

# **CRD Regional Parks Service**

## **Resident Survey 2017**

CRD Regional Parks

February 2018

The logo for CRD (Central Regional District) is located in the bottom right corner. It consists of the letters 'CRD' in a white, stylized, sans-serif font, set against a teal background that features a wavy, wave-like pattern.

## Table of Contents

Executive Summary .....	3
Glossary .....	8
1. Introduction.....	10
1.1 Purpose.....	10
2 Survey Methodology.....	11
2.1 Mail Survey Approach.....	11
2.2 Questionnaire Design.....	11
2.3 Mail-Out Procedures.....	11
2.4 Sample Selection.....	12
2.5 Completion time.....	13
2.6 Data Analysis .....	13
2.7 Comparison between 2017, 2005 and 1998 resident surveys.....	14
2.8. Representativeness of the sample population .....	14
3. Results.....	16
3.1 Socio-demographic characteristics– Question 21, 22 & 23.....	16
3.2 Value orientations – Question 7.....	19
3.3 Benefits of regional parks – Question 1 & 2.....	23
3.4 Benefits of regional trails – Question 4 & 5 .....	27
3.5 Visitor use patterns – Question 3, 6, 8, 9, 10, 11, 12 & 13.....	31
3.6 Satisfaction – Question 14 & 15 .....	45
3.7 Management and funds – Question 16, 17 & 18 .....	48
3.8 Information sources – Question 19.....	54
3.9 Additional comments about regional parks and trails.....	56
4 Conclusion .....	57
5 References.....	64
Appendix 1 Mail-out package.....	65
Appendix 2: Questionnaire .....	67
Appendix 3: Representativeness of the sample population.....	76
Appendix 4: Detailed tables of 2017 results .....	80
Appendix 5: Tables comparing 1998, 2005 and 2017 resident surveys results .....	82

## **Executive Summary**

The Capital Regional District (CRD) Regional Parks Service conducted resident surveys in 1998 and 2005. Data collected through the surveys provided guidance for the conservation and management of natural environments (i.e., management plans), helped develop new recreational activities and transportation routes (i.e., E&N Rail Trail) and supported land acquisition. To leverage the data collected in previous surveys and gather feedback from CRD residents about regional parks and trails, a new resident survey was initiated in late fall 2016 and concluded in the fall of 2017. The purpose of the survey was to collect up-to-date information and monitor public attitudes about the CRD's regional parks and trails system. Below are the highlights of the resident survey:

- The results from the resident survey were analyzed for the whole CRD and for four sub-regions (i.e., Gulf Islands, Saanich Peninsula, Urban Core and Westshore). Data for the whole CRD were compared with the 1998 and 2005 resident surveys to offer insights into possible trends and perception changes over time. Comparison across years was not possible for the sub-regions as the municipalities included in each of them differed.
- A mail-out package containing a questionnaire, a pre-stamped, pre-addressed return envelope, and a cover letter was sent to 5,000 randomly selected residents of the CRD. Two reminder postcards were sent to encourage participation in the survey. The final sample for data analysis entailed 1,245 participants (27%). Of those, 184 respondents were from the Gulf Islands (21%), 221 from the Saanich Peninsula (26%), 309 from the Urban Core (27%) and 531 from the Westshore (27%). The data are statistically valid and representative of the whole of the capital region and the four sub-regions.
- Consistent with previous surveys, younger people were under-represented and older people were over-represented in the survey. Differences were found for age between sub-regions due to older respondents participating in the survey in the Gulf Islands (80% over 55 years) and Saanich Peninsula (68% over 50 years). More females than males participated in the CRD and across sub-regions. More couples with no children took the survey in the CRD, which is consistent with the 2005 resident survey. Across sub-regions household composition varied, with the Gulf Islands having more couples without children than the other areas.

- Respondents to the survey hold strong conservation values about regional parks and trails. Recreational values were also strongly supported by participants as long as they did not impact the protection of nature. Despite being conservation oriented, participants exhibited concern for human interests such as public access to recreation areas. Similar outcomes were obtained in the four sub-regions.
- Having regional parks was perceived as important by the majority of respondents (96%). The main perceived benefits provided by regional parks and trails to users were outdoor recreation (90%), experience natural environments and species (90%), conservation of natural environments and species (89%), mental and physical health (88%), and quiet relaxation (87%). These outcomes are consistent with previous surveys. Some differences were found between sub-regions on outdoor recreation, dog walking, horseback riding and learning about nature. These differences depended on the Gulf Islands expressing less support for outdoor recreation, and the Saanich Peninsula and Westshore owning more dogs and practicing more horseback riding in comparison to the other sub-regions. The Saanich Peninsula residents may perceive regional parks as less important for nature learning purposes because participants reside in an area primarily dedicated to farming and other rural activities. Hence, residents of this area may perceive their surrounding landscape as a primary learning place for nature rather than regional parks and trails.
- Regional trails were perceived by most CRD respondents as important (91%), especially for outdoor recreation (86%), to be away from vehicle traffic (85%), and for mental and physical health (82%). These outcomes are consistent with previous surveys. Outcomes from the sub-regions about regional trails are similar to those obtained for the regional parks.
- Nearly all participants had visited a regional park (93%) or trail (84%) in the last year. The regional parks and trails most visited were: Galloping Goose (73%), Elk/Beaver Lake (58%), Lochside (49%), Witty's Lagoon (48%), Thetis Lake (48%) and Island View Beach (47%). Differences in visitation were documented for most of the regional parks and trails across sub-regions. Differences in uses between years and across sub-regions are present and likely reflect the closeness and accessibility of the regional parks and trails to the participants.
- The most frequent activities undertaken by respondents were walking (68%), hiking (58%), viewing plants and animals (45%) and walking a dog (36%). These results are similar to the ones obtained in the 2005 resident survey, showing that use patterns have remained similar over time.

Respondents were further asked to rank the 5 activities they did the most in regional parks and trails. The following ranking was obtained: walking, hiking, viewing plants and animals, picnicking, and birdwatching. Dog walking is one of the most undertaken activities in regional parks and trails, yet it is not ranked as one of the important activities in these areas. No similar question was asked in the 1998 and 2005 survey. For the four sub-regions, the main activities undertaken were the same as for the whole CRD. Differences in activities between sub-regions were found for birdwatching, cycling, horseback riding, running, swimming and viewing plants and animals. Except for the top ranked item - walking- results vary substantially between sub-regions, likely reflecting the socio-demographic characteristics and accessibility to different types of regional parks and trails across the sub-regions.

➤ During the 12 months prior to the survey, most of the respondents (95%) had visited regional parks and trails more than 10 times (52%), 1-5 times (17%) or 6-10 times (14%). A higher percentage of the respondents had visited a regional park or trail in 2017 with respect to previous surveys. Also across the four sub-regions, respondents tended to be frequent users, with the majority using the system more than 10 times per year. On the Gulf Islands, respondents tended to use regional parks and trails less often than in the other 3 sub-regions, which might be due to the lower number of regional parks and trails present or open to the public on the islands.

➤ One third of the respondents were in the regional parks and trails with a dog (35%), while another third did not own a dog (38%). The remaining participants (21%) did not respond to the question. No similar question was asked in the 1998 and 2005 survey. No differences were documented between sub-regions regarding to this question.

➤ The main reason given by the participants for not visiting a regional park in the 12 months prior to the survey was meeting dogs off-leash (21%). Respondents avoided parks with a high presence of dogs, did not appreciate dog waste on the ground and preferred to go to areas where they did not have to interact with aggressive dog owners and/or aggressive dogs. Other reasons for not visiting regional parks and trails were that they were too far from home (14%), not having enough time (13%), and feeling unsafe (8%). These other reasons are similar to the 1998 and 2005 findings. No differences in responses were found between sub-regions regarding factors limiting use of regional parks and trails.

➤ Respondents to the survey were asked if there were outdoor recreation activities that should be implemented or developed in regional parks and trails in the coming 5 years. Participants suggested developing more trails in parks and for commuting, enhancing trail connectivity and maintenance, and having separate or multi-use trails. Regarding dogs, main themes spanned from on-leash/off-leash use, to dog waste removal, to the establishment of dog parks. The topic “horses” mainly focused on providing more access to this outdoor recreation activity in regional parks. While trails remained a key theme in all sub-regions, dogs were more frequently mentioned in the Urban Core and Westshore, and horses in the Saanich Peninsula. A new theme emerged in the Gulf Islands, where respondents mentioned keeping parks and trails natural.

➤ Participants were also asked to suggest outdoor recreation activities that should be stopped in regional parks and trails in the coming 5 years. Motorized vehicles and bikes (i.e., motorcycles, dirt bikes, electric bikes), dogs off-leash and mountain biking were identified. There is worry that once motorized vehicles and bikes are allowed in an area, more pressure will be exerted to allow such uses in other regional parks and trails. Respondents noted that the main issue with dogs off-leash was that most of them were not under control. Mountain biking as an activity raised concerns, including fostering off-road/trail cycling, which disrupts the natural environment. Respondents also commented that mountain bikers often do not share the trails, making it difficult for walkers to be in the park. In all sub-regions motorized vehicle/bikes and dog off-leash, were the two most cited activities to be stopped in the future. No similar questions were asked in the 1998 and 2005 surveys.

➤ Most respondents were satisfied (85%) with their experience in regional parks and trails and rated positively the contribution of the system to outdoor recreation activities (75% good), conservation of natural environments and species (75% good), and health of the region (84% good). Respondents were neutral toward the contribution of such areas to the regional economy (53%). No similar questions were asked in the 1998 and 2005 surveys. A difference was found between sub-regions for satisfaction about regional parks and trails in general, but not for the specific contribution of such areas. Differences in overall satisfaction might be due to the intensity of responses given by participants per sub-region, where less of the participants on the Gulf Islands were very satisfied.

- Protect the natural environments and species (58%), repair and maintain existing facilities (51%), undertake restoration projects to conserve natural environments and species (49%), and acquire more parkland (48%) were perceived as high management priorities. When specifically asked to rank the three highest priorities from the list of management actions proposed, the respondents identified the same priorities but in a different order than in the previous questions. Specifically, repair and maintain facilities ranked first, undertaking restoration projects to conserve natural environments and species ranked second, and acquiring more parkland was the third. These results are similar to previous survey findings. While the management priorities identified per sub-regions are the same, their ranking slightly changes across regions.
- Most respondents supported an increase in funding to operate regional parks and trails (55%) and the extension of the Regional Parks Land Acquisition Fund for another 10 years (70%). Opinions regarding the level of funding have changed with respect to the 1998 and 2005 resident surveys, when the majority of the respondents were more inclined to maintain the existing funding. No question about the Land Acquisition Fund was asked in the 1998 and 2005 surveys. Similar to the whole CRD, support for an increase in funding to operate regional parks and trails and the extension of the Regional Parks Land Acquisition Fund was expressed across sub-regions.
- Respondents used word-of-mouth (21%), family and friends (20%), CRD website (15%) and park brochures (15%) as their main source of information to find out about the regional parks and trails. No similar questions were asked in the 1998 and 2005 surveys. While some information sources are consistently mentioned across sub-regions (i.e., word-of-mouth, family and friends), others differ in degree of use (i.e., website). This might be related to the socio-demographic composition of the sample population, with slightly older respondents on the Gulf Islands and the Saanich Peninsula.
- Respondents were given the opportunity to add any further comments about regional parks and trails. The majority of the comments were about general support and appreciation for regional parks and trails. Other comments focused specifically on the survey process in two ways: appreciation for participating, or critical toward varying aspects of the survey process. Many of the remaining comments followed themes that were included in the survey questions.

## **Glossary**

**Confidence level:** is the amount of uncertainty associated with an estimate. The confidence level represent the lower and upper limits of all possible results we would obtain by sampling the entire population of our study area. For example, the survey reports a 95% confidence level, which means that if the survey was repeated over and over again, the results of the sample population would match the results from the entire population 95% of the time.

**Effect size:** these measures are used to evaluate if statistically significant results are due to having interviewed a large number of people or to real differences in opinions between participants/groups.

**Large sample size:** a large sample size broadens and reflects the range of possible responses by participants and forms a better picture of the population surveyed.

**Margin of error:** takes into account the degree of random sampling error in a survey and describes the range of values above and below the actual results from a survey. For example, in the survey, there is a margin of error of  $\pm 2.4$ . As 55% (n=686) of the random sample population of the survey supports increasing funding to operate regional parks and trails, there is 95% confidence that 52.6% to 57.4% of the entire population of our sample area would support this action.

**Nonresponse bias:** when respondents opinions differ from non-respondents opinions.

**Reliability:** refers to the extent to which a scale produces consistent results, if the measurements are repeated a number of times.

**Sample size:** it is not practical or necessary to survey an entire population of an area to have a representative sample of the region. Only a subset of the population is required to be able to generalize outcomes to the whole population. In social science, the number of individuals required to obtain a representative sample size to generalize outcomes to the whole population is 400.

**Significant difference:** means that the difference between two groups is measurable and that, statistically, the probability of obtaining that difference by chance is very small (usually less than 5%).



**Significant difference due to sample size:** significant differences in the results are not due to statistically measurable differences between groups but to the large sample size of the survey.

**Statistical significance:** is a measure of whether the sampled population surveyed match closely to the entire population of the study area. When data are statistically significant (e.g.,  $p < .05$ ) it implies that the results obtained from the sample population are representative for the whole population of the study area. A statistically significant result is a result that is not attributed to chance or random events.

## **1. Introduction**

The Capital Regional District (CRD) Regional Parks Service conducted resident surveys in 1998 and 2005. The surveys helped to document public satisfaction, confirm visitor activities in the parks, assess understanding of the benefits of parks for conservation and recreation, and get feedback on priorities for park management and facilities. Data collected through the surveys provided guidance for the conservation and management of natural environments (i.e., management plans), helped develop new recreational activities and transportation routes (i.e., E&N Rail Trail) and supported land acquisition (i.e., Sea to Sea Green Blue Belt). Understanding public needs and interests, and monitoring changes over time are key when setting priorities and being responsive to public expectations. Hence, to leverage the data collected in previous surveys and further engage CRD residents in regional parks and trails decision-making processes, a new resident survey was conducted in 2017.

### **1.1 Purpose**

The purpose of the survey was to collect up-to-date information and monitor public attitudes toward the CRD protected area system and regional services 11 years after the last resident survey. The specific objectives of this project were:

- estimate the level of use of regional parks and trails;
- document the type of activities that residents participate in while in regional parks and on regional trails;
- assess understanding of the importance and benefits of regional parks and trails;
- determine residents' views about the management of regional parks and trails and management priorities; and
- explore the role of regional trails as transportation routes.

Documenting public opinions about regional parks and trails and monitoring how attitudes evolve over time are key to providing future strategic directions for CRD Regional Parks Service planning, environmental conservation and for the development of visitor facilities and services. Such an understanding helps set priorities for the management of regional parks and trails, for planning public engagement and for developing targeted communication strategies and messages.

## **2 Survey Methodology**

### **2.1 Mail Survey Approach**

To collect data that could be compared with the information obtained from the public through the 1998 and 2005 resident surveys, a mail-out package was developed and administered following the “Tailored Designed Method” developed by Dillman et al. (2014). In the following section, a brief description of the method used by CRD Regional Parks Service to carry out the resident survey is provided.

### **2.2 Questionnaire Design**

A survey with a standardized set of questions was administered to participants within the CRD (see Appendix 2). The survey included questions used in previous surveys, as well as new ones. The main areas of focus for the questionnaire were: values, attitudes, regional parks and regional trails use, satisfaction, and management. Questions about participants’ demographic characteristics (i.e., age, sex, income, residency) were also added to the questionnaire. Such data can be compared to the Statistics Canada database to demonstrate if the survey represents a cross-section of CRD citizens.

The survey consisted of close-ended quantitative questions and open-ended qualitative questions. Close-ended questions were used to reduce the response burden for participants. For those questions, a 5-point scale ranging from strongly support/agree to strongly oppose/disagree was used. Open-ended questions were included to allow respondents to offer additional comments and clarify their responses if they wished. All responses in the survey were voluntary, thus participants had the freedom to skip any question they did not wish to answer. All information was collected in compliance with the *Freedom of Information and Protection of Privacy Act (FOIPPA)* (see <https://www.crd.bc.ca/freedom-of-information>).

### **2.3 Mail-Out Procedures**

Based on the “Tailored Designed Method”, the following procedure was followed:

- The first mail-out package contained a cover letter, the questionnaire and a pre-stamped, pre-addressed return envelope (see Appendix 1, Figure A; and Appendix 2).

- A reminder postcard was sent to the entire sample, one week after the first mail-out package (see Appendix 1, Figure B).
- A second reminder postcard was sent two weeks later to people who had not yet returned their questionnaire. A unique identification number was placed on each questionnaire, which helped avoid re-contacting those who had responded to the survey. In the second postcard, a URL link was provided to allow respondents to fill out the survey online (see Appendix 1, Figure C). To maintain the randomness of the sample and avoid unselected individuals responding to the survey online, participants were requested to enter their postal code to access the survey online.

The mail-out package was sent to the selected households at the beginning of November 2016. Reminder postcards followed in late November and early December 2016. Data collection was concluded at the end of January 2017. Mail returned as moved/unknown/unclaimed addresses was received until November 2017, and used solely for the purpose of defining the final response rate. Before 2017, respondents were offered only the mail-out package to participate in the survey. However, mixed-mode questionnaire and survey implementation have recently been suggested as a way to improve response rates, lower costs and increase timeliness while collecting information from the public (Dillman et al., 2014). For these reasons the mail-out approach used for the resident survey of 2005 was modified in 2017 by inviting participants to enter their responses online in the last postcard reminder.

## **2.4 Sample Selection**

It is not practical or necessary to send surveys to all residents of the CRD to have a representative sample of the region. Only a sample of the population is required (n=400) to be able to generalize outcomes to the whole CRD constituency (Dillman et al., 2014; Vaske, 2008).

To have a more detailed understanding of local differences, the survey sample needed to be further divided into sub-regions to account for geographical characteristics, land use patterns, municipal and resident interests and demographics (i.e., age, gender, income). Based on this rationale, the results from the resident surveys of 1998 were analyzed as a whole region and as sub-regions. Specifically, the CRD was further divided into: 1) Gulf Islands; 2) Saanich Peninsula; 3) Core Communities; and 4) Westshore. In the 2005 resident survey, a fifth sub-region was added: the

District of Sooke and Juan de Fuca Area. While similar, the sub-regions boundaries differed among the resident surveys from previous years.

To be able to compare the data collected during the 2017 resident survey with the most recent available data, it was decided to sample the population following the survey sample and collection effort used in the 2005 resident survey, which resulted in sending approximately 1,000 surveys per sub-region ( $n=1000\text{surveys} \times 5\text{sub-region}$ ). However, the aggregation of the data in sub-regions was modified in the 2017 resident survey to be consistent with CRD Regional Planning categories, which are:

- 1) Gulf Islands (Salt Spring, Galiano, Mayne, Pender, Saturna);
- 2) Saanich Peninsula (Central Saanich, North Saanich, Sidney);
- 3) Urban Core (Esquimalt, Oak Bay, Saanich, Victoria, View Royal);
- 4) Westshore (Colwood, Highlands, Juan de Fuca, Langford, Metchosin, Sooke).

With this new sub-regions aggregation, the Westshore ( $n=1000$  surveys) and the Sooke-Juan de Fuca Electoral Area ( $n=1000$  surveys) were added, bringing the sample size for this sub-region to 2,000 surveys. For the other three sub-regions, an average of 1,000 surveys per area was kept. The survey sample was selected randomly. Addresses for the participants were extracted from Intramap and no personal data were retrieved from selected citizens.

## **2.5 Completion time**

The survey entailed 24 questions, many of which had multiple statements to be replied to. The survey was designed to take 15-25 minutes to complete.

## **2.6 Data Analysis**

Upon retrieval of each survey, the surveyors reviewed the questionnaire to ensure completeness of data and all hard copy surveys were entered and coded. Providing an identifying code on the hard copy allowed for the checking of errors or missing data when necessary. The raw data were exported into excel files for analysis. The social science program IBM SPSS 20 software was used to analyze quantitative results.

The glossary at the beginning of this report offers the definitions of the statistical terminology used in this report. For more information about the statistical approach used, please consult the

following source: “Survey Research and Analysis. Application in Parks, Recreation and Human Dimension” by Jerry J. Vaske (2008).

When subsets of the data were compared, such as comparisons of responses between various sub-regions, statistical tests such as independent t-tests and Chi-square were used. To account for the possibility of a large sample size effect, Cramer’s V ( $\phi_c$ ) was performed for each measure. Cramer’s V measures the strength of association between variables and is considered “small” when  $\phi_c < .10$ , “medium” when  $\phi_c < .30$ , and “large” when  $\phi_c < .50$  (Vaske 2008). Qualitative data were coded and analyzed through a content analysis approach.

