

# Children's Play in Natural Environments

Children's play is a natural, instinctive drive - as recognised in the first of the *Playwork Principles* (SkillsActive 2004). Their irrepressible appetite for play propels children to explore and interact with the physical world around them. Natural environments are particularly attractive, inspiring and satisfying to children as settings that supremely meet their play needs and desires. The wide-ranging motivations and benefits of children's natural play are comprehensively reviewed by Lester and Maudsley (2006).

## What are natural environments?

Although the term is used broadly in this factsheet, the majority of natural environments in the UK are semi-natural, i.e. influenced by human activity to a greater or lesser extent. However, they are qualitatively different to built environments and share common features of 'naturalness' or 'wildness' with regard to children's play:

- open to the elements (weather conditions, fresh air, water, earth etc.)

- containing growing vegetation, which may (or not) be managed
- presence of wild animals;
- a degree of psychological freedom from overt adult associations.

Such natural areas, 'wild spaces', exist in an array of sizes, shapes, conditions and locations:

*Wild spaces are green outdoor places where some areas are growing wild. They may be completely natural such as ancient woodland or be mixed in with artificial elements such as urban parks. Wild spaces come in many different shapes and sizes, and can be large or small, wet or dry, open or enclosed, near or far, tall or short, messy or tidy, green or brown. Wild spaces include: country lanes, hedgerows, woodland, city farms, grassland, beaches, heathland, gardens, rivers, shrubs, verges, ponds, fields, hills, parks, trees, farmland, sand dunes, village greens, muddy hollows... (Maudsley 2005).*

## Playful qualities of natural environments

*Children know what is interesting when they see it.* (Pyle 2002)

When given the opportunity, children choose, and enjoy playing in natural environments and/or with natural elements (Hart 1979; Moore 1986; Titman 1994; Chawla 2002; Heerwagen and Orians 2002; Burke 2005; Spencer and Blades 2006). They do so because of the overwhelming play potential of such spaces: the possibilities of now and the promise of more to come (Cobb 1977).

Natural environments are characterised by a number of key features relating to their utility for children's play. They are highly complex habitats – offering children a multiplicity of encounters and sensations, a diversity of topography and texture and an assortment of child-sized spaces, hideaways and holes to explore and inhabit (Titman 1994; Moore and Wong 1997; Fjortoft 2004). Natural environments, especially those with minimal human management, are often disorderly, free-ranging and 'untidy'. Whilst this may not always meet adult aesthetic preferences, it may add to the fundamental attraction for children as spaces that are within their domain (Heerwagen and Orians 2002).

Natural spaces are dynamic – constantly changing in space and time. No two natural environments are alike, and the appearance of individual wild spaces varies with ambient conditions and the time of day/year. Furthermore, the

flexibility of natural environments, allows children to fulfil their various instinctive play behaviours: digging, splashing, climbing, building, breaking, balancing. Natural elements and objects provide children with plentiful "loose parts" (Nicholson 1971) that can be moved and manipulated through play, as well as materials that are bendy, breakable, sticky, edible, combustible etc.

Drawing on such playful possibilities in nature, Wilson (2007) summarises a list of key qualities for children's outdoor environments:

- Accessible
- Inviting
- Stimulating
- Flexible
- Challenging
- Comfortable.

## Affordances – natural invitations to play

The concept of 'affordance' (Gibson 1979) refers to what the environment offers, what it provides for the organism. Affordances are opportunities that arise from the interaction between the physical properties of the environment and the interests, ideas and intent of the individual. Affordances arise through active detection: where the person is both sensing and moving, observing and acting at the same time (Kytta 2002; 2004; 2006).

In terms of children's play, the concept of affordance relates to what play possibilities are *afforded* by the physical environment. Play affordances may be thought of as invitations to play that arise when a

child intentionally encounters any space, but with natural environments providing varied and vivid invitations.

