Collaborative Research Grant Initiative: Mental Wellness in Seniors and Persons with Disabilities

Ideas Fund Final Report

An Examination of the Lived Experiences and Mental Well-being Impacts of a Nature Intervention for Adults with Disabilities and their Caregivers

August 22, 2013 - Don Carruthers Den Hoed
EXECUTIVE SUMMARY

Evidence of the benefits of green spaces and time outside is increasingly being translated into policy and practice. Alongside this trend, inclusion of all people into parks and nature has been an important area of learning and practice. Including those with disabilities, youth, and seniors, as well as groups such as new immigrants has been a recent focus of Alberta Parks, however questions remain unanswered as a result of these nature and inclusion innovations. What are the barriers and mental health benefits for those with disabilities and their caregivers as they are included in nature experiences? What does inclusion mean for those participating in nature experiences?

The objective of this project was to examine the mental health effect of two nature interventions (individual day trips and a larger week-end nature experience). This mixed methods pilot study of 80 participants included pre/post intervention surveys (a nature well-being survey, standardized quality of life inventory (QOLI) questionnaire and depression inventory). Qualitative data was gathered about the immediate inclusion experiences through reflective writing. Qualitative findings were gleaned from reflective writing and comments provided in the QOLI questionnaires. Three dominant themes of inclusion experiences were found: “Sensory Activation”, “Social Relations” and “Reimagined Time and Place”. Results, while not statistically significant, show promise in terms of improved depression symptoms as well as positive outcomes in the following categories of QOLI: self reports of health satisfaction, social relationships (in particular, love and friendship), as well as satisfaction with a sense of community and experiences of helping.

RESEARCH OVERVIEW

Objective(s)

This study addressed a pressing need to understand the mental health benefits of nature and wilderness experiences for adults with disabilities. Such evidence is important for decision making and program development among collaborative partners including not-for profit disability and recreation organizations and decision making partners from Alberta Health and Alberta Parks with their respective government ministries.

The purpose of this study was to empirically examine the mental health impacts of adaptive nature activities including individual day-trips offered by the Push to Open Nature Society and a large inclusive nature event, the Alberta Adaptive Nature Challenge 2012, using a mixed method approach. The study related to 2 CRGI domains, strength-based approaches and system capability to respond to those with complex needs.

Background

Connecting with nature is important for the quality of life and mental health of all people (Government of Alberta, 2011). The Alberta Parks Division of the Ministry of Tourism, Parks and Recreation is committed to supporting the participation of all people in park experiences and programs, regardless of ability. The first step to improving participation in parks is improving access. By removing barriers in new and existing facilities, in programs, and in daily operations, people with disabilities can experience nature with everyone else. The second step is by fostering inclusion – by making sure people feel they truly belong in parks and can get involved in parks, nature, and recreation programs.

Adults across the lifespan (including seniors) with disabilities who want to visit parks crave the same things as everyone else: to experience and be challenged by pristine and rugged nature, and to feel a sense of belonging among people of all abilities participating in the same outdoor experience. In order to ensure access without impacting the wilderness—and to foster inclusion at the same time—the Alberta Parks Division is developing and supporting programs that modify the user, not the environment, to accent the strengths of people in nature. Programs such as the Alberta Adaptive Nature Challenge in Kananaskis Country, which is an adaptive wilderness experience, are model
strengths-based interventions that showcase the abilities of adults (including seniors) with disabilities through inclusive outdoor activities.

This intervention has been implemented since 2008 and offers rich anecdotal evidence obtained about the mental and physical health benefits of parks inclusion (Alberta Tourism, Parks and Recreation, 2009). However, in order to make the most effective use of nature as part of an upstream mental health promotion strategy, evidence obtained from systematic research studies is crucial (Bowler, Knight, and Pullin, 2009; Maller, Townsend, Pryon, Brown, and St. Leger, 2005). This study proposes an in-depth examination of the impacts of mental well-being of inclusive nature activities (including the Alberta Adaptive Nature Challenge and ongoing Push to Open Nature adaptive outdoor experiences), established nature interventions for adults (including seniors) with disabilities. We proposed our study to build on systematic evidence of the facilitators, barriers, character and impacts of an adapted nature intervention.

**Approach and Methods**

This study included pre/post analysis of adaptive nature interventions for adults with disabilities and their participating voluntary caregivers. During the interventions, data was gathered to understand participants’ experiences of day trip or overnight wilderness challenge interventions. This research employed questionnaires for later descriptive statistics, standardized measurements for quality of life and mood, and qualitative content analysis.

**Research questions:**
- What are the quality of life outcomes of individuals participating in an adaptive nature experience?
- What effect, if any, does participating in an adaptive nature experience have on an individual’s mood and emotional state

**Project design:** Mixed methods approach

**Population:** Adults with disabilities (including seniors) and their voluntary caregivers (n=80)

**Sampling:** Purposive sample of registrants for recreational nature day trips and weekend experiences organized by community agencies

**Measures:** During intervention reflective writing, and Pre/post nature experience questionnaires/standardized measures (see Appendix A) of quality of life and mood including:
- Mental Health and Mental Well-Being Impact Questionnaire
- Beck Depression Inventory
- Quality of Life Inventory

**Data analysis:** The interdisciplinary and intersectoral research team jointly completed thematic analysis of qualitative data with hand-coding of reflective writings and comments within the questionnaires. Throughout the project design, implementation and analysis a guiding framework of empowerment and capability theories was the lens for which we viewed the project. A highly collaborative approach to the project at all stages meant that government, university, non-profit organizations, leaders and participants were all involved and able to offer direction and suggestions for the final interpretation and analysis. Presentation of the preliminary findings to research colleagues, collaborating partners including research assistants and participants facilitated further confirmation of the themes and interpretation of data. For qualitative data analysis several meetings and iterations of themes were drawn from the raw data in reflective writing forms and from questionnaires which were organized into initial preliminary categories based on dominant presentation of concepts. Empowerment and capabilities theory (Freire, 1970; Nussbaum, 2006) as well as quality of life frameworks (National Mental Wellbeing Impact Assessment Collaborative, 2011) guided the analysis. Categories found were organized under the central themes they were a part of and presented in a figure (see Figure 1) as well as narrative descriptions with quoted accounts.
With the assistance of a university faculty biostatistician, survey data was analyzed and presented in the following ways:

- Survey 1 (Mental Health and Mental Well-Being Impact Questionnaire) - Histogram, Bar charts and percentages
- Survey 2 (Beck Depression Inventory) – Means and medians
- Survey 3 (Quality of Life Inventory) - Means and medians

**Key Findings**

This analysis of inclusion as an activity in a social relation in a time and place is a solidly Freire'ian (Freire, 1970) approach and which fits our overarching analytic lens of capability theory (Nussbaum, 2006). Strong themes emerged about experiences in nature for adults with disabilities and their caregivers/supports, and three related themes emerged about the meaning of inclusion in nature for adults with disabilities and their caregivers (see Figure 1):

1) Sensory Activation: sensory experience of place in nature (e.g. sitting by water, touching the caves, watching wheelchair on the shore), and structured and unstructured aspects of recreation (e.g. eating outside, exploring)
2) Social Relations: new experiences of self and others, and
3) Reimagined Time and Place: represented an altered experience of time, and a sense of self in place and time. We heard about experiences of time and timelessness in nature as well as weight and weightlessness. The notion of “escape” was important within this theme. These experiences also prompted a reimagining and shifting of priorities and desires (in particular wanting more time in nature).

**Figure 1 Qualitative Themes**

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Alberta Addiction and Mental Health Research Partnership Program 4
Some of the surprising elements of our analysis that stood out were: a missing emphasis on the relationship – and expected differences in the experience - between “helpers” and “helped” individuals, and a missing concern with institutional or organizational expectations. These were expected elements of concern that did not feature in the participants’ responses, though were not a focal point of questioning or analysis in the study. For many participants and caregivers, issues of inclusion are often complicated, coordinated and shaped by institutional rules, safety/risk measures and so on. The fact that participants were not preoccupied with these institutional and organizational factors may demonstrate the respite that nature interventions enable for all involved – a chance to take a break from the rules and roles that normally consume everyday life for adults with disabilities and their caregivers.

Other surprises in the findings were the emphasis and role of environmental education and interpretation in the nature experience and enjoyment; both the experiences that were facilitated and un-facilitated by park leaders or interpreters were recalled and described in great detail, “I will never forget passing along the butterfly as we walked in the rain”. The strong focus on sensory experiences of hearing water, touching a cave, the taste of one’s lunch while sitting by a lake, feeling the warmth of the sun, etc., these were the experience and whether it was highly structured or not seemed not to matter to the impact of the experience on participants. For others the strong playful experience was highlighted. While in many instances the inclusion was challenged by weather or physical demands and considerable responsibilities of both those with disabilities and their caregivers, the “work” of inclusion was never mentioned, only a sense of child-like playfulness. Reflections such as: “I can’t remember the last time I had so much fun just playing in the leaves” were frequently noted by participants.

Statistical Analysis of Survey 1 - Mental Health and Mental Well-being Impact Questionnaire:
Descriptive statistics were calculated to demographic data using measures of central tendency and frequencies. Microsoft Excel® was used in all statistical analyses. Statistical results from survey questionnaires indicate a mean reduction in Beck Depression Inventory scores from a rating of mild depression to minimal following inclusive nature experiences. They also reveal increase in both the importance and satisfaction of Health, Helping, Love, Friends, and Community (based on standardized Quality of Life Indicator (QOLI)).

Pre-trip Demographic Characteristics: Altogether, 43 females (61%) and 27 males (39%) participated in the pre-trip nature survey. Age distribution of the pre-trip survey participants is slightly right skewed with roughly 66% of them under the age of 35 years. Of the participants 30 identified as having a disability and 36 as not being disabled, with 4 responses as “other”.

Post-trip Demographic Characteristics: Altogether, 8 females (73%) and 3 males (27%) participated in the post-trip nature survey. The post-trip sample data is a very small.

Statistical Analysis of Survey 2 - Beck Depression Inventory Questionnaire:
The statistical data obtained from the Beck Depression Inventory (BDI) questionnaire was used to determine if the nature activities program makes a difference in the way participants think about themselves. The BDI provides a quantitative assessment of depressive symptoms in different populations. Of the 51 participants who submitted the pre-trip BDI questionnaire roughly 40 participants did not answer the post-trip BDI questionnaire, leaving only 11 participants in the study sample. No cut-offs for the BDI scores were available to distinguish between good and poor, we computed the total score and descriptive measures such as mean and median are reported.

In this study, the inclusion of participants having no disability may have skewed the data, making it difficult to obtain statistically significant pre vs post results for the disability specifiers. However for the sample of 11 participants that completed both the pre-and post-trip BDI, the pre-trip median values of the BDI score was 11 points, indicating mild depression. Whereas post-trip median values of the BDI score for the same participants was only 3 points, or minimal to no depression. This demonstrates that the BDI scores were considerably decreased post-trip, indicating a change from a score of mild depression to minimal or no depression following the nature experience.
We do not have specific information on what percentage of BDI survey respondents were disabled and those participating in the study identified themselves in a number of ways as disabled, not and some which were accounted for as “other” (for instance some of the caregiversassistants on the nature experiences themselves had visual, cognitive or physical impairments; therefore it is not possible to conduct a valid statistical analysis of only disabled participants. Future studies may want to seek more specific identifiers of (dis)abilities, however this was purposefully not the focus of this study. Rather, this study chose to maintain greater emphasis on the experiences of inclusion rather than (dis)ability. The inclusion of participants having no disability may have skewed the data, making it difficult to obtain statistically significant pre vs post results. However for a sample of 11 participants the pre-trip median values of the BDI score was 11 points. Whereas post-trip median values of the BDI score for the same 11 participants was only 3 points. This demonstrates that the BDI scores have considerably decreased post-trip.

Statistical Analysis of Survey 3 - Quality of Life Inventory Questionnaire:
For the Quality of Life Inventory (QOLI) questionnaire we computed the total score for each scale and descriptive measures such as mean and medians are reported.