## **2.7 Comparison between 2017, 2005 and 1998 resident surveys**

Data for the whole CRD were compared between the 2017, 2005 and 1998 resident surveys to offer insights into possible trends and perception changes over time. To allow for comparison between years, a consistent questionnaire and methodology was used across years. Also the reporting style of the three surveys is consistent to better compare similarities and differences in respondents’ opinions between 2017, 2005 and 1998.

As databases for the 2005 and 1998 resident survey are not available, no statistical comparisons were conducted between the three data collection periods. Only percentages were compared. Trends and patterns can be confirmed/rejected and better explored by repeating the resident survey in 2022. Comparison between the sub-regions was not possible as the municipalities included in the sub-regions did differ in the 2017, 2005 and 1998 resident surveys (see paragraph 2.4).

## **2.8. Representativeness of the sample population**

The total number in the initial sample was 5,000 people, but 369 (7%) mailings were returned as moved/unknown/unclaimed addresses, resulting in a final sample of 4,631 people. From this final sample, the number of completed returned questionnaires by post was 1,045. An additional 4 questionnaires were sent back by mail but not completed, thus not considered in the final sample size of mail-out surveys returned. Another 282 surveys were compiled online. Yet 82 of those were either duplicates of paper/online entries or the identification code entered did not correspond to the one offered to the selected participants, making these entries ineligible for use. The final sample for data analysis entailed 1,045 paper questionnaires and 200 online responses, resulting in an overall response of 1,245 people (27%).

### 2.8.1 Sub-regions – Question 20

Response rates vary between sub-regions, as indicated in Table 1, with the highest return rate being the Urban Core (32%) and the lowest return rate from the Gulf Islands (21%). Detailed percentages for residency of respondents are offered in Appendix 5, Table 5-1 for the whole CRD and for comparison between the 2005 and 2016 survey results. No similar questions was asked in the 1998 survey. The data were statistically valid and representative of the whole capital region and the four sub-regions with a confidence level of 95% (see Appendix 3 for detailed information).

**Table 1: Summary of response rate**

Sub-Region	Initial Sample	Final Sample	Sample Returned	Response Rate (%)
Gulf Islands	1000	859	184	21%
Saanich Peninsula	900	853	221	26%
Urban Core	1000	959	309	32%
Westshore	2100	1960	531	27%
TOTAL CRD	5000	4631	1245	27%

### **3. Results**

#### **3.1 Socio-demographic characteristics– Question 21, 22 & 23**

The socio-demographic characteristics of the sample are described in Table 2 for the whole CRD. The table indicates a reasonably close resemblance of the sample with the Census Canada population of 2016 (<http://www12.statcan.gc.ca/census-recensement/index-eng.cfm>). Some differences between the sample and the census population of 2016 are apparent. Consistent with previous surveys, younger people were under-represented and older people were over-represented. Additionally, more females than males participated in the survey in 2017. The male vs female responses in this study may have been influenced by the fact that many couples did the survey together as noted in their survey form but women may have been the scribe more often and therefore only ticked the female box in the survey. It is difficult to establish if the data for the household compositions are comparable with those of Census Canada, as different categories were used in the resident survey to characterize participants in the survey. Similarities are evident with the 2005 survey household composition. For a more detailed comparison of responses between years see Appendix 5, Table 5-2.



**Table 2: Socio-demographic characteristics (Q21, Q22 & Q23) for the whole CRD**

Demographic Category	Sample	Census Canada 2016
Age (Q21):		
18-24	1%	6%
25-34	5%	13%
35-44	11%	12%
45-54	17%	14%
55-64	28%	15%
65+	38%	27%
No response	4%	
Gender (Q22):		
Male	36%	48%
Female	59%	52%
No response	5%	
Household (Q23):		
Adult living alone	16%	33%
Couple with no children	49%	28%
Extended family	5%	NA
Adults sharing residence	7%	NA
Parent(s)with children	19%	27%
No response	4%	

When comparing responses across sub-regions, it was noted that (Table 3):

- Significant difference was found for age between sub-regions ( $\chi^2 = 58.4$ ,  $df= 12$ ,  $p < .000$ ), which was not due to sample size ( $\phi_c = .128$ ). This difference might be due to the fact that the respondents were older in the Gulf Islands (80% over 55 years) and Saanich Peninsula (68% over 50 years) than in the other two sub-regions.
- More females than males responded to the survey across sub-regions, with no significant difference between sub-regions.
- Significant difference was found for households between sub-regions ( $\chi^2 = 47.0$ ,  $df= 12$ ,  $p < .000$ ), which was not due to sample size ( $\phi_c = .115$ ). This difference might be due to the

fact that households participating in the survey in the Gulf Islands had a different composition, with more couples without children and less with children.

**Table 3: Socio-demographic characteristics (Q21, Q22 & Q23), by sub-region**

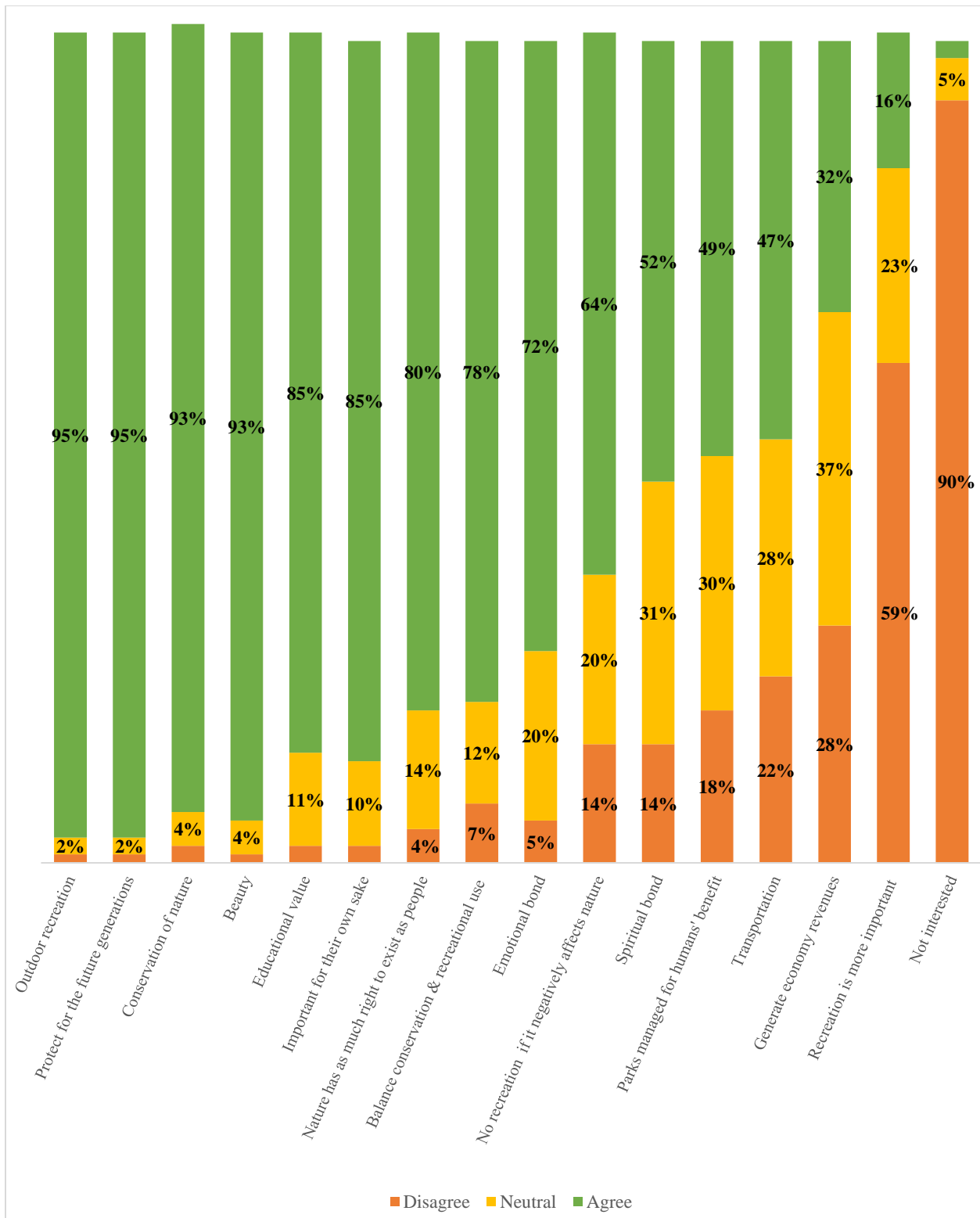
Demographic Category	Percent (%) Responding			
	Gulf Islands n=184	Saanich Peninsula n=221	Urban Core n=309	Westshore n=531
Age (Q21):				
18-24	1%	0.5%	0.5%	0.5%
25-34	1%	3%	7%	5%
35-44	3%	11%	12%	12%
45-54	9%	12%	20%	19%
55-64	26%	26%	26%	31%
65+	54%	42%	31%	32%
No response	5%	5%	4%	2%
Gender (Q22):				
Male	40%	32%	34%	38%
Female	52%	59%	61%	59%
No response	8%	9%	5%	3%
Household (Q23):				
Adult living alone	21%	15%	19%	13%
Couple with no children	61%	50%	39%	50%
Extended family	2%	5%	6%	6%
Adults sharing residence	5%	7%	10%	6%
Parent(s)with children	8%	18%	20%	22%
No response	4%	6%	5%	2%

### 3.2 Value orientations – Question 7

Based on the literature for value orientations toward wildlife (Manfredo, 2008; Manfredo et al., 2016; Dietsch et al., 2016), a value orientation scale was developed and adapted for regional parks and trails. This section reports the specific results for the value orientation scale for the CRD as a whole and for the four sub-regions.

For the CRD (Figure 1), most respondents recognized that they had a responsibility to future generations to protect regional parks and trails (n=1184; 95% agree), that regional parks and trails were important for the conservation of natural environments and species (n=1153; 93% agree) and for their own sake (n=1061; 85% agree), and that natural environments and species had as much right to exist as people (n=989; 80% agree). While a large majority of respondents agreed that regional parks and trails were important for their educational value (n=1053; 85%), their beauty (n=1155; 93%) and felt an emotional bond toward them (n=895; 72%), fewer found regional parks and trails important for transportation (n=585; 47%), for generating regional economy revenues (n=401; 32%), or to establish a spiritual bond (n=647; 52%).

The majority of respondents felt that regional parks and trails were important for outdoor recreation (n=1183; 95% agree), and that outdoor recreational use should be balanced with natural environments and species conservation (n=698; 78%). Few respondents agreed that recreational use was more important than protecting natural environments and species (n=194; 16% agree) and less than half agreed that regional parks and trails should be managed for human benefit (n=612; 49% agree). This was supported by the fact that over half of the participants agreed that outdoor recreational use of regional parks and trails should not be allowed if it negatively affects natural environments and species (n=798; 64%). Only a minority of the participants were not that interested in regional parks and trails (n=27; 2%). For detailed results see Appendix 4, Table 4-1. No similar questions were asked in the 1998 and 2005 surveys.



**Figure 1: Respondents value orientation toward regional parks and trails (Q7), for the whole CRD**

Significant differences were found between sub-regions for the following statements (Table 4):

- “Regional parks and trails are important for outdoor recreation”, which was not due to sample size.
- “Regional trails are important for transportation”, which was not due to sample size; and
- “I am really not that interested in regional parks and trails”, which was not due to sample size.

For the first two items, significant differences might be due to the lower support expressed by the Gulf Islands in regard to the importance of outdoor recreation and transportation in regional parks and trails, while for the third item, significant differences can be attributed to more participants expressing no interest in regional parks and trails in the Gulf Islands.

**Table 4: Respondents value orientation toward regional parks and trails (Q7), by sub-region**

Value Orientation	Percent (%) Responding Agree				$\chi^2$	df	p	$\phi_c$
	Gulf Islands n=184	Saanich Peninsula n=221	Urban Core n=309	Westshore n=531				
Important for outdoor recreation	91%	96%	96%	96%	49.23	12	.000	.116
Important for the conservation of natural environments and species	91%	90%	91%	95%	11.27	12	.506	
We have a responsibility to future generations to protect regionals parks and trails	94%	92%	94%	97%	10.84	12	.542	
Important for their educational value	82%	79%	86%	87%	18.85	12	.092	
Important for their beauty	92%	91%	92%	94%	21.29	12	.046	
Important for generating regional economy revenues	31%	26%	30%	37%	25.33	12	.013	
I have an emotional bond to the regional parks and trails	67%	72%	72%	74%	10.52	12	.570	
I have a spiritual bond to the regional parks and trails	57%	51%	47%	53%	19.76	12	0.72	
Important for their own sake	83%	84%	85%	87%	5.95	12	.919	
Outdoor recreational use of regional parks and trails should not be allowed if it negatively affects natural environments and species	72%	52%	64%	67%	24.83	12	.016	
The use of regional parks and trails is more important than protecting natural environments and species	11%	21%	16%	14%	16.22	12	.181	
Outdoor recreational use and natural environments and species conservation should be balanced in regional parks and trails	71%	76%	77%	81%	18.42	15	.241	
Regional parks and trails should be managed so that humans benefit	44%	48%	52%	50%	9.75	15	.835	
Natural environments and species have as much right to exist as people	79%	72%	76%	85%	23.61	12	.023	
Important for transportation	28%	45%	58%	48%	58.27	15	.000	.127
I am really not that interested in regional parks and trails	4%	3%	2%	1%	42.03	12	.000	.108

### 3.3 Benefits of regional parks – Question 1 & 2

Respondents were asked to rate the importance of regional parks and of the benefits provided by those areas through a 5-point scale ranging from “not at all important” to “very important”. Having regional parks was perceived as “quite” or “very” important” by 96% (n=1195) of respondents to the survey.

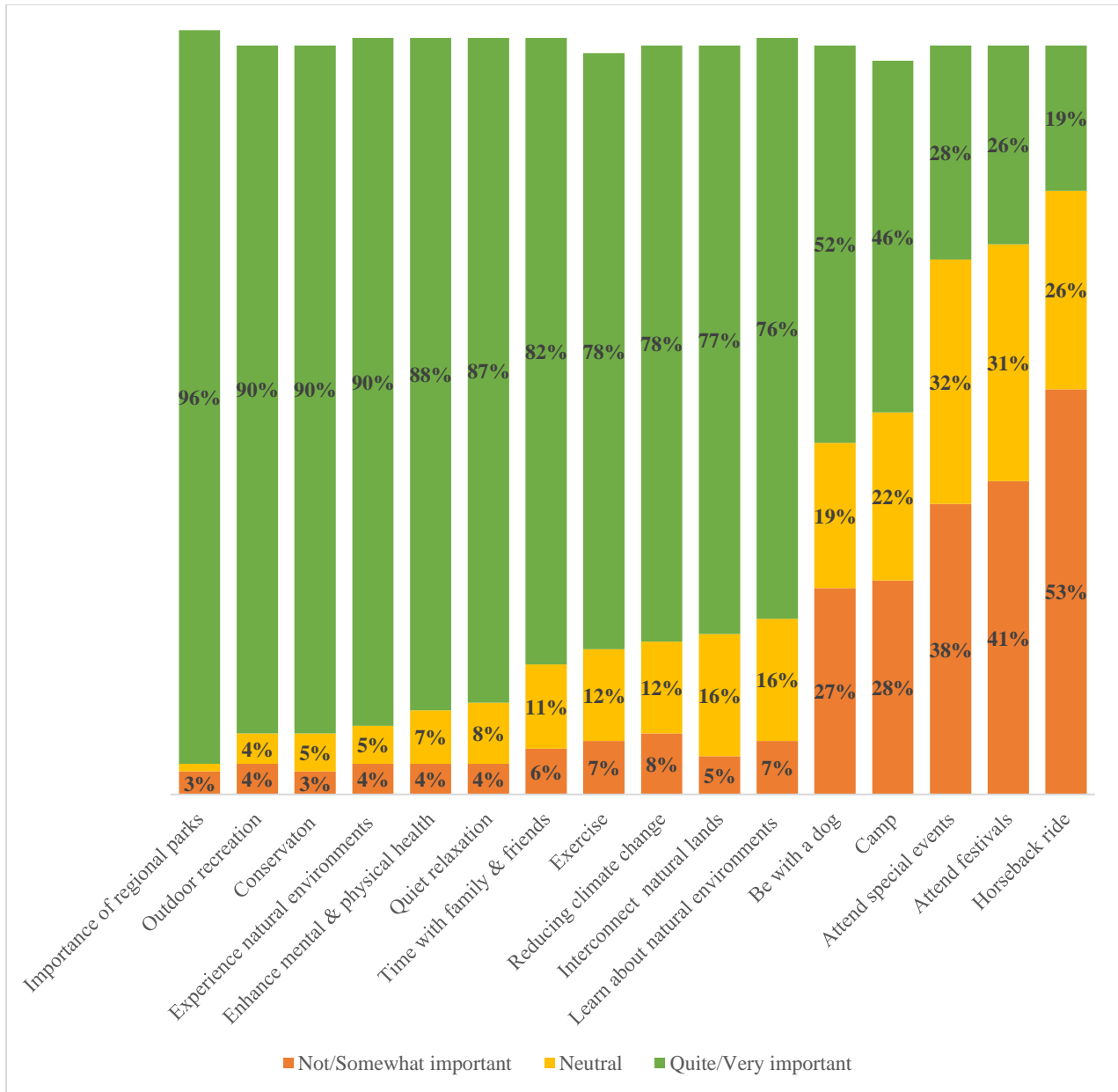
When asked about benefits of regional parks (Figure 2), the most prominent benefits rated as “very” or “quite” important by at least 80% of respondents were:

- A place for outdoor recreation (n=1120; 90% important);
- A place to experience natural environments and species (n=1118; 90% important);
- A place for the conservation of natural environments and species (n=1112; 89% important);
- A place that enhances mental and physical health (n=1084; 88% important);
- A place for quiet relaxation (n=1075; 87% important);
- A place to spend time with family and friends (n=1015; 82% important).

The three least important benefits were:

- A place to horseback ride (n=234; 19% important);
- A place to attend festivals (n=322; 26% important);
- A place to attend special events (n=355; 28% important).

By comparing results between data collections periods, it is important to note that the perceived importance of regional parks has increased from approximately 80% in 1998 and 2005 to 96% in 2017. It is not possible to compare the percentage of responses per benefit statement between years because every survey offered a different list of benefits, and some statement wording differed between years. By looking only at the top benefits identified by respondents in 2017, 2005 and 1998, there is consistency in responses over time. For a more detailed comparison of responses between years see Appendix 5, Table 5-3.



**Figure 2: Respondents perception of importance and benefits of regional parks (Q1 & 2), for the whole CRD.**

Overall, participants of the sub-regions had similar perceptions about the benefits offered by regional parks. Significant differences in opinions between participants were found for the following statements (Table 5):

- A place for outdoor recreation, which was not due to sample size. The Gulf Islands perceived regional parks as a less important place for outdoor recreation.



- A place to be with a dog, which was not due to sample size. The Saanich Peninsula and Westshore perceived regional parks as a more important place to be with dogs.
- A place to horseback ride, which was not due to sample size. The Saanich Peninsula and the Westshore perceived regional parks as a more important place to go horseback riding.
- A place to learn about natural environments and species, which was not due to sample size. The Saanich Peninsula perceived regional parks as a less important place to learn about nature.

These significant differences reflect the Gulf Islands expressing less support for outdoor recreation (Q7), and the Saanich Peninsula and Westshore owning more dogs (see Q10) and practicing more horseback riding (Q9) in comparison to the other sub-regions. The Saanich Peninsula residents may perceive regional parks as less important for nature learning purposes because participants reside in an area primarily dedicated to farming and other rural activities. Residents of this area may perceive their surrounding landscape as a primary learning place for nature rather than regional parks and trails.

**Table 5: Respondents perception of benefits of regional parks (Q1 & 2) by sub-region**

	Percent (%) Responding Important(*)				$\chi^2$	df	p	$\phi_c$
	Gulf Islands n=184	Saanich Peninsula n=221	Urban Core n=309	Westshore n=531				
Importance of regional parks	94%	98%	96%	96%	26.68	12	.009	
A place for outdoor recreation	83%	91%	92%	91%	34.07	12	.001	.096
A place to exercise	71%	82%	77%	80%	21.27	12	.046	
A place that enhances mental health and physical health	86%	88%	84%	89%	13.47	12	.336	
A place to be with a dog	45%	57%	47%	58%	29.58	12	.003	.09
A place to horseback ride	13%	29%	12%	21%	40.50	12	.000	.106
A place to go camping	39%	42%	43%	51%	18.24	12	.108	
A place for the conservation of natural environments and species	91%	86%	88%	91%	19.70	12	.073	
A place to experience natural environments and species	92%	88%	88%	91%	22.52	12	.032	
A place to learn about natural environments and species	78%	67%	78%	78%	31.29	12	.002	.093
An interconnected system of natural lands	77%	74%	78%	77%	8.01	12	.784	
A place that contributes to reducing climate change	78%	73%	77%	81%	6.13	12	.909	
A place to spend time with family and friends	77%	82%	85%	81%	19.46	12	.078	
A place for quiet relaxation	88%	88%	83%	87%	16.38	12	.174	
A place to attend festivals	21%	26%	27%	27%	7.69	12	.809	
A place to attend special events	27%	27%	29%	29%	12.81	12	.382	

\* response categories “very important” and “quite important” merged together.

