Health impacts of the John Muir Award

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"Everybody needs beauty as well as bread, places to play in and pray in where nature may heal and cheer and give strength to the body and soul."
John Muir

University of Glasgow

JOHN MUIR TRUST

Glasgow Centre for Population Health

Executive Summary

There is growing interest in whether contact with 'outdoor' environments has a contribution to make to keeping Scotland's population healthy.

Although we know that people who spend time in such environments as children are more likely to continue doing so as adults, evidence about whether an introduction to such environments has an impact on the health and health-related behaviour and attitudes of younger people is currently lacking.

There are good reasons to think that spending time outdoors might have an influence on young people's health; spending time outdoors in natural environments such as parks or woods is an obvious route to greater physical activity and may have some independent beneficial effects on mental health.

The John Muir Award aims to encourage people of all ages and backgrounds to discover, enjoy and conserve the planet's wild places through a structured yet adaptable scheme.

The Award is the main educational initiative of the John Muir Trust and is delivered through partnerships with youth organisations, schools, clubs, local councils, outdoor centres etc.

The John Muir Award is a framework that has found favour with groups and individuals who wouldn't normally engage in the outdoor environment in a meaningful way.

The aim of this study, carried out by the University of Glasgow, was to assess the impact of participation in the John Muir Award on the health-related behaviours, attitudes and 'trajectories' of 10-16 year olds from Scotland. The main research question was

> *Does participation in the John Muir Award significantly alter young people's health-related attitudes, behaviours and trajectories, including and comprising: participation in sport; attitude to physical activity and sport; self reported fitness; self-esteem; attitudes to and intentions for the future; interest and participation in visiting 'wild places' and other outdoor environments?*

The study also looked in detail at what the participants thought of their Award experience.

Participants in this study were surveyed just before their Award began, just after it finished and then again an average of 18 months beyond that. Several other groups of participants took part in focus groups to discuss their experiences in more detail.

The key findings were:

- Nearly 1 in 10 of the respondents had never visited a wild place before their Award

- Those living in the poorest circumstances were over 6 times more likely than the rest of the Award participants to have had no previous experience of wild places. About 23% of Award participants from the poorest circumstances had no previous experience of wild places, compared with about 4% of the rest of the Award

participants. There is gross socio-economic inequality in who is able to experience these environments.

- Those who had experienced wild environments before participating in their Award were already most likely to aspire to visiting the natural environments as adults.

- The vast majority of the respondents enjoyed their John Muir Award and felt they had achieved something by doing it. Conservation activities, the chance to do new things and the chance to mix with existing friends and make new ones were at the heart of their enjoyment.

- The majority of respondents reported that their Award made them want to spend more time outdoors and to visit natural environments more. This was sustained after the Award was completed. However, their experience had been provided in such a high quality way that it led some respondents to believe outdoor activities were not something they could carry on independently.

- Award participants from Scotland's poorest neighbourhoods showed a sustained increase in aspiration for contact with natural environments in adulthood after their Award.

- Immediately after completing their Award, respondents showed more positive attitudes to physical activity, but this was not sustained in the long run.

- Participation in the Award had no clear impact on self esteem.

- Participation in the Award had no clear impact on physical activity levels.

- Participation in the Award had no clear impact on the frequency with which young people were actually visiting wild places.

Implications for policy and practice

Policy and practice in Scotland are orientated towards five strategic objectives[1]. These objectives are 'joined up', recognising that each one cannot be achieved without the others. Practical policies which are cross-cutting and which achieve impacts across several strategic objectives are therefore very valuable. The cross-cutting nature of benefits of participation in the John Muir Award demonstrated in this study means that the Award experience can be closely aligned achieving the government's strategic objectives.

The reports findings suggest that the John Muir Award has the capacity to make a direct contribution to at least three of the five strategic objectives.

Strategic Objective 2; a Healthier Scotland seeks to "Help people to sustain and improve their health, especially in disadvantaged communities"

[1] See http://www.scotland.gov.uk/About/purposestratobjs

The Award experience led to increased aspirations for contact with natural environments, which has been shown in other research to protect and improve health. That this effect was strongest for young people from the most deprived communities should make the Award highly significant for policy makers because these are often the hardest groups to reach and help.

Strategic Objective 4; a Smarter Scotland seeks to "Expand opportunities for Scots to succeed from nurture through to life long learning ensuring higher and more widely shared achievements."

The Award participants enjoyed the educational aspects of their experience. They learnt about conservation and the environment and many subsequently aspired to continue that interest into adulthood. Many also learnt that they could succeed in tasks they felt daunted by initially, and that working as part of a team of friends was rewarding. The John Muir Award appears to be a highly successful medium for delivering these important lessons. There are strong links between outdoor experiences and Scotland's Curriculum for Excellence[2] and the John Muir Award is successful in both primary and secondary schools.

Strategic Objective 5; a Greener Scotland seeks to "Improve Scotland's natural and built environment and the sustainable use and enjoyment of it."

The Award participants actively participated in caring for and conserving Scotland's natural environment, they loved doing so and they felt a sense of achievement from it. The Award increased their aspirations to maintain a relationship with Scotland's natural environments into adulthood. Other research shows that those who spend time in such environments as children are more likely to do so as adults and then to do so with their own children. The Award may be making a highly cost-effective contribution to a multi-generational behaviour change effect.

Whilst the study findings clearly demonstrate the potential value of the Award experience as a contributor to achieving these strategic aims, the findings also highlight the extent of existing problems which policy makers must worker harder to deal with. The study showed an enormous gap between those from the poorest communities and the rest of Scotland with respect to who had experienced wild places before their Award experience. About 23% of Award participants from the poorest circumstances had no previous experience of wild places, compared with about 4% of the rest of the Award participants. Without the Award, that appalling inequality would have probably persisted and will still exist for those not lucky enough to have had the chance to do a scheme like the John Muir Award. The implications are clear; more young people must have the chance to have this kind of experience, and efforts must continue to reach the least advantaged. The John Muir Award has a proven record at reaching these young people and its experience and methods could be listened to and followed. There is a direct link here to the More Choices, More Chances agenda which is explicitly focused on the most disadvantaged young people in Scotland[3].

The study highlighted that physical activity levels fell with age among young people and also that they perceived and experienced barriers to using the outdoors for recreation even if their Award had inspired them to do so. The Award is thus not a magic bullet for transforming physical activity levels or improving participation in

[2] See http://www.ltscotland.org.uk/curriculumforexcellence/
[3] See http://www.scotland.gov.uk/Publications/2006/06/13100205/0

outdoor activities. Policy makers need to establish more clearly how such barriers to activity can be removed.

In summary, the John Muir Award has a demonstrable contribution to make to the health, education, environmental and inequalities policy agenda in Scotland. The cross-cutting nature of its benefits is closely aligned with the joined up approach to achieving strategic objectives which Scotland has adopted. That the Award appeared to have most benefits for those from most deprived communities is highly significant. However, the study highlighted gross inequalities in experience of wild places before the Award experience, and that young people still perceive barriers to participating in outdoor activities after it.

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The first part of this research was undertaken at the University of Edinburgh, it was completed at University of Glasgow following Mitchell's move there,

Disclosure

This research was carried out with the cooperation of the John Muir Award but it remained completely independent of them. The lead author declares that he is a voluntary member of the John Muir Trust but that he received no reward, either financial or in kind from that voluntary membership.

1 Introduction

Is discovering 'the great outdoors' a route to better health for young people? There is growing interest in the salutogenic (i.e. 'health giving') properties of 'outdoor' environments(1-3), but recent reviews have found more anecdotal evidence than rigorous scientific work with which to explore potential links between health and related behaviour, and various activities in the outdoors(1;4). Although the health benefits of time in the great outdoors is an intuitively appealing idea, there needs to be an evidence base which confirms that time spent outdoors really does have some impact on health if it is to be taken seriously by policy makers and clinicians,.

Among health problems of greatest concern in Scotland is an apparent growth in poor mental health and in overweight / obesity among younger people(5). Both of these can be precursors to poor health in later life. Evidence suggests that being physically active can help tackle these problems. 'Taking exercise' in the recommended amounts can be a struggle for many young people who may feel uncomfortable with the notion and prefer to spend their time doing other things. Physical activity levels, for example, usually fall after the age of 10-11, particularly among girls. Finding successful ways to help young people become and stay physically active, and to improve mental health, are high priorities for the government.

Furthermore, research has shown strong individual level associations between a range of personal, social and health behaviours and attitudes. Combinations of behaviours, attitudes and outcomes in young people can be thought of as constituting a health-related profile or 'trajectory', which may in turn be a good marker for adult behaviour(6). In turn, this suggests health promotion could more usefully focus on the general direction, or 'trajectory' of a young person, rather than on specific behaviours.

There is a considerable body of work looking at the impacts of 'outdoor education' on young people's development (see (7;8) for example). (We use the term 'outdoor education' to encompass the wide variety of schemes and experiences via which young people spend time outdoors, in contact with natural environments). There is a very much smaller body specifically focused on health or health-related attitudes, opinions and behaviours (9). There are good reasons to connect outdoor education and experiences (in their variety of guises) with health and development. Studies have shown that such experiences can change attitudes to the natural environment, and prompt and promote interest in it (10;11), though this may vary with age (12). There is also some suggestion that outdoor education experiences can promote other positive aspects of personality and behaviour which could have a bearing on health, including social interaction and resilience (13).

We emphasise that we are not the first to see the potential for a connection between the potential for outdoor education to influence attitude and behaviour and population health! Pryor and colleagues, for example, explain its potential in some detail (14). However we recognise that (a) there remains relatively little research which examines the impact of outdoor education from a health perspective and (b) the little existing literature tends not to be familiar to most health professionals.

1.1 The John Muir Award

The John Muir Award aims to encourage people of all ages and backgrounds to discover, enjoy and conserve the planet's wild places through a structured yet adaptable scheme. The Award is the main educational initiative of the John Muir Trust and is delivered through partnerships with youth organisations, schools, clubs, Councils, outdoor centres etc. The John Muir Award aims to help leaders motivate and inspire people to enjoy and take responsibility for their own environment. It is open to all, regardless of age, sex, race, class or ability. To gain a John Muir Award, participants must tackle four challenges - Discover, Explore, Conserve and Share 'wild' places, with a loose and accommodating definition of wild which includes everything from park land to remote wilderness. In recent years the number of Awards presented has grown massively, from 844 in 2000 to almost 20,000 in 2007 (and over 70,000 in total). Just under half of these Awards were based in Scotland. The John Muir Award is a framework that has found favour with groups and individuals who wouldn't normally engage in the outdoor environment in a meaningful way; 25% are achieved by individuals considered to be from 'excluded' backgrounds. Whilst some evaluation of the Award for participants and 'Providers' (the organisations that deliver the Award) has been undertaken by the Trust (15), there has been no definite focus on the contribution to participants' health and wellbeing which participation in the Award might make.

The John Muir Award has proven success in engaging young people from a wide variety of backgrounds. Some degree of physical activity is inherent in the Award. Anecdotal evidence also suggests that participation can foster self esteem and confidence which are also important components of good mental health and wellbeing, and which are known to be associated with other 'healthy choices' in life. However, no formal evidence exists about whether the Award makes a contribution to participants' health, or if it achieves success in increasing people's desire to be 'outdoors' in the longer term.

So, this study was conceived in the light of the health problems our society faces, the idea that being introduced to natural environments might influence health-related development and behaviour but a lack of evidence for it, and an excellent outdoor-focused award operating in Scotland, effective at reaching a wide range of young people.

1.2 Study aims

The study aimed to assess the impact of participation in the John Muir Award on the health-related behaviours, attitudes and 'trajectories' of 10-16 year olds from Scotland. The main research question was

> *Does participation in the* John Muir Award *significantly alter young people's health-related attitudes, behaviours and trajectories, including and comprising: participation in sport; attitude to physical activity and sport; self reported fitness; self-esteem; attitudes to and intentions for the future; interest and participation in visiting 'wild places' and other outdoor environments?*

The study also looked in detail at what the participants thought of their Award experience. We were particularly interested in how all study results varied by gender, by the socio-economic background of the participants and by their previous experience of outdoor environments.

1.3 How the report is structured

In the rest of this report are details of how the study was designed and carried out, and its main results. Sometimes in the text, particularly in the results section, we provide statistical details for those who are interested in that aspect of the study. These are denoted by this kind of font and text size. These details may be safely ignored if they are not of interest to the reader. For those readers interested in the statistics, full model results of important analyses described in the main body of the report in this format are provided in the *technical supplement*. The substantive findings are always included in the main text. The report appendices carry details of the questionnaires used and the topic guide for the focus groups.

2 Study design and methods

The study was a relatively small scale evaluation of the John Muir Award. It was devised as the forerunner of a more detailed programme of study to be completed at a later date. It had to work within the bounds of relatively limited funding, but aimed to be as rigorous and comprehensive as possible. In medical research, the usual 'gold standard' study design for research trying to find out the effect of a particular treatment or intervention is the randomised controlled study or RCT. In that kind of design, whether or not a subject gets to try the new treatment or intervention is allocated at random and the impacts of the treatment or intervention are then determined by comparing those who did try the new treatment or intervention with those who did not. To apply such a design to studying the John Muir Award would require us to control who does the Award, and who does not, and to gather data from groups who did and did not do an Award, over a long period of time. Although this would not be impossible, it was beyond the possibilities of the present study. Furthermore, to design a really high quality RCT would require some expectation of the kinds of effects one might expect to see as a result of the Award; since this was the first study of its kind, we had no real evidence for any such expectations.

We thus selected a design more suited to the scale of our research and the fact that it was the first study of its kind on the Award. We followed a cohort of participants through their Award experience, gathering information from them before and after their Award.

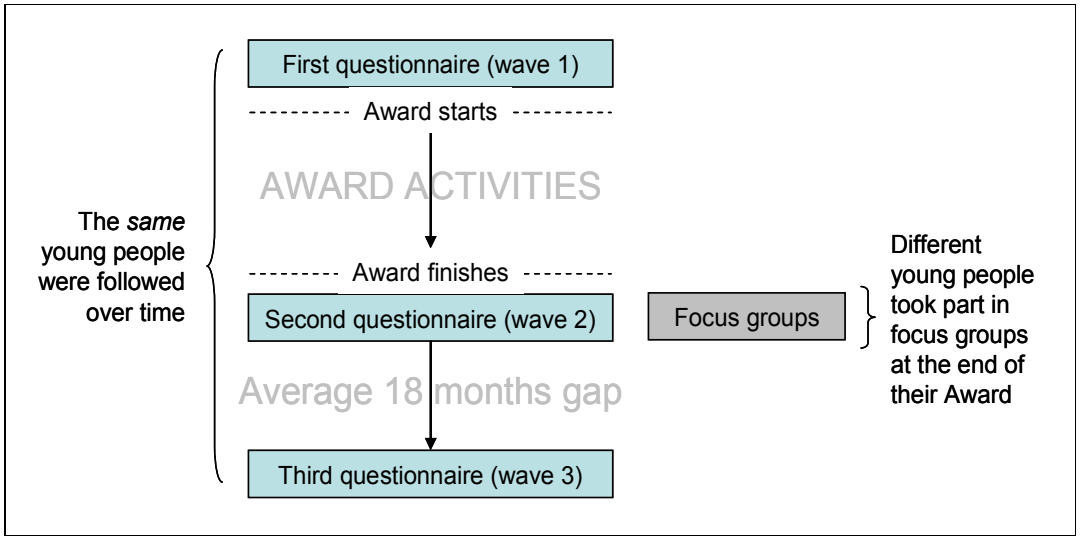
2.1 Study design

The study had 4 data collection components. In 'wave 1', study participants filled out a detailed questionnaire on their health-related behaviours and opinions, experiences of wild land and aspirations for the future (see appendix 2). This took place immediately before their Award experience started and thus represents the 'baseline' or starting point.

The participants were then asked to fill in a second questionnaire, 'wave 2', at the end of their Award experience (see appendix 3). This asked detailed questions about what they had done for their Award, their attitudes to the Award and how the experience might have changed certain opinions and behaviours. This questionnaire also re-measured some of the aspects of health and health-related behaviour captured at wave 1 in order to determine if there was any change. 'Wave 3' (see appendix 4) re-captured information about attitude to the Award and health and health-related behaviour some time after Award involvement had finished (an average time of 18 months afterwards).

Finally, there was a small qualitative component in which a number of Award participants who had not been part of the survey took part in focus groups to discuss their experiences and attitudes in more detail. This allowed the research team to explore some of the results from the questionnaires in more detail. Focus groups are an established method for accessing personal experiences and for facilitating more in-depth understandings of participant's views(16). When carrying out research with children, group interviews provide a way to overcome potential nervousness about 'an interview'(17). A focus group typically involves a small number of people (from 4-8) in an informal group discussion focused around a particular set of issues. The discussion is structured to a greater or lesser extent by a series of questions (the focus group schedule) and is moderated by the researcher; who sets the scene, poses questions, keeps the discussion flowing and encourages people to participate fully. The overall study design is summarised in figure 1.

Figure 1: Study design schematic



2.1.1 Strengths and weaknesses

The design's strengths were that it was a genuinely longitudinal study; that is to say we recorded information before and after Award participation to enable analyses of change, rather than just asking for retrospective opinions once the Award was finished. The use of questionnaires enabled us to gather a large amount of information from a reasonably large number of Award participants, which ensured that the responses were not specific to one particular type of Award experience, one age group, one gender etc. The combination of quantitative data from the surveys and qualitative data from the focus groups also enabled us to check and compare opinions expressed in one form of data gathering, with another. The design's key weakness was that we did not have a group of individuals who did not do the Award against which to compare any changes in attitudes or behaviours we observed among those who did do the Award. As young people grow up their attitudes, opinions, environments and bodies constantly change. This makes it very hard to be certain that changes we observe in attitudes and behaviours are attributable to the Award experience itself. For that reason, as you will read, we have been very cautious in our interpretation of the study results.

A further weakness stemmed from recruitment to the study. As will be described, we had very little information on those who refused to take part in our study and it is thus

entirely possible that only those enthusiastic about their Award agreed to begin the study and continued helping us in subsequent survey waves. There may well be a 'selection bias' in our results. Both the survey and focus group components of the study were relatively small. This limited the certainty of our results and also the extent to which we were able to examine the experiences of specific sub-groups of Award participants.

2.2 Gaining ethical approval

All research carried out by universities has to follow a strict procedure in which the ethical implications are considered. The procedure for recruiting young people into the study, their treatment and the treatment of any data they provide (including its secure storage and anonymisation) was thoroughly examined by independent experts. The University of Edinburgh Education Faculty ethics committee granted ethical approval for the survey phase of the study. The University of Glasgow Education Faculty ethics committee granted approval for the focus group phase of the study.

2.3 Recruiting Award Providers and young people to the survey

The John Muir Award is delivered in a variety of settings, including schools and youth groups. The Award is delivered mainly by registered 'Award Provider' organisations and these were key to our recruitment of study participants. We needed to get the permission and assistance of the Award Providers before we could approach the actual Award participants to see if they wanted to be in our study.

The John Muir Award office provided the research team with contact details for Award Providers in central and west Scotland. The team wrote to 78 Award Providers to ask whether they would be willing to assist us in the research and whether an Award was planned to start in the following months which would be focused on young people in the target age range (8-18 years old). The timing of the Award was important since the study design required that we get a questionnaire to participants *before* their Award started. A total of 28 Providers were eventually identified who were willing to assist, and who had young people of the right age, starting an Award within the time frame of the study.

The Award Providers contacted us in advance of starting their Award. The research team sent them an appropriate number of questionnaire packs; one for each potential individual participant. We also sent the Award Providers instructions (see appendix 1) about how to ask the young people if they wanted to be in our study. We emphasised to the young people what would be involved in taking part, that they did not have to help us and that they were free to withdraw from the study at any time. The young people could also simply refuse to answer any or all of the questions we asked them. They were provided with an information sheet to take home to their parents or guardians at each wave of the study. This sheet included information on what the study was about and what participation would require. Parents were given contact details for the research team and informed that if they objected to their child's participation in the study, they could contact us and we would remove their child from the study immediately. We received no requests of this kind.

2.4 Gathering wave 1 survey data

The Award participants who did agree to be part of the study were asked to fill in a form to confirm that they understood what we were asking them to do, and then complete the first questionnaire. We provided a sealable envelope with each questionnaire so that the young persons' answers were kept confidential and that their Award Provider (who was often also their teacher) could not see what they had

written. The Award Provider gathered the sealed questionnaires together and returned them to us in a postage paid packet.

Each questionnaire was logged into a database by our research team. Each participant was given a unique identification number and a number denoting which Award Provider they had been with. All personal details, such as name and address were separated from the rest of the questionnaire and stored separately in locked filling cabinets. There was no possibility of personal details of the young people being matched to their questionnaire answers by anyone from outside the research team.

2.5 Gathering wave 2 survey data

From our initial contacts and agreement with each Award Provider we had some idea of how long they expected the Award to take. Many schools completed their Award in one or two terms, others did it over the summer holidays or on fixed term residential visits to outdoor education centres. In advance of the anticipated end of the Award, the research team sent appropriate numbers of the second wave questionnaire to the Award Provider. Each questionnaire was again presented in sealable envelopes with a reminder to the young people that they did not have to complete the questionnaire if they did not wish to do so. We asked the Award Provider to issue the questionnaire at the last Award session, i.e. right at the end of the Award. Once returned to us, the wave 2 questionnaires were logged into our database. Each individual who had returned a wave 1 questionnaire was matched to their wave 2 questionnaire and the data stored securely. There were a few incidences of individuals returning a wave 2 questionnaire who did not return a wave 1 questionnaire, perhaps owing to absence at the start of the Award, arrival at the school or youth group or a change of heart over participation. These ‘new’ individuals were also added to the database as their reflections on the Award experience could still be used in analysis at wave 2.

2.6 Gathering wave 3 survey data

Wave 3 differed from the first two waves in that it was delivered by post, directly to each individual Award participant. This was because the research team wanted to leave as long a time as possible after the end of the Award before re-contacting the participants, in order to determine whether any changes seen immediately post-Award were subsequently diluted or lost over time. Since many of the young people would be changing class, club or even school during that time, we needed to re-contact them individually. Each individual who had responded at wave 2 and provided their name and a valid address was sent a wave 3 questionnaire, accompanied by another letter of explanation for their parents and a postage-paid reply envelope. Those who had not responded within 4 weeks were sent a second questionnaire and reminder letter.

2.7 What information was gathered in the surveys and why?

Questionnaire design had to balance a number of competing interests. The questionnaires needed to be relatively brief since evidence shows a strong negative relationship between questionnaire length and completion rate. They needed to gather information of direct relevance to the John Muir Award and to our hypotheses about what changes to opinions and attitudes might occur as a result of the Award experience, but also to use questions from other data sets to allow us to make comparisons between John Muir Award participants and other typical young Scots. Where possible we used existing tried and tested questions. For questions explicitly focused on the John Muir Award or on new areas of study for which there were no existing questions, we piloted the questions, testing them on young people who were not part of the study. This was a useful process as it revealed aspects of the language used by young people which the (very old) research team had not

anticipated. For example, our question concerning self-reported fitness which asked ‘How fit do you think you are?’ was interpreted as meaning ‘how good looking are you?’ – not our intended question at all!

