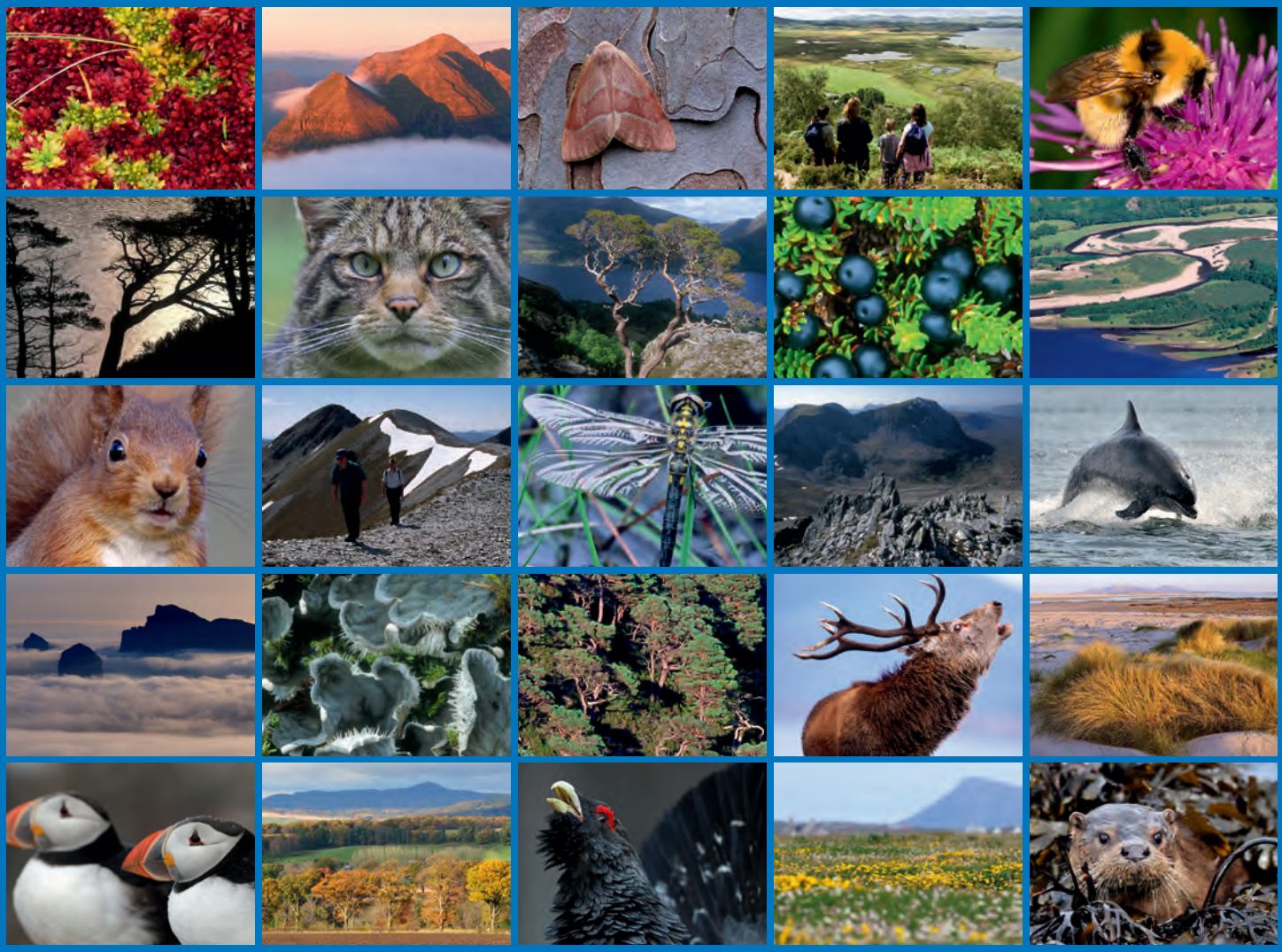
Scottish Natural Heritage
Commissioned Report No. 779

Teaching, learning, and play in the outdoors: a survey of school and pre-school provision in Scotland



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COMMISSIONED REPORT

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Teaching, learning, and play in the outdoors: a survey of school and pre-school provision in Scotland

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COMMISSIONED REPORT

Summary

Teaching, learning and play in the outdoors: a survey of school and pre-school provision in Scotland

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Outdoor; learning; education; school; pre-school; Curriculum for Excellence.

Background

In Scottish pre-schools and schools, through the implementation of Curriculum for Excellence and other policies, it has become an expectation that pupils will receive opportunities to learn outdoors within subject areas and in interdisciplinary studies. This expectation needs empirical investigation. To what extent, in what ways, and with what impacts are schools and pre-schools utilising the school grounds, local areas, and other places beyond as settings for the delivery of Curriculum for Excellence?

Unlike surveys that ask schools to report in hindsight on provisions of outdoor learning, this research collected evidence from teachers themselves about a large number of individual learning events over two comparable periods during the summer terms of 2006 and 2014. The survey generated data from random and non-randomly sampled[1] pre-schools and schools across Scotland about outdoor learning event durations, locations, foci, and other contextual aspects. Using over 1000 records of outdoor events across both surveys, we can construct a comprehensive account of a national changing picture since the inception of Curriculum for Excellence.

This report provides new baseline measures on the impacts of taking learning outdoors. There is significant evidence on how outdoor learning provision is understood to enhance engagement, and challenge and enjoyment, for example. We can also report on the prevalence of themes in learning (such as sustainable development), the association of going outdoors with the pedagogical approaches taken (such as cooperative learning), and the effect of schools' locations in areas of deprivation on provision.

[1] In 2006, we collected data from both randomly selected and non-randomly selected schools and pre-schools. The non-random sub-set of schools and pre-schools were well known for offering a comprehensive curriculum outdoors. In 2006, 'more active outdoor' primary and secondary schools recorded substantially higher averages (68 minutes in primaries and 39 minutes in secondary) per pupil per week. This indicates that schools across the system still have some way to go to match the top end provision we know is possible. Indeed, many individual schools sitting well below 2014 averages have the potential to make significant increases.

Main findings

1. Outdoor provision increases learner engagement and enhances educational experience.

Teachers comprehensively reported that taking provisions outdoors increased 'pupil engagement' in learning in the vast majority of events. Compared to indoor settings, outdoor lessons resulted in the significant enhancement of (in order of incidence): 'challenge and enjoyment', 'personalisation', 'relevance', 'breadth', and 'progression'. Outdoor events in green and natural places of various kinds (parks, gardens, wildlife areas, woods/forests) and residential experiences (where experiences of natural areas would be common) had the highest rates of enhancement of 'challenge and enjoyment'. Teachers reported taking an 'active' approach in the majority of events.

2. Schools and pre-schools have increased their average outdoor durations since 2006 but provision is unevenly spread and further substantial increases are realistically achievable.

In 2014, on average, randomly sampled schools and pre-schools were utilising the outdoors more than in 2006 within Curriculum for Excellence. However, this increase is not evenly spread across all outdoor locations or across all schools and pre-schools. Much more extensive provision is entirely possible in all sectors. As we will show, using findings from the 2006 survey (which had a separate non-random sample of 'active outdoor' schools), we will indicate that at least a further doubling of durations of provisions is realistically achievable for schools.

3. Pre-schools increased outdoor provision on average but most are not yet venturing much beyond their grounds.

The percentage of time spent outdoors as a proportion of the pre-school day went up from 23% in 2006 to 36% in 2014 for this age group.[2] The vast majority of outdoor provision was within nursery grounds, with only occasional trips being made beyond the grounds. 'Play' is still the dominant focus for pre-schools in the outdoors (as in 2006), closely followed by 'personal wellbeing' and 'practical activities'.

4. Primary schools increased average provisions; the increase came through schools offering more teacher-led events in school grounds and more residential experience.

Primary schools showed a notable increase in outdoor provision from an average of 19 minutes per pupil per week in 2006, to 30 minutes per pupil per week in 2014. Increases since 2006 were achieved through nearly trebling the time spent in school grounds and increasing time on residential trips. In primary schools, over one third[3] of the total time spent outdoors was in the school grounds. About a third of the time was spent beyond the grounds and a quarter of the time spent on residential trips. In primary schools, the three main foci were 'teamwork', 'practical skills' and 'play' (whilst in 2006 these were 'nature', 'practical skills' and 'working with others').

5. Secondary schools marginally enhanced their duration of provisions through providing more residential experience but there were fewer events in the school grounds and in local areas than in 2006.[4]

Provision in secondary schools increased from an average of 13 minutes per pupil per week in 2006 to nearly 16 minutes per pupil per week in 2014. For this sector, residential

[2] For pre-schools, the survey was for a sampled 2 weeks in the summer terms of 2006 and 2014. For primary and secondaries, the survey was over an eight week period in May-June 2006 & 2014.
[3] Terms here are approximate. Some figures are rounded. The detailed figures follow below.
[4] We note that at the time, secondary schools were introducing new examinations for the first time.

provision accounted for nearly two thirds of the time outdoors. Between 2006 and 2014, sampled secondary schools more than doubled their durations of residential outdoor provisions but marginally reduced durations spent in grounds and significantly reduced time in local areas. The overall effect is a marginal increase in provision. The main foci were 'teamwork', 'practical skills' and 'personal development' (similar to findings in 2006).

6. *Schools in deprived areas face greater challenges in providing for learning outdoors.*

   In general, pupils attending primary and secondary schools in more deprived areas were less likely to be in receipt of a residential outdoor experience, and were more likely to experience shorter outdoor events. In secondary school, 20% of events were funded by pupils (or their families), and these occurred mostly in schools in the least deprived areas.

7. *Many schools (especially in the primary sector) are beginning to use local areas more enabling them to provide low-cost, teacher-led provisions outdoors.*

   Taken together, primary and secondary school teachers were the lead professional in over three quarters of all events. However, this kind of leadership was more common in primary schools where the vast majority of non-residential outdoor events were led by staff and conducted at no cost to pupils usually in local areas or in the grounds. Outdoor provisions that took place beyond school grounds tended to be of a longer duration (especially if they took place in green spaces such as parks, wildlife areas, and woodland).

7. *Outdoor provisions are helping schools and pre-schools address many aspects of Curriculum for Excellence including Health and Wellbeing and Sustainable Development.*

   As expected, 'health and wellbeing' was the most commonly reported curriculum area to be addressed. 'Sustainable development' (SD) was the most commonly reported curriculum theme (followed by 'citizenship' and 'enterprise' respectively). One fifth of primary and one third of secondary school events (non-residential) addressed the theme of SD. Teachers reported that in the majority of these SD events, pupils were taking and 'active' and 'collaborative' approach to learning. Expectedly, the traditionally dominant awards schemes continue to feature as supportive structures for provisions.

Teachers resoundingly evidenced that taking learning outdoors has many effects: enriching learning and play, affording active and collaborative approaches, and enhancing many important aspects across a wide range of subject areas and thematic aspects. Overall, evidence suggests that pre-schools have made particularly good progress in increasing provisions, whilst many schools have increased outdoor provisions in grounds and on residential trips. However, across all sectors, further substantial increases are realistically achievable. The low average frequency of teacher-led trips beyond the grounds indicates local areas are particularly under-utilised by all sectors. Findings indicate outdoor learning across the curriculum is worthy of sustained attention, partnership working, and policy support. Further research and pre- and in-service teacher development are needed to (a) understand the different purposes, processes, and effects of outdoor learning and play in different settings, (b) to increase provision, (c) to address the particular challenges faced by each sector, and (d) to address issues distinctively faced in deprived areas.

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1. INTRODUCTION

In 2007, a report entitled 'Young People's Interaction with Natural Heritage through Outdoor Learning' provided evidence of the scope and nature of the provisions by schools and pre-schools of teaching, learning and play in the outdoors in Scotland. That survey, conducted in the summer of 2006, provided a baseline measure of provisions. The present study reports on our replication of the main elements of the survey of provisions in 2006, and provides some additional information on the links between outdoor provisions and Curriculum for Excellence, teachers' perceptions of learner engagement when outdoors, and other effects on learning and approaches taken. This research can be described as a cross-sectional study[5] because it allows for the comparison of provision of outdoor learning by pre-schools and schools during two periods (the summer of 2006 and 2014 respectively). Comparing these datasets means we can report through making a comparison of the randomly sampled schools and pre-schools taken from across Scotland's local authorities.

Unlike surveys using once-off questionnaires to perhaps one member of a school staff, this research collected data on each learning event. Our approach is internationally distinctive in that respect. Because we are repeating the survey with an eight year gap, there is obvious scope for a rigorous comparison of provision.[6] This comparison is achievable because teachers and pre-school staff themselves provided records for 8 weeks (schools) or 2 weeks (pre-schools) on individual outdoor educational events (excluding break times and normal PE classes). Teachers reported on durations, locations, learning foci, participant numbers and other contextual aspects such as who led the event. These records allow us now to construct a comprehensive account of a national and changing picture. Such an in-depth account has, heretofore, been unavailable in Scotland and, to our knowledge, in any other country to date. Doing this will help us describe any changes in provision since 2006 in terms of, *inter alia,* duration, location and focus. In this current study we will also be able to report on when and how outdoor provisions address the different curricular subject areas, how it impacts on student engagement, and when cross-curricular aspects such as 'learning for sustainability' were the focus.