### 3.4 Benefits of regional trails – Question 4 & 5

Similar to regional parks, the respondents were asked to rate regional trails importance and benefits. Regional trails were perceived by CRD respondents as “quite” or “very” important by 91% (n=1142) of respondents.

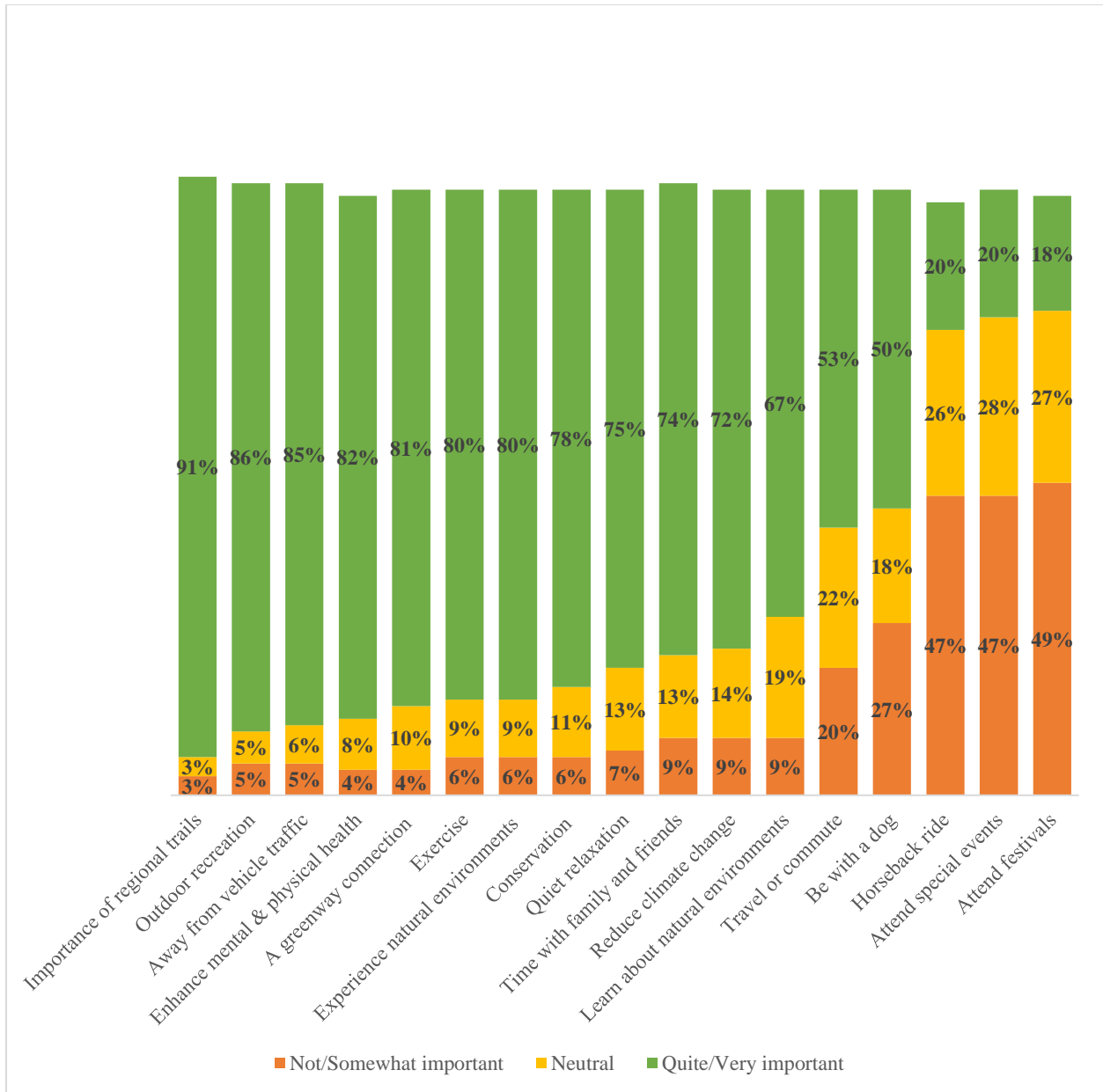
When asked about benefits of regional trails (Figure 3), the most prominent benefits rated as “very” or “quite” important by at least 80% of respondents were:

- A place for outdoor recreation (n=1071; 86% agree);
- An opportunity to be away from vehicle traffic (n=1046; 85% agree);
- A place that enhances mental and physical health (n=1026; 82% agree);
- A greenway connection through urban, suburban and rural landscape (n=1005; 81% agree);
- A place to experience natural environments and species (n=1000; 80% agree);
- A place to exercise (n=1000; 80%).

The three least important benefits were:

- A place to attend festivals (n=223; 18% agree);
- A place to horseback ride (n=246; 20% agree);
- A place to attend special events (n=246; 20% agree).

By comparing results between data collection periods, it is important to note that the perceived importance of regional trails has increased from approximately 78% in 2005 to 91% in 2017. It is not possible to compare the percentage of responses per benefit statement between years because every survey offered a different list of benefits, and some statement wording differed between years. By looking only at the top benefits identified by respondents in 2017 and 2005, some consistency in responses over time remains. No data on benefits provided by regional trails were collected in the 1998 resident survey, hence no comparison is possible. For a more detailed comparison in responses between years see Appendix 5, Table 5-4.



**Figure 3: Respondents perception of importance and benefits of regional trails (Q4 & 5), for the whole CRD**

Overall, participants of the sub-regions had similar perceptions about the benefits offered by regional trails. Significant differences in opinions between participants were found for the following statements (Table 6):

- A place for outdoor recreation, which was not due to sample size. The Gulf Islands perceived regional trails as a less important place for outdoor recreation.

- A place to be with a dog, which was not due to sample size. The Saanich Peninsula and Westshore perceived regional trails as a more important place to be with dogs.
- A place to horseback ride, which was not due to sample size. The Saanich Peninsula and the Westshore perceived regional parks as a more important place to go horseback riding.
- A route to travel or commuting purposes, which was not due to sample size. The Gulf Islands perceived regional trails as a less important place to travel or commute.

Outcomes for the regional trails are similar to the ones obtained for the regional parks. The only difference is given by the Gulf Islands not perceiving the trails as important or as travelling/commuting routes.

**Table 6: Respondents perception of benefits of regional parks (Q4 & 5) by sub-region**

	Percent (%) Responding Important(*)				$\chi^2$	df	p	$\phi_c$
	Gulf Islands n=184	Saanich Peninsula n=221	Urban Core n=309	Westshore n=531				
Importance of regional trails	86%	93%	93%	93%	25.23	23	.014	
A place for outdoor recreation	80%	86%	87%	87%	28.77	12	.004	.09
A place to exercise	74%	83%	79%	82%	21.24	12	.047	
A place that enhances mental health and physical health	82%	84%	83%	82%	9.86	12	.628	
A place to be with a dog	41%	53%	44%	56%	31.68	12	.002	.095
A place to horseback ride	14%	28%	14%	22%	37.96	12	.000	.104
A place for the conservation of natural environments and species	81%	73%	76%	79%	13.33	12	.345	
A place to experience natural environments and species	86%	81%	75%	81%	16.53	12	.168	
A place to learn about natural environments and species	74%	61%	64%	69%	22.20	12	.035	
A place that contributes to reducing climate change	70%	67%	73%	74%	14.26	12	.284	
A greenway connection through the urban, suburban and rural landscape	77%	81%	82%	82%	12.34	12	.418	
A route to travel or commuting purposes	41%	52%	58%	54%	28.19	12	.005	.089
An opportunity to be away from vehicle traffic	82%	88%	85%	83%	10.43	12	.578	
A place to spend time with family and friends	72%	75%	75%	74%	18.45	12	.103	
A place for quiet relaxation	76%	76%	74%	76%	5.98	12	.917	
A place to attend festivals	17%	19%	19%	17%	6.96	12	.860	
A place to attend special events	21%	20%	21%	18%	8.57	12	.739	

\* response categories “very important” and “quite important” merged together.

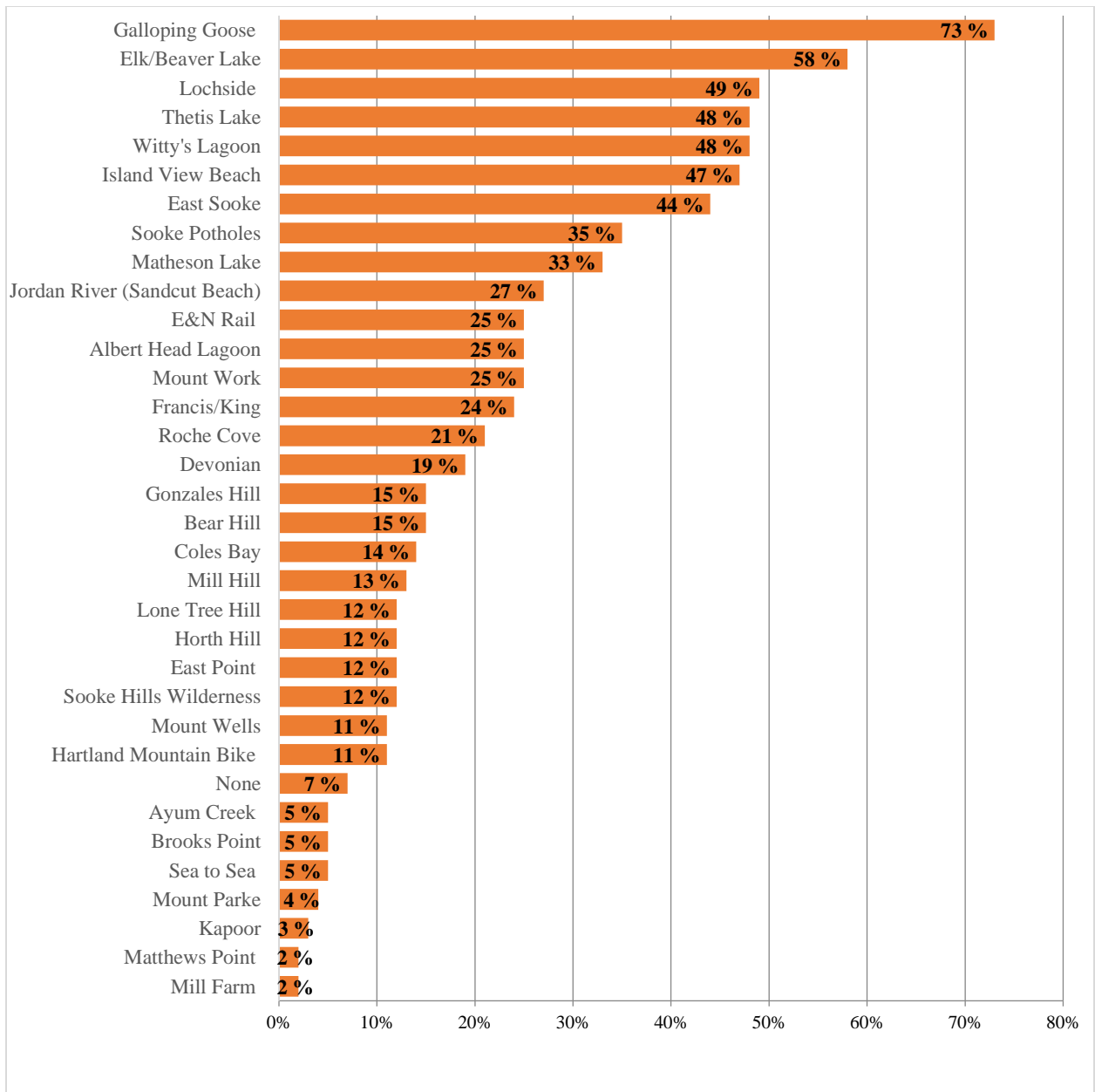
### 3.5 Visitor use patterns – Question 3, 6, 8, 9, 10, 11, 12 & 13

Respondents were asked to indicate which, if any, regional parks or trails they had visited in the previous 12 months. Nearly all participants had visited a regional park (n=1158; 93%) or trail (n=1045; 84%) in the last year. The regional parks and trails most visited by respondents were:

- Galloping Goose (n=914; 73%)
- Elk/Beaver Lake (n=722; 58%)
- Lochside (n=613; 49%)
- Witty's Lagoon (n=597; 48%)
- Thetis Lake (n=597; 48%)
- Island View Beach (n=591; 47%)
- East Sooke (n=542; 44%).

The least visited parks in the system were Matthews Point Regional Park Reserve (n=21; 2%) and Mill Farm Regional Park Reserve (n=24; 2%) (Figure 4).

Similarities in use of regional parks and trails are evident between 2005 and 2017, with the Galloping Goose and Elk/Beaver Lake visited by over half of the respondents in both years. Data for these two areas were not collected in 1998. An in depth overview of visitation patterns are provided for 1998, 2005 and 2017 in Table 5-5 in Appendix 5.



**Figure 4: Visitation patterns of regional parks and trails (Q3 & 6), for the whole CRD**

For the four sub-regions, the main regional parks and trails visited were (Table 7):

- Gulf Island: Elk/Beaver Lake (n=70; 38%), Galloping Goose (n=68; 37%) and Lochside (n=66; 36%).
- Saanich Peninsula: Elk/Beaver Lake (n=183; 83%), Island View Beach (n=183; 83%), Lochside (n=177; 80%) and Galloping Goose (n=139; 63%)



- Urban Core: Galloping Goose (n=244; 79%), Elk/Beaver Lake (n=228; 74%), Thetis Lake (n=201; 65%) and Lochside (n=198; 64%).
- Westshore: Galloping Goose (n=462; 87%), Witty's Lagoon (n=366; 69%) and East Sooke (n=313; 59%).

Significant differences in visitation were found for most of the regional parks and trails across sub-regions, with exception of:

- Brooks Point, Horth Hill, Lochside, Mount Parke, and Sooke Hills Wilderness where significant differences were due to the large sample size and not to differences in use between sub-regions;
- Hartland Mountain Bike Area, Kapoor, Mount Wells and Sea to Sea where there were no differences in use across sub-regions.

Significant differences in uses between years and across sub-regions likely reflect the closeness and accessibility of the regional parks and trails to the participants of the survey.

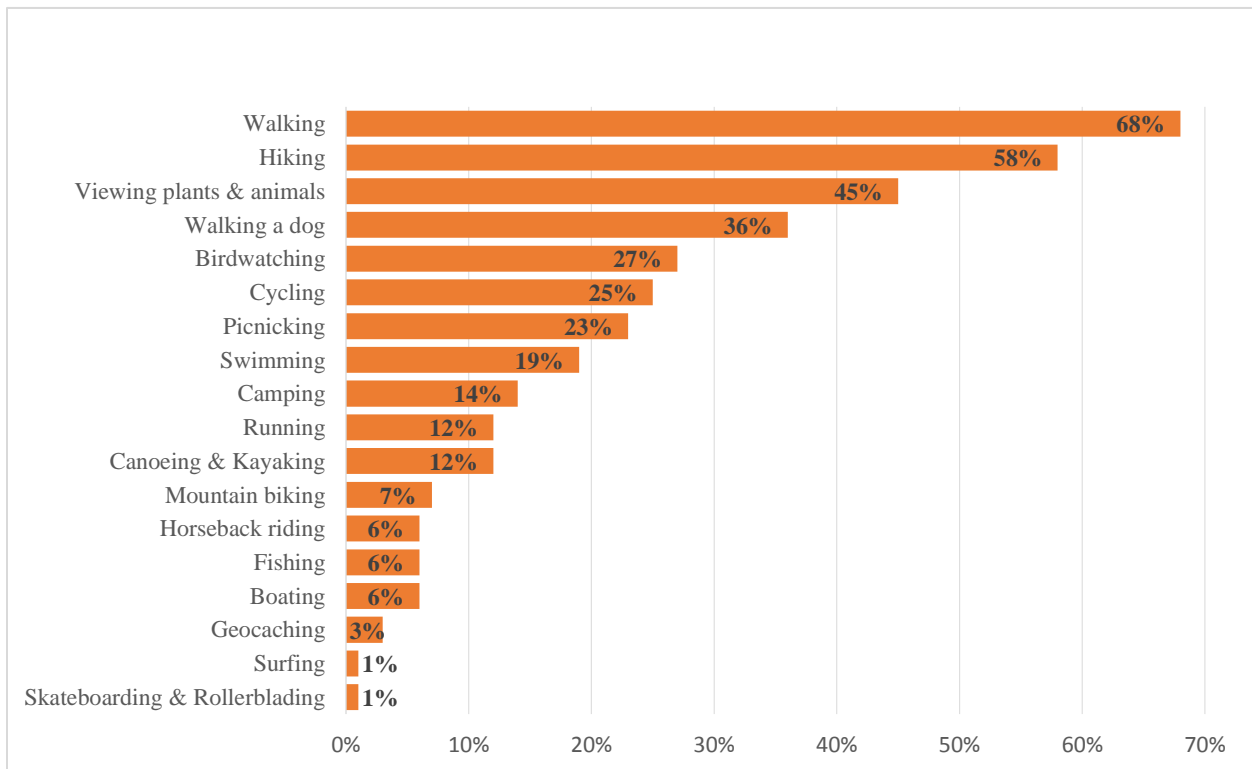
**Table 7: Visitation patterns of regional parks and trails (Q3 & 6) by sub-region**

	Percent (%) Responding				$\chi^2$	df	p	$\phi_c$
	Gulf Islands n=184	Saanich Peninsula n=221	Urban Core n=309	Westshore n=531				
Albert Head Lagoon	3%	13%	20%	40%	30.76	3	.000	.064
Ayum Creek	0.5%	1%	1%	9%	30.76	3	.000	.064
Bear Hill	7%	33%	19%	7%	83.11	3	.000	.104
Brooks Point	24%	3%	1%	1%	432.34	3	.000	.238
Coles Bay	2%	52%	10%	5%	272.47	3	.000	.189
Devonian	2%	6%	10%	35%	87.0	3	.000	.107
East Point	26%	7%	7%	12%	144.40	3	.000	.138
East Sooke	13%	26%	45%	59%	24.51	3	.000	.057
Elk/Beaver Lake	38%	83%	74%	44%	90.06	3	.000	.109
E&N	5%	14%	36%	30%	50.33	3	.000	.157
Francis King	5%	24%	34%	24%	21.32	3	.000	0.53
Galloping Goose	37%	63%	79%	87%	63.61	3	.000	.177
Gonzales Hill	7%	11%	35%	6%	124.26	3	.000	.128
Hartland Mountain Bike	3%	14%	12%	11%	4.83	3	.184	
Horth Hill	6%	47%	7%	1%	309.08	3	.000	.201
Island View Beach	33%	83%	57%	32%	127.93	3	.000	.130
Jordan River	13%	17%	32%	37%	17.82	3	.000	.048
Kapoor	0%	3%	2%	5%	8.25	3	.041	
Lochside	36%	80%	64%	33%	90.84		.000	.211
Lone Tree Hill	1%	6%	11%	18%	18.88	3	.000	.05
Matheson Lake	5%	14%	25%	55%	83.84	3	.000	.105
Matthews Point	4%	4%	1%	1%	23.59	3	.000	.056
Mill Farm	6%	1%	1%	1%	56.50	3	.000	.086
Mill Hill	3%	5%	15%	17%	19.15	3	.000	.050
Mount Parke	19%	2%	1%	1%	344.06	3	.000	.212
Mount Wells	2%	8%	9%	15%	9.64	3	.022	
Mount Work	5%	37%	28%	25%	24.11	3	.000	.056
Roche Cove	3%	8%	14%	38%	84.66	3	.000	.105
Sea to Sea	1%	4%	4%	7%	4.61	3	.202	
Sooke Hills Wilderness	5%	11%	9%	18%	9.5	3	.000	0.23
Sooke Potholes	8%	24%	32%	52%	33.55	3	.000	0.66
Thetis Lake	13%	37%	65%	56%	32.35	3	.000	.065
Witty's Lagoon	8%	14%	50%	69%	40.66	3	.000	.073

Regional parks and trails are used for a variety of purposes. The most frequent activities undertaken by respondents with over 30% participations were (Figure 5):

- Walking (n=840; 68%);
- Hiking (n=717; 58%);
- Viewing plants and animals (n=561; 45%);
- Walking a dog (n=451; 36%).

