BRITISH COLUMBIA SPECIES AT RISK
PUBLIC OPINION SURVEY
2008

FINAL TECHNICAL REPORT

H.W. Harshaw

Faculty of Forestry
University of British Columbia
Vancouver, British Columbia

April 30th 2008

Citation

Harshaw, H.W. (2008). *British Columbia Species at Risk Public Opinion Survey 2008: Final technical report*. Vancouver, BC: University of British Columbia Collaborative for Advanced Landscape Planning.

Acknowledgements

Funding for this project was provided by the Species at Risk Coordination Office in the Integrated Land Management Bureau at the British Columbia Ministry of Agriculture and Lands. Guidance and helpful suggestions were provided by Stephanie Hazlitt, Michiru Main, Pat Field, Kaaren Lewis, Mark Zacharias, Michele Patterson, Archie MacDonald, Kari Nelson, Dave Fraser, Liz Williams, Cameron Campbell, Rob Kozak, and Georgia Pomaki. This report represents the work of a dedicated and energetic team of researchers: Emily Meuser and Arne Moores at the Department of Biological Sciences, Simon Fraser University; and Adelle Airey, Wellington Spetic, and Denise Allen at the Faculty of Forestry, University of British Columbia. The research was coordinated by the Collaborative for Advanced Landscape Planning (CALP) at the University of British Columbia.

EXECUTIVE SUMMARY

The purpose of the *British Columbia Species at Risk Public Opinion Survey* was to inform Government about British Columbians' opinions and beliefs about the management, protection, and recovery of species at risk within the province. This report summarizes responses received from four regions of British Columbia: Vancouver Island/Lower Mainland (Development Regions 1 & 2), Coastal BC (Development Region 6), Southeastern BC (Development Regions 3 & 4), and Central-Northern BC (Development Regions 5, 7 & 8).

The survey instrument was a twelve-page booklet that contained questions which comprehensively measured people's attitudes and beliefs about a wide range of issues and challenges regarding hr protection and recovery of species at risk in British Columbia. The twelve questions that made up the survey were:

Question 1: Opinions and beliefs about how people relate to the environment;
Question 2: Opinion and beliefs about natural resource management issues in BC;
Question 3: Opinions about species at risk protection;
Question 4: Attitudes towards species at risk protection on private land in BC;
Question 5: Opinions about different approaches for protecting and recovering species at risk;
Question 6: Priorities and responsibilities for species at risk protection and recovery;
Question 7: Support for the protection and recovery of species at risk;
Question 8: Prioritizing spending for species at risk protection and recovery;
Question 9: Opinions about priorities for species at risk protection;
Question 10: Opinions about threats to species at risk;
Question 11: Experiences with outdoor recreation; and
Question 12: Demographics.

There was also space for respondents to provide general comments. Analysis of these comments is not provided here.

The delivery of the survey employed a four-contact approach in order to maximize the rate of return. The first contact letter was sent Tuesday, January 15th 2008; the final contact was sent January 31st 2008. Based on the population of British Columbia, the initial sample size was determined to be 770 people. A total of 555 responses were received by March 13th 2008. This represents a 72.8% response rate after correcting for undeliverable addresses (corrected sample size = 762); the number of current returns is sufficient to estimate a sample error of ±4.16% 19 times out of 20.

Respondents represented a range of ages, educational backgrounds, occupations, and household income levels. 50.5% of respondents were male and 49.5% were female. Generally, respondents were longstanding residents of their communities. Respondents were generally biocentric in their attitudes.

The issue of specie endangerment is one that resonates with British Columbians. This is reinforced by the high degree of concern and support expressed for both the protection and recovery of species at risk in the Province. This high degree of concern and support should be harnessed in efforts to encouraged all British Columbians to become involved in efforts to protect species at risk, as results indicate that there is a strong feeling that the public has a responsibility to become involved in efforts to protect and recover species at risk and their habitats. There was a high degree of support for the enforcement of federal species at risk legislation, and there was recognition that species at risk management is hierarchal, and that responsibility for this management is shared by many actors. Respondents were prepared to limit commercial resource use in the province to protect and recover species at risk. There was support for strategies to protect and recover species at risk protection on private land (*e.g.* compensation of private land owners who have been prevented from developing property). Respondents indicated the following prioritization of factors for the identification of species at risk in British Columbia to be protected and recovered:

1. Common species whose numbers are in rapid decline (this was second in the Coastal BC sample region);
2. Species only or mainly occurring in BC (this was first in the Coastal BC sample region);
3. The likelihood of the species being protected;
4. Species at risk in BC but common elsewhere (this was fifth in the Coastal BC sample region);
5. The costs associated with protecting the species (this was fourth in the Coastal BC sample region); and then
6. Species of cultural and traditional importance.

The three most common connections that respondents had to forested landscapes were non-motorized recreation, followed by the environment, and motorized recreation.

1. INTRODUCTION.

The management of species at risk of extinction is a critical component of addressing the sustainability of natural resources; it is a complex undertaking that involves ecological and social sciences, and policy-makers. Many of the arctic and boreal species that are at risk of extinction have the majority of their breeding ranges in Canada (Dunn *et al.,* 1999), and some have argued that due to diversity in typography, British Columbia may be the most biologically diverse province in Canada (Wood & Flahr, 2004). Yet many of these ecosystems, and the plants and animals that they support are at risk of loss or degradation. The issues that are affecting the management of species at risk include habitat loss (from fragmentation, alteration, or destruction), invasive species, and climate change; thus, habitat protection is a key component of species at risk protection and recovery (Scudder, 1999). The management of species at risk of extinction does not occur in a vacuum as commercial, political, and social pressures can exert significant pressure on resource managers (Mace & Hudson, 1999). There have been few studies of Canadian public opinion and attitudes toward species at risk or of potential implications of species at risk management; there have been even fewer studies examining the attitudes of British Columbians. This report documents a survey of the British Columbia public about their attitudes and beliefs about the protection and recovery of species at risk.

Policies governing species at risk authorize governments to protect and recover legally listed species. In Canada, governments are authorized to promote public preferences (Wood, 2006); once species are listed and potential management options are identified, particularly if a management action entails influencing public behaviour or has implications for a public resource, the public may have a role to play in identifying which management options are preferred. Thus, the purpose of surveys of public opinion, attitudes, and beliefs about species at risk is *not* to inform, review, or influence the listing of species at risk. Rather, the purpose of surveys of public opinion, attitudes and beliefs about species at risk is to inform options for their management, including the development of a framework to provide wildlife managers with tools to evaluate practices, planning, policies, and to guide the development of management strategies to achieve desired goals.

The role of public participation in regional land-use planning initiatives in British Columbia became formalized, first through the *Commission on Resources and the Environment* (CORE) process, which was initiated in 1992, and then through *Land and Resource Plans* (LRMPs) beginning in the late 1990s. This history of public engagement, coupled with an increasing concern about the environment, has created an expectation among British Columbians for opportunities to participate in decision-making for natural resources. Social context is an important consideration in policy analysis (Czech & Krausman, 1999); the management of publicly owned natural resources, such as plants and wildlife, depends on public acceptance; and public acceptance can define policy options that are available to managers. Thus, it is essential that sound social science information be integrated into policy-making (Zinn & Manfredo, 1998)

as “a holistic perspective that accounts for public preference and political reality will be more productive in the policy arena and thus for species conservation” (Czech *et al.*, 1998. p. 1109). However, it is important to recognize that the social context is dynamic; and monitoring social context can identify changes in public attitudes towards an issue and may indicate whether efforts to influence public opinion or change people’s behaviour have been effective.

Czech *et al*. (1999) suggest that “[s]pecies conservation is a function of public policy” (p. 1104). Although the identification of species at risk of extinction is a scientific determination, distinct from any social preference or perception (Green, 2005), it is social preferences that guide the success of management actions on Crown lands. Thus, “in reality, endangered species policy is as much a question of social choice as of biology” (Shogren *et al.*, 1999, p. 1258).

Jacobson & Decker (2006) note that the “degree to which an institution is considered legitimate to society depends on its consonance with societal laws, norms, and cultures” (p. 532), and conclude that

> the wildlife management institution emerged in a social context that has changed over time... if institutions are not able to connect to broad societal norms and values, it is likely that their legitimacy will be questioned by society... This is particularly true for institutions and organizations whose focus is management of public resources” (p. 534).

A further consideration is that the perceptions of the public and wildlife personnel can differ on some management actions: “natural resource managers are not always accurate in gauging public opinion and response to management decisions, even for those stakeholder groups with which they are most familiar” (Koval & Mertig , 2004, p. 233). Such disconnects between public and management perceptions may lead to conflicts or can increase the amount of time required to implement a management action.

The goal of the *BC Species at Risk Public Opinion Survey* was to design and conduct a poll to determine public attitudes, beliefs, and perceptions about species at risk issues in British Columbia. The primary objective of this research was to inform the development of a provincial species at risk policy framework. It is anticipated that the results will also inform public discourse on provincial wildlife management and provide government agencies, industry, environmental organizations, and the public an impartial perspective on which actions to move forward with for species at risk issues. The survey addresses the following issues:

1. Public preferences for species at risk (*e.g.* public priorities for species at risk protection, public preferences for species versus ecosystem protection).
2. Responsibilities and expectations for species at risk protection (*e.g.* public priorities for global *vs*. regional responsibilities for species at risk, public understanding of and enthusiasm for species at risk stewardship, and the publics’ views of industry and private landowners responsibilities for species at risk protection).

3. Tradeoffs associated with species at risk protection/recovery (*e.g.* public commitment for species at risk protection and recovery, and priorities for socio-economic factors versus conservation in species at risk decisions).
4. Actions for species at risk (*e.g.* determine public opinion of existing and past species at risk protection actions, the feasibility of various species at risk protection (i.e. recovery and management actions), such as predator management, and captive breeding).
5. Managing for uncertainty (*e.g.* public opinions on species at risk protection for species with insufficient data, public understanding of uncertainties like climate change, invasive species, *etc*. in relation to species at risk protection).

2. METHODS.

A mail-out questionnaire was delivered and administered to residents of British Columbia in order to solicit opinions and beliefs about species at risk management, protection, and recovery. The methods employed for questionnaire design, sample selection, survey delivery, and analyses follow.

2.1. Questionnaire Design.

The questionnaire employed in this study was developed using the principles of the Tailored Design Method (Salant & Dillman, 1994; Dillman, 2000), which identifies procedures to maximize survey return rates and minimize survey error, including questionnaire layout considerations. The identification of clear, concise research questions is important to focus the development of survey questions. It is also important that the resultant questionnaire be designed so that there is a logical flow of the questions, and that the wording of the questions and instructions to the respondents is clear, as brief as possible, and uncomplicated. However, some compromises among these elements are necessary to have a questionnaire that is both accessible to respondents and able to provide unbiased results.

A key requirement of the questionnaire was that it be suitable for delivery in multiple Development Regions in order that a better understanding of public opinion and beliefs about species at risk management, protection, and recovery could be fostered though the comparison of regional responses to questions. Working drafts of the questionnaire were reviewed by employees of the Species at Risk Coordination Office, the British Columbia Ministry of Environment, representatives from the World Wildlife Fund Canada and the British Columbia Council of Forest Industries, and faculty members in the Faculties of Forestry and Psychology at the University of British Columbia and in the Department of Biological Sciences at Simon Fraser University. A draft questionnaire was piloted with students in the Faculty of Forestry at the University of British Columbia to identify difficult questions and to gauge the amount of time necessary to complete the questionnaire. The final questionnaire was a twelve-page booklet (three folded 11-inch by 17-inch sheets printed on both sides), nine of which were printed with questions, which

comprehensively measured people's opinions and beliefs about a wide range of forest values and functions (Appendix A). The final questionnaire was approved by the Behavioural Research Ethics Board, a Division of the Office of Research Services at the University of British Columbia; this review seeks to protect the rights of potential survey respondents. The twelve questions that made up the survey are described below.

2.1.1. Question 1: Opinions and beliefs about how people relate to the environment.

This question examined the structure and coherence of respondents' ecological worldviews to permit an assessment of their attitudes toward the environment. This question employs the *New Ecological Paradigm Scale*, which taps people's "primitive beliefs about humanity's relationship with the Earth" (Dunlap *et al*., 2000, p. 439). The *New Ecological Paradigm Scale* is a robust and widely used tool that has been in use (previously as the *New Environmental Paradigm Scale*) since 1978; this scale has predictive validity, known-group validity, criterion validity, and content validity. The *New Ecological Paradigm (NEP) Scale* measures five facets of an ecological view: reality of limits to growth; anti-anthropocentricism; fragility of nature's balance; rejection of exemptionalism[1]; and the possibility of an eco-crisis. Respondents were presented with fifteen statements that expressed different views about the environment. For each statement, respondents were asked to indicate their degree of agreement on a five-point scale. Respondents had the option of indicating that they did not know enough about a particular statement or did not have an opinion about a particular statement.

2.1.2. Question 2: Opinion and beliefs about natural resource management issues in BC.

This question asked respondents for their opinions about general issues in the management of natural resources. The statements were informed by previous examinations of landscape planning and management (Harshaw *et al.*, 2006). In particular, the statements in this question focused on attitudes about public participation in decision-making and perceptions of trust and responsibility of the management of natural resources. This question listed six general statements expressing different views about natural resource management and in British Columbia. The order of the statements in this question was randomized to avoid bias. For each statement, respondents were asked to indicate their level of agreement on a five-point scale. Respondents had the option of indicating that they did not know enough about a particular statement or did not have an opinion about a particular statement.

2.1.3. Question 3: Opinions about species at risk protection.

This question sought to establish the relative importance of species at risk management by asking discrete trade-off questions that examined the protection and recovery of species at risk on the one hand, and limiting economic activity on the other. This question listed eight statements that described different approaches for the protection of species at risk in British Columbia, and queried respondents about the

[1] "Exemptionalism is the belief that, because of its intelligence, creativity, and technology, the human species is not bound nor constrained by the biophysical laws of nature that restrict other species" (Cairns, 1998).

importance of the protection and recovery of species at risk inside and outside of the areas where they resided. The order of the statements in this question was randomized to avoid bias. For each statement, respondents were asked to indicate their level of agreement on a five-point scale. Respondents had the option of indicating that they did not know enough about a particular statement or did not have an opinion about a particular statement.

2.1.4. Question 4: Attitudes towards species at risk protection on private land in BC.

Currently, the implementation of species protection and recovery efforts on private land is largely at the discretion of the landowner. Hadlock & Beckwith (2002) identify three obstacles to endangered species recovery: (1) there is no economic market, nor economic market values, for most endangered species, which makes compensation efforts difficult; (2) successful species recovery is dependent upon collaboration, and private land-owners may not be willing, or not in a position to collaborate; and (3) issues of distributive and procedural equity or justice introduce further complexities, such as reconciling individuals' responsibilities for collective resources. However, the authors note that if private landowners are included as partners in decision-making and management, and if the landowners "believe the process was fair, typically they will be more satisfied with the decision outcomes and more likely to remain in compliance, even if the decision made was not their desired outcome" (Hadlock & Beckwith, 2002, pp. 198-199). Collaboration between landowners and government can serve to facilitate mutual understanding, increasing the degree of trust between the parties, a willingness to seek mutual solutions, repeated interactions between parties, and an awareness of all options a key to success. The items in this question were informed by a review of a survey that was done by the East Kootenay Conservation Program (2006) to examine public opinion about conservation issues in the Columbia Basin region of British Columbia in order to establish baseline information for planning and management, as well as a study by Czech & Krausman (1999). The order of the statements in this question was randomized to avoid bias. For each statement, respondents were asked to indicate their level of agreement on a five-point scale. Respondents had the option of indicating that they did not know enough about a particular statement or did not have an opinion about a particular statement.

2.1.5. Question 5: Opinions about different approaches for protecting and recovering species at risk.

This question asked respondents for their opinions about different approaches for the protection and recovery of species at risk. The statements were informed by a review of the scientific literature, including: Czech & Krausman (1999), who conducted a national survey of American residents about their attitudes toward species conservation and related concepts and institutions; principles of conservation biology identified by Trombulak *et al*. (2004); Zinn & Manfredo (1998), who conducted two surveys of Colorado residents which examined (1) the acceptability of management actions directed at mountain lions, and (2) the acceptability of destroying beavers and coyotes; Fulton *et al*. (2004) who examined beliefs and attitudes toward lethal management of deer in Cuyahoga National Park in Ohio based on the

theory of reasoned action; Koval & Mertig (2004), who examined the differences between the attitudes of the public and wildlife personnel for several issues related to wildlife management; and Manfredo *et al*. (2003), who conducted a series of surveys in six western states in the US to examine shifts in wildlife value orientation. The order of the statements in this question was randomized to avoid bias. For each statement, respondents were asked to indicate their level of agreement on a five-point scale. Respondents had the option of indicating that they did not know enough about a particular statement or did not have an opinion about a particular statement.

2.1.6. Question 6: Priorities and responsibilities for species at risk protection and recovery.

This question had two parts: the ranking of factors for deciding which species to protect and recover first; and the ranking of groups that play roles in species at risk protection and recovery. The first part of this question asked respondents to rank six factors that can be considered for the protection and recovery of species at risk. A question similar to this was asked by Czech & Krausman (1999), who were interested in examining the ranking of different specie attributes to elicit the relative importance of species. The six factors for the protection of species at risk used in this section were derived from a draft framework for the protection and recovery of species at risk in British Columbia:

1. Species at risk in BC but common elsewhere;
2. Species only or mainly occurring in BC;
3. Chances of successful protection and recovery;
4. Cultural and traditional importance;
5. Economic costs of protection and recovery; and
6. Common species whose numbers are in rapid decline.

The order of the factors in this question was randomized to avoid bias.

The second part of this question presented respondents with seven institutions/actors who may have a responsibility to play in the protection and recovery of species at risk:

1. Local governments;
2. Provincial government;
3. Federal government;
4. First Nations;
5. Individual citizens;
6. Industrial/commercial users; and
7. Private landowners.

Respondents were asked to identify and rank the three institutions/actors that they thought should be the most responsible for species at risk protection and recovery. The order of the institutions/actors in this question was randomized to avoid bias.

2.1.7. Question 7: Support for the protection and recovery of species at risk.

This question sought to identify the degree of support and concern that British Columbians have about the protection and recovery of species at risk. Respondents were asked to indicate their level of support for species at risk protection and their level of support for species at risk recovery on five-point *Likert* scales that were anchored from *I fully support protection* to *I do not support protection at all*. Respondents were also asked to indicate their level of concern about the loss and extinction of animals and their level of concern about the loss and extinction of plants on five-point *Likert* scales that were anchored from *not concerned at all* to *very concerned*.

2.1.8. Question 8: Prioritizing spending for species at risk protection and recovery[2].

Current species conservation prioritization metrics typically rank species as conservation priorities based solely upon the degree to which they are threatened with extinction (*e.g.* World Conservation Union, 2001; Species at Risk Act, 2002). Previous research (*e.g.* Avise, 2005) suggests that other species attributes, such as economic or ecological importance, charisma, evolutionary distinctiveness and endemism, should be considered alongside threat in order to determine conservation priority. Although many studies have explored public valuations of single species or sets of species (*e.g.* Kotchen & Reiling, 2000; Rudd, 2007), few have looked at how specie valuation is influenced by their attributes. Provided that different species can be characterized in terms of their attributes (of which each species may have many, to varying degrees), and these attributes are (and can be) valued differently by the public, determining public preferences about these values could yield a useful tool for identifying which species should be prioritized for conservation without having to ask about each species individually. This question is a preliminary step in this process, with the objective of determining if British Columbians valued four different attributes (endemism, economic importance, threat and distinctiveness) differently. The format of asking respondents to divide $100 among the four categories was used in order to not only obtain a ranking of importance of these values to respondents, but also to explore the strength of these preferences.

[2] This question was developed by Emily Meuser, Department of Biological Sciences, Simon Fraser University.

2.1.9. Question 9: Opinions about priorities for species at risk protection.

This question asked respondents to consider a series of paired trade-offs among six factors for the protection of species at risk. The six factors for the protection of species at risk used in this section were derived from a draft framework for the protection and recovery of species at risk in British Columbia:

1. The likelihood of the species being protected;
2. Species at risk in BC but common elsewhere;
3. Species only or mainly occurring in BC;
4. Cultural and traditional importance;
5. Common species whose numbers are in rapid decline; and
6. The costs associated with protecting the species.

The six factors for the protection of species at risk were arranged in pairs, such that each factor was compared against the other five factors. A total of 15 paired statements were prepared. The order of the paired statements was randomized to avoid bias. This method of inquiry is based on the standard approach developed by Thurstone (1959) in which respondents make repeated comparative judgments about preferences for outcomes (Green & Tull, 1978). This approach permits the construction of a univariate interval scale (that is conducive to statistical analysis) to identify the priority rankings of (in this case) factors for the protection of species at risk, as well as the relative importance of each forest value.

For each of the 15 paired statements, respondents indicated which factor they thought was a higher priority for the protection of species at risk. Specifically, priorities were elicited by asking the following: "*The following list of factors that are considered in the protection of species at risk has been arranged in pairs. For each pair, check the box beside the factor that you think should have a higher priority for identifying what species should be protected*". To improve the clarity of the question, an example was provided.

2.1.10. Question 10: Opinions about threats to species at risk.

There are a number of factors that affect species endangerment. This question asks about people's perceptions of the causes of species endangerment, and can be used to estimate people's knowledge of species at risk, and is based on an examination of perceived threats to endangered species conducted by Czech & Krausman (1999). The order of the statements in this question was randomized to avoid bias. For each statement, respondents were asked to indicate their level of agreement on a five-point scale. Respondents had the option of indicating that they did not know enough about a particular statement or did not have an opinion about a particular statement.

2.1.11. Question 11: Experiences with outdoor recreation.

By and large, Canadians are urban citizens who may have limited connection to nature. One means through which the Canadian public does interact with natural areas is through participation in outdoor recreation activities. The Federal-Provincial-Territorial Task Force on the Importance of Nature to Canadians. (1999) found that 82.2% of BC residents participated in nature-related activities in 1996 (the last year the survey was administered); nature-related activities include a range of activities including camping (24.0% of BC residents), hiking (23.4% of BC residents), and relaxing in an outdoor setting (36.8% of BC residents). If this rate of participation in nature-related activities is stable, then issues related to the natural environment may be relevant to the population. However, current rates are not known. This question asked respondents to detail information about their outdoor recreation use and behaviours. The questions in this section were informed by the scientific literature and will provide information currently unavailable to land-use planners and managers on the recreation characteristics of British Columbians. Data was collected about respondents' most important recreation activity, their degree of recreation specialization in particular types of activities, their preferred recreation setting (within the contexts of the BCMoF *Recreation Opportunity Spectrum* and management jurisdiction), and annual recreation participation. Understanding respondents' recreation behaviour can assist natural resource managers to identify other public uses of natural areas and gauge the extent and sensitivities of provincial (and regional) recreation use.

2.1.12. Question 12: Demographics.

This final question asked respondents to provide information about themselves. This information is useful as it allows the demographic characteristics of survey responses to be compared with census data to check the representativeness of the sample. Information was collected about respondents' age, gender, length of residence in their community, education, occupation, income, and respondents' main connections to the natural environment. Personal connections to nature can influence how people acquire their knowledge about species at risk and related management strategies and approaches. Knowing about what the public's connection to nature is could yield information about the general relevancy of nature to respondents; this information may assist in interpreting general attitudes and perceptions for priorities of a species at risk management framework. Harshaw *et al.* (2006) asked about people's connections to forests; a similar approach elicits connections to the natural environment and could be useful in identifying potential participants for any public participation or citizen forums that may be part of a species at risk management framework.

2.1.13. General Comments.

Space was provided for respondents to elaborate on any of their answers, or to offer comments that they felt were of importance to the management, protection, and recovery of species at risk.

2.2. Sample Selection.

In order to establish that the sample broadly reflected the opinions of British Columbians, every effort was made to maximize the return rate and achieve a 95% confidence interval for the results (see Section 2.3). A desired threshold for the number of returns was identified. This threshold was based on the population of British Columbia, the 95% confidence interval that was associated with the population size, and an estimate of the response rate. The 2007 population of British Columbia was 4,414,000 (BC Stats, 2008). Based on this population, the number of desired returned completed questionnaires, based on a varied population with a sample error of ±5% at the 95% confidence level (*i.e.* ±5% 19 times out of 20), was calculated as 385 (Salient & Dillman, 1994). Based on an estimated 50% response rate, the sample size was determined to be 770.

Initial sample recruitment was made by telephone in order to obtain valid mailing addresses (valid mailing addresses are difficult to get for rural areas and it was important to be able to include both rural and urban people in the sample); people that were not listed in the telephone directory were not included in the sample. The sample was stratified by four areas that were an amalgamation of the eight British Columbia Development Regions (Figure 1). Potential respondents were randomly selected from provincial telephone records, and were asked if they wish to participate in the survey (see Appendix B). A recruitment pre-test was made on Wednesday December 19th 2007 to identify any issues with the recruitment method; no problems were identified, and 72 people agreed to participate in the survey during the pretest. Final sample recruitment was done between Wednesday January 2nd and Tuesday January 8th 2008. People that were willing to participate in the survey were asked to provide their mailing address. The eight British Columbia Development Regions were combined into four sample regions (Table 1) to provide a basis for a comparison of British Columbians' attitudes and beliefs towards species at risk between broad geographical areas.

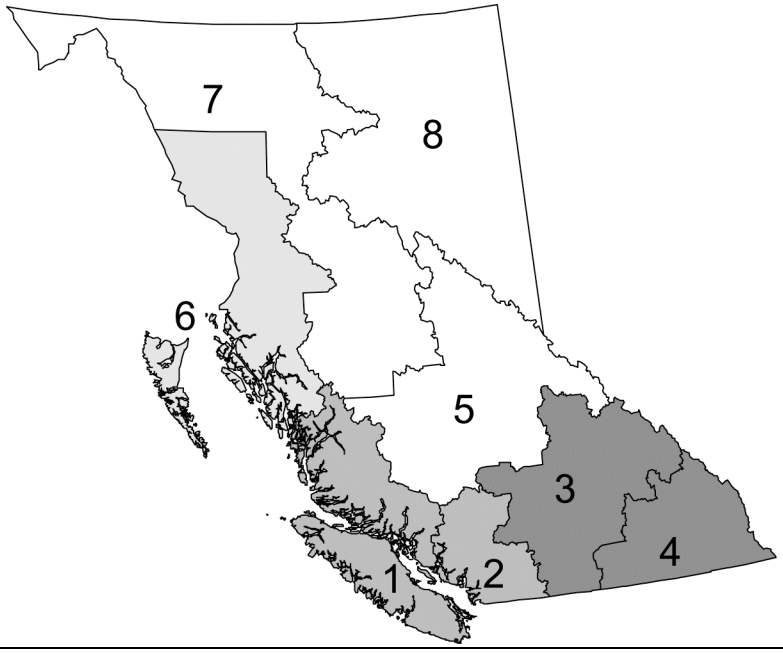

Figure 1. British Columbia development regions and study sample regions (shaded).

Table 1. Sample region correspondence with British Columbia Development Regions.

Sample Region	BC Development Region
Vancouver Island/Lower Mainland	1. Vancouver Island/Coast 2. Lower Mainland/Coast
Coastal BC	6. North Coast
Southeastern BC	3. Thompson/Oakanagan 4. Kootenay
Central-Northern BC	5. Cariboo 7. Nechako 8. Northeast

2.3. Survey Delivery.

The survey design closely followed the Tailored Design Method (Dillman, 2000) and incorporated a multiple contact approach suitable for mail surveys. This multiple contact approach sought to maximize response rates, which is important in capturing the broad range of opinions and beliefs typically found in at the provincial scale and in drawing inferences to the provincial population. Four contact letters were developed to accompany this questionnaire; these are described below. All survey materials and the design of the survey's delivery conformed to the ethical guidelines set out by the University of British

Columbia's Office of Research Services, and received approval from the University of British Columbia's Research Ethics.

The first letter was an initial contact letter (Appendix C) that was prepared to remind potential respondents that they had provided their name and mailing address for participation in a research project examining their opinions about the protection and recovery of species at risk in British Columbia. This letter was sent in advance of the questionnaire and was mailed Tuesday, January 15th 2008.

The second contact was a package that contained a questionnaire (Appendix A) and a stamped and addressed return envelope. A cover letter (Appendix D) accompanied the questionnaire and detailed the purpose and procedures of the survey, assured the potential respondents that their responses would be kept confidential, provided contact information should they have had any questions about the research project arise, and informed potential respondents of their rights as research subjects. This initial questionnaire package was mailed Thursday, January 17th 2008.

The third contact was a reminder postcard (Appendix E) that was sent to everyone in the sample to remind people that had not completed or sent in their questionnaires to do so, and to thank those respondents that had completed and returned their questionnaires. This postcard was mailed Thursday, January 24th 2008.

The fourth contact was a replacement questionnaire package that was sent to all non-respondents. This package contained a cover letter asking respondents to complete the questionnaire (Appendix F), a questionnaire, and a stamped addressed return envelope. This letter and replacement questionnaire package was mailed Thursday, January 31st 2008.

2.4. Analysis.

The data from all completed questionnaires was entered twice to facilitate the verification of data for keying errors, and accuracy and consistency in data coding (Salant & Dillman, 1994). Each completed case (*i.e.* respondent's completed questionnaire) the data from the two datasets was compared, such that each cell (*i.e.* each answer to a question) was verified. When discrepancies were identified, the questionnaire was consulted and the necessary correction was made. The resultant dataset can be considered to be free of errors due to data entry mistakes.

Tests for non-response bias were conducted by comparing early and late respondents on a number of demographic and attitudes towards species at risk variables. The mid-point for the date of questionnaire returns by sample region were identified and responses were then grouped as either early respondents or late respondents; this approach assumes that late respondents are similar to non-respondents

(Armstrong and Overton 1977). T-tests were used to identify any differences between early and late respondents for age, support for species at risk protection, support for species at risk recovery, concern for the loss and extinction of animals, and concern for the loss and extinction of plants; chi-square tests and nominal post hoc tests were calculated for gender, education, and household income.

Descriptive statistics were calculated for each question. For those questions that asked respondents to indicate their level of agreement or assessment of threat, the percentage of responses was calculated for each interval. The mean response, 95% confidence interval, and standard deviation were also calculated for each question (or question item for those questions that had multiple items). In order to identify any differences between the four sample regions for each question, several statistical tests were employed. For each question, except for *Question 6 Priorities and Responsibilities for Species at Risk Protection and Recovery* and *Question 9 Priorities for Species at Risk Protection*, analysis of variance (AVOVA) was used to test for differences between the mean scores for each sample region ($\alpha = 0.05$). *Levene's test* for homogeneity of variance (an assumption of ANOVA) was calculated; if results indicate that variance among the community means are not equal, then the *Welch F test* was employed to test for differences among mean scores (Field, 2005). *Post hoc* tests were used to identify where differences lay. As the sample sizes of the sample regions are not equal, the *Scheffe* test was employed for questions where there was homoscedasticity (*i.e.* homogeneity of variance) (Bluman, 2004). For questions where responses between constituencies were hetroscedastic, the *Games-Howell* test was used (Field, 2005). For Question 11 (experiences with outdoor recreation), ANOVA and *post hoc* tests ($\alpha = 0.05$) were used to assess any differences in mean responses of the four sample regions for five items: *how many years have you done this [most important] activity*; *how skilled are you at this [most important] activity*; *how central is this most important] activity to your lifestyle*; *on average, how many days per month do you do this [most important] activity in each season*; *annual outdoor recreation participation*; and *how many recreation activities do you do*. Annual recreation participation was calculated as the aggregate number of times that a respondent reported participating in an outdoor recreation activity per month for each of the four seasons: the maximum monthly value was set at thirty; if a respondent's reported monthly outdoor recreation participation was greater than thirty, the value was replaced with the maximum value. Resultant participation rates for each of the four seasons were summed and multiplied by three (i.e. three months per season) to give an annual participation rate. AVOVA was used to test for differences between community's mean scores for questions; *Levene's test* for homogeneity of variance was calculated. Differences between sample regions for club membership were assessed using a Chi-square test of independence ($\alpha = 0.05$).

For Question 12 (demographics) ANOVA and *post hoc* tests ($\alpha = 0.05$) were used to assess any differences in mean responses of the four sample regions for three items: age, years of residency in community, and number of people residing in each household. Chi-square tests of independence were

employed to test for differences between the four sample regions (α = 0.05) for three items: gender, highest level of education attained, and household income. No assessments were made for differences between the sample regions for employment sector and main connections to the natural environment. Open-ended responses to occupation and sector questions were assigned to the North American Industry Classification System (NAICS) standard[3].