There was a considerable range of topics of interest, from direct measures of physical activities the participants usually did, to their aspirations for the future. Some questions were designed to specifically measure aspects of health and behaviour which the team thought might be altered by participation in the Award. Others were selected to capture aspects of young people’s character and ‘type’ which might have an influence on the extent to which their Award involvement altered them. For example, we considered that participation it might lead young people to spend more time in wild places, or at least to that aspiration. However, we anticipated that this effect might be greater for those who had little or no previous experience of wild places (and hence might have reported little aspiration at baseline). Of course, the difficulty in designing a series of questionnaires before any data have been gathered is that we needed to anticipate what to ask, and what not to ask. Whilst almost all of the questions asked were used in analysis, there were one or two redundant items.

Table 1 summarises the topics covered in the study, indicating the waves in which they appeared and a brief reason for their inclusion. The full questionnaires are given in appendices 2, 3 and 4.

Table 1: Topics covered in the questionnaires

Question topic	*Waves*	*Reason for inclusion*
Name, date of birth, address, sex, postcode, attitude to neighbourhood of residence	1, 2, 3	Matching responses from individuals, postcode provided an indication of socio-economic status
Family affluence scale	1	Validated indicator of family socio-economic status
Self-reported fitness	1, 2, 3	Outcome measure
Frequency of sport and exercise participation	1, 3	Outcome measure
Attitudes to sport and exercise	1,2,3	Outcome measure
Health status and limiting long-term illness	1	Distinguishes different types of young people at baseline who may have differing responses to and experiences of, the Award.
Smoking, drinking and drug taking; measures of behaviour, exposure and peer group behaviour	1	Distinguishes different types of young people at baseline who may have differing responses to and experiences of, the Award.
Rosenberg self esteem scale	1,2,3	Distinguishes different types of young people at baseline who may have differing responses to and experiences of, the Award. Outcome measure. Comparable with other survey data
Previous experience of wild places	1	Distinguishes different types of young people at baseline who may have differing responses to and experiences of, the Award.
Motivations for doing the Award	1	Distinguishes different types of young people at baseline who may have differing responses to and experiences of, the Award
Leisure time and socialising activities	1, 3	Distinguishes different types of young people at baseline who may have differing responses to and experiences of, the Award. Also potential outcome measure. Comparable with other survey data
Aspirations for future health, wealth and extent of interest in / contact with nature	1, 2, 3	Distinguishes different types of young people at baseline who may have differing responses to and experiences of, the Award. Also potential outcome measure
General perception of Award experience	2,3	Outcome measure and also something which might influence the Award's impact on other outcome measures
Summary of actual Award experience	2, 3	Outcome measure and also something which might influence the Award's impact on other outcome measures
Retrospective comparison of Award with previous experience of similar activities	2	Something which might influence the Award's impact on other outcome measures
Reflection on how Award altered attitudes and behaviours	2	Outcome measure
Self-reported comparison of physical activity rates before and after the Award	3	Outcome measure, comparable to repeated measures of reported activity
Reported change in frequency of visits to wild places and reasons for any change	3	Outcome measure

2.8 Problems with survey data collection

All research projects encounter problems and it is useful to reflect on them and consider whether they have influenced the results unduly.

The key difficulties we had in dealing with John Muir Award Providers revolved around communication and getting the questionnaires to them at the right time. Almost all Providers were exceptionally helpful and interested in the study. Those who did not agree to take part were, almost without exception, simply running their Award at an inappropriate time, or with groups whose ages rendered them ineligible for the study. Those who did agree however, were often difficult to get hold of since they were very busy teachers or youth workers not always easily reached by phone or email. In one instance, poor communication meant that young people had finished their Award and school for the summer holiday before we were able to deliver the second wave questionnaires to the Award Provider. Where this occurred, we opted for a postal wave 2 so as not to lose potential participants. This will have meant that they completed their wave 2 questionnaires as many as 3 or 4 weeks after finishing their Award. The research team felt this was an acceptable solution to maintaining sufficient numbers in what was an already relatively small study.

Another small difficulty was encountered with logging individual respondents into our database in that some of the younger children's handwriting made the reading of names, addresses and birth dates difficult. The advantage of recapturing this information 3 times (once at each wave) was that it was possible to check for mis-readings and incorrect postcodes.

One significant problem was the failure of participants to provide a home address for sending the wave 3 questionnaire to. Some left this section blank. Others used their school address. Since our ethics protocol and the instructions to participants specifically identified the provision of a home address as part of the consent to be sent a postal questionnaire for wave 3, we could not follow these participants all the way through to wave 3. This affected about 15% of our respondents. For those who did provide postal address information however, the standard of address and postcode recall was high, with a valid postcode being recorded or detectable for 98% of respondents who gave an address.

2.9 Preparation of survey data for analysis

All data in questionnaires were entered onto a database for analysis. Our use of a professional service to do this meant that the data were of very high quality. The data set was checked for variable ranges (i.e. that only values within plausible ranges were included) and logical consistency. A small random sample of individuals' data was checked by hand against the actual questionnaires. No discrepancies were found.

2.10 Approach to analysing the survey data

All analyses took account of the fact that respondents' Award experience was determined by their Award Provider. Those who had the same Provider will have had similar experiences in terms of the activities they did, but since the Award does not follow a closely defined prescription, these experiences may have differed from other Award participants. It was important that we took account of this feature of our data in the statistical analysis. (Models took account of clustering in the data using robust standard errors, Data were analysed in Stata v10.There is usually more than one route to testing a statistical hypothesis. Our approach to test selection has been to choose the most robust test that the data would bear. We have opted to report in detail only results which show an important result. The number of models run in exploratory analysis was enormous. The reader can assume that where a result is not reported in detail, it was insignificant. In regard to exploring change over time, our approach was to use fixed effects regression models where possible. We sometimes report ttest results instead for clarity, but all these were also confirmed using the more robust fixed effects approach).

2.11 The focus groups

The focus group schedule, which guided the topics of conversation, was tested on a group of young people who were not part of the study. It comprised a number of open-ended questions about what participants had done as part of the Award, whether it had met their expectations, whether they'd enjoyed it, whether it had had any impact on their sense of physical self and whether they wanted more contact with wild places after taking part (see appendix 5).

Four group discussions were then carried out with Award participants in primary and secondary education at three of the schools which had already participated in the survey. The focus groups took place after the survey had finished. The young people who took part in the focus groups were *not* those who had participated in the survey. Award Providers at the schools were first approached to see if they would help us again and they all agreed. Consent was also obtained from the Head Teacher. The Award provider recruited students who had participated in the Award from two age groups (under 11 and 13-16) and were asked to find a group of girls and a group of boys. Those selected were given a simple age appropriate information sheet to read and the parents of those who agreed to participate were also sent an information sheet detailing the aims and procedures of the research.

Table 2 shows the make-up of each of the four groups. The sample of 30 Award participants was drawn from 1 primary school and 2 secondary schools. Of the 30 pupils who took part, 12 were under 11 and 18 were aged 13 to 16. The participants were evenly balanced between girls and boys and came from a diverse socio-economic background.

Table 2: Focus Group Participants

	Age	Gender	Type of School
Focus group 1	Average of 15	6 girls	Independent fee paying
Focus group 2	Average of 15	6 boys	Independent fee paying
Focus group 3	Average of 15	2 girls; 4 boys	Local Education Authority
Focus group 4	Average of 8	6 girls; 6 boys	Local Education Authority

At the beginning of each group discussion, participants read the information sheet again, were given a copy and asked to sign to show their consent. Confidentially was discussed with the participants before the focus groups started and the young people were assured that the transcripts of the conversation would be anonymised. The researcher also reminded the children that participation was voluntary and that it was their right to stop the discussion at any point for any reason.

Each focus group lasted between 20 and 40 minutes. The researcher tried to keep the discussion short, reflecting the attention spans of some of the quite young children involved. In addition, the focus group schedule was adjusted depending on the age of the pupils. For example, all participants were asked the same open-ended questions, but slightly different language was used for younger and older children. In addition, an extra exercise was used with those aged under 11, in which their responses to a question about the kinds of places they had visited and the kinds of activities they'd been involved in were augmented through a drawing game.

The focus groups were audio-recorded and the discussion transcribed verbatim. The data were then qualitatively analysed. This involved careful reading of the transcripts, a systematic coding of what was said and subsequent analysis of these codes. Findings and insights from the focus groups are integrated with those from the survey in the Results section.

3 Results

This section will answer these key questions

3.1 What was the response rate and quality of data in the survey?

3.2 What kinds of individuals participated in the survey (age, sex and family socio-economic position)?

3.3 What previous experience of wild places did the participants have (and how did this vary by age, sex and family socio-economic position)

3.4 What were the participants' motivations for doing their Award, and how did these vary by age, sex and family socio-economic position?

3.5 How did the participants perceive their Award experience and how did these perceptions vary by age, sex, family socio-economic position and previous experience of wild places?

3.6 How much physical activity did the participants do before their Award, did this change following Award completion and how did this vary by age, sex and family socio-economic position?

3.7 What attitudes to physical activity did the Award participants hold at the start of their Award, how did these change and how did attitudes and change vary by age, sex and family socio-economic position?

3.8 What levels of self esteem did the Award participants hold at the start of their Award, how did these change, and how did levels and change vary by age, sex and family socio-economic position?

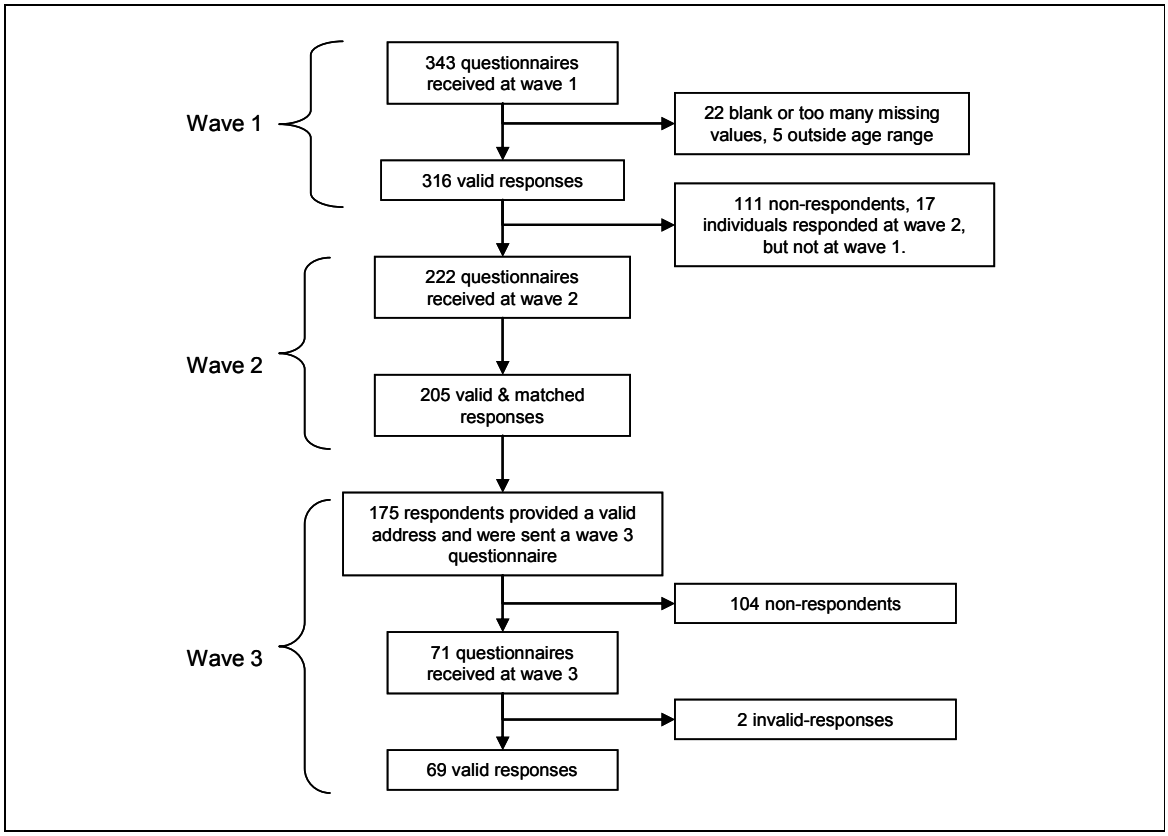
3.9 What aspirations for future health and contact with natural environments did the Award participants hold at the start of their Award, how did these change and how did aspirations and change vary by age, sex and family socio-economic position?

3.10 Did Award participation result in more visits to wild places?

3.1 What was the response rate and quality of data in the survey?

It was not possible to calculate an overall response rate in the conventional sense because we could not record the numbers of Award participants who refused to participate at wave 1 (see section 2.1.1). Our first indication of participation in the study was receipt of a questionnaire. We can however calculate the follow up rates (that is to say, the rates at which respondents participated at each subsequent wave). Figure 2 traces the numbers of respondents at each wave. The follow rate for valid responses wave 1 to wave 2 was 65%, for wave 2 to wave 3 it was 34%, and the overall follow-up rate wave 1 to wave 3 was 22%. The overall follow-up rate from wave 1 to wave 3 was lower than anticipated, but not remarkably low for a study based on younger people and including a postal component. It is important that the wave 1 – wave 2 follow rate was good.

Figure 2: Tracing the follow up of study participants



The quality of the responses we did receive was very high. There were very few questionnaires partially completed and within each question, missing values were relatively low. In wave 1 for example, 80% of responses had two or fewer missing values.

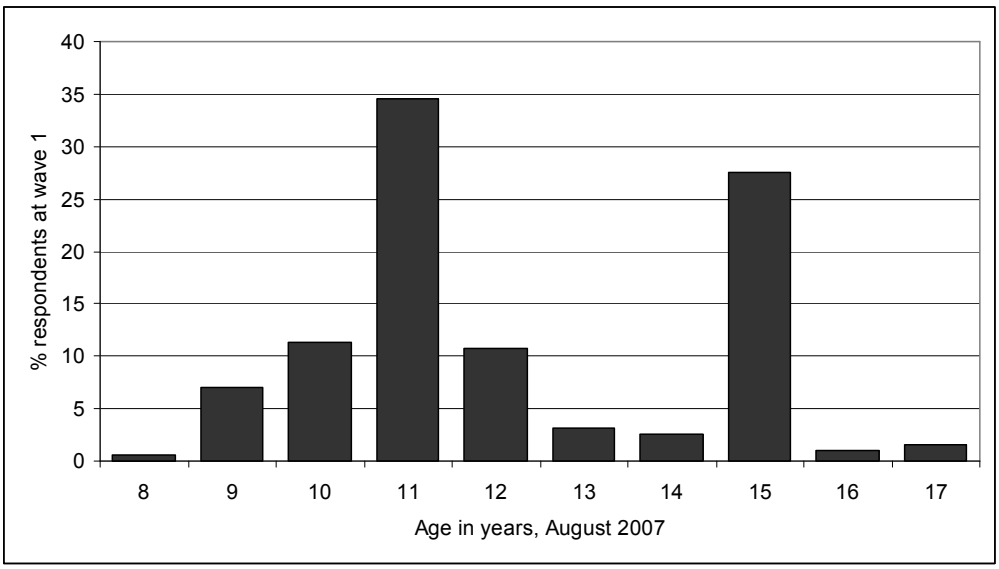
In summary, the quality of responses we received was excellent, and whilst the numbers held up well between waves 1 and 2, they were rather lower than we had hoped at wave 3. This was probably due to using a postal questionnaire for wave 3.

3.2 What kinds of individuals participated in the survey (age, sex and family socio-economic position)

3.2.1 Sample composition at wave 1

Respondents were excluded if they fell outside the age range 8-18. Figure 3 shows the age range of the respondents who met this criterion and we in the study at wave 1.

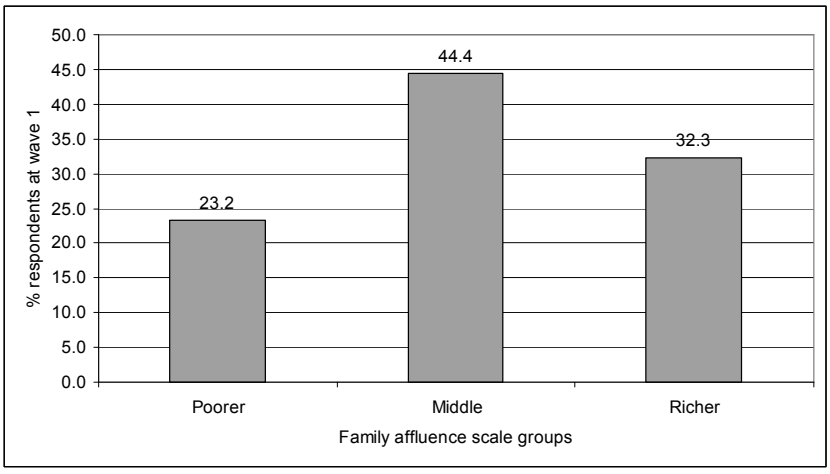
Figure 3: Age range of the study participants



The average age of the sample was 12.6, with the youngest at 8.0 years and the oldest at 17.7 years. The sample was evenly balanced between boys and girls at 51.1% and 48.8% respectively. Within the sample, age and gender were related; the older respondents were more likely to be boys (odds of being a boy associated with unit increase in age = 1.13 p=0.024). It is important to note that age was also strongly related to Award Provider since the Providers were essentially taking either classes or groups of children of roughly the same age.

We had two ways of assessing the relative affluence of family background for the respondents. The Family Affluence Scale, a robust and standard means of measuring family socio-economic position via questions young people are able to answer, was included in the wave 1 questionnaire and derived from questions 6-8 (see appendix 2). The scale can be used as a continuous measure, or may be coded into three groups (poorer, middle and richer).

Figure 4: Distribution of sample by family affluence scale group



We were also able to allocate respondents (who gave a valid postcode) to a Scottish Index of Multiple Deprivation category, based on their postcode of residence. We determined whether the respondent was resident in an area comprising the most deprived 15% of the

Scottish population. Just over 20% of our respondents were in this category, emphasising that the Award was indeed reaching some of Scotland's most deprived young people and that any response bias was not masking the views of people from these backgrounds. There was no association between the age and sex of respondents and either measure of socio-economic position.

3.2.2 Comparisons with other surveys of young people in Scotland

We did have a concern that there would be bias against those from a deprived background, both in the extent to which young people were offered the chance to do the John Muir Award, and in the extent to which they agreed to participate in our study. To a limited extent, we were able to compare the distribution of our respondents into the family affluence scale groups, with that from another survey of young people in Scotland, to find out if our respondents were typical of young Scots. One survey with which we were able to make this comparison was carried out by the Medical Research Council (MRC), Social and Public Health Sciences Unit and it took place in early 2006. It was called the *PaLS* study (Peers and Levels of Stress[4]). There were many differences between *PaLS* and our own study, including the age range (PaLS was focused on 15 year olds) and the geographical area sampled from (PaLS was restricted to the Central Clydeside Conurbation, an urban area centred on Glasgow). The distribution of PaLS respondents in the 3 family affluence groups was 17.2%, 41.6% and 41.2% in the poorer, middle and richer groups respectively. These figures are not wildly dissimilar to our own (see figure 4), with our study having achieved a greater representation from the poorest families. Given that our study was not solely focused on Glasgow (an area of high socio-economic deprivation), our attainment of a higher proportion of respondents from poorer families represents success of both the Award in reaching poorer young people, and a reassurance that those from poorer families did not simply refuse to participate in our study.

In addition to socio-economic status, we can also explore the extent to which we have captured a typical range of 'types' of young people by comparing their behaviour and other characteristics with those respondents from another study. Another MRC study, called '11 to16' followed a group of young people through school, repeatedly surveying them on their health-related behaviour and attitudes as they grew up[5]. These data are now rather old (the 11 year olds were initially surveyed between 1994 and 1995) and they were also drawn from Glasgow and its surroundings rather than the broader area we focused on. Such differences between the 11 to 16 study and our own, in terms of the age range and era of sampling make very sophisticated comparisons of the surveys unwarranted; we have no way of knowing whether any observed differences would be due to the era in which the surveys took place, the geographical areas or whether they represent genuine differences in the samples for example. However, it is useful to make a broad comparison between the data sets to assist in judging what kinds of young people our survey has included.

We examined differences between respondents to our survey and the MRC 11 to 16 study at ages 11 and 13, and the PaLS study at age 15. We compared respondents with the same age ranges and only where the questions asked were identical. We compared the young people on their experiences of smoking, drinking, exposure to drugs, their leisure time behaviours (particularly those oriented to hanging around on the streets which is known to be a marker of a less favourable health trajectory), their self rated fitness, and their own assessment of their future prospects.

On several of these measures, our respondents bore great similarity to those in the MRC youth studies. These included smoking status at 11 years old, frequency of drinking at 15

[4] http://www.sphsu.mrc.ac.uk/study-sites/pals/
[5] http://www.sphsu.mrc.ac.uk/studies/11to16/

years old, peers' smoking behaviour at 11 years old and street oriented leisure time at 15 years old (data not shown).

There were some modest differences on other measures however. The 11 year old Award participants were more likely to rate themselves as 'very fit', relative to the 11 year olds in the MRC study (45% in the Award survey, 30% in the MRC study) and very much less likely to report adverse drinking and smoking behaviours at 13 years old. For example, none of the 13 year old Award participants reported having tried illegal drugs, but 11% of those in the MRC study did so. Also, reported regular (i.e. at least weekly) drinking rates among the MRC study respondents were roughly double those among the Award study respondents at age 15, though rates of consumption reported at less regular intervals were very similar.

One surprising difference between the Award study respondents and the MRC respondents concerned the degree of 'street oriented' leisure time at age 13 and the respondents' overall attitudes to their future prospects. Given the more urban focus of the MRC study, we had expected their respondents to have greater levels of street oriented leisure time, but in fact differences were slight. At ages 13, where our most accurate comparison can be made, there was, if anything, a higher level of street orientated leisure in the Award sample than in the MRC studies. We did note however, that this difference disappeared among the older Award respondents (who we also knew to be generally from wealthier backgrounds).

Overall, the Award study respondents were very similar to those in the MRC studies, despite the time difference between them. It is hard to interpret the differences we did observe. Exposure to drugs and alcohol has not fallen among young people since the MRC 11 to 16 study took place. It is plausible that the Award participants who chose to respond to us were the types of young people who are less exposed to these things, but given the higher levels of deprivation in our study, this also seems unlikely.

3.2.3 Changes in sample composition over the course of the study

Since we lost respondents at waves 2 and 3 of the study, it was important to establish whether the participants who dropped out were systematically different to those who stayed in. If, for example, we lost boys far more than girls, we would need to take account of this loss when evaluating our results because they might be driven by girls' opinions far more than boys'.

