Environmental Literacy Study
-Teacher Component-

Final Report

465-7102P

Prepared for:

Environment Canada

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CORPORATE RESEARCH ASSOCIATES INC

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Introduction

Corporate Research Associates Inc. (CRA) is pleased to present Environment Canada (EC) with this Final Report for the recently conducted **Environmental Literacy Study**. The present report includes discussion of online questionnaires completed by elementary, junior high science, as well as high school science teachers from across Atlantic Canada. This is the second component of a two-fold research methodology, which also included telephone interviews with Regional Development Authorities (RDA) from across Atlantic Canada. Results from the RDA component of the Environmental Literacy Study are reported under separate cover.

The principal objective of the Teachers Component of the Environmental Literacy Study was to better understand the status of the environment as a teaching subject in Atlantic Canada.

Information included in the accompanying data set is based on questionnaires completed online by 193 teachers from across Atlantic Canada. Environment Canada officials distributed an invitation E-mail and link to the online study to principals and school boards throughout the region. These individuals and groups then forwarded the invitation to more than 4,000 teachers in Atlantic Canada. The online survey was active from November 22, 2004 to March 3, 2005.

An incentive was offered to teachers for completion of the online questionnaire. To be included in a draw for a free whiteboard and markers, participating teachers simply noted their name and contact information. In addition to the prize draw, all teachers noting their name and contact information were to be sent a teaching aide packet prepared by Environment Canada.

Appended to the report is a copy of the questionnaires (English and French) and tabular results broken down by provincial and grade level subgroups. These tables are noted in the text for easy reference. All results are expressed as percentages unless noted otherwise.

Executive Summary

Results of the Teacher Component of the Environmental Literacy Study show more than eight in ten teachers in Atlantic Canada believe a healthy natural environment is *critically* important for human health as well as the health of the eco-system. In contrast, just four in ten think it is critically important for economic competitiveness. The environment is also regarded as being in need of improvement at the local, regional, and national level. Perhaps not surprisingly, health concerns are the primary reason teachers perceive a need for environmental improvement.

The key finding of this report is the low level of awareness among teachers of Environment Canada's various programs and activities. When teachers were asked to identify any initiatives or services Environment Canada makes available to teachers to assist with teaching students about environmental issues and concerns, one-half did not offer a definite response (i.e., don't know/no answer). Of Environment Canada's branded initiatives (e.g., Skywatchers, Project Atmosphere, and so on), only Hinterland Who's Who was mentioned on an unaided basis by at least one percent of teachers. Even with the aid of a list, the majority of teachers say they are not aware of Environment Canada's branded initiatives or services. Moreover, the majority of teachers say Environment Canada does not have a resource person in the province they can contact to get assistance or information about teaching environmental issues in the classroom.

This low awareness no doubt contributes to low ratings of Environment Canada's performance providing teaching aides. Fewer than three in ten teachers say the organization does either an excellent (2%) or very good (25%) job in this regard. When asked why they are so negatively disposed, the majority point to this lack of awareness as the reason for their unfavourable opinion.

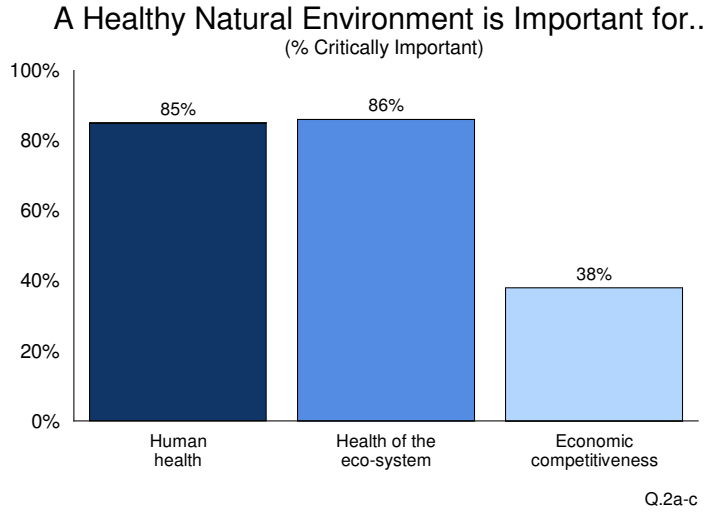
There is also room for improvement with respect to teachers' assessments of student environmental awareness. Just two percent of teachers say their students are very informed. Moreover, the majority of teachers suggest a certain level of apathy with respect to student interest in the environment. A lack of student interest, a lack of time, and a perceived lack of environmental resources (e.g., Environment Canada programs or initiatives) are the primary challenges teachers say they face in broaching environmental issues in the classroom.