Applying the concept of affordance to children's play in natural environments has a number of relevant conclusions:

- Affordances are unique to the individual playing child, or group of children, and are to some extent unpredictable. Children play in response to both the objective and subjective qualities of an environment.
- Affordances are highly dynamic - different features/elements/materials affording different play experiences for different individuals on different occasions.
- The number of affordances increases with complexity of the environment. As highly complex environments, natural spaces provide limitless play affordances - the potential of the space matched only by the inventiveness of the playing child.
- Through manipulating and changing flexible environments through their play, children detect new affordances. Combinations of affordances allow individual or group playlines to develop naturally.
- Natural environments afford children with coherent opportunities to play with

feelings and emotions (Lester and Russell, *in press*). Through playing in wild spaces, children can encounter and experience fear, disgust, disappointment and anger as well as delight, fascination, satisfaction and contentment.

- Children are naturally good at finding affordances, they are 'affordance connoisseurs', and through playing outdoors seek to maximise affordances, i.e. creating playful problems for themselves (Stuart Lester, personal communication).

Trees are a good example of natural features that offer a large number of potential play affordances:

*Trees can be climbed and hidden behind; they can become forts or bases; with their surrounding vegetation and roots, they become dens and little houses; they provide shelter, landmarks and privacy; fallen, they become part of an obstacle course or material for den-building; near them you find birds, little animals, conkers, fallen leaves, mud, fir cones and winged seeds; they provide a suitable backdrop for every conceivable game of the imagination. (Ward 1988).*

Furthermore, natural environments containing many different species and ages of tree will extend the affordances of that space. For example, different trees drop their

leaves at different times, produce different types of fruits and seeds, and their roots, trunks and branches grow in different ways.

## **Physical activity affordances**

Natural spaces spontaneously stimulate high levels of physically active play in children, for instance running in open areas with shifting topography (Fjortoft 2004). Cosco (2005) suggests that simply being outdoors is the strongest predictor of physical activity in young children.

Moore and Wong (1997) illustrate how a diverse natural landscape encourages diverse physical movement in children's play:

*Balancing, chasing, climbing, crawling, dodging, hanging, hopping, jumping, leaping, rocking, rolling, running, sliding, spinning, squirming, swinging, tumbling, twirling, twisting were all part of children's movements in a natural playground.*

Journeys and movement through a natural environment increase the active detection of novel play affordances: barriers to cross, trails to follow, stepping stones, changing surfaces, varying terrain, together with the many natural features and elements that invite specific play activities along the way.

## **Biophilia – the nature instinct**

Alongside their innate play drive, children also exhibit instinctive attachments towards the natural world. Given our close association with natural landscapes until relatively recently, it is unsurprising that humans have evolved an innate emotional sensitivity towards nature and natural processes – a tendency that is termed '*biophilia*' (Kellert and Wilson 1993; Kellert 2002). Although proposed as having a genetic basis, the expression of biophilia in individuals is complex and dependant on a range of environmental and social factors (Lester and Maudsley 2006). In children, this nature instinct is manifest and fulfilled through play in natural environments and/or with natural elements. Biophilia also links to the idea of 'naturalistic intelligence' – an intrinsic human aptitude for understanding and processing information about the natural world (Gardner 1999), which is particularly apparent during childhood.

Lack of early natural play experiences and/or learnt responses from cautious adults, however, can break the biophilia connection; resulting in children developing irrational aversions to nature (Nabhan and Trimble 1994; Kellert 2002; Wilson 2007). This in turn can have a negative influence on children's subsequent attitudes, emotions and behaviours within natural environments.

## Children's sense of wonder

When children have opportunities for intimate and sustained contact with a natural environment through play, they begin to experience it with a sense of wonder, awe and reverie (Cobb 1977). Young children in particular have a natural capacity for deep and direct connections with nature, which may decrease to some extent in later years (Kaplan and Kaplan 2002; Wilson 2007). Such relationships are intuitive rather than cognitive and may not easily be articulated through rational language (Chawla 2002), but nevertheless have potentially huge implications. Chawla (2002), quoting Wordsworth, refers to "*spots of time*" as unforgettable experiences where children "*do not yet differentiate themselves from their surroundings*". Adults often recall, and draw inspiration from, such magical experiences in natural settings as the strongest, most powerful memories of childhood (Cobb 1977).