These results are similar to the ones obtained in the 2005 resident survey, showing that while the frequency of some activities by the residents in regional parks and trails may have changed, use patterns have not (Appendix 5, Table 5-6). No data on activity patterns were collected in the 1998 resident survey, hence no comparison is possible.



**Figure 5: Activities undertaken by participants in regional parks and trails (Q9), for the whole CRD**

For the four sub-regions, the main activities undertaken were the same as for the whole CRD: walking, hiking, viewing plants and animals and walking a dog (Table 8). Significant differences

in activities between sub-regions were found for birdwatching, cycling, horseback riding, running, swimming and viewing plants and animals. These significant differences might be explained as follows:

- Half or more respondents in the Gulf Islands birdwatch and view plants and animals in regional parks and trails, while less participants of the other sub-regions undertook these activities.
- Cycling was a more common activity in the Saanich Peninsula and in the Urban Core, than the other two sub-regions.
- Horseback riding was cited more often in the Saanich Peninsula than in the other sub-regions.
- Running was performed the most by Urban Core respondents.
- In the Westshore, swimming was a more important activity compared to the other sub-regions.

Once again, while certain activities are consistently performed in regional parks and trails across sub-regions, others are not.

**Table 8: Activities undertaken by participants in regional parks and trails (Q9) by sub-region**

	Percent (%) Responding				$\chi^2$	df	p	$\phi_c$
	Gulf Islands n=184	Saanich Peninsula n=221	Urban Core n=309	Westshore n=531				
Birdwatching	48%	24%	19%	26%	46.26	3	.000	.101
Boating	5%	10%	5%	5%	9.77	3	.021	
Canoeing/Kayaking	13%	12%	9%	12%	2.15	3	.541	
Cycling	14%	31%	31%	22%	20.48	3	.000	.067
Camping	10%	9%	18%	16%	11.17	3	.011	
Fishing	3%	5%	4%	8%	8.11	3	.044	
Geocaching	4%	2%	11%	2%	1.36	3	.714	
Hiking	55%	52%	51%	54%	1.05	3	.787	
Horseback riding	3%	13%	3%	6%	23.68	3	.000	.072
Mountain biking	3%	7%	6%	8%	6.69	3	.082	
Picnicking	27%	22%	22%	22%	2.83	3	.418	
Running	3%	12%	18%	12%	20.07	3	.000	.066
Skateboarding /Rollerblading	1%	0.5%	0.5%	1%	1.33	3	.721	
Surfing	2%	0%	2%	2%	3.96	3	.265	
Swimming	13%	11%	18%	24%	17.81	3	.000	.063
Viewing plants/animals	58%	43%	39%	45%	13.10	3	.004	.054
Walking	66%	70%	71%	65%	3.8	3	.281	
Walking a dog	22%	37%	34%	40%	6.59	3	.086	

Respondents were further asked to rank the 5 activities they did the most in regional parks and trails using a scale ranging from 1 (most important) to 5 (least important). The following ranking was obtained:

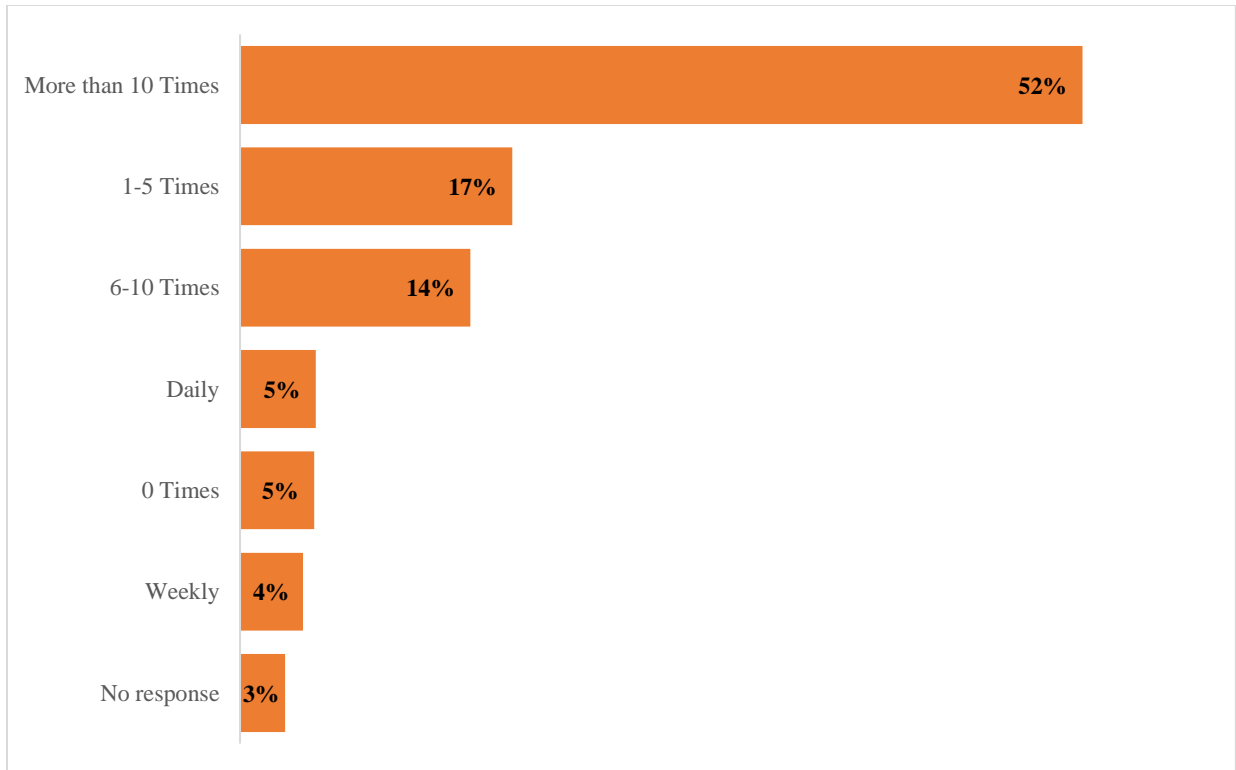
1. Walking
2. Hiking
3. Viewing plants and animals
4. Picnicking
5. Birdwatching

No similar question was asked in the 1998 and 2005 surveys. Except for the top ranked item – walking- results vary substantially between sub-regions (Table 9).

**Table 9: Rank of 5 activities participants did the most in regional parks and trails (Q9) by sub-region**

	Percent (%) Responding			
	Gulf Islands n=184	Saanich Peninsula n=221	Urban Core n=309	Westshore n=531
Birdwatching	3 <sup>rd</sup>	4 <sup>th</sup>	5 <sup>th</sup>	5 <sup>th</sup>
Boating/ Canoeing/Kayaking	5 <sup>th</sup>			
Cycling		4 <sup>th</sup>		
Camping			5 <sup>th</sup>	
Fishing				
Geocaching				
Hiking		2 <sup>nd</sup>	2 <sup>nd</sup>	1 <sup>st</sup>
Horseback riding				
Mountain biking				
Picnicking	4 <sup>th</sup>	5 <sup>th</sup>	4 <sup>th</sup>	4 <sup>th</sup>
Running				
Skateboarding/Rollerblading				
Surfing				
Swimming			5 <sup>th</sup>	3 <sup>rd</sup>
Viewing plants/animals	2 <sup>nd</sup>	3 <sup>rd</sup>	3 <sup>rd</sup>	2 <sup>nd</sup>
Walking	1 <sup>st</sup>	1 <sup>st</sup>	1 <sup>st</sup>	1 <sup>st</sup>
Walking a dog				3 <sup>rd</sup>

When further asked about their use patterns, the respondents replied as follows. During the last 12 months, most of the respondents (n=1188; 95%) had visited regional parks and trails more than 10 times (n=651; 52%), 1-5 times (n=209; 17%) or 6-10 times (n=178; 14%). Some of the respondents used them daily (n=58; 5%) or weekly (n=49; 4%), especially the regional trails—see Figure 6. A higher percentage of the respondents (95%) in the survey had visited a regional park or trail in 2017 in comparison to the 2005 (81%) and 1998 (74%) findings (Appendix 5, Table 5-7).



**Figure 6: Frequency of use of regional parks and trails in past 12 months (Q8), for the whole CRD**

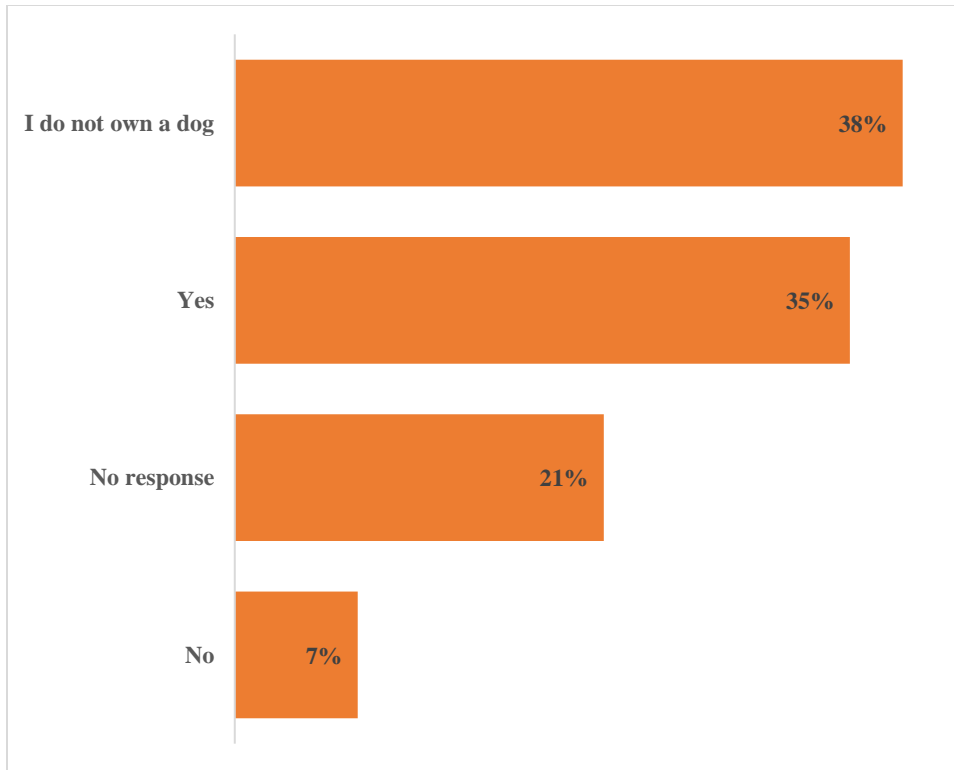
Across the four sub-regions the respondents tended to be frequent users of regional parks and trails, with the majority using them more than 10 times per year (Table 10). Significant differences are present between sub-regions for the frequency of use of regional parks and trails ( $\chi^2 = 85.07$ ,  $df = 21$ ,  $p < .000$ ), which is not due to sample size ( $\phi_c = .153$ ). For example, on the Gulf Islands, respondents tended to use regional parks and trails less often than in the other 3 sub-regions.



**Table 10: Frequency of use of regional parks and trails in past 12 months (Q8), by sub-region**

	Percent (%) Responding			
	Gulf Islands n=184	Saanich Peninsula n=221	Urban Core n=309	Westshore n=531
0 times	11%	2%	5%	3%
One to Five Times	32%	13%	16%	14%
Six to ten times	13%	16%	18%	12%
More than 10 times	39%	55%	51%	57%
Weekly	1%	4%	3%	6%
Daily	1%	5%	5%	5%
No response	3%	5%	3%	3%

One third of the respondents were in regional parks and trails with a dog (n=429; 35%), while another third did not own a dog (n=472; 38%). Few respondents (n=82; 7%) had visited parks or trails without a dog. These questions did not allow respondents to specify why they did not visit regional parks and trails with a dog. Some of the participants volunteered that they used to walk a dog in regional parks and trails when they had one, were too old for such an activity or their dog was too old for the activity now. The remaining respondents (n=262; 21%) did not respond to the question—see Figure 7. No similar question was asked in the 2005 and 1998 surveys.



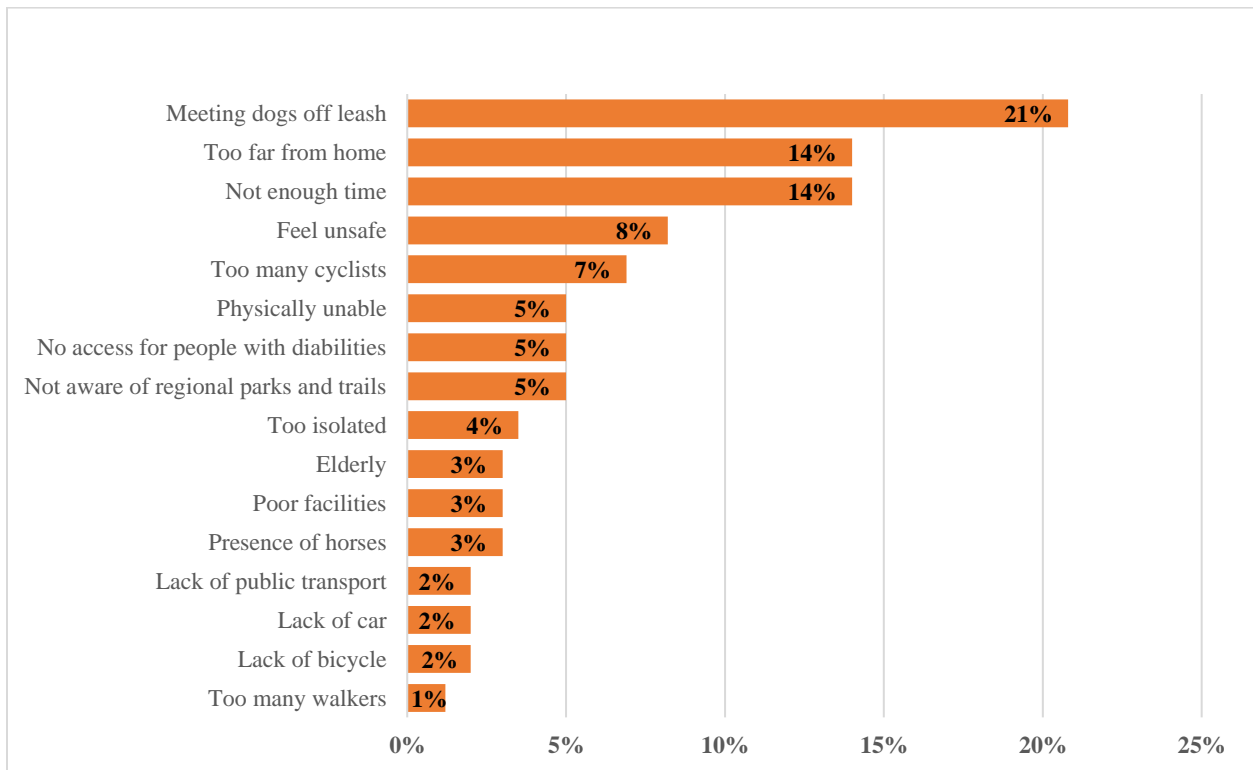
**Figure 7: Visiting regional parks and trails with a dog (Q10), for the whole CRD**

More respondents from the Saanich Peninsula and Westshore went to regional parks and trails with a dog than in the other two sub-regions. It is important to highlight that in the Urban Core and Gulf Islands dog ownership was less common (Table 11). No significant differences were documented between sub-regions.

**Table 11: Visiting regional parks and trails with a dog (Q10), by sub-region**

	Percent (%) Responding			
	Gulf Islands n=184	Saanich Peninsula n=221	Urban Core n=309	Westshore n=531
No	7%	10%	5%	6%
Yes	28%	37%	30%	38%
I do not own a dog	43%	33%	42%	36%
No response	22%	20%	23%	20%

The main reason given by the participants (n=404 comments) not to visit a regional park in the last 12 months was meeting dogs off-leash (n=84; 21%). Respondents specified that they avoided parks with a high presence of dogs, did not appreciate dog waste on the ground and preferred to go to areas where they did not have to interact with aggressive dog owners and/or aggressive dogs. Other reasons for not visiting regional parks and trails were that they were too far from home (n=56; 14%), not having enough time (n=53; 13%), and feeling unsafe (n=33; 8%) – Figure 8. These results are similar to the 1998 and 2005 findings (see Appendix 5, Table 5-8).



**Figure 8: Factors limiting use of regional parks and trails (Q13), for the whole CRD**

No significant difference in responses was found between sub-regions regarding factors limiting use of regional parks and trails (Table 12). For the item “too far from home” significant differences were due to the large sample size and not to real differences between the respondents. Overall, respondents of the sub-regions encountered the same constraints for visiting regional parks and trails.

**Table 12: Factors limiting use of regional parks and trails (Q13), results, by sub-region**

	Percent (%) Responding				$\chi^2$	df	p	$\phi_c$
	Gulf Islands n=184	Saanich Peninsula n=221	Urban Core n=309	Westshore n=531				
Feel unsafe	1%	11%	7%	13%	11.2	3	.011	
Lack of bicycle	0%	2%	2%	2%	1.88	3	.597	
Lack of car	1%	2%	5%	1%	5.92	3	.115	
Lack of public transport	1%	2%	3%	2%	1.15	3	.765	
Meeting dogs off-leash	9%	25%	21%	26%	9.14	3	.027	
Not enough time	14%	13%	13%	14%	.03	3	.999	
No access for people with disabilities	4%	4%	5%	6%	.94	3	.814	
Not aware of regional parks and trails	8%	4%	5%	2%	4.17	3	.243	
Poor facilities	1%	2%	5%	3%	2.89	3	.408	
Presence of horses	2%	6%	3%	2%	2.53	3	.469	
Too far from home	34%	6%	10%	8%	42.53	3	.000	.327
Too isolated	2%	4%	3%	5%	2.63	3	.451	
Too many cyclists	6%	11%	7%	7%	3.61	3	.306	
Too many walkers	4%	0%	2%	0%	10.25	3	.016	
Elderly	5%	4%	5%	2%	2.63	3	.451	
Physically unable//illness	5%	4%	4%	6%	2.71	3	.438	

Respondents were asked if there were outdoor recreation activities that should be implemented or developed in regional parks and trails in the coming 5 years (Q11). From the 540 qualitative comments offered by participants, three main themes emerged: trails (n=84; 15% of comments), dogs (n=45; 8% of comments) and horses (n=40; 7% of comments). Participants suggested to develop more trails in parks and for commuting, to enhance trail connectivity and maintenance, and to have separate or multi-use trails. Regarding dogs, main themes spanned from on-leash/off-leash use, to dog waste removal, to the establishment of dog parks. More recreational opportunities

on trails was the main theme for the topic “horses”, which mainly focused on providing more access to horses in regional parks. While some of those advocating for horse access to parks did not ride anymore, they liked the idea of continued horse presence. While trails remained a key theme in all sub-regions, dogs were frequently mentioned in the Urban Core and Westshore, and horses in the Saanich Peninsula. A new theme emerged in the Gulf Islands, where respondents mentioned keeping parks and trails natural as a main activity to implement in the coming 5 years. Participants were also asked to suggest outdoor recreation activities that should be stopped in regional parks and trails in the coming 5 years (Q12). A total of 495 qualitative comments were offered by participants. The main themes mentioned were stopping motorized vehicle and bikes (i.e., motorcycles, dirt bikes, electric bikes) (n=99; 20% of comments), dog off-leash (n=74; 15% of comments), mountain biking (n=39; 8% of comments) and smoking (n=35; 7% of comments). There is a “slippery slope worry” that once motorized vehicles and motorized bikes are allowed in an area, more pressure will be exerted to allow such uses in other regional parks and trails. Respondents noted that the main issue with dogs off-leash was that most of them were not under control. Mountain biking as an activity raised concerns including fostering off-road/trail cycling which disrupts the natural environment. Respondents also commented that mountain bikers often do not share the trails, making it difficult for walkers to be in the park. In all sub-regions motorized vehicle/bikes and dog off-leash were the two most cited activities to be stopped in regional parks and trails in the coming next 5 years.

No similar questions were asked in the 2005 and 1998 surveys.

