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Environmental Education

Vol 115 Summer 2017

A special place!

Learning outdoors in South Africa

TAKING FLIGHT: birds as TOP connectors

British Birdgirl

THE JOURNAL OF NAEE NATIONAL ASSOCIATION FOR ENVIRONMENTAL EDUCATION (UK)

Living sustainably this UN Year & beyond

THE NAEE The Association's purpose is to promote all forms of environmental education, and to support all those involved in its delivery, so that together we can understand and act on the need to live more sustainably in order to protect the future of our planet.

THE PEOPLE NAEE recently became a Charitable Incorporated Organisation [Charity No. 1166502] but it began life all the way back in the 1960s as the Rural Studies Association. NAEE is run by its members and volunteers who care passionately about environmental education and education for sustainable development. Our charitable **object** is to provide a public benefit by advancing environmental education within early years settings, primary and secondary schools, and institutions responsible for teacher education within the UK and elsewhere.

THE GROUPS NAEE has partnerships and close connections with a range of similar-missioned groups. United Kingdom: Geographical Association; Association for Science Education (ASE); National Savers; Rotary International (Great Britain & Ireland). Overseas: New Zealand Association for Environmental Education (NZAEE); Australian Association for Environmental Education (AAEE); North American Association for Environmental Education (NAAEE); Children and Nature Network USA; Green Teacher; Roots & Shoots Shanghai; Nature Club of Pakistan.

BURSARIES Thanks to the late Hugh Kenrick, NAEE offers school bursaries of up to £400 to cover fees and transport so children can have hands-on opportunities at an environmental centre in Birmingham. Apply via **info@naee.org.uk**.

NAEE ONLINE **naee.org.uk** Our popular **Primary Curriculum Guide** can be downloaded for free here **naee.org.uk/curriculum-resources** (Secondary school version available in September). **Daily news links** here **naee.org.uk/latest-news**.

MEMBERSHIP OF NAEE includes three *Environmental Education* journals per year, in addition to other benefits. See **naee.org.uk/join-naee** for details.

NAEE
NATIONAL ASSOCIATION FOR ENVIRONMENTAL EDUCATION (UK)
Registered charity no. 1166502

National Association for Environmental Education (NAEE UK)
Registered Charity No. 1166502

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Special thanks in this bird-themed issue to: Royal Society for the Protection of Birds (RSPB), Wildlife & Wetlands Trust (WWT), Mya-Rose Craig.

Cover photos: The Southern African Foundation for the Conservation of Seabirds (SANCCOB) working with students with special educational needs (photo credit: Tamlyn Hardy); RSPB Schools Outreach sponsored by ALDI (photo credit: Eleanor Bentall, rspb-images.com). All photos within articles by the author, unless otherwise stated.

Comment

From the Editor Henricus Peters

Birds are perhaps the most easily-accessed of the animal groups, hence being chosen as the main feature of this issue of *Environmental Education*. Birds have, as it happens, for the above reason, also been a major focus of my personal nature – and educational – experiences.

As a New Zealander – or 'kiwi' – I was fortunate to enjoy the natural world/the NZ 'great outdoors' with my family's active encouragement – and much was due to my connections to birds. Beginning with the 'common' species in my native Christchurch and its surrounding plains, rivers and hills, bird spotting as a hobby became an obsession. I then advanced to, again with my family and groups such as the Forest & Bird's Kiwi Conservation Club (UK equivalent is RSPB), investigating the more harder-to-find 'classic' creatures: the nocturnal kiwi 'heard, but never seen'; the famous/infamous mountain parrot, the kea, receiving a bad and unfair reputation as a sheep killer. For our honeymoon, my wife Anne and I travelled south to seek out the very rare yellow-eyed penguin that hobbles from the sea but lives in the shrubs; and the magnificent albatross, then black stilts and dotterels on a braided river bank. Despite – no, actually because of – these bird species, New Zealand is, regretfully, renowned for one of the highest percentage of threated and endangered species on our planet! Yes, human activities are to blame.

Birds are emblematic of countries – many have a 'national bird' or a species that symbolizes a place: the USA, for example, has its golden eagle, yet this 'brand' is not safe; the same bird was heavily affected by DDT spray affecting its eggs, with deadly results.

Birds are, alongside insects, excellent natural indicators of an ecosystem's health. They are the literal 'canary in the coalmine'. They have other multiple benefits: they eat damaging insects, they illustrate wildlife corridors via their migration routes. As 'keystone' species – a plant or animal that plays a unique and crucial role in the way an ecosystem functions – they can be scavenger species, such as vultures in Africa or India (but can also be attacked by people – with education one way out of the problem); or pollinators, such as the hummingbirds that pollinate native cacti in areas of the Sonoran Desert in North America.

We feature some of these species in our regular Webwatch (page 27). Our young writer 'Birdgirl' Mya-Rose (page 10) tells us how she is enabling other young people to engage with the environment – arranged by herself! Birds as inspiration for children's learning, are demonstrated by the RSPB's Clare Whitelegg (page 11) and WWT's Lorna Fox, getting the children outdoors (page 14). We complete the feathered feature with several book reviews and 'Books About…'.

In this United Nations Year of Sustainable Tourism, we begin a new mini-series on what is 'sustainability and education'. This seems particularly timely as the United States withdraws from the Paris Climate Agreement, and other countries find their new voice on the critical issue of our time!

For daily updates, check naee.org.uk/latest-news. Tell us what you think about anything in this journal or NAEE via twitter.com/NAEE_UK; www.facebook.com/UKNAEE or info@naee.org.uk.

Our New President: Professor Justin Dillon

I was born in Stoke-on-Trent in 1957 and lived there until I went to Birmingham University to study chemistry in 1975. I never really appreciated Staffordshire or the surrounding counties until many years later – my parents weren't interested in the outdoors even though my father was a teacher of rural science and looked after a number of farm animals at a secondary modern school.

Public interest in the environment grew steadily during the 1970s and I can remember writing an essay at university about lead in petrol – perhaps the best thing that I did in my entire degree course. Towards the end of my degree I realised that I could not imagine going into the chemical industry or staying on to do a further degree. Teaching seemed like the obvious option and I was successful in applying to Chelsea College. I'd never enjoyed studying as much as I did during my teacher training year.

Determined to stay in London, I took up my first teaching post in Greenwich at a comprehensive school. During the 1980s I taught in half a dozen schools including a spell as a peripatetic teacher of examination classes across London. I studied part-time for a Master's degree in science education at King's College while I was teaching and enjoyed it immensely.

In 1989, I joined the staff at King's to take up a lectureship in science education. I spent half my time working on the National Environmental Database project that set up a system by which schools could compare environmental data. From then until 2014 I taught and researched in the UK and overseas. It took me a very long time to do my PhD which looked at heads of science departments in secondary schools. I was awarded a chair in science and environmental education in 2009.

I moved to Bristol to take up the post of Head of the Graduate School of Education in December 2014. I moved to this vibrant city just at the time that it became European Green Capital – it is a fantastic place to live, work and study. I stepped down the departmental headship in January 2017 to focus on promoting sustainability across the whole university.

What attracted you to join NAEE?

I can't remember when I joined NAEE; it was that long ago. It must have been in the early 1990s – I can remember attending a couple of annual conferences in Bristol and, I think, Leeds. I have to say, though, that these are very hazy memories. I stopped renewing my membership when NAEE seemed to disappear from the environmental education scene. I rejoined the association reasonably recently – things seem to be going in the right direction now.

Much of my research has been into learning outside the classroom and I have contributed to several reports including *A Review of Research on Outdoor Learning* (with Mark Rickinson et al.). I also directed King's involvement in several EU-funded projects which looked at interests and recruitment in science and inquiry-based science education in botanic gardens. I'm also on the education committee of the Royal Horticultural Society and a trustee of Avon Wildlife Trust (I was chair of London Wildlife Trust for many years when I lived in the capital). I'm one of the four co-editors of the *International Handbook of Research in Environmental Education* (Routledge) and co-edited (with Alan Reid) *Environmental Education*, four volumes of the most important writings on the subject (also published by Routledge). Given all that, NAEE seems a natural home.

What do you think environmental education is?

During my MA course I took an optional course on environmental education taught by Arthur Lucas – one of EE's great thinkers. Arthur was one of the first people to realise that environmental education is a very contested term. To some it's about conserving the environment through education and/or activism; to others it's part of an

holistic approach to sustainability. My job is to understand how people conceptualise it and to study how it's carried out by practitioners. It's not my job to say what it is and what it isn't.

What, in your view, are the pros and a few realities of NAEE?

Umbrella organisations, particularly in the education sector, always struggle with funding. NAEE is no exception, although it looks sustainable for the next few years due to careful management. We can strengthen the chances of NAEE being here in 25 years by increasing our reserves so that if times become even harder we can keep going.

NAEE also struggles to make itself heard above all the other, usually larger organisations. What it does have is a strong history and a measure of financial independence. It is able to publish a journal each term which shares good practice from across the UK and beyond. The reality facing NAEE is that it is never going to be a major player in the sector; but what it can do is to be clear about what it does offer and to do that task as well as it can.

As NAEE president, what are your broad goals for the association?

As we say on our website, NAEE's purpose is to promote all forms of environmental education, and to support all those involved in its delivery, so that together we can understand and act on the need to live more sustainably in order to protect the future of our planet. Never has that task been so urgent or so important.