Finally, the majority of teachers acknowledge they would benefit from training on environmental education issues. Teachers were asked what Environment Canada could do, in terms of providing products or services for science teachers. Perhaps not surprisingly, many suggestions centre on increasing awareness of existing programs (i.e., promote awareness, create a catalogue of resources, promote website, E-mail, and in-services). Other comments suggest a need for more ready-to-use materials (i.e., provide lesson plans, align initiatives with curriculum, and more interactive resources).

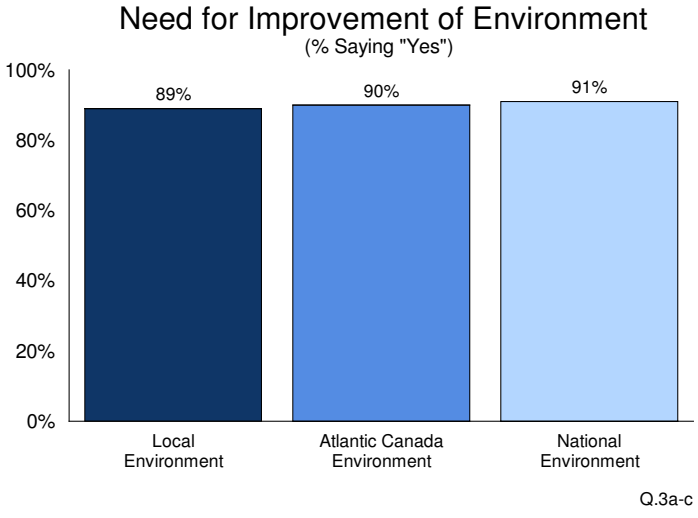
Detailed Analysis

Overall Assessment of the Environment

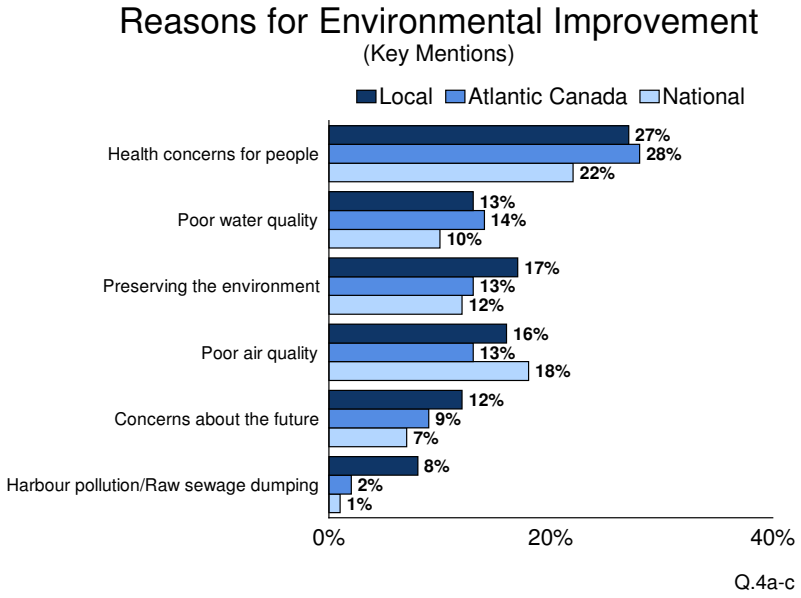
A significant majority of teachers believe a healthy natural environment is critically important for human health as well as the health of the eco-system. However, the link between a healthy environment and economic competitiveness is not as strong. While the vast majority of teachers think a healthy natural environment is important for economic competitiveness, (i.e., *critically important*, or *important but not critical*), just four in ten say it is critically important. Notably, although the sample size is small, teachers in New Brunswick are considerably less likely than those in the other Atlantic Provinces to think a healthy natural environment is critically important for economic competitiveness. (Tables 2a-c)



A vast majority of teachers in the region also think the environment needs to be improved at all levels assessed in this study. Specifically, nine in ten say the local environment, the Atlantic Canadian environment, and the national environment need to be improved at the present time. (Tables 3a-c)