Detailed descriptions for more complex question analysis are presented below for questions one, six, and nine.

2.4.1. Question 1: Opinions and beliefs about how people relate to the environment.

In addition to the descriptive statistics calculated for responses to this question, an examination of the *New Ecological Paradigm Scale* was made to determine if the Scale was an appropriate metric for measuring environmental attitude for the four sample regions examined here. Responses to the items in the NEP Scale were recoded so that the items reflected a consistent scale (*i.e.* 1 = dominant social paradigm, reflective of anthropocentric attitudes; 5 = new ecological paradigm, reflective of biocentric attitudes). Cronbach's Alpha was calculated to test for unidimensionality (*i.e.* internal consistency) of the Scale. Tests were preformed to gauge whether there were any gains in the internal consistency of the Scale if any of the 15 items are removed. A Principal Components Analysis was then employed to further examine the internal consistency of the scale and its applicability to study area. Cronbach's Alpha was then calculated again for each of the five facets of the NEP scale to examine whether the facets could be used alone or were better used together. Finally, a summative scale was constructed to provide an indicator of environmental attitude.

2.4.2. Question 6: Priorities and responsibilities for species at risk protection and recovery.

This question had two parts: a ranking from one to six of factors that are used to prioritize species protection and recovery; and an identification (ranking) of the three groups (*i.e.* institutions, actors) from a list of seven that respondents perceived to be most responsible for the protection of species at risk. For the first part, the frequencies of rankings for species at risk protection and recovery factors were calculated for all sample regions. In order to illustrate the relative priority of each factor, arbitrary weights were assigned to each potential rank: six points for a first ranking, five points for a second ranking, four points for a third ranking, three points for a fourth ranking, two points for a fifth ranking, and one point for a sixth ranking. The weights were multiplied by the frequencies of response for each proxy. The weighted scores of each proxy for the four sample regions were summed and were then normalized by dividing the sum of rank scores by the number of people that ranked that proxy; this resulted in a value between one and six; the resultant values were graphed. Differences in respondents' ranking of factors that are used to prioritize species protection and recovery between sample regions were assessed using Kruskal-Wallis H

[3] The NAICS is the standard used by Statistics Canada and BC Stats.

tests (Zar, 1998; Field, 2005). Analysis for the second part of this question was performed in a similar manner. In order to illustrate the relative responsibility of each group to protect species at risk, arbitrary weights were assigned to each potential rank: three points for a first ranking, two points for a second ranking, and one point for a third ranking. The weights were multiplied by the frequencies of response for each proxy and graphed as above.

2.4.3. Question 9: Opinions about priorities for species at risk protection.

The Thurstone Scale technique was used to analyze respondents' preference for six factors considered in the protection of species at risk (Thurstone 1974). Specifically, Thurstone's *Case V* was selected. This technique consists of presenting respondents with a table containing paired factors and asking which factor (in each pair) is their priority. The observations consist of the proportions of times one factor is judged to be a greater or lower priority than the other factors. Five Thurstone scales were constructed: one for each sample region and one for all of the responses in aggregate. In total, 15 pairs of factors considered in the protection of species at risk (*i.e.* combinations of six factors taken two at a time) were presented to the respondents (*Eq. 1*).

$$ {}_6C_2 = \frac{6!}{(6-2)!2!} = 15 \text{ pairs of factors} \qquad (Eq.\ 1) $$

Separate Thurstone Scales were constructed for each of the four sample regions. In order to do this, the proportions of times that each attribute was selected over the others was computed. Next, z-scores corresponding to the proportions were assigned to each attribute based on the assumption that the proportions are normally distributed. Finally, a ranking scale was created to demonstrate the differences from each of the attributes' standardized means scores. The resultant Thurstone Scale illustrates the rank and the cumulative distances between the factors. Thus, it serves as an effective and straightforward visual tool for conveying how respondents within each sample region value or prioritize the factors that can be considered in the protection of species at risk and how the distances between the factors varies[4].

Prior to constructing the Thurstone Scales for each sample region, the internal consistency (*i.e.* the degree to which the data fit the Thurstone *Case V* model) was assessed (Torgerson, 1958; Thurstone, 1959). The average absolute differences between derived and observed proportions was computed for each factor, summed, and divided by the number of factors to obtain a grand average known as the overall discrepancy of the analyses[5]. Average discrepancy values of up to 7 to 8 percent are generally considered acceptable (Thurstone 1959).

[4] For a more detailed description and formulation of the technique and its applications, see Green and Tull (1978), and Malhotra (1986).

[5] See Torgerson (1958) and Thurstone (1959) for a complete description of this methodology.

Thurstone's *Case V* procedure also allows for confidence intervals to be constructed around the scaled factors, and thus, inferential statistical techniques can readily be applied to the values observed on the scales that were constructed for each sample region. This is based on the premise that the unit of the intervals in each of the constructed scales is equal to $\sqrt{2}\sigma$, and the standard deviation of any scale value (*s.v.*) can be obtained by rearranging the terms to become $\sigma = \frac{1}{\sqrt{2}}$ (Thurstone 1974). Confidence intervals from Thurstone scales were computed (Agahian & Amirshahi, 2006; *Eq.2*).

$$95\%\ \text{C.I.} = \text{s.v.} \pm \frac{1.96\text{s}}{\sqrt{\text{n}}} = \frac{1.39}{\sqrt{\text{n}}} \qquad (\textit{Eq. 2})$$

Where *n* is the sample size (*i.e.* the number of observations for each pair of responses). Confidence intervals were constructed for the observed scale values for all areas.

Finally, comparisons of the sample regions were conducted to determine whether they differed with respect to the prioritization of the factors considered in the protection of species at risk. Instead of comparing scale values[6], a modified Z-test for proportions was used as recommended by Sloan *et al*. (1994). Specifically, the average proportions of times that each factor was preferred over the others were compared between all four sample regions.

2.4.4. General Comments.

The open-ended comments that were provided by respondents are listed in Appendix G.

[6] The scale value of a given factor is dependent on the inter relations of all factors in a group. Therefore, a factor that has the same scale value for different areas may not be perceived as having the same priority given the rankings and distances of the other factors on the scales.

3. RESULTS.

A total of 2,993 sample recruitment telephone calls were completed; of these completed calls, 770 people (25.7%) agreed to participate in the *BC Species at Risk Public Opinion Survey*. A total of 555 completed responses were received between January 23 and March 13 2008, which represents 18.5% of all telephone calls completed, or a 72.8% response rate for the mail survey after correcting for undeliverable addresses (corrected sample size = 762)[7]. The number of completed questionnaires is sufficient to estimate a sample error of ±4.16% at the 95% confidence interval (*i.e.* 19 times out of 20). The pattern of response by sample region (Table 2) indicates that the proportion of respondents from the Vancouver Island/Lower Mainland sample region was less than the proportion of people residing in that area, while the proportion of respondents from the other three sample regions was greater than the proportion of people residing in those areas. Thus, residents of the Vancouver Island/Lower Mainland and Southestern BC sample region may be under-represented in the sample, while residents of the Coastal and Central/Northern BC sample regions may be over-represented.

Table 2. Completed questionnaire returns by sample region.

Sample Region	Frequency	%	Sample Region Population (as % of BC population)
Vancouver Island/Lower Mainland	326	58.8%	76.0%
Coastal BC	38	6.9%	1.6%
Southeastern BC	86	15.5%	15.6%
Central/Northern BC	104	18.8%	6.8%

An examination of demographic characteristics for the combined sample of all four sample regions did not indicate any significant difference between early and late respondents. When the communities were examined individually there was a significant difference between early and late respondents for age in the Vancouver Island/Lower Mainland sample region ($t(317) = 3.218$, $p = 0.001$), as the mean age of early respondents was 5.10 years older that that of late respondents. There was also a significant difference between early and late respondents for education in the Southeastern BC sample region ($n = 83$; $\chi^2 = 11.497$, $df = 5$, $p = 0.042$; Cramer's $V = 0.372$) as more late responders indicated that high school was highest level attained than did early responders, and more early responders indicated that some university/college, university/college degree, and graduate degree was highest level attained than did late responders. There were not any significant differences between early and late respondents for gender and household income in four sample regions.

[7] Undeliverable addresses included invalid mailing addresses, respondents that had moved, respondents who were deceased, respondents who were aged or of poor health and unable to complete the questionnaire.

When all of the sample regions were examined together, there were not any significant differences between early and late respondents for support for species at risk protection, support for species at risk recovery, concern for the loss and extinction of animals, and concern for the loss and extinction of plants. Similarly, when the four sample regions were examined individually, there were no significant differences between early and late respondents for these four questions.

3.1. Question 1: Opinions and beliefs about how people relate to the environment (NEP).

In general, respondents strongly or mildly agreed with biocentric-oriented statements and strongly or mildly disagreed with anthropocentric statements presented in this question (Table 3). Almost nine respondents in ten (89.7%) *strongly* or *mildly agreed* that despite our special abilities humans are still subject to the laws of nature, while just 1.7% of respondents *mildly* or *strongly disagreed* with this statement. Eight times as many respondents expressed *strong* or *mild agreement* (80.1%) with the statement that plants and animals have as much right as humans to exist than did those that expressed *mild* or *strong disagreement* (9.1%). Just fewer than four respondents in five (79.0%) *strongly* or *mildly agreed* with the statement that humans are severely abusing the environment, while fewer than one respondent in ten (8.9%) *mildly* or *strongly disagreed*. Three-quarters of respondents (74.9%) reported *strongly* or *mildly agreeing* with the statement that if things continue on their present course, we will soon experience a major ecological catastrophe, while only 9.1% *mildly* or *strongly disagreed* with this statement. More than six-times as many respondents *strongly* or *mildly agreed* (71.8%) that the balance of nature is very delicate and easily upset than did the percentage of respondents that *mildly* or *strongly disagreed* (11.4%). Seven respondents in ten (70.6%) *strongly* or *mildly agreed* with the statement that when humans interfere with nature it often produces disastrous consequences, while one in ten (10.6%) *mildly* or *strongly disagreed*. Three-times as many respondents reported *strongly* or *mildly agreeing* (57.3%) that we are approaching the limit of the number of people the earth can support than did respondents that reported *mildly* or *strongly disagreeing* (19.0%) with this statement. The majority of respondents (54.0%) *strongly* or *mildly agreed* that the earth is a closed system with very limited room and resources, while almost one-quarter of respondents (23.1%) *mildly* or *strongly disagreed*. Half of respondents (50.0%) *strongly* or *mildly agreed* that the earth has plenty of natural resources if we just learn how to develop them, while more than one-quarter (28.1%) reported *mildly* or *strongly disagreeing* with this statement. Ten times as many respondents reported *mild* or *strong disagreement* (77.9%) with the statement that the balance of nature is strong enough to cope with the impacts of modern industrial nations than did the percentage of respondents that reported that they *strongly* or *mildly agreed* with this statement. More than two-thirds of respondents (67.1%) *mildly* or *strongly disagreed* that humans were meant to rule over the rest of nature, while fewer than one respondent in five (17.3%) *strongly* or *mildly agreed*. Four-times as many respondents reported that they *mildly* or *strongly disagreed* (66.8%) that the so-called “ecological crisis” facing humankind has been greatly exaggerated than did the percentage of respondents that reported *strongly* or *mildly agreeing* (16.7%) with this statement.

Table 3. Question 1: Opinions and beliefs about how people relate to the environment (most frequently identified response in **bold**).

Item	n	Strongly Agree (1)	Mildly Agree (2)	Partly agree/ Disagree (3)	Mildly Disagree (4)	Strongly Disagree (5)	Don't Know	Mean	95% CI	SD
We are approaching the limit of the number of people the earth can support.	513	**34.6%**	22.7%	17.6%	10.6%	8.4%	6.2%	2.31	± 0.114	1.311
Humans have the right to modify the natural environment to suit their needs.	549	4.9%	14.7%	28.4%	20.1%	**31.3%**	0.5%	3.59	± 0.102	1.211
When humans interfere with nature it often produces disastrous consequences.	547	**45.7%**	24.9%	18.8%	7.3%	3.3%	—	1.98	± 0.094	1.112
Human ingenuity will ensure that we do NOT make the earth unlivable.	528	8.5%	15.1%	23.2%	22.6%	**27.8%**	2.9%	3.48[†]	± 0.110	1.288
Humans are severely abusing the environment.	547	**57.1%**	21.9%	11.9%	5.8%	3.1%	0.2%	1.76	± 0.090	1.071
The earth has plenty of natural resources if we just learn how to develop them.	541	**27.0%**	23.0%	20.6%	15.0%	13.1%	1.3%	2.64	± 0.116	1.372
Plants and animals have as much right as humans to exist.	546	**64.7%**	15.4%	10.6%	6.0%	3.1%	0.2%	1.67	± 0.090	1.082
The balance of nature is strong enough to cope with the impacts of modern industrial nations.	535	2.4%	5.3%	11.8%	16.9%	**61.0%**	2.6%	4.32	± 0.088	1.040
Despite our special abilities humans are still subject to the laws of nature.	541	**66.4%**	23.3%	6.5%	1.3%	0.4%	2.2%	1.43	± 0.059	0.707
The so-called "ecological crisis" facing humankind has been greatly exaggerated.	537	5.4%	11.3%	14.0%	19.1%	**47.7%**	2.5%	3.95	± 0.108	1.264
The earth is a closed system with very limited room and resources.	524	**31.6%**	22.4%	18.2%	13.6%	9.5%	4.7%	2.44	± 0.116	1.340
Humans were meant to rule over the rest of nature.	541	9.1%	8.2%	14.0%	13.8%	**53.3%**	1.6%	3.96	± 0.114	1.360
The balance of nature is very delicate and easily upset.	547	**44.8%**	27.0%	6.0%	7.8%	3.6%	0.7%	1.98	± 0.094	1.121
Humans will eventually learn enough about how nature works to be able to control it.	534	3.3%	13.2%	20.1%	22.1%	**38.0%**	3.3%	3.81	± 0.102	1.191
If things continue on their present course, we will soon experience a major ecological catastrophe.	532	**51.4%**	23.5%	13.3%	5.5%	3.6%	2.7%	1.83	± 0.092	1.096

[†] The mean response of Coastal BC respondents was significantly lower than the mean response of Southeast BC respondents.

The majority of respondents (60.1%) *mildly* or *strongly disagreed* that humans will eventually learn enough about how nature works to be able to control it, while fewer than one respondent in five (16.5%) *strongly* or *mildly agreed* with this statement. More than twice as many respondents reported *mildly* or *strongly disagreeing* (54.4%) with the statement that humans have the right to modify the natural environment to suit their needs than did the percentage of respondents that *strongly* or *mildly agreed*. Half of respondents (50.4%) *mildly* or *strongly disagreed* that human ingenuity will ensure that we do not make the earth unlivable, while less than one-quarter (23.6%) *strongly* or *mildly agreed* with this statement.

ANOVA results indicated that there was a statistically significant difference between the mean responses of the four sample regions for one of the fifteen items in Question 1 (Table 4).

Table 4. ANOVA Question 1: Opinions and beliefs about how people relate to the environment (significant differences between sample regions in **bold**).

Item	n	df	F	p
We are approaching the limit of the number of people the earth can support.	511	3	1.34	0.140
Humans have the right to modify the natural environment to suit their needs.	57	3	2.131	0.095
When humans interfere with nature it often produces disastrous consequences.	545	3	0.256	0.856
Human ingenuity will ensure that we do NOT make the earth unlivable.	**526**	**3**	**3.235**	**0.022**
Humans are severely abusing the environment.	545	3	0.453	0.715
The earth has plenty of natural resources if we just learn how to develop them.	539	3	1.540	0.203
Plants and animals have as much right as humans to exist.	544	3	1.527	0.207
The balance of nature is strong enough to cope with the impacts of modern industrial nations.	533	3	0.293	0.830
Despite our special abilities humans are still subject to the laws of nature.	539	3	0.656	0.580
The so-called “ecological crisis” facing humankind has been greatly exaggerated.	535	3	1.186	0.314
The earth is a closed system with very limited room and resources.	522	3	0.824	0.481
Humans were meant to rule over the rest of nature.	539	3	0.845	0.469
The balance of nature is very delicate and easily upset.	545	3	1.856	0.136
Humans will eventually learn enough about how nature works to be able to control it.	532	3	2.100	0.099
If things continue on their present course, we will soon experience a major ecological catastrophe.	532	3	0.641	0.589

There was a significant differences between the mean responses of two sample regions for the fourth item, *human ingenuity will ensure that we do NOT make the earth unlivable*, $F(3, 526) = 3.235$, $p < 0.05$. As the Levene statistic (0.904, $p > 0.05$) indicated that the variances of the mean responses of the sample regions were equal, a *Scheffe* test was used to identify where the differences lay. The *Scheffe post hoc* test revealed that the mean responses for Coastal BC respondents ($\bar{x} = 2.91$) was significantly lower (*i.e.* more agreeable) than the mean response for Southeastern BC respondents ($\bar{x} = 3.69$).

Cronbach's Alpha was calculated to be 0.848, which suggests the unidimensionality of the NEP Scale. This suggestion is supported as there were not any gains in Cronbach's Alpha if any of the 15 items were removed from the Scale. Cronbach's Alpha for the five facets were not as strong individually as for all items together (Reality of Limits to Growth $\alpha = 0.596$; Anti-Anthropocentricism $\alpha = 0.645$; Fragility of Nature's Balance $\alpha = 0.610$; Rejection of Exemptionalism $\alpha = 0.539$; Possibility of an Eco-Crisis $\alpha = 0.773$), which provides further evidence that the application of the NEP Scale to the four sample regions in aggregate is suitable as it is a unidimensional scale.

Four components were identified in the Principal Components Analysis (PCA) (Component #1 Eigen Value = 4.938; Component #2 Eigen Value = 1.413; Component #3 Eigen Value = 1.312; and Component #4 Eigen Value = 1.010). The three components explain a total of 55.9% of the variance: Component #1 = 32.9%; Component #2 = 9.4%; Component #3 = 7.5%; and Component #4 = 6.7%. In the unrotated PCA solution, all but four items loaded on the first component; two items were cross loaded. This is further evidence of the unidimensionality of the NEP Scale. The PCA solution that employed a Varimax rotation did provide a better delineation of the five facets of the NEP Scale.

Applying the NEP as a summative scale indicated that respondents were generally accepting of the new ecological paradigm and tended to be biocentric in their attitudes. The minimum score was 1.27 and the maximum score was 5 (*i.e.* the top bound). The mean score was 3.78 ± 0.059 ($n = 553$) and the standard deviation was 0.712. There was a significant difference of the mean NEP Scale scores between two sample regions $F(3, 551) = 3.023$, $p = 0.029$. Although the *Levene* statistic (4.650, $p = 0.003$) indicated that the variances of the mean responses for some sample regions were not equal, the *Welch F Test* (3.024, $p = 0.032$) confirmed the presence of the differences. The *Games-Howell post hoc* test indicated that the mean NEP Scale score of the Coastal BC sample region ($\bar{x} = 3.51$) was significantly lower (i.e. more anthropocentric) than the mean NEP Scale score of the Southeastern BC sample region ($\bar{x} = 3.92$).

3.2. Question 2: Opinion and beliefs about natural resource management issues in BC.

This question asked respondents about their opinions and beliefs about natural resource management issues in BC. Agreement among respondents with the statements that were presented in this question was mixed (Table 5). The majority of respondents (72.4%) *strongly* or *mildly agreed* that the citizens of British Columbia need to have more opportunities for input into natural resource management decisions, while fewer than one in ten respondents (7.8%) expressed *mild* or *strong disagreement*. More than half of respondents (54.9%) reported *strongly* or *mildly agreeing* with the statement that natural resource management currently focuses too much attention on commercial activities (such as coal mining, oil & gas development, or forestry) and not enough attention on non-commercial activities (such as conservation, recreation, or enjoyment), while more than one in ten respondents (14.6%) *mildly* or *strongly disagreed*. More than five-times as many respondents *mildly* or *strongly disagreed* (72.1%) that

they trusted government to make fair decisions about natural resources that balance species at risk protection and recovery and economic development than did the percentage of respondents that *strongly* or *mildly agreed* (12.7%) with this statement. More than half of respondents (59.9%) expressed *mild* or *strong disagreement* with the statement that there are enough checks and balances in place (such as legislation, professional ethics, monitoring) to ensure responsible natural resource management in BC, while fewer than one respondent in five (16.8%) indicated that they *strongly* or *mildly agreed*. Almost three-times as many respondents *mildly* or *strongly disagreed* (55.3%) that there are enough provincial and national parks in British Columbia to protect species at risk than did the percentage of respondents that *strongly* or *mildly agreed* (19.0%) with this statement. Just more than one-third of respondents (34.5%) *mildly* or *strongly disagreed* that they know enough about natural resources and natural resource management to provide meaningful input into natural resource planning decisions, while more than one-quarter (26.3%) reported that they *strongly* or *mildly agreed.*

ANOVA results indicated that there was a statistically significant difference between the mean responses of the four sample regions for one of the six items in Question 2 (Table 6).

Table 6. ANOVA Question 2: Opinion and beliefs about natural resource management issues in BC (significant differences between sample regions in **bold**).

Item	n	df	F	P
There are enough checks and balances in place (such as legislation, professional ethics, monitoring) to ensure responsible natural resource management in BC.	514	3	2.210	0.086
Natural resource management currently focuses too much attention on commercial activities (such as coal mining, oil & gas development, or forestry) and not enough attention on non-commercial activities (such as conservation, recreation, or enjoyment).	502	3	0.422	0.738
I know enough about natural resources and natural resource management to provide meaningful input into natural resource planning decisions.	**459**	**3**	**3.234**	**0.022**
There are enough provincial and national parks in British Columbia to protect species at risk.	485	3	0.479	0.697
The citizens of British Columbia need to have more opportunities for input into natural resource management decisions.	531	3	0.082	0.970
I trust government to make fair decisions about natural resources that balance species at risk protection & recovery and economic development.	542	3	0.284	0.837

Table 5. Question 2: Opinion and beliefs about natural resource management issues in BC (most frequently identified response in **bold**).

Item	n	Strongly Agree (1)	Mildly Agree (2)	Partly agree/ Disagree (3)	Mildly Disagree (4)	Strongly Disagree (5)	Don't Know	Mean	95% CI	SD
There are enough checks and balances in place (such as legislation, professional ethics, monitoring) to ensure responsible natural resource management in BC.	551	5.4%	11.4%	16.9%	24.1%	**35.8%**	6.4%	3.78	± 0.108	1.238
Natural resource management currently focuses too much attention on commercial activities (such as coal mining, oil & gas development, or forestry) and not enough attention on non-commercial activities (such as conservation, recreation, or enjoyment).	549	**29.0%**	25.9%	22.4%	10.6%	4.0%	8.2%	2.29	± 0.100	1.154
I know enough about natural resources and natural resource management to provide meaningful input into natural resource planning decisions.	549	9.5%	16.8%	**23.3%**	19.9%	14.6%	16.0%	3.16[†]	± 0.114	1.249
There are enough provincial and national parks in British Columbia to protect species at risk.	552	5.8%	13.2%	13.9%	22.1%	**33.2%**	11.8%	3.72	± 0.114	1.286
The citizens of British Columbia need to have more opportunities for input into natural resource management decisions.	552	**40.9%**	31.5%	16.3%	5.6%	2.2%	3.4%	1.93	± 0.086	1.013
I trust government to make fair decisions about natural resources that balance species at risk protection & recovery and economic development.	553	3.1%	9.6%	13.6%	25.1%	**47.0%**	1.6%	4.05	± 0.096	1.135

[†] The mean response of Central/Northern BC respondents was significantly lower than the mean response of Vancouver Island/Lower Mainland respondents.

There was a significant difference between the mean responses of two sample regions for the third item, *I know enough about natural resources and natural resource management to provide meaningful input into natural resource planning decisions*, $F(3, 459) = 3.234$, $p < 0.05$. As the Levene statistic (1.070, $p > 0.05$) indicated that the variances of the mean responses of the sample regions were equal, a *Scheffe* test was used to identify where the differences lay. The *Scheffe post hoc* test revealed that the mean responses for Central/Northern BC respondents ($\bar{x} = 2.87$) was significantly lower (*i.e.* more agreeable) than the mean response for Vancouver Island/Lower Mainland respondents ($\bar{x} = 3.31$).

3.3. Question 3: Opinions about species at risk protection.

Most respondents were in agreement with the statements about the protection of species at risk that were presented in this question (Table 7); the one exception were responses to the statement, natural resource planning and management does a good job of protecting and recovering species at risk and the places that they depend upon to live – fewer than one-quarter (24.6%) expressed *strongly or mildly agreement*, and more than one-third (37.8%) expressed *mildly or strongly disagreement*. Nine respondents in ten (90.8%) indicated that they *strongly or mildly agreed* that it is acceptable to limit industrial and commercial activities on public land in order to protect and recover species at risk and the places that they depend upon to live, while only 1.6% expressed *mildly or strongly disagreement* with this statement. Almost nine respondents in ten (89.8%) *strongly or mildly agreed* that species at risk protection and recovery outside of the area where they lived was important to them, while 1.4% *mildly or strongly disagreed*; similarly, almost as many respondents *strongly or mildly agreed* (88.6%) that species at risk protection and recovery in the area where they lived was important to them, while just 2.5% expressed *mild or strong disagreement*. Just more than two-thirds of respondents (67.1%) reported *strongly or mildly agreeing* that it is acceptable to limit industrial and commercial activities on private land in order to protect and recover species at risk and the places that they depend upon to live, while fewer than one in ten respondents (7.6%) *mildly or strongly disagreed*. The majority of respondents (56.8%) *strongly or mildly agreed* that the protection and recovery of species at risk should be given priority over economic considerations, while fewer than one in ten respondents (8.5%) *mildly or strongly disagreed* with this statement. More than half of respondents (56.7%) *strongly or mildly agreed* that it is more useful to protect and recover the places that plants and animals depend upon to live than it is to protect and recover individual species, while 9.4% of respondents expressed *mild or strong disagreement* with this statement. More than three-times as many respondents *strongly or mildly agreed* that it is acceptable to limit non-commercial activities (such as home building or the drilling of water wells) on private land in order to protect and recover species at risk and the places that they live than did the percentage of respondents (16.7%) that *mildly or strongly disagreed*.

Table 7. Question 3: Opinions about species at risk protection (most frequently identified response in **bold**).

Item	n	Strongly Agree (1)	Mildly Agree (2)	Partly agree/ Disagree (3)	Mildly Disagree (4)	Strongly Disagree (5)	Don't Know	Mean	95% CI	SD
It is acceptable to limit industrial and commercial activities on public land in order to protect and recover species at risk and the places that they depend upon to live.	552	**67.4%**	23.4%	6.0%	0.7%	0.9%	1.6%	1.42	± 0.061	0.722
Natural resource planning and management does a good job of protecting and recovering species at risk and the places that they depend upon to live.	553	2.9%	21.7%	**22.1%**	20.4%	17.4%	15.6%	3.33	± 0.106	1.163
The protection and recovery of species at risk should be given priority over economic considerations.	549	26.0%	**30.8%**	32.1%	5.8%	2.7%	2.6%	2.27	± 0.086	1.010
It is more useful to protect and recover the places that plants and animals depend upon to live than it is to protect and recover individual species.	552	25.2%	**31.5%**	21.4%	5.6%	3.8%	12.5%	2.22	± 0.096	1.067
It is acceptable to limit non-commercial activities (such as home building or the drilling of water wells) on private land in order to protect and recover species at risk and the places that they live.	552	27.9%	**28.6%**	24.3%	8.9%	7.8%	2.5%	2.38[†]	± 0.102	1.210
Species at risk protection and recovery in the area where I live is important to me.	549	**56.5%**	32.1%	8.0%	1.6%	0.9%	0.9%	1.57	± 0.067	0.786
Species at risk protection and recovery outside of the area where I live is important to me.	549	**55.4%**	34.4%	7.7%	0.7%	0.7%	1.1%	1.55	± 0.061	0.732
It is acceptable to limit industrial and commercial activities on private land in order to protect and recover species at risk and the places that they depend upon to live.	551	**43.6%**	23.5%	14.9%	3.8%	3.8%	1.5%	1.90	± 0.086	1.036

[†] The mean response of Vancouver Island/Lower Mainland respondents was significantly lower than the mean response of Central/Northern BC respondents.

ANOVA results indicated that there were statistically significant differences between the mean responses of the four sample regions for two of the eight items in Question 3 (Table 8).

Table 8. ANOVA Question 3: Opinions about species at risk protection (significant differences between sample regions in **bold**).

Item	n	df	F	p
It is acceptable to limit industrial and commercial activities on public land in order to protect and recover species at risk and the places that they depend upon to live.	541	3	1.497	0.214
Natural resource planning and management does a good job of protecting and recovering species at risk and the places that they depend upon to live.	465	3	1.795	0.147
The protection and recovery of species at risk should be given priority over economic considerations.	533	3	1.125	0.338
It is more useful to protect and recover the places that plants and animals depend upon to live than it is to protect and recover individual species.	481	3	2.312	0.075
It is acceptable to limit non-commercial activities (such as home building or the drilling of water wells) on private land in order to protect and recover species at risk and the places that they live.	**536**	**3**	**3.953**	**0.008**
Species at risk protection and recovery in the area where I live is important to me.	542	3	0.429	0.732
Species at risk protection and recovery outside of the area where I live is important to me.	541	3	0.379	0.768
It is acceptable to limit industrial and commercial activities on private land in order to protect and recover species at risk and the places that they depend upon to live.	**541**	**3**	**2.962**	**0.032**

There was a significant difference between the mean responses of two sample regions for the fourth item, *it is acceptable to limit non-commercial activities (such as home building or the drilling of water wells) on private land in order to protect and recover species at risk and the places that they live*, $F(3, 536) = 3.953$, $p < 0.05$. As the Levene statistic (2.483, $p > 0.05$) indicated that the variances of the mean responses of the sample regions were equal, a *Scheffe* test was used to identify where the differences lay. The *Scheffe post hoc* test revealed that the mean responses for Vancouver Island/Lower Mainland respondents ($\bar{x} = 2.27$) was significantly lower (*i.e.* more agreeable) than the mean response for Central/Northern BC respondents ($\bar{x} = 2.66$).

ANOVA results indicated that there was a significant difference between the mean responses of two sample regions for the eighth item, *it is acceptable to limit industrial and commercial activities on private land in order to protect and recover species at risk and the places that they depend upon to live*, $F(3, 541) = 2.962$, $p < 0.05$. Although the Levene statistic (2.787, $p < 0.05$) indicated that the variances of the mean responses for some sample regions were not equal, the Welch F Test (2.386, $p > 0.05$) did not confirm the presence of any differences.

3.4. Question 4: Attitudes towards species at risk protection on private land in BC.

With the exception of the statement, species at risk protection and recovery should not interfere with a landowner's right to develop property (which 59.6% *mildly or strongly disagreed* with and 16.1% *strongly or mildly agreed* with), respondents were in agreement with the statements presented in this question (Table 9). The vast majority of respondents (94.7%) *strongly or mildly agreed* with the statement that members of the public should be encouraged to become involved in efforts to protect species at risk, such as volunteering to help clean up streams, or planting trees, while just 1.3% expressed *mild or strong disagreement*. More than four in five respondents (88.2%) *strongly or mildly agreed* that members of the public have a responsibility to become involved in efforts to protect and recover species at risk and the places that they depend upon to live, while fewer than one respondent in ten (2.5%) reported *mildly or strongly disagreement* with this statement. Seven times as many respondents reported *strongly or mildly agreeing* (73.6%) with the statement that landowners should not have the right to use their property in ways that may put plants or animals at risk of extinction, endangerment, or threat than did the percentage of respondents that indicated that they *mildly or strongly disagreed* (10.4%). More than half of respondents (56.9%) *strongly or mildly agreed* that landowners who are prevented from developing their property because of species at risk laws should be compensated for any lost income by government, while just more than one respondent in ten (16.5%) *mildly or strongly disagreed*.

ANOVA results indicated that there were statistically significant differences between the mean responses of the four sample regions for three of the five items in Question 4 (Table 10).

Table 10. ANOVA Question 4: Opinions about species at risk protection (significant differences between sample regions in **bold**).