Our research questions were:

1. How has outdoor educational provision changed since the advent of Curriculum for Excellence?

2. What are the opportunities afforded by outdoor educational experiences for different kinds of learning, within different subject areas, disciplinary and interdisciplinary foci for learning?

3. How is provision for outdoor learning distributed? Does living in an area of deprivation affect what is provided?

4. What are the effects of going outdoors on the quality of learning for different kinds of setting and provision?

Next, we offer a short literature review, before providing an overview of the methodology and analysis of the statistical data.

[5] This differs somewhat from a longitudinal study. In a cross-sectional study, comparable 'snapshots' or phases of time ae used to capture data. In longitudinal studies, more sustained data gathering is involved.

[6] In that research project, focus groups with young people were also conducted. In these, young people showed they valued outdoor opportunities which were authentic, contingent, less inhibiting, and fun. Participants indicated that they would welcome more provision outdoors by schools.

2. LITERATURE REVIEW

In this short literature review we contextualise the present study by referring to a limited selection of UK sources and policy documents that we felt were relevant to the Scottish context and that have been published since 2006. We start with a short review of the earlier baseline study upon which the current research builds.

2.1 The 2006 Study

In the report on the 2006 survey, entitled 'Young People's Interaction with Natural Heritage through Outdoor Learning'[7], we highlighted the decline in outdoor provisions by schools, the reduction in numbers of staff with a remit for outdoor learning, the increasing commercialisation of outdoor experience, and the disconnection of many young people from their natural heritage. *Curriculum for Excellence* was then at an early stage of implementation, and we noted the potential for further connections with outdoor learning as the curriculum became embedded.

The baseline survey of 2006 indicated wide variations within and between sectors in the provision of outdoor learning, in terms of duration, location, type and focus of outdoor activity. Average outdoor provisions per pupil per week were minutes for primary and for secondary. Some pupils received no outdoor learning provision during the survey period. Mannion *et al.'s* analysis (2006) showed that:

- provision was very variable and limited
- primary schools offered more than secondary schools
- local areas were relatively infrequently used by secondary schools
- pre-school centres rarely brought children into settings beyond their grounds
- residential experience formed a greater proportion of duration as pupils moved into senior classes in primary and into senior schools, and in more active outdoor schools
- the most popular foci of outdoor events in pre-schools were: play, health and fitness, practical activities, and nature
- the most popular foci of outdoor events in primary schools were: nature, practical activities, and working with others
- the most popular foci of outdoor events in secondary schools were: practical activities, working with others, and developing oneself.

2.2 Recent Policy

Since 2006, the Scottish Government has sought to implement Curriculum for Excellence (CfE) in all schools and pre-schools in Scotland. Across all education authorities, the majority of practitioners were expected to have direct ongoing engagement by June 2014, to promote strong progression in learning from younger pupils through to the senior phase at the end of secondary school. There is little doubt that school and pre-school staff are now widely aware of CfE's purposes: to enable children become 'successful learners, confident individuals, responsible citizens and effective contributors', known collectively as 'the four capacities'. These capacities are to be developed through a range of planned learning experiences, both subject-based and interdisciplinary, including learning contexts beyond the classroom.

[7] This report by Mannion, G., Sankey, K., Doyle, L. & Mattu, L. entitled *Young people's interaction with natural heritage through outdoor learning* documented provisions in the summer of 2006 but was published in 2007. It is available at the following link:
www.snh.org.uk/pdfs/publications/commissioned_reports/ReportNo225.pdf

In the early stages of CfE, commentators noted the potential resonance of the new curriculum with outdoor provisions. Outdoor learning was seen as a legitimate way to deliver the purposes of the curriculum in a connected way, employing for example cross-curricular approaches. However, Beames *et al.* (2009) noted at that time that: "CfE [did] not explicitly legitimise the use of what many teachers see as the significant resources needed for learning out-of doors" (Beames *et al.*, 2009, p.35).

Subsequently, documents supporting CfE and its implementation began to make explicit reference to outdoor learning (for example, the *Building the Curriculum*[8] series). Then, in 2010, the keynote publication *Curriculum for Excellence through Outdoor Learning (CfEtOL)* declared unequivocally that "education for any child in Scotland must include opportunities for a series of planned, quality outdoor learning experiences", including local areas as well as residential and adventure activities (Learning & Teaching Scotland, 2010, p.9). This drive to make outdoor learning a "natural and normal" part of education activity was later reinforced in the Scottish Government's (2013, p.6) response to the *One Planet Schools* working group report entitled *Learning for Sustainability*. The report emphasised Scotland's "distinguished tradition and international reputation in outdoor learning" (p.3) and noted that the One Planet Schools concept brought this together with sustainable development education and global citizenship in a way which resonated with Curriculum for Excellence and other existing policies and priorities. In further policy support, the introduction of a new suite of professional standards (GTCS, 2012) included, for the first time, a requirement for teachers to make use of the outdoors, further supporting the integration of outdoor learning into the typical school experience.

Taken together, the current policy context means that the provision of outdoor educational experience – in Scotland, termed, 'outdoor learning' – has moved from inhabiting a supporting (or 'extra'-curricular) role in the last decade, into a more mainstream, core curricular position. Outdoor educational experience is now seen as an approach for teaching all subject areas in diverse places: school grounds-based activities, excursions into local areas, day-long trips into both urban and natural areas (such as National Parks and Nature Reserves), residential experience in centres, as well as residential educational trips being led by teachers or conducted abroad. The policy environment in Scotland has become very positive with regards to outdoor provisions within CfE, and there now exists a comprehensive set of supports, incentives and drivers. However, the influence of these drivers on the provisions for learning outdoors has remained a moot point.

2.3 Researching Provisions for Learning and Play in Outdoor Settings

2.3.1 Surveys of Provision

In the peer-reviewed literature, only a couple of research projects have been reported that sought to discover more about levels of outdoor provisions since 2006. Thorburn and Allison (2013) interviewed 16 stakeholders (teachers, local authority, and national representatives) and suggested that outdoor learning policy aspirations were not being widely met in schools. Christie *et al.* (2014) used a survey (90 questionnaire returns) across four local authorities to collect data on teachers' perceptions of provisions. Their analysis suggested primary schools may now be using their grounds and local areas more, while in secondary schools, the impression was that there is now a willingness to provide more outdoor educational experience but that they would need more help to achieve this.

[8] Available on the Education Scotland website. Short link: http://goo.gl/xRK74a [accessed 02/09/14]

2.3.2 Benefits

Over the last decade, a number of research papers and reports have made many different arguments for outdoor educational provision on the basis of evidence of benefits. Within the scope of this review, we can cite studies of specific forms of outdoor experience that have evidenced different kinds of benefits (for a summary see, for example, Dillon and Dickie, 2012). Importantly, we note that different forms of provision will likely result in different kinds of outcomes. Amos and Reiss (2011) attest that fieldwork outdoors enhanced learning and led to cognitive gains for pupils from deprived areas. Studies of residential experiences have been shown to have the potential to improve participants personal and social development (see Scrutton, 2014), while Christie, Higgins and McLaughlin's (2014) study was more equivocal around the development of pupil 'dispositions'. We note that outdoor learning comes in many forms and the benefits of diverse experience such as play, school gardening, experiences in natural settings, fieldwork, outdoor science activities, intergenerational community-based activities and so on will differ in emphasis and scope. Looking specifically at the natural environment, benefits have been shown to include technical and social skills, better academic performance, improved engagement, the development of a sense of community, and improved health and well-being (see King's College London, 2011). Hence, whilst the arguments around benefits in general is well founded, what might be possible from any one given programme can be quite an open question and more likely related to the distinctiveness of the educational inputs on that programme, its location, and what activities were undertaken there.

2.3.3 Barriers and Influences

A number of studies (e.g. Natural England, 2009; RSPB, 2012, 2013; Pointon, 2013) have illustrated an ongoing decline across the UK in everyday opportunities for young people to spend time outdoors and to develop a relationship with the world around them. In response, schools are increasingly charged with addressing this deficit whilst also being encouraged to address pupil health and well-being and engagement within and across all other curricular areas.

A number of reports have identified the barriers which may prevent teachers from making greater use of outdoor environments (King's College London, 2010). In Scotland, in the light of our review of policy, outdoor provisions have perhaps never had a more legitimate standing. Ross *et al.* (2007) noted that in Scotland, curriculum policy was acting as a legitimatising and motivating force as teachers weighed up the costs and benefits and addressed barriers. Some perceived barriers seem to persist for teachers in Scotland: weather, cost, staffing ratios, but there is evidence that teachers are perceiving their own grounds, their local environment, and staff enthusiasm as positive supporting influences (see Christie *et al.,* 2014). Mannion *et al*.'s (2011) multiple case study found the influences on excursion making at the level of the school (for example head teacher support), the teacher (and their own disposition towards going out), and outside supports. But the influence of the place itself (with its seasonal differences, topography and what the teacher knew or understood about it) can exert a strong influence on what gets planned and executed in excursions in any given setting.

As barriers and influences have become more widely known, a shift is noticeable towards emphasising how we might address them to ensure that teachers feel prepared to overcome them (Children, Schools and Families Committee of the House of Commons, 2010). A need for additional training to address teachers' lack of confidence in using outdoor environments has been identified (e.g. Nicol *et al*., 2007; Christie *et al*., 2014). The need for pre- and in-service training has been highlighted too and new initiatives to address this for at least some students are found in initial teacher education programmes in Scotland. However, we note that addressing barriers alone will not be sufficient for a progressive and comprehensive

curriculum-linked approach to outdoor provisions. What teachers might need to be able to do once barriers to getting outdoors are overcome will also need attention.

2.4 Developments and Supports

A range of resources, models, and CPD opportunities have become available to support teachers in making effective use of the outdoors.[9] A wide range of practice-oriented documents, books, guides, and blogs have been published in recent years, to support teachers' use of the outdoors in various ways. The resources available on the Education Scotland website include several which support and encourage use of outdoor learning contexts, including *Outdoor Learning: Practical guidance, ideas and support for teachers and practitioners in Scotland* (Education Scotland, 2011), and the *Learning About Scotland* briefing (Education Scotland, 2013).

In addition, Local Authorities, Education Scotland, other government bodies (such as Forestry Commission), outdoor centres, and charities continue to support a wide range of initiatives to support practitioners across all education sectors in their use of the outdoors. Initial teacher education departments in many universities are also only at an early stage of making universal provisions for pre-service education in the outdoors and there is a need for sustained coordination of these efforts. A National Network for Outdoor Learning (supported by Education Scotland and Local Authorities) helps with the sharing of practice at a local level. The National Implementation Group for Outdoor Learning (chaired by Education Scotland) seeks to link stakeholder interests and sustain the forward momentum across sectors.

However, meaningful CPD opportunities have been deemed insufficient to meet the growing expectations around the provision of learning outdoors including 'learning for sustainability' (see Higgins *et al*., 2013) and there is insufficient evidence about the efficacy of different CPD in-service in the main. Some in-service teacher education initiatives have been more rigorously designed, applied, and evaluated (see below) but increased provision, research and evaluation are needed here.

Some discrete models of CPD for teacher-led outdoor provisions have been in receipt of evaluation and research attention in the UK. With support from Scottish Natural Heritage, the Teaching in Nature project[10] used collaborative action inquiry with teachers to develop a model of professional development for outdoor visits. Since 2009, teachers across Scotland have undertaken CPD using this model and it has been independently evaluated.[11] The approach is based on the view that teachers can take a place-responsive approach through making planning visits to key sites, working to develop their own and their pupils' relations with a specific place, and, developing curricula in order to teach and learn with and in that place (see Mannion *et al*., 2013). In England, the Natural Connections Demonstration Project[12] is now in train, setting out to evaluate and work closely with teachers in schools with catchments in areas of deprivation who will be using local environments to facilitate outdoor learning. Beames and Ross (2010) have outlined how the 'Outdoor Journeys' model can turn local excursions into interdisciplinary and student-led inquiries and have undertaken a funded inquiry to develop this approach further within secondary schools. Further work to provide and evaluate CPD on traditional and emerging themes (such as 'learning for sustainability') will undoubtedly be required.

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[9] The large number means they are too numerous to list here in any comprehensive manner.
[10] http://teachinginnature.stir.ac.uk/index.html
[11] In 2014, 100 teachers gained professional recognition from the General Teaching Council after having undertaken 'Teaching in Nature' CPD.
[12] http://www.growingschools.org.uk/about/natural-connections

2.5 An Outdoor Pedagogy?

As the field of practice continues to change, we need empirical evidence to capture what contemporary outdoor pedagogy is becoming 'on the ground'. The current study seeks to describe contemporary practice, and evidence whether certain kinds of locations or foci for pedagogy outdoors have certain effects. For example, does outdoor provision enhance learner engagement? What practices and places are beginning to provide opportunity for 'learning for sustainability', 'cooperative learning' or 'interdisciplinary learning'?

Whilst not all outdoor pedagogies will be similar, researchers have identified some key characteristics of outdoor experiential learning. Mannion *et al.*'s (2006) qualitative study found that young people valued outdoor experience (in natural settings) because it was seen as fun, free, real and contingent. Waite (2007) found a similar list of values derived from practitioners' memories of childhood outdoors: freedom, fun, authenticity, autonomy and physicality. These kinds of values infuse the outdoor activities of children and the pedagogies of adults. Compared to indoor activities, this research seeks to add further evidence of some possible common characteristics and effects of outdoor pedagogies.