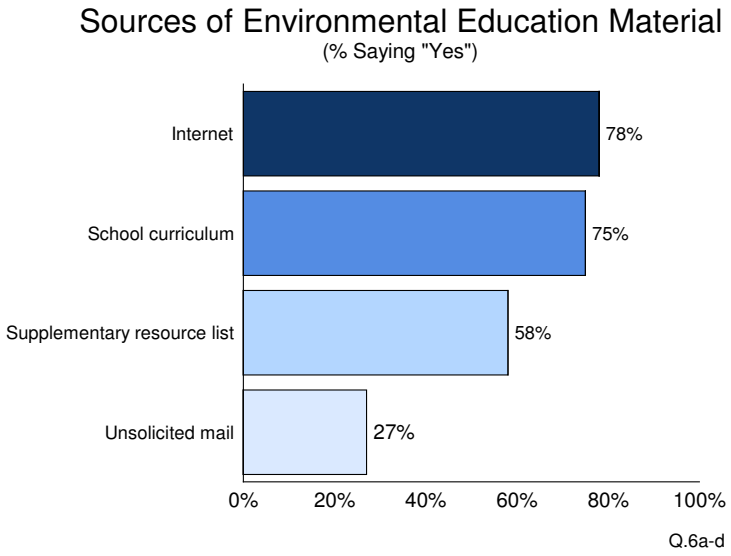
Teachers were asked why they think the environment needs to be improved. While no single reason was cited by a majority of teachers, health issues were the most common concern at all three levels (i.e., local, Atlantic Canada, and national). Other key mentions include poor air quality and poor water quality – both generally consistent with more explicitly stated personal health concerns. In a theme similar to mentions of poor water quality, at the local level teachers in Newfoundland and Labrador, Nova Scotia, as well as in New Brunswick are more likely to specifically mention harbour pollution/raw sewage dumping as a local problem compared with its national importance. Looking at national issues, teachers in Newfoundland and Labrador are more likely than teachers in New Brunswick and Nova Scotia to cite poor air quality as a national problem. (Tables 4a-c)



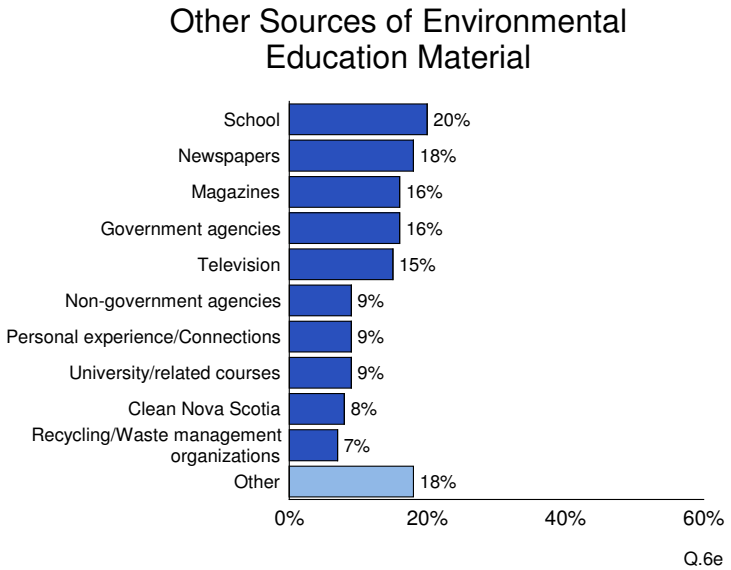
The very few teachers who said the environment did not need to be improved (Local n=6, Atlantic n=5, National n=2) were of the general opinion that the environment in Atlantic Canada was in good condition, especially when compared to other industrialized regions. (Tables 5a-c)

The School Environment

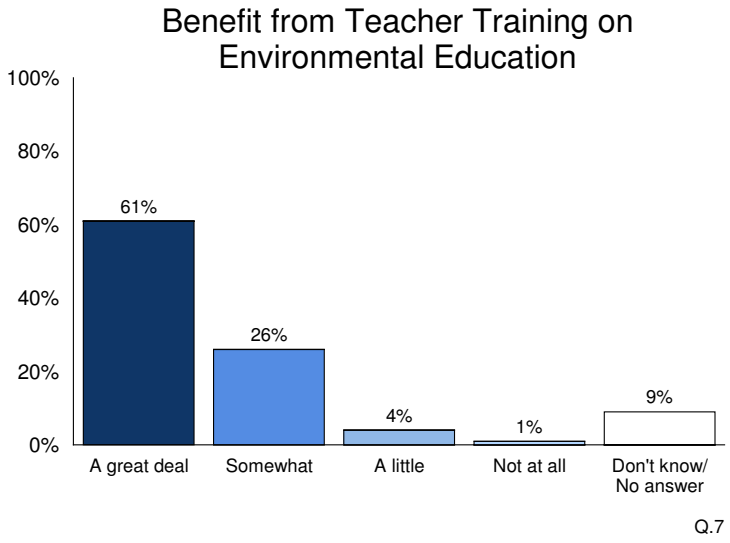
School curriculum and the Internet are teachers' key sources for environmental education material. Notably, while sample sizes are small, school curriculum appears to be considerably more important for high school teachers (i.e., grades 10-12) compared with teachers of primary to grade six. Similarly, supplementary resource lists are utilized more often by high school teachers compared with primary to grade six teachers. Relatively few teachers obtain environmental education materials via unsolicited mail. (Tables 6a-d)