We believe that young people have a right to first-hand educational experiences in their local environment, because these are critical in helping people understand the importance of the biosphere to all life on the planet, as well as being a source of wellbeing and fulfilment, and a motivation towards sustainable living. I believe that NAEE should continue to be committed to campaigning for a strong focus on environmental and sustainability issues across the school curriculum. However, we also need to recognise that much environmental education happens outside the school. We must support the development of engagement with environmental education which is life-long and life-wide.

Trustees are responsible for ensuring that charities keep to their charitable objects. For NAEE that means providing a public benefit by advancing environmental education within early years settings, primary and secondary schools, and institutions responsible for teacher education within the UK and elsewhere. Specifically, but not exclusively, NAEE is committed to the following :

1. facilitating curriculum development through the provision of resources, information and ideas for teachers,
2. providing financial support for pupils to visit outdoor education centres, and
3. collaborating with organisations that have related objectives.

I look forward to my time as NAEE President and to meeting as many of its members as possible.

London | Tree Education

Tree dressing in a city park

Alona Sheridan *NAEE*

Tree Dressing is celebrated all over the world among many cultures at different times of year. In 1990, a charity called Common Ground[1] revived Tree Dressing as an annual English cultural event to take place during the first weekend of December at the end of National Tree Week[2].

When word got out in our local park that the Friends of Mayow Park[3] were to hold a tree dressing event, some people wondered why we were having a Christmas event. They were surprised to learn that ours was upholding a custom that pre-dates Christianity and can be found across the globe as a celebration of trees.

Customs around the world include tying ribbons, writing messages on fabric, hanging objects and singing.

We wanted to bring park users together to celebrate our park trees through a community event. Mayow Park has some ancient trees and also a young orchard to celebrate.

Sunday 4th December 2016 was the date, the orchard our location. The orchard also contains other park trees to draw people to. The Orchard Project[4], who had worked with us to plant the orchard of 18 fruit trees, gave us their support by arranging for a photographer and additional publicity through *Helping Britain Blossom*[5] with a press release and a slot earlier in the morning on BBC Radio London. The radio item brought in people who had missed the other publicity.

Local park users decorating a tree (Credit: Helping Britain Blossom)

The weather that day was cold but dry. First the gazebo was set up. Then resources were checked: card leaf templates for writing messages, scissors, strips of colourful scrap fabric, waterproof pens and enough string to tie all messages to the trees. Apple juice, biscuits and marshmallows were available to refresh our visitors. Passers-by were invited to join us in writing messages. A storyteller told stories at the log circle in the wooded space beside the orchard. In total we had 33 adult visitors and 22 children.

At the end of the morning, we gathered round one of the orchard trees to sing winter songs, supported by a parent with a guitar and some participants who helped us sing in tune.

Singing winter songs among the decorated trees (Credit: Helping Britain Blossom)

To arrange this small event in a public park required permission from the local council and public liability insurance, agreement with the contractors who manage the park, arrangements with the Orchard Project, booking the storyteller and ensuring we had enough volunteers on the day.

Was it worth the effort? Yes, as it brought people together and the trees looked rather magical when they had been decorated. The decorations were carefully removed 10 days later before they became too ragged. Next year we could improve our activities by having a theme for messages of appreciation to the trees.

More information

[1] www.commonground.org.uk

[2] www.treecouncil.org.uk/Press-News/National-Tree-Week-2016

[3] friendsofmayowpark.blogspot.co.uk

[4] www.theorchardproject.org.uk/about-us

[5] helpingbritainblossom.org.uk/about-us

Spring visits to gardens in Birmingham

Compiled by Juliette Green *NAEE*

NAEE's Hugh Kenrick Days offer schools in the West Midlands the opportunity to apply for financial support to give their pupils a chance to visit an outdoor environmental education centre. We believe that first-hand educational experiences in their local environment help young people to understand the importance of the biosphere to all life on the planet. These experiences can be the springboard for excellent further curriculum-focused activities back at school.

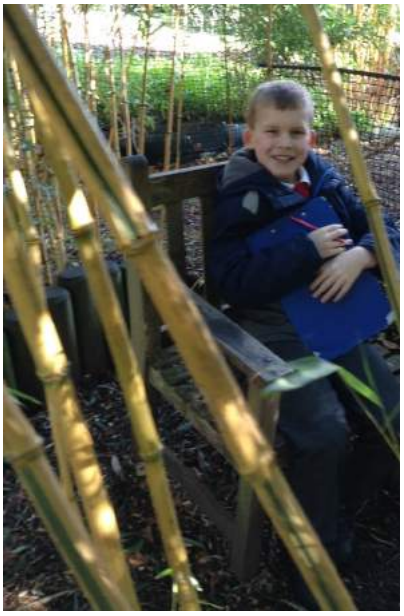
Cotteridge Primary School, Year 4 Kenrick Day visit to Birmingham Botanical Gardens, March 2017

Jonathan Wilson

On Tuesday 14th March Cotteridge Primary School's Year 4 classes visited the Botanical Gardens to delve deeper into the depths and mysteries of the rainforest and to enjoy a day filled with learning in the great outdoors. Cotteridge Primary School is located in the inner city and is an area of Birmingham where many children do not get to visit outdoor areas often. Several children had never been to the Botanical Gardens before and many children commented on how they had never, or rarely, even explored their local park! An educational visit to the Botanical Gardens to learn about the plants, animals and nature was engaging, informative and an experience that everyone enjoyed greatly.

The children had the opportunity to handle animals including stick insects and a chameleon

The children had a hands-on session with rainforest animals, handled artefacts from the rainforest and even looked at the products that originate from the resources of the rainforest. The day allowed the children to explore their topic of the rainforest on a deeper level and the children even had a few facts to share with the staff at the Botanical Gardens! The entire day complemented and built upon the learning and knowledge the children have explored throughout their topic lessons in school. Everyone enjoyed the day and Year 4 are looking forward to uncovering more of the mysteries of the rainforest!



Having a well-earned rest in the bamboo maze

The Kenrick Days bursary allowed these children to experience outdoor learning at its best and inspired some future budding gardeners!

www.cotteridgeprimary.co.uk/year-4s-rainforest-adventure

Oasis Woodview Academy, Year 1 Kenrick Day visit to Martineau Gardens, 28th & 29th March 2017

Ruth Holmes

We visited the gardens, one class on each of the above days, to enhance our science topic on plants. Before the visit, children were taught about ever-green and deciduous trees and they had a basic introduction to the parts of a plant.

During the visit, they enjoyed looking at, smelling and tasting herbs. Fareedah thought the chives tasted *"like pepperami"*. Ruby thought the mint was *"like toothpaste"*. They also tried spinach and rhubarb – which provoked rather mixed reactions. They learnt the important lesson: that you must never eat anything, unless the person telling you to eats and swallows it first. Khaled remembered that *"Rhubarb leaves will poison you."* Husnain said: *"I love rhubarb and spinach. I eat spinach at home."*

In the orchard, we learnt about different fruit trees and looked for signs of spring – blossom and buds.

The children enjoyed singing 'Here We Go Round the Mulberry Bush', but learnt that it's actually a tree!

In the glasshouse, we learnt about the parts of a plant and pollination. Jahvae and Khaled liked being the butterfly and bee. Hayden had asked earlier: *"What is fertilisation?"* He understood much better after this activity.

In the woods, we learnt to identify trees; we found horse chestnuts, ash, oak and yew. The children enjoyed working with partners, blindfolded, to 'meet a tree', and also loved bark rubbing.

We thought that collecting leaf samples on sticky paper bracelets was a fabulous idea!

Walking back to school, children noticed some bees going in and out of the blossoms on a magnolia tree – *"They are looking for nectar,"* said Husnain – he'd previously thought bees got honey from flowers.

Back at school, we have planted some lettuce seeds, sunflowers (in pots) and seed potatoes. We have discussed what the plants will need to help them grow. We have been predicting how long they will take to grow and how successful they will be. As spring moves into summer, we are hoping to grow some herbs too.

The children have described Martineau Gardens as "beautiful" and "so pretty", so we have been thinking about how we could make our playground more beautiful and discussed the importance of tidying up litter, looking after the flower beds etc.

The visit certainly consolidated much of the work we have done in school, as well as teaching the children more about plants and the environment. They all greatly enjoyed the visit and I think that, as well as learning about specific plants, they have an enhanced appreciation of the natural world.

More information

naee.org.uk/apply-for-a-school-bursary

British Birdgirl introduces her peers to wildlife

Mya-Rose Craig *Wildlife blogger*

Mya-Rose Craig is a 15-year-old British Bangladeshi young naturalist, birder and conservationist. She writes the successful *Birdgirl* blog and was a Bristol European Green Capital Ambassador along with Shaun the Sheep. She has also been listed with singer George Ezra and actress Maisie Williams as one of Bristol's most influential young people.

I have been birding and been obsessed by nature all my life and it's a huge part of me. When I go out into nature, no matter how I was before, I feel calm and peaceful. Since I have started my GCSE course, going out into nature has become even more important to help me deal with the pressures of school. The passion I feel about wildlife makes me want to get other young people into it too.

