



Evaluation report for Generation Green



Assessing the Impact of Single Day Short Courses for Young People 2022

Report authors and contributors:

Dr Fiona Holland, Dr Caroline Harvey, Susan Gibson and Rhys Furlong
Nature Connectedness Research Group, University of Derby

Table of Contents

Executive Summary

Acknowledgements

1. Introduction to the evaluation context

2. Evaluation Methodology

2.1. Questionnaire measures used

2.2. Data collection

2.3. Participant details

3. Results

4. Conclusions

5. References

6. Appendices

Appendix A: Copy of the questionnaire

Appendix B: Statistical Analyses

Executive Summary

Mental health and wellbeing are global concerns and recent UK data reveals previous trends for increased wellbeing have been negatively impacted due to the coronavirus pandemic. One approach that may help to support wellbeing is improving our relationship with nature. Increased levels of Nature Connectedness (NC) have been linked to wellbeing gains, and this is of particular importance for young people who tend to disconnect from nature in their teens and twenties. It is clear that more can be done to support wellbeing, particularly for young people, and accessing and engaging meaningfully with nature could be one way to enhance wellbeing outcomes. Environmental-based education programmes have been encouraged to focus on providing experiences that promote NC in order to increase empathy for nature and benefit wellbeing. The UK has a variety of organisations that offer such programmes, and research suggests these can enhance social skills, active learning, imaginative play, self-esteem, and confidence in trying new activities. However, to date, little evaluation has been conducted on the impact of residential outdoor programmes in terms of nature connection and wellbeing. This collaborative research aimed to address this gap and evaluate these via a mixed methods approach.

The intervention involved supporting young people from a range of geographic locations and socioeconomic backgrounds to attend a one-day short course set in a nature-based environment. Young people aged 6-18 were asked to complete questionnaires across three time points (at the start of the day, at the end of the day and approximately 6-8 weeks afterwards). Only a small number of participants completed data at the third time point and so the primary analysis is focused on comparing data across the first two time points.

Results showed that levels of nature connectedness, inclusion of nature in self, confidence in working as part of a group, and confidence in making new friends had all increased significantly at the end of the single day short course. This shows the positive impact that short courses in the outdoors can have for young people in the short term.

However, no significant differences were found over time for looking after nature, or the two proxy measures of wellbeing – happiness and how good participants felt their life was. There was no significant difference for confidence in trying new things.

It was not possible to assess the long-term impact of the short course as insufficient numbers of questionnaires were completed at the third time point.

The outcomes support previous research by Leiflander et al. (2013) as the results indicate that the short course led to short term increases in nature connectedness, confidence in making friends, and working as part of a group and demonstrates the positive benefits that these types of short courses can have for young people. It is not possible to assess if any changes were maintained after the completion of the short course.

Acknowledgements

The report authors would like to thank Emma Ferris from The Outward Bound Trust for her help in co-developing the design of this project, and for her support in coordinating the logistics of the projects informing this evaluation. Thanks also go to the staff from the organisations who supported the young people during this project including the Field Studies Council, Girlguiding, National Parks, Scouts, and the YHA.

All images used in this report are reproduced courtesy of The Outward Bound Trust and partner organisations.

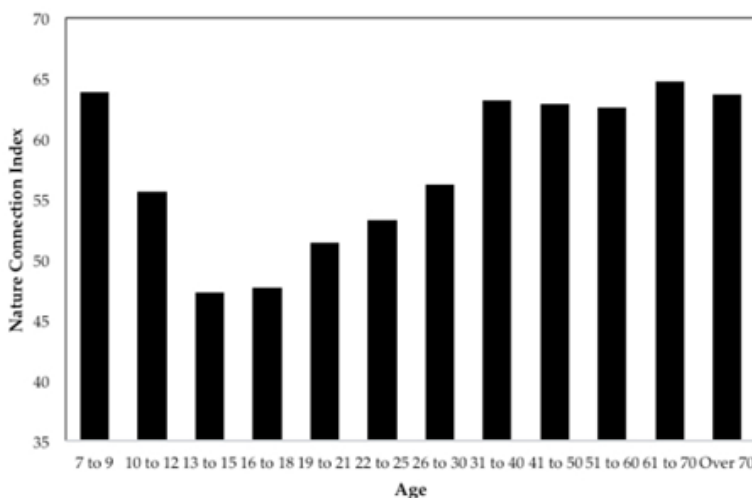
1. Introduction to the evaluation context

