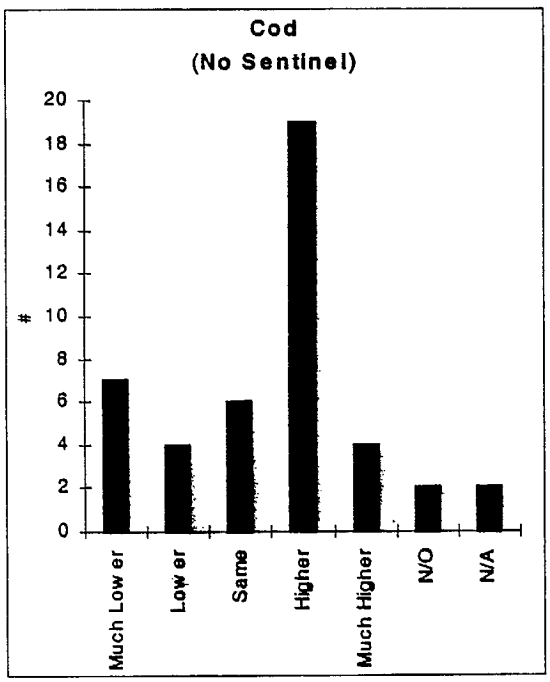


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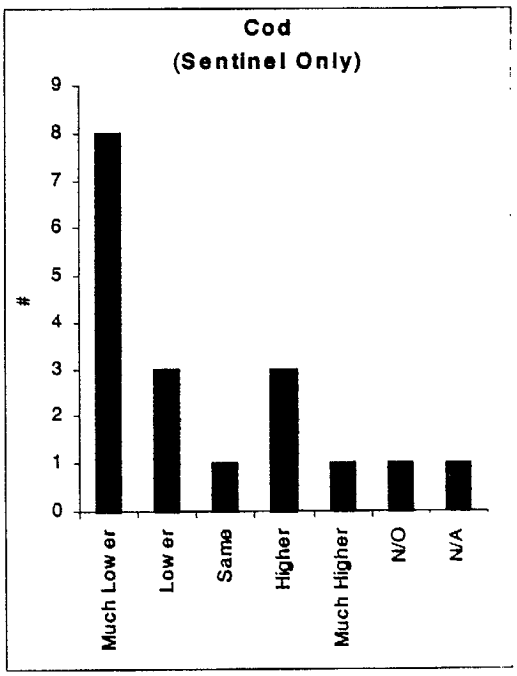
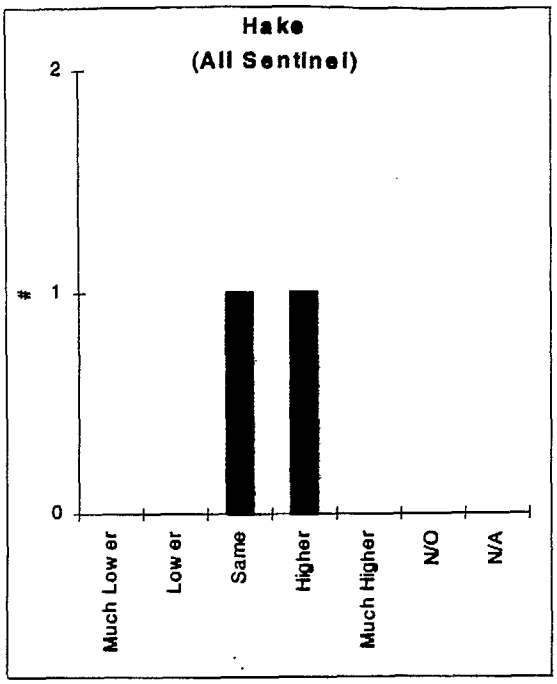
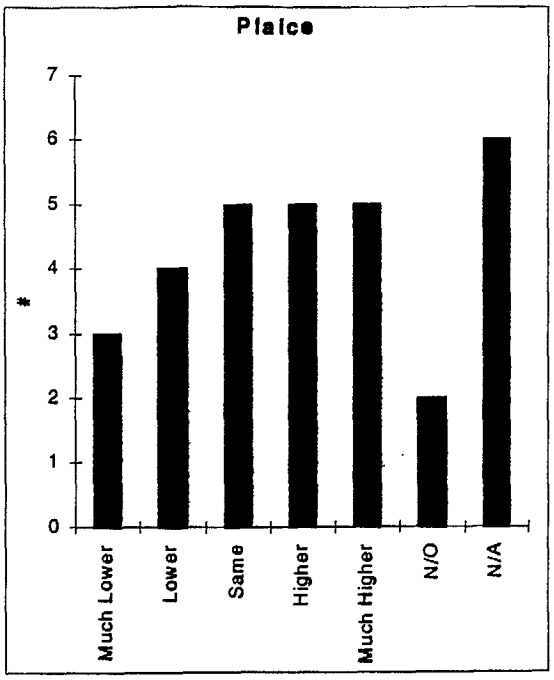
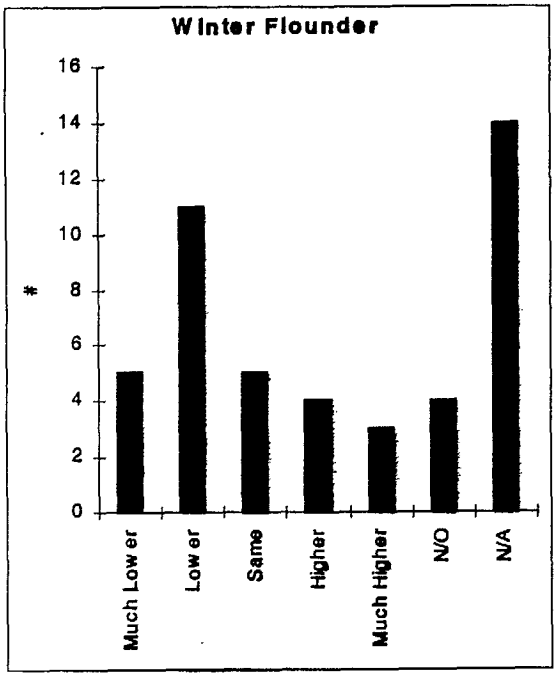


Figure 26. Opinions of respondents asked to compare the abundance of cod, hake, plaice, winter flounder, halibut, turbot, witch, yellowtail and dogfish in 1998 with their abundance during all of the years that they fished for this species (Note: 1. These species represent the 'first priority' of respondents who indicated that they fished for more than one species of groundfish, 'most of the time'. 2. N/A = Not Applicable and N/O = No Opinion).







