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**Results of the 2005 Fish Harvesters'
Telephone Survey on the Status of
Northern (2J3KL) Cod**

**Résultats du sondage téléphonique
de 2005 auprès des pêcheurs sur
l'état de la morue du Nord (2J3KL)**

H. Jarvis¹ and R. Stead²

¹Fish, Food and Allied Workers Union
P.O. Box 10, Station C
St. John's NL A1C 5H5

and

²Science Branch
DFO Newfoundland Region
P.O. Box 5667
St. John's NL A1C 5X1

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ABSTRACT

Prior to the 2005 assessment of Northern Cod, the Fish Food and Allied Workers Union conducted a telephone survey of commercial fish harvesters in NAFO Divi. 2J3KL. Fish harvesters were randomly selected and, overall, nine percent (9%) of licensed harvesters participated in the survey. The questionnaire solicited the opinions of harvesters regarding a number of issues: cod abundance in 2004 compared to abundance in the late 1980s and abundance in 2002; distribution of cod over the fishing area; condition of the fish; and abundance and distribution of prey species. Results varied with the geographic location.

RÉSUMÉ

Avant l'évaluation de 2005 de la morue du Nord, la Fish, Food and Allied Workers Union a mené un sondage téléphonique auprès des pêcheurs commerciaux des divisions 2J3KL de l'OPANO. Les pêcheurs ont été choisis au hasard et, au total, neuf pour cent (9 %) de l'ensemble des titulaires de permis ont participé au sondage. Le questionnaire visait à recueillir l'opinion des pêcheurs à propos d'un certain nombre de sujets : abondance de la morue en 2004 comparativement à l'abondance de la fin des années 1980 et à l'abondance en 2002; répartition de la morue dans la zone de pêche; condition du poisson; abondance et répartition des espèces proies. Les résultats varient selon l'emplacement géographique.

INTRODUCTION

Since 1995 fish harvesters have been collecting biological data through the Sentinel Program (Maddock Parsons and Stead 2005). One of the objectives of the Program is to provide an opportunity for fish harvesters to have input into the stock assessment process.

From 1997 to 2002 fish harvesters were asked to record information about cod by way of a committee questionnaire. Questionnaires were mailed to committee chairpersons, community meetings were held and the questionnaires were completed. Participation in this process declined in 2001 and 2002. In 2003 the level of participation was so low that results could not be considered reflective of the overall perspective of fish harvesters throughout the area.

In February 2005, to continue to provide information that could be used in assessing 2J3KL cod, a telephone survey of groundfish license holders in those areas was conducted. Questions and the survey design were developed in consultation with DFO Science.

Since there has been no directed commercial fishery for cod in the offshore since 1992 the questionnaire focused on collecting information from the inshore portion of the stock area. In addition, because the inshore fishery was closed in both 2003 and 2004, fish harvesters could base their opinion only on by-catches in other fisheries and personal observations of cod seen near the surface or on sounders. Survey questions were developed to provide information on cod abundance, recruitment, condition, migration, distribution and the status of prey species of cod.

The Fish Food and Allied Workers Union office support staff conducted the survey. All persons conducting the survey did so by following the same script (Appendix 1).

Potential candidates for participation in the survey were identified from a listing of license holders, sorted by statistical areas O (NAFO Unit Areas 2J?), A (NAFO Unit Areas 3K?), B (NAFO Unit Areas 3K?), C (NAFO Unit Areas 3L?), D (NAFO Unit Areas 3L?), E (NAFO Unit Areas 3L?), F (NAFO Unit Areas 3L?) and G (NAFO Unit Areas 3L?) See Appendix 2 for geographic locations of statistical areas. The objective was to have 10% of license holders in each statistical area participate in the survey. Prospective participants were selected randomly.

Overall, 9% of 2J3KL Fish harvesters participated in the survey. Table 1 shows the targeted number and the actual number of participants by area.

Table 1: Number of target vs. actual survey participants by statistical area.

Division	Stat Area	NAFO Unit Area	Target	Completed
		2JM		
2J	O		15	15
3K	A	3KA, D, H*	33	27
3K	B	3KH*, I	81	72
3L	C	3LA	34	32
3L	D	3LB	35	34
3L	E	3LF	30	30
3L	F	3LJ	27	27
3L	G	3LQ	9	10
			264	247

*Approximately one half of NAFO Unit Area 3KH is in statistical area A, the remainder in B.