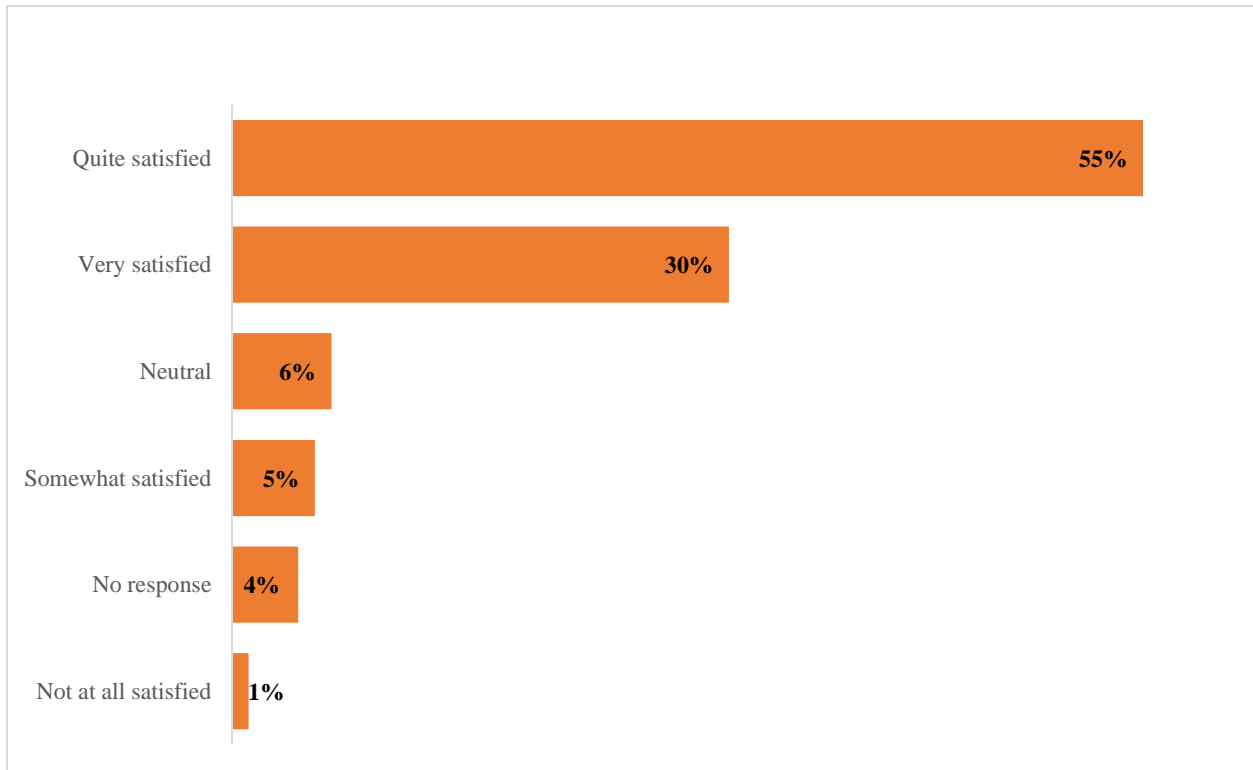
### **3.6 Satisfaction – Question 14 & 15**

Respondents were quite (n=683; 55%) to very (n=375; 30%) satisfied with their experience in regional parks and trails (Figure 9). The following contributions of regional parks and trails over the past 5 years were rated as (Figure 10):

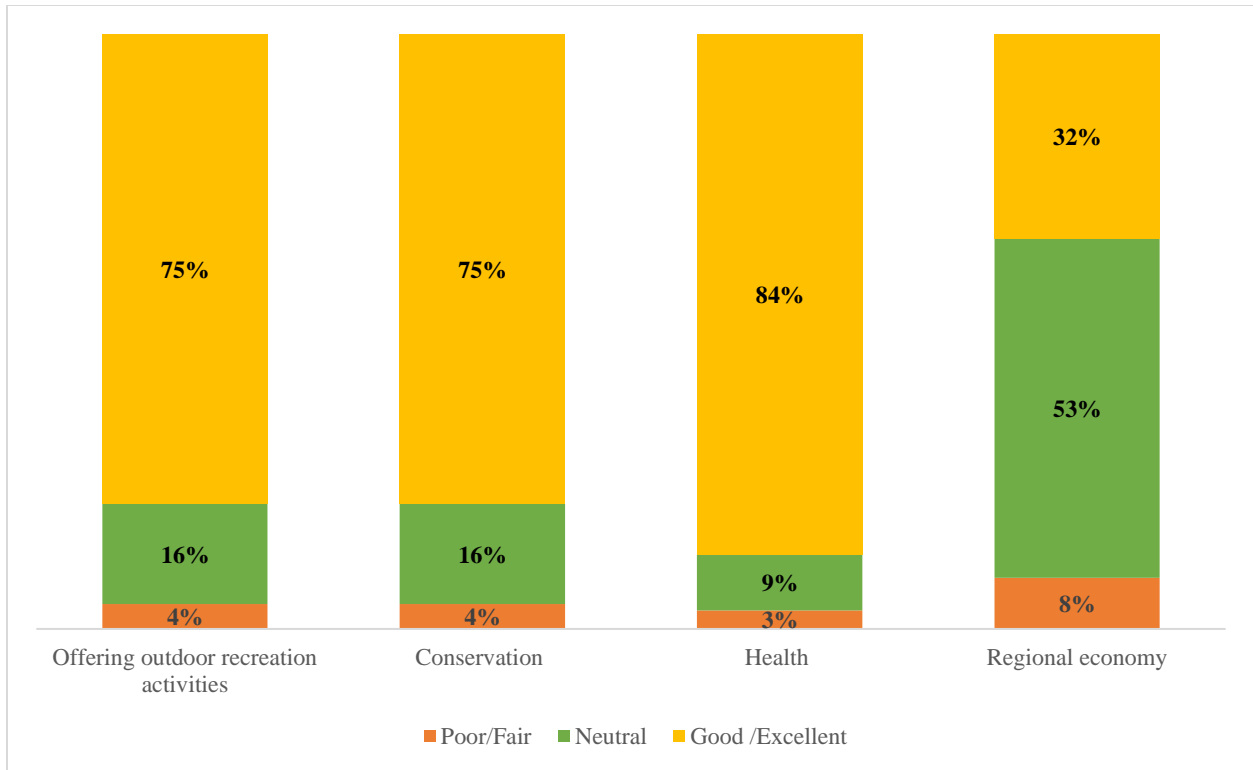
- Offering outdoor recreation activities good (n=615; 49%) to excellent (n=322; 26%);
- Contributing to the conservation of natural environments and species good (n=687; 55%) to excellent (n=253; 20%);
- Contributing to the health of the region and its residents good (n=613; 49%) to excellent (n=435; 35%);

- Contributing to the regional economy (i.e., fees, regional business, tourism) neutral (n=655; 53%).

For detailed outcomes see Appendix 4, Table 4-2 and 4-3. While satisfaction questions have been consistently asked in visitor use surveys over the years, this was not the case for the resident survey of 1998 and 2005, hence comparison is not possible for this set of questions.



**Figure 9: Satisfaction about experiences in regional parks and trails (Q13), for the whole CRD**



**Figure 10: Rating of contribution of regional parks and trails (Q15), for the whole CRD**

A significant difference was found between sub-regions for satisfaction about regional parks and trails in general ( $\chi^2 = 41.47$ ,  $df = 12$ ,  $p < .000$ ), which was not due to sample size ( $\phi_c = .107$ ). Differences might be due to the intensity of responses given by participants per sub-region, where less of the participants on the Gulf Islands were very satisfied (Table 13). No significant difference between sub-regions was found for the contributions of regional parks and trails over the past 5 years (Table 14).

**Table 13: Satisfaction of regional parks and trails (Q14), by sub-region**

	Percent (%) Responding (*)			
	Gulf Islands n=184	Saanich Peninsula n=221	Urban Core n=309	Westshore n=531
Very satisfied	19%	27%	36%	32%
Quite satisfied	57%	58%	50%	56%
Neutral	8%	4%	6%	6%
Somewhat satisfied	8%	5%	3%	4%
Not at all satisfied	3%	1%	0%	0%
No answer	5%	5%	5%	2%

**Table 14: Rating of contribution of regional parks and trails (Q15), by sub-region**

	Percent (%) Responding				$\chi^2$	df	p	$\phi_c$
	Gulf Islands n=184	Saanich Peninsula n=221	Urban Core n=309	Westshore n=531				
Offering outdoor recreation activities	65%	78%	77%	77%	18.78	12	.094	
Contributing to the conservation of natural environments and species	70%	72%	75%	79%	19.02	12	.088	
Contributing to the health of the region and its residents	76%	87%	86%	86%	19.27	12	.082	
Contributing to the regional economy	34%	23%	33%	36%	22.39	12	.033	

(\*) the categories good and excellent were merged to offer an idea of overall satisfaction.

### 3.7 Management and funds – Question 16, 17 & 18

Visitors were asked two questions about possible management actions regarding regional parks and trails managed by the CRD: (1) to rate the importance of a number of management actions; and, (2) to rank their three highest priorities from the list of management actions.

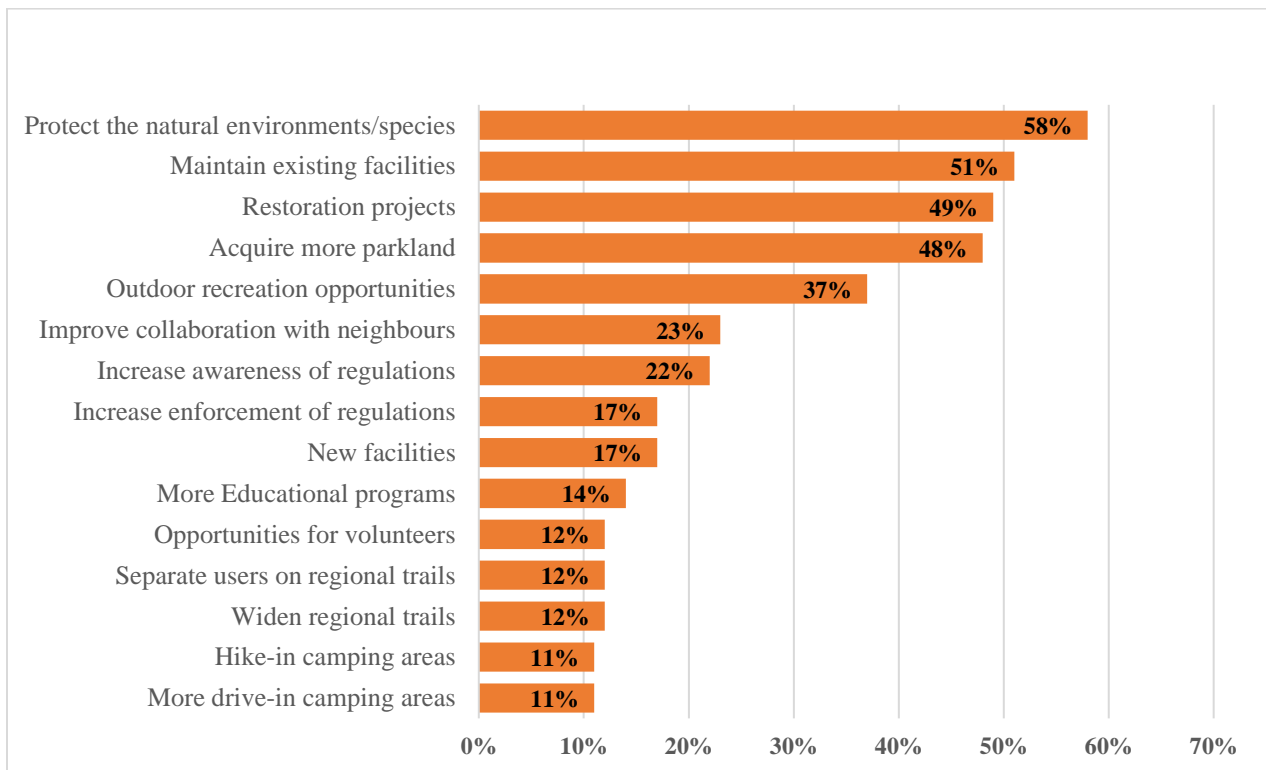
The following management actions were seen as a high priority (Figure 11):

- Protect the natural environments and species (n=724; 58%);



- Repair and maintain existing facilities (n=635; 51%);
- Undertake restoration projects to conserve natural environments and species (n=605; 49%);
- Acquire more parkland (n=599; 48%).

These results are similar to the 1998 and 2005 findings where the main priorities were repair and maintain facilities, undertake restoration projects to conserve natural environments and species, and protect the natural environments and species. For a more detailed overview see Appendix 5, Table 5-9.



**Figure 11: Management priority for regional parks and trails (Q16), for the whole CRD**

No significant difference was found between sub-regions (Table 15). It is important to highlight that while the management priorities identified per sub-regions are the same, their ranking slightly changes across regions.

**Table 15: Management priorities regional parks and trails (Q16), by sub-region**

Possible Management Action:	Percent (%) Responding High Priority				$\chi^2$	df	p	$\phi_c$
	Gulf Islands n=184	Saanich Peninsula n=221	Urban Core n=309	Westshore n=531				
Provide outdoor recreation opportunities	30%	43%	34%	38%	25.33	15	.046	
Provide new or additional facilities	9%	20%	17%	18%	22.36	12	.034	
Repair and maintain existing facilities	44%	52%	52%	52%	16.41	15	.355	
Provide more drive-in camping areas	9%	8%	12%	13%	19.54	15	.190	
Provide hike-in camping areas	15%	10%	24%	11%	12.55	15	.637	
Protect the natural environments and species	60%	51%	58%	61%	19.27	15	.202	
Undertake restoration projects to conserve natural environments and species	51%	44%	49%	50%	13.11	12	.361	
Acquire more parkland	47%	45%	47%	50%	12.86	15	.613	
Widen regional trails	5%	13%	15%	11%	20.24	15	.163	
Separate users on regional trails	14%	13%	14%	9%	15.18	15	.438	
Increase enforcement of regional parks and trails regulations	15%	18%	19%	16%	16.65	15	.340	
Increase visitors' awareness about regional parks and trails regulations	24%	22%	19%	23%	15.22	15	.435	
Provide more educational programs	13%	15%	12%	14%	11.531	15	.714	
Provide more opportunities for volunteers	13%	13%	11%	13%	9.847	15	.829	
Improve collaboration with regional parks and trails neighbours	27%	19%	24%	22%	16.99	12	.150	

When specifically asked to rank the three highest priorities from the list of management actions reported in Figure 11, the respondents did identify the same priorities but in a different order than in the previous questions. Specifically, repair and maintain facilities ranked first (n=236; 19%),

undertaking restoration projects to conserve natural environments and species ranked second (n=187; 15%), and acquiring more parkland was the third (n=143; 12%). Two out of three priorities identified by participants were the same as in the 2005 study but with a different ranking. Acquiring more parkland was mentioned as first (20%) in 2005, protecting natural environments and species as second (17%) and repairing and maintaining existing facilities as third (10%).

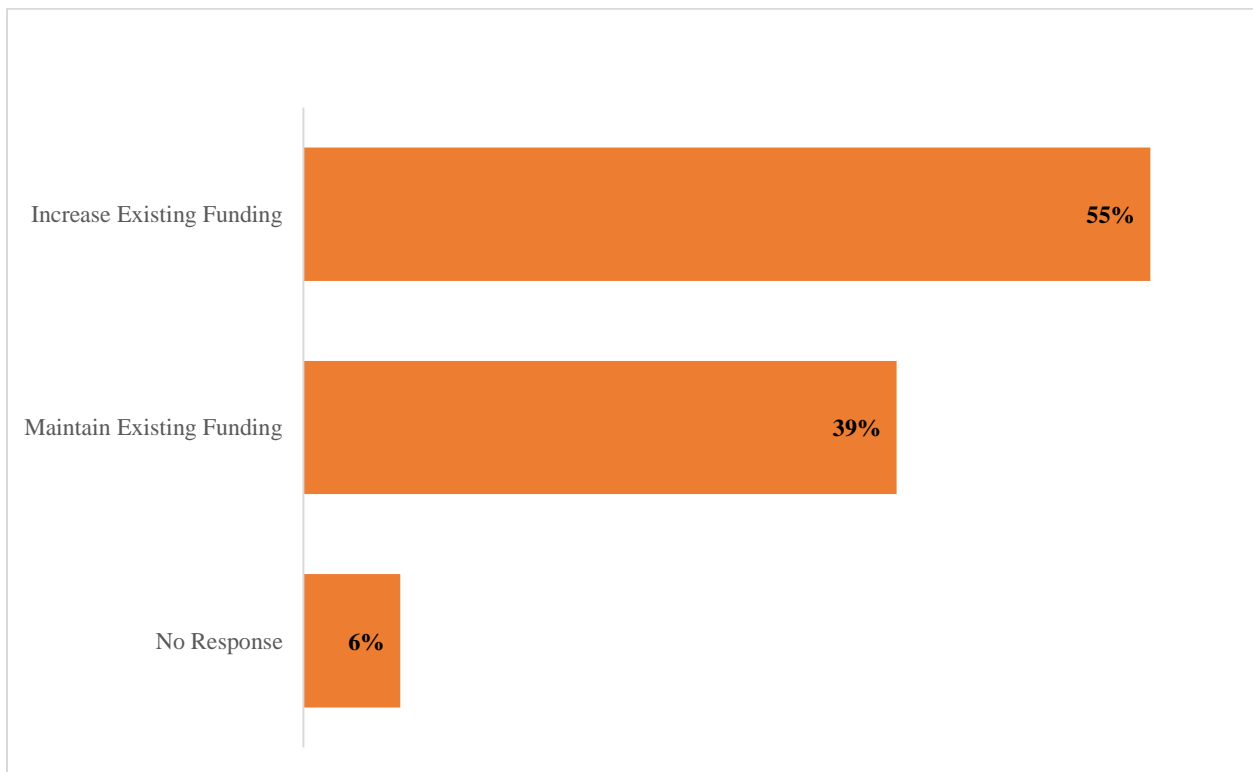
Similarities and differences were documented for the sub-regions. Specifically:

- for the Gulf Islands the first ranking was protect the natural environments and species (n=34; 19%), the second was undertake restoration projects to conserve natural environments and species (n=27; 15%), and the third was acquire more parkland (n=23; 13%), which was consistent with the previous question (Q16);
- for the Saanich Peninsula the first ranking was repair and maintain facilities (n=42; 19%), the second was protect the natural environments and species (n=38; 17%), and the third was undertake restoration projects to conserve natural environments and species (n=23; 10%). This ranking changed from Q16, where acquire more parkland was rated higher than undertake restoration projects to conserve natural environments and species;
- for the Urban Core the first ranking was repair and maintain facilities (n=64; 21%), the second was undertake restoration projects to conserve natural environments and species (n=52; 17%), and the third was protect the natural environments and species (n=38; 12%). This ranking changed from Q16, where the same items were identified but in different order;
- for the Westshore the first ranking was repair and maintain facilities (n=100; 19%), the second was undertake restoration projects to conserve natural environments and species (n=85; 16%), and the third was acquire more parkland (n=66; 12%). This ranking changed from Q16, where the same items were identified but in a different order and where undertake restoration projects to conserve natural environments and species scored alike acquiring more parkland.

Respondents were also asked to comment on levels of funding for operating regional parks and trails in the future (Q17). The results were (Figure 12):

- Increase funding (n=686; 55%)
- Maintain existing funding (n=481; 39%)
- No response (n=78; 6%)

Opinions regarding the level of funding have slightly changed in respect to the 1998 and 2005 resident surveys, when the majority of the respondents were more inclined to maintain the existing funding instead of increasing it (Table 5-10 in Appendix 5).



