

**SPECIAL HUNTER OPINION SURVEY FOR NEWFOUNDLAND:
RESPONSE TO QUESTIONS ABOUT MURRE HUNTING**

John W. Chardine



TECHNICAL REPORT SERIES No. 197
Atlantic Region 1994
Canadian Wildlife Service



Environnement
Canada

Canadian Wildlife
Service

Environnement
Canada

Service canadien
de la faune

Canada

TECHNICAL REPORT SERIES CANADIAN WILDLIFE SERVICE

These reports contain technical and scientific information from projects of the Canadian Wildlife Service. They are intended to make available material that either is of interest to a limited audience, or is too extensive to be accommodated in scientific journals or in existing CWS series.

Demand for these Technical Reports is usually confined to specialists in the fields concerned. Consequently they are produced regionally and in small quantities; they can be obtained only from the address given on the title page. However, they are numbered nationally. The recommended citation appears on the back of the title page.

Technical Reports are available in CWS libraries and are listed with the DOBIS system in major scientific libraries across Canada. They are printed in the official language of the author's choice.

SÉRIE DE RAPPORTS TECHNIQUES DU SERVICE CANADIEN DE LA FAUNE

Ces rapports donnent des informations scientifiques et techniques sur les projets du Service canadien de la faune (SCF). Ils visent à promouvoir la diffusion d'études s'adressant à un public restreint ou trop volumineuses pour paraître dans une revue scientifique ou une des séries du SCF.

Ordinairement, les demandes pour ces rapports techniques ne proviennent que de spécialistes des sujets traités. Ils ne sont donc produits qu'à l'échelon régional et en quantités limitées; leur numérotage est cependant effectué à l'échelle nationale. Ils ne peuvent être obtenus qu'à l'adresse figurant à la page titre. La citation recommandée apparaît au verso de la page titre.

Ces rapports se trouvent dans les bibliothèques du SCF et figurent aussi dans les listes du système de référence DOBIS utilisé dans les principales bibliothèques scientifiques du Canada. Ils sont publiés dans la langue officielle du choix de l'auteur.

Cover illustrations for all regions are by R.W. Butler. These illustrations may not be used for any other purpose without the artist's written permission.

L'illustration sur la couverture (spécifique à chaque région) est une œuvre de R.W. Butler. Ces illustrations ne peuvent être utilisées d'aucune autre façon sans la permission expresse de l'auteur.

CANADIAN WILDLIFE SERVICE
P. O. BOX 1590
SACKVILLE, N. B.
EOA 3C0

**SPECIAL HUNTER OPINION SURVEY FOR NEWFOUNDLAND:
RESPONSE TO QUESTIONS ABOUT MURRE HUNTING**

John W. Chardine¹

Technical Report Series No. 197
Atlantic Region 1994
Canadian Wildlife Service

This publication may be cited as:

Chardine, J.W. 1994. Special Hunter Opinion Survey for Newfoundland:
response to questions about murre hunting. Technical Report Series No. 197.
Canadian Wildlife Service, Atlantic Region.

¹ Canadian Wildlife Service
P.O. Box 21276
St. John's, NF A1A 5B2
Canada

CANADIAN WILDLIFE SERVICE
P.O. BOX 1590
SACKVILLE, NB
E0A 3C0

Published by authority of the
Minister of Environment
Canadian Wildlife Service

Minister of Supply and Services Canada 1994
Catalogue No. CW69-5/197E
ISBN 0-662-21508-7

Copies may be obtained from the author or:

Canadian Wildlife Service
Atlantic Region
P.O. Box 1590
Sackville, NB E0A 3C0
Canada

Table of Contents

Summary/Résumé ii
Introduction 1
Methods 2
Results
1. Response rate and general characteristics of respondents 8
2. Opinion on bag limits and season limits for murre 8
3. Opinion on hunting seasons for murre 11
4. Opinion on murre population status 11
Discussion 15
Acknowledgements 19
Literature cited 19
Appendix 1 21

Summary

The Special Hunter Opinion Survey for Newfoundland (HOS) was conducted in 1988. The survey canvassed hunter opinion on a variety of issues including migratory bird hunting regulations, migratory bird population status, and enforcement. This report presents results from the HOS specifically as they pertain to the hunting of murre in the province. Its main function is to provide a summary of hunter opinion to be used in the process of setting bag limits and hunting seasons for the Newfoundland murre hunt. For this purpose, HOS results are presented for the province as a whole and for three newly established, coastal murre hunting zones. Zone 1 comprised the coast of Labrador north of Boulter's Rock. Zone 2 comprised the southern coast of Labrador and the west and east coasts of the island of Newfoundland north of Cape Anguille and Deadman's Point respectively. Zone 3 comprised the balance of the island. A large sample of migratory bird hunters (n = 1847) from all areas of the province responded to the HOS. This produced a usable response rate of 32%. Eighty-six percent of respondents were in favour of a daily bag limit for murre. The median suggested limit was 15 birds per person per day and ranged from 2-100. Zone 1 hunters suggested a lower median bag limit of 10 birds compared to 20 birds for Zones 2 and 3. The median suggested season limit per person was 60 birds and ranged from 10-1000. Zone 1 and 2 hunters each suggested a median season limit of 50 birds compared to 75 birds for Zone 3. Zone 1 hunters preferred to hunt murre in the months of September-October-November, while those from Zone 2 preferred October-November-December. Zone 3 hunters preferred January-February-March. There was general agreement between hunters from the three zones on murre population status in the five year period prior to the survey. About one-half of respondents felt that populations had remained the same and about one-third felt that populations had declined.

Resumé

Le sondage spécial auprès des chasseurs de Terre-Neuve a été effectué en 1988. On y sollicitait l'opinion des chasseurs sur diverses questions, y compris sur la réglemets relatifs à la chasse aux oiseaux migrateurs, sur la situation des populations d'oiseaux migrateurs et sur la mise en application des réglemets. Le rapport présente les résultats du sondage en ce qui a trait particulièrement à la chasse aux marmettes dans la province. Il a pour but de présenter un résumé des opinions des chasseurs qui serviront dans le processus d'établissement des limites des prises et des saisons de chasse à la marmette à Terre-Neuve. À cette fin, les résultats du sondage sont présentés pour la province dans son ensemble et pour les trois zones de chasse à la marmette qui viennent d'être établies. La zone 1 comprend la côte du Labrador au nord du rocher Boulter's. La zone 2 comprend la côte sud du Labrador et les côtes ouest et est de l'île de Terre-Neuve au nord du cap Anguille et de la pointe Deadman's respectivement. La zone 3 comprend le reste de l'île. Un vaste échantillon de chasseurs d'oiseaux migrateurs (n = 1847) de toutes les régions de la province ont répondu au sondage, ce qui a donné un taux de réponse utilisable de 32%. Quatre-vingt-six pour cent des répondants étaient en faveur d'une limite quotidienne des prises de marmettes. La limite moyenne suggérée était de 15 prises par jour par personne, et les réponses allaient de 2 à 100. Les chasseurs de la zone 1 suggéraient une limite moyenne de 10 prises à comparer à une limite de 20 prises pour les

chasseurs des zones 2 et 3. La moyenne pour ce qui est de la limite des prises par saison s'établissait à 60 prises par personne et la limite allait de 10 à 1000. Les chasseurs des zones 1 et 2 suggéraient une limite moyenne de 50 prises par saison comparativement à 75 prises pour les chasseurs de la zone 3. Les chasseurs de la zone 1 préféraient chasser la marmette au cours des mois de septembre, octobre et novembre, tandis que les chasseurs de la zone 2 préféraient les mois d'octobre, novembre, et décembre; quant aux chasseurs de la zone 3, ils préféraient les mois de janvier, février et mars. Les chasseurs des trois zones s'entendaient généralement sur la situation de la population de marmettes au cours des cinq années précédentes. Environ la moitié des répondants estimaient que la population était demeurée la même et environ le tiers estimaient qu'il y avait eu déclin.