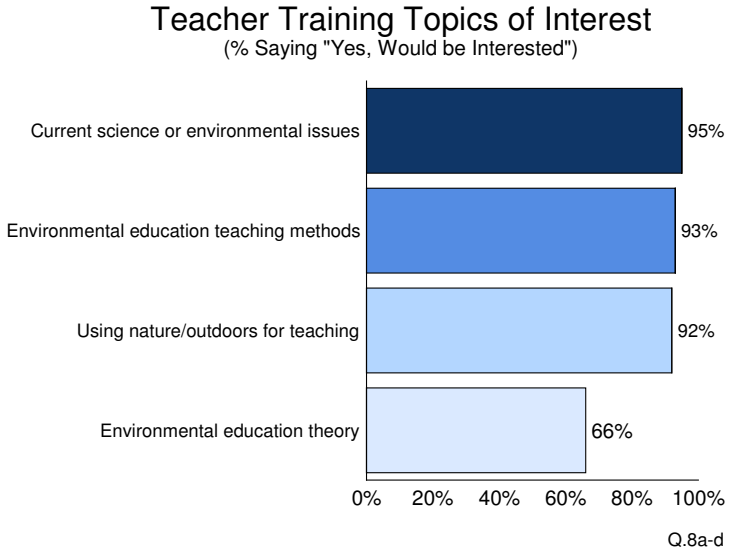
Four in ten teachers also mention they obtain environmental education materials from "other" sources. The variety of responses suggests teachers access a diverse network of environmental information, seemingly utilizing all relevant sources available or known to them. These include resources in school (e.g., fellow teachers, libraries, in-services, and so on) newspapers, magazines, television, and government agencies. (Table 6e)



The majority of teachers acknowledge they would benefit from training on environmental education issues. In fact, six in ten say they would benefit *a great deal*. Notably, teachers in Newfoundland and Labrador are the least likely to say they would benefit a great deal from training on environmental education issues. (Table 7)



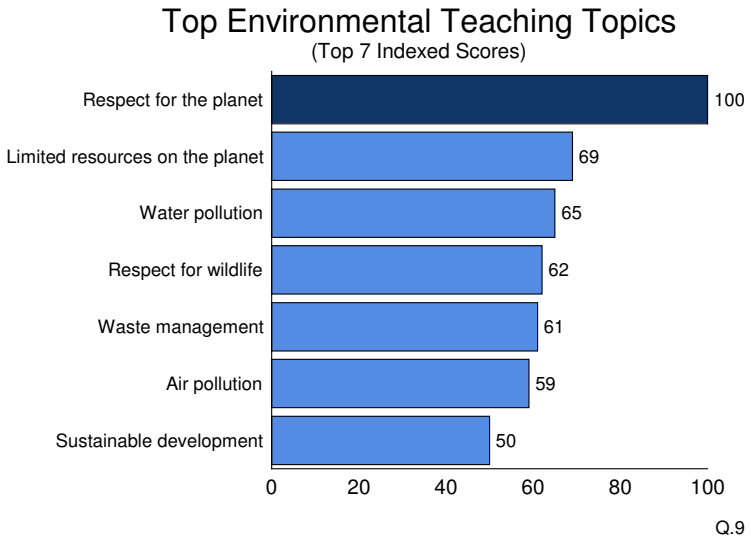
Subsequently, at least nine in ten teachers noted interest in using nature or the outdoors for teaching, current science or environmental issues, as well as environmental education teaching methods. Environmental education theory garnered the lowest level of interest with just two-thirds of teachers expressing interest in this topic. Among those interested in 'other' topics (25%), improving youth awareness of environmental responsibility is the primary issue suggested. (Tables 8a-e)



Teachers were instructed to select seven topics concerning the environment, topics they think are of great importance to students, and that should be taught to every public student in the region at some point in the school system. Subsequently, respect for the planet was selected by six in ten teachers in Atlantic Canada, ranking it as the most important topic in terms of total selections. Additionally, teachers were instructed to select the seven topics in order of importance, selecting the most important topic first, the second most important topic second, and so on. When one accounts for this weighting, respect for the planet remains the most important topic overall. (Table 9)

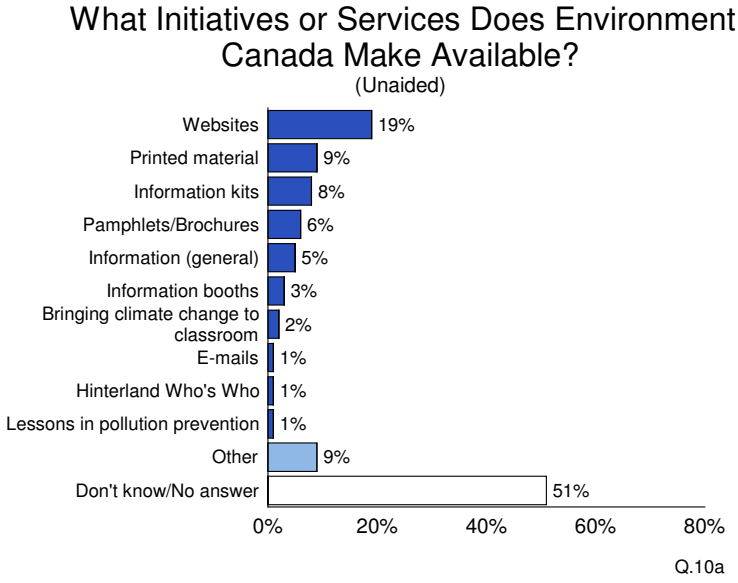
Interestingly, while the sample size is very small, food harvesting and herbicide use is the most important topic in Prince Edward Island, respect for the planet ranks second. The top ranking also varies by grade level. Teachers of grade ten, grade eleven, or grade twelve students rate sustainable development as the top priority, and again, respect for the planet ranks second.