Nabhan and Trimble (1994) maintain that middle childhood, from around 7 years old to puberty, is a period where children's brains are physiologically well developed but they do not yet take on adult roles. This period is full of potential for playing, imagining, creating and receiving, when children are "*in love with the universe*" (Cobb 1977). Natural spaces, through evocative qualities of mystery and magic, feed children's sense of wonder and provide plentiful imaginative and creative play affordances (Moore and Wong 1997).

Lester and Maudsley (2006) argue that:

*It is children's sense of wonder that presents the conceptual link between their exploitation of natural spaces to optimise playful instincts and the development of natural attachments through play.*

## Children's sense of place

If a sense of wonder relates to children reaching out and responding to the natural world, a sense of place conveys a way in which the setting instils itself in the child. Through regularly playing outdoors in attractive, engaging environments children form emotional and meaningful bonds with place, which in turn has positive effects on self identity and esteem (Lester and Maudsley 2006). For instance, Nabhan and Trimble (1994) relate how finding, playing with and taking home natural loose objects ('treasure') transfers the uniqueness of the possession onto the child – 'this stick is special, and so am I'.

By carrying out playful environmental transactions in natural settings, such as den building, collecting objects and exploring routes, children are responding to evolutionary psychological desires to connect with place and natural landscapes (Herrwagen and Oriens 2002). Children playing outdoors, both individually and socially, commonly develop their sense of place through stories and dramatic play – playfully investing cultural meaning

and mythic significance onto natural spaces and features, in a manner that is less evident with fabricated play spaces (Chawla 2002).

## **Children's field of free action**

Although natural settings afford almost limitless potential for diverse play experiences, in order to actualise such affordances children need independence to move and act freely - a "field of free action" (Kytta 2004). At the opposite end of this spectrum is a "field of constrained action", whereby children are restricted in their abilities to access and act freely within natural environments. Such constraints may be mediated in different ways:

- Physical access, management and design of outdoor spaces (eg 'Keep off the grass').
- Cultural, societal and community attitudes and proscriptions (eg 'Don't get dirty').
- Direct interventions by parents, playworkers, teachers and other adults who interact with children (eg 'You'll hurt yourself if you carry on doing that').

The concept of children's field of free action, begs the question: does society in general, and playwork provision in particular, offer sufficient quality and quantity of free play experiences in natural environments?

## **Adult roles**

Although children want and need opportunities to play freely outdoors away from adult supervision (Gill 2007), it does not necessarily follow that adult presence equates to adulteration of children's play experiences. Skilful and sensitive playwork practice, for instance, can support, facilitate and encourage children's freely chosen, self-directed play experiences in natural environments (SkillsActive 2004). In the context of play affordances, playworkers can be thought of as affordance extenders – offering their skills, knowledge and resources to be used by children to extend and develop the play possibilities afforded by the setting.

Furthermore, perceptive adults can increase children's field of free action by helping them to overcome personal fears and anxieties towards natural environments and by acting as advocates for children's rights to play outdoors (as is the case in many play ranger projects).

## **Environmental ethics in children's natural play**

Although well intentioned, adult led environmental awareness agendas aimed at children can result in fear, anxiety and disconnection from nature (Sobel 1999; Wilson 2007). Overt communication of environmental ethics and values may also clash with children's instinctive playful interactions in natural environments. Widespread evidence suggests that the strongest environmental sensibilities in adulthood stem from childhood experiences of

unstructured play in natural environments (Lester and Maudsley 2006), including interactive (potentially damaging) activities.

Positive encounters with nature are important for both the child and, in the long term, the natural world (Moore and Cosco 2000). The onus therefore is on enabling children to experience free play in natural environments without anxiety or conflicting emotions. Practical approaches may involve using extensive natural areas where any localised damage will have the chance to recover naturally and/or resilient natural environments and features that can withstand intensive play activities (Maudsley 2005).