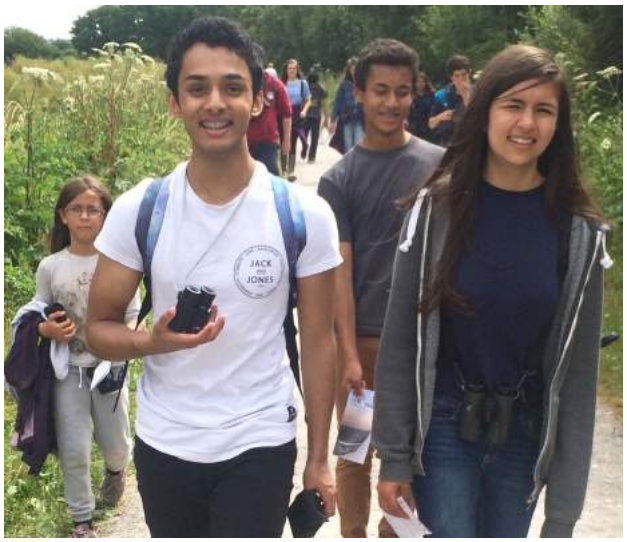
A couple of years ago, I saw that in the United States there are 'birding summer camps' for kids, as they have longer summer holidays and many parents only have two weeks' holiday a year. In early 2015, I was looking up one of these camps and felt disappointed that I could not attend. Then I had the idea and decided to organise my own camp here – in the United Kingdom. The concept? It was to take place over a weekend, be affordable and be after GCSE exams.

'Camp Avalon': a camp for young birders, naturalists and minority ethnic teens

So 'Camp Avalon' was born. Camp Avalon 2015 and 2016 took place at Avalon Marshes on the Somerset Levels, where the Somerset Wildlife Trust and RSPB have reserves. The camps were aimed at teenagers who were already interested in nature right through to those who had never set foot in the countryside. We camped in a nearby campsite and, as well as camp cooking, the young people took part in birding walks, wildlife photography, nature sketching by renowned bird artist John Gale, bird ringing, moth trapping, making nest boxes, pond dipping, looking for nightjars and lots of talks on different subjects like organising to go abroad to a conservation project during your gap year and a talk from the County recorder on what makes good birding records.

As a birder, I had also noticed that when I visited reserves or went on walks, I rarely saw any other ethnic minority young people (I am British Bangladeshi), even in city centre reserves. This is something that worried me, so I worked hard to get young people from ethnic minority and inner-city backgrounds to come to my camp. Camp Avalon is very important as there are no other opportunities for young people, whether into wildlife, birds or don't know anything about nature, to come together on a nature camp.

It was interesting to watch the eight ethnic minority teenagers that came in 2015. Initially they did not know what to expect and felt 'bored' before something began clicking in their minds and they engaged with the natural world around them. For some, the 'click' was the idea of looking in a



Mya-Rose with some of the teens who attended Camp Avalon

mammal trap, whilst for others it was holding a bird during bird ringing or wildlife art. It made me realise that anyone can connect with nature; they just needed to see how, and maybe be shown how. There is something special about watching a 'tough' 14-year-old boy from the inner city, seeing a bird closely for the first time and then his pure delight in holding it, releasing it and then looking at me and smiling from ear to ear. That was a special moment for me!

As well as the camps, I organised a conference in June 2016 called *Race Equality in Nature*, with the aim of trying to get more ethnic minority people out into nature. Our Key Speakers included Bill Oddie, Stephen Moss and Kerry McCarthy MP, who was Shadow Environment Secretary at the time, as well as 85 people attending from all backgrounds and professions including the BBC, and it was sponsored by Bristol Zoo. We looked at the barriers, how these barriers can be overcome and how we can create role models. I have now set up *Black2Nature* and am working with nature charities and community groups to try to overcome the barriers and create role models.

Mya-Rose with naturalists Bill Oddie and Stephen Moss at the 'Race Equality in Nature' conference

More information

campavalon.blogspot.co.uk

twitter.com/BirdgirlUK

East England | Schools outreach

Birds as a source of inspiration for environmental education

Clare Whitelegg *RSPB Schools Outreach Officer in Eastern England*

The breeze in your hair, golden leaves on an autumnal oak and the gentle 'tsetse' calls of long tailed tits high up in the branches: a moment of 'connection to nature' on one of the RSPB's Schools Outreach sessions this year in Norfolk. Birds are of course central to the RSPB's education programme. Our aim is to get children all over the UK to experience what it feels like to connect to nature. In much of our work, learning about birdlife is the conduit for this experience.

Our Schools Outreach Programme is a key part of our education work across the UK, and in the East of England we run a very popular Outreach Programme in the city of Norwich. Generously funded by the Aldi supermarket chain, free outreach sessions are available in 17 cities across the UK, including Norwich. Our trained educators work with teachers and pupils in their school grounds to deliver fun and engaging outdoor learning sessions.

Every session involves at least 30 minutes of outdoor discovery, allowing pupils to experience the natural world first-hand and, we hope, experience that connection to nature. To date, this programme has helped to deliver more than 75,000 'nature connections' for schoolchildren in the UK.

RSPB Schools Outreach sponsored by ALDI (Credit: Eleanor Bentall rspb-images.com)

The three-year partnership will deliver connection-to-nature experiences to more than half a million children in schools, on nature reserves and through activities parents can do with their children at home.

Research has shown that children today have far fewer opportunities to connect with nature than in previous generations and this is detrimental to their wellbeing[1].

Our outreach project aims to counteract this, to improve children's wellbeing while inspiring them to love and understand nature. Ultimately, we hope this will sow the seeds for the next generation of nature-lovers and conservationists to continue protecting nature.

RSPB-ALDI Greenspace event (Credit: David Broadbent rspb-images.com)

Our outreach project offers three curriculum-linked activities for schools to choose from:

Giving Nature a Home Pupils map wildlife habitats in their school grounds and plan to create more homes to help wildlife, such as putting up nest boxes.

Classroom session (Eleanor Bentall rspb-images.com)

Bioblitz Based on citizen science activities originating in the USA, in a short time, pupils hunt for living things including birds, plants and mini-beasts in their school grounds. The lasting impact of this engagement is ongoing in many schools. Schools respond to the resulting demands from the children to have bug pots and binoculars available in school, for after-school clubs, break times and golden time.

Spider in biopot, Bioblitz, St Albans (rspb-images.com)

Big Schools' Birdwatch is our third session within Schools Outreach. Here we focus with the children on local birdlife. We can't emphasise enough how the joy and excitement of these sessions is so utterly counter to the traditional image of bird-watching! We work with groups of 30 pupils using binoculars, dashing (hopefully quietly!) around their school grounds excitedly identifying and recording birds. For most children we work with in

these sessions, this is their first experience of watching birds. It brings to life classroom learning.

Big Schools' Birdwatch (E. Bentall rspb-images.com)

They see real, living creatures in the wild which they may never have seen before. It's wonderful that children begin to understand that these animals are right there in their own neighbourhood. They are enchanted and the joy is palpable.

Pupils may get close to a cheeky, confident robin, pick out for themselves a blue tit high in a tree for the first time in their life, spot a buzzard circling up in the blue, or experience the sheer excitement of tracking down a great tit by its call, which they have just learned in the classroom. Pied wagtails are brilliant for school birdwatching: they are bold, easy to spot and interesting to look at. Watching a sparrowhawk being mobbed by gulls is a vivid new experience, showcasing that whole other world which is up there!

However, it's best to hear about it from the children themselves:

> *"It was brilliant using the binoculars because you could really spot the birds even if they were sitting in a tree quite far away."* (Year 2)
>
> *"We saw a huge flock of woodpigeons in the sky."* (Year 1)
>
> *"It was helpful to learn about the different birds first so that we could try and spot them outside."* (Year 2)
>
> *"We went into the woods and saw a robin and we could hear him before we even saw him."* (Year 3)

Many of our schools in Norwich have taken their learning further, incorporating the outreach session into their ongoing learning. One school embraced the ideas from our outreach work and created a whole term's topic around birds. They looked at the poem 'The Raven' in English, created bird artwork and used the many data-handling possibilities from the *Birdwatch* in maths.

Other schools have even decided to turn their school grounds into a nature reserve as a result of our *Giving Nature a Home* session. The way schools incorporate our work contributes to children having an encompassing experience of environmental education. When we joined one local Year 2 cohort for the *Big Schools' Birdwatch,* pupils were already experts at penguin identification from their classroom work within their Antarctica topic. At the end of the *Birdwatch* session, children walked back to class singing the chorus from their play about penguins and climate change. The *Big Schools' Birdwatch* gives them a real life experience of birds. They learn to identify garden birds in the wild and by the end they have worked as real scientists in the field. Who knows where this will lead? It is all pretty exciting if you are 7!

(Credit: Eleanor Bentall rspb-images.com)

Our outreach sessions bring learning to life, making it real, and this is where the excitement comes from. That this excitement and joy is so evident, spontaneous and seemingly innate in children gives us hope for the future of our wildlife.

More information

www.rspb.org.uk/kids-and-schools

[1]Richard Louv, Last Child in the Woods – Saving our Children from Nature Deficit Disorder;
Every Child Outdoors – RSPB report

Giving learners the wings to fly

Lorna Fox *Learning Advisor, Wildfowl & Wetlands Trust*

Inspiring the next generation of conservationists has always been an important part of the work we do at the Wildfowl & Wetlands Trust (WWT). Our learning sessions are a big part of how we do this. Over the years we have engaged with over two million school children at our nine visitor centres across the UK.

This year the learning team at WWT have taken outdoor education to the next level. New workshops being run by the charity are giving learners the opportunity to experience first-hand how conservationists work, using both new technology and tried and tested data collection practices.

School pupils observing birds at a WWT reserve

At the beginning of this academic year the 'Flight of the Swans' expedition (flightoftheswans.org) gave the learning team a unique springboard for creating a more dynamic session based on their already successful migration workshops.

The session *How can we help migratory birds?* teaches pupils about migration, the risk birds face during migration and how scientists track the birds to learn more about them. In this pupil-led session, children observe and investigate migratory bird species and their habitats and explore the reserve with tracking capabilities, just like the ones WWT scientists use.

