RELATIONSHIPS BETWEEN NEWFOUNDLAND AND LABRADOR RESIDENTS' ENVIRONMENTAL/ WILDLIFE ATTITUDES, DEMOGRAPHIC CHARACTERISTICS AND EXPERIENCE IN WILDLIFE RELATED OUTDOOR ACTIVITIES

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by

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ABSTRACT

A survey was conducted to determine the attitudes of the Newfoundland and Labrador public toward wildlife and the environment. It was hypothesized that: 1) wildlife/environmental attitudes of participants in nonconsumptive activities would differ significantly from those people who participate in consumptive activities and 2) differences in attitudes would be related to knowledge of wildlife and differing life experiences as determined by the demographic characteristics of age, gender, education and place of residence.

A total of 500 personal interviews were conducted - 208 in Phase One on the Avalon Peninsula and 292 in Phase Two in the remainder of the province. Proportional, stratified, multi-stage sampling was used to select towns and respondents. The average interview length was 73 minutes and the response rate was 85.2 percent.

Factor analysis was used to examine the categories of attitudes toward wildlife and the environment held by the public of Newfoundland and Labrador. Nine attitude categories were described: Utilitarian, Urbanistic, Negativistic, Scientistic, Environmental Protectionistic, Ecologistic, Economistic, Developmental and Altruistic. Participants in nonconsumptive activities were likely to be urban residents, better educated, knowledgeable about wildlife, hold highly Economistic and Scientistic attitudes and low Urbanistic and Negativistic attitudes. Participants in consumptive activities were likely to be knowledgeable about wildlife, male, have a lower level of education, hold highly Utilitiaran and Economistic and low Urbanistic attitudes. Over half of the respondents (56%) participated in both consumptive and nonconsumptive activities while 11.6% participated only in consumptive

activities and 22.4% participated only in nonconsumptive activities.

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INTRODUCTION

Although the measurement of attitudes has been an active field of research for more than forty years, relatively little psychological research appears to have been conducted on public attitudes toward the environment or wildlife. Because of increasing global ecological problems and recognition of the need to formulate comprehensive resource management plans, there has been an increase in awareness of the importance of determining the nature and organization of public environmental attitudes and preferences and of examining the relationship between these attitudes and behaviours.

Generally, research on attitudes toward wildlife and the environment has focused on specific issues, description of individual and group attitudes, some investigation of the relationship between attitudes and behaviours, and investigation of variables to explain these differences (Bruvold, 1973; Stokols, 1978). This research has progressed in stages since the late 1960's. Initially investigations were conducted in terms of public participation in wildlife/environment related activities and the economic impact of these activities. Then the socioeconomic and demographic characteristics of these participants were examined. Presently the trend in research is to examine participant attitudes, behaviours and motivations and how these relate to demographic characteristics.

Several studies have been conducted to relate attitudes toward the environment to demographic characteristics. Van Liere and Dunlap (1980) reviewed studies of public attitudes toward environmental issues and found the data consistently supported the generalizations that younger,

well-educated and politically liberal people tended to be more concerned about environmental quality than those who were older, less educated, and politically conservative.

Buttel (1979) also proposed that age is the most important variable related to environmental attitudes since attitudes are linked with historical and economic events such as war and economic depression. He suggested that these events differentially affect particular age groups. In Buttel's study, age was found to have larger total and direct effects on the level of environmental concern than education. Place of residence (i.e., urban or rural) appeared to have the largest direct effect on awareness of environmental problems. Political liberalism had the largest direct effect on support for environmental reform. However, because age was found to be the most consistent predictor of the two attitudes, Buttel concluded age was the major socioeconomic correlate of public environmental beliefs.

Tremblay and Dunlap (1978) found that rural residents were generally less concerned with environmental problems than were urban residents. Urban-rural differences were found to be stronger when concern for environmental problems at the local level was assessed.

People who were raised and who live in rural areas consistently showed lower levels of support for environmental protection than did urban people in Lowe and Pinhey's study (1982). They suggested this could be due to greater environmental degradation in urban areas, diffusion through rural communities of a utilitarian orientation toward the environment, pro-growth orientation of small town dwellers and socialization in metropolitan areas leading to favourable consideration of social solutions to environmental problems.

In a survey of British Columbia university students Gifford et al. (1983) found that gender and education were significantly related to environmental knowledge, affect and behaviour. Exposure to environmental education in university appeared to be the most important factor in determining individual differences in environmental attitudes in that people enrolled in environmental education courses reported more knowledge of the environment, more pro-environment behaviours (i.e., Actual Commitment) and Verbal Commitment than did non-environmental education students. The next important variable was gender. Females were less knowledgable, expressed greater affect about the environment and were more verbally committed than males. The authors suggested these differences were due to the differential socialization of women. As well, natural science major students were more knowledgeable and more emotional (greater affect) about the environment than social sciences and non-science students.

Attempts have been made to also investigate individuals' attitudes toward wildlife and the environment and to predict these attitudes from knowledge of their experiences and background (King, 1947; Hoover and Schutz, 1963a, 1963b; White, 1966; Hendee et al., 1968; Steiner and Barnhart, 1972; Tocher and Milne, 1974; Maloney et al., 1975; Arbuthnot, 1977; Weigel and Weigel, 1978). Studies have correlated attitudinal orientations with participation in wildlife/outdoor activities and uses. Political liberalism, culture, residence in areas where wildlife and wildlife habitat are scarce and membership in wildlife related groups also have been related to differences in attitudes. Measures of demographic characteristics such as gender, age, income, education and place of residence have been correlated with

concern for wildlife in order to determine whether there is a relationship between wildlife attitudes and these variables (Bruvold, 1973).

Using a Q-sort methodology to investigate the relationship between attitudes and type of participation, Erickson (1970) identified three independent wildlife attitude/participant types: Protectionist, those who want to save vanishing wildlife and protect wildlife from hunting; Reductionist, those who view wildlife as destructive to agriculture and favour hunting and controls, and Balance of Nature, those who believe predators and controlled hunting are necessary to maintain a wildlife balance.

Three categories emerged also from Pirt's (1976) wildlife attitude scale. These were wildlife-protective, wildlife-appreciative (general and aesthetic) and anti-consumptive use (anti-hunting and anti-trapping). When attitude types were related to demographic characteristics Pirt found that respondents thirty-five years of age or less scored most positively on her wildlife scales. Results also indicated a positive correlation between gender and scores on four out of five scales. Males scored highest on the wildlife protective scale. Females scored highest on the wildlife-appreciative aesthetic scale.

Hendee et al. (1968) constructed a "wildernism" attitude scale to identify a hierarchy of wilderness users ranging from wilderness-purists (those who most highly value maintenance of the complete naturalness of wilderness) to those who were urban or convenience oriented.

Factor analysis was used to identify seven interpretable factors about which users had similar feelings. These factors were labelled using a term which appeared to best indicate the underlying meaning in

that group of items. The factors also were designated positive or negative depending on the direction in which wilderness purists tended to respond. Respondents who endorsed items in Factor I (Spartanism) also seemed to endorse the ethic of ablebodiedness and fortitude (Positive). Items in Factor II (Antiartifactualism) were endorsed by respondents who rejected man's permanent presence in the natural environment (Negative). Respondents supporting items in Factor III (Primevalism) were interested in satisfactions gained from perceiving the undisturbed natural environment (Positive). Items in Factor IV (Humility) defined man's wish to assert his dominance over the natural environment (Negative). The Factor V (Outdoorsmanship) item grouping suggested that the craft aspects of the wilderness experience were important (Positive). Factor VI expressed aversion to social interaction (Negative). Factor VII (Escapism) weakly implied aversion to depersonalized human encounters (Positive).

A shortened scale of thirty items which best differentiated between purists and urbanists and had highest correlation with wildernism scores was later developed. Clustering of items in the 30-item scale suggested that wildernists could be best differentiated from urbanists in terms of their more positive affinity for natural environments devoid of human influence.

The attitude scores were related to the rest of the questionnaire to determine the extent to which wilderness-purists differed from other users in terms of demographic characteristics, behaviour and management preferences. Wilderness-purists were described as having been raised in urban areas, highly educated, having close friends who participate in wilderness recreation and likely belong to conservation/outdoor clubs

(i.e., nonconsumptive wildlife users).

Hendee (1969) found rural-urban differences in attitudes toward fishing and hunting and suggested these differences could be accounted for in terms of rural residents' harvesting attitudes toward nature. It was suggested that rural inhabitants have utilitarian attitudes to the environment due to the natural exploitive aspects of rural occupations (e.g., wood cutting, mining, fishing). Since people depend on these occupations nature is regarded as something to be used not just appreciated.

Shaw (1974) found that attitudes toward hunting were affected by personal experience with bloodshed, education and the degree of urbanization of the respondent's childhood environment. People with positive attitudes toward hunting most likely had hunted, had a lower level of education and were rural residents. He concluded that attitudes were based on philosophical differences which developed from early background experiences. In a later study Shaw (1978) compared the backgrounds and attitudes of members of three wildlife interest groups: Michigan deer hunters (pro-hunting), Michigan Audubon Society members (neutral toward hunting) and Michigan supporters of the Fund for Animals Inc. (anti-hunting).

For the anti-hunting group the aesthetic and existence values of wildlife were found to be more important than other possible wildlife values. These individuals actively pursued nonconsumptive uses of wildlife, placed a very high aesthetic value on wildlife and behaved accordingly and had low scores on the Knowledge-of-Animals scale.

The Audubon group (neutral) had been interested in wildlife since childhood, had backpacked and camped and often participated in

birdwatching. They were also more knowledgeable about animals compared to the hunter group. Attitudinally, the Audubon group scored high on the Naturalistic scale and had very low Negativistic attitude scale scores.

Demographically the pro-hunting group was most likely to reside in cities, and to have been in the armed forces. They were not experienced at raising animals for a product, had seldom participated in backpacking and birdwatching activities and had very low scores on the knowledge-of-animals scale. The hunting group scored highest on the Dominionistic scale, comparatively high on the Negativistic and had low Humanistic scale scores.

Applegate (1984), in examining changes in attitudes toward deer hunting from 1972 to 1982, also found that experience with hunting and local population density were the best predictors of attitudes toward hunting. He suggested that the decline in hunting participation and increased urbanization of rural areas would lead to a decrease in approval for hunting.

In another study of outdoor activity groups, Witter (1978) found that birdwatchers placed a higher value on wildlife as a component in the global ecosystem and on nonconsumptive uses of wildlife than did wildlife professionals (e.g., biologists) who, in turn, placed higher value on the ultimate worth of wildlife than did hunters. The mean attitude scores showed that wild animals were important to all three groups and that generally wildlife was seen as an integral component in the global ecosystem. Little value was placed on consumptive uses of wildlife or uses involving the actual or attempted removal of wild animals from their habitats. However, hunters and wildlife

professionals attached high importance to sport hunting. Wildlife professionals attached the highest values of the three groups to wildlife as meat sources, subjects for medical experimentation, feather sources, raw materials in fashion, fur and leather sources, and sources of animal product art.

Kellert (1976) developed a scale typology of ten attitudes or valuations toward wildlife which has received much attention since the late 1970's (Table 1). The items used to develop these scales were employed in national survey conducted in the United States in 1976 and 1979 to assess the relative distribution of the various attitude types among demographic and wildlife-related activity groups and the general public.

Kellert (1978) used his attitude typology to investigate differences in attitudes of four wildlife activity groups. Three types of hunters were identified based on their motives for hunting and attitudes toward wildlife. One type of hunter cited the opportunity to be close to nature as their primary reason for hunting (this group tended to have especially high Naturalistic, Ecologistic and Knowledge-of-Animals scale scores and valued the activity primarily for the close contact and familiarity with the natural world which it afforded). Another type of hunter indicated that obtaining meat was their primary reason for hunting (this group had high Utilitarian scale scores and was primarily oriented to the practical and material benefit of the activity with the major focus on the dead animal). The third type of hunter stated that sport and recreation was their major reason for hunting (these people had very high Dominionistic scale scores and valued the hunting experience as a competitive and social activity

Table 1

Typology of Attitudes toward Wildlife (Kellert, 1976)

Attitude Type	Definition
Naturalistic	primary interest and affection for wildlife and the outdoors
Ecologistic	primary concern for the environment as a system, for interrelationships between wildlife species and natural habitats
Humanistic	primary interest and strong affection for individual animals, principally pets. Regarding wildlife, focus is on large attractive animals with strong anthropomorphic associations
Moralistic	primary concern for the right and wrong treatment of animals, with strong opposition to exploitation of and cruelty toward animals
Scientistic	primary interest in the physical characteristics and biological functioning of animals
Aesthetic	primary interest in the artistic and symbolic characteristics of animals
Utilitarian	primary concern for the practical and material value of animals
Dominionistic	primary satisfactions derived from mastery and control over animals, typically in sporting situations

continued...

Table 1

Typology of Attitudes toward Wildlife (Kellert, 1976)

Attitude Type	Definition
Negativistic	primary orientation an active avoidance of animals due to fear or dislike
Neutralistic	primary orientation a passive avoidance of animals due to indifference

involving mastery and conquest of the prey animal).

Three types of fishermen were also identified based on their motives for fishing and attitudes toward wildlife. People whose primary motive for recreational fishing was to catch large fish. had relatively high Utilitarian and Negativistic scale scores and very low Naturalistic and Ecologistic scores. Those who fished for sport (Sport fishermen) had . low Moralistic and high Dominionistic scores, indicating a strong interest in competitive and recreational satisfactions. Respondents who fished primarily to get close to nature had relatively high Moralistic and Humanistic scores suggesting a possible view of fishing as an ethical alternative to hunting. This group's scores on the Humanistic and Moralistic scales indicated a primary orientation to wildlife and conservation of natural habitat rather than to domestic animals or animal welfare concerns.

Birdwatchers had among the highest Naturalistic, Ecologistic and Knowledge scores and among the lowest Negativistic attitude scale scores of any activity group examined (Kellert, 1980). The Humanistic and Moralistic scores of birdwatchers suggested that this group was more oriented to wildlife and natural habitats than to domestic animals, with strong affection for individual animals and concern about cruelty issues.

Zoo visitors were characterized by limited knowledge, naturalistic appreciation and ecological understanding of animals. They scored high only on the Humanistic scale.

Age, gender, urban-rural residence, income and animal activity groups attitude differences were also examined in terms of each attitude type (Kellert and Berry, 1980). Social demographic groups with high

Naturalistic scale scores were college educated, affluent professionals, persons under 35, respondents from moderate-sized population areas, Pacific Coast and Alaska residents and those who rarely or never attended religious services.

Results for the Ecologistic attitude scale among animal activity and demographic groups were similar to those obtained on the Naturalistic scale, with the addition of particularly high Ecologistic scores among wildlife protection and sportsmen-related organization members, and scientific study hobbyists. The most positively related demographic categories were graduate school and college education, Alaska residence, professional or managerial occupations, rare or no attendance at religious services and residence in towns of from 500 to 2000 in population.

On the Humanistic attitude scale, humane and environmental protection organization members, zoo visitors, anti-hunters, and scientific study hobbyists all scored high. Persons under 25 years of age, those earning between $20 - 35,000, females, respondents who rarely or never attended religious services, and Pacific Coast residents were the most Humanistically oriented demographic groups.

Those demographic groups expressing the greatest amount of Moralistic concern were Pacific Coast residents, the highly educated, those engaged in clerical occupations, females, persons who never attended religious services and respondents under 35 years of age. Animal activity groups scoring high on the Moralistic scale included humane and environmental protection organization members and anti-hunters.

Hobbyists had the highest score on the Scientistic scale. Wildlife

protection organization members and birdwatchers also had relatively high scores.

On the Utilitarian scale, farmers, the elderly, blacks and Southern respondents had the highest scores. Among animal activity groups, livestock producers, meat hunters and trappers were especially Utilitarian oriented.

The most Dominionistically oriented animal activity groups were trappers and all three types of hunters. Farmers, males, Alaskan and Rocky Mountain residents, blacks and those of high incomes were the most Dominionistically oriented demographic groups.

Demographically, the elderly, those of limited education and females had the highest Negativistic scale scores.

Educational group differences indicated that respondents of limited education had lower scores than the highly educated on all the attitude and knowledge dimensions with the exception of the Dominionistic, Utilitarian and Negativistic scales. Respondents with less education were characterized also by a relative lack of appreciation, concern, affection and knowledge of animals. In contrast, the college-educated were more protective, emotionally attached, actively involved and factually informed about animals and the natural environment. Kellert suggested the experience of a college education regardless of the disciplinary focus has a positive, sensitizing impact on interest and concern for animals. Though not suggested by Kellert, it is possible also that those who have a positive interest and concern for animals are more likely to enroll in college/university.

Attitude differences between the oldest and youngest were noticeable on the Naturalistic, Humanistic and Utilitarian scales.

Younger respondents had more Naturalistic and Humanistic attitudes and less Utilitarian attitudes than did older respondents. The over 75 and under 25 years of age groups were similar in their lack of knowledge of animals.

Urban-rural results indicated respondents from large cities were more Moralistic, Humanistic, and less Utilitarian than were respondents from rural areas. Significantly lower Negativistic scores among rural residents suggested a strong general interest in animals which is unrelated to animal rights concerns or a sense of loving animals.

In Kellert and Berry's Phase III report (1980), results showed animal rights issues and concern for individual members of a species were important for urban dwellers although they lacked a basic understanding of wildlife conservation issues. Rural dwellers knew more about animals, participated more frequently in wildlife activities and showed less concern for animal rights.

The studies described above indicate that attitudes toward the environment and wildlife are related to demographic characteristics and experience in outdoor/wildlife related activities. Generally, these studies indicated that urban residents and those who are younger and more highly educated tended to be more concerned about environmental quality and conservation of wildlife than rural residents and older, less educated people. Exposure to environmental education and participation in nonconsumptive activities were positively related to regard for the global, ecological aspects and abstract and aesthetic values of wildlife and the environment. Motives for participating in outdoor and wildlife related activities were found to be related to environmental/wildlife attitudes.