Introduction

One mandate of the Canadian Wildlife Service (CWS) is to conserve and protect migratory birds and their habitat. Accordingly, significant resources are directed toward the management and regulation of migratory bird hunting in Canada through provisions set out in the Migratory Bird Convention Act (MBCA).

Although sales of migratory game bird hunting permits (MGBHP) continue to decline across Canada, hunting migratory birds remains a popular pastime, particularly in Newfoundland and Labrador. In 1990, 311,714 MGBHPs were sold across Canada, of which 24,931 were sold in Newfoundland and Labrador (Legris and Lévesque 1991). The number of MGBHPs sold in the province currently equals that sold in the entire Maritime region where human populations are much larger. Commonly hunted migratory game birds in the province are the Common Eider (*Somateria mollissima*), scoters (*Melanitta* spp.), Black Duck (*Anas rubripes*) and Canada Goose (*Branta canadensis*).

The number of migratory game bird hunters in Newfoundland is only a partial indication of the popularity of migratory bird hunting. Additionally, Newfoundland and Labrador is unique in North America in that it is legal for non-native people, under a special regulation in the MBCA, to hunt murrelets (*Uria* spp.). Murrelets are classed as non-game birds in the MBCA and the regulation allows residents of the province to hunt murrelets in Newfoundland and Labrador without a permit. Over 10,000 hunters harvest about 600,000 to 900,000 murrelets annually (Elliot et al. 1991), and only about half buy a MGBHP.

It is clear that successful management of migratory bird hunting in Canada relies, in part, on continued, effective liaison with the hunting public. This is achieved through day-to-day activities of many CWS staff and through a variety of committee structures. Public consultation in the regulatory process has been formalized in the Regulatory Impact Analysis Statement (RIAS) process in which

potential impacts of proposed hunting regulations are assessed partially through input from the public. For regulations already in place, compliance probably depends to a large degree on their public acceptance. One mechanism for assessing public acceptance of regulations is through surveys of hunter opinions.

Hunter opinion surveys have been performed very sporadically in Canada. Filion and Payne (1978) report the results of such a survey in Nova Scotia. In Newfoundland and Labrador, the first and only hunter opinion survey, referred to as the Special Hunter Opinion Survey for Newfoundland (HOS), was conducted in 1988. The main objectives of the survey were:

- 1) to assess hunters' satisfaction and preferences regarding hunting seasons and bag limits.
- 2) to determine hunters' opinions on possible options to change regulations when harvest reductions are necessary.
- 3) to categorize hunters' perceptions of the most common problems in the management of game bird hunting.

This report details HOS results only as they pertain to the Newfoundland murre hunt. The results have been used in the process of determining a bag limit and shorter hunting season for murre, beginning in the fall of 1993. Results from the HOS pertaining to the hunting of other migratory bird species will be presented elsewhere.

Methods

The HOS mail-out questionnaire sampled 6,000 MGBHP holders from the 23,655 names in the 1988, CWS computer file for Newfoundland and Labrador. The sample was stratified by 13 geographic areas devised by Wendt and Cooch (1984) such that the proportion of migratory bird hunters sampled in each area

(based on MGBHP sales) was representative of the overall distribution of hunters (Figure 1).

Twenty major questions were posed to sampled hunters under the headings of: (1) 1987-1988 hunting season; (2) harvest, seasons and bag limits; (3) identification and enforcement, and (4) general information. The questions covered both sides of a 17" x 14" base page, which was folded into a 8 1/2" x 14" questionnaire (see Appendix 1 for a copy of questionnaire). Questions pertaining to the murre hunt were spread throughout the survey.

Questionnaires were mailed out by CWS Headquarters from Ottawa between October 1988 and February 1989 in two waves. Prepaid return envelopes were enclosed with the CWS-St. John's address, with the expectation that these measures would increase response rates.

Questionnaires were manually edited before data were transferred from the completed forms to a computerized, dBase database. dBase programs were written to check for errors, and the database edited. Data were then written to an ASCII text file and transferred to statistical packages (Systat version 5.2 [Wilkinson et al. 1992], and Statview 4.01 [Abacus Concepts 1992]) for analysis.

As part of the process of determining bag limits and hunting seasons for the murre hunt in Newfoundland (Chardine in prep.), the province has been divided into three coastal murre hunting zones (Figure 2). This geographic breakdown was based on the previous work of Elliot (1989) who grouped areas of the province with similar murre hunting characteristics. In this report, regional trends in the HOS data are presented for these three zones.

In the HOS the province was divided into 13 areas based on Wendt and Cooch (1984), and hunters were asked to indicate the area in which they hunted migratory birds in the 1987-88 hunting season (see Figure 1). Unfortunately it

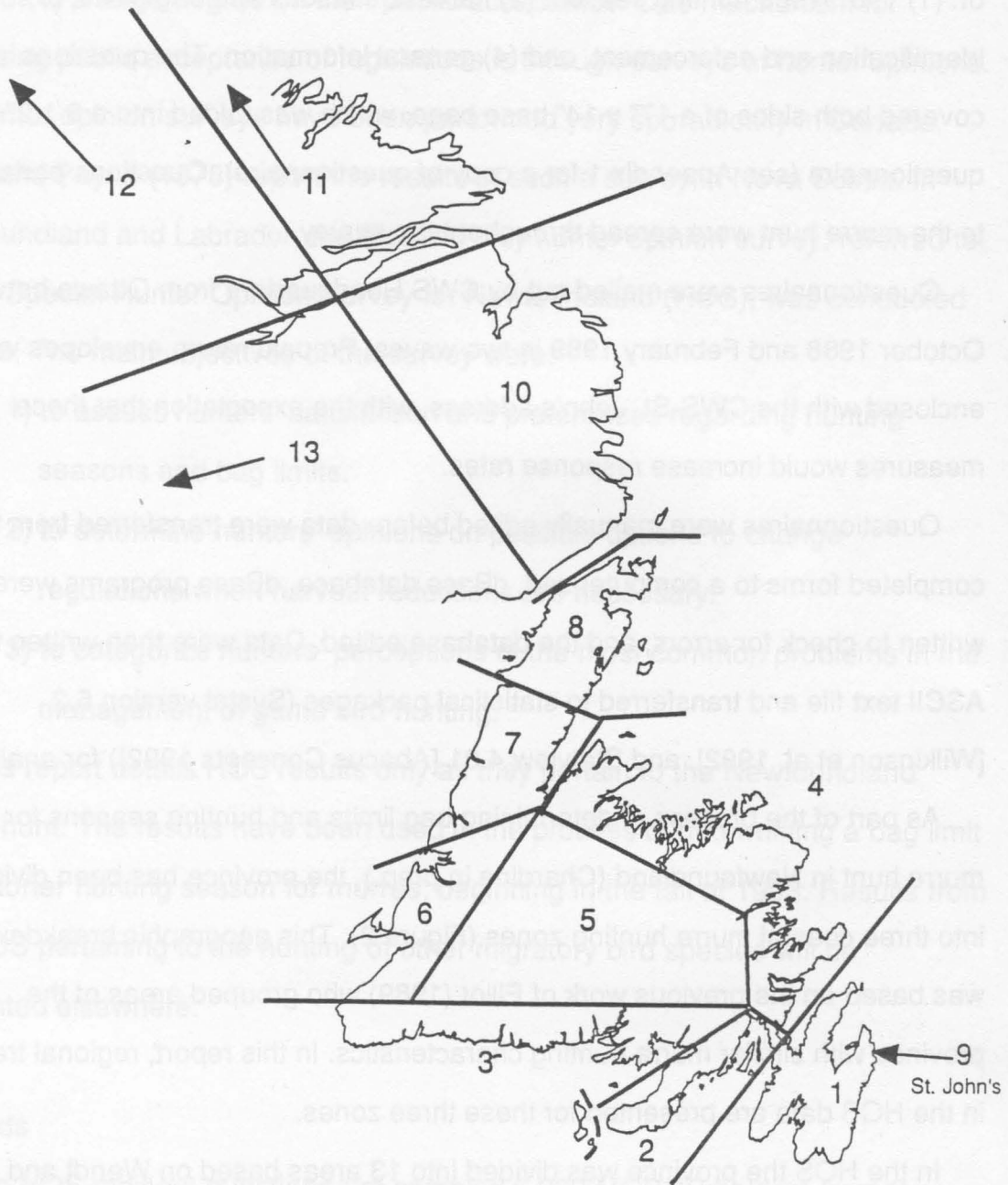


Figure 1. Hunting areas defined in the Hunter Opinion Survey (from Wendt and Cooch 1978).