Item	n	df	F	p
Species at risk protection and recovery should not interfere with a landowner's right to develop property.	**542**	**3**	**3.229**	**0.022**
Landowners should not have the right to use their property in ways that may put plants or animals at risk of extinction, endangerment, or threat.	**545**	**3**	**4.424**	**0.004**
Landowners who are prevented from developing their property because of species at risk laws should be compensated for any lost income by government.	**530**	**3**	**2.709**	**0.045**
Members of the public should be encouraged to become involved in efforts to protect species at risk, such as volunteering to help clean up streams, or planting trees.	547	3	0.855	0.464
Members of the public have a responsibility to become involved in efforts to protect and recover species at risk and the places that they depend upon to live.	548	3	1.481	0.219

Table 9. Question 4: Attitudes towards species at risk protection on private land in BC (most frequently identified response in **bold**).

Item	n	Strongly Agree (1)	Mildly Agree (2)	Partly agree/ Disagree (3)	Mildly Disagree (4)	Strongly Disagree (5)	Don't Know	Mean	95% CI	SD
Species at risk protection and recovery should not interfere with a landowner's right to develop property.	553	6.3%	9.8%	22.6%	23.1%	**36.5%**	1.6%	3.76†	± 0.104	1.227
Landowners should not have the right to use their property in ways that may put plants or animals at risk of extinction, endangerment, or threat.	549	**51.0%**	22.6%	15.7%	4.6%	5.8%	0.4%	1.91‡	± 0.098	1.165
Landowners who are prevented from developing their property because of species at risk laws should be compensated for any lost income by government.	548	23.7%	**33.2%**	23.9%	7.7%	8.6%	2.9%	2.43▲	± 0.102	1.193
Members of the public should be encouraged to become involved in efforts to protect species at risk, such as volunteering to help clean up streams, or planting trees.	552	**71.7%**	23.0%	3.4%	0.4%	0.9%	0.5%	1.35	± 0.055	0.655
Members of the public have a responsibility to become involved in efforts to protect and recover species at risk and the places that they depend upon to live.	552	**56.0%**	32.2%	8.9%	1.4%	1.1%	0.4%	1.59	± 0.067	0.800

† The mean response of Central/Northern BC respondents was significantly lower than the mean response for Vancouver Island/Lower Mainland respondents.
‡ The mean response of Vancouver Island/Lower Mainland respondents was significantly lower than the mean response for Coastal BC respondents.
▲ The mean response of Coastal BC respondents was significantly lower than the mean responses for Vancouver Island/Lower Mainland and Southeastern BC respondents.

There was a significant difference between the mean responses of two sample regions for the fist item, *species at risk protection and recovery should not interfere with a landowner's right to develop property*, $F(3, 542) = 3.229$, $p < 0.05$. As the Levene statistic (0.717, $p > 0.05$) indicated that the variances of the mean responses of the sample regions were equal, a *Scheffe* test was used to identify where the differences lay. The *Scheffe post hoc* test revealed that the mean responses for Central/Northern BC respondents ($\bar{x} = 3.43$) was significantly lower (*i.e.* more agreeable) than the mean response for Vancouver Island/Lower Mainland respondents ($\bar{x} = 3.86$).

There was a significant difference between the mean responses of two sample regions for the second item, *landowners should not have the right to use their property in ways that may put plants or animals at risk of extinction, endangerment, or threat*, $F(3, 545) = 4.424$, $p < 0.05$. As the Levene statistic (2.193, $p > 0.05$) indicated that the variances of the mean responses of the sample regions were equal, a *Scheffe* test was used to identify where the differences lay. The *Scheffe post hoc* test revealed that the mean responses for Vancouver Island/Lower Mainland respondents ($\bar{x} = 1.78$) was significantly lower (*i.e.* more agreeable) than the mean response for Coastal BC respondents ($\bar{x} = 2.34$).

There was a significant difference between the mean responses of three sample regions for the third item, *landowners who are prevented from developing their property because of species at risk laws should be compensated for any lost income by government*, $F(3, 530) = 2.709$, $p < 0.05$. As the Levene statistic (1.270, $p > 0.05$) indicated that the variances of the mean responses of the sample regions were equal, a *Scheffe* test was used to identify where the differences lay. The *Scheffe post hoc* test revealed that the mean responses for Coastal BC respondents ($\bar{x} = 1.92$) was significantly lower (*i.e.* more agreeable) than the mean responses of Vancouver Island/Lower Mainland respondents ($\bar{x} = 2.48$) and Southeastern BC respondents ($\bar{x} = 2.51$).

3.5. Question 5: Opinions about different approaches for protecting and recovering species at risk.

This question presented respondents with a number of statements about different approaches for the protection and recovery of species at risk; the pattern of response for this question is presented in Table 11. Almost all respondents (97.7%) indicated that they *strongly or mildly agreed* with the strategy to support primary and secondary education (kindergarten to grade 12) classes about natural history and the natural environment, while just 0.4% *mildly disagreed* (no respondents *strongly disagreed* with this strategy). A similar degree of support was evident for the strategy to promote environmental awareness and responsibility to encourage people to reduce their impacts on other species and natural areas: 97.1% of respondents *strongly or mildly agreed* and 0.2% *mildly disagreed* (no respondents *strongly disagreed* with this strategy). More than four respondents in five (88.4%) *strongly or mildly agreed* with the strategy of providing incentives (such as tax breaks) to private land-owners for efforts that they could make to

protect and recover the places that species at risk depend upon to live, while 2.9% of respondents *mildly or strongly disagreed*. While 3.8% of respondents *mildly or strongly disagreed* with the strategy to ban pesticides and other toxic chemicals in order to protect and recover species at risk and the places that they depend upon to live, more than four in five respondents (85.5%) *strongly or mildly agreed*. The majority of respondents (84.8%) *strongly or mildly agreed* with the strategy of limiting the spread of invasive non-native (*i.e.* introduced) plants and animals on public lands, while 2.5% of respondents *mildly or strongly disagreed*. Four respondents in five (80.7%) *strongly or mildly agreed* with the strategy of restricting motorized outdoor recreation activities (such as snowmobiles, helicopters, ATVs, or 4x4s) in order to protect and recover species at risk and the places that they depend upon to live, while fewer than one in ten respondents (7.0%) *mildly or strongly disagreed*. Thirteen-times as many respondents reported *strongly or mildly agreeing* (79.9%) with the strategy to increase the amount of parks and protected areas in places that species depend upon to live than did the percentage of respondents that *mildly or strongly disagreed* (6.1%). More than three-quarters of respondents (78.2%) *strongly or mildly agreed* with the strategy to increase the populations of species at risk by raising plants and animals that are at risk in a controlled environment for later release into the wild, while fewer than one in ten respondents (7.1%) *mildly or strongly disagreed*. While just more than three-quarters of respondents (76.5%) *strongly or mildly agreed* with the strategy of enforcing federal species at risk legislation, just 4.4% of respondents indicated *mild or strong disagreement*. Just more than three-quarters of respondents (76.0%) reported *strong or mild agreement* with the strategy to limit the spread of invasive non-native (*i.e.* introduced) plants and animals on private lands, while less than on e respondent in ten (6.2%) *mildly or strongly disagreed*. More than eight-times as many respondents reported *strongly or mildly agreement* (74.0%) with the strategy to limit timber harvesting in order to protect and recover the places that species at risk depend upon to live than did the percentage of respondents that *mildly or strongly disagreed* (7.1%) with this strategy. Less than three-quarters of respondents (73.3%) *strongly or mildly agreed* with the strategy to limit oil and gas development in order to protect and recover the places that species at risk depend upon to live, while less than one respondent in ten (8.3%) indicated that they *mildly or strongly disagreed*. A majority of respondents *strongly or mildly agreed* with the strategy to restrict future industrial development in order to protect and restore the places that species at risk depend upon to live, while just 6.1% expressed *mild or strong disagreement*. Seven respondents in ten (70.6%) *strongly or mildly agreed* with the strategy of limiting mining and mineral exploration in order to protect and recover the places that species at risk depend upon to live, while fewer than one in ten respondents (8.2%) reported *mildly or strongly disagreeing* with this strategy. Two-thirds of respondents (64.9%) *strongly or mildly agreed* with the strategy to limit industrial, commercial, and/or urban development of natural areas on private land, while more than one respondent in ten (11.9%) expressed *mild or strong disagreement* with this strategy. More than three-times as many respondents indicated that they *strongly or mildly agreed* (63.0%) with the strategy of limiting access to natural areas (*i.e.* controlling human activities inside and outside of parks) than did the percentage of respondents that *mildly or strongly disagreed* with this strategy (16.7%).

Table 11. Question 5: Opinions about different approaches for protecting and recovering species at risk (most frequently identified response in **bold**).

Item	n	Strongly Agree (1)	Mildly Agree (2)	Partly agree/ Disagree (3)	Mildly Disagree (4)	Strongly Disagree (5)	Don't Know	Mean	95% CI	SD
Restrict motorized outdoor recreation activities (such as snowmobiles, helicopters, ATVs, or 4x4s) in order to protect and recover species at risk and the places that they depend upon to live.	550	**58.2%**	22.5%	11.1%	3.5%	3.5%	1.3%	1.70	± 0.086	1.033
Promote environmental awareness and responsibility to encourage people to reduce their impacts on other species and natural areas.	553	**83.7%**	13.4%	2.4%	0.2%	—	0.4%	1.19	± 0.039	0.459
Limit negative consequences of green energy development (such as impacts of electricity generation from wind on migratory birds) to protect and recover species at risk and the places that they depend upon to live.	549	30.1%	**30.2%**	19.7%	5.6%	2.6%	11.8%	2.10	± 0.092	1.037
Implement actions for species at risk protection and recovery even if these actions have negative consequences for other species.	550	4.0%	11.1%	**31.5%**	22.9%	17.8%	12.7%	3.45	± 0.098	1.091
Limit timber harvesting in order to protect and recover the places that species at risk depend upon to live.	554	**44.0%**	30.0%	16.4%	5.1%	3.2%	1.3%	1.92	± 0.088	1.054
Support primary and secondary education (kindergarten to grade 12) classes about natural history and the natural environment.	553	**83.4%**	14.3%	2.0%	0.4%	—	—	1.19	± 0.039	0.467
Limit oil & gas development in order to protect and recover the places that species at risk depend upon to live.	553	**45.6%**	27.7%	17.7%	5.1%	2.7%	1.3%	1.90	± 0.088	1.043
Ban pesticides and other toxic chemicals in order to protect and recover species at risk and the places that they depend upon to live.	551	**65.0%**	20.5%	9.8%	2.7%	1.1%	0.9%	1.53	± 0.073	0.864
Increase the populations of species at risk by raising plants and animals that are at risk in a controlled environment for later release into the wild.	551	**43.2%**	35.0%	11.4%	4.2%	2.9%	3.3%	1.84	± 0.084	0.990
Limit mining and mineral exploration in order to protect and recover the places that species at risk depend upon to live.	553	**39.1%**	31.5%	18.6%	5.8%	2.4%	2.7%	1.98	± 0.086	1.025

Table 11 (cont'd). Question 5: Opinions about different approaches for protecting and recovering species at risk (most frequently identified response in **bold**).

Item	n	Strongly Agree (1)	Mildly Agree (2)	Partly agree/ Disagree (3)	Mildly Disagree (4)	Strongly Disagree (5)	Don't Know	Mean	95% CI	SD
Increase the amount of parks and protected areas in places that species depend upon to live.	551	**55.0%**	24.9%	13.4%	2.5%	3.6%	0.5%	1.74	± 0.086	1.026
Limit industrial, commercial, and/or urban development of natural areas on private land.	549	**33.0%**	31.9%	20.9%	7.3%	4.6%	2.4%	2.16†	± 0.094	1.110
Provide incentives (such as tax breaks) to private land-owners for efforts that they could make to protect and recover the places that species at risk depend upon to live.	555	**57.8%**	30.6%	7.9%	0.9%	2.0%	0.7%	1.58	± 0.071	0.837
Limit the spread of invasive non-native (*i.e.* introduced) plants and animals on public lands.	552	**60.9%**	23.9%	8.3%	1.1%	1.4%	4.3%	1.52	± 0.071	0.822
Reduce or enhance the populations of animals that depend on species at risk for food.	544	11.8%	24.4%	**29.6%**	8.5%	9.9%	15.8%	2.77	± 0.108	1.172
Restrict future industrial development in order to protect and restore the places that species at risk depend upon to live.	550	**42.0%**	30.4%	19.5%	4.5%	1.6%	2.0%	1.91‡	± 0.082	0.978
Enforce federal species at risk legislation.	550	**55.6%**	20.9%	11.1%	2.2%	2.2%	8.0%	1.63	± 0.082	0.949
Limit access to natural areas (*i.e.* controlling human activities inside and outside of parks).	551	30.7%	**32.3%**	18.9%	9.1%	7.6%	1.5%	2.29▲	± 0.102	1.216
Reduce or enhance the populations of animals that species at risk depend on for food.	545	13.8%	**28.8%**	25.9%	7.3%	9.4%	14.9%	2.64	± 0.108	1.179
Limit the spread of invasive non-native (*i.e.* introduced) plants and animals on private lands.	551	**45.7%**	30.3%	12.9%	2.9%	3.3%	4.9%	1.82	± 0.086	1.008

† The mean response of Vancouver Island/Lower Mainland respondents was significantly less than the mean responses of Central/Northern BC and Coastal BC respondents.

‡ The mean responses for Coastal BC respondents was significantly greater than the mean responses of Vancouver Island/Lower Mainland and Southeastern BC respondents.

▲ The mean responses for Southeastern BC respondents was significantly less than the mean responses of Central/Northern BC respondents.

Six respondents in ten (60.3%) *strongly or mildly agreed* with the strategy to limit negative consequences of green energy development (such as impacts of electricity generation from wind on migratory birds) to protect and recover species at risk and the places that they depend upon to live, while less than one respondent in ten (8.2%) *mildly or strongly disagreed*. More than twice as many respondents reported that they *strongly or mildly agreed* (42.6%) with the strategy of reducing or enhancing the populations of animals that species at risk depend on for food, while more than one respondent in ten (16.7%) *mildly or strongly disagreed*. More than one-third of respondents (36.2%) *strongly or mildly agreed* with the strategy to reduce or enhance the populations of animals that depend on species at risk for food, while almost one respondent in five (18.4%) *mildly or strongly disagreed* with this strategy. Two respondents in five (40.7%) *mildly or strongly disagreed* with the strategy to implement actions for species at risk protection and recovery even if these actions have negative consequences for other species, while just 15.1% of respondents indicated that they *strongly or mildly agreed* with this approach.

ANOVA results indicated that there were statistically significant differences between the mean responses of the four sample regions for eight of the twenty items in Question 5 (Table 12).

Table 12. ANOVA Question 5: Opinions about different approaches for protecting and recovering species at risk (significant differences between sample regions in **bold**).

Item	n	df	F	p
Restrict motorized outdoor recreation activities (such as snowmobiles, helicopters, ATVs, or 4x4s) in order to protect and recover species at risk and the places that they depend upon to live.	541	3	2.543	0.055
Promote environmental awareness and responsibility to encourage people to reduce their impacts on other species and natural areas.	549	3	1.129	0.337
Limit negative consequences of green energy development (such as impacts of electricity generation from wind on migratory birds) to protect and recover species at risk and the places that they depend upon to live.	**482**	**3**	**2.930**	**0.033**
Implement actions for species at risk protection and recovery even if these actions have negative consequences for other species.	478	3	1.310	0.270
Limit timber harvesting in order to protect and recover the places that species at risk depend upon to live.	**545**	**3**	**2.913**	**0.034**
Support primary and secondary education (kindergarten to grade 12) classes about natural history and the natural environment.	551	3	0.223	0.881
Limit oil & gas development in order to protect and recover the places that species at risk depend upon to live.	544	3	2.523	0.057
Ban pesticides and other toxic chemicals in order to protect and recover species at risk and the places that they depend upon to live.	544	3	2.088	0.101
Increase the populations of species at risk by raising plants and animals that are at risk in a controlled environment for later release into the wild.	531	3	1.932	0.123
Limit mining and mineral exploration in order to protect and recover the places that species at risk depend upon to live.	**536**	**3**	**3.843**	**0.010**
Increase the amount of parks and protected areas in places that species depend upon to live.	**546**	**3**	**3.129**	**0.025**
Limit industrial, commercial, and/or urban development of natural areas on private land.	**534**	**3**	**5.535**	**0.001**

Table 12 (cont'd). ANOVA Question 5: Opinions about different approaches for protecting and recovering species at risk (significant differences between sample regions in **bold**).

Item	n	df	F	p
Provide incentives (such as tax breaks) to private land-owners for efforts that they could make to protect and recover the places that species at risk depend upon to live.	549	3	1.402	0.241
Limit the spread of invasive non-native (*i.e.* introduced) plants and animals on public lands.	526	3	0.910	0.436
Reduce or enhance the populations of animals that depend on species at risk for food.	45	3	0.715	0.522
Restrict future industrial development in order to protect and restore the places that species at risk depend upon to live.	**537**	**3**	**5.628**	**0.001**
Enforce federal species at risk legislation.	**504**	**3**	**3.166**	**0.024**
Limit access to natural areas (*i.e.* controlling human activities inside and outside of parks).	**541**	**3**	**3.711**	**0.012**
Reduce or enhance the populations of animals that species at risk depend on for food.	462	3	0.359	0.782
Limit the spread of invasive non-native (*i.e.* introduced) plants and animals on private lands.	522	3	0.029	0.993

There were significant differences between the mean responses of some sample regions for the third item, *limit negative consequences of green energy development (such as impacts of electricity generation from wind on migratory birds) to protect and recover species at risk and the places that they depend upon to live*, $F(3, 482) = 2.930$, $p < 0.05$. Although the *Levene* statistic (6.088, $p < 0.05$) indicated that the variances of the mean responses for some sample regions were not equal, the *Welch F Test* (2.396, $p > 0.05$) did not confirm the presence of any differences.

There were significant differences between the mean responses of some sample regions for the fifth item, *limit timber harvesting in order to protect and recover the places that species at risk depend upon to live*, $F(3, 545) = 2.913$, $p < 0.05$. Although the *Levene* statistic (3.885, $p < 0.05$) indicated that the variances of the mean responses for some sample regions were not equal, the *Welch F Test* (2.526, $p > 0.05$) did not confirm the presence of any differences.

There were significant differences between the mean responses of some sample regions for the tenth item, *limit mining and mineral exploration in order to protect and recover the places that species at risk depend upon to live*, $F(3, 536) = 3.843$, $p < 0.05$. Although the *Levene* statistic (2.724, $p < 0.05$) indicated that the variances of the mean responses for some sample regions were not equal, the *Welch F Test* (3.019, $p < 0.05$) confirms the presence of the differences. However, the *Games-Howell post hoc* test did not reveal where these differences lay.

There were significant differences between the mean responses of three sample regions for the eleventh item, *Increase the amount of parks and protected areas in places that species depend upon to live*, $F(3, 546) = 3.129$, $p < 0.05$. As the Levene statistic (2.504, $p > 0.05$) indicated that the variances of the mean responses of the sample regions were equal, a *Scheffe* test was used to identify where the differences lay. However, the *Scheffe post hoc* test did not reveal where these differences lay.

There were significant differences between the mean responses of thee sample regions for the twelfth item, *limit industrial, commercial, and/or urban development of natural areas on private land*, $F(3, 534) = 5.535$, $p < 0.05$. Although the *Levene* statistic (4.467, $p < 0.05$) indicated that the variances of the mean responses for some sample regions were not equal, the *Welch F Test* (4.815, $p < 0.05$) confirmed the presence of the differences. The *Games-Howell post hoc* test revealed that the mean response of Vancouver Island/Lower Mainland respondents ($\bar{x} = 2.03$) was significantly less (*i.e.* more agreeable) than the mean responses of Central/Northern BC respondents ($\bar{x} = 2.43$) and Coastal BC respondents ($\bar{x} = 2.61$).

There were significant differences between the mean responses of three sample regions for the sixteenth item, *restrict future industrial development in order to protect and restore the places that species at risk depend upon to live*, $F(3, 537) = 5.628$, $p < 0.05$. As the *Levene* statistic (2.235, $p > 0.05$) indicated that the variances of the mean responses of the sample regions were equal, a *Scheffe* test was used to identify where the differences lay. The *Scheffe post hoc* test revealed that the mean responses for Coastal BC respondents ($\bar{x} = 2.38$) was significantly greater (*i.e.* less agreeable) than the mean responses of Vancouver Island/Lower Mainland respondents ($\bar{x} = 1.82$) and Southeastern BC respondents ($\bar{x} = 1.84$).

There were significant differences between the mean responses of some sample regions for the seventeenth item, *enforce federal species at risk legislation*, $F(3, 504) = 3.166$, $p < 0.05$. Although the *Levene* statistic (3.463, $p < 0.05$) indicated that the variances of the mean responses for some sample regions were not equal, the *Welch F Test* (2.860, $p < 0.05$) confirms the presence of the differences. However, the *Games-Howell post hoc* test did not reveal where these differences lay.

There was significant differences between the mean responses of three sample regions for the eighteenth item, *limit access to natural areas (i.e. controlling human activities inside and outside of parks)*, $F(3, 541) = 3.711$, $p < 0.05$. As the *Levene* statistic (1.929, $p > 0.05$) indicated that the variances of the mean responses of the sample regions were equal, a *Scheffe* test was used to identify where the differences lay. The *Scheffe post hoc* test revealed that the mean responses for Southeastern BC respondents ($\bar{x} = 2.05$) was significantly less (*i.e.* more agreeable) than the mean responses of Central/Northern BC respondents ($\bar{x} = 2.56$).

3.6. Question 6: Priorities and responsibilities for species at risk protection and recovery.

This question was composed of two parts: the ranking of specie attributes for deciding which species to protect and recover first; and the ranking of groups that play roles in species at risk protection and recovery.

3.6.1. Ranking of factors used to prioritize protection and recovery of species at risk.

The pattern of response for this question is presented in Table 13. The *Kruskal-Wallis* test did not indicate any differences in the ranking of factors used to prioritize the protection and recovery of species at risk between the four sample regions (Table 14); the lack of differences in rankings was confirmed by the *Median* test (Table 15). Figure 2 illustrates the weighted ranking of factors used to prioritize the protection and recovery of species at risk.

Table 14. Kruskal-Wallis Question 6: Factors used to prioritize the protection and recovery of species at risk (significant differences between sample regions in **bold**).

Factor	n	df	*H*	p
Species at risk in BC but common elsewhere.	531	3	3.026	0.388
Species only or mainly occurring in BC.	528	3	1.551	0.671
Chances of successful protection and recovery.	525	3	1.59	0.661
Cultural and traditional importance.	526	3	1.003	0.801
Economic costs of protection and recovery.	524	3	2.887	0.409
Common species whose numbers are in rapid decline.	534	3	2.074	0.557

Table 15. Median test Question 6: Factors used to prioritize the protection and recovery of species at risk (significant differences between sample regions in **bold**).

Factor	n	Median	df	χ^2	p
Species at risk in BC but common elsewhere.	531	4.00	3	5.093	0.165
Species only or mainly occurring in BC.	528	2.00	3	2.151	0.542
Chances of successful protection and recovery.	525	3.00	3	1.380	0.71
Cultural and traditional importance.	526	5.00	3	3.560	0.313
Economic costs of protection and recovery.	524	5.00	3	2.698	0.441
Common species whose numbers are in rapid decline.	534	2.00	3	2.311	0.51

Table 13. Question 6: Factors used to prioritize the protection and recovery of species at risk (most frequently identified response in **bold**).

Factor	n	Rank						Mean	95% CI	SD
		1	2	3	4	5	6			
Species at risk in BC but common elsewhere.	532	7.3%	17.9%	**21.1%**	14.1%	20.3%	19.4%	3.80	± 0.135	1.590
Species only or mainly occurring in BC.	529	**46.7%**	19.5%	12.7%	13.0%	4.7%	3.4%	2.20	± 0.122	1.432
Chances of successful protection and recovery.	526	24.0%	**25.7%**	20.5%	18.4%	9.1%	2.3%	2.70	± 0.118	1.372
Cultural and traditional importance.	527	4.9%	7.0%	11.0%	16.9%	28.1%	**32.1%**	4.52	± 0.125	1.459
Economic costs of protection and recovery.	525	4.6%	9.0%	16.4%	19.8%	21.7%	**28.6%**	4.31	± 0.125	1.484
Common species whose numbers are in rapid decline.	535	**35.0%**	22.4%	20.0%	10.5%	6.4%	5.8%	2.48	± 0.125	1.496

The weighted scores of specie attributes (Figure 2) suggest the following prioritization for species at risk in British Columbia to be protected and recovered:

1. Species only or mainly occurring in British Columbia;
2. Common species whose numbers are in rapid decline;
3. Chances of successful protection and recovery;
4. Economic costs of protection and recovery;
5. Species at risk in BC but common elsewhere; and then
6. Species of cultural and traditional importance.

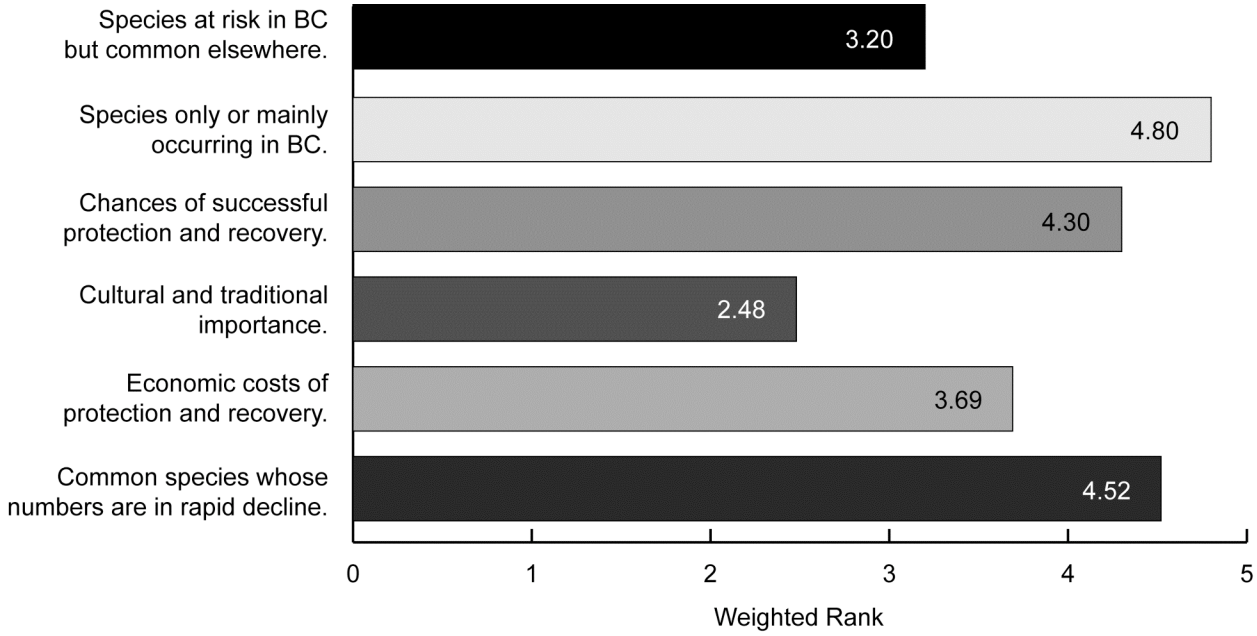

Figure 2. Weighted ranking of factors used to prioritize the protection and recovery of species at risk.

3.6.2. Ranking of groups with responsibilities for the protection of species at risk.

The pattern of response for this question is presented in Table 16. The *Kruskal-Wallis* test did not indicate any differences in the ranking of groups with responsibilities for the protection of species at risk between the four sample regions (Table 17); the lack of differences in rankings was confirmed by the *Median* test (Table 18). Figure 3 illustrates the weighted ranking of groups with responsibilities for the protection of species at risk.

Table 16. Groups with responsibilities for the protection of species at risk

Group	n	Rank			Mean	95% CI	SD
		1	2	3			
Local governments	308	25.3	22.4	52.3	2.27	± 0.094	0.840
Provincial government	480	42.1	48.3	9.6	1.68	± 0.057	0.642
Federal government	424	62.0	22.4	15.6	1.54	± 0.071	0.749
First Nations	145	33.1	31.0	35.9	2.03	± 0.135	0.833
Individual citizens	249	31.3	25.7	43.0	2.12	± 0.106	0.856
Industrial/commercial users	254	32.3	26.4	41.3	2.09	± 0.106	0.855
Private landowners	138	**22.5**	35.5	42.0	2.20	± 0.131	0.782

Table 17. Kruskal-Wallis Question 6: Groups with responsibilities for the protection of species at risk (significant differences between sample regions in **bold**).

Group	n	df	*H*	p
Local governments	307	3	1.332	0.724
Provincial government	479	3	3.582	0.310
Federal government	423	3	2.946	0.400
First Nations	145	3	1.142	0.767
Individual citizens	249	3	0.226	0.973
Industrial/commercial users	254	3	0.159	0.984
Private landowners	138	3	1.947	0.584

Table 18. Median test Question 6: Groups with responsibilities for the protection of species at risk (significant differences between sample regions in **bold**).

Group	n	Median	df	χ^2	p
Local governments	307	3.00	3	—[†]	—
Provincial government	479	2.00	3	1.779	0.620
Federal government	423	1.00	3	2.455	0.483
First Nations	145	2.00	3	0.882	0.830
Individual citizens	249	2.00	3	0.226	0.973
Industrial/commercial users	254	2.00	3	0.232	0.972
Private landowners	138	2.00	3	2.325	0.508

[†] As all values are less than or equal to the median, the median test could not be performed.

The weighted scores of groups with responsibilities for the protection of species at risk (Figure 3) suggest the following ranking of institutions or actors in terms of their responsibility for the protection of species at risk in British Columbia:

1. Federal Government;
2. Provincial Government;
3. First Nations;
4. Industrial/commercial users;
5. Individual citizens;
6. Private landowners; and then
7. Local governments.

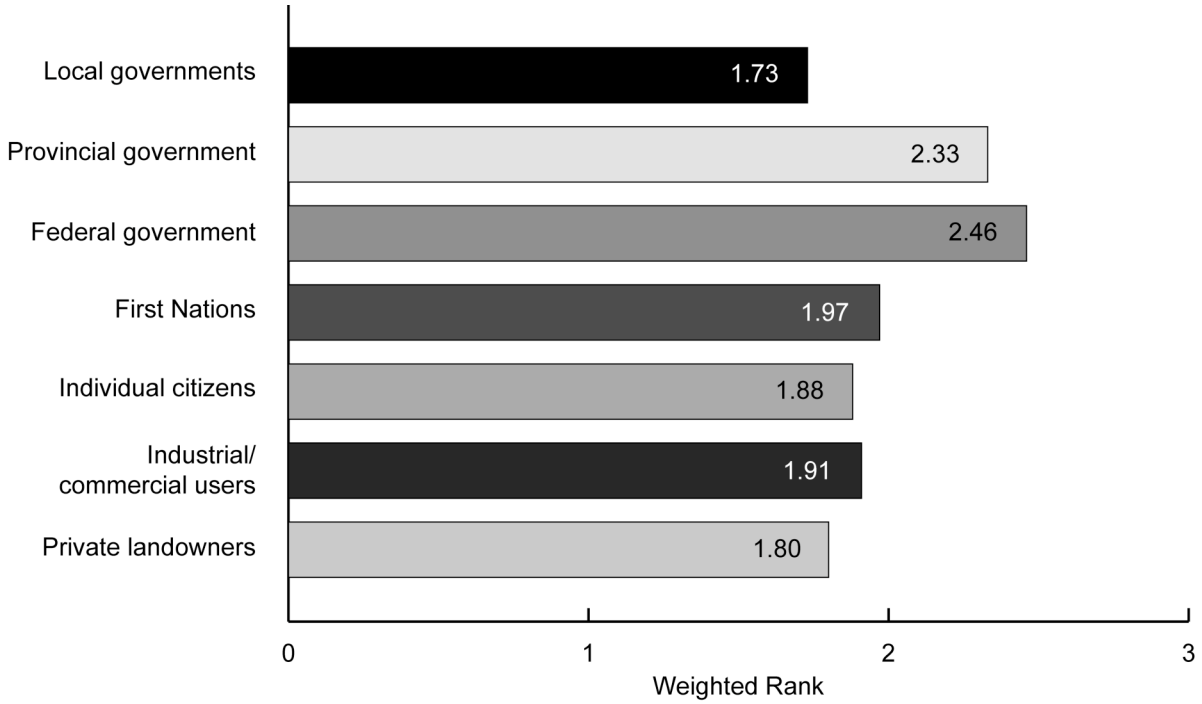

Figure 3. Groups with responsibilities for the protection of species at risk.