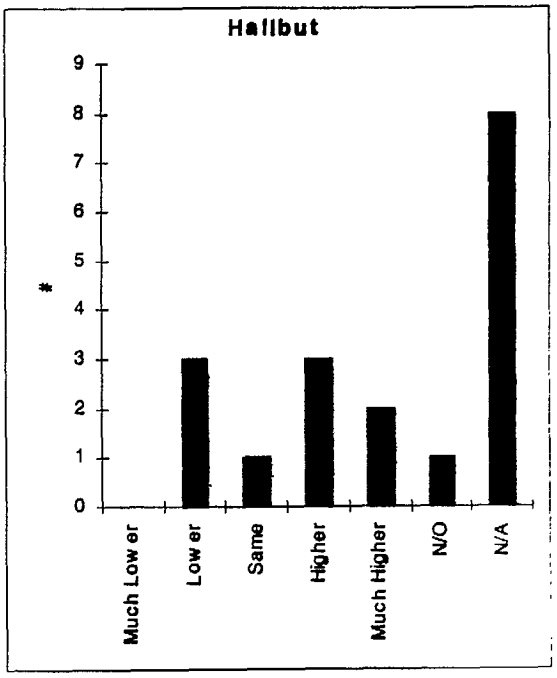
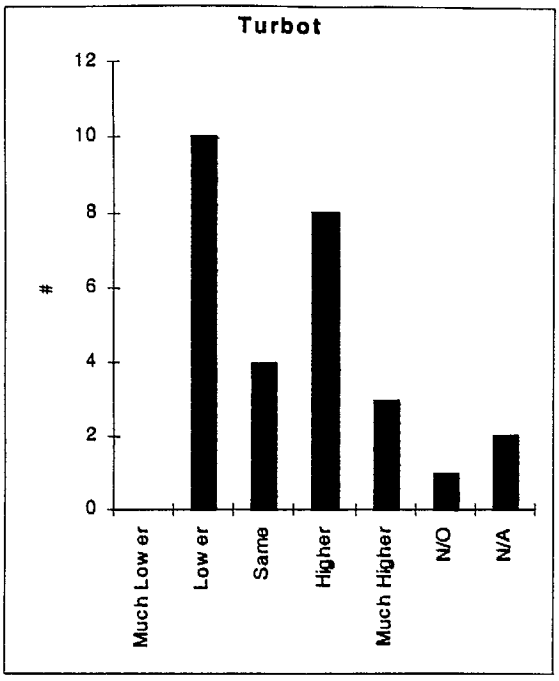
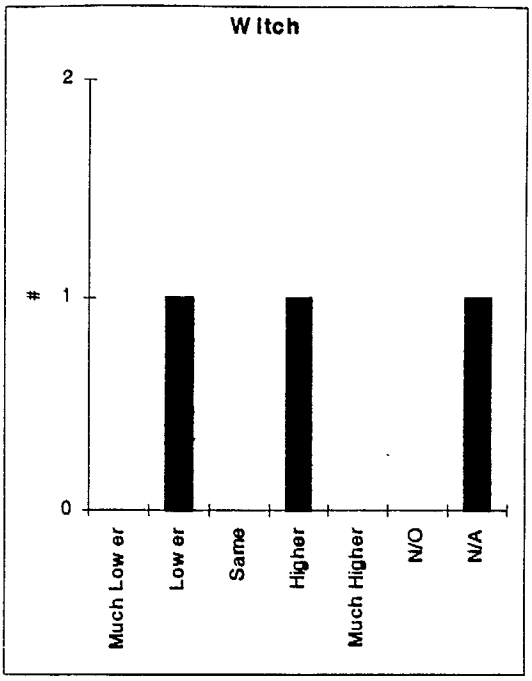
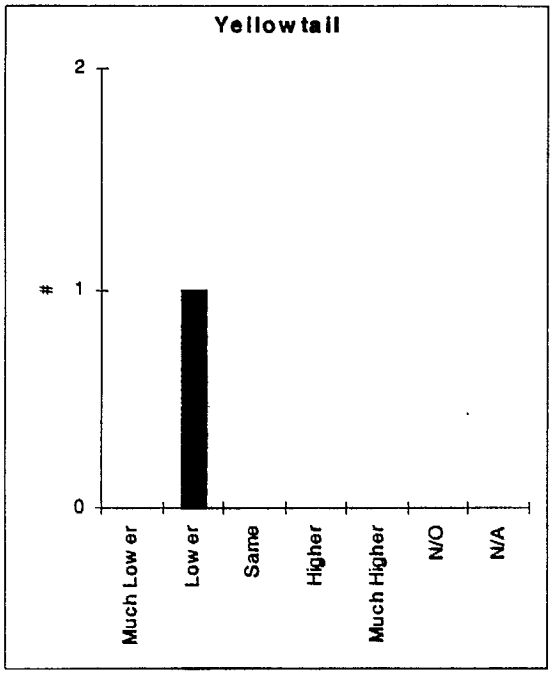


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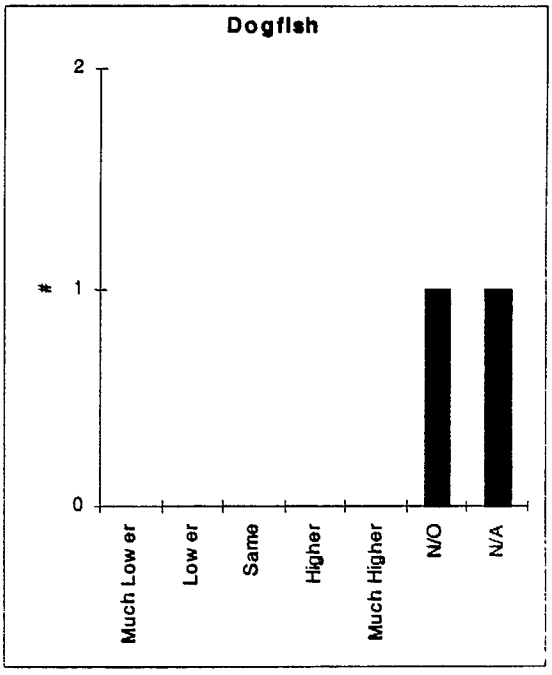