The following graph shows the Index scores for the top seven environmental teaching topics. The Index was calculated by giving the first topic a teacher selected a score of seven, the second topic a score of six, and so on. A total score for each topic was then calculated by summing its selection rankings. The topic with the highest total score (i.e., respect for the planet) was used as a base and the balance of the topic scores were indexed against this base.

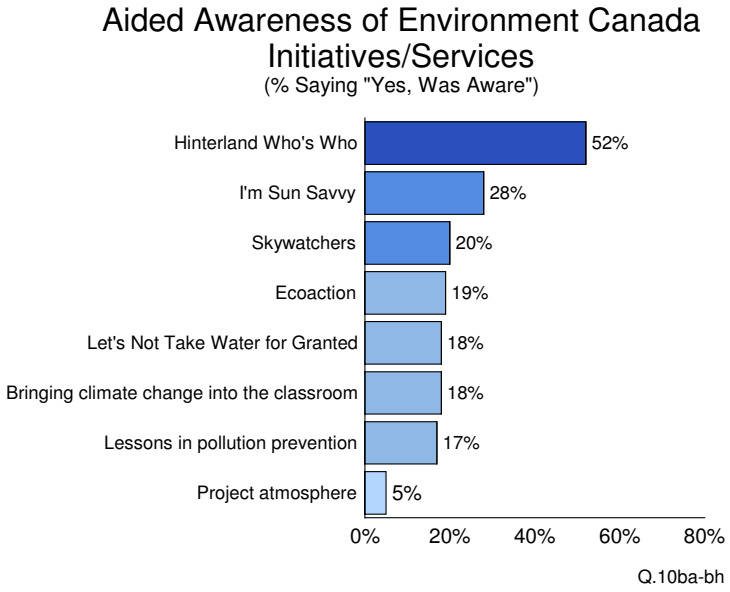


Awareness Issues

Unaided awareness of specific Environment Canada initiatives or services is very low. When teachers were asked to identify any initiatives or services Environment Canada makes available to them to assist with teaching students about environmental issues and concerns, one-half did not offer a definite response (i.e., don't know/no answer). The most common mention was websites in general. Of Environment Canada's branded initiatives (e.g., Skywatchers, Project Atmosphere, and so on), only Hinterland Who's Who was mentioned on an unaided basis and by just one percent of teachers. (Table 10a)

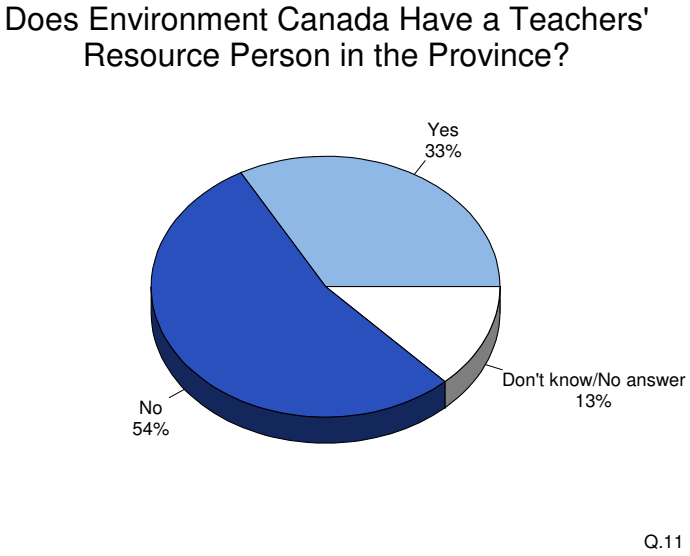


Next, teachers were asked specifically about each of Environment Canada's branded initiatives or services. Perhaps surprisingly, even with the aid of a list, awareness of Environment Canada's various services is relatively low. It is only Hinterland Who's Who that is known by at least one-half of teachers. I'm Sun Savvy has the second highest awareness level among the programs assessed, however, just three in ten teachers indicate they are aware of this program. For the balance of the programs examined, less than two in ten teachers indicate an awareness. (Tables 10ba-bh)