<table>
<thead>
<tr>
<th>Scale</th>
<th>Pre-trip QOLI Importance (mean/median values)</th>
<th>Post-trip QOLI Importance (mean/median values)</th>
</tr>
</thead>
<tbody>
<tr>
<td>HEALTH</td>
<td>1.70/2</td>
<td>1.86/2</td>
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<tr>
<td></td>
<td>2.22/2</td>
<td>2.16/2</td>
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<tr>
<td>SELF</td>
<td>1.59/2</td>
<td>1.73/2</td>
</tr>
<tr>
<td>ESTREEM</td>
<td>2.00/2</td>
<td>2.24/2</td>
</tr>
<tr>
<td>PLAY</td>
<td>1.73/2</td>
<td>1.65/2</td>
</tr>
<tr>
<td></td>
<td>2.22/2</td>
<td>1.73/2</td>
</tr>
<tr>
<td>CREATIVITY</td>
<td>1.41/2</td>
<td>1.32/1</td>
</tr>
<tr>
<td></td>
<td>1.70/2</td>
<td>1.70/2</td>
</tr>
<tr>
<td>HELPING</td>
<td>1.51/2</td>
<td>1.57/2</td>
</tr>
<tr>
<td></td>
<td>2.03/2</td>
<td>2.22/2</td>
</tr>
<tr>
<td>LOVE</td>
<td>1.65/2</td>
<td>1.59/2</td>
</tr>
<tr>
<td></td>
<td>1.46/2</td>
<td>2.24/3</td>
</tr>
<tr>
<td>FRIENDS</td>
<td>1.62/2</td>
<td>1.81/2</td>
</tr>
<tr>
<td></td>
<td>2.05/3</td>
<td>2.27/2</td>
</tr>
<tr>
<td>COMMUNITY</td>
<td>1.46/1</td>
<td>1.57/2</td>
</tr>
<tr>
<td></td>
<td>2.08/2</td>
<td>2.17/2</td>
</tr>
</tbody>
</table>

Note: Importance is rated in a 3 point scale of 1: not important, 2: Important, and 3: Very important. Satisfaction is rated on a 6 point scale ranging from -3: Very dissatisfied, -2: Somewhat dissatisfied, -1: A little dissatisfied, +1: A little satisfied, +2: Somewhat satisfied, and +3: Very satisfied.

Responses from the post-trip QOLI questionnaire demonstrate that the importance of Health, Helping, Love, Friends and Community were perceived positively by participants. There was a slight decrease (drop in mean scores) in the perception of Play and Creativity while Self-esteem did not change from pre- to post-trip. Responses also demonstrate that the satisfaction scores for all scales increases from pre- to post-trip except for Play (See Table 2 for details). Measures of well-being such as satisfaction in health and satisfaction in love scores showed highest improvements.

Given the very small sample size, and the basic level of statistical analysis, the above descriptive measures can perhaps be viewed best as a case study. Therefore, any reported results are not readily generalizable. We note that results from this study can be used to further explore possible trends towards this direction in a larger study.

Conclusions
While considerable challenges to data collection emerged in this study, limiting the volume of post-intervention data sets, the results of this study do highlight several important findings. There appears to be a promising relationship between inclusive nature experiences and depression, satisfaction with
health, love, relationships, helping and community. The limitations were primarily due to the readability of our chosen survey instruments and need for support and interpretation in particular for participants with cognitive and developmental disabilities, though also from the volume of survey material to complete. We believe the higher number of completed pre-surveys (vs. post-surveys) was driven by excitement about the coming experience and willingness to work through the instruments, as well as a post-trip fatigue that made the surveys seem more onerous.

Surprises from the study include extensive role of environmental education and interpretation in the nature experience, focus on sensory experiences of hearing water, warmth and feeling of the sun, etc. and the child-like/playful sense of the experience. Missing was expected distinction between helper/helped roles which makes sense given the projects focus on inclusion and aggregated disabled and caregiver data.

The research invited engagement from government and non-governmental organization funders and collaborative partners. The cross pollination of agencies through this project has itself been an innovative exercise, one that has demonstrated the benefits of inter-sectoral work for health and environment.

Inclusion in nature for both caregivers and adults with disability holds promise as an intervention that can support mental wellbeing and a reimagining of one’s-self in the physical environment. This pilot study demonstrates particular sensory, relational and physical experiences are enhanced in an inclusive nature experience. Further, indicators of wellbeing such as depression, relationships with others and perception of health show potential for improvement with inclusive nature interventions. These findings will prove useful to program development and design for inclusive nature interventions for those at risk of depression or threats to wellbeing.

**Implications for Policy or Practice**

We have uncovered future lines of inquiry to influence the system of care in order to support the self-esteem and mental well-being of seniors and other specific populations of persons with disabilities through upstream nature interventions that involve inclusion in nature as part of health and community practice more broadly. Implications of the study extend to provincial action plans and decisions for parks, adaptive nature programs, participating volunteers, health and recreation therapy practice, teaching and training of mental health workers, as well as the scholarly literature concerned with evidence for strengths-based mental health interventions. This research invited engagement from government and non-governmental organization funders and collaborative partners, which was another positive outcome of the study. The collaboration among agencies through this project has itself been an innovative exercise, one that has demonstrated the potential benefits of inter-sectoral work for better health and environment outcomes. Alberta Parks (Kananaskis Region) and Mount Royal University are now collaborating to complete an Alberta Parks-funded study ($10,000) this year related to nature effects on palliative care patients and caregivers. This same collaborative research team is also pursuing a grant to study effects of nature experiences on post-treatment cancer patients.

Our collaboration in this CRGI study affirmed the strength of inter-sectoral and interdisciplinary research and practice. Parks Division will continue to support studies on nature as a therapeutic intervention and explore the impacts of inclusive outdoor recreation on health. As a result of the collaboration a formal Memorandum of Understanding between Mount Royal University (Institute for Environmental Sustainability) and Alberta Tourism, Parks and Recreation (Kananaskis Region) is being established to encourage future collaborative social research. The integration of parks and health sectors in this project has established a relationship that is at the cutting edge of health and environment practice. It is a relationship that, itself, is worthy of future study. In terms of practice, this study provides two exciting opportunities for service providers and individuals seeking new approaches to care.