Mental health and wellbeing

Mental health is not just of an absence of ill-health but includes wellbeing (Passmore et al., submitted)- a state of optimal human functioning (Pritchard et al., 2019). Mental health and wellbeing are global concerns, of great interest to policy makers, practitioners and researchers and are measured in national (ONS, 2021) and international surveys (Gallup, 2020). The most recent UK data reveals previous trends for increased wellbeing have been negatively impacted due to the coronavirus pandemic. ONS data from 2021 shows higher levels of anxiety and reduced levels of happiness in adults. Children’s wellbeing has also been measured, and recently published data from the UK government (GOV.UK, 2021) suggests that although many young people broadly coped well during the pandemic, others fared less well, with higher levels of depressive symptoms, PTSD, and eating disorders being reported. Girls and young women, disadvantaged young people, and those with special educational needs were more likely to report challenges with their mental health and wellbeing. It is therefore important that interventions are developed to increase wellbeing on a population level.

Nature Connectedness

One approach that may help to support wellbeing is improving our relationship with nature. Increased levels of Nature Connectedness (NC) have been linked to wellbeing gains (Capaldi, Dopko & Zelenski, 2014; Pritchard et al., 2019). Kellert’s Biophilic values highlight the importance of nature for human wellbeing through cognitive, aesthetic, emotional and spiritual development (Kellert, 1993). These values- Utilitarian, Naturalistic, Ecologicistic-scientific, Aesthetic, Symbolic, Humanistic, Moralistic, Dominionistic and Negativistic- describe a human dependence on nature for fulfilling humans’ physical, emotional and meaningful needs (Kellert, 1993). However, despite the importance of nature for human development and wellbeing, evidence suggests that, within the UK, there is a teenage dip whereby young people’s NC reduces after the primary school years and this does not recover until people reach their mid-thirties (Richardson et al., 2019). It is clear that more can be done to support wellbeing particularly for young people and accessing and engaging meaningfully with nature could enhance wellbeing outcomes.



Levels of nature connectedness by age in the UK (Richardson et al., 2019)

Building on Kellert's Biophilic values, Lumber et al. (2017) proposed four pathways to improving connection to nature: Contact, Meaning, Emotion, Compassion and Beauty. These pathways suggest that activities which embody these five components can lead individuals to a relationship with nature that goes beyond appreciation. Other benefits of NC are that people with higher NC also demonstrate increased pro-conservation behaviour (Richardson et al. 2020), and biospheric concern (Schultz, 2001). Given the growing evidence around climate change and the need to care for the environment, it is important to understand more about the impact of interventions that may lead to increases in concern for the environment and environmentally protective behaviours. However, simply providing knowledge is not effective at motivating individuals to protect nature, therefore it is suggested that environmental-based education programmes should turn their focus to promoting NC in order to increased empathy for nature (Leiflander et al., 2013).

The intervention

Access Unlimited is a coalition of fifteen outdoor education providers delivering the Generation Green project, which aims to increase young people's connection with nature and support their wellbeing. These organisations are the Field Studies Council, Girlguiding, 10 English National Parks, Scouts, The Outward Bound Trust and YHA.

Outdoor environments allow children to experience risky play, which can provide a sense of challenge that nurture active learning and encourage imaginative play (Coe, 2016). Through hands on experiences such as this in nature, children can gain greater self-esteem, sense of empowerment (Maller, 2009) as well as gain greater self-efficacy and confidence in trying new activities and socialising (Fuller et al., 2017; Dopko et al., 2019). This study aims to evaluate the impact of single day short courses on young people's nature connectedness and wellbeing.