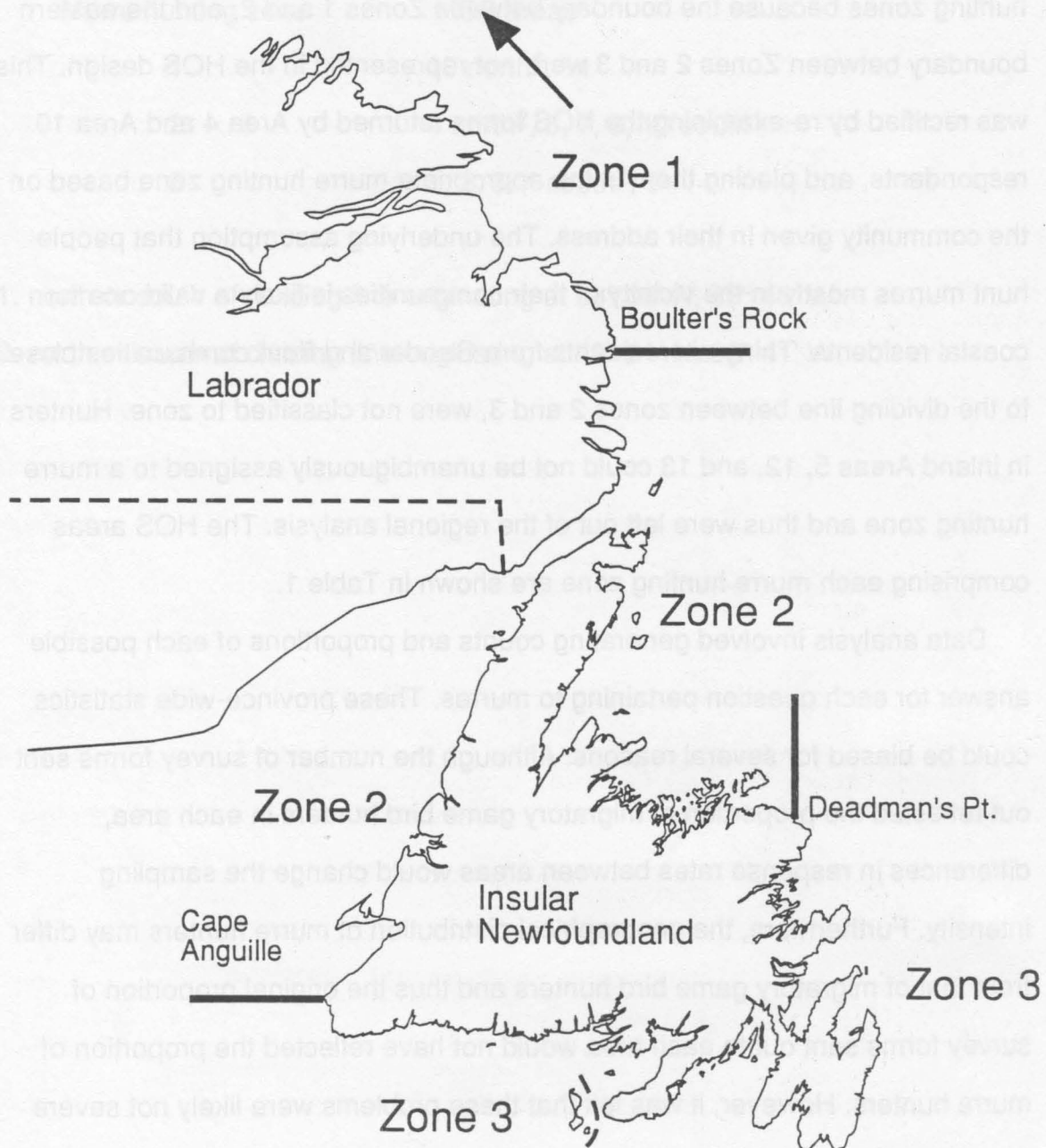


Figure 2. Map of Newfoundland and Labrador showing the three murre hunting zones

was not a simple matter of collapsing the 13 HOS areas into the three murre hunting zones because the boundary between Zones 1 and 2, and the eastern boundary between Zones 2 and 3 were not represented in the HOS design. This was rectified by re-examining the HOS forms returned by Area 4 and Area 10 respondents, and placing them in the appropriate murre hunting zone based on the community given in their address. The underlying assumption that people hunt murre mostly in the vicinity of their communities is likely a valid one for coastal residents. Thirty-six residents from Gander and from communities close to the dividing line between zones 2 and 3, were not classified to zone. Hunters in inland Areas 5, 12, and 13 could not be unambiguously assigned to a murre hunting zone and thus were left out of the regional analysis. The HOS areas comprising each murre hunting zone are shown in Table 1.

Data analysis involved generating counts and proportions of each possible answer for each question pertaining to murre. These province-wide statistics could be biased for several reasons. Although the number of survey forms sent out reflected the proportion of migratory game bird hunters in each area, differences in response rates between areas would change the sampling intensity. Furthermore, the geographical distribution of murre hunters may differ from that of migratory game bird hunters and thus the original proportion of survey forms sent out to each area would not have reflected the proportion of murre hunters. However, it was felt that these problems were likely not severe enough to affect the pooled, province-wide results substantially, and accordingly, special weighting of records in the dataset was not performed. Where appropriate, answers to questions were compared between each of the three murre hunting zones. This was particularly important in determining preferences for murre hunting seasons which are known to vary substantially in different regions of the province (Elliot 1991).

Table 1. Correspondence between HOS areas and murre hunting zones

Murre hunting zone	HOS areas
1	10 north ¹ , 11
2	4 north ² , 6, 7, 8, 10 south ¹
3	1, 2, 3, 4 south ² , 9

1. north or south of dividing line originating at 53° 06' N, 55° 46' W
2. north or south of dividing line originating at 49° 21' N, 53° 41' W

Results

1. Response rate and general characteristics of respondents

Of the 6,000 HOS forms sent out, 1,847 were returned completed, giving a response rate of 31%. An additional 172 forms were returned uncompleted, 166 because the address used was no longer valid, two because the person was deceased, and four for other reasons. If these are subtracted from the total sent out, the adjusted or usable response rate for the HOS was 32%.

Of the 1,847 respondents, 1,490 or 81% hunted migratory birds in the 1987-88 hunting season (question 1). Of those, 801 or 54% hunted murre that season (question 2). The mean number of years of hunting experience for the 1794 hunters responding to the question was 16.7 years (SD = 12.5), which amounted to 30,020 person-years of hunting experience (question 18).

2. Opinion on bag limits and season limits for murre

Although only 801 respondents hunted murre in the 1987-88 hunting season, 1,560 expressed an opinion on whether a daily bag limit should be brought in (question 8a). Fully 86% of those were in favour of bag limits for murre.

Opinions on what the bag limit should be were provided by 1,224 respondents, even though 40 were not in favour of bag limits and 12 had no opinion in this regard (question 8c). Figure 3 shows the distribution of suggested daily bag limits for all 1,224 respondents. The distribution was skewed to the right with a median of 15 birds per person, but with a few suggesting a limit of 100 per person. Table 2 shows the median and range of suggested daily bag limits for the three hunting zones. Suggested bag limits differed significantly between zones (Kruskal-Wallis $H = 9.9$, $df = 2$, $p < 0.01$) with Zone 1 hunters recommending a median bag limit of 10 birds per person and Zones 2 and 3 each recommending 20 birds per person.