Fish harvesters were asked to provide information that would help determine their knowledge of, and experience in, the cod fishery. Table 2 shows the mean age and years of experience of survey participants by NAFO Division.

Table 2: Average age and fishing experience (cod) by NAFO Division.

	2J	3K	3L	Overall
Average age (years)	44	48	49	49
Average years fished for cod	23	23	24	23

Table 3 shows the percentage of survey participants who fished for cod prior to 1992 and during the commercial index fishery (1998-2002) by NAFO Division.

Table 3: Fishery participation prior to 1992 and 1998-2002.

	2J	3K	3L
Fished cod prior to 1992 (%)	100	100	99
Fished cod 1998-2002 (%)	50	85	89

Prospective participants were selected at random from fish harvesters with vessels up to 65 feet in length. Table 4 shows the “vessel sector” of harvesters that participated in the survey.

Table 4: Vessel size by NAFO Division.

	2J	3K	3L
< 35 feet (%)	87	91	82
35 to 44 feet (%)	13	5	11
45 to 65 feet (%)	0	4	7

RESULTS

Questions 5 through 12 of the survey asked the participants their opinions in a number of areas of interest. The questions are listed below with the corresponding summary graphic.

Question 5: Compare the abundance of cod in your area during 2004 with abundance prior to the moratorium in 1992.

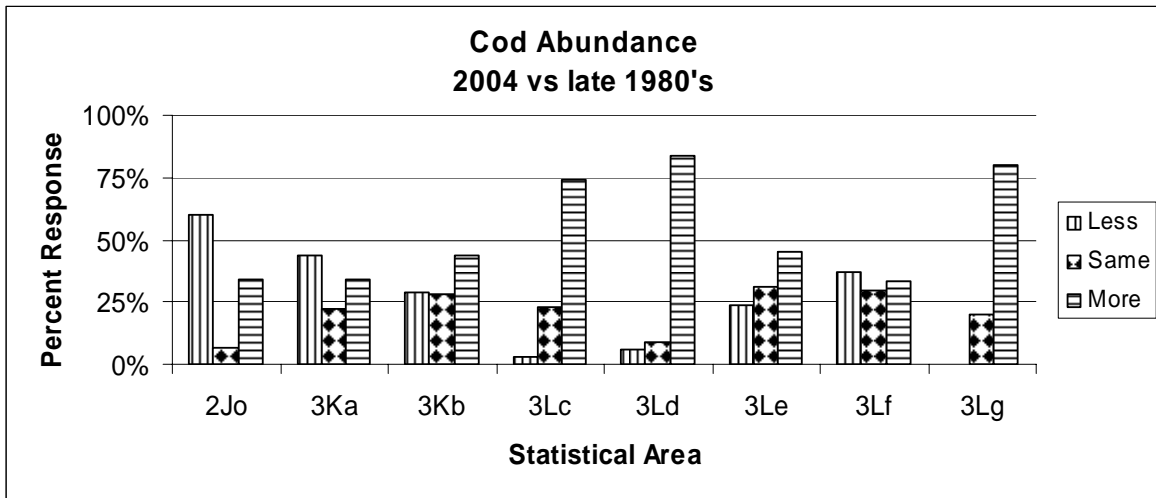


Figure 1. Abundance of cod by statistical area compared to pre-moratorium.

The majority of harvesters in Bonavista, Trinity and St. Mary's Bays indicated they believed there were more cod than prior to the moratorium. In other areas, opinions were divided on this question.

Question 6: Compare the abundance of cod in your area during 2004 with that of 2002.