Yet, we are aware researchers can benefit from not conflating all outdoor experiences into one homogeneous entity.[13] As with indoor learning, different kinds of place and practice will lead to different pedagogies and diverse impacts and effects. Higgins (2009) argues, for example, that experiential approaches could make a unique contribution to global sustainability. A student-led, inquiry-based approach will also encourage interdisciplinary approaches to learning (see Beames and Ross, 2010). When visits to nature reserves were the focus, Mannion *et al.* (2013, p 803) found that a place-responsive pedagogy was possible when teachers explicitly taught "by-means-of-an-environment with the aim of understanding and improving human-environment relations". The contributions of Beames and Ross (2010), Harrison (2010), Mannion and Adey (2011), Ross and Mannion (2012), Mannion and Gilbert (2014) all point to the emergence of an awareness of the role of local places and intergenerational practices in outdoor pedagogies. The role of story as an embedded concern is also noticeable within work of Gilbert and Mannion (2014) and McNaughton (2014) where local and global concerns are raised. The present study and further research may help us answer some of the newly emerging questions around what constitutes effective outdoor pedagogy as practiced in 2014 whilst also looking at the changing nature of provision over time.

2.6 Summary of Literature

This short literature review captures some of the key concerns, findings, and changes in emphasis in policy and practice since 2006. Beames *et al.* (2011) suggested the big question had shifted from 'Does it work?' (reflecting a concern for benefits) to 'How do we do it?' (reflecting a concern with barriers). Now, a further shift is noticeable. Given the current explicit policy imperatives and expectations, the current study seeks to answer: 'What is outdoor learning in practice in Scotland in 2014?', 'Are pupils getting out more?' and 'What are the effects teachers notice?'. This report seeks to address a notable lack of empirical evidence in the literature on these kinds of questions. We trust they will provide a more research-informed basis for action and policy direction internationally, nationally, and locally.

[13] Indeed, indoor learning is rarely conceived in that way.

3. METHODOLOGY

3.1 Research Design

The survey set out to provide an understanding of the changing nature of the scope and range of formal outdoor experiences arranged by schools and pre-school centres. The design of the research is based on the view that teachers themselves are well placed to self-report on formal outdoor provisions. This view was borne out in our experience of successfully surveying schools and pre-schools in 2006. Our survey approach on outdoor experience is internationally distinctive in that it requires schools and pre-school centres to provide weekly updated records for each individual outdoor learning event both on and off school/preschool centre sites.

For the purposes of the survey we took outdoor provisions to mean formally delivered educational experiences that took place outside the school building, capturing activity in the school grounds, in local areas, and residentially too whether delivered by teachers or other staff. The survey sought to capture all outdoor educational activity across all subjects and interdisciplinary themes but we did not survey for PE or for activity at break times at school level. Schools were asked not to record track and field games or sports except for adventure sports (such as mountain biking or skiing). Detailed advice on 'what to survey' was given to schools at the outset. Schools were free to phone us with queries as the survey proceeded. The surveys were both time-limited and seasonally affected happening in May and June. We repeated the survey in 2014 in the same time period as in 2006 to ensure comparability. We evaluated the process in 2006 and 2014 (see Annex 4 for details).

3.2 Survey Instruments

In 2014, we re-used many of the same elements of survey instruments used in 2006 (see Annex 3). This allowed us to make comparisons with 2006 on different types and locations of outdoor provisions, their associated purposes, and durations. New elements were added in 2014 to capture evidence on the effect and impact of events and to reflect the new structures of the curriculum. We also asked about the leadership of events, how costs were met, distance travelled from school, and teachers' views on engagement and enhancement of learning.

3.3 Data Collection Processes

In 2014, three random samples for pre-school, primary and secondary were generated using the same criteria as in 2006: school size and urban-rural location of schools (see Annex 1 and 2). After gaining local authority agreement, schools and preschools were approached and asked to voluntarily participate. We assured participating establishments of anonymity in reporting.

Taking an event-by-event approach meant managing and attending to a sustained survey across over 50 establishments for the agreed duration (2 weeks for pre-schools / 8 weeks for schools). In practice, this meant collecting records from locally-based research coordinators (usually teachers) in each establishment on over 800 individual teaching events. We opted to use paper-based survey instruments but communicated with schools and pre-schools by phone and e-mail. This was effective in that it allowed teachers 'on the move' outdoors to complete the survey in a timely manner and to post these back to the university. Schools were reminded regularly about the submission of returns. Returns were coded and logged into our databases on a weekly basis.

As in 2006, we would note that greater lead-in time and time for the survey work itself would have perhaps improved take-up of the survey. Whilst we increased our random sample

considerably, we found a lower percentage of approached schools and pre-schools agreed to participate than in 2006. In part, this reflected perhaps the timescale for the work, the conditions of change in the system, and perhaps the increasing pressure on establishments to participate in many other processes of monitoring, evaluating and researching practice. Yet, many were very keen to participate and saw it as an opportunity to focus on this area of practice in their establishments.

4. FINDINGS

The findings are drawn from the analysis of the returns from 53 pre-schools and schools sampled across 22 consenting local authority areas. In schools and pre-schools, we collected returns from teachers about over 50,000 child-hours of outdoor learning time accrued during over 800 events.

In Table 1 (below) we outline the numbers of individual event records we received from the randomly sampled pre-schools and schools.

Table 1. Number of participant establishments and event records returned, 2006 and 2014 (Random sample only)

		Random Sample **2006**	Random Sample **2014**
Pre-school	Nos. participant pre-schools	13 Pre-schools	13 Pre-schools
	On-site	121	243
	Off-site	9	13
Primary	Nos. of participant schools	8 Primaries	26 Primaries
	Non-residential events	111	294
	Residential trips	2	9
Secondary	Nos. of participant schools	9 Secondaries	14 Secondaries
	Non-residential events	102	142
	Residential trips	14	36

Note 1. Six pre-school establishments accounted for the 13 off-site trips; one pre-school accounted for five of the trips.
Note 2. Each 'residential trip' comprised a number of 'events' in our recording approach. Primary schools recorded 36 events (across 9 residential trips), and secondary schools recorded 107 events (across 36 residential trips).

Primary schools reported a total of 38 days spent on residential trips, with trips each averaging around 4 days in length. The shortest reported trip was for two days, and the longest was for five days. Not all trips were outdoors for all of the activity time; our records were only for the outdoor components of trips.

Secondary schools reported a total of 124 days spent on residential trips, with each trip lasting an average of 3.4 days. The shortest trip involved a single overnight stay, while the longest was of ten days' duration (to a foreign city location).

4.1 Time spent outdoors

4.1.1 Pre-schools

Table 2. Pre-schools – child hours and percentage of day outdoors 2006 and 2014

	2006	**2014**
Outdoor learning hours	3246	3811
Time at pre-school centres	14105	10647
Percentage of day	**23%**	**36%**

A total of just over 3,800 child hours was spent on outdoor learning activities out of a total attendance child hours of 10,750 hours. This represents an average across all thirteen pre-schools of 36% of each child's day is spent in outdoor learning, considerably higher than among the random pre-schools in 2006. We know from our non-random / 'active outdoor' pre-schools survey in 2006 that 39% was achieved which is only marginally greater than this non-random average in 2014. This suggests this sector has made substantial increases in outdoor provisions over the last eight years. However, some individual nurseries provide substantially more opportunity for play and activity outdoors so further increases are possible.[14]

4.1.2 Primary schools

Table 3. Total outdoor learning child hours and minutes per pupil per week - primary schools non-residential and residential combined

	2006	**2014**
Outdoor learning hours	3390	22366
Roll	1343	5615
Average hours per pupil during 8 week term	2.52	3.98
Minutes/pupil/week (rounded)	**19**	**30**

Primaries have increased average provision. However, we know from our non-random / 'active outdoor' schools survey in 2006 that 68 minutes of an average was achievable. This suggests a further doubling of duration is realistically achievable for this sector. Put another way, we could conceive of a notional target of, for example, one hour per pupil per week at least for this summer period.[15]

4.1.3 Secondary schools

Table 4. Total outdoor learning child hours and minutes per pupil - secondary schools non-residential and residential combined

	2006	**2014**
Outdoor learning hours	13064	25163
Roll	7726	11927
Average hours per pupil during 8 week term	1.7	2.1
Minutes/pupil/week (rounded)	**13**	**16**

Secondaries have increased average provision but only slightly. We know from our non-random / 'active outdoor' survey in 2006 that 39 minutes of an average was achievable. This suggests further substantial increases are realistically achievable. We can suggest a notional target of on average one period per pupil per week at least for the summer period.

[14] The average time each pre-school centre spent on outdoor learning activities varied from a low of 13% to a high of 75%. This latter figure is similar to the provision of the most active outdoor 'top end', non-random nursery we surveyed in 2006 (which was 71%).

[15] These are average figures. Of course, individual schools would focus their programming of their outdoor provisions in various ways across stages and seasons to suit their own contexts. For example, some schools will wish to provide more events locally or residentially.

4.2 Time spent on residential and non-residential activity

4.2.1 Primary schools

Table 5. Percentage of duration for outdoor locations (Primary), 2006 and 2014

	2006	2014
Within school grounds	25%	39%
Beyond school	60%	36%
Residential	15%	25%

Table 5 shows that the proportion[16] of the total duration for primary outdoor learning within school grounds has almost doubled since 2006. Residential provision has also increased as a proportion of duration.

Table 6. Average minutes per pupil per week for all locations (Primary), 2006 and 2014.

	2006	2014
Within school grounds	4.7	12.0
Beyond school grounds	11.4	10.5
Residential	2.9	7.5
Total	**19.0**	**30**

Table 6 shows the average minutes per pupil per week for primary schools across the three main location types. Within school grounds, the average has increased almost three-fold, whilst the residential average has more than doubled. Overall, duration has increased to a half hour per week for pupils on average. There was a significant range in provision, however.

4.2.2 Secondary schools

Table 7. Percentage of duration for outdoor locations (Secondary), 2006 and 2014

	2006	2014
Within school grounds	10%	7%
Beyond school	59%	30%
Residential	31%	63%

Table 8. Average minutes per pupil per week for all locations (Secondary), 2006 and 2014.

	2006	2014
Within school grounds	1.3	1.1
Beyond school grounds	7.7	4.7
Residential	4.0	10.0
Total	**13**	**15.8**

In secondary schools, gains were marginal overall. But there was a slight decrease in grounds use and a decrease in provision 'beyond school'. 'Residential' provision has more than doubled.

[16] Proportions here (as percentages of the total) do not show increases over time; rather, they merely show the way the total durations were split across settings. Table 6 does provide figures for average durations however.

4.3 Residential activity in primary and secondary schools, by SIMD of school

The 2012 Scottish Index of Multiple Deprivation (SIMD) was used as an indicator of the relative deprivation of the areas in which schools and pre-schools were located. SIMD 1 is the most deprived fifth (quintile) of the population[17], ranging to SIMD 5 which is the least deprived.

Table 9. Number of hours spent at residential events by SIMD (Primary)

SIMD	Count of schools in sample	Count of residential stays	Sum of tot child hrs	%
1	5	1	702	12.58%
2	6	2	1058	18.96%
3	7	3	1745	31.28%
4	6	2	814	14.59%
5	2	1	1260	22.58%
Total	**26**	**9**	**5579**	**100.00%**

In primary schools, despite a good representation of schools in the most deprived SIMD quintile, we can see these schools provided relatively few residential stays.

Table 10. Number of hours spent at residential events by SIMD (Secondary)

SIMD	Count of schools in sample	Count of residential stays	Sum of tot child hrs	%
1	0	0	0	0.00%
2	3	6	2552	16.02%
3	4	9	4498	28.23%
4	2	8	2747	17.24%
5	5	13	6136	38.51%
Total	**14**	**36**	**15933**	**100.00%**

For secondary schools, we notice there are more residential events per school in less deprived areas. (The data shows an average of two events per school in the second most deprived SIMD to four in the fourth SIMD and nearly three per school in the least deprived SIMD quintile.) However, the average child hours per event stay reasonably constant at around 400 child hours per event, regardless of deprivation quintile.

[17] Quintiles divide the total population into five equally numerous subsets. The SIMD quintiles are ordered from SIMD1 (most deprived 20% of the population) to SIMD5 (least deprived 20%).

4.4 Non-residential outdoor activity: type of location

4.4.1 Pre-schools

Table 11. Location of pre-school outdoor activity, 2006 and 2014

	2006	2014
Within pre-school grounds	90.8%	94.8%
Beyond pre-school grounds		
Farm/farmland	0.6%	0.8%
Public park	1.6%	1.2%
Urban/civic area	4.5%	0.8%
Woods/forest/wildlife area	2.5%	2.4%

The number of outdoor learning events taking place beyond the pre-school premises has dropped since 2006 to just over 5% from 9%. Table 11 above shows that most of this change appears to have occurred in a reduction in visits to urban or civic areas. This may be explained by the lack of pre-schools in large urban areas within our sample.

In 2006 all off-site outdoor learning was done by pre-schools in large or other urban areas. The number of off-site events is small but we can say this has changed in 2014 with off-site learning being arranged by pre-schools in remote rural areas, accessible small towns and other urban areas.