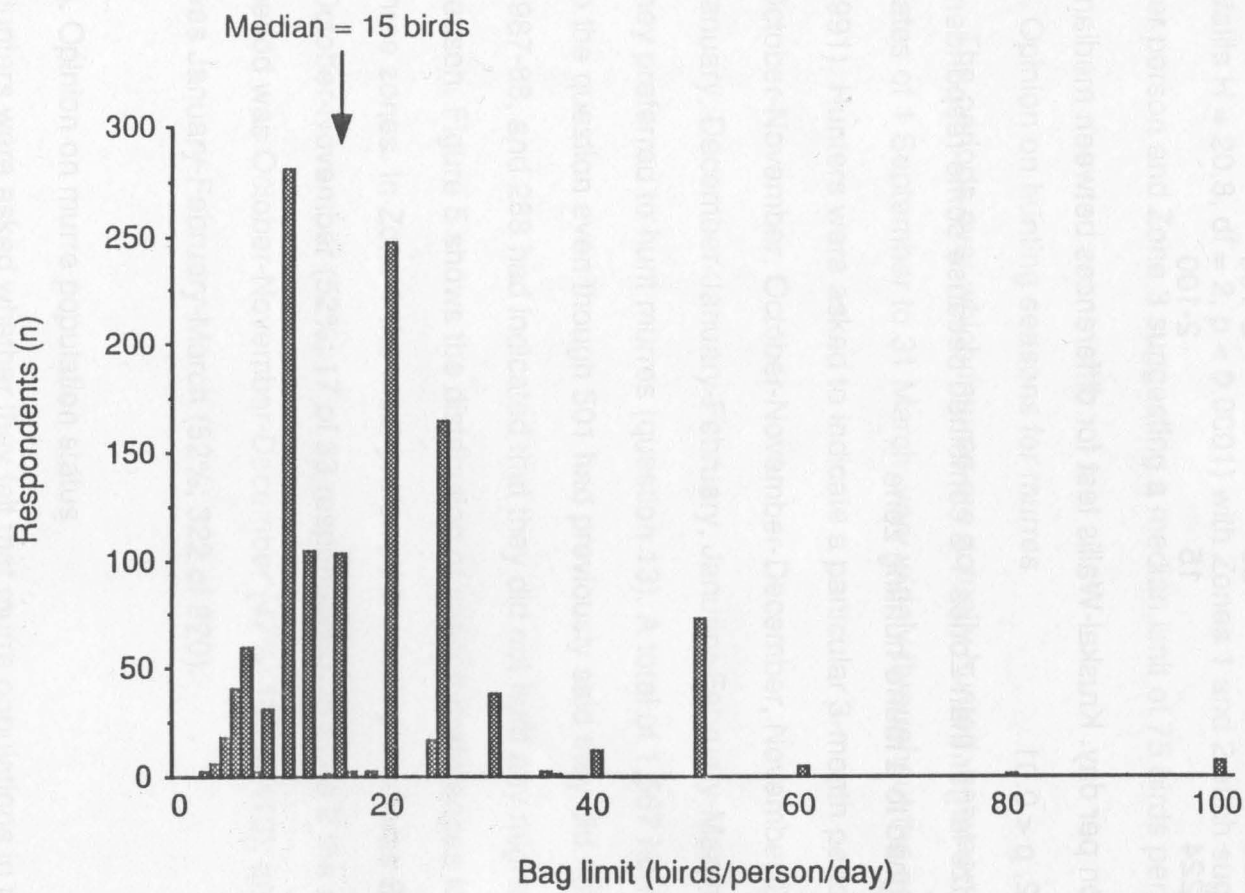


Figure 3. The distribution of suggested bag limits for murre

Table 2. Suggested daily bag limits for murrelets according to murrelet hunting zone

Zone	n	Median ¹ bag limit	range
1	25	10	3-30
2	294	20	2-80
3	493	20	2-100
Total ²	1224	15	2-100

1. Birds per person per day. Kruskal-Wallis test for differences between medians:
 $H = 9.9, df = 2, p < 0.01$
2. Total sample size larger than Zones 1-3 combined because some respondents were not assigned to a murrelet hunting zone

Hunters also were asked how many murre they thought they should be allowed to take per person for the whole hunting season. Figure 4 shows the distribution of suggested season limits. Again the distribution was skewed to the right with a median of 60 birds per person and a range of 10 to 1,000. Table 3 shows the median and ranges of suggested season limits for the three hunting zones. Suggested season limits varied significantly between zones (Kruskal-Wallis $H = 20.8$, $df = 2$, $p < 0.0001$) with Zones 1 and 2 each suggesting 50 birds per person and Zone 3 suggesting a median limit of 75 birds per person.

3. Opinion on hunting seasons for murre

The periods over which murre are actually hunted, between the allowed dates of 1 September to 31 March, vary widely throughout the province (Elliot 1991). Hunters were asked to indicate a particular 3-month period (September-October-November, October-November-December, November-December-January, December-January-February, January-February-March) during which they preferred to hunt murre (question 13). A total of 1,567 hunters responded to the question even though 501 had previously said they did not hunt murre in 1987-88, and 288 had indicated that they did not hunt any migratory birds that season. Figure 5 shows the distribution of season preferences for each of the three zones. In Zone 1 the most preferred 3-month period was September-October-November (52%; 17 of 33 respondents). In Zone 2 the most preferred period was October-November-December (47%; 193 of 410), and in Zone 3 it was January-February-March (52%; 322 of 620).

4. Opinion on murre population status

Hunters were asked whether they felt that murre populations in their hunting areas had increased, decreased or remained the same in the five years prior to