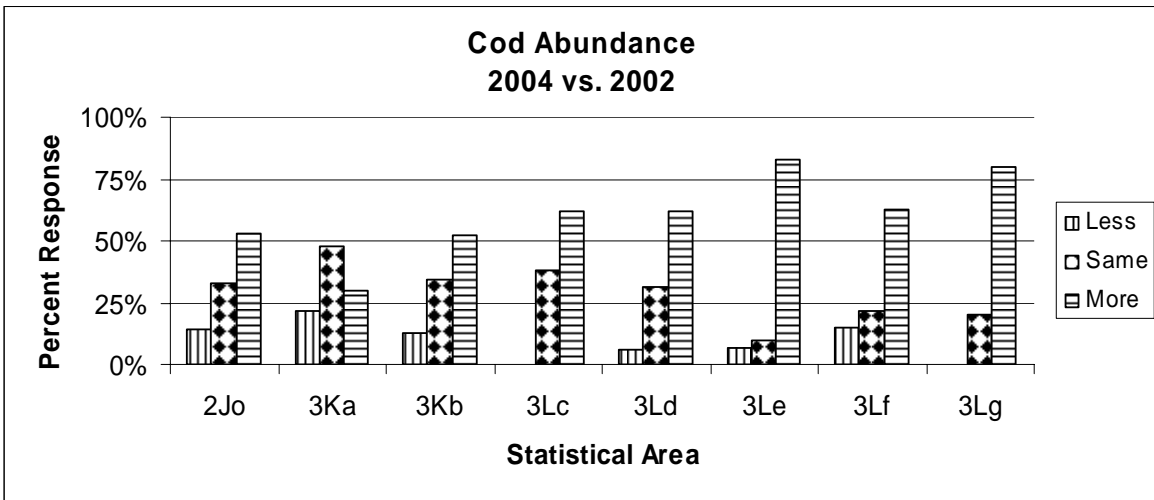


Figure 2. Abundance of cod by statistical area 2004 vs. 2002.

Again, NAFO Division 3L as well as southern 3K harvesters indicate more cod than in 2002. In 2J the majority of harvesters also indicate that the numbers have increased.

Question 7: Describe the size range of cod in your area during 2004.

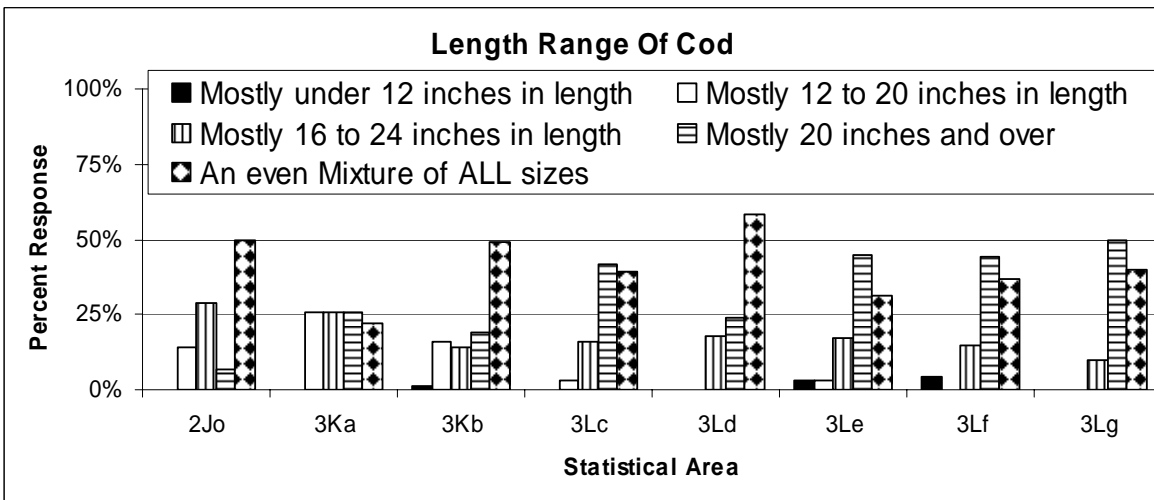


Figure 3. Length composition during 2004.

Opinions on size of cod vary over the whole survey area. This may be due to the fact that there was no commercial fishery and the numbers of fish observed were low.