3.7. Question 7: Support for the protection and recovery of species at risk.

One the whole, respondents were supportive of efforts for the protection and recovery of species at risk in British Columbia (Table 19). More than four respondents in five (86.2%) expressed support for the protection of species at risk in British Columbia, while fewer than one respondent in ten respondents (2.7%) did not express support for protection. More than four respondents in five (83.7%) expressed support for the recovery of species at risk in British Columbia, while fewer than one respondent in ten respondents (3.6%) did not express support for recovery.

On the whole, respondents were concerned about the loss and extinction of plants and animals in British Columbia (Table 20). More than four respondents in five (81.4%) expressed concern about the loss and extinction of animals in British Columbia, while fewer than one respondent in ten (8.8%) did not express great concern about the loss and extinction of animals. More than three-quarters of respondents (76.9%) expressed concern about the loss and extinction of plants in British Columbia, while fewer than one respondent in ten (9.5%) did not express great concern about the loss and extinction of plants.

Table 19. Question 7: Support for the protection and recovery of species at risk (most frequently identified response in **bold**).

Item	n	Fully Support (1)	2	3	4	Do Not Support At All (5)	Mean	95% CI	SD
How much do you support the protection of species at risk in British Columbia?	552	**52.5%**	33.7%	11.1%	2.2%	0.5%	1.64	± 0.067	0.803
How much do you support the recovery of species at risk in British Columbia?	553	**49.0%**	34.7%	12.7%	2.9%	0.7%	1.71	± 0.071	0.846

Table 20. Question 7: Support for the protection and recovery of species at risk (most frequently identified response in **bold**).

Item	n	Not Concerned At All (1)	2	3	4	Very Concerned (5)	Mean	95% CI	SD
How concerned are you about the loss and extinction of animals in British Columbia?	550	3.5%	5.3%	9.8%	28.5%	**52.9%**	4.22	± 0.088	1.051
How concerned are you about the loss and extinction of plants in British Columbia?	550	2.4%	7.1%	13.6%	32.0%	**44.9%**	4.10	± 0.086	1.037

ANOVA results did not indicate that there were statistically significant differences between the mean responses of the four sample regions for any of the four items in Question 7 (Table 21).

Table 21. ANOVA Question 7: Support for the protection and recovery of species at risk (significant differences between sample regions in **bold**).

Item	n	df	F	p
How much do you support the protection of species at risk in British Columbia?	550	3	2.585	0.052
How much do you support the recovery of species at risk in British Columbia?	551	3	0.888	0.447
How concerned are you about the loss and extinction of animals in British Columbia?	548	3	0.081	0.970
How concerned are you about the loss and extinction of plants in British Columbia?	548	3	0.331	0.803

3.8. Question 8: Prioritizing spending for species at risk protection and recovery.

The pattern of response for this question is presented in Table 22. Respondents' mean allocation of funds to the four characteristics of species that may be used to prioritize spending for species at risk protection and recovery in British Columbia suggest the following prioritization of specie characteristics:

1. Species that exist only in BC, and no other area in Canada;
2. Species that are important to BC's economy;
3. Species that are common, but whose numbers are decreasingly quickly; and then
4. Distinctive species.

It is worth noting that the sum of respondents' mean allocation of funds to the four characteristics of species that may be used to prioritize spending for species at risk protection and recovery in British Columbia ($99.82) almost sums to the $100 respondents had to distribute among the specie characteristics.

Table 22. Question 8: Prioritizing spending for species at risk protection and recovery (n = 523).

Item	Minimum	Maximum	Mean	95% CI	SD
Distinctive species	$0.00	$50.00	$21.43	± $0.94	10.913
Species that exist only in BC, and no other area in Canada.	$0.00	$100.00	$28.80	± $1.22	14.208
Species that are important to BC's economy.	$0.00	$100.00	$26.23	± $1.13	15.523
Species that are common, but whose numbers are decreasing quickly.	$0.00	$100.00	$23.36	± $1.21	14.162

ANOVA results did not indicate that there were statistically significant differences between the mean responses of the four sample regions for any of the four items in Question 8 (Table 23).

Table 23. ANOVA Question 8: Prioritizing spending for species at risk protection and recovery (significant differences between sample regions in **bold**).

Item	n	df	F	p
Distinctive species	522	3	0.870	0.456
Species that exist only in BC, and no other area in Canada.	522	3	0.256	0.857
Species that are important to BC's economy.	522	3	1.362	0.254
Species t hat are common, but whose numbers are decreasing quickly.	522	3	0.406	0.749

3.9. Question 9: Opinions about priorities for species at risk protection[8].

This question sought to examine the relative priorities of different factors that may be considered in the protection and recovery of species at risk in British Columbia. This question differs from others asked in the questionnaire as it forces respondents to make explicit trade-offs between the six factors that are considered. Tables 24 to 28 illustrate factors and the proportions of times that factors were chosen over other factors for each of the sample regions, and for all sample regions combined.

Table 24. Vancouver Island/Lower Mainland: Proportions of times in which the factors listed in the top row were chosen over the factors listed in the first column in each studied area.

	Species at risk in BC but common elsewhere.	Cultural and traditional importance.	The likelihood of the species being protected.	Common species whose numbers are in rapid decline	The costs associated with protecting the species.	Species only or mainly occurring in BC
Species at risk in BC but common elsewhere.	0.000					
Cultural and traditional importance.	0.683	0.000				
The likelihood of the species being protected.	0.309	0.148	0.000			
Common species whose numbers are in rapid decline.	0.220	0.082	0.304	0.000		
The costs associated with protecting the species.	0.497	0.418	0.729	0.795	0.000	
Species only or mainly occurring in BC.	0.157	0.144	0.416	0.463	0.199	0.000

[8] The analysis for this question was done by Wellington Spetic, Department of Wood Science, Faculty of Forestry, University of British Columbia.

Table 25. Coastal BC: Proportions of times in which the factors listed in the top row were chosen over the factors listed in the first column in each studied area.

	Species at risk in BC but common elsewhere.	Cultural and traditional importance.	The likelihood of the species being protected.	Common species whose numbers are in rapid decline	The costs associated with protecting the species.	Species only or mainly occurring in BC
Species at risk in BC but common elsewhere.	0.000					
Cultural and traditional importance.	0.632	0.000				
The likelihood of the species being protected.	0.342	0.289	0.000			
Common species whose numbers are in rapid decline.	0.263	0.105	0.368	0.000		
The costs associated with protecting the species.	0.474	0.474	0.658	0.632	0.000	
Species only or mainly occurring in BC.	0.158	0.158	0.237	0.553	0.132	0.000

Table 26. Southeastern BC: Proportions of times in which the factors listed in the top row were chosen over the factors listed in the first column in each studied area.

	Species at risk in BC but common elsewhere.	Cultural and traditional importance.	The likelihood of the species being protected.	Common species whose numbers are in rapid decline	The costs associated with protecting the species.	Species only or mainly occurring in BC
Species at risk in BC but common elsewhere.	0.000					
Cultural and traditional importance.	0.750	0.000				
The likelihood of the species being protected.	0.423	0.195	0.000			
Common species whose numbers are in rapid decline.	0.275	0.050	0.346	0.000		
The costs associated with protecting the species.	0.563	0.582	0.835	0.848	0.000	
Species only or mainly occurring in BC.	0.210	0.138	0.413	0.475	0.203	0.000

Table 27. Central-Northern BC: Proportions of times in which the factors listed in the top row were chosen over the factors listed in the first column in each studied area.

	Species at risk in BC but common elsewhere.	Cultural and traditional importance.	The likelihood of the species being protected.	Common species whose numbers are in rapid decline	The costs associated with protecting the species.	Species only or mainly occurring in BC
Species at risk in BC but common elsewhere.	0.000					
Cultural and traditional importance.	0.652	0.000				
The likelihood of the species being protected.	0.348	0.194	0.000			
Common species whose numbers are in rapid decline.	0.226	0.137	0.330	0.000		
The costs associated with protecting the species.	0.543	0.489	0.826	0.763	0.000	
Species only or mainly occurring in BC.	0.227	0.172	0.505	0.462	0.172	0.000

Table 28. All Sample Regions: Proportions of times in which the factors listed in the top row were chosen over the factors listed in the first column in each studied area.

	Species at risk in BC but common elsewhere.	Cultural and traditional importance.	The likelihood of the species being protected.	Common species whose numbers are in rapid decline	The costs associated with protecting the species.	Species only or mainly occurring in BC
Species at risk in BC but common elsewhere.	0.000					
Cultural and traditional importance.	0.683	0.000				
The likelihood of the species being protected.	0.336	0.175	0.000			
Common species whose numbers are in rapid decline.	0.232	0.087	0.321	0.000		
The costs associated with protecting the species.	0.515	0.462	0.760	0.787	0.000	
Species only or mainly occurring in BC.	0.177	0.148	0.417	0.471	0.188	0.000

Thurstone scales were constructed for all of the sample regions combined and for each sample region (Figures 4 - 8). The scales illustrate the rank of the preferred factors and the true relative distances between them. The origin of the scale, which is assigned to the top ranked factor, is arbitrarily set to one. The scale distance of each factor is found by their cumulative distances from the origin.

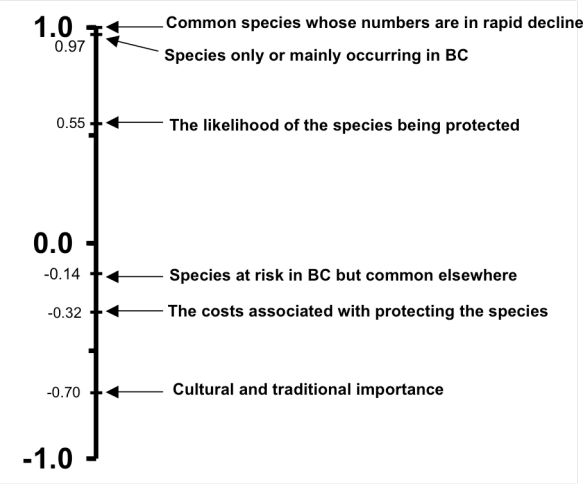

Figure 4. Thurstone Scale: All four sample regions.

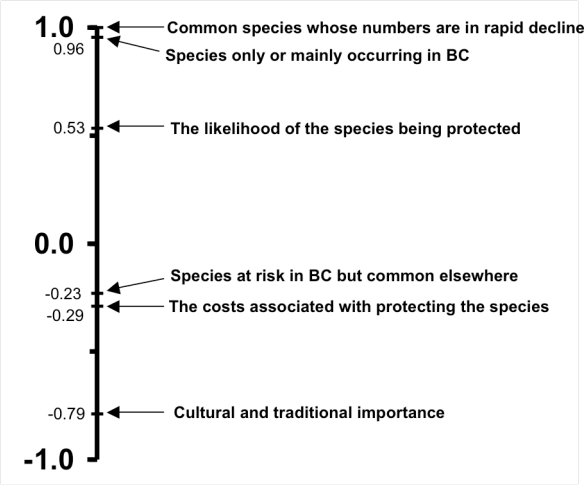

Figure 5. Thurstone Scale: Vancouver Island/ Lower Mainland.

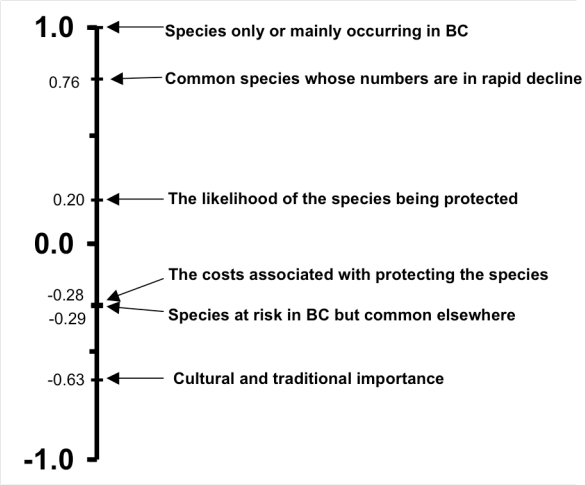

Figure 6. Thurstone Scale: Coastal BC.

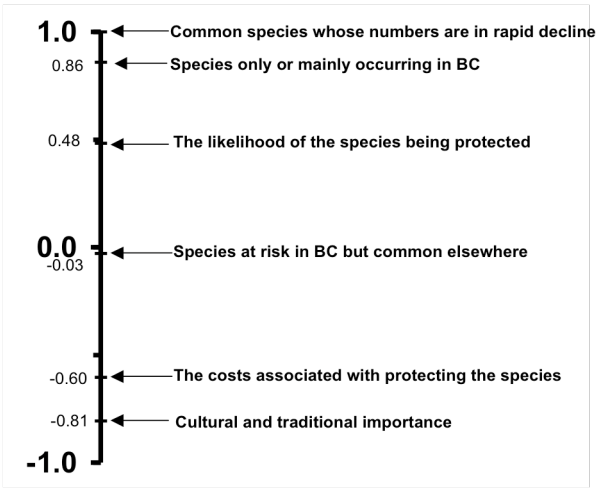

Figure 7. Thurstone Scale: Southeastern BC.

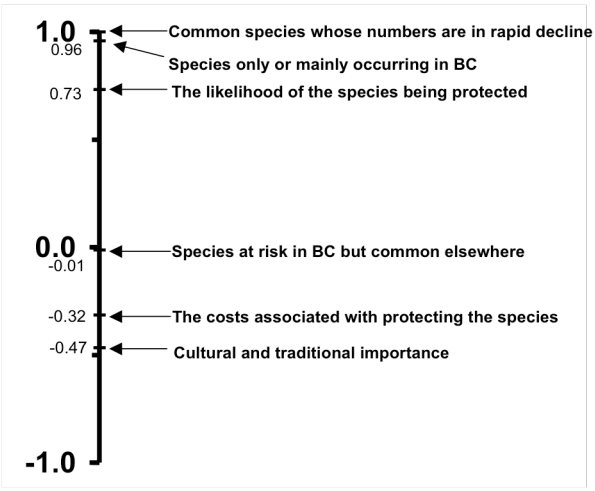

Figure 8. Thurstone Scale: Central-Northern BC.

Table 29 shows the 95% confidence intervals and average discrepancies of factors for the prioritization of the protection and recovery of species at risk in British Columbia for the four sample regions. Table 30 illustrates the average preferred proportions of the six factors for the four sample regions.

Table 29. Confidence intervals and average discrepancies for the four sample regions.

Sample Region	n	95% CI	Mean Discrepancy
Vancouver Island/Lower Mainland	292	± 0.08	3.1%
Coastal BC	38	± 0.23	4.8%
Southeastern BC	80	± 0.16	5.0%
Central-Northern BC	93	± 0.14	3.7%
All	502	± 0.06	3.7%

Table 30. Average preferred proportions of all factors for the four studied areas.

Sample Region	n	Species at risk in BC but common elsewhere	Cultural and traditional importance	The likelihood of the species being protected	Common species whose numbers are in rapid decline	The costs associated with protecting the species	Species only or mainly occurring in BC
Vancouver Island/Lower Mainland	292	0.373	0.222	0.598	0.730	0.352	0.724
Coastal BC	38	0.374	0.279	0.526	0.690	0.379	0.752
Southeastern BC	80	0.444	0.243	0.595	0.730	0.275	0.712
Central-Northern BC	93	0.399	0.268	0.624	0.706	0.310	0.692

As six comparisons were made for each factor, a Bonferroni correction for multiple testing was employed. *Z*-values for the comparison of a specific factor between any two areas (1 and 2) were computed (Eq. 3).

$$z = \frac{\bar{p}_1 - \bar{p}_2}{\sqrt{\frac{1}{k-1} p_c q_c \left(\frac{1}{n_1} + \frac{1}{n_2} \right)}} \qquad \text{(Eq. 3)}$$

where: $\bar{p}_1$ = the average proportion of factor *i* in area 1;

$\bar{p}_2$ = the average proportion of factor *i* in area 2;

k = total number of factors;

p_c = the combined proportions of areas 1 and 2 (e.g. $p_c = \frac{\bar{p}_1 n_1 + \bar{p}_2 n_2}{n_1 + n_2}$);

q_c = 1 - p_c;

n_1 = sample size of area 1;

n_2 = sample size of area 2.

The results of the six comparisons between the four sample regions for all six factors are shown in Table 31. After the Bonferroni correction, the alpha level used was equal to 0.017 (α=0.1/6), which resulted in a two-tail z-critical of 2.394 (Uitenbroek 1997). Therefore, in Table 31, sample regions that are statistically different from each other for a given factor are the ones with z-values greater than 2.394 or smaller than -2.394.

Table 31. *Z*-values for paired comparisons of the four studied areas; critical value ± 2.394 (statistically different α = 0.017 in **bold**).

Sample Regions		Species at risk in BC but common elsewhere	Cultural and traditional importance	The likelihood of the species being protected	Common species whose numbers are in rapid decline	The costs associated with protecting the species	Species only or mainly occurring in BC
Vancouver Island/Lower Mainland	Coastal BC	-0.016	-1.761	1.898	1.180	-0.726	-0.821
	Southeastern BC	**-2.581**	-0.898	0.116	0.000	**2.890**	0.474
	Central-Northern BC	-1.006	-2.052	-0.976	1.009	1.655	1.325
Coastal BC	Southeastern BC	-1.618	0.933	-1.579	-1.023	**2.551**	1.022
	Central-Northern BC	-0.604	0.282	-2.305	-0.421	1.694	1.535
Southeastern BC	Central-Northern BC	1.337	-0.840	-0.860	0.782	-1.133	0.635

The results of the Thurstone analysis indicate that although there were different ranking of the six factors among the four sample regions, significant differences were few. The Thurstone Scales suggest the following prioritization for species at risk in British Columbia to be protected and recovered:

1. Common species whose numbers are in rapid decline (this was second in the Coastal BC sample region);
2. Species only or mainly occurring in BC (this was first in the Coastal BC sample region);
3. The likelihood of the species being protected;
4. Species at risk in BC but common elsewhere (this was fifth in the Coastal BC sample region);
5. The costs associated with protecting the species (this was fourth in the Coastal BC sample region); and then
6. Species of cultural and traditional importance.

3.10. Question 10: Opinions about threats to species at risk.

Generally, each of the eight examples of threats to species at risk were perceived to be threats to respondents; the pattern of response for perceived threats to species at risk is presented in Table 32. Four respondents in five (81.%) indicated that toxic chemicals like some pesticides and herbicides posed a threat to species at risk, while one respondent in twenty (5.2%) did not. Three-quarters of respondents (75.2%) indicated that the loss of the places that species at risk depend upon to live due to commercial activities like mining or logging posed a threat to species at risk, while fewer than one respondent in ten (8.1%) did not. More than seven respondents in ten (71.2%) indicated that the loss of the places that species at risk depend upon due to housing development/urban development posed a threat to species at risk, while fewer than one respondent in ten (9.0%) did not.

Table 32. Question 10: Opinions about threats to species at risk (most frequently identified response in **bold**).

Item	n	Not a Great Threat (1)	2	3	4	A Great Threat (5)	Don't Know	Mean	95% CI	SD
The loss of the places that species at risk depend upon to live due to commercial activities like mining or logging.	531	3.4%	4.7%	13.7%	26.4%	**48.8%**	3.0%	4.16†	± 0.092	1.064
Competition with non-native animals (such as the Norway rat, carp, or House sparrow) or invasive plants (such as Scotch broom or purple loosestrife).	533	1.5%	3.4%	15.8%	**32.8%**	32.6%	13.9%	4.07	± 0.086	0.936
The loss of the places that species at risk depend upon to live due to farming/ranching.	535	7.7%	16.3%	**30.3%**	24.5%	16.6%	4.7%	3.28‡	± 0.102	1.169
Hunting, fishing, or some form of harvesting of plants or animals.	531	11.3%	16.2%	**25.8%**	25.2%	18.6%	2.8%	3.25▲	± 0.110	1.263
The loss of the places that species at risk depend upon due to housing development/urban development.	535	2.6%	6.4%	17.2%	32.9%	**38.3%**	2.6%	4.01▼	± 0.090	1.038
Toxic chemicals like some pesticides and herbicides.	535	0.9%	4.3%	11.0%	26.2%	**55.5%**	2.1%	1.34	± 0.078	0.911
The effects of climate change on plants and animals, and the paces that they depend upon to live.	534	4.1%	7.9%	17.2%	28.3%	**38.0%**	4.5%	3.92	± 0.089	1.138
The effects of outdoor recreation activities on plants, animals, and the places that they depend upon to live.	535	6.9%	16.6%	**31.0%**	30.3%	12.5%	2.6%	3.26•	± 0.094	1.100

† The mean response of Coastal BC respondents was significantly less than the mean responses of Vancouver Island/Lower Mainland respondents.
‡ The mean response of Coastal BC respondents was significantly less than the mean response of Southeastern BC respondents.
▲ The mean response of Central/Northern BC respondents was significantly less than the mean response of Vancouver Island/Lower Mainland respondents.
▼ The mean response of Coastal BC respondents was significantly less than the mean responses of Vancouver Island/Lower Mainland respondents.
• The mean response of Central/Northern BC respondents was significantly less than the mean responses of Southeastern BC and Vancouver Island/Lower Mainland respondents.

Two-thirds of respondents (66.3%) indicated that the effects of climate change on plants and animals posed a threat to species at risk, and the paces that they depend upon to live, while more than one respondent in ten (9.0%) did not. Thirteen times as many respondents indicated that competition with non-native animals (such as the Norway rat, carp, or house sparrow) or invasive plants (such as scotch broom or purple loosestrife) posed a threat to species at risk (65.4%) than did the percentage of respondents that did not (4.9%). More than two respondents in five (43.8%) indicated that hunting, fishing, or some form of harvesting of plants or animals posed a threat to species at risk, while more than one-quarter (27.5%) did not. More than two respondents in five (42.8%) indicated that the effects of outdoor recreation activities on plants, animals, and the places that they depend upon to live posed a threat to species at risk, while less than one-quarter of respondents (23.5%) did not. More than two respondents in five (41.1%) indicated that the loss of the places that species at risk depend upon to live due to farming/ranching posed a threat to species at risk, while less than one-quarter of respondents (24.0%) did not.

ANOVA results indicated that there were statistically significant differences between the mean responses of the four sample regions for six of the eight items in Question 10 (Table 33).

Table 33. ANOVA Question 10: Opinions about threats to species at risk (significant differences between sample regions in **bold**).

Item	n	df	F	p
The loss of the places that species at risk depend upon to live due to commercial activities like mining or logging.	**513**	**3**	**5.514**	**0.001**
Competition with non-native animals (such as the Norway rat, carp, or House sparrow) or invasive plants (such as Scotch broom or purple loosestrife).	457	3	0.443	0.723
The loss of the places that species at risk depend upon to live due to farming/ranching.	**508**	**3**	**4.523**	**0.004**
Hunting, fishing, or some form of harvesting of plants or animals.	**514**	**3**	**5.419**	**0.001**
The loss of the places that species at risk depend upon due to housing development/urban development.	**519**	**3**	**7.229**	**0.000**
Toxic chemicals like some pesticides and herbicides.	**522**	**3**	**3.170**	**0.024**
The effects of climate change on plants and animals, and the paces that they depend upon to live.	508	3	1.899	0.129
The effects of outdoor recreation activities on plants, animals, and the places that they depend upon to live.	**519**	**3**	**4.206**	**0.006**

There were significant differences between the mean responses of two sample regions for the first item, *the loss of the places that species at risk depend upon to live due to commercial activities like mining or logging*, $F(3, 513) = 5.514$, $p < 0.05$. Although the *Levene* statistic (8.058, $p < 0.05$) indicated that the variances of the mean responses for some sample regions were not equal, the *Welch F Test* (3.554, $p < 0.05$) confirmed the presence of the differences. The *Games-Howell post hoc* test revealed that the mean

response of Coastal BC respondents ($\bar{x}$ = 3.58) was significantly less (*i.e.* less of a threat) than the mean responses of Vancouver Island/Lower Mainland respondents ($\bar{x}$ = 4.27).

There was significant differences between the mean responses of two sample regions for the third item, *the loss of the places that species at risk depend upon to live due to farming/ranching*, $F(3, 508) = 4.523$, $p < 0.05$. As the *Levene* statistic (0.623, $p > 0.05$) indicated that the variances of the mean responses of the sample regions were equal, a *Scheffe* test was used to identify where the differences lay. The *Scheffe post hoc* test revealed that the mean response of Coastal BC respondents ($\bar{x}$ = 2.84) was significantly less (*i.e.* less of a threat) than the mean response of Southeastern BC respondents ($\bar{x}$ = 3.46).

There was significant differences between the mean responses of two sample regions for the fourth item, *hunting, fishing, or some form of harvesting of plants or animals*, $F(3, 514) = 5.419$, $p < 0.05$. As the *Levene* statistic (0.065, $p > 0.05$) indicated that the variances of the mean responses of the sample regions were equal, a *Scheffe* test was used to identify where the differences lay. The *Scheffe post hoc* test revealed that the mean response of Central/Northern BC respondents ($\bar{x}$ = 2.90) was significantly less (*i.e.* less of a threat) than the mean response of Vancouver Island/Lower Mainland respondents ($\bar{x}$ = 3.43).

There were significant differences between the mean responses of two sample regions for the fifth item, *the loss of the places that species at risk depend upon due to housing development/urban development*, $F(3, 519) = 7.229$, $p < 0.05$. Although the *Levene* statistic (6.613, $p < 0.05$) indicated that the variances of the mean responses for some sample regions were not equal, the *Welch F Test* (5.261, $p < 0.05$) confirmed the presence of the differences. The *Games-Howell post hoc* test revealed that the mean response of Coastal BC respondents ($\bar{x}$ = 3.41) was significantly less (*i.e.* less of a threat) than the mean responses of Vancouver Island/Lower Mainland respondents ($\bar{x}$ = 4.15).

There were significant differences between the mean responses of two sample regions for the sixth item, *toxic chemicals like some pesticides and herbicides*, $F(3, 522) = 3.170$, $p < 0.05$. Although the *Levene* statistic (3.878, $p < 0.05$) indicated that the variances of the mean responses for some sample regions were not equal, the *Welch F Test* (2.637, $p > 0.05$) did not confirm the presence of the differences.

There was significant differences between the mean responses of three sample regions for the eighth item, *the effects of outdoor recreation activities on plants, animals, and the places that they depend upon to live*, $F(3, 519) = 4.206$, $p < 0.05$. As the *Levene* statistic (0.672, $p > 0.05$) indicated that the variances of the mean responses of the sample regions were equal, a *Scheffe* test was used to identify where the differences lay. The *Scheffe post hoc* test revealed that the mean response of Central/Northern BC

respondents ($\bar{x}$ = 3.71) was significantly less (*i.e.* less of a threat) than the mean responses of Southeastern BC ($\bar{x}$ = 3.92) and Vancouver Island/Lower Mainland respondents ($\bar{x}$ = 4.01).

3.11. Question 11: Experiences with outdoor recreation.

Respondents (n = 396) reported participation in an average of 3.75 ±0.31 recreation activities (s = 3.093). There were significant differences between the mean responses of some sample regions for the number of recreation activities that respondents participated in , $F(3, 395) = 2.904$, $p < 0.05$. As the Levene statistic (0.250, $p > 0.05$) indicated that the variances of the mean responses of the sample regions were equal, a *Scheffe* test was used to identify where the differences lay. The *Scheffe post hoc* test revealed that the mean number of recreation activities in Central-Northern BC ($\bar{x}$ = 4.64) was significantly greater than the mean number of recreation activities in the Vancouver Island/Lower Mainland sample region ($\bar{x}$ = 3.45).

Respondents had engaged in recreation activities in a variety of jurisdictional settings (Table 34). *Provincial Parks* were identified as the setting most often used for recreation engagement (71.2%), followed by *Local or Regional Parks* and *Public Waterways*. As respondents could identify multiple settings, the sum of the percentage of respondents preferring settings is greater than 100%.

Table 34. Question 11: Where do you most often engage in outdoor recreation activities?

Jurisdiction	n	%	95% CI	SD
Provincial Park	528	71.2%	± 0.168	0.453
BCMoF Recreation Site	528	38.6%	± 0.181	0.487
Private Land	528	50.8%	± 0.168	0.500
Crown land	528	46.2%	± 0.185	0.499
Local or regional park	528	70.8%	± 0.169	0.455
Public water way	528	51.5%	± 0.186	0.500
National Park	528	36.7%	± 0.179	0.483

Respondents reported participating in 25 recreation activities (Table 35). Hiking was identified most often as the recreation activity that was most important to respondents, followed by walking, camping, and fishing. *Other leisure activities* included those activities that were only identified by one respondent (*i.e.* rollerblading, snowshoeing, tennis, and spiritual renewal).

Table 35. Question 11: What recreation activity is most important to you? (n = 507).

Activity	Frequency	%
Hiking	110	21.7%
Walking	93	18.3%
Camping	76	15.0%
Fishing	41	8.1%
Hunting	29	5.7%
Boating	26	5.1%
Skiing (general)	20	3.9%
Water Sports	14	2.8%
Horseback Riding	13	2.6%
Motorized Activities	11	2.2%
Jogging/Running	10	2.0%
Golf	9	1.8%
Biking (general)	7	1.4%
Canoeing/Kayaking	7	1.4%
Mountain biking	6	1.2%
Parks	6	1.2%
Gardening	5	1.0%
Multiple activities	5	1.0%
Cross-country skiing	4	0.8%
Other Leisure Activity	4	0.8%
Bird watching	3	0.6%
Lawn Bowling	2	0.4%
Rock climbing	2	0.4%
Wildlife Photography	2	0.4%
Picnicking	2	0.4%

On the whole, respondents' involvement with their most important activity spanned many years (Table 36). Average involvement in activities ranged from 76.24 years (picnicking) to two years (lawn bowling and rock climbing). For the two most cited activities, respondents had been hiking for an average of 29.5 years, walking for 32.3 years, and camping for 32.2 years.

Table 36. Question 11: How many years have you done this activity?

Activity	Frequency	Mean	95% CI	SD
Picnicking	2	74.0	± 76.24	8.49
Parks	6	49.0	28.64	27.28
Multiple activities	5	48.5	8.30	5.97
Fishing	41	40.8	5.43	17.73
Horseback Riding	13	35.9	6.56	10.86
Water Sports	14	34.1	10.13	17.56
Biking (general)	7	33.4	19.31	20.86
Hunting	29	33.1	5.21	14.34
Walking	93	32.3	3.76	17.84
Camping	76	32.2	3.35	14.8
Boating	26	31.2	7.56	18.72
Wildlife Photography	2	30.0	–	21.21
Hiking	110	29.5	2.80	14.81
Golf	9	29.1	14.25	18.53
Skiing (general)	20	28.2	5.55	11.84
Gardening	5	27.5	14.44	10.41
Bird watching	3	26.0	–	29.44
Cross-country skiing	4	22.5	21.03	13.23
Other Leisure Activity	4	21.3	32.42	20.39
Canoeing/Kayaking	7	18.3	15.54	16.79
Motorized Activities	11	16.1	8.58	12.77
Mountain biking	6	15.2	9.05	8.61
Jogging/Running	10	13.6	6.24	8.71
Lawn Bowling	2	11.5		4.95
Rock climbing	2	10.0	0	0

More than half of respondents reported being *very* or *moderately skilled* at the recreation activity that was most important to them (54.6%), while just more than one in ten respondents (11.2%) reported being *beginners* or *somewhat skilled* (Table 37).

Table 37. Question 11: How skilled are you at this activity? (most frequently identified response in **bold**).

	Beginner (1).	1.8%
	Somewhat skilled (2).	9.4%
	Moderately skilled (3).	34.2%
	Very skilled (4).	38.4%
	Expert (5).	16.2%
	n	511
	Mean	3.58
	95% CI	± 0.080
	s	0.930

There were significant differences of mean responses between sample regions for respondents' self-reported recreation skill assessment, $F(3, 509) = 3.302$, $p < 0.05$. As the *Levene* statistic (2.243, $p > 0.05$) indicated that the variances of the mean responses of the sample regions were equal, a *Scheffe* test was used to identify where the differences lay. However, the *Scheffe post hoc* test did not reveal where the differences were.

Just over half of the respondents (55.6%) reported that the recreation activity that they had identified as being most important to them was *mostly* or *very central* to their lifestyles (Table 38).

Table 38. Question 11: How central is this activity to your lifestyle? (most frequently identified response in **bold**).