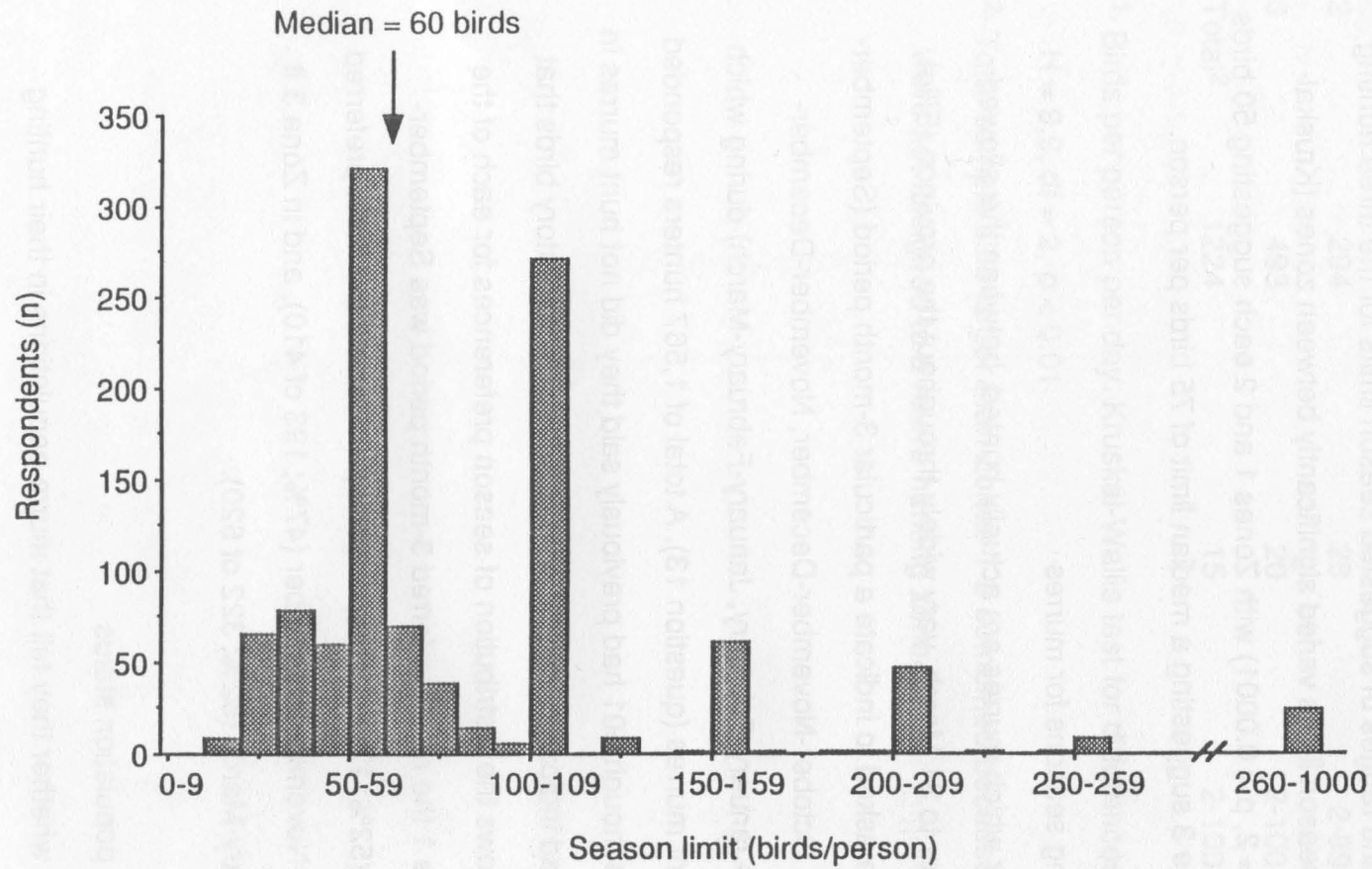


Figure 4. Distribution of suggested season limits for murren

Table 3. Suggested season limits for murrelets according to zone

Zone	n	Median ¹ season limit	range
1	26	50	25-200
2	280	50	12-400
3	416	75	15-1000
Total ²	1091	60	10-1000

1. Birds per person per season. Kruskal-Wallis test for differences between medians: $H = 20.8$, $df = 2$, $p < 0.0001$
2. Total sample size larger than Zones 1-3 combined because some respondents were not assigned to a murre hunting zone

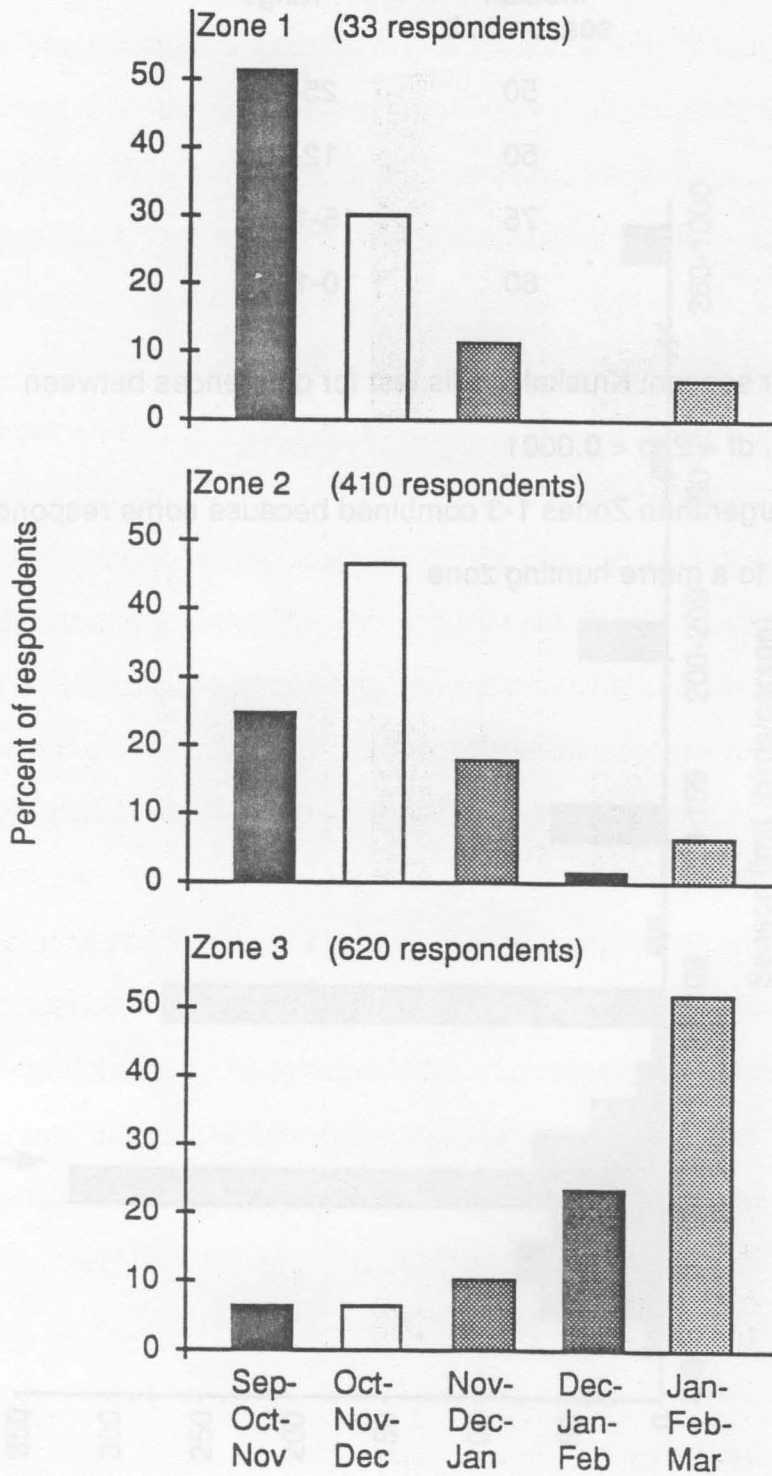


Figure 5. Preferred 3-month murre hunting season according to murre hunting zone

the survey (question 5). The distribution of answers for each zone and the total sample of respondents is shown in Figure 6. Overall, about one-third of respondents felt that populations of both species had declined and about half felt that populations had remained the same. There was no significant differences in the distribution of answers for each species, between the three hunting zones (Thick-billed Murre: $\chi^2 = 7.5$ df = 4, ns; Common Murre: $\chi^2 = 5.4$, df = 4, ns).

Discussion

The Special Hunter Opinion Survey for Newfoundland and Labrador sampled the views of a large number of hunters in the province in 1988. The sampling intensity for hunters buying MGBHPs in 1988 ($n = 23,655$) amounted to 8%. The usable response rate of the HOS (32%) was considerably less than that achieved in a similar survey in Nova Scotia undertaken in 1976 (72%; Filion and Payne 1978), and less than the response rate from seaduck and murre harvest surveys conducted in Newfoundland in the 1970s and 1980s (Elliot et al. 1991). Reasons for the lower response rate to the HOS are unclear at present.

There was overwhelming support for the imposition of a daily bag limit to control the number of murre harvested in the province. However, this result should be tempered somewhat by the fact that as worded, the particular question on bag limits (8a) may have biased the results by encouraging more hunters to respond in favour. In future surveys, problems of this nature should be eliminated through careful scrutiny by a specialist in survey design.