The intervention involved supporting young people from a range of geographic locations and socioeconomic backgrounds to attend a single day short course set in a nature-based environment.

All day courses were focused on helping young people to either connect with or care for nature, or both. The Five Pathways to Nature Connectedness were woven into the delivery of the courses. Trips generally took place in outdoor activity centres in a range of natural settings in National Parks and Areas of Outstanding Natural Beauty.

Across the variety of courses offered, young people took part in a range of experiences such as nature walks, wildlife hunts, bushcraft-type activities such as shelter building and fire lighting, conservation tasks, fieldwork skills such as plant and wildlife identification, wildflower meadow and tree planting, wildlife art and mindfulness sessions. Teambuilding, team challenges, outdoor games and activities were also built into many of the courses.



Young person participating in fire starting with Girlguiding

2. The Evaluation Methodology

The Outward Bound Trust commissioned the University of Derby, on behalf of the Access Unlimited coalition, to evaluate the impact of the single day short courses funded through Generation Green. The aims of the evaluation were to assess any impact of the project on young people's nature connectedness, wellbeing, pro-conservation behaviours and confidence levels.

Study Design

Originally, a mixed methods approach was used in the design, however, partners leading the courses were unable to collect qualitative data due to the logistics of the short, one-day trip intervention. One group gathered qualitative responses; however, this was insufficient data for a cross group analysis. The quantitative approach enabled us to assess if the single day short course had an impact on levels of nature connectedness, wellbeing, pro-conservation behaviours and confidence levels. Survey data was collected at three time points: at the start of the day, at the end of the day and again approximately 2 months later. This allowed scores to be compared across the time points to measure change over time. Only a small number of participants provided data at the third time point and so the primary analysis focused on those participants who provided data at the start and end of the day.

2.1 Questionnaire measures used

Nature connectedness, proconservation behaviours, wellbeing and confidence were captured using the following scales and closed ended questions within the questionnaire (Please see appendix for full questionnaires):

Nature Connectedness

The Nature Connectedness Index (Richardson et al., 2019) includes six questions that are suitable for use with both adults and children. Questions include items such as “being in nature makes me very happy” and responses are scored from 1 (Completely disagree) to 7 (Completely agree).

The Inclusion of Nature in Self scale (Schultz, 2001) was also used, and this measures how much an individual feels they are a part of nature through a series of seven sets of overlapping circles reflecting increasing degrees of inclusion of self in nature.

Proconservation Behaviours

The Children’s Proconservation Behaviours scale (Barbett et al. under review) was developed for use with children aged 8-15 years and consists of 8 questions, 4 measure civil action and a further 4 measure gardening-related behaviours. Only children with access to a garden were asked to complete the gardening questions. Civil action questions include items such as “pick up litter to help nature have a better home” whilst gardening questions include items such as “grow flowers and/or plants that birds and insects will like”. All are scored on a 7-point response scale ranging from 1 (Never) to 7 (Always).

In addition, participants were also asked “How important is it to you to look after nature?” which was scored on a 0 (Not at all important) to 10 (Extremely important) scale.

Wellbeing

Wellbeing was assessed using two bespoke questions, developed specifically for this evaluation. All questions were scored on a 0-10 scale and included the following items:

- I. In general, how good is your life? 0 = Not at all good; 10 = Extremely good.*
- II. In general, how happy do you feel? 0 = Not at all happy; 10 = Extremely happy.*

Confidence

At the level of specific behaviours, confidence has been termed ‘self-efficacy’ and this refers to an individual’s belief in their capacity to face new situations, difficulties and challenges. Self-efficacy is a good predictor of successful behavioural enactment and has been found to promote well-being (Bandura, 1982, 1997). We aimed to understand the young people’s sense of confidence within specific contexts i.e., around working with others, forging friendships and trying novel tasks. These questions were considered to be especially important as the young people had been impacted by frequent lockdowns due to the covid-19 pandemic in the previous 18 months.