	Not central at all (1).	6.0%
	Somewhat central (2).	10.5%
	Moderately central (3).	28.0%
	Mostly central (4).	28.6%
	Very central (5).	27.0%
	n	504
	Mean	3.60
	95% CI	± 0.102
	s	1.163

There were not any significant differences between the mean responses of the four sample regions for the centrality of respondents' most important recreation activity to their lifestyle, $F(3, 502) = 1.474$, $p <$

0.05; the *Levene* statistic (2.590, p > 0.05) indicated that the variances of the mean responses of the sample regions were equal.

Respondents reported preferences for a range of settings for their outdoor recreation pursuits (Table 39). respondents could identify multiple settings. As respondents could identify multiple settings, the percentage of respondents preferring settings is greater than 100%.

Table 39. Question 11: Preferred setting for most important recreation activity (most frequently identified response in **bold**).

Setting	n	%	95% CI	s
Large, undisturbed wilderness areas	519	21.2%	± 0.154	0.409
Large wilderness areas with limited trails & camp-sites	519	48.6%	± 0.189	0.500
Semi-wilderness areas with limited motorized access	519	43.0%	± 0.187	0.496
Easily accessed natural areas with some facilities	519	66.7%	± 0.178	0.472
Rural areas	519	43.2%	± 0.187	0.496
Urban areas	519	25.4%	± 0.164	0.436

Mean annual recreation participation for respondents (n = 495) was 100.5 ±7.5 days (s = 84.905), or almost twice a week. There were not any significant differences between the mean responses of sample regions for annual recreation participation, F (3, 493) = 0.988, p > 0.05.

Respondents participated in their most important recreation activity most often in summer ($\bar{x}$ = 11.80) and least in the winter ($\bar{x}$ = 4.97); see Table 40. ANOVA results did not reveal any significant differences of mean responses between sample regions for any of the seasons.

Table 40. Question 11: On average, how many days per month do you do your most important activity in each season?

Season	n	Mean	95% CI	s
Spring	495	7.97	± 0.713	8.096
Summer	495	11.80	± 0.797	9.049
Fall	495	8.91	± 0.753	8.548
Winter	496	4.97	± 0.653	7.423

Roughly one out of five respondents (18.2% ±0.03) of respondents (n = 555) reported being members of an outdoor recreation club (s = 0.386). The proportion of respondents reporting club membership did not vary significantly by sample region (χ^2 = 0.636; df = 3, p > 0.05).

3.12. Question 12: Demographics.

Respondents' average age was 52.98 ±1.17 years (SD = 13.867). The youngest respondent was 18 years of age. The oldest respondent was 88 years of age. There were not significant differences between the mean age of the four sample regions, $F(3, 537) = 0.755$, $p > 0.05$; the *Levene* statistic (2.095, $p > 0.05$) indicated that the variances of the mean response of some sample regions were equal.

Of the 539 respondents reporting their gender, 50.5% ±1.17 were male and 49.5% ± 1.17 were female (SD = 0.500). A chi-square test of independence indicated that there was not a significant relationship between sample region and gender ($\chi^2 = 3.364$; df = 3, $p > 0.05$; Cramer's V = 0.079).

On average, respondents were residents of their sample regions for 21.92 ±1.48 years (n = 450; SD = 15.965). The number of years of community residence ranged from four months to 81 years. There were significant differences between the mean length of community residency of some sample regions, $F(3, 449) = 3.307$, $p < 0.05$. As the *Levene* statistic (0.397, $p > 0.05$) indicated that the variances of the mean responses of the sample regions were equal, a *Scheffe* test was used to identify where the differences lay. However, the *Scheffe post hoc* test did not reveal where the differences were.

Respondents represented a range of education levels (Table 41). The majority of respondents had completed high school. A chi-square test of independence indicated that there was not a weak significant difference between sample regions for respondents' highest level of education completed ($\chi^2 = 20.891$, df = 15, $p > 0.05$; Cramer's V = 0.114).

Table 41. Question 12: What is the highest level of education that you have completed? (n = 537; SD = 1.251; (most frequently identified response in **bold**).

Education Level	Frequency	%
Some high school	27	5.0%
High school	104	19.4%
Some university/college	139	25.9%
University/college degree	169	31.5%
Graduate degree	63	11.7%
Other	35	6.5%

Respondents reported working in a total of 39 different sectors (Table 42). After retirement, the most frequently cited occupation was Professional/Scientific/Technical Services.

Table 42. Question 12: What industry or sector do you work in? (n = 512; SD = 281.256).

Sector	Frequency	%
Retired	124	24.2%
Professional/Scientific/Technical Services	56	10.9%
Management of Companies & Enterprises	36	7.0%
Multiple	33	6.4%
Educational Services	30	5.9%
Administrative & Support and Waste Management and Remediation Services	26	5.1%
Private Households	25	4.9%
Construction	22	4.3%
Social Assistance	15	2.9%
Forestry & Logging	14	2.7%
General Merchandise Stores	12	2.3%
Pubic Administration	12	2.3%
Ambulatory Health Care Services	10	2.0%
Health Care: Hospitals	10	2.0%
Agriculture: Crop Production	9	1.8%
Unemployed	9	1.8%
Arts, Entertainment & Recreation	7	1.4%
Food Services & Drinking Places	7	1.4%
Repair & Maintenance	7	1.4%
Wholesale Trade	5	1.0%
Finance: Monetary Authorities	5	1.0%
Real Estate	5	1.0%
Disability	5	1.0%
Oil & Gas	3	0.6%
Paper Manufacturing	3	0.6%
Agriculture: Animal Production	2	0.4%
Fishing, Hunting and Trapping	2	0.4%
Mining	2	0.4%
Furniture & Related Product Manufacturing	2	0.4%
Miscellaneous Manufacturing	2	0.4%
Truck Transportation	2	0.4%
Transit and Ground Passenger Transportation	2	0.4%
Insurance Carriers & Related Activities	2	0.4%
Wood Product Manufacturing	1	0.2%
Postal Service	1	0.2%
Warehousing and Storage	1	0.2%
Publishing Industries	1	0.2%
Telecommunications	1	0.2%
Religious, Grantmaking, Civic, Professional, and Similar Organizations	1	0.2%

Respondents reported a range of household income levels (Table 43). The most frequently cited level of household income was $100,000 - $149,999. A chi-square test of independence indicated that there was not a significant difference between the four sample regions for respondents' highest level of education completed (χ^2 = 24.515, df = 33, p > 0.05; Cramer's V =0.131).

Table 43. Question 12: Please check the category that best describes your household income before taxes last year (n = 478; SD = 3.175; most frequently identified response in **bold**).

Income	Frequency	%
<$10,000	11	2.3
$10,000 - $19,999	24	5.0
$20,000 - $29,999	43	9.0
$30,000 - $39,999	57	11.9
$40,000 - $49,999	32	6.7
$50,000 - $59,999	48	10.0
$60,000 - $69,999	48	10.0
$70,000 - $79,999	50	10.5
$80,000 - $89,999	35	7.3
$90,000 - $99,999	25	5.2
$100,000 - $149,999	**67**	**14.0**
>$149,999	38	7.9

On average, respondents' household size was 2.8 ±0.111 people (n = 482; SD = 1.244). Household size ranged from one to ten people. There were not any significant differences between the mean household size of the four sample regions, F(3, 481) = 0.035, p > 0.05; the *Levene* statistic (1.286, p > 0.05) indicated that the variances of the mean response of some sample regions were equal.

Of the twenty-one options presented to respondents about their main connection to the natural environment, the three most frequently cited connections were non-motorized recreation, followed by the environment, and then motorized recreation (Table 44).

Table 44. Question 12: What is your main connection to the natural environment? (n = 531; most frequently identified response in **bold**).

Main Connection	Frequency	%	95% CI	SD
Art	110	20.7	± 0.2	0.406
Education	133	25.0	± 0.2	0.434
Environment	193	36.3	± 0.2	0.481
First Nations	32	6.0	± 0.1	0.238
Forestry	80	15.1	± 0.1	0.358
Guide outfitter	14	2.6	± 0.1	0.160
Local government	18	3.4	± 0.1	0.181
Mining	24	4.5	± 0.1	0.208
Non-timber forest products	15	2.8	± 0.1	0.166
Oil & gas	17	3.2	± 0.1	0.176
Organized Labour	10	1.9	± 0.1	0.136
Photography	158	29.8	± 0.2	0.458
Provincial government	18	3.4	± 0.1	0.181
Ranching/agriculture	67	12.6	± 0.1	0.322
Recreation (motorized)	178	33.5	± 0.2	0.473
Recreation (non-motorized)	**407**	**76.6**	**± 0.2**	**0.423**
Small business	68	12.8	± 0.1	0.334
Tourism	98	18.5	± 0.1	0.388
Trapping	12	2.3	± 0.1	0.149
Utilities & transmission	8	1.5	± 0.1	0.122
Value-added sector	4	2.6	± 0.1	0.160

4. DISCUSSION.

A comparison of respondents' age and gender with Provincial census data indicated that although respondents tended to be older than provincial residents[9], the proportion of men and women respondents was almost equal to Provincial gender proportions (Statistics Canada, 2008). Respondents were generally well educated, as roughly three-quarters had completed high school. Respondents represented a range of occupational sectors and income levels; just less than one-quarter of respondents were retired. A comparison of early and late respondents for selected demographic characteristics and attitudes towards the protection and recovery of species at risk indicated a few significant differences; however, the differences were small. Thus, we can assume that there is little, if any, non-response bias in this analysis and inferences can be made to the provincial population.

In each of the four sample regions, there was a predominant concern about the loss and extinction of plants and animals in British Columbia. Although the degree of concern was slightly greater for wildlife than it was for plants, what is striking about respondents' attitudes about species at risk is that fewer than one in ten were *not* concerned: this suggests the issue of specie endangerment is one that resonates with British Columbians. This suggestion is reinforced by the high degree of support expressed by the vast majority of respondents in all sample regions for both the protection and recovery of species at risk in the Province. Although a high degree of importance was expressed for the protection and recovery of species at risk in and near the places where respondents lived, it is not solely a local issue: respondents expressed the same degree of importance for the protection and recovery of species at risk outside of the places where they lived. Additionally, the reported levels of awareness and concern for the management of species at risk is consistent with the generally pro-environmental attitudes of respondents. Not only did almost all respondents indicate that members of the public should be encouraged to become involved in efforts to protect species at risk (*e.g.* such as volunteering to help clean up streams, or planting trees), but most felt that members of the public have a responsibility to become involved in efforts to protect and recover species at risk and their habitats.

The following discussion will examine some of the issues and concerns that underlie this high degree of awareness and concern for species at risk protection and recovery, and is framed around seven themes:

1. Responsibilities and expectations for species at risk protection and recovery;
2. Threats to species at risk;
3. Factors for prioritizing the protection and recovery of species at risk;
4. Protection and recovery of species at risk on private land;
5. Public preferences for species at risk management strategies/actions;
6. Connections to the natural environment; and
7. Areas of uncertainty and lack of knowledge.

[9] The median of age respondents was 53.0 years; the Provincial median age was 40.8 years.

4.1. Responsibilities and Expectations for Species at Risk Protection and Recovery.

The high degree of support and concern for local and provincial species at risk protection and recovery among respondents is consistent with a previous study of Canadian attitudes towards species at risk management (Jaimet, 2001) and of other Provincial studies (*e.g.* White *et al.*, 2005; East Kootenay Conservation Program, 2006). Although a direct comparison with these studies is not feasible, the degree of consistency among these examinations of public attitudes does suggest that the high levels of support and concern for local and provincial species at risk protection reported by respondents in the current study are not an aberration.

Respondents' ranking of the actors and jurisdictions that are responsible for the protection and recovery of species at risk is fairly consistent with jurisdictional arrangements that govern species at risk management in British Columbia, as this responsibility is shared by national, provincial, territorial, and First Nations governments:

1. Federal Government;
2. Provincial Government;
3. First Nations;
4. Industrial/commercial users;
5. Individual citizens;
6. Private landowners; and then
7. Local governments.

It is noteworthy that there were not significant differences between the four sample regions in the ranking of actors/jurisdictions. It is curious that individual citizens were deemed to have more responsibility than private landowners, especially considering the high level of support among respondents for holding private landowners responsible for species at risk protection and recovery on their property. Although it is unlikely that the average British Columbian is familiar with the legislative framework(s) and multi-jurisdictional agreements governing the management of species at risk at provincial, national and international scales (*e.g.* the British Columbian *Identified Wildlife Management Strategy* and *Wildlife Act*, and the federal *Species at Risk Act*), there does seem to be broad recognition that species at risk management is hierarchal, and that responsibility for this management is shared by many actors.

Despite respondents' recognition of the hierarchical and multi-jurisdictional nature of species at risk protection and recovery, the majority of respondents do not trust the government to make fair decisions about natural resources that balance species at risk protection and recovery and economic development (respondents were generally supportive of strategies that would limit industrial/commercial development in order to protect and recover species at risk; see *4.6. Public Preferences for Species at Risk Management Strategies/Actions*). Two other factors may be influencing the degree of trust that people

accord government: the perception that there are not enough checks and balances in place (such as legislation, professional ethics, monitoring) to ensure responsible natural resource management in BC; and the sense that natural resource planning and management does not do a good job of protecting and recovering species at risk and the places that they depend upon to live.

4.2. Threats to Species at Risk.

Of the eight different potential threats to species at risk that were presented to respondents, toxic chemicals was perceived to be the greatest threat. Based on the proportion of respondents that agreed with the statements presented in Question 10, the rank of these potential threats (from greatest threat to least threat) is:

1. Toxic chemicals (*e.g.* pesticides, herbicides);
2. Commercial/industrial activities (*e.g.* mining, timber harvesting);
3. Housing/urban development;
4. Climate change;
5. Competition with non-native animals and invasive plants;
6. Hunting, fishing, and other harvesting of plants and animals;
7. Impacts from outdoor recreation; and
8. Farming/ranching practices.

The relative threat reported by respondents does not necessarily reflect the actual degree of threat posed by each, and this discrepancy may help to focus communication efforts. For example, if in British Columbia competition with non-native animals and invasive plants is a significant actual threat that is not seen that way by members of the public, education and extension efforts could focus upon this issue and highlight what members of the public can do to help alleviate this problem. However, it is important to recognize that the degree of threat (perceived or actual) will differ throughout the province. There was support to address these threats by restricting some activities; for example, there was broad support to (1) ban pesticides and other toxic chemicals, (2) limit the spread of invasive non-native plants and animals on public lands, and (3) restricting motorized outdoor recreation activities (*e.g.* snowmobiles, helicopters, ATVs, or 4×4s), if such restrictions contributed to the protection and recovery of species at risk and their habitats.

There was general agreement among respondents fom the four sample regions about the degree of risk posed by those threats that can generally be characterized as macro-level threats that are largely beyond the influence (and experience) of average citizens (*i.e.* competition with non-native animals and invasive plants, toxic chemicals, and climate change). However, there was a pattern of differences between respondents from the four sample regions for those threats that can be associated with resource development or lifestyle. For example, Coastal BC respondents indicated that commercial/industrial

activities and urban development posed less of a threat than did Vancouver Island/Lower Mainland respondents; Coastal BC respondents also indicated that the impacts from farming and ranching practices posed less of a threat than Southeastern BC respondents did. Similarly, Central-Northern BC respondents saw hunting, fishing and other harvesting of plants and animals, and impacts fro outdoor recreation as less of a threat than did respondents from Vancouver Island/Lower Mainland. It is likely that Coastal BC and Central-Northern BC respondents are more directly reliant upon natural resources for employment and amenity values than respondents from more urbanized regions of the Province.

4.3. Factors for Prioritizing the Protection and Recovery of Species at Risk.

Respondents assessed different factors that could be used to prioritize the protection and recovery of species at risk using three methods: a ranking of specie attributes, identification of priorities using the Thurstone paired comparison approach, and the allocation of funds for specie characteristics to determine priority (Table 45).

Table 45. Factors for prioritizing the protection and recovery of species at risk.

Rank	Ranked Specie Attributes	Thurstone Scale Rank	Allocation of Funds for Specie Characteristics
1	Species only or mainly occurring in British Columbia.	Common species whose numbers are in rapid decline.	Species that exist only in BC, and no other area in Canada.
2	Common species whose numbers are in rapid decline.	Species only or mainly occurring in BC.	Species that are important to BC's economy.
3	Chances of successful protection and recovery.	The likelihood of the species being protected.	Species that are common, but whose numbers are decreasingly quickly.
4	Economic costs of protection and recovery.	Species at risk in BC but common elsewhere.	Distinctive species.
5	Species at risk in BC but common elsewhere.	The costs associated with protecting the species.	—
6	Species of cultural and traditional importance.	Cultural and traditional importance.	—

Triangulation of these approaches reveals a fairly robust prioritization of factors that can be used to guide species at risk management: although there were slight differences highlighted between the four sample regions in the prioritization suggested by the Thurstone analysis, there were not any statistically significant differences between the four sample regions for the other two methods. Thus, the following prioritization of factors for identifying those species in need of protection and/or recovery is suggested by the public:

1. Species only or mainly occurring in British Columbia;
2. Common species whose numbers are in rapid decline;
3. Chances of successful protection and recovery;

4/5. Economic costs of protection and recovery;

4/5. Species at risk in BC but common elsewhere; and then

6. Species of cultural and traditional importance.

This prioritization supports the conclusion reached by Czech *et al*. (1998) that, "... ecological importance and rarity are the most important factors to consider in prioritizing species for conservation" (p. 1103), and suggests a degree of pragmatism on behalf of respondents. It is somewhat surprising that species at risk in British Columbia but common elsewhere was so low on the list, but this may be an extension of respondents' consideration of the likelihood of successful protection and/or recovery as well as the economic costs associated costs associated with protection and recovery efforts. While it is possible that the ranking of species of cultural and traditional importance as the lowest priority is a reflection of a general cultural disconnect from nature (*i.e.* a relatively urban population with few long-standing roots to the British Columbian landscape), it is equally possible that respondents' concern for species protection and recovery was a reflection of the biocentric views of most respondents and the intrinsic values for nature that such a paradigm encourages.

4.4. Protection and Recovery of Species at Risk on Private Land.

The majority of respondents disagreed with the general statement that species at risk protection and recovery should *not* interfere with a landowner's right to develop property, and that more specifically that landowners should not have the right to use their property in ways that may put plants or animals at risk of extinction, endangerment.

There was support among respondents for limiting industrial/commercial activities and non-commercial activities (such as home building or the drilling of water wells) on private land in order to protect and recover species at risk and their habitats; however, residents of the Vancouver Island/Lower Mainland sample region were not as supportive of these limits. There was also support for limiting urban development in order to protect and recover species at risk.

The support for limiting the actions of private landowners was tempered by support for compensating landowners who are prevented from developing their property because of species at risk laws for any lost income by government. However, government involvement in mitigating the impact of species at risk management strategies on private landowners was not limited to compensation, as respondents supported proactive strategies that would provide incentives (such as tax breaks) to private land-owners for efforts that they could make to become involved in protect and recover the places that species at risk and their habitats, such as assisting with efforts to limit the spread of invasive non-native plants and animals on private lands.

4.5. Public Preferences for Species at Risk Management Strategies/Actions.

As has been demonstrated, British Columbians are concerned about the protection and recovery of species at risk; further over three-quarters of respondents supported the enforcement of federal species at risk legislation. This concern is evident in the desire among most respondents that the citizens of British Columbia have more opportunities for input into natural resource management decisions. However, respondents were also aware that there may be limits to their contributions as only one-third of respondents reported that they knew enough about natural resources and natural resource management to provide meaningful input into natural resource planning decisions. The lack of knowledge about natural resource management should not be seen as a deterrent for providing more opportunities for public involvement; instead the desire for public involvement should be capitalized upon. As recent experience with public representatives on *Land and Resource Management Plans* and *Sustainable Forest Management Certification Public Advisory Groups* has demonstrated, knowledge can be imparted and people can learn about the issues at hand, but public desire for involvement is more difficult to manipulate. More opportunities for members of the public to make their views known about natural resource management issues (*e.g.* through surveys targeted at specific issues) should be fostered, as should opportunities for public dialogue. Two other options for increasing awareness of species at risk protection and recovery that found support among almost all respondents were: (1) primary and secondary education classes about natural history and the natural environment; and (2) promotion of environmental awareness and responsibility to encourage people to reduce their impacts on other species and natural areas.

Although just more than half of respondents were in agreement that natural resource management currently focuses too much attention on commercial activities (such as coal mining, oil and gas development, or forestry) and not enough attention on non-commercial activities (such as conservation, recreation, or enjoyment), the vast majority of respondents indicated that it was acceptable to limit industrial and commercial activities on public land in order to protect and recover species at risk and the places that they depend upon to live. These sentiments are reflected in responses to management strategies and actions to protect and recover species at risk in British Columbia.

The majority of respondents indicated that the protection and recovery of species at risk should be given priority over economic considerations. In particular, most respondents were in favour of restricting future industrial development in order to protect and restore species at risk and their habitats, including the limiting of timber harvesting, oil and gas development, and limiting mining and mineral exploration. Although there was a high degree of support for the restriction of industrial development, this support did vary by sample region.

Support for limiting activities on public land was not restricted to industrial resource development. In addition to supporting strategies that would to ban pesticides and other toxic chemicals (as has been done in some Canadian jurisdictions) in order to protect and recover species at risk and their habitats, there was also support for strategies that would limit the negative consequences of green energy development (*e.g.* impacts of electricity generation from wind on migratory birds) to protect and recover species at risk and their habitats. There was also support for limiting some of the options available to people during their leisure time, as most respondents agreed with the restriction of motorized outdoor recreation activities (*e.g.* snowmobiles, helicopters, ATVs, or 4×4s) in order to protect and recover species at risk and their habitats.

A majority of respondents indicated that that there were not enough provincial and national parks in British Columbia to protect species at risk and their habitats. This finding was supported by the high level of agreement expressed for increasing the amount of parks and protected areas in places that species depend upon to. Further, there was support to limit public access to natural areas (*i.e.* controlling human activities inside and outside of parks). Thus, there seems to be support for missions and mandates of British Columbia Provincial Parks and Canadian National Parks to protect and maintain the ecological integrity of places deemed to have high conservation values.

Although respondents indicated that it was more useful to protect and recover habitat than it was to protect and recover individual species (which suggests an understanding of some of the complexities of species at risk management), there was also support for the active management of species at risk. For example, there was support for captive breeding programs (for both plants and animals), predator control, and the manipulation of species that species at risk depend upon for food. There was also strong support expressed for limiting the spread of invasive non-native plants and animals on public lands.

4.6. Connections to the Natural Environment.

Respondents tended to be biocentric in their overall attitudes and world views; for example, nine out of ten respondents expressed agreement with the statement that despite human's special abilities, we are still subject to the laws of nature. Yet respondents did not necessarily feel that limits to growth were absolute and that human ingenuity may to provide solutions to environmental problems; for example, half of all respondents expressed agreement with the statement that "the earth has plenty of natural resources if we just learn how to develop them", which suggests that respondents may be supportive of innovative management practices that help to extend current levels of consumption. However, given the overall biocentric leanings of respondents, another course of action could to highlight the management strategies for species at risk that are already employed to help maintain current levels of consumption (*e.g.* the creation of parks and protected areas, captive breeding programs); this could serve to demonstrate some of the successes of species at risk protection and recovery, and establish the need to implement more strategies to protect and recover species at risk.

The connections that people have to the natural environment are many and ranged from connections fostered through work (*e.g.* forestry and ranching/agriculture), community development (*e.g.* tourism and small business), culture (*e.g.* art, photography, and First Nations), and leisure time (*e.g.* non-motorized and motorized recreation). It is not surprising that non-motorized recreation was a main connection to the natural environment for most respondents[10], as outdoor recreation plays an important role in fostering people's connections to, and appreciation for, nature (Bryan, 2000); Pergams & Zaradic, (2008) have noted that "environmentally responsible behavior results from direct contact with the environment" (p. 2295).

The characteristics of British Columbians' recreation participation may provide an opportunity to garner awareness and support for the protection and recovery of species at risk. Involvement in recreation activities among respondents was varied and longstanding. Respondents identified twenty-five different outdoor recreation activities that were important to them and generally demonstrated prolonged involvement in these activities. Their recreation participation spanned all four seasons (roughly three-times per week in the summer and less than twice a week winter). Respondents were generally skilled at their activities (likely due to the amount of time devoted to the activity), and believed that the activity was fairly central to their lifestyles. Respondents' recreation participation was varied in terms of the average number of activities that they participated in. Recreation activities were engaged in a variety of landscape settings from wilderness areas to rural areas, which supports the recreation management strategy of ensuring that there is a diversity of recreation settings present on the landscape, as this provides forest managers with the option of responding to changes in recreation demand for different settings (Clark &

[10] This is consistent with previous examinations of the role of outdoor recreation in providing connections to forested landscapes (*e.g.* Harshaw, 2008).

Stankey, 1979); it may be that there are sufficient numbers of people engaging in recreation in a variety of settings to support the management of recreation across a variety of jurisdictions actors and institutions.

Recreationists are an important and large constituency in natural resource management. The number of respondents that indicated that recreation was their main connection to the natural environment suggests that the natural environment is more than a source of fiber and minerals, and that other non-commercial uses of the natural environment are supported. Outdoor recreation participation should be supported and encouraged. The majority of respondents experience the natural environment through the lens of outdoor recreation activities. By recognizing outdoor recreation as an important component of a sustainable approach to natural resource management (including the protection and recovery of species at risk), land-use managers and planners could demonstrate their commitment to the entire range of natural resources found throughout the Province and help British Columbians (and visitors) experience the natural environment.

4.7. Areas of Uncertainty and Lack of Knowledge.

A number of areas of species at risk protection and recovery were identified that respondents did not feel confident responding to; these have been grouped in to four broad areas of uncertainty or lack of knowledge. These are areas where extension and communication efforts could be focused:

1. *Opinions and beliefs about natural resource management issues.*

- Although there was general consensus among respondents that opportunities for public participation in natural resource decision-making was important, at least one in ten respondents indicated that they did not know enough about natural resources and natural resource management to provide meaningful input into natural resource planning decisions.
- There was uncertainty among some respondents about whether there are enough provincial and national parks in British Columbia to protect species at risk.

2. *Opinions about species at risk protection.*

- There was some uncertainty among respondents about whether natural resource planning and management does a good job of protecting and recovering species at risk and their habitats.
- Some respondents were unsure whether it is more useful to protect and recover the species at risk habitat, or to protect and recover individual species.

3. *Opinions about different approaches for protecting and recovering species at risk.*

- There was some uncertainty expressed about the strategy to limit negative consequences of green energy development (such as impacts of electricity generation from wind on migratory birds) to protect and recover species at risk and the places that they depend upon to live.

- Some respondents were unsure about whether it was acceptable to implement actions for species at risk protection and recovery even if these actions have negative consequences for other species.

4. Opinions about threats to species at risk.

- Some respondents were not sure about the degree of threat posed by competition with non-native animals (such as the Norway rat, carp, or House sparrow) or invasive plants (such as Scotch broom or purple loosestrife).

5. CONCLUSION.

Understanding the social context of species at risk management is critical to addressing management options for species at risk protection and recovery. For the management (*i.e.* protection and recovery) of species at risk to be effective and gain long-term public support, it must be relevant to society; making explicit links between the health and abundance of species at risk and quality of life is one approach to this. The necessity of systematically integrating stakeholder input into decision-making has been noted by several authors. Knowing about public attitudes is also helpful in determining which management approaches would have public support and which would not, and could help to identify what could be done to make some management approaches more acceptable. One clear benefit of incorporating public opinion in to natural resource management has been minimizing the uncertainty of planning outcomes as resource management decisions that incorporate public attitudes, beliefs and perceptions are seen as more legitimate by the public.

The issue of specie endangerment is one that resonates with British Columbians. This is reinforced by the high degree of concern and support expressed for both the protection and recovery of species at risk in the Province. This high degree of concern and support should be harnessed in efforts to encouraged all British Columbians to become involved in efforts to protect species at risk, as results indicate that there is a strong feeling that the public has a responsibility to become involved in efforts to protect and recover species at risk and their habitats. There was a high degree of support for the enforcement of federal species at risk legislation, and there was recognition that species at risk management is hierarchal, and that responsibility for this management is shared by many actors.

5.1. Recommendations.

The following recommendations reflect initial insights gleaned from the results of the *British Columbia Species at Risk Public Opinion Survey*.

1. **Ensure that programs and strategies to protect and recover species at risk are informed by knowledge of the attitudes, beliefs, and opinions of a representative sample of British Columbians.**

The management of natural resources in British Columbia is a social endeavour (*i.e.* is concerned with influencing the behaviours of people) that has an impact on public resources; thus, it is important to consider the attitudes and beliefs of a representative sample of British Columbians. Although pains were taken to ensure the geographical representativeness of the sample for the four sample regions examined in the project, it would be prudent to consider administering the questionnaire to a representative sample of respondents from each Development Region in the province, or some other provincial jurisdictional or

administrative unit (*e.g.* forest district)[11]. Fundamental to democratic governance is the inclusion of citizens that will be affected by decisions in the decision-making process – it is a matter of fairness (Lauber & Knuth, 1999; Hunt & Haider, 2001). In the context of decision-making, fairness can be conceived of as judgments about the legitimacy and relevance of a decision. People's perception of fairness influences how they evaluate the procedures that govern the decision-making process (*i.e.* procedural fairness), such that if the procedures are deemed to be fair, then it is more likely that resultant decisions (*i.e.* outcomes) will also be deemed to be fair (*i.e.* distributive fairness) (Lauber & Knuth, 1999). This conception of fairness requires that decision-making processes be open and transparent (Wondolleck & Yaffee, 2000). It is possible that some decisions made about the protection and recovery of species at risk in British Columbia will have disproportionate impacts in different areas of the province, and this has not been lost on the respondents to this survey, as demonstrated by the regional differences associated with perceptions of threats to species at risk. One respondent commented that:

> I have concern that legislation will be designed and enacted by people more powerful and influential than I, and they will do their work in a city a long way from here. Most of BC residents live west of Hope and south of Squamish. They will be the major responders to your survey and they, primarily non-rural residents, will be setting the standards to which I in the rural area must adhere. I have great concern on that score.

A sample of British Columbians by Development Region, or other jurisdictional unit such as Forest District, would serve to address this concern.

2. Public attitudes and beliefs about species at risk protection and recovery should be monitored.

In order to permit natural resource managers, planners, and policy-makers to gauge the success and effectiveness of communication, extension, programs, and management strategies efforts over time, and to provide current information about the opinions, priorities, and preferences of British Columbians, the *British Columbia Species at risk Public Opinion Survey*, or a subset of the questions could be administered in the future. This would also allow for the monitoring of public opinions about, and preferences for, species at risk protection and recovery.

[11] For example, although the percentage of Coastal BC respondents comprised 6.9% of the study sample (which was greater then the 1.6% of the population that the area represents), only 38 completed questionnaires were returned. A higher number of returns for this area would increase the degree of confidence in generalizing these results to the population of this sample region.

3. Make the results of the *British Columbia Species at Risk Public Opinion Survey* widely available.

Communication efforts between the *Species at risk Coordination Office* and residents of British Columbia could to be strengthened through the dissemination of the results of this survey through multiple vehicles. Copies of the report could be made available as hard copies through local Government offices and as digital copies on the Internet. Highlights of the survey could be detailed in one or more articles in local and provincial newspapers.

4. Encourage British Columbians' interactions with the natural environment.

Non-motorized recreation was a main connection to the natural environment for most respondents. Outdoor recreation provides and encourages many benefits to individual participants, society, the economy, and the environment (Manning 1999, Rollins and Robinson 2002), including the fostering of people's connections to, and appreciation for, nature.

However, recreation activities are not benign: both motorized and non-motorized activities can have ecological impacts, such as soil compaction and erosion, vegetation trampling, and the disruption of wildlife viability (Bowles 1995; Knight & Cole 1995a, 1995b; Hammitt & Cole 1998; Havlick 2002); thus any strategy that promotes outdoor recreation participation should be matched with active management of recreation resources and inventories of use.

6. LITERATURE CITED.

Agahian F. and S.H. Amirshahi. (2006). Appearance variations of textile materials due to different near grey backgrounds. *Color Research & Application*. 31(2): 133-141.

Armstrong, J.S. and T.S. Overton. (1977). Estimating nonresponse bias in mail surveys. *Journal of Marketing Research*, 14(3), 396-402.