HYPOTHESES

The present study examines the relationships between the attitudes of the Newfoundland and Labrador public toward wildlife and the environment, demographic characteristics, knowledge of wildlife and participation in consumptive and nonconsumptive activities. Consumptive activities are those that result in or attempt the death of a wild animal (Langeneau, 1976; Witter, 1978). In this study this category includes the recreational activities of hunting, trapping and fishing. Nonconsumptive activities are those that deliberately attempt to interact with wildlife through recreational activities that do not harm animals. Photography, birdwatching and visiting zoos or nature parks were classified as nonconsumptive activities.

Hypothesis One

That the wildlife/environmental attitudes of participants in nonconsumptive activities will differ significantly from those who participate in consumptive activites.

It has been suggested by Cotton et al. (1983) that consideration be given to the subjective experiences a person has had in order to understand how attitudes differ, how decisions are made and how information is processed. From this study and others (Hendee et al., 1968; Shaw, 1974, 1978; Witter, 1978; Kellert, 1978) it is expected that people who participate primarily in consumptive acitivities will hold the attitude that the environment and wildlife are only valuable provided they serve a purpose useful to humans. For example, participants in consumptive activities will hold more Utilitarian

attitudes toward the environment and wildlife than do participants in nonconsumptive activities.

Hypothesis Two

That differences in attitudes are related to knowledge and differing life experiences as determined by the demographic characteristics of age, gender, education and place of residence.

Maloney et al. (1975) suggested that education programs would increase public knowledge and encourage prosocial environmental attitudes and behaviours. Based on these findings and others in the literature (Hendee, 1969; Shaw, 1974; Buttel, 1979; Van Liere and Dunlap, 1980; Kellert and Berry, 1980; Gifford et al., 1983) it is expected in this study that the more knowledgeable and educated a respondent is the more likely it will be that the respondent will hold pro-environmental/wildlife attitudes. As well, based on the literature, it is expected that younger people, males, and urban residents will be more supportive of the maintenance of environmental quality and wildlife than older, female, and rural respondents.

METHODS

Questionnaire Design

Data were collected for this study using personal interviews with a formal questionnaire. The decision to use a combination of these two techniques was based on the need to maximize the response rate, the length of the questionnaire, the variety of issues covered, and the desire to reduce sample bias due to illiteracy and limited access to telephones.

Individuals from the Departments of Psychology and Geography at Memorial University, the School of Forestry and Environmental Studies at Yale University, and Statistics Canada who were familiar with survey sampling and questionnaire design were consulted. Biologists from the provincial Wildlife Division[1] and the Canadian Wildlife Service were consulted concerning the wildlife and environmental issues investigated in this study.

During construction of the questionnaire, questions concerning many issues of wildlife and the environment were developed and tested using student volunteers from Memorial University and members of the public from St. John's and Conception Bay South. Many questions were rejected because of such factors as over-simplicity, question length, multiple issue coverage in one question, over-complexity, biased phrasing and over-generality. Question order and arrangement also were considered. Demographic questions were placed last since they have been known to alienate some respondents (Arthur, 1981). In this way if alienation did occur it would be after the attitudes were measured. A variety of question types were used: multiple choice, five-point Likert Scales, scenario-type questions, true-false, and closed- and open-ended

questions.

The final questionnaire used in this study was thirty-two pages long (see Appendix A).

Survey Sampling

A total of 500 personal interviews were conducted in Newfoundland and Labrador. This sample size was considered adequate to meet the data requirements when cost, time and operational constraints were taken into account. Proportional, stratified multi-stage sampling was used to select towns, and the number and location of respondents in each town. The survey was conducted in two phases. Phase One was conducted in 1982 on the Avalon Peninsula where 208 people were interviewed. The rest of the province was surveyed (292 people) in Phase Two (1982 - 1983).

Initially the proportion of the survey sample (N = 500) to be allocated to each of the ten Census Divisions was determined by dividing each Census Division population by the total provincial population. Then each Division population was stratified on the basis of town size. The strata devised were uniform across Census Divisions (see Table 2).

The number of towns to be surveyed in each Division stratum was determined by dividing the number of people to be surveyed in each stratum by five. Five was estimated to be the average number of interviews which could be conducted in one day. If the number of towns to be surveyed in a Census Division contained a fraction the number was rounded up to maximize geographic coverage. Towns were then randomly selected from the pool of towns in each Division stratum. All towns in strata 4, 5 and 6 were surveyed.

The number of people to be surveyed per stratum was divided equally

Table 2

Outline of Sampling Procedure

Step 1. Total Survey Sample (N = 500)

Step 2. Determine the Proportion (X) of 500 to be allocated to each of 10 Census Divisions:

$$\frac{\text{Census Division Population}}{\text{Provincial Population}} = \frac{X}{500}$$

Step 3. Stratify Division Population on Basis of Town Size (Strata based on Town Size are Uniform across Divisions):

Stratum 1: towns having 1 to 499 people

Stratum 2: towns having 500 to 999 people

Stratum 3: towns having 1000 to 2999 people

Stratum 4: towns having 3000 to 4999 people

Stratum 5: towns having 5000 to 10999 people

Stratum 6: towns having > 10999 people

Step 4. Number of Towns to be Surveyed in each Stratum in each Division:

$$\frac{\text{Number of People to be Surveyed in Stratum}}{5} = \text{Number of Towns to be Surveyed}$$

Step 5. Number of People to be Surveyed/Town : divided equally among towns to be surveyed in the Division Stratum

continued...

Step 6. Selection of Enumeration Areas

Step 7. Selection of Households

Step 8. Selection of Respondents

among the towns to be surveyed in that stratum to enable the maximum number of people to be surveyed in each town. For example if 12 people and 3 towns were to be surveyed in stratum X then four people would be surveyed in Town A, four in Town B and four in Town C. Appendix B indicates the towns, enumeration areas and number interviewed per enumeration area. Figures 1 and 2 indicate the location of towns surveyed in the province.

Multistage sampling was used to select the sampling units. Statistics Canada 1976 Enumeration Areas (EA's) were the primary sampling units used. First, the EA's for each of the towns to be surveyed were listed. Then, in towns having more than one EA, one out of every five EA's was selected at random. The total number of interviews to be conducted in a town was then divided equally among the selected EA's. For example:

> In Town A ten people must be interviewed. If Town A has eleven EA's then two EA's are randomly selected as primary sampling units and five (10/2) people will be interviewed in each unit. If Town A has three EA's then one will be selected as the primary sampling unit and all ten interviews will be conducted there.

In towns without city blocks, selection of households (as the secondary sampling unit) was determined by first calculating the sampling interval (Y) by dividing the number of households by the number of people to be interviewed. Then maps of the 1976 EA's were used to define the sampling route and point of entry into the area. This point of entry was randomly selected from the roads entering that area. Starting from the town limits on a predetermined randomly selected side

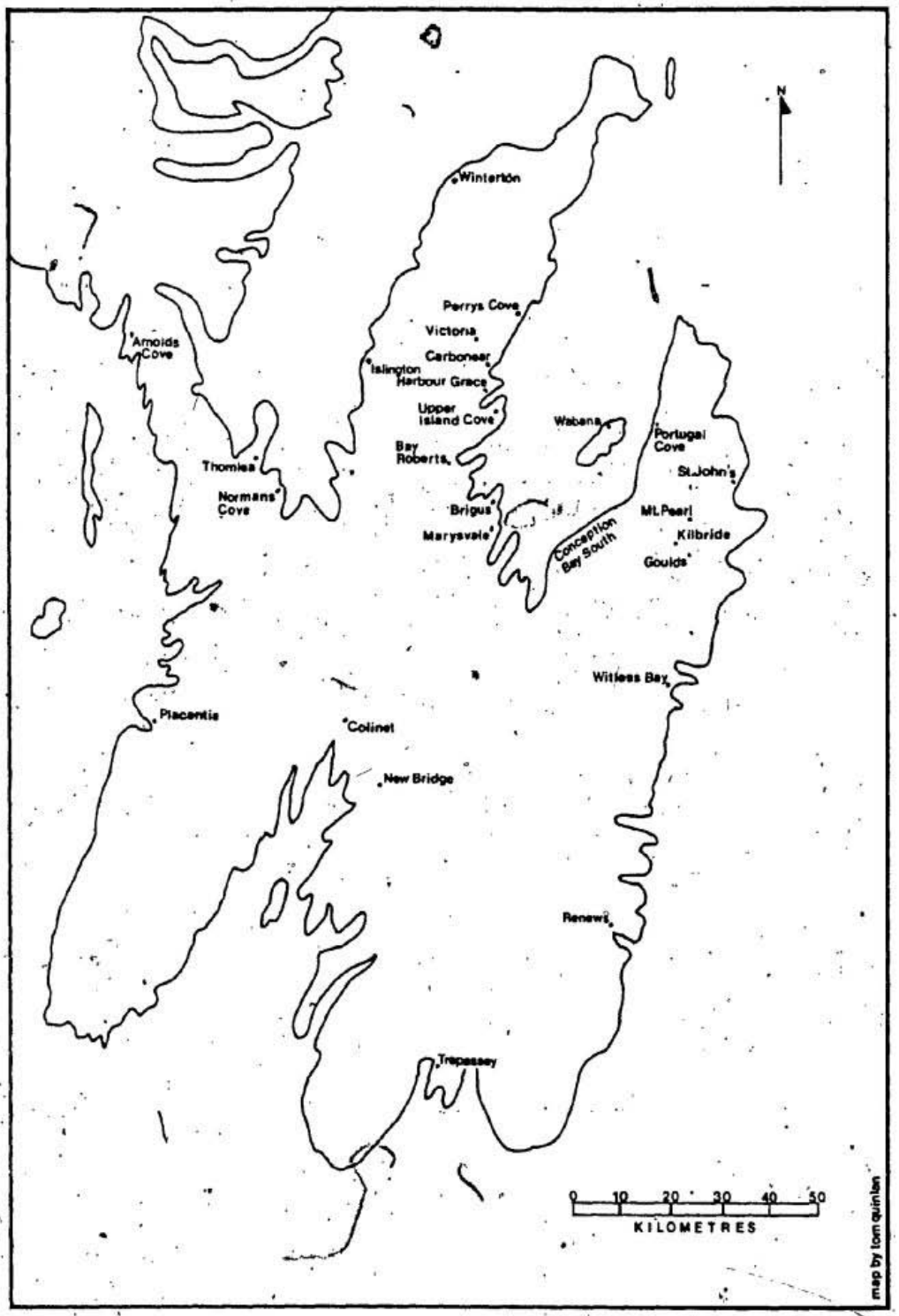

Figure 1. Towns surveyed on the Avalon Peninsula.

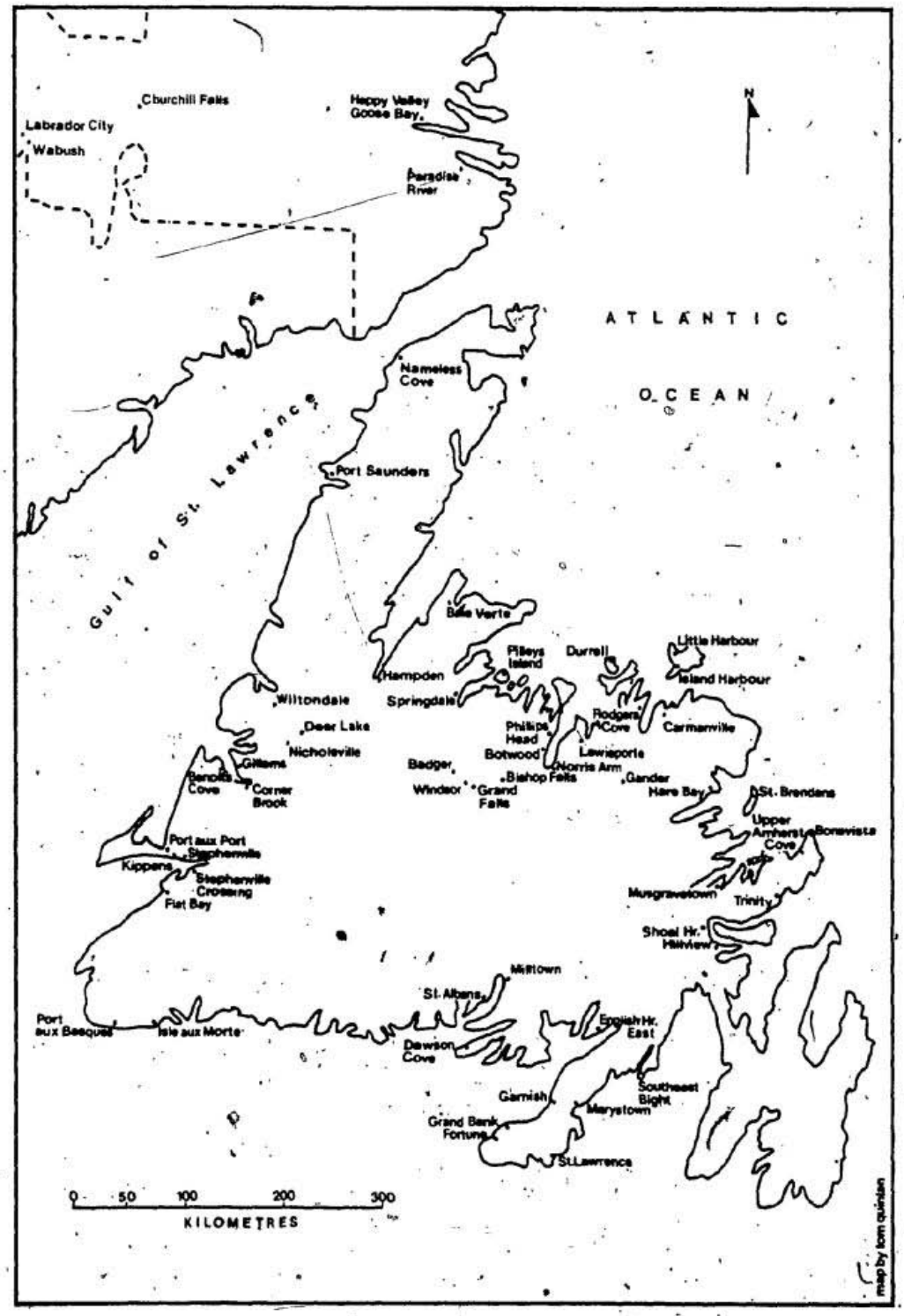

Figure 2. Towns surveyed in Newfoundland and Labrador excluding the Avalon Peninsula.

of the road (i.e., right or left), households were selected using the sampling interval (Y). Every Yth house was surveyed until the appropriate number of people were interviewed.

In towns with city blocks, the number of blocks to be selected was determined by the number of people to be interviewed. One person was interviewed per block. For example, if the EA contained 12 blocks and five people were to be interviewed in that EA then five blocks were randomly selected from the pool of 12 blocks. Houses were then chosen using a predetermined randomly selected house interval (Y). Selection of Y was done by randomly selecting a number from 1 to 10. Every Yth house was surveyed until the appropriate number of people were interviewed.

Respondent Selection

The gender of the first respondent in an EA was randomly selected. Gender of respondents was then alternated after the first was selected.

For example, if the first randomly selected respondent was male and five people were to be interviewed in the EA, then the second respondent would be female, the third male, fourth female and fifth male.

A person in a particular selected household was eligible to be interviewed provided he/she was of the appropriate gender, age (18 years and older) and had the next birthday.

Callbacks

If the selected person was unavailable at the first contact attempt the interviewer went to the next house in the sequence selected using the house interval (Y) for that particular EA. Two callbacks were then

conducted at different times and on different days if necessary in an attempt to interview the target person. If these efforts failed a respondent was selected from the end of the sequence using the Y interval.

Refusals

If the selected respondent refused, the interviewer went to the next house selected by using the house interval (Y) for that EA.

For each EA the number of refusals, callbacks and absentees was recorded.

Pretesting

Three pretests were conducted in January and February, 1982. The first pretest, conducted with students of Memorial University, tested question and issue clarity and order, and determined whether the subject matter was covered adequately. The second and third pretests were conducted in St. John's and Conception Bay South respectively. The primary function of these pretests was to test the sampling precedure. The pretests indicated how respondents would react to and answer questions, allowed an estimate of the interview length, determined whether the questionnaire was too long, whether respondents understood the issues and concepts and indicated modifications for the survey sampling technique used. The pretests were also important for examining and modifying the survey sampling technique and interviewing schedule. Based on the pretest results appropriate changes were made in the questionnaire, sampling and interviewing techniques. For example, answers were recorded on separate answer sheets in the survey of the

Avalon Peninsula sample and on the questionnaire itself for the rest of the sample. Originally it was thought that separate answer sheets would be more convenient during the interview and data coding in that the quantity and bulk of paper to be dealt with would be reduced. However, discussion with interviewers after the Avalon survey was completed indicated efficiency and speed of interviewing and coding would increase if the questions and answers were kept together.

The Interview

Forty-one experienced interviewers conducted the wildlife interviews. Logistical factors were the primary reasons for hiring this number of interviewers. Prior to conducting the interviews, Phase One interviewers were given the interviewer package to review. After the review a meeting was held at which an overview of the study objectives was presented and the sampling methodology and the interviewing procedure (including the questionnaire) were reviewed and discussed. Upon completion of the half day instruction session, interviewers were given packages containing pencils, general interviewing instructions (Appendix C), specific enumeration area instructions and maps, letters of introduction, questionnaires, and answer sheets.

Interviewers conducting surveys in Phase Two were selected by the author on the basis of previous interviewing experience and/or experience in dealing with the public. The same interviewer packages which were used in the Avalon survey were then sent to these interviewers with instructions to call the author collect once the package had been reviewed and a practice interview completed. Any questions concerning the procedure, questionnaire and maps were dealt

with during that telephone call. The success of this method was indicated by the high number of accurately completed questionnaires (only 5 were incomplete but calls to the respondent or interviewers enabled these to be completed), the low number of interviewers who quit (4) and the low refusal rate (14.8%).

RESULTS

Initially the data were examined to determine the response rate of the survey, the mean length of time of the interviews and to compare the demographic profiles of the survey sample and Statistics Canada's 1981 Census for Newfoundland and Labrador. Then an examination was made of the relationships between environmental/wildlife attitudes and age, gender, place of residence, education, knowledge of wildlife and participation in consumptive and nonconsumptive activities.