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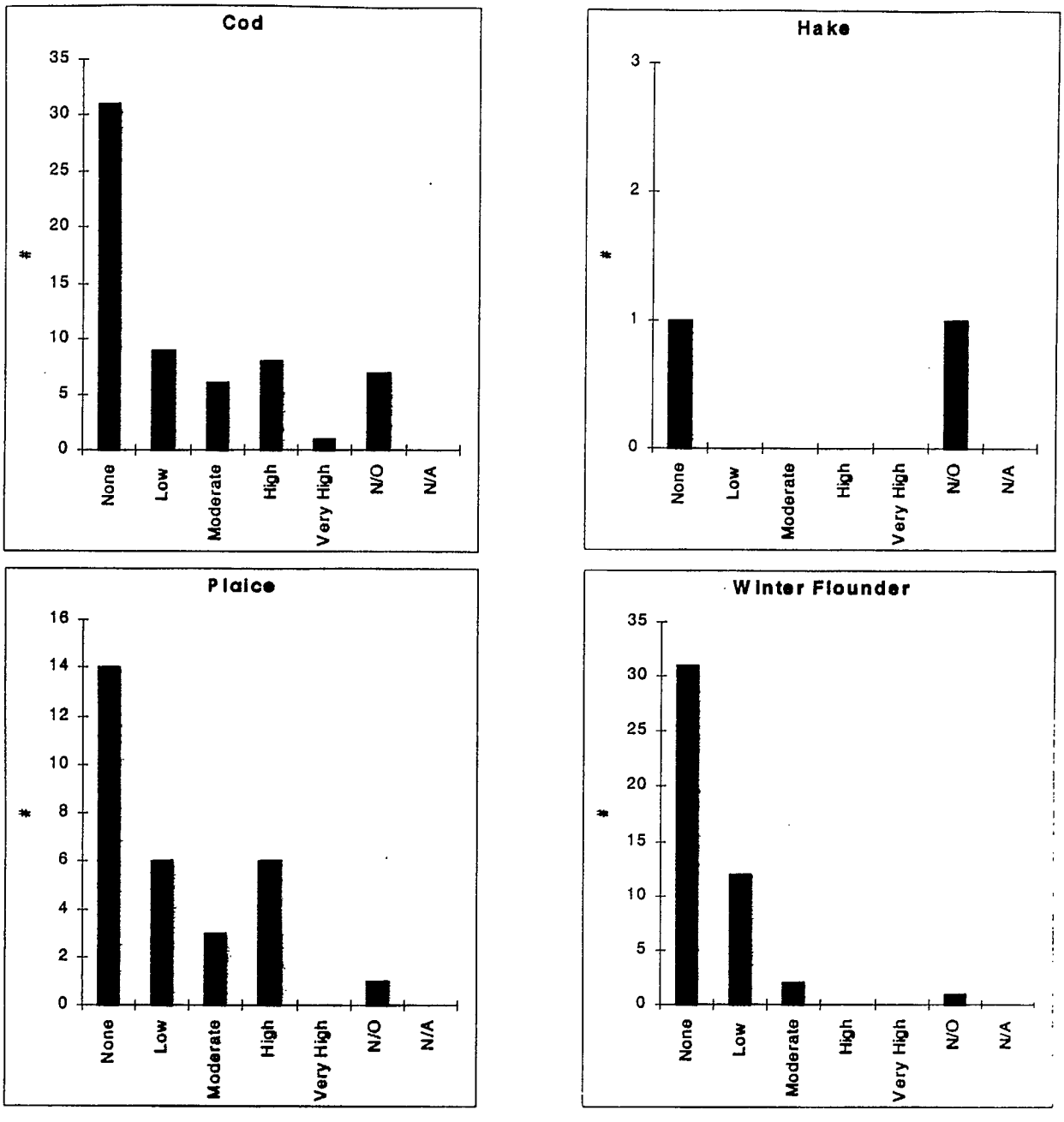
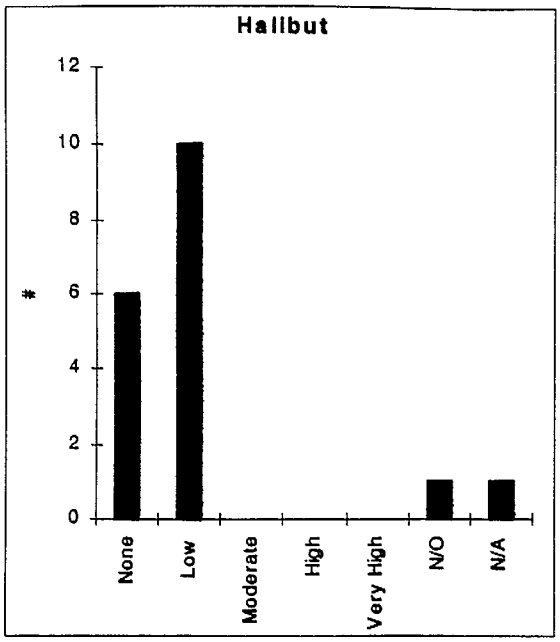
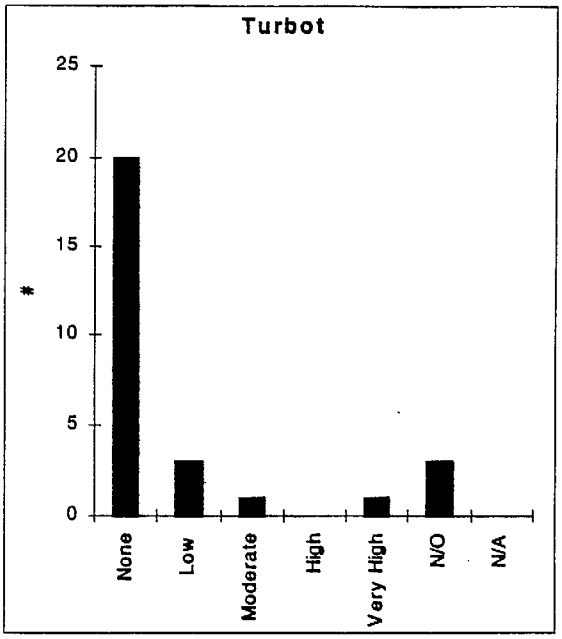
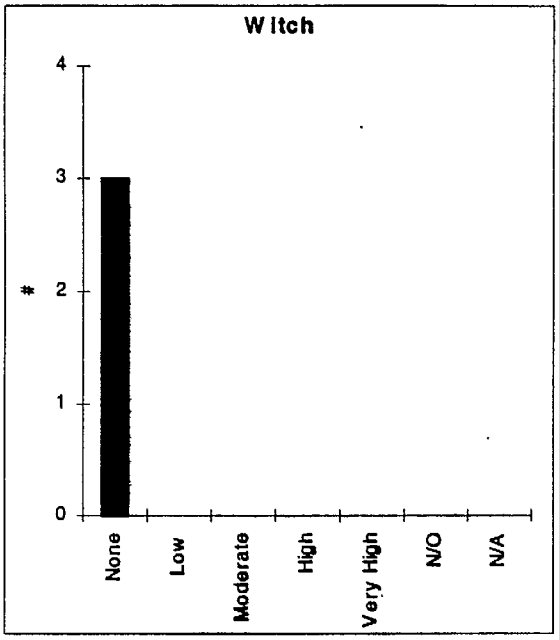


Figure 27. Opinions of respondents asked to categorize the discarding of cod, hake, plaice, winter flounder, halibut, turbot, witch, yellowtail and dogfish by other harvesters in the 1998 fishery (Note: 1. These species represent the 'first priority' of respondents who indicated that they fished for more than one species of groundfish, 'most of the time'. 2. N/O = No Opinion and N/A = Not Applicable).