The attitudes and actions of accompanying adults are also shown to be crucial in developing environmental attitudes (Chawla and Hart 1995; Wilson 2007). Sharing enthusiasm and interest, and modelling positive responses, can help children develop formative relationships with the natural world:

*If a child is to keep alive his inborn sense of wonder... he needs the companionship of at least one adult who can share it, rediscovering with him the joy, excitement and mystery of the world we live in. (Carson 1999)*

## Useful approaches for supporting children's natural play

1. Help children gain access to **nearby nature for everyday experiences.**

This will involve a combination of places and approaches depending on location, including: school grounds, public spaces, rights of way, community gardens, parks, local nature reserves, environmental organisations and relationships with private landowners. Journeys on foot will enhance the discovery of natural play affordances.

2. Identify, maintain and help **protect local wild spaces**, rough ground, waste land and unmanaged vegetation (the 'unofficial countryside') as special childhood places that support invaluable unsupervised, unplanned outdoor play (Pyle 2002; Moore and Cosco 2000).
3. Help children experience **extended periods of uninterrupted free play** in natural environments, and be sensitive to the effects of adult interventions on children's play reverie. Through unhurried natural play, children may experience their own influential 'spots of time' (Chawla 2002; Wilson 2007).
4. Encourage **natural scruffiness** within children's play areas – let outdoor areas go and grow wild. Let the space reflect the changing nature of the seasons. For example: leaving areas of vegetation uncut, leaving grass trimmings, autumn leaves,

fallen branches etc., creating areas of bare earth for digging and playing with mud.

5. Where children's outdoor play environments are limited in diversity and complexity (eg sports fields), **enhance natural affordances** by adding transportable natural materials. Examples might include: branches from tree/hedge trimmings, tree trunk sections, hay/straw, pine cones, soil, rocks, plants in containers and water.
6. **Be prepared.** Check the safety and play potential of natural sites in advance; encourage children to wear/bring old clothes and waterproofs; bring tools, equipment and resources that might enhance the play in that setting; learn skills and techniques (eg rope knots, plant identification) that could be drawn on through exploring the environment with children.
7. Cultivate a **sense of wonder with children** when outdoors. Share excitement and enthusiasm for encounters with nature and take time to talk with children about their experiences (positive and negative) in natural environments. Find opportunities for spending time in natural areas, and re-connecting with your own sense of wonder.

8. Increase children's **field of free action** by being advocates of outdoor play. Communicate with other adults in the community about the benefits of children's natural play, share examples of good professional practice for overcoming barriers and where appropriate challenge social restrictions and stand up for children's right to play outside (Gill 2007).

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## References

- Burke, C (2005) 'Play in focus: children researching their own places and spaces for play', *Children, Youth & Environments*, 15(1), 28-53.
- Carson, R (1999) *The Sense of Wonder*. (New ed) London: HarperCollins.
- Chawla, L 'Spots of time: manifold ways of being in nature in childhood', in Kahn, P and Kellert, S (eds) (2002) *Children and Nature*. Cambridge: MIT Press.
- Chawla, L and Hart, R (1995) 'The roots of environmental concern', *NAMTA Journal*, 20(1), 148-57.
- Cobb, E (1977) *The Ecology of Imagination in Childhood*. New York: Columbia University Press.

Cosco, N. (2005) *Environmental Interventions for Healthy Development of Young Children in the Outdoors*. Open Space, People Space Conference, 19-21 September 2007, Edinburgh.  
<http://www.openspace.eca.ac.uk/conference/proceedings/PDF/Cosco.pdf> (accessed 23/10/07).

Fjortoft, I (2004) 'Landscape as playscape: the effects of natural environments on children's play and motor development', *Children, Youth and Environments*, 14(2), 21-44.

Gardner, H (1999) *Intelligence Reframed: Multiple intelligences for the 21<sup>st</sup> Century*. New York: Basic Books.

Gibson, J (1979) *The Ecological Approach to Visual Perception*. New Jersey: Laurence Erlbaum.

Gill, T (2007) *No Fear. Growing up in a risk averse society*. London: Calouste Gulbenkian Society.  
<http://www.gulbenkian.org.uk/media/item/1176/89/No-Fear-text-no-pix.pdf> (accessed 5/11/07)

Hart, R (1979) *Children's Experience of Place*. New York: Irvington.