The average length of time for the interviews was 73 minutes. The response rate of this survey was 85.2 percent (see Appendix D). This high rate can probably be attributed to the administration technique used, the survey design and respondents' interest in the topic. Repeated callbacks also helped to increase the response rate. A significant difference was found between the response rates of the urban ($N = 309$, $\bar{X} = 81.2\%$) and rural ($N = 181$, $\bar{X} = 91.4\%$) strata ($Z = 2.7$, $p < .004$). This difference possibly could be attributed to the fact that urban residents would be more accustomed to approaches from such people as interviewers and salespeople and so would likely be more accustomed to refusing these approaches. These approaches are likely still novel to rural residents and so the likelihood of refusal would

be lower in rural areas.

Comparison of the Survey Sample and Statistics Canada 1981 Demographic Profiles

As can be seen in Table 3, no significant differences in gender ($\underline{X}$ (1, $\underline{N}$ = 500) = 0.00) or place of residence ($\underline{X}$ (1, $\underline{N}$ = 500) = 3.77) distributions were found between the sample's demographic profile and the Statistics Canada 1981 census profile (Statistics Canada, 1981). However, significant differences in education ($\underline{X}$ (4, $\underline{N}$ = 497) = 22.99, $\underline{p} < .010$) and age ($\underline{X}$ (7, $\underline{N}$ = 498) = 78.83, $\underline{p} < .010$) were found between the provincial population and the sample. Respondents with a Grade 8 education or less were under-represented in the sample while those with at least one university degree were over-represented in the sample. Possibly those respondents with lower levels of education did not feel confident enough in their abilities to complete the questionnaire while those with higher levels of education did feel confident of their abilities to complete the questionnaire. The survey sample also under-represented those who were 18 to 20 years of age and those over 69 years of age. Members of these two age groups were more likely to be living away from home in school residences and senior citizen homes. Neither of these types of residences were surveyed in this study.

Attitude Categories

The results indicate that different categories of environmental/wildlife attitudes exist in Newfoundland and Labrador. Factor analysis of the 72, 5-point attitude scale items was performed using principal components factoring with iterations and varimax

Table 3

Comparison of Statistics Canada 1981 Census and the Sample Demographic Profiles

Characteristic	Population	Proportion	Sample	Proportion
Gender:				
Male	199975	.50	250	.50
Female	200360	.50	250	.50
Education:				
< Grade 8	122230	.31	124	.25
9th - 13th	161740	.41	223	.45
Technical	64710	.16	70	.14
Some University	29350	.07	36	.07
> 1 Degree	18460	.05	44	.09
Residence:				
Urban	338098	.60	319	.64
Rural	229783	.40	181	.36
Age :				
1	63015	.16	26	.05
2	51085	.13	72	.14
3	94425	.24	138	.28
4	61180	.15	111	.22
5	46360	.12	67	.13
6	40490	.10	45	.09
7	16690	.04	30	.06
8	27090	.07	9	.02

continued...

Age group intervals used in this survey differed from Statistics Canada's age group intervals:

	Statistics Canada:	Survey:
1	15 - 19 years	18 - 20 years
2	20 - 24	21 - 25
3	25 - 34	26 - 35
4	35 - 44	36 - 45
5	45 - 54	46 - 55
6	55 - 64	56 - 65
7	65 - 69	66 - 70
8	$\geq$ 70	> 70

rotation. This produced 9 factors with eigenvalues greater than 1.0 accounting for 69.8 % of the variance.

The attitude items were assigned to factors according to their loadings. Items with loadings of .40 or more on any factor were assigned to the factor on which they loaded most heavily. Any item having a maximum loading of less than .40 when all factors were considered was rejected from the item pool. For example, if item X had loadings of .23 on factor 1, .47 on factor 2 and .43 on factor 3, item X would have been assigned to factor 2. If item Y had loadings of .14 on factor 1, .34 on factor 2 and .39 on factor 3 it would have been deleted from the pool of items used to develop the attitude categories. Of the original 72 items used in the factor analysis thirty items were used to construct the final attitude categories and the rest were deleted (Table 4). The mean responses and standard deviations for the 30 items are shown in Appendix E. The factors were named using a one word label which appeared to best describe the underlying attitude theme of the item grouping.

Factor 1, accounting for 22.2% of the variance, expresses a Utilitarian theme. As can be seen in Table 4, agreement with these items would indicate a person feels animals have value only if they can be used to meet human requirements. For example, agreement with the item: "A dog trained at a task, like herding sheep, is generally a better dog than one owned just for companionship" implies that a person feels dogs are of greater value if they can be used as workers for human needs.

Factor 2 (an Urbanistic attitude category) accounted for 10.3% of the variance. A person having a highly Urbanistic attitude toward the

Table 4

Scale Items Used to Construct Attitude Factors

Factor	Item	Loading
1. Utilitarian		
	Whales should be hunted because they are too plentiful	.55
	I think it is alright to kill an animal to make a fur coat as long as that animal is not endangered.	.48
	A dog trained at a task, like herding sheep, is generally a better dog than one owned just for companionship.	.48
	Love is an emotion which people should feel only for other people, not for animals.	.43
	I admire a person who works hard to shoot a big trophy animal like a 600 pound bear.	.42
	I see nothing wrong with using leghold traps to capture wild animals.	.41
	A person sometimes has to beat a horse or dog to get it to obey orders properly.	.40
2. Urbanistic		
	If I were going camping, I would rather stay in a modern campground than in an isolated spot where there might be wild animals around.	.67
	I am generally more interested in pet animals than wild animals.	.50

continued...

Factor	Item	Loading
	Development of industry in Newfoundland should take priority over every thing else.	.48
	Most large dogs are frightening.	.45
3.	Negativistic	
	I dislike most beetles and spiders.	.62
	Rats and cockroaches should be eliminated.	.53
	I find most insects fascinating.	.48
	I would be afraid to touch a snake.	.44
4.	Scientistic	
	I have little desire to study vertebrate zoology or population genetics.	.79
	I have little interest in learning about the taxonomic classification of animals.	.55
5.	Environmental Protectionistic	
	Protecting the environment is so important that continuing improvements must be made regardless of cost.	.63
	Environmental protection is more important than economic growth.	.56
	Air and water pollution are a risk to the average person's health.	.60
6.	Ecologistic	
	It is alright to kill whales for a useful product as long as these animals are not threatened by extinction.	.69

continued...

Factor	Item	Loading
	Restrictions should be placed on the use of all-terrain vehicles and snowmobiles if they harm wild animals.	.60
7. Economistic		
	Environmental controls would reduce the number of jobs in the oil industry.	.50
	Provincial environmental legislation is too tough.	.44
	Environmental standards should be relaxed in order to encourage oil and gas exploration.	.41
8. Developmental		
	If oil were discovered near the Witless Bay seabird colonies it would have to be developed even if it meant harm to the seabird colonies.	.85
	Offshore oil should be developed even if it harms Newfoundland fish and wildlife.	.40
9. Altruistic		
	Animals have emotions just the same as people do.	.72
	It is important for future generations that we look after our wildlife.	.66

environment and wildlife would most likely prefer an urban atmosphere free from the dangers found in wilderness and where development can occur unimpeded. For example, a person who is highly Urbanistic in attitude would agree that "Development of industry in Newfoundland should take priority over everything else".

Items which loaded heavily on Factor 3 (Negativistic) accounted for 7.6% of the variance. A high score on these items would indicate a Negativistic attitude toward lower animal orders (such as insects, snakes and rats). For example, a highly Negativistic person would strongly agree that "rats and cockroaches should be eliminated".

Items which load heavily on Factor 4 (Scientistic) describe the amount of interest a person has in scientific study of animals. A person having a highly Scientistic attitude would be very interested in the scientific study of animals and would strongly disagree that she/he has little desire to study vertebrate zoology or population genetics. This factor accounted for 6.8% of the variance.

The items included on factor 5 describe a concept of Environmental Protectionism. Agreement with the items loading heavily on this factor would indicate that a person feels protection of the environment has the highest priority regardless of economic development and costs. This factor accounted for 5.4% of the variance.

Factor 6 accounted for 4.8% of the variance and describes an Ecologistic attitude toward the environment. A high score on this factor implies a person feels that the environment and wildlife can be used by humans provided neither are deleteriously affected or endangered; the amount and type of use of a resource must be determined by scientific study. A person with a highly Ecologistic

attitude would agree that "it is alright to kill whales for a useful product as long as these animals are not threatened by extinction".

Factor 7 describes an Economistic point of view. Agreement with the items in this factor would indicate that a person feels the environment should be compromised so that economic development can occur. For example, a person with an Economistic attitude would feel "environmental controls would reduce the number of jobs in the oil industry". The amount of variance accounted for by this factor was 4.6%.

Agreement with the items loading highly on Factor 8 (Developmental) would mean that a person feels oil development must occur even at the expense of our living resources (e.g., "Offshore oil should be developed even if it harms Newfoundland's fish and wildlife). This factor accounted for 4.3% of the variance.

Factor 9 (Altruistic) accounted for the least amount of variance - 3.8%. A person who has a highly Altruistic attitude toward wildlife would strongly agree that "animals have emotions just the same as people do" and that "it is important for future generations that we look after our wildlife".

Demographic Variables, Knowledge and Activities

A Pearson correlation was performed to investigate the relationships between age, gender, residence, education, knowledge of wildlife and participation in nonconsumptive and consumptive activities (see Table 5). Although many of the significant correlations account for little variance in the study population it was decided that, because they were significant, these correlations would be discussed.

Table 5

Correlation Matrix of Demographic Variables, Knowledge of Wildlife and Participation in Consumptive and Nonconsumptive Activities

	Age	Residence	Education	Consumptive	Nonconsumptive	Knowledge
Gender	-.0565 N = 498 p < .104	-.0125 N = 500 p < .390	-.0378 N = 497 p < .200	-.5670 N = 432 p < .001	.0376 N = 282 p < .265	-.2934 N = 498 p < .001
Age		.0577 N = 498 p < .099	-.2376 N = 497 p < .001	.0132 N = 431 p < .393	-.1133 N = 281 p < .029	-.1386 N = 496 p < .001
Residence			-.0744 N = 497 p < .049	.0558 N = 432 p < .124	-.1502 N = 282 p < .006	-.0156 N = 498 p < .364
Education				-.0860 N = 430 p < .037	.3310 N = 281 p < .001	.2040 N = 495 p < .001
Consumptive					.1191 N = 253 p < .029	.1423 N = 430 p < .002
Nonconsumptive						.1485 N = 280 p < .006

As explained earlier consumptive activities are those that result in or attempt the deaths of wild animals while nonconsumptive activities deliberately attempt to interact with animals in ways that do not harm them. A knowledge of wildlife measure was developed by summing the number of correct responses to 22 statements about wildlife (see Table 6). The higher the score out of 22 the more knowledgeable the individual would be about wildlife.

Knowledge of wildlife was significantly related to gender (r = -.29, $p < .001$, N = 498), education, (r = .20, $p < .001$, N = 495), participation in nonconsumptive (r = .15, $p < .006$, N = 280) and consumptive activities (r = .14, $p < .002$, N = 230) and age (r = -.14, $p < .001$, N = 496). These results indicate that of the variables examined males, younger people, more educated people, participants in consumptive and participants in nonconsumptive activities were likely to be the most knowledgeable about wildlife.

As was stated earlier, nonconsumptive activities were categorized as those that deliberately attempt to interact with wildlife through recreational activities which do not harm animals. Consumptive activities were categorized as those which result in or attempt the death of a wild animal. Respondents were categorized on the basis of the number of each type of activity they participated in. It was possible for each respondent to participate in up to 3 activities in either of the categories. Accordingly, the number of activities were indexed from 0 to 3 (Figure 3) with 0 meaning no activities of that type were participated in and 3 meaning the respondent participated in 3 activities of that type. As Figure 3 indicates, 11.6% of the respondents participated solely in consumptive activities while 22.4%

Table 6

Items Used to Construct a Measure of Wildlife Knowledge

T = True, F = False

(T) a. A mule is a cross between a donkey and a horse.

(T) b. The Great Auk and the Labrador Duck are now extinct.

(F) c. Spiders have ten legs.

(T) d. It is illegal to keep a wild animal as a pet without a permit.

(T) e. Puffins and murres nest at Witless Bay.

(T) f. It is not legal to shoot hawks, owls and eagles.

(T) g. Wolves are extinct on the island of Newfoundland but still live in Labrador.

(T) h. The gannet is a kind of bird.

(F) i. Monkeys in the wild live only in Asia.

(T) j. Polar bears breed in Labrador

(T) k. Caribou, muskrat and whales are all mammals

(T) l. The skeletons of sharks and sting rays are made of cartilage rather than bone.

(F) m. When frightened, an ostrich will bury its head in the sand.

(T) n. Koala bears are not really bears.

(F) o. The manatee is an insect.

(F) p. The garter snake, green snake and rattlesnake are all poisonous.

(F) q. Veal comes from lamb.

(T) r. When a horse gallops, all four feet will lift off the ground at the same time.

continued...

(F) s. Snakes have a thin covering of slime in order to move more easily.

(F) t. Most insects have backbones.

(T) u. Salmon breed in fresh water but spend most of their lives in salt water.

(T) v. Moose were brought into Newfoundland by man.

Number of Nonconsumptive Activities

Number of Consumptive Activities	0	1	2	3
0	N = 48 9.6%	N = 51 10.2%	N = 40 8.0%	N = 21 4.2%
1	N = 27 5.4%	N = 53 10.6%	N = 47 9.4%	N = 24 4.8%
2	N = 15 3.0%	N = 40 8.0%	N = 24 4.8%	N = 12 2.4%
3	N = 16 3.2%	N = 29 5.8%	N = 43 8.6%	N = 10 2.0%

Figure 3. Participation in Nonconsumptive and Consumptive Activities.

participated only in nonconsumptive activities. Approximately 56% of the respondents participated in both types of activities; 9.6% did not participate in either type of activities.

A significant relationship was found between participation in nonconsumptive activities and education ($r = -.33$, $p < .001$, $N = 281$), place of residence ($r = -.15$, $p < .006$, $N = 282$), knowledge ($r = .15$, $p < .006$, $N = 280$), participation in consumptive activities ($r = .12$, $p < .029$, $N = 253$) and age ($r = -.11$, $p < .029$, $N = 281$). That is, respondents who participated in nonconsumptive activities tended to be younger, more educated, urban residents and more knowledgeable about wildlife than were respondents who did not participate in nonconsumptive activities. Participants in nonconsumptive activities also were more likely to participate in consumptive activities.

Participation in consumptive activities was significantly related to gender ($r = -.57$, $p < .001$, $N = 432$), knowledge ($r = .14$, $p < .002$, $N = 230$), participation in nonconsumptive activities ($r = .12$, $p < .029$, $N = 253$) and level of education ($r = -.09$, $p < .031$, $N = 430$). Those respondents who participated in consumptive activities were most likely to be male, knowledgeable about wildlife, participate in nonconsumptive activities and have a lower level of education.

The data indicate that as participation in nonconsumptive activities increases and participation in consumptive activities decreases respondents are likely to younger and more educated. The data also indicate that as participation increased, knowledge of wildlife also tended to increase. These levels of participation and knowledge imply these respondents are interested in many aspects of the outdoors and wildlife not only nonconsumptive or consumptive

activities.

The education variable was found to be significantly related to age (r = -.24, p < .001, N = 497), place of residence (r = -.07, p < .049, N = 497), participation in consumptive (r = -.09, p < .037, N = 430) and nonconsumptive activities (r =.33, p < .001, N = 281) and knowledge of wildlife (r = .20, p < .001, N = 495). Younger people, urban residents, participants in nonconsumptive activities and people who were knowledgeable about wildlife were most likely to have higher levels of education than other groups examined.

Attitudes, Demographic Variables and Knowledge

Multiple regression was used to estimate the strength of the relationships between the demographic variables, knowledge of wildlife and the attitude factors. First, a general equation was constructed to determine how much variance in the dependent measure was accounted for by all of the independent variables. Then each of the independent variables was removed from the regression equation and a regression analysis done. The difference between the total amount of variance accounted for by all the independent variables and the amount of variance accounted for by the same equation without the particular independent variable indicated how much variance was accounted for by that independent variable. This difference was calculated for each of the independent variables to give an estimate of the uncontaminated effect of each independent variable on each attitude category. Regression equations, Beta weights and the total amount of variance accounted for are shown in Appendix F.

As was predicted, significant differences existed in attitudes due

to life experiences as reflected by the demographic characteristics age, gender, education and place of residence. Differences in attitudes were also significantly related to respondents' knowledge of wildlife. Table 7 indicates the relationship between attitudes, demographic characteristics, knowledge of wildlife and participation in consumptive and nonconsumptive activities as reflected by group mean responses to attitude scale items.

Utilitarian Attitude

Gender accounted for the most variance in utilitarian attitudes (14.88%), followed by age (7.22%), education (3.67%), knowledge of wildlife (1.66%) and place of residence (.72%). Responses to Utilitarian attitude items were significantly related to gender (F (1,485) = 9.11, $p < .010$), age (F (6,485) = 7.36, $p < .001$), level of formal education (F (5,485) = 4.50, $p < .001$), knowledge of wildlife (F (1,485) = 10.15, $p < .010$) and place of residence (F (1,485) = 4.43, $p < .050$). An examination of the group means (see Table 7) indicated respondents who held highly Utilitarian attitudes were mostly likely to be males, older, those with lower levels of education, a low knowledge of wildlife and rural residents.