Avise, J.C. (2005) Phylogenetic units and currencies above and below the species level. In A. Purvis, J.L. Gittleman and T. Brooks (eds.) *Phylogeny and Conservation*. Cambridge University Press, Cambridge, UK. Pages 76-101

BC Stats. (2008). *Quick Facts: British Columbia population*. Retrieved March 27, 2008, from http://www.bcstats.gov.bc.ca/.

Bluman, A.G. (2004). *Elementary Statistics: A step by step approach* (5th ed.). Toronto: McGraw Hill.

Bowles, A.E. (1995). Responses of wildlife to noise. In R.L. Knight & K.J. Gutzwiller (Eds.), *Wildlife and Recreationists: Coexistence through management and research* (pp. 109-156). Washington DC: Island Press.

Bryan, H. (2000). Recreation specialization revisited. *Journal of Leisure Research*, 32(1), 18-21.

Cairns, J. (1998). Hydrobiologia, Malthus, exemptionalism and the risk/uncertainty paradox. *Hydrobiologia, 384*(1-3), 1-5.

Clark, R.N. and G. H. Stankey. (1979). *The Recreation Opportunity Spectrum: A Framework for Planning, Management, and Research*. (No. PNW-98). Portland, OR: USDA Forest Service Pacific Northwest Forest and Range Experiment Station.

Czech, B. and P.R. Krausman. (1999). Public opinion on endangered species conservation and policy. *Society and Natural Resources, 12*(5), 469-479.

Czech, B., P.R. Krausman, and R. Borkhataria. (1998). Social Construction, Political Power, and the Allocation of Benefits to Endangered Species. *Conservation Biology, 12*(5), 1103-1112.

Dillman, D.A. (2000). *Mail and Internet Surveys: The Tailored Design Method* (2nd ed.). Toronto: John Wiley and Sons, Inc.

Dunlap, R.E., K. van Liere, A. Mertig, and R.E. Jones. (2000). Measuring endorsement of the New Ecological Paradigm: A revised NEP scale. *Journal of Social Issues, 56*(3), 425-442.

Dunn, E.H., D.J.T. Hussell, and D.A. Welsh. (1999). Priority-Setting Tool Applied to Canada's Landbirds Based on Concern and Responsibility for Species. *Conservation Biology, 13*(6), 1404-1415.

East Kootenay Conservation Program. (2006). Columbia-Kootenay Public Opinion Poll: January to March 2006 (pp. 2).

Federal-Provincial-Territorial Task Force on the Importance of Nature to Canadians. (1999). *The Importance of Nature to Canadians Survey Highlights* (Catalog No. EN47-311/1999E). Ottawa: Environment Canada.

Field, A. (2005). *Discovering Statistics Using SPSS* (2nd ed.). London: SAGE Publications.

Fulton, D.C., K. Skerl, E.M. Shank, and D.W. Lime. (2004). Beliefs and attitudes toward lethal management of deer in Cuyahoga Valley National Park. *Wildlife Society Bulletin*, 32(4), 1166-1176.

Green, D.M. (2005). Designatable Units for Status Assessment of Endangered Species. *Conservation Biology, 19*(6), 1813-1820.

Green, P.E. and D.S. Tull. (1978). *Research for marketing decisions*. Englewood Cliffs, N.J: Prentice-Hall.

Hadlock, T.D., and J.A. Beckwith. (2002). Providing incentives for endangered species recovery. *Human Dimensions of Wildlife*, 7(3), 197-213.

Hammitt, W.E., and D.N. Cole. (1998). *Wildland Recreation: Ecology and Management* (2 ed.). New York: John Wiley and Sons, Inc.

Harshaw, H.W. (2008). Outdoor recreation participation in BC forest-dependent communities. *Forestry Chronicle*, 84(2), 210-220.

Harshaw, H.W., S.R.J. Sheppard, R.A. Kozak, and T.C. Maness. (2006). *British Columbia Sustainable Forest Management Public Opinion Survey 2005/2006*. Vancouver, BC: University of British Columbia Collaborative for Advanced Landscape Planning.

Havlick, D.G. (2002). *No Place Distant: Roads and motorized recreation on America's public lands*. Washington, D.C: Island Press.

Hunt, L. and W. Haider. (2001). Fair and effective decision making in forest management planning. *Society and Natural Resources, 14*(10), 873-887.

Jacobson, C.A. and D.J. Decker. (2006). Ensuring the future of state wildlife management: Understanding challenges for institutional change. *Wildlife Society Bulletin, 34*(2), 531-536.

Jaimet, K. (2001, January 30). 90% of public backs protection of species: Pollster says support includes landowners who might be affected. *The Ottawa Citizen*.

Knight, R.L., and D.N. Cole. (1995). Factors that influence wildlife responses to recreationists. In R.L. Knight and K.J. Gutzwiller (Eds.), *Wildlife and Recreationists: Coexistence through management and research* (pp. 71-79). Washington DC: Island Press.

Knight, R.L., and D.N. Cole. (1995). Wildlife responses to recreationists. In R.L. Knight and K.J. Gutzwiller (Eds.), *Wildlife and Recreationists: Coexistence through management and research* (pp. 51-69). Washington DC: Island Press.

Kotchen, M. J. and S. D. Reiling (2000). Environmental attitudes, motivations, and contingent valuation of nonuse values: a case study involving endangered species. *Ecological Economics,* 32(1): 93-107.

Koval, M.H. and A.G. Mertig. (2004). Attitudes of the Michigan public and wildlife agency personnel toward lethal wildlife management. *Wildlife Society Bulletin, 32*(1), 232-243.

Lauber, T.B. and B.A. Knuth. (1999). Measuring fairness in citizen participation: A case study of moose management. *Society and Natural Resources, 11*(1), 19-37.

Mace, G.M. and E.J. Hudson. (1999). Attitudes toward Sustainability and Extinction. *Conservation Biology, 13*(2), 242-246.

Malhotra, N. (1986). Marketing Linen Services to Hospitals: A Conceptual Framework and Empirical Investigation. *Journal of Health Care Marketing,* 6(1):43-51.

Manfredo, M.J., T.L. Teel, and A.D. Bright. (2003). Why are public values toward wildlife changing? *Human Dimensions of Wildlife*, 8(4), 287-306.

Manning, R.E. (1999). *Studies in Outdoor Recreation: Search and research for satisfaction* (2 ed.). Corvallis OR: Oregon State University Press.

Pergams, O.R.W., and P.A. Zaradic. (2008). Evidence for a fundamental and pervasive shift away from nature-based recreation. *Proceedings of the National Academy of Science (PNAS)*, 105(7), 2295-2300.

Rollins, R., and D.W. Robinson. (2002). Social science, conservation, and protected areas. In P. Dearden and R. Rollins (Eds.), *Parks and Protected Areas in Canada: Planning and Management* (2 ed., pp. 117-147). Toronto: Oxford University Press.

Rudd, M. (2007). *Public preferences and willingness to pay for aquatic species at risk conservation programs in Canada*. Working paper.

Salant, P. and D.A. Dillman. (1994). *How to Conduct Your Own Survey*. New York: John Wiley and Sons Inc.

Scudder, G.G.E. (1999). Endangered species protection in Canada. *Conservation Biology, 13*(5), 963-965.

Shogren, J.F., J. Tschirhart, T. Anderson, A.W. Ando, S.R. Beissinger, D. Brookshire, *et al*. (1999). Why economics matters for endangered species protection. *Conservation Biology, 13*(6), 1257-1261.

Sloan, J.A., W. Doig, and A. Yeung. (1994). *A Manual to Carry out Thurstone Scaling and Related Analytic Procedures. Manitoba Nursing Research Institute Technical Report #11*. University of Manitoba, 1994. Retrieved from http://www.umanitoba.ca/centres/mchp/concept/thurstone/index.shtml.

Species at Risk Act. (2002). *Bill C-5, An Act Respecting the Protection of Wildlife Species at Risk in Canada*. Retrieved from http://www.parl.gc.ca/37/2/parlbus/chambus/house/bills/government/C-5/C-5_4/C-5TOCE.html.

Statistics Canada. (2008). Community Highlights for Vancouver: Population. Retrieved April 24, 2008, from http://www12.statcan.ca/english/census06/data/profiles/community/Details/Page.cfm?Lang=E&Geo1=CSD&Code1=5915022&Geo2=PR&Code2=59&Data=Count&SearchText=vancouver&SearchType=Begins&SearchPR=59&B1=Population&Custom=.

Thurstone, L. (1974). A Law of Comparative Judegment. In: *Scaling: A Sourcebook for Behavioral Scientists*. G.M. Maranell, ed. Aldine Pub. Co., Chicago, IL.

Thurstone, L. (1959). *The Measurement of Values*. University of Chicago Press, Chicago, IL.

Torgerson, W. (1958). Theory and Methods of Scaling. John Wiley and Sons Inc. New York, NY.

Trombulak, S.C., K.S. Omland, J.A. Robinson, J.J. Lusk, T.L. Fleischner, G. Brown, *et al*. (2004). Principles of Conservation Biology: Recommended Guidelines for Conservation Literacy from the Education Committee of the Society for Conservation Biology. *Conservation Biology*, 18(5), 1180-1190.

Uitenbroek, D.G. (1997). *SISA Bonferroni. Southampton: D.G. Uitenbroek*. Retrieved March 20, 2008, from http://home.clara.net/sisa/bonfer.htm.

White, B., Ord, P. and Hawkes, S. (2005, November 20-26). South Okanagan-Similkameen Conservation Program - Community-based Social Marketing Project – 2004. Paper presented at the *Ecological Monitoring and Assessment Network (EMAN) National Science Meeting 2005 - Sustainability at the Landscape Scale: Supporting the process through multi-party stakeholder participation*, Penticton BC.

Wood, P.M. (2006, May 29-31). *Western Governance and Species-at-Risk Policies? An awkward proposition.* Paper presented at the Multidisciplinary Approaches to Recovering Caribou in Mountain Ecosystems, Revelstoke, BC.

Wood, P.M., and L. Flahr. (2004). Taking endangered species seriously? British Columbia's species-at-risk policies. *Canadian Public Policy, 30*(4), 381-399.

Wondolleck, J.M., and S.L. Yaffee. (2000). *Making Collaboration Work: Lessons from innovation in natural resource management*. Washington DC: Island Press.

World Conservation Union. (2001). *IUCN Red List Categories and Criteria version 3.1*. IUCN, Cambridge, United Kingdom.

Zar, J.H. (1984). *Biostatistical analysis* (3rd ed.). Upper Saddle, NJ: Prentice-Hall, Inc.

Zinn, H.C., and M.J. Manfredo. (1998). Using normative beliefs to determine the acceptability of wildlife management actions. *Society and Natural Resources, 11*(7), 649-662.

APPENDIX A
Questionnaire

British Columbia Species at Risk Public Opinion Survey

Cover art by Adelle Airey, Vancouver 2007.

PLEASE DO NOT WRITE YOUR NAME ON THIS QUESTIONNAIRE

We would like to thank you for participating in this study. Please remember that your identity will remain completely confidential, and the answers you provide will remain anonymous. If you feel uncomfortable with any question(s) you do not need to answer it (them). Your participation is purely voluntary.

INSTRUCTIONS

1. You agree to participate in this research by completing and returning this questionnaire.

2. This questionnaire is not a test of your knowledge - there are no right or wrong answers. To ensure the quality of the results, we urge you to answer the questions as completely as possible. If you want to add more information about any question please feel free to do so.

3. The questionnaire is printed on BOTH sides of the paper - please be careful not to skip any pages.

4. When you have completed the questionnaire, please return it in the self-addressed pre-stamped envelope. You do not need to attach postage.

PLEASE READ THESE IMPORTANT DEFINITIONS

There may be some terms in this questionnaire that you are not familiar with. Below are some definitions for your reference. Please refer to these when answering the questions in this survey.

Species at Risk
Species at risk is a term used to describe any species that is locally or globally extinct, endangered (close to extinction), threatened or of special concern (likely to become endangered without adequate management).

Natural Resource Management
Natural resource management is any action taken to influence human activities and our use of resources (such as timber, fresh water, minerals, marine systems, or recreation opportunities).

Protection
Protection is an action taken to safeguard plants and animals and the places that they depend upon to live.

Recovery
Recovery is an action that returns plants, animals, or the places that they depend upon to live, to a former condition — for example, increasing the number of individual plants or animals.

Q1 This question asks about your opinions and beliefs about how people relate to their environment.

Listed below are statements expressing different views about the environment. For each one, please indicate whether you **Strongly Agree**, **Mildly Agree**, **Partly Agree/Disagree**, **Mildly Disagree** or **Strongly Disagree** with it. If you feel that you don't know enough about a particular statement or don't have an opinion about a statement, select the **Don't Know/No Opinion** box.

	Strongly Agree	Mildly Agree	Partly Agree/Disagree	Mildly Disagree	Strongly Disagree	Don't Know/ No Opinion
We are approaching the limit of the number of people the earth can support.	☐	☐	☐	☐	☐	☐
Humans have the right to modify the natural environment to suit their needs.	☐	☐	☐	☐	☐	☐
When humans interfere with nature it often produces disastrous consequences.	☐	☐	☐	☐	☐	☐
Human ingenuity will ensure that we do NOT make the earth unlivable.	☐	☐	☐	☐	☐	☐
Humans are severely abusing the environment.	☐	☐	☐	☐	☐	☐
The earth has plenty of natural resources if we just learn how to develop them.	☐	☐	☐	☐	☐	☐
Plants and animals have as much right as humans to exist.	☐	☐	☐	☐	☐	☐
The balance of nature is strong enough to cope with the impacts of modern industrial nations.	☐	☐	☐	☐	☐	☐
Despite our special abilities humans are still subject to the laws of nature.	☐	☐	☐	☐	☐	☐
The so-called "ecological crisis" facing humankind has been greatly exaggerated.	☐	☐	☐	☐	☐	☐
The earth is a closed system with very limited room and resources.	☐	☐	☐	☐	☐	☐
Humans were meant to rule over the rest of nature.	☐	☐	☐	☐	☐	☐
The balance of nature is very delicate and easily upset.	☐	☐	☐	☐	☐	☐
Humans will eventually learn enough about how nature works to be able to control it.	☐	☐	☐	☐	☐	☐
If things continue on their present course, we will soon experience a major ecological catastrophe.	☐	☐	☐	☐	☐	☐

Q2 This question asks about your opinions and beliefs about natural resource management issues in BC.

Listed below are statements that express different views about natural resource management and the environment in BC. Please indicate your level of agreement with each statement. If you feel that you don't know enough about a particular statement or don't have an opinion about a statement, select the **Don't Know/ No Opinion** box.

	Strongly Agree	Mildly Agree	Partly Agree/Disagree	Mildly Disagree	Strongly Disagree	Don't Know/ No Opinion
There are enough checks and balances in place (such as legislation, professional ethics, monitoring) to ensure responsible natural resource management in BC.	☐	☐	☐	☐	☐	☐
Natural resource management currently focuses too much attention on commercial activities (such as coal mining, oil & gas development, or forestry) and not enough attention on non-commercial activities (such as conservation, recreation, or enjoyment).	☐	☐	☐	☐	☐	☐
I know enough about natural resources and natural resource management to provide meaningful input into natural resource planning decisions.	☐	☐	☐	☐	☐	☐
There are enough provincial and national parks in British Columbia to protect *species at risk*.	☐	☐	☐	☐	☐	☐
The citizens of British Columbia need to have more opportunities for input into natural resource management decisions.	☐	☐	☐	☐	☐	☐
I trust government to make fair decisions about natural resources that balance *species at risk* protection & recovery and economic development.	☐	☐	☐	☐	☐	☐

Q3 This question asks your opinions about *species at risk* protection.

Listed below are statements about *species at risk* protection and recovery. Please indicate your level of agreement with each statement. If you feel that you don't know enough about a particular statement or don't have an opinion about a statement, select the **Don't Know/No Opinion** box.

	Strongly Agree	Mildly Agree	Partly Agree/Disagree	Mildly Disagree	Strongly Disagree	Don't Know/ No Opinion
It is acceptable to limit industrial and commercial activities on *public* land in order to protect and recover *species at risk* and the places that they depend upon to live.	☐	☐	☐	☐	☐	☐
Natural resource planning and management does a good job of protecting and recovering *species at risk* and the places that they depend upon to live.	☐	☐	☐	☐	☐	☐
The protection and recovery of *species at risk* should be given priority over economic considerations.	☐	☐	☐	☐	☐	☐
It is more useful to protect and recover the places that plants and animals depend upon to live than it is to protect and recover individual species.	☐	☐	☐	☐	☐	☐
It is acceptable to limit non-commercial activities (such as home building or the drilling of water wells) on private land in order to protect and recover *species at risk* and the places that they live.	☐	☐	☐	☐	☐	☐
Species at risk protection and recovery in the area where I live is important to me.	☐	☐	☐	☐	☐	☐
Species at risk protection and recovery outside of the area where I live is important to me.	☐	☐	☐	☐	☐	☐
It is acceptable to limit industrial and commercial activities on *private* land in order to protect and recover *species at risk* and the places that they depend upon to live.	☐	☐	☐	☐	☐	☐

Q4 This question asks about public attitudes toward *species at risk* protection on private land in BC.

Sometimes *species at risk* live on private land, and property owners can be asked to assist in the protection and recovery of a species. Please indicate your level of agreement for each statement below. If you feel that you don't know enough about a particular strategy or don't have an opinion about a strategy, select the **Don't Know/ No Opinion** box.

	Strongly Agree	Mildly Agree	Partly Agree/Disagree	Mildly Disagree	Strongly Disagree	Don't Know/ No Opinion
Species at risk protection and recovery should not interfere with a landowner's right to develop property.	☐	☐	☐	☐	☐	☐
Landowners should not have the right to use their property in ways that may put plants or animals at risk of extinction, endangerment, or threat.	☐	☐	☐	☐	☐	☐
Landowners who are prevented from developing their property because of *species at risk* laws should be compensated for any lost income by government.	☐	☐	☐	☐	☐	☐
Members of the public should be encouraged to become involved in efforts to protect *species at risk*, such as volunteering to help clean up streams, or planting trees.	☐	☐	☐	☐	☐	☐
Members of the public have a responsibility to become involved in efforts to protect and recover *species at risk* and the places that they depend upon to live.	☐	☐	☐	☐	☐	☐

Q5

This question asks for your opinions about different approaches for protecting and recovering *species at risk*.

Species at risk protection and recovery often requires a combination of strategies. Listed below are some possible strategies that can play roles in the protection and recovery of *species at risk*. Please indicate your level of agreement for each strategy. If you feel that you don't have enough knowledge to respond or don't have an opinion about a strategy, select the **Don't Know/No Opinion** box.

	Strongly Agree	Mildly Agree	Partly Agree/Disagree	Mildly Disagree	Strongly Disagree	Don't Know/ No Opinion
Restrict motorized outdoor recreation activities (such as snowmobiles, helicopters, ATVs, or 4×4s) in order to protect and recover *species at risk* and the places that they depend upon to live.	☐	☐	☐	☐	☐	☐
Promote environmental awareness and responsibility to encourage people to reduce their impacts on other species and natural areas.	☐	☐	☐	☐	☐	☐
Limit negative consequences of green energy development (such as impacts of electricity generation from wind on migratory birds) to protect and recover *species at risk* and the places that they depend upon to live.	☐	☐	☐	☐	☐	☐
Implement actions for *species at risk* protection and recovery even if these actions have negative consequences for other species.	☐	☐	☐	☐	☐	☐
Limit timber harvesting in order to protect and recover the places that *species at risk* depend upon to live.	☐	☐	☐	☐	☐	☐
Support primary and secondary education (kindergarten to grade 12) classes about natural history and the natural environment.	☐	☐	☐	☐	☐	☐
Limit oil and gas development in order to protect and recover the places that *species at risk* depend upon to live.	☐	☐	☐	☐	☐	☐
Ban pesticides and other toxic chemicals in order to protect and recover *species at risk* and the places that they depend upon to live.	☐	☐	☐	☐	☐	☐
Increase the populations of *species at risk* by raising plants and animals that are *at risk* in a controlled environment for later release into the wild.	☐	☐	☐	☐	☐	☐
Limit mining and mineral exploration in order to protect and recover the places that *species at risk* depend upon to live.	☐	☐	☐	☐	☐	☐
Increase the amount of parks and protected areas in places that *species at risk* depend upon to live.	☐	☐	☐	☐	☐	☐
Limit industrial, commercial, and/or urban development of natural areas on private land.	☐	☐	☐	☐	☐	☐
Provide incentives (such as tax breaks) to private land-owners for efforts that they could make to protect and recover the places that *species at risk* depend upon to live.	☐	☐	☐	☐	☐	☐
Limit the spread of invasive non-native (*i.e.* introduced) plants and animals on public lands.	☐	☐	☐	☐	☐	☐
Reduce or enhance the populations of animals that depend on *species at risk* for food.	☐	☐	☐	☐	☐	☐
Restrict future industrial development in order to protect and restore the places that *species at risk* depend upon to live.	☐	☐	☐	☐	☐	☐
Enforce federal *species at risk* legislation.	☐	☐	☐	☐	☐	☐
Limit access to natural areas (*i.e.* controlling human activities inside and outside of parks).	☐	☐	☐	☐	☐	☐
Reduce or enhance the populations of animals that *species at risk* depend on for food.	☐	☐	☐	☐	☐	☐
Limit the spread of invasive non-native (*i.e.* introduced) plants and animals on private lands.	☐	☐	☐	☐	☐	☐

Q6 This question asks about priorities and responsibilities for *species at risk* protection and recovery.

There are many things to think about when deciding how to allocate resources for *species at risk* protection and recovery - some of these things are listed below. Please rank the list of different things that natural resource managers think about when deciding which species to protect and recover first. Place your ranking beside each factor from **1 (should be protected first)** to **7 (should be protected last)**.

Rank

_____ *Species at risk* in BC but common elsewhere.

_____ Species only or mainly occurring in BC.

_____ Chances of successful protection and recovery.

_____ Cultural and traditional importance.

_____ Economic costs of protection and recovery.

_____ Common species whose numbers are in rapid decline.

A number of different groups a role to play in *species at risk* protection and recovery. From the list of groups below, identify the three groups that you think should be the most responsible for *species at risk* protection. Please rank these groups from **1 (most responsible)** to **3 (third-most responsible)**.

Rank (Top 3)

_____ Local governments

_____ Provincial government

_____ Federal government

_____ First Nations

_____ Individual citizens

_____ Industrial/commercial users

_____ Private landowners

Q7 The following questions ask about how much you support the protection and recovery of *species at risk*.

On a scale of 1 to 5 with 1 being **I FULLY SUPPORT PROTECTION** and 5 being **I DO NOT SUPPORT PROTECTION AT ALL**, how much do you support the protection of *species at risk* in British Columbia?

I fully support protection (1) (2) (3) (4) (5) I do not support protection at all

On a scale of 1 to 5 with 1 being **I FULLY SUPPORT RECOVERY** and 5 being **I DO NOT SUPPORT RECOVERY AT ALL**, how much do you support the recovery of *species at risk* in British Columbia?

I fully support recovery (1) (2) (3) (4) (5) I do not support recovery at all

On a scale of 1 to 5 with 1 being **NOT CONCERNED AT ALL** and 5 being **VERY CONCERNED**, how concerned are you about the loss and extinction of animals in British Columbia?

Not concerned at all (1) (2) (3) (4) (5) Very concerned

On a scale of 1 to 5 with 1 being **NOT CONCERNED AT ALL** and 5 being **VERY CONCERNED**, how concerned are you about the loss and extinction of plants in British Columbia?

Not concerned at all (1) (2) (3) (4) (5) Very concerned

Q8 This question asks about how you would prioritize spending for *species at risk* protection and recovery.

Some species have special characteristics that society could use to guide policy for species protection:

- Some species are *at risk of extinction* or may be endangered in BC.
- Other species are common, but their numbers may be decreasing quickly.
- Some other species look or behave differently from any other species, or play a unique role in nature — these are called *distinctive species*.
- Still other species are of major importance to BC's economy, either directly (*e.g.* we fish them) or indirectly (*e.g.* through tourism).

If you had $100 to direct toward species protection and recovery in BC, how would you divide it among the following categories?

$ _____ Distinctive species.

$ _____ Species that exist only in BC, and no other area in Canada.

$ _____ Species that are important to BC's economy.

$ _____ Species that are common, but whose numbers are decreasing quickly.

TOTAL $100

Q9 This question asks about what is important to consider in the protection of *species at risk.*

There are several things that can help to identify which species should be priorities for protection. The following list of factors that are considered in the protection of species at risk has been arranged in pairs. For each pair, check the box beside the factor that you think should have a higher priority for identifying what species should be protected. For example, if you think that animals that eat plants are a higher priority than animals that eat other animals, you would check the box on the left:

Animals that eat plants.	☑	☐	Animals that eat other animals.
The likelihood of the species being protected.	☐	☐	Cultural and traditional importance.
Species at risk in BC but common elsewhere.	☐	☐	Species only or mainly occurring in BC.
Species only or mainly occurring in BC.	☐	☐	The likelihood of the species being protected.
Cultural and traditional importance.	☐	☐	Species only or mainly occurring in BC.
The likelihood of the species being protected.	☐	☐	Common species whose numbers are in rapid decline.
Common species whose numbers are in rapid decline.	☐	☐	Cultural and traditional importance.
The costs associated with protecting the species.	☐	☐	The likelihood of the species being protected.
Common species whose numbers are in rapid decline.	☐	☐	Species only or mainly occurring in BC.
Species at risk in BC but common elsewhere.	☐	☐	Common species whose numbers are in rapid decline.
The costs associated with protecting the species.	☐	☐	Species at risk in BC but common elsewhere.
Species at risk in BC but common elsewhere.	☐	☐	Cultural and traditional importance.
Cultural and traditional importance.	☐	☐	The costs associated with protecting the species.
The costs associated with protecting the species.	☐	☐	Common species whose numbers are in rapid decline.
The likelihood of the species being protected.	☐	☐	Species at risk in BC but common elsewhere.
Species only or mainly occurring in BC.	☐	☐	The costs associated with protecting the species.

Q10 The question below asks about some of the things that threaten *species at risk*.

There are a number of different things that threaten *species at risk*. On a scale of 1 to 5 with 1 being **NOT A GREAT THREAT** and 5 being **A GREAT THREAT**, how much of a threat do you think each of the following are to *species at risk*? If you feel that you don't know enough about a potential threat or don't have an opinion about a potential threat, select the **Don't Know/No Opinion** box".

	Not a Great Threat				A Great Threat	Don't Know/ No Opinion
The loss of the places that *species at risk* depend upon to live due to commercial activities like mining or logging.	1	2	3	4	5	☐
Competition with non-native animals (such as the Norway rat, carp, or House sparrow) or invasive plants (such as Scotch broom or purple loosestrife).	1	2	3	4	5	☐
The loss of the places that *species at risk* depend upon to live due to farming/ranching.	1	2	3	4	5	☐
Hunting, fishing, trapping, or some form of harvesting of plants or animals.	1	2	3	4	5	☐
The loss of the places that *species at risk* depend upon due to housing development/ urban development.	1	2	3	4	5	☐
Toxic chemicals like some pesticides and herbicides.	1	2	3	4	5	☐
The effects of climate change on plants, animals, and the places that they depend upon to live.	1	2	3	4	5	☐
The effects of outdoor recreation activities on plants, animals, and the places that they depend upon to live.	1	2	3	4	5	☐

PLEASE TURN TO THE NEXT PAGE...

Q11 The following questions ask about your experiences with outdoor recreation activities.

This section asks about ALL of the outdoor recreation activities that you do.

How many outdoor recreation activities do you do? _____

Where do you most often engage in outdoor recreation activities? **Please check all that apply**.

- ☐ Provincial Park
- ☐ Private land
- ☐ Local or regional park
- ☐ National Park
- ☐ Ministry of Forests recreation site
- ☐ Other (Crown) land
- ☐ Public water way

This section asks about the ONE outdoor recreation activity that is most important to you. Please refer to this activity when answering all of the questions in this section.

What outdoor recreation activity is **MOST IMPORTANT** to you? **Identify only one.** _____

How many years have you done this activity? _____ years.

On a scale of 1 to 5, with **1 being BEGINNER** and **5 being EXPERT**, how skilled are you at this activity?

Beginner (1) (2) (3) (4) (5) Expert

On a scale of 1 to 5, with **1 being NOT CENTRAL AT ALL** and **5 being VERY CENTRAL**, how central is this activity to your lifestyle?

Not at all central (1) (2) (3) (4) (5) Very central

What setting(s) do you prefer for this activity? **Check all that apply.**

- ☐ Large wilderness areas without any trails or facilities
- ☐ Large wilderness areas with limited trails and camp-sites
- ☐ Semi-wilderness areas with limited motorized access
- ☐ Easily accessed natural areas with some facilities
- ☐ Rural areas
- ☐ Urban areas

On average, how many **days per month** do you do this activity in each season?

Spring: _____ Summer: _____ Fall: _____ Winter: _____

Please list any outdoor recreation clubs or organizations that you belong to.

Q12 The following questions ask about you. Your answers to these questions will not identify you in any way. Please remember, your answers will be kept confidential.

How old were you on your last birthday? _____ years old. Gender: ☐ Male ☐ Female

What community do you live in? _____ How many years have you lived here? _____

What is the highest level of education that you have completed? **Please check one**.

☐ Some High School ☐ Some University/College ☐ Graduate degree
☐ High School ☐ University/College Degree ☐ Other (specify): _____

What is your occupation? If you are a homemaker or a student, please state this. If you are retired or unemployed, please state this and list your former occupation.

_____

What industry or sector do you work in (*e.g.* forest industry, mining, government, education, services, tourism, *etc.*)?

_____

Please check the category that best describes your household income **before taxes** last year.

☐ < $10,000 ☐ $30,000 - $39,999 ☐ $60,000 - $69,999 ☐ $90,000 - $99,999
☐ $10,000 - $19,999 ☐ $40,000 - $49,999 ☐ $70,000 - $79,999 ☐ $100,000 - $149,999
☐ $20,000 - $29,999 ☐ $50,000 - $59,999 ☐ $80,000 - $89,999 ☐ >$149,999

How many people live in your household? _____ people.

What is your main connection to the natural environment? **Check all that apply to you.**

☐ Art ☐ Mining ☐ Recreation (motorized)
☐ Education ☐ Non-timber Forest Products ☐ Recreation (non-motorized)
☐ Environment ☐ Oil & Gas ☐ Small Business
☐ First Nations ☐ Organized Labour ☐ Tourism
☐ Forestry ☐ Photography ☐ Trapping
☐ Guide Outfitter ☐ Provincial Government ☐ Utilities & Transmission
☐ Local Government ☐ Ranching/Agriculture ☐ Value-Added Sector

Please use this space or the back page for any comments you have.

The University of British Columbia
Faculty of Forestry
Department of Forest Resources Management
2424 Main Mall
Vancouver, BC V6T 1Z4

Simon Fraser University
Faculty of Science
Department of Biological Sciences
8888 University Drive
Burnaby, BC V5A 1S6

APPENDIX B

Telephone Recruitment Script

Initial Introductory Script

Hello, my name is _____ and I am calling on behalf of Dr. Howie Harshaw at the University of British Columbia, in the Department of Forest Resources Management. We are calling you about a research project that is investigating public attitudes, beliefs, and perceptions about species at risk issues in British Columbia, and interactions with nature. Could I please speak to an adult in the house who is 19 years of age or older and who had the most recent birthday. Is that you? If not, could I speak to that person?

[If person on phone is at least 19 years of age and had the most recent birthday, proceed with the Instructions and Consent section below; otherwise repeat introductory script with appropriate adult OR ask when is a good time to call back the appropriate person.]

May I ask you a few quick questions?

[If yes:] Thank you. Continue.
[If no:] Thank you. Goodbye.

Instructions and Consent

First, I will provide some more details about the study. This research is funded by the Provincial Governments' Species at Risk Coordination Office, which is responsible for the management and protection of species at risk in British Columbia. Your phone number was randomly selected. We have no information about your identity.

We are looking for people to complete a mail-in questionnaire that will take approximately 15-20 minutes of your time. The responses you provide will be anonymous, and your identity will remain confidential. Would you be interested in taking part in this research?
[Read persuaders if necessary]

[If yes:] Thank you. Continue.
[If no:] Thank you. Goodbye.

In order to send you the questionnaire could you please give me your name and current mailing address? Providing your address only allows us to send you the survey materials; it does not commit you to participating in the research study.

Name: _____
Address: _____
Postal Code: _____

Thank you for your time. The questionnaire should be mailed to you int eh first week of January 2008.