4.4.2 Primary and Secondary schools

Table 12. Time spent at different non-residential location types, primary and secondary

Location	Primary		Secondary	
	child hours	%	child hours	%
farm/farmland	227.5	1%	197.5	2%
public park	2460.5	15%	1002.5	11%
school grounds	8783.25	52%	1801.6	20%
urban or civic area	2257	13%	1993.5	22%
wildlife area	1909.5	11%	2448	27%
woods/forest	955	6%	1719	19%
(blank)	194	1%	68	1%
Total	**16786.75**	**100%**	**9230.1**	**100%**

Looking at only the non-residential outdoor learning experiences, we see in Table 12 that 52% of total outdoor learning time was done within the school grounds in primary schools, compared to just 20% in secondary schools.

School grounds events accounted for over half of non-residential duration for primary schools. Taken together, greener spaces – parks, woodland and wildlife areas – accounted for 79% of the outdoor non-residential duration for secondaries. Urban or civic areas appear to afford a greater proportion of duration for secondary schools.

Table 13. Average duration in hours of non-residential outdoor learning events by location type – Primary and Secondary schools

	Primary	Secondary
farm/farmland	3.8	4.0
public park	1.8	3.9
School grounds	1.0	1.2
urban or civic area	2.2	4.5
wildlife area	4.0	4.4
woods/forest	3.0	3.3

The average duration data helps us understand how long outdoor lessons lasted. Table 13 shows that school grounds events are shorter when compared to all other location types.

4.5 Non-residential activity: Distance from school

Table 14. Non-residential events - distance from school – Primary and Secondary schools

Distance from school	Primary		Secondary	
	Events	%	Events	%
on campus	182	62%	71	50%
1-5km	90	31%	24	17%
6-20km	7	2%	23	16%
20km+	15	5%	24	17%
Total	**294**	**100%**	**142**	**100%**

Table 14 provides a new baseline showing the relative use of locations at various distances from school. Here, all non-residential events are considered. We notice the emphasis on grounds use and near-local areas (less than 6km) in primary and the greater emphasis on areas beyond 5km in secondary.

4.6 Non-residential activity: Duration

Table 15. Average duration in hours of non-residential outdoor learning events by distance – Primary and Secondary schools

	Primary	Secondary
on campus	1.0	1.2
1-5km	2.0	3.2
6-20km	4.1	4.2
20km+	3.7	4.7
Total	**1.5**	**2.6**

It is interesting to note how duration of outdoor events increases with distance from school campus, particularly in secondary schools.

Table 16. Average duration in hours of non-residential outdoor learning events by SIMD - Primary and Secondary schools

SIMD	Primary	Secondary
1	1.8	0
2	0.8	1.5
3	1.8	1.9
4	1.1	2.0
5	2.7	4.1
Total	**1.5**	**2.6**

We note how duration of outdoor events increases with lowering deprivation indices, particularly in secondary schools.

4.7 Non-residential activity: Costs

Table 17. Non-residential events – costs, primary and secondary schools

	Primary		Secondary	
	Events	%	Events	%
No cost	262	89%	86	61%
Pupils	3	1%	29	20%
School funds	21	7%	22	15%
Grant funding	4	1%	0	0%
Other	4	1%	5	4%
Total	**294**		**142**	

Table 18. Non-residential events by cost and distance (Primary)

	on campus	1-5km	6-20km	20km+	Total
No cost	181	80	1	0	262
Pupils	0	0	0	3	3
Grant funding	0	1	3	0	4
School funds	0	8	2	11	21
Other	1	1	1	1	4
Total	**182**	**90**	**7**	**15**	**294**

Table 19. Non-residential events by cost and distance (Secondary)

	on campus	1-5km	6-20km	20km+	Total
No cost	70	13	2	1	86
Pupils	0	1	14	14	29
School funds	0	10	5	7	22
Other	1	0	2	2	5
Total	**71**	**24**	**23**	**24**	**142**

Table 20. Non-residential events by cost and location (Primary)

	School grounds	Farm/ farmland	Public park	Urban or civic area	Wildlife area	Woods/ forest	Total
No cost	185	0	44	20	4	8	261
Pupils	0	0	0	1	2	0	3
Grant funding	0	1	0	0	2	0	3
School funds	1	0	7	7	5	0	20
Other	1	1	0	1	0	0	3
Total	**187**	**2**	**51**	**29**	**13**	**8**	**290**

Table 21: Non-residential events by cost and location (Secondary)

	School grounds	farm/ farmland	public park	urban or civic area	wildlife area	woods/ forest	Total
No cost	70	1	1	3	8	1	84
Pupils	0	3	4	5	13	4	29
School funds	0	1	1	4	2	14	22
Other	1	1	0	0	1	2	5
Total	**71**	**6**	**6**	**12**	**24**	**21**	**140**

The bulk of the non-residential events involved no cost. No schools grounds events for primary and secondary incurred a cost. The vast majority of primary school events were either in the school grounds or local and were cost free, whilst for secondary about half of all events were off campus; these tended to be proportionally further flung than for primary, and tended to incur costs more commonly. Of the secondary school events that were funded by pupils, 22 out of 29 (76%) events were in the least deprived quintile (for SIMD).

4.8 Non-residential activity: Leadership of events

Table 22. Leadership of non-residential events by location type (Primary)

	school grounds	farm/ farmland	public park	urban or civic area	wildlife area	woods/ forest	Total
Teacher	163	0	34	19	4	2	222
Pupils	14	0	1	0	0	0	15
Facilitator	7	0	3	10	6	0	26
Parent	2	0	0	0	0	0	2
Ranger	0	2	13	0	3	6	24
Volunteer	1	0	0	0	0	0	1
Total	**187**	**2**	**51**	**29**	**13**	**8**	**290**

Table 23. Leadership of non-residential events by location type (Secondary)

	school grounds	farm/ farmland	public park	urban or civic area	wildlife area	woods/ forest	Total
Teacher	69	2	5	10	17	11	114
Facilitator	1	4	1	2	1	2	11
Ranger	1				6	8	15
Total	**71**	**6**	**6**	**12**	**24**	**21**	**140**

Teachers took the lead in the vast majority of non-residential outdoor learning experiences. In primary schools, teachers led nearly 77% of all events, and in secondaries the figure was more than 80%. Interestingly, pupils took the lead only at the primary school level (5%). Parents taking the lead are negligible in the primary sector and non-existent in the secondary. However, 214 parents have been recorded as present at 49 of the primary school non-residential outdoor learning experiences. In contrast, only three parents were involved in one secondary school non-residential outdoor event. Parental involvement in residential outdoor learning experiences was negligible (with the records showing only two parents in two primary events, with no parental presence in secondary residentials).

4.9 Focus of outdoor learning event

The foci of events in the pre-school sector have changed little since 2006. Play is still the dominant focus, and as in 2006, closely followed by personal wellbeing (called 'health and fitness' in 2006) and practical activities. Teamwork just exceeds nature as one of the top four foci in pre-schools.

In primary schools the three main foci were teamwork, practical skills and play (in 2006 these were nature, practical skills, and working with others).

For secondary schools, the main foci were teamwork, practical skills and individual development, again similar to the previous survey (practical activities, working with others, and developing oneself) but all with higher percentages than in 2006.

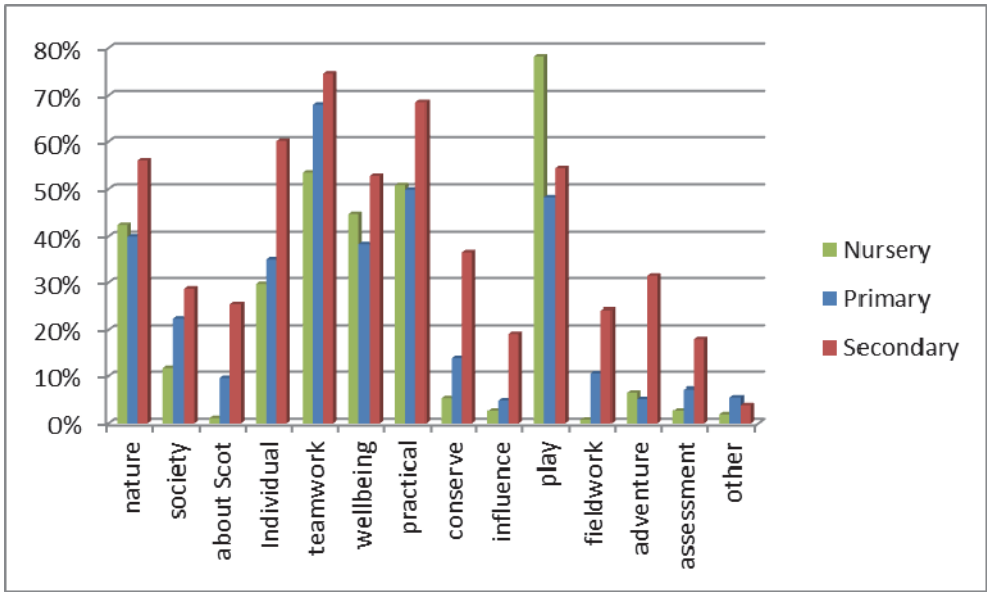

Figure 1. Foci of outdoor learning (% of all residential trips and non-residential events combined). Note: categories based on those used in 2006 research

Table 24. Average duration (hours) of non-residential outdoor learning events by focus

Focus	pre-school	primary	secondary
Nature	1.1	1.6	2.5
Society	1.1	2.0	3.5
About Scotland	0.5	2.5	3.2
Individual or personal development	0.8	1.3	3.0
Teamwork	0.9	1.4	2.6

Personal/social wellbeing	0.9	1.3	3.0
Practical activities or skills	1.0	1.6	2.6
Conservation	0.7	2.5	3.2
Influencing change	0.7	1.7	3.5
Play	0.9	1.5	3.1
Fieldwork	0.5	2.0	3.6
Adventure activity	0.8	3.6	3.7
Assessment of learning	0.5	1.5	2.7
Overall average	**0.9**	**1.5**	**2.6**

The average duration of non-residential outdoor learning experiences is 1.5 hours in primary schools and 2.6 hours in secondaries. The average duration by foci in each sector is generally close to the overall average with some exceptions. In primary schools the average duration for the foci 'about Scotland' and 'conservation' are both 2.5 hours while 'adventure activity' is the longest at 3.6 hours. The focus 'adventure activity' is also the highest average in secondary schools (3.7hrs). Other foci with higher than average durations are 'fieldwork', 'influencing change' and 'society'.

4.10 Curriculum areas

Curriculum for Excellence comprises eight 'curriculum areas', Expressive Arts, Health and Wellbeing, Languages, Mathematics, Religious and Moral Education, Sciences, Social Studies, and Technologies. We included 'Foreign Languages' separately.

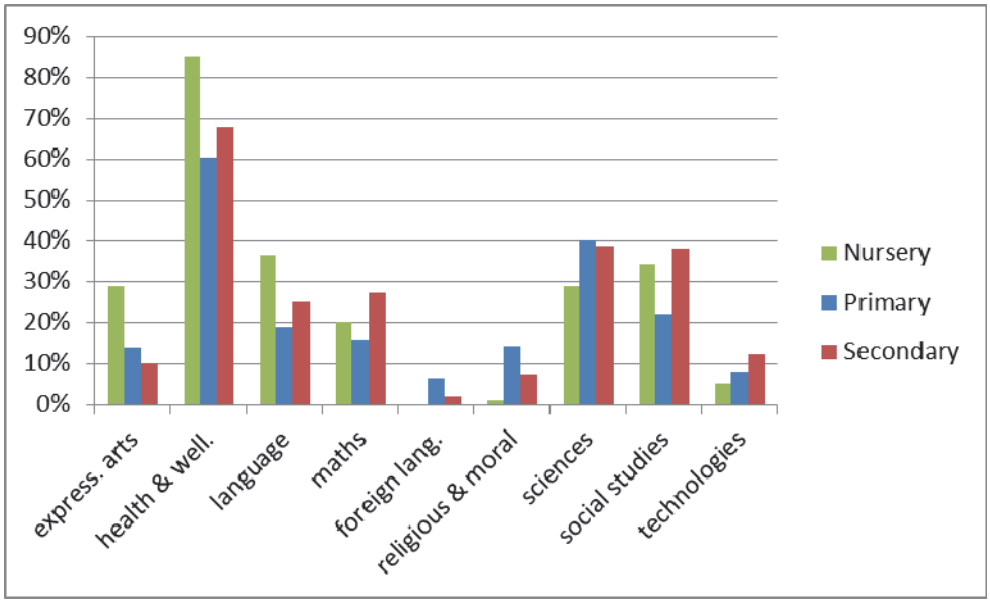

Figure 2. Curriculum areas addressed in OL events (% of residential and non-residential)

Many key areas of CfE are now being addressed through outdoor learning. Expectedly, we note the prevalence of, for example, health and wellbeing. However, we note that 'Technologies' was not strongly reported upon and may be an area for future attention with the now ubiquitous use of mobile and digital technologies.