Question 8: The condition or health of cod in your area during 2004 appeared to be:

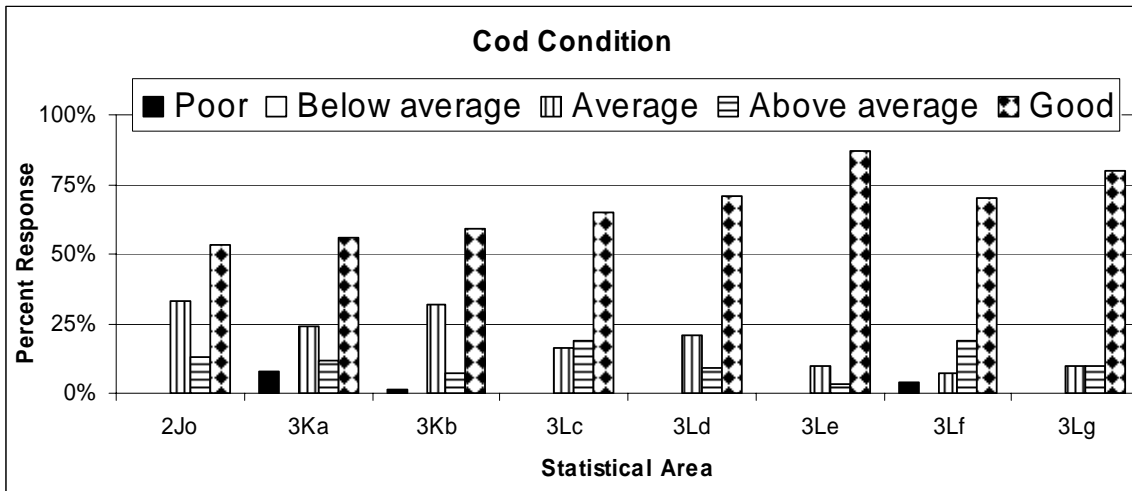


Figure 4. Cod condition during 2004.

All areas indicate cod were in good condition.

Question 9: With consideration given to the traditional time cod migrated to your area, would you say the migration in 2004 was:

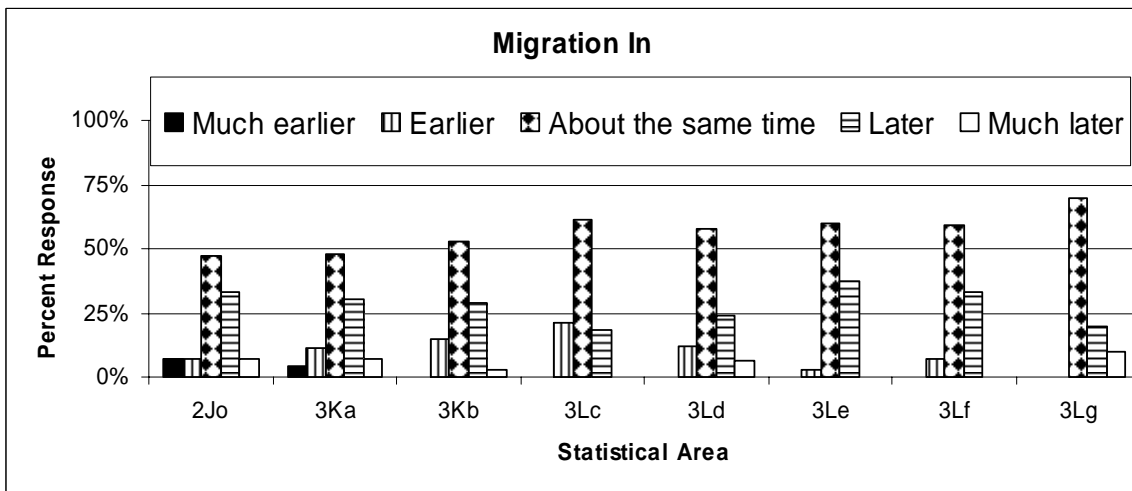


Figure 5. Migration onto fishing grounds 2004.

Fish harvesters from all areas indicate that cod moved onto the fishing grounds near the traditional migration times.