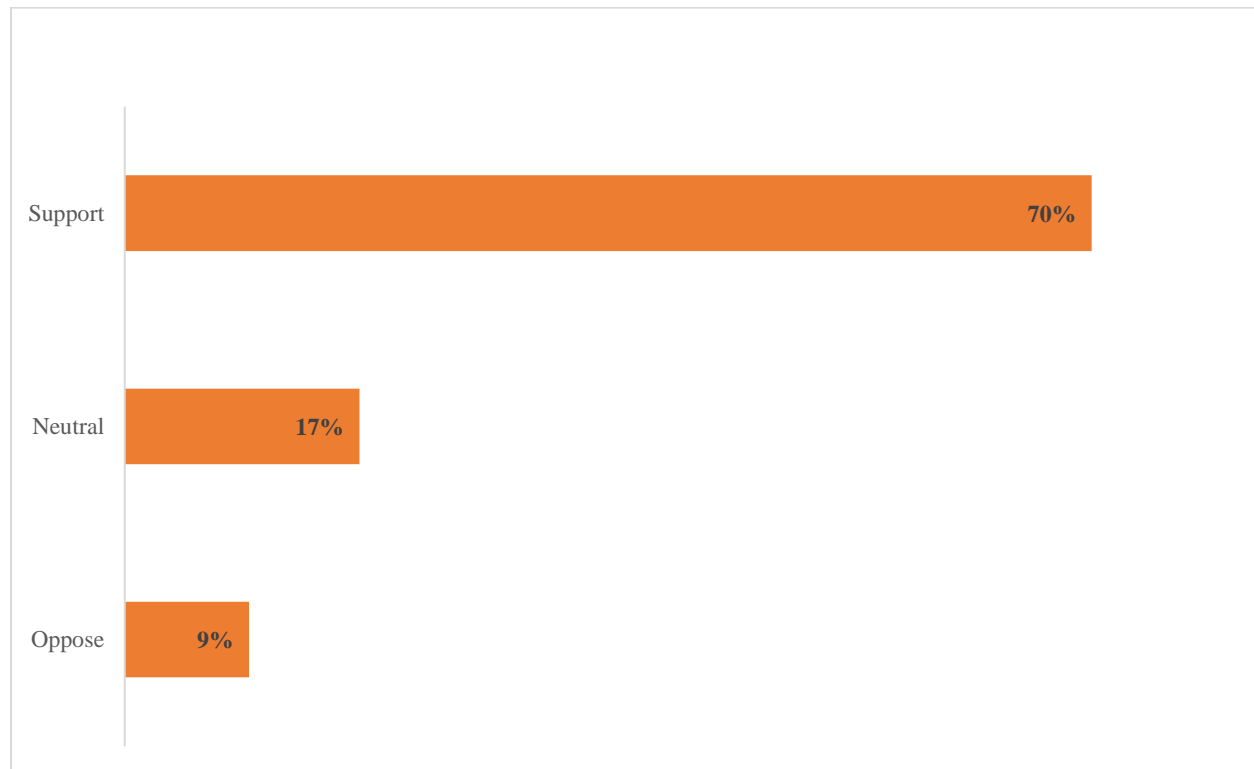
**Figure 12: Funding of regional parks and trails (Q17), for the whole CRD**

Similar to the whole CRD, more than half respondents across sub-regions supported an increase in funding to operate regional parks and trails, with 57% support in the Gulf Islands (n=105), 57% support in the Westshore (n=303), 54% support in the Saanich Peninsula (n=119), and 52% support in the Urban Core (n=161) (Table 16). No significant differences were found between sub-regions.

**Table 16: Funding of regional parks and trails (Q17), by sub-region**

Level of Funding	Percent (%) Responding			
	Gulf Islands n = 184	Saanich Peninsula n=221	Urban Core n = 309	Westshore n = 531
Maintain Existing Funding	34%	38%	42%	38%
Increase Funding	57%	54%	52%	57%
No Response	9%	8%	6%	5%

When asked about support or opposition toward the extension of the Regional Parks Land Acquisition Fund for another 10 years, the majority of respondents supported (n=871; 70%) this proposed action. Some respondents were neutral (n=215; 17%) and fewer (n=111; 10%) were against it (Figure 13). For detailed results see Appendix 4, Table 4-4. No similar questions were asked in the 2005 and 1998 surveys.



**Figure 13: Extension Land Acquisition Fund for another 10 years (Q18), for the whole CRD**

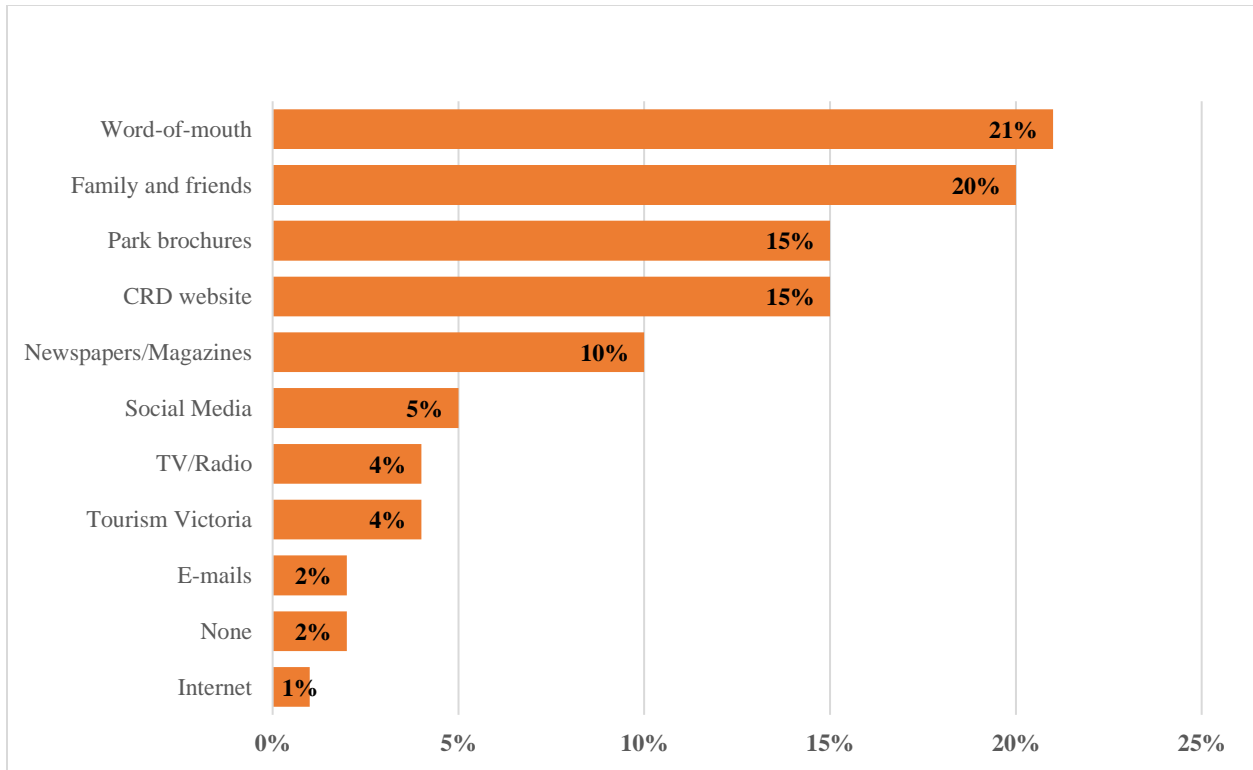
Similar to the whole CRD, more than half respondents across sub-regions supported the extension of the Land Acquisition Fund for another 10 years, with 73% support in the Gulf Islands (n=134) and the Saanich Peninsula (n=161), and 68% support in the Urban Core (n=210) and the Westshore (n=361) (Table 17). No significant differences were found between sub-regions.

**Table 17: Extension Land Acquisition Fund for another 10 years (Q18), by sub-region**

Land Acquisition Fund	Percent (%) Responding			
	Gulf Islands n=184	Saanich Peninsula n=221	Urban Core n=309	Westshore n=531
Strongly support	30%	29%	28%	31%
Support	43%	44%	40%	37%
Neutral	14%	14%	18%	20%
Oppose	5%	4%	6%	6%
Strongly oppose	3%	4%	3%	4%
No answer	5%	6%	5%	2%

### 3.8 Information sources – Question 19

Respondents used word-of-mouth (n=770; 21%), family and friends (n=724; 20%), CRD website (n=552; 15%) and park brochures (n=540; 15%) as their main source of information to find out about the regional parks and trails they visited (Figure 14). For detailed results see Appendix 4, Table 4-5. No similar questions were asked in the 2005 and 1998 surveys.



**Figure 14: Information sources used to find out about regional parks and trails (Q19), for the whole CRD**

When comparing responses across regions, it was noted that (Table 18):

- Similar to the whole CRD, word-of-mouth and family and friends were the primary sources of information to find out about the regional parks and trails in all sub-regions.
- In the Gulf Islands park brochures were the third most used information source. The CRD website and park brochures were the second and third most popular information sources used in the Saanich Peninsula, Westshore and Urban Core.

A significant difference was found only for the use of the CRD website. This may be attributed to the Gulf Islands lower use of this tool for data retrieval. While some information sources are consistently mentioned across sub-regions (i.e., word-of-mouth, family and friends), others differ in degree of use (i.e., website). The Westshore, for example, reported 7% of participants use the internet/google as an important source of information.

**Table 18: Information sources used to find out about regional parks and trails (Q19), by sub-region**

	Percent (%) Responding				$\chi^2$	df	p	$\phi_c$
	Gulf Islands n=184	Saanich Peninsula n=221	Urban Core n=309	Westshore n=531				
None	2%	2%	1%	2%	1.85	2	.604	
CRD website	10%	17%	17%	19%	15.27	3	.002	.065
E-mails	3%	3%	1%	3%	6.80	3	.078	
Family and friends	21%	20%	19%	20%	.388	3	.943	
Newspapers/Magazines	10%	10%	10%	10%	.397	3	.941	
Park brochures	17%	15%	12%	12%	8.78	3	.032	
Tourism Victoria	4%	3%	5%	3%	6.65	3	.084	
TV/Radio	3%	3%	4%	4%	4.42	3	.219	
Social media	4%	4%	4%	5%	5.64	3	.130	
Word-of-mouth	22%	21%	21%	14%	.971	3	.808	
Internet/Google	1%	2%	1%	7%	1.27	3	.735	

### 3.9 Additional comments about regional parks and trails

Respondents were given the opportunity to add further comments about regional parks and trails. A total of 603 qualitative comments were offered by the participants to the survey. The majority of the comments (25%) were about general support and appreciation of the regional parks and trails. Other comments focused specifically on the survey process (7%) in two ways: appreciation for participating, or critical toward varying aspects of the survey process. Many of the remaining comments, followed themes that were included in the survey questions, offering the respondents an opportunity to clarify their answers in the survey. These comment themes included concern about dogs and dog owners (8%) and invasive species management and encroachment (7%) and, requests for more enforcement and support for more mixed use of trails (8%). Other themes (representing 5% of the comments each) were calls for facility improvements such as washrooms, garbage cans and picnic tables, and for the development of more trails. Another 5% of the comments gave support to a more environmental conservation oriented approach within the parks and trails. The remaining 30% of the comments included a variety of themes, many of which were not related to the survey or the Regional Parks system.



## 4 Conclusion

Consistent with previous surveys, younger people were under-represented and older people were over-represented in the survey results. Significant difference was found for age between sub-regions likely due to older respondents participating in the survey in the Gulf Islands and Saanich Peninsula. More females than males participated in the survey in 2017 in the CRD and across sub-regions. More couples with no children took the survey in the CRD, which is consistent with the 2005 resident survey. Across sub-regions household composition was significantly different, with the Gulf Islands having more couples without children than the other areas.

Respondents hold strong conservation values toward regional parks and trails. Also recreational values were strongly expressed by participants as long as they did not impact the protection of nature in the Regional Parks system. We therefore expect CRD residents to more likely be sensitive to nature-focused concerns, including habitat protection and support for threatened or endangered species (Manfredo et al., 2016; Dietsch et al., 2016). These dispositions may be explained by the belief that non-consumptive outdoor recreation (i.e., hiking, biking, horse riding) causes little disturbance to natural areas (Greer et al., 2017) hence is not harmful to natural environments and species. It is important to acknowledge that despite being conservation oriented, participants may also exhibit strong concern for human interests such as public access to recreation areas. For the sub-regions, lower support for the use of regional parks and trails was expressed by the Gulf Islands participants when compared with the other areas.

Having regional parks was perceived as important by the majority of respondents. The main perceived benefits provided by regional parks and trails to users were outdoor recreation, experience natural environments and species, conservation of natural environments and species, mental and physical health, quiet relaxation and bonding with family and friends. These outcomes are consistent with previous surveys. Some differences were found between sub-regions about outdoor recreation, dog walking, horseback riding and learning about nature. The differences reflect the Gulf Islands expressing less support for outdoor recreation, and the Saanich Peninsula and Westshore owning more dogs and practicing more horseback riding in comparison to the other sub-regions. Saanich Peninsula residents may perceive regional parks as less important for nature learning purposes because participants reside in an area primarily dedicated to farming and other rural activities. Hence, residents of this area may perceive their surrounding landscape as a primary

learning place for nature rather than regional parks and trails.

Regional trails were perceived by most CRD respondents as important, especially for outdoor recreation, be away from vehicle traffic, mental and physical health, as a greenway connection through urban, suburban and rural landscape, experience natural environments and species and to exercise. These outcomes are consistent with previous surveys. Outcomes for the regional trails are similar to those obtained for the regional parks. The Gulf Islands, however, perceive the trails as not important or as travelling/commuting routes. This outcome might be due to the absence of trails managed by CRD in these areas.

Nearly all participants had visited a regional park or trail in the last year. The regional parks and trails most visited by respondents were Galloping Goose, Elk/Beaver Lake, Lochside, Witty's Lagoon, Thetis Lake and Island View Beach. Similarities in use of regional parks and trails are evident between 2005 and 2017, with the Galloping Goose and Elk/Beaver visited by over half of the respondents in both years. Data for these two areas were not collected in 1998. Increasing visitation over the three data collection periods aligns with the Traffic and Trail Count data collected by CRD Regional Park Service. The Galloping Goose (1,909,389 visits), Elk/Beaver Lake (1,462,933 visits) and the Lochside (1,186,946 visits) are the most used regional parks and trails. Visitation has increased steadily over the past 7 years across the CRD Regional Parks Service system. Differences in visitation were significant for most of the regional parks and trails across sub-regions. Differences in uses between years and across sub-regions likely reflect the closeness and accessibility of the regional parks and trails to the participants of the survey.

Regional parks and trails are used for a variety of purposes. The most frequent activities undertaken by respondents were walking, hiking, viewing plants and animals and walking a dog. These results are similar to those obtained in the 2005 resident survey, showing that while the frequency of some activities by the residents in regional parks and trails may have changed, use patterns have not. No data on activity patterns were collected in the 1998 resident survey, hence no comparison is possible. For the four sub-regions, the main activities undertaken were the same as for the whole CRD. Significant differences in activities between sub-regions were found for birdwatching, cycling, horseback riding, running, swimming and viewing plants and animals. Once again, while certain activities are consistently performed in regional parks and trails across sub-regions, others are not. Results vary substantially from year to year and between sub-regions, reflecting the socio-

demographic characteristics of the sample population per area and accessibility to different types of regional parks and trails where different activities can be performed.

Respondents were further asked to rank the 5 activities they did the most in regional parks and trails. The following ranking was obtained: walking, hiking, viewing plants and animals, picnicking, and birdwatching. Dog walking is one of the most undertaken activities in regional parks and trails, yet it is not ranked as one of the important activities in these areas. No similar question was asked in the 1998 and 2005 surveys. Except for the top ranked item – walking- results vary substantially between sub-regions, likely reflecting the socio-demographic characteristics of the sample population per area and accessibility to different types of regional parks and trails.

During the 12 months prior to the survey, most of the respondents had visited regional parks and trails more than 10 times, 1-5 times or 6-10 times. A higher percentage of the respondents to the survey had visited a regional park or trail in 2017 than in previous surveys. Across the four sub-regions the respondents tended to be frequent users of regional parks and trails, with the majority using them more than 10 times per year. On the Gulf Islands, respondents tended to use regional parks and trails less often than in the other 3 sub-regions, which might be due to the lower number of regional parks and trails present or open to the public on the islands. Many areas on the islands are reserves with no facilities and services for the public. Another factor influencing use might be age, with an older sample population responding to the survey on the islands.

One third of the respondents were in the regional parks and trails with a dog, while another third did not own a dog. No similar question was asked in the 1998 and 2005 surveys. More respondents from the Saanich Peninsula and Westshore went to regional parks and trails with a dog than in the other two sub-regions. It is important to highlight that in the Urban Core and Gulf Islands dog ownership was less common. No significant differences were documented between sub-regions.

The main reason given by the participants not to visit a regional park in the last 12 months was meeting dogs off-leash. Respondents specified that they avoided parks with a high presence of dogs, did not appreciate dog waste on the ground and preferred to go to areas where they did not have to interact with aggressive dog owners and/or aggressive dogs. Other reasons for not visiting regional parks and trails were that they were too far from home, not having enough time and feeling unsafe. These results are similar to the 1998 and 2005 findings where the most important constraints were not enough time, too far from home, no opportunities for preferred recreational

activity and not aware of regional parks and trails. Lack of awareness about regional parks and trails has decreased over the three survey periods. No significant difference in responses was found between sub-regions regarding factors limiting use of regional parks and trails. Overall, respondents of the sub-regions encountered the same constraints for visiting regional parks and trails.

Respondents to the survey were asked if there were outdoor recreation activities that should be implemented or developed in regional parks and trails in the coming 5 years. Three main themes emerged: trails, dogs and horses. Participants suggested developing more trails in parks and for commuting, to enhancing trail connectivity and maintenance, and to having separate or multi-use trails. In regard to dogs, the main themes spanned from on-leash/off-leash use, to dog waste removal, to the establishment of dog parks. More recreational opportunities on trails was the main theme for the topic “horses”, which mainly focused on providing more access to horses in regional parks. While some of those advocating for horse access to parks did not ride anymore, they liked the idea of continued horse presence. While trails remained a key theme in all sub-regions, dogs were frequently mentioned in the Urban Core and Westshore, and horses in the Saanich Peninsula. A new theme emerged in the Gulf Islands, where respondents mentioned keeping parks and trails natural as a main activity to implement in the coming 5 years.

Participants were also asked to suggest outdoor recreation activities that should be stopped in regional parks and trails in the coming 5 years. The main themes mentioned were stopping motorized vehicle and bikes (i.e., motorcycles, dirt bikes, electric bikes), dog off-leash, mountain biking and smoking. There is a “slippery slope worry” that once motorized vehicles and bikes are allowed in an area, more pressure will be exerted to allow such uses in other regional parks and trails. Respondents noted that the main issue with dogs off-leash was that most of them were not under control. Mountain biking as an activity raised concerns, including fostering off-road/trail cycling which disrupts the natural environment. Respondents also commented that mountain bikers often do not share the trails, making it difficult for walkers to be in the park. In all sub-regions motorized vehicle/bikes and dog off-leash were the two most cited activities to be stopped in regional parks and trails in the coming next 5 years. No similar questions were asked in the 1998 and 2005 surveys.

Respondents were satisfied with their experience in regional parks and trails and rated positively the contribution of regional parks and trails to outdoor recreation activities, conservation of natural environments and species, health of the region and its residents. Most respondents were neutral toward rating the contribution of regional parks and trails in contributing to regional economy (i.e., fees, regional business, tourism). While satisfaction questions have been consistently asked in visitor use surveys over the years, this was not the case for the resident surveys of 1998 and 2005, hence comparison is not possible for this set of questions. A significant difference was found between sub-regions for satisfaction about regional parks and trails in general. This might be due to the intensity of responses given by participants per sub-region, where less of the participants on the Gulf Islands were very satisfied. No significant difference between sub-regions was found for the contributions of regional parks and trails over the past 5 years.

Visitors were asked two questions about possible management actions regarding regional parks and trails managed by the CRD: (1) to rate the importance of a number of management actions; and, (2) to rank their three highest priorities from the list of management actions. The following management actions were seen as a high priority: protect the natural environments and species, repair and maintain existing facilities, undertake restoration projects to conserve natural environments and species, and acquire more parkland. These results are similar to the 1998 and 2005 findings where the main priorities were repair and maintain facilities, undertake restoration projects to conserve natural environments and species, and protect the natural environments and species. Acquiring more parkland has become a higher priority over the three survey periods, while providing opportunities for volunteers has dropped in importance. Similar to the whole CRD, protect the natural environments and species, repair and maintain existing facilities, undertake restoration projects to conserve natural environments and species and acquire more parkland were the highest management priorities across all sub-regions. No significant difference was found between sub-regions. It is important to highlight that while the management priorities identified per sub-regions are the same, their ranking slightly changes across regions.

When specifically asked to rank the three highest priorities from the list of management actions proposed, respondents identified the same priorities but in a different order than in the previous questions. Specifically, repair and maintain facilities ranked first, undertaking restoration projects to conserve natural environments and species ranked second, and acquiring more parkland was the third. Two out of three priorities were the same but with a different ranking in the 2005 study, with

acquiring more parkland as first, protecting natural environments and species as second and repairing and maintaining existing facilities as third. Results vary between sub-regions, reflecting the socio-demographic characteristics of the sample population per area and perceived management needs in different types of regional parks and trails.

Most respondents supported an increase in funding to operate regional parks and trails and the extension of the Regional Parks Land Acquisition Fund for another 10 years. Opinions regarding the level of funding have slightly changed in respect to the 1998 and 2005 resident surveys, when the majority of the respondents were more inclined to maintain the existing funding instead of increasing it. No question about the Land Acquisition Fund was asked in the 1998 and 2005 surveys. Similar to the whole CRD, support for an increase in funding to operate regional parks and trails and the extension of the Regional Parks Land Acquisition Fund was expressed across sub-regions with no significant differences.