4.11 Approaches to Learning

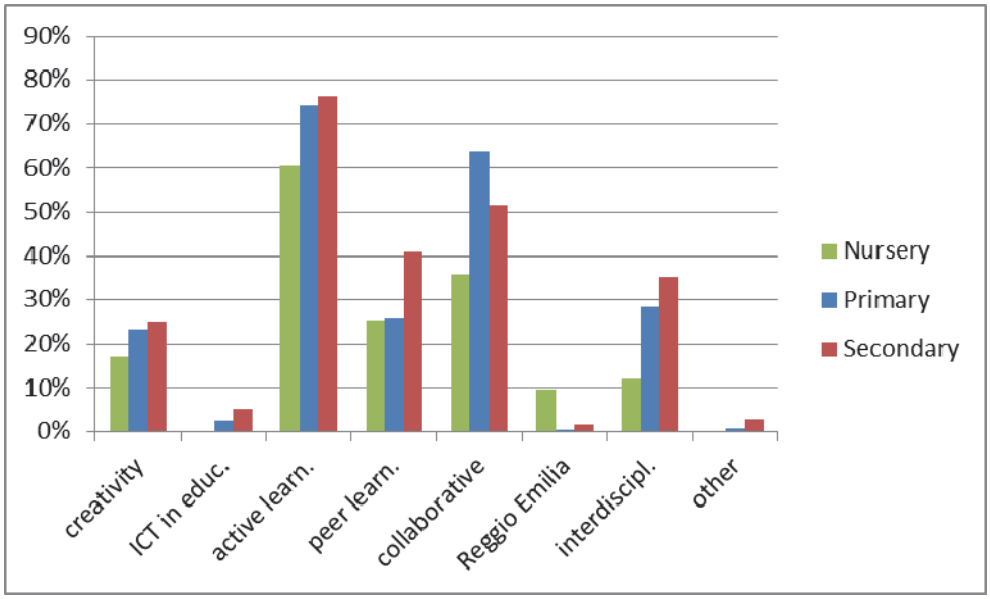

Figure 3. Approaches to learning addressed by OL events (% of residential and non-residential trips)

Figure 3 (above) looks at the approaches taken. As well as 'Outdoor Learning', a number of other 'Approaches to learning' are recognised as part of Curriculum for Excellence; Active Learning, ICT in Learning, Creativity, Peer Learning, Co-operative and Collaborative Learning, and the Reggio Emilia model (which positions children as the key protagonists of their own learning through the relationships they engage in with other people and with the environment. Outdoor learning events clearly afford considerable opportunity for active learning and collaborative learning, the two dominant approaches across reported across all sectors.

4.12 Themes across learning

Curriculum for Excellence includes several 'themes across learning'.

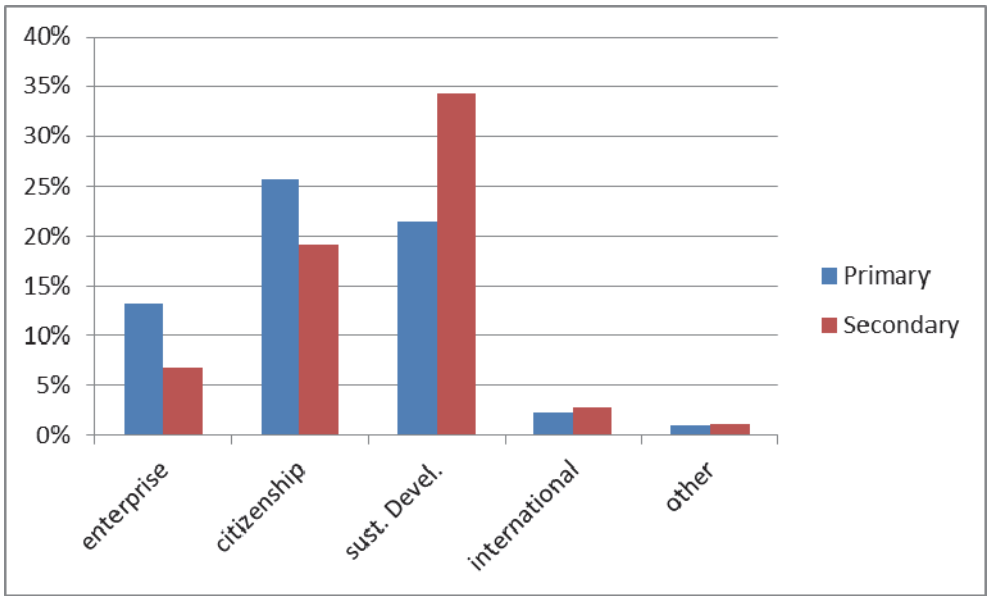

Figure 4. Themes across learning (% of residential and non-residential events)

Table 25. Average duration of themes across learning - Non-residential, Primary and Secondary

Average duration (hrs)	Primary	Secondary
Enterprise	1.2	4.2
Citizenship	1.8	3.4
Sustainable development	1.9	2.8
International education	2.7	3.9

Cross-tabulating the sustainable development theme with some of the approaches to learning reveals varying results. In non-residential secondary schools events, 91% of SD themed events also took an active learning approach, 59% took a collaborative learning approach while just less than a half (48%) was interdisciplinary. Among non-residential primary schools 75% of SD themed events also took an active learning approach, 69% was also collaborative and just 31% was also interdisciplinary.

Table 26. Percentage of Sustainable Development themed events with various approaches to learning - Primary, non-residential

	% of SD theme with approach to learning	% of SD theme without approach to learning
Active learning	75%	25%
Collaborative learning	69%	31%
Interdisciplinary learning	31%	69%

Table 27. Percentage of Sustainable Development themed events with various approaches to learning - Secondary, non-residential

	% of SD theme with approach to learning	% of SD theme without approach to learning
Active learning	91%	9%
Collaborative learning	59%	41%
Interdisciplinary learning	48%	52%

4.13 Impact on Learning

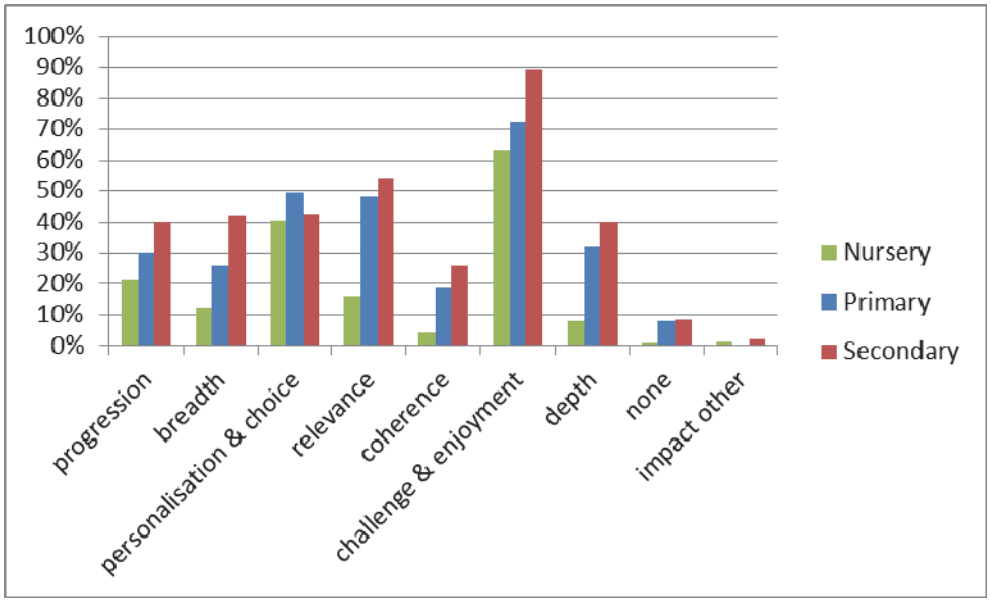

Figure 5. Percentage of events where teachers reported enhancements of learning (% of all events: residential trips and non-residential events combined)

We asked teachers about enhancements against the terms of the seven principles for the practical design of experiences within Curriculum for Excellence. When compared to indoor settings, in general teachers reported that outdoor lessons resulted in significant enhancements, particularly in 'challenge and enjoyment'. This was the case in almost 90% of secondary school outdoor learning events, in just over 70% in primary schools, and in just over 60% of events in nurseries. Residential primary and secondary events had enhanced 'challenge and enjoyment' impacts in over 90% of cases.

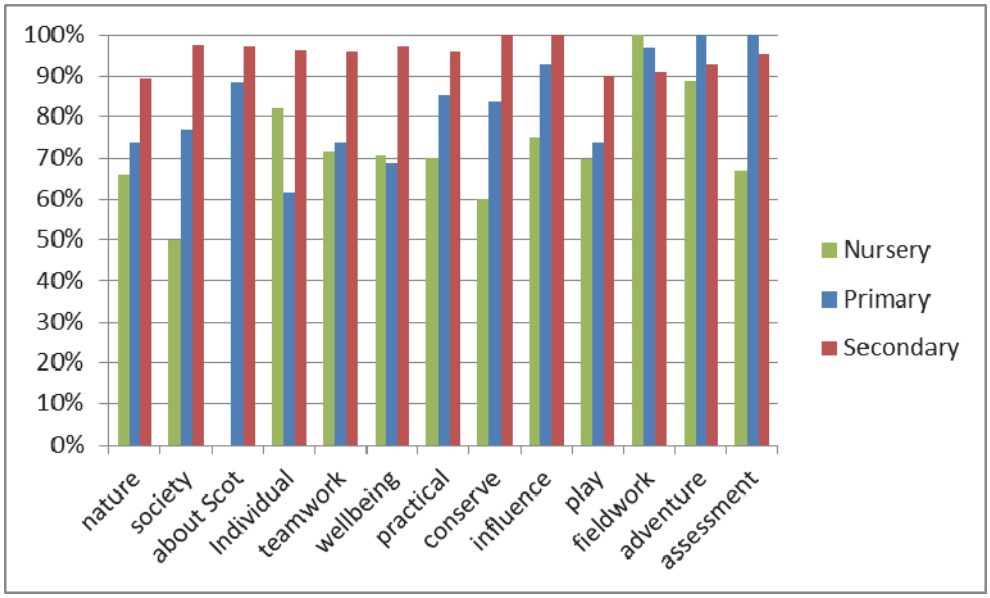

Figure 6. Proportion of outdoor learning events experiencing enhanced 'challenge and enjoyment' by planned focus and sector - non-residential

Secondary school non-residential outdoor events exhibit high proportions of enhanced 'challenge and enjoyment', across all of the planned lesson focus. In contrast, the focus 'society', among nurseries achieved 50% enhancement in 'challenge and enjoyment' compared to indoor provisions.

The challenge and enjoyment enhancement varies by location. In primaries, 68% of events in school ground events were thought to have increased impact compared to indoor settings, while those in woods and forest locations achieved 100%. Secondary schools appeared to have achieved a higher proportion with enhanced 'challenge and enjoyment' across most locations with the exception of events in urban or civic locations.

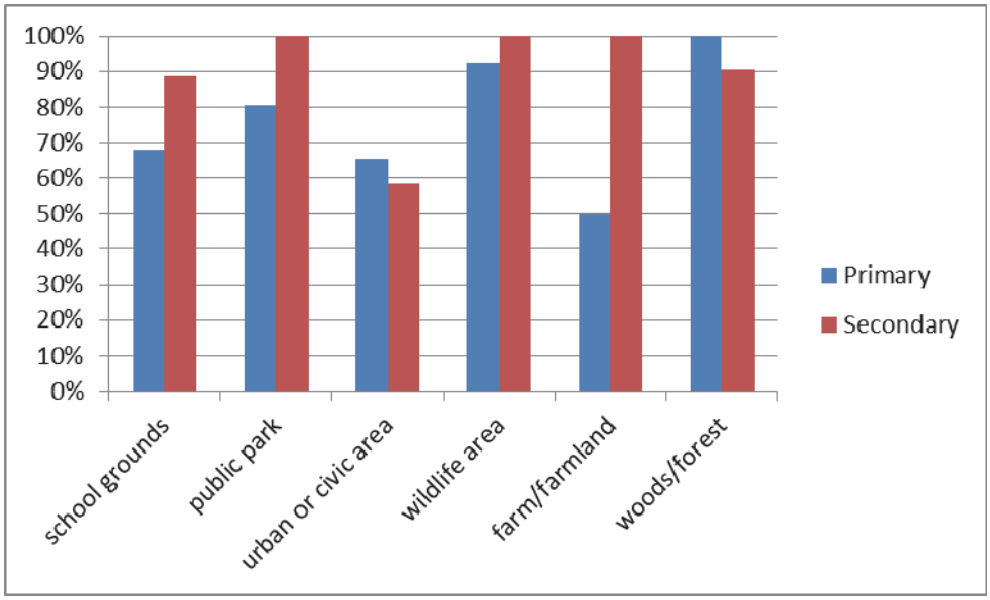

Figure 7. Proportion of non-residential events achieving enhanced 'challenge and enjoyment' by location type, Primary and Secondary

All outdoor locations were associated with the enhancement of 'challenge and enjoyment' at rates of between 50% (the minimum) and 100% (maximum) of events. For residential learning experiences in both primary and secondary sectors, virtually every event was regarded as providing enhanced 'challenge and enjoyment'. Taken together, green and natural places of various kinds (for example, parks, gardens, wildlife areas, woods and forests) and residential experiences (where experiences of nature would be common) were associated with the greatest enhancement of 'challenge and enjoyment' across all sectors. Between 80% and 100% of events in these predominantly green and/or naturalised locations were recorded as having enhanced learners' 'challenge and enjoyment'.

4.14 Teachers' ratings of pupil engagement[18]

4.14.1 Pre-schools

Table 28. Teacher rating of child engagement in outdoor learning experience – pre-school

	Count	%
more than normal	39	44%
about the same	46	52%
less than normal	3	4%
Total	**88**	

In pre-schools, whilst on-site outdoor experience generates considerable levels of engagement, all off-site events were classed as generating 'more than normal' engagement.