Question 10: With consideration given to the traditional time cod migrated out of your area, would you say the migration in 2004 was:

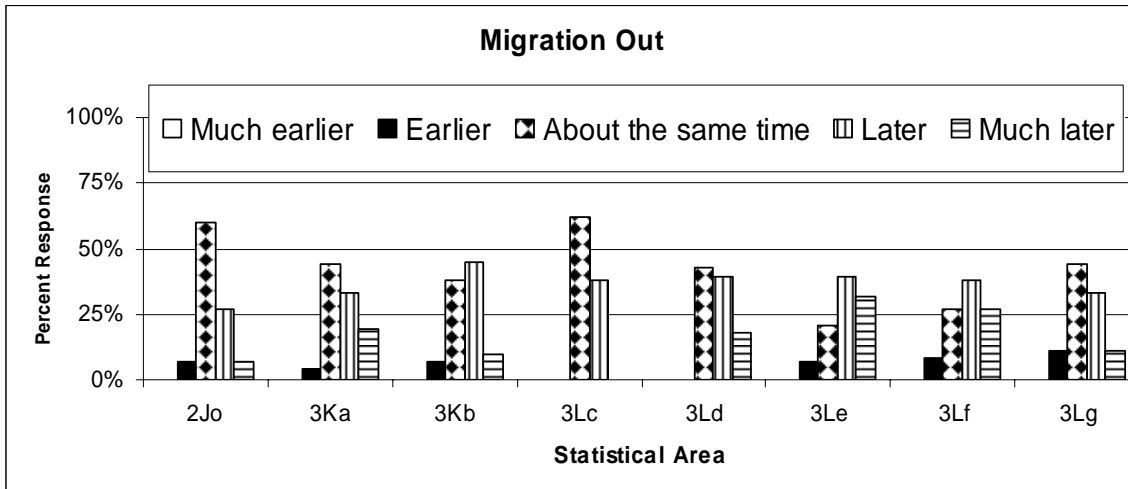


Figure 6. Migration off fishing grounds 2004.

In all areas most of the harvesters surveyed indicated that cod left the area around the normal expected time or somewhat later.

Question 11: In the inshore, cod have historically been found in specific areas commonly referred to as "traditional fishing grounds". During 2004, cod were found:

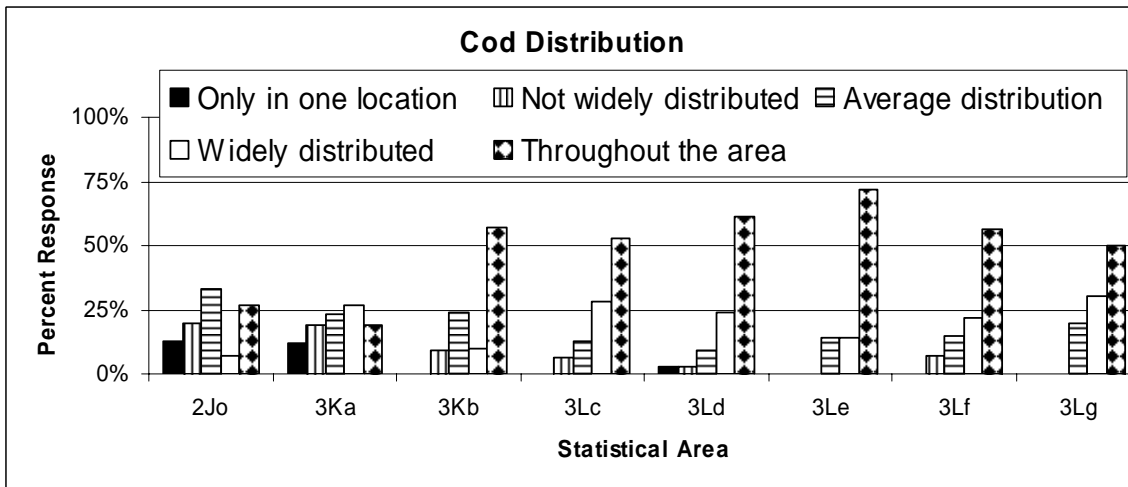


Figure 7. Cod distribution 2004.

In northern areas, statistical areas O and A, there is no agreement as to how cod were distributed over the fishing area. In southern areas cod appears to have been found on all traditional fishing grounds.

Question 12: Baitfish are important to the recovery of our cod stocks. For species cod feed on it is important to know what is happening to their abundance level.