Urbanistic Attitude

Gender was also the most important determinant of Urbanistic attitudes since it accounted for the highest amount of variance (7.10%). Age was next in importance accounting for 2.43% of the variance. Knowledge of wildlife (1.21% of the variance) was third in terms of the amount of variance accounted for. Gender (F (1,485) = 40.83, $p < .001$), age (F (6,485) = 2.33, $p < .050$) and knowledge of wildlife (F (1,485) = 6.98, $p < .010$) were significantly related to

Table 7

Mean Group Responses to Attitude Factor Items

Characteristics	Mean Group Responses								
	Utilitarian	Urbanistic	Negativistic	Scientistic	Environmental Protectionistic	Ecologistic	Economistic	Developmental	Altruistic
Gender:									
Male	0.9	-2.8	-1.6	0.7	1.1	0.2	0.9	0.6	0.1
Female	-0.9	3.0	1.6	-0.6	-1.0	-0.1	-0.7	-0.7	-0.1
Age:									
18 - 20	-2.5	-5.4	4.3	2.6	4.1	-1.0	-1.5	0.4	0.3
21 - 30	-4.5	-0.5	-0.3	0.7	-0.1	-0.3	-1.0	-0.1	0.3
31 - 40	-0.3	-0.8	1.2	-0.3	-0.4	-0.2	1.7	0.9	0.1
41 - 50	1.5	-0.1	-0.3	0.4	0.4	1.0	-1.1	-1.8	-1.2
51 - 60	4.7	3.6	0.2	-1.8	1.5	0.1	1.0	0.6	0.8
61 - 70	6.3	3.9	-3.7	-0.1	1.1	-0.1	0.5	0.1	-1.2
> 70	5.2	0.3	-3.2	-2.3	1.8	0.6	1.2	1.5	2.6
Education:									
< 8th	5.3	-2.2	-2.9	-1.1	-0.6	0.6	-2.6	0.7	0.4
9th - 13th	-0.6	0.1	0.1	0.1	-0.3	-0.1	-0.1	0.1	0.2
Tec.- Voc.	-3.0	-1.2	-0.5	0.4	-0.1	-0.4	-1.4	-0.4	0.3
Some Univ.	-5.6	-1.1	2.9	0.9	0.9	-1.6	-0.9	-1.4	-2.3
1 Degree	-4.6	-1.6	-5.9	1.5	1.9	0.4	-3.4	-2.7	-1.1
> 1 Degree	-2.1	-2.8	-4.7	2.6	5.3	1.6	-6.9	3.1	-0.7

continued...

Characteristic	Mean Group Responses								
	Utilitarian	Urbanistic	Negativistic	Scientistic	Environmental Protectionistic	Ecologistic	Economistic	Developmental	Altruistic
Residence									
Urban	-0.8	-0.5	0.7	0.1	0.1	0.6	0.6	-0.5	0.7
Rural	1.4	0.6	-1.3	0.1	-0.1	-1.1	-0.8	0.7	-1.3
Knowledge									
Low	1.7	2.2	2.3	0.5	-1.1	0.1	-0.8	0.1	0.5
High	-1.8	-2.2	-2.4	-0.7	1.3	-0.1	1.0	-0.1	-0.6
Consumptive									
1	2.3	-2.1	3.4	-1.3	-0.9	1.1	1.6	-0.9	0.5
2	1.0	-2.2	-1.2	1.1	1.3	-0.3	1.9	-0.9	0.8
3	0.2	-4.5	0.7	0.1	-2.0	-0.7	1.7	0.9	-0.4
Nonconsumptive									
1	0.2	1.8	0.9	-1.5	-0.5	0.2	-1.1	0.8	0.3
2	-2.0	-2.1	-2.3	2.7	0.4	-0.3	1.4	2.6	0.7
3	-2.5	-1.7	-2.2	1.5	1.2	2.7	3.5	-2.4	-1.0

Urbanistic attitude item responses. The group means (see Table 7) indicated that those respondents who were highly Urbanistic in their attitudes toward wildlife and the environment were most likely to be females, older and have a low knowledge of wildlife.

Negativistic Attitude

Level of knowledge accounted for the greatest amount of variance in Negativistic attitudes (3.03%), then education (2.82%) and finally gender (1.31%). Negativistic attitude item responses were significantly related to the level of knowledge of wildlife (F (1,485) = 16.99, $p < .001$), level of education (F (5,485) = 3.16, $p < .010$) and by gender (F (1,485) = 7.34, $p < .010$). Respondents with highly Negativistic attitudes were likely to have a low knowledge of wildlife, a lower level of education and most likely were female (see Table 7).

Environmental Protectionistic Attitude

Knowledge of wildlife accounted for 1.03% of the variance in Environmental Protectionistic attitudes and was the only variable which was significantly related to responses to Environmental Protectionistic attitude items (F (1,485) = 5.23, $p < .025$). The group means indicated that respondents who felt most positively about the value of environmental protection were those who were highly knowledgeable about wildlife.

Ecologistic Attitude

Place of residence accounted for 1.51% of the variance in responses to Ecologistic attitude items. The relationship between place of residence and Ecologistic attitude was significant (F (1,485) = 7.43, $p < .010$) An examination of the group means indicated urban residents tended to hold more Ecologistic attitudes than did rural residents.

Economistic Attitude

Education accounted for 5.53% of the variance in responses to Economistic attitude items; the relationship between those variables was significant (F (5,485) = 5.49, $p < .001$). The group means indicated those who were highly Economistic in their attitudes toward wildlife and the environment were most likely to have a lower level of education.

Developmental Attitude

Only .87% of the variance in responses to Developmental attitude items was accounted for by gender. However, the relationship between these variables was significant (F (1,485) = 4.31, $p < .050$). An examination of group means indicated that males were more likely to hold pro-developmental attitudes than were females.

Altruistic Attitude

Place of residence accounted for 2.06% of the variance in responses to Altruistic attitude items. Altruistic item responses were significantly related to place of residence (F (1,485) = 10.36, $p < .010$). Group means indicated that urban residents tended to be more Altruistic in their attitudes toward the environment and wildlife than were rural residents.

No significant relationships were found between the demographic and knowledge variables and responses to Scientistic attitude items.

Attitudes and Participation in Consumptive and Nonconsumptive Activities

A multiple regression analysis also was used to estimate the strength of relationships between wildlife/environmental attitudes and

participation in consumptive and nonconsumptive activities. In this analysis the wildlife/environmental attitude categories were treated as the independent variables while participation in consumptive and nonconsumptive activities became the dependent variables.

Responses to Urbanistic (10.81%), Utilitarian (2.70%), and Economistic (1.38%) attitude items accounted for the most variance when related to participation in consumptive activities. The results indicated that participation in consumptive activities was significantly related to Urbanistic (F (1,490) = 63.01, $p < .001$), Utilitarian (F (1,490) = 15.76, $p < .010$), and Economistic (F (1,490) = 8.05, $p < .010$) attitudes items. Group means indicated that participants in consumptive activities most likely were negative in their Urbanistic attitudes (see Table 7) and held highly Utilitarian and Economistic attitudes.

Economistic (4.13%), Urbanistic (2.71%), Scientistic (2.70%) and Negativistic (1.12%) attitudes accounted for the most variance when related to participation in nonconsumptive activities. Participation in nonconsumptive activities was most related to Economistic (F (1,490) = 23.59, $p < .001$), Urbanistic (F (1,490) = 15.50, $p < .001$), Scientistic (F (1,490) = 15.42, $p < .001$) and Negativistic (F (1,490) = 6.41, $p < .025$) attitudes. An examination of the group means indicated that participants in nonconsumptive activities were most likely to hold highly Economistic and Scientistic attitudes and low levels of Urbanistic and Negativistic attitudes.

Demographic Variables, Knowledge of Wildlife and Participation in Consumptive and Nonconsumptive Activities

Multiple regression analyses also were undertaken to examine the differences between the demographic profiles and knowledge of the two activity groups. Gender (31.13%) and education (1.84%) accounted for the most variance in participation in consumptive activities. As well, gender (F (1,485) = 222.50, $p < .001$) and education (F (5,485) = 2.63, $p < .025$) were significantly related to participation in consumptive activities. An examination of the group means indicated males and those respondents with lower levels of education were the most likely groups to participate in consumptive activities.

Education accounted for the most variance (8.80%) when the relationships between participation in nonconsumptive activities, demographic characteristics and wildlife knowledge were examined. Knowledge of wildlife accounted for 1.43% of the variance and place of residence for 1.21%. Participation in nonconsumptive activities was significantly related to education (F (1,485) = 9.80, $p < .001$), knowledge of wildlife (F (1,485) = 7.94, $p < .010$) and place of residence (F (1,485) = 6.75, $p < .010$). The group means indicated that those people with higher levels of education, greater knowledge of wildlife and who are urban residents were the most likely groups to participate in nonconsumptive activities.

DISCUSSION

The results of this study indicate that the hypotheses were supported. Differences in attitudes toward wildlife and the environment were significantly related to the knowledge and demographic characteristics of the respondents. As well, the attitudes of participants in consumptive activities differed from the attitudes of participants in nonconsumptive activities.

Using factor analysis, nine factors emerged which illustrated a range of attitudes based on the degree of human exploitation of the environment and wildlife. The factors labelled Environmental Protectionistic, Ecologistic, Altruistic and Scientistic were based on maintaining wildlife and the environment in a balanced state. Factors labelled Utilitarian, Urbanistic, Negativistic, Economistic and Developmental reflected support for the exploitation and control of wildlife and the environment. Many of the items which loaded on the attitude factors were borrowed from Kellert's 1976 survey. It had been expected that attitude categories similar to Kellert's would emerge from this study if underlying dimensions of attitudes were actually measured. However, only two attitude categories emerged which were common to both studies - Scientistic and Negativistic attitudes. Although similar descriptions and labellings of two other attitude categories did occur (i.e., Utilitarian Ecologistic) the groupings of items were dissimilar. For example, none of the items used to develop the Ecologistic category in this study, was used to develop the Ecologistic scale in Kellert's study. None of the other five factors from this study resembled Kellert's attitude categories in terms of labelling, description or item content. The inconsistencies between

the attitude categories of this and Kellert's study could be due to the effects of time and differing survey populations. It is possible that the attitude dimensions of Americans regarding wildlife and the environment are indeed different from the attitude dimensions used by Newfoundlanders. These attitude differences could be due to such factors as economics, urbanization, population density, culture and industrial development. The United States is highly industrialized, densely populated, economically prosperous and oriented to an urban way of life. Newfoundland, on the other hand, is sparsely populated, less urbanized, (relative to the United States), with a sluggish, natural resources based economy (i.e. the fishery, forestry, mining). The closer link to the land in this province, compared to the United States, can be illustrated through the percentage of people who hunt for meat. 31% of Newfoundland/Labrador respondents claimed they had hunted for meat (vs sport hunting) at some time in their lives compared to 11% of Americans in Kellert's survey (Kellert, 1980). As well, if this survey was repeated using the same population any attitude differences found could be due to an effect of maturation of the population over time.

Demographic Variables

Gender

When the attitude factors developed in this study were related to demographic characteristics and knowledge of wildlife the gender of the respondent emerged as the variable most related to how people would respond to Utilitarian, Urbanistic, Negativistic and Developmental attitude items. Males tended to hold more Utilitarian and

Developmental attitudes and less Urbanistic and Negativistic attitudes toward wildlife and the environment than did females. That is, males tended to feel animals were primarily of value for their uses to humans, that oil development should occur even at the expense of our living resources. Males also preferred to live in more rural areas where contact with wildlife and the natural environment are more likely and did not fear, dislike or want to eliminate lower orders of animals such as rats or spiders. As well, males were more knowledgeable about wildlife than females were. These results are similar to the results of Kellert's survey (1980) where males tended to value animals primarily for their uses to humanity, to be more knowledgeable about wildlife and to be less likely to avoid animals due to fear or dislike than females would be. Similarly Pirt (1976) found males tended to be more supportive of using animals for human needs than were females (as indicated by low scores on her anti-hunting and anti-trapping scales). However, the utilitarian orientation of males in Pirt's study was balanced with their high scores on the wildlife-protective and general wildlife-appreciative scales.

Gifford et al. (1983) and Dahlgren et al. (1977) suggested that differences in male and female environmental attitudes and knowledge could be due to the differential socialization of the sexes. The effect of socialization is certainly a relevant issue in this province. The poor economy, high unemployment and the traditional view toward males as the primary income earners probably tends to encourage the male attitude that oil development should occur at the expense of other resources. This would increase the number of available jobs (especially in the oil industry) thereby increasing male success as the

primary wage earner. Differences in the level of knowledge and Utilitarian attitudes also could be accounted for by higher levels of participation in consumptive activities by males than by females. Since the primary motive given for participation in consumptive activities was for obtaining meat, it is reasonable that participants (usually males) would be knowledgeable and hold Utilitarian attitudes toward wildlife in order to successfully pursue these activities. Differences in knowledge of males and females was not due to differences in education since no correlation was found between gender and education (Table 5)

Education

Respondents who were highly educated were more knowledgeable about wildlife (consistent with Dahlgren et al., 1977), tended to feel that a) environmental protection should not be reduced so that industrial development could occur, b) that animals have value beyond the ways they can be used to meet human needs and c) would not fear or want lower animal orders eliminated. These results imply that education has a positive effect on the development of a balanced, supportive attitude toward wildlife and the environment. These results corroborate the generalizations from the review by Van Liere and Dunlap (1980) which suggested that concern for environmental quality increases as education increases. The results of Kellert's survey (1980) also imply that education is important in determining affection, knowledge and concern for wildlife and the environment. He suggests that generally it is the experience of a college education rather than the kinds of knowledge acquired in college that is the primary influence on attitudes.

Gifford et al. (1983), on the other hand, found that the type of knowledge acquired during university had a significant effect on knowledge of environmental issues and affect expressed. In his study natural science majors were more knowledgeable and expressed greater concern for environmental issues that any other university majors group. In contrast to Kellert he concluded that the content of education programs is an important determinant of attitudes toward the environment.

These researchers have implied that it is the benefit of a university education as well as the content of that level of education which influence attitudes toward wildlife and the environment. However, it should be pointed out that all of the studies (present one included) examined the relationships between attitudes and education using correlational analyses and the direction of causality cannot be derived from correlations. While it is possible more positive wildlife and environmental attitudes will develop due to a university education it is equally possible that people with positive attitudes toward wildlife and the environment are predisposed to attending university and selecting courses in the natural sciences field. Socio-economic status could also be related to attitudes toward wildlife and the environment, university attendance and course selection. For example, it could be that people of high socio-economic status would be more likely to attend university, have positive attitudes toward wildlife and the environment and to select natural science courses.

Place of Residence

Place of residence was related significantly to Utilitarian,

Ecologistic and Altruistic attitude categories. That is, rural residents tended to feel animals were of value provided they met human requirements and, since they regarded wildlife and environment as primarily for human use, little consideration need be given to endangered species or environmental damage caused by humans unless human well-being is obviously affected.

This lack of concern for animal welfare and support for the practical uses of animals by rural residents also were found by Kellert (1980). As well, Tremblay and Dunlap (1978) found rural residents were less concerned about environmental issues than urban residents. Lowe et al. (1980), in comparing environmental concern with other societal problems, found environmental concern was highest among affluent, highly educated, urban residents who live in and have access to better environments. In a later study by Lowe and Pinhey (1982) rural residents were also found to be less supportive of environmental protection than were urban residents. They suggested that the differences in attitudes of rural and urban residents could be due to greater socialization and environmental degradation in urban areas and the utilitarian pro-growth orientation of rural residents. From these studies it could be implied that as urbanization increases rural attitudes will become less utilitarian and less supportive of participation in consumptive activities with more emphasis being placed on the abstract and nonconsumptive values of wildlife. That rural residents hold more utilitarian attitudes than urban residents because of the more exploitive aspects of rural life was suggested by Lowe and Pinhey (1982) and Hendee (1969) and is supported by the results of the present study.

Age

Older respondents tended to be highly Utilitarian and Urbanistic in their attitudes toward the environment and wildlife and less knowledgeable than younger respondents about wildlife. That is, the practical uses of wildlife, the comfort and safety of an urban lifestyle and priority for development of industry in this province were more supported by older people than younger people. These results are similar to those found by Van Liere and Dunlap (1980), Buttel (1979), Pirt (1976) and Kellert (1980) whose studies all supported the generalization that older people tended to be less concerned about environmental issues, wildlife protection and appreciation. Suggestions made to account for the age-related differences in attitudes included the effects of individual and societal changes in attitude over time (Kellert, 1980) and the effects of historical and economic events such as war and economic depression (Buttel, 1979). Differences in the attitudes of older and younger people could be due also to changes in lifestyle over time and level of education. Past lifestyles in Newfoundland and Labrador were linked closely to the land and subsistence farming, fishing and hunting and self-sufficiency were the norm. As well, most of the older respondents had lived through the "hard times" of the depression and the upheaval of at least one war so it is hardly surprising that older people primarily consider the practical values of animals and regard industrial and urban development as solutions to their economic problems. Older respondents also tended to have less formal education than younger respondents. The interaction of age and education in addition to the relationship of

these variables with Utilitarian attitudes could, in part, account for the Utilitarian attitudes of the older respondents.

Participation in Wildlife-related Activities

The results of this study indicate that those who participated in nonconsumptive activities were more likely to be urban residents, younger, more educated, knowledgeable about wildlife and participate in consumptive activities. In attitude they tended to be highly Economistic and Scientistic and did not hold highly Urbanistic and Negativistic attitudes. In comparison those who participated mainly in consumptive activities were more likely to be male, knowledgeable about wildlife, participate in nonconsumptive activities and have a lower level of education. These respondents tended to hold highly Utilitarian and Economistic attitudes and low Urbanistic attitudes.

Both activity groups tended to be highly knowledgeable about wildlife, participate in a variety of wildlife-related outdoor activities and prefer rural areas where contact with wilderness and wildlife is more likely. As well, the general attitude of both groups was that environmental controls would reduce the number of jobs in the oil industry and that these controls should be relaxed so that oil exploration and development can occur unimpeded. One reason for the similarities of the attitude and demographic characteristics of these groups could be due to the partial overlap between the groups (56.4%) in terms of participation in wildlife/outdoor related activities.

Differences between these groups' attitudes were that participants in consumptive activities tended to hold highly Utilitarian attitudes toward wildlife while participants in nonconsumptive activities tended

to hold highly Scientistic attitudes and to value lower animal orders. Overall, participants in nonconsumptive activities tended to take a more balanced attitude toward wildlife and the environment in that this group tended to value a wider variety of aspects of wildlife and the environment from those that relate directly to human needs to those that are abstract.

Results from other studies indicated participation and attitudes of participants were most related to childhood and present experiences and place of residence as well as education. Hendee (1968, 1969) found that wilderness purists (those who most highly value maintenance of the complete naturalness of wilderness (similar to participants in nonconsumptive activities) were most likely to be highly educated urban residents. Shaw (1974) found attitudes toward wildlife and consumptive activities such as hunting were affected by education, experience with bloodshed and place of childhood residency. He suggested that those attitudes are developed from early background experiences. In a later study (Shaw, 1978) he found that attitudes toward wildlife also were strongly related to present experiences. Witter (1978) found participants in nonconsumptive activities placed more diverse values on wildlife than did those who participated primarily in consumptive activities. Participants in consumptive activities placed more value on wildlife in terms of sport hunting, meat sources and other products.