4.14.2 Primary and Secondary schools (non-residential events)

Table 29. Teacher rating of child engagement in outdoor learning experience – non-residential – primary and secondary (% of events)

	Primary		Secondary	
	Events	%	Events	%
more than normal	222	79%	114	83%
about the same	48	17%	14	10%
less than normal	0	0%	0	0%
unable to say	11	4%	10	7%
Total	**281**		**138**	

Table 30. Average duration of non-residential outdoor learning event by engagement (hours)

	Primary	Secondary
more than normal	1.54	2.69
about the same	1.28	2.07
unable to say	1.09	1.4
Total	**1.49**	**2.60**

None of the primary or secondary schools recorded pupil engagement during the outdoor activity as 'less than normal'. In 79% of primary, and 83% of secondary school non-residential events, pupil engagement was rated by teachers as 'more than normal'. Table 30 shows that engagement has a stronger association with longer events.

[18] Learner engagement is a complex in the research literature and we do not know exactly what the teachers were considering as evidence in the survey. However, we might expect that teachers would look *inter alia* for evidence that pupils were involved autonomously, actively, and/or collaboratively, that they had high levels of commitment and interest, and that tasks were challenging and enriching.

4.15 Awards and schemes

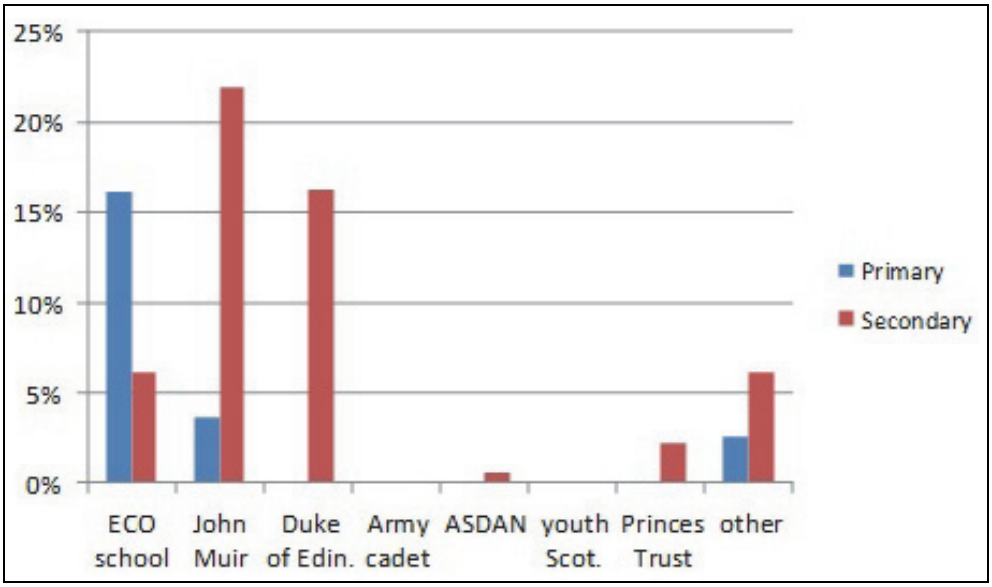

Figure 8. Awards and schemes

We asked schools to report when the outdoor events were connected with awards schemes. Expectedly, EcoSchools was a significant award within primaries in this regard, whilst the John Muir and Duke of Edinburgh awards were more significant in secondary schooling.

5. SUMMARY

5.1 Outdoor Provisions Improves Engagement and Enhances Learning

Teachers' provided evaluative judgments on over 50,000 outdoor learning child-hours within over 800 events. A particularly important finding from this study is that teachers resoundingly reported that outdoor learning of all kinds brought considerable increased engagement, and enhancement of learning, especially 'challenge and enjoyment'. Other enhancements included opportunity for the personalization of learning, greater relevance, breadth and progression (all of which are key principles in CfE). The effect of learning and play within green or natural places of all kinds through residential and non-residential experience alike was particularly strong in generating greater engagement and challenge and enjoyment.

5.2 Understanding Changes in Provision

The findings from comparing our randomly sampled schools and pre-schools in 2006 and 2014 indicate that all sectors appear now to be utilising outdoor settings more. School grounds, local areas and residential experiences all continue to play key roles in affording educational outdoor experience for Scottish children and young people. In all sectors – pre-school, primary and secondary – we have seen increases in provision overall, but there are shifts in the kinds of locations being used by different sectors.

The increase must be welcomed as a finding. The results indicate that there is now a positive direction of travel with respect to increasing provisions outdoors. But our interpretation is that that further increases in outdoor provisions are both achievable and recommendable.[19] Overall, we can say for primary schools in Scotland, a further doubling of duration on average is entirely achievable if the mainstream is to match 'more active outdoor' schools we looked at in 2006. For secondary even greater increases are possible as is a rebalancing of location use. Pre-schools are now coming closer to the records we have for what we can regard as higher achievable norms.[20] As in 2006, provision of education in outdoor places is not equitably provided to all pupils, nor is it evenly provided across establishments and sectors for various location or event types. Schools in areas of deprivation face particular challenges that need to be further understood and addressed.

The range or differentiation in the duration of provision is still quite stark with some establishments offering little and others a lot of experience outdoors. One secondary school offered an average of less than one minute of (non-residential) outdoor learning per pupil per week (over the 8 weeks of the survey) whilst another offered just under 20 minutes per pupil per week. One primary offered nearly two hours (non-residentially) per pupil per week in the same period. There is also a range in location use. One secondary offered just over an hour per pupil per week through a very enhanced residential programme. Another school offered no residential experience over the period.

[19] As this is a cross-sectional study – taking solely two snapshots in time in 2006 and 2014 – we gain the ability to compare random samples at those two moments in time. However, we cannot say exactly when and how the increase has come to pass. We do not know, for example if the increase has been uneven, sustained or recent, slow or sharply felt over the last eight years.

[20] As noted earlier (see also footnote 1, p. i), in 2006, we collected additional data from a non-random sub-set of schools and pre-schools known for offering a more comprehensive curriculum outdoors. These 'more active outdoor' levels of provision help us understand that schools across the system still have considerable scope to increase provision beyond 2014 averages. Also, it is worth remembering that some schools and preschools were offering provisions considerably below the average for 2014.

5.2.1 Pre-schools

In pre-schools, the increase in provision was marked and will no doubt be a welcome and laudable finding among policy and practitioner bodies. Whilst some might not judge that there was any under-use of locations beyond pre-schools' grounds, we note that going beyond the nursery campus was particularly engaging for this age range. Early years practitioners may need further support to find ways to both sustain and increase on-campus provisions and to begin more commonly to cross the campus threshold, beyond which there are many places in which younger children could play, learn and explore. Within pre-schools, the increase in provision duration is strong, however.

5.2.2 Primary Schools

In primary schools, whilst 'beyond grounds' provisions have decreased only slightly, the increased provisions of both residential and within grounds are marked. These increases are supported by a sector-wide and international concern to enhance provisions outdoors. With sustained partnership working, the future of outdoor primary education looks promising. Yet, there is still a way to go before this sector can claim a comprehensive and inclusive programme of outdoor learning in all schools for all pupils in all location types.

The possible under use of local areas is of note. Locally delivered outdoor teaching, such as events in parks, urban areas, woodland and nature areas, can be a low cost way of both enhancing and increasing provision. With sustained attention, continued support for schools and their communities, and partner agencies, we would expect local areas provision has scope for substantial growth. This may be a useful avenue for addressing the need for providing low-cost or no-cost outdoor experience for all.

An explanation of the substantial gains in outdoor teaching in grounds is easily provided. We note that primary teachers have been challenged and encouraged to employ school grounds for some 20 years or more and many have clearly begun to employ school grounds as a 'first port of call' to good effect. Yet, within individual schools and on average, there is still scope for further increases in grounds-based provision in our view.

Primaries are also increasing their uptake of residential experiences which pupils appear to value, enjoy and find particularly engaging but this will not easily be inclusively offered without financial supports.

5.2.3 Secondary Schools

In secondary schools, two changes were apparent. We noticed there has been a possible switch away from the use of school grounds and local areas, and increased use of residential experiences. Firstly, these may be connected or unconnected findings; if connected, the latter may be the result of a switch away from the former. A number of other rationales for explanation are possible. One likely reason is that secondary schools were in 2014 making a focused response to the new examination and assessment regimes during the period of the survey (with the commencement of National 4 and 5 assessments). Another rationale may be that secondary schools are beginning to value the residential experience more and attending less to campus-based and local experience. Reasons for this may be include a belief that residential experience brings curricular relevance and increases pupil engagement. Alternatively, residential experience may be seen as a ready solution to ensuring outdoor provision of some kind; going away residentially sidesteps the challenge of getting outdoors within the traditionally constrained timetable of many secondary schools and affords opportunity for teachers to work with facilitators from outside schools as event leaders. Of course, the expense incurred in residential experiences will preclude some schools particularly in areas of deprivation from offering this type of provision. That some

secondary schools are finding ways of providing more comprehensive outdoor curricula both residentially and beyond the grounds may warrant explaining and sharing. Lastly, there may be a perception of a lack of suitable places (grounds or local areas) in which to address the topics teachers desired. Further research will be of use in understanding the secondary school experience especially in more deprived areas.

5.3 Curriculum for Excellence and the Outdoors

In 2014 we collected new evidence to inquire into the links between outdoor provision and Curriculum for Excellence (CfE). This evidence indicates that outdoor provisions by schools and pre-schools helps with (a) addressing core curriculum areas, (b) engaging learners with key themes such as sustainable development, and (c) enriching the learner experience making it more active, collaborative, challenging, enjoyable and engaging. Looking across the findings, we note an interesting discrete impact of events of both a longer duration and in greener areas in generating more positive effects on learner 'engagement', and 'challenge and enjoyment'.

Key areas of CfE are now being addressed when the outdoors is utilised. We note the prevalence of, for example, health and wellbeing, the sciences, social studies, mathematics and languages[21], sustainable development, and citizenship in outdoor events, indicating the potential for outdoor educational experience to feed into a broad curriculum. Whilst provision is not evenly spread or comprehensive in all respects, the work of schools and pre-schools signposts that the implementation of CfE aims, principles and outcomes can be robustly supported through increasing outdoor provisions. That teachers themselves are stepping up to be the leaders of so many of these events (particularly in primary and pre-school), that schools are doing so without incurring much cost in the main is all testimony to the work of responsive and creative professionals in schools and pre-schools at this time of substantial curricular change.

5.4 Conclusion

As these teachers reported it, taking learning outdoors has the general effect of making learning and play more active and collaborative, enhancing the levels of challenge and enjoyment and other aspects across a wide range of subjects and interdisciplinary areas including sustainable development. Outdoor learning is now a key part of the formally delivered curriculum with enormous potential to enrich the curricular experience of pupils but there are key challenges in reorienting and raising the durations of provision in all sectors. Overall, evidence suggests that outdoor educational provisions in school and pre-schools have increased over time but we cannot claim to be providing a comprehensive, balanced or inclusive educational experience outdoors in Scotland. Data indicate that a further doubling or more of average durations is realistically achievable in schools whilst further increases and developments are also possible in pre-schools. There are particular issues and challenges in secondary schools and in all schools in areas of deprivation. Utilising more teacher-led, local, low-cost provisions in grounds and in local areas are one obvious way in which many schools may consider raising levels of provision but this will not happen without a comprehensive programme of support. Neither would such address the lower incidence of, for example, residential events in schools in areas of deprivation. To achieve further improvements of all kinds of outdoor provision across diverse locations will require financial supports, sustained professional attention, partnership working, and policy support at all levels. There is a need for strengthening evidence-based pre- and in-service teacher development in this regard as well as professional research and teacher-led inquiry into the discrete processes, benefits and effects of taking learning and play outdoors.

[21] This includes literacy, Gaelic, modern languages and classical languages.

6. REFERENCES

Amos, R. & Reiss, M. 2011. The benefits of residential fieldwork for school science: Insights from a five-year initiative for inner-city students in the UK. *International Journal of Science Education*, 34(4), 485–511.

Beames, S., Atencio, M. & Ross, H. 2009. Taking excellence outdoors. *Scottish Educational Review*, 41(2), 32–45.

Beames, S. & Ross, H. 2010. Journeys outside the classroom. *Journal of Adventure Education & Outdoor Learning*, 10(2), 95-109.

Beames, S., Higgins, P. & Nicol, R. 2011. *Learning Outside the Classroom: Theory and Guidelines for Practice.* Abingdon: Routledge.

Children, Schools and Families Committee of the House of Commons. 2010. *Transforming Education Outside the Classroom*. London: The Stationery Office.

Christie, B., Beames, S., Higgins, P., Nicol., R. & Ross, H. 2014. Outdoor education provision in Scottish schools. S*cottish Educational Review,* 46(1), 48-64.

Christie, B., Higgins, P. & McLaughlin, P. 2014. 'Did you enjoy your holiday?' Can residential outdoor learning benefit mainstream schooling? *Journal of Adventure Education & Outdoor Learning*, 14(1), 1-23.

Dillon, J. & Dickie, I. 2012. *Learning in the Natural Environment: Review of social and economic benefits and barriers.* Natural England Commissioned Reports, Number 092.