Confidence was assessed through three questions developed for this evaluation and included the following items scored on a 0 (Not at all confident) to 10 (Extremely confident) scale:

- I. *How confident do you feel about working as part of a group?*
- II. *How confident do you feel about making new friends?*
- III. *How confident do you feel about trying new things?*



National Parks Young Rangers experiencing a natural art session

2.2 Data collection

The Outward Bound Trust led the overall data collection, with each partner organisation given responsibility for identifying courses to be involved in the study. The study was explained to the young people and they chose whether to complete the surveys. Questionnaires were completed either online or in paper format. Questionnaires completed on paper were entered into the survey by each partner organisation.

2.3 Participant details

In total 335 young people took part in the evaluation at time 1, with 317 providing data at both time 1 and time 2 whilst 18 participants provided data at time 1, 2 and 3.

Demographic details are provided for the full sample (i.e., time 1 only) and for those who provided demographic data at both time 1 and time 2.

Table 1: Age and Gender of the participants

	Full sample time 1		Sample for time 1 and time 2	
Age				
Age range	6-18		6-18	
Mean age (sd)	10.82 (3.36)		10.70 (3.33)	
Gender	Number	%	Number	%
Male	133	40.18	126	39.75
Female	188	56.80	178	56.15
Prefer to self-define	4	01.21	4	01.26
Prefer not to say	10	03.02	9	02.84

Details of the residential course provider and numbers of participant responses are shown in table 2.

Table 2: Participant responses by residential course provider

	Full sample time 1		Sample for time 1 and time 2	
	Number	%	Number	%
Field Studies Council	57	17.22	50	17.35
Girlguiding	10	03.02	8	02.52
National Parks	22	06.65	22	06.94
The Outward Bound Trust	0	00.00	0	00.00
Scouts	178	53.78	174	54.90
Youth Hostel Association	51	15.41	51	16.09
Other	14	04.23	14	4.12

From this data, we see that unfortunately, many providers were unable to collect questionnaire data over the three time points which reduced the sample size. The primary analysis is therefore based on the data provided at time 1 and 2.

3. Results

In order to compare any changes in the measures taken between the start and end of the day, a combination of t-tests and the Wilcoxon Signed Ranks test were used. Where data met parametric assumptions, the t-test was used and where data failed to meet parametric assumptions the non-parametric alternative, the Wilcoxon's Signed Rank test was employed. These analyses allowed for comparison of scores across the two time points. The different analyses were used according to the type of data and if it had a normal distribution.

It should be noted that the sample providing data across the three time points was very small and in light of this, the analysis focused on comparison from time 1 and 2 only.

When examining proconservation behaviours, data was compared across the start of the day (time one) and at the follow up time point three.

It is important to note that there may appear to be small changes in the mean values between time points, however if the analysis shows there is no significant difference, then conclusions should not be drawn about any changes. It is only when the analysis shows a significant difference that we can confidently say there has been a change between the time points.

Nature connectedness (NC)

There was a significant increase in levels of NC from time one to time two see table 3 for details of the means and standard deviations (SD) across the two time points.

Table 3: Means and SD for Nature Connectedness across the two time points.

Nature Connectedness		Mean	SD	Mean change	Significant
Pair 1	Time 1	5.48	1.08	+0.16	Yes
	Time 2	5.64	1.27		

Inclusion of nature in self

Similarly, there was a significant increase in the young people's inclusion of nature in self scores between time one and time two and details of the mean scores and SD are show in table 4.

Table 4: Means and SD for Inclusion of nature in self

Inclusion of nature in self		Mean	SD	Mean Change	Significant
Pair 1	Time 1	4.63	1.79	+0.38	Yes
	Time 2	5.01	1.86		

Proconservation behaviours

Proconservation behaviours were measured at the start of the residential programme and again at the follow up time point (time three) approximately 2 months later. It was not measured at the end of the short course as the young people would not have had the opportunity to put the behaviours into action.

There was no significant difference between time one and time three for the young peoples' civil action related conservation behaviour. Similarly, there was no significant difference in the participants' garden-based conservation behaviours between the two time points (see table 5).