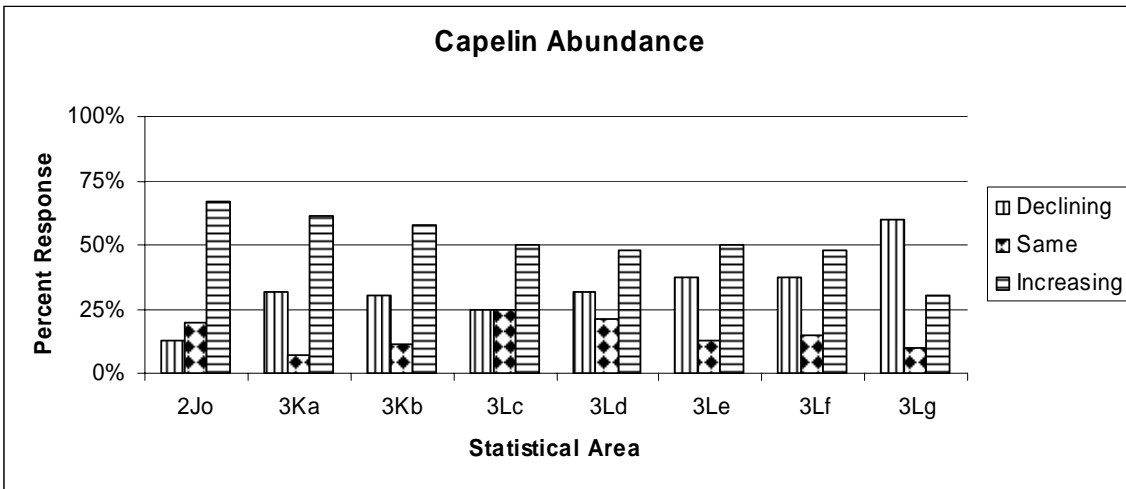


Figure 8. Capelin abundance during 2004.

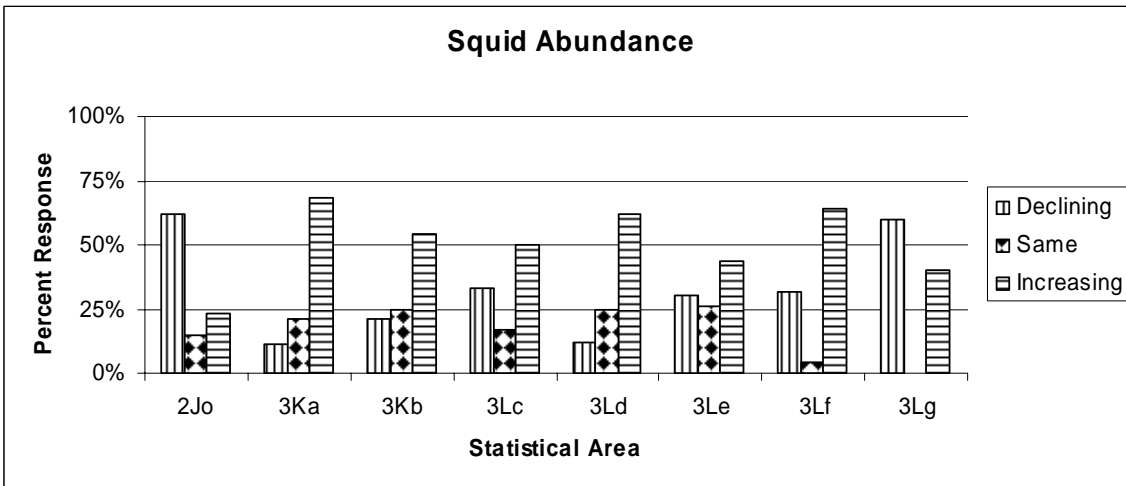


Figure 9. Squid abundance during 2004.