Respondents used word-of-mouth, family and friends, CRD website and park brochures as their main source of information to find out about the regional parks and trails they visited. No similar questions were asked in the 1998 and 2005 surveys. When comparing responses across regions, for the whole CRD, word-of-mouth and family and friends were the primary sources of information to find out about the regional parks and trails in all sub-regions. In the Gulf Islands, parks brochures were the third most used information source. The CRD website and park brochures were the second and third most popular information sources used in the Saanich Peninsula, Westshore and Urban Core. Significant differences were found only for the use of the CRD website. Such differences can be attributed to the Gulf Islands lower use of this tool for data retrieval. While some information sources are consistently mentioned across sub-regions (i.e., word-of-mouth, family and friends), others differ in degree of use (i.e., website). This might be related to the socio-demographic composition of the sample population, with slightly older respondents on the Gulf Islands and the Saanich Peninsula. In the Westshore 7% of participants indicated internet/google as an important source of information.

Respondents were given the opportunity to add any further comments about regional parks and trails. A total of 603 qualitative comments offered by the participants to the survey. The majority of the comments offered general support and appreciation for regional parks and trails. Other comments focused specifically on the survey process in two ways: appreciation for participating,

or critical toward varying aspects of the survey process. Many of the remaining comments, followed themes that were included in the survey questions, offering the respondents an opportunity to clarify their answers in the survey.

## 5 References

- Dietsch A.M., Teel T.L. & Manfredo M.J. (2016). Social values and biodiversity conservation in a dynamic world. *Conservation Biology* 30(6), 1212–1221.
- Dillman D.A., Smyth J.D., & Christian L.M (2014). Internet, phone, mail, and mixe-mode (4th Eds). Hoboken, NJ: John Wikey & Sons.
- Fosnacht K., Sarraf S., Howe E., & Peck L. (2017). How important are high response rates for college surveys? *Higher Education* 40(2):245-265.
- Greer K., Day K. & McCutcheon S. (2017). Efficacy and perception of trail use enforcement in an urban natural reserve in San Diego, California. *Journal of Outdoor Recreation and Tourism* 18: 56-64.
- Lindner J. R., Murphy T. H., & Briers G. E. (2001). Handling nonresponse in social science research. *Journal of Agricultural Education*, 43-53.
- Manfredo M. (2008). Who cares about wildlife? Social science concepts for exploring human-wildlife relationships and conservation issues. Springer: NY, USA.
- Manfredo M.J., Teel T.L., & Dietsch, A.M. (2016). Implications of human value shift and persistence for biodiversity conservation. *Conservation Biology* 30(2), 287–296.
- Welch W. W., & Barlau A. B. (2013). Addressing survey nonresponse issues: Implications for ate principal investigators, evaluators, and researchers. Retrieved from <http://www.colorado.edu/ibs/decaproject/pubs/Survey%20nonresponse%20issues%20Implications%20for%20ATE%20PIs%20researchers%20%20evaluators.pdf>
- Vaske J. J. (2008). Survey research and analysis: Applications in parks, recreation and human dimensions. Pennsylvania: Venture Publishing Inc.



## Appendix 1 Mail-out package

**Figure A: Cover letter for first mail-out**



**Regional Parks**  
490 Atkins Avenue  
Victoria, BC, Canada  
V9B 2Z8

T: 250.478.3344  
F: 250.478.5416  
[www.crd.bc.ca/parks](http://www.crd.bc.ca/parks)

November 3, 2016

**A Little Bit Of Your Time Will Help Us Make Regional Parks and Trails A Better Place To Enjoy Outdoor Recreation and Nature!**

Dear Resident,

We would like to hear your opinions about the contribution of regional parks (i.e., Elk/Beaver Lake, Thetis Lake, Island View Beach,) and trails (i.e., Galloping Goose) to outdoor recreation, natural environments and species conservation, facilities and services. Even if you have not used any regional park or trail, your opinions are important to us.

**Your response to the enclosed survey is extremely important**

Your address is one of only a small number that have been randomly selected from the area served by Capital Regional District Regional Parks. It is important to hear from you and each household selected in this sample, in order to accurately represent the views of all residents.

**We appreciate your time**

A survey and map showing the location of regional parks and trails is enclosed with this letter. This survey will take approximately 10 minutes to complete. One adult over 18 years old per household should complete the survey. All responses provide important information, so I encourage you to answer all questions. However, your responses are voluntary and will be kept confidential.

Personal information collected in this survey are in compliance with Canada census categories and the authority of the *Local Government Act*, and are subject to the *Freedom of Information and Protection of Privacy Act*.

**To return the survey**

Please return the survey in the enclosed stamped and self-addressed envelope by November 18, 2016. You can find more about the survey by contacting Beatrice Frank at [bfrank@crd.bc.ca](mailto:bfrank@crd.bc.ca) or CRD Regional Parks at 250. 478.3344.

Thank you in advanced for your help with this important study.

*Mike Walton*

Mike Walton, Senior Manager  
Regional Parks

**Figure B: First reminder card**

**Thank you for participating in the  
Regional Parks & Trails Survey**

Dear resident,

If you have not taken the survey we mailed you recently, please complete and return it as soon as possible, or complete it online

<https://surveys.crd.bc.ca/parks-trails.survey>.

The survey collects up-to-date information about residents' use of regional parks and trails and opinions about priorities for outdoor recreation and natural environments and species conservation.

If you have any questions about the survey, please contact Beatrice Frank at [bfrank@crd.bc.ca](mailto:bfrank@crd.bc.ca) or CRD Regional Parks at 250.478.3344.

**Figure C: Second reminder card**

**Thank you for participating in the  
Regional Parks & Trails Survey**

Dear resident,

If you have not taken the survey we mailed you 2 weeks ago, please complete and return it by November 30, or complete it online

<https://surveys.crd.bc.ca/parks-trails.survey>.

By hearing back from those randomly chosen in the sample, we can be sure that the results of this survey represent CRD residents' opinions.

If you have any questions about the survey, please contact Beatrice Frank at [bfrank@crd.bc.ca](mailto:bfrank@crd.bc.ca) or CRD Regional Parks at 250.478.3344.

## Appendix 2: Questionnaire

### 1 How important to you are the following benefits provided by regional parks? (Please check one answer per statement)

Benefits	Not at all important	Somewhat important	Neutral	Quite important	Very important
A. A place for outdoor recreation	1	2	3	4	5
B. A place to exercise	1	2	3	4	5
C. A place that enhances mental and physical health	1	2	3	4	5
D. A place to be with a dog	1	2	3	4	5
E. A place to horseback ride	1	2	3	4	5
F. A place to go camping	1	2	3	4	5
G. A place for the conservation of natural environments and species	1	2	3	4	5
H. A place to experience natural environments and species	1	2	3	4	5
I. A place to learn about natural environments and species	1	2	3	4	5
J. An interconnected system of natural lands	1	2	3	4	5
K. A place that contributes to reducing climate change	1	2	3	4	5
L. A place to spend time with family and friends	1	2	3	4	5
M. A place for quiet relaxation	1	2	3	4	5
N. A place to attend festivals	1	2	3	4	5
O. A place to attend special events	1	2	3	4	5

### 2 How important is it to you to have regional parks? (Please check one answer)

- Not at all important
- Somewhat important
- Neutral
- Quite important
- Very important

## Appendix 2: Questionnaire

---

### 3 Which of the following regional park(s) have you visited in the last 12 months?

- None
  
- Albert Head Lagoon
- Ayum Creek Park Reserve
- Bear Hill
- Brooks Point
- Coles Bay
- Devonian
- East Point Park Reserve
- East Sooke
- Elk/Beaver Lake
- Francis/King
- Gonzales Hill
- Hartland Mountain Bike Park (Mount Work)
- Horth Hill
- Island View Beach
- Jordan River - (Sandcut Beach)
- Kapoor
- Lone Tree Hill
- Matheson Lake
- Matthews Point Park Reserve
- Mill Farm Regional Reserve
- Mill Hill
- Mount Parke
- Mount Wells
- Mount Work
- Roche Cove
- Sea to Sea Park Reserve
- Sooke Hills Wilderness
- Sooke Potholes
- Thetis Lake
- Witty's Lagoon

## Appendix 2: Questionnaire

### 4 How important to you are the following benefits provided by regional trails? (Please check one answer per statement)

Benefits	Not at all important	Somewhat important	Neutral	Quite important	Very important
A. A place for outdoor recreation	1	2	3	4	5
B. A place to exercise	1	2	3	4	5
C. A place that enhances mental and physical health	1	2	3	4	5
D. A place to be with a dog	1	2	3	4	5
E. A place to horseback ride	1	2	3	4	5
F. A place for the conservation of natural environments and species	1	2	3	4	5
G. A place to experience natural environments and species	1	2	3	4	5
H. A place to learn about natural environments and species	1	2	3	4	5
I. A place that contributes to reducing climate change	1	2	3	4	5
J. A greenway connection through the urban, suburban and rural landscape	1	2	3	4	5
K. A route to travel or commuting purposes	1	2	3	4	5
L. An opportunity to be away from vehicle traffic	1	2	3	4	5
M. A place to spend time with family and friends	1	2	3	4	5
N. A place for quiet relaxation	1	2	3	4	5
O. A place to attend festivals	1	2	3	4	5
P. A place to attend special events	1	2	3	4	5

### 5 How important is it to you to have regional trails? (Please check one answer)

- Not at all important
- Somewhat important
- Neutral
- Quite important
- Very important

### 6 Which of the following regional trail(s) have you visited in the last 12 months?

- None
- E&N Rail Trail – Humpback Connector
- Galloping Goose Regional Trail
- Lochside Regional Trail

## Appendix 2: Questionnaire

### 7 To what extent do you disagree or agree with each of the following statements? (Please check one answer per statement)

	Strongly disagree	Disagree	Neutral	Agree	Strongly agree
A. Regional parks and trails are important for outdoor recreation	1	2	3	4	5
B. Regional parks and trails are important for the conservation of natural environments and species	1	2	3	4	5
C. We have a responsibility to future generations to protect regional parks and trails	1	2	3	4	5
D. Regional parks and trails are important for their educational value	1	2	3	4	5
E. Regional parks and trails are important for their beauty	1	2	3	4	5
F. Regional parks and trails are important for generating regional economy revenues	1	2	3	4	5
G. I have an emotional bond to regional parks and trails	1	2	3	4	5
H. I have a spiritual bond to regional parks and trails	1	2	3	4	5
I. Regional parks and trails are important for their own sake	1	2	3	4	5
J. Outdoor recreational use of regional parks and trails should not be allowed if it negatively affects natural environments and species	1	2	3	4	5
K. The use of regional parks and trails is more important than protecting natural environments and species	1	2	3	4	5
L. Outdoor recreational use and natural environments and species should be balanced in the regional parks and trails	1	2	3	4	5
M. Regional parks and trails should be managed so that humans benefit	1	2	3	4	5
N. Natural environments and species has as much right to exist as people	1	2	3	4	5
O. Regional trails are important for transportation	1	2	3	4	5
P. I am really not that interested in regional parks and trails	1	2	3	4	5

**Appendix 2: Questionnaire**

---

**8 About how often have you visited regional parks and trails in the last 12 months?**

- 0 times (go to question 11)
  - 1-5 times
  - 6-10 times
  - More than 10 times
  - Other \_\_\_\_\_
- 

**9 Rank the 5 activities you do the most in regional parks and trails from the most important (#1) to the least important (#5).**

- |  |   |  |
|--|---|--|
| <input type="checkbox"/> Birdwatching      | <input type="checkbox"/> Geocaching       | <input type="checkbox"/> Skateboarding/Rollerblading |
| <input type="checkbox"/> Boating           | <input type="checkbox"/> Hiking           | <input type="checkbox"/> Surfing                     |
| <input type="checkbox"/> Canoeing/kayaking | <input type="checkbox"/> Horseback riding | <input type="checkbox"/> Swimming                    |
| <input type="checkbox"/> Cycling           | <input type="checkbox"/> Mountain biking  | <input type="checkbox"/> Viewing plants/Animals      |
| <input type="checkbox"/> Camping           | <input type="checkbox"/> Picnicking       | <input type="checkbox"/> Walking                     |
| <input type="checkbox"/> Fishing           | <input type="checkbox"/> Running          | <input type="checkbox"/> Walking a dog               |
| <input type="checkbox"/> Other _____       |   |  |

**10 Do you visit regional parks and trails with your dog?**

- No
- Yes
- I do not own a dog

**11 Are there any outdoor recreation activities that should be implemented or developed in regional parks and trails in the next 5 years?**

---

---

---

**12 Are there any outdoor recreation activities that should be stopped in regional parks and trails in the next 5 years?**

---

---

---

**Appendix 2: Questionnaire**

---

**13 If you have not visited regional parks and trails in the last 12 months, why? (Please check all that apply)**

- Feel unsafe
- Lack of bicycle
- Lack of car
- Lack of public transport
- Meeting dogs off-leash
- Other \_\_\_\_\_
- Not enough time
- No access for people with disabilities
- Not aware of regional parks and trails
- Poor facilities
- Presence of horses
- Too far from home
- Too isolated
- Too many cyclists
- Too many walkers

**14 Overall, how satisfied are you with your experience in regional parks and trails?**

- Not at all satisfied
- Somewhat satisfied
- Neutral
- Quite satisfied
- Very satisfied

**15 Overall, how would you rate regional parks and trails over the past 5 years in: (Please check one answer per statement)**

	<b>Poor</b>	<b>Fair</b>	<b>Neutral</b>	<b>Good</b>	<b>Excellent</b>
A. Offering outdoor recreation activities	1	2	3	4	5
B. Contributing to the conservation of natural environments and species	1	2	3	4	5
C. Contributing to the health of the region and its residents	1	2	3	4	5
D. Contributing to the regional economy (i.e., fees, regional business, tourism)	1	2	3	4	5



## Appendix 2: Questionnaire

### 16 What activities should be given priority over the next 5 years to enhance your enjoyment of regional parks and trails? (Please check one answer per statement)

Activities	Not a priority	Low priority	Neutral	Medium priority	High priority
A. Provide outdoor recreation opportunities	1	2	3	4	5
B. Provide new or additional facilities	1	2	3	4	5
C. Repair and maintain existing facilities	1	2	3	4	5
D. Provide more drive-in camping areas	1	2	3	4	5
E. Provide hike-in camping areas	1	2	3	4	5
F. Protect the natural environments and species	1	2	3	4	5
G. Undertake restoration projects to conserve natural environments and species	1	2	3	4	5
H. Acquire more parkland	1	2	3	4	5
I. Widen regional trails	1	2	3	4	5
J. Separate users on regional trails	1	2	3	4	5
K. Increase enforcement of regional parks and trails regulations	1	2	3	4	5
L. Increase visitors' awareness about regional parks and trails regulations	1	2	3	4	5
M. Provide more educational programs	1	2	3	4	5
N. Provide more opportunities for volunteers	1	2	3	4	5
O. Improve collaboration with regional parks and trails neighbours (i.e., First Nations, Government agencies, stakeholders)	1	2	3	4	5

### 16a Which of the activities listed above should regional parks and trails focus on in the next 5 years? (Please put the letters corresponding to your first, second and third choice in the appropriate box)

Highest Priority     
  Second Highest Priority     
  Third Highest Priority

### 17 What should be done to operate regional parks and trails in the future? (Please check one answer)

Maintain existing funding

This would result in a 2015 level of operation. Any new parkland would be opened to public use as funds become available.

Increase existing funding

This could result in opening current land banked parks, new or upgraded facilities and services, more conservation projects, more outdoor recreation opportunities, and a tax increase or relocation or an increase in permits fees.

## Appendix 2: Questionnaire

---

**18 The CRD acquires land through the Regional Parks Land Acquisition Fund. Funds are generated through a residential property tax. Would you support or oppose extending the Regional Parks Land Acquisition Fund for another 10 years?**

- Strongly oppose
- Oppose
- Neutral
- Support
- Strongly support

**19 Which of the following information sources do you use to find out about regional parks and trails you visit? (Please check all that apply)**

- |   |  |  |
|---|--|--|
| <input type="checkbox"/> None               | <input type="checkbox"/> Newspaper/Magazines | <input type="checkbox"/> TV/ radio     |
| <input type="checkbox"/> CRD website        | <input type="checkbox"/> Park brochures      | <input type="checkbox"/> Social media  |
| <input type="checkbox"/> E-mails            | <input type="checkbox"/> Tourism Victoria    | <input type="checkbox"/> Word-of-mouth |
| <input type="checkbox"/> Family and friends | <input type="checkbox"/> Other _____         |  |

**20 In which area of the Capital Region do you live in?**

- Beecher Bay First Nation (SCIA'NEW)
- Central Saanich
- Colwood
- Esquimalt
- Esquimalt Nation
- Galiano Island
- Highlands
- Juan de Fuca Electoral Area
- Langford
- Malahat First Nation (MÁLEXEL)
- Mayne Island
- Metchosin
- North Saanich
- Oak Bay
- Pacheedaht First Nation
- Pauquachin First Nation (BOKÉĆEN)
- Pender Island
- Penelakut Tribe (PUNE'LAXUTTH')
- Salt Spring Island
- Saanich
- Saturna Island
- Sidney
- Songhees Nation
- Sooke
- Tsartlip First Nation (WJOŁŁLP)
- Tsawout First Nation (STÁUTW)
- Tseycum First Nation (WSIKEM)
- T'Sou-ke Nation
- Victoria
- View Royal

## Appendix 2: Questionnaire

---

**21 In which age category do you fall?**

18-24

35-44

55-64

25-34

45-54

65+

**22 Are you:**     Female     Male

**23 Please indicate the type of household in which you live.**

Adult living alone

Couple with no dependent children

Extended family

More than two adults sharing a residence

Parent(s) with one or more dependent child

Other \_\_\_\_\_

**Thank you for completing this survey. We value your opinion!**

**Do you have any other comments about your regional parks and trails?**

### Appendix 3: Representativeness of the sample population

---

#### Appendix 3: Representativeness of the sample population

With a completed sample size of 1,245 people, the margin of error for the whole CRD was computed to be plus or minus 2.4% at the 95% confidence level (<http://www.custominsight.com/articles/random-sample-calculator.asp>). This means that any result reported for the overall sample probably will be within 2.4% of the real value. The 95% confidence level indicates that we are 95% sure of these findings. The margin of error for each of the sub-regions is larger (Table 3-1). Hence, a nonresponse bias check was conducted for the sub-areas to evaluate how representative the data collected were for the sub-regions aggregations.

**Table 3-1: Margin of error with a 95% confidence level**

Sub-Region	Margin of Error
Gulf Islands	6.4%
Saanich Peninsula	5.7%
Urban Core	4.6%
Westshore	3.6%
TOTAL CRD	2.4%

When collecting data, concerns exist that the sample obtained may not be representative of the population from which it is drawn. One way to address this issue is to conduct a nonresponse bias check, where a sample of nonrespondents from the original sample population is contacted to ask a subset of questions from the survey. The data obtained from nonrespondents can be compared with the one obtained from respondents, thus evaluating if the sample obtained is representative.

It is important to acknowledge that a nonresponse bias may exist even with a high response rate. Researchers have therefore clarified that data with no response bias is better than a high response rate (Lindner et al., 2001; Vaske, 2008; Welch and Barlau, 2013; Fosnacht et al., 2017). Specifically, if a nonresponse check shows that no statistical differences exists between respondents and nonrespondents, researchers can be confident that the data collected are representative of the population sampled.

To comply with the FOIPPA, no personal data were collected from the sample selected to participate in the resident survey - a limitation that did not enable contact with nonrespondents after the survey was concluded. Research has shown that late respondents are more similar to

### **Appendix 3: Representativeness of the sample population**

---

nonrespondents and can be used as surrogate for those who did not take part to the survey (Lindner et al., 2001; Welch and Barlau, 2013; Fosnacht et al., 2017). Late respondents are defined as those who have responded to the last wave of contact (Lindner et al., 2001). A minimum of 30 late respondents are needed to conduct a nonresponse bias check (Lindner et al., 2001). Based on this rationale, the last wave of responses - the online ones - were used to conduct a nonresponse bias check on the survey.

#### *Nonresponse Bias Check for the resident survey*

When the questionnaire is long it is best to select a subset of important questions to conduct a nonrespondent bias check. In the case of the resident survey, the basic belief dimensions constituting value orientations were used for the nonrespondent bias check. Value orientations are “*unity thema* or *ethos* that capture the personality of a cultural group” (Manfredo, 2008, p. 156). They can “reveal ideology’s influence on a group or the cultural personality of a group” (Manfredo, 2008, p. 160). Value orientation can be measured using basic belief dimensions (Appendix 2, Q7), and are suitable to evaluate if the respondents and nonrespondents to the survey share guiding beliefs about how the world operates in relation to nature, hence whether the sample obtained is representative of the broader population (Vaske, 2008; Manfredo, 2008;).