The median suggested bag limit of 15 murre per person per day was higher than the existing limits for migratory game birds such as seaducks and inland ducks, and probably reflects the current situation with no limits in place. The average hunter's daily bag has contained about 4 to 7 murre since harvest surveys were initiated in 1977 (Elliot et al. 1991) and one might expect that the

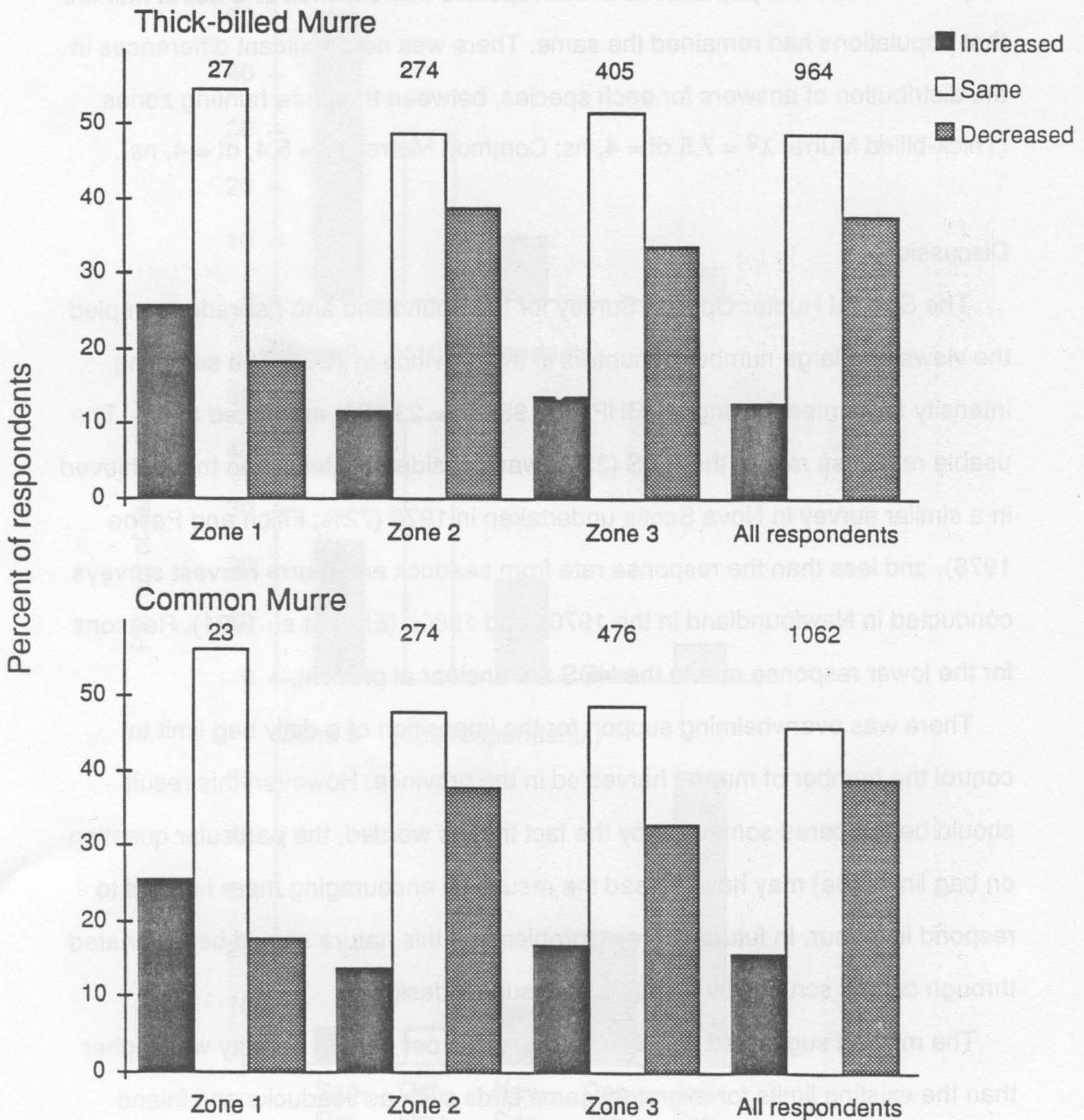


Figure 6. Hunter opinion on the status of murre populations (Increase, Same, Decrease) in the area they hunt over the past 5 years, according to murre hunting zone. Numbers above bars are sample sizes for each zone or total. Total sample larger than Zones 1-3 combined because some respondents were not classified to zone

suggested bag limit would be closer to these figures. The higher suggested limit probably results from a desire by hunters to take advantage of particularly good hunting days when the potential size of bag is in excess of what they would normally achieve.

The median bag limit suggested by Zone 1 hunters was considerably less than Zone 2 or Zone 3 hunters. This probably reflects lower expectations of potential bag size by Labrador murre hunters in Zone 1. Only about 4% of the total annual murre harvest occurs in Labrador. This is mainly because of the relatively short murre hunting season often hampered or prevented altogether by sea-ice.

Hunters also had the opportunity to comment on an appropriate season limit for murre. Fifty percent of hunters recommended a limit of 60 birds per person or less. Hunters in Zones 1 and 2 suggested smaller season limits than hunters in Zone 3. The reasons for this trend are unclear but may be related to regional differences in factors such as duration of period when birds are available, opportunity to hunt, and nutritional needs.

Limits on season kills have not been used to regulate migratory bird harvests in North America. Rather, a possession limit is usually in place in conjunction with a daily bag limit. A possession limit sets a maximum number of birds a hunter can have in his or her possession at any one time, and normally is twice the daily bag limit. At the possession limit, birds can be added to someone's possession as they others are consumed, so limits do not restrict the potential number of birds taken by a hunter in a season. Thus, suggested season limits presented here should be interpreted as a recommendation of a possession limit.

The suggested 3-month hunting seasons for murre in each of the three zones followed the expected pattern (see Elliot 1991). Preferred seasons in the two more northerly hunting zones 1 and 2 were relatively early: either

September-October-November or October-November-December respectively. The preferred season in the more southerly Zone 3 was late: January-February-March. These seasons likely closely correspond to the availability of birds in each of the zones. In Zone 1 and in some regions of Zone 2 murrens arrive from the breeding grounds in September or October but severe weather and ice conditions either hamper or prevent the hunt as the end of December approaches. In Zone 3, although some murrens are probably available all season, large numbers do not begin to congregate in the bays before January (Elliot 1991).

There was strong agreement between hunters from each murre hunting zone on the status of Thick-billed and Common Murre populations in the areas hunted. About 50% of hunters in each zone felt that populations of both species had remained stable in the past five years. However, a significant proportion of hunters, ranging from about 20 to 40% depending on zone and species, felt that populations had declined. In general, migratory bird hunters in Newfoundland are well positioned to qualitatively assess populations in the areas they hunt. Many migratory bird hunters in Newfoundland are fishermen who spend a great deal of time on or near the water. Although they likely do not assess bird populations directly, they do tend to keep a close mental record of the number of murrens they shoot every year. A declining trend in numbers shot could indicate reduced populations and would likely produce this perception.

It is very difficult to determine whether these perceived population trends are real or artifactual. If real, they may reflect changes in the distribution of murrens rather than population sizes. The distribution of murrens can be affected by factors such as changes in sea-ice conditions and food availability. The artifactual nature of the perceived trends is suggested by the lack of agreement on population status between hunters within each zone. However, it is possible that this lack of

agreement could be due to differences in population status between different localized areas within each zone.

It is important to note that the opinions expressed in the HOS date from 1988 and may not be representative today. There are several reasons for suggesting this. The murre hunt in Newfoundland and Labrador has not proceeded in a typical fashion over the past two hunting seasons. In both seasons, hunters reported seeing very few birds on the east coast of insular Newfoundland and consequently few birds were shot. In typical years, murre hunts in areas such as Notre Dame and Bonavista Bays can be very large (Elliot et al. 1991). Again in both seasons, murre congregated in areas of Fortune and Placentia Bays in late winter and were so heavily hunted that the season was closed early by CWS for conservation reasons. Both the lack of birds on the east coast of Newfoundland and the large kills of birds in Fortune and Placentia Bays have raised serious concerns in the hunting public about murre populations in Newfoundland and Labrador. If the HOS were repeated now, opinions would likely reflect this, with the possible result that more respondents would favour bag limits and suggested limits would be more conservative.