Education Scotland. 2011. *Outdoor Learning: Practical guidance, ideas and support for teachers and practitioners in Scotland.* Available at: www.educationscotland.gov.uk/Images/OutdoorLearningSupport_tcm4-675958.pdf [Accessed 7 August 2014].

Education Scotland. 2013. *CfE Briefing 9: Learning about Scotland.* Available at: www.educationscotland.gov.uk/Images/CfEBriefing9_tcm4-754388.pdf [Accessed 21 August 2014].

GTCS: The General Teaching Council for Scotland. 2012. *The Standards for Registration: mandatory requirements for Registration with the General Teaching Council for Scotland.* Available at: www.gtcs.org.uk/web/Files/the-standards/standards-for-registration-1212.pdf [Accessed 27 March 2014].

Gilbert, J. & Mannion, G. 2014. Stories in the land: in the tracks of the highland drovers. *Scottish Local History,* 88.

Harrison, S. 2010. Why are we here? Taking 'place' into account in UK outdoor environmental education. *Journal of Adventure Education and Outdoor Learning,* 10(1), 3-18.

Higgins, P. 2009. Into the big wide world: Sustainable experiential education for the 21st century. *Journal of Experiential Education*, 32(1), 44–60.

Higgins, P., Nicol, R., Beames, S., Christie, B., & Scrutton, R. 2013. *Submission to the Education and Culture Committee on Outdoor Learning.* Edinburgh: The Scottish Parliament. Available at: http://www.scottish.parliament.uk/parliamentarybusiness/CurrentCommittees/70829.aspx [Accessed 10 September 2014].

King's College London. 2010. Beyond barriers to learning outside the classroom in natural environments. Available at: www.lotc.org.uk/wp-content/uploads/2011/04/Beyond-barriers-to-learning-outside-the-classroom-3.pdf [Accessed 19 January 2012].

King's College London. 2011. Understanding the diverse benefits of learning in natural environments. Available at: www.lotc.org.uk/wp- content/uploads/2011/09/KCL-LINE-benefits-final-version.pdf [Accessed 19 January 2012].

Learning & Teaching Scotland. 2010. *Curriculum for Excellence through Outdoor Learning*. Edinburgh: Scottish Government.

Mannion, G. & Adey, C. 2011. *Children, Youth and Environments* (*Special Issue on Place-based Education)*, 21(1), 35-58.

Mannion, G., Fenwick, A., Nugent, C. & I'Anson, J. 2011. Teaching in nature. *Scottish Natural Heritage Commissioned Report No. 476*. Available at: www.snh.org.uk/pdfs/publications/commissioned_reports/476.pdf.

Mannion, G. Fenwick, A. & Lynch, J. 2013. Place-responsive pedagogy: learning from teachers' experiences of excursions in nature. *Environmental Education Research*, 19(6), 792-809.

Mannion, G. & Gilbert, J. 2014. Place-responsive intergenerational education. *In*: Vanderbeck, R. & Worth, N. (eds) *Intergenerational Space.* London: Routledge.

Mannion, G., Sankey, K., Doyle, L. & Mattu, L. 2006. Young people's interaction with natural heritage through outdoor learning. *Scottish Natural Heritage Commissioned Report No. 225.*

McNaughton, M. J. 2014. From acting to action: Developing global citizenship through global storylines drama. *The Journal of Environmental Education*, 45(1), 16-36.

Natural England. 2009. *Childhood and Nature: A Survey On Changing Relationships With Nature Across Generations.* Cambridgeshire: England Marketing.

Nicol, R., Higgins, P., Ross, H. & Mannion, G. 2007. *Outdoor education in Scotland: A summary of recent research*. Battleby: Scottish Natural Heritage.

One Planet Schools Working Group. 2012. *Learning for Sustainability: The report of the One Planet Schools Working Group*. Edinburgh: Scottish Government.

Pointon, P. 2013. 'The city snuffs out nature': young people's conceptions of and relationship with nature. *Environmental Education Research*. Available at: http://dx.doi.org/10.1080/13504622.2013.833595 [Accessed 5 August 2014].

Ross, H., Higgins, P. & Nicol, R. 2007. Outdoor study of nature: teachers' motivations and contexts. *Scottish Educational Review*, 39(2), 160-172.

Ross, H. & Mannion, G. 2012 Curriculum making as the enactment of dwelling in places. *Studies in Philosophy and Education,* 31(3), 303-313.

RSPB. 2012. *Every Child Outdoors (Summary Report)*. Bedfordshire: Royal Society for the Protection of Birds.

RSPB. 2013. *Connecting with Nature.* Bedfordshire: Royal Society for the Protection of Birds.

Scottish Government. 2013. *Learning for Sustainability: The Scottish Government's response to the Report of the One Planet Schools Working Group*. Edinburgh: Scottish Government.

Scrutton, R. 2014. Outdoor adventure education for children in Scotland: quantifying the benefits. *Journal of Adventure Education & Outdoor Learning.* Available at: http://dx.doi.org/10.1080/14729679.2013.867813 [Accessed 26 February 2014].

Thorburn, M. & Allison, P. 2013. Analysing attempts to support outdoor learning in Scottish schools. *Journal of Curriculum Studies*, 45(3), 418-440.

Waite, S. 2007. 'Memories are made of this': Some reflections on outdoor learning and recall. *Education 3–13*, 35(4), 333-347.

ANNEX 1: SAMPLING

Primary and Secondary Schools

The schools which were invited to participate in the survey were identified through a stratified random sampling approach. The Scottish Government's September 2011 database of school contact details[22] was used. Although the September 2012 database was available at that time, it did not contain information on the 6-fold urban/rural classification for each school. As this was an important measure in this study, the 2011 database was used.

Independent schools and those listed as special schools were removed from the database, and separate lists of primary and secondary schools were created. From this, the total number of schools in the 'school size' and 'urban/rural' strata was identified, and the proportion of schools in each category was determined.

The total number of primary and secondary schools to be approached to take part was based on statistical requirements, and informed by the response rate for the 2006 survey. The proportion of schools in each 'school size' and 'urban/rural' category was then used to identify the number of schools in each category that would be approached taking into account our desire to increase the random sample as a whole.

The tables below show the number of schools in each category.

Table 31. Original target number of primary schools (n~90)

PRI		Large Urban			Other Urban			Accessible Small Town			Remote Small Town			Accessible Rural			Remote Rural		
Rolls at Sep 2011	All schools	Number	% of Urban/Rural	Proposed target	Number	% of Urban/Rural	Proposed target	Number	% of Urban/Rural	Proposed target	Number	% of Urban/Rural	Proposed target	Number	% of Urban/Rural	Proposed target	Number	% of Urban/Rural	Proposed target
<50	435	0	0%	0	8	2%	1	7	4%	0	3	4%	0	154	35%	7	263	64%	11
50-99	279	14	3%	1	27	5%	2	18	11%	1	8	12%	0	119	27%	5	93	23%	4
100-199	534	143	29%	6	163	32%	7	43	27%	2	21	30%	1	125	29%	6	39	9%	2
200-299	448	162	33%	7	169	33%	7	55	35%	2	20	29%	1	26	6%	1	16	4%	1
300-399	289	129	26%	6	112	22%	5	25	16%	1	13	19%	1	10	2%	0	0	0%	0
400+	96	47	9%	2	33	6%	1	9	6%	0	4	6%	0	3	1%	0	0	0%	0
Totals	2081	**495**	**100%**	**22**	**512**	**100%**	**23**	**157**	**100%**	**6**	**69**	**100%**	**3**	**437**	**100%**	**19**	**411**	**100%**	**18**

[22] http://www.scotland.gov.uk/Topics/Statistics/Browse/School-Education/schoolcontactdetails [accessed 18/6/12]

Table 32. Original target number of secondary schools (n~45)

SEC		Large Urban			Other Urban			Accessible Small			Remote Small			Accessible Rural			Remote Rural		
Roll at 2011	All Schools	Number	% of Urban/Rural	Proposed target	Number	% of Urban/Rural	Proposed target	Number	% of Urban/Rural	Proposed target	Number	% of Urban/Rural	Proposed target	Number	% of Urban/Rural	Proposed target	Number	% of Urban/Rural	Proposed target
<50	10	0	0%	0	0	0%	0	0	0%	0	0	0%	0	0	0%	0	10	19%	1
50-99	7	0	0%	0	0	0%	0	0	0%	0	0	0%	0	0	0%	0	7	13%	1
100-199	11	1	1%	0	0	0%	0	0	0%	0	0	0%	0	0	0%	0	10	19%	1
200-299	12	1	1%	0	1	1%	0	0	0%	0	0	0%	0	0	0%	0	10	19%	1
300-399	10	2	2%	0	1	1%	0	2	6%	0	1	3%	0	1	4%	0	3	6%	0
400-499	21	7	6%	1	3	3%	0	2	6%	0	4	14%	0	0	0%	0	5	9%	1
500-599	26	12	11%	2	6	5%	1	2	6%	0	1	3%	0	2	8%	0	3	6%	0
600-699	38	9	8%	1	10	9%	1	4	12%	1	4	14%	0	7	28%	1	4	8%	1
700-799	37	9	8%	1	12	10%	2	8	24%	2	5	17%	1	3	12%	0	0	0%	0
800-999	87	31	28%	4	30	26%	4	9	27%	2	10	34%	2	6	24%	1	1	2%	0
1000-1199	60	24	21%	3	26	23%	4	4	12%	1	4	14%	0	2	8%	0	0	0%	0
1200+	48	16	14%	2	26	23%	4	2	6%	0	0	0%	0	4	16%	1	0	0%	0
Totals	**367**	**112**	**100%**	**14**	**115**	**100%**	**16**	**33**	**100%**	**6**	**29**	**100%**	**3**	**25**	**100%**	**3**	**53**	**100%**	**6**

The random samples of primary and secondary schools were then generated by creating an Excel spreadsheets containing all the schools in each category, in the local authorities which had agreed to participate. An online random number generator was then used to select schools by their row number on the sheet. Where a duplicate number on an individual sheet was returned by the random number generator, this was excluded and a new number requested. This was repeated until the required number of primary and schools in each strata had been identified. It was subsequently identified that a small number of the schools had closed or merged since the September 2011 information was collected; in such cases this procedure was repeated to identify additional schools at random.

Additionally, randomly sampled schools which had participated in the 2006 survey, and which were in local authorities which had agreed to participate in the 2014 survey, were also invited to participate in 2014.

Pre-school providers

Since there is no readily available, up-to-date national database of pre-school providers which could be drawn upon to identify a sample of nurseries and pre-schools using this method, an alternative approach was required. Again, those randomly sampled pre-school providers who had participated in the 2006 survey, and who were located in local authority areas which had agreed to participate in the 2014 survey, were invited to participate. Additionally, establishments in the primary school sample which also had their own nursery or pre-school centre were also approached to participate in the nursery survey.

ANNEX 2: INVITED AND PARTICIPATING ESTABLISHMENTS

Table 33 shows the number of establishments we proposed to approach, and the number we expected would participate on that basis. Initial numbers of establishments agreeing to participate were lower than anticipated, likely due to time pressures on schools including the introduction of new examinations, or participation in other research. Additional schools are pre-schools were therefore were invited to take part.

Table 34 shows the actual number of establishments which were approached, and the number which agreed to participate.

Table 33. Proposed number of establishments invited to participate

	Pre-school	Primary	Secondary
Number to be approached	60	90	40
Predicted number of participants	30	45	25

Table 34. Number of establishments approached and participating

	2006			2014		
	Pre-school	Primary	Secondary	Pre-school	Primary	Secondary
Target number of participants	17	22	12	30	45	25
Number invited to participate	43	61	48	134	193	81
Number of participants	20 (13 in random sample)	16 (8 in random sample)	15 (9 in random sample)	13 (in random sample)	26 (in random sample)	14 (in random sample)

Participating Pre-school centres (n=13)

The number of randomly selected pre-schools was the same in 2006. One pre-school centre was involved with both the 2006 and 2014 surveys. Participating pre-schools were based in urban centres (4), small towns (7) and in rural areas (2) providing a reasonable spread of settlement location types.[23]

Participating Primary schools (n=26)

18 more primary schools took part in the 2014 survey than in the comparable random sample from 2006. Our sample is broadly representative of the national profile with primaries in all categories of urban-rural locations and areas of deprivation.[24]

[23] Large urban areas are those with populations above 125k. No pre-schools located in 'large urban' areas provided data in the 2014 sample. The category 'other urban' includes settlements of 10k to 125k people.

[24] There was a degree of under-representation of primaries, however, in 'remote rural' areas (Table 35) and in the least deprived SIMD quintile (Table 36).

Table 35. Urban/rural categories - national profile and participating primary schools

	Count	Survey %	National %
Large urban areas	8	31%	25%
Other urban areas	8	31%	25%
Accessible small towns	2	8%	7%
Remote small towns	2	8%	3%
Accessible rural areas	5	19%	21%
Remote rural areas	1	4%	19%
Total	**26**		

Source: national percentages from schools open September 2011

Table 36. SIMD profile of participating primary schools

SIMD quintile	Count	%
1	5	19.23%
2	6	23.08%
3	7	26.92%
4	6	23.08%
5	2	7.69%

Participating secondary schools (n=14)

In 2006, nine secondary schools were in the random sample. In this latest survey, 14 randomly selected secondary schools have taken part. These were located in urban areas, small towns and rural areas.[25] No secondary schools in the most deprived SIMD quintile responded to this survey but we do have representation from quintile 2. [26]

Table 37. Urban/rural categories - national profile and participating secondary schools

	Count	Survey %	National %
Large urban areas	5	36%	27%
Other urban areas	3	21%	26%
Accessible small towns	3	21%	7%
Remote small towns	1	7%	4%
Accessible rural areas	0	0%	18%
Remote rural areas	2	14%	17%
Total	**14**		

Source: national percentages from schools open September 2011

[25] In terms of representativeness by urban rural classification, accessible rural areas are under-represented while accessible small towns are over-represented.
[26] As a consequence, the sample is over-represented to a small degree in some of the other quintiles.