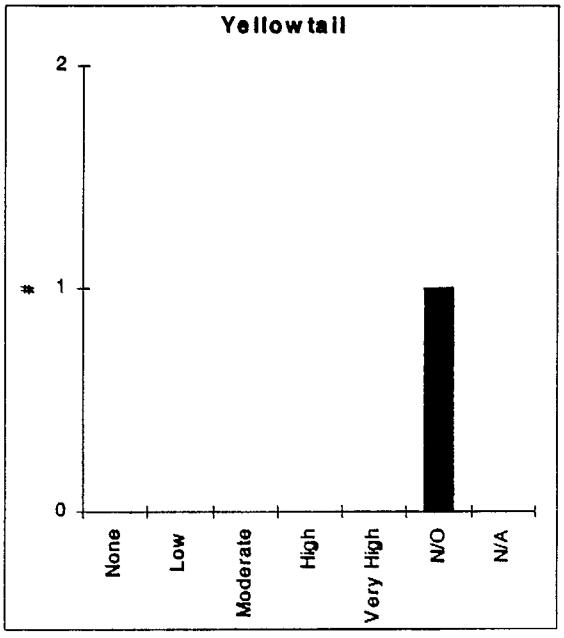


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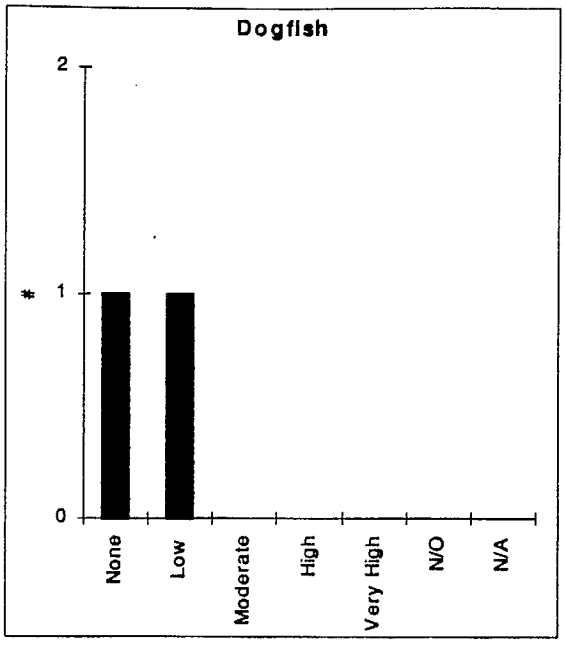


Figure 27. Continued.

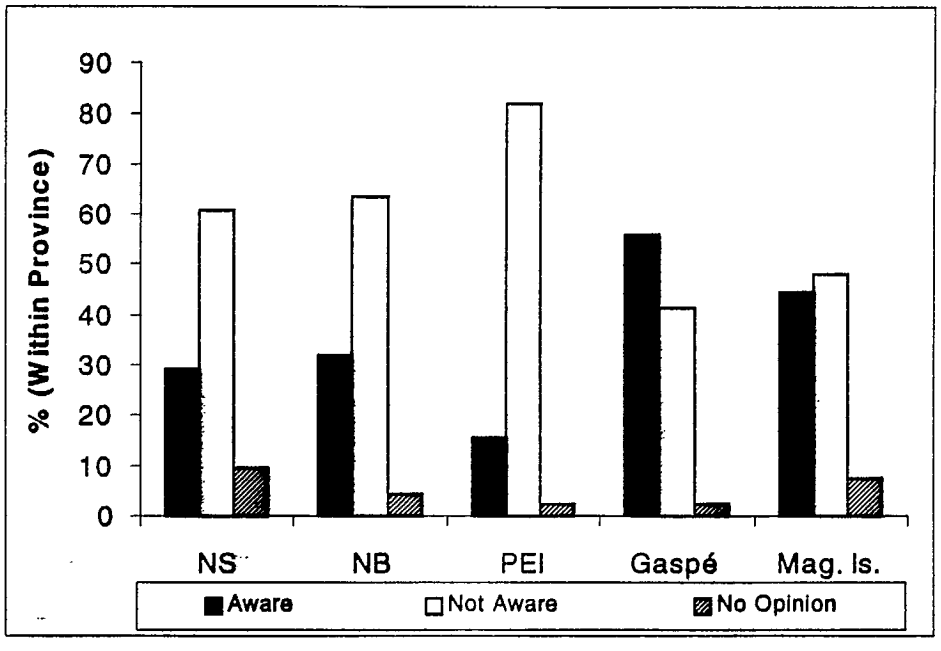


Figure 28. Percentages of all respondents to the questionnaire who indicated they were aware of unreported catches of cod (i.e., through poaching, excessive recreational fishing, black market fishing, or other similar activities) in the ports where they landed their catches in 1998.

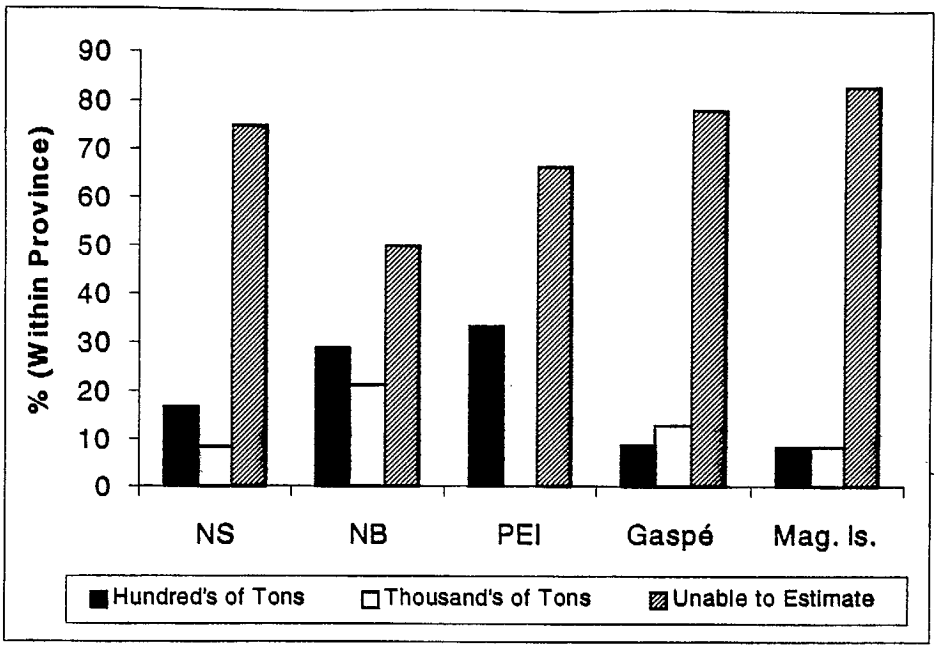


Figure 29. Respondent's estimates of the quantity of cod landed through unreported activities in 1998 (Includes only those respondents that indicated they were aware of unreported catches of cod).

10 – Appendices

Appendix 1
Locations Where Respondents Reported They Observed Seals
While Fishing for Groundfish in 1998

(Note: Numbers in parentheses indicate the number of respondents that expressed the same opinion)

Fishing Areas/Seasons

4T3-4T4
4T4
4T7
4T8 (5)
Lobster district 25
Lobster district 26A
Area 40 to 41
Everywhere in the Gulf (3)
In the Spring mostly
See them everywhere in the spring and fall

New Brunswick

Acadian Peninsula
Baie des Chaleurs (9)
Cap Pele (2)
Everywhere off Caraquet and Miscou
Off Escuminac (5)
Escuminac to Pointe Sapin
Escuminac, Tracadie, Shediac Valley
Everywhere off Lameque
Everywhere off Cape Tormentine
Everywhere in Baie des Chaleurs
Off Caraquet Is.
Off Le Goulet
Off Miscou (10)
Miscou Bank
Nigadoo, Petit Rocher, Stonehaven
Off Pigeon Hill (2)
Everywhere off Pointe Sapin
Shediac Valley (5)
Off St. Louis de Kent

Quebec

All along the Gapésie coast (6)
Off Bonaventure Island (2)
South shore of Anticosti Is. (4T4) in June
Around Iles Brillants (2)
Around the Magdelan Is. (10)
Baie Comeau to Les Trois Soeurs
Cap Gaspé to Mt. Louis
Off Cap-des-Rosiers (2)
Cap-des-Rosiers to Forillon
Forillon to Rivière-au-Renard