Older participants at wave 1, were less likely to respond at wave 2 (odds of not responding at wave 2 associated with age 1.21 ($p=0.048$)). Those not responding at wave 2 were also more likely to live in an area comprising the 15% most deprived population in Scotland (odds of non-response associated with residence in 15% most deprived population of Scotland 3.49, $p=0.005$), but there were no differences in responders and non-responders at wave 2 in terms of gender or family affluence.

Although the numbers responding at wave 3 were small, luckily those who did respond were very similar to the respondents at wave 1. There were no significant differences between the sample at wave 1 and at wave 3 in terms of age, sex, family affluence scale or residence in areas comprising the 15% most deprived population in Scotland. It is unusual to have so little difference between the respondents who start and those who finish a study like this, in terms of their overall age sex and affluence characteristics.

In summary, the study reached a reasonably balanced sample of young people in Scotland, with many similarities to those who have appeared in other surveys. Although we lost some respondents at each successive wave, waves 2 and 3 remained broadly representative of the baseline sample.

3.3 What previous experience of wild places did the participants have (and how did this vary by age, sex and family socio-economic position)

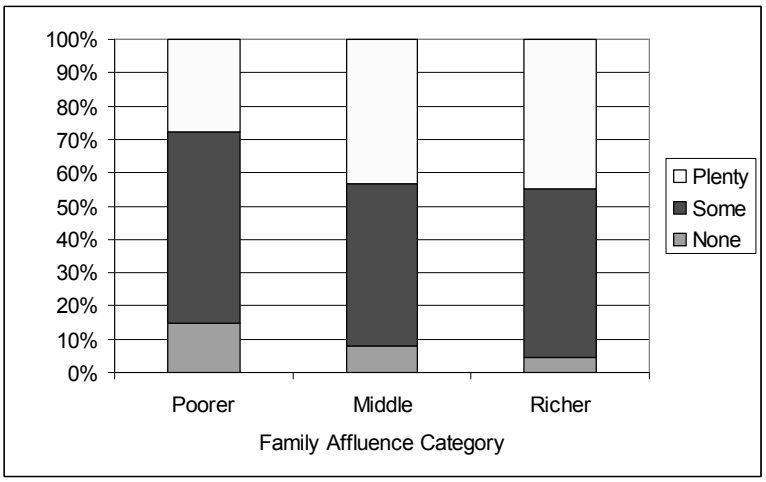
In wave 1 (i.e. just before their Award began), we asked the participants about their previous experience of 'wild places'. Table 2 shows the response pattern.

Table 3: Distribution of previous experience of wild places

How much have you been to wild places before the Award?	Number of respondents	% of respondents	Cumulative %.
None	25	8.7	8.7
Some	150	52.5	61.2
Plenty	111	38.8	100.0
Total	286	100.0	

There was no relationship between previous experience of wild places and either age or sex, but there was a strong relationship with socio-economic position. Figure 5 shows the relationship between family affluence group and previous experience of wild places and makes it clear that those in the poorest category are most likely to have had no experience of wild places before their Award participation, and least likely to have had 'plenty' of experience.

Figure 5: Relationship between family affluence category and previous experience of wild places.



When this relationship was adjusted for the age and sex of the respondents, and the fact that they are grouped by Award Provider, we still saw a significant relationship such that the poorest family affluence group had had less previous contact with wild places than the richest group (regression coefficient for association between poorest family affluence group and previous experience of wild places -0.28, p=0.004).

When we examined this relationship using residence in areas comprising the 15% most deprived population in Scotland as a measure of socio-economic position, it became even more striking. In fact, when we focused on those with no previous experience of wild places at all, we found that a young person resident in areas comprising the 15% most deprived population in Scotland was 6.4 times more likely to have had *no* previous experience of wild

places, than a child from elsewhere (odds of no previous experience of wild places associated with residence in the most deprived areas 6.39, p=0.001). In fact, about 23% of Award participants from the poorest circumstances had no previous experience of wild places, compared with about 4% of the rest of the Award participants.

In summary, whilst most respondents did have some previous experience of the kinds of environments the Award is focused on, a significant minority (nearly 9%) did not. The chances of being in this minority were massively increased by socio-economic deprivation. There is a large socio-economic inequality with respect to which young people are getting to 'wild places'; about 23% of Award participants from the poorest circumstances had no previous experience of wild places, compared with about 4% of the rest of the Award participants. The Award is contributing to reducing that inequality.

3.4 What were the participants' motivations for doing their Award, and how did these vary by age, sex and family socio-economic position?

Figures 6 – 8 show distributions of the responses given to the questions on motivations for Award participation, asked in wave 1. The results are generally similar for boys and girls, but there are some interesting differences between age groups, and groups defined by the family affluence scale. The cynicism of age appears evident and this finding echoes that already noted in the literature (8;12). The differences between poorer and richer children on teacher led *vs.* personal motivations are surprising; with poorer respondents more likely to feel that they were asserting their own choice and richer respondents more likely to feel they were under some teacher-based coercion.

Figure 6: Motivations for participation, by sex

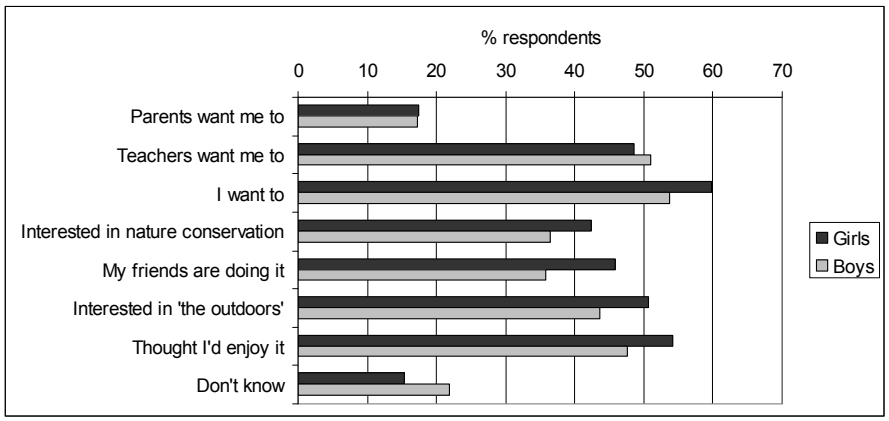


Figure 7: Motivations for participation, by age group

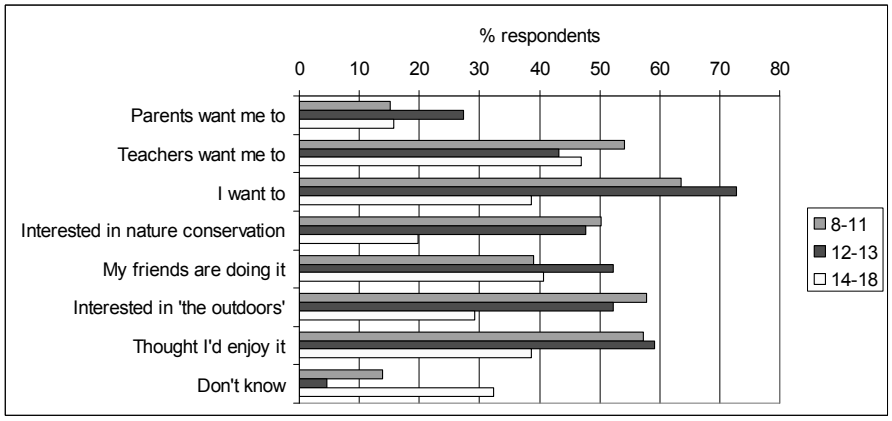
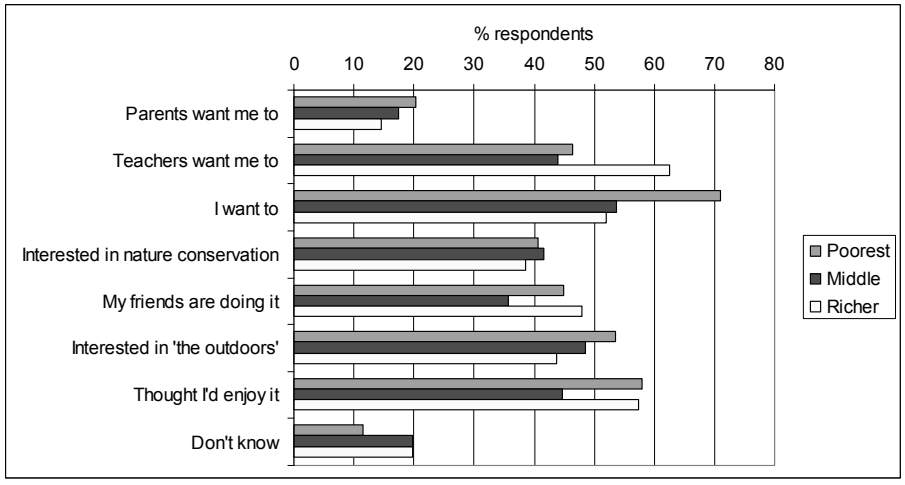


Figure 8: Motivations for participation, by family affluence group



In summary, the responses reflect the delivery of the Award in school setting for many of our respondents, and thus the relatively limited extent to which they actively 'chose' to do the Award. Nonetheless, the relatively large levels of agreement with 'thought I'd enjoy it' and 'interested in the outdoors' perhaps reflect positive anticipations for the Award experience (given that these responses were made at wave 1, before the Award experience actually began).

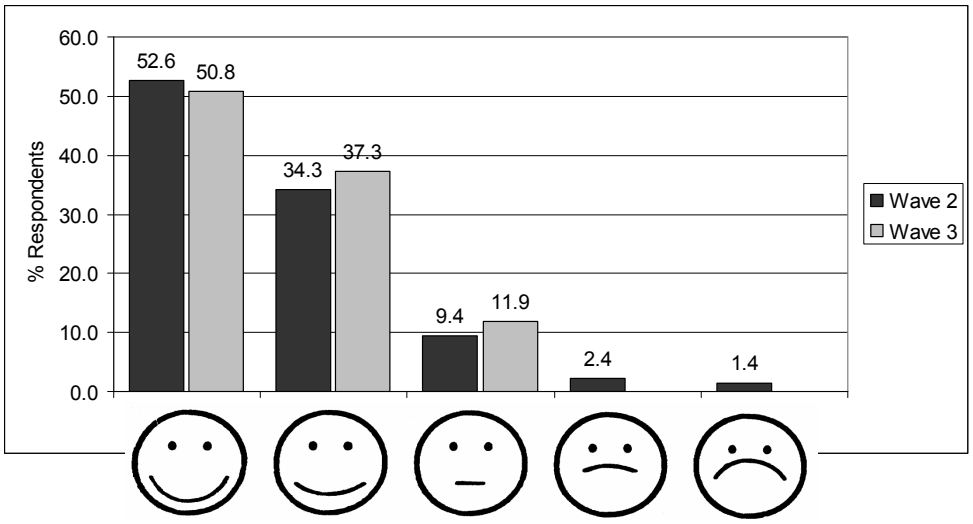
3.5 How did the participants perceive their Award experience and how did these perceptions vary by age, sex, family socio-economic position and previous experience of wild places?

3.5.1 Overall attitude

In wave 2, a number of questions examined participants' opinions and feelings about their Award experience. The same questions were posed in wave 3, which offers the chance to observe opinions straight after the Award (when feelings might be strongest) and then again after a period of reflection.

The most straightforward question used a simple face scale; the respondents were asked to circle the face expression which best captured their feelings about having done their Award. Figure 9 shows the results from both waves (wave 2 just after the Award finished and wave 3 an average of 18 months after the Award).

Figure 9: Participants' feelings about doing their Award at wave 2 and wave 3



At both waves 2 and 3, the overwhelming majority (more than 85%) had positive feelings about their Award experience.

At wave 2, there were no significant differences in the response pattern by sex, family affluence group or by residence in the top 15% of deprived areas in Scotland. However, older respondents were significantly more likely to circle a less 'smiley' face (regression coefficient for age in model predicting face scale value = 0.12 p = 0.008). Those circling the least smiley faces were from a wide range of Award groups. It was not the case that several respondents from just one or two groups had a particularly 'bad' experience. At wave 3, there were no significant differences in the response pattern by age or sex, though there was a weak

relationship such that those from wealthier family backgrounds were more likely to provide a less positive rating (regression coefficient for family affluence scale in a model predicting face scale value = .13 p= 0.037). However, it should be stressed that none of the respondents at wave 3 rated their experience as negative using the face scale.

3.5.2 Enjoyment and achievement

At wave 2 we also asked the respondents to state whether, "*Doing the Award, I feel like I have achieved something or I don't feel like I have achieved anything*" and whether "*Most of time I was enjoying myself or I was not enjoying myself*". About 92% felt they had achieved something, and 95% said most of the time they were enjoying themselves. There was no apparent difference in these responses by age, sex or family affluence. There were too few respondents who felt they did not enjoy their Award experience, or who felt that had not achieved something, to explore variation in response by residence in areas comprising the 15% most deprived population in Scotland.

We were particularly interested in whether attitude to Award participation would vary according to the level of previous experience of wild places or similar activities. We thought it plausible that those for whom such environments and activities were unfamiliar might not enjoy them as much. There was no significant variation in participants' general feelings about doing their Award (as measured by the face scale) associated with the amount of previous experience of wild places, or with having done similar activities before; this suggests that familiarity with environment or activity was not a pre-requisite for enjoyment, or that lack of these things was a barrier to enjoyment. There were too few respondents who said that they did not enjoy their Award experience for a meaningful analysis of whether they also had no previous experience of wild places or similar activities.

The focus group findings echo and augment those from the surveys. Participants said of their Award experience that they "*loved it"* and described the experience as '*great*' or a "*right laugh*". The younger participants especially enjoyed "*jumping in the rivers*", "*getting out of school and going outside*" and "*getting muddy*" (Focus Group (FG) 4, girls and boys aged 8). It appeared that the combination of doing something new, something fun and something useful was at the heart of their enjoyment.

> "*Just trying loads of new things is good because you don't know you like it until you've tried it and we didn't really have the chance to try it before*" (FG 2, boy aged 15).

> "*Yeah and you sort of learn new skills as well. Like I learned how to take nails out of a board or bang them in or like how to dig a trench thing*" (FG 1, girl aged 15).

To understand the experiences of the focus group members, it is useful to know exactly what they did to get their Award. Whilst all Award recipients must Discover, Explore, Conserve and Share 'wild' places, the means to doing that varied considerably. As stipulated, all groups had been involved in some form of Conservation. Activities included clearing rhododendrons, cleaning beaches, laying boardwalks and mapping birch trees.

> "*We went to country estates to cut back undergrowth around baby trees to give them a better chance and we cut down rhododendrons and built a dam and made an avenue to help restoration of a cottage*" (FG 1, girl aged 15).

> "*We did jobs to help the ranger, like clearing out the trench things to let the water run down the hills and building boardwalks and helping to restore the place*" (FG 2, boy aged 15).

Participants said they enjoyed doing something useful for the places they visited, "*because it's a good feeling that you've helped*" (FG 1, girl aged 15). Participants also made reference to a broader conceptualisation of conservation work; describing not leaving any litter behind as "*conservation along the way*":

"*Where we were staying was quite isolated, so there was no rubbish collection or anything, so we took away all the litter and stuff we created and carried it to the train station, which was like conservation along the way*" (FG 1, girl aged 15).

Younger Award participants had undertaken a number of (three to five hour) walks around local lochs, woodlands and along canal tow-paths. These were called 'health walks' by the teacher responsible for organising them. When asked to draw the activities they'd been involved in, the younger participants drew hill-walking, crossing streams and collecting items such as leaves and twigs which were then incorporated into classroom activities such as constructing collages, writing poems and stories (FG 4, girls and boys aged 8). Older participants had also engaged in more traditional outdoor pursuits such as "*canoeing on the loch, rock climbing on the sea cliffs, that kind of thing*" (FG 2, boy aged 14).

Key elements of the enjoyment mentioned by participants were the sense of achievement inherent in certain activities and the enjoyment of doing activities with a group of people their own age:

"*I enjoyed going up the Munros because when you reach the top it feels really good that you've completed it*" (FG2, boy aged 15),

"*It's a good feeling because it's fun if you're doing it with your friends*" (FG 1, girl aged 15).

The younger participants said it was "*interesting*" to learn about the plants and flowers as they walked along, with one teacher being described as very knowledgeable about such things: "*he knows the names of all the things we see*" (FG 4, girl, aged 8). Both of these positives were expanded on further (and are discussed further below).

Even when prompted by the interviewer, no negative aspects of the Award experience were mentioned by any participants as can be seen in the following extracts (where 'I' denotes the interviewer):

I: "*Was there anything you didn't enjoy?*"
"*No, it was hard work, but it was fun, so it was good*" (FG 1, girl aged 14).

I: "*So there was really nothing that you didn't like about it?*"
"*No, I liked it all*" (FG 3, boy aged 15).

3.5.3 Was the Award experience physically active?

The wave 2 questionnaire asked the participants the extent to which they agree that "*doing activities for the Award sometimes got me out of breath or tired*". There was no clear pattern of response to this item, with a reasonably even distribution of responses across the categories of agreement or disagreement. This pattern of responses was similar across ages and sexes. It was also similar for the item which asked the extent to which participants agreed that "*doing the Award was just like playing sport or games*", and the item which asked the extent to which doing the Award had made the participant feel they should '*get more exercise*'. These responses suggest no clear evidence for participants seeing the Award as a source of physical activity or that they were pushed physically by the activities they undertook.

The focus groups offered a contrast to these survey findings however. A number of respondents emphasised the physical element of activities, describing them as "*challenging"*, "*tiring"* and "*hard work"* and relating how one group had "*made up a song about it [cutting down rhododendrons] to keep us going*". Indeed, a participant in the second focus group (who was already very physically active member of the rugby team) was surprised at how much of a challenge he found the activities:

> "*I thought it was going to be easier than it was, like climbing hills and stuff. But some of them were massive hills and sometimes it was difficult to keep going, like near the end when you're getting quite tired, but it was alright in the end*" (FG 2, boy aged 15).

The focus groups also emphasised that the physical nature of the activities, and success in these activities, was a particularly pleasing aspect of the Award experience for some participants.

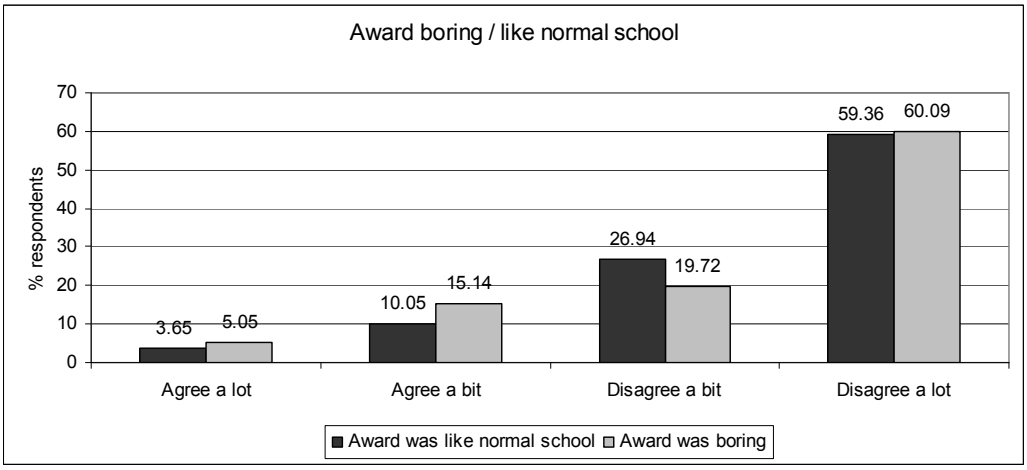
> "*I think if someone had said to me before 'okay, you're going to be building something'; I'd have thought 'oh, I won't be able to do that'. But we were shown what to do and I gave it a go and I did it!*" (FG 1, girl aged15).

This is linked directly to self confidence, which is examined in section 3.8.

3.5.4 Was the Award in contrast to 'normal' school, and was it boring?

Two questions in wave 2 focused on the extent to which engagement in the Award was perceived as genuinely 'alternative' to the ordinary school experience (n=219) and if it was boring (n=218).

Figure 10: Participants' perceptions of the Award as boring, or like normal school



The results show clearly that the Award experience was not boring (for most participants) and not perceived as being like 'normal' school. Further analyses showed a relationship with age such that older participants were more likely to agree that doing their Award was boring (regression coefficient for association between age and disagreement that the Award was boring -0.1 p=0.011), but that there were no other differences in response by sex or family affluence.

By wave 3, there had been a small, but significant shift such that respondents were more likely to agree their Award participation was 'boring' (difference in mean scores wave 2 to wave 3, -.31 p = 0.04) but no change in tendency to agree or disagree the Award was like normal school.

The focus groups revealed more about the nature of the enjoyment of the award and its contrast to 'normal school'. In fact, one of the joys of the Award experience seems to have been that the participants hadn't known what to expect in advance, and that they perhaps expected the worst! For example, one respondent in Focus Group 3 said "*I didnae ken what would happe*n", and another that he'd expected it to be very like the ordinary (boring) school experience:

> I: "*What were you expecting?*"
> "*Like mostly more written work, like you would do in school. Like a bit more boring. But it wasn't. It was pure fun*" (FG 3, boy aged 15).

For the majority of the participants, the Award experience had exceeded expectations in terms of both the scope of what they had been involved in and how much they'd enjoyed it:

> "*We didn't realise how hands on it would be, so that was really good*" (FG 1, girl aged 14)

> "*It was more kind of broad. We thought it would be just like, oh go clean up a beach or whatever, but it was actually go and do something would actually help the island […] and the things we had to do were really good*" (FG2, boy aged 15)

As with the survey data, the focus groups revealed no real differences in enjoyment level or enthusiasm between boys and girls, or those from a richer or poorer background.

A further example of the value of the focus group phase of the research was the emergence of an important theme which we had neglected to include in the surveys. The Award seemed to serve as an important forum for interacting with, and making new, friends. Team based activities were highly popular and all four focus groups spoke about how much they'd liked being able to share the Award experience with their peer groups; it was 'good fun', they got to meet new people and teams became 'bonded' as a result of the new experiences:

> "*It was good fun, all in a big group doing it together*" (FG 1, girl aged 14).

> "*Some people had friends within the group, but because it's such a big year group, you might not know a lot of people, so it was good to get a chance to talk to them [..] you made new friends*" (FG2, boy aged 14).