First, the study illustrates multiple positive impacts of nature experiences on the well-being of person with disabilities and on their caregivers. While some individuals may already intuitively know this, others may be unaware of the benefits or be unable to articulate a plan for incorporating nature experiences into their practice. This study presents an intervention model that can inform individual and institutional program development. In addition, the positive collaboration through this work can serve as an open invitation for practitioners to connect with like-minded groups and build upon promising practices.
Second, this study explores evaluation tools that can be easily applied to ongoing evaluation and results based planning of front-line programs. For example, aside from building knowledge related to the effect of nature on mental health and well-being, the QOLI or BDI (or a modified version of the survey) could be used as ongoing measurement tools for service providers hoping to evaluate their programs and share results to stakeholders and funders. It is the hope of the researchers that this would also lead to a larger volume of comparable data that informs and supports future development and application of nature-based interventions.

DIRECTIONS FOR FURTHER RESEARCH

Results of this study provide a strong platform for future study and point the direction to specific questions such as “do nature experiences impact caregivers and persons with disabilities differently, and how do these impacts affect the helper/helped relationship?” That is, while we purposefully aggregated caregiver and participant results in the name of inclusivity, the helper/helped relationship is a complex and potentially rich area of study.

Replication of this study with the use of adapted or different survey instruments would be indicated as we did face considerable challenges in the completion of surveys for our population. Advancing these studies with new and innovative methods (such as longitudinal studies or video ethnography or other approaches) and exploring different interventions (for instance distinct nature interventions – urban, rural etc) and for different populations (age groups, distinct disabilities or illnesses, and for special populations such as those in recovery from addictions, new immigrants, veterans, and so on) would be appropriate directions for future research.

KNOWLEDGE DISSEMINATION AND TRANSLATION ACTIVITIES

We have experienced interest from various sectors and at multiple levels of decision making. Invitations to present the work in progress, preliminary findings and discoveries have been widespread. Several knowledge translation (KT) activities have taken place with several more proposed over the next 6 months now that a more sophisticated analysis is being developed (see publications and presentations section).

PRINCIPAL APPLICANT (TEAM LEADER)

<table>
<thead>
<tr>
<th>Name</th>
<th>Position Title</th>
<th>Topics of interest</th>
</tr>
</thead>
<tbody>
<tr>
<td>Don Carruthers Den Hoed</td>
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</tr>
<tr>
<td></td>
<td>Lead and Public Engagement Team</td>
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<tr>
<td></td>
<td>Lead, Kananaskis Region, AB</td>
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<td></td>
<td>Tourism Parks and Recreation</td>
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PROJECT PARTNERS (TEAM MEMBERS)

<table>
<thead>
<tr>
<th>Name</th>
<th>Position Title</th>
<th>Role</th>
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<tbody>
<tr>
<td>Sonya Jakubec</td>
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<td>Principal Investigator – research design, data analysis/synthesis, report writing, manuscript preparation</td>
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<tr>
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<td>Research Coordinator – project management, manuscript preparation</td>
</tr>
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<td>Collaborator – participant recruitment</td>
</tr>
<tr>
<td>Jamie McCulloch</td>
<td>General Manager, The Rocky Mount Adaptive Sport Centre</td>
<td>Collaborator – participant recruitment</td>
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<tr>
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</tr>
<tr>
<td>Alexis Cooper</td>
<td>Undergraduate Research Assistant</td>
<td>Questionnaire formatting, database development, recruitment support, data collection/entry</td>
</tr>
<tr>
<td>Ashok Krishnamurthy</td>
<td>Contractor/Consultant</td>
<td>Statistical Analysis</td>
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**PUBLICATIONS AND PRESENTATIONS**

**Publications:**

**Completed Presentations:**


Jakubec, S. L, Carruthers Den Hoed, D., Danelesko, E., & Durham, K. (2011, December). Upstream mental health promotion – A three phase study of inclusive parks programming. Faculty Scholars’ Showcase, Faculty of Health and Community Studies, Mount Royal University, Calgary, AB.


**Upcoming Presentations (July-December 2013):**

*Community/Collaborators Outreach Presentation* (Presentation of Findings)
- Rocky Mountain Adaptive Sports Centre (Canmore, AB)
- Push to Open Nature Society (Red Deer, AB)
- Prospect (Calgary, AB)
- Outward Bound (Canmore, AB)

*Academic Presentations* (Presentation of Findings, Research Process, Community University Partnerships, Student Engagement in Research)
- Mount Royal University – Faculty of Health and Community Studies, university community
- University of Calgary - Disability Studies

*Decision Maker Presentation* (Presentation of Findings and Report for Decision Making)
- AB Parks (Canmore, Edmonton)
- Ministry of Tourism, Parks and Recreation (Edmonton)

**Upcoming Publications (July-December 2013):**
- Jakubec, S. L, Carruthers Den Hoed, D., Danelesko, E., Krishnamurthy, A., & Cooper, A. Submission to Public Mental Health
- Jakubec, S. L, Carruthers Den Hoed, D., Danelesko, E., Krishnamurthy, A., & Cooper, A. Submission to Health and Place
ABOUT THE ALBERTA ADDICTION AND MENTAL HEALTH RESEARCH PARTNERSHIP PROGRAM

The Alberta Addiction and Mental Health Research Partnership Program is comprised of a broad-based multi-sectoral group, representing service providers, academic researchers, policy-makers and consumer groups, working together to improve the coordination and implementation of practice-based addiction and mental health research in Alberta.

The mission of the Research Partnership Program is to improve addiction and mental health outcomes for Albertans along identified research priority themes, by generating evidence and expediting its transfer into addiction and mental health promotion, prevention of mental illness, and innovative service delivery.

The Research Partnership Program sets out to increase Alberta’s excellence and output of addiction and mental health research findings, and to better translate of these findings into practice improvements.

REFERENCES


Bowler, D.E., Knight, T.M., Pullin, A.S. (2009). The value of contact with nature for health promotion: how the evidence has been reviewed. Centre for Evidence-Based Conservation, School of the Environment and Natural Centre for Evidence-Based Conservation, School of the Environment and Natural


APPENDIX A – SURVEY INSTRUMENTS

An Examination of the Lived Experiences and Mental Well-being Impacts of a Nature Intervention for Adults with Disabilities and their Caregivers

The purpose of this project is to understand the mental health and mental well-being impacts of participating in the Adaptive Kananaskis Challenge or other Adaptive Nature Experiences.