Table 5: Means and SD Proconservation behaviours - civil action and gardening

Pro conservation - civil action	Mean	SD	Mean change	Significant
Time 1	4.69	1.45	-0.37	No
Time 3	4.32	1.48		
Pro conservation - gardening	Mean	SD	Mean change	Significant
Time 1	4.07	1.8	-0.28	No
Time3	3.79	1.89		

In addition, there was no significant difference in how important participants felt it was to look after nature between time one and time two. See table 6 for details of the means and SDs.

Table 6: Means and SD for “How important is it to you to look after nature?”

How important is it to you to look after nature	Time	Mean	SD	Mean change	Significant
	Time 1	8.79	1.63	-0.04	No
	Time 2	8.75	2.05		

Wellbeing

Two questions were used as proxy measures of wellbeing.

How good is your life?

There was no significant difference in scores for this measure between times one and two (See table 7).

Table 7: Means and SD for “how good is your life?”

How good is your life?	Time	Mean	SD	Mean change	Significant
Pair 1	1	7.17	2.44	-0.19	No
	2	7.39	2.50		

How happy do you feel?

Similarly, there was no significant difference in scores for how happy the participants felt across the two time points (see table 8).

Table 8: Means and SD for “how happy do you feel?”

How happy do you feel?	Time	Mean	Sd	Mean change	Significant
Pair 1	Time 1	6.80	1.45	+0.03	No
	Time 2	7.16	1.48		

Confidence

Three questions were used to measure changes in the young people’s levels of confidence.

How confident do you feel about working as part of a group?

Confidence in working as part of a group increased significantly from time one to time two (see table 9).

Table 9: Means and SD for confidence in working as part of a group

How confident do you feel about working as part of a group?	Time	Mean	sd	Mean change	Significant
Pair 1	Time 1	7.52	2.40	+0.33	Yes
	Time 2	7.85	2.47		

How confident do you feel about making new friends?

There was a significant increase in how confident young people felt about making new friends from time one to time two (see table 10).

Table 10: Means and SD for confidence in making new friends.

How confident do you feel about making new friends?	Time	Mean	SD	Mean change	Significant
Pair 1	Time 1	6.90	2.97	+0.35	Yes
	Time 2	7.25	2.97		

How confident do you feel about trying different things?

There was no significant difference in how confident the young people felt about trying new things between time one and time two (see table 11).

Table 11: T-test for “How confident do you feel about trying new things?”

How confident do you feel about trying new things?	Time	Mean	SD	Mean change	Significant
Pair 1	Time 1	7.64	2.44	+0.12	No
	Time 2	7.76	2.56		

4. Conclusions

In summary, the data revealed that the single day short courses for the young people had a variety of positive outcomes. The data revealed a significant short-term increase in nature connectedness and inclusion of nature in self, as well as greater confidence in working as part of a group and making new friends. This shows the positive impact that short courses in the outdoors can have for young people in the short term.

However, no significant differences were found for looking after nature, or the two proxy measures of wellbeing – happiness and how good participants felt their life was.

It was not possible to assess the long-term impact of the short course as insufficient numbers of questionnaires were completed at the third time point.

The outcomes support previous research by Leiflander et al. (2013) as the results indicate that the short course led to a short term increases in nature connectedness (and in our evaluation we also saw short term increases in confidence in making friends, and working as part of a group) however this needs to be maintained after the conclusion of the short course to have a long-term effect.



Young people engaging in a natural treasure hunt with the Scouts

Limitations to the study include the small sample across 3 time points. There was potential for over 300 young people to complete the surveys, however only 17 young people completed all the questionnaires. The logistics of working with young people in nature-based and school-based (time 3) environments has many logistical challenges that we recognise. Some of the measures were challenging for some of the young people to

understand, and this may have impacted upon completion rates. There continues to be a need for more child-friendly measures.

We recommend that future evaluations build on this study. Having fewer measures might be helpful and considering ways to follow up short courses with interventions that support continued experiences in nature (even in a small way), discuss nature, ecosystems, and the lessons they gained on their trips, might enhance longer term outcomes.