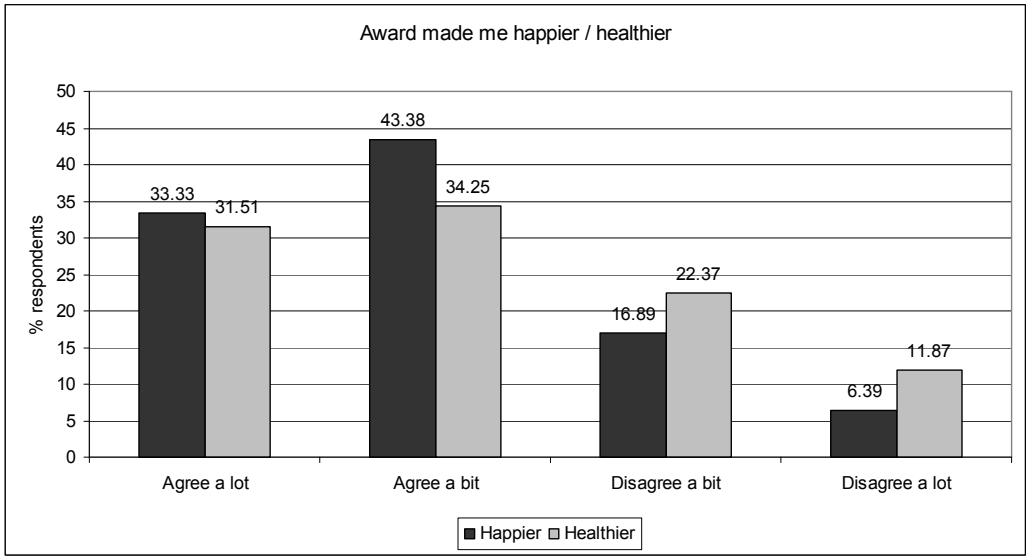
> "*When we had to deal with bad situations it was better for the group because we were more kind of, sort of, close, you know, we were more close by the end of it because we'd done so much together*" (FG 2, boy aged 14).

The younger participants had particularly enjoyed going on walks with their friends and teachers as part of their Award experience. In the group discussion, they shared stories about others from their walks such as "*Dylan skidding on his bum*" and "*Natalie's shoe coming off in the mud*". When asked if they would like to do similar activities in the future, all participants said yes, but the general inclination was to do them with their school friends rather than their family (this is discussed further in later sections).

3.5.5 Did doing the Award influence perceptions of health and happiness?

Two questions in waves 2 and 3 focused on whether doing the Award had made the participants 'feel better'. One asked if the Award experience had made the participant happier (n=219), the other if it had made them healthier (n=219).

Figure 11: Participants' perceptions of the Award as making them happier or healthier



Results at wave 2 suggested a modest positive tendency. Further analyses showed that there were no significant differences by sex or family affluence, but that older respondents were less likely to agree (regression coefficient for association between age and disagreement that the Award made respondent happier 0.12, p=0.019).

By wave 3 however, there had been a shift towards a less positive attitude with regard to the Award participation making respondents happier, with nearly 30% now disagreeing either a bit or a lot that doing the Award had made them happier (difference in mean score on 'Award made me happy', -0.4 p=0.003). Respondents from a wealthier background were more likely to have changed to a less favourable opinion (regression coefficient for change in rating associated with family affluence scale score -0.16 p=0.031). There was no change to perspectives on the Award making respondents healthier at wave 3.

In summary, the Award experience seems to have been perceived as overwhelmingly positive; respondents enjoyed it and felt that they had achieved something by completing it. Award participation was not perceived as very physically active and there was a relatively mixed set of opinions as to whether it had led to greater happiness or health. However, the Award experience was certainly not boring or 'like normal school'. At wave 3, some time after the Award was finished, this generally positive impression was diminished to a small extent. Older respondents were, on the whole, less likely to report favourably on their Award experience, but by no means failed to enjoy it. The fact that some participants had expected the Award to be boring, but found it anything but boring, was an important source of their enjoyment. The chance to interact with friends and make new ones was also highly valued by the participants.

3.6 How much physical activity did the participants do before their Award, did this change following Award completion and how did this vary by age, sex and family socio-economic position?

The actual *quantity* of physical activity was not the prime focus of this evaluation study. We neither expected dramatic changes in physical activity as a result of participation in the Award nor felt able to rigorously detect any such changes. This was because (a) young people are often not in direct control of the amount of exercise they do (school, parents and environment are likely much stronger influences) and (b) it is immensely difficult to

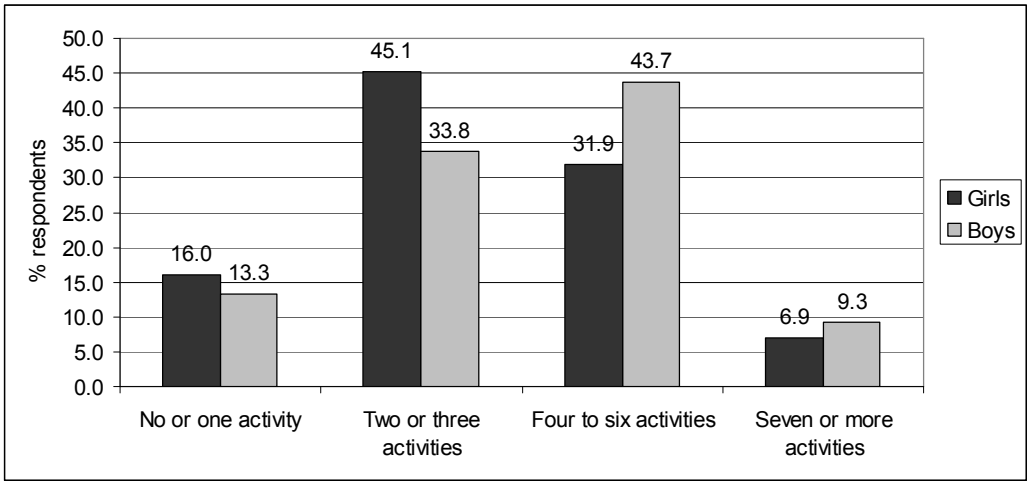
accurately measure amounts of physical activity via self-reported surveys of the kind used in this study. Our focus with regard to physical activity was thus more strongly on attitudes and aspirations for the future. However, we did feel it was worth a brief examination of the issue and to do so we used a mixture of question types across each of the 3 waves of survey. At wave 1 and wave 3 we used a standard means of recording participation in physical activities (see question 11, wave 1 survey in appendix 2). We also asked direct questions about perceived changes in amount of physical activity.

3.6.1 Amounts of physical activity reported in wave 1

To summarise quantities of physical activity we categorised respondents according to the number of physical activities they reported doing either 'every day' or 'most days'. We have no way of knowing the true extent to which the number of different activities corresponds to an *overall* amount of activity; it might be, for example, that one activity pursued at a high intensity actually provides more exercise than several activities pursued at low intensity. The measure was however, strongly related to self assessed fitness (asked at each wave of survey) (r^2 0.35, p<0.001), which may indicate a broad reflection of physical activity levels. The following results must, however, be interpreted with caution.

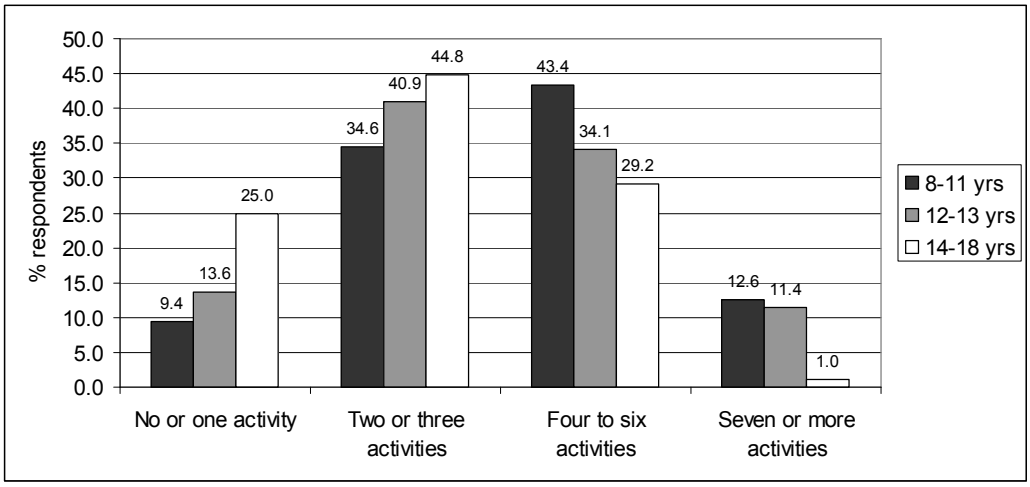
As expected, there were sex differences such that girls typically reported less activity (regression coefficient for the association between total activities reportedly done 'every day or on most days' and being female -0.48, p=0.005)

Figure 12: Categories of reported physical activity, by sex



There were also marked differences by age group, such that numbers of activities fell with increasing age (regression coefficient for the association between total activities reportedly done 'every day or on most days' and age -0.28, p=0.03). Further analysis showed no relationships with family affluence.

Figure 13: Categories of reported physical activity, by age group



3.6.2 Change in amounts of activity reported

In wave 3, the respondents were asked directly whether they felt their physical activity had increased since their Award. Nearly 60% of the wave 3 respondents reported that they did either more, or a lot more physical activity since their Award. However, the numbers of activities they reported doing every day or most days actually *fell* at wave 3. We were able to confirm this fall using more powerful modelling techniques to examine the changes in individuals over the time of the study (fixed effects models which seek differences within person, over time. Coefficient for the association between number of activities reported every day or most days, associated with wave 3 in fixed effects model 0-.62, (95% CI -.98 to -0.27). This fall did not seem associated with gender, age or family affluence. We suspect that it was partly due to the cohort of respondents ageing. Indeed, the fall was related to length of time between wave 2 and wave 3.

3.6.3 Self reported fitness

We also investigated levels of self-reported fitness and their change. At each wave, respondents were asked to rate themselves as very fit, quite fit or not very fit. As already noted in a previous section, levels of self reported fitness were relatively high, with nearly 40% of respondents rating themselves as 'very fit' at wave 1. There was, perhaps surprisingly, no association between self-rated fitness and age or sex. Nor was there a relationship with family affluence, once self esteem (to which self-rated fitness was strongly related) was accounted for. There were also no significant changes in the measure across waves. This measure seemed to reflect the individual's self-esteem.

In summary, the actual quantity of physical activity was not the prime focus of this evaluation study but we did have some crude measures of level and change in activity. As expected, girls undertook fewer activities than boys. Evidence for change in activity levels suggest that, if anything, they fell over the course of the study. We suspect that this was simply because the respondents were getting older.

3.7 What attitudes to physical activity did the Award participants hold at the start of their Award, how did these change and how did attitudes and change vary by age, sex and family socio-economic position?

Waves 1, 2 and 3 all captured respondents' attitudes to sport and physical activity using the same two sets of questions (see appendix 2, questions 12 and 13). A summary scale for positive attitudes to sport was derived by averaging the scores across the first set (question

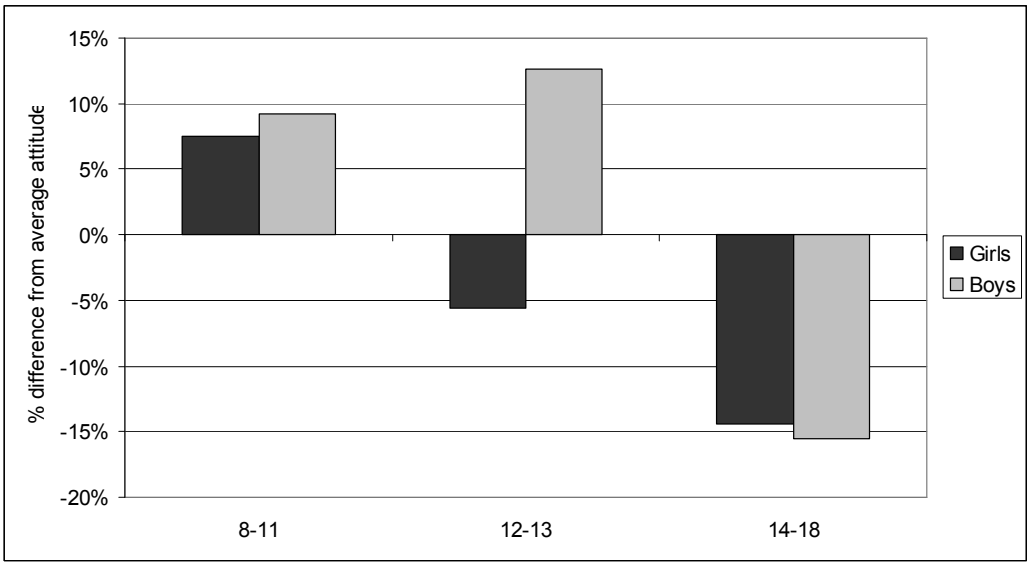
12, appendix 2), and a scale for negative attitudes to sport was derived by averaging the scores across the second set. One missing item was allowed, in order to maximise sample numbers. The resulting scales were used to explore attitudes to sport and exercise at wave 1 and then subsequent changes.

3.7.1 Attitudes at wave 1

Figure 14 shows variation in positive attitudes to sport across age and sex group at wave 1. The figure is designed so that positive attitudes to sport are shown relative to the average for all respondents, and that a higher value on the graph thus indicates more positive attitudes. For example, girls aged 8-11 had about an 8% more positive attitude to sport than the respondents as a whole.

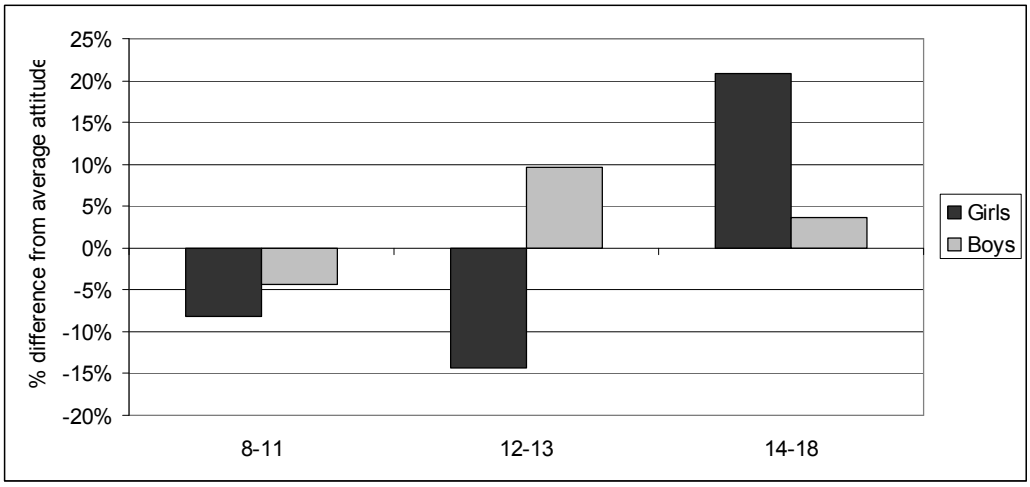
The graph shows that a positive attitude towards sport generally decreased with age (regression coefficient for association between age and less positive attitudes to sport 0.5, p<0.000). Although the graph also suggests that a positive attitude to sport was generally stronger for boys than girls in fact this difference was not statistically significant (p=0.43). There was no relationship between positive attitude to sport and family affluence.

Figure 14: Variation in positive attitudes to sport by age group and sex



The variation in negative attitudes at wave 1 is explored in figure 15. Again, the graph is structured to show how negative attitudes vary across age and sex groups and this time, a higher score denotes a more *negative* attitude. For the younger two age groups, the graph is largely a mirror image of figure 13. However, for the oldest group, the difference between boys and girls is far more marked; girls have a very much more negative attitude to sport at this age (p for interaction coefficient, p=0.028). There was no significant relationship between negative attitude to sport and family affluence.

Figure 15: Variation in negative attitudes to sport by age group and sex



3.7.2 Changes in attitudes

Whether these attitudes changed across the time period of the study was a key question. Change over time in attitudes to sport was explored using statistical models which take account of the fact that these are the same individuals, surveyed at 3 different time points, and that they were grouped by Award Provider.

The results showed that immediately after completing the Award (i.e. at wave 2), there *was* a significant increase in positive attitude to sport (regression coefficient for wave 2 value, relative to wave 1 - 0.093, p=0.042). However, this was not maintained through to wave 3 (regression coefficient for wave 3 value, relative to wave 1, 0.004, p=0.914); in other words, any change in attitudes to sport and exercise which may have been associated with Award participation, was lost with the passage of time. There was no change in negative attitudes to sport at either wave 2 or wave 3. There was also no evidence of any differences in these relationships for boys or girls, according to family affluence, or residence in the 15% most deprived areas in Scotland.

In summary, attitudes to sport were more positive for younger respondents and more negative for girls (increasingly so for older girls). Although we did detect an improvement in attitudes to sport immediately after Award participation, this was not maintained afterwards and had disappeared by wave 3.

3.8 What levels of self esteem did the Award participants hold at the start of their Award, how did these change, and how did levels and change vary by age, sex and family socio-economic position?

3.8.1 Baseline values

Self esteem was measured using a modified form of the Rosenberg self esteem scale. This is a well tested and validated measure. You can see the items which comprise the scale at question 20 in appendix 2.

The average score on the Rosenberg self esteem scale at the baseline (i.e. wave 1, before the Award took place) was 21.9 (95% CI for mean 21.2 to 22.7). This was marginally higher (i.e. greater levels of esteem) than values for comparable respondents to the MRC studies (see section 3.2). There were no significant differences in self esteem by age, sex, family affluence or residence in areas comprising the 15% most deprived population in Scotland.

When focusing specifically on *low* self esteem (a score lower than 20), we saw that girls were more likely to have low self esteem than boys (odds of low esteem for girls, relative to boys 1.7 p=0.042). Previous experience of wild places was *not* related to either self esteem or low self-esteem. One plausible impact of the intervention was that the experience of contact with wild places might lead to an increase in self-esteem. That we saw no relationship between previous experience of wild places and self esteem at baseline made such an impact a less likely finding. Nonetheless, we examined any changes in some detail.

3.8.2 Changes to self esteem

There was no evidence of any change in self esteem across the subsequent waves of the study for the participants as a whole. There were however, some changes for particular sub groups at wave 3. Self esteem rose significantly between waves 1 and 3 for boys (mean difference 2.5 p=0.01). It rose for those from the poorest family affluence group (mean difference 3.2, p=0.02). It also rose for those resident in areas comprising the most deprived 15% of the Scottish population (mean difference 3.08, p=0.03). Since there were no such differences between waves 1 and 2, we know that these changes took place between waves 2 and 3.

We also tried to check for changes in whether a respondent was classified as having low self esteem. There were very relatively few respondents whose self esteem rose enough to take them out of the 'low esteem' classification and we were thus unable to carry out valid statistical analyses on this group.

What do these changes mean? We have two items of evidence to suggest that the changes we have observed are not evidence of an effect of the Award experience. First, if the effect was real we might have expected the change to have been strongest at wave 2, when the Award had just finished. That we detected no changes in self esteem at this point suggests the changes we observe by wave 3 are more likely due to some other factor. Second, whilst we saw evidence for rises in self esteem when we examined the distribution of changes to those in the lowest family affluence group, those who are boys and those resident in areas comprising the poorest 15% of the Scottish population, we also saw evidence of *falls* in self esteem (i.e. evidence of 'regression to the mean'). It is obvious that there are many, many things going on in young people's lives as they grow up and the pattern of results we have seen provides only the slightest suggestion that, for those in the poorest groups and for boys, self esteem has been influenced by Award participation.

3.8.3 Focus groups and confidence

Although we found little evidence of change in self confidence for the participants as a whole in the survey phase of the work, it was a significant subject in the focus group phase of the work. Some participants did talk about their sense of achievement and growth in confidence, as a result of the Award experience.

> "*Yeah! I thought I'd be pathetic and I wouldn't be able to any of it but I could!"* (FG 1, girl aged 15).

> "*I think it gave me more confidence. Because I was really nervous about having to try it but when I did I just loved it so much that I got caught up in the atmosphere and it was fun so I managed it*" (FG 2, boy aged 15).

That the focus groups raised this issue does not contradict the survey findings. The survey sought a particular formal measure of self esteem and was focused on determining whether the Award influenced it for particular types of participant. The advantage of having the focus group data is that they remind us survey data have limitations in what they can detect, whilst

the survey data remind us that just because a few individuals felt more confident as a result of the Award does not mean that all participants will have done so.

In summary, self esteem did not vary by age, sex or socio-economic position at wave 1. Whilst there were some significant rises in self esteem for boys, and for the poorest respondents, between waves 1 and 3, the pattern of results prompts a cautious interpretation and we concluded that these changes are unlikely to be a direct result of Award involvement. Some individuals in the focus groups did report that their confidence was improved by their Award activities.

3.9 What aspirations for future health and contact with natural environments did the Award participants hold at the start of their Award, how did these change and how did aspirations and change vary by age, sex and family socio-economic position?

3.9.1 Aspirations before the Award

All waves of the survey carried a set of questions about aspirations for future. Two measures were derived from these questions (see question 16, appendix 2).

A scale measuring aspirations for health was based on responses to items asking the respondent how likely they thought it that they would be in good health, taking exercise, fitter than they were currently, and how unlikely they would be a smoker and overweight, when they were 21 years old (the scale has an alpha score of 0.7). A higher score denoted stronger expectations of, or aspirations for, 'positive' health behaviours and good health.

Aspirations for future health at wave 1 were not related to age, sex or family affluence, but they were strongly related to self esteem; those with more self esteem also tended to have greater aspiration (regression coefficient for the association between self esteem and aspirations for future health, adjusted for age, sex and family affluence, 0.13 $p<0.001$).

A scale measuring aspirations for contact with nature was based on responses to two items. The first asked the respondent how likely they thought it that they would be walking in countryside or mountains when they were 21. The second asked how likely they thought it that they would be interested in the natural environment when they are 21. The scale has an alpha score of 0.7. A higher score denoted stronger expectations of, or aspirations for, interest in and contact with the natural world.

Aspirations for future contact with natural environments were also not related to sex, family affluence or self esteem at wave 1, but they were strongly related to age (older respondents had *lower* aspirations for contact with nature) and previous experience of wild places. Greater previous experience of wild places was associated with higher aspirations for contact with nature in the future (regression coefficient for association between previous experience of wild places and aspiration for future contact 0.87, $p<0.001$). This was a significant finding, because it suggested that having experience of wild places was associated with desire to have more – echoing findings from other research (18). It also suggested that we might expect participation in the Award to have an influence on those with little or no previous experience of wild places in particular.

By waves 2 and 3, previous experience of wild places was no longer a significant predictor of future aspirations for contact with wild places. This was as expected, since by the end of their Award, all respondents had gained some experience of these environments.

3.9.2 Aspirations after the Award

We found no evidence for changes in these aspirations among the study respondents as a whole, either by wave 2 or at wave 3 apart from a suggestion that aspirations for a healthy future lifestyle actually fell between waves 2 and 3 (coefficient for aspirations for health associated with wave 3, relative to wave 1 -0.35 p= 0.050).