Specifically, the study aims to examine the following questions:

- What changes, if any, to mental health and mental well-being occur through inclusion in adaptive nature experiences and/or the Adaptive Kananaskis Challenge?
- How is quality of life of participants impacted by inclusion in nature experiences?

The tools for examining these questions include:

- Quality of Life Inventory
- Beck Depression Inventory
- Nature Inclusion and Mental Well-being Impact Questionnaire
  (This self-administered survey was developed using both a Population Health/Ecological Model framework utilizing Indicators of Well-being in Canada found at: http://www4.hrsdc.gc.ca/home.jsp?lang=en; and a 2011 UK National Mental Well-being Impact Assessment Tool from the National Mental Well-being Impact Assessment Collaborative found at: http://www.apho.org.uk/resource/item.aspx?RID=95836)
- Adaptive Nature Self-Reflection notes and optimal photos of your experiences in nature

This study has not been undertaken before, and is a place to begin to contribute to research for mental health and Provincial Parks programs.

Nature Inclusion and Mental Well-being Impact Questionnaire

These questions are intended to provide an initial understanding of and to uncover further directions for research.

Instructions:

For this survey, participants are asked to place a check mark [✓] by their responses and add comments where indicated. If necessary or helpful, participants may have the Research Assistant read and write down responses as directed by the participant.
**Demographic Information** (please place a check mark [✓] by your response)

1. **How old are you?**
   - □ 18 – 25
   - □ 26 – 35
   - □ 36 – 45
   - □ 46 – 55
   - □ 56 – 65
   - □ 66+

2. **What is your gender?**
   - □ Male
   - □ Female
   - □ Transgendered
   - □ Prefer not to say

3. **Is your general health:**
   - □ Improving
   - □ Getting worse
   - □ Staying the same

4. **Do you live with a disability?**
   - □ Yes
   - □ No

   4a. **If yes, please describe:**
   - □ Hearing
   - □ Seeing
   - □ Speech / Communication
   - □ Mobility
   - □ Agility
   - □ Learning
   - □ Memory
   - □ Developmental / Cognitive
   - □ Pain
   - □ Emotional / Psychological
   - □ Other: ________________

5. **What is your role in the nature activity/experience?**
   - □ Participant in a trail-rider, adapted bike, boat or other equipment
   - □ Assistant to carry the trail-rider or other equipment
   - □ Observer or support person alongside friend or family member
   - □ Other: ____________________________

6. **What is the highest level of school you have completed?**
   - □ Elementary
   - □ Junior High
   - □ High School
   - □ College
   - □ University

7. **What is your source of income?**
   - □ Employment Income
   - □ AISH
   - □ Other

8. **Describe your work life and the associated number of hours:**
   - □ Volunteer: Hours per week ________
   - □ Occasional / Temporary Employment: Hours per week ________
   - □ Part-time Employment: Hours per week ________
   - □ Full-time Employment: Hours per week ________
   - □ Student: Hours per week ________
   - □ Other: ____________________________ Hours per week ________

9. **Describe your living situation:**
   - **Independent:**
     - □ Alone
     - □ With partner
     - □ With room-mate
   - **Semi-independent:**
     - □ Group home
     - □ Approved home
     - □ Family/partner
     - □ Room-mate
     - □ Shelter
     - □ Other: ____________________________
Instructions: (please place a check mark [✓] by your response – there are 23 questions).

Nature experiences include activities in a place that is primarily undisturbed by people, such as a park, but not outdoor recreation activities that take place in a formal site such as a playing field or backyard.

1. Being active in nature is important to me.
   □ Strongly Agree  □ Agree  □ Neutral  □ Disagree  □ Strongly Disagree
   Comments:

2. Relaxing in nature is important to me.
   □ Strongly Agree  □ Agree  □ Neutral  □ Disagree  □ Strongly Disagree
   Comments:

3. Spending time with others in nature is important to me.
   □ Strongly Agree  □ Agree  □ Neutral  □ Disagree  □ Strongly Disagree
   Comments:

4. I talk about my participation in nature activities with others.
   □ Agree  □ Disagree
   Comments:

5. I am involved in nature activities.
   □ Agree  □ Disagree
   Comments:

6a. I attend nature activities (physical and non-physical) that are NOT connected to the Kananaskis Adaptive Challenge.
   □ Agree  □ Disagree
   If Agree, go to question 6b.

6b. The types of activities in nature I participate in outside of the Kananaskis Challenge are:

7a. I feel I have enough time for nature experiences of any kind.
   □ Agree  □ Disagree
7b: How much time do you spend in a nature activity per week?
- None  -  1-60 min  -  1-2 hours  -  2-3 hours  -  3-5 hours  -  6+ hours

Comments:

8a. I feel I have enough time for non-physically active nature experiences (time outside in nature relaxing, sight-seeing, picnicking, etc).
- Agree  -  Disagree

8b. How much time do you spend on non-physically active nature experiences (time outside in nature relaxing, sight-seeing, picnicking, etc) per week?
- None  -  1-60 min  -  1-2 hours  -  2-3 hours  -  3-5 hours  -  6+ hours

Comments:

9a. I feel I have enough time for physically active, recreational nature experiences (time outside in nature hiking/walking or trail-riding, biking, skiing, snow-shoeing, sailing, climbing, kayaking, canoeing, etc).
- Agree  -  Disagree

9b. How much time do you spend on physically active nature experiences (time outside in nature hiking/walking or trail-riding, biking, skiing, snow-shoeing, sailing, climbing, kayaking, canoeing, etc) per week?
- None  -  1-60 min  -  1-2 hours  -  2-3 hours  -  3-5 hours  -  6+ hours

Comments:

10. I am satisfied that the amount I take part in nature experiences meets my needs for overall well-being.
- Strongly Agree  -  Agree  -  Neutral  -  Disagree  -  Strongly Disagree

Comments:

11: I am satisfied that my current participation in nature experiences meets my social needs.
- Strongly Agree  -  Agree  -  Neutral  -  Disagree  -  Strongly Disagree

Comments:

12a. I feel I have enough money to participate in nature experiences.
- Agree  -  Disagree

12b. Approximately how much do you spend per month participating in nature experiences (ie. costs for events, park fees, transportation expenses, lodging, equipment rental, other supports such as caregiving or babysitting expenses)?
- $0  -  $1 - $10  -  $11 - $25  -  $26 - $50  -  $51 - $100  -  $101 - $200  -  $201+

Comments:
13a. I feel I can easily get to nature experiences I would like to participate in.
☐ Agree ☐ Disagree

If Disagree, can you describe problems, barriers, challenges you may face?