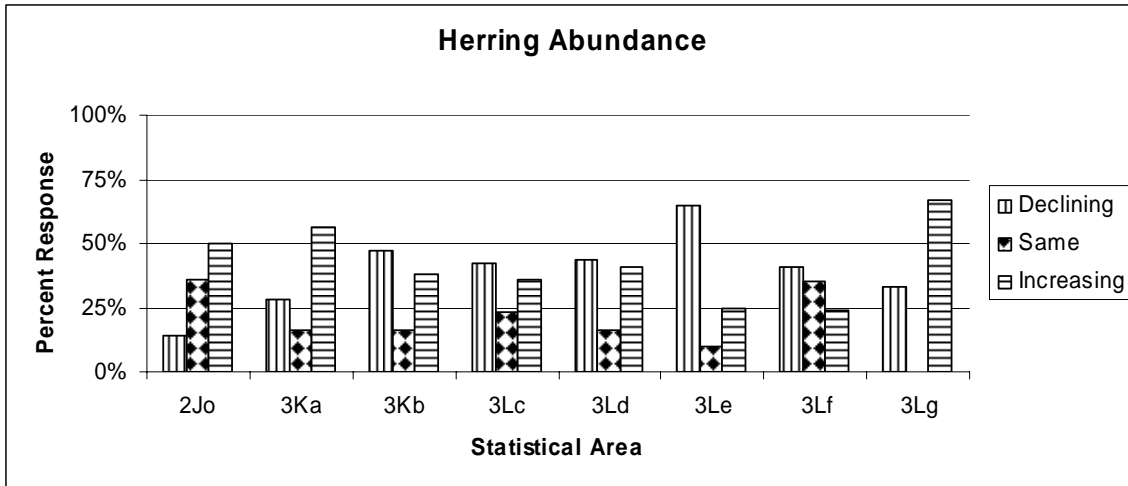


Figure 10. Herring abundance during 2004.

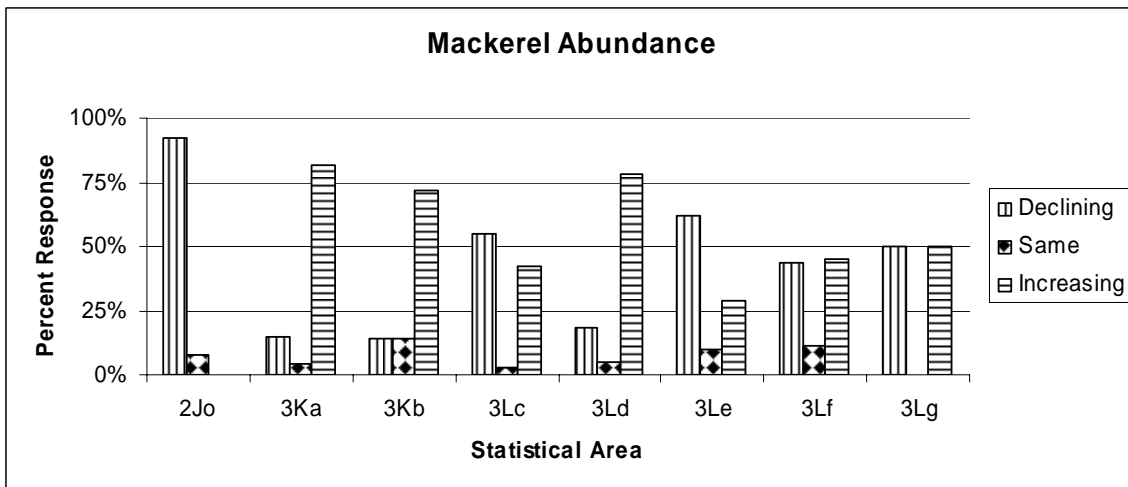


Figure 11. Mackerel abundance during 2004.

All areas indicated abundance of capelin was increasing except St. Mary's Bay. All areas except Labrador and St. Mary's Bay agree that squid numbers appear to be increasing as well. There is no clear trend in herring abundance while mackerel appears to be increasing in northern 3K and Trinity Bay with varying responses in other areas.

DISCUSSION

In an effort to include fish harvesters input in the 2005 assessment of Northern Cod the Fish Food and Allied Workers Union (FFAW) conducted a telephone survey in NAFO Divisions 2J3KL. Fish harvesters were randomly selected and, overall, nine percent (9%) of licensed harvesters participated in the survey.

In 2J most felt that cod abundance during 2004 was lower than it had been during the late 1980's but higher than it was during 2002 (the last year of the commercial index cod fishery). Telephone survey results from 3K showed no clear indication of how cod abundance in 2004 compared with abundance during the late 1980's, but most felt that cod abundance in 2004 was about the same as or better than it had been during 2002. In 3L most fish harvesters in Bonavista Bay, Trinity Bay and St. Mary's Bay felt that cod abundance was better in 2004 than it had been in the late 1980's and better than it was during 2002. There was no clear indication of how 2004 abundance in Conception Bay and along the Southern Shore compared with abundance during the late 1980's however most felt that cod abundance in 2004 was better than it had been during 2002.