Quebec – Continued

Off the Gapésie coast (4)
Southern shores of Gapésie
Off Grand- Etang, Magdelan Is.
Matane to Rimouski
Off Mt. Louis (4T3)
North of the Magdelan Is. (not in the southern part) (10)
South of the Magdelan Is.
Offshore from Cap-des-Rosiers
Paspebiac
Pointe Gaspé to Sept-Iles
Rivière-au-Renard to Forillon
Ste-Therese to Cap-des-Rosiers

Nova Scotia
Along coast of Cape Breton
Along the northwest coast of Cape Breton (3)
Off Bay St. Lawrence (6)
Canso Causeway area
Canso causeway to Cheticamp
Off Cape George
Off Cape North (3)
Off Cheticamp (4)
St. George's Bay area (4)
Off Mabou
Off Margaree
Off Pictou (3)
Off Pleasant Bay
Off Port Hood (8)

PEI
All around PEI
Off Beach Point
Off the east coast (Annandale area)
Off east Point
Off eastern PEI (3)
Off eastern PEI (4T8 area)
Fisherman's Bank
Off Howard's Cove
Miminegash (4)
Off North Cape (2)
Off Souris (4T8 area)
Off West Point

Appendix 2
Final Comments and Opinions Made by Respondents on the 1998 Groundfish Fishery After Completing the Questionnaire.

Note - The comments and opinions are grouped into the following seven categories:

- Seals
- Dogfish
- Mesh Sizes
- Gear Conflicts
- Licenses and Quotas
- Fisheries Management
- Other/Miscellaneous

Comments and Opinions Regarding Seals

Something should be done about the seals (2).
Problems with seals, should do something about them!
Big problem with seals. They are not only affecting the groundfish but also the lobster fishery.
Have to do something about the seals, and the cormorants are a problem too!
Something has to be done in St. Louis-de-Kent, NB about the seals. They're in great abundance. Seals are a big problem for the fishers in the area.
Big problem with seals, we should have a controlled hunt for them.
Big problem with seals, saw them eating lobster. We should do something about them!
Big problem with seals, they eat cod and lobster.
Seals are causing problems, should open a hunting season. They eat fish and lobster.
Seals are a big problem, something should be done about them!
Should increase seal hunting quotas, their population goes up every year!
Should promote a seal industry. Instead of shipping from the Magdalen Is. to Newfoundland we should have our own processing plants here.
Big problems with seals.
Seals are a big problem around the Magdelan Is.
Big problem with seals, that's why there are no cod off the northern coast of the Magdalen Is.
The seals are a big problem they eat lobsters.

Comments and Opinions Regarding Dogfish

Dogfish are scarce.

Comments and Opinions Regarding Mesh Sizes

Square mesh and bigger mesh size gillnets are very good conservation measures to use.
Larger mesh sizes should have been used 20 years ago.
Recommend a minimum mesh size of 6 inches for Cod and a maximum of 8-10 nets.
Proposes mixing half 5.25 and half 6.0 inch mesh gillnets for better selectivity. This would eliminate catching too many big females, which is the case for 6 inch mesh.
Recommends using a mesh size of 155 mm diamond to minimize discards. It's a good conservation method.
For the flatfish fishery, we should return to diamond mesh to limit the cod by-catch and the small fish being caught.
The mesh size increase this year was a good conservation measure.
Mesh sizes are too big. We catch too many big females. Worried about the future!

Comments and Opinions Regarding Gear Conflicts

Should restrict the draggers if they re-open the fishery. They're who killed the cod fishery.
The gillnet fishery is catching the flounder when they're spawning which is dangerous for the resource.
If the fishermen targeting winter flounder would eliminate the floats on their gillnets it would eliminate the by-catch of cod and hake. You don't need floats if you're fishing for winter flounder.
Draggers are damaging the bottom and are harmful to the winter flounder fishery.
The big problem is the draggers that are coming back. They ruined the fishery. Only allow the inshore fishers to fish.
Does not agree with the fact that big draggers were fishing in the index fishery in 1998.
The draggers and big seiners discard a lot of fish. They shouldn't be allowed to fish. They destroy the resources.
The draggers should be taken out of the fishery.
Restrict gillnet fishing. If they re-open the fishery, only use longlines for the first 5 years. Very ecological fishery!
Can't believe the draggers are still fishing! If they re-open the fishery, we'll still have the same problems.
Has knowledge of a dragger unloading 1,000 lbs. of small turbot and also one sentinel fisher that unloaded 30,000 lbs. without an observer.
Should limit the number of mobile gear vessels in the turbot fishery. Too many small turbot are being caught!
The scallop fleet damages the fishing grounds. They are worse than the draggers!
Should have forbidden mobile vessels in the index fishery. Their gears are not selective and they discard a lot of fish. This was done a lot this year.
Re-open the fishery for fixed gears, but limit the number of nets and soak-times. Don't let the nets stay in the water for days!
Re-open the fishery with small quotas for the fixed gear. There can be a small fishery with longlines and gillnets. The mobile fleets are destroyers!
In favor of re-opening the cod fishery, but for fixed gears only. If not, we'd be facing the same problems as before! Keep the sport fishery closed. They try to blame the fixed gear fleet for the problems with cod, but in fact it's the big draggers.
If the fishery should re-open, we should go with longlines. With the gillnet fishery, there's a lot of poaching going on. Harvesters always fish more nets than allowed, and what about the ghost fishing? Bad for the resource!
Why do the draggers always have the bigger quota for by-catches? Each province should have its own individual quota, because Newfoundland is always getting the biggest part of the cake!
Can't believe the big seiners are still fishing. They catch a lot of cod by-catch. We should not allow this to happen!
It would be more equitable to give larger quotas to the fixed gear fishermen. They remove the fish in a very ecological way compared to the big draggers!
Should take the big boats out of the cod fishery. They're destroying the stock!
The cod stock is at it's worst. DFO lets the draggers fish for flatfish and they catch big quantities of cod by-catch. They go out in all weather, and fish the smaller boat's quotas. Small fishers are always the losers in these situations.

Comments and Opinions Regarding Licenses and Quotas

If the cod fishery re-opens, they should give individual quotas and they should only allow fixed gears to fish.
Thinks the cod hasn't recovered! Allowing 2,500 hooks for longlines is too much!
Longline fishing is the best conservation method for the future of the cod fishery. We should be given a small quota so we can follow the fisheries progression.
Re-open the fishery for the historic cod fishers, but only the longliners. Take fishers with experience.