Table 38. SIMD profile of responding secondary schools

SIMD quintile	Count	%
1	0	0.00%
2	3	21.43%
3	4	28.57%
4	2	14.29%
5	5	35.71%

ANNEX 3: SURVEY DOCUMENTS

Nursery daily log

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DAILY LOG for NURSERIES

Today's date:	Today's Weather:		
Duration of morning session	Number of girls attending:	Number of boys attending:	
Duration of afternoon session	Number of girls attending:	Number of boys attending:	

Start time	Description of Main Outdoor Activity/ Activities	Approx. time outside (mins/hours)	Numbers outside	
			Girls	Boys
8am				
9am				
10am				
11am				
12 noon				
1pm				
2pm				
3pm				
4pm				
5pm				

The Planned Purpose or Focus of Today's Outdoor Activities

	Tick any that were planned
Nature / Nature-society / Sense of Place	
Conservation of natural or cultural heritage	
Society: Social / Cultural / Community Links	
Influencing change / Advancing a cause	
Studying or "Learning about Scotland"	
Play / Enjoyment / Leisure	
Individual or personal development	
Fieldwork	
Teamwork, working with others, developing groups	
Adventure Activity	
Personal / social wellbeing	
Assessment of learning	
Practical activities or skills	
Other (write in):	

/Please turn over

Curriculum Areas Addressed	Tick any that were addressed
Expressive Arts	
Health & Wellbeing	
Language / Literacy	
Maths / Numeracy	
Foreign Languages	
Religious & Moral	
Sciences	
Social Studies	
Technologies	

Approaches to Learning & Interdisciplinarity	Tick any that applied
Creativity	
ICT in Education	
Active Learning	
Peer Learning	
Collaborative / Cooperative	
'Reggio Emilia' approach	
Interdisciplinary Learning	
Other (write in):	

Engagement Outdoors (Circle ONE)
Compared to indoor settings, children's engagement in activities outdoors appeared to be:

More Than Normal	About the Same	Less Than Normal	Unable to Say

Impact on Learning
When compared to indoors settings, did the outdoor activities result in an enhancement of these elements in children's learning? (Tick any that applied)

Progression		Personalisation / Choice	
Relevance		Challenge and Enjoyment	
Depth		Other (write in):	

Thank you!
Your contribution is valuable to us.
Please return the completed form to your nursery / school's Research Coordinator.

If you have any queries about this survey, please contact your school's nominated Research Co-ordinator. Alternatively, email Leanne (Research Assistant) at leanne.mathie@stir.ac.uk or phone/text 07891 928 177.

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NURSERIES – OFF-SITE TRIP LOG

Date of trip				Office use only	
Length of time spent outdoors (to nearest ½ hour)			Today's weather		
Numbers of children participating	Girls			Boys	
Numbers of participating adults	Nursery staff			Parents or Carers	
	Others (write in):	Other facilitators			

Location of trip						
Type of Location (Circle the MAIN ONE)	Urban or Civic Area	Public Park / Garden / Greenspace	Woods/ Forest	Farm / farmland	Wildlife Area / Nature Reserve / National Park	
Distance from nursery (Circle ONE)	<1km	1-5km	6-20km	20km +		
Travel costs mainly met by (Circle ONE)	No cost (e.g. on foot)	Children/families (e.g. public transport)	Nursery funds	Grant Funding	Other (write in):	
Main Activity			**Who Took Lead Role?** (e.g. nursery staff / ranger)			

The Planned Purpose or Focus of Today's Outdoor Activities			
	Tick any that were planned		Tick any that were planned
Nature / Nature-society / Sense of Place		Conservation of natural or cultural heritage	
Society: Social / Cultural / Community Links		Influencing change / Advancing a cause	
Studying or 'Learning about Scotland'		Play / Enjoyment / Leisure	
Individual or personal development		Fieldwork	
Teamwork, working with others, developing groups		Adventure Activity	
Personal / social wellbeing		Assessment of learning	
Practical activities or skills			
Other (write in):			

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Curriculum Areas Addressed	Tick any that were addressed
Expressive Arts	
Health & Wellbeing	
Language / Literacy	
Maths / Numeracy	
Foreign Languages	
Religious & Moral	
Sciences	
Social Studies	
Technologies	

Approaches to Learning & Interdisciplinarity	Tick any that applied
Creativity	
ICT in Education	
Active Learning	
Peer Learning	
Collaborative / Cooperative	
'Reggio Emilia' approach	
Interdisciplinary Learning	
Other (write in):	

Engagement Outdoors (Circle ONE) Compared to indoor settings, children's engagement in activities outdoors appeared to be:			
More Than Normal	About the Same	Less Than Normal	Unable to Say

Impact on Learning When compared to indoors settings, did the outdoor activities result in an enhancement of these elements in children's learning? (Tick any that applied)						
Progression		Breadth		Personalisation / Choice		
Relevance		Coherence		Challenge and Enjoyment		
Depth		None of these		Other (write in):		

Thank you!
Your contribution is valuable to us.
Please return the completed form to your Research Coordinator.

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Scottish Natural Heritage

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SCHOOLS - NON-RESIDENTIAL OUTDOOR EVENT RECORD

Date of event			**Length of time spent outdoors** (to nearest ½ hour)		Office use only		
Class level(s) involved (Circle all that apply)	P1	P2	P3	P4	P5	P6	P7
	S1	S2	S3	S4	S5	S6	___
Numbers of participating pupils	Female			Male			
Numbers of participating adults	Teachers			Parents or Carers			
	Teaching Assistants			Other facilitators			

Location (Circle the MAIN ONE)	School Grounds	Urban or Civic Area	Public Park / Garden / Greenspace	Woods/ Forest	Farm / farmland	Wildlife Area / Nature Reserve / National Park
Distance from school (Circle ONE)	On campus		1-5km	6-20km		20km +
Travel costs mainly met by (Circle ONE)	No cost (e.g. on foot or bicycle)		Pupils (e.g. public transport)	School funds	Grant Funding	Other (write in):
Main Activity			**Who Took Lead Role?** (e.g. teacher / ranger)			

The Planned Purpose or Focus	Tick any that were planned
Nature / Nature-society / Sense of Place	
Society: Social / Cultural / Community Links	
Studying or 'Learning about Scotland'	
Individual or personal development	
Teamwork, working with others, developing groups	
Personal / social wellbeing	
Practical activities or skills	
Conservation of natural or cultural heritage	
Influencing change / Advancing a cause	
Play / Enjoyment / Leisure	
Fieldwork	
Adventure Activity	
Assessment of learning	
Other (write in):	

Curriculum Areas Addressed	Tick any that were addressed
Expressive Arts	
Health & Wellbeing	
Language / Literacy	
Maths / Numeracy	
Foreign Languages	
Religious & Moral	
Sciences	
Social Studies	
Technologies	

/Please turn over

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Approaches to Learning & Interdisciplinarity	Tick any that applied
Creativity	
ICT in Education	
Active Learning	
Peer Learning	
Collaborative / Cooperative	
'Reggio Emilia' approach	
Interdisciplinary Learning	
Other (write in):	

Themes Across Learning	Tick any that applied
Enterprise in education	
Education for Citizenship	
Sustainable Development	
International Education	
Other (write in):	

Awards / Schemes	Tick any that applied
Eco Schools	
John Muir	
Duke of Edinburgh	
Army Cadet	
ASDAN	
Youth Scotland	
Princes Trust	
Other (write in):	

Engagement Outdoors (Circle ONE)
Compared to indoor settings, children's engagement in activities outdoors appeared to be:

More Than Normal	About the Same	Less Than Normal	Unable to Say

Impact on Learning
When compared to indoors settings, did the outdoor activities result in an enhancement of these elements in children's learning? (Tick any that applied)

Progression		Breadth		Personalisation / Choice		
Relevance		Coherence		Challenge and Enjoyment		
Depth		None of these		Other (write in):		

Thank you!
Your contribution is valuable to us.
Please return the completed form to your school's Research Coordinator.

If you have any queries about this survey, please contact your school's nominated Research Co-ordinator. Alternatively, email Leanne (Research Assistant) at leanne.mattu@stir.ac.uk or phone/text 07881 928 177.

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SCHOOLS - RESIDENTIAL OUTDOOR EVENT RECORD

Start date of event			**End date of event**			Office use only	
Class level(s) involved (Circle all that apply)	P1	P2	P3	P4	P5	P6	P7
	S1	S2	S3	S4	S5	S6	—
Numbers of participating pupils	Female			Male			
Numbers of participating adults	Teachers			Parents or Carers			
	Teaching Assistants			Other facilitators			

Location of residential experience (write in)					
Distance from school (Circle ONE)	1-5km		6-20km		20km +
Travel costs mainly met by (Circle ONE)	No cost (e.g. on foot or bicycle)	Pupils (e.g. public transport)	School funds	Grant Funding	Other (write in):
Main Outdoor Events / Activities		**Who Took Lead Role?** (e.g. teacher / ranger)			

The Planned Purpose or Focus	Tick any that were planned
Nature / Nature-society / Sense of Place	
Society: Social / Cultural / Community Links	
Studying or 'Learning about Scotland'	
Individual or personal development	
Teamwork, working with others, developing groups	
Personal / social wellbeing	
Practical activities or skills	
Conservation of natural or cultural heritage	
Influencing change / Advancing a cause	
Play / Enjoyment / Leisure	
Fieldwork	
Adventure Activity	
Assessment of learning	
Other (write in):	

Curriculum Areas Addressed	Tick any that were addressed
Expressive Arts	
Health & Wellbeing	
Language / Literacy	
Maths / Numeracy	
Foreign Languages	
Religious & Moral	
Sciences	
Social Studies	
Technologies	

/Please turn over

Approaches to Learning & Interdisciplinarity	Tick any that applied
Creativity	
ICT in Education	
Active Learning	
Peer Learning	
Collaborative / Cooperative	
'Reggio Emilia' approach	
Interdisciplinary Learning	
Other (write in):	

Themes Across Learning	Tick any that applied
Enterprise in education	
Education for Citizenship	
Sustainable Development	
International Education	
Other (write in):	

Awards / Schemes	Tick any that applied
Eco Schools	
John Muir	
Duke of Edinburgh	
Army Cadet	
ASDAN	
Youth Scotland	
Princes Trust	
Other (write in):	

Please record the main outdoor activities undertaken each day, the approximate time spent outdoors for each activity, and the number of pupils participating.

Day	Description of Activities	Approx. time outdoors for each activity	Number of girls	Number of boys
1				
2				
3				
4				
5				

If your trip lasts longer than 5 days, please complete this section ONLY on a second event record, OR write the relevant information on a blank sheet, and staple the additional page to this one.

Engagement Outdoors (Circle ONE)

Compared to indoor settings, pupils' engagement in activities outdoors appeared to be:

More Than Normal	About the Same	Less Than Normal	Unable to Say

Impact on Learning

When compared to indoor settings, did the outdoor lesson result in an enhancement of these elements in pupil learning? (Tick any that applied)

Challenge and Enjoyment		Breadth		Depth		Relevance	
Progression		Personalisation / Choice		Coherence		None of these	
Other (write in):							

Thank you! Your contribution is valuable to us.
Please return the completed form to your school's Research Coordinator.

ANNEX 4: EVALUATION OF THE SURVEY

All participants were invited to provide an evaluation of how they experienced participation in the survey. The evaluation document comprised five questions, with space for additional comments also provided.

Six survey participants responded to the invitation, and gave the responses below.

EVALUATION QUESTION	YES	NO	TO SOME DEGREE
I / My colleagues found the information provided at the outset was useful and easy to understand.	6	0	0
I / We found the distribution, collection and return of event records were unproblematic.	3	2 *	1 **
I / My colleagues found the event records were easy to use and understand.	6	0	0
I / We consider the data we provided were accurate and complete.	4	2 ***	0
I / We would be happy to take part in a survey of this kind again.	6	0	0

* 'Examination pressures' were cited here.
** This school was undergoing an inspection.
*** Both said they felt it was likely that more events had taken place than were submitted, but that these were not recorded due to organizational pressures.

Additional respondent comments:

It was not 'overly onerous' (1), was 'easy by e-mail' (1), would have been easier outside exam time (1), would like an all year survey (or a four season) (1), would like more space on the returns form to describe events (1).

Evaluation Conclusion:
This and other feedback indicated that Primary teachers were more comfortable and assured in their ability to make returns, while in Secondary this was more of a challenge due to either the very large size of some schools, the presence of exceptional circumstances or the result of pressures from the commencement of new examinations. Where teachers indicated that their returns were not accurate or complete, this pointed to a likely under-reporting of events in some schools, especially larger secondaries. This was also the case in 2006.

There were only a small number of returns but the response to the evaluation is supportive of the efficacy of the research, and indicates that we can be content with the quality, accuracy and completeness of returns and their comparability with returns in 2006.

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