5. References

- Bandura, A. (1982). Self-efficacy mechanism in human agency. *American psychologist*, 37(2), 122.
- Bandura, A. (1997) *Self Efficacy: The exercise of control*. New York.
- Barbett, L. (Under review). Children's Proconservation Behaviours questionnaire.
- Capaldi, C. A., Passmore, H.-A., Nisbet, E. K., Zelenski, J. M. & Dopko, R. L. (2015). Flourishing in nature: A review of the benefits of connecting with nature and its application as a wellbeing intervention. *International Journal of Wellbeing*, 5, 1-16.
- Coe, H. A. (2017). Embracing risk in the Canadian woodlands: Four children's risky play and risk-taking experiences in a Canadian Forest Kindergarten. *Journal of Early Childhood Research*, 15(4), 374-388.
- Dopko, R. L., Capaldi, C. A., & Zelenski, J. M. (2019). The psychological and social benefits of a nature experience for children: A preliminary investigation. *Journal of Environmental Psychology*, 63, 134-138.
- Fuller, C., Powell, D., & Fox, S. (2017). Making gains: the impact of outdoor residential experiences on students' examination grades and self-efficacy. *Educational Review*, 69(2), 232-247.
- Gallup (2020). Gallup Global Well-Being <https://news.gallup.com/poll/126965/gallup-globalwellbeing.aspx>
- GOV.UK. (2021, November 18). 7. *Children and young people*. GOV.UK. <https://www.gov.uk/government/publications/covid-19-mental-health-and-wellbeing-surveillance-report/7-children-and-young-people>
- Hunt, A., Stewart, D., Richardson, M., Hinds J., Bragg, R., White, M. and Burt, J., (2017). Monitor of Engagement with the Natural Environment: developing a method to measure nature connection across the English population (adults and children). *Natural England Commissioned Reports, Number 233*. York.
- Liefländer, A. K., Fröhlich, G., Bogner, F. X., & Schultz, P. W. (2013). Promoting connectedness with nature through environmental education. *Environmental education research*, 19(3), 370-384.
- Maller, C., Townsend, M., St Leger, L., Henderson-Wilson, C., Pryor, A., Prosser, L., & Moore, M. (2009, January). Healthy parks, healthy people: The health benefits of

contact with nature in a park context. In *The George Wright Forum* (Vol. 26, No. 2, pp. 51-83). George Wright Society.

ONS (2021) Personal wellbeing in the UK, quarterly

<https://www.ons.gov.uk/peoplepopulationandcommunity/wellbeing/bulletins/personalwellbeingintheukquarterly/april2011toseptember2021>

Pritchard, A., Richardson, M., Sheffield, D., & McEwan, K. (2019). The relationship between nature connectedness and eudaimonic well-being: A meta-analysis. *Journal of Happiness Studies*, 21, 1145-1167

Richardson, M., Hunt, A., Hinds, J., Bragg, R., Fido, D., Petronzi, D. Barbett, L., Clitherow, T. and White, M. (2019). A Measure of Nature Connectedness for Children and Adults: Validation, Performance, and Insights. *Sustainability*. 11(12), 3250; <https://doi.org/10.3390/su11123250>

Richardson, M., Passmore, H-A., Barbett, L., Thomas, R. & hunt. A. (2020). The green care code: How nature connectedness and simple activities help explain pro-nature conservation behaviours. *People and Nature*. <https://doi.org/10.1002/pan3.10117>

Schultz, P. W. (2001). The structure of environmental concern: Concern for self, other people, and the biosphere. *Journal of Environmental Psychology*, 21, 327-339.

6. Appendices

Appendix A: Questionnaire



Pre-course survey

Thank you for taking the time to answer our survey. It asks some questions about you, how you feel about nature, and how you feel generally. It will take around 15 minutes to complete. We will ask you to complete the survey again at the end of your trip and also for a final time a few weeks after your trip.

Please try and fill in the questionnaire by yourself but if you do not understand any of the questions you can ask a leader to explain it to you.