Heerwagen, JH and Oriens, GH 'The ecological world of children', in Kahn, P and Kellert, S (eds) (2002) *Children and Nature*. Cambridge: MIT Press.

Kaplan, R and Kaplan, S 'Adolescents and the natural environment', in Kahn, P and Kellert, S (eds) (2002) *Children and Nature*. Cambridge: MIT Press.

Kellert, SR 'Experiencing nature', in Kahn, P and Kellert, S (eds) (2002) *Children and Nature*. Cambridge: MIT Press.

Kellert, SR and Wilson, EO (1993) *The Biophilia Hypothesis*. Washington, DC: Island Press.

Kytta, M (2002) 'Affordances of children's environments in the context of cities, small towns, suburbs and rural villages in Finland and Belarus', *Journal of Environmental Psychology*, 22, 109-123.

Kytta, M (2004) 'The extent of children's independent mobility and the number of actualized affordances as criteria for child-friendly environments', *Journal of Environmental Psychology*, 24, 179 – 198.

Kytta, M (2006) 'Environmental child-friendliness in the light of the Bullerby model', in Spencer, C and Blades, M (eds) (2006) *Children and their Environments: Learning, using and designing spaces*. Cambridge: Cambridge University Press.

Lester, S and Maudsley, M (2006) *Play, Naturally. A review of children's natural play*. London: National Children's Bureau.

Lester, S and Russell, W (*in press*) *Play for a Change – Play, Policy and Practice: A review of contemporary perspectives*. London: Play England.

Maudsley, MJ (ed) (2005) *Playing on the Wildside: An essential resource for environmental playwork*. Cheltenham: Playwork Partnerships. Available from: <http://www.playworkpartnerships.co.uk/>

Moore, R (1986) *Childhood's Domain*. London: Croom Helm.  
Moore, R and Cosco, N (2000) *Developing an Earth-bound Culture through Design of Childhood Habitats*.  
<http://web.archive.org/web/20060312193215/http://www.naturalearning.org/earthboundpaper.html>  
(accessed 5/11/07)

Moore, RC and Wong, H (1997) *Natural Learning*. Berkely: MIG Communications.

Nabhan, G and Trimble, S (1994) *The Geography of Childhood*. Boston: Beacon Press.

Nicholson, S (1971) 'How not to cheat children: the theory of loose parts', *Landscape Architecture*, 62(1), pp 30-35.

Pyle, RM 'Eden in a vacant lot: special places, species and kids in community of life', in Kahn, PH and Kellert, SR (eds) (2002) *Children and Nature*. Cambridge: MIT Press.

SkillsActive (2004) *Playwork Principles*. London: SkillsActive.  
<http://www.skillsactive.com/playwork/principles> (accessed 5/11/07)

Sobel, D (1999) 'Beyond Ecophobia', *Yes! magazine*.  
[www.yesmagazine.org/article.asp?ID=803](http://www.yesmagazine.org/article.asp?ID=803) (accessed 12/11/07).

Spencer, C and Blades, M (eds) (2006) *Children and their Environments: Learning, using and designing spaces*. Cambridge: Cambridge University Press.

Titman, W (1994) *Special Places, Special People: The Hidden curriculum of school grounds*. London: WWF UK / Learning Through Landscapes. Out of print but available online from:  
[http://www.eric.ed.gov/ERICWebPortal/custom/portlets/recordDetails/detailmini.jsp?nfpb=true&ERICExtSearch\\_SearchValue\\_0=ED430384&ERICExtSearch\\_SearchType\\_0=eric\\_accno&accno=ED430384](http://www.eric.ed.gov/ERICWebPortal/custom/portlets/recordDetails/detailmini.jsp?nfpb=true&ERICExtSearch_SearchValue_0=ED430384&ERICExtSearch_SearchType_0=eric_accno&accno=ED430384)  
(accessed 18/10/07).

Ward, C (1988) *The Child in the Country*. London: Bedford Square Press.

Wilson, R (2007) *Nature and Young Children: Encouraging creative play and learning in natural environments*. Abingdon: Routledge.

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