There was no clear indication of the most abundant length range of cod except in Trinity Bay. In Trinity Bay, most fish harvesters felt that there was an even mixture of all sizes (lengths) of cod. Fish harvesters, throughout 2J3KL, felt that cod were in good condition.

In 2J and northern 3K there was no clear indication about the distribution of cod. In southern 3K and throughout 3L, most fish harvesters felt that cod were widely distributed throughout the area.

Survey participants were also asked to provide information about capelin, squid, herring and mackerel. In 2J most felt that capelin abundance was low but increasing and that squid and mackerel abundance was low and declining. In 3K most felt that capelin, squid and mackerel abundance was good and increasing. In 3L most felt that capelin, squid, herring and mackerel abundance was low but capelin and squid were increasing in abundance.

REFERENCES

Maddock Parsons and Stead. 2005. Sentinel surveys 1995-2004: Catch per Unit Effort in NAFO Divisions 2J3KL. DFO Can. Sci. Advis. Sec. Res. Doc. 2005/044.

APPENDIX A

Survey Questionnaire

Preamble

I am calling from the FFAW. There will be a full scientific assessment on Northern Cod this year and we want to ensure that Fish Harvesters input and observations are included in that assessment. To collect information from Fish Harvesters we have prepared a list of questions we would like to ask you. At this time we are only looking for information from the inshore portion of the 2J3KL stock area and while we do realize there was no directed fishery for cod during 2004, we do believe you have information that will be helpful in assessing this stock. It will only take a few minutes, would you like to participate?

Questions

1. How old are you?
2. In total, how many years did you fish for cod prior to the 1992 moratorium?
3. Did you fish for cod during the index fishery (1998 to 2002)?
4. What is the size range of the vessel that you used to fish for cod?
 - under 35 ft
 - 35 to 45 ft
 - 45 to 65 ft
5. Compare the abundance of cod in your area during 2004 with that of the late 1980's. Would you say that in 2004, cod were:
 - Far Less abundant
 - Less abundant
 - About the same
 - More abundant
 - Far more abundant
6. Compare the abundance of cod in your area during 2004 with that of 2002 (The last year of the commercial index fishery). Would you say that in 2004, cod were:
 - Far Less abundant
 - Less abundant
 - About the same
 - More abundant
 - Far more abundant

7. The size range of cod in your area during 2004 appeared to be:
 - Mostly under 12 inches in length
 - Mostly 12 to 20 inches in length
 - Mostly 16 to 24 inches in length
 - Mostly 20 inches and over
 - An even Mixture of ALL sizes

8. The condition or health of cod in your area during 2004 appeared to be:
 - Poor
 - Below average
 - Average
 - Above average
 - Good

9. With consideration given to the traditional time cod migrated to your area, would you say the migration in 2004 was:
 - Much earlier
 - Earlier
 - About the same time
 - Later
 - Much later

10. With consideration given to the traditional time cod migrated out of your area, would you say the migration in 2004 was:
 - Much earlier
 - Earlier
 - About the same time
 - Later
 - Much later

11. In the inshore, cod have historically been found in specific areas commonly referred to as "traditional fishing grounds". During 2004, cod were found:
 - Only in one location
 - Not widely distributed
 - Average distribution
 - Widely distributed
 - Throughout the area

12. Baitfish are important to the recovery of our cod stocks. For species cod feed on it is important to know what is happening to their abundance level.

A. Caplin abundance is:

- At a low level and declining
- At a low level but increasing
- Average abundance & not changing
- Good abundance but decreasing
- Good abundance and increasing

B. Squid abundance is:

- At a low level and declining
- At a low level but increasing
- Average abundance & not changing
- Good abundance but decreasing
- Good abundance and increasing

C. Herring abundance is:

- At a low level and declining
- At a low level but increasing
- Average abundance & not changing
- Good abundance but decreasing
- Good abundance and increasing

D. Mackerel abundance is:

- At a low level and declining
- At a low level but increasing
- Average abundance & not changing
- Good abundance but decreasing
- Good abundance and increasing

E. OTHER? _____ abundance is:

- At a low level and declining
- At a low level but increasing
- Average abundance & not changing
- Good abundance but decreasing
- Good abundance and increasing