What one thing could most improve your ability to experience nature as much as you would like?

13b: My transportation to nature experiences includes (check (√) all that apply):

Public Transport:
☐ Walking ☐ Bus ☐ Train ☐ Access Calgary

Vehicle:
☐ Own ☐ Borrowing ☐ Car pool ☐ Other: ________

Comments:

14. When out in nature I feel more optimistic about my general health and mental well-being.
☐ Strongly Agree ☐ Agree ☐ Neutral ☐ Disagree ☐ Strongly Disagree

Comments:

15. Participation in nature experiences changes my mood for the better.
☐ Strongly Agree ☐ Agree ☐ Neutral ☐ Disagree ☐ Strongly Disagree

Comments:

16. Participation in nature experiences changes my experiences of anxiety (of any level) for the better.
☐ Strongly Agree ☐ Agree ☐ Neutral ☐ Disagree ☐ Strongly Disagree

Comments:

17. Participation in nature activities increases my energy level.
☐ Strongly Agree ☐ Agree ☐ Neutral ☐ Disagree ☐ Strongly Disagree

Comments:

18. Participation in nature activities improves my confidence in my ability to make decisions.
☐ Strongly Agree ☐ Agree ☐ Neutral ☐ Disagree ☐ Strongly Disagree

Comments:
19. Participation in nature activities has a positive influence on my sense of belonging.
   □ Strongly Agree  □ Agree  □ Neutral  □ Disagree  □ Strongly Disagree

Comments:

20. Participation in nature activities has a positive influence on my relationships.
   □ Strongly Agree  □ Agree  □ Neutral  □ Disagree  □ Strongly Disagree

Comments:

21: Participation in nature activities has a positive effect on my satisfaction and enjoyment of
nature and the environment.
   □ Strongly Agree  □ Agree  □ Neutral  □ Disagree  □ Strongly
Disagree

Comments:

22: Participation in nature activities improves my care and concern for nature and the
environment.
   □ Strongly Agree  □ Agree  □ Neutral  □ Disagree  □ Strongly
Disagree

Comments:

23: Participation in nature activities has improved my conservation and social activism for nature
and the environment.
   □ Strongly Agree  □ Agree  □ Neutral  □ Disagree  □ Strongly
Disagree

Comments:

Thank you for participating!
Name: ____________________________ Marital Status: _______ Age: _____ Sex: _______
Occupation: ______________________ Education: _______________

Instructions: This questionnaire consists of 21 groups of statements. Please read each group of statements carefully, and then pick out the one statement in each group that best describes the way you have been feeling during the past two weeks, including today. Circle the number beside the statement you have picked. If several statements in the group seem to apply equally well, circle the highest number for that group. Be sure that you do not choose more than one statement for any group, including Item 16 (Changes in Sleeping Pattern) or Item 18 (Changes in Appetite).

| 1. Sadness                                                                 |
| 0  I do not feel sad.                                                      |
| 1  I feel sad much of the time.                                            |
| 2  I am sad all the time.                                                  |
| 3  I am so sad or unhappy that I can't stand it.                          |

| 2. Pessimism                                                              |
| 0  I am not discouraged about my future.                                  |
| 1  I feel more discouraged about my future than I used to be.             |
| 2  I do not expect things to work out for me.                            |
| 3  I feel my future is hopeless and will only get worse.                  |

| 3. Past Failure                                                          |
| 0  I do not feel like a failure.                                          |
| 1  I have failed more than I should have.                                |
| 2  As I look back, I see a lot of failures.                              |
| 3  I feel I am a total failure as a person.                              |

| 4. Loss of Pleasure                                                      |
| 0  I get as much pleasure as I ever did from the things I enjoy.         |
| 1  I don't enjoy things as much as I used to.                            |
| 2  I get very little pleasure from the things I used to enjoy.           |
| 3  I can't get any pleasure from the things I used to enjoy.             |

| 5. Guilty Feelings                                                      |
| 0  I don't feel particularly guilty.                                    |
| 1  I feel guilty over many things I have done or should have done.      |
| 2  I feel quite guilty most of the time.                                |
| 3  I feel guilty all of the time.                                       |

| 6. Punishment Feelings                                                  |
| 0  I don't feel I am being punished.                                    |
| 1  I feel I may be punished.                                            |
| 2  I expect to be punished.                                             |
| 3  I feel I am being punished.                                          |

| 7. Self-Dislike                                                         |
| 0  I feel the same about myself as ever.                                |
| 1  I have lost confidence in myself.                                    |
| 2  I am disappointed in myself.                                         |
| 3  I dislike myself.                                                    |

| 8. Self-Criticalness                                                    |
| 0  I don't criticize or blame myself more than usual.                   |
| 1  I am more critical of myself than I used to be.                      |
| 2  I criticize myself for all of my faults.                             |
| 3  I blame myself for everything bad that happens.                     |

| 9. Suicidal Thoughts or Wishes                                          |
| 0  I don't have any thoughts of killing myself.                         |
| 1  I have thoughts of killing myself, but I would not carry them out.  |
| 2  I would like to kill myself.                                         |
| 3  I would kill myself if I had the chance.                             |

| 10. Crying                                                              |
| 0  I don't cry anymore than I used to.                                  |
| 1  I cry more than I used to.                                           |
| 2  I cry over every little thing.                                       |
| 3  I feel like crying, but I can't.                                     |

Subtotal Page 1

Continued on Back
11. Agitation
0  I am no more restless or wound up than usual.
1  I feel more restless or wound up than usual.
2  I am so restless or agitated that it's hard to stay still.
3  I am so restless or agitated that I have to keep moving or doing something.

12. Loss of Interest
0  I have not lost interest in other people or activities.
1  I am less interested in other people or things than before.
2  I have lost most of my interest in other people or things.
3  It's hard to get interested in anything.

13. Indecisiveness
0  I make decisions about as well as ever.
1  I find it more difficult to make decisions than usual.
2  I have much greater difficulty in making decisions than I used to.
3  I have trouble making any decisions.