"It was a day of unforgettable learning," said Brett Stevenson, Executive Head at Walmore Hill Primary, Gloucestershire. *"Every pupil had the chance to better understand migration, to put the migratory journey of different species around the world into context, and to discover the challenges they face when making these incredible journeys."*

The skills and enquiry-based sessions are part of a learning journey that starts with pre-visit information given to teachers to prepare pupils for the day and then concludes with tasks done back at school with the information they have collected on the day. It is this learning journey that really impacts on a pupil's tendency towards conserving nature and wetlands in the future.

In another session, *How and why do we monitor birds?* pupils use GPS trackers to find their way around the site and take photographs on digital cameras to identify and count birds. The charity has had pockets of funding to support the use of technology during the sessions.

Using different techniques and equipment to collect information about birds

The kids have really enjoyed the independent style of the task and using the equipment, which we don't have at school. Seeing them using it in context and understanding how it's used by conservationists at the Trust has been great," said Sophie Beattie, a secondary teacher at Sacred Heart School, London.

Students also use more basic data collection techniques like tally counters to record bird numbers, before entering the data into spreadsheets back at school, just like WWT's scientists do in their work.

"We want our learners to experience what it really is like working as a conservation scientist. Using the cameras and GPS trackers means pupils are engaged in the environment around them and using the technology that scientists use brings a new level of engagement for lots of learners," said Lorna Fox, Learning Advisor at WWT.

The charity hopes that the immersive experiences these sessions offer will ignite a passion in wetland wildlife and habitats. And if not all learners are destined to become the next Peter Scott. at the very least pupils are introduced to new outdoor environments and equipped with valuable scientific, geographic and technological skills.

Research

Emerging environmental science in early years education

Sue Dale Tunnicliffe *University College London*

Science is all around, an integral part of our world. Young children are intuitive scientists (Gopnik, 2009). They observe, ask questions, investigate, collect data and work out what it means, forming an understanding, which is their basis for understanding their world. This develops into children's science, as their ideas and interpretations are in fact common to most children. This science is blended with school science once they enter formal education, which may ultimately become scientist science, (Osborne, Bell and Gilbert, 1983). Moreover, children develop narratives about their observations and activities (Bruner 2002) as well as interpreting what they notice and find out, often justifying their interpretation and decisions; in essence, intuitively using the scientific process.

Place

Children are born into this world into place and environment, and immediately start developing a personal 'sense of place'.

The first place is their home, and gradually the immediate outside becomes part of their environmental experience and understanding.

Places have an identity. For people it is created not only by the visual landscape but also by invisible history, features and happenings from the past which have occurred in the sense location. Watts (1998) considered awareness of the past of a place to be one of the strongest aspects of the sense of the countryside, and the concept can be extrapolated to buildings, such as cathedrals.

Early Years specialists consider the physical and emotional environment for children less than three years of age. Bradford (2012) was concerned with the developing child and understanding an appropriate environment. These two aspects are intertwined.

Science is environmental education

Environmental education, however, tends to focus on the physical environments that a child encounters and to which they can be introduced by educators and family, to extend their experiences of 'place' and the varying environments that these places contain.

I understand 'nature' to mean 'the environment', in which most people think there is 'nature'. It is postulated nowadays that children are out of touch with nature. Louv (2008) refers to 'nature deficit' amongst these 'digitised 'children, exposed to technology but not the untamed outside.

However, even though urban children from an urban-focused society may have scant experience of wilderness, they have interactions with fauna, flora and earth science in varying amounts, depending on what is found in 'their place' and, vicariously, through media. The *natural* environment, locations and components as opposed to the *built* environment, is often the educational focus for environmental education, but a large part of the environment that our children experience is the one constructed by humans. Hence the built environment is an important aspect of environmental awareness. Increasingly the deleterious effect on the environment, where our species has destroyed or otherwise changed the landscape, our place, has led to our era in our world being named the 'Anthropogenic' era (*The Guardian*, accessed 14.1.17). Some remedial actions are being taken such as recycling, with many schools and communities becoming involved.

The environment's constituents

The environment is the result of earth science in action in the past and present. The soil, landscape, differing biomes, vegetation and habitats and their incumbents as well as the climate and weather effects such as typhoons, monsoons and droughts, are all aspects of the environment. Yet much literature on environmental science emphasises the biological, not the physical or earth sciences.

Young children experience the physical outside world but do not remark upon it in their early vocabulary, rich in nouns and some action words, such as 'dig', 'splash' (Tunnicliffe 2013 page 11).

My eldest son's first 50 words at the age of two did not contain any words related to the environment per se, such as soil, sky, clouds, but did contain words of objects and actions he had seen in the outside, such as bricks, spade, bus and 'dig-dig' (dumper truck).

Yet the natural environment of earth, soil and sky and the built environment on the surface of the Earth are large components of their 'place'. In 1998, the Japanese early years curriculum environmental area 'Field of Nature,' underwent a name change from 'nature' to 'environment' to include the environment outside, to enable children to 'observe things 'objectively and logically' (Sumida, 2013), including mud. Indeed 'mud kitchens' are becoming a common feature of nursery education in England.

Other educators introduce nature journeys focusing on nature and living organisms and not on the earth science components which are essential for the emergence of habitats. Environmental education is more than nature education and provides real experiences for emergent scientists, starting with their immediate surroundings.

Earth science awareness develops in children from their experiences and direct observations but, unless highlighted by a facilitator, can become part of the background of 'place'. Children observe and think about their environment, natural occurrences – e.g. sunrise, sunset, day and night (dark and light) beyond our planet into space, other worlds.

Children observe changes; in my experience the sky and clouds catch the attention of the emerging environmentalist as do weather patterns in their locality. The substrate under their feet is noticed! Young children have an inherent urge to collect items: pine cones, twigs, pebbles or individual leaves. They are fascinated by wet soil and enjoy when allowed to play in mud creating shapes and structures, particularly a feature of the early years' experiences facilitated in Japanese kindergartens (Sumida, 2013). However, their attention is diverted to plants and towards moving animals. Indeed there seems an acute 'earth science blindness' similar to that noticed by Wandersee and Schussler (1999). This is exemplified by my son's vocabulary cited above. He spent much time outside, in his environment, but did not need to name the fundamentals. To him they were there to explore and use, but naming them was unimportant.

Physical science is present in so many actions that children undertake in play. Movement, as exemplified by pulling a force over the substrate on which

they are moving, pushing stones along, piling them to dam a stream, pulling down a branch, when playing for instance. Young children are intrigued when investigating bodies of water and floating such as sticks. So, too, are actions using a force or mixing solutions, adding water to mud and constructing objects with it. Indeed 'mud play' actions involve pushes, pulls, twisting, as well as an element of numeracy.

Children have an understanding of vegetation from their own everyday observations, which contributes to their awareness of their external environment, but gradually adopt an attitude that vegetation is worthless and utilitarian (Schneekloth, 1989). A study eliciting understanding of plants and animals amongst young children in the USA and England (Patrick and Tunnicliffe, 2011) found that the children were in touch with their everyday environment.

My observations of primary school children on visits to botanical and horticultural gardens, is that they are interested in plants until distracted by moving animals. They may have a much narrower understanding of the word 'plant'. A tree, for example, may not be considered a plant. Early years children (4-year-olds) when interviewed about everyday plants (unpublished data) used the word 'grass' as synonymous with a stretch of green lawn and when shown, firstly an individual grass plant from a lawn and secondly a mature grass plant in flower, were amazed.

Animals, in the home or outside, play an important part in a child's developing understanding of environmental science. My eldest son's first words show that names are important to a child.

Observing and categorizing is a basic science skill and the collecting of evidence, for example seeing the same kind of animal but with differences. One child of my acquaintance pointed to something in the sky and was told 'plane', thereafter anything flying in the air was allocated to the category of plane, i.e. things that flew. She gradually learnt to identify other categories within her super-ordinate category 'plane', such as 'birds'. Gradually she accepted that they both were part of the larger group of things that were in the air above her. Names are learnt gradually, from a category name for all similar things in one dimension, such as all things that fly, which include non-animal instances, such as planes, but also plant parts!

Emerging science

Formally learning about places, their constituent parts and the effects of humans on the environment, is a key aspect of environmental education and such focused education 'creates a heightened commitment to serving as active and contributing citizens' (Sober, 2005, p. 7).

These early observations and experiences of environments may well lead to learners with an interest in science and eventually a career. An holistic view of the environment by facilitators and planners is crucial in supporting the potential of early learners into developing as scientifically literate beings with a science capital.

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The importance of environmental education in teaching learners with special education needs in South Africa

Tamlyn Hardy *Education Manager at SANCCOB*

The Southern African Foundation for the Conservation of Seabirds (SANCCOB) is an internationally recognised leader in oiled wildlife response, rehabilitation and chick-rearing; contributes to research which benefits seabirds; trains people to care for the birds and educates the public to develop behavioural change which benefits marine life and the environment.

I currently serve as SANCCOB's Education Manager. My job is to develop, find funding for and implement educational programmes that focus on the plight of the endangered African penguin and seabirds. I completed my studies in Environmental Education but beforehand actually started off my career in High School Mathematics. During my initial years of teaching, my father was diagnosed with peripheral neuropathy. By the time I finished my first set of studies he had been officially declared disabled and had stopped working. I was really taken aback by how his impairment changed his willingness to learn and his approach to his overall environment. He no longer wanted to engage in the world around him. I began thinking a lot about how learners with special education needs (LSEN) approach their environment. From there I started taking free online courses, reading any textbook I could get my hands on with a LSEN focus. Sadly, I found that there was a lack of information available on environmental education and LSEN work in South Africa.