If you have any questions about the study you can call Dr. Howie Harshaw at (604) 822-3970, or contact him by e-mail at: harshaw@interchange.ubc.ca.

Scripted Replies to Potential Respondent Questions

How was I selected?

We used random digit dialing to select residential phone numbers from across British Columbia. We do not have information about either your name or address.

How long will it take?

The questionnaire takes about 20 minutes. In some cases it may be several minutes longer, in some cases it may take less time. It depends on how much you have to say.

Will it be confidential and anonymous?

When we write reports and other publications results will be presented using summary statistics (*i.e.* percentages and averages, *etc*.) which prevents the identification of individuals.

How do I know you are who you say you are?

I can give you the telephone number of Dr. Howard Harshaw and you can call him directly to confirm who he is at (604) 822-3970. You can also contact Dr. Harshaw by e-mail at: harshaw@interchange.ubc.ca.

Who can I contact if I have questions about my participation as a research subject?

If you have any concerns about your treatment or rights as a research subject, you may telephone the Research Subject Information Line in the UBC Office of Research Services at the University of British Columbia, at 604-822-8598.

How will the information be used?

The information will be analyzed and results will be used to inform the development of provincial species at risk policy. Results will also be used in writing academic journal articles, and for reports that will be available to the general public in summary format on the Internet (www.sar-pos.ca).

APPENDIX C

Initial Contact Letter

The University of British Columbia
Faculty of Forestry
Department of Forest Resources Management
2424 Main Mall
Vancouver, BC V6T 1Z4

Simon Fraser University
Faculty of Science
Department of Biological Sciences
8888 University Drive
Burnaby, BC V5A 1S6

Dr. Howard Harshaw
Research Associate
Forest Resources Management
University of British Columbia
☎ (604) 822-3970

Emily Meuser
M.Sc. Candidate
Department of Biological Sciences
Simon Fraser University
☎ (778) 782-4649

Greetings,

You recently provided your name and address to receive more information about a research study about the protection of species at risk in British Columbia. A few days from now, you will receive a questionnaire in the mail for this important research project being conducted by the *Department of Forest Resources Management* at the *University of British Columbia*, and the *Department of Biological Sciences* at *Simon Fraser University*. We are writing in advance because we have found many people like to know ahead of time when survey materials will be arriving.

The study seeks your opinions about the protection of species at risk in British Columbia. This study is important because it will help government agencies, industry, and environmental organizations better understand people's opinions about the protection of species at risk and assist in the development of government policy in this area.

Thank you for your time and consideration. It is only with the generous help of people like you that our research can succeed. The results of the survey will be publicly available in April 2008 on the Internet at www.sar-pos.ca.

Sincerely,

Howard Harshaw Emily Meuser

APPENDIX D

Questionnaire Cover Letter

The University of British Columbia
Faculty of Forestry
Department of Forest Resources Management
2424 Main Mall
Vancouver, BC V6T 1Z4

Simon Fraser University
Faculty of Science
Department of Biological Sciences
8888 University Drive
Burnaby, BC V5A 1S6

BRITISH COLUMBIA SPECIES AT RISK PUBLIC OPINION SURVEY

Dr. Howard Harshaw
Research Associate
Forest Resources Management
University of British Columbia
☎ (604) 822-3970

Emily Meuser
M.Sc. Candidate
Department of Biological Sciences
Simon Fraser University
☎ (778) 782-4649

Greetings,

We are writing to ask your help in an important study about the protection of species at risk in British Columbia. You recently provided your name and address to receive more information about a research study about the protection of species at risk in British Columbia.

PURPOSE

The purpose of this survey is to obtain general information on public opinions about the protection of species at risk and related land-use planning issues from British Columbians. This research project is conducted by researchers at UBC and SFU and is funded by the *Species at Risk Coordination Office*, which is responsible for the management and protection of species at risk in British Columbia. The intent of the survey is to:

- Inform the development of a provincial species at risk policy framework;
- Inform public debate on provincial wildlife management; and
- Provide government agencies, industry, environmental organizations, and the public with information about British Columbians' attitudes about species at risk protection and other issues.

This survey is one of the largest research studies conducted in BC on people's opinions about the protection of species at risk. Overall results will be shared publicly and may be used to guide discussions and the development of provincial policies about the protection of species at risk. It is anticipated that the survey results will contribute to a better understanding of the resource management priorities of communities in different parts of British Columbia. The results and analysis of this study will be publicly available in April 2008 on the Internet at:

www.sar-pos.ca

STUDY PROCEDURES

The survey will take about 20 to 30 minutes to complete. Please take your time as you consider your answers to the questions. Remember, there are no right or wrong answers. If not enough space is provided for your answer, feel free to use the extra pages at the end of the questionnaire. Please return the completed survey and other material used for your answers in the stamped return envelope provided.

CONFIDENTIALITY

Your identity will be kept strictly confidential. You will not be identified by name in any reports of the completed study. All documents will be identified only by a code number and kept in a locked filing cabinet and a password protected computer file. The data that is collected in this research project will be kept for future use regarding public opinions and beliefs about sustainable forest management. **Please do not write your name anywhere on the questionnaire. Individual responses will not be made available to anyone outside the research team.**

CONTACT INFORMATION

If you have any questions about the research, or would like further information, please do not hesitate to contact Dr. Harshaw or Ms. Meuser at the phone numbers listed at the top of the first page. If you have any concerns about your rights or treatment as a research subject, you may contact:

UBC Office of Research Services
Research Subject Information Line
(604) 822-8598

SFU Office of Research Ethics
Dr. Hal Weinberg, Director
(778) 782-6593

CONSENT

Participation in this study is completely voluntary, and you may refuse to participate at any time without penalty. You may skip any question if you do not feel comfortable answering it, though we encourage you to complete all questions if possible. By completing and returning this survey, you grant your consent to participate in this study.

Thank you very much for helping with this important study.

Sincerely,

Howard Harshaw Emily Meuser

APPENDIX E

Postcard Reminder

Front

[Address]

Back

Greetings,

Last week a questionnaire seeking your opinions about the protection of species at risk was mailed to you. Your name was randomly selected, and you provided your mailing address to us.

If you have already completed and mailed the questionnaire, please accept our sincere thanks. If not, please do so today. We are especially grateful for your help because it is only when people like you share your opinions that we can understand what people think about the protection of species at risk in BC.

If you did not receive a questionnaire, or if it was misplaced, please call us collect at (604) 822-3970 and we will get another one in the mail to you today.

Dr. Howard Harshaw
Department of Forest Resources Management
University of British Columbia
Vancouver, BC
V6T 1Z4

Ms. Emily Meuser
Department of Biological Sciences
Simon Fraser University
Burnaby, BC
V5A 1S6

APPENDIX F

Replacement Questionnaire Cover Letter

The University of British Columbia
Faculty of Forestry
Department of Forest Resources Management
2424 Main Mall
Vancouver, BC V6T 1Z4

Simon Fraser University
Faculty of Science
Department of Biological Sciences
8888 University Drive
Burnaby, BC V5A 1S6

Dr. Howard Harshaw
Research Associate
Forest Resources Management
University of British Columbia
☎ (604) 822-3970

Emily Meuser
M.Sc. Candidate
Department of Biological Sciences
Simon Fraser University
☎ (778) 782-4649

Greetings,

About two weeks ago, we sent a questionnaire to you that asked about your opinions about the protection of species at risk in British Columbia. The feedback from people that have already responded has included a range of comments and ideas about the protection and management of species at risk in the province. We think that the results are going to be helpful to land-use managers and decision-makers.

The study is drawing to a close. We are writing again because of the importance that your questionnaire has in helping us to get accurate results. We need to hear from more people so that we can be sure that the study results will fairly represent the citizens of British Columbia.

We would like to reiterate the confidential nature of your response. Your identity will be kept strictly confidential. You will not be identified by name in any reports of the completed study. All documents will be identified only by a code number and kept in a locked filing cabinet and a password protected computer file. Ensuring your confidentiality is very important to us.

We hope that you will complete and return the questionnaire soon. If you have any questions, please don't hesitate to contact either of us collect at the numbers listed on the top of the page.

Sincerely,

Howard Harshaw Emily Meuser

APPENDIX G

General Comments to Questionnaire

Ban all firearms (eventually) forever everywhere. For now – education and proficiency – permit required by all hunters, trappers (*i.e.* killers of animals). Many believe their killing is a sport and is fun! (they should be shot). When it is necessary for food, I can accept that. Just because man paid $ for a piece of land – does not entitle him to drive off the animals that are on it – beaver/deer/ - they were here first, and they have rights. Man has made up so many myths (wrong, mistaken, unfounded, faulty) about animals, through ignorance, ego ("I won't say I was frightened by two wolves – I'll say six, or a "a pack") false beliefs handed down – to frighten or control!! Sometimes I think the end of man would be a good thing. I hope that there is life on other "planets" where life is fair, and all living things honored. And so much for that tirade – Thanks. PPS and "I'm sorry" to any animal that I was neglectful, or ignorantly "abuse".

Thank you. No social researcher will ever be able to justify the need for "income" in a survey. You wisely placed it at the end; after this respondent spent considerable time completing your survey it was only my desire to see my efforts furthered that I mail you this P.O.S.

Clearly the first statement in Q1 is the main issue. Until human population is controlled all other measures will only be temporary solutions. What happened to the "zero population growth" movement of the 70's? After some 60 years of observation as a biologist I have little confidence that humans will make the sacrifices necessary to reverse environmental impacts currently occurring. I hope I am wrong. Of all the questions in your survey I found Q9 to be the most mind-twisting and difficult to answer. I look forward to seeing the survey results and hope there will be some applications made. PS Great drawings on the cover!

Do something before it is too late. Ensure this is not just another "waste of time and money".

Q1 comments: Nature and slow industry = fast both = crash. Only after they rule themselves. No trees = no us. Q2 comments: species move parks do not. Q3 comments: each case is unique to judge. Q4 comments: ownership confers responsibility as part of its purchase price. Q5 comments: climate change will move species not land! We both need to inhabit the same space. Needs case by case judgment. Different methods of harvest can be used. Develop safer less destructive methods. Toxins place species at risk. Exploration is usually not a problem. Species move / land does not = new policies of usage. Eg. Elk Lake toads. We don't know enough to do this. Each case is judged alone. Good luck – individual people can be stubborn and perverse. It only takes one to destroy your goals. Eg. Bee mites on Van. Isle. Q7 comments: Despite all we can do we may not win other factors than human interference may be involved. Q8 comments: Investigation of why and how the losses. Q9 comments: This is an incomplete thought – protected where? BC/elsewhere? Glam vs. ugly species? Cynical vs. optimistic reader? Too many harvesters for supply. We are getting better at this one. Species move we protect places that do not move. Q10 comments: Too many people not enough space. Problems are becoming global (international). We cannot push them off-shore and pretend they have gone away. Hunter/gather is a closed cycle. People in balance with nature. Farming is till open ended cycle. We will find a way to close this cycle or we will crash on a global scale. Species at risk show us some of the cracks in our relationship with nature. Thank you for looking into these matters.

Q9 was difficult to do with consistency. Like many I'm sure, we need better information on these subjects.

I have extensive past experiences hiking, camping, in Western Canada, including wilderness areas. I graduated with a zoology degree in 1977 and did a post-op year in Oceanography, followed by a 1 year research stint at the Institute of Ocean Sciences in Patricia Bay, prior to pursuing a health care career. So I have a reasonable understanding and appreciation for this tremendously difficult problem.

I think changing our environment can sometimes lead to beneficial things occurring e.g. logging in our area has greatly enhanced the Black bear, deer and moose populations. Some of our forests were much too dense to support much of anything. But I don't support logging next to creeks and rivers.

I would support protection of the environment but at the same time resent when areas are off limits – example – closing trails or off trail walking in UBC endowment lands (Pacific Spirit Park).

Species including mankind are subject to natural disasters and extinction is possible. We should limit our impact as much as possible however economic health is important in order to provide the financial resources for species protection. While we have control over local, provincial and federal jurisdictions, remember that most environmental impacts are global. Use common sense in enforcement and limit our impact as much as possible. Mankind's existence is an impact.

The flora and fauna and wilderness are true glory of Canada! They make this a unique country, different from the others. The more they are decimated by human exploitation and interference they more this country will sink into the urban morass of undifferentiated highways, factories, suburbs and UGLINESS of human hubris! We need all our native species of plants and animals – for the richness of our environment and our experience as part of Nature, the conscious acceptance of ourselves as also animals, in harmony with it.

In answering the questions in this questionnaire feel it didn't deal with the forestry which I know best. As I have spent 17 years on the Sunshine Coast I've seen results on the decline of fishing and logging. Not only from over development of area but waste of humans. Harvesting of the forest can be done in proper managed way. Humans are over populating the world and growth and greed are killing the earth. My opinions will not solve this nor will these questionnaires, perhaps education or educating all about where this leading earth will help. Thank you for giving me the change to participate. I feel my world education has come from travels to other countries seeing the way how the world around us helps. TV, radio, computers open the door for this enlightenment. Still unless we teach people to respect our land we'll just continue destroying our livelihood. My wishes would be to see more of the common folk have more input to the government. To be listened to with open minds and hearing what we feel. Thank you.

For many of the questions you answer and then think "to what degree?" *i.e.* what limit should be set on time, money or priority to these "species at risk"?

Upon completion of your survey, I realize how difficult it is to prioritize each endangered species. Our nature is to try to "do right" by all species, a task that is almost impossible. We need to make some hard decisions to preserve our resources, be they animal, vegetable or mineral. The problem with the majority of the populace is apathy and a desire to "let someone else make the hard decisions". The majority of us are not well enough informed to make a lot of these decisions and thus have to leave this up to those who are. I look at the once beautiful forests of B.C. (and now into Alberta) and see the devastation of the Mountain Pine Beetle. If we had made the "hard decision" in the beginning when this was a small isolated pocket, we would still have the magnificent forests we once had and our grandchildren and their grandchildren would still have these magnificent forests instead of the brown dying/dead ones we now have. It makes me want to cry when I see the pure waste. We can no longer drink uncaringly from our mountain streams when out in the wilderness. Evidence of "Man's inhumanity to man, makes countless numbers mourn" is seen in the garbage strewn, small trees and shrubs trampled, animals shot for trophy and let to rot, streams and rivers polluted by industry, cities and our fellow man. ON and on it goes and we act as if we will never run out of these precious commodities. To those of you that are trying to find a way to preserve our natural resources and it appears that they are all becoming endangered, we say a big Thank You.

I don't have much education but with what I know of the near future of global warming species at risk will be humans.

People meddling with nature, even with the best of intentions, scares me greatly! I don't agree with crippling a whole industry to protect 4 pair of owls. If research done really focuses on damage that could be done by interfering then I would support it. I do not really trust the Federal or Provincial governments to oversee our Natural Resources without scientific input. However if you have 3 scientists in a room your have 3 totally conflicting theories on how to fix something and if your add Greenpeace into the mix I truly fear for our future. There I can tell you what is wrong but not how to fix it!

Why is education on these lines not more accessible. When thing like tagging grizzly bears in M.U. 7-23, why are results not published. Why are they thinning out moose by limited entry's to thin the wolves to save the small herd of caribou when their wintering ground has been logged and they have no place to winter, should this not be public knowledge. We didn't even know what is endangered and what is been done! I don't want my answers from Greenpeace.

My concerns deal with traditional/cultural use regarding species in decline. My observation indicates certain species are used as a food source but are also being used as a monetary source of income to the detriment of the species. Also the traditional utilization of the whole animal (hides, etc) are no longer taking place.

Prior to retirement I regret to say that I hunted and fished with rod and gun. I till use the rod but not the gun. I regret the various species of animals and birds whose lives I brought to an untimely end. (one of the perils of having a conscience and being 80!)

I think that environmental protection is very important. I am interested in animal results and I am closely connected to someone who hikes a lot.

Continue to improve natural parks and resources, as population increases. Teach young people to enjoy nature.

I hope this survey will cause the BC government to stop recreational use of motorized vehicles, stop the use of chemical pesticides and increase education of all citizens on species management.

I appreciate the protection of unique species as well a generally preserving enough natural habitat for everybody to enjoy. I am in favor of cautious development into wilderness area, but I resent people that hyperventilate over stupid minor environment issues, propose outrageous restrictions and costly solutions and place the welfare of animals equal to that of humans.

We live in an area where deer or bears can be seen, but I never phone anyone. I let the wild life leave on there own. I wish you all the best to protect our wild life. We lived in Terrace for 15 years, the North is in a mess. Forest companies left trees and water sheds in a mess. 11) We have to drive a car, in the Maple Ridge area, no public transit. 12) The building, and people are moving into this area, every year. By March 9/09 when the Golden Ears Bridge opens it will be a mess! No farms left!

I find this survey very biased and you can make your stats the way you want – skewed. This is not a fair survey to capture rural/or urban. As a farmer and health care provider, I make sure that I am responsible for what is around me. Nobody has the right to tell me what I can or cannot do on my own private land, unless we agree to sell it to you at fair market value. I have heard of many animals becoming extinct and some of it is very far from the truth. Quit spending my tax dollars on garbage.

A very complex subject. Many questions were presented with limited options, when in reality there are more areas of compromise available. Q1 seemed limited to the short term. In terms of tens of thousands of years, which is but a small sedimentary layer in a fossil bed, the earth has the capacity to “rebalance” once humans are gone. Q2: As a planner for the local “official community plan” for Otter Point … I can say with some experience that local and provincial governments have neither the desire nor the enforcement tools to effectively manage this issue.

The first statement of Q1 tells the whole story of why we are in the mess we are in! I very much appreciate the work you are doing. However, I am of the belief we are to late.

Questions provoked deep thought. Wish I had more knowledge of current legislation re: Species at Risk/Endangered Species. Would have given more informed responses. Best of luck with the research/survey.

The time has come for stewardship of creation/environment to trump economic growth. Otherwise, we will kill this planet and all people along with it. (Actually, the earth will probably survive – people won’t). So, it is going to be a very difficult 200 years ahead of us: either we drastically reduce our stuff – focused standards of living or the changed climate on earth will change our lifestyle for us…

I strongly feel we are doing a very bad job of protecting our environment. I have seen many changes in our area due to logging, climate change and population increase, over the years that I have been here. I feel I look at the destruction and can’t do anything about it.

Q6 has a typo. Q7 shouldn’t switch directions ½ way through the question.

We must not let our social conscience turn us into playing God and deciding what is a good plant or animal and what I bad. Weeds are not weeds they are plants that act differently than what we want. Animals have come and gone for ever long before humans started controlling their environment. It is offensive for people to say an animal is bad in a particular area just because it was introduced 200 years ago. It is now native to that location. It doesn't know it is an intruder only social do gooder humans are making that decision by trying to "control" nature and the earth. Every species that has ever existed does not need to occupy the plant. It is wrong for a bunch of people to make the decision that this animal is good and this one bad. That usually comes from emotion and has no place. In the animal and insect world there are always adverse effects by one species over another. Humans are just another species.

My husband and I just purchased 40 acres in the Harrison area. How exciting! We are realizing how important it is to leave our children on this planet with the proper message, we are caretakers! Educate the kids!

I do not believe I am an expert on these questions, I answered them to the best of my ability. I don't know how you obtained my name and address. Unless it was from a call I made in answer an advertisement asking for volunteers with type 2 diabetes to contribute to an exercise study.

I found this survey quite thought provoking and a bit difficult to complete. I do believe that humans were meant to rule over the rest of nature, but a good ruler is wise. He does not waste or destroy the resources available to him, but carefully plans for the future. My problems is that I am not sure I believe all that the media or extremists try to scare us about.

As I said, I owned resort … east of 100 Mile House and I spent 20 years of conflict with A.L.R. and Forestry. I am retired now and it not too bad. So much for the golden years. Have a nice day.

Species at risk is somewhat selective *i.e.* media hot spotting? And prone to over reaction?

I answered questions assuming "private lands" does not include land claimed by Natives as traditional lands. Private lands I assumed to be 320 acres or less.

Tough questions. It would've been helpful to give more examples (like for outdoor activities…camping, and fishing are definitely ones, but what about going to the beach for swimming at the lake).

The more nature is left completely alone, without contact with man, the better of nature and man will be.

If we do not do something quickly about fish farming and the problem of sea lice on young salmon, not only will we lose the wild fish but the whales and other marine mammals. It is an urgent situation on the Northern tip of Vancouver Island.

I appreciate you asking for my input. My wife and I have always enjoyed our outdoors at home in BC. We hunt for groceries and the rest is, different parts of BC that I've worked at. We hiked the land, tracked and shot wildlife with a camera. Rule #1 has always…take out what you taken in, and sometimes more

I have no connection to the environment from a business stand, only as a user and admirer of the environment.

Your questionnaire is well written and raises interesting questions about the rights of private land owners. As a private land owner myself, I feel strongly that ownership does not include the right to "do anything" on your land. Rather, ownership should bring with it responsibilities, including the protection of water, habitat, and species at risk. Government should play a key role in enforcement of enviro. Regulations on private land.

Q6: you ask about responsibilities and one pick is First Nations. It's my opinion, but I just see First Nations waste their natural resources. Shot 20 moose, by 1 person a year, shot moose any time of the year and if it is too hard to recover it, they leave it and go shoot another one and then only take the best cuts of meat. Allowing First Nations to hunt at night with lights, while the rest of the hunters are cut back more and more each year! Is this fair? Is this sustainable, not in my books, yet our government and uneducated public let it go on and on! First Nation people need to be under the same laws and regulations that we all are under for any of this to work. No special interest groups.

Walk gently – always - everywhere – everyone.

Questions relating to “the cost associated with…” have variable answers depending on how high the cost. For instance, in Q9 if the cost is in millions or less, other factors take priority. If the cost will be in billions, then cost becomes the higher priority.

The world is in very grave danger of perishing, as we now know. From my point of view the great population increase (human) is the greatest threat of all, because it impacts on other species then removing habitat. Population increase = larger demand on earth’s resources and a larger demand for land use i.e. housing etc., This places us in a situation which leaves us utterly helpless. Our present political system cannot hope to cope with these immense and tragic consequences.

I think “not in my backyard” is the biggest problem for needed green development. Junk science on both sides of debate needs to be confronted.

Crown land is poorly managed with regards to recreation. Motorized recreation is generally unregulated. A large-scale planning exercise must be undertaken to set areas for different recreation uses. i.e. motorized vs. non-motorized. Trapping is a traditional use, but it is time to revisit whether it is a use that British Columbians support. It is indiscriminate and presents a serious risk to small mammal populations. I have seen areas with drastically reduced population after only a couple of years of intensive trapping.

We passed the number of people the earth could support in the 1950’s. The amount of accumulated contamination will overwhelm any efforts to save species at risk in the long term.

For a study which is going to be influential within the government and industry, I feel that too many of the questions were worded to “beg a response” and the results will be very easily statistically manipulated.

I consider logging part of agriculture. As trees are grown and harvested as any other crop. Perhaps I do not understand this question (Q10) but it seems to me that plant eating and meat eating animals are in need of each other to keep a balance in nature. As do plants and trees need them. Let them balance themselves. If one species ever becomes excessive to the point of high imbalance (making other animal or plant/trees in danger) then take appropriate action.

Some (many?) spp. At risk in BC are marginal populations of common spp. At the periphery of their range, or taxonomically dubious (*i.e.*, subspp. Not spp.) Provincial parks can protect large unaltered habitat (forest, grassland) but can not easily be established in smaller and/or urban/agricultural habitats (e.g., Fraser and other river deltas). In my opinion /experience, grade and high school environmental education is necessary, but currently poor, alarmist, and often provided by unqualified teachers. The ESA has conducted several surveys on ecological/environ. Hobbies such as aquarium/terrarium keeping, house plants, gardening are often effective education tools.

Economy is a subset of ecology, and needs rethinking so it doesn’t require unlimited growth and private mega corporations and we do not need to be a colony of the US, which is now so corrupt that a criminal elite blew up the 3 world trade buildings to foist a myth of “terrorists” to control the world with fear. Meanwhile the natural world dies of global warming, toxins, depletions, etc. Things are dire!

Waste of tax dollars conducting such an elaborate survey! It could be made much simpler and cost effective to obtain this information. The dollars spent on this survey could have been spent on environmental protection instead. Note #1 important factor = survival. Food/water; shelter; oxygen (in no particular order).

Thanks for taking on this project.

I’m not really knowledgeable about this subject, and found it tedious and time consuming.

I am absolutely incensed that the Campbell Government are allowing the timber companies to sell off forestry for speculation. This destruction of our forests will contribute to global warming. The clear cuts encourage erosion. Also, allowing resorts in our Provincial Parks is grossly irresponsible. It’s the thin end of the wedge. It will push the animals out. Also, letting the Indians fish for salmon with nets nearly all the way across the river is stupid. Saw this with my own eyes on the Alberni River. One net after the other up the river.

This was a very thorough survey but I did not notice any questions regarding the discrepancy between the activities of a native versus non-native in the northern part of this province. I do not believe that natives should have different rules for fishing, hunting, trapping, etc. It disgusts me to see the waste they create when they take the best part of a moose and leave the rest to rot or get eaten by a coyote. Also – they sell too many salmons privately to white men. Everyone should abide by the hunting rules and regulations despite their race, color, age in an attempt to monitor wild game numbers. Also – the provincial government should hang its head in complete and utter shame for the way they "dealt" with the Mountain Pine Beetle epidemic in Northern BC. I have grade one students in my class who color their evergreen trees RED because of the devastation the pine beetle brought to the North. Nobody with any clout ever wanted to do anything about this when it first started because it started in one of BC's largest provincial parks. Tweedsmuir Park. Forget save the park!!! Look at the environment now. The beetle spread like wild fire and how we're logging at full force in an attempt to salvage any profits. In doing so, the animals are being forced to relocate and the wind is becoming very strong. The overpaid government yahoos in Victoria should have taken action in the park years ago. But then again, who are we in the North?

For years I have been a member of fish and game clubs, and Blackpowder clubs but have not been active lately due to health. I presently live (15yrs) on a smallish lot near Clinton. It had numerous Ponderosa Pine trees on it. All of the mature trees have been infected by Pine Beetle and most have been removed. The remaining trees will go soon. I can't think of how many hours of enjoyment I've had watching red squirrels in the trees in front of my balcony. They used to access these trees from my house roof from the trees at the back. I haven't seen a squirrel since the trees at the back of my house were felled. I live in a mainly Pine forest area and the forest, like many areas of the BC Interior, is devastated. My concern is not just for the forest but also for the animals and birds (humans too) that depend on them. We hear daily about the effects of Pine Beetle on industry, but I can't recall one report on the effect this will have on animals and birds.

We need to educate our children about the value of nature. Inculcating a sense of the importance of the environment and the creatures around them is the best way to protect species at risk. OK, maybe not the most effective immediately, but it will pay off in the future!

I have lived my entire life with a powerful connection to nature, living in rural settings and spending every possible minute outdoors – walking, cutting firewood, berry picking, some mushrooming… just exploring. The development of land in the Kootenays is becoming frightening. In my immediate neighbourhood it is near frenzied. Subdivide. Subdivide. Money to be made although local and regional government are scrambling with the support of many residents to form official community plans to protect against the onslaught of hungry developers – our "traditional" way of life here is profoundly threatened. Tourists pull in here with trailers full of ATVs in the spring summer fall, and snowmobiles in winter. The many old logging roads are clogged with machines now, and of course once in the alpine they roar around everywhere, with no concern for the damage they cause – both plant and animal life. I feel that laws MUST be in place; but the government has gutted both the forestry sector and conservation office – so how do we enforce legislation? I think the key is education. If the majority of people thought even a little like me, the world would be a better place and our planet might have a change. Thank you for doing this survey.

The imbalance in protection bothers me. We hatch fish (*e.g.* Puntedge River Courtneay). Then protect seals that eat up the small fish – right at the bridge. Solution: harvest over half the seals save thousands of salmon. It is wrong to give Native (Indians) special rights – fisheries, tax exempt, etc. Equality is what is needed! Imagine a world where soil used for drug growing use grew food – and that was equally shared. Imagine a world with nothing was spent on war. Humans are/have the problem "endangered species" is minor.

People are adaptable and innovative so we should find new ways to live and work without harming the environment. If we don't make sacrifices we will be extinct.

The constant emphasis on "growth" is a threat to wild places and their inhabitants/flora. In our society – everything needs to be justified by a dollar value. I feel untraveled wilderness has an inherent value – even if there are no trails, campsite or mineral deposits. Need a diverse economy so all our eggs aren't in one basket. Need to allow increased urban density to avoid suburban sprawl and highways. Ongoing education for kids and new immigrants. I'm not against industry or logging, but support strict regulation and enforcement of species at risk legislation. Wilderness and its inhabitants are a common resource (and joy) and do not "belong" to a corporation or even the "crown". In an era of individual rights we forget the importance of common wealth. A wild valley, a lake used by migrating birds, an uninhabited delta – all represent a kind of wealth even if they are not, or will not be developed. As a Canadian these are part of my psyche – I feel reassured that these places and their inhabitants are there. Education is crucial.

The environment is in great danger. Its protection should take priority over everything else *i.e.* The cost, cultural or traditional importance, individual rights. We need to save the earth now before there is nothing left for our children.

Concerned about global warming and the effect on the environment. Spent last summer in Ladakh India and saw first hand effects on farming and village life with change in weather patterns.

1954-1960 I worked at a logging camp at Huaskin Lake near Sullivan Bay. We had noseeum flies which were driven out by invasive Black flies. Went back in 1990s the Black flies were still there. In the 60s we were over run by acrowny deer, wolves moved in, deer disappeared, near later wolves gone. In my opinion change happens, some good, some bad.

I live near our most precious National Park (Gwaii Haanas) and I understand that we must limit human influences to help keep this area in pristine condition. I … have concerns regarding the number of sport fishing charter boats and their catch limits. There are approximately two dozen boats that use the marina daily from May to August with most guests bringing in limits daily. One has to wonder how long the ground fish (halibut, yellow eye and ling cod) and the spring salmon can last with this pressure. I think there should be a ban on killing the large, female ling code and halibut.

I do not like how Q9 is asked.

Q1 * the balance of nature…cope… Of course…there is no doubt if balances itself. At the detriment of what is its OWN LAW.

I found Q9 confusing – perhaps I should have left that blank.

A very interesting and penetrating survey. I enjoyed filling it.

Some Q5 questions were answered as don't know as I didn't understand the question.

From being brought up on a farm and seeing the various wild animals quite often, such as deer, bears, beavers, raccoons, swans, geese, ducks, etc., and for activity we often hiked off into the wilderness, up mountains, and etc. for swimming and or viewing. Is what makes me miss the wilderness activities and or living there.

I wish to see more responsibility and leadership from politicians on every level, with regard to species at risk. In fact I would like to see binding legislation in BC that would prohibit political interference in resource management decision making that would in any way compromise protection of species at risk.

First Nations have done a lot of damage to animals in this area. Can you help?

There needs to be tougher laws in place to protect all wildlife with severe penalties for offenders. All landowners, residential and commercial need to be made accountable for their actions when it comes to development and use of their land. We may not be able to reverse what damage has been done but with careful planning and management going forward, we can hopefully prevent the further decline and ultimate extinction of some species. It will be a sad world indeed if we continue to lose species due to a lack of urgency and action on our part as human beings.

We are avid campers, but like mainly forestry sites. Where we take out everything we take in (and usually more – whatever people before us have left). As a member of a family who grew up living off the land, and planted thousands of trees – environmental protection is important to me.

I can not image BC w/no animals/birds. I also know that the human population will continue to grow. Please protect the environment for the children of tomorrow.

I am a participant in your survey on the protection of species at risk and am taking the liberty of adding input. I am returning this under separate cover from the questionnaire. I am interested in the process toward and implementation of a species at risk protection plan, and I am certain such legislation will be enacted. My concern is more with how it will be done, who will design the legislation, and equal treatment.

I have concern that legislation will be designed and enacted by people more powerful and influential than I, and they will do their work in a city a long way from here. Most of BC residents live west of Hope and south of Squamish. They will be the major responders to your survey and they, primarily non-rural residents, will be setting the standards to which I in the rural area must adhere. I have great concern on that score. And I am sure many will have statement about their impartiality. I experienced this urban "impartiality" at the national level when the federal Liberal government was contemplating its legislation to support it. All the large metropolitan communities supported the legislation proposed while the rural and northern municipal governments did not. The split showed the urban thought for a wonderful idea and the rural thought about the impact on them, their livelihood, values, communities, and their unanswered questions.