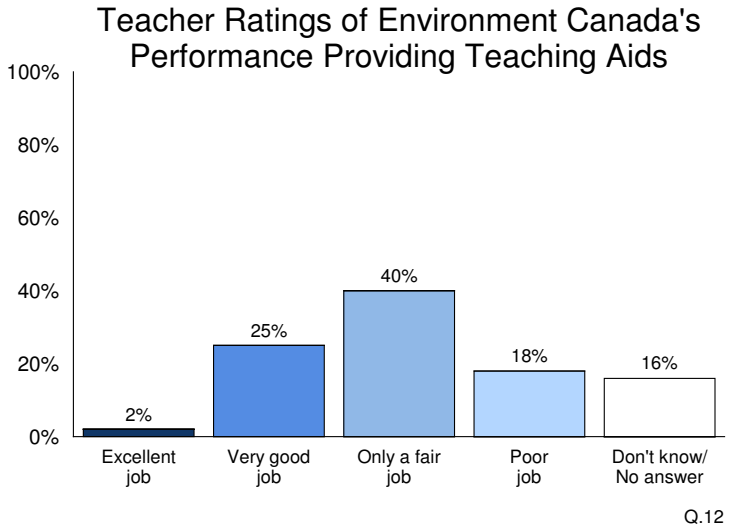
Regionally, there are some notable differences with respect to aided awareness of Environment Canada programs. Teachers in Newfoundland and Labrador are considerably less likely than others to be aware of the Skywatchers and I'm Sun Savvy programs. Additionally, teachers in Nova Scotia are considerably less likely than others to say they are aware of Bringing Climate Change into the Classroom.

With respect to resource personnel, the majority of teachers say Environment Canada does not have a resource person in the province they can contact to get assistance or information about teaching environmental issues in the classroom. Awareness in this respect is consistently low across Atlantic Canada. (Table 11)

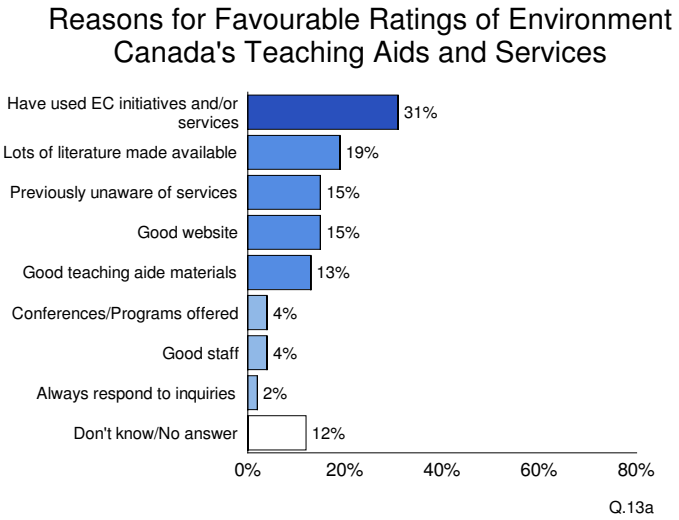


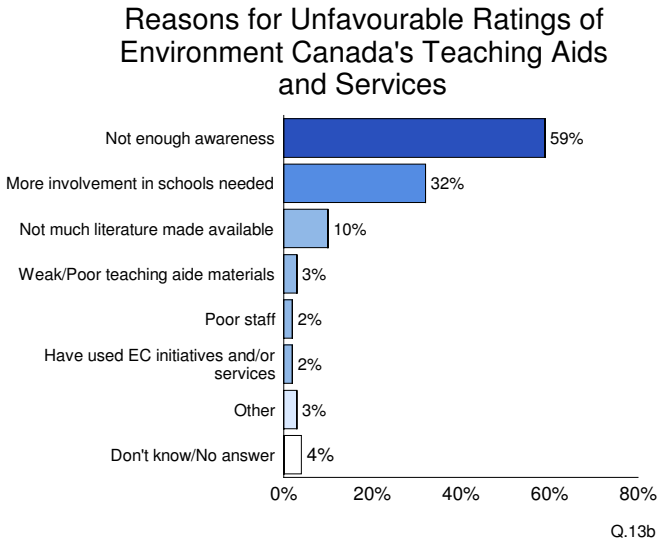
Assessment of Environmental Education

In concert with low awareness of Environment Canada's various educational programs and resource personnel, teachers in Atlantic Canada provide low ratings of Environment Canada's performance assisting them in terms of initiatives and service aides. Fewer than three in ten teachers say Environment Canada does an excellent or a very good job in this regard. (Table 12)