Comments and Opinions Regarding Licenses and Quotas - Continued

Should re-open the fishery for the fixed gear only.
The cod resource is low and the fishery should stay closed. If they do decide to re-open, they should be very cautious and only let the fixed gear into the fishery.
Other fishers suggest the cod stock is increasing. If they re-open the cod fishery, other fisheries will suffer!
Re-open the cod fishery with longlines only.
This year the Am. plaice are plentiful! Don't understand why the quota went down 40% this year.
The cod fishery should re-open with a small quota.
The witch flounder quota went down from 1,000 t (97) to 500 t (98). The 1999 quota should go up because there's lots of fish to be caught. Same for Am. Plaice. Good abundance this year.
Cod stock is still very low!
Should give individual quotas instead of a global one.
They should give individual quotas instead of global ones.
Should increase the Am. plaice quota because the resource is plentiful. Found many hake in lobster traps!
Should increase quota for Am. plaice. The resource is plentiful.
Should re-open the cod and hake fishery with a restricted quota for each region.
Should re-open the hake fishery. The quota for the 4T8-4T1 area should be 75% hake and 25% cod. Hake spawn in June/July, so if they re-open the fishery it should be in August.
Would like to see the season for Atl. halibut extended. This year, the by-catches for cod were taken at a very early time and the zone was closed for halibut. Very frustrating when you invest $23,000 in this fishery!
Don't understand why they're always decreasing the quotas. The last two years have been the most abundant ones.
Should increase the quota for Am. Plaice. Never seen so much this year.
Should have a higher by-catch for hake in the winter flounder fishery.
By-catch of hake should be increased, in the winter flounder fishery.
There should be individual by-catch limits instead of global ones. Re-open the Cod fishery with a small quota for a "survival" fishery.
It would be better to have individual quotas for by-catches.
By the time they finished the index fishery in 1998, all the quota for Halibut was taken by Newfoundland. So he thinks they should have individual quotas by province.
Licenses should be delivered earlier. This year they received their licenses too late and the fish were gone! We should get them by the end of April instead of the end of May, because every year is different.
The global quotas for cod should be increased and the cod fishery should slowly re-open.
License conditions should be changed so we can fish in shallower waters. We should also be able to fish earlier in the season (spring).
Would like to see the cod fishery re-open with a small quota.
Should re-open the cod fishery on a small scale. A small quota for each fisher, just enough to have a few bucks and their stamps. Instead of drawing names to fish, they should give a small quota to each groundfish fisher.
Should re-open the fishery for cod and hake with small quotas. It isn't fair that the lobster fishers from this side of the Island (Miminegash) haven't had a chance to be in the Index fishery.
Would like to see higher quotas and moderate by-catch limits instead of repeatedly opening and closing a fishing zone for winter flounder (The by-catch limit for winter flounder started at 30%, then went down as much as 15% this year. They should find a constant number for the whole season).
Should re-adjust the quota for next year for Am. plaice. Thinks that the stock is healthy as ever. The scallop fishery is in very bad shape; the season is way too long. That's not logical when you see so much Am. plaice and a decrease in the quota!
The quota for Am. plaice should be increased for next year. The stock is as healthy as ever.
Wishes the cod fishery would re-open on a small scale. Worried that if it's not reopened, it could harm the lobster fishery. With a small-scale fishery, there would be equilibrium created!

Comments and Opinions Regarding Licenses and Quotas - Continued

Want a higher quota for Am. plaice for next year. Re-open the cod fishery.
Should re-open the cod fishery on a small scale. Only hooks and lines should be allowed to fish. Instead of allowing 5 fish/person in the recreational fishery they should give a small quota to each vessel.
Would like to see a re-opening of the cod fishery with something like 8,000-10,000 lbs./boat.
Should re-open the cod fishery on a small scale.
Should re-open the cod fishery on a small scale.
Re-open the cod fishery on a small scale (10,000-15,000 lbs./fisher).
Like to see the cod fishery re-open with a small quota. A lot of fishers are inactive during July, so a few weeks in the cod fishery would help.
Should increase the halibut quota. Some fishers did very well in this fishery this year. There is a good abundance on American Bank.
Like to see the cod fishery re-open with a small quota for the fixed gears.
Never seen so much fish this year. Thinks the fishery should re-open for the inshore fleet.
Was surprised to see the abundance and size of cod this year. Caught a few 5 ft. long cod. Thinks it was a good fishing season for him, even if in some areas it wasn't so good.
Would like to see the cod fishery re-opened. Should combine the sentinel and the index quotas and split it between all of the fishers.
Increase the turbot quota for next year.
Should increase the turbot quota and give individual quotas. In the cod fishery, should have 45,000-50,000 lbs. for by-catch.
Increase the turbot quota. The stock is healthy.
Re-open the cod fishery for 1 year with a small quota. We would know more about abundance!
Should increase the turbot quota for 1999. The stock is healthy. Should re-open the cod fishery with a small quota of 25,000 lbs. per fishermen.
Should limit effort in the turbot fishery. Too many fishers for the amount of quota!
Increase quota for turbot. Re-open the cod fishery!
Should re-open the fishery for 35-40 ft. vessels, with a small quota.
Re-open the cod fishery with a small quota for the fixed gears.
Re-open the fishery with a small quota (i.e., 10,000 lbs./boat)
Inshore fishers should have more quotas than the offshore. Instead of having one big boat fishing the quota, it should be divided among many smaller boats, and then more people could work!
Each province should have an individual quota!
Should increase the by-catch for cod in the halibut fishery.
The cod abundance is still very low.
Re-open the cod fishery with a small quota for fixed gear. Then we'd have an idea on the resource!
Should have quotas instead of by-catch allocations, so when your quota is caught, you stop fishing. This would stop a lot of discarding.

Comments and Opinions Regarding Fisheries Management

The recreational fishery is not monitored or verified enough. Excessive recreational fishing.
Should have 10 days fishing for the Index fishery, instead of fixed dates. If you have bad weather, the fishers can't go out fishing and they loose in the process.
Rather than giving fixed dates to fish, they should give a quota for the season to catch it, and then you can follow the species through the entire season (i.e., flatfish). No lost days because of bad weather.
Should start later in Sept. instead of Aug., that way it would be good for witch also.
Should stop crab fishers from fishing for turbot. They have big boats, and they take the majority of the quota!
Spread out the cod fishery on unexploited areas. Everybody is fishing in the same area.