The basic belief dimensions in the survey were added together to form a “value orientation” variable. Two items were not included as part of this value orientation variable: 1) regional trails are important for transportation and 2) I am not that interested in regional parks and trails. These two items do not qualify as value orientation basic beliefs. The reliability of the basic beliefs was tested with Cronbach  $\alpha$  (Vaske, 2008; Manfredo, 2008) to evaluate if participants’ basic beliefs were consistent, thus allowing the creation of a value orientation variable. Reliability was acceptable with values over 0.7 for the four sub-regions and the whole CRD (see Table 2). This allowed analysts to use the value orientation variable as a nonresponse bias check between respondents and nonrespondents.

An independent t-test confirmed there were no significant differences found between respondents and nonrespondents (see Table 3-2). To account for the possibility of a large sample size effect, Cramer’s V ( $\phi_c$ ) was performed for each measure. All the measures showed medium to large relationship (Vaske, 2008), hence no size effect was detected.

### Appendix 3: Representativeness of the sample population

---

**Table 3-2: Cronbach  $\alpha$ , independent t-test and Crammer's V ( $\phi_c$ ) for values toward regional parks and trails.**

	# of nonrespondents	Cronbach $\alpha$	t-test	<i>df</i>	<i>p</i> value	$\phi_c$
Gulf Islands	35	.835	-.278	42	.782	.438
Saanich Peninsula	40	.722	.252	211	.927	.324
Urban Core	50	.723	-.167	303	.874	.404
Westshore	75	.708	.532	524	.595	.302
CRD	200	.745	.237	1224	.812	.234

Based on the above results we can assert that no significant differences in values exist between respondents and nonrespondents of the sub-regions and the whole CRD. The nonrespondents bias is not present in the data collected. The sample obtained is therefore representative of the sub-regions as well as of the whole CRD.

#### **Limitations of sample design**

A series of limitations have likely contributed to a lower response rate (27%) in comparison to the 2005 resident survey (42%). The following list of challenges may have affected survey retrieval:

**1) Intramap:** this CRD information sharing tool was used to access municipal geographic data to randomly select participants' addresses. While this tool offers advanced functionality for geographic analysis, mapping and data management, and allows access to addresses without participants' personal data, it does not represent the best address database. The main issues were that Intramap does not always include the most updated addresses and it is a difficult tool to navigate, especially when selecting households. For future surveys it is suggested that other databases be used such as Canada Post and phone books, which are updated on a yearly basis.

**2) Post-office box (P.O. boxes):** are uniquely addressable lockable boxes located in post office stations. P.O. boxes are used by those whose mail is not delivered at home. In many remote or not easily accessible communities, like the islands and the communities around Port Renfrew, many participants have P.O. boxes. Generic mail (lacking the name of the P.O. box holder) - such as the

### **Appendix 3: Representativeness of the sample population**

---

resident survey – is undeliverable to P.O. boxes, which likely explains the 7% (n=369) mail returned. To overcome this issue, two different approaches can be followed: using personal data such as the name of the selected participant on the mail-out address and/or carry-out an in-person interview approach in remote or difficult to access areas.

**3) Token:** similar to past resident surveys conducted by CRD Regional Parks Service, no token was given to participate in the survey. Dillman et al., (2014, p.30) however, suggests that “one of the most effective ways for improving survey response is that the surveyor has given something to the recipient, and he in return sees it as appropriate to return the favor by completing the questionnaire”. Future surveys should offer a token of appreciation to its participants. One suggestion is to include participants in a draw prize in the next resident survey. This approach has shown success in the regional trail survey of 2013, when participants could decide to be included in a \$100 gift card draw for a restaurant of their choice.

**4) Secondary homes on the Gulf Islands:** on the islands there are secondary homes used for vacation purposes. Owners may have received the survey too late due to late mail collection, or they may have been absent and not taken part. These circumstances may have influenced the response rate for this sub-region. A possible solution to these challenges is to oversample the islands in the next resident survey.

**5) Delivery delays:** a series of delays between the printing and the mail-out resulted in participants receiving the mail-out package later than expected. Hence, some people may have not filled out the survey because of limited time before the survey deadline. While Dillman et al., (2014) suggest a three week period to carry out a mail-out survey, it is better to plan for longer survey cycles to allow participants to have enough time to participate.

**6) Season:** the survey package was sent to the selected sample population at the end of October/early November. While this time frame might have been suitable for some sub-regions, it might have represented a constraint for others. For example, sending the mail-out package to the Gulf Islands in spring/summer might have resulted in a higher response rate. It is suggested to plan the next resident survey for the spring 2021, rather than in the winter season.

## Appendix 4: Detailed tables of 2017 results

### Appendix 4: Detailed tables of 2017 results

**Table 4-1. Value orientation (Q7) for the whole CRD**

Value Orientation	Percent (%) Responding					
	Strongly disagree	Disagree	Neutral	Agree	Strongly agree	No response
Regional parks and trails are important for outdoor recreation	0.6	0.2	2.1	20.5	74.5	2
Regional parks and trails are important for the conservation of natural environments and species	0.9	0.7	3.8	24.3	68.3	2
We have a responsibility to future generations to protect regional parks and trails	0.4	0.4	2.2	15.8	79.3	1.9
Regional parks and trails are important for their educational value	0.8	1.2	11.3	35.4	49.2	2.1
Regional parks and trails are important for their beauty	0.2	0.3	4.3	26.7	66.1	2.5
Regional parks and trails are important for generating regional economy revenues	12.4	15.8	36.5	20.2	12	3.1
I have an emotional bond to the regional parks and trails	2	3.3	20.3	31.5	40.4	2.5
I have a spiritual bond to the regional parks and trails	6.4	7.1	31.4	22.4	29.6	3.1
Regional parks and trails are important for their own sake	1.1	0.6	9.8	31.9	53.3	3.3
Outdoor recreational use of regional parks and trails should not be allowed if it negatively affects natural environments and species	3.5	10	19.8	34.6	29.5	2.6
The use of regional parks and trails is more important than protecting natural environments and species	23.3	35.2	23.2	12.3	3.3	2.7
Outdoor recreational use and natural environments and species conservation should be balanced in regional parks and trails	1.6	5.5	12.2	43.9	34.1	2.8
Regional parks and trails should be managed so that humans benefit	4.1	13.7	30.2	36.1	13	2.8
Natural environments and species have as much right to exist as people	1.4	2.7	13.6	32.9	46.6	3
Regional trails are important for transportation	9.2	12.3	28.4	25.9	21.1	3.2
I am really not that interested in regional parks and trails	72.3	17.4	5.1	0.7	1.5	3



## Appendix 4: Detailed tables of 2017 results

**Table 4-2. Satisfaction about experience in regional parks and trails (Q14) for the whole CRD**

Satisfaction	Percent (%) Responding
Very satisfied	30.1
Quite satisfied	54.9
Neutral	5.9
Somewhat satisfied	4.7
Not at all satisfied	0.6
No Response	3.9

**Table 4-3. Rating of regional parks and trails over the past 5 years (Q15) for the whole CRD**

	Percent (%) Responding					No response
	Poor	Fair	Neutral	Good	Excellent	
Offering outdoor recreation activities	1	3.1	16.3	49.4	25.9	4.3
Contributing to the conservation of natural environments and species	1.1	3.1	16.3	55.2	20.3	3.9
Contributing to the health of the region and its residents	0.5	2	9.1	49.2	34.9	4.3
Contributing to the regional economy (i.e., fees, regional business, tourism)	2.3	6.3	52.6	26.3	6.4	5.9

**Table 4-4. Extension Land Acquisition Fund for another 10 years (Q18) for the whole CRD**

Land Acquisition Fund	Percent (%) Responding
Strongly support	29.7
Support	40.2
Neutral	17.3
Oppose	5.5
Strongly oppose	3.4
No response	3.8

**Table 4-5. Information sources used to find out about regional parks and trails (Q19) for the whole CRD**

Information sources	Percent (%) Responding
None	1.6
CRD website	15.1
E-mails	2
Family and friends	19.7
Newspapers/Magazines	10.2
Park brochures	14.7
Tourism Victoria	3.6
TV/Radio	3.6
Social media	5.3
Word-of-mouth	21
Internet	1.2

## Appendix 5: Tables comparing 1998, 2005 and 2017 resident surveys results

**Table 5-1. Residency of participants of the survey (Q20), comparing 2005 and 2017 survey results**

	Percent (%) Responding (*)	
	2005 Sample	2017 Sample
Beecher Bay First Nation (SCIA'NEW)		0.1
Central Saanich	13.8	7.8
Colwood	5.6	6.9
Esquimalt	0.6	3.5
Esquimalt Nation		0.1
Galiano Island		1.8
Highlands	0.8	8.4
Juan de Fuca Electoral Area	2.2	4.8
Langford	7.7	5.4
Malahat First Nation (MÁLEXEEL)		0
Mayne Island		2.7
Metchosin	2.1	9.5
North Saanich	3.1	6.6
Oak Bay	1.1	5.1
Pacheedaht First Nation		0.1
Pauquachin First Nation (BOKÉĆEN)		0
Pender Island		3.5
Penelakut Tribe (PUNE'LAXUTTH')		0
Salt Spring Island	11.4	3.8
Saanich	10.8	6.9
Saturna Island		3.1
Sidney	3.1	3.3
Songhees Nation		0
Sooke	11.7	7.5
Tsartlip First Nation (WJOŁEŁP)		0.1
Tsawout First Nation (STÁUTW)		0
Tseycum First Nation (WSIKEM)		0
T'Sou-ke Nation		0.1
Victoria	7.2	4.7
View Royal	3.1	4.6
Southern Gulf Islands	6.9	
Other	5.4	
No response	3.2	

\* column absent data for reporting year are blank

## Appendix 5: Tables comparing 1998, 2005 and 2017 resident surveys results

**Table 5-2. Socio-demographic data (Q21, 22 & 23), comparing 1998, 2005 and 2017 survey results**

	Percent (%) Responding (*)		
	1998 Sample (**)	2005 Sample (***)	2017 Sample
<b>Age (Q21):</b>			
18-24	2.7		0.5
25-34	9.5		4.3
35-44	18		10.2
45-54	24		16.5
55-64	18.7		28.1
65+	27.1		36.9
No response			3.5
<b>Gender (Q22):</b>			
Male	51.9	49.5	58.9
Female	48.1	46.2	35.7
No response		5.4	5.4
<b>Household (Q23):</b>			
Adult living alone		20.8	16
Couple with no children		54.8	48.8
Extended family			5.3
Adults sharing residence			7.1
Parent(s)with children		28	18.5
Other			0.6
No response		4.1	3.7

\* column absent data for reporting year are blank

\*\* no household data are reported for the 1998 sample as this information was not retrieved through this survey.

\*\*\* age is not reported for the 2005 sample as different categories were used in this survey.

## Appendix 5: Tables comparing 1998, 2005 and 2017 resident surveys results

**Table 5-3. Benefits of regional parks (Q1 & 2), comparing 1998, 2005 and 2017 survey results**

Benefit:	Percent (%) Responding Important (*) (**)		
	1998 Sample	2005 Sample	2017 Sample
Importance of regional parks	80.8	79.9	95.5
A place for outdoor recreation	87.9		89.9
A place to exercise			78.2
A place that enhances mental health and physical health			87.1
A place to be with a dog		65.6	52.7
A place to horseback ride		43.1	18.8
A place to go camping			45.5
A place for the conservation of natural environments and species (***)	94.2	94.4	89.3
A place to experience natural environments and species	89.5	94.8	89.8
A place to learn about natural environments and species	83.5	89.7	75.9
An interconnected system of natural lands			76.8
A place that contributes to reducing climate change			78.1
A place to spend time with family and friends	93.2	92.6	81.5
A place for quiet relaxation	89.2	93.3	86.3
A place to attend festivals			25.8
A place to attend special events			28.6
A green-space buffer from suburban development	92.4	93.3	
A place that enhances residential property values		61.8	
A place that stimulates the economy through sales of outdoor equipment		51.6	
A place to hike		89.5	
A place to cycle		70.7	
A place to promote nature-based tourism		74.7	
Maintaining scenic areas	92.4		
Habitat for wildlife	92.1		

\* column absent data for reporting year are blank

\*\* 1998 response categories were “very important” or “fairly important”, 2005 response categories were “very important”, “quite important” or “somewhat important” and 2017 response categories were “very important” and “quite important”

\*\*\* the wording of the statement “a protected natural environment for native plants and animals” used in 1998 and 2005 was reworded to “a place for the conservation of natural environments and species” in 2017. The change of wording may have affected response rate.

## Appendix 5: Tables comparing 1998, 2005 and 2017 resident surveys results

**Table 5-4. Benefits of regional trails (Q4 & 5), comparing 2005 and 2017 survey results**

Benefit:	Percent (%) Responding Important(*) (**)	
	2005 Sample	2017 Sample
Importance of regional trails	72.1	91.7
A place for outdoor recreation		85.9
A place to exercise		80.4
A place that enhances mental health and physical health		82.4
A place to be with a dog	47.2	50.2
A place to horseback ride	23	19.7
A place for the conservation of natural environments and species (***)	67.9	77.4
A place to experience natural environments and species	68.5	80.4
A place to learn about natural environments and species		67.1
A place that contributes to reducing climate change		71.8
A greenway connection through the urban, suburban and rural landscape (***)	81.4	80.7
A route to travel or commuting purposes (***)	56.9	52.8
An opportunity to be away from vehicle traffic (***)	73.2	84.1
A place to spend time with family and friends	70.2	73.9
A place for quiet relaxation		75.2
A place to attend festivals		17.9
A place to attend special events		19.6
A place that enhances residential property values	28.8	
A place that stimulates the economy through sales of outdoor equipment	19.9	
A place to hike	70.3	
A place to cycle	68.9	
A place to promote nature-based tourism	34.4	

\* column absent data for reporting year are blank

\*\* 2005 response categories were “very important”, “quite important” or “somewhat important” and 2017 response categories were “very important” and “quite important”

\*\*\* the wording of several statements were changed from the 2005 to the 2017 resident survey. The change of wording may have affected response rate.

## Appendix 5: Tables comparing 1998, 2005 and 2017 resident surveys results

**Table 5-5. Regional parks and trails visited in the Past 12 Months (Q3 & 6), comparing 1998, 2005 and 2017 survey results**

Regional Parks and Trails	Percent (%) Visiting by Year (*)		
	1998 Sample	2005 Sample	2017 Sample
Albert Head Lagoon	15.0	17.5	24.9
Ayum Creek		5.3	4.6
Bear Hill	12.4	13.9	14.7
Brooks Point		3.2	4.8
Coles Bay	15.9	11.0	14.1
Devonian	7.2	9.3	18.6
East Point	7.9	4.8	12
East Sooke	27.2	36.9	43.5
Elk/Beaver Lake	53.0	51.2	57.6
E&N Rail Trail – Humpback Connector			25.3
Francis / King	12.2	13.1	23.9
Galloping Goose		57.3	73.4
Gonzales Hill	16.5	13.2	14.5
Hartland Mountain Bike (Mount Work)			10.8
Horth Hill	13.6	7.1	11.6
Island View Beach	40.6	35.5	47.5
Jordan River			26.7
Kapoor		1.4	3.2
Lochside		31.1	49.2
Lone Tree Hill	6.0	7.0	11.6
Matheson Lake	16.8	22.6	33.2
Matthews Point		2.7	1.7
Mill Farm		7.4	1.9
Mill Hill	7.8	10.0	13.1
Mount Parke	6.2	2.0	3.9
Mount Wells		3.3	10.5
Mount Work	13.4	14.6	25.1
Roche Cove	11.3	16.5	21.7
Sea to Sea		4.0	5.1
Sooke Hills Wilderness		13.1	12.7
Sooke Potholes			36.1
Thetis Lake	29.4	38.2	49.1
Witty's Lagoon	32.6	37.4	49.7

\* column absent data for reporting year are blank

## Appendix 5: Tables comparing 1998, 2005 and 2017 resident surveys results

**Table 5-6. Activities of regional parks (Q9), comparing 2005 and 2017 survey results**

Activities:	Percent (%) Responding Important (*)	
	2005 Sample	2017 Sample
Birdwatching		27.1
Boating/Canoeing/Kayaking	15.6	17.1
Cycling	37.7	24.7
Camping		14.4
Fishing	9.6	5.6
Geocaching		2.7
Hiking		57.6
Horseback riding	4.2	6.2
Mountain biking		6.6
Picnicking	50.7	22.7
Running/Jogging	18.7	12.1
Skateboarding/Rollerblading		0.6
Surfing		1.4
Swimming	32.1	18.7
Viewing plants/animals	54.8	45.1
Walking		67.5
Walking a dog	41.8	36.2
Hiking/Walking	92.9	
Sun bathing	24.5	
Nature photography	27.3	

\* column absent data for reporting year are blank

**Table 5-7. Frequency of use of regional parks and trails in past 12 months (Q8), comparing 1998, 2005 and 2017 survey results**

Level of Use:	Percent (%) Responding by Year (*)		
	1998 Sample	2005 Sample	2017 Sample
Not at All/ 0times	26.0	19.1	4.6
One to Five Times	28.9	24.4	16.9
More than Five Times	45.2	56.4	
Six to ten times			14.3
More than 10 times			52.3
Daily			4.7
Weekly			3.9
No response			2.8

\* column absent data for reporting year are blank

## Appendix 5: Tables comparing 1998, 2005 and 2017 resident surveys results

**Table 5-8. Factors limiting use of regional parks and trails (Q13), comparing 1998, 2005 and 2017 survey results**

Factor Limiting Use:	Percent (%) Responding by Year (*)		
	1998 Sample	2005 Sample	2017 Sample
Not enough time	38.7	63.6	13.7
Not aware of regional parks and trails	15.1	10.6	4.5
No opportunities for my recreation activities	10.6	4.5	
Too crowded	5.9	6.5	
Poor facilities	2.7	3.2	3.2
Lack of public transportation	5.9	4.9	2.2
Lack of personal transportation	9.1	5.4	
Lack of access for people with disabilities	4.3	3.4	4.7
Too far from my residence		26.3	13.9
I am not really interested in visiting regional parks		4.4	
My friends are not interested		2.2	
My family members are not interested		3.6	
I don't have the skills		0.4	
I don't have the ability		4.1	
Feel unsafe			8.2
Lack of bicycle			1.5
Lack of car			2.2
Meeting dog off-leash			20.8
Presence of horses			2.5
Too isolated			3.5
Too many cyclist			6.9
Too many walkers			1.2
Elderly			3.4
Physically unable			5.2

\* column absent data for reporting year are blank



## Appendix 5: Tables comparing 1998, 2005 and 2017 resident surveys results

**Table 5-9. Management of regional parks and trails (Q16), comparing 1998, 2005 and 2017 survey results**

Possible Management Action:	Percent (%) Responding high priority by year (* (**) (***)		
	1998 Sample	2005 Sample	2017 Sample
Provide outdoor recreation opportunities			36.5
Provide new or additional facilities	15.5		16.9
Repair and maintain existing facilities	56.8	43.1	51
Provide more drive-in camping areas		12.8	11.4
Provide hike-in camping areas (***)	9.3	16.2	11.2
Protect the natural environments and species (****)	69.8	55.6	58.2
Undertake restoration projects to conserve natural environments and species (****)	47	43.4	48.6
Acquire more parkland	25.2	36.2	48.1
Widen regional trails			11.5
Separate users on regional trails			11.5
Increase enforcement of regional parks and trails regulations (****)		27.9	17.2
Increase visitors' awareness about regional parks and trails regulations			22
Provide more educational programs/opportunities	13.3	11.5	13.7
Provide more opportunities for volunteers (****)	48.7	12.8	12.2
Improve collaboration with regional parks and trails neighbours			22.7
Improve security	20.5	23	
Provide more trails	27.8		
Provide more information	16.9	14.8	
Manage the impact of visitors on plants and animals	46.7		

\* column absent data for reporting year are blank

\*\* 1998 response categories were "high priority", 2005 response categories were "very important" and 2017 response categories were "high priority".

\*\*\* additional statements were present in the 1998 and 2005 surveys. It was decided not to include those statements that pertained to specific issues, such as hiking or dog management among others to reduce information loads.

\*\*\*\* the wording of several statements were changed over the three survey periods. The change of wording may have affected response rate.

**Table 5-10. Funding of regional parks and trails (Q17), comparing 1998, 2005 and 2017 studies**

Level of Funding:	Percent (%) by Year (*)		
	1998 Sample	2005 Sample	2017 Sample
Reduce Funding	2.9	1.8	
Maintain Existing Funding	49.5	44.5	38.6
Increase Funding	39.1	43.9	55.1
No Response	8.5	9.8	6.3

\* column absent data for reporting year are blank