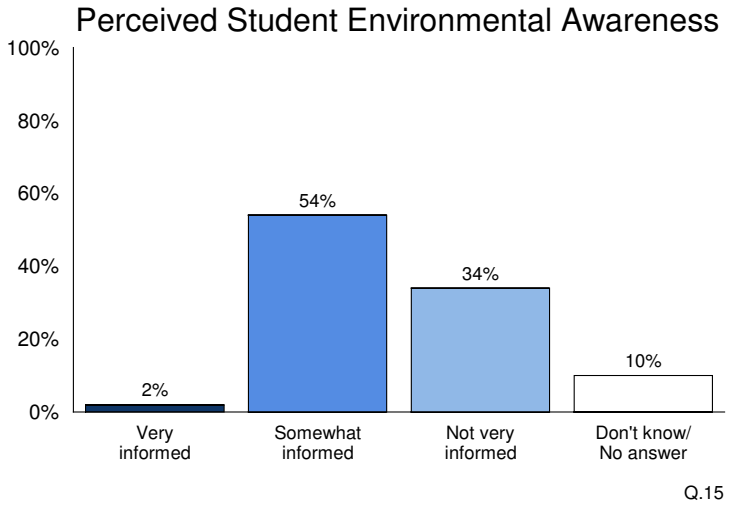


Those providing favourable ratings (n=52) were asked why they are positively disposed. A variety of general comments were provided, with the central theme being previous experience with Environment Canada's initiatives and services. Conversely, the strong majority of those indicating Environment Canada does only a fair or a poor job of providing teaching aides (n=111) cite a lack of awareness of such programs and services as the reason for their unfavourable opinion. (Tables 13a-b)

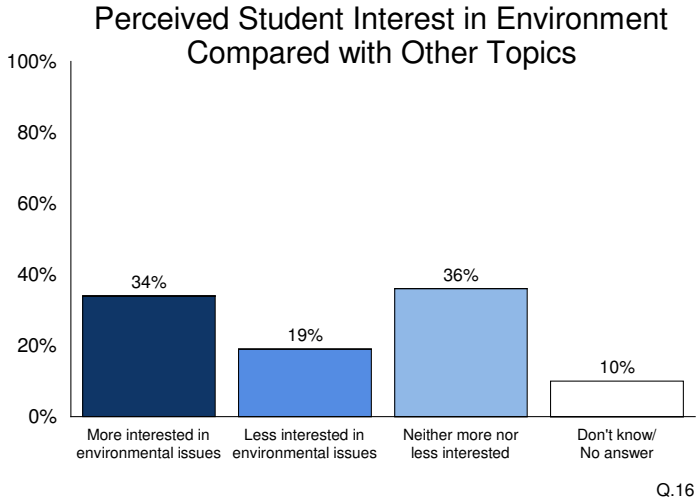




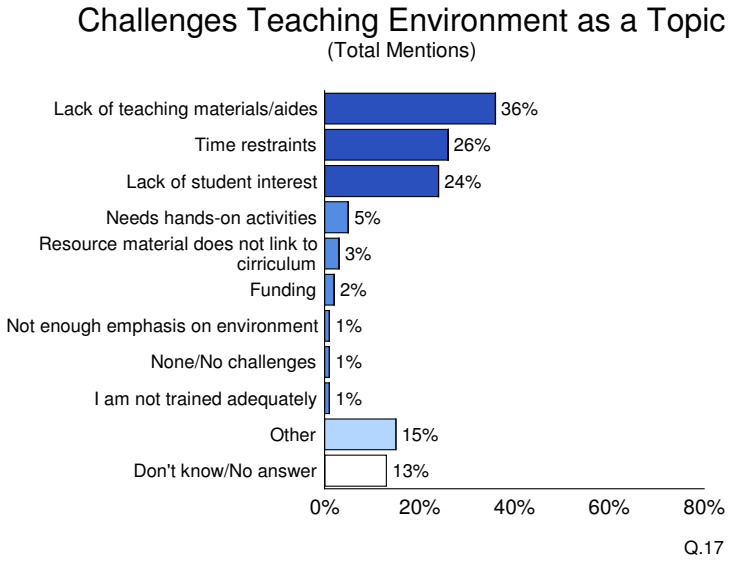
Students are perceived as being somewhat informed about environmental issues. Clearly there is room for improvement in this regard as just two percent of teachers believe their students are *very* informed. Notably, while one might expect high-school teachers to be more likely to perceive their students as being very environmentally informed, ratings of student environmental awareness is only moderate across all grade levels. (Table 15)