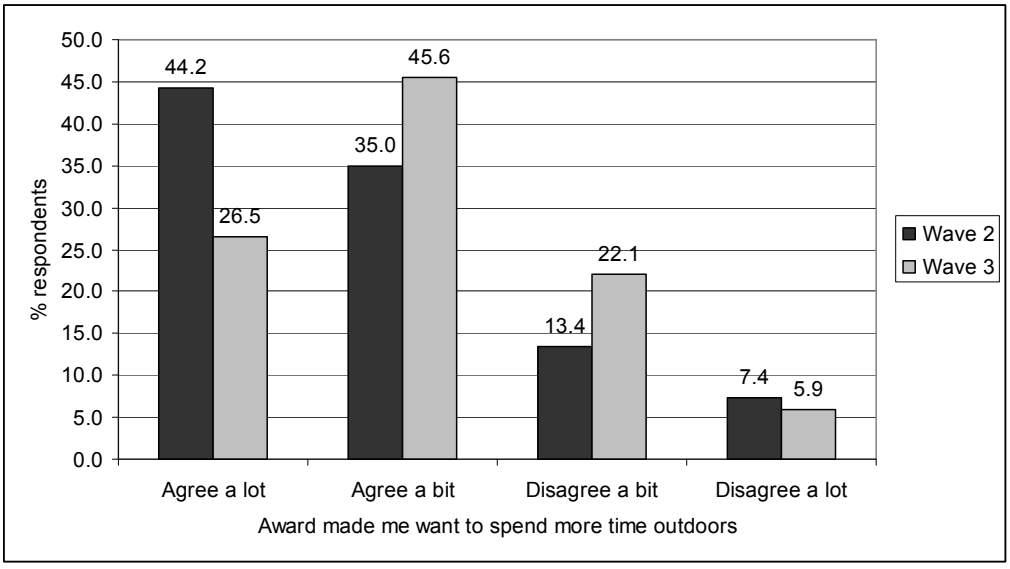
However, when we examined changes within sub-group of respondents, we did see one positive result. For those resident in areas comprising the 15% most deprived population in Scotland, there was a significant rise in aspirations for future contact with nature between waves 1 and 2 (coefficient for interaction between wave 2 and residence in 15% most deprived areas in Scotland, associated with aspiration score = 0.79 p= 0.006) and this was sustained at wave 3 (coefficient for interaction between wave 2 and residence in 15% most deprived areas in Scotland, associated with aspiration score = 1.2 p=0.001). Investigating this effect further, we determined that it was primarily driven by a change for boys. This means that participation in the Award seems to have increased aspiration for future contact with nature among those living in some of Scotland's most deprived environments.

3.9.3 Stated and actual impacts of the Award on visits to outdoor environments

At waves 2 and 3, the respondents were asked how much the Award "*made me want to spend more time outdoors*" and whether doing the Award "*made me want to visit more natural places, (like parks or the countryside), with my family and friends*".

Immediately after their Award (i.e. at wave 2), the respondents expressed strong agreement that their experience had made them want to spend more time outdoors. This effect had diminished a little by wave 3, but remained clear (figure 16).

Figure 16: Response to Award's influence on wanting to spend time outdoors, waves 2 and 3



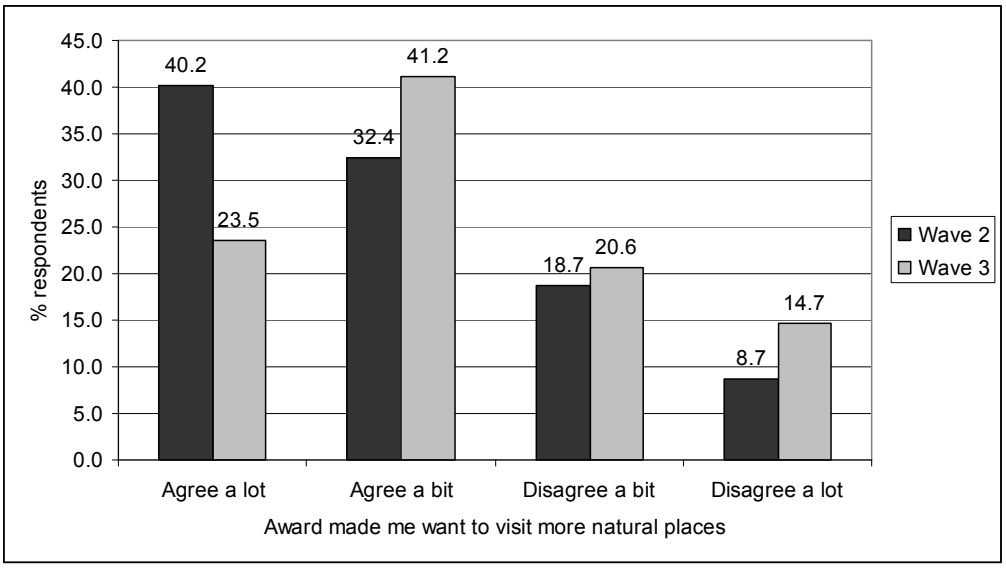
Statistical models revealed that at wave 2, older respondents were more likely to disagree that their Award participation had made them want to spend more time outdoors (coefficient for association between age and disagreement 0.12, p=0.013) but that there was no influence of sex, family affluence or of residence in an area comprising the 15% poorest population in Scotland.

Agreement that participation in the Award made respondents want to spend more time outdoors had changed significantly by wave 3 (difference between mean score in wave 2 and wave 3 = 0.37, p=0.0012). The factors predicting change in whether respondents were more or less

inclined to agree were interesting; older respondents were more likely to *increase* their agreement (coefficient for association between change in agreement and age 0.14, p=0.003), those with greater family affluence scores to *decrease* their agreement (coefficient for association between change in agreement and family affluence scale -0.13, p=0.009). Those resident in an area comprising the 15% poorest population in Scotland were more likely to *increase* their agreement (coefficient for association between change in agreement and residence in poorest 15% 0.63 p=0.019). There was clearly a complex shift in attitude! Perhaps the most important message was that even at wave 3, long after the Award experience finished, 72% of respondents agreed that their experience had made them want to spend more time outdoors.

Similar analyses were conducted examining agreement that participation in the Award "*made me want to visit more natural places, (like parks or the countryside), with my family and friends"*. Figure 17

Figure 17: Response to Award's influence on wanting to visit natural places more



At wave 2, age was again associated with more disagreement with the statement (coefficient for association between age and disagreement 0.17, p=0.006) but there was no relationship with sex, or measures of family affluence or residence in areas comprising the15% poorest population in Scotland. The change in this pattern of response was significant (difference between mean score in wave 2 and wave 3 = 0.29, p=0.03). Age (coefficient for association between change in agreement and age 0.20, p=0.006) and sex (coefficient for association between change in agreement and being a boy -0.50 , p=0.033) both predicted a change in response between wave 2 and wave 3, but family affluence and residence in an area comprising the poorest 15% of the Scottish population, did not. Again, the clearest finding was that, at wave 3, long after the Award finished, 65% of respondents agreed that their experience had made them want to visit natural places more.

Although the number of respondents reporting that they had not enjoyed their Award experience was very small (see section 3.5.2) making statistical analyses difficult, we did note a relationship between reporting that Award participation increased desire for contact with natural places and enjoyment of the Award experience. Perhaps unsurprisingly, those who did not enjoy their Award were much less likely to agree that it had made them want to visit more natural places or spend more time outdoors.

3.9.4 'These activities are difficult to arrange'; an unintended consequence of the Award?

The focus groups were able to shed more light on the Award's impact on attitudes to visiting wild places. All participants said that the Award had inspired them to want to visit wild places again, but a number highlighted obstacles to future involvement in activities such as conservation work, canoeing and climbing (which were the aspects of their Award experiences that participants were particularly keen to repeat).

It seemed that the high levels of structure and support with which the Award activities were delivered had contributed to participants' enjoyment of them, but it had also contributed to a sense that such experiences wouldn't be easy to repeat independently. This was either because participants thought such activities required travel to another locale and expert guidance, or because they required a high level of self-motivation. One respondent in the second focus group said "*it would be quite difficult to arrange it all outside of school*" (FG 2, boy aged 15).

When prompted about perhaps getting access to green space or the outdoors in a less 'demanding' way, (such as going for a walk in the local area), respondents lacked enthusiasm. One commented "*we sometimes go for walks at the weekend when my Dad's around but that's a bit boring*" (FG 1, girl aged 15). Other participants reported little activity with their families and little with their friends. All the participants expressed a strong preference for doing activities with their peers, rather than family members; saying climbing and hill-walking and canoeing was "*the sort of the thing you would do with your friends*" rather than family. (FG 1, girl aged 15).

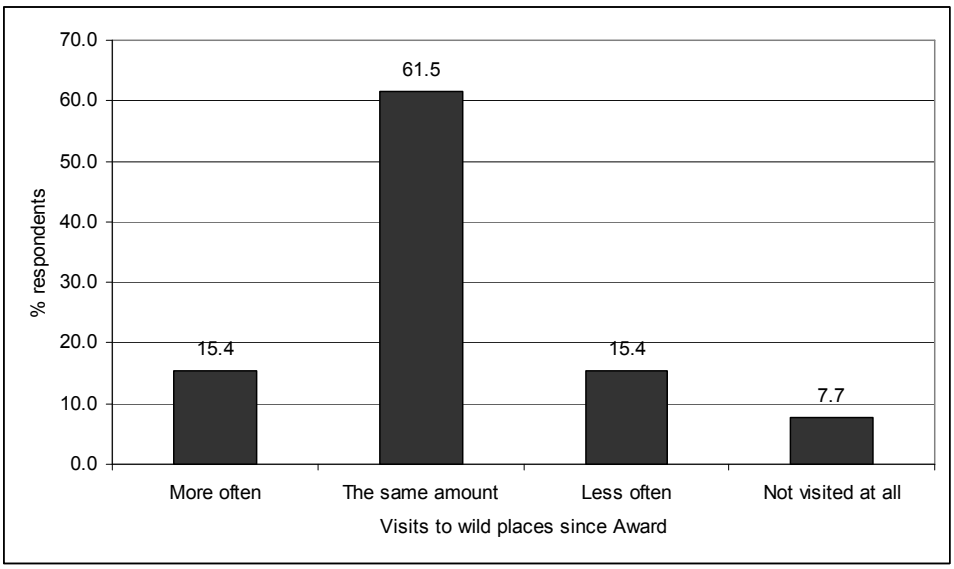
In summary, before the Award started we found that those who had previous experience of wild places were more likely to aspire to continued contact with nature and the outdoors in their adult lives. By the end of the Award experience, there had been a significant positive increase in this aspiration among those resident in an area comprising the poorest 15% of the Scottish population. Very strong agreement that the Award experience led to them wanting to spend more time outdoors and to visit natural places more persisted among respondents long after the Award had finished. However, the focus groups revealed that some participants' experience of the high level of organisation and supervision of their Award activities had prompted them to doubt whether they could continue such activities on their own or with their families or friends.

3.10 Did the Award result in more visits to wild places?

The results in the previous section begged a further question; was there any actual change in levels of visits to wild places, and if so, to what could this be attributed?

At wave 3, the respondents were asked directly "*Since you finished your John Muir Award, have you visited wild places more often, the same amount, less often or not at all?*" Figure 18 gives the response.

Figure 18: Reported Visits to wild places since Award



The graph shows that for most respondents, there had been no change in visits to wild places, despite their stated aspirations. Equal proportions had increased or decreased their visits. There were no significant relationships between age, sex, family affluence or residence in an area comprising the poorest 15% of the Scottish population, and these reported changes (or lack of change). For those respondents who reported a change however, we also asked for the reasons behind the change. Since so few had actually changed visiting behaviour, numbers were very small in this variable and were not suitable for rigorous analysis. From the small response available, there was no evidence that the Award was a key motivator for those who had increased their visits.

In summary, despite reporting aspirations for more contact with nature and wild places, very few of the respondents had actually visited these environments more. This is highly likely to reflect the fact that most of the respondents are not in control of their visits to these environments; it requires some combination of time, parental permission, company and perhaps transport.

4 Brief summary

This section distils the large number of results down to those which are most important

The original research question was

> *Does participation in the John Muir Award significantly alter young people's health-related attitudes, behaviours and trajectories, including and comprising: participation in sport; attitude to physical activity and sport; self reported fitness; self-esteem; attitudes to and intentions for the future; interest and participation in visiting 'wild places' and other outdoor environments?*

The answer is a tentative yes to the components of the question focused on aspirations and attitudes regarding contact with nature in the future, particularly for those resident in some of Scotland's poorest areas. The respondents also overwhelmingly enjoyed and valued their Award experience. They enjoyed the conservation activities, seeing them as something

positive and useful. They enjoyed the novelty and excitement of their experiences. They enjoyed the social aspects of them too. Some enjoyed the surprise that the Award activities were not what they expected!

However, participation in the Award did not lead to any demonstrable and sustained shift in attitudes to physical activity or to a demonstrable rise in actually visiting wild places. Whilst the Award activities were enjoyable, for some the high level of organisation and novelty of experience led them to believe that they could not repeat those kinds of activities by themselves, or with family or friends.

Whilst self esteem did rise for certain groups during the course of the study, it seems unlikely that this was attributable to their Award participation. The focus groups provided some anecdotal examples of activities which boosted confidence, but the study cannot conclude that the Award definitely improves self esteem or confidence for most participants.

The study showed that those in the poorest circumstances were much less likely to have visited wild places before their Award experience, and that perhaps this group is most positively affected by the experience. This is, surely, a positive outcome for the John Muir Award and reinforces its desire to reach people from all backgrounds, not just the most advantaged. Since this is the group with the greatest likelihood of health problems in adult life, any success in establishing a desire to visit salutogenic environments must be welcomed.

The study also showed that those who experience wild places are far more likely to aspire to do so again and again. Once people are introduced to these environments, it seems they want to revisit them. The John Muir Award is clearly successful at introducing people to these environments and by implication, in helping to establish aspirations for a healthy behaviour. Of course, in itself, the Award cannot take a role in turning aspiration into actual behaviour; that is something which other agencies need to prioritise.

"When one tugs at a single thing in nature, he finds it attached to the rest of the world"
John Muir

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5 Technical Supplement

In this part of the report we provide more detailed statistical results for those who wish to read them. The results presented are tied to, and expand, the results presented in the main body of the report

T.5.1 What kinds of individuals participated in the survey (age, sex and family socio-economic position)

T.5.1.1 Sample composition at wave 1

Age and sex were related in the sample. This logistic regression model predicts the odds of being a boy, with age as an independent variable. It shows that the odds of being a boy rise with age.

Table 4: Odds of being a boy rises with age in the sample

```
Logistic regression                                     Number of obs   =        307
                                                        Wald chi2(1)    =       4.64
                                                        Prob > chi2     =     0.0313
Log pseudolikelihood = -210.04443                       Pseudo R2       =     0.0126

                                (Std. Err. adjusted for 15 clusters in provid)
------------------------------------------------------------------------------
             |               Robust
         sex | Odds Ratio   Std. Err.      z    P>|z|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
         age |   1.130478   .0643781     2.15   0.031     1.011086    1.263968
------------------------------------------------------------------------------
```

T.5.1.2 Changes in sample composition over the course of the study

Odds of not responding at wave 2 were higher for older wave 1 respondents

Table 5: Odds of not responding at wave 2 were associated with age

```
Logistic regression                                     Number of obs   =        299
                                                        Wald chi2(1)    =       3.90
                                                        Prob > chi2     =     0.0483
Log pseudolikelihood = -180.58041                       Pseudo R2       =     0.0299

                                (Std. Err. adjusted for 15 clusters in provid)
------------------------------------------------------------------------------
             |               Robust
       wave2 | Odds Ratio   Std. Err.      z    P>|z|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
         age |   1.211067   .1174391     1.97   0.048     1.001442    1.464571
------------------------------------------------------------------------------
```

Odds of not responding at wave 2 were also much higher for wave 1 respondents resident in the 15% poorest areas in Scotland (simdtp15 in the model)

Table 6: Odds of not responding at wave 2 associated with residents in areas comprising the 15% more deprived areas in Scotland.

```
Logistic regression                                     Number of obs   =        246
                                                        Wald chi2(1)    =       8.00
                                                        Prob > chi2     =     0.0047
Log pseudolikelihood = -135.14047                       Pseudo R2       =     0.0486

                                (Std. Err. adjusted for 15 clusters in provid)
------------------------------------------------------------------------------
             |               Robust
       wave2 | Odds Ratio   Std. Err.      z    P>|z|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
    simdtp15 |   3.489681   1.541822     2.83   0.005     1.467929    8.295954
------------------------------------------------------------------------------
```

T.5.2 What previous experience of wild places did the participants have (and how did this vary by age, sex and family socio-economic position)

This model shows the persistence of a significant relationship such that the poorest family affluence group have had less previous contact with wild places than the richest group (the omitted reference category).

Table 7: An association between family affluence group and previous experience of wild places

```
Linear regression                               Number of obs =     280
                                                F(  4,    14) =    3.20
                                                Prob > F      =  0.0463
                                                R-squared     =  0.0339
                                                Root MSE      =  .61479

                                  (Std. Err. adjusted for 15 clusters in provid)
------------------------------------------------------------------------------
             |               Robust
Previous contact |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
         age |   .0095457   .0205287     0.46   0.649    -.034484    .0535755
         sex |    .006016   .071677      0.08   0.934    -.1477158   .1597479
      Poorer |  -.2815274   .0832945    -3.38   0.004    -.4601764   -.1028784
      Middle |  -.0490277   .0509563    -0.96   0.352    -.158318    .0602626
       _cons |   2.263938   .3463139     6.54   0.000     1.521168   3.006707
------------------------------------------------------------------------------
```

This model shows that when we focus on those with no previous experience of wild places at all, a child from the poorest 15% of Scotland is 6.4 times more likely to have had *no* previous experience of wild places, than a child from elsewhere (the omitted reference category).

Table 8: Odds of no previous experience of wild places for those from areas comprising the most deprived 15% of Scottish population

```
Logistic regression                             Number of obs   =        227
                                                Wald chi2(3)    =      11.99
                                                Prob > chi2     =     0.0074
Log pseudolikelihood = -57.917797               Pseudo R2       =     0.1132

                                  (Std. Err. adjusted for 15 clusters in provid)
------------------------------------------------------------------------------
             |               Robust
No previous  |  Odds Ratio   Std. Err.      z    P>|z|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
         age |   .8596136   .1463611    -0.89   0.374     .6157076    1.20014
         sex |    .916783    .467307    -0.17   0.865     .3375888    2.489689
Most deprived |  6.395965   3.564757     3.33   0.001     2.145327    19.06859
------------------------------------------------------------------------------
```

T.5.3 How did the participants perceive their Award experience and how did these perceptions vary by age, sex, family socio-economic position and previous experience of wild places?

T.5.3.1 Overall attitude

Older respondents were significantly more likely to circle a less 'smiley' face to indicate their feelings about their Award experience

Table 9: Association between age and overall Award experience

```
Linear regression                               Number of obs =     207
                                                F(  1,     9) =   11.67
                                                Prob > F      =  0.0077
                                                R-squared     =  0.0759
                                                Root MSE      =  .82409

                                  (Std. Err. adjusted for 10 clusters in provid)
------------------------------------------------------------------------------
             |               Robust
Overall exp  |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
         age |   .1152937   .0337502     3.42   0.008     .0389454    .1916419
       _cons |   .2440726   .4707303     0.52   0.617    -.8207933    1.308939
------------------------------------------------------------------------------
```

At wave 3, there was a weak relationship such that those from wealthier family backgrounds were more likely to provide a less positive rating (measured by variable whose value increases with choice of less smiley faces)

Table 10: Association between family affluence and overall Award experience at wave 3

```
Linear regression                               Number of obs =      66
                                                F(  1,     8) =    6.26
                                                Prob > F      =  0.0369
                                                R-squared     =  0.0929
                                                Root MSE      =  .65158

                                   (Std. Err. adjusted for 9 clusters in provid)
------------------------------------------------------------------------------
             |               Robust
  Overall exp|      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
Family affluence|   .1342756   .0536874     2.50   0.037     .0104722    .258079
       _cons |   1.114841   .1660895     6.71   0.000      .731838    1.497844
------------------------------------------------------------------------------
```

T.5.3.2 Was the Award in contrast to 'normal' school, and was it boring?

At wave 2, there was a relationship with age such that older participants were more likely to agree that the Award was boring (the variable labelled '*awbord*' measured agreement with the statement 'Doing the Award was boring'; lower values denoted greater agreement).

Table 11: Association between age and agreement that the Award was boring at wave 2

```
Linear regression                               Number of obs =     218
                                                F(  1,     9) =   10.03
                                                Prob > F      =  0.0114
                                                R-squared     =  0.0535
                                                Root MSE      =  .89182

                                   (Std. Err. adjusted for 10 clusters in provid)
------------------------------------------------------------------------------
             |               Robust
      awbord |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
         age |  -.0995095    .031416    -3.17   0.011    -.1705774   -.0284416
       _cons |   4.584596   .4611612     9.94   0.000     3.541377    5.627815
------------------------------------------------------------------------------
```

By wave 3, there had been a small, but significant shift such that respondents were more likely to agree the Award was 'boring' (results are a ttest for agreement with the statement 'Doing the Award was boring' at waves 2 (*awbord*) and 3 (*awbord3*).

Table 12: Difference between agreement that the Award was boring at waves 2 and 3

```
------------------------------------------------------------------------------
Variable |       Obs        Mean    Std. Err.   Std. Dev.   [95% Conf. Interval]
---------+--------------------------------------------------------------------
  awbord |        52    3.480769    .1045366    .7538238    3.270903    3.690635
awbord3  |        52    3.173077    .1309011    .9439415    2.910282    3.435872
---------+--------------------------------------------------------------------
    diff |        52    .3076923    .1441113    1.039201    .0183768    .5970078
------------------------------------------------------------------------------
    mean(diff) = mean(awbord - awbord3)                           t =   2.1351
Ho: mean(diff) = 0                     degrees of freedom =       51

 Ha: mean(diff) < 0           Ha: mean(diff) != 0           Ha: mean(diff) > 0
 Pr(T < t) = 0.9812         Pr(|T| > |t|) = 0.0376          Pr(T > t) = 0.0188
```

T.5.3.3 Did doing the Award influence perceptions of health and happiness?

Older respondents were less likely to agree with the statement that the 'Award made me happier' (higher values of *awhapy* denote less agreement)

Table 13: Association between age and agreement that the Award made me happier

```
Linear regression                               Number of obs =     219
                                                F(  1,     9) =    8.05
                                                Prob > F      =  0.0195
                                                R-squared     =  0.0951
                                                Root MSE      =  .83125

                                  (Std. Err. adjusted for 10 clusters in provid)
------------------------------------------------------------------------------
             |               Robust
      awhapy |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
         age |   .1267037   .044655     2.84   0.019     .0256872    .2277202
       _cons |   .3904351   .6364298    0.61   0.555    -1.049269    1.830139
------------------------------------------------------------------------------
```

By wave 3 however, there had been a shift towards a less positive attitude with regard to the Award making respondents happier, with nearly 30% now disagreeing either a bit or a lot that the Award had made them happier. The ttest shows the difference in mean response between the two waves (*awhapy3* is at the same measure but at wave 3).