14. Worthlessness
0  I do not feel I am worthless.
1  I don't consider myself as worthwhile and useful as I used to.
2  I feel more worthless as compared to other people.
3  I feel utterly worthless.

15. Loss of Energy
0  I have as much energy as ever.
1  I have less energy than I used to have.
2  I don't have enough energy to do very much.
3  I don't have enough energy to do anything.

16. Changes in Sleeping Pattern
0  I have not experienced any change in my sleeping pattern.
1a  I sleep somewhat more than usual.
1b  I sleep somewhat less than usual.
2a  I sleep a lot more than usual.
2b  I sleep a lot less than usual.
3a  I sleep most of the day.
3b  I wake up 1–2 hours early and can't get back to sleep.

17. Irritability
0  I am no more irritable than usual.
1  I am more irritable than usual.
2  I am much more irritable than usual.
3  I am irritable all the time.

18. Changes in Appetite
0  I have not experienced any change in my appetite.
1a  My appetite is somewhat less than usual.
1b  My appetite is somewhat greater than usual.
2a  My appetite is much less than before.
2b  My appetite is much greater than usual.
3a  I have no appetite at all.
3b  I crave food all the time.

19. Concentration Difficulty
0  I can concentrate as well as ever.
1  I can't concentrate as well as usual.
2  It's hard to keep my mind on anything for very long.
3  I find I can't concentrate on anything.

20. Tiredness or Fatigue
0  I am no more tired or fatigued than usual.
1  I get more tired or fatigued more easily than usual.
2  I am too tired or fatigued to do a lot of the things I used to do.
3  I am too tired or fatigued to do most of the things I used to do.

21. Loss of Interest in Sex
0  I have not noticed any recent change in my interest in sex.
1  I am less interested in sex than I used to be.
2  I am much less interested in sex now.
3  I have lost interest in sex completely.

NOTICE: This form is printed with both blue and black ink. If your body does not appear this way, it has been photocopied in violation of copyright law.

Alberta Addiction and Mental Health Research Partnership Program
1. Print your name, identification number, age, gender, and test date on the right side of the page.

2. Use a No. 2 pencil only and make heavy, dark marks when responding to the questions.

3. If you want to change an answer, erase it carefully and then fill in your new choice.

4. Do not make any marks outside the circles.

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DIRECTIONS:

This survey asks how satisfied you are with parts of your life such as your work and your health. It also asks how important these things are to your happiness. Special definitions are used for words like “money,” “work,” and “play.” Keep these definitions in mind as you answer the questions. Answer every question, even if it does not seem to apply to you. It is your feelings and opinions that are important, so there are no right or wrong answers. Just give the answers that best describe you.

The survey asks you to describe how important certain parts of your life (such as work and health) are and how satisfied you are with them.

**Important** means how much this part of your life adds to your overall happiness. You can say how important something is by picking one of three choices: “Not Important” (0), “Important” (1), or “Extremely Important” (2).

**Satisfied** means how well your needs, goals, and wishes are being met in this area of life. You can say how satisfied you are by picking one of six choices from “Very Dissatisfied” (-3) to “Very Satisfied” (+3).

For each question, blacken the circle that best describes you.

EXAMPLE:

This is how you would answer if WORK was “Important” to your overall happiness:

- Not Important
- Important
- Extremely Important

You would answer this way if you were “Somewhat Satisfied” with your WORK:

- Very Dissatisfied
- A Little
- A Little
- Somewhat Satisfied
- Very
HEALTH is being physically fit, not sick, and without pain or disability.

1. How important is HEALTH to your happiness?

   0  1  2
   Not Important Important Extremely Important

2. How satisfied are you with your HEALTH?

   -3 -2 -1 0 1 2 3
   Very Somewhat A Little Somewhat Very
   DISSATISFIED SATISFIED

SELF-ESTEEM means liking and respecting yourself in light of your strengths and weaknesses, successes and failures, and ability to handle problems.

3. How important is SELF-ESTEEM to your happiness?

   0  1  2
   Not Important Important Extremely Important

4. How satisfied are you with your SELF-ESTEEM?

   -3 -2 -1 0 1 2 3
   Very Somewhat A Little Somewhat Very
   DISSATISFIED SATISFIED

GOALS-AND-VALUES are your beliefs about what matters most in life and how you should live, both now and in the future. This includes your goals in life, what you think is right or wrong, and the purpose or meaning of life as you see it.

5. How important are GOALS-AND-VALUES to your happiness?

   0  1  2
   Not Important Important Extremely Important

6. How satisfied are you with your GOALS-AND-VALUES?

   -3 -2 -1 0 1 2 3
   Very Somewhat A Little Somewhat Very
   DISSATISFIED SATISFIED

MONEY is made up of three things. It is the money you earn, the things you own (like a car or furniture), and believing that you will have the money and things that you need in the future.

7. How important is MONEY to your happiness?

   0  1  2
   Not Important Important Extremely Important

8. How satisfied are you with the MONEY you have?

   -3 -2 -1 0 1 2 3
   Very Somewhat A Little Somewhat Very
   DISSATISFIED SATISFIED

WORK means your career or how you spend most of your time. You may work at a job, at home taking care of your family, or at school as a student. WORK includes your duties on the job, the money you earn (if any), and the people you work with. (If you are unemployed, retired, or can't work, you can still answer these questions.)

9. How important is WORK to your happiness?

   0  1  2
   Not Important Important Extremely Important

10. How satisfied are you with your WORK? (If you are not working, say how satisfied you are about not working.)

   -3 -2 -1 0 1 2 3
   Very Somewhat A Little Somewhat Very
   DISSATISFIED SATISFIED

PLAY is what you do in your free time to relax, have fun, or improve yourself. This could include watching movies, visiting friends, or pursuing a hobby like sports or gardening.

11. How important is PLAY to your happiness?

   0  1  2
   Not Important Important Extremely Important

12. How satisfied are you with the PLAY in your life?

   -3 -2 -1 0 1 2 3
   Very Somewhat A Little Somewhat Very
   DISSATISFIED SATISFIED
**LEARNING** means gaining new skills or information about things that interest you. LEARNING can come from reading books or taking classes on subjects like history, car repair, or using a computer.