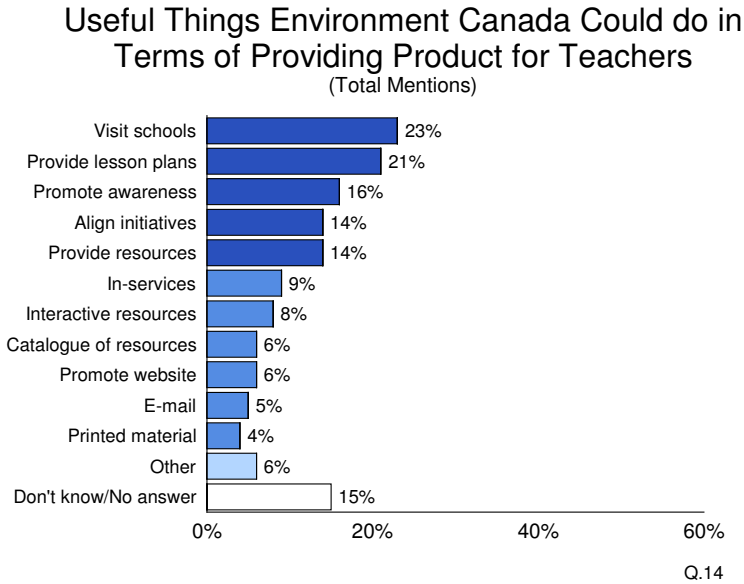
Moreover, the majority of teachers suggest a certain level of apathy with respect to student interest in the environment. Two in ten indicate they think students are less interested in environmental issues compared with other topics, while more than one-third think students are neither more nor less interested in environmental issues. Interestingly, there appears to be a higher level of interest in the environment among younger students. Specifically, teachers of primary through to grade six are considerably more likely than those teaching higher grade levels to indicate students are more interested in the environment compared with other issues. (Table 16)



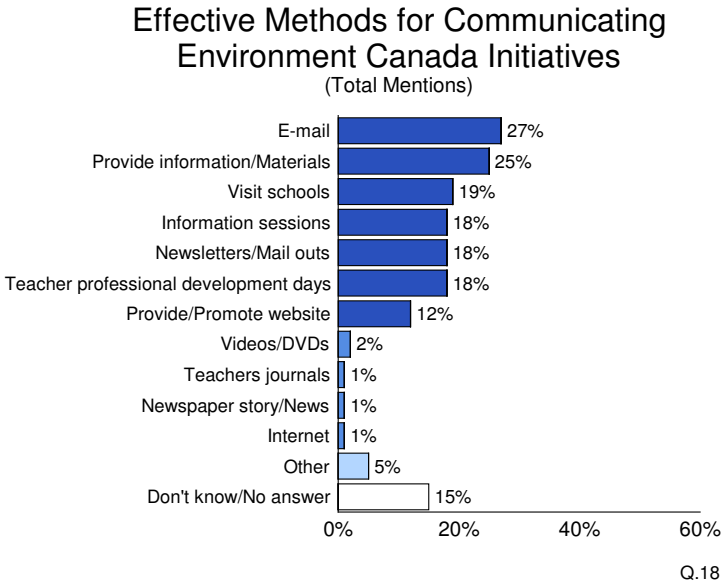
Nevertheless, a lack of student interest is not the only challenge teachers face in broaching environmental topics in the classroom. In fact, just one-quarter of teachers indicate a lack of student interest is a challenge in teaching the environment as a topic. Rather, there is a perception among many teachers, errant or not, that there is a lack of environment-related teaching materials available. This perception coincides with low awareness with respect to each of the Environment Canada programs assessed in this study (e.g., Skywatchers, Ecoaction, and so on). Finally, available classroom time is also a key challenge for teachers. (Table 17: Total Mentions)



Teachers were asked what Environment Canada could do, in terms of providing products or services for science teachers. Perhaps not surprisingly, many suggestions centre on increasing awareness of existing programs (i.e., promote awareness, create a catalogue of resources, promote website, E-mail, and in-services). Other comments suggest a need for more ready-to-use materials (i.e., provide lesson plans, align initiatives with curriculum, and more interactive resources). Finally, school visitation, separate from in-services, would be welcome by one-quarter of respondents. (Table 14: Total Mentions)



From the teachers' perspective, the best way for Environment Canada to get across its message about its initiatives and services to Atlantic Canadian teachers is through personal contact (i.e., visit schools, hold information sessions, teacher professional days, and in-services). While personal contact is desirable, it may not always be feasible given resources available. Accordingly, it is encouraging to note close to three in ten teachers indicate E-mail would be one of the best contact methods, and close to two in ten would value newsletters or other mail outs. (Table 18: Total Mentions)



Study Methodology

Questionnaire Design

The questionnaire for this study was designed by Corporate Research Associates Inc., in consultation with representatives from Environment Canada.

Survey Administration

Environment Canada officials drafted and sent an invitation E-mail to principals and school boards across Atlantic Canada. The E-mail noted the purpose of the project, and contained a link to the online survey. Principals and school board officials were asked to forward the E-mail to more than 4,000 elementary, junior high science, as well as high school science teachers from across Atlantic Canada in Atlantic Canada. The online survey was active from November 22, 2004 to March 3, 2005.

An incentive was offered to teachers for completion of the online questionnaire. To be included in a draw for a free whiteboard and markers, participating teachers simply noted their name and contact information. In addition to the prize draw, all teachers noting their name and contact information were to be sent a teaching aide packet prepared by Environment Canada.

Respondents were offered the choice to complete the online survey in either English or French.