Table 14: Difference between agreement that the Award made me happier at waves 2 and 3

```
Variable |       Obs        Mean    Std. Err.   Std. Dev.   [95% Conf. Interval]
---------+--------------------------------------------------------------------
  awhapy |        52    1.846154   .0966428    .6969011    1.652135    2.040172
 awhapy3 |        52        2.25   .1254705    .9047803    1.998108    2.501892
---------+--------------------------------------------------------------------
    diff |        52   -.4038462   .1037008    .7477972   -.6120342   -.1956581
------------------------------------------------------------------------------
     mean(diff) = mean(awhapy - awhapy3)                           t =  -3.8943
 Ho: mean(diff) = 0                                     degrees of freedom =     51

 Ha: mean(diff) < 0           Ha: mean(diff) != 0           Ha: mean(diff) > 0
 Pr(T < t) = 0.0001         Pr(|T| > |t|) = 0.0003          Pr(T > t) = 0.9999
```

Respondents from a wealthier background were more likely to have changed to a less favourable opinion. Model results are for a variable measuring change in response between waves 2 and 3. The variable is coded so that a lower score denotes increased disagreement with the statement 'Doing the Award made me happier'.

Table 15: Association between family affluence and change in agreement that the Award made me happier, between waves 2 and 3

```
Linear regression                               Number of obs =      51
                                                F(  1,     6) =    6.87
                                                Prob > F      =  0.0395
                                                R-squared     =  0.0961
                                                Root MSE      =  .72322

                                  (Std. Err. adjusted for 7 clusters in provid)
------------------------------------------------------------------------------
             |               Robust
Change in agreement |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
Family affluence |   -.154321   .0588812    -2.62   0.040    -.2983981   -.0102438
       _cons |   .1419753   .2046386     0.69   0.514    -.3587574    .642708
------------------------------------------------------------------------------
```

T.5.4 How much physical activity did the participants do before their Award, did this change following Award completion and how did this vary by age, sex and family socio-economic position?

T.5.4.1 Amounts of physical activity reported in wave 1

The model shows that older respondents reported fewer activities that were done 'every day or on most days', that boys were more likely to report more such activities than girls, and no significant relationship with family affluence.

Table 16: Associations between age, sex, family affluence and reported physical activities

```
Linear regression                               Number of obs =     293
                                                F(  3,    14) =    5.71
                                                Prob > F      =  0.0091
                                                R-squared     =  0.0834
                                                Root MSE      =  2.0191

                                   (Std. Err. adjusted for 15 clusters in provid)
------------------------------------------------------------------------------
             |               Robust
'Daily' actitivies |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
         age |  -.2759095   .1134807    -2.43   0.029    -.5193013   -.0325176
'Being female |   -.481232   .1437485    -3.35   0.005    -.7895419    -.172922
Family affluence |  .0991371   .1237723     0.80   0.437    -.1663281    .3646023
       _cons |   6.948381   1.558208     4.46   0.001     3.606357    10.29041
------------------------------------------------------------------------------
```

T.5.4.2 Change in amounts of activity reported

A fixed effects model (seeking differences in activities reported within person, over time) showed a significant reduction at wave 3, relative to wave 1.

Table 17: Fixed effects regression detecting change in reported physical activities

```
Fixed-effects (within) regression               Number of obs      =       385
Group variable: idnum                           Number of groups   =       316

R-sq:  within  = 0.1270                         Obs per group: min =         1
       between = 0.0200                                        avg =       1.2
       overall = 0.0298                                        max =         2

                                                F(1,14)            =     14.44
corr(u_i, Xb)  = 0.0646                         Prob > F           =    0.0019

                                   (Std. Err. adjusted for 15 clusters in provid)
------------------------------------------------------------------------------
             |               Robust
'Daily' actitivies |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
      Wave 2 |  (dropped)
      Wave 3 |  -.6231884   .1639703    -3.80   0.002    -.9748698   -.2715071
       _cons |   3.345455   .0293869   113.84   0.000     3.282426    3.408483
-------------+----------------------------------------------------------------
     sigma_u |  2.2088438
     sigma_e |  1.1638011
         rho |  .78271443   (fraction of variance due to u_i)
------------------------------------------------------------------------------
```

The fall in activities reported was related to length of time between wave 2 and wave 3 (*Time*), hinting at an influence of ageing.

Table 18: Association between change in physical activities reported and age, sex, family affluence and length of follow up time between waves 2 and 3

```
Linear regression                               Number of obs =      68
                                                F(  4,     8) =   13.64
                                                Prob > F      =  0.0012
                                                R-squared     =  0.0400
                                                Root MSE      =  1.6748

                                   (Std. Err. adjusted for 9 clusters in provid)
------------------------------------------------------------------------------
             |               Robust
      Change |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
         age |   .0106093   .1102417     0.10   0.926    -.2436085    .2648271
         sex |  -.1109795   .5703977    -0.19   0.851    -1.426319    1.20436
Family affluence |  -.1171609   .0868724    -1.35   0.214     -.317489    .0831672
        Time |  -.0619204   .0228579    -2.71   0.027    -.1146308     -.00921
       _cons |   2.182241   1.332607     1.64   0.140    -.8907556    5.255237
------------------------------------------------------------------------------
```

T.5.5 What attitudes to physical activity did the Award participants hold at the start of their Award, how did these change and how did attitudes and change vary by age, sex and family socio-economic position?

T.5.5.1 Attitudes at wave 1

The model shows that a positive attitude towards sport generally decreases with age, because the variable is coded such that a smaller value denotes a more positive attitude. Although the graph in the main report body also suggests that a positive attitude to sport is generally stronger for boys than girls, in fact this difference was not statistically significant. There was no relationship between positive attitude to sport and family affluence.

Table 19: Association between positive attitude to sport and age, sex and family affluence

Linear regression — Number of obs = 287; F(3, 14) = 11.91; Prob > F = 0.0004; R-squared = 0.0652; Root MSE = .45197

(Std. Err. adjusted for 15 clusters in provid)

+ve attitude	Coef.	Robust Std. Err.	t	P>|t|	[95% Conf.	Interval]
age	.0555186	.0118352	4.69	0.000	.0301346	.0809025
sex	-.0333653	.0474172	-0.70	0.493	-.1350651	.0683346
Family affluence	-.0040104	.018349	-0.22	0.830	-.0433651	.0353442
_cons	.9320842	.1302992	7.15	0.000	.6526202	1.211548

These results are largely mirrored for the negative attitudes to sport variable (coded so that a small value denotes greater negativity). The particular difference between boys and girls in the oldest age group can be formally confirmed via an interaction term; the one of interest here is labelled as *int age3, boys* in the results table. The significant coefficient denotes a different relationship between negative attitudes to sport for boys and girls in age group 3 (14-18 year olds).

Table 20: Association and interaction between negative attitudes to sport and age group and sex

Linear regression — Number of obs = 283; F(6, 14) = 6.66; Prob > F = 0.0017; R-squared = 0.0368; Root MSE = .62475

(Std. Err. adjusted for 15 clusters in provid)

-ve attitude	Coef.	Robust Std. Err.	t	P>|t|	[95% Conf.	Interval]
_Isex_2	-.0060576	.0686003	-0.09	0.931	-.1531907	.1410754
12-13 year olds	.1261718	.1466242	0.86	0.404	-.1883058	.4406494
14-18 year olds	-.310982	.0881725	-3.53	0.003	-.5000931	-.1218709
int age2,boys	-.2379321	.1845822	-1.29	0.218	-.6338215	.1579574
int age3,boys	.1872929	.0764337	2.45	0.028	.023359	.3512268
Family affluence	.0443922	.0248569	1.79	0.096	-.0089205	.097705
_cons	3.06209	.0860981	35.57	0.000	2.877428	3.246752

T.5.5.2 Changes in attitudes

When formally examining change over time in a fixed effects regression, the model shows that at wave 2, immediately after completing the Award, there was a significant increase in positive attitude to sport (smaller values of the variable denote more positive attitudes), but that this was not maintained through to wave 3.

Table 21: Fixed effects model showing change in positive attitude to sport at wave 2, but not wave 3

Fixed-effects (within) regression — Number of obs = 577; Number of groups = 313

R-sq: within = 0.0309; between = 0.0062; overall = 0.0126

Obs per group: min = 1; avg = 1.8; max = 3

F(2,14) = 4.72; Prob > F = 0.0272

corr(u_i, Xb) = 0.0224

(Std. Err. adjusted for 15 clusters in provid)

+ve attitude	Coef.	Robust Std. Err.	t	P>|t|	[95% Conf.	Interval]
_Iwave_2	-.0932254	.0417608	-2.23	0.042	-.1827933	-.0036575
_Iwave_3	.0041402	.0375442	0.11	0.914	-.0763841	.0846644
_cons	1.569891	.0188291	83.38	0.000	1.529507	1.610276
sigma_u	.4669818					
sigma_e	.33515086					
rho	.66002802	(fraction of variance due to u_i)				

T.5.6 What levels of self esteem did the Award participants hold at the start of their Award, how did these change, and how did levels and change vary by age, sex and family socio-economic position?

T.5.6.1 Baseline values

Although there were no overall differences in average levels of self esteem, girls were more likely to report *low* self esteem than boys.

Table 22: Odds of low self esteem for girls at wave 1

```
Logistic regression                               Number of obs   =        259
                                                  Wald chi2(3)    =      10.47
                                                  Prob > chi2     =     0.0150
Log pseudolikelihood = -149.09387                 Pseudo R2       =     0.0260

                                  (Std. Err. adjusted for 15 clusters in provid)
------------------------------------------------------------------------------
             |               Robust
low self-est | Odds Ratio   Std. Err.      z    P>|z|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
         age |   1.150786   .083997     1.92   0.054     .9973891    1.327776
      Girls* |   1.741611   .475125     2.03   0.042      1.02032    2.972799
Family affl~e|   .8864036   .0733796   -1.46   0.145     .7536437     1.04255
------------------------------------------------------------------------------
```

T.5.6.2 Changes to self esteem

Self esteem rose significantly between waves 1 and 3 for boys. This result was confirmed using fixed effects models (data not shown).

Table 23: Comparison of self esteem at waves 1 and 3 for boys only

```
Paired t test
------------------------------------------------------------------------------
Variable |     Obs        Mean    Std. Err.   Std. Dev.   [95% Conf. Interval]
---------+--------------------------------------------------------------------
self-est~3|      28     24.85714    .9254118    4.896819    22.95835    26.75593
self-est~1|      28     22.32143    1.245153    6.588731    19.76659    24.87627
---------+--------------------------------------------------------------------
    diff |      28     2.535714    .9448862    4.999868     .596968    4.474461
------------------------------------------------------------------------------
    mean(diff) = mean(selfest_d3 - selfest_d)                     t =   2.6836
Ho: mean(diff) = 0                              degrees of freedom =       27

Ha: mean(diff) < 0           Ha: mean(diff) != 0           Ha: mean(diff) > 0
Pr(T < t) = 0.9939         Pr(|T| > |t|) = 0.0123          Pr(T > t) = 0.0061
```

It also rose for those from the poorest family affluence group. This result was confirmed using fixed effects models (data not shown).

Table 24: Comparison of self esteem at waves 1 and 3 for those in the poorest family affluence group only

```
------------------------------------------------------------------------------
Variable |     Obs        Mean    Std. Err.   Std. Dev.   [95% Conf. Interval]
---------+--------------------------------------------------------------------
self-est~3|      15         22.2    1.552878    6.014269    18.86941    25.53059
self-est~1|      15           19    1.704336    6.600866    15.34456    22.65544
---------+--------------------------------------------------------------------
    diff |      15          3.2     1.24671    4.828487    .5260731    5.873927
------------------------------------------------------------------------------
    mean(diff) = mean(selfest_d3 - selfest_d)                     t =   2.5668
Ho: mean(diff) = 0                              degrees of freedom =       14

Ha: mean(diff) < 0           Ha: mean(diff) != 0           Ha: mean(diff) > 0
Pr(T < t) = 0.9888         Pr(|T| > |t|) = 0.0224          Pr(T > t) = 0.0112
```

It rose for those resident in areas comprising the most deprived 15% of the Scottish population. This result was confirmed using fixed effects models (data not shown).

Table 25: Comparison of self esteem at waves 1 and 3 for those resident in areas comprising the most deprived 15% of the Scottish population only

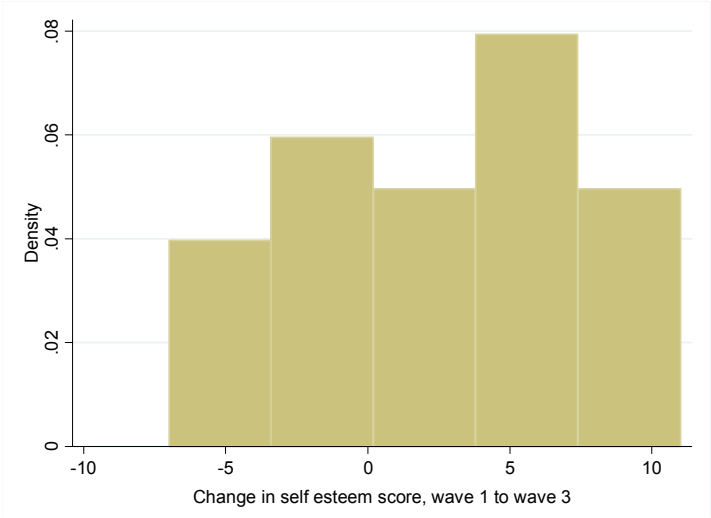
Variable	Obs	Mean	Std. Err.	Std. Dev.	[95% Conf.	Interval]
self-est wave3	12	23.41667	1.755763	6.08214	19.55226	27.28107
self-est wave1	12	20.33333	1.601767	5.548683	16.80787	23.8588
diff	12	3.083333	1.22139	4.231018	.3950726	5.771594

mean(diff) = mean(**selfest_d3** - **selfest_d**) t = **2.5244**
Ho: mean(diff) = 0 degrees of freedom = **11**

Ha: mean(diff) < 0 Pr(T < t) = **0.9859**
Ha: mean(diff) != 0 Pr(|T| > |t|) = **0.0283**
Ha: mean(diff) > 0 Pr(T > t) = **0.0141**

The graph below provides some evidence of regression to the mean for changes in boys self esteem score, wave 1 to wave 3. Whilst the balance of change is positive, it is marginally so. This coupled with absence of a dose response effect in that there was no change at wave 2 leads to doubt over the robustness of this finding.

Figure 19: Histogram of changes in self esteem for boys, wave 1 to wave 3



T.5.7 What aspirations for future health and contact with natural environments did the Award participants hold at the start of their Award, how did these change and how did aspirations and change vary by age, sex and family socio-economic position?

T.5.7.1 Aspirations before the Award

Aspirations for future health at wave 1 were un-related to age, sex or family affluence, but were strongly related to self esteem such that those with more self esteem had greater aspiration.

Table 26: Associations between aspirations for future health and age, sex, family affluence and self esteem

Linear regression

Number of obs = **250**
F(4, 14) = **18.80**
Prob > F = **0.0000**
R-squared = **0.1528**
Root MSE = **2.0829**

(Std. Err. adjusted for **15** clusters in provid)

asp for health	Coef.	Robust Std. Err.	t	P>|t|	[95% Conf.	Interval]
age	-.1781175	.1154972	-1.54	0.145	-.4258344	.0695994
sex	-.112242	.2328766	-0.48	0.637	-.6117126	.3872287
Family affluence	.0843098	.1084166	0.78	0.450	-.1482208	.3168403
self esteem	.1278395	.0209359	6.11	0.000	.0829366	.1727424
_cons	8.112297	1.435393	5.65	0.000	5.033686	11.19091

Aspirations for future contact with natural environments were un-related to sex and family affluence, but were strongly related to age (older respondents had lower aspirations for contact with nature) and previous experience of wild places (denoted as *Previous contact* in the model). Increasing amounts of previous experience of wild places was associated with higher aspirations for contact with nature in the future.

Table 27: Associations between aspirations for future contact with natural environments, and age, sex, family affluence and previous experience of wild places

Linear regression — Number of obs = 269; F(4, 14) = 16.44; Prob > F = 0.0000; R-squared = 0.1878; Root MSE = 1.6404

(Std. Err. adjusted for 15 clusters in provid)

asp for nature	Coef.	Robust Std. Err.	t	P>|t|	[95% Conf.	Interval]
age	-.2697924	.0488274	-5.53	0.000	-.3745167	-.1650682
sex	.0477721	.1647997	0.29	0.776	-.3056882	.4012325
Family affluence	-.0500631	.0584652	-0.86	0.406	-.1754585	.0753322
Previous contact	.8680519	.1815927	4.78	0.000	.4785744	1.257529
_cons	5.067114	.5566154	9.10	0.000	3.873293	6.260936

T.5.7.2 Aspirations after the Award

When formally examining change over time in a fixed effects regression there was some weak evidence that aspirations for a healthy future lifestyle actually fell between waves 2 and 3, with the coefficient for wave 3 showing a significant fall, relative to wave 1.

Table 28: Fixed effects model exploring change in aspirations for health

Fixed-effects (within) regression — Number of obs = 564; Number of groups = 310

R-sq: within = 0.0214; between = 0.0013; overall = 0.0050

Obs per group: min = 1; avg = 1.8; max = 3

F(2,14) = 6.82; Prob > F = 0.0085

corr(u_i, Xb) = 0.0031

(Std. Err. adjusted for 15 clusters in provid)

asp for health	Coef.	Robust Std. Err.	t	P>|t|	[95% Conf.	Interval]
_Iwave_2	.1329253	.1340387	0.99	0.338	-.1545591	.4204096
_Iwave_3	-.3543513	.1653973	-2.14	0.050	-.7090932	.0003905
_cons	8.859342	.0643515	137.67	0.000	8.721322	8.997362
sigma_u	2.220856					
sigma_e	1.2702385					
rho	.75350168	(fraction of variance due to u_i)				

For those resident in areas comprising the 15% most deprived population in Scotland, there was a significant rise in aspirations for future contact with nature between waves 1 and 2, as shown by the significant interaction terms int1 (*w2*most dep'd and w3*most dep'd*).

Table 29: Fixed effects model showing interaction between wave and residence in areas comprising the 15% most deprived population in Scotland

```
Fixed-effects (within) regression               Number of obs      =       464
Group variable: idnum                           Number of groups   =       243

R-sq:  within  = 0.0657                         Obs per group: min =         1
       between = 0.0013                                        avg =       1.9
       overall = 0.0249                                        max =         3

                                                F(4,14)            =     12.04
corr(u_i, Xb)  = -0.0124                        Prob > F           =    0.0002

                                              (Std. Err. adjusted for 15 clusters in provid)
------------------------------------------------------------------------------
             |               Robust
asp for nature |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
      _Iwave_2 |  -.0453001    .11628    -0.39   0.703    -.2946959    .2040957
      _Iwave_3 |  -.6206116   .3158618   -1.96   0.070    -1.298068    .0568446
  Most deprived |  (dropped)
int1 (w2*most dep'd) |   .7869905   .2456897    3.20   0.006     .2600385    1.313943
int1 (w3*most dep'd) |   1.209405   .2803061    4.31   0.001     .6082088    1.810602
       _cons |   3.738042   .0706659   52.90   0.000     3.586478    3.889605
-------------+----------------------------------------------------------------
     sigma_u |   1.626107
     sigma_e |  1.1122697
         rho |   .68126085   (fraction of variance due to u_i)
------------------------------------------------------------------------------
```

T.5.7.3 Stated and actual impacts of the Award on visits to outdoor environments

At wave 2, older respondents were more likely to disagree that their Award had made them want to spend more time outdoors

Table 30: Association between agreement that the Award makes you want to spend more time outdoors, and age, sex and family affluence

```
Linear regression                               Number of obs =       198
                                                F(  3,     9) =      4.93
                                                Prob > F      =    0.0270
                                                R-squared     =    0.0794
                                                Root MSE      =    .87898

                                              (Std. Err. adjusted for 10 clusters in provid)
------------------------------------------------------------------------------
             |               Robust
Awd time outdoors |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
         age |   .1173564   .0380039    3.09   0.013     .0313855    .2033272
         sex |   .1095253   .1611423    0.68   0.514    -.2550039    .4740546
Family affluence |  -.0083627   .0482216   -0.17   0.866    -.1174475    .1007221
       _cons |   .2412778   .4813471    0.50   0.628    -.8476049     1.33016
------------------------------------------------------------------------------
```

A ttest confirmed significant change in reporting on this variable between waves 2 and 3, such that disagreement rose.

Table 31: Comparison of levels of agreement that the Award makes you want to spend more time outdoors at waves 2 and 3

```
Paired t test
------------------------------------------------------------------------------
Variable |     Obs        Mean    Std. Err.   Std. Dev.   [95% Conf. Interval]
---------+--------------------------------------------------------------------
 Wave 2: |      51    1.823529    .1144668    .8174566    1.593616    2.053443
 Wave 3: |      51    2.196078    .1188824    .8489902    1.957296    2.434861
---------+--------------------------------------------------------------------
    diff |      51    -.372549    .1083234    .7735835   -.5901229   -.1549752
------------------------------------------------------------------------------
     mean(diff) = mean(awasp_out - awasp_out3)                     t =  -3.4392
 Ho: mean(diff) = 0                              degrees of freedom =       50

 Ha: mean(diff) < 0           Ha: mean(diff) != 0           Ha: mean(diff) > 0
 Pr(T < t) = 0.0006         Pr(|T| > |t|) = 0.0012          Pr(T > t) = 0.9994
```

However, in a model which explains the *change* in this variable between wave 2 and wave 3,a different picture emerged. The change variable was scaled such that an increase was associated with an increase in agreement that the Award made the respondent want to spend more time outdoors. Age was now associated with a rise in agreement, increase family affluence with a fall and residence in an area comprising the poorest 15% of the Scottish population with a rise.

Table 32: Association between change in agreement that the Award makes you want to spend more time outdoors between waves 2 and 3, and age, sex, family affluence and residence in areas comprising the 15% most deprived population in Scotland

```
Linear regression                               Number of obs =      49
                                                F(  5,     6) =   49.54
                                                Prob > F      =  0.0001
                                                R-squared     =  0.2073
                                                Root MSE      =  .73909

                                   (Std. Err. adjusted for 7 clusters in provid)
------------------------------------------------------------------------------
             |               Robust
Awd time outdoors |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-----------------+------------------------------------------------------------
             age |    .138155   .0290965     4.75   0.003     .0669586    .2093515
             sex |  -.2547023   .2056093    -1.24   0.262      -.75781    .2484055
Family affluence |  -.1340699   .0355329    -3.77   0.009    -.2210157   -.0471242
   Most deprived |   .6293072   .1199244     5.25   0.002     .3358627    .9227517
            Time |  -.0220377   .0068866    -3.20   0.019    -.0388886   -.0051869
           _cons |   -.959505   .4042768    -2.37   0.055    -1.948735    .0297246
------------------------------------------------------------------------------
```

At wave 2, age was again associated with greater disagreement with the statement "*Doing the Award made me want to visit more natural places (like parks or the countryside) with my family and friends" (*variable called *awnatu)*. There was no association with sex or family affluence, or residence in areas comprising the15% poorest population in Scotland (not shown).