SUMMARY AND CONCLUSIONS

The present study has served as a baseline measure of the attitudes of the people of Newfoundland and Labrador toward wildlife

and the environment and the relationships of their attitudes to demographic variables and participation in wildlife related outdoor activities. It was found that the gender and age of the respondent, years of education, place of residence and participation in wildlife-related activities were significantly related to attitudes toward wildlife and the environment. Generally, the attitudes of Newfoundlanders and Labradorians indicated a high level of interest in wildlife and the environment and recognition of the importance of maintaining healthy wildlife populations and the quality of the environment. However, when put in the context of the pressures of daily life (e.g., economics) this interest and support was heavily tempered with the views that improvement of personal and provincial economics have priority over environmental/wildlife conservation and management.

The results of this study raise several issues for future research. Primary consideration should be given to investigating: 1) the causal link between education and attitudes toward wildlife and the environment and 2) the causal link between attitudes toward wildlife and the environment and participation in wildlife and environment related activities.

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FOOTNOTES

1. This survey served two purposes: 1) to investigate public attitudes toward wildlife and the environment as related to experience and 2) to provide information to the provincial government on the public's perceptions of various wildlife/environmental issues and their opinions of the Wildlife Division and its programs (Hill, 1984).

APPENDIX A
QUESTIONNAIRE AND VARIABLES USED IN ANALYSES
Variables used in analyses are marked by an asterisk at the top of each question

INTERVIEWER INSTRUCTIONS [DO NOT READ TO RESPONDENT]:
P 1,2 = Question was used in Phase 1 and Phase 2 Questionnaires
Refused Answer = 99
Missing Values (Variables) = 00
Put ALL answer numbers on the line to the right of the question, except where long answers (open-ended questions) must be written out. Write those answers beneath the question in the space provided.

INTRODUCTORY PARAGRAPH:
Hello, my name is _____
I am conducting a survey on behalf of Memorial University. I would like to talk to you about your attitudes toward wildlife and some environmental issues and, also, about the outdoor activities you are involved in.

FOR INTERVIEWER'S INFORMATION:
Present letter of introduction if respondent asks for some verification of who you are.

IMPORTANT DEFINITIONS:

ECOLOGICAL: about the relationship of animals and plants with their surroundings
ENVIRONMENT: surroundings that affect an animal's (or plant's) way of living
ENDANGERED: the danger of being removed completely from a place (such as Newfoundland and Labrador)
SPECIES: plants or animals which look the same
URBAN: living in a city
WILDLIFE: means wild animals, not pets or other domesticated animals. It includes waterfowl, other wild birds, small and large mammals and other wildlife in natural environment. It does not include animals in zoos or game farms.
WATERFOWL: for example ducks, geese, coots, cranes.
OTHER BIRDS: All other wild birds such as robins, sparrows, crows, pigeons, hawks, owls and upland game birds such as grouse, partridge, pheasant...
SMALL MAMMALS: includes small game and non-game species. For example, rabbits, squirrels, raccoons, foxes, groundhogs, beaver and other fur-bearers.
LARGE MAMMALS: includes big game and non-game species. For example, deer, bears, moose, mountain sheep.
URBAN DEVELOPMENT: construction of buildings and roads such things as business and housing
ATV: tracked or rubber-tired vehicles for going cross-country (does not include snowmobiles)
OTHER WILDLIFE: includes all remaining wildlife such as butterflies, frogs, snakes, lizards, but not fish.

Subject's 1st Name _____ Subject's Telephone _____

Subject Number _____ v1
* Sex (female = 1, male = 2) ___ v2
* Enumeration Area _____ v3
* Stratum _____ v4
* Town/City _____ v5
* Day _____ v6
* Month _____ v7
* Year _____ v8
* Length of Interview (minutes) ___ v9

P 1,2

Different people value different things - that is, some things are important to some people and not to others. I would like to read you a list of these things and I would like you to tell me how much importance you place on each of them by using a scale from 0 to 10 where 10 represents something you value the most and 0 represents something you don't value at all.

a. spending time with your family _ v10
b. owning you own car _ v11
c. eating healthy foods _ v12
d. getting plenty of exercise _ v13
e. spending time outdoors _ v14
f. increasing your income _ v15
g. attending church _ v16
h. conserving energy _ v17
i. watching television _ v18
j. being a Canadian _ v19
k. reading _ v20
l. participating in sports _ v21
m. saving money _ v22
n. listening to music _ v23
o. travel _ v24
p. personal safety _ v25
q. a clean environment _ v26
r. getting actively involved in your community _ v27
s. having a good job _ v28

P2

Now I would like you to tell me how much importance you place on the following uses of wildlife by using the same scale (as in question 1) from 0 to 10.

a. furs _ v29
b. hunting _ v30
c. food _ v31
d. viewing (in person and pictures) _ v32
e. enjoyment from knowing animals exist _ v33
f. maintaining nature's balance _ v34

P 1,2
Some wildlife officers are faced with increasing problems between bears and people.
What would be your first and second choices for solving this problem?

1. Place limits on the number of people visiting areas inhabited by bears
2. Limit the number of bears by killing some
3. Relocate the bears to a more distant location
4. Allow visitors only in areas where bears are not likely to be
5. Increase outdoor education
6. Increase enforcement
7. Increase garbage pickup

1st choice __ v35
2nd choice __ v36

P 1,2
If a law were passed to protect endangered animals and plants it might increase the cost of some energy development projects. If this were to happen it has been suggested that protection should apply only to certain animals and plants. Which of the following endangered species would you favour protecting ?

	Strongly Favour Protection				Strongly Oppose Protection	
a. The Eastern Mountain Lion (cougar)	5	4	3	2	1	__ v37
b. A fish, such as the Atlantic salmon	5	4	3	2	1	__ v38
c. A plant, such as the Pitcherplant	5	4	3	2	1	__ v39
d. A snake, such as the Garter Snake	5	4	3	2	1	__ v40
e. A bird, such as the Whooping Crane	5	4	3	2	1	__ v41

P 1,2
Salmon rivers are threatened in some areas of Newfoundland. Would you favour the following water uses if they threatened a salmon river?

	Strongly Favour				Strongly Disfavour	
a. urban development on the river	5	4	3	2	1	__ v42
b. hydro development along the river	5	4	3	2	1	__ v43
c. unlimited fishing in the river	5	4	3	2	1	__ v44
d. water diverted to increase human drinking supplies	5	4	3	2	1	__ v45
e. water dammed to make a lake for recreational use	5	4	3	2	1	__ v46

P 1,2
Would you favour the following types of development if it is known that caribou habitat would decrease?

	Strongly Favour				Strongly Disfavour	
a. urban development in those areas	5	4	3	2	1	__ v47
b. hydro development in those areas	5	4	3	2	1	__ v48
c. mining close to those areas	5	4	3	2	1	__ v49
d. motorized vehicles in those areas	5	4	3	2	1	__ v50

* P 1,2
Now, I would like to read you some statements that deal with people's knowledge of animals. As I read each statement, please tell me if you think it is true(1), false (2) or if you don't know (3). Don't worry if the questions seem hard. Nobody can answer all of them correctly.

Total correct out of possible 22 __ v51
(G) Score on general questions out of possible 12 __ v52
(W) Score on world questions out of possible 3 __ v53
(N) Score on Newfoundland questions out of possible 7 __ v54

G a. A mule is a cross between a donkey and a horse.
N b. The Great Auk and the Labrador Duck are now extinct.
G c. Spiders have ten legs.
G d. It is illegal to keep a wild animal as a pet without a permit
N e. Puffins and murres nest at Witless Bay
G f. It is not legal to shoot hawks, owls and eagles
N g. Wolves are extinct on the island of Newfoundland but still live in Labrador
N h. The gannet is a kind of bird.
W i. Monkeys in the wild live only in Asia
N j. Polar bears breed in Labrador
G k. Caribou, muskrat, and whales are all mammals
G l. The skeletons of sharks and sting rays are made of cartilage rather than bone.
G m. When frightened, an ostrich will bury its head in the sand.
W n. Koala bears are not really bears.
W o. The manatee is an insect.
G p. The garter snake, green snake and rattlesnake are all poisonous.
G q. Veal comes from lamb.
G r. When a horse gallops, all four feet will lift off the ground at the same time.
G s. Snakes have a thin covering of slime in order to move more easily.
G t. Most insects have backbones.
N u. Salmon breed in fresh water but spend most of their lives in salt water.
N v. Moose were brought into Newfoundland by man

P 1
Which of the following animals are considered to be endangered in Canada?
Yes = 1, No = 2, Don't Know = 3

Osprey	__ v55
Peary Caribou	__ v56
Moose	__ v57
Lynx	__ v58
Sea Otter	__ v59
Wolf	__ v60
Eastern Mountain Lion	__ v61
Arctic Hare	__ v62
Whooping Crane	__ v63
Peregrine Falcon	__ v64

P 2
Please indicate the 2 types of animals which interest you the most and indicate which would be your 1st and 2nd choice.
NOTE emphasis is on the type of animal not the specific examples:

1. I am not interested in most animals — 1st choice __ v65
2. Beautiful animals, for example, butterflies, peacocks — 2nd choice __ v66
3. Useful animals, for example, cows, sheep
4. Scientifically fascinating animals
5. Attractive and likeable animals
6. Trophy animals
7. Animals in the wild, for example, otters and moose
8. Animals important to particular ecosystem
9. Animals that are national emblems and represent our culture and traditions, for example, caribou and beaver

* P 1,2
Would you tell me, out of a scale of 1 to 5, if you agree or disagree with the following statements

	Strongly Disagree				Strongly Agree	
a. If I were going camping, I would rather stay in a modern campground than in an isolated spot where there might be wild animals around	1	2	3	4	5	__ v67
b. Most large dogs are frightening	1	2	3	4	5	__ v68
c. Development of industry in Newfoundland should take priority over everything else	1	2	3	4	5	__ v69
d. Love is an emotion which people should feel only for other people, not for animals	1	2	3	4	5	__ v70
e. I admire a person who works hard to shoot a big trophy animal like a 600-pound bear	1	2	3	4	5	__ v71
f. If I were choosing a pet dog or cat, the animal's beauty would be the most important consideration	1	2	3	4	5	__ v72
g. I know little about ecosystems or the population dynamics of wild animals	1	2	3	4	5	__ v73
h. I would be afraid to touch a snake	1	2	3	4	5	__ v74
i. I am generally more interested in pet animals than wild animals	1	2	3	4	5	__ v75
j. Rats and cockroaches should be eliminated	1	2	3	4	5	__ v76
k. I have owned pets that were as dear to me as another person	1	2	3	4	5	__ v77
l. I dislike most beetles and spiders	1	2	3	4	5	__ v78
m. It bothers me to see captive wild animals	1	2	3	4	5	__ v79

	Strongly Disagree				Strongly Agree		
n. A person sometimes has to beat a horse or dog to get it to obey orders properly	1	2	3	4	5	__	v80
o. In most cases the beauty of an animal is more important to me than any other quality	1	2	3	4	5	__	v81
p. I have little desire to see wild animals in places like jungles	1	2	3	4	5	__	v82
q. The acid rain issue has been played up too much	1	2	3	4	5	__	v83
r. A dog trained at a task, like herding sheep, is generally a better dog than one owned just for companionship	1	2	3	4	5	__	v84
s. I dislike having most animals physically close to me	1	2	3	4	5	__	v85
t. Watching Birds as a hobby strikes me as a waste of time	1	2	3	4	5	__	v86
If oil were discovered near the Witless Bay seabird colonies it would have to be developed even if it meant harm to the seabird colonies	1	2	3	4	5	__	v87
v. I approve of firmly disciplining a dog so that it strictly obeys every command	1	2	3	4	5	__	v88
w. I find most insects fascinating	1	2	3	4	5	__	v89
x. People should have car access to scenic areas even if the wildlife are disturbed by the traffic and noise	1	2	3	4	5	__	v90
y. Cutting trees for lumber and paper should be done in ways that help wildlife even if this results in higher lumber prices	1	2	3	4	5	__	v91

	Strongly Disagree				Strongly Agree	
z. It is important for future generations that we look after our wildlife	1	2	3	4	5	__ v92
aa. Animals have emotions just the same as people do	1	2	3	4	5	__ v93
bb. Laboratory experiments which cause great pain to animals should be stopped even if these experiments are important for scientific and medical research	1	2	3	4	5	__ v94
cc. Offshore oil should be developed even if it harms Newfoundland's wildlife and fish	1	2	3	4	5	__ v95
dd. I care more about the suffering of individual animals than I do about species population levels	1	2	3	4	5	__ v96
ee. Cattle and sheep grazing should be limited on publicly owned lands if it destroys plants needed by wildlife	1	2	3	4	5	__ v97
ff. Our government should spend very little time and money on trying to educate the public about wildlife issues and problems	1	2	3	4	5	__ v98
gg. Illegal killing of wildlife should result in stiff fines and, if done repeatedly, even prison sentences	1	2	3	4	5	__ v99
hh. Development which threatens salmon should be discontinued even if unemployment increases	1	2	3	4	5	__ v100
ii. I think it's all right to kill an animal to make a fur coat as long as that animal is not endangered	1	2	3	4	5	__ v101
jj. I have little interest in learning about the taxonomic classification of animals	1	2	3	4	5	__ v102

	Strongly Disagree				Strongly Agree	
kk. I think rodeos are cruel to animals	1	2	3	4	5	__ v103
ll. Resources must be developed even if the loss of wilderness results in much smaller wildlife populations	1	2	3	4	5	__ v104
mm. The goals of most environmentalists are a threat to the economic prosperity of our country	1	2	3	4	5	__ v105
nn. I see nothing wrong with using leghold traps to capture wild animals	1	2	3	4	5	__ v106
oo. Seabird colonies should be protected	1	2	3	4	5	__ v107
pp. Forests should be sprayed for spruce budworm	1	2	3	4	5	__ v108
qq. Whales should be hunted because they are too plentiful	1	2	3	4	5	__ v109
rr. People who benefit most from wildlife (such as hunters, fishermen and birdwatchers) should help pay the cost of wildlife conservation	1	2	3	4	5	__ v110
ss. Restrictions should be placed on the use of all-terrain vehicles and snowmobiles if they harm wild animals	1	2	3	4	5	__ v111
tt. I think it's alright to kill whales for a useful product as long as the animals are not threatened by extinction	1	2	3	4	5	__ v112
uu. We must even use insecticides and herbicides that are harmful to wildlife if they are needed to keep agricultural and forest industries at their present levels	1	2	3	4	5	__ v113
vv. Scientific study of wildlife is important in helping to maintain healthy wildlife populations	1	2	3	4	5	__ v114

	Strongly Disagree				Strongly Agree	
ww. In most cases, wild animals such as caribou and moose would be better off if government officials did not try to control the populations of these animals	1	2	3	4	5	__ v115
xx. I have little desire to study vertebrate zoology or population genetics	1	2	3	4	5	__ v116
yy. Before trapping of wild animals is permitted there should be proof these animals will not be endangered by this trapping	1	2	3	4	5	__ v117

V458 - Total scale score for Phase I - total possible = 190
V459 - Total scale score for Phase II - total possible = 255

Now I am going to ask you some questions about your outdoor activities:

P 1,2
What is your favourite outdoor activity ?
_ v118

P 1,2
Where do you usually go?
a. ____ miles away or _ v119
b. whenever and wherever the opportunity arises (01) _ v120

P 1,2
In the past year has your participation in your favourite outdoor activity:
Increased 1. Decreased 2. Stayed the Same 3 _ v121

P 1,2
Why has it increased (or decreased)? Increased: _ v122
Decreased: _ v123

P 1
How many days/year do you spend at this activity?
1. 1 to 5 days _ v124
2. 6 to 10 days
3. 11 to 20 days
4. 21 to 35 days
5. >35 days

P 1,2
How does hearing or seeing wildlife affect your enjoyment of your favourite outdoor activity?

Greatly Increases Enjoyment					Greatly Decreases Enjoyment	No Effect	
6	5	4	3	2		1	_ v125

HUNTING

* P 1,2

Have you hunted in Newfoundland or Labrador in the past two years?

a. Yes 1. No 2. _ v126

b. Anywhere else? Yes 1. No 2. IF NO GO TO 18 _ v127

P 1,2

Where? _ v128

P 2

How far do you usually travel to go hunting? (miles) _ v129

*. P 1,2

Have you regularly hunted at any other time in your life?

Yes 1. No 2. IF YES SKIP TO 21 _ v130

P 1,2

Do you disagree with hunting?

a. Yes 1. No 2. IF NO SKIP TO 20 _ v131

b. What is your most important reasons for this opposition?

1. Morally wrong to kill animals for recreation or sport
2. Hunting is psychologically abnormal
3. Oppose firearms
4. Love animals
5. Opposed to pain and suffering inflicted on animals
6. Hunting encourages violence
7. Objects to disrespectful and unethical conduct of most recreation or sport hunters _ v132
8. Vegetarian
9. Other (specify)

P 1,2

Then what is your main reason for not hunting? _ v133

SKIP TO 25

P 1,2

What were (are) the types of animals that you have hunted the most?