When I started as Education Manager at SANCCOB, I shifted all the projects to a LSEN focus; in the last two years we've had the opportunity to work with hundreds of learners across different age groups with different barriers including, but not limited to: autism, Down syndrome, ADHD, physical impairments, deaf, hard of hearing, cerebral palsy, aphasia and severe intellectual disorders. The work is incredibly interesting and rewarding but also time intensive.

Each lesson includes the process of:

1. Receiving learner information sheets on each child participating in the lesson
2. Creating a breakdown of each impairment that exists within the group
3. Lesson plan development with the purpose of creating learning experiences that can include all learners
4. Assessment and evaluation (mostly tracking behavioural change but this can vary based on which impairments are present)
5. Feedback and evaluation from participating learners and educators
6. Self-reflection and self-evaluation

For some of the students, it was their first time stepping on a beach

A lot of the time I was met with confused parents, but it was a great opportunity to illustrate the importance of EE regardless of what barriers the child may be experiencing. There were several instances where learners would step onto a beach, take a night walk or visit a nature reserve for the first time.

An educator named Zolani reported to SANCCOB that the camp they attended was *"a great opportunity for the kids. Often deaf children with oral parents, particularly in the Xhosa community, are not fully accepted and there is a stigma around having a deaf child. Often these kids are hidden from society. Many kids that are here on the camp have never even been to a shopping centre so this camp is a completely new experience."*

Through our work we have been able to track, not only retained information, but actual behavioural change with four of our partner schools initiating environmental education programmes of their own.

It has been reported that participating learners have become more compassionate for the environment and are more willing to engage in outdoor activities. We all know that the environment belongs to everyone and in turn, all people are responsible for protecting and appreciating it, regardless of what intrinsic or extrinsic barriers may exist.

Slowly but surely SANCCOB has been asking learners with special education needs to expose themselves to new experiences. There is no reason why a physically impaired learner can't participate in a beach clean-up, a deaf learner can't go on a night walk or a blind learner can't bird watch. I encourage any environmental educators reading this to reach out to a special needs school near you and take the time to make reasonable accommodations to your content in order to engage all types of learners.

More information

sanccob.co.za

World | What is sustainability?

World Heritage and sustainable development

Compiled by Henricus Peters *NAEE*

Heritage was long absent from the mainstream sustainable development debate, despite its crucial importance to societies and the wide acknowledgment of its great potential to contribute to social, economic and environmental goals.

Based on a strong appeal from national and local stakeholders, the 2030 Agenda adopted by the UN General Assembly integrates, for the first time, the role of culture, through cultural heritage and creativity, as an enabler of sustainable development across the Sustainable Development Goals (SDG). World Heritage may provide a platform to develop and test new approaches that demonstrate the relevance of heritage for sustainable development.

On 19 November 2015, the 20th General Assembly of the States Parties to the World Heritage Convention adopted a *Policy for the Integration of a Sustainable Development Perspective into the Processes of the World Heritage Convention*[1]. The overall goal of the policy is to assist States Parties, practitioners, institutions, communities and networks, through appropriate guidance, to harness the potential of World Heritage properties and heritage in general, to contribute to sustainable development. This will therefore increase the effectiveness and relevance of the Convention whilst respecting its primary purpose and mandate of protecting the Outstanding Universal Value (OUV) of World Heritage properties. Its adoption represents a significant shift in the implementation of the Convention and an important step in its history.

So where does education – and environmental education in particular – come in to play? There are, arguably, strong links between cultural heritage and environmental goals and therefore between world heritage and environmental education – those places that benefit from world heritage status are exemplar locations to learn 'about', 'in' and 'for' the natural and cultural environments.

In the current context of changing demographics and climate, growing inequalities, diminishing resources, and growing threats to heritage, the need has become apparent to view conservation objectives, including those promoted by the World Heritage Convention, within a broader range of economic, social and environmental values and needs encompassed in the sustainable development concept.

By identifying, protecting, conserving and presenting to present and future generations—a key component of environmental education— irreplaceable cultural and natural heritage properties of OUV, the World Heritage Convention, contributes significantly to sustainable development and the wellbeing of people.

In applying a sustainable development perspective within the implementation of the World Heritage Convention, States Parties should also recognise the close links and interdependence of biological diversity and local cultures within the socio-ecological systems of many World Heritage properties. These have often developed over time through mutual adaptation between humans and the environment, interacting with and affecting one another in complex ways, and are fundamental components of the resilience of communities. This suggests that any policy aiming to achieve sustainable development will necessarily have to take into consideration the interrelationship of biological diversity with the local cultural context.

The World Heritage Convention promotes sustainable development, and in particular environmental sustainability, by valuing and conserving places of outstanding natural heritage value, containing exceptional biodiversity, geodiversity or other exceptional natural features, which are essential for human wellbeing.

States Parties should recognise that World Heritage properties themselves often play a direct role in providing food, clean water and medicinal plants and ensure measures are in place for their protection and use in an equitable way.

The World Heritage Convention includes, as one of its strategic objectives: *'to enhance the role of communities in [its] implementation'*. Recognising rights and fully involving indigenous peoples and local communities, in line with international standards, is at the heart of sustainable development.

World Heritage properties are important travel destinations that, if managed properly, have great potential for inclusive local economic development, sustainability and strengthening social resilience. Sustainable forms of tourism development, including community-based initiatives – again read here opportunities for environmental education – should be accompanied by inclusive and equitable economic investment to ensure benefit sharing in and around World Heritage properties.

There follow two examples of World Heritage Sites I have visited, where education via local eco-tourism plays a crucial role to inform and explain, thereby to begin to advocate.

The author in 'Stone Forest' — the South China Karst World Heritage Site

'Stone forest', China [2] [3]

South China's Karst landscape is one of the world's most spectacular examples of humid tropical to subtropical sites. The 'stone forest' is huge – it's really a serial site spread over the provinces of Guizhou, Guangxi, Yunnan and Chongqing and covers 176,228 hectares. It contains the most significant types of karst landforms, including tower, pinnacle and cone, along with other spectacular characteristics such as natural bridges, gorges and large cave systems. The stone forests of Shilin are considered superlative natural phenomena and a world reference. The cone and tower karsts of Libo, also considered the world reference site for these types of karst, form a distinctive and beautiful landscape. Wulong Karst has been inscribed for its giant dolines (sinkholes), natural bridges and caves.

Exploring the Stone Forest

Despite its size and difficulty to access — flight into the neighbouring Kunming and movement around and between the sites is realistic only by bus with walking amongst the stones themselves — many groups, including schools and tour parties, were there the weekend I visited with a Scout Troop.

Victoria Falls, Africa

The Mosi-oa-Tunya/Victoria Falls is the world's greatest sheet of falling water. It is significant worldwide for its exceptional geological and geomorphological features and active land formation processes with outstanding beauty attributed to the falls, i.e. the spray, mist and rainbows.

Lunar double rainbow over Victoria Falls (Photo credit Calvin Bradshaw calvinbradshaw.com)

This transboundary property (it is split between the two very different countries of Zambia and Zimbabwe) extends over 6860 ha and comprises 3779 ha of the Mosi-oa-Tunya National Park (Zambia), 2340 ha of Victoria Falls National Park (Zimbabwe) and 741 ha of the riverine strip of Zambezi National Park (Zimbabwe). A riverine strip of the Zambezi National Park extending 9 km west along the right bank of the Zambezi and islands in the river are all within the Park as far as Palm and Kandahar Islands, with the Victoria Falls being one of the major attractions. The waterfall stands at an altitude of 915m above mean sea level and spans to 1708m wide, with an average depth of 100m and the deepest point 108m. Sprays from this giant waterfall can be seen from a distance of 30 km from the Lusaka road, Zambia and 50 km from Bulawayo road, Zimbabwe.

Basalts have been cut by a river system producing a series of eight spectacular gorges that serve as breeding sites for four species of endangered birds. The property is protected under the *National Heritage Conservation Act (1998)* and the *Zambia Wildlife Act* on the Zambia side; and the *Zimbabwe Parks and Wildlife Act Cap. 20. 14 of 2008 (revised)* on the Zimbabwean side. The Plan addresses specifically questions of transboundary coordination, management of urban and tourism facilities and funding schemes.

More information

[1] whc.unesco.org/en/sustainabledevelopment
[2] whc.unesco.org/en/list/1248
[3] www.protectedplanet.net/south-china-karst-world-heritage-site

Celebrating 21 years of Education for Sustainability at London South Bank University

Alona Sheridan *NAEE*

London South Bank University (LSBU) has been the home of the Education for Sustainability (EfS) MSc for 21 years and this event (in January 2017) was a celebration of that achievement. As an alumnus of that course, I was pleased to be able to attend.

Professor Pat Bailey, Deputy Vice Chancellor at LSBU, opened the conference, explaining how LSBU is working to embed EfS across the university.

A team of panellists comprising academics and former alumni explained their work in relation to the EfS course. Delegates heard how the course has grown to include students from all across the globe, how it integrates theory and practice and how alumni have gone on to influence their communities, including policy development, as agents for change — a positive outcome of the course. Safia Minney, founder of People Tree, gave a business perspective to EfS, explaining how her company challenges modern day slavery and unfair practices in the fashion industry. Social justice and corporate social responsibility were important to all the panellists.

Then came short presentations from alumni from the UK, Cameroon, Lesotho and Rwanda, which showed the breadth of professional directions and practice, and how the course had empowered them. It was clear this course met formal learning outcomes while enabling students to develop their own professional practice using EfS values.