Table 33: Association between agreement that the Award makes you want to visit natural places more, and age, sex and family affluence.

```
Linear regression                               Number of obs =     200
                                                F(  3,     9) =    7.88
                                                Prob > F      =  0.0069
                                                R-squared     =  0.1522
                                                Root MSE      =  .88062

                                   (Std. Err. adjusted for 10 clusters in provid)
------------------------------------------------------------------------------
             |               Robust
Awd visit nature |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-----------------+------------------------------------------------------------
             age |    .173017   .0489386     3.54   0.006     .0623102    .2837238
             sex |   .0614017   .1243106     0.49   0.633    -.2198084    .3426117
Family affluence |  -.0006442    .053526    -0.01   0.991    -.1217285    .1204401
           _cons |  -.2902966   .5695278    -0.51   0.623    -1.578658    .9980648
------------------------------------------------------------------------------
```

A ttest confirmed significant change in reporting on this variable between waves 2 and 3, such that disagreement rose.

Table 34: Comparison of levels of agreement that the Award makes you want to visit natural places more, at waves 2 and 3

```
Paired t test
------------------------------------------------------------------------------
Variable |     Obs        Mean    Std. Err.   Std. Dev.   [95% Conf. Interval]
---------+--------------------------------------------------------------------
  Wave 2 |      52    2.076923    .1341027    .9670281    1.807701    2.346145
  Wave 3 |      52    2.365385    .1401057    1.010316    2.084111    2.646658
---------+--------------------------------------------------------------------
    diff |      52   -.2884615    .1297885    .9359181   -.5490228   -.0279003
------------------------------------------------------------------------------
     mean(diff) = mean(awnatu - awnatu3)                           t =  -2.2226
 Ho: mean(diff) = 0                           degrees of freedom =       51

 Ha: mean(diff) < 0           Ha: mean(diff) != 0           Ha: mean(diff) > 0
 Pr(T < t) = 0.0154         Pr(|T| > |t|) = 0.0307          Pr(T > t) = 0.9846
```

A change variable, scaled such that an increase is associated with an increase in agreement that the Award made the respondent want to visit natural places more, showed that age was associated with a rise in agreement, and sex with a fall. There was no association with family affluence or residence in an area comprising the poorest 15% of the Scottish population..

Table 35: Association between change in agreement that the Award makes you want to visit natural places more, between waves 2 and 3, and age, sex and family affluence, controlling for time between wave 2 and wave 3.

Linear regression

Number of obs = 51
F(4, 6) = 31.92
Prob > F = 0.0003
R-squared = 0.2647
Root MSE = .84424

(Std. Err. adjusted for 7 clusters in provid)

Chge in awd nature	Coef.	Robust Std. Err.	t	P>|t|	[95% Conf.	Interval]
age	.202731	.0488162	4.15	0.006	.083282	.3221799
sex	-.4995485	.1816167	-2.75	0.033	-.9439486	-.0551483
Family affluence	-.1300924	.0626158	-2.08	0.083	-.2833077	.0231228
Time	.017324	.0154934	1.12	0.306	-.0205871	.0552351
_cons	-1.937353	.5997132	-3.23	0.018	-3.404799	-.469908

Appendix 1: Examples of contact letters, information sheets to participants and parents

Contact Name
Address 1
Address 2
Address 3

Dear NAME

We are writing to you as a Provider of the John Muir Award to ask for your help with some research by Edinburgh University. The research is funded by Glasgow Centre for Population Health and is fully supported by the John Muir Trust.

What is the research about?
The research is about the effects of doing the John Muir Award on participants' attitudes and opinions towards health and exercise.

What do the participants have to do?
We'd like them to fill in a short questionnaire. Almost all the questions just involve ticking a box, and it shouldn't take too long. There will be one questionnaire at the start of their Award, and another one when they finish the Award. There are a couple of questions about smoking and drinking alcohol but no one has to answer anything they don't want to. We are particularly interested in participants aged 10 -16, but if you have a mixed age group we are happy to receive questionnaires from anyone aged under 20. Please note that we have been given approval from Edinburgh University's Education Research Ethics Committee not to seek prior consent from parents for their child's participation in the work, but that all young people will have an information sheet to take home to their parents, explaining the work.

What would I do if I wanted to help?
To make the research work we would need you to explain the project to the participants (we will provide clear information for you, and for them), ask if they want to help us, hand out questionnaires to those that do, and then post the filled in questionnaires back to us in a postage paid envelope. You would also need to do the same for the second questionnaire at the end of the Award.

What will we do with the answers they give?
We will give everyone an envelope for their questionnaire so that only the research team will see their answers. We will look at everyone's answers together, not at each individual's. When the work is over, we will write a report on what we find, put it on the Award's website and send copies to Providers and participants.

When would I need to do this?
We need to get the first questionnaire filled in as close to the start of the Award experience as possible, so ideally on their first or second session. Similarly, we would like the second questionnaire as close to the end of the Award as possible, perhaps on the last meeting you have with the participants. The research is running

for the whole of 2006, so even if you plan to run an Award later in the year you can still take part.

Do I have to help?
No, but it would help us, and the John Muir Trust, a great deal if you do.

What happens now?
If you'd like to help, please let the research team know so we can send you the questionnaires and instructions. You can do this by either filling in the form on this page and posting it back to us in the envelope we have provided, or by emailing the research leader (Richard Mitchell) with the information. If you do email please don't forget to let us know how many questionnaires you will need and when you think your Award group will be starting and finishing, so we can get you the questionnaires and instructions in plenty of time.

What if I want to know more before I decide?
Please feel free to get in touch with Richard Mitchell to discuss the work, or ask about your particular situation. You can call him on 0131 651 1283, or email him. You can also get in touch with The John Muir Award Regional Manager (Toby) if you'd like to.

Thanks very much for your help

Dr Richard Mitchell
Richard.Mitchell@ed.ac.uk
0131 651 1283

✂----------

Health Impacts of the John Muir Award

_____ (your name)

_____ (organisation name)

Please tick one box and complete the blanks.

❒Yes, I would like to help with this research and I expect to have about _____ (*how many*) young people aged 10-16 starting the John Muir Award. They should start about _____ *(month and year)*. I expect the Award to be finished about _____ *(month and year)*.

❒No, I don't want to help with this research.

(Please let us know why you have said no, if you can)_____

_____

_____

Sample participant information sheet

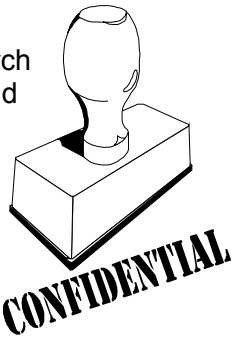
HELLO! We are from Edinburgh and Glasgow Universities. We need your help…

Who are we? We're a team who are interested in young people's health and opinions. We'd like to know more about you, and about how doing the John Muir Award affects you.

What would I have to do?
We'd like you to help by answering a few questions in the booklet that's with this letter. It shouldn't take long. You do **not** have to answer anything that you don't want to, but it would really help us if you answer as much as you can.

Is that all?
We will ask you to fill in a similar booklet once you've done your Award, and then again a few months after that. But remember, you do not have to do it if you don't want to. It's completely up to you.

What will you do with the answers I give you?
We have given you an envelope for your booklet so that only the research team will see your answers. *No one else will see them*. Your parents and teachers will **not** see what you write.



When we get booklets back from all the young people doing this Award, we will look at everyone's answers together. We are interested in young people in general, not *your* answers on their own.

The answers will show us what people like you think about your health, and about doing this Award. We will write a report on what we find and put it on the Award's website (www.johnmuir Award.org). If you'd like us to, we'll tell you what we found out at the end by sending you the results.

Why are you asking me?
We're asking *all* the young people doing the John Muir Award in the Strathclyde area to help us.

What if I want to help?
Great! Thanks! Please fill in the booklet. By writing your name on the first page you are telling us that you are happy to help, but remember, you do not have to answer anything you don't want to and you can stop any time you want to.

What if I don't want to help?
That's fine. Please don't write anything on the booklet, just hand it back to the person who gave it to you.

The team

Sample parent information sheet

Dear Parent / Guardian

We are a group of professional researchers from Glasgow and Edinburgh Universities. We are writing to you because we have asked your child to help us in a study of the John Muir Award they are doing. Your child said yes! We want you to know about this study and that's why we have asked your child to give you this letter.

What did we ask you child to do?
We asked your child to fill in a very short questionnaire now, at the end of their Award, and again a few months after that. We will post the last questionnaire to your home. We made it clear to them that they do not have to help us, that they do not have to answer any question they do not wish to and that they can stop being in the study at any time.

What is the questionnaire about?
The questionnaire asks about attitudes to sport and exercise, smoking and drinking, social and 'spare time' activities, and your child's thoughts about their future.

What will you do with the information?
Only the research team will see their answers. *No one else will see them*. When we get the questionnaires back from all the young people doing this Award, we will look at everyone's answers together. We are not interested in the results from individual children and your child will *never* be identified in anything we do. We will not give your address to anyone else and when the research is over, we will destroy all record of it.

Do the John Muir Award people know about the study?
Yes! They are working very closely with us on it, but the research is independent. The work is funded by the Glasgow Centre for Population Health.

Why didn't you ask me about this in advance?
The John Muir Award takes place in many different ways and we could not be sure exactly which young people are going to participate until their first session.

What if my child has said yes to being in the study, but I don't want them to be part of it?
If you are sure you don't want them to be in the study please let us, and your child, know. We will immediately destroy the questionnaire your child filled out and will not ask him or her to fill in anything else. You can let us know by 'phoning, emailing, faxing or writing to the research leader, Dr Richard Mitchell, at the University of Edinburgh.

Dr Richard Mitchell
Research Unit In Health, Behaviour and Change
University of Edinburgh Medical School
Teviot Place
Edinburgh
EH8 9AG
tel. 0131 651 1283, fax. 0870 168 7523
Richard.Mitchell@ed.ac.uk

Please also feel free to contact Dr Mitchell if you have any concerns or queries about the study.

With thanks and best wishes from Dr Richard Mitchell and the team.

Appendices 2-4: Questionnaires used at each survey wave

Thanks for helping us! It won't take long…

On this page are some questions about you. We will keep this page away from the rest of the questionnaire so that your name and your answers cannot be linked by anyone, other than the research team.

By writing your name on this sheet you are also telling us that you agree to being part of our study, but remember, you do **not** have to answer anything you don't want to, and you can stop at any time.

1) **What's your name?** (Please write on the line, as clearly as you can)

(First name**)**_____ **(**Second name**)**
_____

2) **When were you born? (**Write the date in the boxes**)**

Day Month Year

❑❑/❑❑/❑❑❑❑

3) **Are you a boy or a girl?** (Please tick **one** box! ☺) Male ❑ 1 Female ❑ 2

4) **What's your postcode? (**e.g. G99 1AA**)** ❑❑❑❑ ❑❑❑

5) **We would like to post a questionnaire to you a few months after you finish your Award. If you are OK with us sending you the questionnaire, please give us your address (we won't give it to anyone else!). If you don't want to get a questionnaire in the post, just leave this bit blank.**

Address: _____

_____

_____

_____

Most of the questions just ask you to tick a box (like this ☑), or draw a circle round a number (like this ③). Some ask you to write an answer in a box, or on a line. We tell you what to do for each question. There are some questions on the back page too. Don't forget them!

6) **Does your family have a car or van?** Please tick **one** box

No ❑ 1 Yes, we have 1 car ❑ 2 Yes, we have 2 or more cars ❑ 3

7) **Do you have your own bedroom?** Please tick **one** box

No ❑ 1 Yes ❑ 2

8) **During the past year, did you go away on holiday with your family?** Please tick **one** box

No ❑ 1 Yes, once ❑ 2 Yes, twice ❑ 3 Yes, more than twice ❑ 4

9) Look at the faces and put a **circle round the number** which shows best **how you feel about your neighbourhood**.

The next questions are all about sport, exercise and play

10) **How fit do you think you are? (and I don't mean 'how good looking are you', I mean fit as in 'in-shape' or 'athletic' ☺)** Please tick **one** box

Very ❑ 1 Quite ❑ 2 Not very ❑ 3

11) **OTHER THAN in class at school - how often do you do any of these activities, exercises or sports?** ***Try to think of ALL the things you do - for fun or training, at lunchtimes, after school or during weekends or holidays***

Please put ***ONE tick on every line***

	Every day	Most days	Weekly	Less often	Never
basketball or volleyball	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
Swimming	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
Football	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
Cycling	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
Aerobics	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
Running or jogging	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
netball, rugby or hockey	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
badminton, tennis or squash	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
gymnastics, ballet or dancing	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
martial arts	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
Walking in the streets	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
Walking in the countryside	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
Golf	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5

Do you do something(s) we haven't listed? Write them in below and tick a box!

	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5

12) **What do you think about playing sport, taking exercise or being physically active in general?**

Please tick ***one box on each line***.

Sport or exercise …	Very true	Quite true	Not very true	Not true at all
Is fun	❑ 1	❑ 2	❑ 3	❑ 4
helps me cope with stress	❑ 1	❑ 2	❑ 3	❑ 4
helps me make new friends	❑ 1	❑ 2	❑ 3	❑ 4
gives me more energy	❑ 1	❑ 2	❑ 3	❑ 4
helps me keep in shape	❑ 1	❑ 2	❑ 3	❑ 4
makes me look better	❑ 1	❑ 2	❑ 3	❑ 4
helps me feel better about myself	❑ 1	❑ 2	❑ 3	❑ 4
makes me stronger	❑ 1	❑ 2	❑ 3	❑ 4
helps me to be healthy	❑ 1	❑ 2	❑ 3	❑ 4

13) **Here are some more things people sometimes think about doing sport or exercise. In general, how true are these for you?**

Please tick ***one box on each line***

	Very true	quite true	not very true	not true at all
I don't have enough time to do it	❑ 1	❑ 2	❑ 3	❑ 4
It is difficult for me to get to places where I can do it	❑ 1	❑ 2	❑ 3	❑ 4
I am not interested in sport or exercise at all	❑ 1	❑ 2	❑ 3	❑ 4
I would rather do other things in my spare time	❑ 1	❑ 2	❑ 3	❑ 4
I am not very good at physical activities	❑ 1	❑ 2	❑ 3	❑ 4
I don't have the right equipment	❑ 1	❑ 2	❑ 3	❑ 4
The weather is too bad	❑ 1	❑ 2	❑ 3	❑ 4
I feel embarrassed when I do it	❑ 1	❑ 2	❑ 3	❑ 4
I have too much work / homework to do	❑ 1	❑ 2	❑ 3	❑ 4

The next few questions are about your health

14) **How is your health in general?** (Please tick **one** box)

Very Good	Good	Fair	Poor	Very Poor
❑ 1	❑ 2	❑ 3	❑ 4	❑ 5

15) **Do you have any long-standing illness, disability or infirmity? By long-standing I mean anything that has troubled you over a period of time, or that is likely to affect you over a period of time?** (Please tick **one** box)

No ❑ 1 Yes ❑ 2

…and if you have ticked YES,

15b) ***Does this illness or disability limit your activities in any way?***

Yes, it limits me ❑ 1 No, it doesn't ❑ 2

15c) ***What illness, disability or infirmity do you have*****? (Please write it in on the line)**

_____

The next questions are about smoking and drinking. Remember, NO ONE ELSE will see ANY of your answers. Remember too, you do <u>not</u> have to answer these if you don't want to.

16) **Which of these best describes you?** Tick **one** box only.

I have *never* smoked at all (not even a puff) ❑ 1

I only tried smoking *once* (even if it was just a puff) ❑ 2

I *used to* smoke but gave it up ❑ 3

I smoke *occasionally* (sometimes) ❑ 4

I smoke *regularly* (one or more cigarettes a week) ❑ 5

…And if you ticked the 'smoke regularly box', on average, how many cigarettes do you smoke each week? Write in the number.

I smoke ..... cigarettes a week.

17) **How often do you have an alcoholic drink (NOT JUST A SIP)?** If you've **never** had an alcoholic drink, tick the **last** box. Tick **one** box only.

I have an alcoholic drink ...

- every day ❑ 1
- most days ❑ 2
- about once a week ❑ 3
- about every couple of weeks ❑ 4
- about once a month ❑ 5
- once or twice a year ❑ 6
- I have never had an alcoholic drink ❑ 7

18) **Has anyone ever offered you any drugs?** Tick **one** box only.

- yes, I've been offered drugs <u>but I didn't try them</u> ❑ 1
- yes, I've been offered drugs <u>and I tried them</u> ❑ 2
- no, I've <u>never</u> been offered drugs ❑ 3

19) **How many of your friends do each of these things?**

Please tick ***one box on each line***.

How many of your friends…	none	a few	half	most	all of them
Smoke	❑ 1	❑ 2	❑ 3	❑ 4	❑ 5
Drink alcohol	❑ 1	❑ 2	❑ 3	❑ 4	❑ 5
Do lots of sports or exercise	❑ 1	❑ 2	❑ 3	❑ 4	❑ 5
Have tried drugs	❑ 1	❑ 2	❑ 3	❑ 4	❑ 5

20) **Here are some statements about how you might feel. How much do you agree with them?**

Please tick ***one box on each line***

	Agree a lot	Agree a bit	Disagree a bit	Disagree a lot
I am pretty sure of myself	❑ 1	❑ 2	❑ 3	❑ 4
I often wish I was someone else	❑ 1	❑ 2	❑ 3	❑ 4
I am easy to like	❑ 1	❑ 2	❑ 3	❑ 4
I have a low opinion of myself	❑ 1	❑ 2	❑ 3	❑ 4
I am a failure	❑ 1	❑ 2	❑ 3	❑ 4
There are lots of things about myself I would like to change	❑ 1	❑ 2	❑ 3	❑ 4
I am able to do things well	❑ 1	❑ 2	❑ 3	❑ 4
Most of the time I am satisfied with myself	❑ 1	❑ 2	❑ 3	❑ 4
I like myself	❑ 1	❑ 2	❑ 3	❑ 4
I feel I have a good number of qualities	❑ 1	❑ 2	❑ 3	❑ 4
I take risks	❑ 1	❑ 2	❑ 3	❑ 4

21) **How much have you been to 'wild places' before starting the John Muir Award? A wild place is anywhere that feels natural, unspoilt or wild to you.** Please tick **one** box**.**

None ❑ 1 Some ❑ 2 Plenty ❑ 3

22) **Why are you doing this Award?** Please tick ***all boxes that apply to you***

Parent(s) or guardian(s) want me to ❑ 1

Teachers want me to ❑ 1

I want to ❑ 1

I am interested in nature conservation ❑ 1

My friends are doing it ❑ 1

I am interested in 'the outdoors' ❑ 1

I thought I'd enjoy it ❑ 1

I don't really know ❑ 1

23) **Here is a list of things that people sometimes do in their free time, when they aren't at school for example, or when they're not working. What about you?**

Tick **one box on each line.**

In my free time I	Every day	Most days	Weekly	Less often	Never
see my pals	❑ 1	❑ 2	❑ 3	❑ 4	❑ 5
listen to music (radio, tapes or CDs)	❑ 1	❑ 2	❑ 3	❑ 4	❑ 5
look around the shops	❑ 1	❑ 2	❑ 3	❑ 4	❑ 5
read newspapers, mags or comics	❑ 1	❑ 2	❑ 3	❑ 4	❑ 5
read books	❑ 1	❑ 2	❑ 3	❑ 4	❑ 5
go to watch sports matches	❑ 1	❑ 2	❑ 3	❑ 4	❑ 5
go to the cinema or theatre	❑ 1	❑ 2	❑ 3	❑ 4	❑ 5
hang around the street	❑ 1	❑ 2	❑ 3	❑ 4	❑ 5
play computer games	❑ 1	❑ 2	❑ 3	❑ 4	❑ 5
do a hobby, art or play a musical instrument	❑ 1	❑ 2	❑ 3	❑ 4	❑ 5
go to something like guides, scouts, or B.B.	❑ 1	❑ 2	❑ 3	❑ 4	❑ 5
go out nowhere in particular	❑ 1	❑ 2	❑ 3	❑ 4	❑ 5
go to gigs or concerts	❑ 1	❑ 2	❑ 3	❑ 4	❑ 5
go to discos or clubs	❑ 1	❑ 2	❑ 3	❑ 4	❑ 5
go to the church, mosque or temple	❑ 1	❑ 2	❑ 3	❑ 4	❑ 5
do nothing much	❑ 1	❑ 2	❑ 3	❑ 4	❑ 5

Just one page left to go!

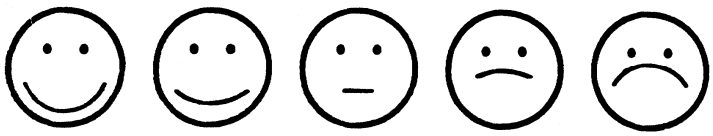
The last questions are about your future…

24) **What do you think you will be doing when you are 21 years old ?**

Please tick **one box for each line.**

I will be…	Very Likely	Quite Likely	Quite Unlikely	Very Unlikely
in good health	❑ 1	❑ 2	❑ 3	❑ 4
taking exercise	❑ 1	❑ 2	❑ 3	❑ 4
walking in countryside or mountains	❑ 1	❑ 2	❑ 3	❑ 4
A regular smoker	❑ 1	❑ 2	❑ 3	❑ 4
overweight	❑ 1	❑ 2	❑ 3	❑ 4
own a car	❑ 1	❑ 2	❑ 3	❑ 4
unemployed (out of work)	❑ 1	❑ 2	❑ 3	❑ 4
fitter than I am now	❑ 1	❑ 2	❑ 3	❑ 4
interested in the natural environment	❑ 1	❑ 2	❑ 3	❑ 4
have been in trouble with the police	❑ 1	❑ 2	❑ 3	❑ 4
be married	❑ 1	❑ 2	❑ 3	❑ 4
be a Mum or Dad myself	❑ 1	❑ 2	❑ 3	❑ 4

25) Look at the faces and ***put a circle round the number*** which shows best how you feel about your future.



That's it! That's the end of the questionnaire.

THANK YOU!!

PLEASE PUT THE QUESTIONNAIRE IN THE ENVELOPE PROVIDED, SEAL THE ENVELOPE UP AND HAND IT BACK TO THE PERSON WHO GAVE IT TO YOU.

This is the second questionnaire. Thanks for helping us again!