Acknowledgements

Richard Elliot and Ian Goudie designed the HOS. Eric Hiscock and George Finney commented on earlier drafts of the manuscript. The contents of this report was improved through discussions with Wayne Turpin, Pierre Ryan, and Eric Hiscock.

Literature cited

Abacus Concepts 1992. Statview. Berkeley, CA, Abacus Concepts Inc. 466 pp.

- Elliot, R. D. 1989. Background for a Newfoundland turr harvest management strategy. St. John's, NF, CWS. manuscript report.
- Elliot, R. D. 1991. The management of the Newfoundland turr hunt. In: Studies of high-latitude seabirds. 2. Conservation biology of Thick-billed Murres in the northwest Atlantic, St. John's, NF, Supply and Services Canada. p. 29-35.
- Elliot, R. D., Collins, B. T., Hayakawa, E. G. and Métras, L. 1991. The harvest of murre in Newfoundland from 1977-78 to 1987-88. In: Studies of high-latitude seabirds. 2. Conservation biology of Thick-billed Murres in the northwest Atlantic, St. John's, NF, Supply and Services Canada. p. 36-44.
- Filion, F. L. and Payne, F. J. 1978. Opinions of hunters in Nova Scotia on regulations under the Migratory Birds Convention Act. In: Migratory game bird hunters and hunting in Canada. Boyd, H. and G.H. Finney (eds.). CWS report series no. 43. Supply and Services Canada, Ottawa. p. 58-63.
- Legris, A. M. and Lévesque, H. 1991. Migratory game birds harvested in Canada during the 1990 hunting season. Ottawa. CWS Progress Notes no. 197. 40 pp.
- Wilkinson, L., M. Hill and E. Vang. 1992. Systat: Statistics, Version 5.2 edition. Evanston, IL, Systat Inc. 724 pp.
- Wendt, S. and Cooch, F. G. 1984. The kill of murre in Newfoundland in the 1977-78, 1978-79, and 1979-80 hunting seasons. Ottawa. CWS Progress Notes no. 146. 10 pp.

Appendix 1. The Special Hunter Opinion Survey for Newfoundland

Name: _____ Address: _____
 Phone: _____
 This survey is a special survey, the first ever sent out to you to check your opinion on the way the Department of Fisheries and Aquaculture is doing. This is your opportunity to let us know your thoughts on hunting, the way we manage it, and how we can improve it.

Please take the time to work through these questions. Most will be answered by talking to your friends or the people you talk to in your area. However, we will send the questions to you as much as possible. It may take you a few minutes to answer them. We suggest you turn down the TV, get some water, and take your time - your reply to this survey will help us decide on the best hunting regulations - your response makes all the difference!

Your responses to these questions will be kept strictly confidential. Please return the questionnaire to the address provided. If you have any trouble understanding the questions, please call collect toll-free 1-877-333-3333.

A. THE 2002 HUNTING SEASON

1. Do you go hunting in regular, one-time, special, or family hunting groups?
 Regular
 One-time
 Special
 Family

2. In which group hunting has your choice of the groups of birds that you hunted?
- Black Duck (includes Black Duck and Teal)
 - Geese
 - Shore
 - Sea Duck (includes Eiders and Goldeneyes)
 - Loon (includes)

3. Please check the number of birds in the group of hunters who hunted the birds.

4. How many birds did you hunt in each of the following groups? Please write a number in each space.

Group	1-2	3-4	5-6	7-8	9-10	11-15	16-20	21-25	26-30	31-40	41-50	51-60	61-70	71-80	81-90	91-100	More than 100
Black Duck (includes Black Duck and Teal)																	
Geese																	
Shore																	
Sea Duck (includes Eiders and Goldeneyes)																	
Loon (includes)																	

5. If you were to hunt again, what would be the best time to hunt for the number of birds in the group you hunted?

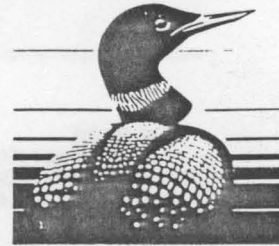


6. Please check the number of the options for the area where you hunt birds.

B. HUNTING DECREASE AND INCREASE

7. Do you think that the number of birds in the areas you hunt have increased, stayed the same, or decreased?

Group	Increased	Stayed the same	Decreased	Don't know
Black Duck	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Geese	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Shore	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Sea Duck (includes Eiders and Goldeneyes)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Loon (includes)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>



Name and Address here

This really is a special survey, the first ever sent out to get hunters' opinions on migratory bird management in Newfoundland. This is your opportunity to let us know your opinions on seasons, bag limits and enforcement for migratory bird hunting.

Please take the time to work through these questions. Most can be answered by putting a check-mark in the appropriate box or by writing brief comments. Although we've made the questions as simple as possible, it may take you 15-20 minutes to answer them. We suggest you turn down the TV, get a cup of tea, and take your time - your reply to this survey will help us decide on the best hunting regulations - your response makes all the difference!

Your responses to these questions will be kept strictly confidential. Please return the questionnaire today in the special postage-paid envelope provided. If you have any trouble understanding the questions, please call collect to (709) 772- 5585 in St. John's.

A. THE 1987-88 HUNTING SEASON

1. Did you go hunting for migratory birds (ducks, geese, snipe, or turrs) last season (1987-88) in Newfoundland and Labrador?
 Yes
 No → Go to question 5

2. (a) If you did go hunting last year, please check all the groups of birds below that you hunted.

- Inland Ducks (includes Black Ducks and Teal etc.)
- Geese
- Snipe
- Sea Ducks (includes Eiders and Oldsquaws etc.)
- Turrs (or murre)

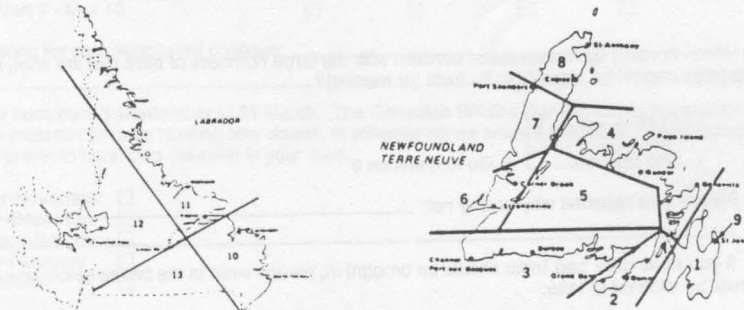
(b) Please circle the box beside the group of migratory birds above that you hunted the most.

3. About how many migratory birds did you kill and retrieve in the 1987-88 season? (Please enter a number for each group of birds that you hunted).

- Inland Ducks (Includes Black Ducks and Teal etc.) about birds
- Geese about birds
- Snipe about birds
- Sea Ducks (Includes Eiders and Oldsquaws etc.) about birds
- Turrs (Murre) about birds

4. (a) In what areas did you hunt migratory birds in 1987-88? (place a check in the box for the number of the area on the map where you hunted).

- 1.
- 2.
- 3.
- 4.
- 5.
- 6.
- 7.
- 8.
- 9.
- 10.
- 11.
- 12.
- 13.



(b) Please circle the number on the list above for the one region where you spent most time hunting.

B. HARVEST SEASONS AND BAG LIMITS FOR 1988-89

5. Do you think that the numbers of migratory birds in the areas you hunt have increased, stayed the same, or decreased in the past 5 years?

	Increased	Stayed the same	Decreased	No Comment
Inland Waterfowl				
Black Duck	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Green-winged Teal	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Mallard	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Ring-necked Duck (Pond Divers)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Mergansers (Shell birds, gozzards)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Canada Geese	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Snipe	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

	Increased	Stayed the same	Decreased	No Comment
Sea Ducks				
Common Eiders (Shore Ducks)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
King Eiders (King Birds)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Harlequin Ducks (Lords and Ladies)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Turrs				
Thick-billed Murres (Northern Turrs)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Common Murres (Newfoundland Murres) ...	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

6. When migratory bird populations decrease, which of the following methods would you prefer be used to help rebuild these populations? (Check one.)