The afternoon began with three workshops: delegates could choose which to attend. One was on values and mindsets we would like to encourage in order to engage young people in environmental issues. Another had a focus on refugees and the third was a visit to the Whole Earth photographic exhibition in the campus grounds.

We learned that some students from Commonwealth countries had received scholarship awards funded by the Department for International Development (DfID), enabling them to study and complete the EfS Masters degree.

The day was rounded off with a keynote speech from Stephen Sterling. He reflected that LSBU gave birth to the EfS Masters course as a result of work with WWF, the wildlife charity, and that it encouraged students to develop their work for social, economic and ecological sustainability. The global culture of testing children in the belief that it will achieve employability, despite narrowing of experience, should be questioned. The EfS community has grown globally yet it needs to communicate better with other sectors of civic society and to develop learning that cares about the future. Stephen gave us plenty to think about.

This was a successful celebratory event where people who support the need for EfS were able to share beliefs and values.

Education for Sustainability (EfS) MSc/PgDip at London South Bank University

EfS is a distance learning postgraduate course at Masters level delivered by a team of experts. The course provides personal and professional development for those interested, or already engaged, in paving the way for a more sustainable world by way of understanding, educating or promoting sustainability. The unique structure of distance learning enables international students to gain a globally recognised qualification from the UK.

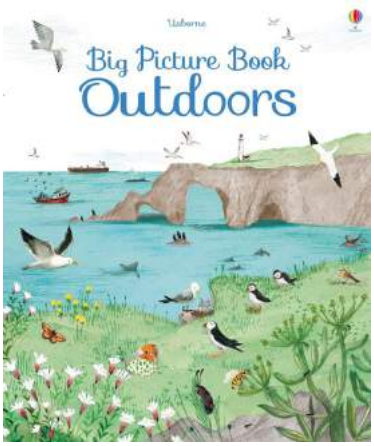
Did you know that we're the only university mentioned in UNESCO's good practice UK case studies in EFS?

(From www.lsbu.ac.uk/courses/course-finder/education-sustainability-msc)

Book reviews

Usborne Big Picture Book Outdoors

Minna Lacey



As anyone familiar with Usborne Picture Books will anticipate, this publication really is a feast for the eyes for any young nature lover. The pages are crammed full of illustrations, making it a great book to sit and look at, spotting different animals and plants in the double page spreads on each occasion.

A sensory element is added to the illustrations with little inscriptions of the sounds you might here if you were standing in the picture – a fish leaping out of the river is marked with 'Splish Splash', and a bittern standing in reeds has the words 'Boom Boom Boom' floating upwards from its beak. Many of the labelled illustrated insects, plants and animals have simple one sentence facts alongside them: '*Water plants make oxygen, which fish use to breathe', 'Meadow pipits look for spiders living in the bracken'* – an adult looking at the book with a small child would easily be able to bring it alive and drop in these facts as the animals are pointed out by little fingers. Children who spent time poring over these pages would benefit from its detail and the sense of depth and variety of life in the outdoors that it conveys – it really simulates the experience of standing in a wide open space and having to tune in to sounds and movement to spot different forms of life.

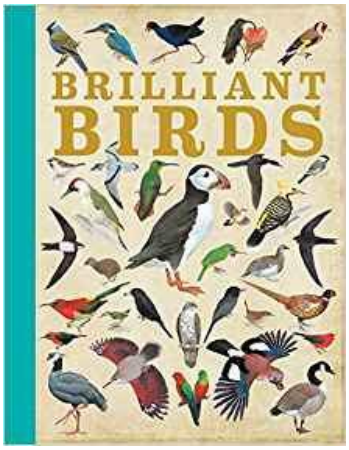
This book would be of most use to pre-school readers and perhaps those in reception, as older children might enjoy a little more text and information, but the illustrations really render it a lovely gift to any child or addition to a school book corner or library.

Philippa Riste

Usborne Big Picture Book Outdoors. **Minna Lacey, Illustrated by Rachel Stubbs and John Russell (2017). Usborne Publishing. Hardback, pp32. ISBN 978-1-4095-9873-2. £12.99.**

Brilliant Birds

Matthew Morgan & Suhel Ahmad

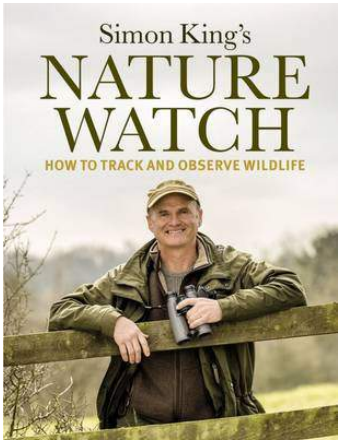


'Brilliant Birds' is a beautifully produced sequel to 'British Wildlife' by the same publisher. Stunning illustrations of birds from all over the world feature on colourful themed double page spreads. Birds are grouped according to the kinds of interesting facts which make them memorable to children – by colour: 'Green and Gorgeous', 'Alluring Yellow', 'Crafty Camouflage'; according to distinctive features such as 'Unbelievable Beaks', 'Flightless Fancies', or 'Fabulous Feathers'; and by special talents including 'Speed Kings', 'Diving Champions', and 'Soaring Sensations'. Text is minimal although scattered with interesting facts – the main draw of the book is its illustrations and the skill with which they have been arranged and presented in order to capture a child's imagination. It is not a handbook or exhaustive guide, but rather a picture book designed to ignite interest and the imagination. This book would be treasured by a keen ornithologist, but is also an excellent introduction to the world of birds for children who have had previously little or no interest in bird watching. It would be a very popular and informative addition to a reference library for primary children – its focus on speed, size, and abilities of different birds could render it a useful focus in numeracy work, or in talking about diversity in the classroom. Such a dynamic and colourful introduction to the variety of birdlife on our planet is sure to engender interest in the bird life in the immediate environment and a natural outworking of using this book as a stimulus would be to spend time with children finding out and even observing bird life in school grounds or in their gardens at home.

Philippa Riste

Brilliant Birds. **Matthew Morgan, Suhel Ahmad (2016). QED Publishing. Hardback, pp64. ISBN 978-1-78493-611-2. £9.99.**

Nature Watch *Simon King*

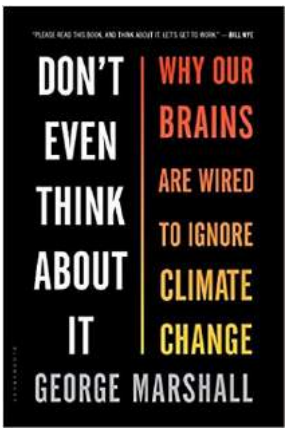


Nature Watch is an excellent resource on how to track and observe wildlife. It is clearly set out, with beautiful photography (as you would expect from Simon King) and illustrations, and is a highly accessible book for both beginner and experienced tracker alike. The remit of the book is to give tracking signs and watching tips for animals found in the British Isles and Europe – although much of the useful advice and information in the two initial chapters on Equipment and 'Field Senses' (learning how to move and set up your surroundings with minimal disruption to the animals you wish to watch) is universally applicable. Over 200 pages are dedicated to the details any would-be tracker needs to know about the animal they wish to observe, split under the five sub-headings of Mammals, Birds, Reptiles, Amphibians and Invertebrates. Each species is described in terms of its size and appearance in lovely watercolour illustrations, alongside images (mostly to scale) of a typical footprint, photos and descriptions of faeces, typical food remains (for example, in photographs of two hazelnut shells, King notes that the difference between the eating habits of woodmice and bank voles is that voles leave toothmarks on the outer edge of the nut), habitat and home, and a 'How to Watch' section. To be treasured by a family as a key to outdoor adventures, and a confidence and knowledge booster for any outdoor educator wanting to enthuse their pupils and share the wonder of the lives of wild animals living on our doorstep, this book really is, as King asserts in the introduction, a 'distillation' of his knowledge born of years of fascination and observation; an invaluable and inspiring guide in how to study and engage with the wildlife surrounding us.

Philippa Riste

Nature Watch. **Simon King (2016). Quadrille Publishing. Hardback, pp256. ISBN 978-1-84949-476-2. £20.**

Don't even think about it: why our brains are wired to ignore climate change *George Marshall*



An enticing title that persuaded me to order the book from our library. There was just one copy in the whole of Cumbria, so it wasn't high in the popularity charts, which is just the status climate change holds in the discussion stakes, apart from a few days when a world conference takes place. The author is George Marshall, founder of the Climate and Information Network, based in Oxford.

The book doesn't deal with facts and figures but the psychological research that shows how the human brain has evolved to set aside problems that seem too painful and frightening to accept, so we act on immediate rather than future dangers. The brain responds better to a sense of urgency where simple answers can found. Climate change lacks these for neither the causes or solutions of climate change seem clear and the situation always seems to be changing.

Opposing business and political views add to people's confusion. I think Marshall's solution may be the answer. Having examined the spread and growth of evangelical Christian Churches in America and the major religions around the world with simple but convincing messages he declares, *'It's not statistics that will change peoples' minds; it's the story.'*

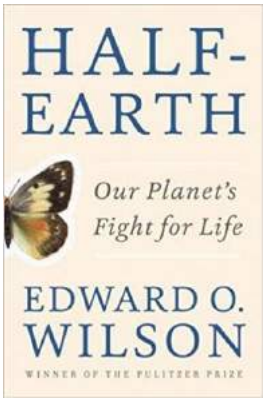
He leaves the burning prospect of the potential 4 degrees average global temperature rise until the final chapter. We need to be shouting the message simply, clearly and positively. For humans' future on this planet we need to believe it. Read the book for all the details!