Unique code

So that we can match up the answers you give to the questions now to your answers at the end of your trip, we would like you to use a unique code. This means that your answers remain confidential. Your code will be made up of the **last 3 letters of your first name and the date and month of your birth**. For example, if your name is Janet Smith and you were born on 1 April 2009, your code will be **net1April**

My code:

Last 3 letters of my first name _____

The date and month of my birth _____

About you

Age _____ years

Gender (please tick one): Male Prefer not to say
Female Prefer to self-identify

Your home postcode (if known) _____

Who are you doing your course with? (please choose one)

- Field Studies Council
- Girlguiding
- National Parks
- Scouts
- The Outward Bound Trust
- YHA
- Other Please name _____

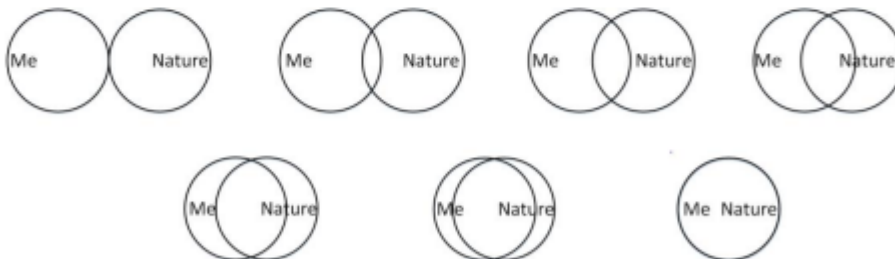
In this section we would like to know how you feel about your relationship with nature.

1. The following questions are about you and nature. By nature we mean all types of natural environment and all the plants and animals living in them. Nature can be close to where you live in towns; the countryside or wilderness areas further away.

Please tell us how much you agree or disagree with each of the following statements, by circling the relevant number.

	Completely disagree							Completely agree
I always find beauty in nature	1	2	3	4	5	6	7	
I always treat nature with respect	1	2	3	4	5	6	7	
Being in nature makes me very happy	1	2	3	4	5	6	7	
Spending time in nature is very important to me	1	2	3	4	5	6	7	
I find being in nature really amazing	1	2	3	4	5	6	7	
I feel part of nature	1	2	3	4	5	6	7	

2. We are interested to know how connected you feel with nature. Please circle the picture below which best describes your connection with nature right now?



3. On a scale of 0 – 10, how important is it to you to look after nature?

Not at all important											Extremely important
	0	1	2	3	4	5	6	7	8	9	10

This section asks about what type of activities you might do to help the environment.

4. How often do you do the following by yourself or with someone else?

	Never	Rarely	Occasionally	Sometimes	Frequently	Very frequently	Always
Take part in wildlife surveys (such as Garden bird watch, Bio-Blitz, etc.)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Pick up litter to help nature have a better home	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Talk to other people (such as family, friends, etc.) about the importance of looking after nature and the environment	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
When walking in nature, by myself or with a dog, I try to avoid disturbing wildlife	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

5. Do you have a garden? Yes No

If you ticked yes, please answer question 6. If you ticked no, please skip to the questions on the final page.

6. How often do you do the following by yourself or with someone else?

	Never	Rarely	Occasionally	Sometimes	Frequently	Very frequently	Always
Grow flowers and / or plants that birds and insects will like	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Make homes for nature (such as insects, hedgehogs, etc.)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Put food out to feed garden birds	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Leave an area of lawn/ flowerbed to grow wild	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

7. On a scale of 0 – 10, in general how happy do you feel?

Not at all happy											Extremely happy
0	1	2	3	4	5	6	7	8	9	10	

8. On a scale of 0 – 10, how confident do you feel about working as part of a group?

Not at all confident											Extremely confident
0	1	2	3	4	5	6	7	8	9	10	

9. On a scale of 0 – 10, how confident do you feel about making new friends?

Not at all confident											Extremely confident
0	1	2	3	4	5	6	7	8	9	10	

10. On a scale of 0 – 10, how confident do you feel about trying new things?

Not at all confident											Extremely confident
0	1	2	3	4	5	6	7	8	9	10	

11. On a scale of 0 – 10, in general how good is your life?

Not at all good											Extremely good
0	1	2	3	4	5	6	7	8	9	10	

Thank you for taking the time to complete these questions, your help is much appreciated. If any of the questions in the survey have caused you distress in any way, please speak to your doctor, your group leader or your parent/guardian.