- Open the season later
 Close the season earlier
 Lower the daily bag limits
 Close the season for several years
 Other (Please specify)

7. (a) The daily bag limits for migratory bird hunting during the current 1988- 89 hunting season in Newfoundland and Labrador are shown below. Are these limits acceptable to you?

- Yes → Go to question 8
 No

(b) If no, please write in the daily bag limit you would prefer.

Inland Waterfowl	Present daily limit	Your preferred daily limit would be
Black Ducks - Newfoundland	4	<input type="text"/>
- Labrador	6	<input type="text"/>
Mergansers - Newfoundland	6	<input type="text"/>
- Labrador (includes scoters)	6	<input type="text"/>
Other Ducks - Newfoundland	6	<input type="text"/>
- Labrador	6	<input type="text"/>
Geese - Newfoundland	5	<input type="text"/>
- Labrador	5	<input type="text"/>
Snipe - Newfoundland	10	<input type="text"/>
- Labrador	10	<input type="text"/>
Sea Ducks - Newfoundland	12	<input type="text"/>
- Labrador	15	<input type="text"/>

8. (a) Many hunters have expressed concern with the large numbers of turrs that are shot, many for illegal sale. Do you think daily bag limits should be brought in for turrs (or murres)?

- Yes.....
 No.....
 No opinion.... → Go to question 9

(b) Please give reasons why or why not: _____

(c) If you think daily bag limits should be brought in, please write in the boxes below how many turrs each hunter in the boat should be allowed to take:

In one day?
 In one season?

9. Would you prefer migratory bird hunting seasons to open on:

- A Saturday
 A Monday
 Another week-day
 The same calendar day each year (e.g. the 25th of the month)
 No preference

10. (a) Should seasons for inland ducks and geese hunted in the same area continue to open and close at the same time?

- Yes
 No
 No opinion

(b) Please give reasons why or why not: _____

11. (a) The hunting seasons for inland ducks, geese and snipe for the current 1988-89 season in Newfoundland and Labrador are summarized in the table below.

Are these seasons acceptable to you?

Yes → Go to question 12
No

(b) If you feel the seasons for your area are not acceptable, please suggest the timing you would prefer for the zones where you hunt.

Hunting Zone	Present season	Your preferred timing would be:			
		Season Opening 2 weeks earlier	1 week earlier	Season Closing 1 week later	2 weeks later
Northern Coastal	Sept 24 - Dec 10	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Southern Coastal	Sept 24 - Dec 10	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Avalon-Burin Coastal	Oct 1 - Dec 17	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Avalon-Burin Inland	Oct 1 - Dec 17	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Northern Inland	Sept 24 - Dec 10	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Inland	Sept 24 - Dec 10	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Northern Labrador	Sept 3 - Dec 10	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Western Labrador	Sept 3 - Dec 10	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Southern Labrador	Sept 3 - Dec 17	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Central Labrador	Sept 3 - Dec 10	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

(c) Please give reasons for your suggested changes _____

12. (a) The hunting seasons for sea ducks for the current 1988-89 season in Newfoundland and Labrador are summarized in the table below.

Are these seasons acceptable to you?

Yes → Go to question 13
No

(b) If you feel the seasons for your area are not acceptable, please suggest the timing you would prefer for the zones where you hunt in the table below, remembering seasons must fall between 1 September and 10 March.

Hunting Zone	Present seasons	Your preferred timing would be:			
		Season Opening 2 weeks earlier	1 week earlier	Season Closing 1 week later	2 weeks later
Northern Coastal	Nov 26 - Mar 10	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Southern Coastal	Nov 26 - Mar 10	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Avalon-Burin Coastal	Nov 26 - Mar 10	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Northern Labrador	Oct 1 - Jan 16	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Western Labrador	Sept 3 - Dec 10	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Southern Labrador	Nov 26 - Mar 10	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Central Labrador	Oct 22 - Dec 3 and Jan 7 - Mar 10	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

(c) Please give reasons for your suggested changes: _____

13. The turr season now lasts from 1 September to 31 March. The Canadian Wildlife Service would like to shorten this season to the time when most turr (murre) hunting now occurs, in different zones around the coast. Please check the three-month period you would prefer to hunt turrs in your area:

- September-October-November
- October-November-December
- November-December-January
- December-January-February
- January-February-March

C. IDENTIFICATION AND ENFORCEMENT

14. (a) Many hunters cannot identify all the species of birds they hunt, especially by the "book names" used in regulation summaries. Would you be interested in receiving information or attending a course on identifying species of migratory birds?

Yes
No → Go to question 15

(b) Which species of migratory birds would you like assistance in identifying? (Check all that apply.)

- | | | | |
|------------------|--------------------------|------------------------|--------------------------|
| Black Duck | <input type="checkbox"/> | White-wing Scoter | <input type="checkbox"/> |
| Mallard | <input type="checkbox"/> | Black Scoter | <input type="checkbox"/> |
| Green-wing Teal | <input type="checkbox"/> | Surf Scoter | <input type="checkbox"/> |
| Pintail | <input type="checkbox"/> | Oldsquaw | <input type="checkbox"/> |
| Ring-neck Duck | <input type="checkbox"/> | Greater Scaup | <input type="checkbox"/> |
| Common Goldeneye | <input type="checkbox"/> | Lesser Scaup | <input type="checkbox"/> |
| Canada Goose | <input type="checkbox"/> | Common Merganser | <input type="checkbox"/> |
| Harlequin Duck | <input type="checkbox"/> | Red-breasted Merganser | <input type="checkbox"/> |
| Common Eider | <input type="checkbox"/> | Common Snipe | <input type="checkbox"/> |
| King Eider | <input type="checkbox"/> | Common Murre | <input type="checkbox"/> |
| | | Thick-billed Murre | <input type="checkbox"/> |

15. Here is a list of some common problems with migratory bird hunting. Please select the three that you feel are the most common problems in Newfoundland and Labrador. Number your choices as : 1 for most common problem, 2 as second most common, and 3 the third most common.

- Hunting migratory birds without a licence
- Shooting migratory birds at night
- Going over the allowed bag limit
- Hunting migratory birds before the legal season
- Hunting migratory birds after the legal season
- Shooting flightless birds
- Using unplugged shotguns
- Not retrieving all crippled birds
- Shooting species that are protected
- Using the open season for one species as an excuse to carry a gun to hunt other birds
- Selling of migratory birds
- Other (please specify) _____

16. (a) How many times have you been checked by an enforcement officer while you were involved in the hunting or transport of migratory birds, over the last 5 years?

- Never → Go to question 17
- Once
- Twice
- Three to four times
- Five times
- More than five times

(b) Which of the following officers were you checked by? (Check all that apply.)

- Canadian Wildlife Service
- RCMP
- Provincial Wildlife Division
- Other (specify) _____

17. (a) Do you feel that the amount of migratory bird enforcement of all types (bag checks, boat checks, selling charges etc.) in your area, is;

- Too low
- About right
- Too high

D. GENERAL INFORMATION

18. How many years have you been hunting migratory birds? Years.

19. (a) Do you belong to a sportsman's, hunter's or conservation organization?

- Yes
- No

(b) If yes, please give name of organization _____

20. What is your age?

You've reached the end! Thank you very much for your cooperation.

We welcome additional comments on migratory bird hunting regulations and law enforcement in Newfoundland and Labrador. Please use the space provided below or attach an additional page.

Please return the questionnaire today using the special postage-paid envelope.

Canadian Wildlife Service
Box 9158, Station B
St. John's, Nfld. A1A 2X9

CANADIAN WILDLIFE SERVICE
P. O. BOX 1590
SACKVILLE, N. B.
EOA 3CD