Comments and Opinions Regarding Fisheries Management - Continued

Thinks that eventually the hake could be a problem to the lobster fishery because they eat the small and soft ones!
Permits should be given out earlier. No fish in the Baie des Chaleur this year. Thinks something illegal is going on with the sentinel fishery. A lot of small fish were caught. Gillnets shouldn't be soaked before early Sept. Lobster fishers shouldn't be able to fish groundfish.
Bad management by DFO and Associations. We should have more experimental fisheries.
Poor surveillance at wharves on the Quebec side. If some fishers want to poach, it's the place to go.
Involved in an experimental project in 1997 that involved gear that limited cod by-catch. He needed another year to complete the work but DFO never got back to him for funding!
Would like to try for an experimental fishery for Am. plaice in the Baie des Chaleurs in 1999. This year, the time and areas where he found plaice were very different compared to previous years.
Don't appreciate the way the index fishery was managed. They closed the zone and re-opened it constantly.
Unhappy about the way the fisheries are managed. The Atlantic halibut was opened for only a week or two. With all the effort it takes to get the gear ready, you only use it for a few weeks!
The index fishery was very badly managed. They don't send fishers where the fish are! Lost a lot of money, because the index fishery was badly managed.
For the index fishery, thought it was a waste of money to pay for an observer!
Dockside monitors & observers are a waste of money!
All fishers shouldn't be penalized for illegal activities. Take an example from the lobster fishery. We should have better representation in the industry, not only scientists & bureaucrats.
There are a lot of abuses and poaching in the recreational fishery. It's not fair for the groundfishermen who are waiting for the resource to come back! Should have observers on board the tourist boats!
Monitoring on PEI is a joke! The monitors' jobs depend on the activities of the vessels. If the vessels are doing something illegal and the authorities are notified, the fishery will be stopped and the monitor will loose their job. Therefore, lots of illegal things go unreported.
Sentinel and index fisheries should stay. Really important to have information on the stocks. Should be opened to more than one person per harbour.
Should ban the ITQ from the fishery.
The winter fl. fishery was opened too late. The fish were gone early. It changes every year. Opening dates should be more flexible!
A good conservation method for turbot is to use diamond mesh instead of square. The index fishery is better than the sentinel, because the sites are not picked by DFO.
Every year, some fishers go exploratory fishing for plaice at Miscou, and they catch a lot of cod by-catch in the process. Then the fishery closes for everyone. DFO should stop this exploratory fishery because everyone knows there's no plaice off Miscou!
Should re-open the cod fishery, and have better control than before the moratorium. Should have observers on board and all fishing activities noted.
A lot of over-fishing is done around Miscou. There's not enough enforcement there. Something has to be done now because the little bit of fish out there has no chance! Shouldn't be a turbot fishery there. It's a cod area and not a turbot one!
Paspebiac and Bonaventure are the worst places for poaching! Not enough enforcement in that area. People do what they want. Something should be done about this situation!
The resource is not ready for re-opening.
This year the fishery opened and closed constantly. We almost didn't fish! We should be fishing earlier in August, even in the spring.
Should put much more effort into watching discarding at sea. Since the moratorium, the cod stock is still very low. No fish on the traditional grounds!

Comments and Opinions Regarding Fisheries Management - Continued

Very little fish around the Magdelan Is. Worse than ever! Sport fishery is a joke. They go out fishing and select the bigger fish, before discarding lots of small ones! For the index fishery, we received our permits too late!
In the halibut fishery, we should punish those who catch a lot of cod by-catch. They shouldn't be allowed to fish! Everyone gets punished because of a few!
Seems that the cod has decreased since the moratorium!
Next year the sentinel fishery should start sooner. This year the cod left the area sooner so the fishing wasn't as good. We started late in September.
Not satisfied with the sentinel fishery. Thinks it is not managed properly.
A lot of fishing abuse in the past. That's the reason we're in this situation now!
For the sentinel fishery, we should fish with diamond mesh. We always fish these nets traditionally. Square nets don't catch as much fish!
For the sentinel fishery, we should fish with diamond mesh instead of square. We always fish diamond nets traditionally Square mesh is too big, too much fish can escape. It's a bad sampling method!
Doesn't believe in the sentinel or index fishery. Should group quotas and give it to fishers. The fishers could better follow the resource. At this time, they don't know where they are with all those government projects!
In the sentinel fishery, find it difficult to fish in the same sites all the time. Would have liked more latitude in this area.
Has no confidence in the sentinel and index fisheries.

Other/Miscellaneous Comments and Opinions

Water was warm this year.
Thinks the scientific survey is not designed to sample flatfish.
The Alfred Needler is not good for Am. plaice sampling. It tows at 3 knots while we fish at 1 knot!
Thinks that the survey on the Alfred Needler doesn't give good results for Am. plaice.
Thinks that there should be a survey for Am. plaice in the 4T8 area with a seiner. That's the best way of sampling Am. plaice. The scientific survey is not done at a good time.

Appendix 3
The Questionnaire used in the 1998 End of Season Survey of Groundfish Harvesters from the Southern Gulf of St. Lawrence

The following questions deal with your fishing activities during 1998.

1. In 1998, did you fish for groundfish?

(By groundfish, we mean: cod, hake, or any of the flatfish or dogfish.)

Yes O[1] **(GO TO QUESTION 4)**

No O[2]

2. What was your main reason for NOT fishing for groundfish in 1998?

(Check one only)

(a) Low numbers of groundfish O[1]

(b) No quota O[2]

(c) Fishery closed O[3]

(c) Problems with markets or prices O[4]

(d) Problems with boat or gear O[5]

(e) Illness or accident O[6]

(f) Other: O ⌊⌊⌋

_____

3(a) In 1998, did you fish for anything else?

(For example: tuna, herring, scallops, etc.)

Yes O[1]

No O[2]

3(b) If YES, what other type(s) of fish did you fish for in 1998?

_____

NOTE TO INTERVIEWER:
END INTERVIEW FOR RESPONDENTS WHO DID NOT FISH FOR GROUNDFISH IN 1998

THANK RESPONDENT FOR THEIR COOPERATION.

Appendix 3 - Continued

The next few questions ask for information that will allow us to group your responses with the experiences and backgrounds of other fishers that use the same type of fishing gear and fish for similar species of groundfish.

4. **Including 1998, how many years have you been fishing commercially for groundfish?**

   ⌊⌊⌋ *years fishing commercially*

5. **What is the overall length of the fishing vessel you used for fishing groundfish in 1998?**

   ⌊⌊⌋ O [1] **Feet** O [2] **Meters**

6. **In 1998, did you fish for groundfish in the Sentinel Fishery (=Sentinel Survey) or Index Fishery?**

   Yes O [1] → **Sentinel Index (Circle one)**

   No O [2]

7(a). **In 1998, did you fish for groundfish in the Recreational Fishery?**

   Yes O [1]

   No O [2]

7(b). **If YES, "Would you say that the majority of the groundfish that you caught in 1998 was caught in the Recreational Fishery?".**

   Yes O [1]

   No O [2]

8. **Before the fisheries for cod and hake were closed, what species of groundfish did you fish for most of the time? If you normally fished for more than one species of groundfish, please give them in order of priority, starting with the species that you most preferred to catch.**

(a) Cod	O [1]	(e) Witch	O [5]
(b) White hake	O [2]	(f) Turbot	O [6]
(c) American plaice	O [3]	(g) Dogfish	O [7]
(d) Winter flounder	O [4]	(h) Other:	O ⌊⌊⌋

NOTE TO INTERVIEWER

(For Q. 8 & 9: When the Respondent Has Fished for More Than One Species, Indicate the "Priority of Species fished for" with a number corresponding to the priority in the circle)

9. **In 1998, when the fisheries for cod and hake were closed, what species of groundfish did you fish for most of the time? If you normally fished for more than one species of groundfish, please give them in order of priority, starting with the species that you most preferred to catch.**

(a) Cod	O [1]	(e) Witch	O [5]
(b) White hake	O [2]	(f) Turbot	O [6]
(c) American plaice	O [3]	(g) Dogfish	O [7]
(d) Winter flounder	O [4]	(h) Other:	O ⌊⌊⌋

Appendix 3 - Continued

10. Of the *... name of Main Species #1 stated in Q.9 (_____)...* that you caught in 1998, how would you describe the average size of the fish?

Would you say they were ...

(a) about the same size as previous years O 1

(b) smaller than previous years O 2

(c) larger than previous years O 3

11 (a) In 1998, what was the main type of fishing gear that you used most of the time to fish for groundfish?