13. **How important is LEARNING to your happiness?**

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14. **How satisfied are you with your LEARNING?**

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**CREATIVITY** is using your imagination to come up with new and clever ways to solve everyday problems or to pursue a hobby like painting, photography, or needlework. This can include decorating your home, playing the guitar, or finding a new way to solve a problem at work.

15. **How important is CREATIVITY to your happiness?**

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16. **How satisfied are you with your CREATIVITY?**

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**HELPING** means helping others in need or helping to make your community a better place to live. HELPING can be done on your own or in a group like a church, a neighborhood association, or a political party. HELPING can include doing volunteer work at a school or giving money to a good cause. HELPING means helping people who are not your friends or relatives.

17. **How important is HELPING to your happiness?**

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18. **How satisfied are you with the HELPING you do?**

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**LOVE** is a very close romantic relationship with another person. LOVE usually includes sexual feelings and feeling loved, cared for, and understood. (If you do not have a LOVE relationship, you can still answer these questions.)

19. **How important is LOVE to your happiness?**

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20. **How satisfied are you with the LOVE in your life?** (If you are not in a LOVE relationship, say how satisfied you feel about not having a LOVE relationship.)

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**FRIENDS** are people (not relatives) you know well and care about who have interests and opinions like yours. FRIENDS have fun together, talk about personal problems, and help each other out. (If you have no FRIENDS, you can still answer these questions.)

21. **How important are FRIENDS to your happiness?**

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22. **How satisfied are you with your FRIENDS?** (If you have no FRIENDS, say how satisfied you are about having no FRIENDS.)

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CHILDREN means how you get along with your child (or children). Think of how you get along as you care for, visit, or play with your child. (If you do not have CHILDREN, you can still answer these questions.)

23. How **important** are CHILDREN to your happiness? (If you have no CHILDREN, say how important having a child is to your happiness.)

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24. How **satisfied** are you with your relationships with your CHILDREN? (If you have no CHILDREN, say how satisfied you feel about not having children.)

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RELATIVES means how you get along with your parents, grandparents, brothers, sisters, aunts, uncles, and in-laws. Think about how you get along when you are doing things together like visiting, talking on the telephone, or helping each other out. (If you have no living RELATIVES, blacken the 0 ['Not Important'] circle for question 25 and do not answer question 26.)

25. How **important** are RELATIVES to your happiness?

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26. How **satisfied** are you with your relationships with RELATIVES?

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HOME is where you live. It is your house or apartment and the yard around it. Think about how nice it looks, how big it is, and your rent or house payment.

27. How **important** is your HOME to your happiness?

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28. How **satisfied** are you with your HOME?

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NEIGHBORHOOD is the area around your home. Think about how nice it looks, the amount of crime in the area, and how well you like the people.

29. How **important** is your NEIGHBORHOOD to your happiness?

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30. How **satisfied** are you with your NEIGHBORHOOD?

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<tr>
<td>Very Dissatisfied</td>
<td>Somewhat Dissatisfied</td>
<td>A Little Dissatisfied</td>
<td>Somewhat Satisfied</td>
<td>Very Satisfied</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

COMMUNITY is the whole city, town, or rural area where you live (it is not just your neighborhood). COMMUNITY includes how nice the area looks, the amount of crime, and how well you like the people. It also includes places to go for fun like parks, concerts, sporting events, and restaurants. You may also consider the cost of things you need to buy, the availability of jobs, the government, schools, taxes, and pollution.

31. How **important** is your COMMUNITY to your happiness?

<table>
<thead>
<tr>
<th></th>
<th>0</th>
<th>1</th>
<th>2</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Not Important</strong></td>
<td><strong>Important</strong></td>
<td><strong>Extremely Important</strong></td>
<td></td>
</tr>
</tbody>
</table>

32. How **satisfied** are you with your COMMUNITY?

<table>
<thead>
<tr>
<th></th>
<th>3</th>
<th>2</th>
<th>1</th>
<th>-1</th>
<th>-2</th>
<th>-3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Very Dissatisfied</td>
<td>Somewhat Dissatisfied</td>
<td>A Little Dissatisfied</td>
<td>Somewhat Satisfied</td>
<td>Very Satisfied</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
PROBLEMS THAT GET IN THE WAY OF YOUR SATISFACTION

List any problems that get in the way of your satisfaction in each area of life. For example, if you do not get along with your boss and this makes WORK less satisfying, you may write “Don’t get along with boss” on this section of the answer sheet. Please take your time, be specific, and write as much as you can to help explain what reduces your satisfaction in each area of life.

Health

Self-Esteem

Goals-and-Values

Money

Work

Play

Learning

Creativity

Helping

Page 6
Love

Friends

Children

Relatives

Home

Neighborhood

Community

Please list additional problems or concerns
Adaptive Nature Self-Reflections

Please take a few minutes to respond to the questions below about this nature experience using words and/or photos to illustrate your experiences.

1. Please identify your role in the nature experience (i.e. participant in the trail-rider or adapted bike, kayak or other; assistant to carry the trail-rider or other assisted equipment; observer and participant alongside a family member, or other...)

2. At what moment during this experience did you feel most engaged with nature?

   Describe what was happening …

   Describe how you were feeling …

3. At what moment during this experience were you most distanced from nature?

   Describe what was happening …

   Describe how you were feeling …

4. What action did you or anyone else take that you found most affirming or helpful?

5. What action did you or anyone else take that you found most puzzling or confusing?

6. What about the nature experience surprised you the most?

7. Describe or explain the photograph reflections you would like to use to respond to any of the questions above.
APPENDIX C – STAKEHOLDER GROUP KT/PROMOTIONAL POSTER

NATURE, inclusion & mental health?

Alberta Tourism, Parks and Recreation and Mount Royal University invite you to learn about the results of their joint research study on the effects of inclusive parks programming on mental well-being.

June 12, 2013, 6:30 pm to 8:00pm
Fish Creek Environmental Learning Centre
13931 Woodpath Road S.W., Calgary

Light refreshments served at 6:30pm
Please RSVP to 403-678-5508
(toll-free by calling 310-0000)

This research is funded by Alberta Health Services and Alberta Human Services as part of the Collaborative Research Grant Initiative: Mental Wellness in Seniors and Persons with Disabilities, and by Alberta Tourism, Parks, and Recreation.