My recommendation is to proceed slowly, have much and meaningful dialogue, be careful of the urban-rural split. The Columbia Basin Trust legislation was written by the residents of the Columbia River drainage lying north of the 49th parallel in that part of the basin affected by the Canadian dams built under the Columbia River Treaty. (The Kettle River drainage and the Okanagan drainage basins were not affected by these dams and were not part of the legislation). The writing of the legislation took place only after Revelstoke, with public input and recommendation.

Consider having the province's rural areas write the legislation and recommend the regulations. For an effective rural input (development of choices and acceptance of the decision) there will need to be benefit to the rural areas. Seems fair somehow; the rural area will be the most impacted by the legislation but the province as a whole will benefit. The "CORE" process used in the 1990s with all special interest groups at the table with two advisors behind each participant has much to recommend it.

This brings me to the question of who makes the final decision. Campbell and the Liberals wanted to permit the building of coal-fired electrical generators in the Similkameen: an example of decision making by "people away" with the impacts resting in the rural area. (It was the same government that "neutered" local control of the Columbia Basin Trust, moving power and decision making to Vancouver and Victoria away from the rural area.) So, as much as possible, the regions affected by the legislation need to have some control with future change that will inevitably occur.

A fine example of region-wide input and decision making was the air quality standards developed in the Cariboo Regional District, Williams Lake and area. Every group affected was at the table and signed off on the agreement. Sawmills, truckers, seniors, sellers of wood stoves, provincial government are only a few that hammered out the agreement. Or, to put it another way, the persons paying the dollars and changing the most, those modifying their operations, those most inconvenienced, and those who benefited the most but paid the least were all there and all agreed.

As a judge in the Federation of Canadian Municipalities "Sustainable Communities Awards" I annually see many excellent projects and activities across Canada. Municipal government is doing tremendous things, far ahead of the provinces and the federal government. I would suggest protection of endangered species could do no better than to be placed under its auspices.

I have to remind myself occasionally of a trip through the Tyrell Museum in Drumheller, Alberta. I remember vividly walking on a glass floor over abundant flora and fauna, the dinosaur era, then walking over a wasteland, then over the regrowth of flora and fauna. I could not escape the understanding that some species dies off, other species evolve and take their place.

I recognize change occurs. I am a good steward of my land. I strive to live life by treating my environment as I want to be treated; sensitively, with care and with respect. I abhor denial, inaction and distortion of truth on environmental matters for personal or supporter gain; *e.g.*, Stephen Harper, Thomas D'Aquino, Gordon Campbell, and Wal-Mart. Concomitantly, I want decision making, control and enforcement decentralized to the greatest degree possible into the rural areas. Thus, my earlier comment supporting municipal government, funded fairly, of course, by the senior governments for the responsibility taken and administered by local government.

To help preserve our species and plants we as a people of the Province of BC should stop clear cutting of our forests and go back to selective logging. Example if you want a carrot from your garden, would you go and take the whole row because you want 1 carrot for dinner? Re: global warming – look at all of our barren land from clear cutting and the government should stop the sale of Crown land to foreign investors.

I'm an 83 yr old widower living in a retirement home so the above do no apply. Occasionally walking in a local regional park is the only activity other than in my retirement facility.

Why do a survey on paper? Seems like a waste of resources. At least reduce the amount of material that comes with it.

I'm tired of big business abusing our natural resources for profits, profits, profits. I believe they are entitled to a profit, but it never seems to be enough to make a profit, they need more. Big business needs to pay their fair share. I hear global economy which I see as a smoke screen to make more money. BC economy has been international for decades.

Land owner in the Pine/Lemoray Park used for recreational purpose. Do something about the Pine Beetle that is killing the forests.

My opinion is everything has its time on this planet as dictated by our natural history *e.g.* dinosaurs, birds, etc. If protection is too forward on saving a species I feel it just might interfere with the natural evolution of any given species including ourselves!

I have answered this with some reservations. I have a problem with how a species is chosen to be a species at risk and that selection process as a whole. Some species are obvious but I know there are quite a few species being put forward by or skewed science. It is then up to directly effected groups to disprove their findings, this takes time and decisions are made prematurely based on bad or screwed initial proposals. The process is not always open either.

Private property makes up a very small percentage of British Columbia and should be left just like that, Private! My experience tells me the Government is far more likely to boggle-up things than private citizens. *E.g*. The Mountain Pine Beetle originated on Crown land and spread onto private forests and wiped them out. That was my retirement, whom should be held responsible? Government has ignored me, the private citizen tax payer. All levels of government should take a leadership role to protect Native species and stop the spread of invasive species. Eg. Non-native fish species should not be farmed in a native fish habitat. I am interested in the survey results, but lack internet access. Please don't discriminate, mail me the results. I do not understand how you can guarantee confidentiality on a coded survey.

Everything would run a whole lot better "if" which is a big word POLITICS could be kept out of the picture and all the paper trails.

The robins are disappearing and the crows are multiplying.

Significant bias towards having a contiguous marine park/reserve on the whole inside passage route. (a 12% water park/reserve) no grizzly bear hunting!!

Is question Q9 trying to see if 1st Nations species should be saved regardless. Q10 – some for of harvesting etc. commercial fishing traditionally over fishes, then the powers that be decide to study the problem while still allowing over fishing. Trawlers or draggers should be stopped, it is a very harmful method of fishing. It destroys the nurseries for many species. Herring roe fishery should be cut way down or stopped – too many other species depend on herring for food.

The last 6 years I have been handicapped by limited use of my legs. In the past my family enjoyed camping in provincial parks approx. 10 to 15 days every 2 years. One of my hobbies was gold panning in numerous streams and looking for semi precious stones. Salt water fishing 4 to 5 times every year. Fresh water fishing in lakes and streams while camping.

I believe that life exists as a whole. As species no longer contribute they become extinct and are replaced by new ones who are relevant to the new environment. The advent of homo sapiens seems to have upped this natural progression in part, perhaps, because of greed and in part by arrogance. i.e. we think we are above nature. It is my view that we are not, and we mess with nature at our peril. What price are we prepared to pay for a few more I??? or a softer life?

Great survey.

Q3 – I left two answers blank – because my answer would depend on "who was there first". If a farmer digs an irrigation ditch, and fish move into it – I vote in favor of the farmer. If people want to build homes so far up a mountain that the deer, bobcats and bear have no where to go – I'm rooting for protecting the animals, and telling the people live somewhere else.
Q4 – compensation should depend on what kind of development is being talked about. If it is a change that allows the carry on farming, ranching, etc compensation for lost income might be appropriate. If the land owner wants to put up a strip mall or subdivision, and retire on the profits of the land sale, the government might be better spending the money on species and the preservation of nature and natural resources.
Q5 – My concern would be – what if raising and introducing plants and animals not only increases the population of species at risk, but also introduces some disease or fish farms affecting wild fish stocks.
Q11 – I am pretty much disabled now. At this point in life, I can take short walks in public parks. I stop in National Parks and enjoy looking at the natural beauty that is there. The animals are a big part of the enjoyment. I go to Long Beach every year, and find great comfort in the sight and sound of the waves. Watching a chipmunk makes me happy.

I have two young children and protecting the environment for their future is of key importance to me. I think it is important for all sectors of government to be involved: to educate individuals and businesses on ways to do their part, and in some cases, to make examples either financially or criminally of those who ignore their harmful impact on the environment. I also believe it is important for governments to take a more active roll of informing the public on what is being done and what should be done by the public to help, on what sacrifices must be made and why. I think we rely too much on the media to get our information and they tend to focus on the bad news which is good for ratings but tends to turn people off. I know we all need to help, but scaring people isn't the answer.

As a farmer I am always engaged in discussion about the environment and wilderness issues. I don't have much time, nor do I seek to engage the wilderness but I do recognize how important it is to such endangered species. I also am aware that some positions are little more than self interest hype.

I did not fully understand the questions in Q9

In Genesis ch 1 when God told mankind to have dominion over the earth and subdue it he was asking us to look after it not dominate and use it to our advantage and for our greed. Once humans really understand this, we will all be in a much greater position and truly considerate of our impact on the planet that is our home.

Our local municipality refuses to enforce the Prov. Bldg Code therefore a private landowner can do whatever he/she pleases. *E.g.* Deep excavation adjacent a ravine and cutting of all large trees along the ravine without any environmental impact studies or geotechnical considerations for the homes and highways below. There is NO enforcement of the Prov Bldg Code here. The cabinet ministers and regional district place the responsibility of enforcement onto the local municipality. Thus the environment sustains irreversible damage in a matter of hours and the people are taught that it is okay to do this. After all, it is the wild west.

Q1 – I believe most people are not concerned with the disappearance of the different species. I for one have not seen a snow owl in many years. As well as many species of song birds among many others.
Q2 – resource management is lacking in all areas. Starting with government, forest industry, resource, oil, forest. Nobody is held accountable industry moves in, take out whatever and leave. How many trees are being replanted?
Q3 – Not only are large animals at risk. Small animals are disappearing without being missed. The black squirrel, red fox, prairie chicken just to name a few.
Q4 – It is a little misdirected. The uninformed public will blame the farmer. But I know many a farmer that will leave some hay bales in places where deer, elk and moose frequent. In fact I have known some farmer to leave a piece of hay field uncut because of birds nesting. The public in general needs to be educated/
Q5 – Hold companies feet to the fire. Taking every tree down, without replacing it is a no no. Oil companies should not be allowed to dig wherever in many a swamp where birds nest.
Q6 – Recourse companies do a lot of damage. They should not be allowed to harvest and run. They have an obligation to restore and limit the damage that was done.
Q7 – It is not a question of how much I support the recover and protection of species. The average citizen does not make enough money to pay for the destruction of our animals home. Industry has to step up to the plate. A concerned citizen.

It is better to check background of individuals who are more familiar or attached to the survey concerned such as danger species in this regard to protect by having more neutral parks for inhabitants. These types of people may give better survey answers than us. Thanks.

I don't think the common person should be made to feel so guilty about what we use when the rich want to fly around orbit just because they can afford it. Go after big business before you hound the little guy with little usage, or means of usage of so much waste. Jet fuel, gas. And argue there should be no trucks in city centers period. The animals were here before us if we can't help we shouldn't hinder either.

I found many questions confusing.

If you loose one species it impacts on all other species (including human) negatively. We must start with changing our attitudes and habits double up when we drive. Put a toll on bridges if your by yourself $10 2 people $5 3 people free. Recycling must be law, not separated no pick up composting courses in school education is the answer.

While the executives of the major industries are lining their pockets with the tons of money, our resources are diminishing. Just like the salmon. Before there were connays, there was bountiful fish in all our rivers. The clear cutting of forests destroy thousands of species in one single acre of land. The clear cutting of the rubber tree in South America reduces the oxygen on our planet. Our rivers and oceans near the shores are contaminated with sewage and garbage. The cost of electricity keeps soaring, why, running of electric energy, running of resources to support the production of electricity, where are they disposing toxic waste; nuclear waste. The economy is a disgrace. Housing costs are very high, electricity is high. For a sustainable future we need to work together. People need to be informed or educated. Work on a protocol between government and First Nations when resources are involved. Respecting one another and working together until an agreement is reached. Probably sounds corny to you all. Within 150 years our homeland has turned from plenty and healthy to scarce and toxic. More and more babies are born with birth defects. No one knows why. Water used to be clear and fresh. Now we have to buy bottled water if we don't want to get sick form the water that comes out of our taps. Brown and smelly at times. If you want to respond, please write me again.

In question 5 where I have put arrows – I think that the question should have been made into 4 questions not two or reworded.

I am a 25 year old male who enjoys the natural environment and all the responsibilities that should be taken into consideration while enjoying it. I am an active hunter who firmly believes in conservation as a major priority so that future generations can enjoy the things that I love so much. I think to raise awareness of the environment and issues that are happening, init you have to be out enjoying it so that if ? threatened you will feel responsible in helping to save it.

The environment is my main concern; I think it is the most urgent matter for government policy. I am willing to pay more taxes and have legislation which limits lifestyle choices in order to protect wildlife and wilderness.

Sorry for being so late. I was out of town when questionnaire arrived. Just returned.

The purpose of this questionnaire seems largely…

The provincial government seems more and more to have its hands in the pockets of corporations. Very little regard or care is given for the citizens of this province. Vancouver or Victoria are to the rest of the province like Ottawa or Toronto are to the West. Couldn't give a damn! We are only areas for exploitation and profit. These surveys are only window dressings to give an appearance that someone cares. A mask to hide behind. Sadly, this survey will probably be used in passing new regulations which is wrong, good or bad. Regional issues should be decided by regional votes during elections, especially issues that may have detrimental consequences to that region. People who have to live with the end consequences should have to decide, not the government or corporations who have their bank accounts hidden away in the Cayman Islands.
Mad cow disease is a prime example of fear mongering to pass Draconian laws. These waves of fear mongering are always used or ridden by special interest groups to achieve their agendas. The rights of others always get stampeded over. The government created their own problem by allowing animal parts to be fed back to the beef against the advise of the majority of science and the concerns of its citizens. There has been no accountability, just passing of the buck. There has been certain sectors of business who have profited much from this and now have obtained greater control of the market place through inspections of sales of beef. This squeezing out the small farmers. They are pushing for a captive market place, mad cow disease their Trojan horse. This mentality is also now affecting other sectors of the food market place giving off the stench of criminal conspiracy.
No where, in the rule of law, from the foundation of our nation is there provision for a paternal state, in fact the opposite is true. Lets not have a return to Feudalism. In truth the right of the individual takes precedent over that of the state, corporations or special interest groups. Thank you.

Economic development is important to the province of BC, while there cannot be a devolution of society and a moratorium on development there must be a middle ground where economic development occurs with environmental concerns addressed in a meaningful and effective way so there can be less habitat destruction and more sensitivity to important ecological areas. The south perimeter road around Burns Bog is an example of misguided development without appropriate environmental safeguards.

I need to be educated more in what is going on. After completing this thing most questions should have been answered "I don't know".

Q1 – I found it difficult to answer this question as I believe we have already surpassed the limit – none of the check boxes provide an acceptable response.
Q5 – I find the suggestion that reducing food and/or increasing predators of a SAR could be beneficial as curious.
I note that protection/recovery actions must be considered on a species-specific basis rather than broad policy directives. Not all species will respond equally well to a given action.

Freelance artist/managing thoroughbred brood mare farm. Difficult questions because it would depend on how certain things are/or going to be done. It would be nice to gain a good balance. Like my neighbour has and does not care English Ivy going up her tree and its choking it (Fir tree) 50 ft tall, and in the winds it scaring the crap out of me. She won't listen, the Park near me is full of it because of people dumping. Sorry this took so long, but have had deaths just recently.

Far too much land is used for logging. A greater part of our forests incl. the ones near communities should be left untouched. Large protected wilderness areas in the North eg. Are too far out of the way for most residents to use them.

I think it is natural for species to become extinct. I support legislation and education, protection and recovery (in some cases) when extinction is accelerated by human impact and activity. I think in situations where land ownership or resource extraction is a part of a land's history – a goal should be to try to educate and encourage to limit further impact – but it is not fair to try to control all aspects of what happens on that land. I think future exploration and economic development should be scrutinized more closely and that limits should be strict on crown/public lands.

I believe that there should be more restrictions on motorized outdoor recreation vehicles (ATVs, snowmobiles, 4x4s and seadoos). This should also include horsepower reductions. A large reduction in the number of domestic cats and limiting their access to wild birds and animals should be given careful consideration.

A lot of wild birds are killed or injured by flying into household and commercial windows. This I understand is due to light attraction or the mirror effect of glass windows. The problem of light attraction could be reduced through education. Research funds should be provided to reduce the mirror effect of glass windows or to place something in or on the glass in these windows. A different method may have t be used for new construction or renovations and existing windows. This would have to be inexpensive, aesthetically pleasing, and not obstruct the view. If this were to improve thermal insulation and reduce energy consumption so much the better.

I enjoy horse trail riding.

You refer to the balance of nature. There is no such thing. It is a constant war out there. Eat or be eaten. Everything is connected but all organisms are striving for the things they need to survive. Some are successful others go extinct. The fossil record shows us that extinction is the norm. Survival is not. Species at risk will always occur. We should not lose sight of the big picture, that is all species are at risk!

I think this survey is an excellent idea. I feel BC lags behind other areas in Species @ Risk management due to the perceived abundance of space in our province. The survey itself is poorly put together- redundant at times. I shouldn't feel that the survey questions are trying to "trick" me – which I did at times. Simple is good – thanks for the effort.

Working for a large timber harvesting company, I can say I think that things are managed in a sensible way that seems to work out well, but I do believe there should be random audits to make sure companies are following the rules. I know these do take place, but hey do not happen enough in my eyes. Raising public awareness in a huge way starting young would be a good start for species at risk. My opinions are always free. I enjoyed having the change to give my opinions on the subject at hand.

The natural world is dynamic and as such change is a positive order. To restrict or stifle nature just because it suits man is to upset a delicate balance with far reaching consequences, much as the chaos effect on weather. Great care by all parties concerned should be exercised before taking action. Blanket rules do not work, study and careful guidelines do.

Parts of this survey seemed overly complicated! Q11 (particularly # of activities) was unclear.

From my experience public opinion is usually not a good way to get an accurate assessment of any current condition. There are far too many bias opinions and a general lack of expertise to obtain a meaningful result. The creation of a 'task force' is a much more effective method of obtaining useful methods of change. Get a limited number of people, educated in the area specific of expertise that is being surveyed, as well input from the various levels of government – which represent the funding authority – to come up with a plan that has the best chance of achieving the desired goals. But that only works in theory. In reality, we have corruption and graft in our own government too. Hundreds of millions of tax-dollars given to Quebec, Radwanski with his $600,000 expense account, Adrian Clarkson spending millions as she travels around the globe!

Then trying to get a unified goal from individual citizens, business men and developers, large corporations as well as trying to maintain a national interest (whatever that might be), then include 'protection of the environment' – these are such di-polar points of view that a simple plan to achieve any goals seems virtually impossible.

I recall my drafting teacher posing a question when I was in Grade 10. He said: "what animal can be eradicated from the face of the earth and it will only result in a benefit to every other living creature?". I thought for a few moments and realized this animal had to be at the very top of the food chain – and there is only one "humans".

So the simple solution for the protection of species at risk is to limit or reduce human population. This however is contrary to every economic model for a developing nation. Economic success depends on an expanding population base – so which countries have opted for (or would be willing to have) a healthy eco-system over a bigger GNP?

Another very significant bit of information is that for the first time in the (human) history of the earth – we can expect the total exhaustion of natural resources such as oil and gas within another generation. This will have profound effects on the way we currently live.

So the quick fix would be to instantly eliminate a large portion of the human population. But there is another bit of information I recall from Grade 10 that reflects our conspicuous consumption in North America. China's population is now in excess of 1.2 Billion and in Canada, we are only just over 30 Million. But as people in North America we consume resources at 30 to 40 times (per capita) that of countries in Africa, India and China. That makes Canada's equivalent population over 1 Billion, and the USA about 10 Billion. We are the most glutinous inhabitants of the planet and there is little likelihood of a significant change in behavior without an 'external force'.

So there you have the solution. By instantly eliminating the human population in North America, it will dramatically extend the life-span of the remaining population on the earth as well as providing habitat for the species at risk – so who is in favour? Who is willing to give up their current life-style for something less? Will you give up your house to limit consuming resources? Will you stop driving your car or flying on planes that both consume fuel and pollute the air? Would you even consider a cut in salary?

How can we make an entire country live more efficiently, use less resources and work toward downsizing the entire country's population? That is the question that needs to be answered and when you find that answer, you will also find the answer for protecting species at risk.

Filling out this questionnaire took considerable thought and level of reading comprehension. Section Q9 was the most difficult to answer.

I have degrees in Physical Geography and Biogeography. I can see the impact humans make on the environment and I understand the human/environment interaction. Personally, I want to be free to enjoy the natural world, but I don't want my enjoyment to come at too high a cost to the plants and animals that live with me in this place. Wherever I've seen mass degradation and destruction to the environment, the cause has been over population.

Two questions in Q5 with asterisks highlight can not be answered as worded. Questionnaire poorly worded, as the reduce or enhance portion is contradictory and does not allow for a definitive answer.

I feel you are wasting much tax-payers dollars asking the same questions many times over in different forms. This questionnaire becomes very confusing! Many of the questions put the average person, has no control over what happens. Filling out surveys will not change this or help!

It is important to protect areas (remote and local) that are still natural. And then provide some access and education on these sites in order to give people a knowledge of what these areas represent.

Recreational fishing, hunting, off-road, bird watching clubs have motivation and manpower to carry out habitat improvement with gov't assistance and financing. Might also be useful to species surveys, etc. Environmentalists are worthless losers whining that the gov't should do something. This is over. Gov't is useless. It only responds to the last group that bribed it. The future will be decided by professionals like yourselves. Good luck, people. You're going to need it.

What concerns me most is the massive over fishing by first nations people it is BS that they are allowed 600 fish per person? To sell commercially? I have seen this first hand and they are taking all the salmon. And the fish farms with the lice attacking the wild baby salmon. The fish in the fish farm should be in self contained tanks where they are totally separated from the surrounding ocean. Is the government trying to wipe out wild salmon? It's a crying shame, and what are we to do about it? Do we have a voice?

Apologies for returning this late. However I was away for some days. Very interesting questionnaire. It certainly made me think about this topic.

Generalities – no specifics. Are you concerned about moose or spotted owl? Answers to most questions should reflect more specific situations than questions allow.

Kids broke my pen. Sorry for the messy writing. Thank you for asking for my opinion. I think the world needs help and this is one way of starting.

There is a continuous stream of logging trucks dropping off logs at the All West Trading Log Dump in Kitimat. I personally do not approve of clear cut logging, especially during the fall and winter. I wonder what happens to the wildlife like squirrels, bears, etc., who have found shelter for the winter, and have stored their cache to carry them over the winter.
I have seen the documentaries on Fish farming and the threat the lice from the farms are to the small salmon fry coming down the rivers. I wonder why we are taking such a risk with our wild salmon, and other species, and why controls are not being put into place such as enclosures for these farms, or not allowing them to locate at the mouth of rivers.
I believe Corporate interests control everything in this country. We need to be more respectful of nature as we all need to exist on this planet, and even birds don't poop in their own nests. Thank you for allowing me to express some of my own feelings.

Very interesting and useful questions. Good luck in protecting all species at risk.

I think the Oolichan fishery in Kemano, BC is extinct or whatever! We haven't had oolichans there for three years now. This is good medicine for First Nations people.

Natural environment – I live in it; I eat from it; I breath from it; I see it, feel it, smell it.

Effective protection and recovery of species at risk will require society to redefine our needs to be within ecological limits. This requires an awareness that perpetual economic growth is not ecologically sustainable and that we confuse "needs" with "wants". In other words without lowering our levels of consumption significantly, our chances of protecting, recovering, and ensuring the persistence of species at risk are slim. Another critical step is to reform tenure arrangements on Crown land, so that government and the public are able to plan and manage Crown land and resources, rather than licensing these responsibilities to private individuals and organizations.

The government needs to enforce laws: regulations already on the books. The reduction of conservation officers and offices is ridiculous. You must weigh mining/logging/industrial expansion/economy on total extinction. You can't shut down a mine because of tow pairs of spotted owls. However you could order selective logging only in that same area.

The public is largely uninformed on matters of basic conservation. For the large part, this survey asks them opinions on matters that they would respond to emotionally but, in reality, have a complexity beyond them. I question its value as a surveying instrument.

1. Biggest issue: how to enforce legislation we already have.
2. Must include private land (not just public) in any management plan.
3. Species at risk should always be viewed within its context and the eco-system in which it lives should be what is managed, not just eh species itself.
4. Ecosystems unique in Canada are most precious. Example – Garry oak ecosystems of Southern BC/Vancouver Island which has many species at risk.
5. All branches/departments of a government (*i.e.* provincial, municipal, federal) must be required to respect species at risk protection processes. Example of what should not occur: BC highways dept not having to go through assessment process for West Vancouver's Eagle Ridge (Garry Oak ecosystem identified as at risk), and also designated protected by municipal plan); or BC Highways not having to follow acknowledged "good practice to cut off (or isolate) one natural species rich area from another).
6. All levels of government need to be aware of and perhaps have policy responses to those of the other levels. Governments must work towards policies which respect a protective designation (of an area/species) assigned by another level of government. All of the above statements are to be understood with reference to areas of jurisdictional overlap (ie fisheries – federal and municipal development bylaws; or the Eagle Ridge example cited above). Somehow First Nations government must also be worked into this.
7. Governmental policies need to stay abreast of current research (in ecosystems and what supports species at risk/what threatens them).
8. Government should not rule out large implication possibilities. My belief is that our province has gained a great deal by the creation of the agricultural land reserve, even though it has been reduced piecemeal ever since its creation.
9. All land and resource management policies should reflect an ecosystem impact approach. Where human influences are more dominant, the trade-off should always be for diverse and highly interactive social environments (which enrich human lives).

Q12 Commercial fishing – Are we extinct???

Don't want to see any messing with Prov. Campsites – especially Forestry campsites. Just limit or disallow ATVs in them. My family still enjoys what we took pleasure in as a family. Also – don't make a questionnaire so long if you want people to reply.

I really feel strongly about putting a population cap on the Kelowna area, its getting out of control. You would think that motorized recreational activities would have a big impact on the environment but it really is nothing compared to housing development impacts. Where I used to dirtbike when I was 13 is all houses and suburbs now and its not slowing down at all. I hate it!

In questions Q5 and Q6 there are statements related to "cost" we must also consider the additional benefits of protection and recovery. The income to the Province with some species may well outweigh the cost and therefore receive a higher priority.

Also in Q5 there are statements regarding the oil and gas sector. There are developments and exploitation programs that limit damage to our environment. If we can proceed with minimal footprint that would be my preference. In regard to the deforestation or timber harvest exceptions must be made to deal with massive amounts of Pine Beetle infected trees.

Ever since 1977 I've had the wonderful opportunity to fly through-out this beautiful country of Canada. It has given me the opportunity to see a lot of beautiful scenery and animals and I wish a lot more of our young people would take more time to appreciate what we still have. However, it has also given me the opportunity to see the not so good as well. Here in BC we question why our natural fish stocks are decreasing and yet we still continue to promote fish farms purse seining, herring fisheries, harvesting krill. The sea lice problem is huge and yet we turn a blind eye for the sake of money, let alone introducing foreign species such as Atlantic Salmon on the Pacific Coast. If we continue harvesting krill, everything above them suffers. If we develop a wetland it would be like removing a gas station for our migratory birds. We have a fish hatchery here … that I would dare say produces just enough fish for all the seals and sea lions in this area. I've spent a few years flying an old Huey on the BCFS Rapattack program. We had initial attack down to a science. If a fire were to start we would in some cases have that fire out in just a few hours. We saved millions of dollars of timber. What we see now is we are losing billions of dollars of timber because of bug infestation. I don't think it would have hurt to let a few of those fires go to clean up some of the beetle problem. If we were to simply take money and greed out of the equation and replace it with common sense we would be able to very easily solve some of our problems. We cannot control what Mother Nature gives us, but there are a lot of things that we as humans can. Sincerely,

My husband worked for the forest industry for over 40 yrs.

More concise questions about specific concerns and solutions in each region.
More questions with regard to the regional rights of people in these regions who need large game to sustain their families.

More surveys asking questions and looking for sustainable solutions.

More questions on how to recycle materials, who is responsible for using and collecting these products. More surveys on what we can do to help.

Weather patters have changed so dramatically in the last few years. We don't have until 2020 to fix the problem, we are out of time, we should have been paying attention and working on these problems since the 70s. If we stopped doing all the things that are impacting the earth and its creatures right now, it still wouldn't reverse the damage we have done, and as a species we are also close to our own extinction.

There is hope in some areas that can be monitored in time, because the earth is so big and has the capacity to heal if we stop doing harmful activities, such as exploration trophy hunting, pollution, and building our houses in areas where animals need access to the valleys and rivers. As the human race becomes more populated, more vehicles, trucks, trains, planes, ATVs, skidoos and hunters take their toll, the animals desperately need our help, we must get past this stigma that we are different from the animals, that they don't have the same feeling or instincts that we have, that killing one member of their family doesn't have a huge impact on those that are left, especially when it's a parent or a protector.

The animals have taught us everything we know for the past 3000 years, the knowledge we have forgotten, the plants they taught us to use, our hunting techniques, they gave us their meat, their skin, their love, and they've worked hard for us, with very little appreciation from us.

The Pine Beetle problem, a huge catastrophic epidemic, made worse by trucking infected lumber to other areas that were not affected. Now all the creature that depend on the boreal forests are suffering because of it. It's a problem we can do nothing about, no matter what we do from this point on.

The forestry must make a monumental effort, to use the public for counting all species in BC, whether it be at bird feeding stations, road kill drop sites, hunters, etc (trappers, etc). In fact everything should be done to count the numbers and see what can be done. There should be a moratorium on hunting for 4 years, no more trophy hunting, killing the breeding bulls, or allowing hunters to hunt all through the year. (includes native hunters also) Certain areas that are passageways should be protected and left undisturbed, and traffic should be slowed in sensitive areas, where high fences with channel gates can funnel the larger animals to safer areas.

Every effort should be made to keep our conservation programs in tact and producing results. If you're going to allow any hunting, use those funds to make these programs work. Do survey with dept highways in every region, the same with the trains. Find out how many animals have died approx. in the last 15 years by trains, and trucks on major highways. Good luck.

Somehow and someway, I would like to work somewhere to help the environment and all kinds of species. But right now I don't know how to get there. But I'm sure I will get there and help someday. Thanks I know this will help some.

Due to illness and low income as well and my age we really have no connections with the above mentioned.

Q6 The 3 governments have done a terrible job protecting any species, the lies are mounting and the people being paid off to continue lying (*e.g.* fish farms and sea lice) and hiding evidence should be jailed and fined. First Nations are no better, good example is the early sturgeon? Run now down from over 1 million fish to 12,000 spawners last year. Good work.

We have 160 acres in the Criss Creek area, and has no electricity or running water.

My main connection to the natural environment is my husband who strongly encourages me to enjoy it through hiking, camping, snowshoeing and fishing. I am grateful for having participated in this study as it has raised my level of interest in the subject. Thank you.

Our gov't's biggest weakness in protection of wild salmon fish stocks, their lack of support for fish hatcheries, and then their lack of foresight in reviewing problems associated with fish farming. They also have hand cuffed fish and wildlife with lax laws and punishments as well as in action on over fishing by Canadians as well as international commercial fishing. In reference to wildlife there are many animals that ???? to city and urban sprawl – these animals need to be controlled as they become pests and cause numerous other problems. *i.e.* deer, coyotes, geese.

I apologize for the delay in returning this survey. I filled it out and thought "what's the use?" Our Prime Minister listens to the Exon-Mobile Science, just like Mr. Bush and refuses to take global warming seriously. Our BC Gov't isn't any better. I fought Alcan, along with hundreds of other people and even when we won a few small victories, decisions were overturned by government. Economy always trumps environment. They didn't care about the loss of a river nor the fish and they won't care about the loss of any other species. I hate to be so cynical but I have no faith that government will support anything that protects the future. They think only of the present and their biggest concern is getting re-elected.

Some questions asked want you to pick between. We all need to better. Even you.

My personal belief is that urbanization (sprawl) is the main contribution to species decline. I lived in Vancouver for 10 years (20-30 yr age) and day after day, year after year, you see the increased impact of growing populations. In a small place like Quesnel, (even with logging as its main source of employment) does not seem to have the same effect as people in concentrated #s. I hunt and fish and I haven't noticed any particular species in decline while in the woods. Trees are a renewable resource while urbanization is relatively permanent. My belief is that we need to limit the total area that we inhabit.

I prefer to drive or bike (mountain bike) to a not too populated area and enjoy to peaceful area of the river and the wilderness and to do some fishing or just hiking around some with my dog and being safe not to get caught between any bears.

BC should use the Tidal power along the West Coast of Vancouver Island to generate electricity then make hydrogen from saltwater. Then hydrogen in hydrogen powered vehicles all over the place. We should be an example for the world. All industry, transportation and homes could use this abundant green renewable resource. Make plastic from corn oil, paper from hemp. Leave our forests alone so they sustain our planet.

Re final question: you ask for "main" connection and "in all that apply" – which is it? I answered somewhere in between the 2 options several questions required the type of assumption and advocate a service-based economy and cooperative social status rather than our current competition and commodity based economy. Anything we can do to protect and preserve and increase recovery of natural systems should take priority over any other value. If not, we are killing our souls as well as our chances of survival as a species.