1. Small game, for example, rabbits
2. Big game, for example, caribou, bear
3. Waterfowl, for example, ducks and geese _ v134
4. Upland birds, for example, ptarmigan, grouse _ v135
5. Pests, for example, rats, _ v136
6. Exotic game, for example, impala, water buffalo _ v137
7. Other (specify)

P 1,2
What is (was) your most important reason for hunting?
1.For meat
2.To eliminate problem animals _ v138
3.For sport or recreation
4.To be with family or friends
5.To get close to nature
6.For solitude
7.To obtain a trophy
8.To use a firearm
9.For relaxation
10.To get away from it all
11.Seeing wildlife
12.Other (specify)

P 1,2
In some locations the hunting of ptarmigan (partridge) has been permitted in the winter. Do you think that ptarmigan should be hunted at this time of year?
a. Yes 1. No 2. _ v139
b. Why? _ v140

P 2
Would you support the increase in male only hunting licenses if this allowed more people to hunt?
Yes 1. No 2. _ v141

P 1
Which moose license would you prefer if all three types were available to you?
1. male only license
2. female only license
3. either sex license _ v142

P 1
Do you think there should be :
1. unlimited numbers of hunting licenses available
2. limited numbers of licenses like now
3. have limit but increase the number from what is now available
4. don't know _ v143

TRAPPING
* P 1,2
Have you ever trapped or snared wild animals?
Yes 1. No 2. IF NO SKIP TO 30 _ v144

P 2
How far do you usually travel to trap/snare? _ v145

P 1,2
What is your most important reason for trapping ?
1.For fur
2.For meat
3.For property protection
4.To get close to nature _ v147
5.For solitude
6.For profit
7.For sport or recreation
8.For scientific study
9.For relaxation
10.Other (specify)

P 1,2
What are the two wild animals that you have most commonly trapped ? a)_____ a. _v148
b)_____ b. _v149

P 1,2
Has trapping ever been a major source of income for you?
Yes 1. No 2. _ v150

P 1,2
What is your main reason for not trapping?
1. no opportunity
2. no interest
3. no time
4. it's inhumane
5. it's psychologically abnormal
6. opposed to trapping
7. it's morally wrong to kill animals
8. object to trapping for recreation or sport
9. other _ v146

FISHING
* P 1,2
Do you fish (eg. salmon,cod,trout) for:
1.commercial purposes
2.sport _ v151
3.both
4.don't fish at all IF 4) SKIP TO 35

P 1,2
If you fish for sport what is your most important reason for fishing ?
1.To catch big fish
2.To get close to nature _ v152
3.For solitude
4.For sport or recreation
5.To eat fresh fish
6.To catch a lot of fish
7.To be with friends or family
8.For relaxation
9.Other (specify)

P 1,2
Do you have a favourite fishing spot? 1.Yes _ v153
2.No SKIP TO 35
IF YES, how far do you travel to get to that spot?
___miles _ v154

BIRDWATCHING
* P 1,2
Do you or have you ever birdwatched ?
Yes 1. No 2. IF NO SKIP TO 42 _ v155

P 1,2
Do you keep a life bird list?
1. Yes 2. No _ v156

P 1,2
What was or is your most important reason for birdwatching ?
1.Birds pretty to look at
2.Hobby _ v157
3.Scientific study
4.To see as many birds as possible
5.To be close to nature or for solitude
6.To do something with family or friends
7.Good for the children
8.Personally fascinated by birds
9.Relaxation
10.Other (specify)

P 1,2
On any one trip how far have you travelled for birdwatching?
a. ___ miles _ v158
b. just watch wherever I happen to be (01) _ v159

P 1,2
Have you fed birds in the past two years?
Yes 1. No 2. _ v160

P 1,2
Approximately how many different kinds of birds do you think you can identify?
1. Less than 10 2. 11-20
3. 21-30 4. 31-40 _ v161
5. 41-60 6. 61-100
7. 101 or more

* P 1,2
Have you gone to a zoo, wildlife or nature park in the past two years?
Yes 1. No 2. _ v162

* P 2
Any other time?
Yes 1. No 2. _ v163

* P 1,2
Have you ever visited Salmonier Nature Park?
Yes 1. No 2. IF NO SKIP TO 48 _ v164

P 1,2
When was the last time you visited this park? _ v165
_____ (year)

P 1,2
What was your most important reason for going there?
1. Animals are pretty to look at
2. Educational for children
3. To study animal behaviour _ v166
4. Personally interested by wild animals
5. To do something with friends/family
6. Relaxation
7. Other (specify)

P 1,2
Would you go back for a visit?
Yes 1. No 2. _ v167

P 1,2
There should be more parks in Newfoundland like the Salmonier Nature Park
Yes 1. No 2. Don't Know 3. _ v168

* P 1,2
Have you ever photographed animals ?
Yes 1. No 2. IF NO SKIP TO 50 _ v169

P 1,2
Please list the animals that you most commonly photographed
a. ___ _ v170
b. ___ _ v171
c. ___ _ v172
d. ___ _ v173
e. ___ _ v174

P 1,2
Have you purchased any photographs, posters, prints, paintings, souvenirs, or carvings of animals ?
Yes 1. No 2. IF NO SKIP TO 52 _ v175

P 1,2
IF YES What have you bought? (Yes 1., No 2.)
1. Photographs, prints or posters
2. Painting, carvings, pottery
3. Souvenirs
4. 1 + 2
5. 1 + 3
6. 2 + 3
7. 1,2 + 3
_ v176

P 1,2
Do you draw, paint or carve animals yourself?
Yes 1. No 2. _ v177

P 1,2
As a child or teenager did you belong to any conservation or animal-related organizations, for example, 4-H Club, Cubs, Scouts, Guides?
a. Yes 1. No 2. _ v178
b. IF YES Which one(s)?
_____ _ v179
_____

P 1,2
Do you or your husband/wife belong to any conservation or animal-related organizations ?
Yes 1. No 2. IF NO SKIP TO 56 _ v180

P 1,2
Which one(s)? _ v181

P 1,2
Do you have any children ? Yes 1 No 2 IF NO SKIP TO 59 _ v182

P 1,2
Do you ever read to or look at books with your children? Yes 1. No 2. IF NO SKIP TO 59 _ v183

P 1,2
Are they ever books about animals?
Yes 1. No 2. _ v184

P 1,2
How frequently do you read about wildlife?
1. Frequently 2.Sometimes 3.Rarely 4.Never. _ v185

P 1,2
Do you read any magazines regularly?
Yes 1. No 2. IF NO SKIP TO 62 _ v186

P 1,2
Do you read any of the following?
1. Audubon
2. Cats
3. Canadian Geographic _ v187
4. Defenders of Wildlife _ v188
5. Dog World _ v189
6. Field and Stream _ v190
7. International Wildlife _ v191
8. Living Wilderness _ v192
9. National Geographic
10. National Parks and Conservation
11. National Wildlife
12. Natural History
13. Nature Canada
14. Outdoor Life
15. Outdoor Canada
16. Sierra Club Magazine
17. Sports Afield
18. Any others ? (specify)

19. None

P 1,2
How frequently do you watch animal-related television shows?

When on	Frequently	Sometimes	Rarely	Never	No TV	
6	5	4	3	2	1	_ v193

IF NO TV OR NEVER SKIP TO 66

P 1,2
What animal or outdoor related programs do you like to watch? (Yes 1., No 2.)

1. Land and Sea _ v194
2. Oceans Alive _ v195
3. Wild Kingdom _ v196
4. Untamed World _ v197
5. Jacques Cousteau Specials _ v198
6. John and Janet Foster Specials _ v199
7. Lloyd Colbourne _ v200
8. Walt Disney _ v201
9. Nature of Things _ v202
10. Other _ v203

P 1,2
How much do you think these TV shows have influenced your ideas and knowledge of wildlife?

Greatly Influenced 5 4 3 2 1 Not at all Influenced _ v204

P 1,2
Do you think there should be more animal-related TV shows
Yes 1. No 2. _ v205

P 1,2
Do you know what ATV's (all-terrain vehicles) are?
(Give definition from front of questionnaire if necessary)
Yes 1. No 2. IF NO SKIP TO 75 _ v206

P 2
Do you own an ATV?
Yes 1. No 2. _ v207

P 1,2
What do you think they should be used for ?

1. work
2. recreation
3. both _ v208
4. shouldn't be allowed at all

P 1,2
Who, if anyone, should be allowed to use ATV's?
1. anybody
2. trappers _ v209
3. hunters _ v210
4. wildlife officers _ v211
5. recreationists _ v212
6. resource exploration
7. construction maintenance
8. mature, responsible adults
9. other (specify)

10. nobody

P 1,2
Do you think ATV's should be restricted from certain areas of the province?
Yes 1. No 2. IF NO SKIP TO 72. _ v213

P 1,2
What areas? _ v214

P 2
Do you think they cause problems for wildlife?
Yes 1. No 2.
IF NO SKIP TO 74 _ v215

P 1,2
In what ways? _ v216

P 1,2
Do you think any of the following should be restricted?
1. 4 x 4's
2. tracked all-terrain vehicles
3. rubber-tired all-terrain vehicles _ v217
4. none _ v218
5. all
6. don't know

P 1,2
Are you familiar with snowmobiles?
Yes 1. No 2. IF NO SKIP TO 83 _ v219

P 1,2
Do you own a snowmobile ? Yes 1. No 2.
IF NO SKIP TO 78 _ v220

P 1,2
What do you use it for? _ v221
1. work
2. recreation
3. both

P 1,2
What (other things) do you think they should be used for?
1. work
2. recreation _ v222
3. both
4. shouldn't be allowed at all

P 1,2
Do you think snowmobiles should be restricted from certain areas of this province?
Yes 1. No 2. IF NO SKIP TO 81 _ v223

P 1,2
What areas? _ v224

P 1,2
Who, if anyone, should be allowed to use snowmobiles ?
1. anybody _ v225
2. trappers _ v226
3. hunters _ v227
4. wildlife officers _ v228
5. recreationists
6. resource exploration
7. construction maintenance
8. mature, responsible adults
9. other (specify)

10. nobody

P 1,2
Do you think snowmobiles cause problems for wildlife
a. Yes 1. No 2. _ v229
b. In what ways? _ v230

P 1,2
If the provincial government was putting together an information program which topic(s) if any would you like more information about? (Yes 1., No 2.)

1. wildlife management _ v231
2. animals and birds _ v232
3. wild rivers _ v233
4. ecological reserves and wilderness areas _ v234
5. acid rain _ v235
6. seal hunt _ v236
7. offshore petroleum development _ v237
8. whales and whale entrapment _ v238
9. spruce budworm and the provincial spray program _ v239
10. trapping _ v240
11. hydro development _ v241
12. forestry _ v242
13. mining _ v243
14. fishing _ v244
15. agriculture _ v245

P 2
How would you like the information on these topics to presented ? (Yes 1., No 2.)

1. newspapers _ v247
2. radio _ v248
3. books _ v249
4. TV _ v250
5. magazines _ v251
6. school/university _ v252
7. technical reports _ v253
8. mailed pamphlets _ v254
9. public meetings _ v255

P 1,2
Do you think there should be more environmental/resource education taught in schools?
Yes 1. No 2. _ v256

P 1,2
Why? _ v257

P 2

The Wildlife Division is developing a Public Education Program. Which topics would you like to know more about? (Yes 1., No 2)

1. wildlife management and protection _ v258
2. animals and birds and how they live _ v259
3. special wildlife and wilderness areas _ v260
4. special problems and issues for wildlife such as poaching, development etc. _ v261
5. hunting _ v262
6. trapping _ v263
7. other _____ _ v264

P 1

Do you think the Wildlife Division should develop more programs emphasizing any of the following :

Yes = 1, No = 2

Hunter education _ v265
Trapper education _ v266
Fishing education _ v267
Outdoor education _ v268
Recreation _ v269
Wildlife Identification _ v270
Widlife Management _ v271
Nothing _ v272

P 1,2

The public should have more say in how wildlife is managed

Strongly Disagree 1 2 3 4 5 Strongly Agree _ v273

IF 1 OR 2 GO TO 90

P 1

Do you think Wildlife Regulations should be determined by:

1. the people living in the area
2. the government
3. the people and the government
4. shouldn't have Regulations at all
5. no opinion _ v274

P 2

How would you like the public to be heard? (Yes 1., No 2)

1. public meetings _ v275
2. advisory groups _ v276
3. opinion surveys _ v277
4. direct communication with politicians and biologists (eg. telephone) _ v278 _ v279
5. other _____

P 2
Have you ever tried to communicate (eg. in writing, by telephone) with the Wildlife Division?
a. Yes 1. No 2. _ v280
b. IF YES were you satisfied with this communication?
Yes 1. No 2. _ v281

P 1,2
How much do you feel you know about what each of the following branches of the Provincial Government does?

	Alot				Nothing at All	
a. Department of Mines	5	4	3	2	1	_ v282
b. Petroleum Directorate	5	4	3	2	1	_ v283
c. Department of Highways	5	4	3	2	1	_ v284
d. Division of Wildlife	5	4	3	2	1	_ v285
e. Department of Environment	5	4	3	2	1	_ v286

IF D IS 1 SKIP TO 101

P 1,2
What do you think the duties of the Wildlife Division are? _ v287

P 1,2
you think the Wildlife Division should change in any way? Yes 1. No 2. Don't Know 3. _ v288

P 1,2
IF YES, in what ways? _ v289

P 1,2
Do you think the Wildlife Regulations should change in any way? Yes 1. No 2. _ v290

P 1,2
IF YES in what ways? _ v291

P 1,2
Do you think Wildlife Regulations are well enforced ?
Yes 1. No 2. _ v292

P 1,2
If not, why not ? _ v293

P 2
What do you think the Wildlife Division should concentrate on?:
(Yes 1., No 2.)

1. improving wildlife protection _ v294
2. improving wildlife management _ v295
3. wildlife studies _ v296
4. public education _ v297
5. habitat protection _ v298
6. rare animals and plants _ v299
7. other _____ _ v300

P 2
What kinds of wildlife should the Wildlife Division work on:

1. moose _ v301
2. caribou _ v302
3. bears _ v303
4. wolves _ v304
5. rabbits _ v305
6. endangered species _ v306
7. eagles, hawks, owls _ v307
8. beavers, otter, muskrat, mink _ v308
9. foxes _ v309
10. lynx _ v310
11. seabirds _ v311
12. songbirds _ v312
13. insects _ v313

P 1,2
Do you think poaching is a common occurrence in Newfoundland/Labrador?

Very Common 5 4 3 2 1 None at All _ v314

P 1,2
Do you think poaching occurs around where you live?
Yes 1. No 2. Don't Know 3. _ v315

P 1,2
Why do you think people poach? (Yes 1., No 2)
_ v316
_ v317
_ v318
_ v319

P 2
If there was a way to report poachers so you weren't identified in any way would you report poaching if you saw it occur? Yes 1. No 2. _ v320

P 2
IF NO why not? _ v321

P 1,2
How much of a problem do you think littering is in Newfoundland as a whole?
Big Problem No Problem
1 2 3 4 5 _ v322
IF 4 or 5 SKIP TO 108

P 1,2
(IF 1,2,or 3) What do you think can be done to reduce this littering problem? _ v323

P 1,2
If government were to set aside special areas to preserve as Wilderness then which of the following activities do you think should be allowed there (Yes 1., No 2.)

1. hiking/skiing _ v324
2. hunting _ v325
3. cabin building _ v326
4. canoeing _ v327
5. trouting _ v328
6. logging _ v329
7. off-road vehicles _ v330
8. roads _ v331
9. motor boats _ v332
10. mining _ v333
11. snowmobiles _ v334
12. hydro-development _ v335
13. trapping/snaring _ v336

P 1,2
Are you aware of any government designated Wilderness Areas?
a. Yes 1. No 2. _ v337
b. IF YES Which one(s)? _ v338

P 1,2
Would you like to see Wilderness Areas established in any particular areas of this province (Nfld. and Labrador)?
a. Yes 1. No 2. _ v339
b. IF YES, where? _ v340

P 1,2
Many unsettled areas of Newfoundland and Labrador are not easily accessible to people.
Do you think these areas should remain this inaccessible?
Yes 1. No 2. Some should 3. No opinion 4. _ v341

P 1,2
Why? _ v342

P 1,2
Do you think Hydro development access roads should be closed to the public after the project is completed ?
Yes 1. No 2. _ v343

P 1
Have you ever heard of the Avalon Wilderness Area?
Yes = 1, No = 2 __ v344

P 1
One of the reasons it was created was to protect the caribou living on the Avalon Peninsula. Do you think it has succeded in its purpose?
Yes = 1, No = 2, Don't Know = 3, Partly = 4 _ v345

P 1
What do you feel are the benefits of the AWA to the public?
1. improved educational opportunities
2. opening up the wilderness area
3. better access to wildlife
4. increased income to community (tourism)
5. don't know
6. other
7. none _ v346

P 1
Do you think the AWA should be kept as a wilderness area?
Yes = 1, No = 2, Don't Know = 3 _ v347

P 1
Why? _ v348

P 1
What do you think would happen to the caribou herd if the AWA ceased to exist? _ v349

P 1
Some fishermen claim substantial economic loss because whales are ruining their nets. Which method do you think would best correct this situation?:
1. kill as many whales as possible
2. kill only those whales who come too close to nets
3. devise an alarm system to warn them away from nets
4. government compensation (whale damage insurance)
5. accept loss of nets as an uncontrollable hazard of nature like storms _ v350

P 1,2
Now I would like your personal opinion about the following statements

	Strongly Agree				Strongly Disagree	
a. Pollution is a world-wide problem	1	2	3	4	5	_ v351
b. I am less concerned about pollution problems now than I was a year ago	1	2	3	4	5	_ v352
c. Air and water pollution are a risk to the average person's health	1	2	3	4	5	_ v353
d. Environmental protection is more important than economic growth	1	2	3	4	5	_ v354
e. Protecting the environment is so important that continuing improvements must be made regardless of cost	1	2	3	4	5	_ v355
f. Provincial Environmental legislation is too tough	1	2	3	4	5	_ v356
g. Environmental controls would reduce the number of jobs in the oil industry	1	2	3	4	5	_ v357
h. Beverage companies and consumers should have to use returnable bottles and cans	1	2	3	4	5	_ v358

	Strongly Agree				Strongly Disagree	
i. When the provincial Ministry of Environment tells me a chemical is safe, I believe them	1	2	3	4	5	_ v359
j. The average person really cannot do very much to help improve the environment	1	2	3	4	5	_ v360
k. Wilderness should not be accessible by roads	1	2	3	4	5	_ v361
l. Environmental standards should be relaxed in order to encourage oil and gas exploration	1	2	3	4	5	_ v362

P 1,2
Have you ever heard or read of acid rain?
Yes 1. No 2. IF NO SKIP TO 121 _ v363

P 1,2
Where did you hear/read most about it?

1. newspapers	_ v364
2. TV	_ v365
3. radio	_ v366
4. magazines	_ v367
5. books	_ v368
6. school/university	_ v369
7. other people	_ v370
8. technical reports	_ v371
9. mailed pamphlets	_ v372
10. public meetings	_ v373

P 1,2
What part of Canada (including Newfoundland and Labrador) do you think has the worst acid rain problems?