You can also contact one of the freely available support organisations:

Child Line

Telephone 0800 1111

www.childline.org.uk

Samaritans

Telephone 116 123

www.samaritans.org

Appendix B: Statistical analyses

Nature connectedness (NC)

There was a significant increase in levels of NC from time one to time two (see table 1a).

Table 1a: T-test results for nature connectedness

Nature Connectedness		Mean	SD	T value	Significant
	Time 1	5.48	1.08	-0.29	Yes
	Time 2	5.64	1.27		

Inclusion of nature in self

Similarly, there was a significant increase in the young people's inclusion of nature in self scores between time one and time two. (See table 2a).

Table 2a: T test for Inclusion of nature in self

Inclusion of nature in self		Mean	SD	T score	Significant
	Time 1	4.63	1.79	-4.34	Yes
	Time 2	5.01	1.86		

Proconservation behaviours

Proconservation behaviours were measured at the start of the residential programme and again at the follow up time point approximately 2 months later. It was not measured at the end of the short course as the young people would not have had the opportunity to put the behaviours into action.

There was no significant difference between time one and time three for the young peoples' civil action related conservation behaviour. Similarly, there was no significant difference in the participants' garden-based conservation behaviours between the two time points (see table 3a).

Table 3a: T-test results for Proconservation - civil action and gardening

Pro conservation - civil action	Mean	SD	t value	Significant
Time 1	4.69	1.45	1.31	No
Time 3	4.32	1.48		
Pro conservation - gardening	Mean	SD	t value	Significant
Time 1	4.07	1.8	0.82	No
Time3	3.79	1.89		

In addition, there was no significant difference in how important participants felt it was to look after nature between time one and time two (see table 4a).

Table 4a: Wilcoxon’s Signed Rank comparisons for “How important is it to you to look after nature?”

How important is it to you to look after nature	Time	Mean	SD	Z value	Significant
	Time 1	8.79	1.63	-0.31	No
	Time 2	8.75	2.05		

Wellbeing

Two questions were used as proxy measures of wellbeing.

How good is your life?

There was no significant difference in scores for this measure between times one and two (See table 10).

Table 10: T test results for “how good is your life?”

How good is your life?	Time	Mean	SD	T value	Significant
Pair 1	1	7.17	2.44	-0.99	No
	2	7.39	2.50		

How happy do you feel?

Similarly, there was no significant difference in scores for how happy the participants felt across the two time points (see table 11).

Table 11: T test results for “how happy do you feel?”

How happy do you feel?	Time	Mean	SD	T value	Significant
Pair 1	Time 1	6.80	1.45	-1.91	No
	Time 2	7.16	1.48		

Confidence

Three questions were used to measure changes in the young people's levels of confidence.

How confident do you feel about working as part of a group?

Confidence in working as part of a group had increased significantly from time one to time two (see table 12).

Table 12: T test results for confidence in working as part of a group

How confident do you feel about working as part of a group?	Time	Mean	SD	T value	Significant
	Time 1	7.52	2.4	-2.18	Yes
	Time 2	7.85	2.47		

How confident do you feel about making new friends?

There was a significant increase in how confident young people felt about making new friends from time one to time two (see table 15).

Table 15: T test for confidence in making new friends.

How confident do you feel about making new friends?	Time	Mean	SD	T value	Significant
	Time 1	6.9	2.97	-2.2	Yes
	Time 2	7.25	2.97		

How confident do you feel about trying different things?

There was no significant difference in how confident the young people felt about trying new things between time one and time two. (see tables 18 and 19)

Table 18: T-test for "How confident do you feel about trying new things?"

How confident do you feel about trying new things?	Time	Mean	SD	T value	Significant
	Time 1	7.64	2.44	-0.96	No
	Time 2	7.76	2.56		