David Fellows

Don't even think about it: why our brains are wired to ignore climate change. **George Marshall (2014). Bloomsbury Publishing. Hardback, 260pp. ISBN 978-1-62040-133-0. £20.**

Half-Earth: Our Planet's Fight for Life

Edward O. Wilson



Jane Goodall is something of a conservation superstar and I have been very fortunate to have met her, twice. She is a well-qualified zoologist and environmentalist; a trailblazer in African chimpanzees and as a woman scientist. She is 83 and still going strong, spreading the conservation message as she travels worldwide; she certainly draws a crowd, mainly younger people. By happy comparison, Edward Osborne Wilson, is 86, an expert on ant societies, coiner of the concept of 'biodiversity,' and has made his mark on evolutionary biology, entomology, environmentalism, and literature….the list seems endless. Two of his 31 books – *The Ants* and *On Human Nature* – received Pulitzer Prizes. I am sad I have not met EO Wilson; he seems like a 'Charles Darwin' kind of almost grandfatherly figure who, alongside Dr Jane, believes we need to take positive, even sometimes radical, steps to protect our planet.

Half Earth certainly proposes a plan to save our imperiled biosphere: devote half the surface of the Earth to nature. The renowned biologist identifies actual regions of the planet that can still be reclaimed, including California redwood forest, Amazon River Basin, Western Ghats of India, the Serengeti, the long-leaf pine savannahs of the American South, the flatlands of northeastern Europe, Congo Basin, Borneo, McMurdo Dry Valleys in Antarctica.

The 'plan' of reserving so much land as 'wild lands', whilst great in theory, is quite something if you think about it. Certainly in the new age of Trump, the opposite is actually happening and less, not more, space is looked at in terms of nature presservation, at least by some. The other challenges are: making good/better/more effective use of the current used/city landscape, so that the 'wild lands' are seen as 'ok' …this would come down to making cities more sustainable! Half-Earth concludes E.O. Wilson's trilogy begun by *The Social Conquest of Earth* and *The Meaning of Human Existence*.

The book itself is very readable and interesting and eloquent but, for me, does not lean towards being easily labelled an immediate 'call to action'. Recommended as a book about our problem-filled planet and ways to work with nature, yes. A 'how to' guide, maybe not.

Henricus Peters

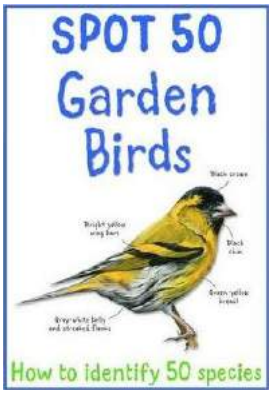
Half-Earth: Our Planet's Fight for Life. **Edward O. Wilson. Liveright Publishing Corporation. Hardback, 272pp. ISBN 978-1-63149-082-8. £19.98.**

Children's books about...birds

NAEE's Juliette Green highlights some useful books for teaching children about our feathered friends.

Spot 50 Garden Birds

Camilla de la Bedoyere

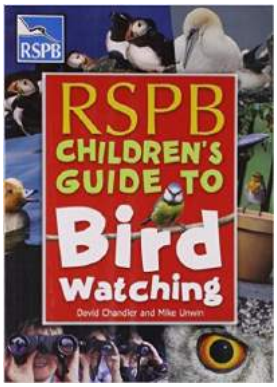


I use these 'Spot 50' books all the time when working outside with children (other titles include wildflowers, trees and insects). They are easy to navigate as a simple field guide, and contain just the right level and amount of information about each species.

Each species has its own page, with a large labelled picture and a fact file (scientific name, size, call, breeding information etc.). The 50 birds are organised by family (flycatchers, wagtails and waxwings; thrushes; finches; martins, swallows and swifts; woodpeckers; raptors etc.), with each family having a different-coloured page background. The contents page doubles up as a checklist to tick off the species that are seen.

Spot 50 Garden Birds. **Camilla de la Bedoyere (2014). Miles Kelly Publishing. Paperback, pp56. ISBN 978-1-84810-610-7. RRP £6.99.**

RSPB Children's Guide to Bird Watching *David Chandler & Mike Unwin*



Aimed at 8-12 year olds, this is a well-organised book that offers a 'head start' to anyone interested in finding out more about birds.

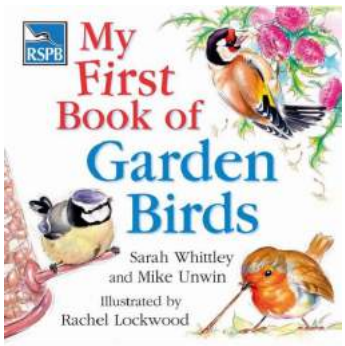
The first half of the book gives essential information and useful tips to young birders, including how to recognise different bird species (looking at size, shape, colour, behaviour, calls etc.); the kit that's needed; information about birdwatching in different habitats; and ways in which young people can get involved in conservation. There's a handy section entitled 'The Birder's Year', which includes suggestions for bird-related activities that can be done during the three main school holidays (Christmas, Easter and summer).

The second half of the book is a field guide to help identify most of the bird species that can be seen in the UK and Ireland. Each bird has half a page devoted to it, which includes pictures and notes about identification, behaviour, voice, where to see and any confusion species.

The back of the book has a detailed glossary, index of bird species and a checklist to complete. This book would be the perfect present for any young person who wants to get into birdwatching, and would also be a very useful reference guide for a classroom or school birdwatching club.

RSPB Children's Guide to Bird Watching. **David Chandler & Mike Unwin (2005). A&C Black. Paperback, pp128. ISBN 978-0-7136-8795-8. RRP £6.99.**

My First Book of Garden Birds *Mike Unwin & Sarah Whittley*



My favourite book to use with children! The colourful illustrations appeal to young children, but there is sufficient information about each of the 20 featured bird species to engage older ones as well.

Each bird has a 'Guess Who' page, which gives clues to help identify the species—for example: *'This bird likes being around gardeners. It perches on spades and snaps up insects from the ground.'* Then when you turn over, you find out what bird it was and can read more information about it. Great fun, and informative too!

My First Book of Garden Birds (RSPB). **Mike Unwin & Sarah Whittley, illustrated by Rachel Lockwood (2006). A&C Black. Hardback, pp48. ISBN 0-7136-7678-7. RRP £6.99.**

Spike's Best Nest *Tony Maddox*

This is a brilliant big book to read to children outside. A lucky charity shop find has become a book that I've used in various places for many different themes. These have included reading it in a reception classroom followed by independent work making nest collages for Spike to sit in; and as part of a birds event in a woodland where children had a go at constructing their own nests. As well as showing children about birds' nests, the book also portrays other animals, their habits and habitats (e.g. the rabbit family live in an underground burrow, which Spike finds scary, and the owl sings at night, waking Spike up!); and allows discussion of the concept that 'there's no place like home' (i.e. Spike tries various places in which to sleep, but finds that the most comfortable place is his own nest).

Spike's Best Nest. **Tony Maddox (2003). Myriad Books Limited. Paperback (big book), pp30. ISBN 1-904154-73-5. RRP £14.99. [Also available as a small book]**

Love books?

NAEE members are invited to become part of the team who review books, especially latest releases.

Contact
info@naee.org.uk

Webwatch

Compiled by Henricus Peters *Editor*

BIRDS

Birds of Britain

Over 450 pages including changing monthly features and a permanent guide to Britain's bird reserves and clubs.

www.birdsofbritain.co.uk

Royal Society for the Protection of Birds (RSPB)

The RSPB's website provides you with your local RSPB reserves, the birds that should be around you, what time of year you might see them and how to maximise your viewing success.

www.rspb.org.uk

There is also part of the RSPB website which provides teaching resources, children's activities, family ideas, information about school outreach sessions etc., which aim to inspire children and young people to love and care for nature.

www.rspb.org.uk/kids-and-schools

British Trust for Ornithology (BTO)

Looking out for birds? Share your interest in birds with others by being part of the British Trust for Ornithology (BTO). Volunteer surveyors, members and staff work in partnership to provide unbiased information about birds and their habitats.

www.bto.org

Birdwatch

Alongside the magazine of the same name, this website provides up-to-date information on the latest birding events, recent bird news, gadgets.

www.birdwatch.co.uk

The Wildfowl and Wetlands Trust (WWT)

A charity that saves wetlands, which are essential for life itself. The charity has at its heart issues like wellbeing, nature, climate change and education.

www.wwt.org.uk

BirdLife International

The world's largest nature conservation partnership, with 120 partner organisations from 118 countries/territories. **www.birdlife.org**

10,000 Birds

More than just birds, this website includes other worldwide wildlife, but its main focus is birding information. From here it also provides you with links to other websites and opportunities to support bird conservation.

www.10000birds.com

SAVE (Saving Asia's Vultures from Extinction)

SAVE works across South Asia to raise awareness of the plight/flight of these magnificent and maligned birds. **www.save-vultures.org**

SUSTAINABILITY

UN Year of Sustainable Tourism (#IY2017)

Key information regarding tourism – a huge connector of people with their environment – and making this 'sustainable'.