1. West coast of Canada
2. Prairies
3. Ontario
4. Quebec
5. Maritimes
6. Newfoundland and Labrador
7. Don't know
8. 3 to 6
9. 3 + 4

_ v374

P 1,2
Who or what do you think causes most of the acid rain problem? _ v375

P 1,2
What do you think an average person can do to help reduce acid rain? _ v376
_ v377

P 1
How much of a problem do you think acid rain is in Newfoundland and Labrador right now?
1. a very serious problem
2. a small problem
3. not a problem
4. no opinion _ v378

P 1,2
How much do you think salmon are affected by acid rain?
Alot Not at All Don't Know
6 5 4 3 2 1 _ v379

NOW we're going to talk a little bit about oil development:

P 1
Do you think the advantages of offshore oil development _ v380
outweigh the disadvantages? _ v381
Yes 1. No 2. No Opinion 3. _ v382

P1
What are the disadvantages? _ v383
_ v384
_ v385

P 1,2
Do you think the advantages of offshore oil development outweigh the disadvantages?
Yes = 1, No = 2, No Opinion = 3 _ v386

P 1
If there was an oil spill who should clean it up?
1. international oil companies
2. Canadian oil companies
3. federal government
4. Newfoundland government
5. whoever made the spill
6. whoever is making a profit
7. all of the above
8. 1 + 2
9. 3 + 4
10. 3,4,5 + 6
11. 5 + 6
12. not sure _ v387

P 1,2
How much of an effect do you think an oil spill would have on the fishery in the area where the spill occurs
Wipe out all Fish No Effect
6 5 4 3 2 1 _ v388

P 1,2
How much of an effect do you think an oil spill would have on the seabirds in the spill area?
Completely Wipe it out No Effect
6 5 4 3 2 1 __ v389

P 1
Have you heard of the Newfoundland Spruce Budworm Spray Program?
Yes = 1, No = 2 _ v390

P 1
Where did you hear most about it?
1. TV _ v391
2. newspaper _ v392
3. books _ v393
4. other people _ v394
5. radio _ v395
6. magazines _ v396
7. school/university _ v397
8. technical reports _ v398

P 1
Do you think the program should continue?
Yes = 1, No = 2 _ v399

P 1
Do you think this Program is necessary to save Newfoundland's forests? Yes = 1, No = 2 _ v400

P 1
Do you think there are any adverse effects of spraying on people?
Yes = 1, No = 2 _ v401

P 1
Do you think there are adverse effects of the spraying on the environment? Yes = 1, No = 2 _ v402

P 1
Would you mind if spraying occurred where you live?
Yes = 1, No = 2 Don't Know = 3 _ v403

P 1
Do you think there should be more public say on whether the spray program should continue?
Yes = 1, No = 2 _ v404

P 1
What is your opinion of the annual Newfoundland seal hunt?

Strongly Disfavour	Disfavour	Neutral	Favour	Strongly Favour
1	2	3	4	5

_ v405

P 1
Do you or have you ever participate(d) in the seal hunt?
Yes = 1, No =2 _ v406

P 1
Have any of your friends or family participated?
a. family Yes = 1, No = 2, Don't Know = 3 _ v407
b. friends Yes = 1, No = 2, Don't Know = 3 _ v408

P 1
What is you opinion of the anti-seal hunt movement?

Strongly Disapprove	Disapprove	Neutral	Approve	Strongly Approve
1	2	3	4	5

_ v409

P 1
Do you think the seal hunts are being properly managed?
Yes = 1, No = 2, No Opinion = 3 _ v410

The following questions are about pets, livestock and wild animals:

P 1,2
Do you or have you personally owned any pets ?
(excluding horses)
Yes 1. No 2. IF NO SKIP TO 127 _ v411

P 1,2
What kinds? _ v412
_ v413
_ v414

P 1,2
In general what was your main reason for owning a pet ?
1. Good for family and children _ v415
2. Sport or show
3. Companionship and affection
4. Beauty of the animal
5. Work
6. Profit
7. Protection
8. Breeding
9. Gift from someone
10. Like animals in general
11. Other (specify)

P 1,2
Have you ever had a wild animal as a pet ?
Yes 1. No 2. IF NO SKIP TO 129 _ v416

P 1,2
What kind was it ? _ v417

P 1
Do you or have you ever owned a horse?
Yes = 1, No = 2 _ v418

P 1
What were the most important reasons for owning a horse?
1. beauty of animal
2. sport or show
3. profit
4. companionship and affection
5. recreational riding
6. work
7. to get close to nature
8. good for family and children
9. breeding
10. other _ v419

P 1,2
Do you or have you ever raised livestock ?
Yes 1. No 2. IF NO SKIP TO 131 _ v420

P 1,2
What kind of livestock did (do) you raise?
What did (do) you raise them for?

	Raise for own Use	Commercial	Other	
a.Cattle	1	2	3	_ v421
b.Poultry	1	2	3	_ v422
c.Sheep or lambs	1	2	3	_ v423
d.Pigs	1	2	3	_ v424
e.Goats	1	2	3	_ v425
f.Rabbits	1	2	3	_ v426
g.Horses	1	2	3	_ v427

P 1
Do/Did your parents ever hunt regularly?
Yes = 1, No = 2 Dont't Know = 3
1. mother _ v428
2. father _ v429

P 1
Did/Do either of your parents watch or feed birds as a regular activity?
Yes = 1 No = 2 Don't Know = 3
1. mother _ v430
2. father _ v431

P 1
Did/Do either of your parents trap of snare wild animals?
Yes = 1 No = 2 Don't Know = 3
1. mother _ v432
2. father _ v433

P 1
Did/Do either of your parents ever work in an animal-related profession, such as raising livestock or breeding dogs?
Yes = 1 No = 2 Don't Know = 3
1. mother _ v434
2. father _ v435

P 1
Did/Do any of your relatives:
1. commercial fish
2. sport fish
3. none of the above (didn't fish)
4. 1 and 2 _ v436

DEMOGRAPHICS:

* P 1,2

Could I have your age please?

1. 18-20
2. 21-30
3. 31-40
4. 41-50
5. 51-60
6. 61-70
7. over 70

_ v437 _

P 1,2

What is your present marital status:

1. never married
2. married
3. cohabiting
4. separated/divorced
5. widowed

_ v438

P 1,2

How many children do you have between the ages of :

Number of Children	0	1	2	3	4	5	
0 - 5 years	_	_	_	_	_	_	_ v439
6 - 10 years	_	_	_	_	_	_	_ v440
11 - 18 years	_	_	_	_	_	_	_ v441
over 18 years	_	_	_	_	_	_	_ v442

P 1,2

How many people live as a part of your family in your home?

___/people _ v443

* P 1,2

What was the last grade or level in school you completed?

1. 0 - 5 grade
2. 6 - 8 grade
3. 9 - 11 grade
4. 12 - 13 grade
5. technical or vocational school
6. some university}
7. university complete}
8. some graduate}
9. Master's degree}
10. PhD degree}
11. Law or medical degree

_ v444

b.

IF 5. to 11. THEN what was your major: _ v445

P 1,2
Do you rent or own your own home
1. rent
2. own _ v446
3. live with parents

P 1,2
Which of the following best describes your permanent residence?:
1. Detached home
2. Semi-detached home (Duplex) _ v447
3. Rowhouse
4. Hi-rise apartment (over 4 floors)
5. Low-rise apartment
6. Other (specify)

P 1,2
INTERVIEWER: WRITE DOWN OCCUPATION AS WELL AS CATEGORY
Please indicate the type of occupation you work at from the list of categories below. If you are not sure where to place your occupation check the category "Other" and specify what it is (ie. the title of your job and what you do most at work.) _ v448
1. Clerical and General Office Work _____ OCCUPATION
   (typing, telephone receptionist, filing, book-keeping etc)
2. Sales Occupations
   (selling insurance, cars, clothes, etc)
3. Service Occupations
   (police, bartending, floor cleaning etc)
4. Farming, fishing, mining, forestry
5. Manual labourer
   (construction, freight, packagers, etc)
6. Skilled and semi-skilled trades
   (assembly-line, electrician etc.)
7. Transportation occupations
   (truck driver, pilot, stewardess, etc)
8. First level supervisor
   (foreman, etc.)
9. Teaching
   (school teacher, safety trainer, driving instructors etc)
10. Scientific and Technical
   (doctor, nurse, civil engineer, etc)
11. Social and Artistic
   (social worker, lawyer, economist, writer, artist etc)
12. Executive, managerial and related
   (accountants, bank managers, personnel managers, etc)
13. Housewife
14. Retired
15. Unemployed
16. Other ____

P 1,2
IF 13,14,15 WHAT DID YOU DO BEFORE? _ v449

P 1,2
Would you give me the letter of the group which represents the total annual income, before taxes, of your household:
1. under 4,999
2. 5,000 - 9,999
3. 10,000 - 14,999
4. 15,000 - 19,999 _ v450
5. 20,000 - 24,999
6. 25,000 - 34,999
7. 35,000 - 49,999
8. 50,000 - 99,999
9. 100,000 and over
10. don't know
11. refused to answer

P 1,2
Where were you born:
1. Newfoundland
2. Labrador _ v451
3. other (specify)

P 1,2
How long have you lived in this community? _ v452
(98 = all life)

P 1,2
Where did you live before?
Specify the community if in Newfoundland, otherwise specify province. If outside Canada, specify country. _ v453

P 1,2
Where were your parents born?
Specify the community if in Newfoundland, otherwise specify province. If outside Canada, specify country.
a. Mother _ v454
b. Father _ v455

P 1,2
How often do you generally attend religious services?
1. More than once a week
2. Once a week
3. 2 - 3 times a month
4. Once every 2 - 3 months _ v456
5. Once or twice a year
6. Rarely
7. Never

P 1,2
How strongly do you feel about your religious beliefs?
1. Very strongly
2. Strongly
3. Moderately
4. Not strongly
5. Don't Know

_ v457

Comments:

APPENDIX B
TOWNS AND NUMBER INTERVIEWED PER TOWN

Appendix B
Towns and Number Interviewed per Town

Stratum	Number Interviewed	Town and Map Position	Enumeration Area (EA)	Number Interviewed
1	119	1 Thornlea	001-201	6
		2 Islington	001-163	6
		3 Perry's Cove	001-103	6
		4 Renews	007-070	6
		5 New Bridge	007-052	6
		6 Colinet	007-075	6
		7 Southeast Bight	002-010	6
		8 English Harbour East	002-173	3
		9 Dawson's Cove	002-168	4
		10 Flat Bay	005-009	6
		11 Nicholsville	005-208	3
		12 Gillams	005-162	4
		13 St. Brendan's	003-014	5
		14 Hillview	001-208	5
		15 Upper Amherst Cove	001-305	5
		16 Island Harbour	003-161	5
		17 Rodgers Cove	003-252	5
		18 Little Harbour	003-210	5
		19 Phillip's Head	003-355	5
		20 Wi[illegible]ondale	005-213	6
		21 Port Saunders	005-216	6
		22 Nameless Cove	005-266	5
		23 Paradise River	004-202	5
2	62	24 Witless Bay	007-103	5
		25 Marysvale	006-004	4
		26 Norman's Cove	001-173	5
		27 Winterton	001-154	5
		28 Brigus	001-002	5
		29 Garnish	002-069	3
		30 Milltown	002-170	5
		31 Port au Port	005-055	3
		32 Hampden	004-131	[illegible]
		33 Musgravetown	001-270	[illegible]
		34 Trinity	001-253	4
		35 Pilley's Island	003-366	5
		36 Carmanville	003-158	5
		37 Churchill Falls	004-253	3

Note.
Stratum 1 = 1-499 people Stratum 2 = 500-999 people
Stratum 3 = 1000-2999 people Stratum 4 = 3000-4999 people
Stratum 5 = 5000-10999 people Stratum 6 = > 11000 people

continued ...

Stratum	Number Interviewed	Town and Map Position	Enumeration Area (EA)	Number Interviewed
3	86	38 Trepassey	007-067	4
		39 Arnold's Cove	001-022	4
		40 Portugal Cove	006-220	4
		41 Victoria	001-104	4
		42 Upper Island Cove	001-064	4
		43 Placentia	007-013	4
		44 Harbour Grace	001-065	5
		45 St. Lawrence	002-102	4
		46 Fortune	002-114	4
		47 St. Albans	002-209	4
		48 Isle aux Morts	002-257	4
		49 Kippens	005-053	5
		50 Stephenville Crossing	005-020	4
		51 Benoit's Cove	005-177	4
		52 Badger	004-064	3
		53 Norris Arm	003-305	3
		54 Hare Bay	003-057	6
		55 Shoal Harbour	007-007	5
		56 Baie Verte	002-126	6
		57 Durrell	003-215	5
4	48	58 Kilbride	007-123	4
		59 Bay Roberts	001-015	6
		60 Goulds	007-121	4
		61 Wabana	006-219	4
		62 Grand Bank	002-116	4
		63 Deer Lake	005-204	4
		64 Bishop's Falls	003-309	4
		65 Botwood	003-316	4
		66 Bonavista	001-318	4
		67 Lewisporte	003-067	3
		68 Springdale	004-074	4
		69 Wabush	004-260	3
5	73	70 Carbonear	001-073	6
		71 Conception Bay South	006-024	4
			006-057	3
			006-059	3
		72 Mount Pearl	007-223	3
			007-226	4
		73 Marystown	002-066	5
		74 Stephenville	005-057	3
			005-062	3
			005-023	3
		75 Gander	003-114	3
			003-119	3

continued ...

Stratum Number	Number Interviewed	Town and Map Position	Enumeration Area (EA)	Number Interviewed
		75 Gander	003-117	3
		76 Grand Falls	004-012	3
			004-003	4
		77 Windsor	004-015	3
			004-013	4
		78 Happy-Valley Goose Bay	004-211	2
			004-216	3
			004-209	2
		79 Port aux Basques	002-261	6
6	112	80 St. John's	006-113	6
			006-117	6
			006-163	5
			006-164	6
			006-165	6
			006-167	6
			007-106	5
			007-152	5
			007-153	5
		80 St. John's	007-155	5
			007-161	5
			007-172	6
			007-176	6
			007-217	6
		81 Corner Brook	005-119	6
			005-112	5
			005-103	6
			005-118	6
		82 Labrador City	004-272	6
			004-262	5

APPENDIX C
GENERAL INTERVIEWING INSTRUCTIONS

Appendix C

General Interviewing Instructions:

In conducting surveys attention must be paid to data-gathering techniques - in this case the personal interview. As well, a well-defined methodology for interviewing must be developed to minimize the effect of bias. For this study, responses to questions will be used as indirect indicators of attitudes toward wildlife and environmental issues.

Your responsibilities to the study and your duties as an interviewer are:

1. to clearly communicate the question
2. to detect and correct any misunderstandings the respondent may have of the questions
3. to guide the respondent to keep on the topic
4. to maximize flow of information by:
   a) modifying your own verbal and nonverbal behavior
   b) communicating positive attitudes toward the interview, the questionnaire, the respondent and the respondent's co-operation
5. to emphasize to the respondent how important he/she is to the survey
6. to record answers clearly and completely
7. to follow the sampling and interviewing instructions. If you have ANY questions call the project leader collect (Bonny Hill - office: 737-8496, leave message and I'll get back to you home: 834-8309)
8. do not fictionalize the responses
9. do not bias the responses:
   ie.: by tone of voice, gestures or facial expression. Learn to control the expression of your own attitudes
10. report to the project leader possible invalidities in the interview or sampling procedures

Your responsibilities to the respondent are:

1. to stress voluntary participation
2. to minimize refusal rates by choosing a time that is most convenient for you and the respondent. Interviews may start as early as 9:00 AM and as late as 9:30 PM. Avoid interviewing at mealtimes and use of unnecessary interviewing time. Offer to come back a second time to complete the interview; you may have to set set up an appointment for another day.
3. anonymity and confidentiality should be guaranteed so there is no possibility of the information being used against the respondent. A telephone number and the respondent's first name are only requested for spot checks of the interview's authenticity

4. do not deceive the respondent, just give the general explanation of the study (found at the beginning of the questionnaire). If the respondent wants more details or information concerning study results ask them to contact the project leader at Psychology Department, Memorial University

It is conceivable that you may spend the first day in the area without actually finishing an interview. However, the time has been well spent if you've managed to get appointments for later in the week or information on the best time for callbacks for those who were not at home. This type of field activity is unavoidable and necessary for getting the job done; and it requires as much skill and resourcefulness as the interview itself.

When you're face-to-face with the respondent there is a critical point of getting the respondent to agree to an interview. This depends on your power of verbal persuasion and your ability to cope with verbal resistance (see examples of stock answers to respondents - Figure 1).

Gaining access to the appropriate respondent is critical for valid study results.

You should be neatly dressed and well groomed with a neutral appearance.

INTERVIEW STRUCTURE:

A. INTERVIEW PREPARATION:

Read over the reasons for the study, respondent selection and interview instructions and the questionnaire. Become familiar with the question skipping pattern in the questionnaire. Be comfortable with your introduction and preliminary explanation of what you're doing at the respondent's door. Plan your method of recording the interview.

B. INTRODUCTION:

Give your name, your purpose for being there, what the survey is about, who it is for and why and how the respondent was selected. If the respondent does not have time for the interview or claims not to know anything about the survey subject explain that he/she was selected by an impartial sampling procedure; and, that it is necessary to obtain the points of view of everyone in the sample including people who are busy or who do not have time to be familiar with the topics. If the person is still not willing, offer to come back later. If you are still refused thank them very much for their time and say goodbye.

What you should say...