On this page are some questions about you. We need to ask these again, just to check our records.

Remember, we will keep this page separate from the rest of the questions. **No one** else will see what you write.

Also remember, you do **not** have to answer anything you don't want to, and you can stop at any time.

1) What's your name? (Please write on the line, as clearly as you can)

(First name**)**_____ **(**Family name**)** _____

2) When were you born? (Write the date in the boxes**)**

Day Month Year

❑❑/❑❑/❑❑❑❑

3) What's your postcode? (e.g. G99 1AA**)** ❑❑❑❑ ❑❑❑

4) Look at the faces and put a **circle round the number** which shows best **how you feel about your neighbourhood**.

Just like last time, most of the questions ask you to tick a box (like this ☑), or draw a circle round a number (like this ③).

Some of the questions are exactly the same as on the first questionnaire you filled in. We're sorry if it seems a bit boring to answer them again, but it will really help us if you do.

The first questions are all about the John Muir Award you have been taking part in.

5) Look at the faces and put a **circle round the number** which shows best **how you feel about having taken part in the John Muir Award**

6) Tell us about what you did to get your Award. Please tick **one** box on each line. If neither choice is exactly right, please choose the answer closest to the truth.

To do the Award	I spent most of the time outdoors	☐ 1	or	I spent most of the time indoors	☐ 2
When we were outside	we were mostly in the town or city	☐ 1	or	in the countryside or in the hills or forests	☐ 2
I spent most of the time	with friends I already knew well	☐ 1	or	with people I hadn't met before	☐ 2
When doing the Award	I spent some nights away from home	☐ 1	or	I stayed at home	☐ 2
When we were outside	the weather was nice	☐ 1	or	the weather was nasty	☐ 2
Most of the time I was	about the right temperature	☐ 1	or	too hot or too cold	☐ 2
I spent most of the time	working with other people	☐ 1	or	working on my own	☐ 2
Doing the Award	I feel like I have achieved something	☐ 1	or	I don't feel like I have achieved anything	☐ 2
Most of time	I was enjoying myself	☐ 1	or	I was not enjoying myself	☐ 2

7) Have you ever done the kinds of activities you did to get your John Muir Award before? Please tick **one** box

Yes ❑ 1 No ❑ 2

8) How much do you agree or disagree with these statements about the activities you have done for the John Muir Award? Please tick one box on each line

	Agree a lot	Agree a bit	Disagree a bit	Disagree a lot
I learnt a lot about wild places or the natural environment	❑ 1	❑ 2	❑ 3	❑ 4
Doing activities for the Award sometimes got me out of breath or tired	❑ 1	❑ 2	❑ 3	❑ 4
Doing the Award has made me feel better about the place where I live	❑ 1	❑ 2	❑ 3	❑ 4
Doing the Award has made me think more about my own future	❑ 1	❑ 2	❑ 3	❑ 4
Doing the Award was boring	❑ 1	❑ 2	❑ 3	❑ 4
Doing the Award made me want to spend more time outdoors	❑ 1	❑ 2	❑ 3	❑ 4
Doing the Award was just like playing sport or games	❑ 1	❑ 2	❑ 3	❑ 4
Doing the Award was just the same as normal school	❑ 1	❑ 2	❑ 3	❑ 4
Doing the Award made me think I need to get more exercise	❑ 1	❑ 2	❑ 3	❑ 4
Doing the Award made me happier	❑ 1	❑ 2	❑ 3	❑ 4
Doing the Award made me determined to change something about myself	❑ 1	❑ 2	❑ 3	❑ 4
Doing the Award made me want to visit more natural places, (like parks or the countryside), with my family and friends	❑ 1	❑ 2	❑ 3	❑ 4
Doing the Award made me healthier	❑ 1	❑ 2	❑ 3	❑ 4

9) What do you think about playing sport, taking exercise or being physically active in general?

Please tick ***one box on each line***.

Sport or exercise …	Very true	Quite true	Not very true	Not true at all
Is fun	❑ 1	❑ 2	❑ 3	❑ 4
helps me cope with stress	❑ 1	❑ 2	❑ 3	❑ 4
helps me make new friends	❑ 1	❑ 2	❑ 3	❑ 4
gives me more energy	❑ 1	❑ 2	❑ 3	❑ 4
helps me keep in shape	❑ 1	❑ 2	❑ 3	❑ 4
makes me look better	❑ 1	❑ 2	❑ 3	❑ 4
helps me feel better about myself	❑ 1	❑ 2	❑ 3	❑ 4
makes me stronger	❑ 1	❑ 2	❑ 3	❑ 4
helps me to be healthy	❑ 1	❑ 2	❑ 3	❑ 4

10) Here are some more things people sometimes think about doing sport or exercise. In general, how true are these for you?

Please tick ***one box on each line***

	Very true	Quite true	Not very true	Not true at all
I don't have enough time to do it	❑ 1	❑ 2	❑ 3	❑ 4
It is difficult for me to get to places where I can do it	❑ 1	❑ 2	❑ 3	❑ 4
I am not interested in sport or exercise at all	❑ 1	❑ 2	❑ 3	❑ 4
I would rather do other things in my spare time	❑ 1	❑ 2	❑ 3	❑ 4
I am not very good at physical activities	❑ 1	❑ 2	❑ 3	❑ 4
I don't have the right equipment	❑ 1	❑ 2	❑ 3	❑ 4
The weather is too bad	❑ 1	❑ 2	❑ 3	❑ 4
I feel embarrassed when I do it	❑ 1	❑ 2	❑ 3	❑ 4
I have too much work / homework to do	❑ 1	❑ 2	❑ 3	❑ 4

11) Here are some statements about how you might feel. How much do you agree with them?

Please tick ***one box on each line***

	Agree a lot	Agree a bit	Disagree a bit	Disagree a lot
I am pretty sure of myself	❑ 1	❑ 2	❑ 3	❑ 4
I often wish I was someone else	❑ 1	❑ 2	❑ 3	❑ 4
I am easy to like	❑ 1	❑ 2	❑ 3	❑ 4
I have a low opinion of myself	❑ 1	❑ 2	❑ 3	❑ 4
I am a failure	❑ 1	❑ 2	❑ 3	❑ 4
There are lots of things about myself I would like to change	❑ 1	❑ 2	❑ 3	❑ 4
I am able to do things well	❑ 1	❑ 2	❑ 3	❑ 4
Most of the time I am satisfied with myself	❑ 1	❑ 2	❑ 3	❑ 4
I like myself	❑ 1	❑ 2	❑ 3	❑ 4
I feel I have a good number of qualities	❑ 1	❑ 2	❑ 3	❑ 4
I take risks	❑ 1	❑ 2	❑ 3	❑ 4

12) How fit do you think you are? (and I still don't mean 'how good looking are you', I mean fit as in 'in-shape' or 'athletic' ☺**)** Please tick **one** box

Very ❑ 1 Quite ❑ 2 Not very ❑ 3

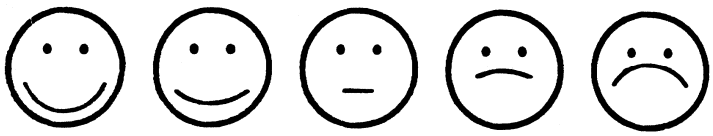
Just one more page to go… you're nearly there!

13) What do you think you will be doing when you are 21 years old?

Please tick **one box on each line.**

When I am 21, I will be…	Very Likely	Quite Likely	Quite Unlikely	Very Unlikely
in good health	❑ 1	❑ 2	❑ 3	❑ 4
taking exercise	❑ 1	❑ 2	❑ 3	❑ 4
walking in countryside or mountains	❑ 1	❑ 2	❑ 3	❑ 4
a regular smoker	❑ 1	❑ 2	❑ 3	❑ 4
overweight	❑ 1	❑ 2	❑ 3	❑ 4
a car owner	❑ 1	❑ 2	❑ 3	❑ 4
unemployed (out of work)	❑ 1	❑ 2	❑ 3	❑ 4
fitter than I am now	❑ 1	❑ 2	❑ 3	❑ 4
interested in the natural environment	❑ 1	❑ 2	❑ 3	❑ 4
have been in trouble with the police	❑ 1	❑ 2	❑ 3	❑ 4
married	❑ 1	❑ 2	❑ 3	❑ 4
a Mum or Dad myself	❑ 1	❑ 2	❑ 3	❑ 4

14) Look at the faces and ***put a circle round the number*** which shows best how you feel about your future.



That's it! That's the end of the questionnaire.

THANK YOU

NOW PLEASE PUT THE QUESTIONNAIRE IN THE ENVELOPE PROVIDED, SEAL THE ENVELOPE UP AND HAND IT BACK TO THE PERSON WHO GAVE IT TO YOU.

This is the ***last*** questionnaire – thanks for your help!

On this page are some questions about you. We need to ask these again, just to check our records.

Remember, we will keep this page separate from the rest of the questions. **No one** else will see what you write.

Also remember, you do **not** have to answer anything you don't want to, and you can stop at any time.

1) **What's your name?** (Please write on the line, as clearly as you can)

(First name**)**_____ **(**Second name**)**
_____

2) **When were you born? (**Write the date in the boxes**)**

Day Month Year

❑❑/❑❑/❑❑❑❑

3) **What's your postcode? (**e.g. G99 1AA**)** ❑❑❑❑ ❑❑❑

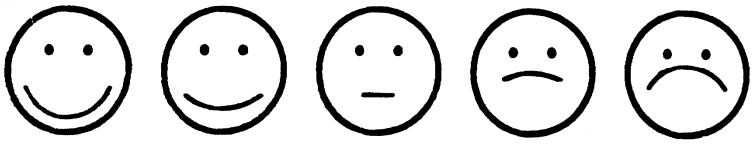
4) **Look at the faces and put a circle round the number which shows best how you feel about your neighbourhood.**

Just like last time, most of the questions ask you to tick a box (like this ☑), or draw a circle round a number (like this ③).

Some of the questions are exactly the same as those you filled in before. We're sorry if it seems a bit boring to answer them again, but it will really help us if you do.

The first questions are all about the John Muir Award you took part in a little while ago.

5) **Look at the faces and put a circle round the number which shows best how you feel about having taken part in the John Muir Award**



6) **When did you finish your John Muir Award?** (Please tick the month and the year when you received your Award. Don't worry if you can't remember exactly! Do the best you can.)

Jan ❑1 Feb ❑2 Mar ❑3 Apr ❑4 May ❑5 Jun ❑6 Jul ❑7 Aug ❑8 Sep ❑9 Oct ❑10 Nov ❑11 Dec ❑12

2006 ❑1 2007 ❑3

The next questions are all about sport, exercise and play

7) **Since you finished your John Muir Award, have you done, exercise or physical activity** (please tick **one** box)

A lot more than I did before the Award ❑1

More than I did before the Award ❑2

About the same amount as I did before the Award ❑3

Less than I did before the Award ❑4

A lot less than I did before the Award ❑5

8) **OTHER THAN in class at school - how often do you do any of these activities, exercises or sports?** ***Try to think of ALL the things you do - for fun or training, at lunchtimes, after school or during weekends or holidays***

Please put ***ONE tick on every line***

	Every day	Most days	Weekly	Less often	Never
Basketball or volleyball	❑ 1	❑ 2	❑ 3	❑ 4	❑ 5
Swimming	❑ 1	❑ 2	❑ 3	❑ 4	❑ 5
Football	❑ 1	❑ 2	❑ 3	❑ 4	❑ 5
Cycling	❑ 1	❑ 2	❑ 3	❑ 4	❑ 5
Aerobics	❑ 1	❑ 2	❑ 3	❑ 4	❑ 5
Running or jogging	❑ 1	❑ 2	❑ 3	❑ 4	❑ 5
Netball, rugby or hockey	❑ 1	❑ 2	❑ 3	❑ 4	❑ 5
Badminton, tennis or squash	❑ 1	❑ 2	❑ 3	❑ 4	❑ 5
Gymnastics, ballet or dancing	❑ 1	❑ 2	❑ 3	❑ 4	❑ 5
Martial arts	❑ 1	❑ 2	❑ 3	❑ 4	❑ 5
Walking in the streets	❑ 1	❑ 2	❑ 3	❑ 4	❑ 5
Walking in the countryside	❑ 1	❑ 2	❑ 3	❑ 4	❑ 5
Golf	❑ 1	❑ 2	❑ 3	❑ 4	❑ 5

Do you do something(s) we haven't listed? Write them in below and tick a box!

	❑ 1	❑ 2	❑ 3	❑ 4	❑ 5
	❑ 1	❑ 2	❑ 3	❑ 4	❑ 5
	❑ 1	❑ 2	❑ 3	❑ 4	❑ 5
	❑ 1	❑ 2	❑ 3	❑ 4	❑ 5

9) **What do you think about playing sport, taking exercise or being physically active in general?**

Please tick ***one box on each line***.

Sport or exercise …	Very true	Quite true	Not very true	Not true at all
Is fun	❑ 1	❑ 2	❑ 3	❑ 4
helps me cope with stress	❑ 1	❑ 2	❑ 3	❑ 4
helps me make new friends	❑ 1	❑ 2	❑ 3	❑ 4
gives me more energy	❑ 1	❑ 2	❑ 3	❑ 4
helps me keep in shape	❑ 1	❑ 2	❑ 3	❑ 4
makes me look better	❑ 1	❑ 2	❑ 3	❑ 4
helps me feel better about myself	❑ 1	❑ 2	❑ 3	❑ 4
makes me stronger	❑ 1	❑ 2	❑ 3	❑ 4
helps me to be healthy	❑ 1	❑ 2	❑ 3	❑ 4

10) **Here are some more things people sometimes think about doing sport or exercise. In general, how true are these for you?**

Please tick ***one box on each line***

	Very true	quite true	not very true	not true at all
I don't have enough time to do it	❑ 1	❑ 2	❑ 3	❑ 4
It is difficult for me to get to places where I can do it	❑ 1	❑ 2	❑ 3	❑ 4
I am not interested in sport or exercise at all	❑ 1	❑ 2	❑ 3	❑ 4
I would rather do other things in my spare time	❑ 1	❑ 2	❑ 3	❑ 4
I am not very good at physical activities	❑ 1	❑ 2	❑ 3	❑ 4
I don't have the right equipment	❑ 1	❑ 2	❑ 3	❑ 4
The weather is too bad	❑ 1	❑ 2	❑ 3	❑ 4
I feel embarrassed when I do it	❑ 1	❑ 2	❑ 3	❑ 4
I have too much work / homework to do	❑ 1	❑ 2	❑ 3	❑ 4

11) **How fit do you think you are? (and I still don't mean 'how good looking are you', I mean fit as in 'in-shape' or 'athletic' ☺)** Please tick **one** box

Very ❑ 1 Quite ❑ 2 Not very ❑ 3

12) **Since you finished your John Muir Award, have you visited any 'wild places' ? A wild place is anywhere that feels natural, unspoilt or wild to you.**

Since my Award I have visited wild places… (please tick **one** box)

more often ❑ 1 the same amount ❑ 2 less often ❑ 3 not visited at all ❑ 4

Now, if you ticked 'more often', please answer the question on this side of the page

Why have you visited wild places more often than before? (please tick **one** box**)**

Mainly because of doing the Award ❑ 1

Partly because of doing the Award ❑ 2

It's because of something else ❑ 3

And if you ticked 'less often', or 'not visited at all', please answer the questions on this side of the page.

Can you tell us what stops you from visiting 'wild places'? (please tick the **one** box that is **most** important)

I don't want to go there ❑ 4

It's too hard to get there ❑ 5

My family / friends don't want to go ❑ 6

I don't know where to go ❑ 7

I don't have the right clothing ❑ 8

I am too frightened to go ❑ 9

I don't have time to go ❑ 10

13**) Here are some statements about how you might feel. How much do you agree with them?**

Please tick ***one box on each line***

	Agree a lot	Agree a bit	Disagree a bit	Disagree a lot
I am pretty sure of myself	❑ 1	❑ 2	❑ 3	❑ 4
I often wish I was someone else	❑ 1	❑ 2	❑ 3	❑ 4
I am easy to like	❑ 1	❑ 2	❑ 3	❑ 4
I have a low opinion of myself	❑ 1	❑ 2	❑ 3	❑ 4
I am a failure	❑ 1	❑ 2	❑ 3	❑ 4
There are lots of things about myself I would like to change	❑ 1	❑ 2	❑ 3	❑ 4
I am able to do things well	❑ 1	❑ 2	❑ 3	❑ 4
Most of the time I am satisfied with myself	❑ 1	❑ 2	❑ 3	❑ 4
I like myself	❑ 1	❑ 2	❑ 3	❑ 4
I feel I have a good number of qualities	❑ 1	❑ 2	❑ 3	❑ 4
I take risks	❑ 1	❑ 2	❑ 3	❑ 4

THERE ARE NOT TOO MANY QUESTIONS LEFT! PLEASE KEEP GOING!

14**) How much do you agree or disagree with these statements about the activities you did for the John Muir Award?**

Please tick **one box on each line**

	Agree a lot	Agree a bit	Disagree a bit	Disagree a lot
I learnt a lot about wild places or the natural environment	❑ 1	❑ 2	❑ 3	❑ 4
Doing activities for the Award sometimes got me out of breath or tired	❑ 1	❑ 2	❑ 3	❑ 4
Doing the Award made me feel better about the place where I live	❑ 1	❑ 2	❑ 3	❑ 4
Doing the Award made me think more about my own future	❑ 1	❑ 2	❑ 3	❑ 4
Doing the Award was boring	❑ 1	❑ 2	❑ 3	❑ 4
Doing the Award made me want to spend more time outdoors	❑ 1	❑ 2	❑ 3	❑ 4
Doing the Award was just like playing sport or games	❑ 1	❑ 2	❑ 3	❑ 4
Doing the Award was just the same as normal school	❑ 1	❑ 2	❑ 3	❑ 4
Doing the Award made me think I need to get more exercise	❑ 1	❑ 2	❑ 3	❑ 4
Doing the Award made me happier	❑ 1	❑ 2	❑ 3	❑ 4
Doing the Award made me determined to change something about myself	❑ 1	❑ 2	❑ 3	❑ 4
Doing the Award made me want to visit more natural places, (like parks or the countryside), with my family and friends	❑ 1	❑ 2	❑ 3	❑ 4
Doing the Award made me healthier	❑ 1	❑ 2	❑ 3	❑ 4

15) **Here is a list of things that people sometimes do in their free time, when they aren't at school for example, or when they're not working. What about you?**

Please tick **one box on each line.**

In my free time I	Every day	Most days	Weekly	Less often	Never
see my pals	❑ 1	❑ 2	❑ 3	❑ 4	❑ 5
listen to music (radio, tapes or CDs)	❑ 1	❑ 2	❑ 3	❑ 4	❑ 5
look around the shops	❑ 1	❑ 2	❑ 3	❑ 4	❑ 5
read newspapers, mags or comics	❑ 1	❑ 2	❑ 3	❑ 4	❑ 5
read books	❑ 1	❑ 2	❑ 3	❑ 4	❑ 5
go to watch sports matches	❑ 1	❑ 2	❑ 3	❑ 4	❑ 5
go to the cinema or theatre	❑ 1	❑ 2	❑ 3	❑ 4	❑ 5
hang around the street	❑ 1	❑ 2	❑ 3	❑ 4	❑ 5
play computer games	❑ 1	❑ 2	❑ 3	❑ 4	❑ 5
do a hobby, art or play a musical instrument	❑ 1	❑ 2	❑ 3	❑ 4	❑ 5
go to something like guides, scouts, or B.B.	❑ 1	❑ 2	❑ 3	❑ 4	❑ 5
go out nowhere in particular	❑ 1	❑ 2	❑ 3	❑ 4	❑ 5
go to gigs or concerts	❑ 1	❑ 2	❑ 3	❑ 4	❑ 5
go to discos or clubs	❑ 1	❑ 2	❑ 3	❑ 4	❑ 5
go to the church, mosque or temple	❑ 1	❑ 2	❑ 3	❑ 4	❑ 5
do nothing much	❑ 1	❑ 2	❑ 3	❑ 4	❑ 5

Just one page left to go!

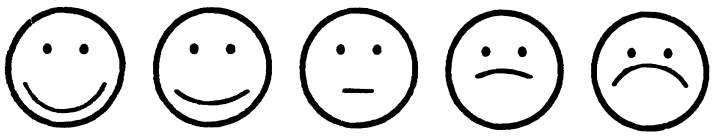
The last questions are about your future…

16) **What do you think you will be doing when you are 21 years old ?**

Please tick **one box for each line.**

I will…	Very Likely	Quite Likely	Quite Unlikely	Very Unlikely
be in good health	❑ 1	❑ 2	❑ 3	❑ 4
be taking exercise	❑ 1	❑ 2	❑ 3	❑ 4
be walking in countryside or mountains	❑ 1	❑ 2	❑ 3	❑ 4
be a regular smoker	❑ 1	❑ 2	❑ 3	❑ 4
be overweight	❑ 1	❑ 2	❑ 3	❑ 4
own a car	❑ 1	❑ 2	❑ 3	❑ 4
be unemployed (out of work)	❑ 1	❑ 2	❑ 3	❑ 4
be fitter than I am now	❑ 1	❑ 2	❑ 3	❑ 4
be interested in the natural environment	❑ 1	❑ 2	❑ 3	❑ 4
have been in trouble with the police	❑ 1	❑ 2	❑ 3	❑ 4
be married	❑ 1	❑ 2	❑ 3	❑ 4
be a Mum or Dad myself	❑ 1	❑ 2	❑ 3	❑ 4

17) Look at the faces and ***put a circle round the number*** which shows best how you feel about your future.



That's it! That's the end of the questionnaire.

THANK YOU!!

PLEASE PUT THE QUESTIONNAIRE IN THE ENVELOPE PROVIDED, SEAL THE ENVELOPE UP AND POST IT BACK TO US

Appendix 5 - Focus group schedule

Introduction: Explain purpose of the research. Inform them that the discussion will last for no more than 45 minutes. Establish ground rules – no right or wrong answers, confidential, can stop at any point and can ask questions. Explain about tape recording.

Start of group discussion:

* Ask them to state their name and their age on tape.

* Warm up exercise (i.e. using flipchart paper and felt-tips get them to draw what they do at JMA).

* What kinds of places did you go to (prompt: beach, park, garden, glen, woods)?

* What kinds of thing did you do (prompt: tree survey, litter clearance, games, making frog shelters and compost heaps, collecting minibeasts, drawing and painting plants and birds)?

* Was it like you expected it to be?

* Did you enjoy taking part?

If yes, what was the thing you enjoyed most?

If no, what was the thing you enjoyed least?

* Did taking part make you feel you got better at some of the physical skills (i.e. building things).

* After taking part, do you want to go into hills/woods/forests/countryside more than you did before?

If yes, why?
If no, why not?

* Who else encourages you to be physically active (prompt: playground activities, after school clubs, PE).

* Is there anything else you'd like to add?

Thanks for talking with me today; it's been really helpful and really interesting!