(Check one only)

(a) Gillnet O 1 ..... →

(b) Longline O 2 ..... →

(c) Otter trawl O 3 ..... →

(d) Seine O 4 ..... →

(e) Other: O ☐☐

_____

(b) For the fishing gear that you used most often in 1998, what was the usual amount of fishing gear that you used during a typical day of fishing?

		N/A
_____	# of gillnets	O 99
_____	# of hooks	O 99
_____	# of sets or tows	O 99
_____	# of sets or tows	O 99
_____	(other, specify)	O 99

12. Compared to previous years, would you say that you used:

(a) about the same amount of fishing gear in 1998 O 1

(b) less fishing gear in 1998 O 2

(c) more fishing gear in 1998 O 3

13. During 1998, did you fish for groundfish for the entire season?

Yes O 1 (GO TO Question 18)

No O 2

14. In 1998, did you switch to another fishery such as tuna, herring, scallops, etc. during the groundfish season?

Yes O 1

No O 2 (GO TO Question 18)

15. To what fishery did you switch in 1998?

(Check one only)

(a) Tuna O 1

(b) Herring O 2

(c) Scallops O 3

(d) Other: O ☐☐

_____

Appendix 3 - Continued

16. **What was your <u>main</u> reason for switching from fishing for groundfish in 1998?**
(Check one only)

(a) Low numbers of groundfish O 1
(b) No quota O 2
(c) Fishery was closed O 3
(d) Problems with markets or prices O 4
(e) Problems with boat or gear O 5
(f) Illness or accident O 6
(g) Other: O ⌊⌊⌋

_____

17. **Do you <u>usually</u> switch from groundfish to another fishery <u>during</u> the groundfish season?**

Yes O 1
No O 2

18. **Can you tell me the <u>exact</u> number of days you spent fishing for groundfish in 1998?**

⌊⌊⌊⌋ *days fishing this year* ..... **(<u>GO TO</u> Question 20)**

Don't know O 9 ..... **(<u>GO TO</u> Question 19)**

19. **Could you give me your best estimate of how many days you spent fishing for groundfish in 1998?**

(a) Less than 10 O 1
(b) 10 - 19 days O 2
(c) 20 - 29 days O 3
(d) 30 - 39 days O 4
(e) 40 - 49 days O 5
(f) 50 - 59 days O 6
(g) 60 - 69 days O 7
(h) 70 - 79 days O 8
(i) 80 - 89 days O 9
(j) 90 - 99 days O 10
(k) 100 or more O 11

20. **Compared to 1997, would you say that you fished:**

(a) about the same number of days in 1998 O 1 **(<u>GO TO</u> Question 22)**
(b) fewer days in 1998 O 2
(c) more days in 1998 O 3

Appendix 3 - Continued

21. **What was your main reason for spending (LESS or MORE) time fishing for groundfish in 1998?**
(Check one only)

(a) Low numbers of groundfish O 1
(b) Change in fisheries management (quotas, closures) O 2
(c) Change in markets or prices O 3
(d) Problems with boat or gear O 4
(e) Illness or accident O 5
(f) Weather conditions O 6
(g) Other: O ⌊⌊⌋

_____

22. **Thinking of those days in 1998 when the weather was too bad to fish for groundfish, would you say there were LESS, the SAME, or MORE bad weather days in 1998 than usual?**

(a) Less O 1
(b) Same O 2
(c) More O 3

23. **In 1998, did dogfish interfere with your efforts to fish for groundfish?**

Yes O 1
No O 2

Additional comments:

_____
_____
_____

24. **In 1998, did you see any seals while fishing for groundfish?**

Yes O 1
No O 2

If YES, where did you see seals in 1998?

_____
_____
_____

Appendix 3 - Continued

The following questions ask you to compare or describe conditions in the groundfish fishery in 1998, using a scale which goes from VERY LOW to LOW to AVERAGE to HIGH to VERY HIGH:

25. In your opinion, would you say the number of:	Very Low	Low	Average	High	Very High	N/O	N/A
(a) dogfish in your fishing area in 1998 was	O 1	O 2	O 3	O 4	O 5	O 7	O 9
(b) seals in your fishing area in 1998 was	O 1	O 2	O 3	O 4	O 5	O 7	O 9

NOTE TO INTERVIEWER

(For Q. 25 & 26:"Main species" of groundfish that you fished for in 1998 = *... name of main species stated in Q.9 ...*)
(N/O = No Opinion N/A = Not Applicable (i.e., Seals are never seen in this area))

The following questions ask you to compare the number or quantity of groundfish in your fishing area in 1998 with previous years, using a scale which goes from MUCH LOWER to LOWER to SAME to HIGHER to MUCH HIGHER:

26. In your opinion:	Much Lower	Lower	Same	Higher	Much Higher	N/O	N/A
(a) how would you compare the number of *... name of Main Species #1 stated in Q.9 (_____)...* in your fishing area in 1998 with their number in 1997?	O 1	O 2	O 3	O 4	O 5	O 7	O 9
(b) how would you compare the number of *... name of Main Species #1 stated in Q.9 (_____)...* in your fishing area in 1998 with their number from 1993 to 1997?	O 1	O 2	O 3	O 4	O 5	O 7	O 9
(c) how would you compare the number of *... name of Main Species #1 stated in Q.9 (_____)...* in your fishing area in 1998 with their number throughout all the years you have fished for this species?	O 1	O 2	O 3	O 4	O 5	O 7	O 9

Appendix 3 - Continued

The following questions relate to fishing activities by vessels other than your own during 1998. I wish to remind you that your responses to these questions are confidential and will not be communicated to fishery officers.

27. In your opinion, which of the following words best describes the discarding of ... name of Main Species #1 stated in Q.9 (_____) in the 1998 fishery?

None	(i.e., there was no discarding in the fishery)
Low	(i.e., very few vessels discarded; low amounts discarded)
Moderate	(i.e., some vessels discarded; moderate amounts discarded)
High	(i.e., some vessels discarded a lot; many vessels discarded some)
Very High	(i.e., many vessels discarded large amounts of fish)
No Opinion	
Not Applicable	

28 (a) In those ports where you landed your catches this year, were you aware of any unreported catches of cod through poaching, excessive recreational fishing, black market fishing, or other similar activities?

Yes	O 1	
No	O 2	(GO TO QUESTION 29)
No Opinion	O 3	
Not Applicable	O 4	

28 (b) In your opinion, roughly how much cod was landed through these activities in the ports where you landed fish in 1998?

In the hundreds of tonnes: 100, 200, 300, _____	O 1
or	
In the thousands of tonnes: 1000, 2000, 3000, _____	O 2
Could not quantify (Circle)	O 3

29. The results of this survey will be available in the spring of 1999. Would you like to receive a copy?

Yes	O 1	CONFIRM COMPLETE MAILING ADDRESS ON COVER PAGE
No	O 2	

Appendix 3 - Continued

Do you have any additional comments or suggestions that you would like to make on the 1998 groundfish fishery?

THANK YOU FOR YOUR ASSISTANCE.

SH 223 F55 no. 2517E c.1
Hurlbut, T.
Results of the 1998 end of
season survey of groundf...
243666 12049515 c.1