'The #IY2017 will promote tourism's role in the following five key areas:

1) *Inclusive and sustainable economic growth*
2) *Social inclusiveness, employment and poverty reduction*
3) *Resource efficiency, environmental protection and climate change*
4) *Cultural values, diversity and heritage*
5) *Mutual understanding, peace and security.'*

All of these – especially points 2, 3 and 4 – have major educational benefits / spinoffs.

www.tourism4development2017.org
twitter.com/iystd2017

UN Sustainability Goals

sustainabledevelopment.un.org/sdgs

The new 17 SDGs include:

SDG 6 : clean water *'Water and sanitation are at the very core of sustainable development, critical to the survival of people and the planet. Goal 6 not only addresses the issues relating to drinking water, sanitation and hygiene, but also the quality and sustainability of water resources worldwide.'*

SDG 11: sustainable cities and communities *'More than half the world's population lives in cities. By 2030, it is projected that 6 out of 10 people will be urban dwellers. Despite numerous planning challenges, well-managed cities and other human settlements can be incubators for innovation and ingenuity and key drivers of sustainable development. However, as more people migrate to cities in search of a better life and urban populations grow, housing issues intensify. ….managing solid waste is often problematic in densely populated areas. Urban air pollution also challenged cities around the world, causing illness and millions of premature deaths annually. In 2014, around half the global urban population was exposed to air pollution levels at least 2.5 times higher than maximum standards set by the World Health Organization.'*

Air pollution in Shanghai, China, regularly goes above 100 PM (parts per million)
[Source: **aqicn.org/city/shanghai**]

SDG 13 : climate action *'Climate change presents the single biggest threat to development, and its widespread, unprecedented impacts disproportionately burden the poorest and most vulnerable. Urgent action to combat climate change and minimize its disruptions is integral to the successful implementation of the Sustainable Development Goals. The global nature of climate change calls for broad international cooperation in building resilience and adaptive capacity to its adverse effects, developing sustainable low-carbon pathways to the future, and accelerating the reduction of global greenhouse gas emissions.'*

'On 22 April 2016, 175 Member States signed the Paris Agreement under the United Nations Framework Convention on Climate Change. The new agreement aims to reduce the pace of climate change and to accelerate and intensify the actions and investments needed for a sustainable low-carbon future.'

However, shortly before this journal went to press, the United States' White House decided to withdraw from the Paris Agreement. This will have a range of consequences, including throwing a question mark over both the US Government's role in climate actions and the need for cities and people – especially educators – to continue to teach about climate and human activity.

'Climate change often exacerbates disasters. Between 1990 and 2013, more than 1.6 million people died in internationally reported disasters, with annual deaths trending upwards. In 2015, 83 countries had legislative and/or regulatory provisions in place for managing disaster risk.'

WORLD HERITAGE

UNESCO World Heritage and Sustainable Tourism Programme

This programme is based around working with the stakeholders involved with heritage sites to ensure that *'heritage management is integrated at a destination level, the natural and cultural assets are valued and protected, and appropriate tourism developed.'* **whc.unesco.org/en/tourism**

'World Heritage' publication

World Heritage is the official UNESCO publication from the World Heritage Centre. Featuring in-depth articles on cultural and natural World Heritage sites. The quarterly review is produced in English, French and Spanish. Many of these can be viewed online for free, but of course a subscription gives you total access.

whc.unesco.org/en/review

The Green List

World Heritage is about the value of the site itself and, although World Heritage sites are expected to be well managed, some are actually not, as they have lost part of the value for which they were initially listed, due to inefficient management and/or governance patterns. Those sites would not meet the Green List criteria.

The Green List recognises not the intrinsic value of the site, but the quality and effectiveness of its management and governance systems, which enable the Protected Area (PA) to reach its conservation goals. Many good places are therefore able to be Green Listed while they would never be on the World Heritage list. In that sense, Green List and World Heritage are quite complementary. The Green List is targeting all the PAs and will celebrate the effort of all categories of PAs in achieving conservation goals. **papaco.org/greenlist**

Protected Planet

This is the online interface for the World Database on Protected Areas (WDPA), a joint project of IUCN and UNEP, and the most comprehensive global database on terrestrial and marine protected areas.

www.protectedplanet.net

SUSTAINABILITY & ENDANGERED SPECIES

Arkive

May 20th 2017 marked 14 years of Arkive, which now features over 16,000 species, adding over 3 new ones every day. In the human world, the 14th year of marriage, is celebrated as the ivory anniversary. While elephant-themed gifts are now the go-to for many couples, the ivory trade persists around the world and is driving the world's largest land animal to extinction. **www.arkive.org**

www.arkive.org/education

NATURAL DISASTERS: EARTHQUAKES

Just after midnight on 14 November 2016, a 7.8 magnitude earthquake struck New Zealand's South Island 55 miles north east of Christchurch: the towns of Kaikoura and Blenheim were devastated. This was followed by a 6.8 magnitude aftershock later that day, one of 313 aftershocks recorded within 13 hours by Geonet, New Zealand's national earthquake service.

naee.org.uk/ga-focuses-earthquakes

www.bbc.com/news/world-asia-37967178

Website showing the more technical side of earthquake science. **ow.ly/SqT830ckdGe**

Excellent website with very dynamic graphics about what causes earthquakes.

ow.ly/C6fM30ckecT

CLIMATE CHANGE

The Geographical Association website states: *'Climate change is an important and historic geographical process which looks into the past, present and future. But what is the evidence for climate change? What causes it, and what impact will it have on environments and people?'*

ow.ly/8eNH30cuJHV

The Royal Meteorological Society's climate change updates series for geography teachers helps answer these questions, and acts as a summary for geography teachers and secondary and post-16 students investigating climate change, based on data chosen from recent reports on climate change by the Intergovernmental Panel. The site includes a series of fact-sheets, e.g. *Signs of a Changing Climate, Earth's Energy Balance, The Impact of Climate Change on Food Production and Security.*

MetLink
Royal Meteorological Society

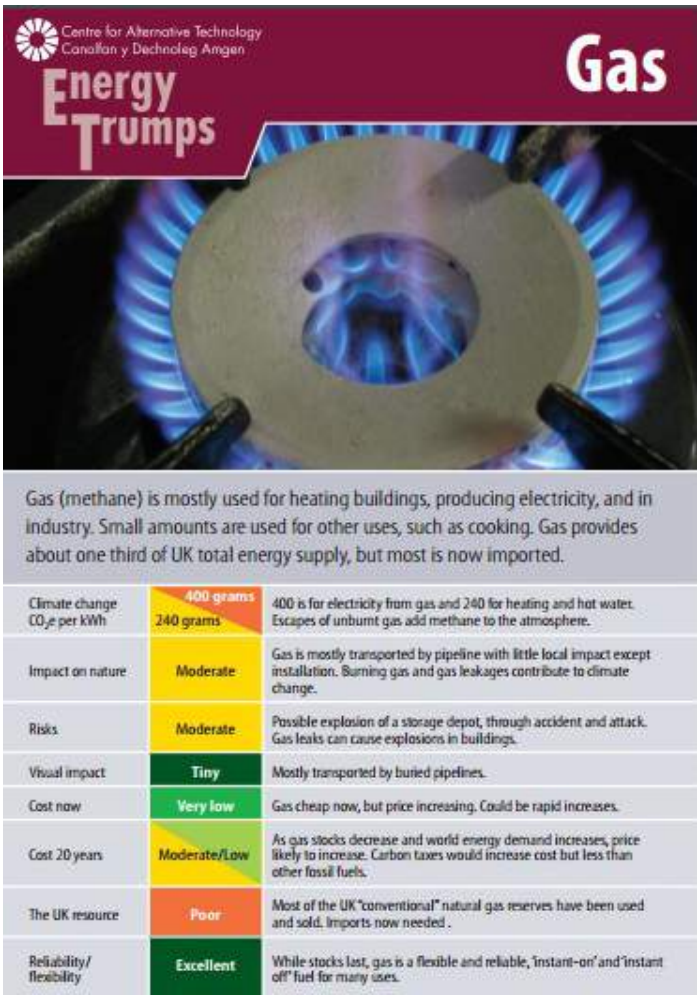
www.metlink.org/ipcc-updates-geography-teachers

ENERGY

Energy Trumps

A card game (available in both English and Welsh) from the Centre for Alternative Technology (CAT) which enables players to learn more about different supplies of energy and the various positives and negatives associated with each.

learning.cat.org.uk/resources



The Pod – EDF Energy's education programme

Teachers need to log their school on to the site to download resources. The site is linked to Eco-Schools so schools can gain Eco-Awards. Three main aims of the Pod:

1. To inspire young people and their families to choose a more sustainable lifestyle.
2. To promote STEM (science, technology, engineering and maths) and encourage science and engineering as a career choice.
3. To help children understand that a low carbon, secure and affordable energy supply is vital for the future.

jointhepod.org/home

NEWS

NAAEE – NAEE's US partner – has partnered with the Children and Nature Network, researchers at the University of Minnesota, and the University of Illinois Urbana-Champaign to launch the Science of Nature-Based Learning Collaborative Research Network.

naaee.org/news/newsroom/connecting-children-nature-executive

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NAEE on social media

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Follow NAEE Twitter: twitter.com/naee_uk

NAEE Facebook: www.facebook.com/NAEEUK

Write for *Environmental Education* journal

We welcome articles, book reviews and website suggestions from NAEE members, supporters and readers. We are especially interested in case studies, including environmental education, outdoor classrooms, forest schools etc. — in primary or secondary schools and colleges.

Articles may occasionally be reprinted either on their own or with other articles in NAEE publications or on the website.

For more information, please contact *henricus.p@yahoo.com*.

Join NAEE's Executive Committee

To find out more about the roles of the NAEE Executive Committee, and consider becoming nominated to this governing body, contact the National Coordinator: *info@naee.org.uk*.

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