1. IF THE RESPONDENT ASKS:" Who is doing this survey?"
   "This survey is being conducted by the Research Division of Model State University. We are trying to get some idea about what people what people think about current issues in Model City."
2. IF THE RESPONDENT PRESSES FOR A BETTER ANSWER ON AUSPICES:
   "Well... I'm a professional interviewer. The people in charge of this survey are at the Research Division at Model State University. They'd be glad to explain the survey to you. Would you like their phone number so you could call them?" (If "Yes", give the number).
3. IF RESPONDENT WONDERS WHY HE IS BEING INTERVIEWED, OR SUGGESTS INTERVIEWING SOMEONE ELSE:
   "You were selected completely by chance according to procedures worked out by my office. So your opinions are important and interviewing someone else wouldn't be as good."
4. IF RESPONDENT SAYS HE DOESN'T HAVE TIME TO BE INTERVIEWED:
   "The questions won't take long. You can go right on with your work and I'll just run through these items."
5. IF RESPONDENT INSISTS HE IS TOO BUSY:
   "What would be a better time soon for me to come back? I'll note down an appointment that would be more convenient for you."
6. IF RESPONDENT SAYS HE DOESN'T KNOW ENOUGH TO GIVE GOOD ANSWERS:
   " In this survey, it's not what you know that counts. Rather, it's what you happen to think about various topics that is important."
7. IF RESPONDENT IS AFRAID TO ANSWER SOME QUESTION OR ASKS: "What are you going to do with these answers?" or "Why do you want to know that?":
   "Well... many people are being asked these same question, of course, and what you say is confidential. We are interested in these question only to see what a lot of people in Model City generally are thinking about."
8. IF RESPONDENT RESENTS QUESTIONS THAT TALK DOWN TO HIM:
   "the people in my office made up these questions, and we are instructed to read each one just as it is written."
9. IF RESPONDENT IS ANNOYED AND JUST PLAIN REFUSES TO ANSWER A QUESTION:
   "Of course, you don't have to answer any question you'd prefer not to. I'm only trying to get your opinion because our study is more accurate that way." Then if respondent still refuses, don't comment, just go on quickly to the next question. Mark the item "Refused".

Figure 1. Example of Stock Answers to Respondents * Note. From Survey Research by Backstrom and Hursh, 1963,

C. THE INTERVIEW:

Now that you're in the respondent's house maintain a neutral distance from your respondent. You do not want to appear too pushy or aggressive by standing or sitting too close. Nor do you want to be so far away that the interviewer-respondent relationship cannot be established. Pace your questions so the respondent has enough time to think about and answer the question. Do not interrupt the respondent verbally or psychologically (for example: by flipping the page to the next question before the respondent is finished answering the last question). Communicate your interest in the topics and the respondent will be more interested as well. Do not judge your respondent's answers but be interested and appreciative of his/her efforts.

Read the introduction paragraph and ALL the questions aloud to the respondent. This will alleviate any problems or embarrassment which might arise if, for example, the respondent can't read.

Record answers and comments on the answer sheet in the spaces provided. Record the telephone number and first name of the respondent on the top right hand corner of the first page of the answer sheet.

I. RESPONDENT SELECTION:

A respondent is anyone of the appropriate sex who is 18 years or older and who has the next birthday.

See specific Enumeration Area instructions (Part V)

II. CALLBACKS:

Two callbacks are required if the respondent is unavailable at the first contact attempt. If, at the end of two callbacks, that person is still unavailable for interviewing go to the next house selected by using the house interval calculated for that Enumeration Area (found at the top left side of the Enumeration Area Instructions). If you find that the respondent is away and will not be back until well after you have finished all the interviews in the area go to another house (again using the house interval specified for the Enumeration Area).

III. REFUSALS:

If the selected respondent refuses go to the next house selected by using the house interval for that Enumeration Area.

Record the number of refusals, callbacks and absenteeism in the space provided at the top of the Enumeration Area instructions.

IV. APARTMENTS:

A. BASEMENT APARTMENTS:

Randomly select the main house or the apartment. Then for the next house with a basement apartment chose the household type (ie. main house or basement apartment) that was not chosen last time.

B. APARTMENT BLOCKS:

Treat one apartment block like a city block and follow the directions for the household selection.

V.

Maps of Enumeration Areas are from the 1976 Census so they may be slightly out of date. Just keep to the appropriate side of the road and follow it around the designated block or around the town. The maps will show the block numbers, starting point and direction of counting for house intervals.

See Figure 2 for an example of enumeration area instructions and map.

NUMBER OF REFUSALS ____
NUMBER OF CALLBACKS ____
NUMBER NOT AT HOME AFTER 2 CALLBACKS ____

TOWN - Churchill Falls
ENUMERATION AREA - 004-253
NUMBER TO BE SURVEYED - 3 (2 FEMALES, 1 MALE)
HOUSE INTERVAL - 2

BLOCK ONE (1)
- survey a male in the 2nd house from the indicated corner of A. P. Low Street and Ossokmanuan Street going in the direction shown
- continue on this block using the specified house interval until a male is interviewed

BLOCK TWO (2)
- survey a female in the 2nd house from the indicated corner of John McLean Street going in the direction shown
- continue on this block using the specified house interval until a female is interviewed

BLOCK THREE (3)
- survey a female in the 2nd house from the indicated corner of Frissell Street Ossokmanuan Street going in the direction shown
- continue on this block using the specified house interval until a female is interviewed

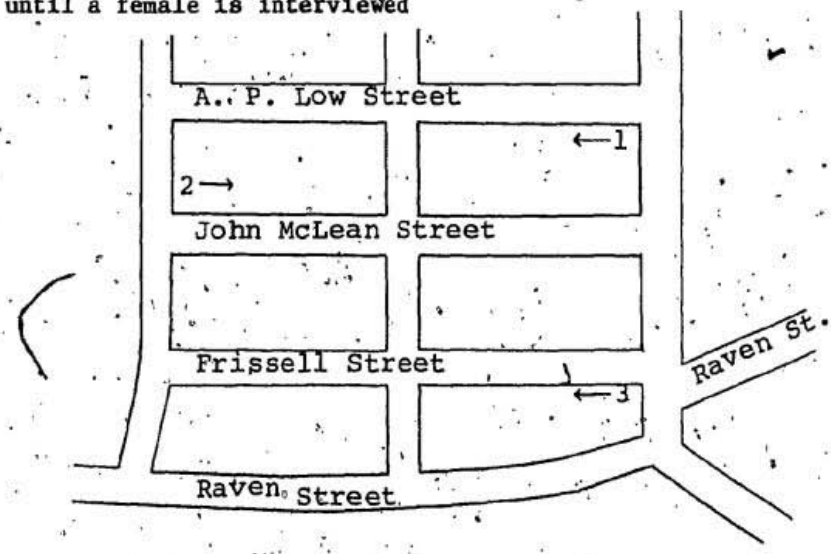

Figure 2. Sample of Enumeration Area Instructions and Map

SUMMARY OF INSTRUCTIONS TO AVALON INTERVIEWERS:

1. Read over instructions to familiarize yourself with everything in the package. If you have any questions PLEASE CALL ME OR COME SEE ME.

2. Keep records of your mileage.

3. Make sure everything is completed for each questionnaire and at the top of the Enumeration Area instruction form..

4. When all the interviews are completed pack everything up (questionnaires, maps, Enumeration Area Instruction, general interviewing instructions, and your expenses receipts and tally of mileage) and bring it to me or mail it back to me.

5. As soon as I receive your packages you will be paid.

SUMMARY OF INSTRUCTIONS TO PROVINCIAL INTERVIEWERS:

1. Read over instructions to familiarize yourself with everything in the package. If you have any questions PLEASE CALL ME COLLECT (don't write, it takes too long).

2. Keep receipts of lunch and records of your mileage.

3. Make sure everything is completed for each questionnaire and at the top of the Enumeration Area instruction form.

4. When all the interviews are completed, pack everything up (questionnaires, maps, Enumeration Area Instructions, general interviewing instructions, and your expenses receipts and tally of mileage) and send it to me.

5. I'll be mailing your pay and expenses money (including postage) as soon as I receive your packages.

APPENDIX D
REFUSAL RATES OF TOWNS

Appendix D
Refusal Rates of Towns

Town	EA	Number Interviewed	Number Refusals	Number Callbacks	Sex Ratio F : M
Thornlea	001-201	6	0	0	3 : 3
Islington	001-163	6	0	0	3 : 3
Perry's Cove	001-103	6	0	0	3 : 3
Renews	007-070	6	0	1	3 : 3
New Bridge	007-052	6	1	0	3 : 3
Colinet	007-075	6	1	0	3 : 3
Southeast Bight	002-010	6	3	0	3 : 3
English Harbour East	002-173	3	0	2	2 : 1
Dawson's Cove	002-168	4	1	0	2 : 2
Flat Bay	005-009	6	0	2	3 : 3
Nicholsville	005-208	3 TS	0 TR	1 TC	2 : 1
Gillams	005-162	4 119	0 7	0 24	2 : 2
St. Brendan's	003-014	5	0	0	3 : 2
Hillview	001-208	5	0	0	2 : 3
Upper Amherst Cove	001-305	5	0	0	2 : 3
Island Harbour	003-161	5	0	3	2 : 3
Rodgers Cove	003-252	5	0	2	2 : 3
Little Harbour	003-210	5	0	2	2 : 3
Phillips Head	003-355	5	0	0	3 : 2
Wiltondale	005-213	6	0	3	3 : 3
Port Saunders	005-261	6	0	2	3 : 3
Nameless Cove	005-266	5	0	6	2 : 3
Paradise River	004-202	5	1	0	3 : 2
Witless Bay	007-103	5	0	2	3 : 2
Marysvale	006-004	4	0	0	2 : 2
Norman's Cove	001-173	5	1	0	3 : 2
Winterton	001-154	5	0	0	3 : 2
Brigus	001-002	5	2	0	2 : 3
Garnish	002-069	3	0	0	1 : 2
Milltown	002-170	5 TS	0 TR	0 TC	2 : 3
Port au Port	005-055	3 62	0 7	1 13	1 : 2
Hampden	004-131	5	2	6	3 : 2
Musgravetown	001-270	5	0	1	3 : 2
Trinity	001-253	4	1	0	2 : 2
Pilley's Island	003-366	5	0	3	2 : 3
Carmanville	003-158	5	1	0	2 : 3
Churchill Falls	004-253	3	0	0	2 : 1
Trepassey	007-067	4	0	0	2 : 2
Arnold's Cove	001-022	4	0	1	2 : 2
Portugal Cove	006-220	4	2	0	2 : 2

Note. TS = Total Surveyed/Stratum
TR = Total Refusals/Stratum
TC = Total Callbacks/Stratum

continued ...

Town	EA	Number Interviewed		Number Refusals		Number Callbacks		Sex Ratio F : M
Victoria	001-104	4		0		0		2 : 2
Upper Island Cove	001-064	4		0		0		2 : 2
Placentia	007-013	4		2		0		2 : 2
Harbour Grace	001-065	5	TS	1	TR	0	TC	2 : 3
St Lawrence	002-102	4	86	5	16	1	27	2 : 2
Fortune	002-114	4		3		4		2 : 2
St. Albans	002-208	4		0		0		2 : 2
Isle aux Morts	002-257	4		1		5		2 : 2
Kippens	005-053	5		0		2		3 : 2
Stephenville Crossing	005-020	4		0		3		2 : 2
Benoit's Cove	005-177	4		0		2		2 : 2
Badger	004-064	3		1		5		2 : 1
Norris Arm	003-305	3		1		0		2 : 1
Hare Bay	003-057	6		0		0		3 : 3
Shoal Harbour	007-007	5		0		0		2 : 3
Baie Verte	004-126	6		0		0		3 : 3
Durrell	003-215	5		0		4		3 : 2
Kilbride	007-123	4		0		2		2 : 2
Bay Roberts	001-015	6		0		0		3 : 3
Goulds	007-121	4		0		0		2 : 2
Wabana	006-219	4		2		0		2 : 2
Grand Bank	002-116	4		6		6		2 : 2
Deer Lake	005-204	4	TS	0	TR	2	TC	2 : 2
Bishop's Falls	003-309	4	48	0	11	2	13	2 : 2
Botwood	003-316	4		2		0		2 : 2
Bonavista	001-318	4		0		0		2 : 2
Lewisporte	003-267	3		0		0		1 : 2
Springdale	004-074	4		0		1		2 : 2
Wabush	004-261	3		1		0		2 : 1
Carbonear	001-073	6		0		0		3 : 3
Conception Bay South	006-024	4		1		1		2 : 2
	006-057	3		0		0		1 : 2
	006-059	3		0		0		1 : 2
Mount Pearl	007-226	4		0		3		2 : 2
	007-223	3		1		6		2 : 1
Marystown	002-066	3		2		3		2 : 3
Stephenville	005-057	3	TS	0	TR	0	TC	1 : 2
	005-023	3	73	1	9	1	37	2 : 1
	005-062	3		0		0		2 : 1
Grand Falls	004-003	4		0		3		2 : 2
	004-012	3		1		9		2 : 1
Windsor	004-013	4		1		2		2 : 2
	004-015	3		0		0		1 : 2
Happy Valley-Goose Bay	004-209	2		0		2		1 : 1
	004-211	2		0		0		1 : 1

continued ...

Town	EA	Number Interviewed		Number Refusals		Number Callbacks		Sex Ratio F : M
Happy Valley-Goose Bay	004-216	3		0		1		1 : 2
Gander	003-119	3		1		1		2 : 1
	003-114	3		1		0		1 : 2
	003-117	3		0		1		2 : 1
Port aux Basques	002-261	6		0		4		3 : 3
St. John's	006-113	6		1		4		3 : 3
	006-117	6		1		1		3 : 3
	006-163	5		0		1		2 : 3
	006-164	6		2		6		3 : 3
	006-165	6		2		9		3 : 3
	006-167	6		1		3		3 : 3
	007-106	5		1		7		2 : 3
	007-152	5	TS	2	TR	6	TC	3 : 2
	007-153	5	112	1	24	2	83	2 : 3
	007-155	5		1		1		3 : 2
	007-161	5		1		0		2 : 3
	007-172	6		1		3		3 : 3
	007-176	6		1		5		3 : 3
	007-217	6		3		5		3 : 3
Corner Brook	005-103	6		1		4		3 : 3
	005-112	5		2		2		3 : 2
	005-118	6		2		4		2 : 4
	005-119	6		0		5		3 : 3
Labrador City	004-262	5		0		2		3 : 2
	004-272	6		1		13		3 : 3
Total		500		74		197		250 : 250

APPENDIX E
MEAN RESPONSES AND STANDARD DEVIATIONS OF SCALE ITEMS

Scale Item	Mean	Standard Deviation
1. Utilitarian		
Whales should be hunted because they are too plentiful.	3.32	1.44
I think it is alright to kill an animal to make a fur coat as long as that animal is not endangered.	3.08	1.49
A dog trained at a task, like herding sheep, is generally a better dog than one owned just for companionship.	3.09	1.42
Love is an emotion which people should feel only for other people, not for animals.	3.95	1.29
I admire a person who works hard to shoot a big trophy animal like a 600 pound bear.	3.93	1.38
I see nothing wrong with using leghold traps to capture wild animals.	3.91	1.36
A person sometimes has to beat a horse or dog to get it to obey orders properly.	3.71	1.40
2. Urbanistic		
If I were going camping, I would rather stay in a modern campground than in an isolated spot where there might be wild animals around.	2.63	1.65
I am generally more interested in pet animals than wild animals.	2.82	1.44
Development of industry in Newfoundland should take priority over every thing else.	3.03	.46
Most large dogs are frightening.	2.56	1.60
3. Negativistic		
I dislike most beetles and spiders.	2.16	1.36
Rats and cockroaches should be eliminated.	1.97	1.33
I find most insects fascinating.	2.28	1.37
I would be afraid to touch a snake.	2.16	1.55
4. Scientistic		
I have little desire to study vertebrate zoology or population genetics.	2.30	1.38
I have little interest in learning about the taxonomic classification of animals.	2.54	1.31
5. Environmental Protectionistic		
Protecting the environment is so important that continuing improvements must be made regardless of cost.	3.64	1.12
Environmental protection is more important than economic growth.	3.33	1.06
Air and water pollution are a risk to the average person's health.	4.34	1.02

Scale Item	Mean	Standard Deviation
6. Ecologistic		
It is alright to kill whales for a useful product as long as these animals are not threatened by extinction.	4.01	1.21
Restrictions should be placed on the use of all-terrain vehicles and snowmobiles if they harm wild animals.	4.26	1.14
7. Economistic		
Environmental controls would reduce the number of jobs in the oil industry.	3.41	1.15
Provincial environmental legislation is too tough.	3.75	.46
Environmental standards should be relaxed in order to encourage oil and gas exploration.	3.59	1.54
8. Developmental		
If oil were discovered near the Witless Bay seabird colonies it would have to be developed even if it meant harm to the seabird colonies.	3.33	1.32
Offshore oil should be developed even if it harms Newfoundland fish and wildlife.	3.41	1.21
9. Altruistic		
Animals have emotions just the same as people do.	3.98	1.25
It is important for future generations that we look after our wildlife.	4.46	1.13

APPENDIX F
TOTAL VARIANCE AND BETA WEIGHTS OF REGRESSION EQUATIONS

F1. Factors with Demographic Characteristics

F2. Factors with Activities

F3. Activities with Demographic Characteristics

Fl. Factors with Demographic Characteristics
Knowl = Knowledge Res = Residence Educ = Education

Factor	Total Variance	Beta Weights Knowl	Sex	Age	Res	Educ
Utilitarian	.21	.14	.13	-.28	-.09	.20
Urbanistic	.15	.12	-.28	-.16	.07	.06
Negativistic	.13	.19	-.12	-.07	-.08	.18
Scientistic	.03	.03	-.09	-.09	.02	.09
Environmental Protectionistic	.05	.11	-.07	.13	-.01	.11
Ecologistic	.02	.00	-.02	.04	-.12	-.02
Economistic	.08	.06	-.06	.12	-.06	.25
Developmental	.02	-.03	-.10	-.03	.07	-.05
Altruistic	.03	-.08	-.04	-.04	-.14	-.08

F2. Factors with Activities

a. Nonconsumptive: Total Variance = .14

Factor	Beta Weight
Utilitarian	.07
Urbanistic	.17
Negativistic	.11
Scientistic	.17
Environmental Protectionistic	.04
Ecologistic	.02
Economistic	.21
Developmental	.06
Altruistic	.00

b. Consumptive: Total Variance = .16

Factor	Beta Weight
Utilitarian	-.17
Urbanistic	.34
Negativistic	-.01
Scientistic	.04
Environmental Protectionistic	.06
Ecologistic	-.13
Economistic	.12
Developmental	-.04
Altruistic	.04

F3. Activities with Demographic Characteristics
Res = Residence Educ = Education Knowl = Knowledge

Activity	Total Variance	Beta Weight Sex	Age	Res	Educ	Knowl
Consumptive	.32	-.57	-.10	.00	-.15	.00
Nonconsumptive	.13	.01	.09	-.11	.32	.12